



APPENDIX G
: USER'S MANUAL

MRX-1 Installation Manual

Network Base Station



COMPLETETM
CONTROL

 **Universal Remote Control**[®]

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Introduction

The MRX-1 base station is an “addressable” Network and RF base station. MAC addressing gives you the ability to use an unlimited amount of MRX-1’s and allows the control of many identical components as needed throughout the house. While providing a new control technology it also provides the traditional RF ID addressing. All URC products can be integrated with a MRX-1 either by software or by using an optional accessory. The MRX-1 is compatible with URC Narrow Band and Network Controls.

1. The MX-5000 sends radio waves (WiFi or Narrow Band RF) in every direction, so you don’t have to point the remote anymore!

2. The MRX-1 receives commands from the Network via a WiFi Router/WAP; or over an optional RFX-250 or RFX-250i.

IR over RF



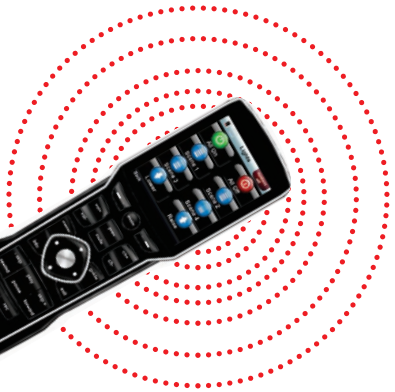
IR over IP Network



WiFi Router



IR Controlled Device



3. Self-adhesive “Flashers” affix to the Infrared sensors on the front panels of your client’s components. The Flashers relay commands to components. The flashers plug in to the MRX-1 rear flasher line outputs via their 10 foot cables. The MRX-1 can also connect to components with rear panel IR Inputs via its adjustable IR Line Outputs.

Features and Benefits

The Bridge for Network Remotes and Keypads

The MRX-1 enables IR and RS-232 devices to be controlled by URC Network Controls. Via the optional RFX-250 or RFX-250i, traditional Narrow Band RF remotes and keypads can also control the same IR and RS-232 devices.

2-Way RS-232 Thermostats, Security Systems, Home Theater AVRS and Multi-Zone Matrixes

Via the unique URC 2-Way database installers can drag and drop 2-Way pre-programmed modules into any URC Network Control powered by the MRX-1's two RS-232 ports. RS-232 components can display Volume Pop Ups, Status displays, Tuner Modules, 2-Way Transport Controls, etc.

Whole House URC Lighting via RFTX-1

Via the RFTX-1 transmitter, the MRX-1 can relay commands from any URC Network Control to URC Lighting devices. By installing multiple MRX-1/RFTX-1 relay stations around a home, installers can create seamless coverage of any size house, allowing lighting paths and whole house scenes.

Utilize MRX-1 Sensor Port to Automate TOAD Devices

The MRX-1 offers URC Network Controls automation capability for devices that do not have discrete codes. It is equipped with a sensor port compatible with optional URC video or voltage sensors, thus an installer can program macros that test whether a device is on or off before issuing input commands etc.

Control Devices with Relays

URC Network Controls can control lifts, screens etc. via the MRX-1's NO, NC or Momentary set of contacts.

Parts Guide

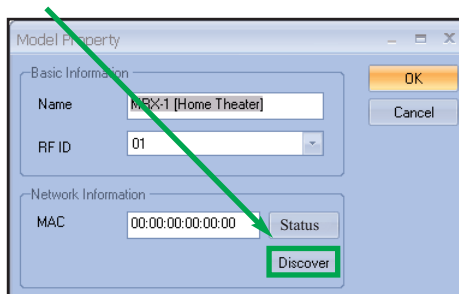
The MRX-1 Network Base Station includes:

