ELK-M1XRFTWM

Two-Way Wireless Transceiver/ Expander
for Elk Two-Way Wireless Sensors.

Refer to page 8 for a listing of sensor part numbers.

INSTALLATION MANUAL

ELK
PRODUCTS, INC.

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FEATURES:

- Adds up to 144 individual wireless zones (sensors/points)
- Operates from the 4 wire RS485 Data Bus
- Multiple Transceivers (Receivers) may be connected to a single Control
- Flash Memory allows field updating of operating Firmware
- Compatible with Elk complete line of Two-Way Wireless Sensors.

SPECIFICATIONS:

- Operating Frequency: 902 Mhz to 928 Mhz
- Transmission Duration (active on-time): 50 ms
- Sensitivity: >105 dbm
- Operating Temperature: 32° F to +120° F (0° C to 49° C)
- Operating Voltage: 12 Volts D.C.
- Current Draw: 25mA Receiving, 85mA Transmitting

NOTE: ELK PRODUCTS IS NOT RESPONSIBLE FOR ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

OVERVIEW

The letters **"TW"** in M1XRFTWM stand for"two-way" communications, meaning this device is actually a transmitter and a receiver (a transceiver). In other words, it has the ability to both transmit and receive. The compatible Elk 6000 series two-way wireless sensors are also two-way, making them vastly superior to traditional one-way wireless sensors.

The last letter "**M**" stands for "multiple receiver capable". Earlier M1XRFTW units were intended to work together with each other but suffered from memory overload if they same sensors were heard by each unit. This condition could often lead to false loss of supervisory troubles.

NOTE: This manual references the word transceiver as well as receiver and transmitter. This is due to the fact that M1 keypad programming and the ElkRP programming software still maintain support for traditional one-way wireless as well as the new Elk two-way wireless products. We hope this does not cause confusion.

This Transceiver allows the M1 Control to accept Elk's 6000 Series "Two-Way" Wireless Sensors. See the listing of available sensors later in the manual. This list is constantly growing and may not be current in this manual due to its printing date.   Please contact your local Elk distributor for the latest products and information.

NOTE: Elk also produces two other models of wireless expanders for the M1 Control. The ELK-M1XRFEG † allows M1 to accept Interlogix (aka GE, UTC) one-way sensors. The M1XRF2H † allows M1 to accept Honeywell (aka Ademco) 5800 series one-way sensors. Regardless of the model and supported wireless protocol, each connects to the M1 Control via the RS485 four (4) wire Data Bus and becomes enrolled and integrated much the same way as a hardwired expander.

Because it is attached to the RS485 Data Bus, a wireless expander can be remotely mounted virtually anywhere in the building to provide maximum convenience and coverage (range). The serial numbers (TXID) and setup information of all sensors are stored safely inside the control. In the event is should become necessary to replace a wireless expander it will not be necessary to reprogram the sensor info. Simply replace the wireless expander and perform a data bus enrollment to allow the M1 Control to begin communicating with it.

VERY IMPORTANT: The M1XRFTWM "two-way" Transceiver must be enrolled as the <u>first zone expander</u> (Address # 2) on the M1 Control Data Bus.   NO MORE THAN 3 additional M1XRFTWM transceivers may be connected to the M1 for expanded wireless coverage. The 1st additional M1XRFTWM transceiver must be enrolled at data bus address 3, the 2nd at data bus address 4, and the 3rd at data bus address 5. If any other type or model of expander (wireless or hardwire) is installed at one of these needed addresses then they will have to be relocated (moved) to a higher address to make room for the M1XRFTWM(s). See Appendixes A, B, & C for additional details on the use of multiple transceivers. <u>No bus addresses other than 2, 3, 4, or 5 may be used for M1XRFTWM Transceivers.</u>

Retrofitting an existing installation - In a retrofit installation or takeover situation it is possible to mix various models of Elk M1XRFx wireless expanders and their compatible sensors on a single M1 Control. This can be economically beneficial as it prevents having to throw away or replace existing wireless sensors just to utilize another brand. BUT EXTREME CAUTION must be taken to assure that each sensor is installed within adequate range of it's respective and compatible wireless expander brand/model. In other words, the sensors and wireless expanders are physically and electronically different. Each sensor can only communicate with its respective wireless expander brand/model.

IN AN INSTALLATION CONSISTING OF MIXED BRAND/MODEL WIRELESS EXPANDERS THE SENSOR BRAND/MODEL MUST BE MATCHED TO THE CORRECT WIRELESS EXPANDER BRAND/MODEL.

The ELK-M1G Control should be running application firmware ver. <u>5.3.0 or higher</u> to support the M1XRFTWM Receiver. Refer to Elk's website for "flash" file updates.

† Not evaluated by UL

Installation and Setup

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

ANT1
On-board
Antenna

JP1 Bus
Terminating
Jumper

Data Bus
Address Switches

NOTE: ONLY addresses 2, 3, 4, or 5 should be used with the M1XRFTWM.

RS-485
Data Bus
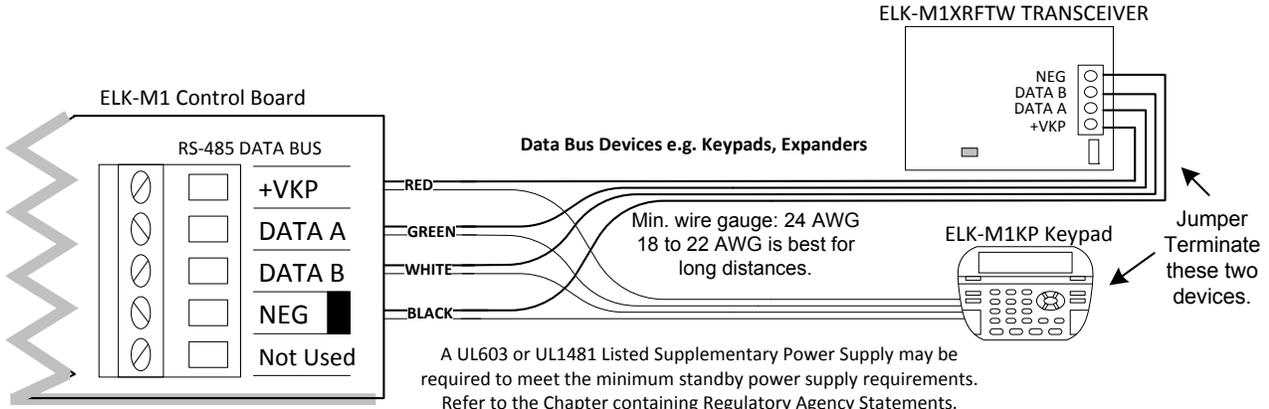Connections

ELK-M1XRFTWM Two-Way Transceiver

NOTE: Jumper JP1 makes it convenient to terminate the RS-485 Data Bus if this is the last installed device.

Installation must be in accordance with:
- Chapter 2 of the National Fire Alarm Code, ANSI/NFPA 72 and the National Electrical Code, ANSI/NFPA 70.
- UL 1641, Standard for Installation and Classification of Residential Burglar Alarm Systems
- Local Authority Having Jurisdiction
- Wiring methods shall be in accordance with the National Electrical Code, ANSI/NFPA 70.

