

# ELK-M1XSP Serial Port Expander

## Supplementary Instructions & Release Notes for Firmware Version 10.X.X

This version provides M1 Integration to:  
**AES Intellinet Radio Communicators  
and Uplink GSM Communicators**

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Firmware and/or bootware releases generally contain feature enhancements but in some cases may also contain resolutions for issues found in previous versions. For the latest Updates refer to the Elk Website. <http://www.elkproducts.com>

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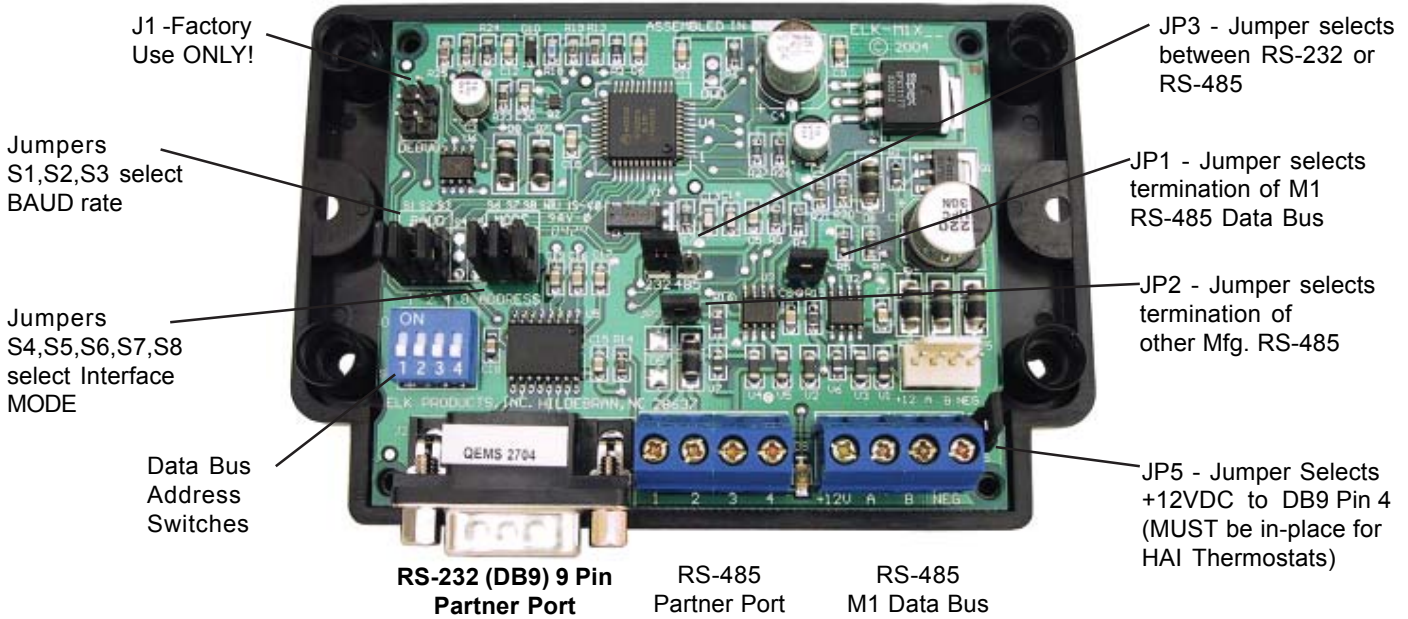


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7/1/2013

# M1XSP Installation and Setup

**INSTALL UNIT \* SET ADDRESS AND OPTION JUMPERS \* ACTIVATE M1 BUS ENROLLMENT PROCESS**



### M1XSP Diagnostic LED indicator

Slow blink (1/2 sec.) = Normal communication with M1.

Fast flicker = Communicating with other equipment (Thermostat, Lighting Controller, PC, etc.)

No blink = No communication with M1. Unit might be unplugged or powered off.

1. The M1XSP operates on the M1 Keypad data bus and may therefore be remoted near the equipment being interfaced.
2. Before making any wiring connections, turn Off the M1 Master Power Switch.
3. Connect terminals +12V, A, B, and Neg from the M1XSP to the M1's Keypad Data Bus (terminals +VKP, Data A, Data B, & Neg). **NOTE: Refer to the M1 Installation Manual and the M1DBH information in this manual about proper connections of data bus devices with multiple homerun cables.**
4. There are 4 address switches, each with a position of OFF or ON (binary value 0 or 1) and a decimal equivalent value of (1, 2, 4, or 8). The total decimal value of the "ON" switches equates to the data bus address. As a rule, the first M1XSP should be set to address 1. If more than 1 M1XSP is installed, set each one to a unique (sequential) address (2, 3, etc).

Table 1: Data Bus Address Switch Settings				LEGEND	
<p><b>Address 1</b></p>	<p><b>Address 2</b></p>	<p><b>Address 3</b></p>	<p><b>Address 4</b></p>	<p>  ON   OFF                 </p>	<p><b>M1XSP Data Bus Terminating Jumper JP1</b> Used to engage a 120 Ohm resistor for terminating the M1 RS-485 Data Bus. See Data bus wiring instructions before use.</p>
<p><b>Address 5</b></p>	<p><b>Address 6</b></p>	<p><b>Address 7</b></p>	<p><b>For an M1XSP the only valid Data Bus Addresses are 1 thru 7 since the max. number of M1XSPs is 7.</b></p>		

