LumenRadio

Wireless DMX/RDM

Lighting control via wireless is nothing new, there are plenty of options. Trouble is, everyone is using the same narrow band of frequencies, and not just for lighting. Your competition are wireless microphones, in-ear monitors, Wi-Fi, ZigBee, Bluetooth devices and many more - often at the same time.

To achieve true wireless link reliability, you need an ingenious approach: CRMX™ (Cognitive Radio MultipleXer) provides the answer. Using our *Cognitive Coexistence* system at its heart, CRMX continually monitors the whole frequency band to identify all problem areas and dynamically shifts its operation. The result is that CRMX neither disturbs, nor is disturbed by other systems - it totally coexists, even in the most crowded areas.

CRMX units use high frame refresh rates and intelligent error correction routines to fix problems before they ever become apparent. CRMX units are so efficient that they can repair most corrupted or mis-timed inputs from other devices - a kind of *DMX washing machine* to clean up dirty signals.

CRMX units are available as single transmitters and receivers which support DMX-512A/RDM, or as a dual transmitter which can send two DMX/RDM universes and additionally supports Art-Net and Streaming ACN via its Ethernet connection. As a useful bonus, the dual unit can also convert between Art-Net/Streaming ACN and standard DMX/RDM via the wireless and wired connections.

Front panel controls

Each unit uses an indicator panel to control and report upon its operation. See the operation section for details on how to link and unlink CRMX unts.

Connect - *press to link with, or unlink from, another unit.*

Lock - *lit when keylock is locked.*
Power - *lit when power applied.*
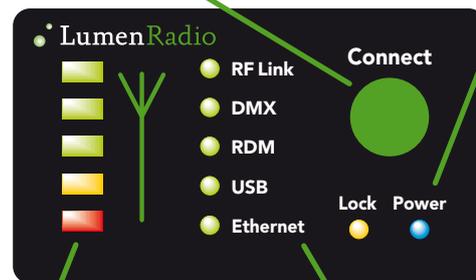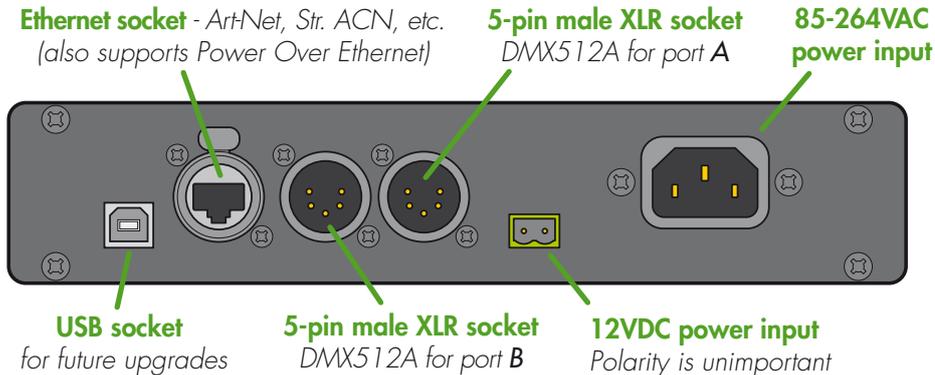
Signal strength indicators
Not used on transmitters. For receivers, the amber indicator turns on at roughly 20% of maximum signal strength and the top green indicator turns on at roughly 90%. The red indicator turns on only if a problem occurs with the link to the transmitter.

Status indicators
RF Link: Indicator on when this unit is linked. *Receiver*: Flashes fast (~3Hz) if link is lost or when linking. *Transmitter*: Flashes fast (~3Hz) when linking or slow (~1Hz) when unlinking.
DMX: On when a DMX signal is present.
RDM: Flashes to show RDM packet activity.
USB: On when connected via USB.
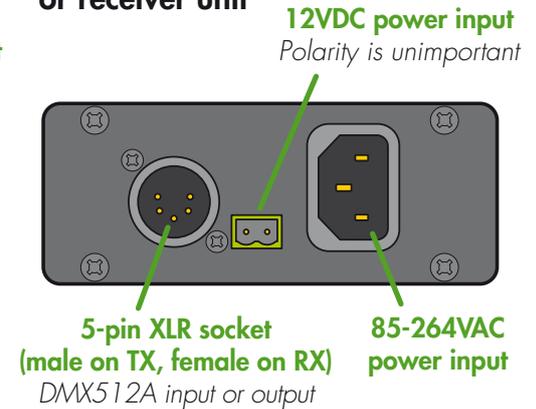**Ethernet**: Flashes to show Art-Net/Streaming ACN activity.

