ST☆RGATE

INTERACTIVE AUTOMATION SYSTEM

The Next Generation In Automation!

ST☆RGATE is a powerful Interactive Automation System that integrates control of the different sub-systems throughout your home or business including: Lighting, Security, Entertainment (Audio/Video), Communications, Heating/Cooling, Pool/Spa, Irrigation, Appliances and much more.

THE NEXT GENERATION IN AUTOMATION

ST☆RGATE integrates scheduling and advanced two-way control of X-10, Infrared, Hardwired Inputs and Outputs, Telephone, Intercom, Interactive Voice Response and Multi-media functions. It can be operated from any telephone, computer, X10 controller, IR remote, wireless remote (RF), digital and analog inputs, ASCII (RS-232), and by time/event schedule.

ADVANCED TWO-WAY X-10 CONTROL

In addition to sending X-10 commands, **ST☆RGATE** *monitors and identifies* all X-10 activity on the power line, allowing intelligent "If-Then" control based on received X-10 commands and/or other input conditions. Programmed routines and complex macros can be set or triggered at the touch of a button from any X-10 controller (desk top, wireless remote, wall-mounted, etc.). **ST☆RGATE** also supports X-10 Status Request commands and Preset Dim and Micro-Dim/Bright commands available with PCS brand dimmer modules.

ADVANCED TWO-WAY TELEPHONE CONTROL

ST☆RGATE sends and receives touchtone signals and responds to ring, off-hook, on-hook and Caller I.D. signals for optimum control by phone and unlimited communication possibilities! Any combination of telephone signals can be used to trigger events. For example, dialing 9-1-1 can automatically flash the outside lights to help authorities locate your house. The tv or stereo can automatically mute when the phone rings and un-mute when the phone is hung up after the call. With Caller I.D., incoming calls from friends and family can be identified and announced through loudspeakers ("John Doe is calling!") or, when you're away, automatically transferred to your cellular phone (using phone company's 3-Way Calling) or pager to display the caller's number!

Three different remote access codes can be programmed (up to six digits each) and levels of access assigned. For instance, your personal remote access code can allow complete access to all **ST☆RGATE** functions while your neighbor's code only allows control of your sprinklers and outside lights when your away. Calls can be logged for later review. Calls to specific numbers (teen calling boyfriend/girlfriend) can be restricted to certain times of day and duration. **ST☆RGATE**'s separate phone and intercom outputs allow control via the intercom without interfering with the outside line and vice versa. Multi-line phones can be connected to both outputs for maximum flexibility.

INTERCOM / HOLD / PAGING / LISTEN IN

ST☆RGATE's built-in intercom allows phone-to-phone communication and paging throughout the premises through dedicated speakers and/or audio system. Calls can be placed on hold, announced by paging, and transferred to other extensions. A line-level audio input allows connection to a microphone preamp (or other audio source) for monitoring audio via telephone.

INTERACTIVE VOICE RESPONSE

ST☆RGATE's built-in Interactive Voice Response feature allows voice responses (factory presets and/or user programmed) to be issued based on any input condition(s). Over 600 preset responses (words, phrases, sound effects) are included such as "on," "off," "up," "down," etc., which can be organized into sentences along with custom user-recorded responses. Up to 128 user responses can be recorded from any phone or via line-level audio input and directed to any or all of four outputs (speaker out, line-level out, phone line, intercom line). This allows for maximum flexibility when setting up voice acknowledgments, wake-up signals, system status reports, reminders, etc. Responses to commands issued by phone, for instance, can be acknowledged over the phone without disturbing the rest of the house while responses to commands issued from desktop, wall-mounted or wireless controllers can be routed to the appropriate speaker(s) or sound system based on time of day, controller location, or any other condition(s).

TWO-WAY INFRARED CONTROL

ST☆RGATE integrates control of tvs, stereos, home theater, and other infrared-operated components (with optional ***IR-XP² InfraRed Xpander***™). Audio/video equipment can be controlled by time, X-10, IR, telephone, analog or digital input, ascii, etc. Custom macros can be programmed to turn on power, select sources (am/fm, tv, vcr, cd, etc.), switch channels, set volume levels, and even close the drapes and dim the lights - all at the touch of a button or at preset times! In addition to issuing IR commands, **ST☆RGATE** can respond to learned commands, allowing any IR remote to be used as a controller for **ST☆RGATE**! For instance, pressing the "power" button on your tv remote can also dim the lights and close the drapes. Unused buttons can be assigned specific **ST☆RGATE** functions. **ST☆RGATE** stores up to 500 IR commands which can be issued to any of its four zoned emitter outputs. It can also "repeat" or redirect IR commands to any or all of the four zones.

Optional **Power Status Sensors** can be connected to report on/off status of up to four components (tv, vcr, etc.) regardless of how the components are turned on (via hand-held remote, **ST☆RGATE** or manually). These can be used to prevent system-issued IR commands from getting out of step with the controlled components and to trigger events based on the on/off status of a component.

JDS TECHNOLOGIES *"The Home of Automation"*

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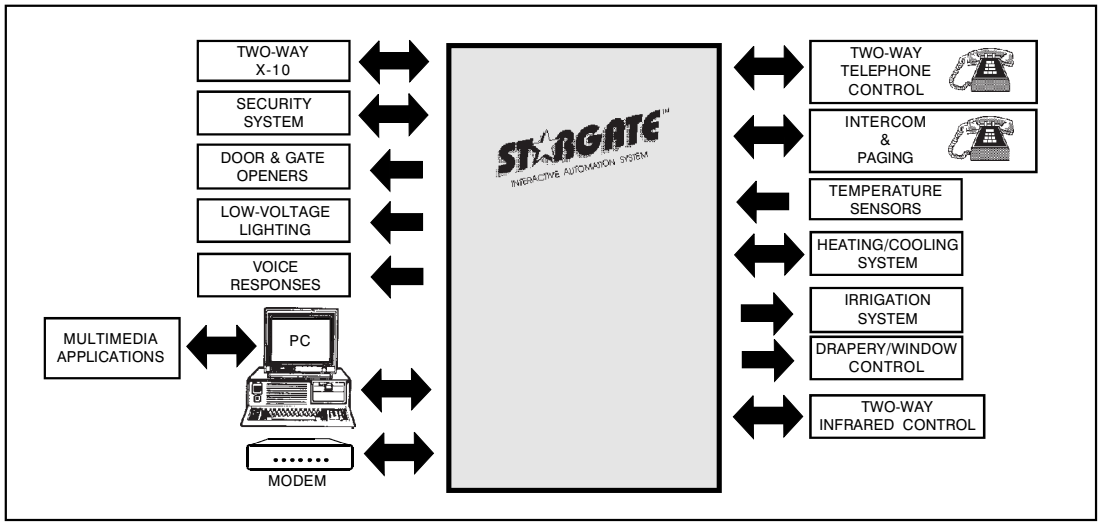

EASY "POINT & CLICK" PROGRAMMING

The intuitive *Event Manager* software (included) makes programming easy and offers many advanced control features that can be customized to suit any residential or commercial application. Time- and event-based schedules are easily programmed by selecting from simple "pop-down" menus. No language to learn or program code to write - the Windows-based *Event Manager* software writes it for you! Intelligent "If-Then" routines can be triggered by time, date, sunrise/sunset, received X-10 commands, received IR commands, telephone signals (touchtones, ring, off-hook, Caller I.D., etc.), analog & digital inputs, ASCII text, timers, flags, variables and other input conditions. Once programmed, **ST☆RGATE** can be disconnected from the computer or used together for monitoring, manual control and a host of multi-media functions. **ST☆RGATE's** internal clock/calendar tracks sun-rise & sunset and automatically adjusts for daylight savings and leap year!

DIGITAL INPUTS

16 opto-isolated digital inputs (expandable) accommodate motion detectors, security sensors, thermostats, assistive switching devices and other hardwired devices. Digital inputs can be connected "in series" with alarm system zones for interfacing automation with security. Digital inputs are rated 4-24v ac/dc. Input status can be logged to a file or printer and monitored/reviewed locally or remotely via modem.

ANALOG INPUTS

8 analog inputs (expandable) accommodate temperature and humidity sensors or any device with variable output from 0-5vdc. Built-in calibration software provides gain and offset adjustment. Analog values can be logged to a file, printer and monitored/reviewed locally or remotely via modem.

RELAY OUTPUTS

8 single-pole-double-throw (S.P.D.T.) relays (expandable) allow connection to security systems, HVAC, speakers, sprinklers, low-voltage lighting, etc. Relay output status can be logged to a file or printer and monitored/reviewed locally or remotely via modem. Relay outputs are rated 1A @ 28v ac/dc.

ASCII INPUT & OUTPUT

ST☆RGATE can be programmed to respond to ASCII text data (up to 32 characters in length) to trigger any event in the schedule. It can also send ASCII text data to trigger other computer programs or control an external modem or other peripherals.

MULTIPLE SERIAL PORTS

Four serial ports (3-RS232,1-RS485) support simultaneous connection to a pc, modem and other peripherals. Two of the RS232 ports have adjustable baud rates.

DOWNLOADABLE FIRMWARE

ST☆RGATE's firmware code is stored in flash memory allowing upgrades to be received via modem, internet, etc. then downloaded without having to replace eproms or power down the system.

SYSTEM MONITORING & CONTROL

The multi-purpose ***"MegaController"*** allows *total system monitoring* and *manual control* in a single, on-screen interactive workspace!

MegaController features include:

Interactive Status Display - displays on/off status of all 256 X-10 addresses and allows **manual control** of the entire system.

Activity Log - logs and displays date, time, origin, and letter/number/function code of all X-10, IR & I/O commands as they occur.

History button - recalls system activity (previous 200 commands) for review, file or print out - an invaluable tool for monitoring or troubleshooting!

I/O Access - displays status of digital inputs and relay outputs and allows direct control of relays.

Analog Access - reads and displays status of analog inputs.

IR Access - allows manual control of all learned IR commands.

Telephone Access - allows direct access to telephone dialing functions.

SPECIFICATIONS

Power	16.5 VAC @ 40VA
Connections	RS232: (3) RJ11, RS485: (1) Screw Terminals
Compatibility	IBM or compatible w/ asynchronous serial port
Required operating system	Windows 3.1x or Win95
Required available disk space	3 MBytes
Digital inputs	16 (expandable), 4-24V AC/DC
Analog inputs	8 (expandable), 0-5VDC
Relay outputs	8 (expandable), 1A @28VDC
Transmission rate	9600 bps asynchronous
Data format	8 Data Bits, No Parity, One Stop Bit
Delays	Unlimited
Timers	32
Variables	256
Flags	256
Macros	256
Time Labels	32
ASCII	32 characters/line
Lines of code	Up to 8,000
Activity Log (History)	Last 200 commands
Message Log	12,000 characters
Dimensions	11" x 15" x 4"
Weight	13 lbs.

OPERATION MANUAL

WinEVM EVENT MANAGER PROGRAMMING GUIDE

Rev C

DCN 141-00551-02

03/00

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"The Next Generation in Automation"

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JDS Technologies does not warrant the STARGATE hardware or WinEVM Event Manager software will function properly in all hardware and software environments. STARGATE and the WinEVM Event Manager software may not work with modified versions of the Microsoft operating system, certain resident software applications, or hardware that is not 100% compatible with that provided by International Business Machines, Inc.

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Welcome to STARGATE

The Next Generation in Automation!

STARGATE is a powerful interactive automation system that integrates control of the different subsystems throughout a home or business including Lighting, Security, Entertainment (Audio/Video), Communications (Telephone, Intercom), Heating/Cooling, Irrigation, etc. The system can be controlled by telephones, computers, X10 controllers, in-wall keypads, wireless keypads (RF remotes), infrared remotes, analog and digital inputs, and time/event schedule.

STARGATE features include:

- ✓ **2-Way X10 Communication** - Sends and Receives standard and advanced X10 signals for control of lighting and appliances.
- ✓ **2-Way IR Communication** - Sends and Receives infrared signals (with optional InfraRed Xpander™) for control of audio, video, home theater, and other infrared-operated equipment.
- ✓ **2-Way TELEPHONE Communication** - Sends and Receives TouchTones, CallerID, on-hook, off-hook, and hookflash signals.
- ✓ **2-Way INTERCOM Communication** - Built-in intercom path for phone-to-phone communications, paging and local control.
- ✓ **2-Way SERIAL Communicatio**n - Sends and Receives ASCII via three RS-232 ports and one RS-485 port for connection to computer, modem and other serial devices (thermostats, weather stations, etc.).
- ✓ **INTERACTIVE VOICE RESPONSE** - Over 600 Preset and 128 User-Programmable words, phrases and sound effects for prompts, acknowledgements, signals, messages, etc.
- ✓ **VOICEMAIL/VOICEMENU** – 8 VoiceMail Mailboxes, Integrated VoiceMenu system.
- ✓ **INPUTS AND OUTPUTS** - 16 Digital / 8 Analog Inputs, 8 Relay Outputs (expandable) for interfacing with security systems, heating/cooling systems, irrigation, etc.
- ✓ **Built in Battery Backup** - saves your schedule in case of power outage.
- ✓ **External Battery Backup** - allows connection of 12V battery (optional) to maintain system operation during power outages.
- ✓ **Real-time clock/calendar** - automatically adjusts for Daylight Savings and Leap Year.
- ✓ **SunRise/SunSet calculations**
- ✓ **X10 Sequence Feature** - A series of X10 commands within a defined time window can trigger an Event. For example, pressing A-1 A-2 A-1 within 3 seconds could dim the lights.
- ✓ **Message Log** - Your schedule can log any Event you specify with a time-date stamp attached
- ✓ **Security Mod**e - Have your front porch light (and/or other devices) come on at ‘approximately’ the time you specify.
- ✓ **Expansion port** - for add-on products
- ✓ **Power Fail Catch-up** - returns devices to their scheduled state when power fails and is then restored.

What's Included

In addition to this manual, your STARGATE package contains:

- ✓ One STARGATE
- ✓ One AC power adapter
- ✓ Two 4-Conductor Modular TELEPHONE cables
- ✓ One 6-Conductor Modular DATA cable
- ✓ One RJ11-DB9 adapter
- ✓ One DB9-DB25 adapter
- ✓ Program Diskettes – WinEVM Event Manager Software
- ✓ One Powerline Interface Module (TW523 or PSC05 or Equivalent)

What you need

- ✓ An IBM PC-AT or 100% compatible computer capable of running Microsoft Windows , with an asynchronous serial port.
- ✓ A 3.5" high-density floppy disk drive for software installation.
- ✓ A hard disk with at least 1.6 mega-bytes available or a high capacity floppy diskette drive.
- ✓ Microsoft Windows 3.1 or higher or Win95/98.

Installing STARGATE

Choose a mounting location accessible to (a) a continuously-powered ac source, (b) system ground, preferably a steel or copper ground rod, ideally no further away than 10 feet, and (c) telephone lines. Remove appropriate knockouts for cables. Place the panel at a convenient viewing height and mark the mounting holes. Attach the enclosure using screws suitable for the mounting surface.

Grounding: Connect the main-board Earth-Ground lug to a long steel or copper ground rod driven deeply into the earth. Do not use a gas pipe, plastic pipe or ac ground connections. Use at least 16-gauge wire. Make the run as short and direct as possible.

1. Turn off your PC.
2. Plug one end of the modular DATA cable into STARGATE **COM1** port.
3. Plug the other end of the modular DATA cable into the RJ11-DB9 adapter then into your PC's serial port (use the DB9-DB25 adapter if needed).
4. Plug one end of the modular TELEPHONE type cord into the Power Line Interface module.
5. Plug the other end of the cord into the STARGATE jack labeled "P.L.I.".
6. Plug the Power Line Interface into an AC outlet.
7. Connect a pair of wires (22 gauge) from the "~ AC " POWER INPUT terminals to the plug-in power supply terminals.
8. Plug the power transformer into an AC outlet.
9. Restart your PC.
10. If operation during power outages is required, connect a 12V RECHARGEABLE BATTERY (4Ah or greater) to the "BATTERY +12V" and "BATTERY GND" terminals.

NOTE: DO NOT PLUG THE POWER LINE INTERFACE INTO A FILTERED OUTLET OR POWER STRIP - THIS WILL DEGRADE X10 SIGNALS.

Telephone Connections

STARGATE has three modular jack connectors (RJ-11) labeled LINE, PHONE and ICM on the Telephone/Voice Board.

CO - connects to the incoming telephone line (C.O. Line) from the phone company, or, when connected to a Key Telephone System or PBX, to a spare station port or extension.

PHONE - connects to the telephone wiring of the premises (red and green wires).

ICM - provides direct access to STARGATE's INTERCOM (talk path) for phone-to-phone communications and local telephone control of STARGATE™ without affecting the outside phone line. It can be used with standard single-line phones and/or wired to the yellow and black wires of two-line telephones for intercom access on "Line 2." The ICM jack can also be connected to a spare CO Input of a Key Telephone System or PBX for local telephone control of STARGATE.

Connections to Key Telephone System or PBX:

For maximum flexibility, connect the **ICM** jack to a **spare C.O. Input** of the KSU (Key Service Unit) or PBX and the **LINE** jack to a **spare station port** or extension output. This configuration will accommodate several advanced capabilities:

1. Any phone station or extension with access to the spare C.O. line can operate STARGATE locally.
2. Any C.O. line programmed to ring at the spare station port can be used for remote access to STARGATE.
3. STARGATE can answer and transfer calls to other extensions for automatic call distribution (ACD) and Caller ID applications.
4. Voice Responses can be broadcast over the phone system's intercom and paging system.

Voice Output Connections

Voice responses can be outputted directly to speakers or to an amplifier, receiver, etc. when greater amplification is required.

SPEAKER - output (screw terminals) can directly drive several speakers at normal listening volume. Speaker volume control is provided by an adjustable (with small screwdriver) volume control potentiometer located near the Speaker screw terminals.

LINE-LEVEL OUT - output (RCA phono jack) can be connected to the line level input of an amplifier, receiver, etc. using a standard RCA-type phono cable. When connecting to a stereo amplifier or receiver, use a "Y-Adapter" to connect STARGATE's Line Level Output to both (left and right) amplifier/receiver line level inputs.

LINE-LEVEL IN - input (RCA phono jack) can be connected to the line level output of an amplifier, receiver, etc. using a standard RCA-type phono cable. When connecting to a stereo amplifier or receiver, use a "Y-Adapter" to connect STARGATE's Line Level Output to both (left and right) amplifier/receiver line level outputs.

Ground Loops – Occasionally when interconnecting audio devices a ground loop problem can occur. This shows up as an annoying hum from STARGATE's Speaker or an audio amplifier's speakers. Ground Loops are caused by the ground reference of one device not being at the same electrical potential as the other device, due to the location of the AC power connection, floating grounds, etc. Methods to eliminate the ground loop are:

1. Use the same AC power outlet to power the affected devices.
2. Use an Audio System Ground Loop Isolator (Radio Shack 270-054)

BE SURE TO MAINTAIN PROPER SPEAKER LOAD (IMPEDANCE) WHEN CONNECTING MULTIPLE SPEAKERS TO YOUR AMPLIFIER OR RECEIVER. THE DIAGRAM SHOWS HOW TO CONNECT FOUR 8-OHM SPEAKERS TO AN AMPLIFIER TO MAINTAIN A LOAD OF 8 OHMS. THE TOP PAIR ARE CONNECTED IN "SERIES" AS ARE THE BOTTOM PAIR, THEN THE TWO PAIRS ARE CONNECTED IN "PARALLEL" TO THE AMPLIFIER.

Installing the WinEVM Event Manager Software

Before installing Event Manager, you should copy the distribution disks onto a set of working disks, then store the original disks for safekeeping.

Event Manager comes with an installation program that will copy the various parts of the Event Manager software onto the drives and directories that you specify. The program's menus and prompts will lead you through the install process.

To Install:

Start Microsoft Windows.

1. Insert Setup disk in drive A
2. From Program Manager (Windows 3.1X), select File menu and choose Run (Win95 select START and choose Run).
3. Type a:\setup and press ENTER

A comprehensive installation/setup program will take over at this point. You will be prompted for directory information, drive, etc. Each prompt will contain default (recommended) information.

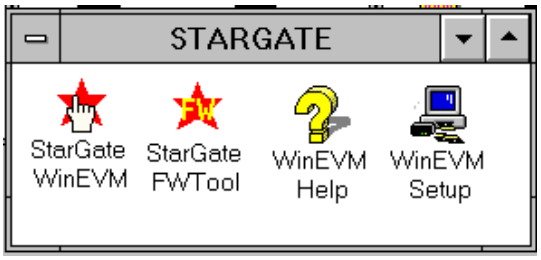
After the Install program is done, a Setup program will start to allow you to set Event Manager parameters.

Starting Out

After connecting all cables and completing the Setup program it is time to start the Event Manager Software and test communications.

Starting Event Manager

Windows 3.1X: Double click with your mouse on the STARGATE WinEVM icon located in the STARGATE group.



Win95: Select START, then select PROGRAMS, then select STARGATE, then select STARGATE WinEVM.

Event Manager will load your Device DataBase and the last Schedule that you were working on. If this is the first time you have used Event Manger, no Device DataBase will exist and a blank one will be created for you.

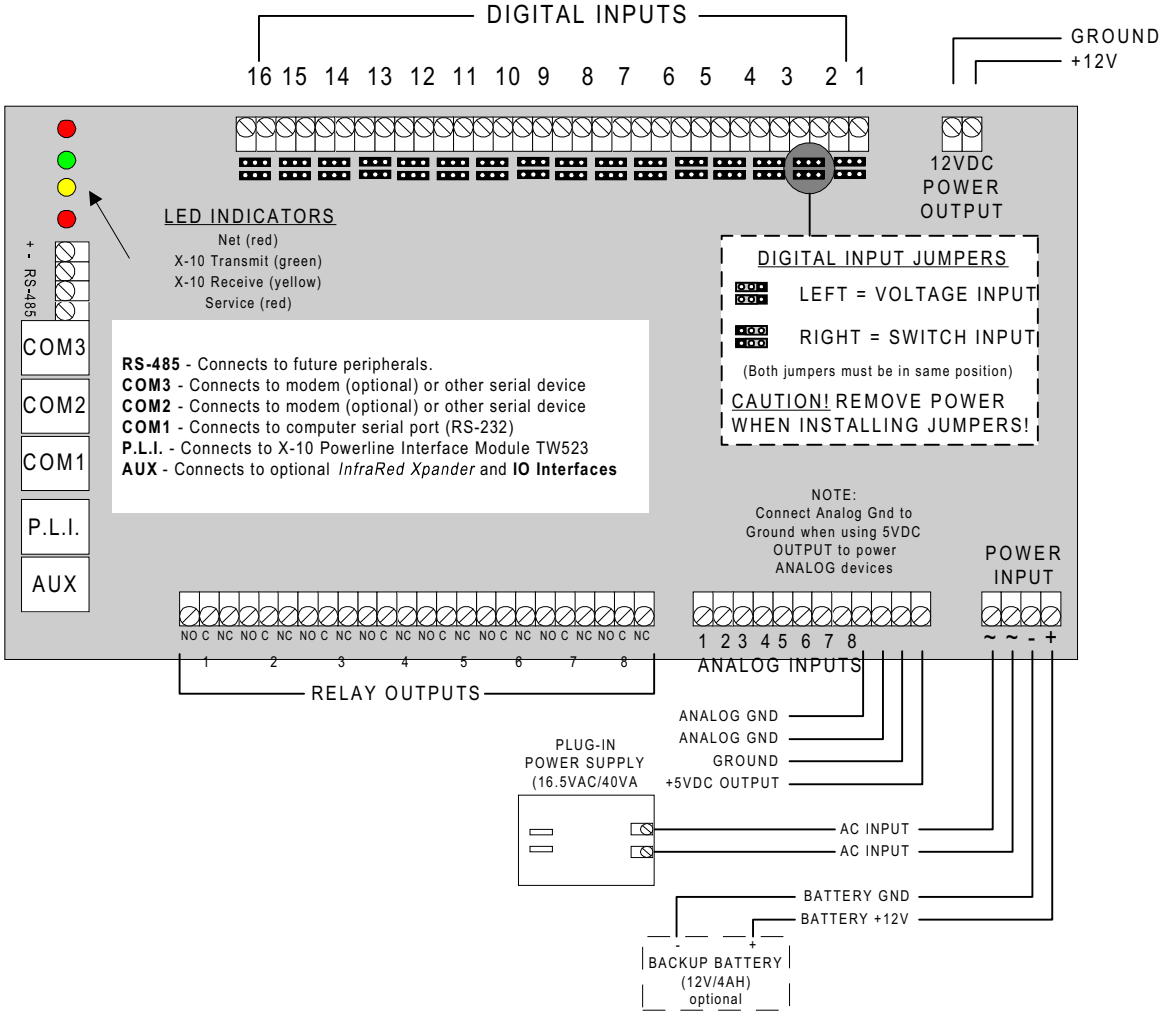
Testing Communications

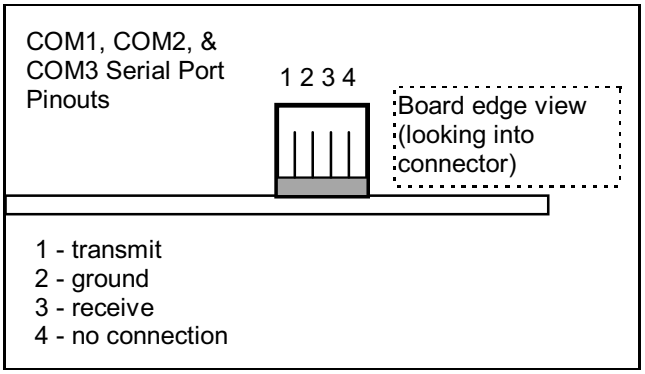
Select Utilities | System Info. If you see a screen appear with various system parameters, then the communication path between your PC and STARGATE is working. If an error occurs:

1. Make sure you have specified the correct Com port.
2. Windows cannot support shared hardware interrupts. Since COM1 and COM3 (also COM2 and COM4) share the same interrupts, you cannot have one serial device installed on COM1 and the other device installed on COM3 (or one device on COM2 and another on COM4).
3. If you have an external modem, check that it is connected to a serial port. If you have an internal modem, check the switch setting (on the board) to ensure that it is assigned to the appropriate COM port.
4. Select the Serial Port option from the System menu to check that your specification of the COM port is correct. If you cannot start WinEVM, use an editor to display the C:\WINDOWS\WINEVM.INI file. There is a line under the section entitled [WinEVM] that should appear as: COMPORT = n , where n = 1 to 4.
5. There are a number of TSR (Terminate and Stay Resident) programs that are provided with voice fax modem boards. If you have installed another software package that utilizes your board, make sure this program is not running when you start Windows and SuperVoice. If it is still running, it will assume control of the Com Port and no other programs will have access to this port. Check your AUTOEXEC.BAT file to ensure that the program is not loaded during the boot up routine. Creating your own Modular Data Cables

STARGATE Specifications

STARGATE Panel





The STARGATE Panel contains four LED status indicators.

SERVICE - (red) indicates that STARGATE's processor is running (even if the schedule is stopped) and should always be flashing once/second when STARGATE is powered up.

XMIT - (green) will flash when STARGATE transmits an X-10 command.

REC - (yellow) will flash when STARGATE receives an X-10 command.

(both XMIT and REC are normally ON. They will flash at a 1-second interval if the power Line Interface is not plugged in and attached to the STARGATE).

NET - (red) will flash indicating network activity (although it will still flash even if there are no IO Devices attached). The flash rate is dependant on Schedule size, the larger the Schedule, the slower it will flash.

Electrical Specifications

Power Supply	16.5VAC @ 40VA, Plug-In Transformer
Transmission Rate:	9600 bps asynchronous
Data Format:	8 Data Bits, No Parity, One stop Bit
Connectors(RS-232)	(3) COM1, COM2,COM3
Screw Terminals	Power Input, Power Output, Digital Inputs, Analog Inputs, Relay Outputs, RS-485
Compatibility	IBM or compatible w/asynchronous serial port
Required Operating System	Windows 3.1x or Win95
Required Disk Space	3 Mbytes
Physical Size:	15" Height, 11" Length, 4" Width

Digital Inputs

Quantity	16 (expandable to 80)
Type	Non-polarized, opto-isolated
Isolation	500 V channel-channel & channel-ground
Input Range	4-24V DC or AC (50-1,000 Hz)
Input Resistance	470 ohms min
Response Time	100 milliseconds typ, requires pulse width of 100 milliseconds

Analog Inputs

Quantity	8 (expandable to 40)
A/D Type	Successive approximation
Resolution	8 bit (20mV/bit)
Input range	0-5 V(uni-polar)
Filtering	none
Conversion Time	20us type, 30us max
Linearity	+/- 1 bit
Accuracy	0.2% of reading +/- 1 bit
Input Current	100 nA max at 25 degrees C

Relay Outputs

Quantity	8 (expandable to 40)
Contact Rating	2A @ 24 VDC
Contact type	Gold overlay silver
Contact resistance	100 milliohms max (initial)
Contact arrangement	SPDT
Operating time	20 milliseconds max
Release time	10 milliseconds max
Life rating	Mechanical: 10 million operations min Electrical: 100,000 min @ full load

Programming Specifications

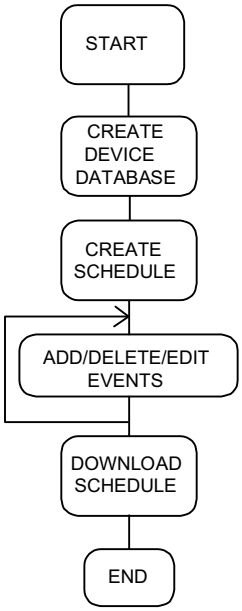
X-10 Devices	256
Timers	32
Time Labels	32
Flags	256
Variables	256
IF Macros	16
THEN Macros	256
IR Commands	500 (with optional JDS InfraRed Xpander™)
Voice Responses	Over 600 Preset Words, Phrases and Sound Effects. 128 User-Programmable Responses
VoiceMail	8 Mailboxes, approximately 18 minutes of total voice storage for VoiceMail and User-Voice responses
Lines of Code	approx. 6000-8000 (based on actual schedules, each IF condition or THEN action uses different amounts of memory)

What is Event Manager

Event Manager is the user interface that runs on your PC that lets you create schedules for use with STARGATE. With Event Manger, you can create and edit schedules that once downloaded into STARGATE, allow total control of your home or office.

How Event Manager Works

The following flowchart shows the steps for creating a schedule and demonstrates how Event Manager works with STARGATE.



Device DataBase

Before you create a Schedule for STARGATE, it is recommended that you create a Device DataBase. This tells the Event Manager what devices are in your home. Devices may be added, changed or deleted in the Device DataBase at any time.

Events

An Event consists of an "IF" section (conditions), followed by a "THEN" section (actions). If the IF section is true, the THEN section is executed. If not, the THEN section is skipped.

Screen Types

There are many types of Event Manager screens. The main screen will show the main menu bar, the time and date and the current schedule in the editor workspace.

Event Manager User's Guide

The menu bar is your primary access to all the menu commands. If a menu command is followed by an ellipsis mark (...), choosing the command displays a dialog box. A command without an ellipsis mark indicates that once you choose it, that action occurs.

Event Manager Windows

Most of what you see and do in the Event Manager environment happens in a window. A window is a screen area that you can move, close and open. Only one window can be active at any time. The active window is the one that you're currently working in. Any commands you choose or text you type generally applies only to the active window. Event Manager makes it easy to spot the active window by highlighting the window title. If your windows are overlapping, the active window is always the one on the top of all the others (the foreground).

What is X-10

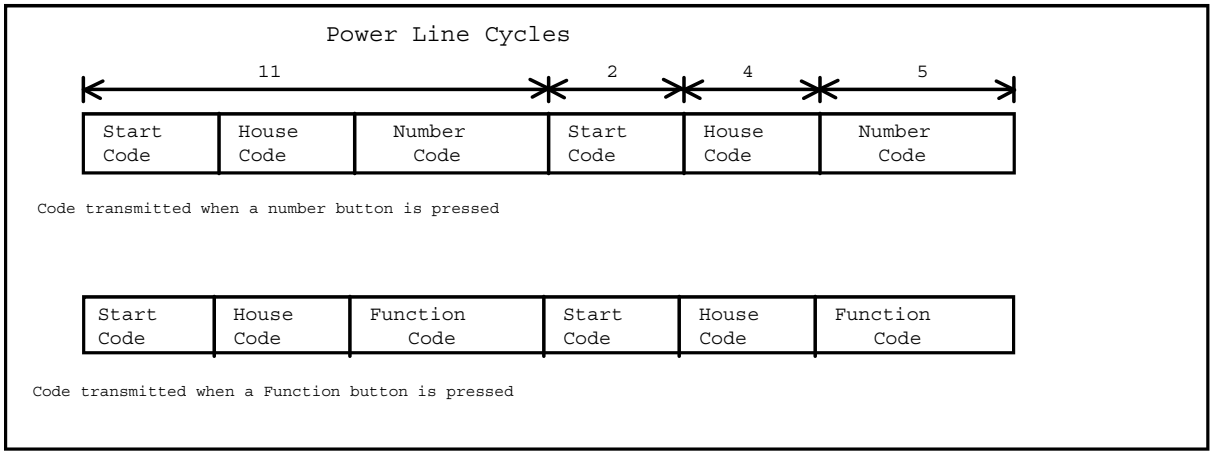
The X-10 POWERHOUSE System is a line of home automation products designed to control lights and appliances using existing electrical wiring as a communications medium. X-10 is the "De Facto" standard for Power Line Carrier (PLC) transmission. The code format was first introduced in 1978 and is compatible with many manufacture's versions of PLC devices.

X-10 Addresses

All X-10 receiver modules have two code dials: a house code dial and a unit code dial. There are 16 house codes, ranging from the letters A to P. There are also 16 unit codes, ranging from 1 to 16. That means there are 256 possible combinations of module addresses.

X-10 Theory

X-10 is based on a technique known as carrier current communication. High frequency bursts are sent out over the power line that are received by the receiver modules. The high frequency bursts, or bits, are sent to coincide with the zero crossing of the AC power line. The receiver modules know to start listening to the AC line for a bit sequence when it detects a zero crossing. The format used by X-10 is an 11-bit sequence consisting of a start code, a house code, and either a function code or a module number. The first 2 bits represent a Start Code, the next four represent the HouseCode, and the last five represent the KeyCode, either a NumberCode (1 through 16) or a Function Code (ON, OFF, All Lights On, etc.). This complete block, (StartCode, HouseCode, KeyCode) is always transmitted at least twice.



To understand why an X-10 transmission can only contain either a module number or a function code, you need to understand how a manual X-10 system works. Use the MegaController to see what is being sent when a button is pressed from a manual control console. You will see that when a number button is pressed, it sends the HouseCode-NumberCode to select the module. When a function button is pressed, it sends the HouseCode-FunctionCode to control the selected module.

DIM/BRIGHT Limitations

The Power Line Interface can receive Dim and Bright codes, but the output will represent the first Dim or Bright code received, followed by every third code received, i.e., the output from the Power Line Interface will not be a continuous stream of Dim or Bright codes as transmitted.

What this means to STARGATE: STARGATE keeps track of Dim/Bright levels for any of the 256 X-10 devices. Since STARGATE cannot reliably receive Dim/Bright codes sent by another X-10 controller, any Dim or Bright code received by STARGATE will be ignored. This means that as long as you use STARGATE to dim or brighten a light, it will know exactly what level of brightness the light is at. But if you dim or brighten a light using a controller other than STARGATE, STARGATE will ignore those commands and not update the Dim/Bright level for the light.

The Bottom Line - If you use STARGATE to control dim/bright levels, dimming or brightening using another X-10 controller or at the switch itself, will cause STARGATE to get out of sync with what the real level is.

Event Basics

"Junior, IF you eat your vegetables, THEN you can watch TV, ELSE you're going to bed!"

This section gives you an overview of what an Event is and how it is used in a schedule. An understanding of the **Event Concept** is very important to make the most of STARGATE. Be sure that you understand this concept before you create your own schedule.

What is an Event

An Event consists of an "IF" section, followed by a "THEN" section. If the IF section is true, the THEN section is executed.

Event Type

There are two types of Events, the IF-THEN and the IF-THEN-ELSE.

IF-THEN

The simplest form of an Event is an IF-THEN:

```
if
  condition is true
then
  do action
end
```

If the condition is true, then the action is executed. This simple form of an IF statement gives you the choice of executing an action(s) or skipping it. For instance, if the opening statement was put into an IF-THEN statement, it might look something like this:

```
if
  eat your vegetables
then
  watch TV
end
```

IF's are easy to understand because we use them constantly in our daily conversations.

IF-THEN-ELSE

Event Manger also lets you choose between two actions with the IF-THEN-ELSE structure.

```
if
  condition is true
then
  do action1
else
  do action2
```

In the previous example, if the condition is true, the first action is executed, if the condition is false, the action following the else statement is executed.

For example, if the opening statement was put into an IF-THEN-ELSE statement, it might look something like this:

```
if
  eat your vegetables
then
  watch TV
else
  goto bed
end
```

IF Junior eats his vegetables, he can watch TV, IF he does not, he will have to go to bed.

FAST EVENT

Fast Events are Events triggered by X10 ON/OFF commands and Digital Inputs (STARGATE 's) going ON/OFF. These events are executed immediately when triggered regardless of schedule size. A Fast Event can be placed anywhere in the schedule.

Logic Type

The Event's Logic Type refers to whether the IF conditions will be 'ANDed' or 'ORed' together when determining if the THEN/ELSE actions should be executed.

AND

If 'AND' is chosen, **all of the conditions** must be met before any action will be taken.

```
EVENT
 If
   eat vegetables
   and  dishes washed
 Then
   watch TV
 End
```

In this example, Junior must eat his vegetables **and** wash the dishes to get to watch TV, only doing one will not work. This is what the AND does: All of the conditions must be true in order to make the actions happen.

OR

If 'OR' is chosen, **only one condition** has to be met before any action will be taken.

Suppose Junior's mother decides not to be so tough, changing the orders to, "Eat you vegetables **or** wash the dishes and you can watch TV".

```
EVENT
 If
   eat vegetables
   or  dishes washed
 Then
   watch TV
 End
```

Now junior has a choice, either eat his vegetables or wash the dishes, and he will be able to watch TV. This is what the OR does: Only one of the conditions has to be true in order to make the actions happen.

Any number of IF conditions can be combined to control any number of THEN actions. For example:

```
EVENT sample event
 If
   condition 1 is true
   and  condition 2 is true
   and  condition 3 is true
   and  condition 4 is true
 Then
   do this action
 End
```

In this example, **all the conditions** must be met before the 'THEN' action will be executed. More than one action may be executed in the 'THEN' section of the event.

For example:

```
EVENT sample event
 If
   condition1 is true
   or condition2 is true
 Then
   do action1
   do action2
 Else
   do action3
   do action4
   do action5
   do action6
 End
```

In this example, if condition1 is true ***or*** condition2 is true, then do action1 and action2, if neither condition is true, then do action 3, 4, 5 and 6.

A more meaningful Event would use real conditions to control real devices. For example:

```
EVENT sample event
 If
   Time = 6:00 PM .MTWTF.
 Then
   (X: Frontporch Light  B 3)  ON
 End
```

In this example, when the time is equal to 6 PM on any weekday but not weekends, the Frontporch Light turns on.

```
EVENT sample event
 If
   (F: Alarm Activated) is SET
   and   Time = 6:00 PM .MTWTF.
 Then
   (X: Frontporch Light  B 3)  ON
 End
```

In this example, if the flag 'Alarm Activated' is set ***and*** the time is equal to 6 PM on any weekday but not weekends, turn on the Frontporch Light.

Compound AND/OR

Event Manager can use compound AND/OR logic. As an example:

```
EVENT AND/OR Sample Event
 If
   (X:Make Coffee  C 1) is ON
 -AND-
   Time = 6:00 AM .MTWTF.
   or   Time = 10:00 AM S.....S
 Then
   (X: Coffee Maker  C 2)  ON
   (X: Make Coffee   C 1)  Idle
   Delay 01:00:00
   (X: Coffee Maker  C 2)  OFF
 End
```

In this example, Otto defines a 'Make Coffee' switch as X-10 address C1. He turns this switch ON at night only if he puts coffee and water in the coffee machine. If this switch is ON -AND-, it's 6 AM weekdays OR 10 AM weekends, then turn on the coffee maker, set the 'Make Coffee' switch to Idle, then turn off the coffee maker after 1 hour.

Event Manager can use compound OR/AND logic as well. As an example:

EVENT OR/AND Sample Event
If
(X:Alarm Active L 1) is ON
and Time = 6:00 PM SMTWTFS
-OR-
(X:Alarm Active L 1) is OFF
and Time = 8:00 PM SMTWTFS
Then
(X: Front Door B 1) ON
(X: Garage Light B 2) ON
End

In this example, Otto wants his outside lighting to turn on at a different time based on whether or not the security system is set. If the security system is ON and it's 6 PM, -OR-, the security system is OFF and it's 8 PM, then turn on the Front Door and Garage lights.

Nesting

Nesting is a way to add complex decision making into your Events. The maximum number of Nested Events is 3.

Summary of valid 'IF' conditions

Time equal to hh:mm days	hh = hour , mm = min, days = SMTWTFS
Time is less than hh:mm days	hh = hour , mm = min, days = SMTWTFS
Time is greater than hh:mm days	hh = hour , mm = min, days = SMTWTFS
Time Label	Label given to a certain time
Date	(equal, before, after)
Equal to SunRise /SunSet days	days = SMTWTFS
Before SunRise/SunSet days	days = SMTWTFS
After SunRise/SunSet days	days = SMTWTFS
X-10 Device	State = ON/OFF/IDLE Module A1 - P16
X-10 Sequence	Up to 6 sequential X-10 commands within a specified time window
Timer = Running, Stopped, Expired32 timers (1 second resolution)	
Flag = Set/Clear/Idle	256 flags
Variable "=",">","<" ,etc (0-255) 256 variables	
IF Macro	A series of 'IF' conditions
ASCII Input	Up to 32 characters
System Variables	Power Restore, X-10 loss, First Schedule Pass, Power loss
Digital Inputs	ON/OFF/Toggles/GOES On/GOES Off states of Digital Inputs
Analog Inputs	Value of Analog Input (0-255)
Relay Outputs	On/Off
Telephone Sequence window	Any combination of Off-Hook/On-Hook/Touchstones within a specified time
Telephone Line Status	On-Hook/Off-Hook/On-Hold/Off-Hold/CallerID/Ring/Remote Access
IR Sequence	Up to 10 sequential IR commands within a specified time window
IR Power Sensor	4 Power Sensors
VoiceMail "=",">","<" ,etc (0-255)	Compare number of New/Old Messages in any mailbox

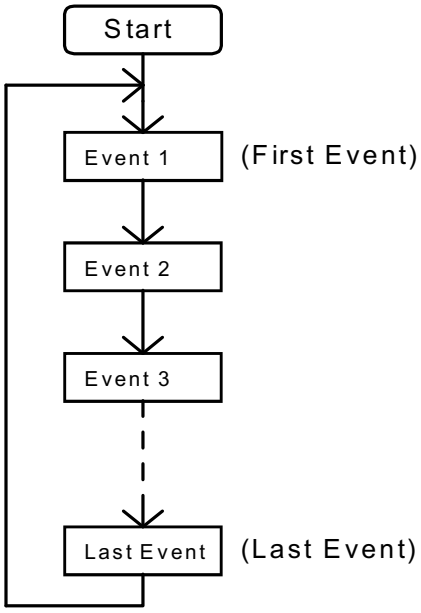
Any combination of 'IF' conditions may be combined in an Event.

Summary of valid 'THEN' actions:

X-10 Device = ON/OFF/DIM/BRI	Module A1 - P16
All Lights On	HouseCode A-P
All Lights Off	HouseCode A-P
All Units Off	HouseCode A-P
Timer	Load/Clear/Start
Flag	Set/Clear
Variable	Load/Clear/Inc/Dec
Message Log	8K of message space
Then Macros	Series of 'THEN' actions
ASCII Output	Up to 32 characters
IR Commands	IR Commands sent by InfraRed-Xpander
Relay Outputs	On/Off control of Relays
Telephone	Off-Hook/On-Hook/TouchTones/On-Hold/Off-Hold/Hookflash/Pause
Voice	Play Voice Response, Record User Voice
Audio Path Line/Intercom/Line-	Connect/Disconnect: CO Line/Intercom/Line-Level Input to CO Level Output/Speaker
VoiceMail	All VoiceMail functions, load user_VAR with New/Old messages

Event Processing

After you download a Schedule to STARGATE, STARGATE will start with the first Event, check 'IF' conditions and do any actions, go on to the next event, do the appropriate actions, and so on until the end of the schedule is reached. STARGATE then starts over at the beginning of the Schedule evaluating the first Event.



Fast Events

Fast Events are Events triggered by X10 ON/OFF commands and Digital Inputs (STARGATE 's) going ON/OFF. These events are executed immediately when triggered regardless of schedule size. A Fast Event can be placed anywhere in the schedule. Note that there can only be 1 Fast Event for a given trigger.

Standard Events

Standard Events are based on an IF statement(s) and THEN actions and are processed in sequential order. Utilities | System Info will list the total time to complete one pass through a schedule.

When an event is evaluated, STARGATE checks if the logic type of the Event is AND or OR. STARGATE will use the logic type to evaluate the conditions and decide whether to take the required action(s). For AND logic events, **all the conditions** must be true, for the OR logic events, **only 1 condition** has to be true.

Example 1 IF/THEN/ELSE

```
EVENT sample event
 If
   After SunSet  SMTWTFS
   or   Before SunRise  SMTWTFS
 Then
   SET (F:It's Dark)
 Else
   CLEAR (F:It's Dark)
 End
```

The flag "It's Dark" will be set if, the current time is after SunSet on any day, ***or*** if the current time is before SunRise on any day of the week, otherwise the flag "It's Dark" will be cleared.

Example 2 IF/THEN/ELSE

```
EVENT sample event
 If
   Time is After 5:00 PM  .MTWTF.
   and  Time is Before 8:00 PM  .MTWTF.
 Then
   (X:Security Light  B 7) ON
 Else
   (X:Security Light  B 7) OFF
 End
```

This event will turn on the X-10 device that has the name "Security Light" if, the time is after 5 PM during weekdays ***and*** before 8 PM during weekdays. The event would turn the "Security Light" off when the time is not between 5 PM and 8 PM weekdays.

IMPORTANT NOTE: IF THE EVENT IS ***NOT*** IF ALWAYS, EACH TIME AN EVENT IS EVALUATED, STARGATE WILL NOT EXECUTE ANY ACTION UNLESS THE CONDITIONS HAVE CHANGED SINCE THE LAST TIME THE EVENT WAS EVALUATED. IF THE EVENT IS IF ALWAYS, EVERY TIME AN EVENT IS EVALUATED, STARGATE WILL EXECUTE THE ACTIONS IF THE IF CONDITIONS ARE MET.

Using the previous example, if the current time was 4:59pm on Monday, the event would evaluate as not true (the first condition was not true, i.e., the current time was not after 5 PM), since during the previous evaluation cycle, the event evaluated as not being true, no changes occurred so no actions would take place. When the current time changes to 5 PM, both conditions are met (it is after 5 PM and before 8 PM), and the THEN actions are processed. On subsequent evaluation cycle no actions will be processed until the time is after 8 PM (because both IF's are still true), whereas the event evaluates as not true, and the previous evaluation cycle evaluated as being true, the ELSE actions will be processed.

Example:

```
EVENT: sample event
 If
   Time = 5:00 PM S.....S
   and  (X:HotTub  B 5) is ON
 Then
   (X:HotTub Blower  B 6) ON
 End
```

In this example, IF the X-10 device 'HotTub' is ON, ***and*** the current time is 5 PM on Saturday or Sunday, THEN turn the X-10 device 'HotTub Blower' ON.

Example:

```
EVENT: sample  event
 If
   Time equals 5:00 PM S.....S
   or  Time equals 6:00 PM .MTWTF.
 Then
   (X:Porch Light  B  3) ON
 End
```

In this example, IF the current time is 5 PM on Sat or Sun, ***or*** the time is 6 PM on Mon-Fri., THEN turn on the X-10 device 'Porch Light' ON.

IF Always Examples

The Event in Example 1 is an 'IF Always' type of Event. When A-1 is turned ON, STARGATE will send the 'B-1' 'B-ON' X-10 command followed by a 2 second delay, and keep repeating this command as long as A-1 is on. This type of Event will keep executing the actions as long as the if condition(s) stay true. When using "IF Always" it is recommended that you insert some delay to allow time for other X-10 commands to be processed. In Example 2, when A-1 is turned on, STARGATE will send the 'B-1' 'B-ON' command once, until A-1 is turned OFF and ON again. This type of Event must see the conditions change before the actions are executed.

Example 1:

```
EVENT:
 If Always
   (X: A 1) is ON
 Then
   (X:B 1) ON
   Delay 0:00:02
 End
```

Example 2:

```
EVENT:
 If
   (X: A 1) is ON
 Then
   (X:B 1) ON
 End
```

A Quick Tour of Event Manager

A Case Study: Otto Mashon

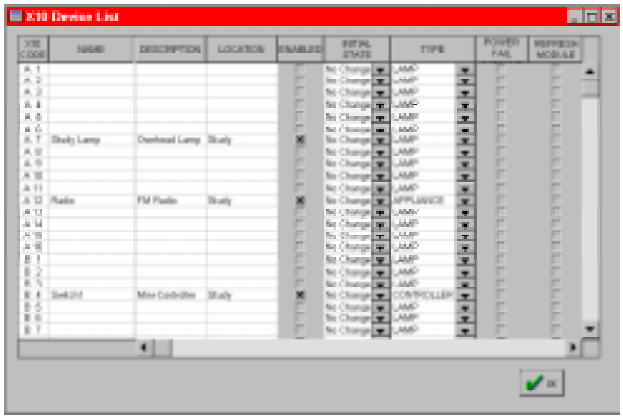
Otto Mashon just completed his installation and is ready to start automating. He starts by automating his study. Otto has always wanted to push a single button on his mini-controller to activate his Overhead Lamp and the Radio.

For a quick test, Otto creates a simple schedule to turn on A7 (Overhead Lamp) and J2 (FM Radio) whenever M5 (button 1 on his mini-controller) is pressed.

Otto begins by making a list of the X-10 devices. The list consists of the button on the mini-controller, the lamp and the radio. Once Otto's list is completed, he begins to create his Device DataBase

NAME	LOCATION	DESCRIPTION	HOUSE/UNIT Address
Study Lamp	Study	Overhead Lamp	A-4
Radio	Study	FM Radio	A-12
Switch1	Study	Mini-Controller	B-4

Otto must define devices in his Device DataBase before he can use them in a schedule. This is done by selecting the **Define | X-10 Device** menu choice.



From here, Otto fills out the X-10 Device Definition Dialog Box with the information for each X-10 device that he wants to control and for each type of X-10 controller that will be used (the mini-controller in this example).

When Otto is satisfied with the names and selections for the three devices that he will be using, he leaves the X-10 Device List menu by pressing the [OK] button.

Now that Otto has the mini-controller, lamp and radio defined in the Device DataBase he wonders, *"How do I want these X-10 devices to work together"*. He decides that when he enters his study, he wants to press a button on his mini-controller, and have both the Study Lamp and Radio to turn on. Likewise, when he leaves, he wants to turn the Study Lamp and Radio off with one button.