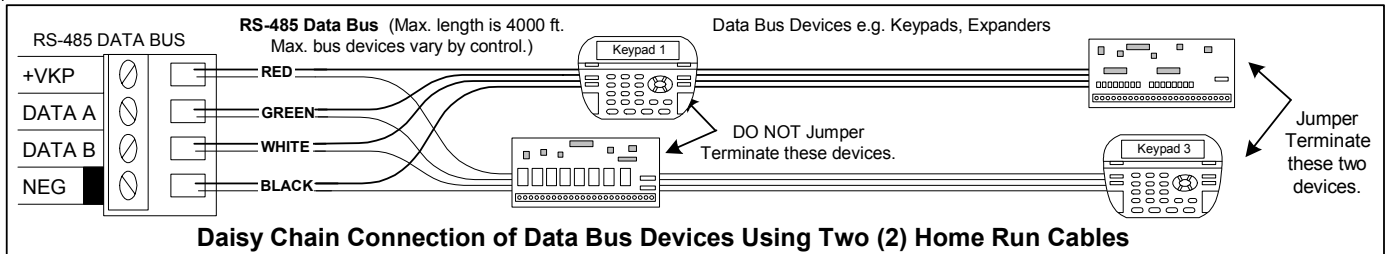
5. Set the "Mode", "Baud", and other necessary jumpers according to the Installation diagrams on previous pages.
6. After all connections are complete, turn On the M1 Master Power Switch.
7. Enroll the M1XSP into the M1 Control. From the Keypad access the Installer level programming and select Menu 01-Bus Module Enrollment. Press the right arrow key to start the enrollment. Once enrollment has completed press the right arrow key to view results. Enrolled M1XSPs will show up as type 5 (T5) followed by the specific address number.

# Elk-M1 Data Bus E.O.L. Termination

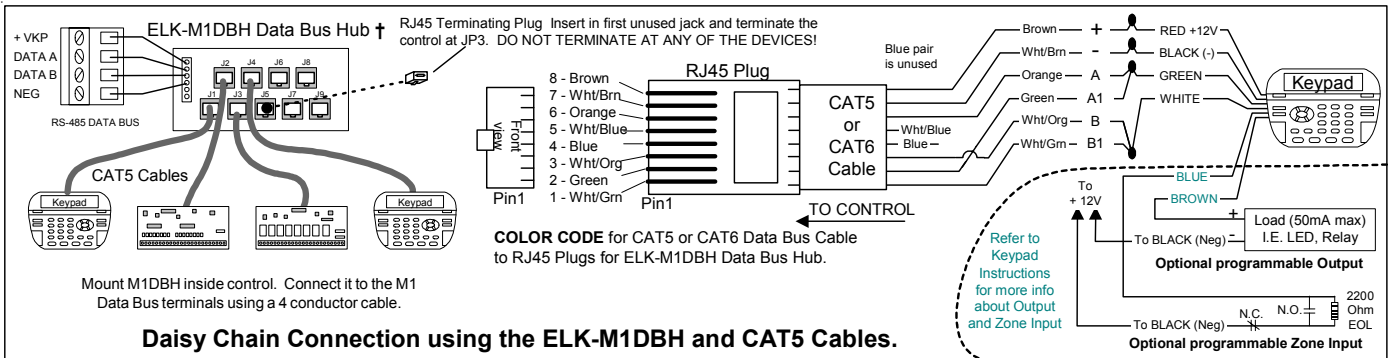
## VERY IMPORTANT!

The control uses a RS-485 “differential” data bus operating at 38,400 bits per second. This is relatively high speed by industry standards and ensures fast, accurate communications. EOL data bus terminating resistors are strongly suggested to eliminate the possibility of reflection errors due to varying cable lengths. Every device; keypad, expander, etc. and the control has a built-in bus terminating resistor (120 Ohm) which can be activated via a 2 pin jumper (2 Gold Pins). Two black shorting caps are included in the hardware pack. When one of the shorting caps is placed on the two gold pins, it activates the 120 Ohm terminating resistor across Data Lines A & B. Terminating resistors are marked JP2 on the keypads and JP1 on the expanders. From the factory, no terminating resistors are installed (activated).

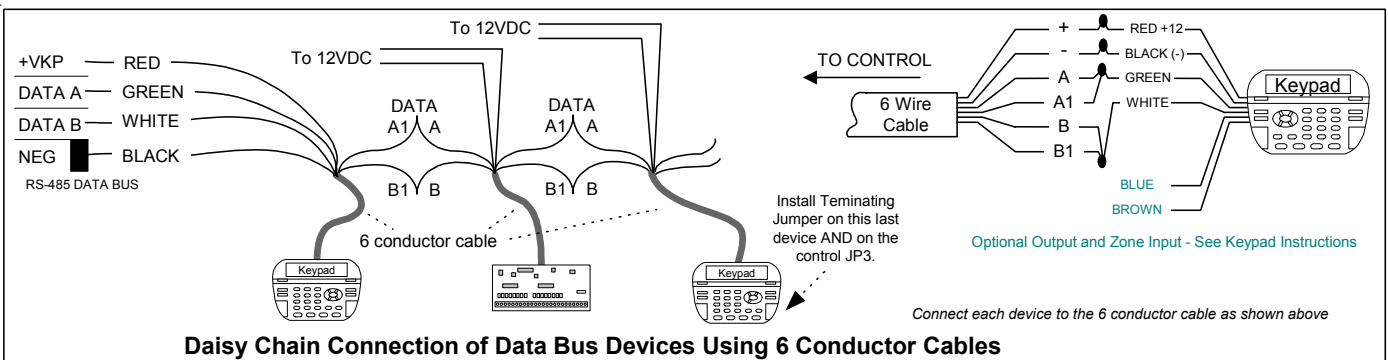
**WARNING! The RS-485 Data Bus must NEVER have more than 2 terminating resistors header/jumpers installed.**



The M1 should have no more than 2 home run cables but devices can be daisy chained along each. The last device on each home run SHOULD be terminated via the gold 2 pin terminating header/jumper. Placing a shorting cap on the pins will engage a 120 Ohm resistor across data lines A & B. If there is only 1 data bus home run cable then place shorting cap on JP3 of Main Board. See other hookups below.



The optional ELK-M1DBH † Data Bus Hub is suggested if the job must have more than 2 home runs. The M1DBH accepts CAT5 or CAT6 cable with RJ45 plugs. It keeps wires more organized while also providing easy bus termination. Essentially, the M1DBH circuit board daisy chains the devices by series connecting the DATA lines A & B. An plug-in RJ45 terminator is supplied for use in the first unused jack.



