

ELK-C1M1 Information Addendum



In addition to its super fast, dual path, alarm communications capability, the C1M1 also boasts support for Elk-RP remote programming of the M1 Control by the Alarm Company, and remote services operation by End Customers. Both these capabilities can be accomplished without any need for local port forwarding or static IP address assignment. This addendum for the C1M1 was created to focus and assist with the setup and operation of some items not covered in the C1M1 Install Manual. Elk will continue to add content to this addendum and welcomes your input and suggestions.

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IMPORTANT NOTES:

- To be UL compliant and fully compatible with the ELK-C1M1 Communicator the ELK-M1 Control should be running FW 5.3.10.
- ElkRP version 2.0.34 is required for use with the ELK-C1M1 Communicator.

NOTICE: Drawings, illustrations, diagrams, part numbers, etc. are provided as reference only and are based on equipment available at the time the information was created. All information contained in this document are subject to change without notice. The Install Manual shipped with M1 Controls does not currently mention the C1M1 because its publication predates the C1M1.

ELKLINK - Setting up a login to the ElkLink web portal for an End Customer.

The ElkLink website provides a login portal for End Customers. From here an End Customer can Arm and Disarm their M1 system through the C1M1. They can also setup email or text notifications, view history, and perform any other future operations. The following limitations exist on the End Customer portal. 1) ElkLink only allows operation of a single area/partition (Area #1) 3) ElkLink only provides a single End Customer login per C1M1. Multiple family members will need to share a common End Customer login.

3.1. Log-in to the ElkLink site using your Alarm Company 'Admin' or 'Reg' credentials.

NOTE: Setting up a End Customer login to ELKLINK can only be accomplished by Alarm Company personnel who hold Admin or Reg credential authority. Personnel with ViewOnly credentials can review settings but cannot setup or edit.

3.2 Choose the **End Customer** tab.

3.3. Choose **NEW** from the left margin.

3.4. Complete the **First Name, Last Name, Email Address, Mobile Number, and Mobile Carrier** fields. The email is very important as ElkLink automatically sends an email invite and link for the end customer to use in setting up their own personal Username and Password. The mobile number/carrier fields are necessary if the customer wishes to setup text notifications.

Service Provider / Alarm Company These fields are completed automatically using the stored Alarm Company account info.

Device MAC Address Use the pulldown arrow to find and select the Device MAC Address belonging to the C1M1 installed for this End Customer. This is the most critical field to be completed. in this box ElkLink should display the Device MAC Addresses for all C1M1 units registered under your Alarm Company that HAVE NOT ALREADY been assigned to an End Customer. If you don't see the Device MAC for a unit being installed it is possible that the unit has already been assigned to the wrong End Customer Login.

IMPORTANT: Each C1M1 can only be assigned to a single End Customer Login. However, if an End Customer has multiple M1 locations with C1M1 Communicators installed, their single login can be used to control Multiple units. In this situation there will be a pull down box in the ElkLink web and mobile apps which will allow them to select which unit to view and control.

Add New End Customer

END CUSTOMER

Login Name: [Will be set in user activation]

First Name *: Mobile Carrier *:

Last Name *: Service Provider *:

Email Address *: Alarm Co Name *:

Mobile Number *: Device MAC *:

Please use edit mode to add more devices, maximum devices can accommodate is 25.

* Denotes Required Fields / Selected devices will be removed

Save Cancel

3.5. Choose **Save** after you have completed all the fields.

3.6 Remember to advise the End Customer that they will be receiving an email from ElkLink. The email will contain a link for them to use in setting up their own personal Username and Password for ElkLink.

3.7. **Remote Arm/Disarm** - The M1 Control requires the C1M1 to supply an authentication code (valid M1 User Code) for all remote commands. The Alarm Company MUST program a single User Code into the M1 Control AND the C1M1 Device setup screen.

In the M1 Control we recommend adding and assigning the last M1 User Code (Code 199) for ElkLink purposes. This location should be less likely to get accidentally deleted or changed. Set the Authority Levels for this code as Arm and Disarm ONLY. Set the name for this code to be: "C1M1 Remote." Each time the End Customer uses their ElkLink End Customer website or SmartPhone App to perform an Arm or Disarm command the C1M1 will supply this code to the M1 Control for authentication.