ELK-M1XRFTW
TRANSCEIVER

For best radio coverage mount transceiver 7 to 8 feet high and as close as possible to center of the building being protected. Try to stay 4 ft. or more away from the M1 Control and maintain adequate spacing from any metal objects and potential sources of electrical noise and/or interference.

ELK-M1G CONTROL

ELK-M1KP KEYPAD

ELK-M1XRFTW TRANSCEIVER

NEG
DATA B
DATA A
+VKP

ELK-M1 Control Board

RS-485 DATA BUS

+VKP

DATA A

DATA B

NEG

Not Used

RED

GREEN

WHITE

BLACK

Data Bus Devices e.g. Keypads, Expanders

Min. wire gauge: 24 AWG
18 to 22 AWG is best for
long distances.

ELK-M1KP Keypad

Jumper
Terminate
these two
devices.
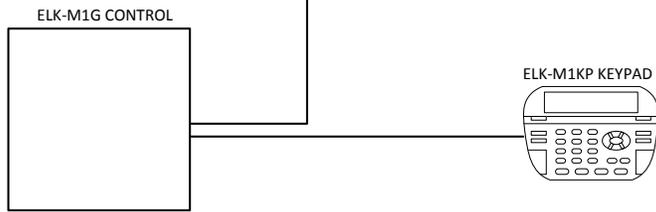
A UL603 or UL1481 Listed Supplementary Power Supply may be required to meet the minimum standby power supply requirements. Refer to the Chapter containing Regulatory Agency Statements.

1. **Mounting** - Use two (2) #6 x 1/2" screws (not provided) on each side of the housing for mounting. The Transceiver connects to the Keypad data bus and may be remotely located up to several thousand feet away from the control. NEVER mount inside a metal enclosure or on metalized surface!   Space at least 4 to 6 feet from electrical devices that generates noise, including the M1 Control. Electrical noise may negatively affect operation.

2. **Wiring Connections** - Turn the power Off on the Control Panel before making any wiring connections. Connect terminals +12V, A, B, and Neg from the receiver 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 that manual about proper connections of data bus devices with multiple homerun cables.

3. **Antenna - This device uses a single on-board ceramic antenna. No external antenna is required.**

Diagnostic LED Indicators

There a four (4) LEDs on the board that provide valuable information as to the operation of the M1XRF:

STATUS (Data Bus Status) - Multiple conditions exist for this LED:
  OFF = No Power to the unit.
  ON Solid = Power is good but it is not yet enrolled with the M1 or the Microprocessor is not functioning.
  BLINKING = 2 different blink rates:
      - Slow "one blink per second" indicates Normal Operating mode.
      - Two blips with brief off indicates Bootloader mode. Unit needs to be flash programmed with application firmware. Unit will not be operational until application firmware has been flashed into the unit using ElkRP.

LEARNED RF - This LED indicates that a valid transmitter has sent a signal packet back to the M1 Control.

ALL RF - This LED blinks whenever any transmission is detected in the same frequency as the Transceiver.

DATA BUS ACTIVE - This LED blinks near continuously and indicates activity on the M1 Data Bus.

Setting the Data Bus Address and the Starting Wireless Zone ID

The Transceiver must be addressed and enrolled as the 1st zone expander (Data Bus Address # 2) on the M1 Control. For extended range/coverage up to 3 additional Transceivers may be installed so long as they are enrolled as the 2nd, 3rd, and 4th zone expander ONLY (Data Bus Addresses 3, 4, and 5) on the M1 Control. If another hardwire or wireless expander is presently enrolled at one of these addresses that device must be moved to another address in order to make room for the Transceiver. Refer to Appendixes A, B, & C for more details on the use of multiple transceivers.

Data Bus Address Information: Every device attached to the M1 Data Bus must have a valid address setting within it's device type. TYPE 1 is for Keypads, TYPE 2 is for Hardwire and Wireless Input expanders, TYPE 3 is for Output expanders, TYPE 5 is for Serial expanders. This grouping of devices into different types allows devices in different groups to use the permits same or similar address numbers to exist in each device group type. All devices except keypads utilize a bank of 4 miniature DIP switches for setting the address number. Each switch has an OFF or ON position (binary value 0 or 1) and decimal equiv. value of (1, 2, 4, or 8). The total decimal value of the "ON" switches determines the data bus address. Set the switches to the desired data bus address by referring to Tables 1-1 and 1-2. A small screwdriver may be helpful.

Hardwired Expanders versus Wireless Expanders (Transceivers):
A single Hardwired Zone Expander adds 16 hardwired zones at a time to an M1 Control. The data bus address determines the zones numbers (starting and ending) of that group of 16 zones. See Table 1-1. If additional M1XINs are installed each must be assigned a different address, usually the next available, which sets the zone numbers (starting and ending) of that group of 16 zones.

A single Wireless Transceiver/Zone Expander can add up to 144 wireless zones to an M1 Control. The primary or 1st Transceiver must be installed and enrolled at data bus address #2, therefore the first wireless zone will always be Zone 17. If the full compliment of 144 wireless zones is added then the last wireless zone will be Zone #160. (17 + 144 = 160).

No hardwired zone expander should ever be assigned a data bus address that would result in a conflict between a wireless zone and a hardwired zone. In a mixed system of hardwired and wireless zones if any hardwired zone expanders are enrolled in the range of zones 33 through 160 then an entire group of 16 wireless zones is lost for every hardwired (16 zone) expander installed.

	HARDWIRED Zone Expanders							WIRELESS Zone Expanders				
Data Bus Address	Starting and Ending Zone Numbers	Switch Settings					Data Bus Address	Wireless "Starting Point" Zone 17 up to 160	Switch Settings			
		S1	S2	S3	S4				S1	S2	S3	S4
2	Zones 17 - 32	Off	**On**	Off	Off		2	Opt. 2nd M1XRFTWM	Off	**On**	Off	Off
3	Zones 33 - 48	**On**	**On**	Off	Off		3	Opt. 3nd M1XRFTWM	**On**	**On**	Off	Off
4	Zones 49 - 64	Off	Off	**On**	Off		4	Opt. 4th M1XRFTWM	Off	Off	**On**	Off
5	Zones 65 - 80	**On**	Off	**On**	Off		5	*not valid*	**On**	Off	**On**	Off
6	Zones 81 - 96	Off	**On**	**On**	Off		6	*not valid*	Off	**On**	**On**	Off
7	Zones 97 - 112	**On**	**On**	**On**	Off		7	*not valid*	**On**	**On**	**On**	Off
8	Zones 113 - 128	Off	Off	Off	**On**		8	*not valid*	Off	Off	Off	**On**
9	Zones 129 - 144	**On**	Off	Off	**On**		9	*not valid*	**On**	Off	Off	**On**
10	Zones 145 - 160	Off	**On**	Off	**On**		10	*not valid*	Off	**On**	Off	**On**
11	Zones 161 - 176	**On**	**On**	Off	**On**		11	*not valid*	-	-	-	-
12	Zones 177 - 192	Off	Off	**On**	**On**		12	*not valid*	-	-	-	-
13	Zones 193 - 208	**On**	Off	**On**	**On**		13	*not valid*	-	-	-	-
14	*not valid*	-	-	-	-		14	*not valid*	-	-	-	-
15	*not valid*	-	-	-	-		15		-	-	-	-

Table 1-1   **Table 1-2**

As seen above zones 17 to 31 are associated with data bus address 2 which is where the primary (1st) M1XRFTWM must be setup and enrolled. Avoid setting up and enrolling hardwired expanders at any of the data bus addresses where a wireless zone might someday be needed.