Another option for wiring multiple home runs is with 6 conductor cable. This allows devices to daisy chained by making an in and out connection, basically a 3 way splice of the data A (Green) wire to 2 wires of the 6 conductor cable (designated A and A1). Do the same for the data B (White) wire. At the control splice the A1 and B1 wires to the A and B wires going to the next device. Terminate the last wired device and the control JP3 ONLY! The data wires will be in series, but the POS (+) and Neg (-) power wires should be parallel wired to the +VKP and Neg terminals or to an auxiliary Power Supply if the combined current draw exceeds the rated current available from the Control.

## AES Intellinet Radio Subscriber Unit

AES Intellinet Radio Subscriber units can be **SERIALLY** interfaced to ELK-M1G or M1EZ8 Controls using an M1XSP Serial Port Expander flash programmed with Version 10.0.2 or later. See Firmware Release Notes for any new releases. Integration with AES allows for Contact ID formatted data of all events and conditions to be sent to a Central Station.

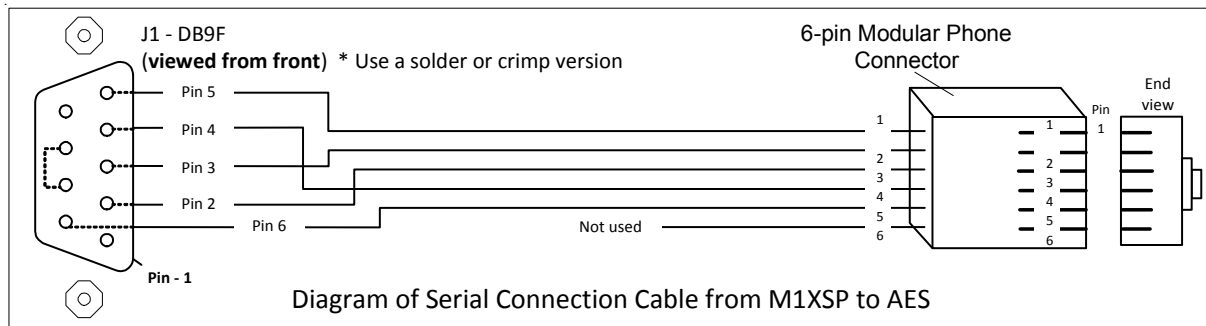
**IMPORTANT: For compatibility with AES the M1XSP must be flashed with firmware version 10.x.x or later.**

Additional requirements: ELK-M1G or M1EZ8 Control must contain firmware version 4.4.12 or later.

ElkRP Remote Program Software must contain version 1.6.18 or higher.

Firmware versions and updates may be downloaded from the Elk Website: [www.elkproducts.com](http://www.elkproducts.com)

1. Connect the M1XSP to the M1 Control per the instructions on page 2.
2. Set the M1XSP **MODE** Jumpers as: 1 0001: **S4\* = "1" (UP)**, **S5="0" (DN)**, **S6="0" (DN)**, **S7="0" (DN)**, & **S8="1" (UP)**.  
\* NOTE: Some units do not have jumper S4. The BAUD jumpers S1,S2, & S3 do not matter for this setup.
3. Set Jumper JP5=**ON**.
4. Set Jumper JP3 to the "**232**" position. **MAKE CERTAIN TO "ENROLL" THE M1XSP WITH THE CONTROL!**
5. Install the AES Radio Unit as per the manufacturers recommendation, obtaining the best possible signal strength. Since the M1XSP operates from the RS-485 data bus it allows the AES Radio to be positioned far from the control.
6. Construct a Serial Connection Cable from the M1XSP to the AES Radio Unit using the diagram below. This cable requires a DB9F 9 Pin Female connector on one end and a 6 wire modular phone plug on the other. See diagram below.



7. The AES Radio has it's own power supply and requires a plug-in transformer and backup battery.
8. Activate the AES Radio per its instructions. Verify that the unit is activated.
9. Program the M1 or EZ8 Control using a Keypad or the ElkRP software.  
 From the Telephone Numbers menu select any 1 of the 8 telephone numbers.
  - A. If the AES is to be the primary alarm reporting then program the Telephone TYPE as "0=Always report to this number". If the AES is to operate in a "Backup" mode (only report upon failure of the previous telephone number) then program the TYPE as "1=Backup previous number". NOTE: Only telephone numbers 2 thru 8 can be set as "Backup".
  - B. Program the name to describe the reporting location of this telephone number. (Optional)
  - C. Leave the telephone number "NUMBER TO DIAL" blank.

C.S. Telephone: 1

Type: 0 - Always report to this number

Name: CENTRAL STATION

Number to dial:  

Reporting format: 7 = Serial Expander

Dialing attempts: 2

Account Numbers

Area 1: 005432

Area 2: 000000

Area 3: 000000

Area 4: 000000

Area 5: 000000

Area 6: 000000

Area 7: 000000

Area 8: 000000

To disable reports to this number for a particular area, set its account number to 000000.

Report the following using this number

- Area events, alarms, restorals, and unbypasses
- Zone bypasses
- Zone troubles
- User events (opens/closings)
- Global system events

- D. Program the reporting format as "7-Serial Expander".
- E. Program the Dial Attempts to a value of at least 1.
- F. Choose the desired conditions to be reported by clicking on the selection blocks at the bottom.
- G. Program the Account Number to be reported for each active Area (Partition).

From the Communicator Reporting Code menus (folders), program the following:

- H. Program any desired Area Reporting codes by setting their value greater than 00.
- I. Program any desired User Report codes by setting their value greater than 00.
- J. Program any desired Zone Report codes by setting their value greater than 00.
- K. Program any desired System Report codes by setting their value greater than 00.
- L. Program any desired Keypad Panic Report codes by setting their value greater than 00.