Under the Alarm Company ElkLink Device tab locate the Device under the Device MAC column. Then click on the actual MAC number (blue colored link) to open the View Device screen. Choose the **EDIT** button to open this screen for editing. In the field titled: **Remote Disarming Code**, enter the User Code which was previously programmed into the M1 Control.

Choose the **Update** button to save this new information and update the database and the C1M1.

Programming the M1 for Communicating through the C1M1

To be UL compliant and fully compatible with the ELK-C1M1 Communicator the ELK-M1 Control should be running FW 5.3.10.

Setting up and programming of the M1 parameters necessary for communications using the C1M1 may be done from the Keypad Installer Level programming or from the ElkRP Programming Software.

1. Programming from the Keypad Installer Level

From the M1 Keypad enter the Installer Level Programming mode by pressing ELK, 9, RIGHT Arrow, and then entering the Installer Programming code. Navigate to Menu 08, Telephone Account Setup and press the RIGHT arrow key to select. The first screen shows the name currently assigned for Tel #1. A customized name is not required. Use the DOWN or UP arrow keys to scroll and view each menu option. Press the RIGHT arrow key to select and program the desired option.

Telephone #1 - This telephone number MUST be programmed in order to use the C1M1. Program each option as follows:

- 1.1. Program option 01 (Format) as "06 = Ethernet". (This is the same setting needed and used by an Elk-M1XEP)
- 1.2. Program option 02 (Priority) as "0 = Always Report".
- 1.3. Skip options 03 and 4 (Number and Dial Attempts) as they do not pertain to IP communications.
- 1.4. Program a non-zero number (e.g. 000001) into the respective Acct. number location (options 05 thru 12) for each Area/ Partition that is to be reported to the Central Station. The C1M1 will not report an area if the Acct. number is all zeros (000000). NOTE: This step only sets the Areas to be reported. The actual Acct. number that identifies the customer at the Central Station will be programmed and stored in the C1M1 via the ElkLink web portal. C1M1 reports a single Acct. number with an extended digit that identifies the Area (partition) to the Central Station.
- 1.5. Program option 13 as "Yes" if you wish to enable reporting of Zone Alarms, Zone Restorals, and Zone unbypasses.
- 1.6. Program option 14 as "Yes" if you wish to enable reporting of Zone Bypasses.
- 1.7. Program option 15 as "Yes" if you wish to enable reporting of Zone Troubles.
- 1.8. Program option 16 as "Yes" if you wish to enable reporting of User Openings and Closings.
- 1.9. Program option 17 as "Yes" if you wish to enable reporting of Global System (AC, Low Battery, etc.) events.

NOTE: Telephone or "dialed" number is the legacy method used by M1 for communicating alarms. Of the available 8 telephone numbers in the M1 only Telephone #1 is required for enabling C1M1 Cellular and IP communications. The other 7 numbers can still be used for digital or voice dialing if the client still has a working POTS (plain old telephone) line. In that case Telephone #2 could be setup and utilized as a digital dialer backup for the C1M1 should it ever be unsuccessful in reaching the Central Station. Keep in mind that since C1M1 is a Dual Path Communicator, it backs up itself using the its two different communications pathways (IP and Cellular).

Reporting Codes - Menus 09, 10, 11, 12, and 13. Each of these Menus lists reporting codes grouped by category.

- 1.10. Program each reporting code (Zone, User, System Event, etc.) that needs to be reported by entering a non-zero value (e.g. 01, 99, etc.) Reporting codes with a value of 00 will NOT be reported.

Global System Definitions - Menu 07 contains select options important to the C1M1. Most are factory preset to the correct values but should be double checked.

- 1.11. Global option G34 must be set at 115,200. This sets the baud rate for the M1 Main Serial Port 0.
- 1.12. Global options G35 thru G40 should each be checked as Enabled (Programmed to Yes). These options determine what data categories are communicated out Serial Port 0.