Data Bus Enrollment::

Once the data bus address is set to "2" and the Transceiver has been powered up then it will be necessary to manually ENROLL the device in order for the M1 Control to recognize it. Data bus enrollment can be done from keypad programming "Menu 1 - Bus Module Enrollment" or from the ElkRP Remote Programming Software.

(The steps below require an M1 LCD Keypad)
1. Press the ELK key, then 9 (or scroll up) to display 9 - Installation Programming. Press the RIGHT arrow key to select this menu.
2. Enter the Installer Program Code. (The default code is 172839)
3. The first Installer Programming menu displayed will be "Bus Module Enrollment"
4. Press the RIGHT arrow key to select this menu. "Enrolling Bus Modules" will display
5. The control will transmit an enrollment message to all data bus devices, followed by a display showing the total Bus Modules that are enrolled. To view the enrolled devices press the RIGHT arrow key next to the word Edit.
6. Press the * or Exit keys to exit Installer Programming.

> **Auth. Required**
> **Enter Valid Pin**

> **01-Bus Module**
> **Enrollment**

> **XX Bus Modules**
> **Enrolled, Edit**

Important considerations when installing an M1XRFTWM:
- A single M1XRFTW wireless transceiver expander is capable of supporting up to 144 wireless Sensors/Zones.
- Wireless zones are always allocated in Groups of 16 but it is not necessary to install or use all 16 zones in the group. However it is important to understand that NO HARDWIRED zones can exist at any of these zone number locations.
- Take special care to ensure that NO wireless zone numbers spill over into data bus addresses that are already assigned to a M1XIN Hardwired Zone Expander, or vis versa.   It may be necessary to move a hardwired expander and its related zones up higher in the numbering scheme just to make room for a group of 16 wireless zones.
- Elk strongly recommends that all wireless zones be assigned consecutively.   The wireless group numbers AND the associated data bus addresses will also be consecutive. Do not mix hardwired zone expanders in between groups of wireless zones. Data bus addresses that are potentially vulnerable to this are addresses 2,3,4,5,6,7,8,9, & 10 since these addresses are the only locations where the wireless zones (17 thru 160) can exist.
- Zone 160 is the highest wireless zone number allowed. Wireless zones cannot exist in the range of 161 through 208.
- If a large number of wireless zones is ever anticipated then it would be wise to AVOID any of these potentially overlapping data bus addresses (zones) when assigning a hardwired expander.

Example: To install an M1 Control with 64 wireless zones the first zone will begin at Zone #17 since the M1XRFTW must be assigned at data bus address 2. Starting from 17 then adding 64 zones results in the last wireless zone being zone #80. And zone #80 is the last zone in the data bus address #5 location. So the next or first available data bus address for a hardwired zone expander would have to be data bus address #6. NO HARDWIRED ZONE EXPANDER COULD BE SET to data bus addresses 2, 3, 4, or 5. Each of those data bus addresses are reserved for the 64 wireless zones.

NOTE: Try to anticipate whether the system might someday require more wireless or hardwired zones. If the answer is yes then it would be wise to plan the data bus address assignments in such a way that future growth is possible without having to default the control or totally re-arrange the addresses at a future date.

Operation

How does the Elk Two-Way technology differ from one-way wireless technology?

Elk's Two-Way technology is superior to traditional one-way wireless products in many ways.

1. Every signal sent by an Elk two-way sensor receives a positive acknowledgment from the transceiver. *One-way systems have the reputation of being "fire and pray".*
2. Elk two-way sensors only send one signal at a time. *One-way sensors have no choice but to blindly send multiple signals in hopes that at least one will reach the receiver.*
3. Long battery life and energy efficiency are inherent designs of the Elk two-way sensors. Elk two-way sensors self-adjust their RF power, using only the minimum power needed to deliver a clear signal. *One-way sensors consume FULL power on each and every transmission.*
4. Long range coverage is possible due to the 900 MHz frequency range and automatic frequency hopping design. *One-way systems operate at a specific, non-adjustable lower frequency.*
5. A two-color LED indicator on the sensor provides operational feedback. A single Green blink means the transmission was sent and positively acknowledged by the transceiver. A Red blink means the sensor was unable to receive an acknowledgment from the M1XRFTW transceiver. *One-way sensors provide no indication of signal verification.*
6. Installation confidence. All Elk 6000 series sensors artificially limit their RF power to 50% of normal for the first 10 minutes after battery installation. This "stress test" helps to assure that a sensor's mounting location and range is suitable for long term reliability. The principle is that a sensor that is able to reliably communicate using half the normal power will have a high degree of reliability with full 100% power. *Other sensor brands do not provide this confidence feature.* To take full advantage of this feature we recommended that every sensor be temporarily installed at its intended location and violated (tripped) multiple times while observing the two-color LED indicator. <u>A near instant GREEN blink response from the sensor is Ideal</u>. The sensor will repeatedly attempt to reach the receiver for up to 20 seconds, but any time it takes more than just a few seconds to get through it means that the mounting location is poor. Therefore, we strongly suggest reorienting the sensor to another spot on the mounting surface, or rotating its mounting by 90 degrees whenever it takes more than a few seconds to get a GREEN acknowledge. Excessive range and poor wireless conditions will always result in a delay of the GREEN blink. A Red blink means the sensor was unable to receive an acknowledgment from the M1XRFTW transceiver. NOTE: In extreme situations it may be necessary to relocate the transceiver to closer spot or to add an additional remote transceiver to cover distant sensors.

NOTE: The Green Acknowledge LED does not operate for sensor restoral transmissions.

Programming tools needed for the M1XRFTW Transceiver and Sensors.

There are no special tools required for Elk's two-way wireless product line. The Transceiver itself and the sensors may be programmed using either the M1 Keypad Installer Programming or the ElkRP Remote Programming software. The following pages document the options and steps for programming from the keypad.

Installation and Replacement of Batteries in Wireless Sensors::

A Low Battery trouble will be sent to the Control whenever a sensor determines that its battery needs to be replaced. This will generally occur well in advance of the battery becoming completely dead. However, it is up to the customer to ensure that the Low Battery trouble is responded to and rectified in a timely manner so that the system can continue to operate.

When replacing a Low Battery:
1. Remove the old battery and **WAIT AT LEAST 20 SECONDS** before installing the new battery. This is important as it allows the sensor circuitry to completely shutdown and erase the low battery memory.
2. After **20 seconds**, install the new battery, then trip the sensor a couple of times so that an "all good" signal will be sent to the control to clear the low battery trouble.