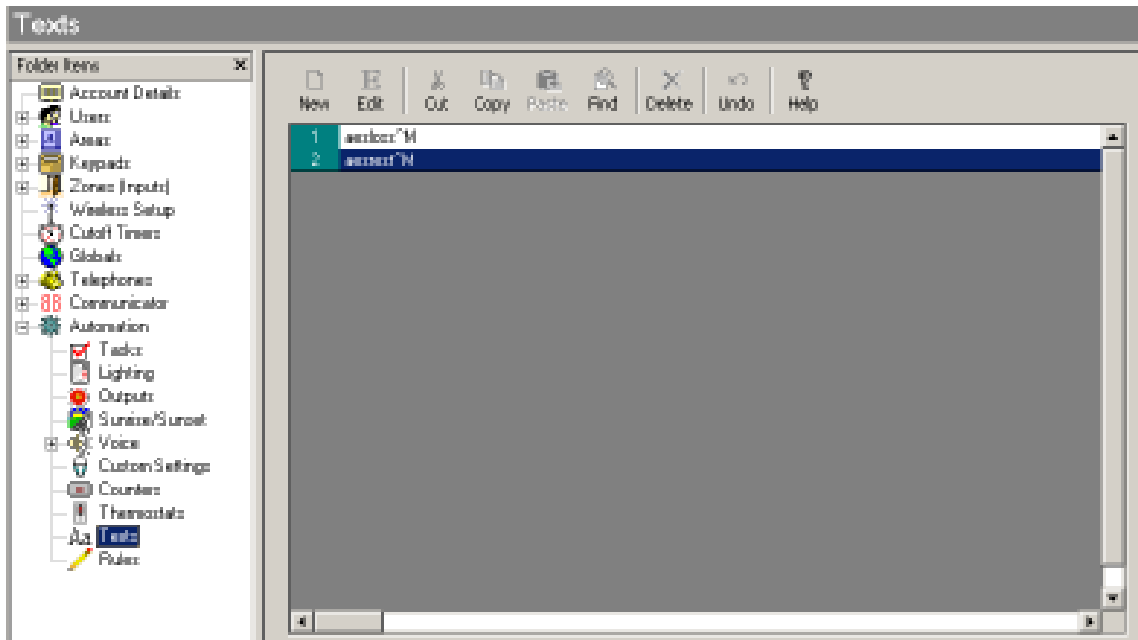
IMPORTANT: IF USING ELKRP SOFTWARE MAKE SURE TO **SEND** ALL OF THIS PROGRAMMING TO THE CONTROL.

- 10. Test - Test - Test It is very important to test each of the reported events.

### SUPERVISION

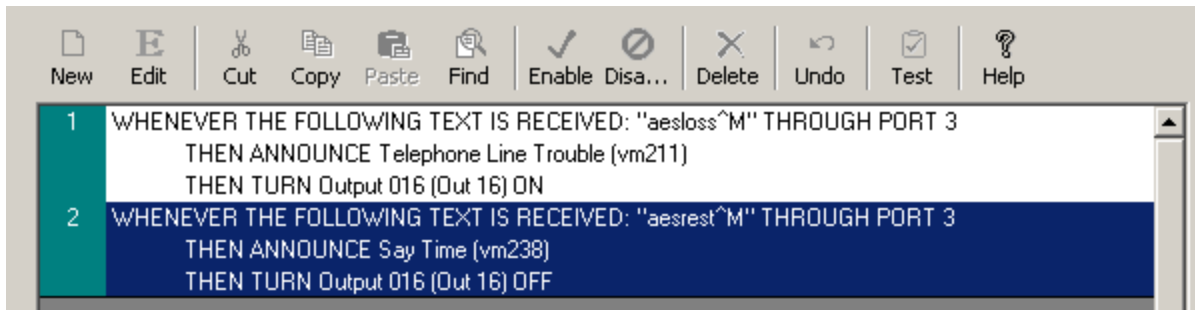
The M1XSP is enrolled with M1 Control and is automatically supervised on the data bus. Loss of an M1XSP for more than 40~ seconds will result in a "Expander Missing" signal by the control.

The M1XSP is also capable of reporting the loss of communications between the AES unit and the AES receiver or the loss of communications between the AES unit and the M1XSP. Likewise, it can report when communications is restored. To accomplish this the M1XSP produces two text strings "aesloss^M" and "aesrest^M". These text strings must be programmed into the "Texts" folder using the ElkRP software. See below:



**NOTE: Text Strings are Case Sensitive.**

Before the text strings can produce any alert or actions it will be necessary to write a rule using the ElkRP software. For example, a rule can be written to turn on an output, speak a voice message, etc. See examples below:



## ***OBSOLETE* - UPLINK 2500 and AnyNET Cellular Radios**

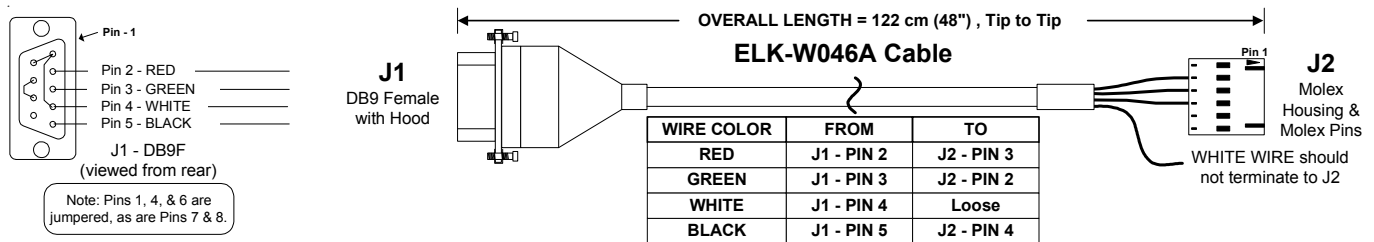
The UPLINK 2500 & AnyNET Radios can be SERIALY interfaced to ELK-M1G or M1EZ8 Controls utilizing an M1XSP that has been flashed with firmware Version 10.0.2 or later. See Firmware Release Notes for any later releases. Integration with Uplink provides FULL DATA reporting to a Central Station using contact ID for all events and conditions.

**For compatibility with Uplink the M1XSP must be flash programmed with firmware 10.0.2 or later.**

Additional requirements: ELK-M1G or M1EZ8 Control must contain firmware version 4.3.8 or later.  
ElkRP Remote Program Software must contain version 1.6.2 or higher.