- | | |
|----------------------------------------|--------------------------------------|
| 1 - MRX-1 Network Base Station | 1 - Ten feet 3.5mm Stereo to |
| 1 - 12V-1000mA Power Supply | 3.5mm Stereo (for daisy chaining |
| 6 - Visible Emitters with 10 foot plug | multiple MRX-1 with one RFX- |
| in cables including 1 pink sleeved | 250) |
| emitter for the RFTX-1 port | 1 - Adjustment Tool |
| | 1 - Mounting Plate for wall mounting |
| | the MRX-1 |

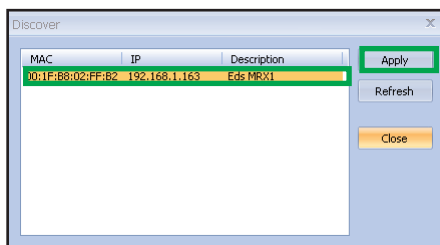
Network Installation and Control

The MRX-1 is a network base station that allows full control of your components. Once installed to the network, press a button on the remote to send a command via WiFi over the customer's network. The MRX-1 receives and sends IR, RS232 and Relay commands to the devices you specify. Note that the MRX-1 sensor can only be utilized by URC Network Controls.

1. Connect the Ethernet cable (RJ45) to the rear of the MRX-1 and into the network router.
2. Open the CCP editor.
3. Select Program then Configure Home.
4. Add a MRX-1 base station and the properties window opens.
5. Either type in the MAC address which can be found on a sticker located on the bottom of the unit or click on the Discover button.



6. The Discover window opens to reveal a list of connected MRX-1 units. Highlight the preferred MRX-1 MAC address and select Apply. The Discover window closes.



- Now the MRX-1's MAC address will populate the MAC address field.

The screenshot shows a 'Model Property' dialog box with the following fields and buttons:

- Basic Information:**
 - Name: Eds MFX1
 - RFID: 01
- Network Information:**
 - MAC: 00:1F:B8:02:FF:B2
 - Status button
 - Discover button
- Port Information:**
 - Port 1: [Empty]
 - Port 2: [Empty]
 - Port 3: [Empty]
 - Port 4: [Empty]
 - Port 5: [Empty]
 - Port 6: [Empty]
 - Serial 1: Serial 1
 - Serial 2: Serial 2

Buttons: OK, Cancel

- Press OK to close the window.
- Plug flashers into any of the six flasher ports on the MRX-1. If you utilize IR output #6, you must use the pink sleeved flasher. IR Output #6 is dual purpose, it can be used as an IR flasher or it can control the RFTX-1 for URC Lighting.

IR Over Narrow Band via Optional RFX-250

Note: RF remotes via RFX-250 can only control IR components. RS232, Relay and Sensor control are not available to RF remotes.

1. Power on all AV components, lower all dimmers to 50% and power on anything that may create RF Interference (particularly devices with high speed microprocessors or hard drives).



2. Check that the address wheel on the back of the MRX-1 is set to ID#0 (the interference “sniffing” position).

Check that the arrow pointer in the center of the wheel is pointed to 0, the default “interference sniffing” position. If it is not, use the included small flat blade screwdriver to set the RF ID# to 0.

3. Connect the MRX-1 to its DC wall adapter and plug the wall adapter into a live AC outlet. Place the MRX-1 in a convenient central location in the equipment rack. Unlike an MRF-250, the MRX-1 can be placed next to components with hard drives or high speed microprocessors. There is no RF circuitry inside the MRX-1 itself.

4. Connect the RFX-250 to the MRX-1’s RF INPUT jack as shown.

When connecting a single RFX-250 to the MRX-1 utilize the cable with 3.5 mm plugs on both ends. When you need a longer wire or are connecting up to three RFX-250s, use a cable with tinned ends or splice it. Cable can be extended as much as 200', then connected to the spliced end of a 3.5mm cable.