Otto starts thinking to himself, "*Now how will this work? If the switch on the mini-controller is ON, then turn ON the Study Lamp and the Radio. Lets see;*"

if

the mini-controller switch is ON

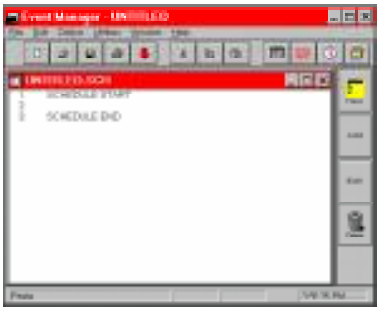
then

turn the Study Lamp ON

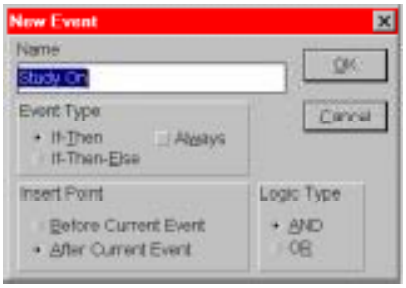
turn the Radio ON

end

Since he hasn't created any Events yet, his Editor Workspace shows a schedule that is empty and is untitled.



Otto's first step is to create an Event. He creates a new Event by pressing the [New] button in the right side ToolBox. He fills out the Event Definition dialog box with the name and description of the Event. In this example the name is "Study", the Event type is "IF-THEN", the logic type is "AND" and the insert point location is "After this Event"



When satisfied with his selections, he presses the [OK] button to accept the new Event. The new Event named "Study On" shows up in the Editor Workspace.

Looking at the workspace Otto wondered how he could make the lamp and radio turn on when he presses the mini-controller button. "*Well, the first thing I have to do is make the button push on my mini-controller be the IF statement*". He does this by

moving the highlight bar onto the 'IF' statement and pressing the [Add] button in the ToolBox. A popup menu appeared and he chose `X-10 Device State' since that is the type of device that he wants to use in this Event. After selecting 'X-10 Device State', another popup window appeared. Otto chose `Switch 1' from the list and the `ON' radio button. "*Now is this what I want ?*", Otto thought, "*If Switch 1 is ON, yes that's it*". He presses the [OK] button to accept this choice.

"*Now that the `IF' part of my Event is correct, I have to add the Study Lamp and Radio in this somehow*". Otto did this by adding an Action statement the same way he did the IF condition statement, by moving the highlight bar onto the 'THEN' statement in the Event, and pressing the [Add] button in the ToolBox.

He chose 'X-10 Device' from the 'THEN Action' popup window and was put into the X-10 Device Action dialog box.

Otto moves the highlight bar onto the Study Lamp and chose the ON radio button from the list of actions. "*This is getting easy*", Otto thought while pressing the [OK] button. The Event is updated with this selection. "*Now, all I have to do is add the Radio and I'll be done*", mused Otto.

Otto again selects the [Add] button in the ToolBox and the THEN Action popup window appears. Otto chose 'X-10 Device' and the X-10 Device dialog box appeared. He selects 'Radio' by highlighting it in the list box and pressing the ON radio button.

Otto decided that this Event was complete and he wanted to see if it would work. Otto saved the schedule first by selecting the **Schedule | Save As** menu, entering the name "sample" and pressing the [OK] button. To download the schedule into STARGATE, Otto selects the **Schedule | DownLoad** menu.

Otto chose '[x] Download Schedule' since he wanted to download his newly created schedule and the '[x] Download Device Database' option. With 'Download Device Database' selected, STARGATE will be downloaded with the Initial State values that were defined in the Device DataBase. STARGATE keeps track of all Devices and whether they are ON or OFF and by downloading the Initial States, you can pre-define an X-10 Device to be ON or OFF. This is normally used for the first download only.

Pressing [OK], the schedule is downloaded and Otto was put back in the Workspace.

Otto, eager to try his new schedule, presses the "B4-ON" button on his mini-controller. This turned on the Study Lamp and Radio. Having created his first Event to turn the on the Study Lamp and Radio, Otto is eager to create another to turn them off.

So Otto goes back to work to define a new Event, one that will turn the Study Lamp and Radio off when the mini-controller switch is turned off. Since he is using X-10 devices that have been defined already, Otto does not have to define any new ones.

Otto decides that this Event will turn the Light and Radio OFF when the mini-controller button "B4-OFF" is pressed. He creates a new Event by pressing [New Event] in the ToolBox. He fills out the Event Definition dialog box and names this Event 'Study Off'.

When satisfied with his selections, Otto presses the [OK] button to accept the new Event.

"I will make this Event work just like the first one, except replace the ON's with OFF's." He did this by moving the highlight bar onto the 'if' statement in the Event and pressing the [Add] button in the ToolBox. A popup menu appears and he chooses 'X-10 Device'.

The 'X-10 Device' dialog box appeared and he selects 'Switch 1' from the list of devices and the OFF' radio button. Otto presses the [OK] button to accept this choice.

Otto adds the Study Lamp and Radio, turning both of them OFF, to the 'then' part of the Event in same manner as he did in the first Event.

Otto decides that the new Event is complete and he wants to try it out. He saves the schedule first by selecting the **Schedule | Save** menu, since the schedule has already been named, Otto saves it under the same name. Otto then selects the **Schedule | DownLoad** menu.

Otto chooses 'Download Schedule' from the DownLoad options but not the 'Download Device Database' option since he did not want to change the internal states in STARGATE, as they now reflect the actual states of these devices. Pressing [OK], the schedule is downloaded and Otto is back in the Workspace.

Otto presses the "5-ON" button on his mini-controller, and the Study Lamp and the Radio turns on. He then presses the "5-OFF" button, the Study Lamp and Radio turns off. "This is what it's all about", murmured Otto as he began defining new Events.

Otto is well on his way to an automated home. He has mastered the concept of defining devices in the DataBase and creating a basic IF-THEN Event.

Creating a Device DataBase

One of the first steps to take before creating a Schedule is to create your Device DataBase. This DataBase contains your X-10 devices (appliance, lamp and remote control types), Timers, Variables and Flags. Once a device has been created it can be used in any Schedule.

Starting Out

The first place to start would be to make a list of all the X-10 type devices you have in your home or office. Once you have your list, we suggest that you spend the time to enter these devices into the DataBase. It may seem like a lot of work at first, but it will save you a lot of time down the road if you decide to change the X-10 address of your devices.

NOTE: EVENT MANAGER CAN ONLY HANDLE 1 DEVICE DATABASE AND ALL SCHEDULES CREATED WILL USE THIS DEVICE DATABASE. IF YOU NEED TO HAVE A DIFFERENT DEVICE DATABASE, FOR EXAMPLE, IF YOU HAVE ANOTHER HOME OR CUSTOMER THAT HAS DIFFERENT DEVICE NEEDS, CREATE ANOTHER DIRECTORY AND COPY ALL THE FILES FROM THE STARGATE DIRECTORY.

The Define Menu is where all the Devices are defined, including X-10, Timers, Time Labels, Flags, Variables, Macros, IR, I/O, HVAC, Telephone and Voice.

Define X-10

The **Define | X-10** command will open the X-10 Device List. This box allows you to create, edit and delete X-10 devices in the Device DataBase. An X-10 device can be a lamp or appliance module, an X-10 remote or any device that can send or receive X-10 commands.

Creating a New X-10 Device

In the **Define | X-10** Device List window, type or select as required for each X10 device:

NAME - Enter the device name to refer to (e.g. Living Rm Light).

DESCRIPTION - Enter a brief device description (e.g. reading light).

LOCATION - Enter the devices location (e.g. Living Room).

ENABLED - Check this box to enable the use of the device in a schedule.

INITIAL STATE - Enter the default state for the device to assume when downloading the device database.

TYPE

LAMP: Dimmer-type modules, X-10 and PCS

APPLIANCE: on/off only type modules

CONTROLLER: Transmitter type devices

LAMP-6381: Levition 6381 SAN020 models (or equivalent modules that respond to the Extended Code commands).

POWER FAIL CATCHUP - Check this box to force the device into its scheduled state when power fails and is then restored.

REFRESH MODULE - Check this box to periodically issue the X-10 on or off command that corresponds to state currently stored in STARGATE's memory.

VOICE REPSONSE – Voice response given when using the TouchTone access. Each module can be assigned up to 2 words for a response.

After completing the list, press [OK] to store the information into the DataBase, [APPLY] to send the options to STARGATE's memory, [CANCEL] or <ESC> to return without storing.

NOTE 1: ONLY ONE X10 DEVICE CAN BE DEFINED FOR A HOUSECODE/UNITCODE ADDRESS. X10 DEVICE NAMES MUST BE UNIQUE, MEANING, YOU CANNOT USE AN X10 DEVICE NAME MORE THAN ONCE.

NOTE 2: YOU MUST SELECT "DOWNLOAD DEVICE DATABASE" WHEN DOWNLOADING TO STARGATE FOR ANY OF THE ALTERNATE CATEGORY OR ENABLE OPTIONS TO TAKE EFFECT, OR PRESS THE APPLY BUTTON TO SEND OPTIONS WITHOUT DOWNLOADING.

Define Timers

STARGATE Timers are countdown timers, meaning if you load one with a time, it will start to count down to zero. Timers can be loaded with a value, started and stopped from within a schedule. Each Timer counts down in 1-second intervals and can be loaded with a maximum time of 18:12:16 (18 hours, 12 minutes, 16 seconds).

Menu Item	Description
Name	The Timer name that will be used in the schedule (required)
Description	Brief description of the Timer (optional)

Define TimeLabels

A Time Label is a time with a descriptive name given to it. An example would be assigning the time 7:00 AM to the name "Wakeup". Your schedule can now refer to "Wakeup" anywhere that 7:00 AM would be used. If you need to change a time that is used often in your schedule, it would be useful to use a Time Label. This way, when you change the time in the Time Label, all references to that label will change.

A more powerful feature of Time Labels is the Time Dependent/offset capability. This capability allows a time to be based upon another time. An example would be assigning a time to be 30 minutes after SunSet and used to turn on exterior lighting. Since SunRise and SunSet are recalculated everyday, this Time Label would always be 30 minutes after SunSet.

Menu Item	**Description**
Name	Time Label name that will be used in the schedule
Description	Brief description of the Time Label (optional)
Dependent	Select whether this will be dependent upon another time. If YES is selected, a listbox showing all the defined Time Labels and an Offset time field will be shown. If NO is selected, you must fill in the time that this Time Label will refer to.

Creating a New Time Label

1. In the Time Labels window, select the [New] button. Event Manager opens the Time Label Definition window.
2. Complete the Name and Description fields.
3. Select whether this Time Label will be dependent upon another time by pressing the appropriate YES/NO radio button.

IF YES - dependent on another time

a) Move the highlight bar onto the Time that this Time Label will be dependent upon

b) Select whether time will be added or subtracted from the selected Time Label.

c) Enter the amount of time that will be added or subtracted. The maximum time that can be added or subtracted is 4 hours 15 minutes, (4:15). The offset time combined with the Time Label cannot be greater than 23:59 or less than 00:00, meaning the combined time cannot carry over into the next or previous day. This will not cause an error condition, but the IF statement will never be true.

IF NO - not dependent on another time

a) Enter the Hour and Minutes and select the days that will be assigned to this Time Label

b) Select whether this Time Label will use the Security feature.

4. Select the [OK] button to accept your choice and store the Time Label into the Device DataBase, or [CANCEL] to quit without storing.

NOTE: YOU CAN'T USE THE SAME NAME FOR MORE THAN ONE TIME LABEL.

Editing an Existing Time Label

1. In the Define Time Label window, move the highlight bar to the Time Label that is to be edited and select the [EDIT] button.

2. Make changes to the Time Label.

Select the [OK] button to accept your choice and store the Time Label into the Device DataBase, or [CANCEL] to quit without storing.

NOTE: YOU WILL BE ASKED TO CONFIRM YOUR CHOICE IF YOU CHANGE THE NAME OF A TIME LABEL THAT IS USED IN THE CURRENT SCHEDULE.

Deleting a Time Label

1. In the Define Time Label window, move the highlight bar to the Time Label that is to be deleted.

2. Select the [DELETE] button.

Define Flags

A Flag is a variable that has three states: Set, Clear or IDLE. Any Event can set or clear a flag as well as check the state. Flags are useful for communicating between Events or assigning a global variable such as 'Alarm Armed'.

Menu Item	Description
Name	The Flag's name that will be used in the schedule
Description	Brief description of the Flag (optional)
Initial State	This will be the initial state that this flag will be set to in STARGATE if the DownLoad Device DataBase option is selected when downloading the schedule.

Define Variables

A Variable can have a value that ranges from 0 to 255. Variables can be incremented, decremented, loaded with a value and cleared. Variables are useful when you need to base decisions on reoccurring conditions. An example would be to count the number of times the motion sensor at your front door was activated. This would tell you how many people came to your front door.

Menu Item	Description
Name	The Variable's name that will be used in the schedule (required)
Description	Brief description of the Variable (optional)
Initial Value	This will be the initial value that this Variable will be set to in STARGATE if the DownLoad Device DataBase option is selected when downloading the schedule.

Define IF Macros

An IF Macro is a series of IF conditions, and the logic type associated (AND/OR). The IF conditions are entered into the Macro the same way as Events. Each IF Macro can be used in your Schedule any number of times.

IF Macros are useful for when you use the same set of IF conditions in more than one Event. By defining a set of IF conditions as an IF Macro and replacing those repeated conditions, you can reduce your schedule size and make it more readable.

Example 3 IF Macro named 'Dark Weekdays'

```
MACRO BEGIN
 If
    After SunSet .MTWTF.
    or Before SunRise .MTWTF.
MACRO END
```

When an IF Macro is used in an Event, the conditions within the macro must be met for the IF Macro to be true.

```
EVENT: Good Morning
 If
   IF MACRO(Dark Weekdays)
 Then
   (X:PorchLight A 2) ON
 End
```

In this example, if the IF Macro "Dark Weekdays" is TRUE, (that is, if it after SunSet OR before SunRise on weekdays), THEN turn the Porch Light ON.

Creating a New IF Macro

1. In the Define IF Macro window, select the [New] button. Event Manager opens the IF Macro Definition window.
2. Complete the Name, Description and Logic Type fields.
3. Add IF Conditions by using the ToolBox.
3. Select the [OK] button to accept your choice and store the IF Macro into the Device DataBase, or the [Cancel] button to return without saving.

NOTE: YOU CAN'T USE THE SAME NAME FOR MORE THAN ONE IF MACRO.

Editing an Existing IF Macro

1. Highlight the IF Macro that you want to edit and select the [EDIT] button.
2. Change or Add IF Conditions by using the ToolBox.
3. Select the [OK] button to accept your choice and store the IF Macro into the Device DataBase, or the [Cancel] button to return without saving.

Deleting an IF Macro

1. Highlight the IF Macro that you want to delete.
2. Press the [DELETE] button on your keyboard.

Define THEN Macros

A THEN Macro is a series of THEN actions. The THEN actions are entered into the Macro the same way THEN and ELSE actions are in the Event Editor. Each THEN Macro can be used in a Schedule any number of times Then Macros can contain Nested IF/THEN structures and calls to other THEN Macros.

THEN Macros are similar to IF Macros, except they use action statements instead of condition statements. THEN Macros are useful when you use the same set of actions over and over in different Events.

Example 4 THEN Macro named 'Lights Off'

MACRO BEGIN
(X:Study Lamp A 7) OFF
(X:Radio A 12) OFF
MACRO END

Example 5 Event using a THEN Macro

EVENT: Good Night
If
11:00 PM SMTWTFS
Then
(THEN MACRO:Lights Off)
End

In this example, if the time is 11:00 PM on any day, the Study Light and Radio will be turned off.

Creating a New THEN Macro

1. In the Define THEN Macro window, enter a name for the macro in the name field and then press the EDIT button. Event Manager opens the THEN Macro Definition window.
2. Add THEN Actions by using the ToolBox tools.
3. Select the [OK] button to accept your choice and store the THEN Macro into the Device DataBase.

NOTE: YOU CAN ONLY HAVE ONE THEN MACRO WITH A GIVEN NAME.

Editing an Existing THEN Macro

1. In the Define THEN Macro window, move the highlight bar to the THEN Macro that you want to edit and select the [EDIT] button.

Deleting a THEN Macro

1. Highlight the THEN Macro that you want to delete.
2. Press the [DELETE] button.

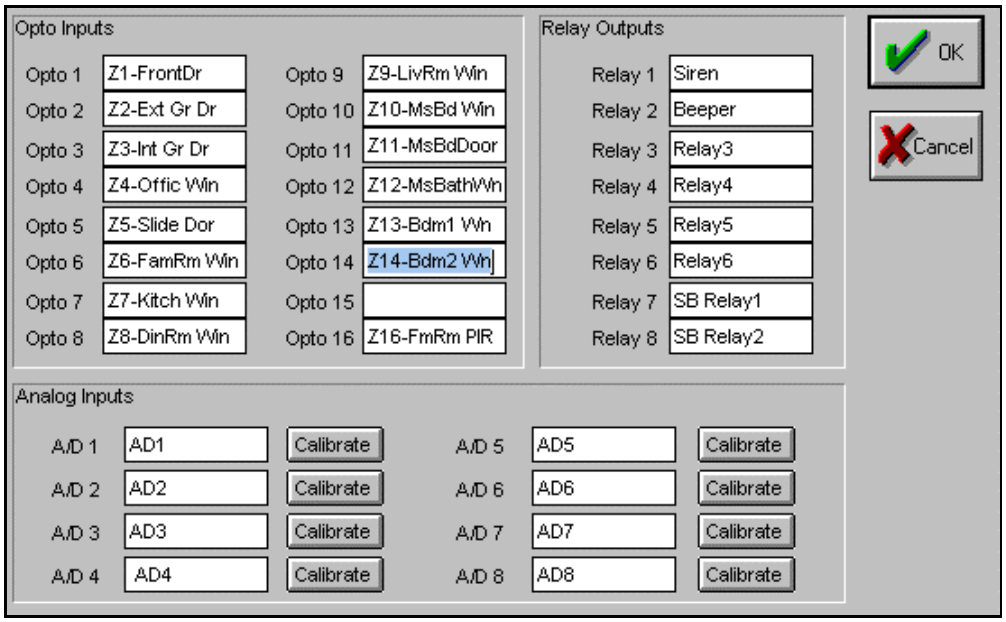
Define IR/IO Devices

To define the IR or IO device, select the desired device and double click or press the Define button and the appropriate IR or IO define screen will be displayed.

To Enable the IR or IO device to be used by STARGATE, select the Enable checkbox next to the device. When the OK button is pressed, the enable information is sent to STARGATE and stored in non-volatile memory. STARGATE uses this to determine which devices to read and write to.

STARGATE & IO-Deluxe Setup

The Define | IO Device | STARGATE or Define | IO Device | IO-Deluxe command will open the IO Setup Dialog box. When setting up the IO-Deluxe, select the address that matches the dip-switch address on the IO-Deluxe.



The dialog box appears allowing you to enter names for each IO connection. Each name corresponds to a connection on the STARGATE or IO-Xpander, which has 16 opto-isolated inputs, 8 SPST relays(see appendix for ratings) and 8 8-bit Analog-Digital inputs.

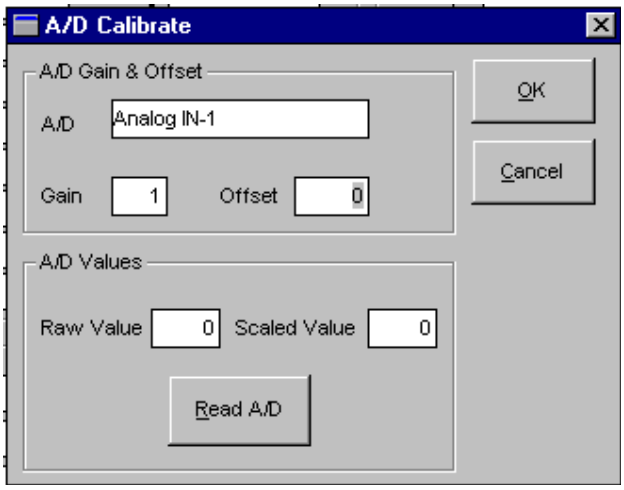
Analog Inputs

The Analog inputs connect internally to an Analog to Digital Converter that converts analog voltages into a digital representation compatible with STARGATE. The A/D converters are 8 bit (range: 0-255) with an input voltage range of 0-5 volts DC. This gives a resolution of approximately 20mV/bit (256 x 20mV = 5V). When STARGATE reads an A/D input, it will read a value in the range of 0-255, which represents a voltage from 0-5 applied to the input. The table below shows some typical input voltages and shows what STARGATE will read.

Input Voltage	STARGATE
0 volt	0
1 volt	51
2.5 volt	128
4 volt	205
5 volt	255

Table 1: Analog Input Voltages

Calibrating



Calibration can be done through an external gain/offset circuit or done through software. There are tradeoffs using either method, if resolution is important the external gain/offset circuit is preferred, if resolution/accuracy is not as important (there is no general rule of thumb, each application is different and the tradeoffs must be examined on a case by case basis) the software gain/offset may be acceptable.

Lets suppose you are going to measure temperature using an AE1000 Wall plate temperature sensor. The AE1000 temperature sensor output voltage is linearly proportional to the Fahrenheit temperature (10.0 mV/degree F and has a range from +32 to +212 degrees F).

Assume the temperature being measured is 72° F. The LM34D will output 720mV (72° x 10mV/degree). STARGATE will read this 720mV and the digital representation will be 36.

A/D resolution-20mV/bit: 720mV ÷ (20mV/bit) = 36

So, STARGATE reads '36' when the temperature is 72°. It would be nice if the value STARGATE read was the same as the temperature. The two ways of doing this could be:

1. Build a 2x amp to convert the 720mV to 1400mV (1400mV / (20mV/bit) = 72)
2. Multiply the value read by STARGATE by 2 (36 x 2 = 72), a gain of 2

Option 2 requires the least amount of work, but the resolution of the A/D converter is multiplied by 2 as well, going from 20mV/bit to 40mV/bit. To use the option 2 approach, the gain can be increased by software from within the **Define | IO Devices** dialog boxes. Every A/D input can be calibrated with a software gain and offset. The gain will actually multiply the A/D value and the offset will be added to the result. Using the previous AE1000 example, let's say a gain of 2 will give a value of 70 at 72 degrees. It is not 72 as would be expected due to many factors, wiring capacitance, AE1000 accuracy, etc. By specifying an offset of 2, this will bring the value in line with the temperature. The formula for scaled A/D is:

scaled_value = (raw_A/D_value x gain) + offset

If you do not need a gain factor, be sure to set the gain to 1 and offset to 0.

NOTE1: YOU MAY USE DEFINE IO ANYTIME YOU ADD ANOTHER IO DEVICE, CHANGE CONNECTIONS OR RENAME PORTS. NOTE THAT IF YOU DO MAKE A CHANGE, SUCH AS SWAPPING 2 INPUTS, YOU WILL NEED TO RE-DOWNLOAD THE SCHEDULE BEFORE THE CHANGES TAKE EFFECT.

NOTE2: CONNECT ANALOG GROUND TO GROUND WHEN USING THE ON-BOARD 5VDC POWER SOURCE TO POWER ANALOG DEVICES.

Digital Inputs

When using Digital Inputs, be sure the jumpers are in the correct position for the application.

For applications that provide a voltage to the digital input (alarm panels, doorbells, etc.) the jumpers must be in the LEFT position (see Figure 1: Digital Input Left Position). Be sure the voltage applied to the digital input is between 4-24 volts AC or DC.

If a voltage source is needed, STARGATE's 12VDC POWER SOURCE may be used**. CAUTION: This Power Source is rated 12VDC @ 0.5A. USE AN EXTERNAL POWER SUPPLY IF MORE CURRENT IS REQUIRED.**

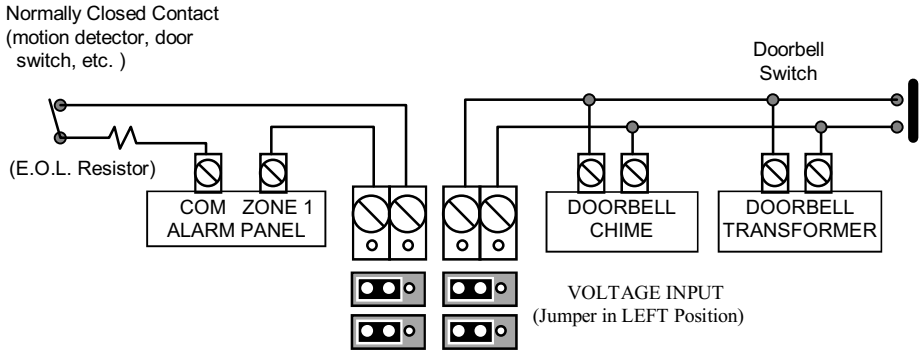


Figure 1: Digital Input Left Position

For applications that provide a "dry contact" switch closure to the digital inputs (switches, relays, etc.) the jumpers must be in the RIGHT position as shown in Figure 2: Digital Input Right Position.

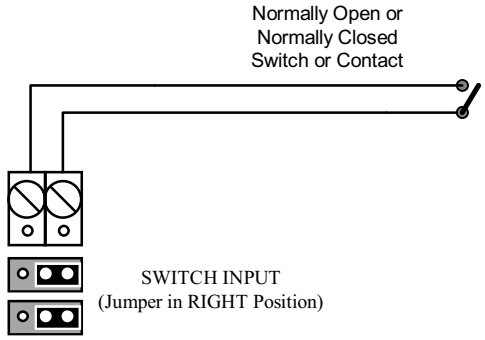


Figure 2: Digital Input Right Position

Relay Outputs

Each Relay Output has three terminals: “NO” (normally open), “NC” (normally closed), and “C” (common). The NO is connected to C when the relay is ON. NC is connected to C when the relay is OFF. In Figure 3: Relay Connections, two relays are used to allow a single-line cordless phone to switch between two different phone lines. The cordless base is normally connected to Line 1 (Relay 1 and Relay 2 de-activated). When Relay 1 and Relay 2 are both activated, it connects to Line 2.

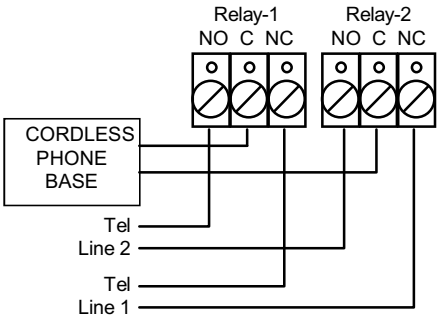
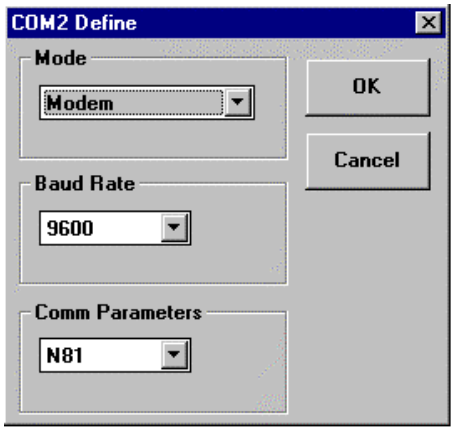


Figure 3: Relay Connections

Define COM Ports

Serial ports COM2 and COM3 can be independently configured in two Modes, General Purpose or Modem, and selectable baud rates and data format. COM1 is reserved for communication to the PC, the parameters for COM1 cannot be changed and are pre-defined at 9600 bps, N81.



General Purpose Mode

In General Purpose mode, the COM port can use ASCII In or Out commands from a schedule. The baud rate and comm. parameters must match the serial device's parameters.

Modem Mode

If an external modem will be used to communicate to the STARGATE, configure the com port to Modem mode. It is recommended to set the baud rate to 9600 to match the primary (COM1) serial port rate.

Define Telephone

The Define | Telephone **Parameters Setup** menu lets you setup all the operational telephone parameters. Click on **DEFINE** then click on **TELEPHONE** to bring up the Telephone Parameters Setup menu.

TOUCHTONE TO X10 MODE

STARGATE supports several formats of touchtone-to-X10 control.

90 Code - mode allows control of 90 X10 addresses using * (for ON) or # (for OFF) followed by two digits (similar to TeleCommand System 100). Defaults = House codes A-J, Key codes 1-9 and All Lights On/All Units Off/Dim/Bright.

160 Code - mode allows control of 160 X10 addresses using * or # followed by three digits. Defaults = House codes A-J, Key codes 1-16 and All Lt. On/All Units Off/Dim/Bright.

NONE - mode disables touchtone-to-X10 control. This is useful for applications that require customized TouchTone control, which is programmed specifically for each event.

X10 MAPPING

Clicking on the **X10 Mapping** button brings up the **TouchTone to X10 Mapping Menu**. This menu lets you "map" TouchTone codes to any X10 command.

TouchTone Code - The TouchTone number dialed.

House Code - The associated X10 letter code.

Key Code - The associated X10 number code.

Name (from dbf) - The associated X10 device name.

Local On Restrict - Checking this box prevents the corresponding TouchTone code from issuing the associated X10 On command when dialed from an on-premise phone.

Local Off Restrict - Checking this box prevents the corresponding TouchTone code from issuing the associated X10 Off command when dialed from an on-premise phone.

Rem1/Rem2/Rem3 On Restrict - Checking this box prevents the corresponding TouchTone code from issuing the associated X10 On command when dialed remotely using Remote Access Code 1, 2 or 3.

Rem1/Rem2/Rem3 Off Restrict - Checking this box prevents the corresponding TouchTone code from issuing the associated X10 Off command when dialed remotely using Remote Access Code 1, 2 or 3.

LOCAL ACCESS

Intercom Access Code - Dialing this code will switch all telephones connected to the "PHONE" output jack to the internal intercom. Default = *01.

TAD Bypass Code - When an external telephone answering device is used, dialing this code when calling in will override the answering device to allow access to STARGATE.

Enable-Disable Code - Dialing ### followed by this code will DISABLE TouchTone to X-10 control (90, 160 or 256 modes).

Dialing *** followed by this code will ENABLE TouchTone to X-10 control (90, 160 or 256 modes). This is useful to prevent inadvertent operation of X-10 devices when using phone company services that require dialing * or #.

HOLD Code - Dialing * followed by this code will place the C.O. line on hold. Dialing # followed by this code will release hold.

CALLER ID ENABLE

Check this box to enable Caller ID recognition.

Area Code – Enter your locations Area Code. Used to prevent anouncing the Area Code for local calls when announcing a Caller ID number.

REMOTE ACCESS

Remote Access – Select this button to go to the VoiceMail/RemoteAccess setup screen.

RING COMMAND CODE

On/Off - Turns Ring Command code feature on or off.

House Code/Unit Code - Select the desired X10 code to be transmitted when the phone rings.

Send Ring On - If selected, only the X10 ON code will be transmitted each time the phone rings.

Send Ring Off - If selected, only the X10 OFF code will be transmitted each time the phone rings.

First Ring Only -If selected, the selected X10 code will be transmitted on the first ring only.

TELEPHONE TIME SETTINGS

Hookflash - Defines the time duration of a hookflash generated by STARGATE (default = 600 milliseconds).

Comma Delay - Defines the time duration of a pause generated by STARGATE when the a comma is used.

PHONE INPUT

C.O. Access - Defines the default state of the "PHONE" jack (C.O. line or Intercom).

If **Intercom** is selected, picking up any phone connected to the "PHONE" jack will first access the intercom. If the associated C.O. Access code is dialed (default = 9), the phone will switch to the C.O. Line (similar to a PBX system). Hanging up will reset the PHONE jack back to intercom mode.

VoiceMenu/VoiceMail

STARGATE's VoiceMenu/VoiceMail is an integrated system that provides a high level of features and functionality not found in Telephone Answering systems. The VoiceMenu/VoiceMail interface is composed of 2 separate but tightly coupled parts, VoiceMail and VoiceMenu.

VoiceMail: Interface the caller uses when calling STARGATE. Functions include basic Telephone Answering Machine functions such as leaving messages in the main voice-mailbox or any of seven secondary voice-mailboxes. The first three voice-mailboxes have access to the full VoiceMenu functionality; the remaining five voice-mailboxes have access to the VoiceMail submenu of the VoiceMenu structure only. The VoiceMail system can be setup as a single voice-mailbox system or as a multiple voice-mailbox system with the main outgoing message providing directions for leaving a message in a secondary voice-mailbox.

VoiceMenu: Interface the caller uses to access the STARGATE system to retrieve messages, control HVAC or security, or any custom function. Once the proper password is entered, the caller has access to all of the defined VoiceMenu functions.

Memory: There is approximately 18 minutes of total voice storage available for VoiceMail and VoiceMenu messages and user voice responses. If more voice storage time is required, a voice memory expansion upgrade is available that will increase the total voice storage time to approximately 40 minutes.

IMPORTANT NOTE: Adding the voice memory expansion upgrade will permanently erase all existing User Voice Responses including all VoiceMail and VoiceMenu prompts and messages. If your application requires storage of lengthy and/or a large number of incoming messages, it is recommended that you install the voice memory expansion upgrade prior to setting up the VoiceMail and VoiceMenu system. If you add the voice memory expansion upgrade to a STARGATE that already has User Voice Responses recorded, you will need to re-record all User Voice Responses.

Programming the VoiceMail System

STARGATE supports 8 voice-mailboxes. Each mailbox has a password and Greeting (Outgoing Message). Each Greeting uses one of the 128 User Defined Voice responses. Each mailbox can record up to 255 incoming messages each (stored in dedicated memory locations).

VoiceMail Mailboxes are accessed remotely through the Voice Menu interface. The Voice Menu provides a basic framework for sophisticated Interactive Voice Menus.

Single User VoiceMail System

A Single User mailbox system uses "Main 1" Mailbox only and has a single password for gaining access into the system. This system most closely resembles a standard answering machine where someone calls in, hears a Greeting and then leaves a message. To setup a Single User mailbox follow these steps:

1) Click *Define* - then click *VoiceMail/Remote Access.*

2) Select *VoiceMail & VoiceMenu System* in the Access Mode section.

3) Set *Answer On Ring* to the number of rings the system should count before answering incoming calls.

4) Set the *Remote Timeout* time. During the playback of messages, if the number of seconds entered elapses with no Touch-Tone activity, the system will hang up.

5) Select the *Maximum Record time* in the VoiceMail section. This is the maximum time an incoming message can be recorded before the system hangs up.

6) Set the desired *Incoming Call Monitor* output if you want to listen to messages as they are being left.

7) Check the *Enable* Checkbox for Mailbox "Main 1" only. UN-check all other *Enable* Checkboxes.

8) Click on the *Password* cell for Mailbox "Main "1" then enter a password (up to six digits).

Recording the Greeting (Outgoing Message)

This greeting will be played when the system answers incoming calls. The Greeting uses one of the 128 User Voice Responses. The Greeting can be selected through the schedule to allow different Greetings based on time of day, day/night, weekends, etc.

9) Double-click the *Greeting* cell for Mailbox "Main "1." This will take you to the *Voice Mail Greeting/User Voice Response* window.

10) Select any blank line in the *User Voice Response* list and type in a name such as "Main Greeting" or "O.G.M."

11) Select the appropriate *Record Source*.

12) Click the *Record* button and record the Greeting. Then click the *Stop* button.

13) To review the Greeting, select the appropriate *Playback Test* output then click the *Play* button. If necessary, repeat step 12 and 13 until you are satisfied with the greeting.

14) Click the *OK* button.

Running a Macro after a Message is left in Mailbox

A THEN Macro can run after a message has been left in a mailbox. This is useful for notifying a pager of a new message, or calling another number. To run a THEN Macro after a message is left in a mailbox:

15) Check the *Enable Macro* checkbox for Mailbox "Main 1".

16) Double-click the *Macro To Run After Message* cell for Mailbox "Main 1" then select from the list of defined THEN Macros, then click *OK*.

Click the *APPLY* button to download the information. At this point you should be able to place a call to STARGATE, hear the Greeting, and leave a message.

Multiple User VoiceMail System

A Multiple User mailbox system can have up to 8 voice-mailboxes. A typical application for a Multiple User Mailbox would be a family or small business that does not want to share a common answering machine so that each family member or employee can have a private mailbox.

Mailbox "Main 1" is the starting point for all incoming calls. This Greeting should instruct the caller how to leave a message in the personal mailboxes (2 - 8). A typical Mailbox Main 1 Greeting would be: *"You have reached the Smith residence, to leave a message for Tom press 2, to leave a message for Jane press 3, to leave a message for Tim press 4, or leave a general message at the beep"*. In this example, Mailbox 2 is assigned to Tom, 3 to Jane and 4 to Tim. The caller wanting to leave a message for Tom presses 2. Tom's Greeting (Mailbox 2) will start playing, *"Hi this is Tom, sorry I'm not here to take your call. Please leave a message at the beep"*. The message will be recorded into Tom's Mailbox.

To setup a Multiple User mailbox follow these steps:

1) Click *Define* - then click *VoiceMail/Remote Access.*

2) Select *VoiceMail & VoiceMenu System* from within the Access Mode box.

3) Set *Answer On Ring* to the number of rings the system should wait before answering incoming calls.

4) Set the *Remote Timeout* time. During the playback of messages, if the number of seconds entered elapses with no Touch-Tone activity, the system will hang up.

5) Select the *Maximum Record time* in the VoiceMail section. This is the maximum time an incoming message can be recorded before the system hangs up.

6) Set the desired *Incoming Call Monitor* output if you want to listen to messages as they are being left.

7) Check the *Enable* Checkbox for the Mailboxes used only. UN-check all other *Enable* Checkboxes.

8) Click on the *Password* cell for each mailbox and enter a different password (up to six digits) for each.

Recording the Greeting (Outgoing Message)

This greeting will be played when the system answers incoming calls. This Greeting should instruct the caller what digit to press in order to leave a message in the appropriate Mailbox. Example: *"You have reached the Smith residences, to leave a message for Tom press 2, to leave a message for Jane press 3, to leave a message for Tim press 4, or leave a general message at the beep"*. Each Mailbox's Greeting uses one of the 128 User Voice Responses. A Mailbox's Greeting can be selected through the schedule to allow different Greetings based on time of day, day/night, weekends, etc.

9) Double-click the *Greeting* cell for Mailbox Main 1. This will take you to the *Voice Mail Greeting/User Voice Response* window.

10) Select any blank line in the *User Voice Response* list and type in a name such as "Main Greeting" or "O.G.M."

11) Select the appropriate *Record Source*.

12) Click the *Record* button and record the Greeting. Then click the *Stop* button.

13) To review the Greeting, select the appropriate *Playback Test* output then click the *Play* button. If necessary, repeat step 12 and 13 until you are satisfied with the greeting.

14) Click the *OK* button.

15) Repeat steps 9 - 13 for the other (personal) voice-mailboxes used. Keep in mind that these Greetings should each be a personal Greeting for the Mailbox owner. Example: *"Hi this is Tom, sorry I'm not here to take your call. Please leave a message at the beep"*

Running a Macro after a Message is left in Mailbox

A THEN Macro can run after a message has been left in a mailbox. This is useful for notifying a pager of a new message, or calling another number. To run a THEN Macro after a message is left in a mailbox:

15) Check the *Enable Macro* checkbox for the desired mailbox.

16) Double-click the *Macro To Run After Message* cell for the desired mailbox then select from the list of defined THEN Macros, then click *OK*.

Click the *APPLY* button to download the information.

At this point you should be able to place a call to STARGATE, hear the Main 1 Mailbox Greeting, press a digit to go to another Mailbox, and leave a message.

Programming the VoiceMenu System

STARGATE's VoiceMenu system provides remote access to retrieve messages and control the system. The VoiceMenu provides a framework for a sophisticated Interactive VoiceMenu structure. Eight (8) VoiceMenu menus are available, each menu having 10 touch-tone digit choices. Pressing a touch-tone digit can trigger a Macro, go to another VoiceMenu, perform a VoiceMail function, go to Command mode, or disconnect the call.

A typical call into STARGATE to retrieve messages would be:

1. Call the number STARGATE is connected to.

2. When STARGATE answers and plays the Greeting, press the pound digit ("#") to stop the Greeting.

3. Enter the password for the Mailbox (defined in the VoiceMail setup)

STARGATE will respond with "You have [number] (new) messages in Mailbox [number]"

At this point you are in the "MAIN" VoiceMenu menu. The VoiceMenu Prompt defined for "MAIN" will begin to play.

4. Press 2 to go to the VoiceMail menu.

5. Press 1 to Play the 1st Message left in the Mailbox

To setup the VoiceMenu System, follow these steps:

1) Click *Define* - then click *VoiceMail/Remote Access*.

2) Select *VoiceMail & VoiceMenu System* in the Access Mode section.

3) Select the *MAIN* tab in the VoiceMenu section.

4) Press the *Edit* button to create a Main VoiceMenu Prompt list. This is the prompt you will hear when you enter the password for your mailbox (after STARGATE announces the number of messages). Each VoiceMenu Prompt list can contain a combination of up to 60 Preset words, phrases, sound effects, and/or User Voice Responses. Double-click on each Word, Phrase, Sound, or User Voice Response to build your Main VoiceMenu Prompt list then click *OK*.

5) To the right of the VoiceMenu Prompt is a grid showing *TouchTone Digits* 1 through 0, each with an associated *Action*. When a TouchTone Digit is pressed, the Action is executed. Double click on the *Action* cell for each digit then select the appropriate *Voice Menu Action* (Do Nothing, Do Macro, Go to Menu, VoiceMail, Go to Command mode, or Hang up).

Do Nothing: Nothing will happen when this Digit is pressed.

Do Macro: A THEN Macro will be triggered when this Digit is pressed. Macros can perform complex functions such as changing Temperature SetPoint, Arming Security systems or reporting status. Macros must first be defined before they can be selected. To define a THEN Macro, click the THEN MACRO icon on the Button Bar at the top of the screen.

Go to Menu: Go to a VoiceMenu when this Digit is pressed. This command is used to move between the different VoiceMenus. A simple way to replay the current VoiceMenu Prompt is to choose the same VoiceMenu that you are in.

VoiceMail: Trigger a VoiceMail command such as Play, Delete, Replay, etc.

Go to Command Mode: This will take STARGATE out of VoiceMenu Mode and into Command Mode. Command Mode allows the use of the TouchTone to X-10 (i.e., *11 to turn A-1 ON).

Hang Up: Disconnects STARGATE (goes on-hook).

Repeat steps 3 - 5 for each VoiceMenu Tab.

6) Press the *APPLY* button to download the information. At this point you should be able to place a call to STARGATE, enter a Password and gain access to the VoiceMenu System. *Note: you can also access the VoiceMenu system locally by switching to Intercom and entering the password.*

Accessing the VoiceMenu/VoiceMail System

There are 4 methods to access the VoiceMenu/VoiceMail system:

Remote Access

Calling STARGATE and entering one of the passwords will place the user into the VoiceMenu system. Only the first three mailboxes (Main1, 2 & 3) have access to the full VoiceMenu system, the other five mailboxes (4-8) have access to the VoiceMail system only.

Call the number STARGATE is connected to.

When STARGATE answers and plays the Greeting, press the pound digit ("#") to stop the Greeting.

Enter the password for the Mailbox (defined in the VoiceMail setup)

STARGATE will respond with "You have [number] (new) messages in Mailbox [number]"

At this point you are in the "MAIN" VoiceMenu menu. The VoiceMenu Prompt defined for "MAIN" will begin to play and the system will respond according to the structure of the VoiceMenu setup.

Local Access

Switch to INTERCOM by pressing the *ICM Access Code* or take a phone connected to the intercom (ICM) port offhook. Enter a password for the desired mailbox. STARGATE will respond with "You have [number] (new) messages in Mailbox [number]". At this point you are in the "MAIN" VoiceMenu menu. The VoiceMenu Prompt defined for "MAIN" will begin to play and the system will respond according to the structure of the VoiceMenu setup.

WinEVM Access

From the *Utilities | VoiceMail* dialog box, each mailbox can be accessed. The dialog box displays the number of new and total messages stored in each mailbox and allows playback/review and deleting of messages via the mouse.

Schedule Access

VoiceMail functions can also be accessed and controlled via the schedule. This is useful for setting up advanced voice mail functions such as toll saver, outgoing message selection based on time of day, pager notification based on Caller ID, etc.

IF Conditions can be based on the number of New or Old Messages in a specific Mailbox. They can be treated like variables with the full complement of Compare Options.

THEN Actions include: Say Number of Messages, Play First Message, Next Message (skip), Delete Message, Replay Message, Play Caller ID, Stop Message, Play All Messages, Play New Messages, Backup 5 Seconds, Forward (advance) 5 Seconds, Select Greeting, Force VoiceMail, Announce Only On/Off, Answer on Ring (set ring count), Incoming Call Monitor On/Off, Load User_Var with # of NEW Messages, Load User_Var with # of OLD Messages, and VoiceMail Output selection (Speaker, Line Level Out, ICM or C.O. Line).

Define VoiceMail-Remote Access

Access Mode

None – Select to disable any Remote Access

Remote Access System – Select to enable Command Mode Remote Access *only*. Command Mode allows the TouchTone to X-10 commands (i.e., *11 to turn A-1 ON).

Enable Voice Menu System – Select to enable the VoiceMail & VoiceMenu system.

Access Parameters

Answer on Ring – Enter the number of rings STARGATE will wait before answering incoming calls (default = 8).

Remote Timeout - Enter the number of seconds STARGATE will wait for a valid Remote Access code otherwise hang up (default = 30).

VoiceMail

Announce only - Check to play the Main1 Mailbox Greeting then hang-up without recording Incoming Messages.

Maximum Record Time – Enter the maximum number of seconds STARGATE will record each Incoming Message.

Incoming Call Monitor – Check to monitor incoming calls. *Note: Both the Greeting and Incoming Messages will be directed to the selected output.*

Mailboxes

Enable – Check to enable the mailbox.

Password – Enter a Password to access the associated Mailbox.

Greeting – OutGoing Message. Double Click to edit.

Macro Enable – Select to run a Macro after a new message is left in the associated Mailbox.

Macro to run after message – After a message is left in this mailbox; this macro will be executed if the Macro Enable box is checked. Typical uses for this macro would be for notifying a pager of a new message left in the mailbox.

VoiceMenu

VoiceMenu sub-menus are accessible by pressing the Tab button across the top of the screen.

VoiceMenu Prompt

Each sub-menu will play a series of Voice Prompts when accessed. Selecting the “EDIT” button changes the prompts.

Touch-Tone Action

Action that will occur when the touch-tone digit is pressed. The Action can be one of the following:

Do Nothing – Do Nothing when pressed.

Do Macro – Trigger a macro.

Goto Menu – Go to another VoiceMenu sub-menu.

VoiceMail – Execute a VoiceMail function.

Goto Command Mode - Exit the VoiceMenu and switch to Command Mode.

HangUp – Disconnect STARGATE.

VoiceMail Examples

TOLL SAVER

When the Toll Saver function is used with standard answering machines, calls are answered after 1 or 2 rings if there are new messages. If no new messages are recorded it answers after 4 or more rings. When calling in remotely to check messages, if the phone rings more than 1 or 2 times, the user knows there are no new messages and can hang up without being charged for the call.

Through the schedule, the VoiceMail "Answer On Ring Number" can be controlled based on Caller ID, Mailbox number, time of day, etc. to allow a more flexible "Toll Saver" function.

```
EVENT:  Toll Saver
 If
    (VMAIL:MBX-1 # New Msg) >= 1
 Then
    VM:Answer on Ring 2
 Else
    VM:Answer on Ring 4
 End
```

FORCE VOICEMAIL

The Force VoiceMail function lets you initiate any VoiceMail Box as if it answered an incoming call.
This facilitates many custom functions such as:
1) Automatically directing calls to specific VoiceMailBoxes based on Caller ID.
2) Live transfer of calls to VoiceMail Boxes via touchtone sequences. (After answering or placing a call you can transfer the call to any VoiceMail Box).

```
EVENT:  Force VoiceMail (Caller ID)
 If
   CallerID: 2125551212
 Then
   VM:Force VoiceMail - MailBox 2
 End

EVENT:  Force VoiceMail (Touchtone)
 If
   CO: Is OFF Hook
 Then
   |-If
   |  TelePhone Seq:'2*' Received within 3 seconds
   |Then
   |  VM:Force VoiceMail - MailBox 2
   |- Nest End
   |-If
   |  TelePhone Seq:'3*' Received within 3 seconds
   |Then
   |  VM:Force VoiceMail - MailBox 3
   |- Nest End
   |-If
   |  TelePhone Seq:'4*' Received within 3 seconds
   |Then
   |  VM:Force VoiceMail - MailBox 4
   |- Nest End
 End
```

MESSAGE WAITING BEEP

This event will play a beep sound through the speaker output every two minutes to notify you that there are new messages in MailBox 1. The beep sound will stop after all new messages have been played back.

```
EVENT: MESSAGE WAITING BEEP
 If-Always
    (VMAIL:MBX-1 # New Msg) > 0
 Then
    Voice: BBBeep [Spkr]
    DELAY: 0:02:00
 End
```

CUSTOM OUTGOING MESSAGES

This event will select a custom Greeting (outgoing message) based on a matched Caller ID. If no match occurs, the default Greeting will be selected. This allows personalized greetings to be played to familiar callers (friends, family, associates, etc.).

```
EVENT: CUSTOM GREETING
 If
   CallerID: ??????????
   " Look for any CallerID coming in "
 Then
   " Always change to default  "
   " greeting after any CID, this "
   " will make sure proper greeting "
   " is selected. "
   VM:Change MailBox 1 Greeting to Main Greeting
   " Now look for special numbers in "
   " order to change the greeting the "
   " caller will hear.  If no numbers "
   " match, the default greeting will "
   " be used. "
   |-If
   |  CallerID: 6195551212
   |Then
   |  VM:Change MailBox 1 Greeting to Dad
   |- Nest End
   |-If
   |  CallerID: 6194878787
   |Then
   |  VM:Change MailBox 1 Greeting to Jeff
   |- Nest End
 End
```

Example VoiceMenu Setup

The Macros used in this example are listed below Figure 4 : Example VoiceMenu System.