Test and Verify Alarm Signal Transmissions via Cellular, IP, or both

Trip several alarms on the M1 Control and verify that the central station receives them.

If you are having problems getting reliable Cellular alarm signal transmissions, additional adjustments may be necessary.

- Recheck signal strength. You need at least 2 bars of cell service [**b** **2**] for reliable operation.
- Check antenna connector to be sure it is screwed on and seated correctly.
- If adequate cell signal cannot be achieved where the C1M1 needs to be mounted, an external remote Antenna may be purchased and installed in place of the factory DiPole antenna. Remote antennas are available from most Alarm Distributors and Cellular accessory stores and come with various cable lengths and mounting options. Elk Products offers a magnetic mount remote antenna with a 6 meter (~19 ft.) cable. The part number is: ELK-WA003

2. Connecting and programming from the ElkRP Software

Download and install the latest version of the ElkRP PC Programming Software (v2.0.34 or later) from Elk's website. Connect to the M1 Control and program all necessary communications options. It will be necessary to create a new (blank) client M1 account in ElkRP unless you have previously used ElkRP to program this M1 Control.

There are two ways to connect ElkRP to the M1 Control when a C1M1 is installed. The first is referred to as Local Connect, the second is Remote Connect.

- 1) **Local Connect via USB** - This requires a USB Serial Cable (Serial A to USB Mini B) from your PC to the USB port on the bottom edge of the C1M1. This is a common cable that may be purchased locally. Elk Products offers this cable for sell as part number ELK-USBCM. After the cable is connected to your PC and plugged into the C1M1 your PC should auto-detect, located, and install the appropriate USB software driver. **NOTE: The C1M1 has to be powered up in order for the PC to recognize the cable.**

Open the M1 Account and set the Network Adapter as "C1M1" on the Account Details screen. Fill in the System URL/IP that is assigned to the C1M1. The "Find C1M1" box may help with this process. The C1M1 non-secure port is defaulted to "2101". If the secure port is ever utilized it will always be "1" number higher than the non-secure port. Leave the boxes for Use Secure port and Passphrase blank for now. ALWAYS be sure to fill in the MAC Address that is assigned to the C1M1. This number is printed on the right side of the C1M1 housing.

To connect locally, use the Connection drop down icon and select the option for: On-site Local. A second fly-out window will open and allow you to select: PC USB Port TO Device USB (if available). The ElkRP should now connect via USB to the M1 Control.

Most all modern PCs have at least one USB serial port. The best part about the C1M1 having a USB serial port is that it is now possible to locally program via a direct wire (USB Cable) without disrupting or interfering with the C1M1 connection to M1's serial Port 0.

- 2) **Remote connect** - This uses an Intermediate server known as the "ELK Proxy." If you have already filled in the MAC Address of the C1M1 then you can choose Network Proxy from the ElkRP Connection drop down icon. This will open a login window. You must enter your ElkLink login credentials to validate yourself with the ELK Proxy server. These credentials may be saved for future use or you may choose to enter them each time manually for better security. After a short delay the ElkRP should now connect via the ELK Proxy server to the M1 Control.

Older "legacy" ElkRP connection methods that are still supported:

- A) **Local IP connect from a PC on the customer's LAN to the C1M1 LAN (IP) Port.** By default the C1M1 is enabled to accept inbound connections via its LAN (IP) Port. Its setting is: Enabled > Non-Encrypted Only. Changing this setting can only be done using the C1M1 Diagnostic Utility. Other options are: Enabled > Encrypted Only, Enabled > Non-Encrypted & Encrypted, Disabled > No Inbound via LAN. If set as encrypted then a key (encryption key) must be generated and known (shared) by the C1M1 and the ElkRP software. The C1M1 uses AES encryption and implements an easy to recall Passphrase method to generate a secure and invisible encryption key.
- B) **Local Serial connect from PC to the M1 main serial Port 0 using Serial Cable.** This is rarely used anymore nor is it recommended because this disrupts interaction between the M1 and the C1M1 while the main serial port connection is being used by the PC.