5. Observe the RF LED of the RFX-250. Cup your hand over the RFX-250's RF LED. If it is glowing or flickering you must relocate the RFX-250 to a location where the LED does not flicker.
6. Observe the STATUS LED of the MRX-1. It is a little more sensitive than the RFX-250. If you see any flickering of this LED, move the RFX-250 to a new location. If your installation location simply doesn't offer you any choice and you are detecting interference everywhere you place the RFX-250, you have three last resort options:
 - a. Remove the RFX-250's antenna. This will reduce the range enormously, but may still be enough for this client.
 - b. Extend a wire to another room. Try this over the floor first, before attempting to conceal the wire.
 - c. Admit defeat and install a "pointing again" IR repeater system. If no buttons are pressed on any remote control, no valid RF transmissions are being received.
7. Once you have found a location that is absolutely clean with all components on, test to see if the range is adequate and that macro reliability is perfect. Start with the antenna angle set to 45 degrees and positioned so that the long side of the antenna is facing the customer's favorite seating position. When testing, set both the remote and the MRX-1 to the same VALID RF ID#. Keep in mind that zero (0) is not a valid RFID#. Watch the STATUS LED on MRX-1 - it should light every time you press a button on the remote. This will tell you that the signal was received and understood. You can ignore the RF LED on the RFX-250 (it only indicates that a signal was received, not that it was understood).
8. If the range is inadequate, you may extend the wire to any area that is not getting good results and place an additional RFX-250 in that area. Up to three RFX-250s can be connected to one MRX-1.
9. Should you need more than six IR Outputs, connect as many as three different MRX-1s to one RFX-250 in a daisy chain using the supplied cable. To preserve addressability, set each MRX-1 to a different RF ID number. Remember "0" (zero) is not a valid RF ID.

Optimizing IR Flasher Levels

Test a few commands for each device before fixing the flasher in place on the front panel of a device.

Since TiVo, Replay TV, Satellite Receivers and Cable Boxes are all extremely sensitive to IR overload or saturation, you should test them thoroughly. Put up the on screen guide and test the navigation arrows. Compare operation via RF to the original remote control. Operation should be identical. If operation is inconsistent or sluggish, lower the IR line output and/or reposition the flasher.

If you still have sluggish operation, check that the remote control is set to a particular LINE OUT, rather than ALL. When IR commands are sent to all the flashers in a cabinet, you can have difficulty adjusting the IR Output. Reprogram the remote control to send IR commands only via a specific (1-6) Line Output, then readjust the IR Line Output level.

1. Connect an IR emitter to each IR output and run the emitter wire to the front panel of each component. DO NOT STICK the emitter in place. ADJUST the level first.
2. Adjust each of the IR Output levels for best operation. If the component operates best at minimum level, but is still operating sluggishly or intermittently, move the emitter farther away from the components IR sensor.

Integrating Optional RFTX-1 to control URC Lighting

Not only will you have greater control of your home theatre equipment with the MRX-1, now you also have control of your URC Lighting. What better way to watch a movie and control your universe!

1. Simply plug the RFTX-1 with the 10' pink connecting cable (included with the RFTX-1) into the MRX-1 pink fixed port #6.



2. Set the URC Lighting Device in the CCP Editor to RF and set the IR output to Port #6.

Device	Signal	Receiver	IR Output
Main	RF	MRX-1 [Home Theater]	ALL
TV1	Network	MRX-1 [Home Theater]	Port 1
TV2	Network	MRX-1 [Home Theater]	Port 2
TV3	Network	MRX-1 [Home Theater]	Port 3
Air Conditioner	IR		
AV Receiver	Network	MRX-1 [Home Theater]	Port 4
iPod	Network	MRX-1 [Home Theater]	Port 5
URC Lights	Network	MRX-1 [Home Theater]	Port 6