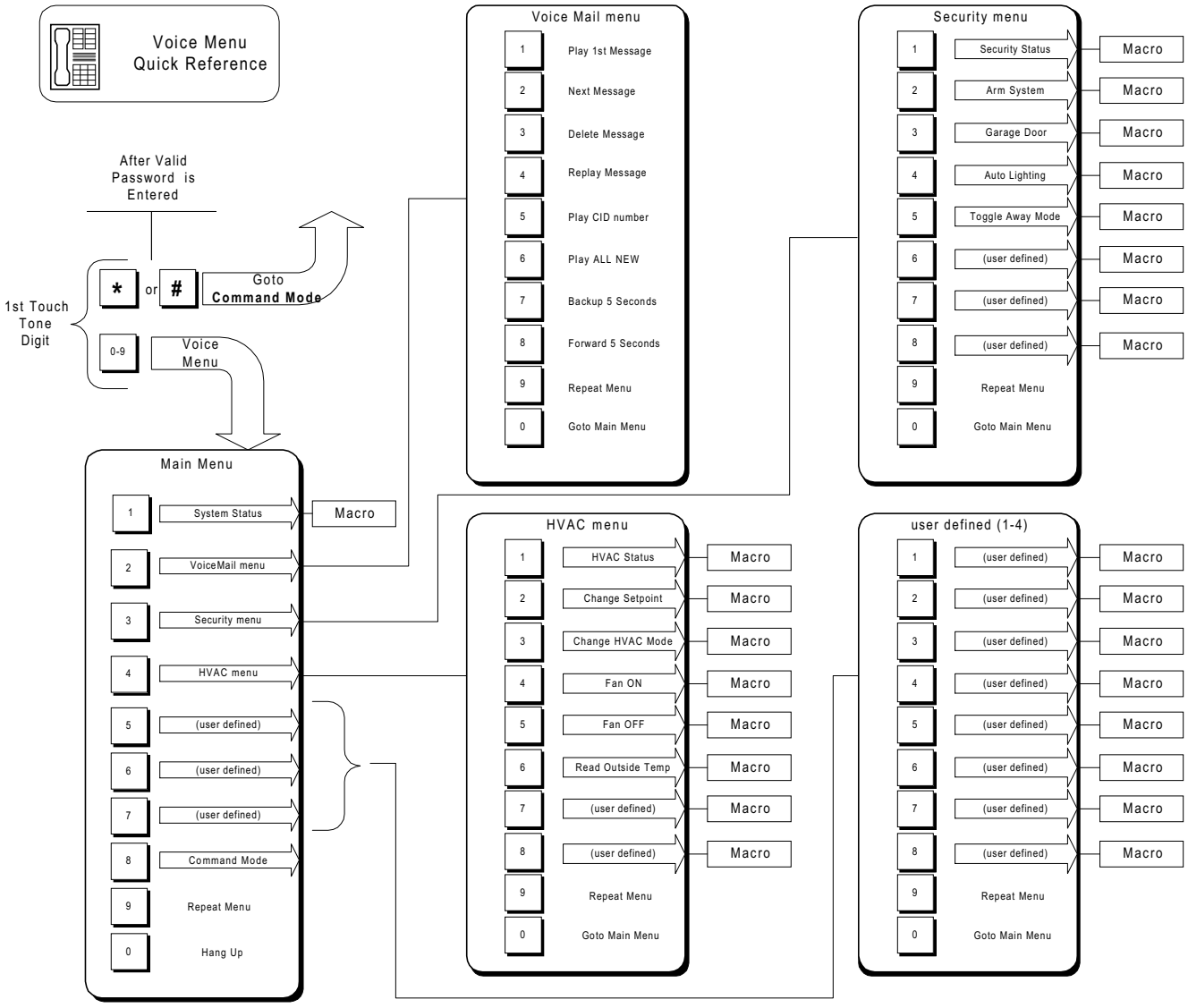


Figure 4 : Example VoiceMenu System

Main Menu Macros

```
THEN Macro: System Status
 MACRO BEGIN
  " Main Menu System Status"
  Voice:<day hh:mm am/pm> [CO]
  |-If
  |(DI:Sec Armed) is ON
  |Then
  |  Voice:SECURITY SYSTEM IS ARMED  [CO]
  |Else
  |  Voice:SECURITY SYSTEM IS DISARMED  [CO]
  |- Nest End
  |-If
  |X10: (I-1  Home Mode) is ON
```

```
  |Then
  |  Voice:HOME MODE IS ENABLED  [CO]
  |Else
  |  Voice:HOME MODE IS DISABLED  [CO]
  |- Nest End
  |-If
  |(F:Vacation Mode) is SET
  |Then
  |  Voice:Vacation Mode  [CO]
  |Else
  |  Voice:Vac Mode Dis  [CO]
  |- Nest End
  |-If
  |(F:Alarm Violation) is SET
  |Then
  |  Voice:ALARM HAS BEEN VIOLATED  [CO]
  |Else
  |  Voice:ALARM STATUS IS SECURE  [CO]
  |- Nest End
 MACRO END
```

HVAC Menu Macros

```
THEN Macro: HVAC Status
 MACRO BEGIN
   Voice:INSIDE TEMPERAT IS Thermo Temperature DEGREES  [CO,ICM]
   Voice:SET TO Thermo Setpoint DEGREES  [CO,ICM]
 MACRO END

THEN Macro: Change Setpoint
 MACRO BEGIN
   Voice:SET TO Thermo Setpoint ENTER NEW TEMPERAT  [Spkr,CO,ICM]
   TouchTone to user_VAR SYNC
   (V:Temp Setpoint)   load with user_VAR
   |-If
   |(V:Temp Setpoint) < 80
   |(V:Temp Setpoint) > 60
   |Then
   |  (HVAC:Thermo)  Change Setpoint to value in user_VAR
   |  Voice:BBBEEP  [CO,ICM]
   |  DELAY  0:00:04
   |  Voice:NEW SET TEMPERAT IS Thermo Setpoint DEGREES  [CO,ICM]
   |Else
   |  Voice:INVALID TEMPERAT  [CO,ICM]
   |- Nest End
 MACRO END


THEN Macro: Change HVAC Mode
 MACRO BEGIN
   |-If
   | " use variable HVAC Mode to keep track"
   | "  Mode == 0: OFF Mode"
   | "  Mode == 1: HEAT Mode"
   | "  Mode == 2: COOL Mode"
   | "  Mode == 3: AUTO Mode"
   | "  "
   (V:HVAC Mode)  INCREMENT
   |-If
   |(V:HVAC Mode) = 4
```

```
  |Then
  |  (V:HVAC Mode)  LOAD with 0
  |- Nest End
  |“  ”
  |-If (V:HVAC Mode) = 1
  |Then
  |  (HVAC:Thermo)  HEAT Mode
  |  Voice:HEATING MODE  [CO]
  |- Nest End
  |-If
  |(V:HVAC Mode) = 2
  |Then
  |  (HVAC:Thermo)  COOL Mode
  |  Voice:COOLING MODE  [CO]
  |- Nest End
  |-If
  |(V:HVAC Mode) = 3
  |Then
  |  (HVAC:Thermo)  AUTO Mode
  |  Voice:AUTOMATI MODE  [CO]
  |- Nest End
  |-If
  |(V:HVAC Mode) = 4
  |Then
  |  (HVAC:Thermo)  OFF Mode
  |  Voice:OFF MODE  [CO]
  |- Nest End
 MACRO END

THEN Macro: Fan ON
 MACRO BEGIN
  (HVAC:Thermo)  Fan ON
  Voice:FAN ON  [CO]
 MACRO END

THEN Macro: Fan OFF
 MACRO BEGIN
  (HVAC:Thermo)  Fan OFF
  Voice:FAN OFF  [CO]
 MACRO END

THEN Macro: Read Outside Tmp
 MACRO BEGIN
 “ not implemented”
 MACRO END
```

Security Menu Macros

```
THEN Macro: Security Status
 MACRO BEGIN
  |-If
  |(DI:Alrm Violate) is ON
  |Then
  |  Voice:ALARM STATUS IS VIOLATED  [CO,ICM]
  |Else
  |  Voice:ALARM STATUS IS SECURE  [CO,ICM]
  |- Nest End
 MACRO END

THEN Macro: Arm System
 MACRO BEGIN
```

```
   |-If
   | " make sure it's off "
   |(DI:Sec Armed) is OFF
   |(DI:Sys Ready) is ON
   |Then
   |" Close relay for 1 second to arm"
   |  (RELAY:Alarm Toggle) ON
   |  DELAY  0:00:01
   |  (RELAY:Alarm Toggle) OFF
   |- Nest End
   DELAY  0:00:03
   |-If
   |CO: Is OFF Hook
   |or ICM: Is OFF Hook
   |    -AND-
   |(DI:Sec Armed) is ON
   |Then
   |  Voice:SECURITY SYSTEM ARMED  [CO,ICM]
   |- Nest End
   |-If
   |CO: Is OFF Hook
   |or ICM: Is OFF Hook
   |    -AND-
   |(DI:Sec Armed) is OFF
   |Then
   |  Voice:SECURITY SYSTEM NOT ARMED  [CO,ICM]
   |- Nest End
  MACRO END

THEN Macro: Garage Door
  MACRO BEGIN
    " Give status of Garage Door, give "
    "  option to close if it is open "
   |-If
   |(DI:GarageDoorSW) is ON
   |Then
   |  " if Garage door open, say it "
   |  Voice:GARAGE DOOR IS OPEN  [CO]
   |  " Give option to close "
   |  " Press 33# to close door "
   |  Voice:TO CLOSE PRESS 30 3 POUND  [CO]
   |  " Get value, anything other than "
   |  " 33# will not affect the door "
   |  TouchTone to user_VAR SYNC
   |  (V:Counter 1)   load with user_VAR
   |  |-If
   |  |(V:Counter 1) = 33
   |  |Then
   |  |  Voice:CLOSE  [CO]
   |  |  (RELAY:Garage Door) ON
   |  |  DELAY  0:00:01
   |  |  (RELAY:Garage Door) OFF
   |  |- Nest End
   |Else
   |  Voice:GARAGE DOOR IS CLOSED  [CO]
   |- Nest End
  MACRO END


THEN Macro: Auto Lighting
  MACRO BEGIN
    Voice:AUTOMATI LIGHTING IS  [CO]
```

```
  |-If
  |(F:Auto Lighting) is SET
  |Then
  |  Voice:ENABLED  [CO]
  |Else
  |  Voice:DISABLED  [CO]
  |- Nest End
  Voice:TO SELECT AUTOMATI LIGHTING PRESS 1 POUND  [CO]
  Voice:TO D SELECT AUTOMATI LIGHTING PRESS 2 POUND  [CO]
  Voice:ELSE PRESS 3 POUND  [CO]
  TouchTone to user_VAR SYNC
  (V:Counter 1)   load with user_VAR
  |-If
  |(V:Counter 1) = 1
  |Then
  |  (F:Auto Lighting)  SET
  |  Voice:AUTOMATI LIGHTING ENABLED  [CO]
  |- Nest End
  |-If
  |(V:Counter 1) = 2
  |Then
  |  (F:Auto Lighting)  CLEAR
  |  Voice:AUTOMATI LIGHTING DISABLED  [CO]
  |- Nest End
 MACRO END

THEN Macro: Toggle Away Mode
 MACRO BEGIN
  " not implemented"
 MACRO END
```

Define User Voice Responses

The **Define | User IVR Response** menu lets you name and record your own custom voice responses. Up to 128 user recordable responses are available.

To record a voice response (voice responses must be recorded via a telephone connected to the ICM path or from a phone on the C.O. LINE) :

1. Click on **DEFINE** then click on **USER VOICE RESPONSE.**
2. Click on a blank line in the VOICE RESPONSE list and type the name of the response you wish to record (up to 16 characters).
3. Select INTERCOM or C.O. LINE (the source you wish to record from) in the **RECORD SOURCE** box.

Note: You can record off of the phone line (C.O. Line) during a call to capture voice responses from friends, associates, etc. These can then be added to events for custom applications. For example, you can record each friend saying "It's [friend's name] calling, pick up the phone" then have their responses broadcast over speakers when Caller ID recognizes their numbers!

4. With the telephone receiver off hook, click on **RECORD**.
5. At the beep, speak the desired prompt into the phone, then click **STOP**.
6. To review, select INTERCOM, C.O. LINE, LINE LEVEL or SPEAKER in the **PLAYBACK TEST** box then click **PLAY**.

To record a voice response via the LINE LEVEL INPUT:

1. Click on **DEFINE** then click on **USER VOICE RESPONSE.**
2. Click on a blank line in the VOICE RESPONSE list and type the name of the response you wish to record (up to 16 characters).
3. Select LINE LEVEL INPUT in the **RECORD SOURCE** box.
4. Connect the LINE LEVEL INPUT of the Telephone/Voice Board to the line level output of the device you are recording from (sound card, tape player, mixer, preamplifier, etc.).
5. Begin playing the source voice response and click on **RECORD**.
6. When the source voice response has completed, click **STOP**.
7. To review, select INTERCOM, C.O. LINE, LINE LEVEL or SPEAKER in the **PLAYBACK TEST** box then click **PLAY**.

Voice Functions

The **VOICE OUTPUT** menu lets you create voice responses for use as prompts, acknowledgements, signals, messages, etc. There are six types of voice responses:

Presets (Over 600 built-in words, phrases and sound effects),

User-Defined (up to 128 user-recorded words, phrases and sound effects),

Analog (analog input values),

Variable (variable values),

HVAC (SetPoint and temperature),

Special (time, date, last caller ID, TimeLabel, etc.).

Voice responses can be used individually or combined into sentences and can be sent to any or all of four output zones:

SPEAKER - output (screw terminals) which can directly drive several speakers at normal listening volume.

LINE-LEVEL - output (RCA phono jack) which can be connected to an amplifier, receiver, etc. when greater amplification is required.

C.O. LINE - output (RJ-11 jack) which allows playing/recording voice responses via the outside telephone line.

INTERCOM -output (RJ-11 jack) which allows playing/recording voice responses via the built-in intercom line.

Voice responses can be sent synchronously or asynchronously to accommodate different applications. When sent synchronously, a voice response will play completely before the next line of the event is executed. When sent asynchronously, a voice response will play while the next line of the event is executed. Note: Wavefiles can only play asynchronously.

Using the Event Editor

ToolBox

The ToolBox contains functions most frequently used when creating and editing schedules. It is located at the right side of the Event window.

Creating an Event

New Event

Selecting the [New] button will bring up the New Event box. You will be able to customize the Event to be an IF/THEN, IF/THEN/ELSE or FAST EVENT type, define the Event's logic type as AND or OR, and insert the new Event before or after the current highlighted event.

Fast Events

Events triggered by X10 ON/OFF commands, Digital Inputs (STARGATE 's) going ON/OFF or Received Infrared command. These events are executed immediately when triggered regardless of schedule size. Note that there can only be 1 Fast Event for a given trigger.

Menu Item	Description
Name	The name of the Event. This name will appear in the schedule
Event Type	The type of Event that you want to create. IF-THEN, IF-THEN-ELSE or FAST EVENT.
☑ Always	If the Always checkbox is selected, STARGATE will always execute the actions if the conditions are met. If not selected, STARGATE will not execute any action unless the conditions have changed since the last time the Event was evaluated.
Logic Type	The logic type of the Event, AND or OR.
Insert Point	This will place the new Event above or below the Event that is currently highlighted.

After selecting [OK], an empty Event will be inserted into your schedule.

Event - Add

You can add IF Conditions or THEN Actions to an Event by moving the highlight bar to where you want the statement to be inserted.

If you want to add an IF statement, move the highlight bar to the IF section of the Event, that is between the 'EVENT' and the 'Then' lines, and press the [ADD] button in the ToolBox. The 'IF Condition' popup menu will appear and by using your mouse or the arrow keys on the keyboard, move to the type of IF Condition you want and press the <Enter> key or click [OK] with your mouse.

To add a THEN statement, move the highlight bar to the THEN or ELSE section of the Event, then press the [ADD] button in the ToolBox. The 'THEN Action' popup menu will appear and by using your mouse or the arrow keys on the keyboard, move to the type of Action you want and press the <Enter> key or click with your mouse.

Event - Edit

To Edit an Event (IF Condition or THEN/ELSE Action), move the highlight bar to the item to be edited and select the Toolbox [Edit] button (or double-click the left mouse button on the line to be edited). A dialog box with the information from that line will appear and allow you to edit it.

Event - Delete

To Delete an IF Condition or THEN/ELSE Action, move the highlight bar to the item you want to delete and select the Toolbox [Delete] button.

Editing an Event

To modify an Event, move the highlight bar to the Event Name, and select the [EDIT] button in the ToolBox (or double click the left mouse button). The Event Definition box will appear with the name, event type and logic type fields filled in. When you are done with your changes, press the [OK] button to save. By pressing the <ESC> key or the [Cancel] button, any changes are discarded.

NOTE: WHEN CHANGING FROM AN IF-THEN-ELSE TYPE EVENT TO AN IF-THEN TYPE EVENT, ALL OF THE ACTIONS AFTER THE ELSE STATEMENT MUST BE DELETED BEFORE IT CAN BE CHANGED

Deleting an Event

To delete an Event, place the highlight bar on the Event Name and select the [Delete] button in the ToolBox.

IF Conditions

An Event uses IF Conditions to decide whether to do the THEN or ELSE actions. IF Conditions can be based on time, date, sunrise/sunset, state of an X-10 device, received X10 sequence, received infrared, timers, variables, flags, digital inputs, analog inputs, relay outputs, ASCII input, telephone input (TouchTones, ring, Caller ID, on-hook, off-hook) and system variables (first schedule pass, X10 loss, ac power loss, power restored).

To add an IF Condition to an Event, move the highlight bar in the IF section of the Event and select the [ADD] Toolbox button. A pop-up menu will appear allowing you to choose the type of IF condition. Select what type of IF Condition you want with the mouse. A dialog box will appear and allow you to fill in the information for the IF Condition that was chosen.

X-10 Device State

Selecting X-10 Device State from the menu will open the X-10 Device Pick box. This IF condition will be TRUE if the state of the X-10 Device is the same as the state chosen from the dialog box. After completing the form, press [OK] to enter the new information into the schedule, [ADD] to enter the new information and return to the X10 Device pick box for more entries, or the [CANCEL] to escape without saving anything.

What is it — STARGATE monitors the Powerline and as X-10 commands are received, it updates its internal state table of all 256 X-10 devices. The three states that STARGATE keeps track of are ON, OFF and IDLE. You can compare the state of any X-10 device to trigger an Event.

How Used — When used in the schedule, STARGATE will compare the state of the X-10 device stored in STARGATE, against the state chosen in the dialog box. If the states match, this IF statement will be true.

Menu Choices	**Description**
ON	If the device chosen is 'ON', this statement will be true.
OFF	If the device chosen is 'OFF', this statement will be true.
IDLE	If the device selected is in 'IDLE' mode, this statement will be true.
NOT OFF	This condition will be true if the specified module (house and unit code) is either ON or IDLE. It will be false if the module is OFF.
NOT ON	This condition will be true if the specified module (house and unit code) is either OFF or IDLE. It will be false if the module is ON.
NOT IDLE	This condition will be true if the specified module (house and unit code) is either ON or OFF. It will be false if the module is IDLE.
Enabled	This condition will be true if the specified module (house and unit code) is ENABLED in the DEFINE-X10 DEVICE database. It will be false if the module is DISABLED.
Disabled	This condition will be true if the specified module (house and unit code) is DISABLED in the DEFINE-X10 DEVICE database. It will be false if the module is ENABLED.
DimLevel ==##	This condition will be true if the specified module's (house and unit code) current level (0 to10) is equal to ## (specified number). It will be false if not.
DimLevel <= ##	This condition will be true if the specified module's (house and unit code) current level (0 to 10) is less than or equal to ## (specified number). It will be false if the level is greater than ##.
DimLevel >= ##	This condition will be true if the specified module's (house and unit code) current level (0 to 10) is greater than or equal to ##. It will be false if the level is less than ##.
PresetLevel ==##	This condition will be true if the specified module's (house and unit code) Preset level (1 to 31) is equal to ## (specified number). It will be false if not.
PresetLevel <=##	This condition will be true if the specified module's (house and unit code) Preset level (1 to 31) is less than or equal to ## (specified number). It will be false if not.
PresetLevel >=##	This condition will be true if the specified module's (house and unit code) Preset level (1 to 31) is greater than or equal to ## (specified number). It will be false if not.

What is the IDLE State:

STARGATE keeps track of the current state of all 256 X-10 devices in a place called a state table. The device state can be ON, OFF, or IDLE. A visual readout of the state table is provided by the MegaController display.

The ON or OFF state is obvious, but what is this IDLE state, and why is it needed? It can't be sent or received on the power line, it isn't part of the X-10 modules or controllers, and it only exists inside the STARGATE, yet it's extremely important and useful.

In concept, IDLE is neither ON nor OFF, but more like an "available for use" or "ready to go" state. The nature of X-10 and some practical uses make it an ideal solution for a large number of situations.

When the STARGATE passes through your schedule, one primary job it has is to look for a change in the states of the X-10 devices. If it sees a change, it does whatever you told it to do. If nothing has changed, it ignores that scene or event and continues on. If it didn't act only on change of state, it would be sending out commands all the time.

Suppose you have the 8 button wireless remote control and the plug-in base receiver set for the M HouseCode. You decide that when button 5 is pressed on or off, you want the study light and the fireplace spotlight to turn on or off. They're both controlled by wall switches across the room, one assigned A-7 , and one assigned G-3 (doesn't matter what they are assigned to!).

Easy to program into the STARGATE. Basically, you put it in like this:

```
EVENT Sample On
 If
   (X: Switch 1  M-5) is ON
 Then
   (X: Study Light  A-7) ON
   (X: Hallway Light  A-2) ON
 End

EVENT Sample Off
 If
   (X: Switch 1  M-5) is OFF
 Then
   (X: Study Light  A-7) OFF
   (X: Hallway Light  A-2) OFF
 End
```

Fine. Flows logically, easy to setup. You push button M-5 to ON, and they both turn on. You push M-5 to OFF, and they both turn off. How is the STARGATE interpreting this? It received M-5 ON, from your wireless controller, which was a change to the state of M-5, so it rolled along turning on the lights you assigned on the other codes. The STARGATE passes through the schedule around many times a second, watching for a change to the state of M-5. The next pass through your schedule, it checked M-5 for it's current state (ON). Until it sees M-5 change, it doesn't try to turn on the lights again.

Now to turn the lights off. You push button M-5 to OFF, and they both turn off. When you sent M-5 OFF, the STARGATE received it and saw the change in the state of M-5, so it turned off both lights. Next time through the schedule, it left everything alone.

So, it works the way you expect. What's the problem? Where's that IDLE state stuff come in? Let's throw in a typical monkey wrench. Your four-year old boy zips in while you're still sitting there and punches the wall switch for the study light, flipping it off manually. You push the button M-5 ON on your controller like you did originally, but this time the lights don't come on. Nothing happens. You try pushing it ON again a couple times, still nothing. You push it OFF, and now the remaining light goes off. Now you push M-5 ON again, and finally both lights go ON. What's going on here?

A limitation of X-10 devices is that most are one-way.. which means they can't notify the STARGATE when they are turned on or off manually! The STARGATE was still watching for a change to the state of M-5 (ON, in the example). When you pressed M-5 ON to flip the light back on that your child turned off manually, the STARGATE checked M-5, found it set to ON already, so it didn't try to turn on the lights again. Not until you pushed it off, changing the state, did it act on it.

So why not have STARGATE always act on M-5 ON, every pass through the schedule, instead of watching for the change in its state? In this example, it would then send an 'ON' command to the two lights, constantly, every pass through the schedule. You wouldn't be able to turn off the lights manually, not to mention the power line tied up with constant X-10 commands.

You could do some clever programming, setting flags and such, to get around this X-10 limitation, but it would be complicate things quite a bit. Enter the IDLE state. If you could set the M-5 button to IDLE, which is neither ON nor OFF, it would then be available for use . A push of M-5 ON at any time, (like after the child turned off the wall switch manually) would then be a change in the state of M-5 (from IDLE to ON) and the STARGATE would re-send the commands to turn the lights on.

Let's rewrite the example to set the state of M-5 to IDLE after each push:

```
EVENT Sample On
 If
   (X: Switch 1  M-5) is ON
 Then
   (X: Study Light  A-7) ON
   (X: Hallway Light  A-2) ON
   (X: Switch 1  M-5) Idle
 End

EVENT Sample Off
 If
   (X: Switch 1  M-5) is OFF
 Then
   (X: Study Light  A-7) OFF
   (X: Hallway Light  A-2) OFF
   (X: Switch 1 M-5) Idle
 End
```

Now each time that you push M-5 on your wireless controller, STARGATE re-sends the ON or OFF commands to your lights, even if they have been turned on or off manually. Since your event always sets the M-5 to IDLE state after each time you push the button, any M-5 ON or OFF code coming in is a change to the M-5 state, so STARGATE will trigger the event.

You will find having the ability to set switches (such as M-5 in the example) and devices to the IDLE state (making them available to be triggered), will make writing events into your schedule much easier than the fancy programming necessary to otherwise cope with X-10 limitations.

Another way to write this example would be to use the X-10 Sequence. When an Event is using an X-10 Sequence, it is waiting for an exact sequence of X-10 Commands on the Powerline, and they must happen within a certain amount of time.

Using X-10 Sequences in the previous example, the IDLE state is not needed. This is because the Event is looking for a sequence of X-10 commands, not a state change, so there is no need to change the state of anything.

Let's rewrite the example to look for a sequence instead of a state change:

```
EVENT Sample On
 If
   (XSEQ: M-5 M-ON) received within 4 seconds
 Then
   (X: Study Light  A-7) ON
   (X: Hallway Light  A-2) ON
 End

EVENT Sample Off
 If
   (XSEQ: M-5 M-OFF) received within 4 seconds
 Then
   (X: Study Light  A-7) OFF
   (X: Hallway Light  A-2) OFF
 End
```

Now each time that you push M-5 (sending M-5 M-ON) on your wireless controller, STARGATE sees the sequence and re-sends the ON commands to your lights, even if they have been turned on or off manually.

X-10 State vs. X-10 Sequence

X-10 State: The present status, ON/OFF/Idle, of the X-10 device at the time STARGATE is looking at it in a schedule.

X-10 Sequence: A series of any valid X-10 transmissions, either HouseCode/UnitCode or HouseCode/FunctionCode, that STARGATE receives.

X-10 Sequence

Selecting X-10 Sequence from the menu will open the X-10 Sequence Box. This IF condition will be TRUE if STARGATE receives or transmits the X-10 Command sequence, in the exact order and within the time window that you specify in the dialog box. After completing the form, press the [OK] button to enter the new information into the schedule, or [CANCEL] to return without saving.

What is it STARGATE monitors the Powerline and compares received only, transmitted only, or either received/transmitted commands on the Powerline with the command(s) that you specify in the X10 Sequence box. A command sequence can consist of up to 6 X-10 commands and a time window that they must occur in. An X-10 command sequence can consist of any X-10 commands, A1, C5, P-ON, F-OFF, D-ALL UNITS OFF, etc.

How Used When used in the schedule, STARGATE will monitor the Powerline and if the X-10 commands STARGATE receives are the same as those you have specified, and they occur within the time window, this statement will be TRUE.

Menu Choices	**Description**
HouseCode	The HouseCode used in the command
UnitCode	The UnitCode used in the command if the UnitCode radio button is chosen
UnitCode	Select a UnitCode command
ON Command	Select the ON command
OFF Command	Select the OFF command
Dim Command	Select the DIM command
Bright Command	Select the BRIGHT command
All Lights ON	Select the All Lights ON command
All Lights OFF	Select the All Lights OFF command
All Units OFF	Select the All Units OFF command
Preset Command	Select the Preset command and a preset level
Time Window	The Time frame that the commands must occur in. Note that each X-10 command takes approximately 1 second to send if sent with no delay in-between, so be sure to allow enough time for all of the commands to be seen in the Time Window
[Add]	This will add a command to the X-10 Sequence list where the highlight bar is positioned
[Replace]	This will replace a command in the X-10 Sequence list where the highlight bar is positioned with selections made
[Delete]	This will delete the command that is highlighted in the list box
[OK]	This will accept the choices made and add to the schedule
[Cancel]	This will exit the X-10 Sequence dialog box without adding or modifying the schedule

Example: Using 1 UnitCode to control 4 different lights.

```
EVENT: lights 1
 If
   (XSEQ: A-1  A-OFF  A-1  A-OFF) Received within  4 seconds
 Then
   (X:Lamp 1  B 1) ON
 End

EVENT: lights 2
 If
   (XSEQ: A-1  A-OFF  A-1  A-ON) Received within  4 seconds
 Then
   (X:Lamp 2  B 2) ON
 End

EVENT: lights 3
 If
   (XSEQ: A-1  A-ON  A-1  A-OFF) Received within  4 seconds
 Then
   (X:Lamp 3   B 3) ON
 End

EVENT: lights 4
 If
   (XSEQ: A-1  A-ON  A-1  A-ON) Received within  4 seconds
```

Then
(X:Lamp 4 B 4) ON
End

If Timer

What is it

These are the Timers that you have defined in the Device DataBase for use in your schedule. Timers are countdown timers, meaning, once a timer is loaded, it will decrement every second until it reaches zero (00:00:00), or is stopped by an Event. The maximum amount of time that can be loaded into a Timer is 18 hours, 12 minutes, 16 seconds (18:12:16). Once the Timer has been loaded, it will start counting down to zero (00:00:00).

There are 4 states that a Timer can be in:

Expiring: A Timer is Expiring when it changes from 00:00:01 to 00:00:00. The Timer will stay in the Expiring state for one complete pass through your Schedule, then change to the Stopped state.

Running: While a Timer is counting down, it is in the Running state.

Not Running: While a Timer is not counting down (opposite of Running).

Stopped: A Timer can get into the Stopped state 1 of 2 ways. 1) The Timer can be stopped using the Timer Stop Action in an Event, or 2) After the Timer reaches the Expiring state, it goes into the Stopped state.

Cleared: After every Schedule download, all Timers are put into the 'Cleared' state. *Note that this is different from the 'Stopped' state, it cannot be tested for in an Event.* Timers will stay in the 'Cleared' state until an Event changes its state. It may be necessary to create an 'Initialization Event' that after a download, puts the Timers into a state other than 'Cleared'.

Example:

EVENT: Initialization Event
If
(X: N-16) is ON
or (X: N-16) is OFF
Then
(T:HallwayLt) STOP
End

Example: Timer is loaded with 15 seconds

Timer Value	Timer State
00:00:00	Stopped
00:00:15	Running (just loaded with 15 seconds)
00:00:14	Running
. . .	
00:00:01	Running
00:00:00	Expiring (Timer stays in this state for 1 pass through schedule)
00:00:00	Stopped

How Used

Timers can be used in an Event to provide 1-second resolution timed events. The Timers can be stopped, started, cleared or loaded with a new countdown time at any time.

Menu Choices	**Description**
Expiring	If the Timer is Expiring (the Timer counts down to 00:00:00), this IF statement will be true.
Running	If the Timer is running, this IF statement will be true.
Not Running	If the Timer is NOT running, this IF statement will be true.
Stopped	If the Timer has been stopped, this IF statement will be true.

Example:

EVENT: Hallway Motion

```
If
  (XSEQ:  A-14 A-ON) Received within 4 seconds
Then
  (T:HallwayLt) Load 0:02:00
  (X:Hall Light) ON
End

EVENT: Hallway Turn OFF
If
   (T:HallwayLt) is Expiring
Then
   (X:Hall Light)  OFF
End
```

In this example, when motion is detected in the hallway, the X-10 command A-14 A-ON is sent. When STARGATE receives this command, the "HallwayLt" timer gets loaded with 2 minutes and the hallway light turns ON (in EVENT "Hallway Motion"). When the timer reaches 0:00:00 (Expiring), the second EVENT "Hallway Turn OFF" will turn the hallway light OFF.

NOTE: TIMERS ARE RETRIGGERABLE, THAT IS, WHILE THEY ARE RUNNING, A NEW LOAD VALUE CAN BE LOADED INTO THE TIMER. IN THE PREVIOUS EXAMPLE, IF THE TIMER HAD COUNTED DOWN TO SAY, 90 SECONDS, AND THERE WAS MOTION IN THE HALLWAY AGAIN CAUSING THE A-14 A-ON COMMAND TO BE SENT AGAIN, THE "HALLWAYLT" TIMER WOULD BE RELOADED WITH 2 MINUTES

If Flag

What is it Flags are variables that have 3 states, Set , Clear or IDLE. Events can use Flags to communicate with each other.

How Used When used in the schedule, STARGATE will check the state of the Flag and compare it to that specified.

Menu Choices	**Description**
Set	If the Flag's state is Set, this IF statement will be true
Clear	If the Flag's state is Clear, this IF statement will be true
IDLE	If the Flag's state is IDLE, this IF statement will be true
Not Set	If the Flag's state is NOT Set, this IF statement will be true
Not Clear	If the Flag's state is NOT Clear, this IF statement will be true
Not IDLE	If the Flag's state is NOT IDLE, this IF statement will be true

Example: Tracking System

```
EVENT: Tracking 1
 If
  (X:Hall Motion A-14) is ON
 Then
  (F:Hallway Track) SET
 End

EVENT: Tracking 2
 If
/* going from hallway to study */
   (X:Study Motion) is ON
   and (F:Hallway Track) is SET
 Then
   (X:Hall Light)  OFF
   (X:Study Light)  ON
   (F:Hallway Track)  CLEAR
   (F:Study Track)  SET
 End

EVENT: Tracking 3
 If
/* going from study to hallway */
   (X:Hall Motion A-14) is ON
   and (F:Study Track) is SET
 Then
   (X:Study Light)  OFF
   (X:Hall Light)  ON
   (F:Study Track)  CLEAR
   (F:Hallway Track)  SET
 End
```

In the tracking example above, flags are used to keep track of the last room that was occupied. Using motion detectors and keeping track of the last room that was occupied (with flags), a sophisticated tracking system can be developed that will turn the lights on in the room that you walk into, as well as turn off the lights in the room you were just in.

If Variable

What is it Variable values can range anywhere from 0 to 255. The Variable can be compared against a value, A/D Input, HVAC temperature or SetPoint, or another Variable and used to trigger an Event.

How Used When used in the schedule, the Variable will be compared against the type that you specify.

Compare Options

Equal to	Variable is equal to
Less than	Variable is less than
Greater than	Variable is greater than
Less than/Equal to	Variable is less than or equal to
Greater than/Equal to	Variable is greater than or equal to
Not Equal to	Variable is not equal to
Changes Value	This condition will be true if the value changes since the last schedule pass.
Increases in Value	This condition will be true if the value has increased since the last schedule pass
Decreases in Value	This condition will be true if the value has decreased since the last schedule pass
Bits 0-7 Set	These conditions check to determine if the specified bit is set (has a value of one). Variables/Analog Inputs/HVAC values are stored as 8-bit numbers ranging from 0 to 255. Bit 0 is the least significant bit (LSB) and bit 7 is the most significant bit (MSB). Here are some examples: If the variable = 0(decimal) (00000000b), no bits are set. If the variable = 8(decimal) (00001000b), only bit 3 is set. If the variable = 6(decimal) (00000110b), bits 1, and 2 are set. If the variable = 192(decimal) (11000000b), bits 7 and 6 are set.
Bits 0-7 Not Set	These conditions check to determine if the specified bit is NOT set (has a value of zero). Variables /Analog Inputs/HVAC values are stored as 8-bit numbers ranging from 0 to 255. Bit 0 is the least significant bit (LSB) and bit 7 is the most significant bit (MSB).
Compare Against	
Value	If selected, the Variable highlighted in the listbox will be compared against a value that can range from 0 to 255 (see picture above).
Analog Input	If selected, the Variable highlighted in the listbox will be compared against an Analog Input shown in the listbox to the right.
Variable	If selected, the Variable highlighted in the listbox will be compared against a Variable picked from the listbox to the right.
HVAC	If selected, the Variable highlighted in the listbox will be compared against an HVAC value shown in the listbox to the right.

IF Macro

What is it	An IF Macro is a set of IF Conditions that has a name (like an Event with no THEN actions) and can be used multiple times in a Schedule. Each IF Macro has a logic type associated with it, similar to the logic type of an Event. If the logic type is AND, then all of the conditions must be true for the IF Macro to be true. If the logic type is OR, the only 1 of the conditions needs to be true for the IF Macro to be true.
How Used	When used in the schedule, STARGATE will evaluate all of the IF Conditions in the IF Macro. If the conditions meet the requirements of the IF Macro (AND/OR), the IF Macro statement will be true.

Example 6 IF Macro Example: Gone@Night

IF MACRO:
If
(X:Alarm Armed) is ON
and After SunSet SMTWTFS
End

Example 7 Using IF Macro "Away at Night"

EVENT: Random Lights1
If
(IF MACRO:Gone@Night)
and Time is 8:30 PM SMTWRFS Security Mode
Then

(X:Kitchen Lights) ON
End

EVENT: Random Lights2
If
(IF MACRO:Gone@Night)
and Time is 9:30 PM SMTWRFS Security Mode
Then
(X:Dining Lights) ON
End

In the examples above, an IF MACRO was used by both Events to check if the Alarm is Armed and if it is dark outside. Once you define an IF MACRO, you may use it in any Event, any number of times.

If Comment

What is it	A Comment can be a description or a note. It does not affect the way the Event works in any way.
How Used	When used in the schedule, a Comment can add some description of what the Event is doing. A Comment can be placed anywhere within the Event, but not between Events.

If Time

What is it	A Time condition is a time that you want something to happen.
How Used	When used in the schedule, STARGATE will compare the current time of day to the time you choose. If the times match, the IF statement will be TRUE.

Menu Choices	**Description**
Equal to	If the "Equal to" radio button is pressed, the current time must be equal to the time you have entered and match the days you chose in order to be considered true.
Before	If the "Before" radio button is pressed, the current time must be **AFTER Midnight** and **BEFORE the specified time**, and match the days you chose, in order to be considered true.
After	If the "After" radio button is pressed, the current time must be **AFTER the specified time** and **BEFORE Midnight** (11:59:59 PM), and match the days you chose, in order to be considered true.
Days	By selecting the checkbox next to the days, you can specify the day(s) this condition must occur.
☑ Security Mode	Security Mode will add or subtract a random amount of time from the time entered. Every day a new random number is generated and added to the time entered. This feature is useful to make lights go on or off at random times to give a more 'lived in' look.

STARGATE's day begins at midnight and ends at 11:59 PM. If you are using an IF statement such as 'Time is after 8:00 PM', it will be true from 8:00 PM until midnight (when STARGATE's day ends).

As an example, Otto would like to turn his outdoor lights on when he presses the button on his mini-controller, but only if it is at night (after 8:00PM for this example).

EVENT Outdoor lights
If
Time is After 8:00 PM SMTWTFS
and (X:minibutton) is ON
Then
(X:Outdoorlgts) ON
End

This is fine until Otto stays up after midnight one evening. Once the time is after midnight (11:59 PM), he could not turn his lights on. He solved this by adding another Time condition to his Event.

EVENT Outdoor lights
If
Time is After 8:00 PM SMTWTFS
or Time is Before 6:00 AM SMTWTFS
-AND-
(X:minibutton) is ON
Then
(X:Outdoorlgts) ON
End

Now, if is after 8pm or before 6am, and Otto presses the button, his light will turn on.

NOTE: YOU MUST USE OR LOGIC WHEN THE IF CROSSOVER MIDNIGHT TO THE NEXT DAY.

If Time Label

What is it — A Time Label is a time that has descriptive name. It can be used to give a meaningful name to a particular time.

Example: "Wakeup" could mean 5:45 AM . MTWTF .

"Dusk" could mean 30 minutes after SunSet

How Used — When used in a schedule, the current time of day will be compared to the time in the Time Label. If the times meet the requirements that have been entered into the Time Label, the IF statement will be TRUE.

Menu Choices	**Description**
Equal To	The current time and day must EQUAL the TimeLabels time and day exactly.
Before	If selected, the current time must be **AFTER Midnight** and **BEFORE the TimeLabels time** and the days must match.
After	If selected, the current time must be **AFTER the TimeLabels time** and **BEFORE Midnight** and the days must match.

If Date

What is it — Dates are a particular Month and Day. They are used to control an Event's actions to a particular day of the year, or a range of days. An example would be changing heating and cooling patterns based on the seasons.

How Used — When used in the schedule, STARGATE will compare the current date against the month and day that you have specified into your schedule.

Menu Choices	**Description**
Equal To Date	When the current date becomes **EQUAL** to the date specified, this IF statement will be TRUE.
Before Date	When the current date is **AFTER January 1st** and **BEFORE the specified date**, this IF statement will be TRUE, otherwise it is FALSE.
After Date	When the current date is **AFTER the specified date** and **BEFORE January 1st**, this IF statement will be TRUE, otherwise it is FALSE.
Even Days	Condition is true if the current day of the month is an even number (2,4,6, etc.).
Odd Days	Condition is true if the current day of the month is an odd number (1,3,5, etc.).
Season – Spring	Condition is true if the current date is between March 20 and June 20.
Season – Summer	Condition is true if the current date is between June 21 and September 21.
Season – Fall	Condition is true if the current date is between September 22 and December 20.
Season – Winter	Condition is true if the current date is between December 21 and March 19.
AM	Condition is true if current time is between 12:00 AM (midnight) and 11:59 AM.

PM	Condition is true if current time is between 12:00 PM (noon) and 11:59 PM.
Daytime	Condition is true if current time is between 6:00 AM and 5:59 PM.
Nighttime	Condition is true if current time is between 6:00 PM and 5:59 AM.
Light	Condition is true if current time is after sunrise and before sunset.
Dark	Condition is true if current time is after sunset and before sunrise.

As an example, Otto would like his Christmas lights to come on at 6:00 PM everyday if it's after December 15th.

```
EVENT Christmaslights
 If
  Date is After Dec 15
  and Time is 6:00 PM  SMTWTFS
 Then
  (X:Christmaslgts)  ON
 End
```

The Christmas lights would be turned on at 6:00 PM everyday as long as it is after December 15th. When the date becomes January 1st, the lights would not be turned on since this is the start of another year.

If Otto wanted to have his lights come on from December 15th - January 5th, his Event would look like this:

```
EVENT Christmaslights
 If
  Date is After Dec 15
  or Date is Before Jan 5
  -AND-
  Time is 6:00 PM  SMTWTFS
 Then
  (X:Christmaslgts)  ON
 End
```

NOTE: YOU MUST USE OR LOGIC WHEN DATES CROSS OVER TO THE NEXT YEAR.

If SunRise/SunSet

Selecting SunRise/SunSet from the menu will open the SunRise/SunSet box. You can choose to have this IF condition be TRUE if the current time is Equal to, Before or After SunRise or SunSet on a particular day. After completing the form, press the [OK] button to enter the new information into the schedule, or the [CANCEL] to return without saving anything.

What is it — Everyday at midnight, STARGATE re-calculates the SunRise and SunSet times, based on your location. Your schedule can use these times to control Events that you want to be based on SunRise or SunSet times. The calculated SunRise and SunSet times has an accuracy of plus or minus 10 minutes from the true SunRise or SunSet.

How Used — When used in the schedule, STARGATE will compare it's current time to the calculated SunRise or SunSet time and also compare the current day of the week.

Menu Choices	**Description**
Equal To	If the current time is EQUAL to the SunRise or SunSet time on the day(s) selected, this IF statement will be true.
Before	If the current time is **AFTER Midnight** and **BEFORE the SunRise or SunSet time** on the day(s) selected, this IF statement will be true.
After	If the current time is **AFTER the SunRise or SunSet time** and **BEFORE Midnight** on the day(s) selected, this IF statement will be true.
SunRise	If selected, STARGATE will use the calculated SunRise time in this statement.
SunSet	If selected, STARGATE will use the calculated SunSet time in this statement.

☑ Security Mode When selected, STARGATE will add the security offset to the SunRise or SunSet time. This will change the SunRise/SunSet time by adding/subtracting the Security Offset to the time.

NOTE: FOR SUNRISE/SUNSET CALCULATIONS TO BE ACCURATE, THE LONGITUDE, LATITUDE AND TIME ZONE INFORMATION MUST BE CORRECT.

If ASCII In

What is it ASCII text data can be sent to STARGATE and used to trigger an Event. The ASCII text can be up to 32 characters in length and must be terminated with a carriage return.

How Used The ASCII text sent to STARGATE can ***match exactly*** (upper/lower case, spaces, etc.), match a range of characters or test for a number of characters. Programs other than Event Manager can send ASCII text to STARGATE to trigger Events. Select the STARGATE COM port ("Source") which will receive the ASCII data.

Menu Choices	**Description**
Input Data Match	The ASCII input string must ***match exactly*** (upper/lower case, spaces, etc.) the ASCII In statement
Input Data Range Match	This condition is used to compare the input string or a portion of it to certain characters. Example: Match 'ZZZZZ' starting at char X The symbol meanings are: X refers to the location in the string of the first character to compare (i.e., the character number). ZZZZZZZZ are the characters to compare the received data to. The condition is true if all characters match exactly, false is any do not match.
Number of characters received equals ##	Condition is true if the number of characters received (serial string length) is equal to the value.
Number of characters received is less than ##	Condition is true if the number of characters received (serial string length) is less than or equal to the value.
Number of characters received is greater than ##	Condition is true if the number of characters received (serial string length) is greater than or equal to the value.

Example 8 ASCII In

```
EVENT: ASCII Input Example
 If
   ASCII-In: 'Hello Otto' [COM 1]
 Then
   (X:Study Light  A7) ON
 End
```

In the previous example, when the ASCII text 'Hello Otto' is sent to STARGATE, it will trigger the Event to turn the Study Light ON.

2) Suppose an alarm system sends ASCII text messages for its alarm states. Typical messages the alarm would send are:

Alarm Violation

Alarm Armed

Alarm Ready

To keep track of Alarm states, ASCII In conditions are used.

Example 9 ASCII In

```
EVENT:  Alarm Status
If
   ASCII-In: Match 'Alarm' starting at character number 1[COM1]
Then
  |-If
  |  ASCII-In: Match 'Armed' starting at character number 7[COM1]
  |Then
  |  " Armed state == 1 "
  |  (V:Alarm State) ) LOAD with 1
  |-End
  |-If
  |  ASCII-In: Match 'DisArmed' starting at character number 7[COM1]
  |Then
  |  " Disarmed state == 2 "
  |  (V:Alarm State) ) LOAD with 2
  |-End
  |-If
  |  ASCII-In: Match 'Violated' starting at character number 7[COM1]
  |Then
  |  " Violated state == 3 "
  |  (V:Alarm State) ) LOAD with 3
  |-End
End
```

3) Suppose you have a weather station that reports the current temperature in the following format:

Temp = 85 degrees

To match the string and convert the value to a variable the following event could be used.

Example 10 ASCII In

```
EVENT:  Convert Temperature
If
   ASCII-In: Match 'Temp = ' starting at character number 1[COM1]
Then
  Put value of received char #8-9 into user_VAR [COM1]
  (V:Temperature) load with user_VAR
End
```

NOTE: THE SERIAL PORT ON STARGATE WILL NOT ECHO ANY ASCII TEXT THAT IS SENT TO IT. THE ASCII TEXT INPUT TO STARGATE MUST BE TERMINATED WITH A CARRIAGE RETURN (LINE FEEDS ARE NOT NEEDED).

AND Statement

Selecting AND Statement from the menu will add an AND statement to the Event.

What is it AND statements are used in OR type Events.

How Used You can use the AND statement to create compound OR/AND type Events.

Example 11 AND Statement

```
EVENT: OR/AND Example
If
   (X:P1 ) is ON
   or (X: P2 ) is ON
   -AND-
```

```
  (X:P3 ) is ON
  or (X: P4 ) is ON
Then
  (X: B7) ON
End
```

In the previous OR/AND example, if either P1 or P2 is ON, AND, if either P3 or P4 is ON, then turn B7 ON.

OR Statement

Selecting OR Statement from the menu will add an OR statement to the Event.

What is it OR statements are used in AND type Events.

How Used You can use the OR statement to create compound AND/OR type Events.

Example 12 OR Statement

```
EVENT: OR/AND Example
If
  (X:P1 ) is ON
  and (X: P2 ) is ON
  -OR-
  (X:P3 ) is ON
  and (X: P4 ) is ON
Then
  (X: B7) ON
End
```

In the previous AND/OR example, if P1 and P2 is ON, OR, if P3 and P4 is ON, then turn B7 ON.

If System Variables

What is it System Variables are variables internal to STARGATE that can be used in Schedules.

How Used The System Variables can be used to trigger an Event

Menu Choices	Description
Power-Restore	This variable is set after power is restored after a power failure. It will be set for one pass through the Schedule, then it will be cleared. You may want to use this variable to force certain devices to an known state after power comes back on.
First Pass	This variable is for the first pass through a Schedule after a DownLoad. You may want to use this variable to force certain devices to an known state after a new DownLoad.
X10 Signal Loss	This variable is set when the X10 zero cross signal is not received. This can occur if the TW523 PLI is unplugged or if the AC power powering the TW523 goes out. This variable could be used to detect a power failure if running on battery backup.

Example 13 Power Restore

```
EVENT: Power Restore Example
If
  Power-Failure
Then
  /* Reset critical Devices */
  (X:Hot Tub  B-5)  OFF
  (X:Sprinklers  D-1)  OFF
End

EVENT: First Pass Example
If
  First Pass
Then
```

```
  /* Setup Certain Devices */
  (F:Security Active)  OFF
  (X:Modem  M-1)  ON
End

EVENT: X10 Loss Example
If
  X10 Loss
Then
  LOG ' AC Power Loss'
End
```

If Digital Input

Digital Inputs are 'ON' when sufficient voltage (4 - 24v ac or dc) is applied between the two inputs when configured in voltage mode, or when configured for switch input, an electrical connection is made between the two inputs.

How Used When used in a schedule, STARGATE will compare If the condition is met, the IF statement will be TRUE.

Menu Choices	**Description**
ON	This IF statement will be TRUE as long as a voltage is applied to the Digital Input selected in the list box.
OFF	This IF statement will be TRUE as long as there is no voltage to the Digital Input selected in the list box.
Toggle	The IF statement will be TRUE if the Digital Input changes from either ON to OFF or OFF to ON, it doesn't matter which way it changes, only that it did change.
Goes ON	This IF statement will be TRUE when a voltage is first applied to the Digital Input selected in the list box. It is equivalent to TOGGLES and IS ON.
Goes OFF	This IF statement will be TRUE when a voltage is first removed from the Digital Input selected in the list box. It is equivalent to TOGGLES and IS OFF.

If Analog Inputs

What is it An Analog Input measures voltages that range from 0 to 5 volts DC. The converted value can range anywhere from 0 to 255. The Analog value can be compared against a value, Analog Input, HVAC temperature or SetPoint, or Variable and used to trigger an Event.

How Used When used in the schedule, the Analog Input will be compared against the type that you specify.

Compare Options

Equal to	Analog Input is equal to
Less than	Analog Input is less than
Greater than	Analog Input is greater than
Less than/Equal to	Analog Input is less than or equal to
Greater than/Equal to	Analog Input is greater than or equal to
Not Equal to	Analog Input is not equal to
Changes Value	This condition will be true if the value changes since the last schedule pass.
Increases in Value	This condition will be true if the value has increased since the last schedule pass
Decreases in Value	This condition will be true if the value has decreased since the last schedule pass
Bits 0-7 Set	These conditions check to determine if the specified bit is set (has a value of one). Variables/Analog Inputs/HVAC values are stored as 8-bit numbers ranging from 0 to 255. Bit 0 is the least significant bit (LSB) and bit 7 is the most significant bit (MSB). Here are some examples:

	If the Analog Input = 0(decimal) (00000000b), no bits are set.
	If the Analog Input = 8(decimal) (00001000b), only bit 3 is set.
	If the Analog Input = 6(decimal) (00000110b), bits 1, and 2 are set.
	If the Analog Input = 192(decimal) (11000000b), bits 7 and 6 are set.
Bits 0-7 Not Set	These conditions check to determine if the specified bit is NOT set (has a value of zero). Variables /Analog Inputs/HVAC values are stored as 8-bit numbers ranging from 0 to 255. Bit 0 is the least significant bit (LSB) and bit 7 is the most significant bit (MSB).
Compare Against	
Value	If selected, the Analog Input highlighted in the listbox will be compared against a value that can range from 0 to 255 (see picture above).
A/D Device	If selected, the Analog Input highlighted in the listbox will be compared against an A/D input shown in the listbox to the right.
Variable	If selected, the Analog Input highlighted in the listbox will be compared against a Variable picked from the listbox to the right.
HVAC	If selected, the Analog Input highlighted in the listbox will be compared against an HVAC value shown in the listbox to the right.

If Relay Output

What is it	The state of a Relay Output can be compared and used in a schedule.
How Used	When used in a schedule, STARGATE will test the state of a Relay.

Menu Choices	**Description**
ON	This IF statement will be TRUE if the Relay is in the ON state.
OFF	This IF statement will be TRUE if the Relay is in the OFF state.

If Infrared

What is it	When used in conjunction with the JDS InfraRed Xpander™, received Infrared Command Sequences and Power Sensor Input states can be compared. STARGATE monitors the InfraRed Xpander™ and compares Infrared commands received with the command(s) that you specify in the IR Sequence box. A command sequence can consist of up to 10 commands and a time window that they must occur in. An IR command sequence can consist of any learned IR commands.
How Used	First, configure the InfraRed Xpander™ using the Define | IR & IO | IRXpander setup screen. IR Sequences can be used after IR codes have been learned into the InfraRed Xpander™. IR Power Sensor states can be used after names have been assigned to the ports.

IR Sequence

An IR sequence is a number of IR commands received by the InfraRed Xpander™ within a time window.

IR Power Sensor

IR Power Sensors can be tested for ON and OFF states.

If Telephone

The IF | Telephone menu has two fields: Telephone Sequence and C.O. Line Status.

The Telephone Sequence field lets you program events to respond to sequences of TouchTones, off-hook and on-hook signals.

The C.O. Line Status field lets you program events to respond to off-hook, on-hook, hold, ring(s), Caller ID, Remote User, TouchTone to user_VAR and TouchTone to TimeLabel done.

To add a Telephone Condition to an event:

1) Click on the IF line of the event then click on ADD.

2) Click TELEPHONE.