Program a Telephone #1 - As mentioned on the previous page this is the one and only telephone number that MUST be programmed in order to use the C1M1. Program each option as follows:

- 2.1. Open/create an M1 Account, then connect ElkRP using one of the methods mentioned above.

In the left column click the (+) symbol beside **Telephones**. If there is no Telephone 1 then choose New from the menu bar (or right click the mouse button) and add a Telephone 1. If Telephone 1 exists then click it once to edit its settings.

C.S. Telephone: 1

Type

Central Station data is entered on the M1XEP Setup window.

Select Areas

Select the areas allowed to report to this Central Station

Area 1
 Area 2
 Area 3
 Area 4
 Area 5
 Area 6
 Area 7
 Area 8

Report the following using this number

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

The M1XEP Setup button is not used! ElkRP displays this whether you have an M1XEP or not. The necessary setup for a C1M1 Communicator (IP address, Port, DNIS, and CS Acct number) is setup and managed from the ElkLink website portal.

- 2.2. Program the Priority for Telephone #1 as: "Always Report".
- 2.3. No name is required for Telephone #1. This is optional and may be skipped.
- 2.4. There is no need to program the fields for Number to Dial or Dial Attempts.
- 2.5. Program the Format for Telephone #1 as: IP (6)
- 2.6. In the section titled "Report the following using this number", check the box beside the events (Areas events, Zone bypasses, Zone troubles, User events, Global events) that you wish to have the C1M1 report.
- 2.7. In the section titled "Select Areas", check the box for the area(s) programmed. If no box is checked, C1M1 won't report.
NOTE: This step only sets the Areas to be reported. The actual Acct. number that identifies the customer at the Central Station will be programmed and stored in the C1M1 via the ElkLink web portal. C1M1 reports a single Acct. number with an extended digit that identifies the Area (partition) to the Central Station.
- 2.8. If you wish to setup Telephone #2 as a digital dialer backup to Telephone #1, add or edit Telephone #2 and program it as type: "Backup." Telephone #1 will be the primary means of communications and Telephone #2 will only be used as digital dialer backup should Telephone #1 (C1M1) be unsuccessful. Dual reporting (to both) may also be selected by configuring the Type for both numbers as: "Always Report." NOTE: Your Central Station may charge additional fees for dual reporting.
- 2.9. Select the Send to Control button to program these settings. **ElkRP must be connected to the M1 Control!**

Reporting Codes (RCs)

- 2.10. In the left column of ElkRP click the (+) symbol beside **Communicator**. This expands into 5 categories of "RC" (report codes). Select one at a time and review the available report codes. For each report code you wish the C1M1 to report you must set its value to 01 (non zero). Reporting codes that have a value of 00 will NOT report.
Remember to click the Send to Control button on each category screen. **ElkRP must be connected to the M1 Control!**
- 2.11. Click on Save to retain all your new settings in this account.

Global System Definitions - Menu 07 contains select options important to the C1M1. Most are factory preset to the correct values but should be double checked.

- 2.12. Global option G34 must be set at 115,200. This is baud rate for the M1 Main Serial Port 0.
- 2.13. Global options G35 thru G40 should each be checked as Enabled (Programmed to Yes). These options determine what data categories are communicated out Serial Port 0.

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- Check antenna connector to be sure it is screwed on and seated correctly.
- If adequate cell signal cannot be achieved where the C1M1 needs to be mounted, an external remote Antenna may be purchased and installed in place of the factory DiPole antenna. Remote antennas are available from most Alarm Distributors and Cellular accessory stores and come with various cable lengths and mounting options. Elk Products offers a magnetic mount remote antenna with a 6 meter (~19 ft.) cable. The part number is: ELK-WA003

Secure Mobile Apps

ElkLink Mobile No Port Forwarding is required with the C1M1.

Elk Products developed the ElkLink mobile app available for free download in both Android and iOS versions. This app supports the primary security functions of the M1 Control which include; remote system status and arm or disarm of the primary area (Area 1), including mobile history log. No special setup is required on the user's mobile device(s) by the installing Alarm Company.