Elk 6000 Series Wireless Sensors

Enrollment and programming of wireless devices may be done from Keypad Installer Programming or from ElkRP			

Enrollment from Keypad Installer Programming utilizes Menu 14 and the LRN (Learn) method. The enroll method varies between sensors. Please follow the specific enroll method suggested below and read the additional programming recommendations.

Enrollment from the ElkRP software involves typing in the TXID (serial number of the sensor) along with selecting the particular attributes.

Image	Part Number(s) & Description	Keypad Enroll Method	From Keypad Installer Programming use Menu 14, sub-menu 3:Lrn Sel Wireless Transmitter. Follow the published Enroll Method procedure and other steps as listed below.
	Elk6010 † Keychain Remote (FOB), 4 buttons with System Status Inquiry	Enroll Method 3	Set the Supervision Type as "**0**". This is mandatory! Use **Menu 14, sub-menu 2:Xmit Transmitter Opt.** Program the Zone Def. as 15-KEYFOB using **Menu 5:Zone Definitions**. Key (button) functions may be modified using **Menu 14, sub-menu 4:KeyfobSel Event Definition.** By factory default key (button) 1=Arm, 2=Disarm, and 3=Inquiry (System Status). Keys (buttons) 1,2,3,4 may be converted to respond as 5,6,7,8 by enabling Option 1 using M**enu 14, sub-menu 2:Xmit Transmitter Opt.** Loop # = {For keychain remotes the Loop # does not matter}
	Elk6020 † Slim Door & Window Sensor, Front/Back Tamper	Enroll Method 1	Loop # = 2 This sensor has a built-in reed switch and provides a single zone (input). When enrolled into a factory defaulted zone location the M1 should recognize this sensor on the default loop value of 0. I.E. It should not be necessary to change (reprogram) the Loop from 0 to 2. However if this sensor is being enrolled into a location previously occupied by another sensor, care must be taken to be certain the Loop gets changed to Loop # 2 or else the sensor may not operate.
	Elk6021 † Mini Window Sensor, No Tamper	Enroll Method 1	Loop # = 2 This sensor has a built-in reed switch and provides a single zone (input). When enrolled into a factory defaulted zone location the M1 should recognize this sensor on the default loop value of 0. I.E. It should not be necessary to change (reprogram) the Loop from 0 to 2. However if this sensor is being enrolled into a location previously occupied by another sensor, care must be taken to be certain the Loop gets changed to Loop # 2 or else the sensor may not operate.
	Elk6022 † Universal 3-Zone Dr/Wnd Sensor, 1 Reed + 2 Aux., Front/Back Tamper	Enroll Method 2	This Sensor has a built-in reed switch PLUS 2 external inputs providing a total of 3 zones. For each input used the sensor MUST be enrolled as a separate wireless zone. The TXID will be the same for each. Loop # = > The Loop # directs which input on the sensor is assigned to each wireless zone. On the zone utilizing the built-in reed set the Loop # to 2. On the zone utilizing the Aux. LP1 terminals set the Loop # to 1. On the zone utilizing the Aux. LP3 terminals set the Loop # to 3. This is very IMPORTANT! Normally Open (N/O) contacts may used with the Aux. Inputs LP1 & LP3 by enabling Option 2 under **Menu 14, sub-menu 2:Xmit Transmitter Opt.** For additional information see instructions packed with sensor.
	Elk6030 † PIR Motion Sensor with Security/ Convenience Light	Enroll Method 1	Loop # = 2 This is a single zone sensor. During enrollment it is very important that the Loop number be set to Loop # 2. This sensor WILL NOT operate unless the Loop # is set to 2.
	Elk6030P † PIR "Pet Immune" Motion Sensor with Security/ Convenience Light	Enroll Method 1	Loop # = 2 This is a single zone sensor. During enrollment it is very important that the Loop number be set to Loop # 2. This sensor WILL NOT operate unless the Loop # is set to 2.
	Elk6050 Photoelectronic Smoke Detector with built-in Sounder	Enroll Method 1	Loop # = 2 This is a single zone sensor. During enrollment it is very important that the Loop number be set to Loop # 2. This sensor WILL NOT operate unless the Loop # is set to 2.

† Not evaluated by UL

'Quick Step' Enrollment of Elk 6000 Series Sensors

Enrolling Sensors from the M1 Keypad Installer Programming (additional details on following pages)

NOTE: The M1XRFTW must be enrolled on the data bus at address 2.

1. From M1 Keypad Installer Programming scroll or navigate to Menu: **14-Wireless Setup**
2. Press right arrow and scroll up to Sub-Menu: **3:Learn Sel⬍ Prg▶ WirelessTransmtr**
3. Press right arrow **WZone** and search of scroll to the first available (unused) location displaying **TransmitrToLrn**. An existing or already enrolled location will display **Enrolled** followed by a 6 digit TXID number of the enrolled sensor.
4. After finding an available wireless zone location press the right arrow to **Lrn** (Enroll) a sensor into this location.
5. The keypad will display **Push Transmitter Button** and the M1G will announce: **"Press transmitter button for zone __"**. On successful enrollment the keypad will chime and the TXID will briefly display. The M1G will announce: **"Zone __ Enrollment"**. The Rapid-Enroll feature will advance to the next available wireless zone in sequence and wait for another sensor to be enrolled. The M1G will announce: **"Press transmitter button for zone __".**   The Rapid-Enroll may be exited by pressing the ELK key.

ENROLL METHOD 1 -
- A. **Insert Battery** in the Sensor while M1 is displaying **"Push Transmitter Button"**. **If battery is already installed then remove it and wait 5 seconds before re-inserting.**
- B. Upon successful enrollment the Keypad will chime and briefly display the 6 digit TXID code of the Sensor.
  - If enrollment FAILS the TXID will not display. If that happens then remove the battery, wait 5 seconds, then re-insert.

ENROLL METHOD 2 - For Sensors with Multiple Zone Inputs.   The enrollment must be repeated for each additional Zone Input. The TXID will be the same for each. We strongly recommend enrolling the additional zone(s) in sequence with the 1st.
- A. For the internal reed switch Zone (LP2) insert the Battery into the Sensor while M1 is displaying **Push Transmitter Button**.
- B. Upon successful enrollment the Keypad will chime and briefly display the 6 digit TXID code of the Sensor.
  - If enrollment FAILS the TXID will not display. If that happens then remove the battery, wait 5 seconds, then re-insert.
  The Rapid-Enroll feature will auto advance to the next wireless zone.
- C. To enroll the next Zone (marked LP1) on this sensor REMOVE the Battery and wait 5 seconds. Then re-insert Battery into the sensor. Repeat this step to enroll the next Zone (marked LP3).
- D. The Loop # must be progammed uniquely for each input since the TXID will be the same for all 3 available wireless zones.