3) Click the desired sequence of TouchTones, off-hook, and on-hook signals to respond to.

To program a response to any TouchTone digit, click the ANY TOUCHTONE button.

4) Click OK. A "Telephone" line will appear in the IF section of the event.

Note: Off-Hook is represented by "^", On-Hook by "+", Any TouchTone by "?".

Telephone Sequence

Telephone Sequences can be based upon any TouchTone digit or ONHook/OFFHook states.

Telephone Status

CO OFFHook	Condition is true when the CO Line is in the OFFHook state (a phone is off the hook).
CO ONHook	Condition is true when the CO Line is in the ONHook state (a phone is on the hook).
CO Off Hold	Condition is true when the CO Line is **not** in the Hold state.
CO On Hold	Condition is true when the CO Line is in the Hold state.
ICM OFFHook	Condition is true when a phone connected to the ICM port is in the OFFHook state (a phone is off the hook).
ICM ONHook	Condition is true when a phone connected to the ICM port is in the ONHook state (a phone is on the hook).
Ring	Condition is true the number of Rings specified equals the number of rings of an incoming call.
TouchTone to user_VAR done	Condition is true when the TouchTone to user_VAR conversion is completed. The TouchTone to user_VAR conversion is completed when 1 - 3 TouchTone digits followed by the pound (#) digit is entered. The conversion is aborted if a) an ONHook condition occurs before pound digit entered, b) 10 seconds elapse after the start of the conversion, c) a value greater than 255 is entered. If aborted, the user_VAR value will be loaded with 255. Typical uses for this condition is to load another variable or HVAC SetPoint after a successful conversion.
TouchTone to TimeLabel done	Condition is true when the TouchTone to TimeLabel conversion is completed. The TouchTone to TimeLabel conversion is completed when 1 - 4 TouchTone digits followed by the star (*) digit for AM or the pound (#) digit for PM is entered. The conversion is aborted if a) an ONHook condition occurs before the star or pound digit is entered, b) 10 seconds elapse after the start of the conversion, c) an invalid time is entered. If aborted, the Time Label will not be loaded. Typical use for this condition is to load and announce the TimeLabel after a successful conversion.
CID Match	Condition is true when an incoming call's Caller ID number matches the number entered. A question mark can be used as a wild character to match any digit.
CID Unknown Number	Condition is true when an incoming call's Caller ID number is reported as an Unknown Number. This can occur when a call is coming from an area that does not support Caller ID.
CID Private Number	Condition is true when an incoming call's Caller ID number is reported as a Private Number. This can occur when the Caller ID information is blocked by the person originating the call.

Example 14 :HOOKFLASH MANIA

With this event, if you pick up then hang up the phone three times within 6 seconds, STARGATE will turn off all the lights.

EVENT: Hookflash Mania

```
If
      Telephone Seq: '   ^   +   ^   +   ^   +   ' is Received within 6 seconds
Then
      (XCMD: A All-Units-Off)
End
```

Example 15: CALLER ID ANNOUNCE

In the following example, STARGATE's Caller ID identifies an incoming call and announces the caller through the speaker. It then answers the call and plays a message to the caller. An on-hook signal is issued after 3 minutes to prevent STARGATE from tying up the C.O. line.

```
EVENT: CALLER ID JOHN
  If
     CallerID: 212-555-1212
 Then
      Voice: "It's John, Pick Up" [SPEAKER]
      Telephone: OFF-HOOK
      Voice: "Hi John, hold on, I'll be right there" [C.O. Line]
      Delay 0:03:00
      Telephone: ON-HOOK
  End
```

Example 16 : VOICE PAGING

In this example, picking up a phone (^), then pressing *72 will connect the Intercom to the Speaker Output to allow live voice paging until the phone is hung up (+).

```
EVENT: ACTIVATE PAGING
  If
    Telephone Seq: '^*72' is Received within 3 seconds
Then
      (AUDIO PATH: Connect Intercom to Speaker Output)
End

EVENT: DE-ACTIVATE PAGING
  If
    Telephone Seq: '+' is Received within 1 seconds
Then
      (AUDIO PATH: Disconnect Intercom to Speaker Output)
End
```

Example 17: LONG DISTANCE CALL ALERT

With this event, picking up a phone (^), then pressing 1followed by any ten TouchTone digits (??????????) within 15 seconds will turn on module A-1 for 5 seconds to indicate a long distance call is being made.

```
EVENT: Long Distance Call Alert
  If
    Telephone Seq: '^1??????????' Received within 15 seconds
  Then
    (XCMD: A-1 A-ON)
    Delay 0:00:05
    (XCMD: A-1 A-OFF)
  End
```

If HVAC

These are the Thermostats that you have defined in Define | HVAC.

What is it	The Thermostat's SetPoint and Temperature can be compared against a value, Analog Input, another HVAC temperature or SetPoint, or Variable and used to trigger an Event.
How Used	When used in the schedule, the Thermostat's SetPoint or Temperature will be compared against the type that you specify.

Compare Options

Equal to	SetPoint or Temperature is equal to
Less than	SetPoint or Temperature is less than
Greater than	SetPoint or Temperature is greater than
Less than/Equal to	SetPoint or Temperature is less than or equal to
Greater than/Equal to	SetPoint or Temperature is greater than or equal to
Not Equal to	SetPoint or Temperature is not equal to
Changes Value	This condition will be true if the value changes since the last schedule pass.
Increases in Value	This condition will be true if the value has increased since the last schedule pass
Decreases in Value	This condition will be true if the value has decreased since the last schedule pass
Bits 0-7 Set	These conditions check to determine if the specified bit is set (has a value of one). Variables/Analog Inputs/HVAC values are stored as 8-bit numbers ranging from 0 to 255. Bit 0 is the least significant bit (LSB) and bit 7 is the most significant bit (MSB). Here are some examples: If the SetPoint or Temperature = 0(decimal) (00000000b), no bits are set. If the SetPoint or Temperature = 8(decimal) (00001000b), only bit 3 is set. If the SetPoint or Temperature = 6(decimal) (00000110b), bits 1, and 2 are set. If the SetPoint or Temperature = 192(decimal) (11000000b), bits 7 and 6 are set.
Bits 0-7 Not Set	These conditions check to determine if the specified bit is NOT set (has a value of zero). Variables /Analog Inputs/HVAC values are stored as 8-bit numbers ranging from 0 to 255. Bit 0 is the least significant bit (LSB) and bit 7 is the most significant bit (MSB).

Compare Against

Value	If selected, the SetPoint or Temperature highlighted in the listbox will be compared against a value that can range from 0 to 255 (see picture above).
A/D Device	If selected, the SetPoint or Temperature highlighted in the listbox will be compared against an A/D input shown in the listbox to the right.
Variable	If selected, the SetPoint or Temperature highlighted in the listbox will be compared against a Variable picked from the listbox to the right.
HVAC	If selected, the SetPoint or Temperature highlighted in the listbox will be compared against an HVAC value shown in the listbox to the right.

If VoiceMail

What is it	The number of messages in the various mailboxes can be compared against a value, A/D Input, HVAC temperature or SetPoint, or another Variable and used to trigger an Event.
How Used	When used in the schedule, the number of messages will be compared against the type that you specify.

Compare Options

Equal to	Variable is equal to
Less than	Variable is less than
Greater than	Variable is greater than
Less than/Equal to	Variable is less than or equal to
Greater than/Equal to	Variable is greater than or equal to
Not Equal to	Variable is not equal to
Changes Value	This condition will be true if the value changes since the last schedule pass.
Increases in Value	This condition will be true if the value has increased since the last schedule pass

Decreases in Value	This condition will be true if the value has decreased since the last schedule pass
Bits 0-7 Set	These conditions check to determine if the specified bit is set (has a value of one). Variables/Analog Inputs/HVAC values are stored as 8-bit numbers ranging from 0 to 255. Bit 0 is the least significant bit (LSB) and bit 7 is the most significant bit (MSB). Here are some examples: If the variable = 0(decimal) (00000000b), no bits are set. If the variable = 8(decimal) (00001000b), only bit 3 is set. If the variable = 6(decimal) (00000110b), bits 1, and 2 are set. If the variable = 192(decimal) (11000000b), bits 7 and 6 are set.
Bits 0-7 Not Set	These conditions check to determine if the specified bit is NOT set (has a value of zero). Variables /Analog Inputs/HVAC values are stored as 8-bit numbers ranging from 0 to 255. Bit 0 is the least significant bit (LSB) and bit 7 is the most significant bit (MSB).
Compare Against	
Value	If selected, the Variable highlighted in the listbox will be compared against a value that can range from 0 to 255 (see picture above).
Analog Input	If selected, the Variable highlighted in the listbox will be compared against an Analog Input shown in the listbox to the right.
Variable	If selected, the Variable highlighted in the listbox will be compared against a Variable picked from the listbox to the right.
HVAC	If selected, the Variable highlighted in the listbox will be compared against an HVAC value shown in the listbox to the right.

THEN/ELSE Actions

An Event will execute the THEN Actions when the condition(s) in the IF section are TRUE, and the ELSE Actions when the condition(s) in the IF section are FALSE. THEN and ELSE actions can be any combination of X-10 commands, IR commands, Telephone commands, Voice Responses, Audio Path, Relays (on/off), ASCII out, timers, flags, variables, logging a message and Then Macros.

To add a THEN or ELSE Action to an Event, place the highlight bar where you want to add the Action, in the THEN or ELSE section of the Event, and press the [ADD] button.

A popup menu will appear allowing you to choose the type of THEN or ELSE action that you want. Select the type by moving the highlight bar and pressing [Return] or click with the mouse. A dialog box will appear and allow you to fill in the information needed.

X-10 Device

What is it These are the X-10 Devices that have been defined and can be used in your schedule. You can also enter the HouseCode and UnitCode instead of using the X-10 Device DataBase.

How Used When used in the schedule, X-10 Devices can be turned ON, OFF, Dimmed or Brightened. Also global commands such as All Lights On, All Lights OFF and All Units OFF can be sent.

Menu Choices	Description
Set Module to IDLE	Sets module to IDLE
ON	Sets module to ON
OFF	Sets module to OFF
Brighten # steps	Brighten module # number of steps
Dim # steps	Dim module # number of steps
All Lights ON	Sends the All Lights ON command
All Lights OFF	Sends the All Lights OFF command
All Units OFF	Sends the All Units OFF command
Set to Level %	Sets the module to a specific level using standard X-10 DIM/BRI commands
Preset to Level %	Sets the module to a specific level using PreSet X-10 commands. Note the module must support the Preset Dim command.
Micro-Bright # steps	Micro Brighten the module # number of steps. This command is used with PCS style modules only.
Micro-Dim # steps	Micro Dim the module # number of steps. This command is used with PCS style modules only.
Status Request	Sends the Status Request command
Status is ON	Sends the Status=ON command
Status is OFF	Sends the Status=OFF command
Hail Request	Sends the Hail Request command
Hail Acknowledge	Sends the Hail Acknowledge command
Toggle Module State	Toggles the Modules State by sending an OFF command if the module is ON, an ON command if the module is OFF.
Refresh Module	Refresh the module by sending the current state of the module.
Enable Module	This command enables a module that was previously disabled. A module must be enabled before it will respond to any commands or transmit an X-10 signal via the schedule.
Disable Module	A disabled module will not respond to any commands except for Enable Module. This command can be used as a quick way to prevent any other part of your schedule from controlling a module.

Enable X10 ON Trigger	Enables Fast Events based on the X10 ON Trigger. Fast Events Triggers are enabled by default. This command will enable a trigger if it has been disabled.
Disable X10 ON Trigger	Disables Fast Events based on the X10 ON Trigger. Fast Events Triggers are enabled by default. This command will disable a trigger if it has been enabled.
Enable X10 OFF Trigger	Enables Fast Events based on the X10 OFF Trigger. Fast Events Triggers are enabled by default. This command will enable a trigger if it has been disabled.
Disable X10 OFF Trigger	Disables Fast Events based on the X10 OFF Trigger. Fast Events Triggers are enabled by default. This command will disable a trigger if it has been enabled.
Set State to ON	This command sets the current state in the state table to ON, Level 11. It does not send any X-10 signal over the power line.
Set State to OFF	This command sets the current state in the state table to OFF, Level 12. It does not send any X-10 signal over the power line.
Set State to IDLE	This command sets the current state in the state table to IDLE. It leaves the level unchanged. It does not send any X-10 signal over the power line.
Send ON Command Only	This command sends the X10 ON command.
Send OFF Command Only	This command sends the X10 OFF command.
Send BRI Command # times	This command sends the X10 BRI command ## number of times.
Send DIM Command # times	This command sends the X10 DIM command ## number of times.
Put current level into Variable	This command puts the X-10 module's current light setting into the specified variable. If the light is ON, its level (0 to 10) will be put in the variable. If the light is OFF, the variable is set to 11. This command allows you to store the current level and later set the light back to it. See the following commands for more information on setting the light to the level contained in a variable.
Put 'Preset Dim' level into Variable	This command puts the received preset dim level (1 to 32) into the specified variable. This allows you to receive preset dim signals from devices that transmit them. Whenever the controller receives a preset dim signal immediately following a house/unit code signal, it stores the preset dim level for that house/unit code.
Set to level in Variable	This command reads the value of the specified variable and sets the X-10 module to that level. If the variable value is 0 to 10, the light will be turned on at that level. If the variable value is 11, the light will go off. Remember that a light ON at level 0 is not the same as OFF.
Set to Preset Level in Variable	This command transmits a preset dim signal. The preset dim level (1 to 32) is taken from the specified variable. Thus, if the variable contains the value 12, the X-10 signal "preset dim to level 12, 35%, " is transmitted.

Timer/Delay

What is it	These are the Timers that have you have defined in the Device DataBase. Timers are countdown timers, meaning, once a Timer is loaded, it will decrement every second until it reaches zero (00:00:00), or is stopped by an Event. The maximum amount of time that can be loaded into a Timer is 18 hours, 12 minutes, 16 seconds (18:12:16).
How Used	Timers can be used in an Event to provide 1 second resolution time events. The Timers can be stopped and started at any time as well as cleared.

Menu Choices	**Description**
Stop	Stop the Timer from running. If the timer is already stopped or expired, this command has no effect.
Start	Start the Timer. If the timer is already running, this has no effect.
Clear	Clear the Timer, this will set the timer to 00:00:00.
Load	Load the Timer with the value specified. This will automatically start the Timer so no Start command is needed.

Delay	Delay execution of this Event by the amount of time specified. When placed in an Event, the Delay statement will delay execution of only that Event, until the delay time has expired.
Re-triggerable	If selected, the Delay will be re-triggerable. A re-triggerable Delay will be re-loaded automatically every time the If condition(s) become true.

Example 18 Delay Example 1

```
EVENT Hallway Light
 If
   (XSEQ:  A-14 A-ON) Received within 4 seconds
 Then
    (X:Hallway Light A-2) ON
    DELAY    0:05:00  -Re-triggerable
    (X:Hallway Light A-2) OFF
 End
```

In this example, a motion sensor is setup to send the X-10 'A-14 A-ON' command whenever motion is detected in the hallway. When this sequence is received, the Hallway Light will turn ON, wait 5 minutes and then turn OFF.

But what happens if somebody is in the hallway for more than 5 minutes or walks through with 1 second left? Normally, the Hallway Light will still turn off after 5 minutes. However, if you define the Delay as Re-triggerable, whenever the IF Condition is true again (X10 SEQ: A14 A-ON is this example) the Delay would be re-loaded with 5 minutes.

Example 19 Delay Example 2

```
EVENT sprinklers
 If
    Time = 4:00 AM  SMTWTFS
 Then
    (X:Sprinkler 1) ON
    DELAY    0:06:00
    (X:Sprinkler 1) OFF
    (X:Sprinkler 2) ON
     DELAY    0:04:00
    (X:Sprinkler 2) OFF
    (X:Sprinkler 3) ON
    DELAY    0:12:00
    (X:Sprinkler 3) OFF
 End
```

In the example above, at 4:00 AM Sprinkler 1 will turn ON and the Event will Delay for 6 minutes. Sprinkler 1 will then turn OFF, Sprinkler 2 will turn ON. After 4 minutes it will turn OFF and Sprinkler 3 will turn ON for 12 minutes and then turn OFF.

NOTE: DELAYS THAT ARE USED IN ONE EVENT WILL HAVE NO EFFECT ON ANY OTHER EVENT.

Flag

What is it	Flags are used as variables or markers that have two states, Set or Cleared. Events can use Flags to communicate with each other.
How Used	When used in the schedule, STARGATE will Set or Clear the Flag.

Menu Choices	**Description**
Set	Set the Flag
Clear	Clear the Flag
IDLE	Set the Flag to IDLE

Example 20 It's Dark

```
EVENT Set flag It's Dark
 If
  After SunSet    SMTWTFS
  or Before SunRise    SMTWTFS
 Then
  (F:It's Dark)   SET
 Else
  (F:It's Dark)   CLEAR
 End
```

In the above example, the flag 'It's Dark' will be set when it is dark, that is, after SunSet or before SunRise, and clear the flag when it is light outside.

Variable

What is it Variables are 8 bit and can have a value that ranges from 0 to 255. This value can be loaded directly, loaded with an A/D Input value, loaded with another Variable, cleared, incremented or decrement. Two additional system variables are user_VAR (8 bit) and user_16VAR (16 bit). The user variables are used as exchange variables, various THEN Actions use these variables to store a value to later use by another THEN Action.

How Used Variables can be used to keep track of how many times something happens and can trigger other Events.

Menu Choices	**Description**
Load with Value	Load the Variable with the Value specified. Note that the maximum that can be loaded is 255 and the minimum 0.
Load with A/D	Load the Variable with the A/D Input chosen in the rightmost listbox.
Load with Value	Load the Variable with the value from another Variable.
Clear	Clear the Variable. This would be the same as loading the Variable with 0.
Increment	Increment the Variable by 1. If the value is already 255, this command will not do anything.
Decrement	Decrement the Variable by 1. If the value is already 0, this command will not do anything.
Load Value	The value that will be loaded if the 'Load' option is chosen. Valid range for variables is 0-255.
Increment (roll-over at 255)	Increments (i.e. adds 1 to) variable . If the initial value is 255, it will roll over to zero.
Decrement (roll-under at 0)	Decrements (i.e. subtracts 1 to) variable . If the initial value is 0, it will roll over to 255.
Load with random number	Loads variable with a random number (range 0-255).
Load with user_VAR	Loads variable with user_VAR.
Load with HVAC	Loads variable with HVAC Temperature/SetPoint. Note this command can only work with the TX10B Bi-directional Thermostat.
variable = variable + ###	Add a value (###) to a variable.
variable = variable + var2	Add another variable.
variable = variable - ###	Subtract a value (###) from a variable.
variable = ### - variable	Subtract a variable from a value (###), and put it into the variable.
variable = variable - var2	Subtract a second variable from the first variable.
variable = variable * ###	Multiply a variable by a value (###). If the result is more than the variable maximum (255), it will be truncated to an 8-bit value.
variable = variable / ###	Divides a variable by a value (###).
Load user_VAR with another variable	Load the user_VAR with another variable.
Load var1 & var2 with user_16VAR	Loads two (8 bit) variables with the user_16VAR (16 bit). The Most Significant Byte (MSB) of user_16VAR is loaded into var1, the Least Significant Byte (LSB) is loaded into var2.

For example, if user_16VAR contains 25,655 the command: load var1 & var2 with user_16VAR would give these results: var1 = 100 var2 = 55

Load user_16VAR with var1 & var2 Loads the user_16VAR(16 bit) with two (8 bit) variables . The Most Significant Byte (MSB) of user_16VAR is loaded by var1, the Least Significant Byte (LSB) is loaded by var2.

For example, if var1 = 25 and var2 = 243 the command:

load user_16VAR with var1 & var2 would give these results: user_16VAR = 6643

(The basic formula is: user_16VAR = (var1 x 256) + var2)

Load user_16VAR with var1 * var2 Loads the user_16VAR(16 bit) with the product of two (8 bit)variables multiplied together.

For example, if var1 = 47 and var2 = 128 the command:

load user_16VAR with var1 * var2 would give these results: user_16VAR = 6016

Load user_16VAR with var1 + var2 Loads the user_16VAR(16 bit) with the sum of two (8 bit)variables added together.

For example, if var1 = 243 and var2 = 198 the command:

load user_16VAR with var1 + var2 would give these results: user_16VAR = 441

Increment user_16VAR Increments the user_16VAR, if the maximum value(65535) is reached, it will roll over to 0.

Decrement user_16VAR Decrements the user_16VAR, if the minimum value(0) is reached, it will roll under to 65535.

Message Logging

What is it Messages of up to 32 characters of text each can be saved to the Log. Analog Input and Variable values can be embedded into the text as well. The Log can hold 8000 characters of message data. Each Log entry has a 6 character overhead for time and date, so if you were logging a 10 character message, you could store 500 entries, 8000 ¸ (10 [for message] + 6 [for overhead]) = 500).

How Used The text in the Log statement will be saved in the Log and can be read out using the Read Log utility.

A Wizard function is available to aid in embedding variables and Analog Inputs or Variables into the text string.

Example 21 Message Log

```
EVENT: Log Output Example
 If - Always
   (F:Log Temp) is ON
 Then
   LOG: 'Temp is <Outside Temp> Degrees'
   Delay 1:00:00
 End
```

In this example, as long as the Flag 'Log Temp' is ON, the temperature will be stored in the Log at an hourly interval.

THEN Macro

What is it A THEN Macro is set of THEN Actions that have a name (like an Event with no IF conditions) and can be used multiple times in a schedule.

How Used When used in the schedule, STARGATE will execute the statements in the THEN Macro. THEN Macros are useful when a group of Devices will be turned ON or OFF many times in a schedule. Defining these Devices as a Macro will simplify programming.

Example 22 THEN MACRO 'Day Lights Off'

```
MACRO BEGIN
   (X: Hallway Light A-7) OFF
   (X: Bedroom Light A-15) OFF
   (X: Kitchen Light A-4) OFF
```

```
  (X: Bathroom Light  A-3)  OFF
End
```

Example 23 Using THEN MACRO

```
EVENT Turn off Lights in daytime
 If
  Time = 9:00 AM  .MTWTF.
 Then
  (THEN MACRO: Day Lights Off)
 End
```

Comment

What is it	A Comment can be a description or a note. It does not affect the way the Event works in any way.
How Used	When used in the schedule, a Comment can add some description of what the Event is doing. A Comment can be placed anywhere within the Event.

IR Command

These are the IR Commands that are available for use in an Event (requires *IR-XP² InfraRed Xpander*).

For complete setup, programming and operational information, refer to the IR-XP² InfraRed Xpander instruction manual.

What is it The IR Command will instruct the InfraRed Xpander to issue an IR command defined in the Define | IR menu.

How Used When used in a Schedule, STARGATE instructs the InfraRed Xpander to send the highlighted IR command out the selected Emitter Output(s), the number of times selected in the 'Play _ Times' box.

Menu Choices	Description
IR Commands	This is the IR command that will be sent.
Emitter Outputs	This is the Emitter Output port(s) of the InfraRed Xpander the selected IR command will be sent out of.
Play ## Times	This is the number of times the IR command will be sent.

ASCII Out

What is it Up to 32 characters of ASCII text can be sent out the serial port to be used by other programs or products and converting ASCII input strings into the user_VAR variable. Analog Input and Variable values can be embedded into the text as well. ASCII Out can also trigger Wavefiles (.wav) and execute other Windows programs (.exe).

How Used The text in the ASCII Out statement will be sent out the serial port. Select the STARGATE COM port ("Destination") which will send the ASCII data. Programs other than Event Manager can use this text as a monitor, to trigger another program on a PC, etc. ASCII Out text will show up in the MegaController.

To include Analog Inputs or Variables into the ASCII string, place the Analog Input or Variable name between the < > characters similar to this: *<name>*. When the ASCII text is printed, the *<name>* will be replaced with the value of the Analog Input or Variable.

If you need more than 32 characters of text in a line, you can combine lines by putting the '\' character as the last character is the line (see example below).

Menu Choices	Description
Output ASCII String	Send the ASCII string to the specified port.
(The following commands look at the specified character location(s) in a serial data string, converts it to a number, and loads it into the system variable user_VAR. After the value is put in user_VAR, you can use variable commands to move it to a variable and perform other operations on it)	
Put value of received char # into user_VAR	
	Converts a single character into a number, which must be between 0 and 9.
Put value of received char ## into user_VAR	
	Converts two consecutive characters into a number, both of which must be between 0 and 99.
Put value of received char ### into user_VAR	
	Converts three consecutive characters into a number, all of which must be between 0 and 255.

Wizards are available to assist adding Time/Date, CID, variables, analog inputs, user_VAR, user_16VAR, binary value and Lutron HomeWorks commands.

Example 24 ASCII Out

EVENT: ASCII Out Example 1

```
If
  (X:FrontDoor PIR  H8) is ON
Then
  (V:Frnt Door ) Increment
  ASCII-Out: '<Frnt Door> people approached door' [COM 2]
End

EVENT: ASCII Out Example 2
If
  ASCII-In: 'Temp'
Then
  ASCII-Out: 'Temperature is <Outside Temp> \'
  ASCII-Out: 'degrees'
End
```

In the first example, every time the FrontDoor motion detector (PIR) is triggered the 'Frnt Door' Variable is incremented and the ASCII Out string is sent out the serial port. In this example, if the 'Frnt Door' Variable is incremented to 12, the ASCII Out string would be:

12 people approached door

In the second example, the Analog Input "Outside Temp" is connected to a temperature sensor and the current temperature is 77 degrees. When the ASCII-In "Temp" is received, the ASCII-Out string sent out the serial port is:

Temperature is 77 degrees

Note the use of the '\' character at the end of the first ASCII-Out string and how it kept the two lines together. If the '\' character was not used, the string would look like this:

Temperature is 77

degrees

Example 25 ASCII Out Example

If the received data string is: "234"

The following command sets user_VAR equal to 2: Put value of received char #1 into user_VAR

The following command sets user_VAR equal to 2: Put value Of received char #2 into user_VAR

The following command sets user_VAR equal to 23: Put value Of received chars #1-2 into user_VAR

The following command sets user_VAR equal to 234: Put value Of received chars #1-3 into user_VAR

Example 26 ASCII Out Example

If the received data string is: "Wind Speed is 15"

The following command sets user_VAR equal to 15: Put value Of received chars #15-16 into user_VAR

Wave File Support

To play a wave file first you must have the capability to play wave files through a sound card. Use the software that came with the sound card to create or edit wave files for WinEVM, or you can use the Windows Sound Recorder (a standard Microsoft Window's accessory) with your sound card to record your wave files. The wave files must be located in the WinEVM directory/folder or a directory/folder listed in your autoexec.bat path.

To get a WinEVM event to play a wave file, simply add the **@@filename.wav** character string as your ASCII Output, and WinEVM will use the Windows built in MCI features to send the wave file to the sound card (see example below). The wavefile can be any length, playing will not affect any STARGATE functions, although the MegaController may be temporarily affected.

NOTE: FOR THE WAVE FILE TO PLAY, WINEVM MUST BE RUNNING WITH THE FLGACONTROLLER ACTIVE. THE FLGACONTROLLER CAPTURES THE ASCII OUTPUT TEXT, AND WHEN IT DETECTS THE SPECIAL "@@" STRING, IT SENDS THE WAVEFILE INFORMATION TO THE SOUNDCARD TO PLAY.

WinExec Support

To get a WinEVM event to execute a Windows program, simply add the **&& program.exe** character string as your ASCII Output, and WinEVM will execute the program (see example below).

NOTE: FOR THE WINEXEC FEATURE TO WORK, WINEVM MUST BE RUNNING WITH THE FLGACONTROLLER ACTIVE. THE FLGACONTROLLER CAPTURES THE ASCII OUTPUT TEXT, AND WHEN IT DETECTS THE SPECIAL "&&" STRING, IT TRIGGERS THE PROGRAM.

Example 27 Wav File

EVENT: Wave & WinExec Example
If
(X:FrontDoor PIR H8) is ON
Then
(V:Frnt Door) Increment
ASCII-Out: '<Frnt Door> people approached Door'
ASCII Out: '@@hello.wav'
ASCII Out: '&&notepad.exe'
End

Nested IF/THEN

What is it — A Nested IF/THEN is an Event within an Event. It can be an AND or OR as well as IF/THEN or IF/THEN/ELSE. The maximum levels of nesting is 3.

How Used — Nesting can be used to simplify a complex set of criteria for doing some action.

Nesting example:

EVENT: Nesting Example1
If
(XSEQ: M-1 M-ON) received with 3 seconds
Then
If
(X:Drapes A-13) is ON
Then
(X:Drapes A-13) OFF
End
If
(X:TV B-1) is OFF
Then
(X:TV B-1) ON
End
End

In the above example, if the X-10 sequence M-1 M-ON is received by STARGATE, it will then test to see if the Drapes (A-13) are open, if they are, STARGATE will close them, it then tests if the TV (B-1) is off, if it is, STARGATE will turn it on.

Relay Output

How Used When used in a schedule, STARGATE will turn the selected Relay ON or OFF.

Menu Choices	Description
ON	If selected, the Relay Output highlighted in the listbox will be turned ON.
OFF	If selected, the Relay Output highlighted in the listbox will be turned OFF.

HVAC

What is it Thermostat's SetPoint, Modes, Fan and Setback Temperatures can be controlled through a schedule. The Thermostat must have been previously defined in Define | HVAC.

How Used Select the Thermostat and the command to be sent. STARGATE will issue the command when used in a schedule.

Menu Choices	Description
Set (SetPoint) Temperature	Adjust the Thermostat's SetPoint.
OFF	Set the Thermostat's operating mode to OFF.
HEAT	Set the Thermostat's operating mode to HEAT.
COOL	Set the Thermostat's operating mode to COOL.
AUTO	Set the Thermostat's operating mode to AUTO.
Increment SetPoint	Increment the Thermostat's SetPoint by 1 degree.
Decrement SetPoint	Decrement the Thermostat's SetPoint by 1 degree.
Setback ON	Enable the SetBack mode and the SetBack offset.
Setback OFF	Turn the SetBack mode OFF.
FAN ON	Turn the FAN ON.
FAN OFF	Turn the FAN OFF.
Load SetPoint with user_VAR	Loads the selected Thermostat's SetPoint with user_VAR. This command is useful to set the SetPoint via TouchTone input.

Example 28 Change HVAC SetPoint via Phone

```
EVENT:  Change Temp SetPoint
If
  TelePhone Seq:'^4822' Received within 7 seconds
  " Go OFFHook, dial HVAC (4822) "
Then
  Voice:TEMPERAT SET Thermo SetPoint  [CO,ICM]
  TouchTone to user_VAR
End

EVENT:  Temp SetPoint Done
If
  TouchTone to user_VAR complete
Then
  (V:Temp SetPoint)   load with user_VAR
  |-If
  |  (V:Temp SetPoint) != 255
  |Then
  |  (HVAC:Thermo)  Change SetPoint to value in user_VAR
  |  "allow enough time for X10 codes"
  |  DELAY  0:00:03
```

```
 | "reply with new SetPoint"
 |  Voice:TEMPERAT SET TO Thermo SetPoint  [CO,ICM]
 |Else
 |  Voice:INVALID TEMPERAT  [CO,ICM]
 |-End
End
```

Telephone Actions

The **THEN Telephone Actions** field lets you program automatic TouchTone dialing, off-hook, on-hook, hold, pause and hookflash signals. This can be used in conjunction with telephone company services such as paging, caller ID, three-way calling and call forwarding to provide increased communications capabilities.

Telephone Out

The Telephone Out Tab page allows you to create a sequence of TouchTone digits, ON/OFF hook commands or TouchTone CallerID or user_VAR.

Note: Off-Hook is represented by "^", On-Hook by "+", Pause by "," and Hookflash by "!".

Digits 0-9	Sends TouchTone digits to the C.O. Line output
ON/OFF Hook	Sends the command for the C.O. Line to go ONHook or OFFHook.
HookFlash	Sends the command for the C.O. Line to HookFlash. The HookFlash time is defined in the Define | Telephone field.
Pause	Pauses an amount of time as defined in the Define | Telephone field.
user_VAR	Converts the value of user_VAR to TouchTone Digits and sends to the C.O. Line.
Caller ID	The last Caller ID message can be used in the Telephone Output field. By placing the upper-case letter 'C' in the THEN | TELEPHONE OUT field, STARGATE will replace it with the contents of the Caller ID buffer. STARGATE inserts a header (prefix) onto the CID number as shown below:

CID Header: 001 valid number

002 private Number

003 unknown Number

Examples : 001-619-487-8787 (valid number)

002-000-000-0000 (private Number)

003-000-000-0000 (unknown number)

Telephone Control

Go OFFHook	Takes the C.O. Line OFFHook.
Go ONHook	Puts the C.O. Line ONHook.
HookFlash	Sends the command for the C.O. Line to HookFlash. The HookFlash time is defined in the Define | Telephone field.
Go ON Hold	Puts the C.O. Line in a Hold state.
Release Hold	Releases the Hold state.
Remote Access	Force STARGATE to enter the Remote Access mode for the give user.
Enable TouchTone Access	Enable the built-in TouchTone to X-10 system.
Disable TouchTone Access	Disable the built-in TouchTone to X-10 system.

Clear TouchTone Buffer	Clears any TouchTone digits that are in the TouchTone input buffer.
Phone to ICM	Connects the Phone jack to the Intercom (ICM) jack.
Phone to C.O.	Connects the Phone jack to the C.O. (Line) jack.

Load user_VAR with TouchTone [SYNC]

Loads user_VAR with the next 1-3 TouchTone digits followed by the # digit. When the conversion is done, the IF Condition 'TouchTone to user_VAR complete' will be true and user_VAR will contain the number. If the conversion does not complete normally, the user_VAR will contain 255. The [SYNC] option eliminates the need for a separate event to look for the IF Condition "TouchTone to user_VAR complete". Selecting the SYNC option will pause the entire schedule until the conversion is done.

A conversion that does not complete normally is caused by one of the following:

1. More than 3 TouchTone digits are entered.
2. A 10 second timeout occurs
3. Converted value is greater than 255

Example 29 Change SetPoint

```
EXAMPLE
THEN Macro: Change Setpoint
 MACRO BEGIN
  Voice: ENTER NEW TEMPERAT  [Spkr,CO,ICM]
  TouchTone to user_VAR SYNC
  (V:Temp Setpoint)   load with user_VAR
  |-If
  |(V:Temp Setpoint) < 80
  |(V:Temp Setpoint) > 60
  |Then
  |  (HVAC:Thermo)  Change Setpoint to value in user_VAR
  |  Voice:BBBEEP  [CO,ICM]
  |  DELAY  0:00:04
  |  Voice:NEW SET TEMPERAT IS Thermo Setpoint DEGREES  [CO,ICM]
  |Else
  |  Voice:INVALID TEMPERAT  [CO,ICM]
  |- Nest End
 MACRO END
```

Load TimeLabel with TouchTone [SYNC]

Loads a TimeLabel with the next 2 - 4 TouchTone digits followed by the * digit for AM or the # digit for PM. When the conversion is done, the IF Condition 'TouchTone to TimeLabel complete' will be true and the TimeLabel will contain the new Time. If the conversion does not complete normally, the IF Condition 'TouchTone to TimeLabel complete' will NOT be set and the TimeLabel will not have been changed. The [SYNC] option eliminates the need for a separate event to look for the IF Condition "TouchTone to TimeLabel complete". Selecting the SYNC option will pause the entire schedule until the conversion is done.

A conversion that does not complete normally is caused by one of the following:

1. More than 4 TouchTone digits are entered
2. A 10 second timeout occurs
3. Converted value is not a valid time

Example 30 Change a wake up time

```
EVENT:  Change WakeUp Time
If
 TelePhone Seq:'^9253' Received within 6 seconds
 " (Enter W-A-K-E on telephone) "
Then
 " Say current wakeup time "
 Voice:WAKE_UP <Wake Up Time>  [CO,ICM]
```

```
  TouchTone to Time Label:(TL:Wake Up Time)
End

EVENT:  Wakeup time Converted
If
  TouchTone to TimeLabel complete
Then
  " Say new wakeup time "
  Voice:WAKE_UP TIME <Wake Up Time>  [CO,ICM]
End
```

Example 31 Reporting Temperature to a Pager

In the following example, if the inside temperature exceeds 80 degrees, STARGATE dials a pager (goes off-hook and dials 123-4567), waits 6 seconds for the paging service to answer (3 commas), then dials the temperature (V) followed by the pound sign (#) to complete the page and hangs up (+). The temperature will then appear on the pocket pager display!

```
EVENT: CALL JOHN'S PAGER
  If:
    (Analog In: TEMP) > 80 degrees
  Then:
    Load user_VAR with (Analog :TEMP)
    Telephone Out: '^ 123-4567 ,,, V # +'
  End
```

Voice Functions

Adding A Voice Response To An Event

To add a Voice Output to an event:

1) Click on the **THEN** line of the event then click on **ADD**.

2) Click on **VOICE** then click on **VOICE RESPONSE**.

3) Click the desired VOICE RESPONSE TYPE (Preset, User-Defined, Analog, Variable, Wavefile or Special).

4) double-click on the desired Voice Response in the list. Each selection will appear in the SELECTIONS box.

To **PREVIEW** a response, click on the desired Voice Response then click PREVIEW.

5) To form sentences, repeat steps 3 and 4. Responses will play in the order they appear in the SELECTIONS box.

To **DELETE** a Voice Response from the Selection box, click once on the response and then click DELETE.

To **REPLACE** a Voice Response with a different one from the list, click once to highlight the response in the Selection Box then click on the desired Voice Response in the list, then click REPLACE.

6) Select **OUTPUT(s)** (SPEAKER, LINE LEVEL, C.O. LINE, INTERCOM).

7) Select the desired **VOLUME** level (0 = lowest, 12 = highest).

8) Select **SYNCHRONOUS** if you want the Voice Response to complete playing before executing the next line of the event (except Wavefiles, which are asynchronous only).

9) Click OK. A “VOICE” line will appear in the THEN section of the event.

Example 32 Report Temperature with Voice

```
EVENT: REPORT TEMPERATURE
  If:
    (A-1 A-ON) is Received within 3 seconds
  Then:
    (VOICE: “The Temperature Is <temp> Degrees”) [Speaker]
  End
```

Connecting Voice Inputs To Voice Outputs

In some cases it may be desirable to route audio from an input source (C.O. Line, Intercom or Line-Level Input) to the Speaker Output, Line-Level Output, C.O. Line or Intercom. For example, connecting the C.O. Line to the Line-Level Output will allow remote voice paging through a PA amplifier. A music source connected to the Line-Level Input can be routed to the Speaker Output for background music and to the C.O. Line for "Music-On-Hold." A pre-amplified microphone connected to the Line-Level Input can be routed to the C.O. Line for remote audio monitoring.

To connect (or disconnect) an input source to an output:

1) Click on the **THEN** line of the event then click on **ADD**.

2) Click **AUDIO PATH**.

3) Select the **INPUT SOURCE** (C.O. Line, Intercom or Line-Level Input).

4) Select the **OUTPUT** (Speaker Output, Line-Level Output, C.O. Line or Intercom).

5) Select **CONNECT** or **DISCONNECT**.

4) Click **OK**.

Note: Once an input is connected to an output, it will remain connected until instructed to disconnect.

Example 33 REMOTE VOICE PAGING

In the following example, the STARGATE Line-Level Output is connected to a PA amplifier with speakers throughout the premises. User 1 calls home remotely, then enters a Remote Access Code followed by *72 (*PA) to allow live voice paging through his house PA system. The voice prompt "Paging Access ON" is sent to the C.O. Line to signal User 1 that his/her voice is about to be broadcast throughout the house. The Audio Path between the C.O. Line and Line-Level Output is then connected for 15 seconds during which User 1 speaks his/her announcement. The Audio Path between the C.O. Line and Line-Level Output is then disconnected and the voice prompt "Paging Access OFF" is then sent to the C.O. Line to signal User 1.

EVENT: REMOTE VOICE PAGING
If:
(Remote Access - User 1)
*and (Telephone: *72) is Received within 3 seconds*
Then:
(VOICE: "Paging Access ON") [C.O. Line]
(AUDIO PATH: Connect C.O. Line to Line Level Output)
Delay 0:00:15
(AUDIO PATH: Disconnect C.O. Line to Line Level Output)
(VOICE: "Paging Access OFF") [C.O. Line]
End

Example 34 REMOTE AUDIO MONITORING (LISTEN IN)

In the following example, a hidden microphone is connected to a preamplifier, the output of which is connected to STARGATE's Line-Level Input. User 1 calls home, then enters a Remote Access Code followed by *54 to remotely monitor sound in the house for 30 seconds.

EVENT: REMOTE LISTEN IN
If:
Telephone - Remote User 1
*and (Telephone: *54) is Received within 3 seconds*
Then:
(AUDIO PATH: Connect Line Level Input to C.O. Line)
Delay 0:00:30 (Retriggerable)
(AUDIO PATH: Disconnect Line Level Input to C.O. Line)
End

Recording A Voice Response In An Event

In some cases it may be desirable to record audio from an input source (C.O. Line, Intercom or Line-Level Input) when triggered by an event such as recording messages from callers, leaving messages for callers identified by CallerID or memos for family members, etc.

To program an event to RECORD a Voice Response:

1) Click on the **THEN** line of the event then click on **ADD**.

2) Click on **VOICE** then click on **USER VOICE RECORD**.

3) Select a line in the **USER DEFINED RESPONSE** list.

4) Type the name of the User-Defined Response to be recorded.

5) Select the **RECORD SOURCE** (Intercom, C.O. Line, Line-Level-Input).

6) Select the maximum **RECORD TIME** allowed for the voice response.

7) Click **OK**.

NOTE: When using the USER VOICE RECORD feature, the user will hear a beep prompt to indicate when to begin speaking. Pressing any TouchTone key will stop the recording and automatically playback the recorded message for review. If a TouchTone key is not pressed, the recording will stop automatically when the RECORD TIME has elapsed.

Example 35 RECORDING MESSAGES FROM IDENTIFIED CALLERS

In the following example, STARGATE answers calls from a specific caller (identified by CallerID) and prompts them to press 1 to leave a message.

```
EVENT: RECORD JOHN
  If
      CallerID: 212-555-1212
Then
      If
        Voice: "Hi John, press 1 to leave a message" [C.O. Line]
       Telephone Seq: '1' Received within 15 seconds
      Then
        Record: 'John's Message' from CO Line for 20 seconds
      End
End
```

Example 36 RECORDING (OR CHANGING) MESSAGES REMOTELY BY PHONE

With the following events, User1 can call home, enter his/her Remote Access Code, then press *-R-E-C (*732) to record (or change) a message that will playback through speakers at home as soon as someone arrives and disarms the security system such as “Call me at the office as soon as you get home.”

```
EVENT: ARRIVE MESSAGE RECORD
  If
      Telephone: Remote User1
      and Telephone Seq: '*732' Received within 10 seconds
Then
      Record: Arrived Message from CO Line for 20 seconds
End

EVENT: ARRIVE MESSAGE PLAYBACK
  If
      (DI:Armed) Goes OFF
Then
      Voice: Arrived Message [SPEAKER]
End
```

VoiceMail

All VoiceMail functions can be controlled through the schedule allowing very custom VoiceMail systems.

Menu Choices	Description
Say Number of Messages	Announce the number of messages in a particular Mailbox.
Play First Message	Start playing the first message in the Mailbox.
Next Message (skip)	Skip to the next message in the mailbox.
Delete Message	Delete the current message. Note that the message must have been played before it can be deleted.
Replay Message	Replay the current message. Note that the message must have been played before it can be replayed.
Play Caller ID	Announce the Caller ID number for the current message. STARGATE tags each message with the Caller ID number. Note that the message must have been played before using this command.
Stop Message	Stop the current message from playing.
Play All Messages	Play All Messages in a mailbox.
Play All NEW Messages	Play All NEW Messages in a mailbox. Once a NEW message has been played, it is changed to an OLD message.
Backup 5 Seconds	Re-winds the current message being played by 5 seconds.
Forward 5 Seconds	Advance the current message being played by 5 seconds.
Select Greeting	Change the Greeting for the selected Mailbox.
Force VoiceMail	Force a VoiceMail session. This will place the VoiceMail system in a state as if STARGATE answered the incoming call.
Announce Only On/Off	Enable or Disable the Announce Only feature. If Enabled, the system will answer the incoming call but not allow a message to be left.
Answer on Ring	Change the ring count for STARGATE to answer on. A Toll-Saver feature can be made by looking at the number of messages in particular mailboxes and changing the ring count.
Incoming Call Monitor	Enable or Disable the Incoming Call Monitor. If Enabled, the Greeting as well as the message being left will beheard.
Load user_VAR with # of NEW Messages	Loads user_VAR with the number of NEW Messages in a particular Mailbox.
Load user_VAR with # of OLD Messages	Loads user_VAR with the number of OLD Messages in a particular Mailbox.

Menu Choices

File

The File menu lets you open and create Schedules. The menu also lets you save your changes, print the schedule, DownLoad to STARGATE and Exit the program.

File - New

The **File | New** command lets you open a new Schedule with the default name Untitled.sch. Event Manager will prompt you to name an Untitled Schedule when you try to save it.

File - Open

The **File | Open** command displays a Schedule-selection dialog box for you to select a Schedule to open into the editor workspace.

The Open Schedule box contains a schedule list and buttons labeled [OK] and [Cancel]. Once you've selected the schedule you want to open and load into Event Manager, choose the [OK] button (choose [Cancel] if you change your mind). You can also press <Enter> once the schedule is selected, or you can double-click the schedule name with the left mouse button.

File - Save

The **File | Save** command lets you save the current Schedule to a file in the directory that you started Event Manager in. If the schedule has the default name (Untitled.sch), Event Manager will open the **Save Schedule** dialog box to let you rename and save as a different name.

Event Manager will save the Schedule with the '.sch' file extension. If a Schedule that is being saved already exists in the directory that you are in, Event Manager will rename the old version with a '.bak' file extension.

File - Save As

The **File | Save As** command lets you save the schedule in the Editor workspace under a different name. When you choose this command, you see the Save As dialog box.

File - Rules Check

The **File | Rules Check** command will check for any errors in the current Schedule. The types of errors that will be checked are:

- ✓✓ Use of a Device that is not in the Device DataBase
- ✓✓ Empty Events
- ✓✓ Illegal combination of Conditions and Actions

A window will pop-up giving you a description of the error, and the line number that it occurs on.

File - DownLoad

The **File | DownLoad** command lets you DownLoad the current schedule as well as initial Device settings.

You have the option of downloading your Device's Initial States as defined in the 'Define Device" menus. If you do not want to change the states of the devices that have been updated by STARGATE, do not select this checkbox.

What is it — If you create a new Schedule or change one, it **must** be downloaded to STARGATE before it can be used. The Download option will download the schedule that is currently in the workspace.

How Used — Select the checkbox for the Download option that you want. If you want to download the Schedule, select the Schedule checkbox. If you want to download the Initial Device States, select that checkbox.

Menu Choices	Description
Save Schedule to Disk	Selecting this checkbox will save the Schedule and Device DataBase before downloading.
Download Schedule	Selecting this checkbox will download the current Schedule. Before the Schedule is downloaded, a Rules Check is automatically performed. If there are any errors, you will be asked to use the **Schedule | Rules Check** option to get more details. After the Schedule is downloaded, there will be a slight delay while STARGATE is preparing the Schedule to run.
Download Device Database	This option is useful for forcing all of your X-10 devices to a known state before the Schedule is loaded. This option will take more time if you have a large amount of X-10 devices in your DataBase.

NOTE: YOU CANNOT DOWNLOAD A SCHEDULE THAT HAS ERRORS.

File - Print

The **File | Print** command lets you print the contents of the current Schedule.

Menu Choices	Description
Initial FormFeed	Selecting this checkbox will send a FormFeed command to your printer before printing.
Line Numbers	Selecting this option will add line numbers to the Schedule when it is printing.
Schedule Listing	Selecting this checkbox will print the Schedule that is active in the workspace.
Device Listing	Selecting this checkbox will print out the Device DataBase.
Print to File	Selecting this checkbox will print to a File instead of the Printer.
Setup	Selecting this button will open a dialog box in which you can choose print options.

Menu Choices	Description
Print using CSV Format	This option will print the Device DataBase using the CSV (comma separated variable) format which can be used by many popular spreadsheet programs.
Suppress Nesting Bars	If selected, the nesting bars of the Nested IF/THENs will be printed.

File - Exit

The **File | Exit** exits to DOS from Event Manager. If there are any changed Schedules that you have not saved, Event Manager will prompt you to save it. The Device and Macro DataBase will also be saved if any changes have been made. These are saved into the files device.dbf and macro.dbf, the old versions being renamed device.bak and macro.bak.

Edit

Selecting Items

To tag the item(s) in your schedule that you want to work with, you select the lines. You can select lines a variety of ways using the mouse or the keyboard.

The selected lines in your schedule are called the *selection* and is marked on your screen with a different background color.

To Select any line or a series of lines

You can use this technique to select any line or series of lines in your schedule.

Point to where you want the selection to begin, hold down the left mouse button, and drag the mouse pointer to where you want the selection to end.

-Or-

Position the highlight bar where you want the selection to begin. Hold down SHIFT as you use the arrow keys to move the highlight bar to where you want the selection to end.

Cut

Lines that are Cut from a schedule are first copied into the Clipboard and then removed from the schedule.

Moving and Copying lines using the Clipboard

Lines that you cut or copy are placed in the Clipboard, a temporary storage area. A line placed in the Clipboard remains there until you choose the Cut or Copy command again, when it is replaced with the new item. You can paste an item from the Clipboard into your schedule as many times as you like. The following instructions tell how to move and copy lines:

1. Select the lines or Event
2. To move lines, choose Cut from the Editor menu or press Ctrl-X on the keyboard.

   -OR-

1. To copy lines, choose Copy from the Editor menu or press Ctrl-C on the keyboard.
2. Position the highlight bar in a new location.
3. From the Editor menu, choose Paste or press Ctrl-V on the keyboard.

Copy

Selected lines are copied into the Clipboard.

The optional shortcut key for the Copy command is Ctrl-C.

Paste

Lines that have been Cut or Copied into the Clipboard are Pasted into the schedule at the point that the highlight bar is positioned.

The optional shortcut key for the Paste command is Ctrl-V.

Freeze

Any line or lines that are selected will become ‘Frozen’. This is similar to commenting out a line or using a ‘REM’ statement in a batch file. Any line or lines that are Frozen will not be downloaded.

NOTE: IF YOU ADD THESE COMMANDS TO FREEZE ALL LINES OR LINES, YOU MUST DOWNLOAD YOUR SCHEDULE FOR THIS TO TAKE EFFECT.

Thaw

Any line that is selected and 'Frozen' will be 'Thawed' with this command. This is the opposite of the 'Freeze' command.

NOTE: IF YOU NUL THIS COMMAND TO THAW A LINE OR LINES, YOU MUST DOWNLOAD YOUR SCHEDULE FOR THIS UNIT ON TO TAKE EFFECT.

Define

See Creating a Device DataBase on page 9.

Utilities

The Utilities Menu is a collection of utilities that are used to interactively send X-10 commands, stop and start STARGATE schedule, read/set the time and date, do an X-10 signal test, read STARGATE Message Log and calculate the free memory available on your PC.

Mega Controller

The **Utilities | Mega Controller** command will open the Mega Controller window. When selected, Event Manager will take a short time to upload the current status of the Devices.