Configuration - An Alarm Company employee with authority level "Admin or Reg" will need to establish the End Customer with an account in the ElkLink portal. The End Customer will then receive a weblink via email to allow them to choose their own Username and Password credentials. The end customer may then download and install the free app on any of their mobile devices.

eKeypad No Port Forwarding is required with the C1M1.

This is a powerful third party iOS app available for purchase in two (2) versions, Standard or Pro. It was written and is supported by an outside software developer in cooperation with Elk Products. eKeypad was originally written to support operation of an Elk M1 Control through an ELK-M1XEP IP Communications Interface. An update to this app is now available which supports operation of an M1 Control through the ELK-C1M1 Dual Path Communicator.

Configuration - Setting up the eKeypad app to connect with the C1M1 is very straightforward and similar to setting it up to connect with an M1XEP. The main difference is the app now connects with the Elk intermediate server first using the End Customer login credentials. The Elk intermediate server then facilitates the connection with the C1M1 and thus to the M1 Control. Elk Products created this intermediate (proxy) service to facilitate remote connectivity to C1M1 units without any need for a local static IP address and/or any port forwarding at the customer premises.

Step 1 - From the eKeypad - Configuration - menu select Automation Systems, Add New System, then choose ELK C1M1. From this screen you may customize the Device name and assign it to a Profile. NOTE: The displayed URL of the C1M1 Proxy and its port number is automatically assigned and MUST NOT BE CHANGED unless directed to do so by an eKeypad or Elk support person.

Step 2 - Type in the MAC Address of the C1M1 Communicator (see sticker on right side of C1M1). Step 3 - Type in the Username and Password belonging to the End Customer (must be assigned by the Alarm Company from the ElkLink webportal). Step 4 - Type in a Valid UserCode that currently resides in the M1 Control. Step 5 - Click SAVE.

Test Connection - On initial connection eKeypad should synchronize the data from the M1 Control. This may require several minutes!

M1TouchPro No Port Forwarding is required with the C1M1.

This is a powerful third party Android OS app which is available for purchase. Like eKeypad, this app was written and is supported by an outside software developer in cooperation with Elk Products. M1TouchPro was originally written to support operation of an Elk M1 Control through a ELK-M1XEP IP Communications Interface. An update to this app is being released which will support operation of an M1 Control through the ELK-C1M1 Dual Path Communicator.

Configuration - Setting up the M1TouchPro app to connect with the C1M1 is very straightforward and similar to setting it up to connect with an M1XEP. The main difference is the app now connects with the Elk intermediate server first using the End Customer login credentials. The Elk intermediate server then facilitates the connection with the C1M1 and thus to the M1 Control. Elk Products created this intermediate (proxy) service to facilitate remote connectivity to C1M1 units without any need for a local static IP address and/or any port forwarding at the customer premises.

Step 1 - From the M1TouchPro "Add Device" menu select ELK. On the next screen select ElkM1 Via C1M1. From here you may customize the Device Name. Step 2 - Type in the Username and Password belonging to the End Customer (must be assigned by the Alarm Company from the ElkLink webportal). Step 3 - Type in the MAC Address of the C1M1 Communicator (see sticker on right side of C1M1). Step 4 - Type in a Valid UserCode that currently resides in the M1 Control. Step 5 - Click SAVE.