Firmware versions and updates may be obtained from the Elk Website: [www.elkproducts.com](http://www.elkproducts.com)

1. Install the ELK-M1XSP per the instructions on page 2.
2. Set **MODE** Jumpers on the M1XSP to 1 0000: **S4\* = "1" (UP)**, **S5="0" (DN)**, **S6="0" (DN)**, **S7="0" (DN)**, & **S8="0" (DN)**.  
\* NOTE: Some units do not have jumper S4. The BAUD jumpers S1,S2, & S3 do not matter for this setup.
3. Set Jumper JP5=**OFF**
4. Set Jumper JP3 to the "**232**" position.
5. Mount the Uplink Radio Unit in a suitable location as recommended by Uplink. This is very important in order to obtain the best signal strength. The M1XSP operates from the RS-485 data bus and can easily be located away from the control.
6. Connect a serial communications cable from the M1XSP to the serial port on the Uplink Radio. The compatible Uplink Radio has a special "flat" serial connection on its right side. Uplink previously was the only source for this cable (Uplink # UPL002554300A). But effective 9/2010 Elk is now including a compatible cable (ELK-W046A) with the M1XSP. The construction and pinout for this cable is:



NOTE: Uplink had a radio that came with a DB25 25-pin serial connector. This may or may not be compatible with the M1XSP. At minimum it would require a special cable with a DB9F (9 pin female) on one end and a DB25M (25 pin male) on the other end. Elk does not recommend the use of this radio model.

7. Power the Uplink Radio from one of the Aux. 12V power terminals on the M1, or from an auxiliary 12VDC power supply.
8. Follow the Uplink Instructions for activating the Radio into the network. Verify that the unit is activated.
9. Using the M1 Keypad Programming OR the ElkRP software, program the Telephone and Communicator attributes.
  - Select any 1 of the 8 telephone numbers and program the following:
    - A. If you want Uplink to ALWAYS report the the selected conditions, program the Telephone TYPE as "0=Always report to this number". However, to have Uplink BACKUP (only report the selected conditions upon failure of) the previous telephone number, program the TYPE as "1=Backup previous number". NOTE: Only telephone numbers 2 thru 8 can be set as "Backup".
    - B. Optional - Program a name to describe the location that this telephone number is reporting to.
    - C. Do not program any numbers into the NUMBER TO DIAL location.
    - D. Program the reporting format as "7-Serial Expander".
    - E. Program the Dial Attempts value.
    - F. Click on the selection blocks to program the desired conditions to be reported by this telephone number.
    - G. For each active Area (Partition), program the Account number as 999999.
 From the Communicator Reporting Code menus (folders), program the following:
    - H. Program any of the Area Reporting codes by setting their value greater than 00.
    - I. Program any of the User Report codes by setting their value greater than 00.
    - J. Program any of the Zone Report codes by setting their value greater than 00.
    - K. Program any of the System Report codes by setting their value greater than 00.
    - L. Program any of the Keypad Panic Report codes by setting their value greater than 00.

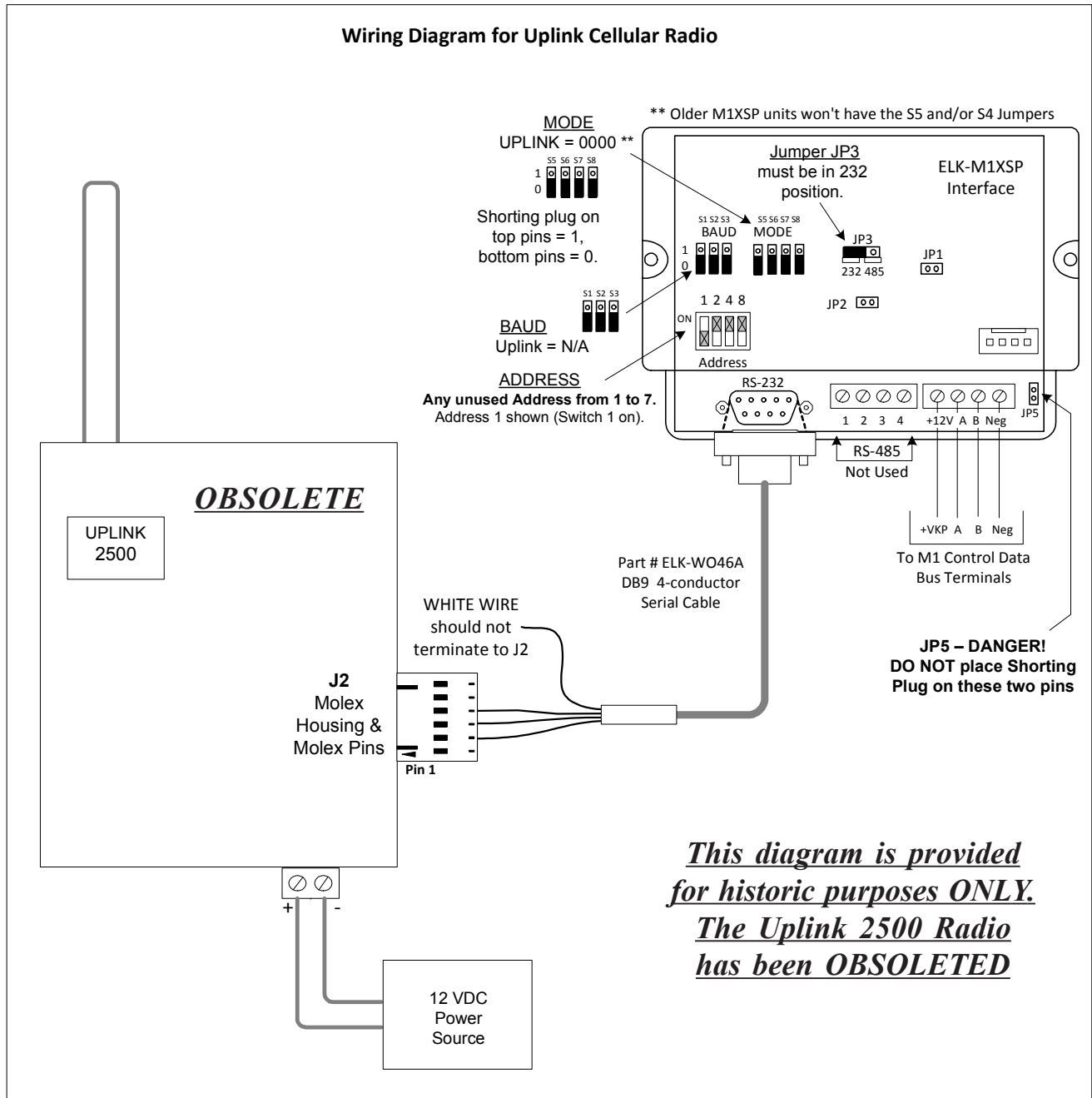
10. Test the Uplink reporting by activating any of the reported events.