ENROLL METHOD 3 - KEYCHAIN REMOTES   †
- A. PRESS and HOLD button 1 or button 2 while M1 is displaying **Push Transmitter Button**.
- B. Upon successful enrollment the Keypad will chime and briefly display the 6 digit TXID code of the Sensor.
  - If enrollment FAILS the TXID will not display. If that happens then remove the battery, wait 5 seconds, then re-insert.

NOTE: If the M1 Lrn (Enroll) function times out or is manually exited then It may be necessary to restart from Step 1

6. To end Rapid-Enroll once all wireless zones (sensors) have been enrolled, press the ELK key one time.
7. Loop # - Refer to the "Elk 6000 Series Wireless Sensors" chart for more information on the loop setting of each sensor. For single internal reed sensors the Loop # setting will be 2.   It is VERY IMPORTANT to follow the directions outlined in the referenced chart and set the Loop # correctly.   To set the Loop # scroll up or down to the desired M1 wireless zone and press the left arrow. The screen will display a 9 digit number (the TXID in decimal) followed by **Loop=**. Press the right arrow and move cursor over to **Loop=**.
8. Program the Zone Def. using **Menu 5: Zone Definitions.**

Enrolling Sensors from the ElkRP Software
1. Launch ElkRP and open the desired Customer Account file.
2. If no wireless zones currently exist in the M1 you will first need to create a group of 16 wireless zones. In the folders column right click on **Zones (Inputs),** then click **New Wireless Zones**. Select Group 2. **NOTE**: The first M1XRFTW must be enrolled at data bus address 2, therefore the first wireless zone will always be Zone 17 which resides in Group 2. Additional groups of 16 zones may be added as required. It a hardwired zone expander is occupying address 2 it will have to be relocated to another address so that the M1XRFTW can be at address 2. Up to 3 additional M1XRFTW Transceivers may added for expanded coverage. If so, they must be enrolled at addresses 3, 4, and 5 respectively.   If a large quantity of wireless zones is expected, avoid enrolling hardwired expanders in data bus addresses below 10. This will allow for the maximum of 144 wireless zones.
3. Program the Zone Definition,Name,Type, and desired options by clicking on: **Wireless Group** (the group just added). Then select each zone one at a time to program. Zones definitions may be assigned before or after sensor enrollment.
4. To enroll the sensors click on: **Wireless Setup** from the folders column.
- A. Click the **> Transmitters** tab, then double click a zone.
- B. Place a check mark in the **Enabled** box.
- C. Set Supervision type as either: **0**=Non Supervised (Keyfobs), **1**=Normal "Burg" Supervision, or **2**=Fire Supervision
- D. **TXID #** - type in the Sensor TXID printed on the label on the inside and outside of the sensor.
- E. **LOOP** # - Refer to step 7 above and the "Elk 6000 Series Wireless Sensors" for more information.
- F. Click **Save**. Repeat the entire step 4 for each additional Wireless Sensor.

IMPORTANT! For sensors with multiple zone inputs the enrollment must be repeated for each additional Zone Input and the TXID will be the same for each. We strongly recommend enrolling the additional zone(s) in sequence with the 1st. The Loop # must be programmed correctly to identify which zone input belongs with which wireless zone.

† Not evaluated by UL

M1 Keypad Programming for Wireless

From the keypad enter the Installer Level Programming mode. Press ELK, 9 > (enter installer code).
Navigate to the Wireless Setup - Menu 14 and press the RIGHT arrow key to select.

```
┌─────────────────────────┐
│ 14-Wireless             │
│ Setup              ▶    │
└─────────────────────────┘
```

There are four (4) wireless setup submenus: 1-Receiver (Transceiver) Options, 2-Xmitter Options, 3-Xmitter Enroll, and 4-Keyfob Event Definitions. Use the UP or DOWN arrow keys to locate the desired submenu, then press the right arrow key to select.

Wireless Submenu   **Description**

```
┌─────────────────────────┐
│ 1:Rec   Sel◆  Prg▶      │
│ Receiver Options        │
└─────────────────────────┘
```

This submenu is for Receiver (Transceiver) options. To select this menu press the RIGHT arrow key, or press the Up or Down arrow keys to scroll the submenus.

```
┌─────────────────────────┐
│ RO3:=024  Hours    ▶    │
│ Reg. Supervision        │
└─────────────────────────┘
```

Sets the expiration timeout value for supervision of zones assigned as Supervisory Type 1 (Non-Fire Zones). The range is 001 to 255 hours and the default is 024 hours. If a Type 1 sensor fails to check-in prior to this timeout it will be declared missing. The Type is assigned to each transmitter (sensor) under Transmitter Opt 02 (see below).

```
┌─────────────────────────┐
│ RO4:=004  Hours    ▶    │
│ Fire Supervision        │
└─────────────────────────┘
```

Sets the expiration timeout value for supervision of zones assigned as Supervisory Type 3 (Fire Zones). The range is 001 to 255 and the default is 004 hours. Should a Type 3 sensor fail to check-in prior to this timeout it will be declared missing.

```
┌─────────────────────────┐
│ R O 5 : = N o      ▶    │
│ UL Wireless-Jam         │
└─────────────────────────┘
```

For UL listed installations with the Elk-XRFTW Transceiver this option should be enabled. This provides a trouble indication in the event of an attempt to jam the wireless frequency. And in the event the M1XRFTW Transceiver ever become inoperable or missing the M1 will violate all wireless unarmed burglar zones and trouble all wireless fire zones.

```
┌─────────────────────────┐
│ 2:Xmit  Sel◆  Prg▶      │
│ Transmitter Opt ▶       │
└─────────────────────────┘
```

This submenu is for specific transmitter (sensor) options. To select this menu press the RIGHT arrow key, or press the Up or Down arrow keys to scroll to another submenu.

```
┌─────────────────────────┐
│ WZn017:Sel◆ Prg▶        │
│ Wireless Zone           │
└─────────────────────────┘
```

Use the UP and DOWN arrow keys to locate a particular wireless transmitter. Press the RIGHT arrow key to select and program the displayed transmitter.

```
┌─────────────────────────┐
│ WZn017 01:=No      ▶    │
│ Enable Transmitr        │
└─────────────────────────┘
```

Displays if a transmitter is enabled or disabled. This option CANNOT be used to add a new device, but it can be used to temporarily suspend or remove an already enrolled device. When a new sensor is added via the enroll process this location will be set to Yes.

```
┌─────────────────────────┐
│ WZn017 02:=0       ▶    │
│ Supervision  Type       │
└─────────────────────────┘
```

This sets the expected check-in (supervision) interval of a sensor. Burglar (non-fire) sensors should be set as "1"=Normal Supervision. Fire Sensors should be set as "3" = Fire Supervision. **CAUTION! Keychain Remotes † (Fobs) or sensors that leave the building MUST be set to "0" = non supervised.** See receiver selections R02 and R03 for supervision time values. Valid values are: 0, 1, or 3   Factory default setting is 1 (Normal Supervision).

```
┌─────────────────────────┐
│ WZn017 03: = No    ▶    │
│ Enable Option 1         │
└─────────────────────────┘
```

This is relevant to a few select sensors. Factory default is No. **See the List of Elk 6000 Series Wireless Sensors to determine which transmitters use this option.**

```
┌─────────────────────────┐
│ WZn017 04: = No    ▶    │
│ Enable Option 2         │
└─────────────────────────┘
```

This is relevant to a few select sensors. Factory default is No. **See the List of Elk 6000 Series Wireless Sensors to determine which transmitters use this option.**

```
┌─────────────────────────┐
│ WZn017 05: = 001 ▶      │
│ Keyfob User ID          │
└─────────────────────────┘
```

This location allows a number to be assigned as the User ID that will appear in the M1 event log whenever a Keychain Remote † is used to arm/disarm. Valid range is 001 to 255. NOTE: Standard M1 User codes are 001 to 199.

```
┌─────────────────────────┐
│ WZn017 06: = No    ▶    │
│ PIR Auto Restore        │
└─────────────────────────┘
```

This option (PIR Auto Restore) is not currently used by the M1XRFTW.