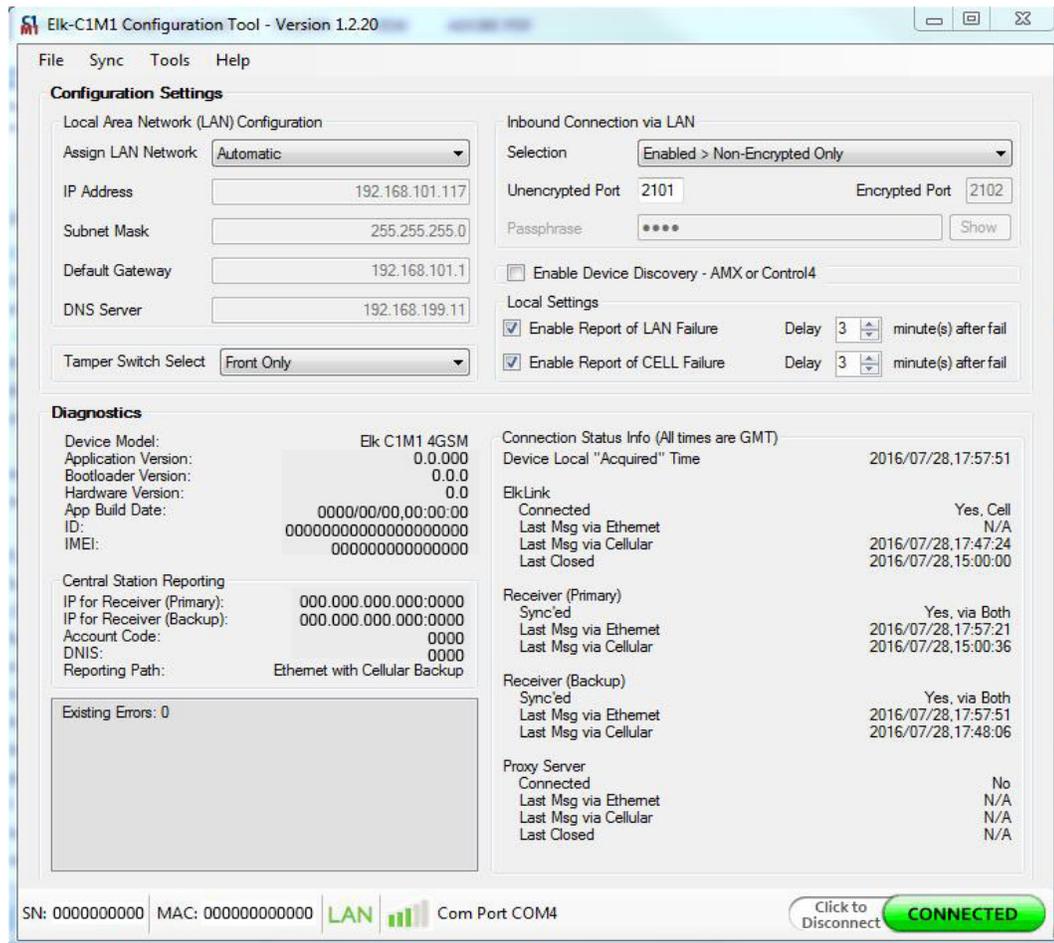
Test Connection - On initial connection M1TouchPro should synchronize the data from the M1 Control. This may require several minutes!

NOTE: Regardless of whether you choose to use the free ElkLink App, the purchased eKeypad App, or the purchased M1TouchPro App, C1M1 communications between the app and the customer's premises is encrypted and secure. C1M1 also provides a quicker connection to the user's system that the connection previously provided by the M1XEP.

C1M1 Diagnostic Utility

Elk created a C1M1 diagnostic utility whose main purpose is to provide local diagnostic information during a phone conversation with a member of Elk's Technical Support team. This utility is not required for setup of the C1M1's Central Station Alarm Reporting. All CS reporting settings of the C1M1 are and must be done from the ElkLink website. Beyond alarm reporting, the C1M1 does have some options which can only be setup from this utility. These options are: 1) Enabling of inbound LAN IP connections for 3rd party integration partners, 2) Changing the Unencrypted Port number (if Encryption is enabled, its Port number will automatically be 1 digit higher than the unencrypted port number), 3) Setting of a Passphrase which create a blind Encryption key for securing traffic on the inbound IP LAN, 4) Enabling of Device Discovery for AMX or Control4 integration, 5) Changing the automatic LAN or CELL failure reporting and time delay options, 6) Disabling the front cover tamper switch. This utility is available on request from Elk's website.

IMPORTANT: Unencrypted LAN connectivity to the C1M1 is enabled by factory default using Port 2101. The diagnostic utility is not needed unless you wanted to enable Encrypted connections or change the other options. If Encryption is enabled, a Passphrase must be entered which will create a blind Encryption key. The same Passphrase must then be used on both ends of a connection. I.E You would need to enter the identical Passphrase on ElkRP if you wanted to connect to the Encrypted port.