**SUPERVISION:** The M1XSP is enrolled into the M1 and is automatically supervised on the data bus. Loss of a M1XSP for more than 40~ seconds causes "Expander Missing" by the M1. This inherently supervises the loss of Radio as well.

it is also possible to supervise the loss of radio signal with the Uplink Network Ops Center and signal this back into the M1 Controller. This requires an M1 Automation Rule to look for a specific ASCII text string from the M1XSP. The result of this type supervision signal can be whatever you wish, based on the capability of the rule engine. Do the following:

- A. From ElkRP program 2 new Text strings. One will be "uplinkloss^M" and the other "uplinkrest^M".
- B. Now write a rule utilizing the "uplinkloss^M" as follows:  
WHENEVER THE FOLLOWING TEXT IS RECEIVED: "uplinkloss^M" THROUGH PORT X (M1XSP address)  
THEN TURN Output X ON (this can be used to power a trouble indicator)
- C. Write a second rule utilizing the "uplinkrest^M" text as follows:  
WHENEVER THE FOLLOWING TEXT IS RECEIVED: "uplinkrest^M" THROUGHT PORT X (M1XSP address)  
THEN TURN Output X Off (used to reset the trouble indicator)

**NOTE: Text Strings are Case Sensitive. Make certain that each text string ends with ^M (carriage return).**



## UPLINK 4500EZ 4G GSM Communicator

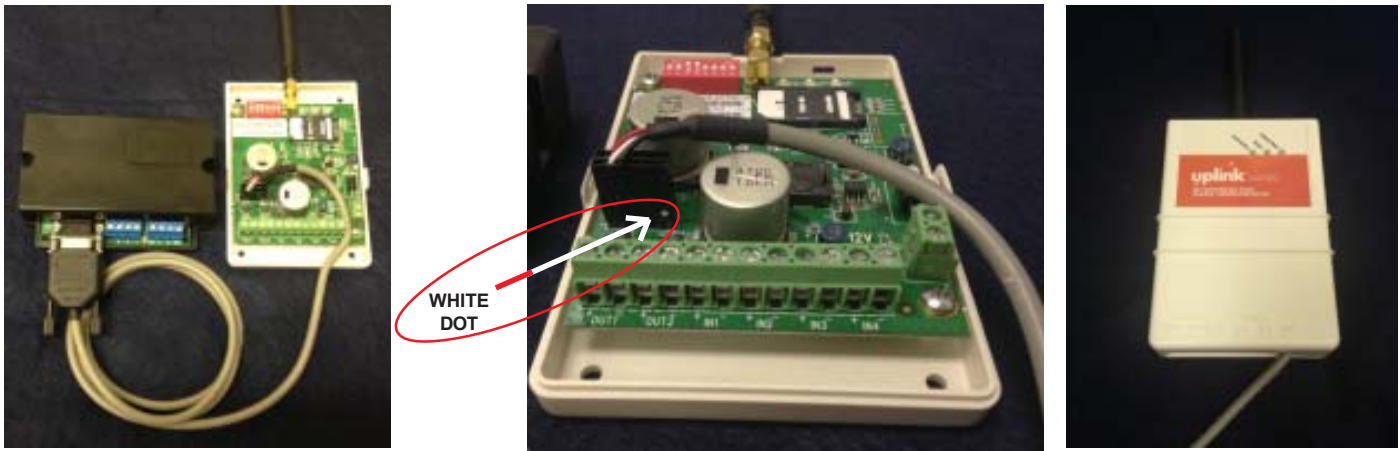
Connecting a ELK-M1XSP to the UPLINK 4500EZ requires a special serial cable available only from UPLINK.

UPLINK has not produced a version of the 4500 GSM Communicator with an external serial port connection as they had previously offered with their 2500 and AnyNet products. As an alternative, they are recommending a workaround solution that uses a 12-Pin software development connector inside the unit on the left side of the circuit board. This connector requires a special serial adapter cable that can only be obtained directly from UPLINK. Some issues with this connection are: 1) There is no friction lock or physical locking mechanism to prevent an accidental unplug. 2) There is no strain relief to prevent damage if the cable be pulled. 3) There is minimal surge/transient protection because the cable itself must pass very close to sensitive components on the board. It is unknown if any isolation or protection exists between this connector and the microprocessor. 4) Once this cable is connected it is nearly impossible to reclose the cover on the 4500EZ. Despite these issues this is currently the only method for integrating the UPLINK 4500EZ to the Elk M1XSP and M1 Control. We feel it important to mention that Elk Products had no control over these issues and therefore cannot accept responsibility or any liability for damage, misuse, or failure due to the application of this product.

Contact UPLINK directly to purchase the special serial cable. This has a 9-Pin "D" connector on one end and a dual row 12-Pin header connector on the other end. **WARNING: REMOVE POWER FROM ALL EQUIPMENT BEFORE MAKING ANY CONNECTIONS!**

Remove the UPLINK 4500EZ cover and locate the dual row 12-pin male header connector on the left side of the board. The lower right hand pin of this header is PIN #1. There should be a "1" printed on the circuit board adjacent to this pin. Now locate the small WHITE DOT painted on one end of the UPLINK cable's 12-Pin female connector. This dot identifies PIN #1. Align PIN #1 on the 12-Pin female connector with PIN #1 on the 12-Pin male header. Plug the connector into the header making certain that all 12 pins are properly aligned and covered. Double check the final installation against the picture below.