3. Download to the MX remote and begin controlling your lights.

Overview of IR Routing

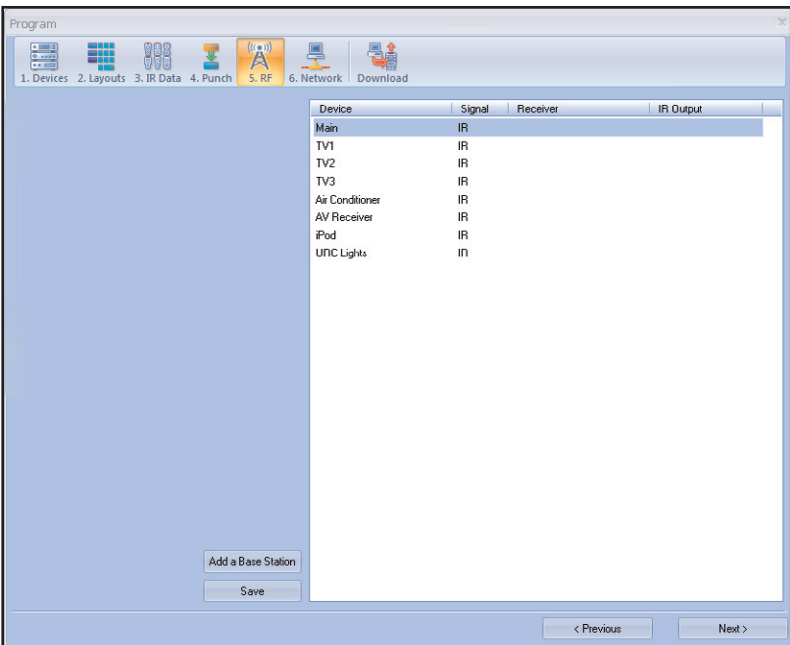
There are several considerations to take into account when you are installing an MRX-1 to control an array of identical components:

1. Each identical component must receive IR commands **ONLY** from a dedicated Flasher affixed to its front panel or a rear panel direct IR input. The SIGNAL of the remote should be set to Network or RF **ONLY** for each identical component. IR can still be utilized for other devices in your system!
2. When connecting a flasher from the MRX-1 to your component make sure to notate the Flasher Output Number being used.

Network or RF Setup in CCP

1. Open the RF Setup Window in CCP

The RF Setup window opens after selecting RF Control from the Program Menu. The RF Setup window is composed of a “spread sheet” of options for EACH of your devices.



2. Adjust the Signal For Each of the Identical Devices

The RF Setup window enables you to adjust the Signal output for each device individually, by clicking on the intersection of a row and a column and then selecting Network or RF (for optional RFX-250) from the three options shown in the pull down list box.

Select Network or RF (for optional RFX-250) from the three options shown for EACH of the identical TVs. You may leave the other components with no flashers set to IR.

Device	Signal	Receiver	IR Output
Main	RF	MRX-1 [Home Theater]	ALL
TV1	Network	MRX-1 [Home Theater]	Port 1
TV2	Network	MRX-1 [Home Theater]	Port 2
TV3	Network	MRX-1 [Home Theater]	Port 3
Air Conditioner	IR		
AV Receiver	RF	MRX-1 [Home Theater]	Port 4
iPod	Network	MRX-1 [Home Theater]	Port 5
URC Lights	Network	MRX-1 [Home Theater]	Port 6

3. Select a Receiver to Control Identical Devices

Choose a Base station to send commands over the Network or via RF to control multiple components.

4. Adjust the IR Outputs For Each of the Identical Devices

The RF Setup window enables you to adjust which Flashers output by the remote control for each device individually, by clicking on the intersection of a row and a column and then selecting **Ports 1-6** from the seven options shown in the pull down list box.

Select the correct IR Output (refer to your connection notes) for EACH of the identical TVs. You may leave the other components of the system set to ALL. In the figure below, each device is set to a specific flasher.

Device	Signal	Receiver	IR Output
Main	RF	MRX-1 [Home Theater]	ALL
TV1	Network	MRX-1 [Home Theater]	Port 1
TV2	Network	MRX-1 [Home Theater]	Port 2
TV3	Network	MRX-1 [Home Theater]	Port 3
Air Conditioner	IR		
AV Receiver	Network	MRX-1 [Home Theater]	Port 4
iPod	Network	MRX-1 [Home Theater]	Port 5
URC Lights	Network	MRX-1 [Home Theater]	Port 6

5. Close the RF window and Download to the Remote.

Frequently Asked Questions

Can I use flasher/emitters that I have already installed in the system to connect to the MRX-1?