WZn017 shown as an example only!

† Not evaluated by UL

```
┌─────────────────────────┐
│ 3:Learn Sel✦ Prg▸       │
│ WirelessTransmtr        │
└─────────────────────────┘
```
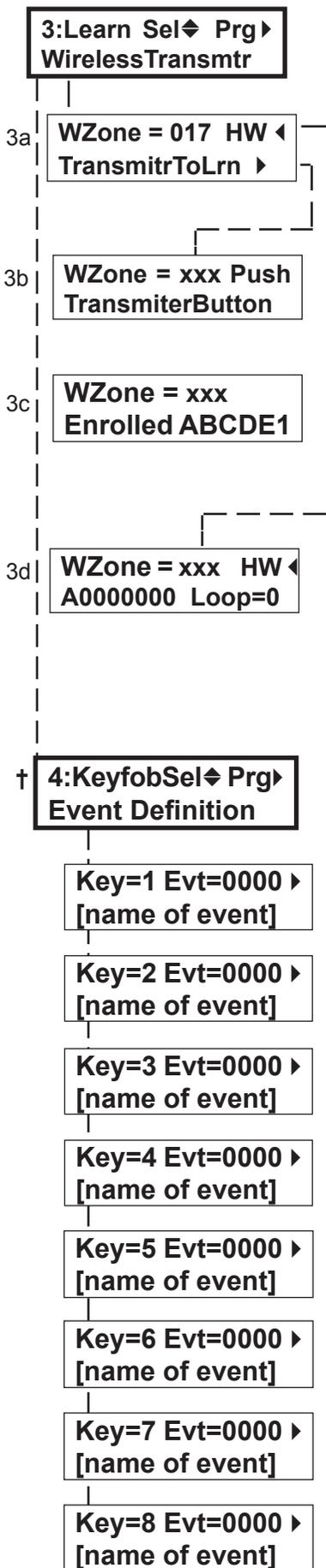
This submenu is used to manually enroll transmitters (sensors). To select this menu press the RIGHT arrow key, or press the Up or Down arrow keys to scroll submenus.

Select the zone for the new transmitter (sensor) by entering the three (3) digit zone number OR by scrolling to the zone number using the UP and DOWN arrow keys. NOTE: If a transmitter is already enrolled for this zone the display will resemble 3c below. Otherwise, it will display "TransmitrToLrn".

3a
```
┌─────────────────────────┐
│ WZone = 017  HW ◂       │
│ TransmitrToLrn  ▸       │
└─────────────────────────┘
```

WZone = 17 shown as example

Press the RIGHT arrow key to select and program the zone.

3b
```
┌─────────────────────────┐
│ WZone = xxx Push        │
│ TransmiterButton        │
└─────────────────────────┘
```

As this message is displayed the M1 will speak: "Press Transmitter Button for Zone XXX". Go to the transmitter (sensor) and execute the enroll process according the sensor instructions. In most cases this requires inserting the battery. If successful the keypad will chime and M1 will speak: "[Zone Number/Name] Enrollment."   Refer to step 3c below.

3c
```
┌─────────────────────────┐
│ WZone = xxx             │
│ Enrolled ABCDE1         │
└─────────────────────────┘
```

The TXID of the newly enrolled transmitter (sensor) will momentarily display. Rapid Enroll will then auto-advance to the next zone (step 3b) to permit sequential enrollment of transmitters. Press the ELK key twice to exit the enrollment after all new sensors have been enrolled.

DELETING A WIRELESS SENSOR - To delete an existing sensor navigate to option "WZnxxx 01" and select "No".   NOTE: Manually setting the Loop to 0 will also delete a sensor.

SETTING THE LOOP #. Refer to the "Elk 6000 Series Wireless Sensors" chart for more information on the loop setting of each sensor. For single internal reed sensors the Loop # setting will be 2. It is VERY IMPORTANT to follow the directions outlined in the referenced chart and set the Loop # correctly.   From step 3a press the Keypad LEFT arrow marked "HW". The TXID in decimal notation will display on the lower left.   Press the RIGHT arrow to move the cursor over to Loop =. Enter 1, 2, or 3 according to the sensor instructions. Refer to the "Elk 6000 Series Wireless Sensors" for more information.

3d
```
┌─────────────────────────┐
│ WZone = xxx   HW ◂      │
│ A0000000  Loop=0        │
└─────────────────────────┘
```

†
```
┌─────────────────────────┐
│ 4:KeyfobSel✦ Prg▸       │
│ Event Definition        │
└─────────────────────────┘
```

This submenu is used to program the operation or "action" for Keychain Remote † (FOB) buttons. Each button can be assigned one of six (6) separate operations as explained below. To select this menu press the RIGHT arrow key.

Press the UP or DOWN arrow keys to select a key (button) 1 to 8. Some models may not support all the programmable buttons. The event or operation for each button is set by a four (4) digit event code. The range of event codes is 0000 to 0030   See M1 Installer Manual, Appendix A, Event Codes.

Factory default = Only keys (buttons) 1 and 2 have a default setting.

```
┌─────────────────────────┐
│ Key=1 Evt=0000 ▸        │
│ [name of event]         │
└─────────────────────────┘
```

```
┌─────────────────────────┐
│ Key=2 Evt=0000 ▸        │
│ [name of event]         │
└─────────────────────────┘
```

Key (Button) & Symbol	M1 Factory Default Event & Operation
Key1 - Lock	Event=0027 - KeyMomAway (Arm the Control)
Key2 - Unlock	Event=0029 - KeyMomDisarm (Disarm the Control)
Key3 - *i* Status Inquiry	Event=0000 - unprogrammed See NOTE 1 below
Key4 - Red Triangle	Event=0000 - unprogrammed See NOTE 2 below

```
┌─────────────────────────┐
│ Key=3 Evt=0000 ▸        │
│ [name of event]         │
└─────────────────────────┘
```

```
┌─────────────────────────┐
│ Key=4 Evt=0000 ▸        │
│ [name of event]         │
└─────────────────────────┘
```