The MegaController is a powerful On-Line interactive controller. It allows you to:

- ✓✓ Monitor the status of all 256 X-10 devices
- ✓✓ Control all 256 X-10 devices
- ✓✓ Send any X-10 command
- ✓✓ Send the Status Request command (used with 2-way X-10 devices)
- ✓✓ Send Preset Dim and Micro-Dim/Bright commands (used with PCS lighting modules and RCS thermostats)
- ✓✓ Display the last 100 commands that STARGATE transmitted or received (HISTORY).
- ✓✓ Log the STARGATE Activity to a file
- ✓✓ Read status, set or clear Flags
- ✓✓ Read and set Variable values
- ✓✓ Read Timers
- ✓✓ Read status of I/O devices (Digital Inputs, Analog Inputs, Relay Outputs)
- ✓✓ Set or Clear Relays
- ✓✓ Control HVAC (thermostats)
- ✓✓ Dial telephone numbers
- ✓✓ Send ASCII text
- ✓✓ Play .wav files

Menu Choices	Description
HouseCode	HouseCode used when an X-10 command is sent. The current HouseCode will be displayed in HouseCode dial left of the X10 matrix. To change the HouseCode, click with the left mouse button on the HouseCode dial, or click the HouseCode on the X10 matrix (leftmost column).
StatReq	This button will send the 'Status Request' command. This command has to follow a UnitCode command. A 2-way X-10 device will respond to this command with the 'Status = ON' or 'Status = OFF' command.

History	This button will clear the Activity Log and print the last 200 commands transmitted or received by STARGATE.
Clear	This button will clear the Activity Log screen.
☑ Log to File	Selecting this button will cause the contents of the Activity Log to be saved into a file.
☑ Lock Scrolling	Selecting this button will prevent the Activity Log from scrolling when the MegaController receives information from STARGATE.
Activity Log	Activity that STARGATE sends or receives. A date and time stamp is applied to all activity. When STARGATE receives an X-10 command, such as a command sent from a controller other than STARGATE (like a mini-controller), the 'Rec' keyword will be placed after the time stamp. This will let you know if the X-10 command was sent by STARGATE or by another controller. The Activity Log has a maximum capacity of 200 lines.
Colors...	This button will open another box that gives you the choice of colors for the ON/OFF/IDLE states in the X10 Matrix.

X-10 Matrix

The X-10 Matrix (grid) allows you to toggle the X-10 device or set the device to a particular state using the Mouse. By clicking certain areas of the matrix, you can change the state of X-10 devices.

To	Do this
Toggle an X10 Device...	Click on the device in the matrix with the left mouse button.
Set a device to a specific state	Click on the device with the right mouse button, a sub-menu will appear, select the ON/OFF state with the right mouse button.
Set the DIM/BRI level...	Click on the device with the right mouse button, a sub-menu will appear, select the Set Level choice, then select the level with right mouse button.
Send a PRESET level...	Click on the device with the right mouse button, a sub-menu will appear, select the PreSet Level choice, then select the level with right mouse button. NOTE: This command applies to PCS lighting modules and RCS bi-directional thermostats only.

Wave File and WinExec Support

Support for playing .wav files and executing other Windows programs is provided through the MegaController. The MegaController ***must*** be running for Wavefiles to play. To include a wavefile in a schedule or execute another program, see the ASCII Output command.

Stop Schedule

This command will stop the execution of the schedule in STARGATE.

Start Schedule

This selection will start the execution of the schedule that is in STARGATE.

Clear Schedule

This selection will clear the schedule that is in STARGATE.

Time Set

The Read/Set Time box is where STARGATE's Time and Date can be read or set.

Menu Choices	Description
Read Time	This button will read STARGATE's time and display it on the screen.
Set Time	Pressing this button will set the time in STARGATE with the time specified in the dialog box. Note that this will also set the Latitude, Longitude and TimeZone information, information that is needed for proper SunRise/SunSet calculations.
Done	This button will exit out of the Read/Set Time box. You must first press 'Set Time' to save any changes before pressing 'Done.'
Set Time	Pressing this button will set the time in STARGATE with the time specified in the dialog box. Note that this will also set the Latitude, Longitude and TimeZone information, information that is needed for proper SunRise/SunSet calculations.
Latitude	Displays and Sets the Latitude for your location (refer to Location chart in the Appendix).
Longitude	Displays and Sets the Longitude for your location (refer to Location chart in the Appendix).
Time Zone	This button will exit out of the Read/Set Time box. You must first press 'Set Time' to save any changes before pressing 'Done.'
Daylight Savings	Select this if Daylights Savings is observed in your area.
Refresh Interval	The period of time between Refresh cycles.
Security Interval	The maximum amount of random minutes added or subtracted from the specified time when 'Security Mode' is selected.

X-10 Signal Test

The X-10 Signal Test is a tool that will send alternating ON-OFF commands. This is useful in finding areas of your home that may be receiving a weak X-10 signal.

If you suspect that the X-10 signal is not making it to parts of your home, change the code on an appliance module to match the HouseCode/UnitCode used in this test. Start the signal test and test all areas of your home by plugging in the appliance module and listening for the ON/OFF click. Although this is not a scientific means for measuring signal strength, it will give you a relative feel for areas that are not receiving the X-10 signals.

If you have areas that are not receiving the X-10 signal (but need to), you may need to install a signal coupler or signal bridge or move STARGATE to a location in your home that will allow the signal to reach the dead areas.

Menu Choices	Description
HouseCode	HouseCode that will be used.
UnitCode	UnitCode that will be sent.
Start	Pressing this button will start the signal test. It will send commands in the following order: HouseCode - UnitCode HouseCode - ON HouseCode - UnitCode HouseCode - OFF ... repeating the sequence until the Stop Command is sent

Stop	Pressing this button will stop the signal test.
Cancel	Pressing this button will stop the signal test, and return to the Event Editor.

System Info

The System Info command takes a snapshot of STARGATE's status and displays it in a window. Some of the status information that is displayed is:

- ✓✓ Firmware Version
- ✓✓ Current Schedule
- ✓✓ Time
- ✓✓ SunRise/SunSet times
- ✓✓ Latitude, Longitude, TimeZone
- ✓✓ Percent of Schedule memory used

Message Log

The Message Display command opens the Message Log window that allows you to read any Message that has been logged by STARGATE.

Menu Choices	Description
Read Messages	Pressing this button will read any Message that has been stored in STARGATE.
Clear Messages	Pressing this button will clear the Message display **and** clear any Messages that have been stored in STARGATE.
Save To File	Pressing this button will allow you to save the Message display to a file, with the file extension of ".msg".

Self Test

If you suspect any problems with your STARGATE, there is a Built In Self Test (BIST) that STARGATE can run. It tests the serial port, internal memory, the clock-calendar chip and the X-10 interface.

This test will clear any Schedule and Device states in STARGATE, so you will have to download your Schedule after using it.

If the X-10 test fails, check the cable between STARGATE and the TW523 Powerline Interface, make sure it is firmly connected. If any other test fails, contact Technical Support.

Modem

With the Remote Execution capability of STARGATE and Event Manager you can control your STARGATE over the phone line using modems. This section describes the connections required, the setup of the modems and how to initiate a remote STARGATE session.

For the Remote Execution feature to work, STARGATE must be directly connected to a 9600 baud (or better) Hayes compatible modem through a NULL modem adapter. Your PC must have an internal 9600 baud (or better) Hayes compatible modem or be connected to an external modem through a serial port.

Modem Setup

Before you can use STARGATE with a modem, it is necessary to configure the modem parameters for your PC, for the remote modem and for the STARGATE that will be connected to the remote modem.

To configure the remote modem (connected to STARGATE):

1. Be sure the STARGATE power transformer is connected properly to the 'AC INPUT' on the STARGATE Main Processor Board and **NO backup battery is connected**.
2. Connect the STARGATE serial port to your modem using a null modem cable or adapter.

   (A null modem cable or adapter reverses the 'xmit' (pin 2) and 'receive' (pin 3) lines to allow communication between devices with similar serial port pinouts such as STARGATE and a modem).
3. Remove power from STARGATE (unplug power transformer from wall).
4. Apply power to your modem and make sure it is On.
5. With your modem On, plug in the STARGATE power transformer.
6. As STARGATE initializes, it sends the following MODEM SETUP STRING to your modem: AT S0=10 Q0 V1 X4 &W0 &Y0.

   This assures that when power is restored after a power outage, your modem will be ready for remote operation. If a backup battery is going to be used, STARGATE will not experience a power outage and will not issue the modem setup string when power is restored. In this case, add an event to your schedule to send the setup string when power is restored.
7. To change the MODEM SETUP STRING, select MODEM SETUP and edit the MODEM SETUP STRING as needed, then press [OK] to save the changes, or [CANCEL] to escape without saving anything.

Menu Choices	**Description**
Modem Port	Select the serial port to which the PC's modem is connected. It can be different from the port into which you plugged the STARGATE.
Speaker	This section gives you control of your modem's speaker.
Volume	You can set your speaker's volume to low, medium or high.
Num Retries	Enter the number of times you want Event Manager to redial the phone number after an unsuccessful attempt (i.e., busy line).
Retry Interval	Enter the number of seconds Event Manager will wait before retrying the call.
Comma Pause	Set the duration of the pause (in seconds) that each comma represents. When Event Manager encounters a comma while dialing a number, it will pause the specified time before continuing.
Wait between Calls	This is the maximum length of time Event Manager will wait for the remote modem to answer. After this time limit has passed, Event Manger will 'time out' and hang up. Enter the number of seconds to wait for the call to time-out (i.e., no answer).
[ ]Pulse Dialing	If you are using a pulse-dial (rotary) phone line, select this box.
Answer on Ring	The number of rings to wait before STARGATE instructs the modem to answer. If you select 0 for this number, the remote modem will never answer. Note, if STARGATE is not connected either remotely or locally, you will not be able to change this value.

Quick Dial Setup

The entries in the Quick Dial Setup box appear in the Quick Dial section of the Dial Modem box. The Quick Dial buttons act like the memory buttons on an automatic-dialing phone. Each Quick Dial button stores a name and number.

Connecting to a remote STARGATE

Selecting the Utilities | Modem option from the main menu will put you into the Dial Modem box. Fill in the Dial Modem box. The following is a description of each field:

To	This is the phone number that the remote STARGATE is at. You can automatically fill in the Name and Phone text-entry boxes using the Quick Dial buttons. You can also manually enter the information from the keyboard.
Quick Dial	The Quick Dial buttons work like the memory buttons on an automatic dialing phone. When you click on one, Event Manager automatically fills in the Name and Phone fields. Click on the Quick Dial Setup button to edit the Quick Dial section.

Callback Options

When connecting to a remote STARGATE, you may be calling from a location that has an expensive phone connect fee, such as on a vacation. With the Callback option, once a connection is made with the remote STARGATE, Event Manager will send the remote STARGATE the Callback number. The remote STARGATE will hang-up the line and call that number back.

Menu Choices	Description
Callback Enabled	If selected, Event Manager will send the Callback number to the remote STARGATE once a connection is made. If not selected, the remote STARGATE will answer and assume a normal connection.
Pulse Dial on Callback	If the remote STARGATE uses a pulse-dial (rotary) phone line, select this checkbox. It will instruct the remote STARGATE to dial the phone number using pulse-dial (rotary) method.
Number	This is the number that Event Manager will send to the remote STARGATE to call back. It is the phone number that the modem in your PC is connected to.

Choosing the Start Command

Selecting the Start button will trigger Event Manager to start the calling procedure. The Dialing Status dialog box will appear and give you status of the call. You may abort the call at any time by selecting the Abort button or by pressing the [ESC] key on your keyboard.

The following sequence of events will take place after pressing the Start button:

Event Manager	remote STARGATE
Dial number in 'To' section	waiting for call
	answer on 3rd ring
(if CallBack is enabled)	
send CallBack number	*hang up remote* STARGATE *line*
hang up line, wait for CallBack	*wait 10 seconds*
	dial CallBack number
answer on 1st ring	
set REX flag	

After a connection to the remote STARGATE is made, the REX flag (Remote EXecution) is set and will be shown on the status line (bottom line) of Event Manager. If the connection is ever lost or broken, the REX flag will be cleared and disappear from the status line.

Controlling a remote STARGATE

When you have established a connection, the remote STARGATE can be controlled in the same manner as if it was still connected to your computer. You can create and download Schedules, access the MegaController, or do anything you would in a normal session.

Ending the modem session

When you are ready to hang-up the line from the remote STARGATE, you can do one of two things:

1. From the Utilities | Modem box, select the Hang-up button and Event Manager will hang up the phone line from the modem.

2. Exiting out of Event Manager will hang up the phone line.

Options

The **UTILITIES | OPTIONS** box allows the user to select the serial port of the PC that is connected to STARGATE, select the IR Remote type, and change X10 options.

Menu Choices	Description
Serial Port	Choose the serial port that the PC uses to communicate to the STARGATE. **Note:** This is not the serial port used for remote communications, but the PC serial port that STARGATE is directly connected to.
IR Remote Type	Select 'IR-Xpander' if you have an IR-XP2 InfraRed Xpander connected to the STARGATE's AUX port. If a different IR Remote type is used, select it in the menu.
X10 Options	**Single Phase/3 Phase**: Select the setting that meets the requirements of your AC power service. Most households use Single Phase AC service. In environments with noisy powerlines, the X-10 signal that the Power Line Interface sees when it is sending can sometimes be altered enough that the STARGATE thinks it did not send correctly, thereby causing it to re-send. By disabling the 3-Phase option, the STARGATE will only send X-10 transmissions at the zero crossing of the electrical phase it is connected to. Note that 3-Phase transmission is only needed in a 3-Phase environment, most households do not use 3-Phase wiring. **X10 Retry Attempt**: STARGATE can detect X-10 collisions when it is transmitting X-10 signals by comparing what it is receiving from the Power Line Interface to what it sent. When a mis-match occurs, most likely it was a collision with another X-10 transmitter or noise. STARGATE will attempt to retry the X-10 command the number of tries listed, from 0 for no Retries, up to 5.

Time Setup

The Time Setup window allows you to configure your location, Refresh and Security Intervals. These parameters are necessary for calculating SunRise/SunSet times, and any Refresh or Security times.

Menu Choices	Description
Longitude	This is your location's Longitude.
Latitude	This is your location's Latitude.
TimeZone	This is your location's TimeZone.

NOTE: IF YOUR CITY IS NOT LISTED IN THE APPENDIX LISTING, CHOOSE THE CITY THAT IS CLOSEST TO YOURS.

☑ Daylight Savings Time Used?

If you live in an area the observes Daylight Savings time, select this checkbox. STARGATE will automatically adjust the time for Daylight Savings Time. This feature will only work for daylight savings time in the United States.

For countries other than the United States, you will have to manually change the time when Daylight Savings time goes in and out of effect. It may be necessary to change the TimeZone to get the SunRise/SunSet times to be correct.

Refresh Interval	The time interval between Refresh operations in minutes. This feature works with X-10 Devices only. A Refresh operation will re-transmit the ON/OFF state of any X-10 Device that has the Refresh Option enabled. This is useful if you have a device that turns itself ON or OFF mysteriously, or to override any local switching of lights.
Security Interval	The maximum amount of time that can be added or subtracted from the current time when the ☑ Security Mode option is set. Every day at midnight, STARGATE will use this Security Interval to calculate a random number that is between 0 and the Security Interval. If an Event is using a time based condition with the Security Mode option enabled, this random number is either added to or subtracted from (this is random also) the current time.

Example 37 Security Option

if the Security Interval is set for 15 minutes, and you have an Event such as:

```
EVENT Security Lights
 If
   Time = 8:00 PM  SMTWTFS  Security Mode
 Then
    (X:Porch Light  B-3) B-ON
 End
```

The Porch Light could be turned on anytime between 7:45 PM and 8:15 PM.

Power Failure

STARGATE has a built-in battery backup that allows it to retain it's memory in case your house has a power failure, or you decide to move STARGATE to another location. STARGATE can also detect when you have had a power failure and let you act on it.

When the power goes off in your home, most of the X-10 type equipment will go off, when power comes back on, STARGATE may think these devices are still on, creating an out of sync problem. Another scenario is if during the time the power was out, your schedule was supposed to turn a device on, since power was not on at the time the device was to turn on, it never did.

For example, assume you had a light scheduled to turn on at 6:15:

From 6:00 to 6:30, there was a power failure:

When the power comes back on, the light will be off because it never got the ON command at 6:15.

STARGATE knows that the power failed and will do the following:

- ✓✓ Play catch-up to the current time and force any X-10 device that has it's 'Play Catch-up' flag set, to the state it would have been in had the power not gone out.
- ✓✓ Set the 'Power-Fail' variable for use in the Schedule.

During Power Fail Catch-up, the yellow and green LED's will flash steadily, after catching up, both LED's will be on solid.

The Catch-up time will depend on how long power was out and how large your schedule is.

FCC Compliance

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by JDS could void the user's authority to operate the equipment.

Note: This product was FCC certified under test conditions that included the use of shielded I/O cables and connectors between system components. To be in compliance with FCC regulations, the user must use the shielded cables and connectors and install them properly.

Glossary of Terms

Device DataBase - The area where your Devices are created and stored.

Editor Workspace - Area where schedules are edited.

ELSE Section - The area in an Event between the 'Else' and 'End' keywords.

Event - An If section followed by a Then section. If the 'If' section is true, the 'Then' section is executed.

Flag - A variable that has two states, Set or Clear.

Highlight Bar - The black bar seen in a schedule showing the current position.

IF Conditions - Used by an Event to determine whether to do the 'Then' or 'Else' sections of an Event.

IF Macro - A series of 'If Conditions'.

IF Section - The area in an Event between the 'If' and 'Then' keywords.

Initial State - The initial state of a Device in the Device DataBase.

Message - A text message that STARGATE can log.

Message Log - The storage area for STARGATE messages.

Refresh Interval - The period of time between refresh cycles.

Schedule - A series of Events that control your home.

SunRise/SunSet - The times that the sun rises in the morning and sets in the evening.

THEN Actions - What the STARGATE will execute when the conditions in the 'If' section are true.

THEN Macro - A series of 'Then' actions.

THEN Section - The area in an Event between the 'Then' and 'Else' or 'End' keywords.

TimeLabels - A time that has a label associated with it.

Timer - Used by STARGATE to provide time based Events.

TW523 - Two-Way Power Line Interface (P.L.I.) module that connects to STARGATE.

Variable - Used by STARGATE for counting.

X-10 Device State - The state of an X-10 device (ON/OFF) at the time STARGATE is looking at it.

X-10 Sequence - Up to 6 X-10 commands within a specified time window.

Appendix A - Location

City	State	Latitude	Longitude
Birmingham	Alabama	33 N	86 W
Dothan	Alabama	31 N	85 W
Huntsville	Alabama	34 N	86 W
Mobile	Alabama	30 N	88 W
Montgomery	Alabama	32 N	86 W
Adak Island	Alaska	51 N	176 W
Anchorage	Alaska	61 N	149 W
Fairbanks	Alaska	64 N	147 W
Juneau	Alaska	58 N	134 W
Nome	Alaska	64 N	165 W
Point Barrow	Alaska	71 N	156 W
Flagstaff	Arizona	35 N	111 W
Phoenix	Arizona	33 N	112 W
Tucson	Arizona	32 N	110 W
Yuma	Arizona	32 N	114 W
Fort Smith	Arkansas	35 N	94 W
Jonesboro	Arkansas	35 N	90 W
Little Rock	Arkansas	34 N	92 W
Texarkana	Arkansas	33 N	94 W
Bakersfield	California	35 N	119 W
Bishop	California	37 N	118 W
Eureka	California	40 N	124 W
Fresno	California	36 N	119 W
Long Beach	California	33 N	118 W
Los Angeles	California	34 N	118 W
Needles	California	34 N	114 W
Sacramento	California	38 N	121 W
San Bernardino	California	34 N	117 W
San Diego	California	32 N	117 W
San Francisco	California	37 N	122 W
San Jose	California	37 N	121 W
Santa Ana	California	33 N	117 W
Santa Barbara	California	34 N	119 W
Colorado Springs	Colorado	38 N	104 W
Denver	Colorado	39 N	104 W
Durango	Colorado	37 N	107 W
Grand Junction	Colorado	39 N	108 W
Greeley	Colorado	40 N	104 W
Pueblo	Colorado	38 N	104 W
Hartford	Connecticut	41 N	72 W
New Haven	Connecticut	41 N	72 W
New London	Connecticut	41 N	7 W
Stamford	Connecticut	41 N	73 W
Storrs	Connecticut	41 N	72 W
Washington	D.C	38 N	77 W
Dover	Delaware	39 N	75 W
Wilmington	Delaware	39 N	75 W
Copenhagen	Denmark	55 N	12 E
Ringkobing	Denmark	56 N	8 E
Gainesville	Florida	29 N	82 W
Jacksonville	Florida	30 N	81 W
Key West	Florida	24 N	81 W
Miami	Florida	25 N	80 W
Orlando	Florida	28 N	81 W
Pensacola	Florida	30 N	87 W
Tallahassee	Florida	30 N	84 W
Tampa	Florida	27 N	82 W
Albany	Georgia	31 N	84 W
Athens	Georgia	33 N	83 W
Atlanta	Georgia	33 N	84 W
Augusta	Georgia	33 N	81 W
Brunswick	Georgia	3 N	81 W
Columbus	Georgia	32 N	84 W
Macon	Georgia	32 N	83 W
Hilo	Hawaii	19 N	155 W
Honolulu	Hawaii	21 N	157 W
Kailua	Hawaii	19 N	156 W
Lihue	Hawaii	21 N	159 W
Wailuku	Hawaii	20 N	156 W
Boise	Idaho	43 N	116 W
Lewiston	Idaho	46 N	117 W
Pocatello	Idaho	42 N	112 W

City	State	Latitude	Longitude
Twin Falls	Idaho	42 N	114 W
Carbondale	Illinois	37 N	89 W
Champaign	Illinois	40 N	88 W
Chicago	Illinois	41 N	87 W
Decatur	Illinois	39 N	88 W
Joliet	Illinois	41 N	88 W
Peoria	Illinois	40 N	89 W
Quincy	Illinois	39 N	91 W
Rock Island	Illinois	41 N	90 W
Rockford	Illinois	42 N	89 W
Springfield	Illinois	39 N	89 W
Bloomington	Indiana	39 N	86 W
Evansville	Indiana	37 N	87 W
Fort Wayne	Indiana	41 N	85 W
Gary	Indiana	41 N	87 W
Indianapolis	Indiana	39 N	86 W
Marion	Indiana	40 N	85 W
Muncie	Indiana	40 N	85 W
South Bend	Indiana	41 N	86 W
West Lafayette	Indiana	40 N	86 W
Burlington	Iowa	40 N	91 W
Cedar Rapids	Iowa	41 N	91 W
Des Moines	Iowa	41 N	93 W
Dubuque	Iowa	42 N	90 W
Fort Dodge	Iowa	42 N	94 W
Mason City	Iowa	43 N	93 W
Sioux City	Iowa	42 N	96 W
Waterloo	Iowa	42 N	92 W
Dodge City	Kansas	37 N	100 W
Salina	Kansas	38 N	97 W
Topeka	Kansas	39 N	95 W
Wichita	Kansas	37 N	97 W
Ashland	Kentucky	38 N	82 W
Bowling Green	Kentucky	36 N	86 W
Frankfort	Kentucky	38 N	84 W
Hazard	Kentucky	37 N	83 W
Lexington	Kentucky	38 N	84 W
Louisville	Kentucky	38 N	85 W
Middlesboro	Kentucky	36 N	83 W
Owensboro	Kentucky	37 N	87 W
Paducah	Kentucky	37 N	88 W
Alexandria	Louisiana	31 N	92 W
Baton Rouge	Louisiana	30 N	91 W
Monroe	Louisiana	32 N	92 W
New Orleans	Louisiana	29 N	90 W
Shreveport	Louisiana	32 N	93 W
Augusta	Maine	44 N	69 W
Bangor	Maine	44 N	68 W
Portland	Maine	43 N	70 W
Presque Isle	Maine	46 N	68 W
Boston	Massachusetts	42 N	71 W
Lawrence	Massachusetts	42 N	71 W
New Bedford	Massachusetts	41 N	70 W
Pittsfield	Massachusetts	42 N	73 W
Provincetown	Massachusetts	42 N	70 W
Springfield	Massachusetts	42 N	72 W
Worcester	Massachusetts	42 N	71 W
Annapolis	Maryland	38 N	76 W
Baltimore	Maryland	39 N	76 W
Cumberland	Maryland	39 N	78 W
Hagerstown	Maryland	39 N	77 W
Salisbury	Maryland	38 N	75 W
Ann Arbor	Michigan	42 N	83 W
Boyne City	Michigan	43 N	85 W
Detroit	Michigan	42 N	83 W
Grand Rapids	Michigan	42 N	85 W
Kalamazoo	Michigan	42 N	85 W
Lansing	Michigan	42 N	84 W
Marquette	Michigan	46 N	87 W
Pontiac	Michigan	42 N	83 W
Port Huron	Michigan	42 N	82 W
Saginaw	Michigan	43 N	83 W
Traverse City	Michigan	44 N	85 W
Bemidji	Minnesota	47 N	94 W
Duluth	Minnesota	46 N	92 W
International Falls	Minnesota	48 N	93 W
City	**State**	**Latitude**	**Longitude**
Rochester	Minnesota	44 N	92 W
Saint Cloud	Minnesota	45 N	94 W
Saint Paul	Minnesota	44 N	93 W
Greenville	Mississippi	33 N	91 W
Jackson	Mississippi	32 N	90 W
Meridian	Mississippi	32 N	88 W
Natchez	Mississippi	31 N	91 W
Oxford	Mississippi	34 N	89 W
Cape Girardeau	Missouri	37 N	89 W
Columbia	Missouri	38 N	92 W
Jefferson City	Missouri	38 N	92 W
Joplin	Missouri	37 N	94 W
Kansas City	Missouri	39 N	94 W
Poplar Bluff	Missouri	36 N	90 W
Saint Louis	Missouri	38 N	90 W
Springfield	Missouri	37 N	93 W
Billings	Montana	45 N	108 W
Butte	Montana	46 N	112 W
Great Falls	Montana	47 N	111 W
Havre	Montana	48 N	109 W
Helena	Montana	46 N	112 W
Miles City	Montana	46 N	105 W
Missoula	Montana	46 N	114 W
Lincoln	Nebraska	40 N	96 W
North Platte	Nebraska	41 N	100 W
Omaha	Nebraska	41 N	96 W
Scottsbluff	Nebraska	41 N	103 W
Amsterdam	Netherlands	52 N	4 E
Rotterdam	Netherlands	51 N	4 E
Carson City	Nevada	39 N	119 W
Elko	Nevada	40 N	115 W
Ely	Nevada	39 N	114 W
Las Vegas	Nevada	36 N	115 W
Berlin	New Hampshire	44 N	71 W
Concord	New Hampshire	43 N	71 W
Manchester	New Hampshire	43 N	71 W
Atlantic City	New Jersey	39 N	74 W
Cape May	New Jersey	38 N	74 W
Long Branch	New Jersey	40 N	74 W
Newton	New Jersey	41 N	74 W
Trenton	New Jersey	40 N	74 W
Albuquerque	New Mexico	35 N	106 W
Clovis	New Mexico	34 N	103 W
Gallup	New Mexico	35 N	108 W
Roswell	New Mexico	33 N	104 W
Santa Fe	New Mexico	35 N	105 W
Albany	New York	42 N	73 W
Binghamton	New York	42 N	75 W
Buffalo	New York	42 N	78 W
Ithaca	New York	42 N	76 W
Massena	New York	44 N	74 W
New York	New York	40 N	74 W
Olean	New York	42 N	78 W
Poughkeepsie	New York	41 N	73 W
Rochester	New York	43 N	77 W
Syracuse	New York	43 N	76 W
Utica	New York	43 N	75 W
Watertown	New York	43 N	75 W
Asheville	North Carolina	35 N	82 W
Charlotte	North Carolina	35 N	80 W
Fayetteville	North Carolina	35 N	78 W
Kitty Hawk	North Carolina	36 N	75 W
New Bern	North Carolina	35 N	7 W
Raleigh	North Carolina	35 N	78 W
Wilmington	North Carolina	34 N	77 W
Winston-Salem	North Carolina	36 N	80 W
Bismarck	North Dakota	46 N	100 W
Fargo	North Dakota	46 N	96 W
Grand Forks	North Dakota	47 N	97 W
Minot	North Dakota	48 N	101 W

Williston	North Dakota	48	N	103	W
Akron	Ohio	41	N	81	W
Canton	Ohio	40	N	81	W
Cincinnati	Ohio	39	N	84	W
Cleveland	Ohio	41	N	81	W
Columbus	Ohio	39	N	83	W

City	State	Latitude		Longitude	
Dayton	Ohio	39	N	84	W
Lima	Ohio	40	N	84	W
Mansfield	Ohio	40	N	82	W
Toledo	Ohio	41	N	83	W
Youngstown	Ohio	41	N	80	W
Ardmore	Oklahoma	34	N	97	W
Oklahoma City	Oklahoma	35	N	97	W
Tulsa	Oklahoma	36	N	95	W
Astoria	Oregon	46	N	123	W
Baker	Oregon	44	N	117	W
Coos Bay	Oregon	43	N	124	W
Eugene	Oregon	44	N	123	W
Klamath Falls	Oregon	42	N	121	W
Portland	Oregon	45	N	122	W
Salem	Oregon	44	N	123	W
Allentown	Pennsylvania	40	N	75	W
Erie	Pennsylvania	42	N	89	W
Harrisburg	Pennsylvania	40	N	76	W
Oil City	Pennsylvania	41	N	79	W
Philadelphia	Pennsylvania	39	N	75	W
Pittsburgh	Pennsylvania	40	N	80	W
Scranton	Pennsylvania	41	N	75	W
State College	Pennsylvania	40	N	77	W
Williamsport	Pennsylvania	41	N	77	W
Providence	Rhode Island	41	N	71	W
Charleston	South Carolina	32	N	79	W
Columbia	South Carolina	34	N	81	W
Greenville	South Carolina	34	N	82	W
Aberdeen	South Dakota	45	N	98	W
Pierre	South Dakota	44	N	100	W
Rapid City	South Dakota	44	N	103	W
Sioux Falls	South Dakota	43	N	96	W
Chattanooga	Tennessee	35	N	85	W
Jackson	Tennessee	35	N	88	W
Knoxville	Tennessee	35	N	83	W
Memphis	Tennessee	35	N	90	W
Nashville	Tennessee	36	N	86	W
Oak Ridge	Tennessee	36	N	84	W
Union City	Tennessee	36	N	89	W
Amarillo	Texas	35	N	101	W
Austin	Texas	30	N	97	W
Beaumont	Texas	30	N	94	W
Brownsville	Texas	25	N	97	W
Corpus Christi	Texas	27	N	97	W
Dallas	Texas	32	N	96	W
El Paso	Texas	31	N	106	W
Houston	Texas	29	N	95	W
Lubbock	Texas	33	N	101	W
San Angelo	Texas	31	N	100	W
San Antonio	Texas	29	N	98	W
Wichita Falls	Texas	33	N	98	W
Cedar City	Utah	37	N	113	W
Logan	Utah	41	N	111	W
Provo	Utah	40	N	111	W
Salt Lake City	Utah	40	N	111	W
Bennington	Vermont	42	N	73	W
Burlington	Vermont	44	N	73	W
Montpelier	Vermont	44	N	72	W
Rutland	Vermont	43	N	72	W
Bluefield	Virginia	37	N	81	W
Bristol	Virginia	36	N	82	W
Charlottesville	Virginia	38	N	78	W
Chincoteague	Virginia	37	N	75	W
Danville	Virginia	36	N	79	W
Lynchburg	Virginia	37	N	79	W
Norfolk	Virginia	36	N	76	W
Richmond	Virginia	37	N	77	W
Roanoke	Virginia	37	N	79	W
Staunton	Virginia	38	N	79	W
Winchester	Virginia	39	N	78	W
Olympia	Washington	47	N	122	W
Pullman	Washington	46	N	117	W
Seattle	Washington	47	N	122	W

Spokane	Washington	47	N	117	W			
Walla Walla	Washington	46	N	118	W			

City	State	Latitude		Longitude	
Yakima	Washington	46	N	120	W
Charleston	West Virginia	38	N	81	W
Clarksburg	West Virginia	39	N	80	W
Parkersburg	West Virginia	39	N	81	W
Wheeling	West Virginia	40	N	80	W
Eau Claire	Wisconsin	44	N	91	W
Green Bay	Wisconsin	44	N	88	W
La Crosse	Wisconsin	43	N	91	W
Madison	Wisconsin	43	N	89	W
Milwaukee	Wisconsin	43	N	87	W
Oshkosh	Wisconsin	44	N	88	W
Wausau	Wisconsin	44	N	89	W
Casper	Wyoming	42	N	106	W
Cheyenne	Wyoming	41	N	104	W
Rock Springs	Wyoming	41	N	109	W
Sheridan	Wyoming	44	N	106	W

City	Country	Latitude		Longitude	
Tirane	Albania	41	N	19	E
Calgary	Alberta	51	N	114	W
Edmonton	Alberta	53	N	113	W
Medicine Hat	Alberta	50	N	110	W
Algiers	Algeria	36	N	3	E
Annaba	Algeria	36	N	7	E
Bechar	Algeria	31	N	2	W
Oran	Algeria	35	N	0	W
Tamanrasset	Algeria	22	N	5	E
Tindouf	Algeria	27	N	8	W
Andorra	Andorra	42	N	1	E
Bahia Blanca	Argentina	38	S	62	W
Buenos Aires	Argentina	34	S	58	W
Cordoba	Argentina	31	S	64	W
Corrientes	Argentina	27	S	58	W
Mar del Plata	Argentina	38	S	57	W
Rawson	Argentina	43	S	65	W
Rio Gallegos	Argentina	51	S	69	W
Salta	Argentina	24	S	65	W
Adelaide	Australia	34	S	138	E
Albany	Australia	35	S	117	E
Alice Springs	Australia	23	S	133	E
Ballarat	Australia	37	S	143	E
Brisbane	Australia	27	S	153	E
Broken Hill	Australia	31	S	141	E
Cairns	Australia	16	S	145	E
Canberra	Australia	35	S	149	E
Cape York	Australia	10	S	142	E
Carnarvon	Australia	24	S	113	E
Darwin	Australia	12	S	130	E
Derby	Australia	17	S	123	E
Eucla	Australia	31	S	128	E
Geraldton	Australia	28	S	114	E
Hobart	Australia	42	S	147	E
Kalgoorlie	Australia	30	S	121	E
Launceston	Australia	41	S	147	E
Lord Howe Island	Australia	31	S	159	E
Melbourne	Australia	37	S	145	E
Mount Isa	Australia	20	S	139	E
Newcastle Waters	Australia	17	S	133	E
Norfolk Island	Australia	29	S	1	E
Oodnadatta	Australia	27	S	135	E
Perth	Australia	31	S	115	E
Port Augusta	Australia	32	S	137	E
Port Hedland	Australia	20	S	118	E
Rockhampton	Australia	23	S	150	E
Sydney	Australia	33	S	151	E
Townsville	Australia	19	S	146	E
Wiluna	Australia	26	S	120	E
Yaraka	Australia	24	S	144	E
Graz	Austria	47	N	15	E
Innsbruck	Austria	47	N	11	E
Salzburg	Austria	47	N	13	E
Vienna	Austria	48	N	16	E
Freeport	Bahamas	26	N	78	W
Nassau	Bahamas	25	N	7	W
Antwerp	Belgium	51	N	4	E
Brussels	Belgium	50	N	4	E
Belmopan	Belize	17	N	88	W
Hamilton	Bermuda	32	N	64	W
Thimphu	Bhutan	27	N	89	E
La Paz	Bolivia	16	S	68	W
Santa Cruz	Bolivia	17	S	63	W
Sucre	Bolivia	19	S	65	W
Belem	Brazil	1	S	48	W
Belo Horizonte	Brazil	19	S	43	W
Brasilia	Brazil	15	S	47	W
Cruzeiro do Sul	Brazil	7	S	72	W
Cuiaba	Brazil	15	S	56	W
Fortaleza	Brazil	3	S	38	W
Manaus	Brazil	3	S	60	W
Porto Alegre	Brazil	30	S	51	W
Porto Velho	Brazil	8	S	63	W
Recife	Brazil	8	S	34	W
Rio de Janeiro	Brazil	22	S	43	W

City	Country	Latitude		Longitude	
Salvador	Brazil	12	S	38	W
Santarem	Brazil	2	S	54	W
Sao Paulo	Brazil	23	S	46	W
Teresina	Brazil	5	S	42	W
Prince George	British Columbia	53	N	122	W
Prince Rupert	British Columbia	54	N	130	W
Sydney	British Columbia	46	N	60	W
Vancouver	British Columbia	49	N	123	W
Victoria	British Columbia	48	N	123	W
Yaounde	Cameroon	3	N	11	E
Largeau	Chad	17	N	19	E
Ndjamena	Chad	12	N	13	E
Barranquilla	Colombia	10	N	74	W
Bogota	Colombia	4	N	74	W
Cali	Colombia	3	N	76	W
Medellin	Colombia	6	N	75	W
Limon	Costa Rica	10	N	83	W
San Jose	Costa Rica	9	N	84	W
Guantanamo	Cuba	20	N	75	W
Havana	Cuba	23	N	82	W
Willemstad	Curacao	12	N	68	W
Nicosia	Cyprus	35	N	33	E
Brno	Czechoslovakia	49	N	16	E
Kosice	Czechoslovakia	48	N	21	E
Prague	Czechoslovakia	50	N	14	E
Santo Domingo	Dominican Republic	18	N	69	W
Alexandria	Egypt	31	N	29	E
As Sallum	Egypt	31	N	25	E
Aswan	Egypt	24	N	32	E
Cairo	Egypt	30	N	3	E
Port Said	Egypt	31	N	32	E
Suez	Egypt	29	N	32	E
San Salvador	El Salvador	13	N	89	W
Helsinki	Finland	60	N	24	E
Kemi	Finland	65	N	24	E
Ajaccio	France	41	N	8	E
Bordeaux	France	44	N	0	W
Brest	France	48	N	4	W
Calais	France	50	N	1	E
Dijon	France	47	N	5	E
Le Havre	France	49	N	0	E
Limoges	France	45	N	1	E
Lyon	France	45	N	5	E
Marseilles	France	43	N	5	E
Nantes	France	47	N	1	W
Paris	France	48	N	2	E
Strasbourg	France	48	N	7	E
Toulouse	France	43	N	1	E
Cayenne	French Guiana	4	N	52	W
Savannah	Georgia	32	N	81	W
Bonn	Germany	50	N	7	E
Braunschweig	Germany	52	N	10	E
Dresden	Germany	51	N	13	E
Frankfurt am Main	Germany	50	N	8	E
Hamburg	Germany	53	N	10	E
Hannover	Germany	52	N	9	E
Leipzig	Germany	51	N	12	E
Magdeburg	Germany	52	N	11	E
Munich	Germany	48	N	11	E
Nuremberg	Germany	49	N	11	E
Rostock	Germany	54	N	12	E
Stuttgart	Germany	48	N	9	E
Weimar	Germany	50	N	11	E
Berlin	Germany	52	N	13	E
Alexandroupolis	Greece	40	N	25	E
Athens	Greece	37	N	24	E
Iraklion	Greece	35	N	25	E
Kerkira	Greece	39	N	19	E
Rhodes	Greece	36	N	28	E
Thessaloniki	Greece	40	N	22	E
Godthab	Greenland	64	N	51	W
Saint George's	Grenada	12	N	61	W
Basse-Terre	Guadeloupe	16	N	61	W
Guatemala City	Guatemala	14	N	90	W
Conakry	Guinea	9	N	13	W

City	Country	Latitude		Longitude	
Port-au-Prince	Haiti	18	N	72	W
La Ceiba	Honduras	15	N	86	W
Tegucigalpa	Honduras	14	N	87	W
Budapest	Hungary	47	N	19	E
Szeged	Hungary	46	N	20	E
Akureyri	Iceland	65	N	18	W
Reykjavik	Iceland	64	N	21	W
Ahmadabad	India	23	N	72	E
Bangalore	India	12	N	77	E
Bhopal	India	23	N	77	E
Bombay	India	18	N	72	E
Calcutta	India	22	N	88	E
Gangtok	India	27	N	88	E
Hyderabad	India	17	N	78	E
Kanpur	India	26	N	80	E
Madras	India	13	N	80	E
Nagpur	India	21	N	79	E
New Delhi	India	28	N	77	E
Srinagar	India	34	N	74	E
Ambon	Indonesia	3	S	128	E
Banjarmasin	Indonesia	3	S	114	E
Denpasar	Indonesia	8	S	115	E
Dili	Indonesia	8	S	125	E
Jakarta	Indonesia	6	S	106	E
Manado	Indonesia	1	N	124	E
Medan	Indonesia	3	N	98	E
Palembang	Indonesia	2	S	104	E
Pontianak	Indonesia	0	S	109	E
Sorong	Indonesia	0	S	131	E
Surabaya	Indonesia	7	S	112	E
Ujungpandang	Indonesia	5	S	119	E
Yogyakarta	Indonesia	7	S	110	E
Abadan	Iran	30	N	48	E
Esfahan	Iran	32	N	51	E
Mashhad	Iran	36	N	59	E
Shiraz	Iran	29	N	52	E
Tabriz	Iran	38	N	46	E
Tehran	Iran	35	N	51	E
Al Basrah	Iraq	30	N	47	E
Baghdad	Iraq	33	N	44	E
Mosul	Iraq	36	N	43	E
Cork	Ireland	51	N	8	W
Dublin	Ireland	53	N	6	W
Limerick	Ireland	52	N	8	W
Elat	Israel	29	N	34	E
Haifa	Israel	32	N	35	E
Jerusalem	Israel	31	N	35	E
Tel Aviv	Israel	32	N	34	E
Bari	Italy	41	N	16	E
Cagliari	Italy	39	N	9	E
Florence	Italy	43	N	11	E
Genoa	Italy	44	N	8	E
Messina	Italy	38	N	15	E
Milan	Italy	45	N	9	E
Naples	Italy	40	N	14	E
Palermo	Italy	39	N	13	E
Rome	Italy	41	N	12	E
Turin	Italy	45	N	7	E
Venice	Italy	45	N	12	E
Kingston	Jamaica	18	N	76	W
Fukuoka	Japan	33	N	130	E
Hakodate	Japan	41	N	140	E
Hiroshima	Japan	34	N	132	E
Iwo Jima Island	Japan	24	N	141	E
Kyoto	Japan	35	N	135	E
Nagasaki	Japan	32	N	129	E
Nagoya	Japan	35	N	136	E
Osaka	Japan	34	N	135	E
Sapporo	Japan	43	N	141	E
Sendai	Japan	38	N	140	E
Tokyo	Japan	35	N	139	E
Amman	Jordan	31	N	35	E
Mombasa	Kenya	4	S	39	E
Nairobi	Kenya	1	S	36	E
Kuwait	Kuwait	29	N	47	E

City	Country	Latitude	Longitude
Pakxe	Laos	15 N	105 E
Vientiane	Laos	17 N	102 E
Riga	Latvia	56 N	24 E
Beirut	Lebanon	33 N	35 E
Tripoli	Lebanon	34 N	35 E
Maseru	Lesotho	29 S	27 E
Monrovia	Liberia	6 N	10 W
Brest	Lithaunia	52 N	23 E
Vilnius	Lithaunia	54 N	25 E
Luxembourg	Luxembourg	49 N	6 E
Palma	Majorca	39 N	2 E
Blantyre	Malawi	15 S	35 E
Lilongwe	Malawi	13 S	33 E
Kuala Lumpur	Malaysia	3 N	101 E
Kuching	Malaysia	1 N	110 E
Pinang	Malaysia	5 N	100 E
Churchill	Manatoba	58 N	94 W
Norway House	Manatoba	53 N	97 W
Winnipeg	Manitoba	49 N	97 W
Acapulco	Mexico	16 N	99 W
Cancun	Mexico	21 N	86 W
Chihuahua	Mexico	28 N	106 W
Ciudad Juarez	Mexico	31 N	106 W
Durango	Mexico	24 N	104 W
Guadalajara	Mexico	20 N	103 W
Hermosillo	Mexico	29 N	110 W
La Paz	Mexico	24 N	110 W
Mazatlan	Mexico	23 N	106 W
Merida	Mexico	20 N	89 W
Mexico City	Mexico	19 N	99 W
Monterrey	Mexico	25 N	100 W
Tijuana	Mexico	32 N	117 W
Veracruz	Mexico	19 N	96 W
Monte Carlo	Monaco	43 N	7 E
Plymouth	Montserrat	16 N	62 W
Casablanca	Morocco	33 N	7 W
El Aaiun	Morocco	27 N	13 W
Marrakech	Morocco	31 N	8 W
Tangier	Morocco	35 N	5 W
Campbellton	New Brunswick	48 N	66 W
Chatham	New Brunswick	47 N	65 W
Moncton	New Brunswick	46 N	64 W
Saint John	New Brunswick	45 N	66 W
Auckland	New Zealand	36 S	174 E
Auckland Islands	New Zealand	50 S	166 E
Christchurch	New Zealand	43 S	172 E
Dunedin	New Zealand	45 S	170 E
Gisborne	New Zealand	38 S	178 E
Hamilton	New Zealand	37 S	175 E
Invercargill	New Zealand	46 S	168 E
Milford Sound	New Zealand	44 S	167 E
Nelson	New Zealand	41 S	173 E
New Plymouth	New Zealand	39 S	174E
Palmerston North	New Zealand	40 S	175 E
Wellington	New Zealand	41 S	174 E
Whangarei	New Zealand	35 S	174 E
Corner Brook	Newfoundland	48 N	57 W
Fredericton	Newfoundland	45 N	66 W
Gander	Newfoundland	48 N	54 W
Saint John's	Newfoundland	47 N	52 W
Pyongyang	North Korea	39 N	125 E
Cambridge Bay	NW Territories	69 N	105 W
Coppermine	NW Territories	67 N	115 W
Frobisher Bay	NW Territories	63 N	68 W
Inuvik	NW Territories	68 N	133 W
Yellowknife	NW Territories	62 N	114 W
Bergen	Norway	60 N	5 E
Bodo	Norway	67 N	14 E
Narvik	Norway	68 N	17 E
Oslo	Norway	59 N	10 E
Trondheiin	Norway	63 N	10 E
Amherst	Nova Scotia	45 N	64 W
Halifax	Nova Scotia	44 N	63 W
Kingston	Nova Scotia	44 N	76 W
New Glasgow	Nova Scotia	45 N	62 W

City	Country	Latitude		Longitude	
Truro	Nova Scotia	45	N	63	W
Yarmouth	Nova Scotia	43	N	66	W
Fort Severn	Ontario	55	N	87	W
Kenora	Ontario	49	N	94	W
Kitchner	Ontario	43	N	80	W
Moosonee	Ontario	51	N	80	W
Ottawa	Ontario	45	N	75	W
Sudbury	Ontario	46	N	81	W
Thunder Bay	Ontario	48	N	89	W
Toronto	Ontario	43	N	79	W
Windsor	Ontario	42	N	83	W
Colon	Panama	9	N	79	W
David	Panama	8	N	82	W
Panama	Panama	8	N	79	W
Asuncion	Paraguay	25	S	57	W
Arequipa	Peru	16	S	71	W
Cuzco	Peru	13	S	71	W
Iquitos	Peru	3	S	73	W
Lima	Peru	12	S	7	W
Trujillo	Peru	8	S	79	W
Baguio	Philippines	16	N	120	E
Cebu	Philippines	10	N	123	E
Davao	Philippines	7	N	125	E
Iloilo	Philippines	10	N	122	E
Manila	Philippines	14	N	121	E
Naga	Philippines	13	N	123	E
Subic	Philippines	14	N	120	E
Zamboanga	Philippines	6	N	122	E
Gdansk	Poland	54	N	18	E
Krakow	Poland	50	N	19	E
Poznan	Poland	52	N	16	E
Warsaw	Poland	52	N	21	E
Lisbon	Portugal	38	N	9	W
Porto	Portugal	41	N	8	W
Ponce	Puerto Rico	18	N	66	W
San Juan	Puerto Rico	18	N	66	W
Fort Chimo	Quebec	58	N	68	W
Gaspe	Quebec	48	N	64	W
Hull	Quebec	45	N	75	W
Ivugivik	Quebec	62	N	77	W
Montreal	Quebec	45	N	73	W
Quebec	Quebec	46	N	71	W
Rouyn	Quebec	48	N	79	W
Schefferville	Quebec	54	N	66	W
Prince Albert	Saskatchewan	53	N	105	W
Regina	Saskatchewan	50	N	104	W
Saskatoon	Saskatchewan	52	N	106	W
Uranium City	Saskatchewan	59	N	108	W
Dhahran	Saudi Arabia	26	N	5	E
Mecca	Saudi Arabia	21	N	39	E
Medina	Saudi Arabia	24	N	39	E
Riyadh	Saudi Arabia	24	N	46	E
Bloemfontein	South Africa	29	S	26	E
Cape Town	South Africa	33	S	18	E
Durban	South Africa	29	S	31	E
Johannesburg	South Africa	26	S	28	E
Port Elizabeth	South Africa	33	S	25	E
Pretoria	South Africa	25	S	28	E
Pusan	South Korea	35	N	129	E
Seoul	South Korea	37	N	127	E
Barcelona	Spain	41	N	2	E
Bilbao	Spain	43	N	2	W
Granada	Spain	37	N	3	W
La Coruna	Spain	43	N	8	W
Madrid	Spain	40	N	3	W
Seville	Spain	37	N	5	W
Valencia	Spain	39	N	0	W
Zaragoza	Spain	41	N	0	W
Colombo	Sri Lanka	6	N	79	E
Jaffna	Sri Lanka	9	N	80	E
Goteborg	Sweden	57	N	11	E
Kiruna	Sweden	67	N	20	E
Stockholm	Sweden	59	N	18	E
Sundsvall	Sweden	62	N	17	E
Bern	Switzerland	46	N	7	E

City	Country	Latitude	Longitude
Geneva	Switzerland	46 N	6 E
Zurich	Switzerland	47 N	8 E
Al Qamishli	Syria	37 N	41 E
Allepo	Syria	36 N	37 E
Damascus	Syria	33 N	36 E
Kaohsiung	Taiwan	22 N	120 E
Taipei	Taiwan	25 N	121 E
Bangkok	Thailand	13 N	100 E
Chiang Mai	Thailand	18 N	98 E
Adana	Turkey	37 N	35 E
Ankara	Turkey	39 N	32 E
Canakkale	Turkey	40 N	26 E
Erzurum	Turkey	39 N	41 E
Istanbul	Turkey	41 N	28 E
Izmir	Turkey	38 N	27 E
Samsun	Turkey	41 N	36 E
Charlotte Amalie	Virgin Islands	18 N	64 W
Christiansted	Virgin Islands	17 N	64 W
Midway Islands	USA	28 N	177 W
Aberdeen	United Kingdom	57 N	2 W
Belfast	United Kingdom	54 N	5 W
Birmingham	United Kingdom	52 N	1 W
Cardiff	United Kingdom	51 N	3 W
Edinburgh	United Kingdom	55 N	3 W
Glasgow	United Kingdom	55 N	4 W
Inverness	United Kingdom	57 N	4 W
Lerwick	United Kingdom	60 N	1 W
Liverpool	United Kingdom	53 N	3 W
London	United Kingdom	51 N	0 W
Londonderry	United Kingdom	55 N	7 W
Plymouth	United Kingdom	50 N	4 W
Portsmouth	United Kingdom	50 N	1 W
York	United Kingdom	53 N	1 W
Montevideo	Uruguay	34 S	56 W
Caracas	Venezuela	10 N	66 W
Ciudad Bolivia	Venezuela	8 N	70 W
Maracaibo	Venezuela	10 N	71 W
Dawson	Yukon Territory	64 N	139 W
Dawson Creek	Yukon Territory	55 N	120 W
Old Crow	Yukon Territory	67 N	139 W
Watson Lake	Yukon Territory	60 N	128 W
Whitehorse	Yukon Territory	60 N	135 W

Appendix B - Examples

The following examples are from actual Schedules.