Yes, the flashers are compatible if they use 3.5mm plugs with the same polarity (Tip is data, sleeve is ground). It is important to notate the RFTX-1 shared port utilizes a sleeved emitter for long term use.

I'm getting inconsistent operation regardless of flasher level or position.

Some components are easily overloaded with IR from nearby flashers. Prevent IR from affecting the problem component from other flashers by setting the device to a specific IR Line Output instead of ALL, then adjust the Line Output.

I am unable to control my URC Lighting Dimmer/Switch with the MRX-1. Now what?

Make sure the RF switch on the RFTX-1 is set to the correct frequency for the URC Dimmer or Switch. URC Lighting Models MRFA is 418MHz and MRFB is 433MHz.

How do I update the firmware?

Make sure the MRX-1 is connected to the Network then open CCP and click on the Firmware button located

How can I set my MRX-1 to factory default?

Look on the bottom of the MRX-1 and remove the cover plate to reveal a reset button. Simply press the button with a pen or thin object to reset the unit.

Specifications

Network: One 10/100 Ethernet port

Relay: One relay configurable to be NO, NC or Momentary

Sensor: One sensor supports Video or Voltage sensing via URC sensors.

RS-232: Two RS-232 ports support TX, RX and GND two way communication via URC cables.

IR: Six adjustable IR ports enable the included URC emitters to control IR devices Note: 6th IR Output requires the included sleeved emitter (identified by a pink connector), since it can optionally be used to connect an RFTX-1

Weight: 8.4 oz.

Size: 248 x 120mm x28mm

Power: 12v External Power Supply

USA Limited Warranty Statement

Your Universal Remote Control, when delivered to you in new condition, is warranted against defects in materials or workmanship as follows: UNIVERSAL REMOTE CONTROL, INC. warrants this product against defects in material or workmanship for a period of one (1) year and as set forth below. Universal Remote Control will, at its sole option, repair the product using new or comparable rebuilt parts, or exchange the product for a comparable new or rebuilt product. In the event of a defect, these are your exclusive remedies.

This Limited Warranty covers only the hardware components packaged with the Product. It does not cover technical assistance for hardware or software usage and it does not cover any software products whether or not contained in the Product; any such software is provided "AS IS" unless expressly provided for in any enclosed software Limited Warranty.

To obtain warranty service, you must deliver the product, freight prepaid, in its original packaging or packaging affording adequate protection to Universal Remote Control at the address provided in the Owner's Manual. It is your responsibility to backup any macro programming, artwork, software or other materials that may have been programmed into your unit. It is likely that such data, software, or other materials will be lost during service and Universal Remote Control will not be responsible for any such damage or loss. A dated purchase receipt, Bill of Sale, Installation Contract or other verifiable Proof of Purchase is required. For product support and other important information visit Universal Remote Control's website: <http://www.UniversalRemoteControl.com> or call the Universal Remote Control Customer Service Center (914) 835-4484.

This Limited Warranty only covers product issues caused by defects in material or workmanship during ordinary consumer use. It does not cover product issues caused by any other reason, including but not limited to product issues due to commercial use, acts of God, third-party installation, misuse, limitations of technology, or modification of or to any part of the Universal Remote Control product. This Limited Warranty does not cover Universal Remote Control products sold as USED, AS IS, REFURBISHED, so-called "B STOCK" or consumables (such as batteries). This Limited Warranty is invalid if the factory-applied serial number has been altered or removed from the product. This Limited Warranty is valid only in the United States of America. This Limited Warranty specifically excludes products sold by unauthorized resellers.

Information To The User

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 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.

Warning

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Note : The manufacturer is not responsible for any Radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.



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