NOTE 1: Key (button) 3 on a 6010 Keychain Remote ALWAYS performs a system status Inquiry when pressed momentarily. This same key may be pressed and held for four (4) seconds to activate M1 programmable Key3 event. Factory default is 0000 (do nothing)

```
┌─────────────────────────┐
│ Key=5 Evt=0000 ▸        │
│ [name of event]         │
└─────────────────────────┘
```

NOTE 2: Key (button) 4 on a 6010 Keychain Remote REQUIRES a press and hold for two (2) full seconds in order to activate M1 programmable Key4 event. This can be any event, however the most common use is for emergency panic (Police Panic event 0023 or 0024). Factory default is 0000 (do nothing)

```
┌─────────────────────────┐
│ Key=6 Evt=0000 ▸        │
│ [name of event]         │
└─────────────────────────┘
```

DOUBLE KEY (BUTTON) PRESSES

M1 programmable Key7 event may be triggered by pressing the top 2 keys (buttons) together for ~3 seconds, and Key8 event may be triggered by pressing and holding the bottom 2 keys.

```
┌─────────────────────────┐
│ Key=7 Evt=0000 ▸        │
│ [name of event]         │
└─────────────────────────┘
```

SWAPPING THE KEY (BUTTON) FUNCTIONS

```
┌─────────────────────────┐
│ Key=8 Evt=0000 ▸        │
│ [name of event]         │
└─────────────────────────┘
```

The M1 programmable keychain events are GLOBAL for all units. While it is not possible to fully customize the keys for multiple persons, it is possible to swap keys 1,2,3,4 to become keys 5,6,7,8. This allows 2 different remotes or people to activate different events. Enable Option 1 from **Menu 14, sub-menu 2:Xmit Transmitter Opt.**

† Not evaluated by UL

Appendix A - Data Bus Selection Table

This table should help visualize how the Wireless Zones and Hardwired Zones share the data bus address assignments. Please note that **No Wireless Zones Are Allowed Above Zone 160**. This table shows the starting wireless Zone # and data bus address along with the additional data bus addresses and Zone #'s necessary to obtain the total and best mix of wireless and hardwired zones. The left column indicates the total maximum wireless zones that may be obtained based on the data bus addresses chosen.

1. The bolded column indicates that the 1st M1XRFTW Transceiver must be at data bus address 2. This also means that the first wireless zone will be Zone #17.

2. If possible, try to determine how many total wireless zones might ever be needed now or in the future on this installation. And be sure to also consider the possibility of future hardwired zones and M1XIN hardwired expanders in the future.

   NOTE: The total (max.) number of wireless zones will be decreased by 16 zones for any hardwired expanders installed and enrolled in the data bus addresses at or below Addr 10. The reason is that only zones 17 to 160 can be used for wireless zones, and data bus addresses 2 thru 10 correspond to zones 17 to 160.

   It is strongly recommended that all wireless zones be sequential, with no hardwired zones interspersed between them.
   The following are suggested guidelines:
   - If there is any possibility that additional wireless zones might be needed in the future, consider leaving a gap of 1 or more data bus addresses between the M1XRFTW data bus address belonging to the last wireless zone and any M1XIN hardwired zone expanders.
   - If there is little or no likelihood of additional wireless zones being required, the 1st hardwired zone expander can be If setup and enrolled at the first available data bus address right after the last wireless zone

3. Start down the left column and pick the line that represents the maximum number of wireless zones required. Follow this row across to find the first column indicating "hardwired". The top of this column shows the data bus address where an M1XIN Hardwired Zone Expander may be enrolled.

   - Up to 3 additional "redundant" M1XRFTW Transceivers may optionally be installed at data bus addresses 3, 4, & 5. Redundant Receivers may be remotely mounted and wired back to the M1 Control to provide additional range and coverage in extremely large or difficult buildings. See Appendix C regarding Redundant Receivers.

   NOTE: An M1XRFTW installed for redundancy does not increase the number of wireless zones, it only helps to improve the range and coverage.

Total Wireless Zones (max.)	Primary (1st) M1XRFTW must be at Data bus Addr 2 Zones 17-32	Data Bus Addr 3 Zones 33 - 48	Data Bus Addr 4 Zones 49 - 64	Data Bus Addr 5 Zones 65 - 80	Data Bus Addr 6 Zones 81 - 96	Data Bus Addr 7 Zones 97 - 112	Data Bus Addr 8 Zones 113-128	Data Bus Addr 9 Zones 129-144	Data Bus Addr 10 Zones 145-160	Data Bus Addr 11 Zones 161-176	Data Bus Addr 12 Zones 177-192	Data Bus Addr 13 Zones 193-208
										No Wireless Zones Here		
16	M1XRFTW — A single M1XRFTW can add up to 144 wireless zones to the M1 Control.	Optional 2nd M1XRFTW *	Optional 3rd M1XRFTW *	Optional 4th M1XRFTW *	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired
32		**	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired
48		**	**	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired
64		**	**	**	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired
80		**	**	**	**	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired
96		**	**	**	**	**	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired
112		**	**	**	**	**	**	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired
128		**	**	**	**	**	**	**	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired
144		**	**	**	**	**	**	**	**	M1XIN Hardwired	M1XIN Hardwired	M1XIN Hardwired

* indicates an Address where either a redundant M1XRFTW Wireless Transceiver OR a M1XIN Hardwired Expander can be installed.

* * indicates a **Reserved Address** which can ONLY be used for wireless zones based on the total number of desired wireless zones.

Fundamentally only 1 M1XRFTW Wireless Transceiver is needed to add 144 wireless zones to an M1 Control. But this presumes that each wireless sensor is installed within the coverage range of the single transceiver. In large buildings or where all sensors cannot be covered by a single M1XRFTW transceiver then up to 3 additional M1XRFTWs may be connected to the data bus and deployed into the more distant areas. IMPORTANT! If additional M1XRFTWs are installed they MUST be set and enrolled ONLY at data bus addresses 3, 4, and 5.