Example 38 Toggle lights ON and OFF for 10 minutes after the security system is tripped

```
EVENT:  Start Timer
 If
  /* L1 is connected to alarm output */
  (XSEQ: L-1 L-ON ) Received within 3 seconds
 Then
  (T:Alarm Timer) LOAD with  0:10:00
  (XCMD:A-7  A-ON)
 End

EVENT:  Toggle Security Lights
 If
  (X:A-7) is ON
  and  (T:Alarm Timer) is Running
 Then
  (XCMD:A-7  A-OFF)
 Else
  (XCMD:A-7  A-ON)
 End
```

NOTE: SINCE THE TAIL THE LIGHTS ARE TOGGLING ON AND OFF, THE X10 NETWORK MAY BECOME SATURATED BY THE RELATED ON/OFF COMMANDS AND STARGATE MAY NOT BE ABLE TO HEAR X10 TRANSMISSIONS. IT MAY BE NECESSARY TO PUT A DELAY STATEMENT IN THE THEN SECTION TO ALLOW TAIL OR OTHER X10 TRANSMISSIONS.

Example 39 Using the modem to call a Pager number

```
EVENT:  Call Pager Number
 If
  (XSEQ: P-1 P-ON P-1 P-ON) Received within 6 seconds
 Then
  /* Call Bob's pager, display 1234 */
  ASCII-Out:'ATDT555-1212,,,,1234'
 End
```

Note this example assumes STARGATE is connected to a modem as shown in the Modem Section of the manual.

Example 40 Setup a smart answer Modem

```
EVENT:  Smart Answer Modem Pickup
 If
```

```
  ASCII-In:'RING'
  /* Have Modem pickup if 2 rings, */
  /* followed by no rings for 20 sec, */
  /* and 1 ring between 20 and 60 sec */
  /* Set remote modem to answer on 0 rings */
 Then
  (V:RingCount) INCREMENT
  -If
  | (V:RingCount) is Equal to 1
  |Then
  | (T:RingMin) LOAD with  0:00:10
  -End
  -If
  | (V:RingCount) is Equal to 2
|Then
  | -If
  | | (T:RingMin) is Running
  | | /* 2nd ring within 10 seconds? */
  | |Then
  | | /* Load the min and max times for */
  | | /* the 3rd ring to fall between */
  | | (T:RingMin) LOAD with  0:00:20
  | | (T:RingMax) LOAD with  0:00:59
  | |Else
  | | /* Nope, rang after 10 seconds */
  | | (V:RingCount)  CLEAR
  | -End
  -End
  -If
  | (V:RingCount) is Equal to 3
  |Then
  | -If
  | | (T:RingMin) is Stopped
  | | and  (T:RingMax) is Running
  | | /* 3rd ring between min and max? */
  | |Then
  | | (V:RingCount)  CLEAR
  | | ASCII-Out:'ATA'
  | |Else
  | | (V:RingCount)  CLEAR
  | -End
  -End
  -If
  | (V:RingCount) is Greater than 3
  | /* If RingCount goes over 3, clear */
  |Then
  | (V:RingCount)  CLEAR
  -End
 End

EVENT:  Clear RingCount if maxtimeout
 If
  (T:RingMax) is Expiring
  /* If no 3rd ring before max time */
  /* times out, clear RingCount  */
 Then
  (V:RingCount)  CLEAR
 End
```

If you use a modem with STARGATE and have to share a line with an answering machine, the normal answering mode will not work. If you set the answering machine to answer on fewer number of rings than STARGATE, you'll never connect with STARGATE. The same goes for the opposite, if STARGATE answers on fewer rings than your answering machine, you'll never record any calls.

Example 3 shows how STARGATE can tell the modem to pick up the line after a certain pattern of rings and pauses, thus bypassing an answering machine. This example assumes the answering machine will pick up on the 4th ring.

If 2 rings are detected within 10 seconds, followed by a 20 second period with no rings, STARGATE will instruct the modem to pickup if 1 more ring occurs before the maximum timeout.

Appendix C - Trouble Shooting

BEFORE YOU CALL...

The following pages describe the most common questions posed to Technical Support. Each symptom is followed by the most common cause for each problem. Before calling Technical Support for further assistance, please try the list of suggestions that relate to your problem.

Once you have tried the suggestions and the symptom persists, be ready with the following information when calling Technical Support:

1. Be at your PC and have Event Manager running.
2. The firmware and Event Manager versions.
3. Firmware version is reported by selecting **Utility | System Info** and Event Manager version by selecting **HELP | ABOUT**.
4. The type of PC you are using: 386, 486, Pentium.
5. A short description of the problem and any error messages that appear.

You can contact Technical Support at the following phone numbers:

TEL (858) 486-8787 FAX (858) 486-8789

EMAIL onlinejds@aol.com
WEB www.JDSTECHNOLOGIES.COM

If you decide to contact us by fax or email, please include the information requested above. The more information you include about the symptom, the easier it is for us to respond quickly and as accurately as possible. Don't forget to include your return fax number, including area code!

I keep getting Communication Errors

Check that you have the correct serial port selected. Also check that the STARGATE is connected properly.

Make sure that this serial port is not in contention with another serial port. Note that com1 and com3 share an interrupt and com2 and com4 share an interrupt. This means that if STARGATE is connected to com1, you cannot be using another serial device on com3, such as a mouse. If this is the case, change the serial port that STARGATE is connected to and change the serial port options.

When I look at 'System Info' my longitude and latitude are wrong

You must change the Time Parameters in the UTILITIES | TIME/DATE SET menu for STARGATE to know your location.

The SunRise and SunSet calculations are wrong

Maker sure you have the correct longitude, latitude and Time Zone for your location listed in the TIME/DATE SET menu. This information is used to calculate the correct SunRise and SunSet times.

My Mouse does not work with Event Manager

If you have a serial mouse, check that it is not using the same serial port that Event Manager uses to communicate to STARGATE. They cannot use both com1 and com3, or com2 and com4 because com1/com3 share the same interrupt and com2/com4 share the same interrupt. You must use either com1 and com2, or com3 and com4 for the mouse and STARGATE respectfully.

I have a Mouse but I don't see the Mouse cursor

Event Manager checks your system to see if a mouse driver is loaded. If no mouse driver is loaded, Event Manger will disable the mouse so you would not see a mouse cursor. Check your config.sys file to maker sure you are loading your mouse driver.

Problems in Communication

Check the following if you have trouble using the Com Port while using WinEVM:

1. Make sure you have specified the correct Com port.
2. Windows cannot support shared hardware interrupts. Since COM1 and COM3 (also COM2 and COM4) share the same interrupts, you cannot have one serial device installed on COM1 and the other device installed on COM3 (or one device on COM2 and another on COM4).
3. If you have an external modem, check that it is connected to a serial port. If you have an internal modem, check the switch setting (on the board) to ensure that it is assigned to the appropriate COM port.
4. Select the Serial Port option from the System menu to check that your specification of the COM port is correct. If you cannot start WinEVM, use an editor to display the C:\WINDOWS\WINEVM.INI file. There is a line under the section entitled [WinEVM] that should appear as: COMPORT = n , where n = 1 to 4.
5. There are a number of TSR (Terminate and Stay Resident) programs that are provided with voice fax modem boards. If you have installed another software package that utilizes your board, make sure this program is not running when you start Windows and SuperVoice. If it is still running, it will assume control of the Com Port and no other programs will have access to this port. Check your AUTOEXEC.BAT file to ensure that the program is not loaded during the boot up routine. Creating your own Modular Data Cables

If the supplied MODULAR DATA CABLES do not fit your requirements, you can either purchase a custom length cable or create your own. To create your own cable you will need 6-conductor telephone cable, 6-conductor RJ-11 style plugs and a tool to crimp the plugs to the cable.

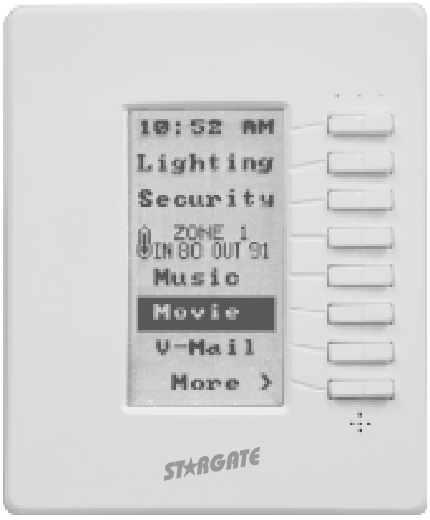
Follow the crimp-tool instructions for stripping the wire and crimping the plugs. Make sure that you use the same polarity in the plugs as in the supplied cables and as shown below:

INDEX

STARGATE™

INTERACTIVE AUTOMATION SYSTEM

LCD MULTI-MENU KEYPAD
LCD-96M



USER MANUAL

JDS TECHNOLOGIES *"The Home of Automation"*

12200 Thatcher Court Poway, CA 92064 U.S.A.
TEL 858-486-8787 FAX 858-486-8789
EMAIL onlinejds@aol.com
www.jdstechnologies.com

REV 1.1

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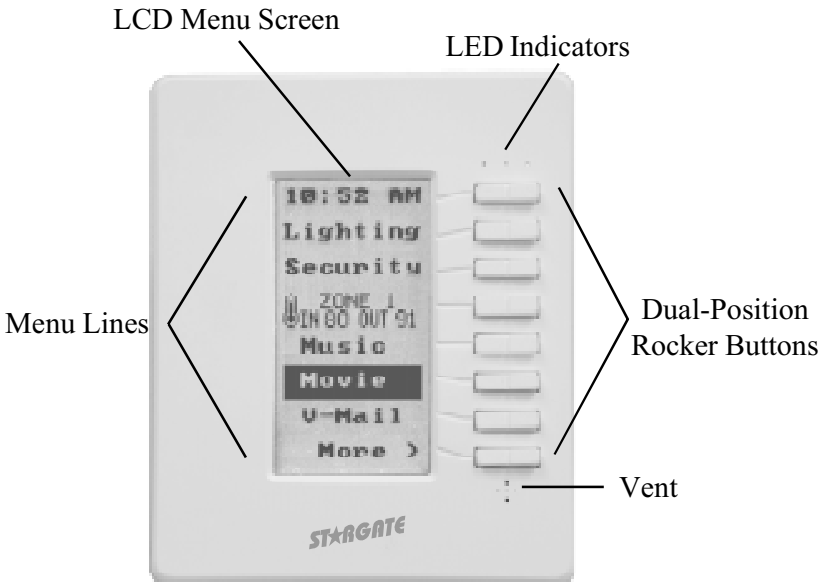
OVERVIEW



- **Stores 96 User-Defined Menus & Sub-Menus**
- **Programmable from Event Manager software**
- **Supports Text & Graphics (.bmp)**
- **8 Dual Position Rocker Keys**
- **Independent Left/Right Programming**
- **3 Programmable LEDs (On/Off/Blink)**
- **Continuous or Timed Backlight**
- **VoiceMail Menu**
- **Caller ID Name & Number Log**
- **Thermostat Menu With 16 Zone Access**
- **Reliable RS-485 Communication**
- **Simple 4-Wire Connection**
- **Low Current Draw (100ma @ 12vdc)**
- **Colors: White, Black, Custom**

The LCD-96M is a versatile, easy-to-use, menu-driven keypad that allows control of lighting, heating/cooling, security, home theater, audio/video, pool/spa, irrigation, voice mail, and other systems connected to Stargate. Up to 96 interactive menu screens can be created and downloaded to the LCD-96M by the user/installer with the included Event Manager software. Each menu line (up to 8 per menu) can consist of text (up to 10 letters across) or bitmapped graphics (.bmp format, 64 x 16 pixels).

8 Dual-Position Rocker Buttons, located to the right of the menu display, can be individually programmed to perform different functions depending on the menu selected. The Left and Right side of each button can be programmed independently (such as left = off, right = on) or perform the same function (such as go to Main menu). Programmable functions include: Navigational functions (go to menu, previous menu), Then Actions (X-10, IR, Relay, Macro, VoiceMail, Flag, Variable, Audio Path) and Predefined Menus (Thermostat, VoiceMail, TimeLabel, Variable, Caller ID, DigitPad, TelePad, Time Display). A special Two-Way X-10 feature allows any X-10 address to be assigned to a rocker button. Pressing once on the right or left side of the button turns the X-10 device On or Off. Holding down the right or left side of the button Brightens or Dims. On/Off status is indicated by a normal (Off) or reversed (On) background on the associated menu line for easy viewing, even from a distance.

Individual menu screens or complete setups can be downloaded to keypads via the shared RS-485 connection or stored on disk as templates and later loaded to keypads as needed. Menu line items can be cut, copied and pasted from any menu to another for easy editing. Keypads can also be programmed and edited remotely via modem.

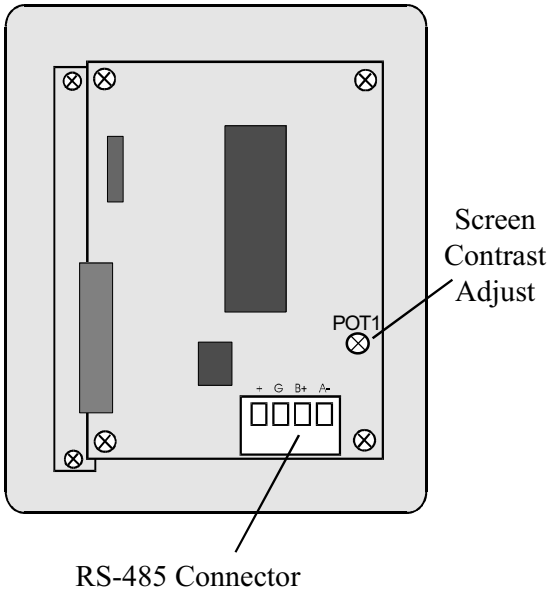
Three LEDs (red, green and yellow), located above the rocker keys, can be individually instructed (from the Event Manager schedule) to turn on, turn off, blink fast or blink slow based on any condition(s).

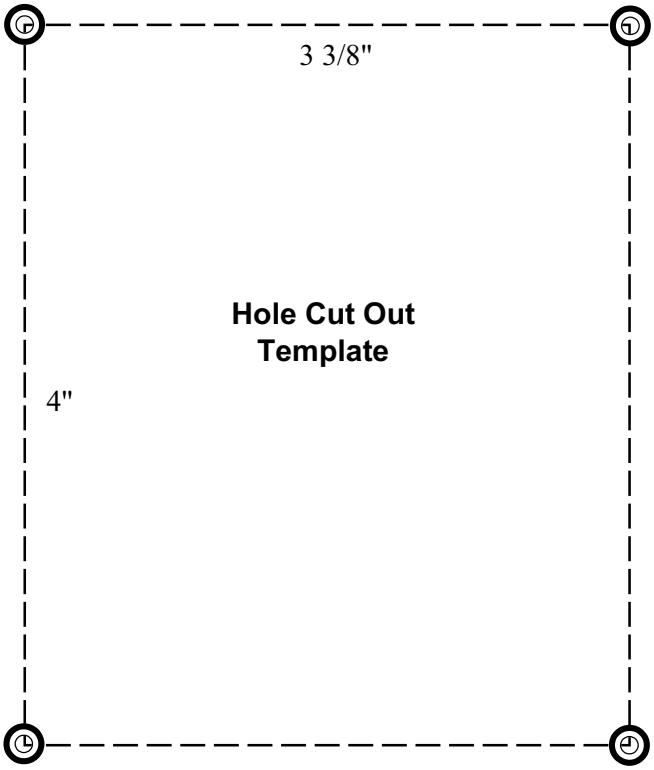
The LCD-96M has a built-in high-contrast green backlight that can be programmed to stay on continuously or turn on with any key press then time out after a specified delay time. The backlight and menu selections can also be accessed via the Event Manager schedule to allow dynamic interaction with other system functions.

Up to 16 LCD-96M Keypads can be connected in a "daisy-chain" to Stargate's RS485 port using two twisted pairs of catagory-5 cable (one pair for communication and the other for 12vdc power) or homerun (star wired) to an optional RS-485 hub. Up to 4 LCD-96M Keypads can be powered by Stargate's on-board 12vdc power supply. Five or more keypads require an external 12vdc power supply.

The LCD-96M faceplate measures 4"W x 4 3/4"H and snaps into an included wall-mount enclosure (3 3/8"W x 4"H x 2"D) for easy installation.

LCD MULTI-MENU KEYPAD
LCD-96M





INSTALLING THE LCD-96M

1) Choose a convenient location to install the LCD-96M Keypad. For best visability, install the keypad at eye level.
2) Using the Hole Cut-Out Template on the previous page, put a small pencil mark on the wall in the four corners of the cut-out.
3) Draw lines to connect the four pencil marks.
4) Check that the horizontal lines are level prior to cutting out the hole.
5) Carefully cut out the 3 3/8" x 4" hole with a dry wall utility knife.
6) Slide the Catagory-5 cable through the access hole in the back of the enclosure.
7) Insert the enclosure into the wall with the lock wings closed flush against the top and bottom of the enclosure (figure 1). Be sure the side marked "THIS SIDE UP" on the back of enclosure lip is facing up and the lock wings are back far enough behind the enclosure lip to accommodate the thickness of the wall (figure 2).
8) Once inserted, lock the enclosure in place by tightening the two lock wing screws.
9) Terminate the four wires of the Catagory-5 cable onto the screw terminal connector (figure 3) and plug into back of keypad.
10) Place the top of the keypad over the top lip of the enclosure then carefully snap the bottom in place (figure 4).

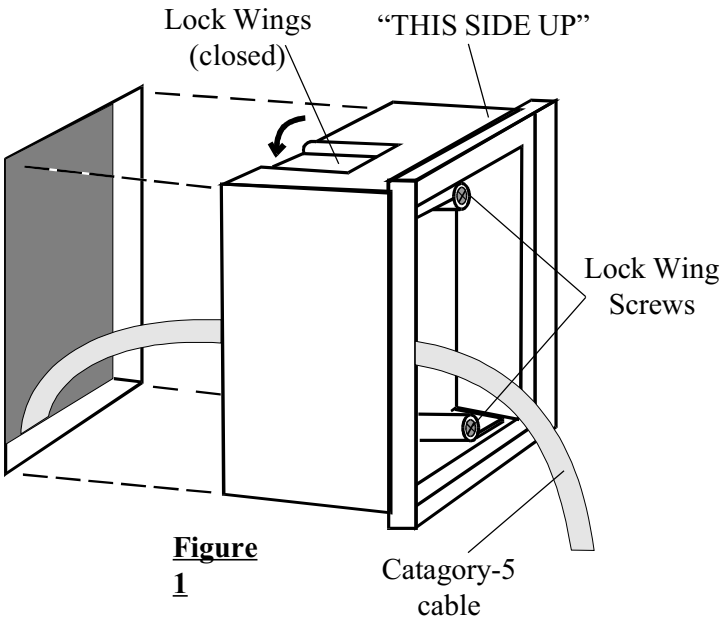


Figure 1

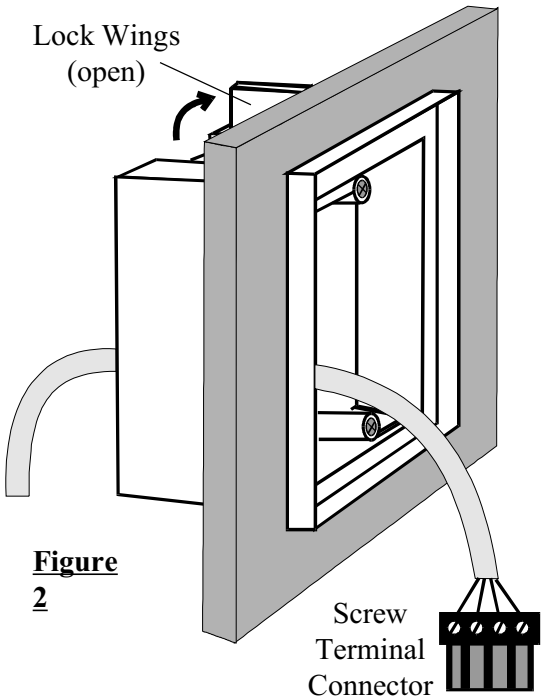


Figure 2

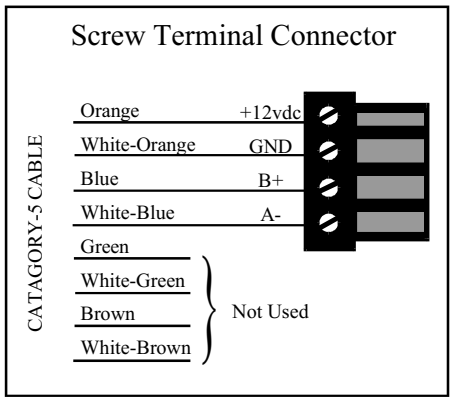


Figure 3

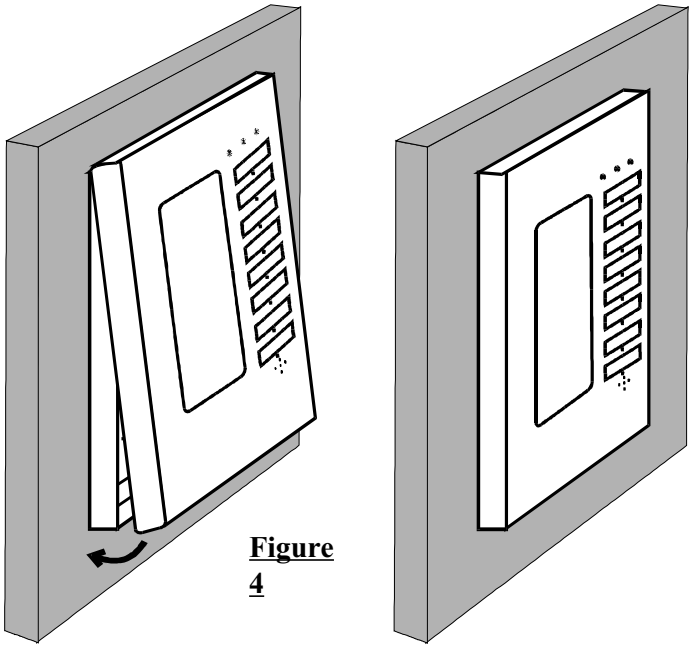
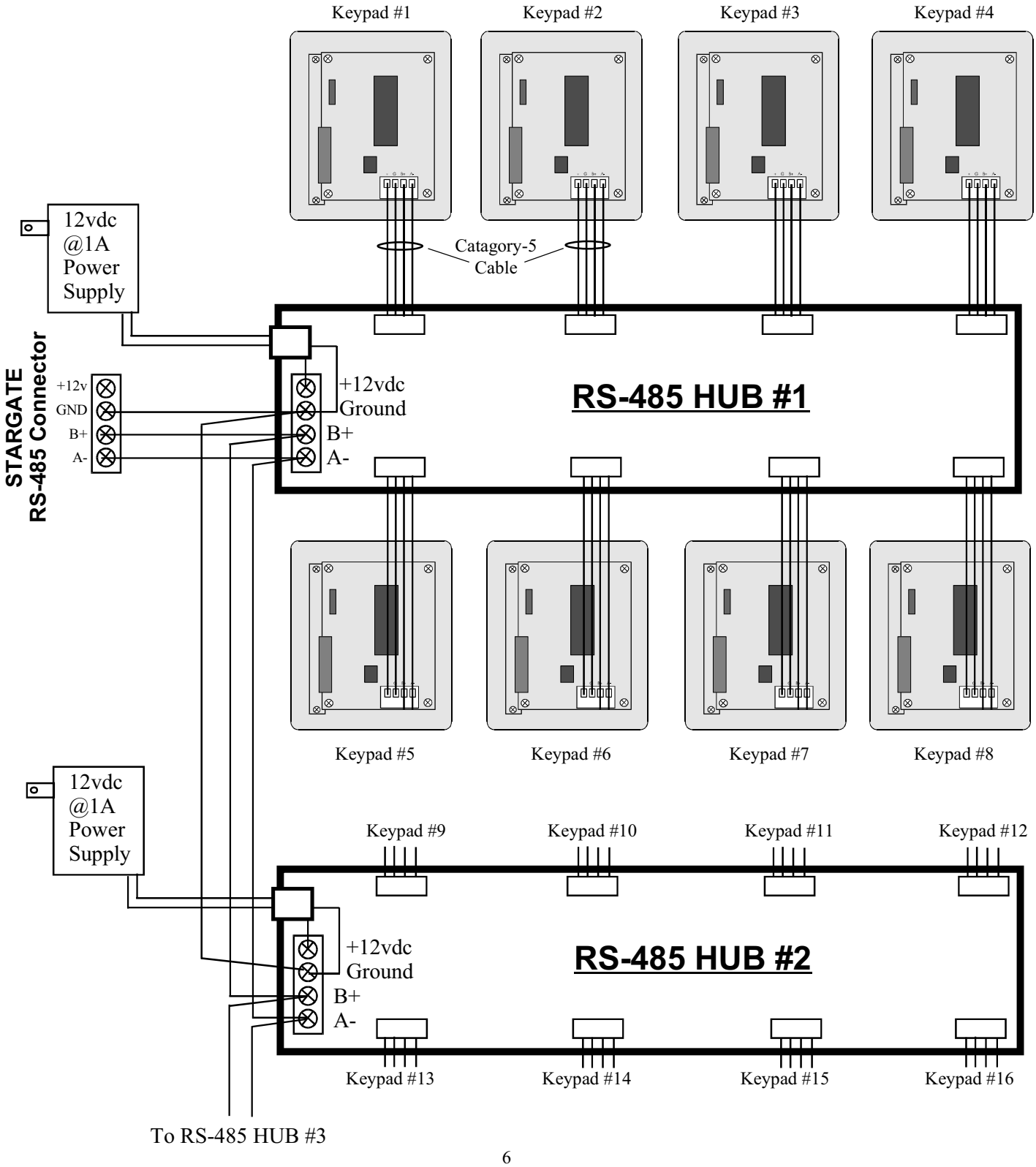


Figure 4

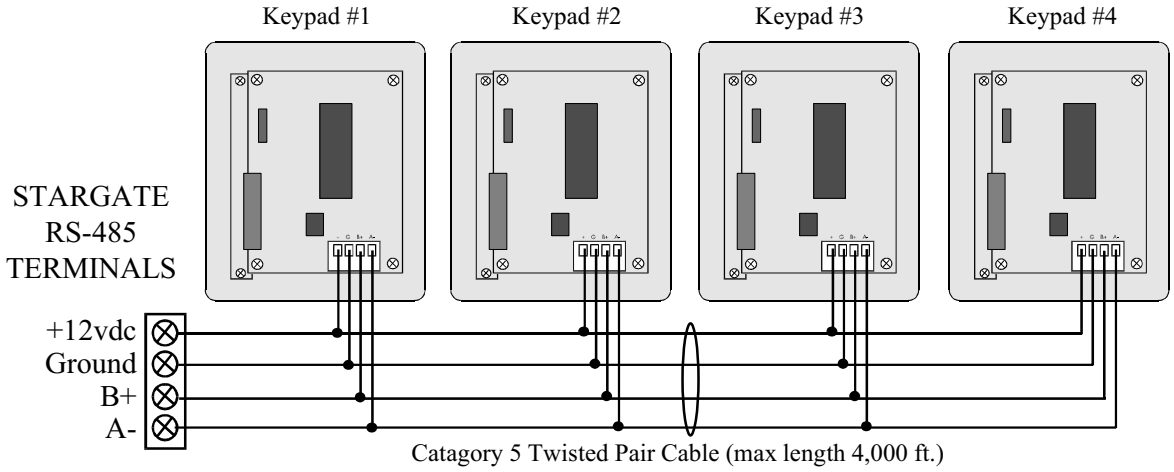
CONNECTION USING RS-485 HUB AND HOME-RUN (STAR) WIRING

An optional RS-485 Hub can be used to allow home-run (star format) wiring of keypads to Stargate. The RS-485 Hub can accommodate up to 8 RS-485 devices (keypads, thermostats, etc.). Additional hubs can be connected to accommodate up to 32 devices. **NOTE: Each hub requires an external 12vdc @ 1A power supply. DO NOT power a hub from Stargate's 12v power source.** When connecting two or more hubs, the RS-485 inputs and ground connection of each hub should be connected in a "daisy-chain" configuration (see diagram). Catagory-5 twisted-pair cable is recommended for all RS-485 connections. Total cable length should not exceed 4,000 feet.

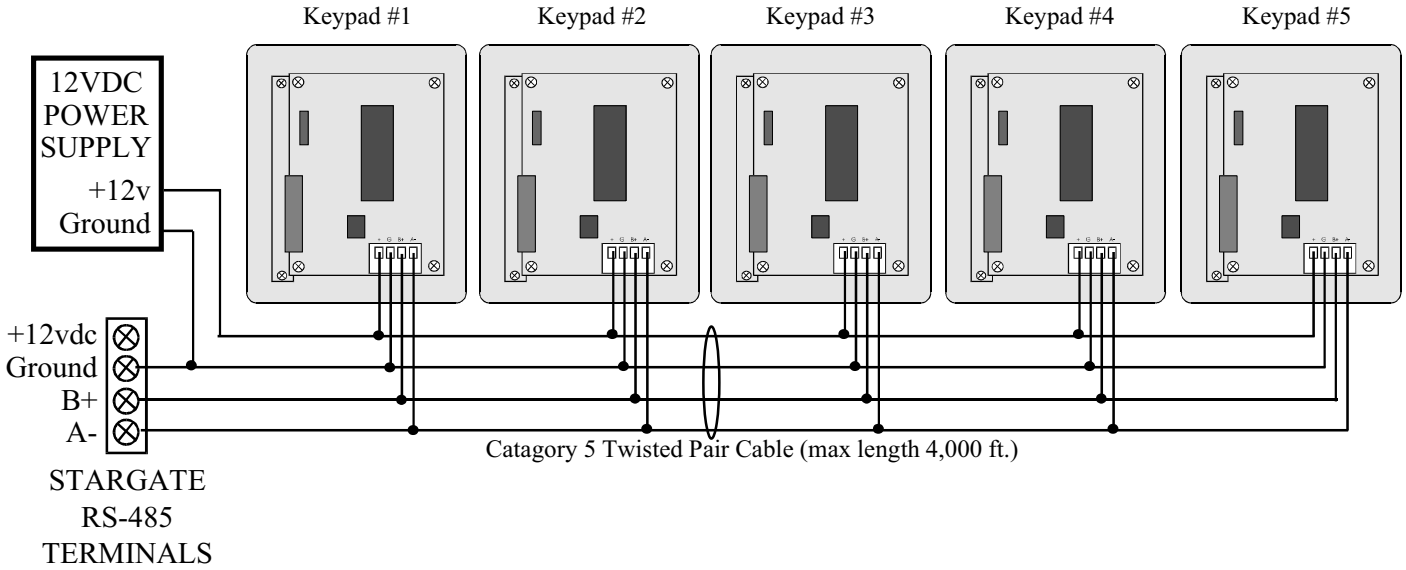


CONNECTION USING DAISY-CHAIN (LOOP) WIRING

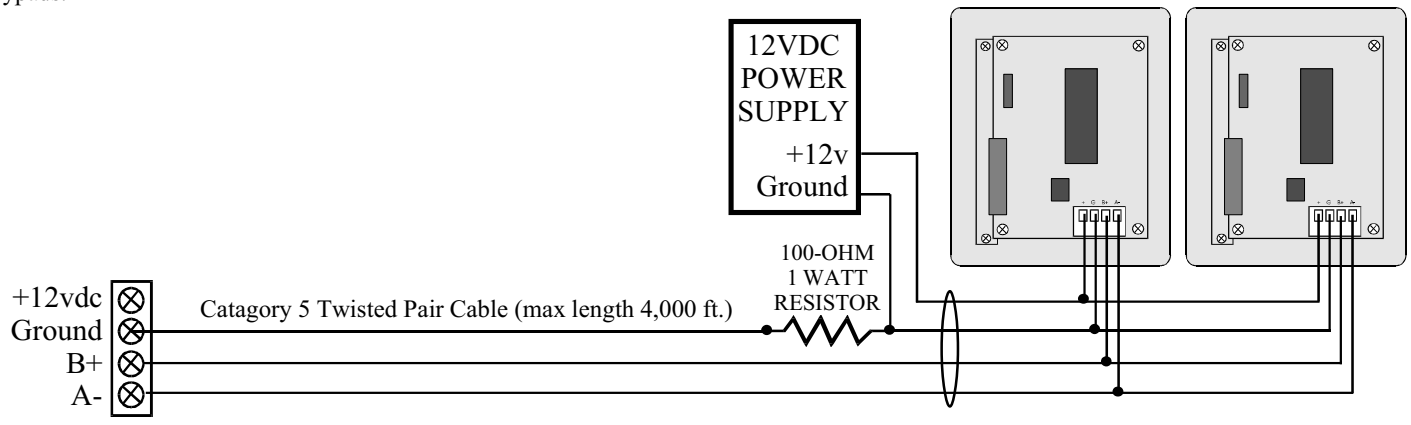
Up to 16 LCD-96M Keypads can be connected in a "daisy-chain" to Stargate's RS485 port using two twisted pairs of catagory-5 cable (one pair for communication and the other for 12vdc power). Up to 4 LCD-96M Keypads can be powered by Stargate's on-board 12vdc power supply. Total cable length should not exceed 4,000 feet.



When connecting 5 or more LCD-96M keypads, an external 12vdc power source is required. Allow 100mA for each LCD-96M. If the external 12vdc power source is located near Stargate, connect the NEGATIVE (Ground) wire of the power supply to the GROUND terminal of Stargate's RS-485 connector.



When connecting an external 12vdc power source at the keypad location, add a 100-ohm, 1watt resistor in series with the ground wire feeding the keypads.



SETUP

1) Connect 12vdc power and RS-485 network pair (B+, A-) to the keypad(s).

(NOTE: Some Stargate RS-485 connectors are labeled "TRB" instead of B+ and "TRA" instead of A-)

If an external 12vdc power supply is used, you MUST connect the ground (negative) of the power supply to the ground (-) terminal of Stargate. The 3 LEDs will blink for several seconds as Stargate establishes communication with the keypad.

2) After the LEDs stop blinking, press and **hold** the top button (either side) until the **Setup** menu screen appears (about 6 seconds).

NOTE: Setup can only be accessed from the Main Menu (Menu #1) top button.

3) If the screen appears blank or faint, using a small screwdriver, **slowly** turn the tiny screen **contrast control** ("POT1") near the RS-485 connector on the back of the keypad (see page 4).

4) Set the keypad address to a number from 1 to 16 using the #2 button labeled **"Addr"**. Press the right side of the button to increment or the left side to decrement. ***NOTE: Each LCD-96M must be set to a different address number.***

5) Set the default menu screen number (menu screen to go to after timeout) to a number from 1 to 96 using the #3 button labeled **"Default Scrn"**. For Main Menu set to 1.

6) Set the default menu screen timeout (seconds) using the #4 button labeled **"Scrn Tout"**. Set to "00" to disable the timeout or a number from 15 - 255 seconds. If a menu is selected from the keypad, it will revert back to the default menu after the menu screen timeout. Menus selected from the schedule using "Goto Menu" will not timeout.

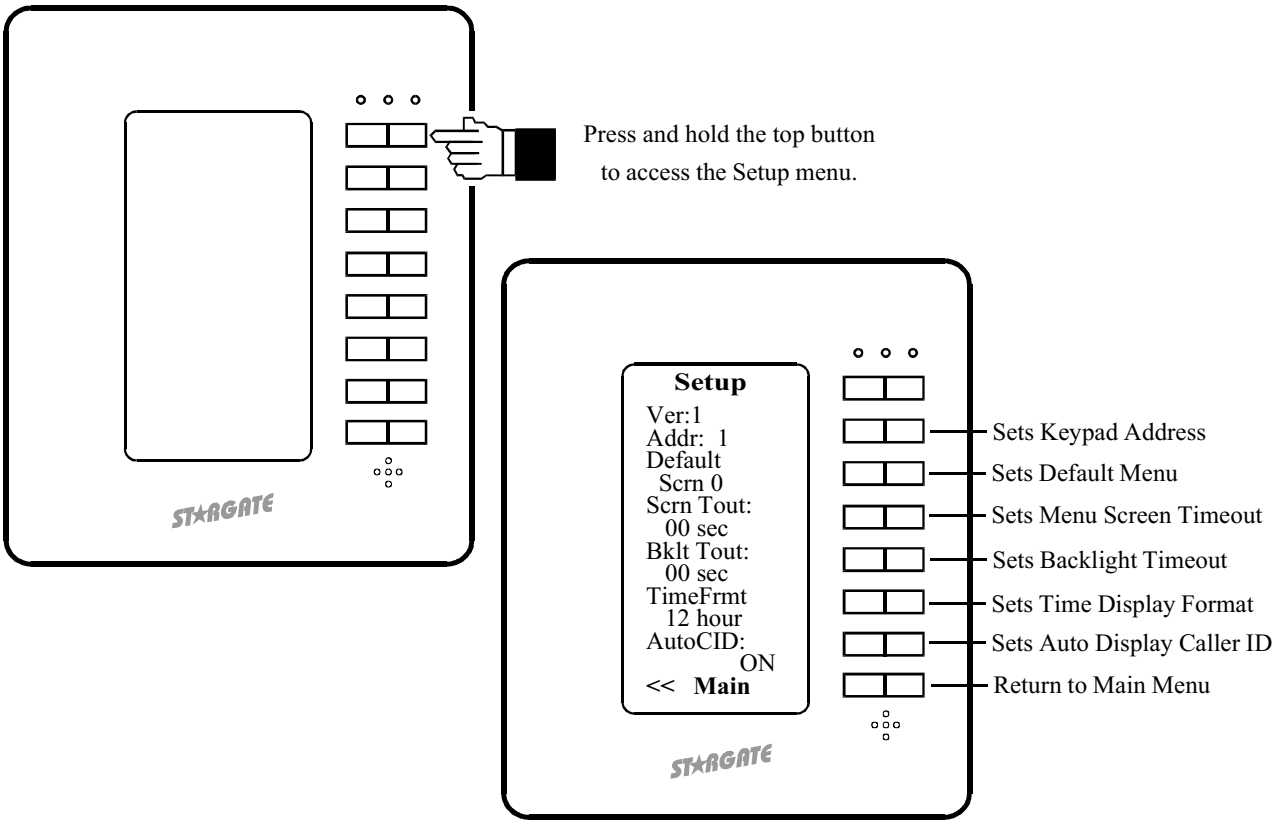
7) Set the display backlight timeout using the #5 button labeled **"Bklt Tout"**. Set to "00" to keep backlight on continuously or a number from 15 - 255 seconds to have it turn off after the selected number of seconds have elapsed since the last button press.

8) Set the Time Display Format (12 hour or 24 hour) using the #6 button labeled **"TimeFrmt"**.

9) Select CallerID Auto Display on/off using the #7 button labeled **"AutoCID"**.

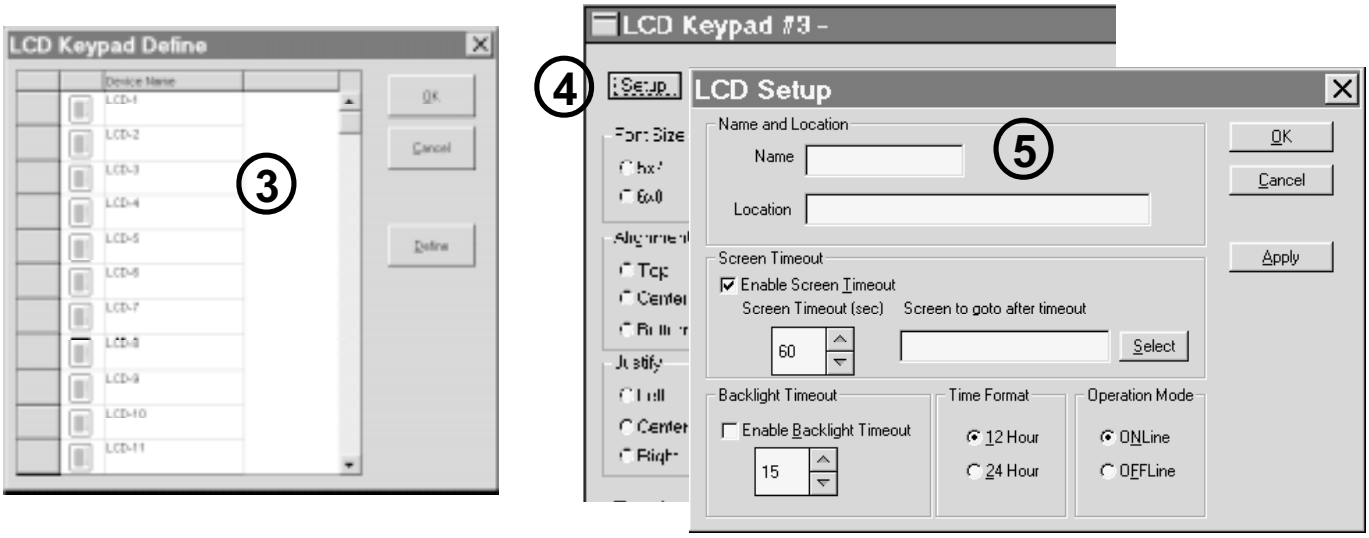
When CallerID Auto Display is on, the menu screen automatically switches to the Caller ID display menu on incoming calls. To function, your phone line must be equipped with Caller ID service and Caller ID must be enabled in the WinEVM Define - Telephone field.

10) Press the bottom (#8) button to return to the Default (Main) Menu.

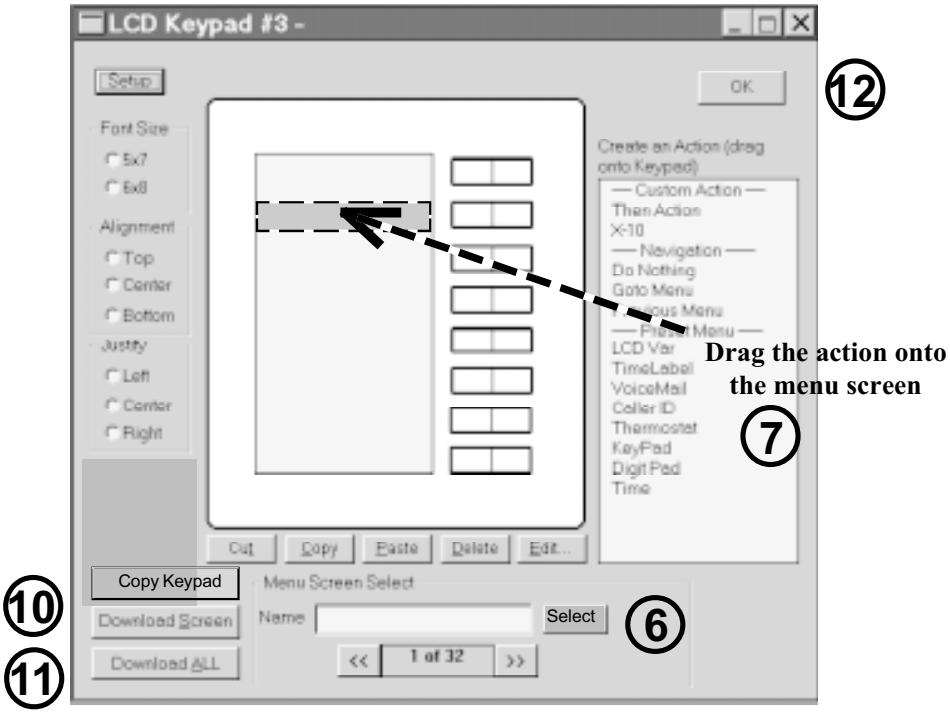


PROGRAMMING AND OPERATION - Introduction

1) Open Event Manager for Windows (WinEVM).
2) Click DEFINE - LCD KEYPAD.
3) Select the LCD Keypad address you want to program then click DEFINE to open the LCD KEYPAD programming utility.
4) Click the SETUP KEYPAD button.
5) Enter a name and location for the keypad. Set or change the timeout parameters (if not already set at keypad). Click Apply then OK.



6) Click the "Select" button in the MENU SCREEN SELECT section to select the Menu number you want to program then type a name for the menu (ie: "MAIN") in the "Name" box.
7) Click on an ACTION you want to assign to a keypad button, then drag the action onto the menu screen (to the left of the desired keypad button). This will bring up an edit field for the type of action selected.
8) Complete the edit field then click OK to accept the action or CANCEL to escape.
NOTE: The left and right side of a keypad button can each be programmed to perform different actions.
Click the "RIGHT BUTTON SAME AS LEFT" box when you want both sides to perform the same action.
9) Repeat step 7 for each button in the menu you want to program.
10) Click DOWNLOAD MENU to load the LCD-96M with the new menu or select another Menu number to program and repeat steps 6 - 9.
11) To download all defined menus to the LCD-96M, click DOWNLOAD ALL. This may take a few minutes depending on the number of menus and content (text/graphics) being downloaded. It is not necessary to DOWNLOAD ALL menus if each menu is downloaded individually.
12) Click OK to exit.



PROGRAMMING AND OPERATION - Introduction

BUTTON ACTIONS
There are three types of button actions that can be assigned, **Custom**, **Navigation** and **Predefined Menu**.

CUSTOM (Then Action, X-10 Two-Way)
Then Actions include X-10, IR, Relay, Macro, VoiceMail, Flag, Variable, HVAC, Audio Path, LCD Keypad and are treated the same as Then Actions used in the schedule.
X-10 Two-Way action allows single button X-10 control of on, off, dim and bright functions with on/off status indication (inverted background = on, normal = off).

NAVIGATION
Navigational functions include "do nothing", "go to menu"and "previous menu". These allow switching to specific menus or previous menu. "Do nothing" prevents the associated keypad button from performing any action but the menu line can still display text or graphics.

PREDEFINED MENUS
Predefined Menus are menus screens with pre-defined function and layout. They include Thermostat, VoiceMail, TimeLabel, Variable, Caller ID, DigitPad and TelePad. Time Display is a single pre-defined Menu Line. The bottom button of the Thermostat, VoiceMail, Caller ID, DigitPad and TelePad menus returns to the Main Menu (left button) or Previous Menu (right button). These are identified with the graphic for "Main" menu and for "Previous" menu.

SIZE
Selects the type size of the text on a menu line. 5 x 7 supports up to 10 characters. 6 x 8 supports up to 8 bold characters.

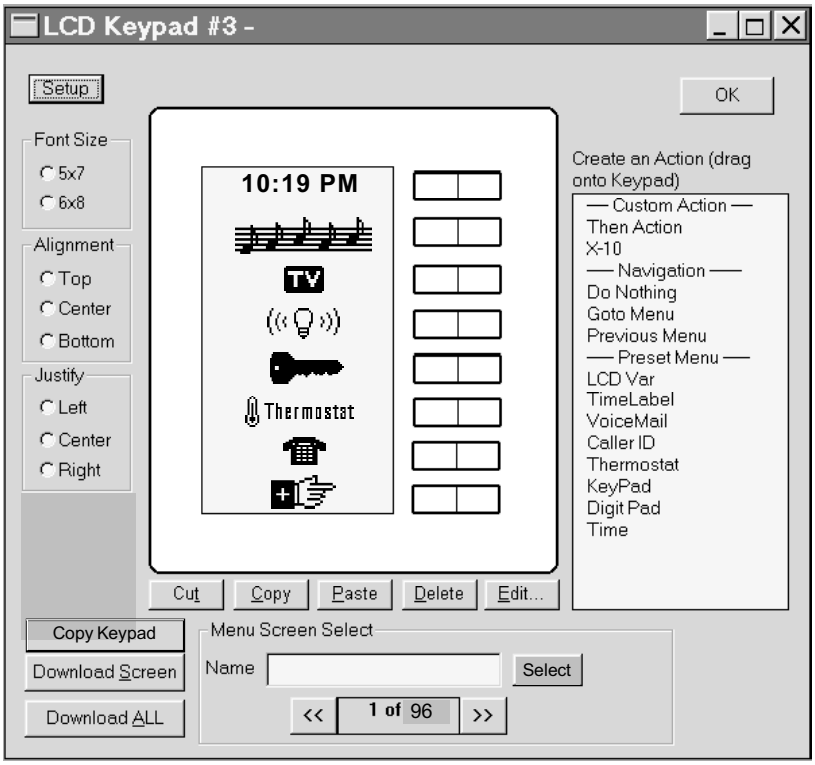
ALIGNMENT
Selects the vertical placement of the text on a menu line.

JUSTIFY
Selects the horizontal placement of the text on a menu line.

CUT, COPY, PASTE, DELETE, EDIT
Performs the corresponding function to the selected menu line.

COPY KEYPAD
Copies all menus from the selected keypad to another keypad.

DOWNLOAD SCREEN / DOWNLOAD ALL
Download Screen loads only the displayed menu into the LCD-96M keypad.
Download ALL loads all defined menus into the LCD-96M keypad.



Using Bitmapped Graphics

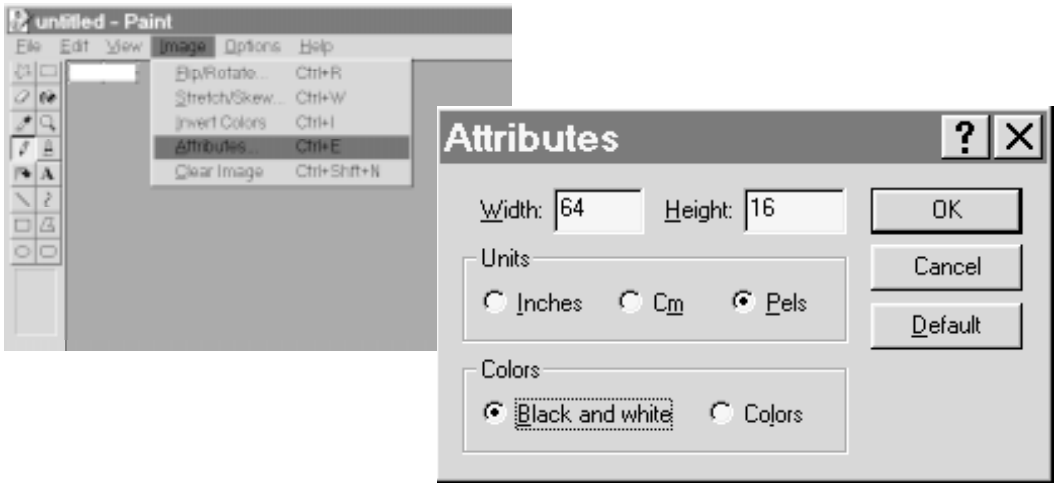
Many menu items allow the use of bitmapped graphics in place of text for labeling a menu line. Graphics can enhance the look of a menu and simplify identifying the function of a button. For instance, using up and down **arrows** in place of the words "up" and "down"simplifies the thermostat menu. A library of useful menu graphics is included with WinEVM versions 2.43 and higher. Each LCD Keypad address can have a unique library of up to 48 bitmapped graphics.

Creating Bitmapped Graphics

Bitmapped Graphics can be created in Microsoft Paint or any other graphics program that supports bitmapped graphics. Bitmapped Graphics used in menus **must be stored as .bmp files sized to 64 x 16 pixels, black & white only in the STARGATE folder (or folder containing your schedule and database files).**

To create a new bitmap graphic in MicroSoft Paint:

1) Click FILE - NEW
2) Click "Image" then click "Attributes" to bring up the Attributes field. Type 64 in the "Width" box. Type 16 in the "Height" box. Select "Pels" in the Units section. Select "Black and White" in the Colors section. Then Click OK.
3) Draw the desired bitmap. Click the Magnifier Tool to enlarge the workspace if necessary.
4) Click FILE - SAVE and select the STARGATE folder (or folder containing your schedule and database files), type a name for the bitmap then click OK.