NOTE: Use of this utility requires a USB Serial A to Mini-B Cable connection (part # ELK-USBCM) with your PC.

1. Connect the ELK-USBCM cable between your PC and the C1M1. Make sure the C1M1 is powered up and then launch the Utility software. The PC should automatically discover the Com Port and display it along the bottom of the screen. DO NOT launch the Utility software until you have everything plugged in and powered up!

2. Click the lower right hand button labeled "Click to Connect"

The Serial Number and MAC Address of the connected C1M1 will now be displayed along the bottom. Along this same line the Utility also displays the status of the LAN connection and the Cell service status.

NOTE: All data in the example above is for instructional use only. No data is displayed until after a C1M1 is connected.

HARDWARE OVERVIEW

Dipole Antenna

Cell (Service) Red LED

ON solid is the expected indication to show that a Cell tower is within range and the unit has established a connection.

Blinking indicates limited or no service.

LAN (Activity) Green LED

Blinking is the expected indication to show that communication is occurring with a Local Area Network (LAN)

ElkLink (Connect) Orange/Yel LED

ON solid is the expected indication to show that C1M1 has an established connection with the ElkLink intermediate server portal. Note: Continuous connection to ElkLink is not mission critical for CS reporting. This LED may be off for short time periods.

Removable Terminal Block

Power Input (12 VDC)

This power shall be supplied from an Aux. Power output on the M1 Control.

Input

Not currently enabled - future use

Output

Not currently enabled - future use

RS232 Cable (3 Wire)

C1M1 ships with a 36" serial cable plugged into this port. A DB9M connector on the other end of this cable plugs directly to the Main RS232 Serial Port on the M1 Control.

WARNING: Max. Cable Length is 36"

Do NOT disconnect, splice or extend this serial cable. Evidence of such action will **VOID PRODUCT WARRANTY.**

LAN (IP) Port

For connection to client's LAN (Local Area Network) for Dual Path communications. If LAN is not available, C1M1 may be used in single path (Cellular Only) operation mode.

USB Port (Mini B)

Allows local ELK-RP programming of M1 using a PC and a USB serial cable.



7 Segment Display

Sequentially displays 1 character at a time to reveal: Signal Strength, Error Codes, IP Address. Data is grouped in short packets with a key letter prefix. It also displays communications activity.

b bars of cell signal - The letter is followed by a single digit from 0 to 5.

Example: **b 3** reveals 3 bars of service.

E Errors - The letter is followed by two digits. Examples of error codes are:

- E01** = Application not loaded
- E02** = Radio Module Power Fail
- E03** = No SIM card installed.
- E04** = Inactive Unit
- E05** = Low (Poor) Signal Strength
- E06** = No Service or unregistered on Cell Network
- E07** = Unable to communicate with M1
- E08** = Cellular radio module not detected
- E09** = No Internet Service (LAN detected)
- E10** = No LAN detected (check cable)
- E11** = Central Station not configured in ElkLink
- E12** = CS Receiver failed to respond
- E13** = No DHCP Server found

A Address - The LAN IP address is displayed 1 character at a time during the first 2 minutes after power up. C1M1 supports IPv4 addresses. These consist of 4 octets having a value of 0 to 255. Each octet will be separated by a decimal point.

Example: **A 192.168.0.100**

NOTE: CS reports will take priority over the LAN IP display which can make it difficult to view the address sequentially during power up. If needed the LAN IP display may be manually restarted by removing the cover from the C1M1 and pressing the small tamper switch button 5 times quickly. Always replace the cover when done.

Communications Activity:

□ Communications to the Central Station is displayed as a clockwise rotation of the outer 6 elements on the display. A decimal point in the the lower right corner will illuminate if the report is being sent over IP (Ethernet).

⊗ Communications to ElkLink is displayed as a figure 8 circulation of all 7 elements on the display.

□ Communications via the USB serial port is displayed as a clockwise rotation of the lower 4 elements on the display.