Appendix B - Examples of Zone Configurations

| Example A			Example B			Example C		
All 208 Zones as Hardwired			144 Wireless Zones plus 16 Hardwired Zones			112 Wireless Zones plus 48 Hardwired Zones		
Zones 1-16	Bus Addr N/A	Inputs on Main Panel	Zones 1-16	Bus Addr N/A	Inputs on Main Panel	Zones 1-16	Bus Addr N/A	Inputs on Main Panel
Zones 17-32	Bus Addr 2	M1XIN	Zones 17-32	Bus Addr 2	M1XRFTWM	Zones 17-32	Bus Addr 2	M1XRFTWM
Zones 33-48	Bus Addr 3	M1XIN	Zones 33-48	Bus Addr 3	Optional 2nd M1XRFTWM	Zones 33-48	Bus Addr 3	Optional 2nd M1XRFTWM
Zones 49-64	Bus Addr 4	M1XIN	Zones 49-64	Bus Addr 4	Optional 3rd M1XRFTWM	Zones 49-64	Bus Addr 4	Optional 3rd M1XRFTWM
Zones 65-80	Bus Addr 5	M1XIN	Zones 65-80	Bus Addr 5	Optional 4th M1XRFTWM	Zones 65-80	Bus Addr 5	Optional 4th M1XRFTWM
Zones 81-96	Bus Addr 6	M1XIN	Zones 81-96	Bus Addr 6	Absolutely NO M1XIN Expanders on addresses 2 thru 10	Zones 81-96	Bus Addr 6	Absolutely NO M1XIN Expanders on addresses 2 thru 7
Zones 97-112	Bus Addr 7	M1XIN	Zones 97-112	Bus Addr 7		Zones 97-112	Bus Addr 7	
Zones 113-128	Bus Addr 8	M1XIN	Zones 113-128	Bus Addr 8		Zones 113-128	Bus Addr 8	
Zones 129-144	Bus Addr 9	M1XIN	Zones 129-144	Bus Addr 9		Zones 129-144	Bus Addr 9	M1XIN
Zones 145-160	Bus Addr 10	M1XIN	Zones 145-160	Bus Addr 10		Zones 145-160	Bus Addr 10	M1XIN
Zones 161-176	Bus Addr 11	M1XIN	Zones 161-176	Bus Addr 11	M1XIN	Zones 161-176	Bus Addr 11	M1XIN
Zones 177-192	Bus Addr 12	M1XIN	Zones 177-192	Bus Addr 12	M1XIN	Zones 177-192	Bus Addr 12	M1XIN
Zones 193-208	Bus Addr 13	M1XIN or Keypad Zones	Zones 193-208	Bus Addr 13	M1XIN or Keypad Zones	Zones 193-208	Bus Addr 13	M1XIN or Keypad Zones
N/A	Bus Addr 14	N/A	N/A	Bus Addr 14	N/A	N/A	Bus Addr 14	N/A
N/A	Bus Addr 15	N/A	N/A	Bus Addr 15	N/A	N/A	Bus Addr 15	N/A

Maximum of 144 Wireless Zones

Maximum of 112 Wireless Zones

Appendix C - Installing Multiple Redundant Transceivers

After the first Transceiver has been installed at address 2, up to 3 additional units may be installed for redundancy or improved coverage and range. Each addtional unit will require its own data bus address and must be enrolled into the control.

IMPORTANT NOTE: There can be no more than 4 total ELK-M1XRFTWM Transceivers connected to the M1 Control.   † The use of multiple redundant Transceivers was not evaluated by UL.
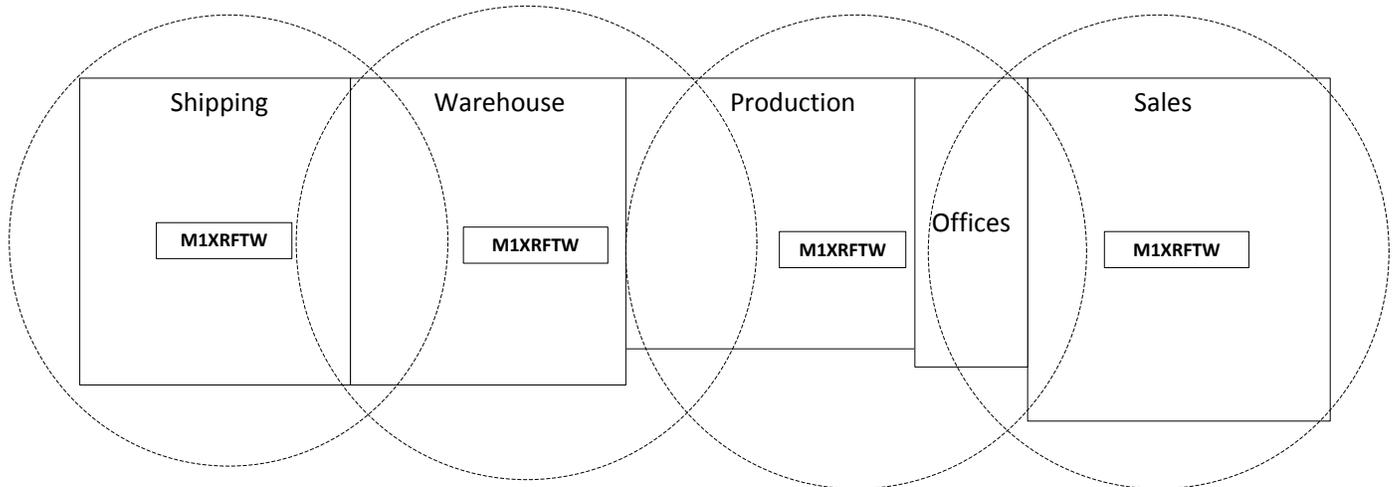
EXAMPLE OF LARGE COMMERCIAL BUILDING with the maximum of 4 M1XRFTW Transceivers

Appendix D - Updating Firmware in the Transceiver

Operating firmware is stored in "Flash" memory. This 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. **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 Firmware:
1. Physically connect the Computer and Control using either the RS-232 Serial Ports or the M1XEP † Ethernet Interface.
3. Start ElkRP and open the account belonging to the control. Click on the Connection menu icon and establish a connection. Again, use the appropriate **Direct using Com_** OR **Network** options.
4. Click on Update/Verify Firmware from the Send/Rcv menu icon.
5. On the Update/Verify screen, select the device to be updated. In this case it is a Input Expander. Then also select the "Update to new firmware" option. Then click Continue.
6. The Update Firmware screen displays the device name, the current Firmware, Hardware, and Bootware version, and a pull down window for selecting the firmware version to use on the update. Select the appropriate firmware that you wish to use. NOTE: Firmware update files are stored on your computer in a special folder titled "Updates". The exact location of this folder varies according to the Windows operating system which you are currently running.
7. Click on the check box for "Update". If "Reprogram" or "Rollback" is displayed the firmware file is the same as OR older that 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.

† Not evaluated by UL

Appendix E - Agency Statements

FCC AND IC COMPLIANCE STATEMENT:

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

NOTE: THE GRANTEE IS NOT RESPONSIBLE FOR ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

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 communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does 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:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

ELK-M1XRFTWM   M1 Two-Way Receiver   FCC ID: TMA ELK-M1XRFTWM   IC: 4353A-M1XRFTWM

This equipment complies with the FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and any part of your body.

This device must not be collocated or operating in conjunction with any other antenna or transmitter.

Limited Warranty

The ELK-M1XRFTW Wireless Transceiver is warranted to be free from defects and workmanship for a period of 2 years from date of manufacture. Batteries used with wireless devices are not warranted. Elk makes no warranty, express or implied, including that of mechantability or fitness for any particular purpose with regard to batteries used with wireless devices. Refer to Elk's website for full warranty statement and details.

Underwriters Laboratories (UL) Information/Requirements:

- The ELK-M1XRFTWM has been evaluated to the following standards:

  UL Standard 985, Household Fire Warning System Units

  UL Standard 1023, Household Burglar-Alarm System Units

- Operating termperature range must be from 32° F to +120° F (0° C to 49° C)
- Humidity not to exceed 85%.
- For Indoor/dry use only.
- M1 Firmware Version 5.3.0
- M1XRFTWM Firmware Version 50