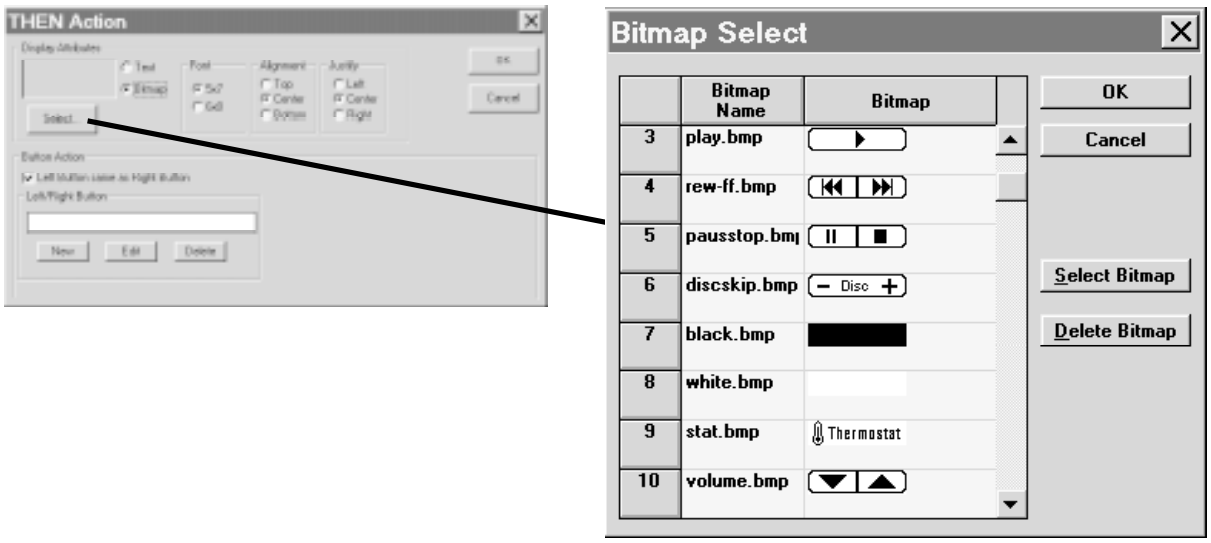


To place a graphic onto a menu line:

1) Select "bitmap" then click "Select" in the Display Attributes section. This will bring up the Bitmap Select menu.
2) Click on the desired Bitmap name or graphic in the list then click OK.

To add a new bitmap to the list, click on a blank line in the Bitmap Select list then click "ADD" and select the desired bitmap.

NOTE: Size, Alignment and Justify do not apply to graphics.

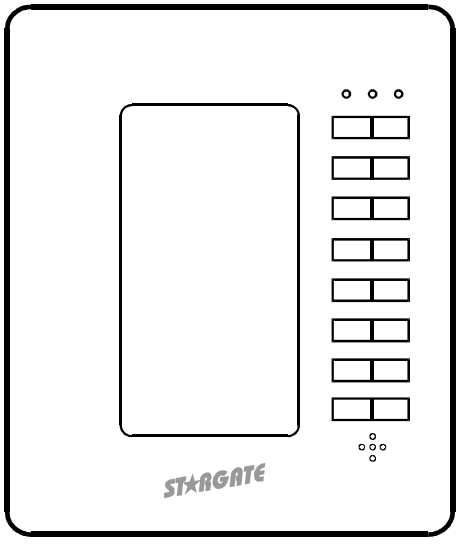


Then Actions

Selecting Then Action will bring up the Then Action field. In the DISPLAY ATTRIBUTES section, type the name you want to appear on the menu line (up to 10 characters) or select a bit map graphic. Graphics used in menus must be stored in the STARGATE folder or folder containing your schedule (.sch) and database (.dbf) files. In the BUTTON ACTION section, click NEW under the LEFT Button heading to bring up the button action choices for the LEFT side of the rocker button. Select the desired Then Action. Do the same for the RIGHT Button if you want the RIGHT side of the rocker button to perform a different Then Action, then click OK. Otherwise check the "RIGHT BUTTON SAME AS LEFT BUTTON" box to assign the same function to both sides, then click OK.

Then Actions triggered by a button are treated the same as those used in the Event Manager schedule. For complete details on Then Actions, refer to the "THEN/ELSE Actions" section of your Stargate User Manual.

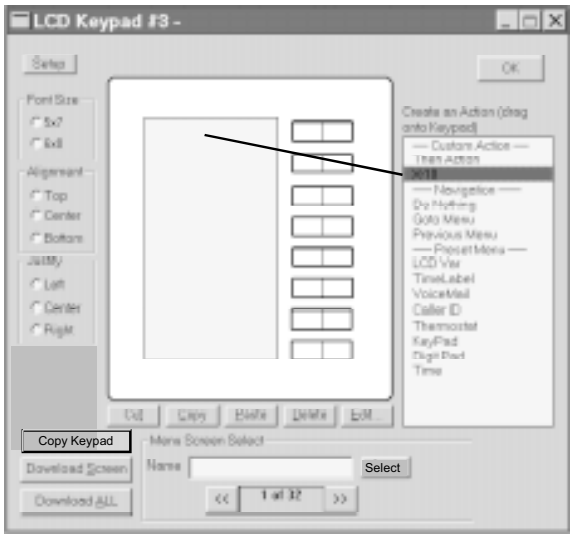
When a Then Action button is pressed, the programmed action will be executed.



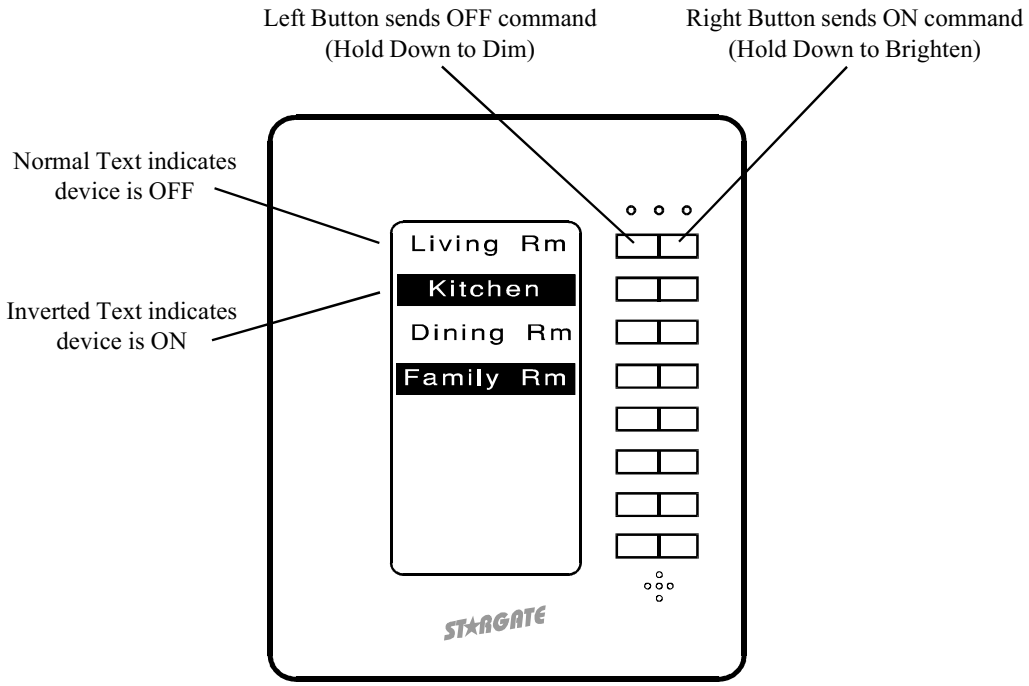
PROGRAMMING AND OPERATION - Custom Actions

X-10 Two-Way

Selecting X-10 Two-Way as a menu item will bring up the X-10 field. Select the X-10 device you want to control in the X-10 Device List then type the name you want to appear on the menu line (up to 10 characters). Double-clicking the name in the list will insert the first 8 or 10 characters of the name into the text box (depending on size selected). Graphics used in menus must be stored as .bmp files sized to 64 x 16 pixels, black & white only in the STARGATE folder (or folder containing your schedule and database files).

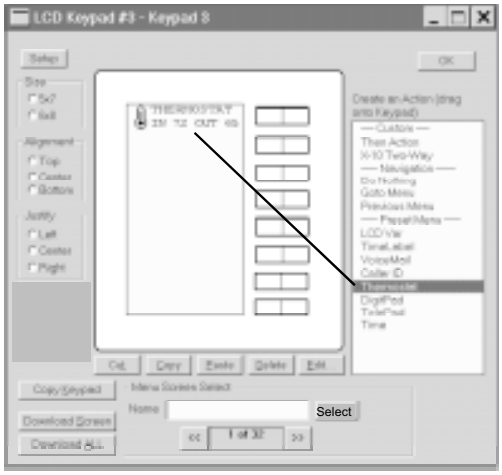


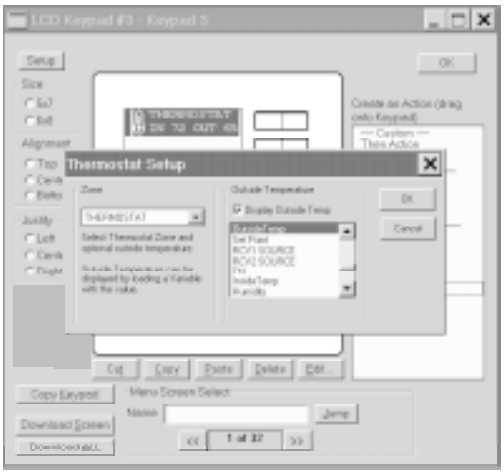
When the RIGHT side of the X-10 button is pressed, Stargate sends the associated ON command. When the LEFT side of the X-10 button is pressed, Stargate sends the associated OFF command. Holding down the RIGHT side of the button BRIGHTENS, holding down the LEFT side DIMS. When the associated X-10 device is in the ON state, the name on the the menu line is inverted (black background with green text). When the associated X-10 device is in the OFF state, the name on the the menu line is normal (black text on green background). The On/Off status indication will also respond to any X-10 controller.



Thermostat

Selecting Thermostat as a menu item will bring up the Thermostat Setup field. Select the Thermostat Zone to be displayed on the Thermostat menu line (to the left of the associated keypad button). The Thermostat menu line will display the name of the zone (first 8 letters) in the upper half of the menu line and the current temperature on the bottom half.

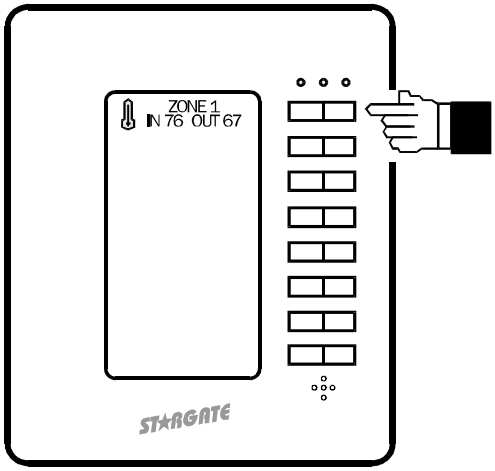


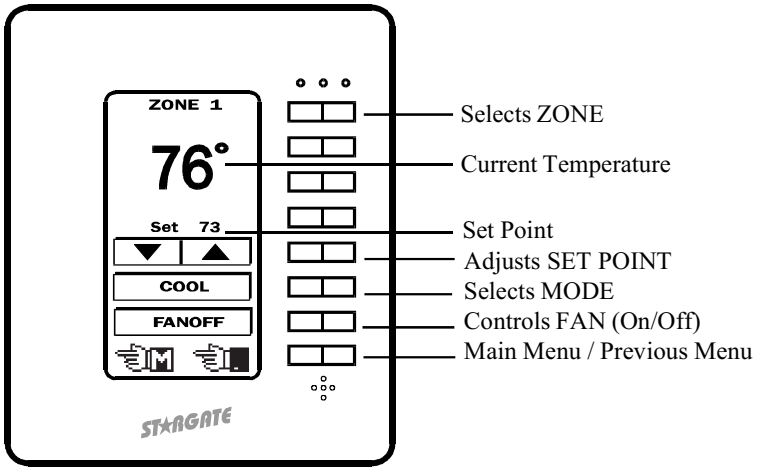


Outside temperature can also be displayed on the bottom half of the menu line by clicking the "DISPLAY OUTSIDE TEMP" box and selecting a defined variable in the list below it. The variable must be loaded with the outside temperature value from an analog input, RS-20 Remote temperature sensor or other source, then updated to the keypad with an event in the Event Manager schedule using the THEN - LCD VARIABLE UPDATE action. Example:

EVENT: Update Outside Temp Variable to LCD-96M
If
(A/D:Outside Temp) changes value
Then
(V:Outside Temp) LOAD with (A/D: Outside Temp)
LCD: Update LCD Variable <V:Outside Temp> [KP:ALL]
Delay 0:15:00
End

When the Thermostat button (either side) is pressed, the display switches to the Thermostat menu. The thermostat menu displays zone name, temperature, set point, mode (heat/cool/auto/off) and fan status (on/off) and allows control of set point, mode and fan. Up to 16 thermostat zones can be defined and accessed from the thermostat menu. Pressing the top (#1) button selects the thermostat zone. RCS RS-20 Remote temperature sensors are treated as separate zones and can also be displayed by a thermostat menu.

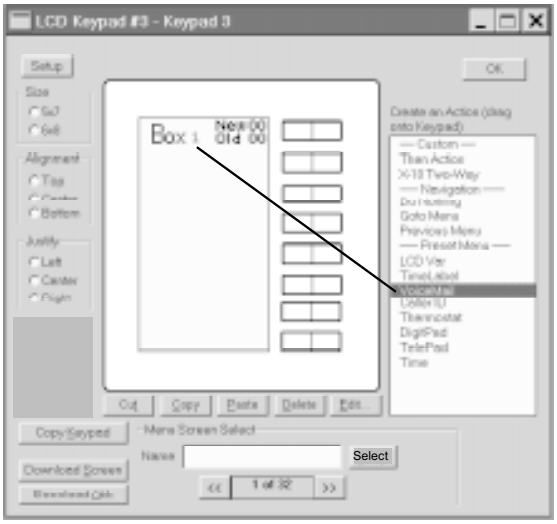


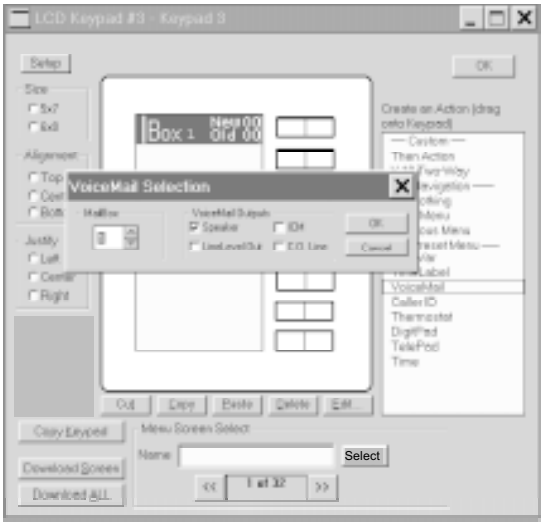


PROGRAMMING AND OPERATION - Pre-defined Menus

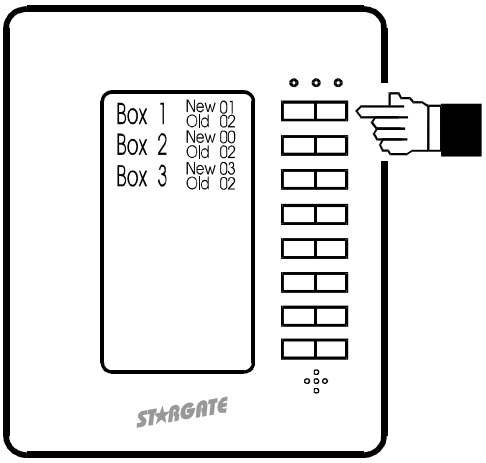
VoiceMail

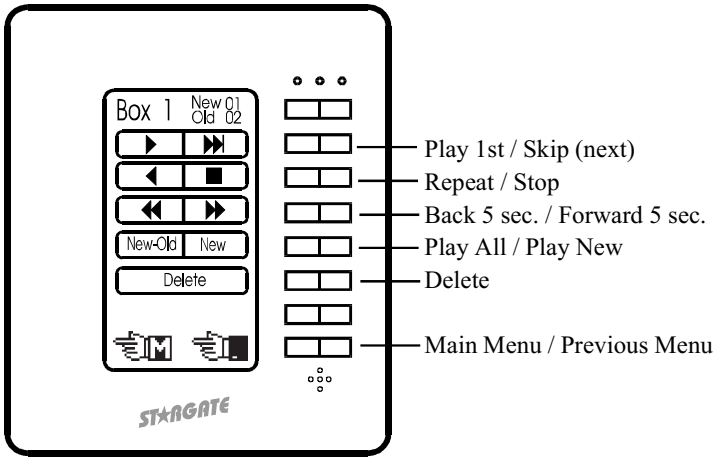
Selecting VoiceMail as a menu item will bring up the VoiceMail selection field. Select a mailbox number and the desired output for playing back voicemail messages then click OK. This will display the Box Number on the left side of the menu line and the number of NEW and OLD messages on the right side.





When the VoiceMail button is pressed, the display switches to the associated VoiceMail menu, with pre-defined buttons for Play/Skip, Repeat/Stop, Back 5 Seconds/Forward 5 Seconds, Play All New & Old Messages/Play New Messages Only and Delete. The top menu line of the VoiceMail menu displays the Box Number and number of new and old messages in the mailbox.



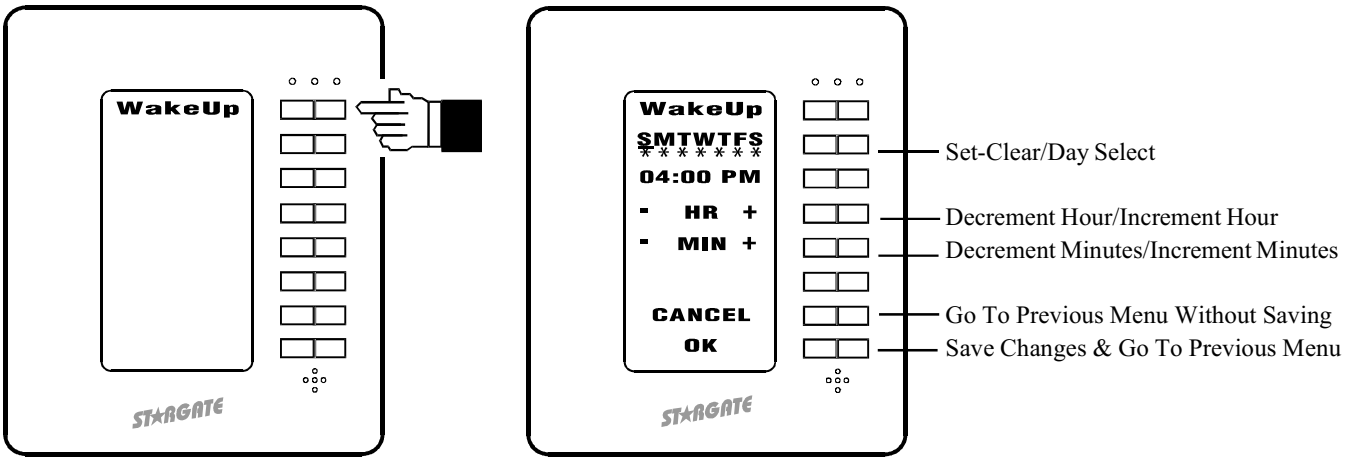


Time Label

Selecting Time Label as a menu item will bring up the Time Label field. Select the Time Label you want to control then type the name you want to appear on the menu line (up to 10 characters) or select a bit map graphic then click OK. Double-clicking the name in the list will insert the first 8 or 10 characters of the name into the text box (depending on size selected).

When the Time Label menu button is pressed, the screen switches to the Time Label menu. The top menu line of the Time Label menu displays the name you assigned. The next menu line lists the days of the week by first letter (SMTWTFS). Pressing the RIGHT side of button #2 scrolls through each day. An underline below the letter indicates the selected day. Pressing the LEFT side of button #2 inserts or removes an asterik (*) below the selected day(s). The asterik indicates the day(s) the Time Label is in effect. The next menu line down displays the time of day the Time Label is in effect. Button #4 ("HR") sets the Hour (left side decrements, right side increments). Button #5 ("MIN") sets the Minutes (left side decrements, right side increments). Button #7 ("CANCEL") returns to the previous menu without saving any changes. Button #8 ("OK") enters the new Time Label data and returns to the previous menu.

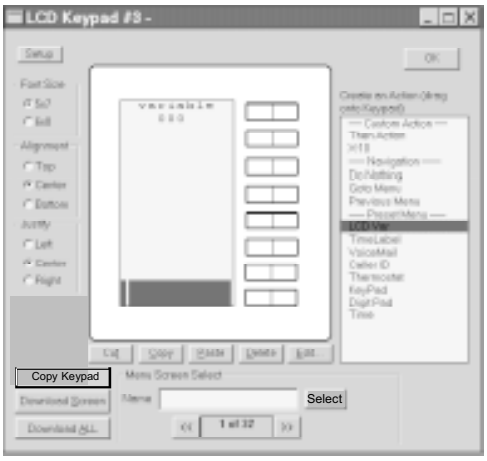
NOTE: In order for a TimeLabel to be controlled exclusively from the keypad, ***deselect*** *all the days of the week when defining the Time Label in WinEVM and select "TimeLabels" in the download options. Once downloaded, the TimeLabel can only be programmed by a keypad. (If a "Touchtone to TimeLabel" function is used in the schedule, it can change the TimeLabel time but not the day of the week.) Deselect "TimeLabels" in the download options for future downloads, otherwise any settings made from the keypad will be overwritten. Software/Firmware updates will clear Time Label settings. It is necessary to reset Time Label settings from a keypad after updating software/firmware. Changes made to Time Label settings from a keypad will not appear in the WinEVM Define - Time Label field.*



PROGRAMMING AND OPERATION - Pre-defined Menus

Variable

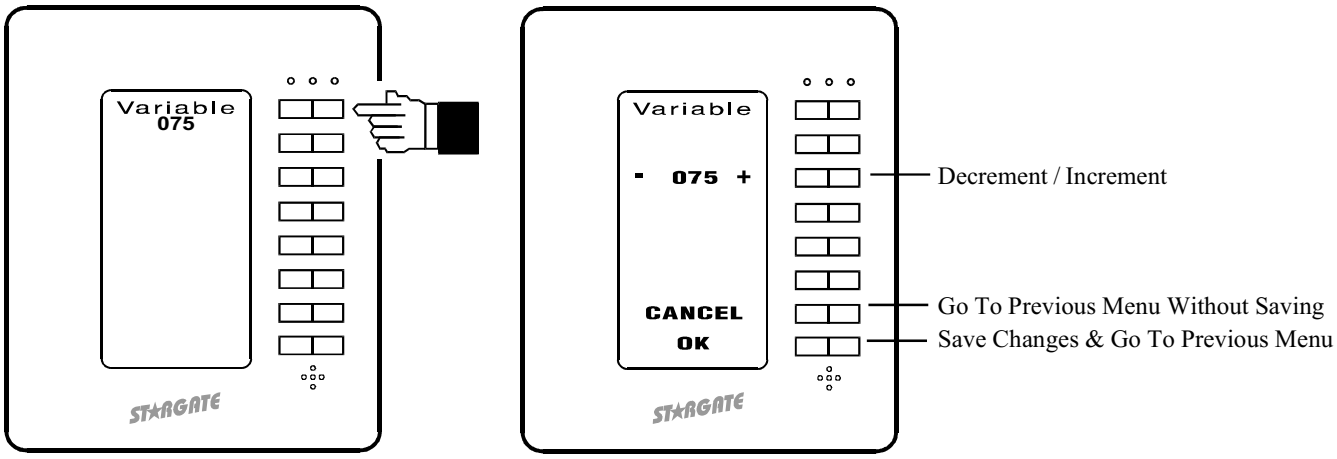
Selecting Variable as a menu item will bring up the Variable field. Select the variable whose value is to be displayed on the menu item (to the left of the associated keypad button). Type the variable name (up to 8 characters) to be displayed above the numerical value. Double-clicking the name in the list will insert the first 8 or 10 characters of the name into the text box (depending on size selected).



To minimize traffic on the RS-485 network, updating the displayed variable value requires an event in the Event Manager schedule using the THEN - LCD VARIABLE UPDATE action. Example:

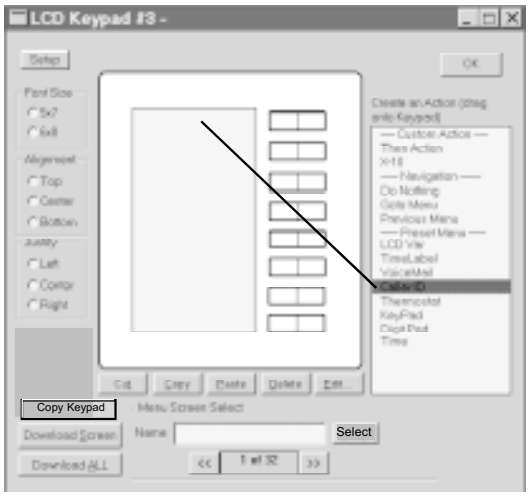
EVENT: Update Humidity Variable to LCD-96M
If
  (A/D:Humidity) changes value
Then
  (V:Humidity) LOAD with (A/D: Humidity)
  LCD: Update LCD Variable <V:Humidity> [KP:ALL]
End

When the LCD Variable menu item button is pressed, the display switches to the LCD Variable menu. The LCD Variable menu displays the variable value and allows the variable to be incremented or decremented by pressing the + or - side of button #3.

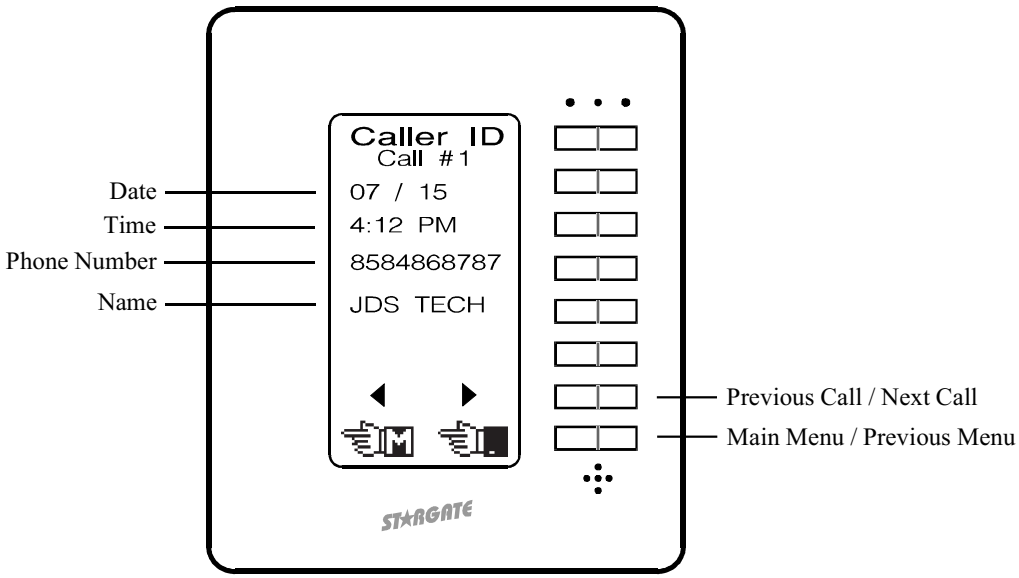


Caller ID

Selecting Caller ID as a menu item will bring up the Caller ID field. Type the name you want to appear on the menu line (up to 10 characters) or select a bit map graphic then click OK.

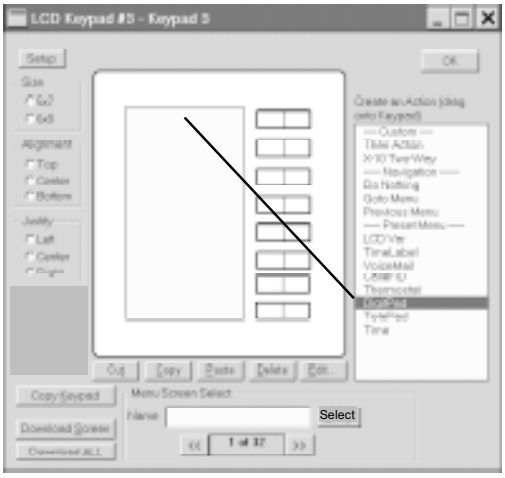


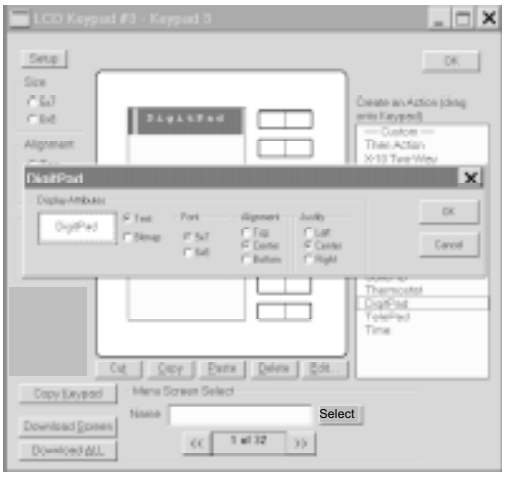
When the Caller ID button is pressed, the display switches to the Caller ID menu which stores and displays Caller ID data (time, date, number and name) for the last 50 calls. The most recent call is listed first. Pressing the left or right arrow button allows you to scroll through and review previous calls.



DigitPad

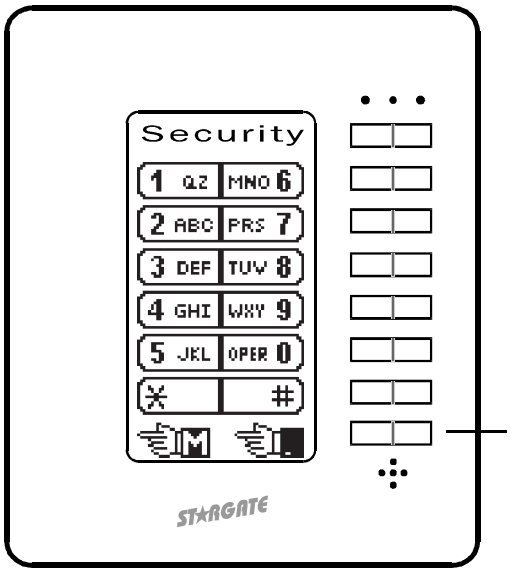
Selecting DigitPad as a menu item will bring up the DigitPad field. Type the name you want to appear on the menu line (up to 10 characters) or select a bitmapped graphic then click OK. Graphics used in menus must be stored as .bmp files sized to 64 x 16 pixels, black & white only in the STARGATE folder (or folder containing your schedule and database files).





When the DigitPad menu item button is pressed, the display switches to the DigitPad menu. The DigitPad menu contains pre-labeled buttons similar to a telephone keypad. While a DigitPad button is pressed, the corresponding menu line inverts to confirm the button press. Programming any single button press or sequence of button presses to perform an action requires an event in the Event Manager schedule using the IF - LCD KEYPAD condition.

The DigitPad can serve as a security keypad with multiple access codes to arm and disarm a connected security panel. This requires an "armed" output from the security panel connected to one of Stargate's digital inputs and one of Stargate's relays (COM and N.O. terminals) connected to a security panel zone programmed for "KEYSWITCH" operation. Example:



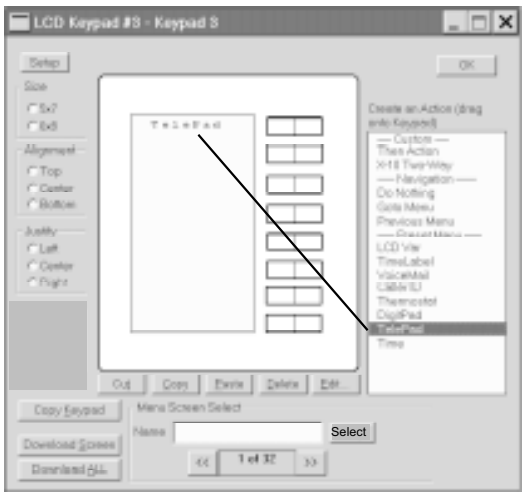
Main Menu / Previous Menu

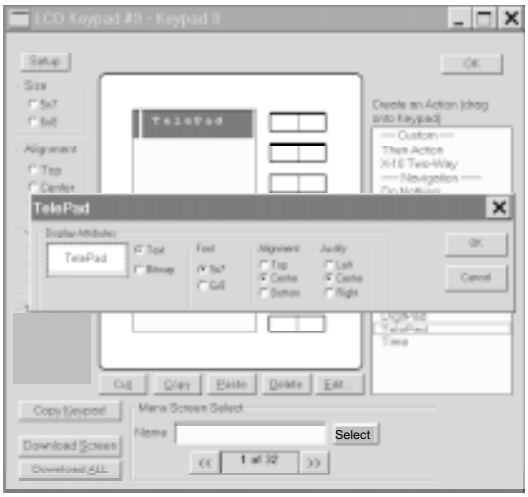
```
EVENT:  Security Access Code
If
 LCD Seq:'1 2 3 4 ' Received within 4 seconds
Then
 (RELAY:Security) ON
 DELAY  0:00:01
 (RELAY:Security) OFF
 DELAY  0:00:02
   If
      (DI:Armed) is OFF
   Then
      LCD:  Red LED OFF [KP:ALL]
      Voice:SECURITY SYSTEM DISARMED  [Spkr]
   Else
      LCD:  Red LED Blink Slow [KP:ALL]
      Voice:SECURITY SYSTEM ARMED  [Spkr]
   Nest End
End
```

PROGRAMMING AND OPERATION - Pre-defined Menus

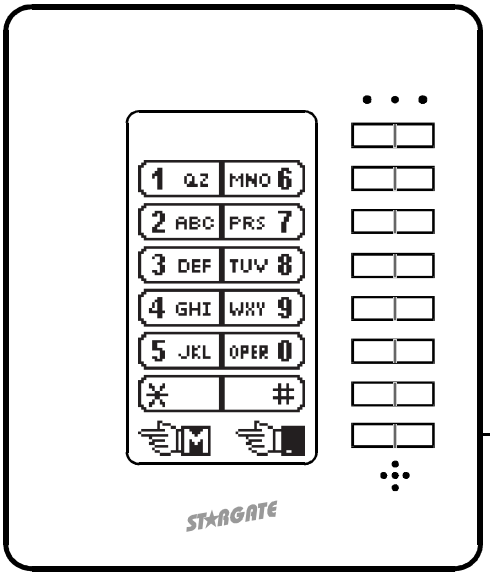
TelePad

Selecting TelePad as a menu item will bring up the TelePad field. Type the name you want to appear on the menu line (up to 10 characters) or select a bitmapped graphic* then click OK. Graphics used in menus must be stored as .bmp files sized to 64 x 16 pixels, black & white only in the STARGATE folder (or folder containing your schedule and database files).





When the TelePad menu item button is pressed, the display switches to the TelePad menu. The TelePad menu contains pre-labeled buttons similar to a telephone keypad and performs the same functions as a telephone on the ICM line. For example, if the Telephone Parameters are defined for 90 Codes, pressing * 1 1 on the TelePad will instruct Stargate to issue an A-1 ON X10 command. Any event programmed to respond to a touchtone sequence can also be controlled from the TelePad menu. Note: TelePad cannot trigger an event that includes On-Hook or Off-Hook conditions in the telephone sequence. While a TelePad button is pressed, the corresponding menu line inverts to confirm the button press.

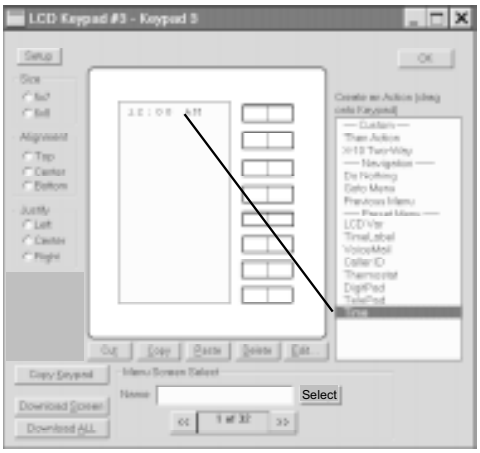


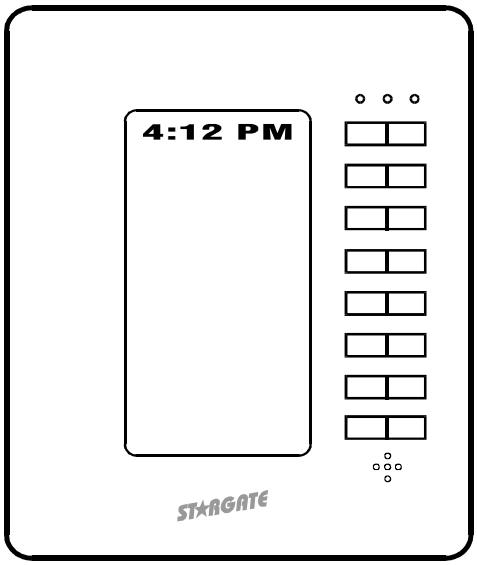
* Graphics used in menus must be stored in the STARGATE folder as .bmp files sized to 64 x 16 pixels, black & white only.

PROGRAMMING AND OPERATION - Pre-defined Menus

Time Display

Selecting Time Display as a menu item will place "12:00" on the selected line. Once downloaded, the current time will be displayed on the corresponding menu line of the LCD-96M. Set Display Attributes then click OK. Click SETUP to select 12 hour or 24 hour format.





Then LCD Keypad Actions

In addition to all the menu functions that can be downloaded and stored in the LCD-96M, a variety of scheduled actions can be incorporated into the Event Manager schedule to interact with the keypad using the THEN - LCD KEYPAD function. These include **LED Functions** that control the three LEDs, **Menu Screen Functions** that affect individual menus or menu lines and **Keypad Functions** that affect the entire keypad.

LED Functions

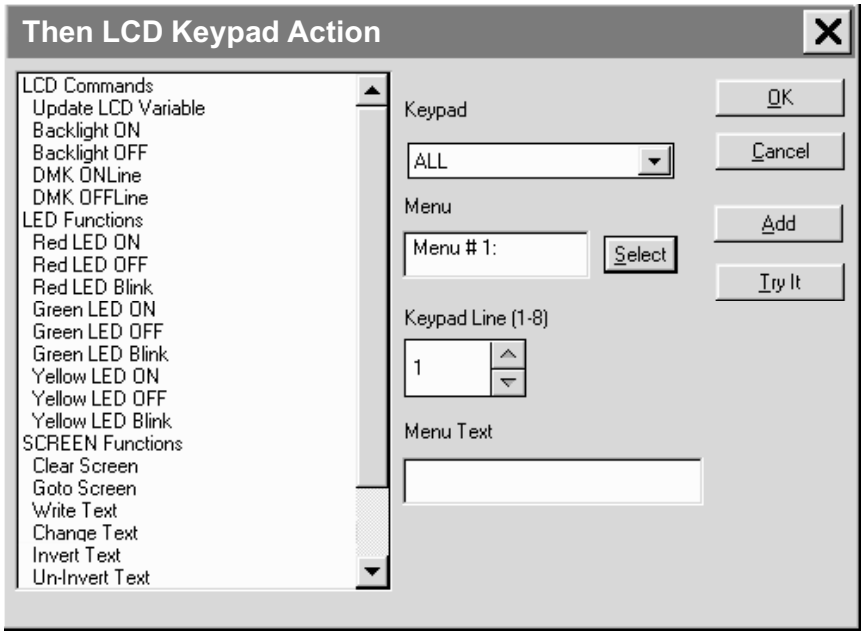
Red LED ON - turns the red LED on steady.
Red LED OFF - turns the red LED off.
Red LED Blink Slow - blinks the red LED on and off 2 times per second.
Red LED Blink Fast - blinks the red LED on and off 4 times per second.
Green LED ON - turns the green LED on steady.
Green LED OFF - turns the green LED off.
Green LED Blink Slow - blinks the green LED on and off 2 times per second.
Green LED Blink Fast - blinks the green LED on and off 4 times per second.
Yellow LED ON - turns the yellow LED on steady.
Yellow LED OFF - turns the yellow LED off.
Yellow LED Blink Slow - blinks the yellow LED on and off 2 times per second.
Yellow LED Blink Fast - blinks the yellow LED on and off 4 times per second.

Menu Screen Functions

Update LCD Variable - sends current value of the specified variable to all keypads.
Clear Screen - clears the LCD screen display.
Go To Menu - switches to a specific menu.
Write Text - sends temporary text to a menu line on a specific or all keypads.
Change Text - changes text on a specific menu line of a specific menu.
Invert Text - reverses the background and text color of a specific menu line.
Un-Invert Text - returns the background and text color of a specific menu line to normal.

Keypad Functions

Backlight ON - turns on backlight.
Backlight OFF - turns off backlight.
Backlight Timeout - sets backlight timeout (seconds).
Default Menu - sets the default menu.
Default Menu Timeout - sets the default menu timeout (seconds).
Keypad ON Line - turns on communication between keypad buttons and Stargate.
Keypad OFF Line - turns off communication between keypad buttons and Stargate.



PROGRAMMING AND OPERATION - Then LCD Keypad Actions

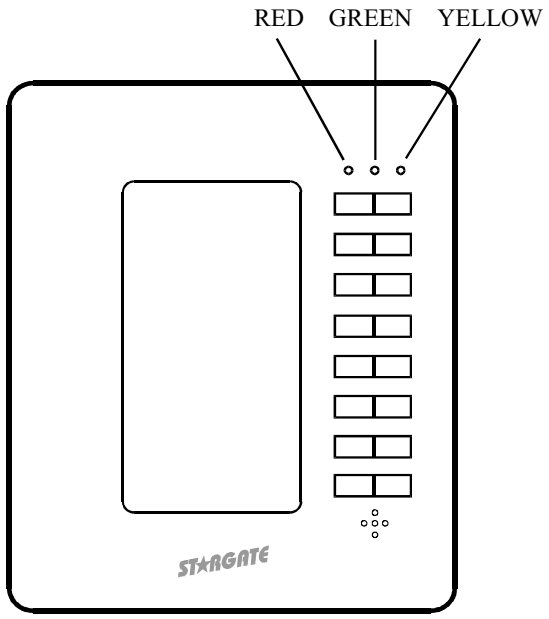
LED Actions

Three LEDs (red, green and yellow), located above the rocker keys, can be individually programmed (from the Event Manager schedule) to turn on, turn off, blink fast or blink slow based on any condition(s).

Example 1:

The **Red** LED can display status of a connected security system (on = armed, off = disarmed, blink fast = violated, blink slow = exit delay).

```
EVENT:  ARMED
 If
  (DI:Armed) is ON
 Then
  LCD:  Red LED ON [KP:ALL]
 End

EVENT:  DISARMED
 If
  (DI:Armed) is OFF
 Then
  LCD:  Red LED OFF [KP:ALL]
 End

EVENT:  VIOLATED
 If
  (DI:Violated) is ON
 Then
  LCD:  Red LED Blink-Fast [KP:ALL]
 End

EVENT:  EXIT DELAY
 If
  (DI:Exit Delay) is ON
 Then
  LCD:  Red LED Blink-Slow [KP:ALL]
 End
```



Example 2:

The **Green** LED can indicate VoiceMail status (on = Old Messages, off = No Messages, blink = New Messages).

```
EVENT:  VOICE MAIL - NEW MSGS
 If
  (VMAIL:MBX-1 # New Msg) > 0
 Then
  LCD:  Green LED Blink-Fast [KP:ALL]
 End

EVENT:  VOICE MAIL - OLD MSGS
 If
  (VMAIL:MBX-1 # New Msg) = 0
  and  (VMAIL:MBX-1 # Old Msg) > 0
 Then
  LCD:  Green LED ON [KP:ALL]
 End

EVENT:  VOICE MAIL - NO MSGS
 If
  (VMAIL:MBX-1 # New Msg) = 0
  and  (VMAIL:MBX-1 # New Msg) = 0
 Then
  LCD:  Green LED OFF [KP:ALL]
 End
```

Example 3:

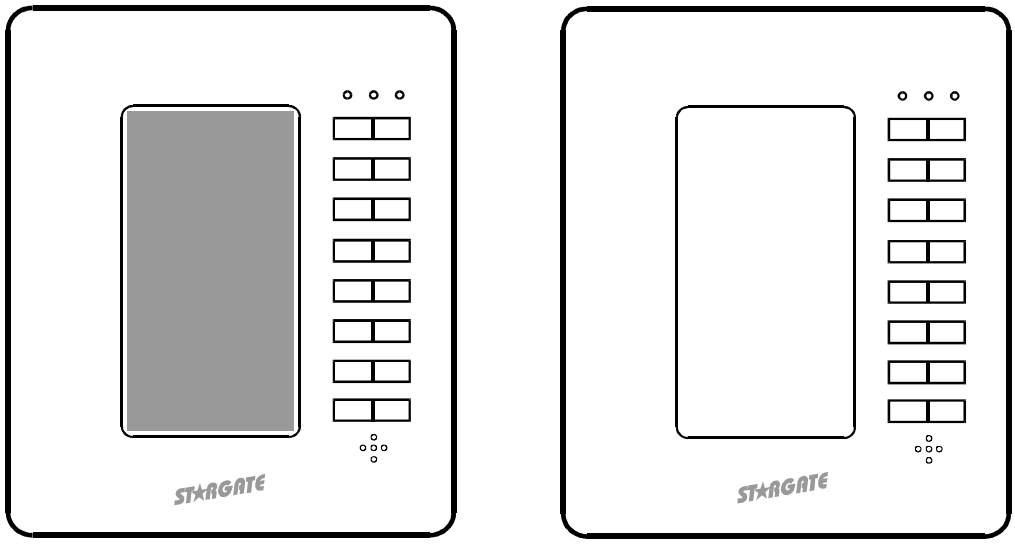
The **Yellow** LED can indicate the status of your telephone line (on = line in use, off = line is clear, blink slow = ringing, blink fast = on hold).

```
EVENT:  OFF-HOOK
 If
  CO: Is OFF Hook
 Then
  LCD:  Yellow LED ON [KP:ALL]
 End

EVENT:  ON-HOOK
 If
  CO: Is ON Hook
 Then
  LCD:  Yellow LED OFF [KP:ALL]
 End

EVENT:  RING
 If
  CO: Ring 1
 Then
  LCD:  Yellow LED Blink-Slow [KP:ALL]
 End

EVENT:  HOLD
 If
  CO: Is ON Hold
 Then
  LCD:  Yellow LED Blink-Fast [KP:ALL]
 End
```

PROGRAMMING AND OPERATION - Then LCD Keypad Actions

Backlight Actions

The LCD-96M has a built-in high-contrast green backlight that can be programmed to stay on continuously or turn on with any key press then time out after a specified delay time. Menus remain visible in daylight when the backlight is off.



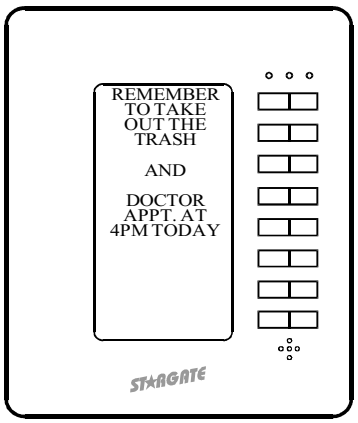
The backlight can also be accessed via the Event Manager schedule to allow dynamic interaction with other system functions. For example, an event in your schedule can turn on the backlight of your bedroom keypad at wake-up time and off during sleeping hours.

EVENT: Backlight
If
  Time is after (TL: Wake-up)
  and Time is before 11:30PM SMTWTFS
Then
  LCD: Backlight ON [KP:1]
Else
  LCD: Backlight OFF [KP:1]
End

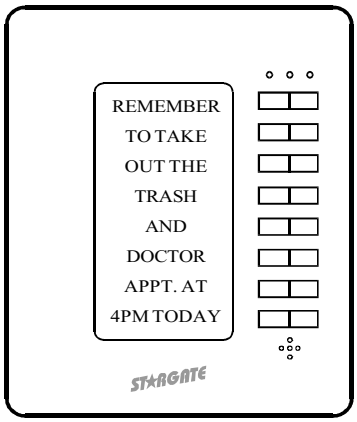
When the backlight is OFF, the first button press (any button) will turn on the backlight without issuing a command. Once the backlight is on, button presses operate as programmed.

Write Text

Messages such as "TAKE OUT THE TRASH" or "DOCTOR APPT AT 4PM TODAY" can be triggered by your schedule and displayed on the appropriate keypad(s). Text written to a keypad will be displayed until the keypad changes to a different menu screen or times out and reverts to the default menu. It is NOT stored in the keypad's memory and can only be recalled via the schedule. Up to 16 lines of text can be written to a menu screen with up to 10 characters per line. Text messages can be written to the top and/or bottom half of a menu line without affecting the rest of the menu.



For permanent messages that can be stored in the keypad, simply create a menu, define all buttons as "Go To Menu", select the Main Menu (Menu #1) then type the desired text in each 'Display Attributes' box. You can then use the Then LCD Keypad "Go To Menu" function in an event to bring up the menu based on any condition(s). The menu will remain displayed until any button is pressed. It will NOT time out. Pressing any button will return the user to the Main Menu. This method will allow 8 lines of text with up to 10 characters each.

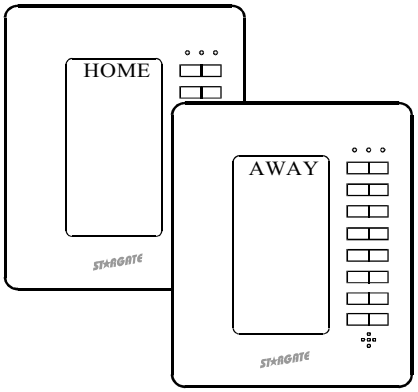


Change Text

The text on a menu line can be changed via the schedule to expand the functionality of a button. Change Text will not affect bitmaps.