Since there are no locking or strain relief provisions to prevent this connector from accidentally coming loose, one workable solution is to route the cable around the right side of the screw terminal blocks and then bend it down and back around to the left so that it can exit from the terminal block notch in the cover. See diagrams below. When attempting to replace the cover on the 4500EZ, be careful not to bend, pinch, or otherwise damage the wires. Since the top of the connector is nearly as tall as the cover, it is very difficult to fit the cover in place. If all goes well the results should look similar to the lower right hand picture. If you decide to leave the cover off, be sure to provide some means of keeping the connector plugged in.



**For compatibility with Uplink the M1XSP must be flash programmed with firmware 10.0.2 or later.**

Additional requirements: ELK-M1G or M1EZ8 Control must contain firmware version 4.3.8 or later.

ElkRP Remote Program Software must contain version 1.6.2 or higher.

Firmware versions, updates, and release notes may be obtained from the Elk Website: [www.elkproducts.com](http://www.elkproducts.com)

1. Install the ELK-M1XSP per the instructions on page 2.
2. Set **MODE** Jumpers on the M1XSP to 1 0000: **S4\* ="1" (UP), S5="0" (DN), S6="0" (DN), S7="0" (DN), & S8="0" (DN).**  
\* NOTE: Some units do not have jumper S4. The BAUD jumpers S1,S2, & S3 do not matter for this setup.
3. Set Jumper JP5=**OFF**
4. Set Jumper JP3 to the "**232**" position.
5. Mount the Uplink Radio Unit in a suitable location as recommended by Uplink. This is very important in order to obtain the best signal strength. The M1XSP operates from the RS-485 data bus and can easily be located away from the control.
6. Connect the special UPLINK serial cable to the M1XSP and to the 12-Pin serial connector on the Uplink Radio.
7. Power the Uplink Radio from one of the Aux. 12V power terminals on the M1, or from an auxiliary 12VDC power supply.
8. Follow the Uplink Instructions for activating the Radio into the network. Verify that the unit is activated.



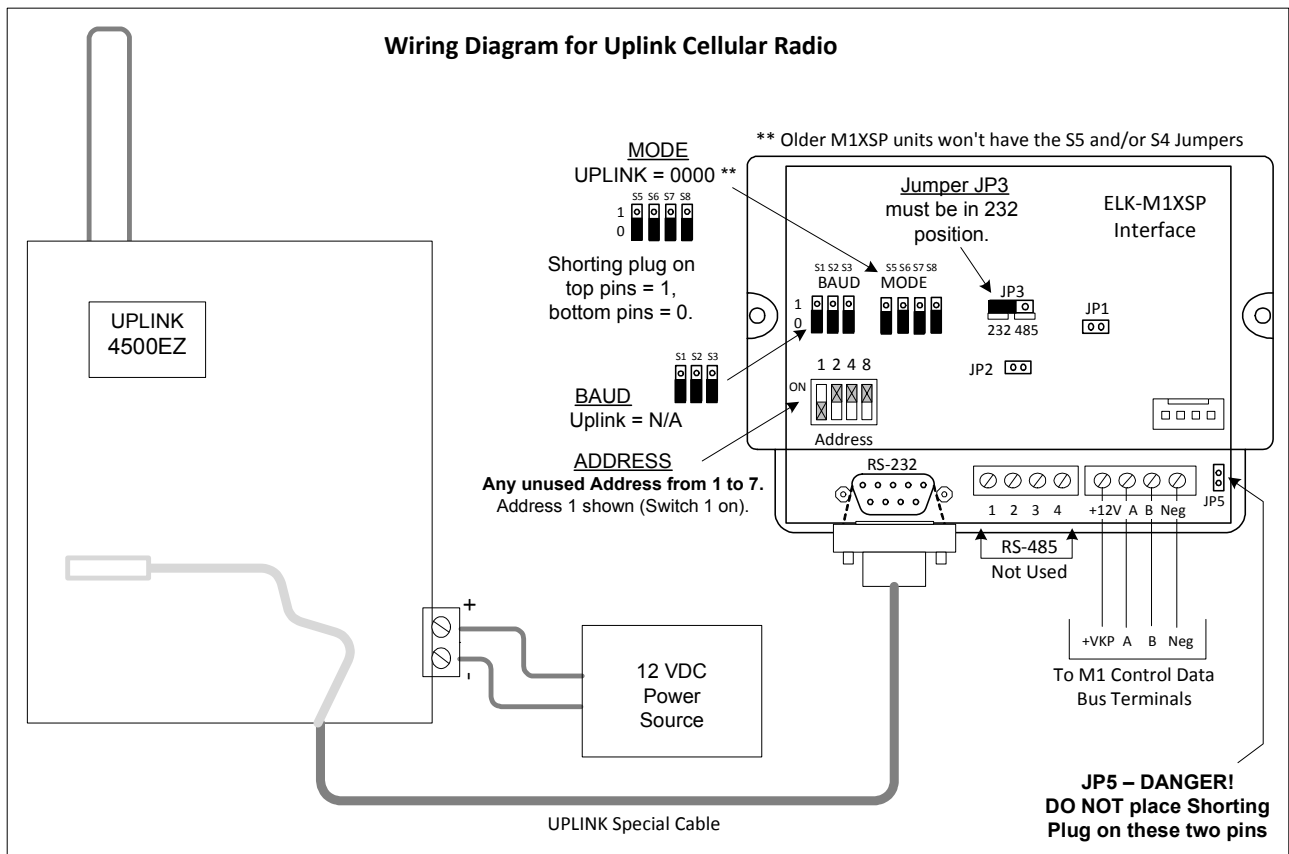
9. Using the M1 Keypad Programming OR the ElkRP software, program the Telephone and Communicator attributes.
  - Select any 1 of the 8 telephone numbers and program the following:
    - A. Do have Uplink ALWAYS report the selected conditions program the Telephone TYPE as "0=Always report to this number". However, to have Uplink BACKUP (only report after failure of the previous telephone number, program the TYPE as "1=Backup previous number". NOTE: Only telephone numbers 2 thru 8 can be set as "Backup".
    - B. Optional - Program a name to describe the location that this telephone number is reporting to.
    - C. Do not program any numbers into the NUMBER TO DIAL location.
    - D. Program the reporting format as "7-Serial Expander".
    - E. Program the Dial Attempts value.
    - F. Click on the selection blocks to program the desired conditions to be reported by this telephone number.
    - G. For each active Area (Partition), program the Account number as 999999.
  - From the Communicator Reporting Code menus (folders), program the following:
    - H. Program any of the Area Reporting codes by setting their value greater than 00.
    - I. Program any of the User Report codes by setting their value greater than 00.
    - J. Program any of the Zone Report codes by setting their value greater than 00.
    - K. Program any of the System Report codes by setting their value greater than 00.
    - L. Program any of the Keypad Panic Report codes by setting their value greater than 00.
10. Test the Uplink reporting by activating any of the reported events.