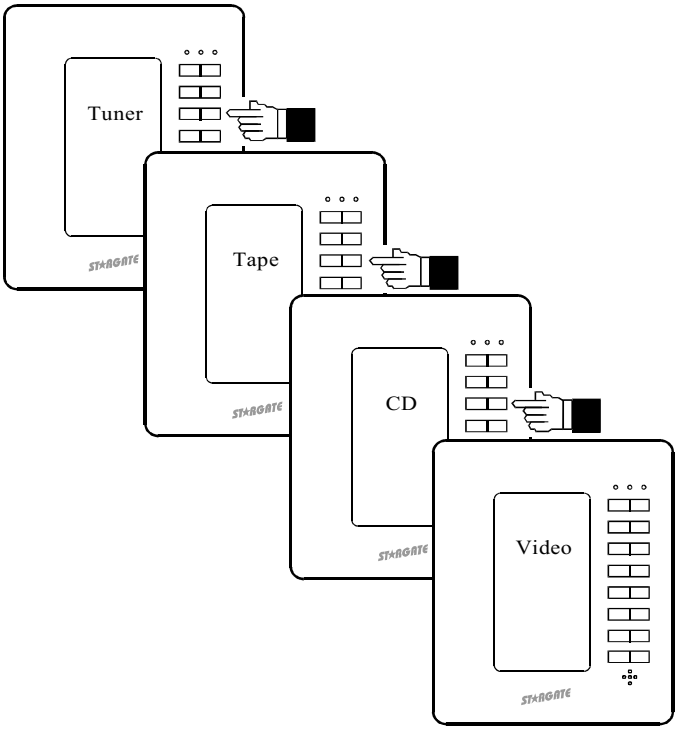
Example 1:
A menu line could be programmed to change from "HOME" to "AWAY" when the Away flag is set and back to "HOME" when the flag is clear.

```
EVENT: HOME / AWAY
If
  (F:Away) is Set
Then
  LCD:  Change Text Item 1 Menu 1 to 'AWAY' [KP:# 1]
Else
  LCD:  Change Text Item 1 Menu 1 to 'HOME' [KP:# 1]
End
```



Example 2:
Successive presses of a particular button could be programmed to toggle through the various source inputs of a stereo receiver (tuner, tape, cd, video). Each time the button is pressed, it triggers a Then Action to increment the "Source" variable. Each time the Source Variable changes value the SOURCE SELECT event (below) instructs Stargate to issue the appropriate IR command (via the IR-Xpander) and change the menu line text to identify the selected source.

```
EVENT:  SOURCE SELECT
 If
  (V:SOURCE)   Changes Value
 Then
  If
     (V:SOURCE) = 0
  Then
     (IR:TUNER ) play 1 time(s) [1]
     LCD:  Change Text Item 3 Menu 16 to 'Tuner' [KP:# 1]
  Nest End
  If
     (V:SOURCE) = 1
  Then
     (IR:TAPE ) play 1 time(s) [1]
     LCD:  Change Text Item 3 Menu 16 to 'Tape' [KP:# 1]
  Nest End
  If
     (V:SOURCE) = 2
  Then
     (IR:CD ) play 1 time(s) [1]
     LCD:  Change Text Item 3 Menu 16 to 'CD' [KP:# 1]
  Nest End
  If
     (V:SOURCE) = 3
  Then
     (IR:VIDEO ) play 1 time(s) [1]
     LCD:  Change Text Item 3 Menu 16 to 'Video' [KP:# 1]
  Nest End
  If
     (V:SOURCE) >= 4
  Then
     (V:SOURCE)  LOAD with 0
  Nest End
 End
```

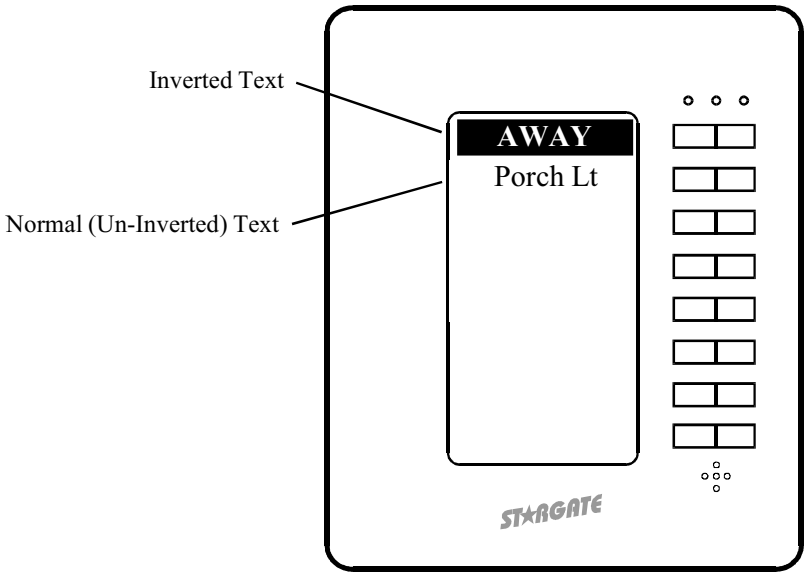


Invert and Un-Invert Text

The text of a menu line can be inverted (background and text color reversed) via the schedule to indicate a change of state such as flag set, a relay on, etc. or simply to visually differentiate it from other menu lines. An inverted menu line can be un-inverted to return it to the original background and text color.

Example:

```
EVENT:  Away Flag
 If
  (F:Away) is Set
 Then
  LCD: Invert Text Line 1 of Menu 3 [KP:1]
 Else
  LCD: Un-Invert Text Line 1 of Menu 3 [KP:1]
 End
```



GLOSSARY

Bitmap - A graphic image formed from individual elements (pixels).

Catagory-5 Cable - Tightly wound twisted pair cable designed to carry high-speed data signals.

Daisy-Chain - A wiring configuration with multiple devices connected to the same wires at different locations along the length of the wires. Also referred to as "Loop" wiring.

Home-Run - A wiring configuration with multiple devices connected to separate wires running back to a common point. Also referred to as "Star" wiring.

Hub - A device for terminating and distributing communication signals to multiple components from a central location.

LCD - Liquid Crystal Display.

LED - Light Emitting Diode.

Menu - A screen with defined menu lines.

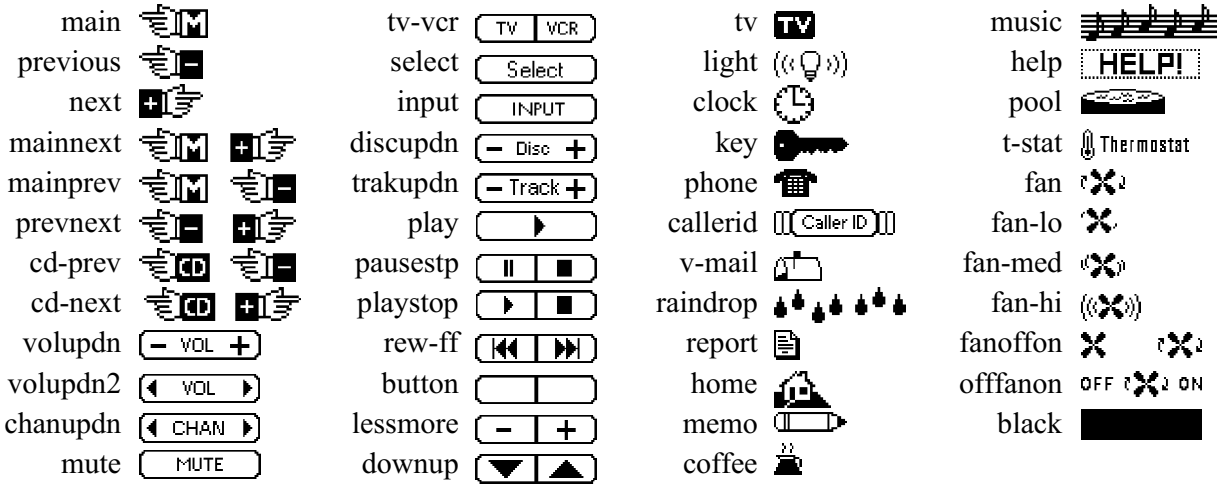
Menu Line - One of eight sub-divisions of a menu screen containing 64 x 16 pixels.

Pre-Defined Menu - A type of menu with a pre-defined function and layout.

Rocker Button - Dual position push-button switch.

Screen - The complete display area of the keypad containing 64 x 128 pixels.

BIT MAP LIBRARY



SPECIFICATIONS

Model Number	LCD-96M
Enclosure Dimensions	4 1/2" x 3 3/4" x 2 1/4" (H x W x D)
Keypad Dimensions	4 3/4" x 4" x 1 1/4" (H x W x D)
Net Weight	8 oz.
Supply Voltage	9 - 15 VDC
Power Consumption	100mA
Communication	RS-485 Half Duplex, 9600 Baud, N-8-1
Operating Temperature	32^0F - 95^0F (0^0C - 35^0C)
Programming	WinEVM Event Manager Software
LED Indicators	Red, Green, Yellow
Display	128 x 64 Graphic LCD w/ LED Backlight
Capacity	96 User-Defined Menus
Backlight Timeout	Disabled, 15-255 seconds
Menu Screen Timeout	Disabled, 15-255 seconds
Time Display Format	12 hour or 24 hour

TROUBLESHOOTING

Backlight is on but display is blank
Contrast is out of adjustment. Slowly turn the Contrast Adjust Control on back of keypad with a small screwdriver until the menu appears.

Default menu appears but buttons have no effect
Check the RS-485 B+ and A- connections on the keypad and at Stargate.
Make sure the RS-485 Hub is powered up (if applicable).
Make sure the keypad address is correct in the Setup Menu screen.
Power down Stargate for several seconds then power up.

Technical Support hours: 10am - 4pm M-F Pacific Time
JDS Technologies
12200 Thatcher Court
Poway, CA 92064 U.S.A.
Tel: 858-486-8787
Fax: 858-486-8789
Email: onlinejds@aol.com

APPLICATION NOTES

LIGHTING

Stargate supports the complete X-10 protocol for power line carrier control of lights and appliances and other X-10 compatible devices. It supports formats used by several manufacturers including X-10, Leviton, PCS, Smartlinc, RCS, etc. In order to issue X-10 signals to the power line, Stargate's "PLI" port connects to a TW523 or PSC05 Two-Way Power Line Interface module via a supplied 4-conductor modular telephone cable.

Preset Dim Level

A *Preset Dim* or *Preset Level* command is a single X-10 command that instructs a dimmer switch or module to go to a specific level (rather than start from full brightness then issue a stream of continuous dim commands to reach the desired level). This is a much more reliable method of dimming since it minimizes X-10 traffic on the powerline and does not rely on an external processor to keep track of levels. There are two different formats used to accomplish Preset Level depending on the manufacturer, standard and extended code.

STANDARD preset dim commands are used by PCS and Smartlinc and follow the standard X-10 format of address data followed by function data (A-1 A-Preset Dim 97%). The protocol supports 32 different levels from 0% (off) to 100% (full bright).

EXTENDED CODE preset dim commands are used by X-10 two-way lamp modules (LM-14A) and some Leviton dimmer switches (6381, 6343) and combine the address data and function data into a single extended code command string (A-1 Preset Dim 97%). The extended code protocol supports 64 different levels from 0% (off) to 100% (full bright) however Stargate utilizes only 32 for consistency when using different types.

Since the two formats are completely different, it is necessary to identify the type of dimmer being used in the DEFINE - X10 DEVICE database so Stargate knows which type of command to issue. For PCS and Smartlinc dimmers, standard X-10 dimmer switches and lamp modules, select LAMP in the TYPE column. For X-10 LM-14A's and Leviton dimmer switches, select LAMP EXCODE in the type column. Click APPLY to download the X-10 database data to Stargate.

Lutron Support

Stargate also has built-in support for Lutron HomeWorks lighting systems via ASCII commands through an RS-232 port. Once the Lutron HomeWorks system has been set up and configured, the HomeWorks controller com port can be connected to one of Stargate's com ports (port 2 or port 3) via a serial data cable. Stargate can then be programmed to issue ASCII commands to the HomeWorks system to trigger (simulate) any HomeWorks button (1-17) on any keypad (1-16) on any panel (1-8). Stargate can also be programmed to respond to Lutron button presses by adding events based on ASCII input strings received from the Lutron controller.

To issue a Lutron command, select ASCII OUT as a Then Action of an event then click LUTRON. Select the desired Lutron panel, keypad and button then click OK. Once downloaded, this event will output the appropriate ASCII string to the HomeWorks controller to trigger the programmed Lutron action for that button.

SECURITY

Stargate can be interfaced with virtully any wired alarm panel that supports basic programmable features.
The most common functions to integrate are remote arm/disarm, energy management and automation based on room activity/ occupancy.

Remote Arm and Disarm

To allow the alarm panel to be armed or disarmed by Stargate, one of the alarm panel zones is programmed as a "keyswitch input." This enables a momentary contact closure between the common terminal and the zone input terminal (usually from a key switch) to arm or disarm the panel. Instead of connecting a keyswitch, we connect the COMMON and N.O. (Normally Open) terminals of one of Stargate's relays to the alarm panel keyswitch zone. Once connected, Stargate can be programmed to activate or de-activate the relay (arm or disarm the alarm system) based on any input (LCD Keypad, telephone code, time of day, away macro, etc.).

Since the same contact closure will arm or disarm the alarm system, it is important for Stargate to keep track of the alarm system's status. To do this we program the alarm panel to supply an "Armed Output" via a set of programmable terminals (sometimes referred to as the PGM lug). The Armed Output provides a low voltage when the alarm system is armed and no voltage when disarmed. We connect the Armed Output to one of Stargate's Digital Inputs (with the jumper settings in the left position for "voltage input"). When the alarm panel is ARMED the digital input is ON. When the alarm panel is DISARMED (or CLEAR) the digital input is OFF.

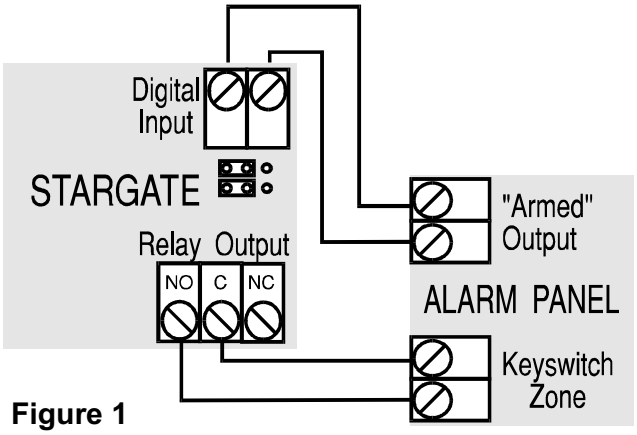
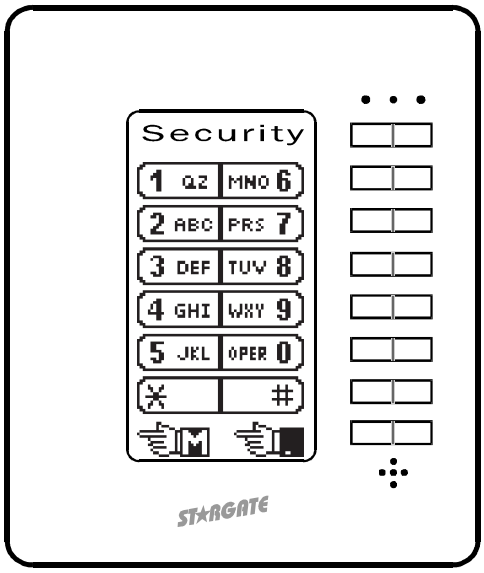


Figure 1

Events can now be constructed to arm and disarm the alarm system. First we want to allow arming/disarming from the LCD-96M Keypads. To do this we use the "DigitPad" menu which resembles a security keypad with numeric keys. When a button is pressed on the DigitPad menu, a corresponding signal is sent to Stargate via the RS-485 network. Using the IF - LCD Keypad function in WinEVM, we create an event to turn on and off a relay momentarily in response to a specific sequence of button presses (password or access code). For example:



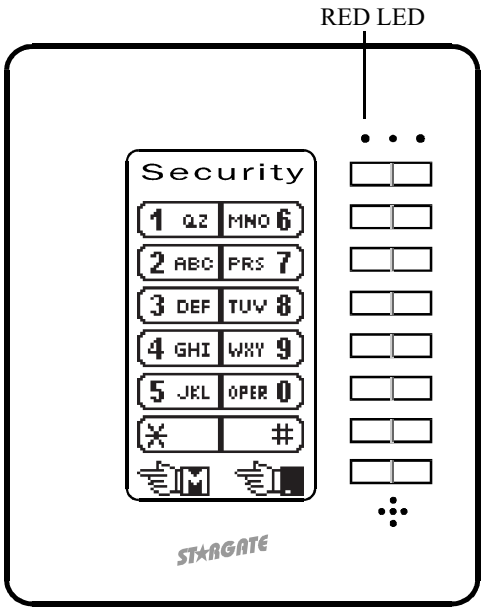
EVENT: Arm / Disarm Alarm System
If
    LCD Seq: '1 2 3 4' Received within 6 seconds
Then
    (RELAY: Keyswitch zone) ON
    DELAY 0:00:01
    (RELAY: Keyswitch zone) OFF
End

We can also add the ability to arm/disarm locally or remotely via telephone. Since the status of the alarm system may not be known when operating remotely by phone, different codes should be used for arming and disarming. In the following example, pressing **1-2-3-4-* arms** the alarm system and **1-2-3-4-# disarms** it.

EVENT: Arm / Disarm via phone
If
LCD Seq: '1 2 3 4' Received within 6 seconds
- OR -
Tel Seq: '1 2 3 4 *' Received within 6 seconds
and (DI: Armed Output) is OFF
- OR -
Tel Seq: '1 2 3 4 #' Received within 6 seconds
and (DI: Armed Output) is ON
Then
(RELAY: Keyswitch zone) ON
DELAY 0:00:01
(RELAY: Keyswitch zone) OFF
End

For visual feedback, we will program the red LED to blink slow when the alarm panel is armed. For audio feedback, we will program a corresponding voice response.

EVENT: Red LED Alarm Status Indication
If
(DI: Armed Output) is ON
Then
LCD Keypad: RED LED Blink Slow
Voice: Alarm System Armed [CO, ICM, SPKR]
Else
LCD Keypad: RED LED OFF
Voice: Alarm System Armed [CO, ICM, SPKR]
End



Energy Management/Automation based on Occupancy

Another useful function is to manage lighting and heating/cooling based on whether or not the room or area is occupied. Motion detectors that are used to sense someone's presence in a room can also be used to control lights in that room. This not only provides the convenience of hands-free automated lighting, but allows lights to be programmed to turn off (or dim to a low level) after a specified delay time, thereby saving energy. Likewise, multi-zone heating/cooling systems can be controlled by the same motion detectors, allowing management of heating and cooling based on occupancy.

For automated lighting, there are several conditions to consider. We want the lights to come on as someone enters the room only if the room is dark, and go off when the room is no longer occupied. Since we are using a motion sensor as a trigger, we must also allow for instances when the room is occupied but there is no motion, such as when a person is reading, watching tv or sleeping.

One method of programming is to turn the light on full brightness (preset level 100%) and load/start a 10 minute timer when motion is detected between sunset and sunrise. For fastest possible response, we create a Fast Event triggered by the motion sensor. When the timer expires, dim the light slightly (preset level 90%) and load/start a 5 minute timer. When the 5 minute timer expires, turn off the light. This way, when you enter the room, the light comes on full. If you remain still for 10 minutes (reading or watching tv), rather than turn off and leave you in the dark, the light will dim slightly to warn you know there are 5 minutes remaining until it turns off. You can then make any motion (wave your hand) to retrigger the motion sensor 10 minute timer which returns the light to 100%.

```
FASTEVENT:  [ DI:Motion Sensor Goes OFF]
 Then
  If
   Time is Dark (after SunSet, before SunRise)
  Then
   X10: A-1  Light PRE-Set Level  100%
   (T:LIGHT 1) LOAD with 0:10:00
   (T:LIGHT 2)  STOP
  Nest End
 End

 EVENT:  Light Timer 1 Expiring
 If
  (T:LIGHT 1) is Expiring
  and  X10:A-1  Light is ON
 Then
  X10: A-1  Light PRE-Set Level  90 %
  (T:LIGHT2) LOAD with 0:05:00
 End

 EVENT:  Light Timer 2 Expiring
 If
  (T:LIGHT 2) is Expiring
 Then
  X10: A-1  Light OFF
 End

 EVENT:  Light Off
 If
  (XSEQ: A-1 A-OFF) Received within 3 seconds
 Then
  (T:LIGHT 1) STOP
  (T:LIGHT 2)  STOP
 End
```

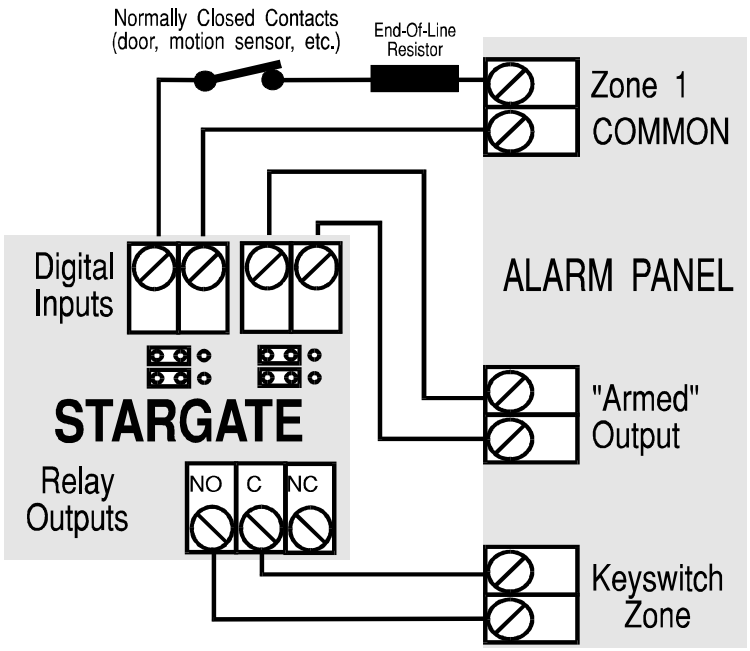


Figure 2

NOTE: When connecting a motion sensor to both Stargate (digital input) and a security zone, place the digital input jumpers in the "Voltage" or **left** position and connect the sensor contacts, alarm zone and digital input in a series circuit as shown in figure 2. If an end-of-line (E.O.L.) resistor is required, change it to a value 470 ohms less to accommodate the added resistance of the digital input. (If the E.O.L. is 1000 ohms, change it to 560 ohms, the closest standard resistor value.) If possible, program the zone for "No Resistor Required" to provide the maximum current through the zone loop. If the alarm panel has separate relays that can be programmed to "follow" the status of each security zone, connect each relay to a Stargate digital input and place the digital input jumpers in the "Switch" or **right** position.

HVAC (Heating, Ventilation, Air Conditioning)

Stargate has built-in support for two-way communication with thermostats manufactured by RCS, Inc. and Enerzone Systems, Inc. Communication with RCS thermostats is done either via X-10 (thermostat model TX-15B) or via Stargate's RS-485 port (thermostat model TR15). Communication with Enerzone thermostats is done via one of Stargate's RS-232 ports. Up to 16 thermostat zones can be monitored and controlled.

Using Stargate with the RCS TX-15B Thermostat

When a hardwired approach is not practical, Stargate can interface with the HVAC system using X-10 signals to communicate to and from the thermostat. The RCS TX-15B was specifically designed for this purpose and can be setup to provide reliable HVAC control. Up to 16 zones are supported by Stargate, however, when using X-10 communication for thermostat control, it is wise to limit the number of zones in the system to minimize X-10 traffic on the power line. When more than a couple zones are required, a hardwired approach is recommended.

Each TX-15B utilizes a complete X-10 "House" or "Letter" code for signalling. Four dip switches on the TX-15B control unit circuit board are used to assign the the House code. Other X-10 devices in the system must be set to different house codes to avoid unwanted interaction. For maximum control, it is best to setup the TX-15B to use DECODE TABLE #1 which employs the STANDARD X-10 preset level command set for control and acknowledgement. The Preset Level command set provides 512 unique X-10 codes for each House code (32 preset levels per Unit code times 16 Unit codes per House code). For true two-way communication, the TX-15B monitors Unit codes 1 - 5 for commands received from Stargate and transmits acknowledgements and response commands over Unit codes 6 - 16. This enables Stargate to verify that HVAC commands have been received by the thermostat and act upon changes in temperature or thermostat settings. (See RCS Advanced Code Table)

To setup Stargate for the TX-15B:

1. Click DEFINE - HVAC and select "RCS TX-15B" for Thermostat Type.
2. Select a Zone number and type a Zone Name for identification.
3. Select the House Code that is reserved for the thermostat.
4. In the "TX15-B Options" box, set the Polling Frequency (how often Stargate reads the thermostat's temperature and set point).
5. Click OK.
6. Click DEFINE - X10 DEVICE and scroll to the X10 House Code letter used for the thermostat.
7. Select "LAMP" in the TYPE column for all 16 unit codes of the thermostat House code.
8. Click APPLY then OK.

Using Stargate with the RCS TR-15 RS-485 Thermostat

For maximum reliability, the TR-15 RS-485 thermostat provides two-way control via Stargate's RS-485 port. Up to 16 TR-15's can be daisy-chained over a single pair of wires (catagory-5) or home run to an optional RS-485 hub which in turn connects to Stargate's RS-485 port (see Figure 3). Four dip switches on the TR-15 control unit circuit board are used to assign the the RS-485 address.

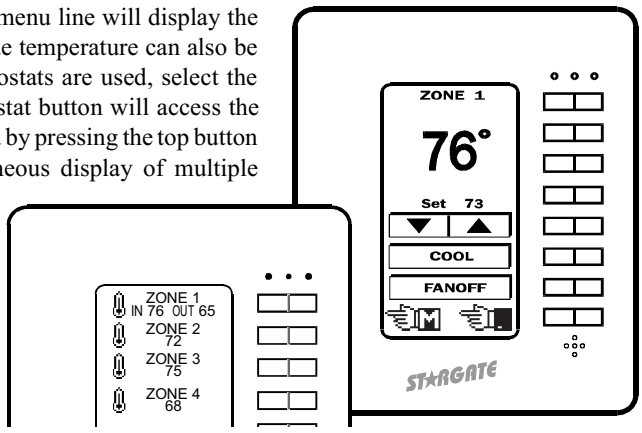
NOTE: Each thermostat must be assigned a different RS-485 address.

To setup Stargate for the TR-15:

1. Click DEFINE - HVAC and select "RCS TR-15 RS-485" for Thermostat Type.
2. Select a Zone number and type a Zone Name for identification.
3. Select the RS-485 ADDRESS the thermostat is set to.
4. Repeat steps 2 - 3 for each TR-15 Thermosat zone.
5. Click OK.

Controlling the Thermostat

Once the HVAC parameters have been defined in WinEVM, we can assign a thermostat button to the LCD-96M Keypad by dragging the word "Thermostat" to the desired menu line. When downloaded to the keypad, the menu line will display the thermostat location name and current temperature. Outside temperature can also be displayed on the menu line (optional). If multiple thermostats are used, select the nearest zone to the keypad location. Pressing the thermostat button will access the thermostat menu for that zone. Other zones can be accessed by pressing the top button of the thermostat menu. For direct access and simultaneous display of multiple thermostats, a separate menu button can be assigned for each zone.



RS-485 HUB WIRING LAYOUT

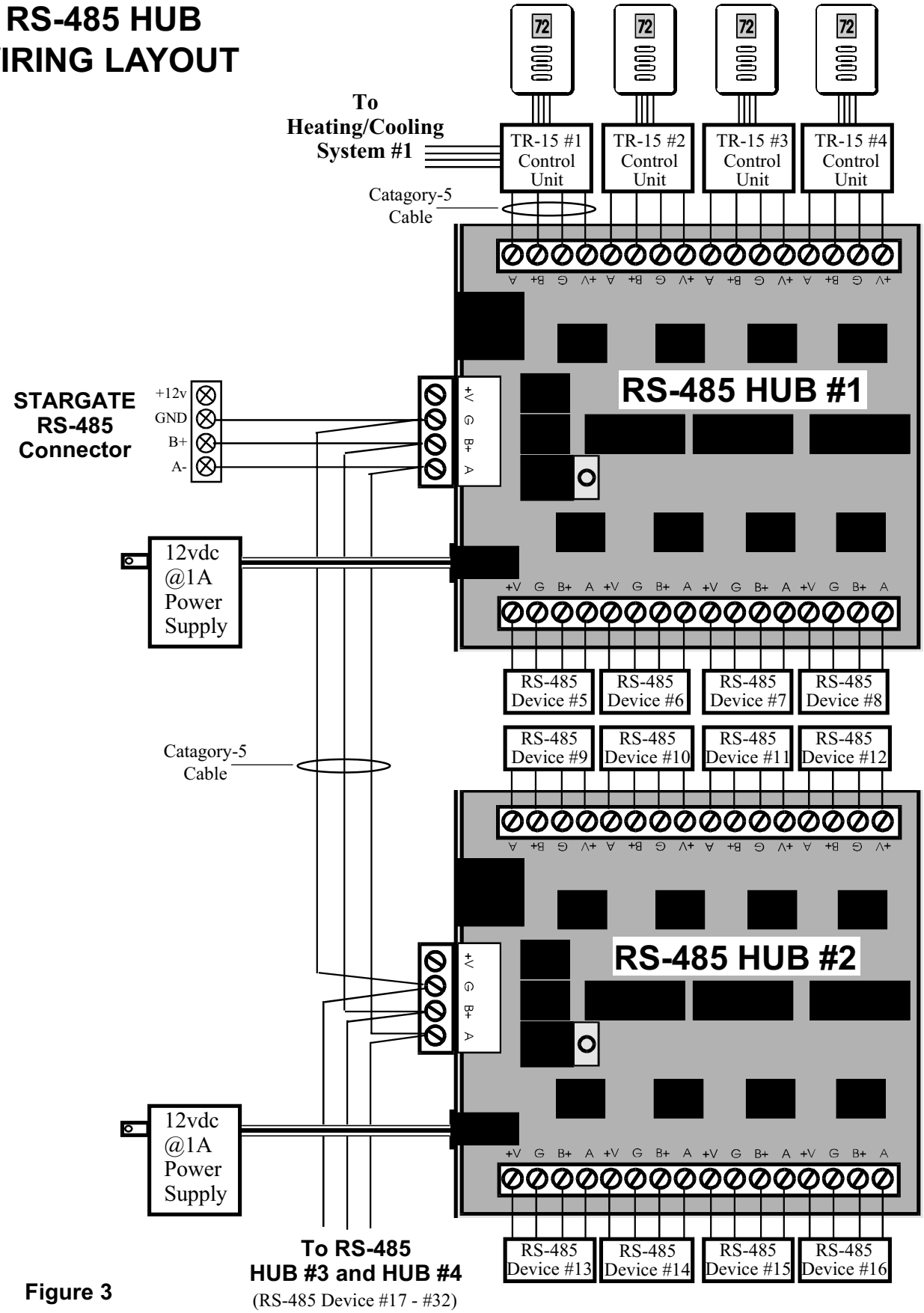


Figure 3

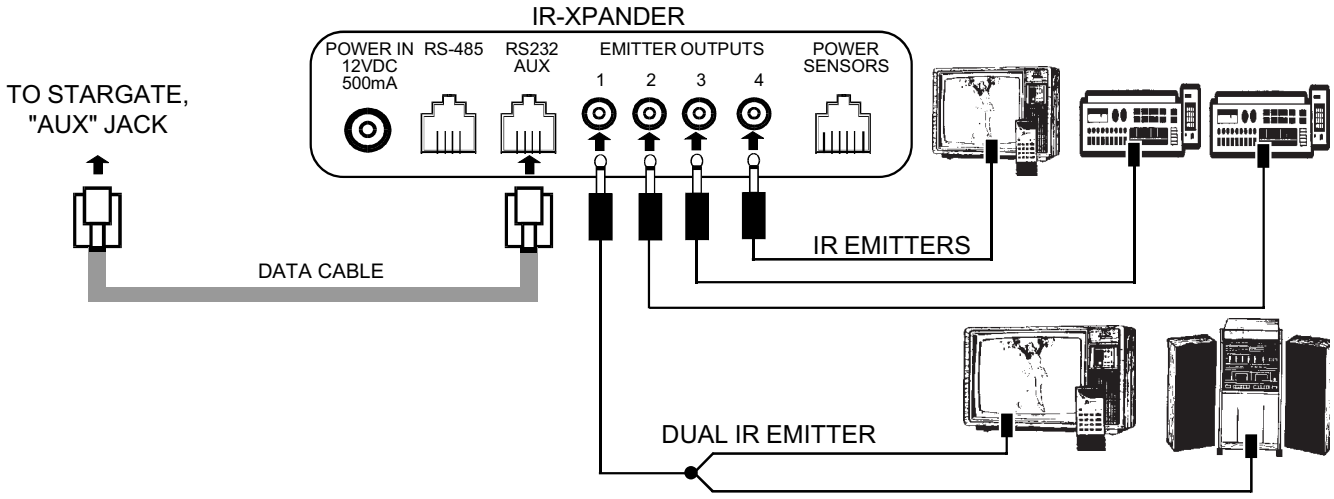
HVAC cont'd

Thermostats can also be monitored and controlled from any local or remote telephone. There are several ways to program this feature depending on the amount of control required. In the following example, pressing the code H-V-A-C-* (4-8-2-2-*) triggers an event that voices the current temperature and setpoint, then prompts the user to press subsequent digits for more options.

```
EVENT:  HVAC*
 If
  TelePhone Seq:'4822*' Received within 6 seconds
 Then
  (F:HVAC)  SET
  Voice:THE TEMPERAT IS Zone1 Temperature DEGREES SET Zone1 Setpoint DEGREES  [CO,ICM]
  Voice:TO SET TEMPERAT PRESS 1  [CO,ICM]
  Voice:FOR COOL MODE PRESS C O  [CO,ICM]
  Voice:FOR HEATING MODE PRESS H E  [CO,ICM]
  Voice:FOR AUTOMATI MODE PRESS A U  [CO,ICM]
  Voice:FOR OFF MODE PRESS 0 0  [CO,ICM]
  Voice:FOR FAN ON PRESS F A STAR  [CO,ICM]
  Voice:FOR FAN OFF PRESS F A POUND  [CO,ICM]
  Voice:TO LEAVE THIS MENU PRESS POUND 0  [CO,ICM]
 End

EVENT:  HVAC SELECT
 If
  (F:HVAC) is SET
 Then
┌ If
│  TelePhone Seq:'1' Received within 2 seconds
│ Then
│  Voice:ENTER TEMPERAT FOLLOWBY POUND  [CO,ICM]
│  TouchTone to user_VAR SYNC
│  (HVAC:Zone1)  Load Setpoint with value in user_VAR
│  Clear TouchTone Input Buffer
└ Nest End
┌ If
│  TelePhone Seq:'26' Received within 3 seconds
│ Then
│  (HVAC:Zone1)  COOL Mode
│  Voice:COOL MODE  [CO,ICM]
└ Nest End
┌ If
│  TelePhone Seq:'43' Received within 3 seconds
│ Then
│  (HVAC:Zone1)  HEAT Mode
│  Voice:HEATING MODE  [CO,ICM]
└ Nest End
┌ If
│  TelePhone Seq:'28' Received within 3 seconds
│ Then
│  (HVAC:Zone1)  AUTO Mode
│  Voice:AUTOMATI MODE  [CO,ICM]
└ Nest End
┌ If
│  TelePhone Seq:'00' Received within 3 seconds
│ Then
│  (HVAC:Zone1)  OFF Mode
│  Voice:OFF MODE  [CO,ICM]
└ Nest End
┌ If
│  TelePhone Seq:'32*' Received within 3 seconds
│ Then
│  (HVAC:Zone1)  Fan ON
│  Voice:FAN ON  [CO,ICM]
└ Nest End
┌ If
│  TelePhone Seq:'32#' Received within 3 seconds
│ Then
│  (HVAC:Zone1)  Fan OFF
│  Voice:FAN OFF  [CO,ICM]
└ Nest End
┌ If
│  TelePhone Seq:'#0' Received within 3 seconds
│  or  TelePhone Seq:'+' Received within 2 seconds
│ Then
│  (F:HVAC)  CLEAR
│  Voice:BDRINGGG  [CO,ICM]
└ Nest End
 End
```

AUDIO/VIDEO/HOME THEATER

To integrate audio and video components into the system, an optional IR-XP2 InfraRed Xpander is connected to Stargate's "AUX" port. The IR-Xpander learns and stores all the infrared (IR) commands from each audio/video component's remote control. Once the IR commands have been learned into the IR-Xpander, Stargate can be programmed to control any audio/video function via LCD Keypad, LED Keypad, telephone, X-10, or by time or event.

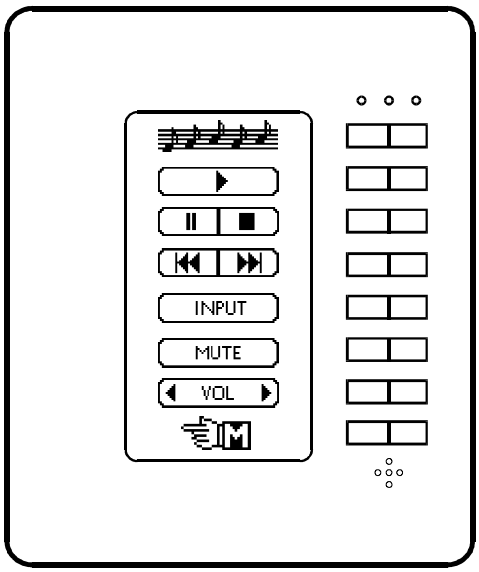


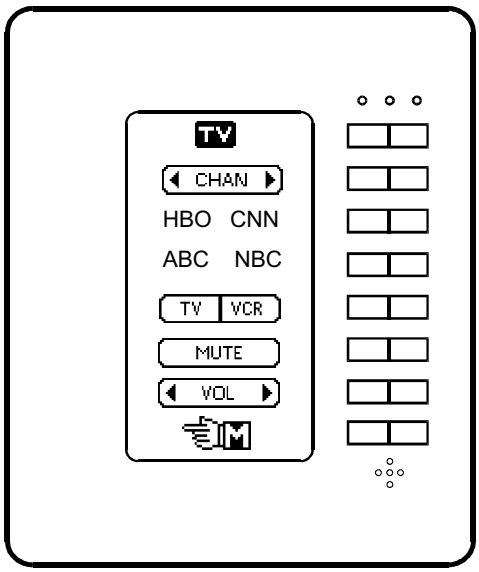
STEP 1: Learning IR Commands Into The IR-Xpander (refer to InfraRed Xpander User Manual)

STEP 2: Creating Audio And Video Menus On The LCD Keypad

The LCD-96M Keypad provdes an easy user interface for controling most audio and video control functions such as volume up/down, channel up/down, input selection, mute, etc. Separate menus can be defined to navigate through the various audio and video components. To define a menu:

1) Click DEFINE - LCD KEYPAD then select the desired keypad address.
2) Click SELECT then double-click the desired menu number.
3) Click and Drag "Then Action" to the desired menu line.
4) Select "IR" from the then action list.
5) Select the desired IR command and emitter output(s).
6) Type the label (text) for the button or click "Bitmap" then select the desired icon to represent the button and click OK.
7) Repeat steps 3 - 6 to complete the menu.





Integrating Other Functions With Audio/Video Components

Using Variables To Control Input Source Settings

Successive presses of a single button can be programmed to select the various input sources of a stereo receiver (tuner, tape, cd, video). Each time the button is pressed, it triggers a Then Action to increment the "Source" variable. Each time the Source Variable changes value the SOURCE SELECT event (below) instructs Stargate to issue the appropriate IR command (via the IR-Xpander) and change the menu line text to identify the selected source.

Another method is to use separate buttons for each source input. Pressing a button triggers a Then Action to load the "Source" variable with the corresponding value.

With either method, Stargate can keep track of the input source by the value of the Source Variable provided the receiver input is not changed at the receiver or via IR remote. If the source does get changed at the receiver or via IR remote, pressing a source select button on a keypad will put the system back in sync.

```
EVENT:  SOURCE SELECT
 If
  (V:SOURCE)   Changes Value
 Then
 ┌ If
 │    (V:SOURCE) = 0
 │  Then
 │    (IR:TUNER ) play 1 time(s) [1]
 │    LCD:  Change Text Item 3 Menu 16 to 'Tuner' [KP:# 1]
 └ Nest End
 ┌ If
 │    (V:SOURCE) = 1
 │  Then
 │    (IR:TAPE ) play 1 time(s) [1]
 │    LCD:  Change Text Item 3 Menu 16 to 'Tape' [KP:# 1]
 └ Nest End
 ┌ If
 │    (V:SOURCE) = 2
 │  Then
 │    (IR:CD ) play 1 time(s) [1]
 │    LCD:  Change Text Item 3 Menu 16 to 'CD' [KP:# 1]
 └ Nest End
 ┌ If
 │    (V:SOURCE) = 3
 │  Then
 │    (IR:VIDEO ) play 1 time(s) [1]
 │    LCD:  Change Text Item 3 Menu 16 to 'Video' [KP:# 1]
 └ Nest End
 ┌ If
 │    (V:SOURCE) >= 4
 │  Then
 │    (V:SOURCE)  LOAD with 0
 └ Nest End
 End
```

Automatic Mute When Phone Rings

The following events will mute the TV and stereo when the phone rings and unmute them when you hang up after the call. Instead of issuing a mute command to the stereo, we switch it to the AUX input to allow it to announce Caller ID (see next page). A 2-second delay is added to the 'ON-Hook Un-Mute' event to maintain the mute condition when hookflashing for Call Waiting.

```
EVENT:  INCOMING CALL MUTE
If
  CO: Ring 1
Then
  (F:MUTE)  SET
  (IR:TV MUTE ) play 1 time(s) [Emitter1]
  (IR:RCV AUX ) play 1 time(s) [Emitter1]
End

EVENT:  ON-HOOK UN-MUTE
If
  TelePhone Seq:'+' Received within 2 seconds
  and  (F:MUTE) is SET
Then
  DELAY  0:00:02
  If
    CO: Is ON Hook
   Then
    (F:MUTE)  CLEAR
    (IR:TV MUTE ) play 1 time(s) [Emitter1]
    If
      (V:RCV SOURCE) = 0
     Then
      (IR:RCV TUNER ) play 1 time(s) [Emitter1]
    Nest End
    If
      (V:RCV SOURCE) = 1
     Then
      (IR:RCV TAPE ) play 1 time(s) [Emitter1]
    Nest End
    If
      (V:RCV SOURCE) = 2
     Then
      (IR:RCV CD ) play 1 time(s) [Emitter1]
    Nest End
    If
      (V:RCV SOURCE) = 3
     Then
      (IR:RCV VIDEO ) play 1 time(s) [Emitter1]
    Nest End
  Nest End
End
```

Announcing Caller ID Through Audio System

```
EVENT:  CALLER ID LIST 1
If
  CallerID: ???1111111
  or  CallerID: ????2222222
  or  CallerID: ????3333333
Then
  (F:CallerID)  SET
┌ If
│   CallerID: ???1111111
│  Then
│   Voice: Moe  [Line]
└ Nest End
┌ If
│   CallerID: 2222222222
│  Then
│   Voice: Larry  [Line]
└ Nest End
┌ If
│   CallerID: ????3333333
│  Then
│   Voice: Curly  [Line]
└ Nest End
End

EVENT:  CALLER ID LIST 2
If
  CallerID: ???4444444
  or  CallerID: ????5555555
  or  CallerID: ????6666666
Then
  (F:CallerID)  SET
┌ If
│   CallerID: ???4444444
│  Then
│   Voice: Peter  [Line]
└ Nest End
┌ If
│   CallerID: ????5555555
│  Then
│   Voice: Paul  [Line]
└ Nest End
┌ If
│   CallerID: ????6666666
│  Then
│   Voice: Mary  [Line]
└ Nest End
End

EVENT:  CALLER ID OTHER
If
  CallerID: ??????????
  and  (F:CallerID) is CLEAR
Then
  Voice:<CID> [Line]
End
```

The following events check the Caller ID of each incoming call and play a unique User Voice Response for each number in the Caller ID List events. Since there is a limit to the number of If - CallerID lines that can be placed in a single event (about 20), separate events have been created, each containing a portion of the CallerID numbers to be announced by a unique User Voice Response. Calls that are not included in a Caller ID List event will be announced by phone number only.

Voice Paging Through Audio System

The following two events will switch your phone to the ICM port and broadcast your voice through the audio system. When you hang up, it switches back to the normal CO port connection.

```
EVENT:  LIVE PAGE
If
  TelePhone Seq:'^7*' Received within 4 seconds
Then
  Connect PHONE port to ICM port
  (F:PAGE)  SET
  (F:TV MUTE)  SET
  (IR:TV MUTE ) play 1 time(s) [Emitter1]
  (IR:RCV AUX ) play 1 time(s) [Emitter1]
  Audio:Connect ICM In to Line Level Out
End

EVENT:  ON-HOOK CLEAR PAGE
If
  TelePhone Seq:'+' Received within 2 seconds
  and  (F:PAGE) is SET
Then
  Audio:Disconnect ICM In to Line Level Out
  Connect PHONE port to CO port
  (F:PAGE)  CLEAR
End
```

If live broadcasting live causes feedback, your phone is probably too close to the audio system speakers or the audio system volume is turned up too loud. Using the following *Delayed Page* event will let you broadcast announcements without feedback by recording your voice message then playing it back when you hang up.

```
EVENT:  DELAYED PAGE
If
  TelePhone Seq:'^8*' Received within 4 seconds
Then
  Connect PHONE port to ICM port
  Record:'Page' from ICM for 10 seconds
  Voice:Page  [Line]
  Connect PHONE port to CO port
End
```

Managing CD's With LCD Keypad

The following two events will allow you to select cd's from the LCD Keypad and display the name of the selected disk on the cd menu. Since CD management is not a built-in function of the keypad, an event must be added to the schedule to manage cd selection. When a selection is made, the LCD Keypad loads the "CD" Variable with a value corresponding to the cd's slot number in the multiple disk player. For each CD Variable value, a nested if-then is created to isuue the required IR commands and change the text on the cd menu to display the selection. The event then switches the keypad to the CD menu screen and loads the CD Variable back to 0.

```
EVENT: CD SELECT
 If
  (V:CD) > 0
 Then
 ┌If
 │  (V:CD) = 1
 │ Then
 │  LCD:  Change Text Line 1 Menu 18 to 'AbbeyRoad ' [KP:# 13]
 │  (IR:CD DISK ) play 1 time(s) [Emitter1]
 │  (IR:CD 1 ) play 1 time(s) [Emitter1]
 │  (IR:CD ENTER ) play 1 time(s) [Emitter1]
 └ Nest End
 ┌If
 │  (V:CD) = 2
 │ Then
 │  LCD:  Change Text Line 1 Menu 18 to 'HardDaysNi' [KP:# 13]
 │  (IR:CD DISK ) play 1 time(s) [Emitter1]
 │  (IR:CD 2 ) play 1 time(s) [Emitter1]
 │  (IR:CD ENTER ) play 1 time(s) [Emitter1]
 └ Nest End
 ┌If
 │  (V:CD) = 3
 │ Then
 │  LCD:  Change Text Line 1 Menu 18 to '   Help!  ' [KP:# 13]
 │  (IR:CD DISK ) play 1 time(s) [Emitter1]
 │  (IR:CD 3 ) play 1 time(s) [Emitter1]
 │  (IR:CD ENTER ) play 1 time(s) [Emitter1]
 └ Nest End
 ┌If
 │  (V:CD) = 4
 │ Then
 │  LCD:  Change Text Line 1 Menu 18 to 'Let It Be ' [KP:# 13]
 │  (IR:CD DISK ) play 1 time(s) [Emitter1]
 │  (IR:CD 4 ) play 1 time(s) [Emitter1]
 │  (IR:CD ENTER ) play 1 time(s) [Emitter1]
 └ Nest End
  LCD:  Goto Menu Screen = Menu 18  [KP:# 13]
  (V:CD)  LOAD with 0
End
```

Managing CD's With LCD Keypad

A simpler method to implement is to use the TelePad menu to enter the disk slot number directly. This does not provide a listing of the CD titles as with the previous method, but allows CDs to be added to the player without having to modify the schedule or LCD Keypad CD menus. In this case, the user must know the slot number for the desired disk selection. Note: Button presses on the TelePad menu are treated the same as touchtones over the ICM line. Any event programmed to respond to touchtone sequences can be controlled via the TelePad as well as X-10 devices (when "90 codes" or "160 codes" is selected in the Define - Telephone field).

```
EVENT:  CD SELECT BY TELEPAD
If
  ICM: Is ON Hook
Then
┌ If
│   TelePhone Seq:'1' Received within 2 seconds
│ Then
│   (IR:CD1 1 ) play 1 time(s) [Emitter1]
└ Nest End
┌ If
│   TelePhone Seq:'2' Received within 2 seconds
│ Then
│   (IR:CD1 2 ) play 1 time(s) [Emitter1]
└ Nest End
┌ If
│   TelePhone Seq:'3' Received within 2 seconds
│ Then
│   (IR:CD1 3 ) play 1 time(s) [Emitter1]
└ Nest End
┌ If
│   TelePhone Seq:'4' Received within 2 seconds
│ Then
│   (IR:CD1 4 ) play 1 time(s) [Emitter1]
└ Nest End
┌ If
│   TelePhone Seq:'5' Received within 2 seconds
│ Then
│   (IR:CD1 5 ) play 1 time(s) [Emitter1]
└ Nest End
┌ If
│   TelePhone Seq:'6' Received within 2 seconds
│ Then
│   (IR:CD1 6 ) play 1 time(s) [Emitter1]
└ Nest End
┌ If
│   TelePhone Seq:'7' Received within 2 seconds
│ Then
│   (IR:CD1 7 ) play 1 time(s) [Emitter1]
└ Nest End
┌ If
│   TelePhone Seq:'8' Received within 2 seconds
│ Then
│   (IR:CD1 8 ) play 1 time(s) [Emitter1]
└ Nest End
┌ If
│   TelePhone Seq:'9' Received within 2 seconds
│ Then
│   (IR:CD1 9 ) play 1 time(s) [Emitter1]
└ Nest End
┌ If
│   TelePhone Seq:'0' Received within 2 seconds
│ Then
│   (IR:CD1 10 ) play 1 time(s) [Emitter1]
└ Nest End
┌ If
│   TelePhone Seq:'#' Received within 2 seconds
│ Then
│   (IR:CD1 ENTER ) play 1 time(s) [Emitter1]
└ Nest End
End
```

DEFAULT INTERCOM

In many cases it is more convenient to have Stargate default to the INTERCOM rather than the CO line. Selecting ICM under Define - Telephone Setup - Phone Output Default will cause all phones to be connected to the ICM port by default. Dialing "9" will switch the user to the outside line (CO). When this setup is used, it is important to note that all phones connected to Stargate's "PHONE" port will not ring since they are normally not connected to the CO line. The following events will switch Stargate's "PHONE" port to the CO line when the line rings and switch back to the ICM line when the phone hangs up after a call. Additional events are used to accomodate abandoned calls (the caller hangs up before you or Stargate answers the call). The OFF-HOOK AUTO SWITCH event (optional) automatically switches an off-hook phone to the CO line after 3 seconds if no touchtone is pressed. This is useful for those who are not familiar with the system and don't know to dial "9" for the outside line. If any touchtone other than "9" is pressed after going off-hook, Stargate remains connected to the ICM line.

```
EVENT:  DEFAULT ICM RING
If
  CO: Ring 1
  or CO: Ring 2
  or CO: Ring 3
  or CO: Ring 4
Then
  Connect PHONE port to CO port
  (T:RING) LOAD with 0:00:08
End

EVENT:  DEFAULT ICM RESET
If
  TelePhone Seq:'+' Received within 2 seconds
Then
  DELAY  0:00:02
┌ If
│   CO: Is ON Hook
│  Then
│   Connect PHONE port to ICM port
└  Nest End
End

EVENT:  ABANDONED CALL
If
  (T:RING) is Expiring
  and  CO: Is ON Hook
Then
  Connect PHONE port to ICM port
End

EVENT:  OFF-HOOK - AUTO SWITCH
If
  (T:RING) is Not Running
Then
┌ If
│   ICM: Is OFF Hook
│  Then
│   (T:DIAL TONE) LOAD with 0:00:03
└  Nest End
┌ If
│   TelePhone Seq:'^?' Received within 4 seconds
│  Then
│   (T:DIAL TONE)  STOP
└  Nest End
┌ If
│   (T:DIAL TONE) is Expiring
│  Then
│   Connect PHONE port to CO port
└  Nest End
┌ If
│   ICM: Is ON Hook
│   and  (T:DIAL TONE) is Running
│  Then
│   (T:DIAL TONE)  STOP
└  Nest End
End
```

CREATING CUSTOMER DATABASES

1. Create a folder for each customer (C:\STARGATE\SMITH, C:\STARGATE\JONES, etc.)

2. Place a shortcut icon on your desktop for WinEVM. (From Windows Explorer, right click on the WinEVM application icon in the Stargate folder and drag it onto the desktop. Then click "Create Shortcut Here.")

3. Create a copy of the WinEVM shortcut icon for each customer. (Right click and drag the original shortcut icon to the sideand let go. Then click "Copy Here." For each copied icon, right click the icon and select "Rename." Type the customer's name to identify the icon. Then right click the copied icon again and select "Properties." Select the "Shortcut" tab and change the "Start in" field to the corresponding customer folder (eg: change C:\STARGATE to C:\STARGATE\SMITH) then click OK.

4. Copy all the customer's database files (.dbf) and schedules (.sch) into their corresponding folders.

5. When you click on a customer shortcut, it will bring up WinEVM with the corresponding customer's databases. Click File - Open to access the customer's schedule.

NOTE: ALWAYS CLOSE THE SCHEDULE BEFORE EXITING THE WINEVM PROGRAM TO PREVENT THE WRONG SCHEDULE FROM SHOWING WHEN A DIFFERENT CUSTOMER SHORTCUT IS SELECTED.