SUPERVISION: The M1XSP is enrolled into the M1 and is automatically supervised on the data bus. Loss of a M1XSP for more than 40~ seconds causes "Expander Missing" by the M1. This inherently supervises the loss of Radio as well.

it is also possible to supervise the loss of radio signal with the Uplink Network Ops Center and signal this back into the M1 Controller. This requires an M1 Automation Rule to look for a specific ASCII text string from the M1XSP. The result of this type supervision signal can be whatever you wish, based on the capability of the rule engine. Do the following:

- A. From ElkRP program 2 new Text strings. One will be "uplinkloss^M" and the other "uplinkrest^M".
- B. Now write a rule utilizing the "uplinkloss^M" as follows:  
 WHENEVER THE FOLLOWING TEXT IS RECEIVED: "uplinkloss^M" THROUGH PORT X (M1XSP address)  
 THEN TURN Output X ON (this can be used to power a trouble indicator)
- C. Write a second rule utilizing the "uplinkrest^M" text as follows:  
 WHENEVER THE FOLLOWING TEXT IS RECEIVED: "uplinkrest^M" THROUGH PORT X (M1XSP address)  
 THEN TURN Output X Off (used to reset the trouble indicator)

**NOTE: Text Strings are Case Sensitive. Make certain that each text string ends with ^M (carriage return).**



## Updating/Replacing Firmware in the ELK-M1XSP

The M1XSP stores its operating firmware in "Flash" memory. This state-of-the-art memory allows electronic field updates and eliminates the old fashion method of changing IC chips or shipping boards back to the factory. As new firmware updates become available, they will be posted on ELK's website found at [www.elkproducts.com](http://www.elkproducts.com). **NOTE: Firmware updating can only be done through the M1 Control using a Direct to PC Com port connection or an optional Ethernet Network connection. Dial-up connections cannot be used to perform firmware updates.**

### How to Update:

1. Physically connect the Computer and Control using either the RS-232 Serial Port 0 or the M1XEP Ethernet Interface.
2. Open ElkRP and the account belonging to the control. Click on the Connection menu icon and establish a connection. Use either the **Direct using Com\_ OR Network** options.
3. On the Send/Rcv menu icon there is a selection that allows the firmware to be updated.
4. Select the device to be updated. In this case it is a Serial Expander. Select the update firmware option.
5. Display will show: Device name, current Firmware, Hardware, and Bootware version, and a pull down window for selecting the update firmware. NOTE: All update (.bin) files downloaded or received should be stored in a directory on your computer. Refer to the Options tab under the Setup menu in RP. It will indicate what directory is used for the update files.
6. Click on the check box for "Update". If "Reprogram" or "Rollback" is displayed the firmware file is the same as OR older than what is in the control. Reprogramming with the same firmware is a waste of time but was included for factory testing purposes. Rollback is not recommended except under the guidance of Elk Technical Support.

## Firmware Release Notes

### Version 10.0.6 - released July 1, 2013

#### Changes effective with this new application firmware:

1. It was recently discovered that Uplink's cellular network cannot handle extended report codes beyond 255. This is an issue for M1 Keypad Function/Panic Zones which use extended codes 401 and up to identify the keypad where the event was triggered. When the Uplink network encounters extended codes higher than 255 it truncates the number by 256 and sends the resulting number to the Central Station. Example: extended code 401 will be sent as extended code 145 from Uplink to the Central Station. So if the M1 Control has a zone programmed at location 145 the Central Station will receive a duplicate extended ID code whether the event came from zone 145 OR from a keypad function/panic activated event. This new M1XSP firmware resolves this by remapping the codes below 255. For Uplink each of the potential 16 Keypads has a new unique identifier. Keypad #1 will be identified as extended code 209, Keypad #2 as 210, and so on. The keypads and extended codes are as follows:

Keypad #1 = 209	Keypad #5 = 213	Keypad #9 = 217	Keypad #13 = 221
Keypad #2 = 210	Keypad #6 = 214	Keypad #10 = 218	Keypad #14 = 222
Keypad #3 = 211	Keypad #7 = 215	Keypad #11 = 219	Keypad #15 = 223
Keypad #4 = 212	Keypad #8 = 216	Keypad #12 = 220	Keypad #16 = 224

**Please remember to notify the Central Station of this change so they can properly map these extended codes. This only affects reporting from Uplink. All other communications continues to use extended code 401 and up.**

### Version 10.0.2 - released June 2, 2008

#### Changes effective with this new application firmware:

1. This is a brand new firmware edition.
2. Uplink - The move of Uplink to this new firmware edition made it possible to greatly increase the event reporting buffer size. This is now the "preferred" firmware for use with the Uplink Anynet cellular radio.
3. AES - Effective with this new firmware release the Elk-M1 is now compatible with the AES brand of long range radio alarm reporting equipment.

**NOTE: ELK-RP will identify this firmware as "Firmware supports AES". However it also supports Uplink AnyNet.**