Rear panel connections

Dual CRMX transmitter unit

Ethernet socket - *Art-Net, Str. ACN, etc.*
(also supports Power Over Ethernet)

5-pin male XLR socket
DMX512A for port A

85-264VAC power input

USB socket
for future upgrades

5-pin male XLR socket
DMX512A for port B

12VDC power input
Polarity is unimportant

Note: If Power Over Ethernet is used, do not also attach 12VDC or mains power.

Single CRMX transmitter or receiver unit

12VDC power input
Polarity is unimportant

**5-pin XLR socket
(male on TX, female on RX)**
DMX512A input or output

85-264VAC power input

Normal operation

To link units

1 Ensure the antennas are connected on the front panels.

2 Power on the transmitter and receiver(s). Ensure that the **RF LINK** indicators on all receivers are off (use the unlink procedure if necessary).

3 On the transmitter, press and release the **CONNECT** button. The transmitter will search (for a period of ten seconds) for unlinked receivers. Its **RF LINK** indicator will flash.

At the end of the search period, all located receivers will be linked to the transmitter - their **RF LINK** indicators will be on.
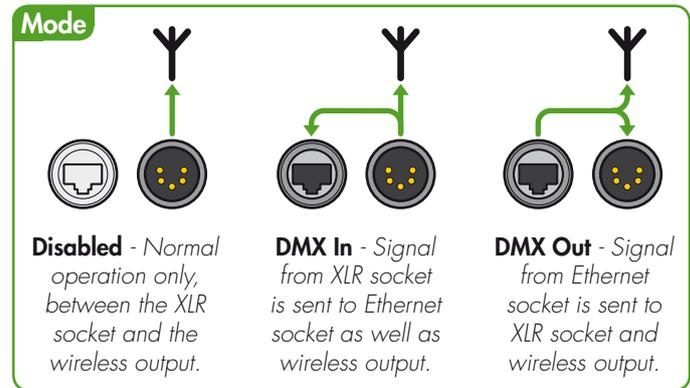
To unlink units

- **Unlink all**: Press and hold the **CONNECT** button on the transmitter to unlink all of its receivers.

- **Unlink one**: Press and hold the **CONNECT** button on a receiver to unlink it from a transmitter.

Art-Net and Streaming ACN configuration

The dual transmitter unit can process Art-Net and Streaming ACN signals via its Ethernet connection. Using the Sand Device Browser utility on a computer linked to the same network as the CRMX unit, you can determine how signals should be directed and used. The two CRMX ports operate independently; each port can be fed from or to any of 256 specific universes, via the Ethernet connection. The CRMX unit can act as a converter between Art-Net/Streaming ACN and the wired and/or wireless DMX connections.

To configure Art-Net and streaming ACN (dual units only)

1 Run the Sand Device Browser utility (from LumenRadio.com) on a computer linked to the same network as the CRMX unit.

   If there are two or more CRMX units, right click on one of the entries in the utility and click the **Identify** option. The associated CRMX unit will flash its indicators to identify itself.

2 If necessary, change the default **Ip** address of the CRMX unit. If **Ip** is changed, double click on the Ip address window to reset the unit (or power cycle the unit to achieve the same result).

3 For each CRMX port, choose the **Mode** (see panel right) and the appropriate **Protocol**: Art-Net or Streaming ACN.

4 Choose the required **Subnet** (1 to 16) and the appropriate DMX **Universe** (1 to 16) within that subnet.

Mode

Disabled - *Normal operation only, between the XLR socket and the wireless output.*

DMX In - *Signal from XLR socket is sent to Ethernet socket as well as wireless output.*

DMX Out - *Signal from Ethernet socket is sent to XLR socket and wireless output.*

Sand Device Browser 1.1.0.0

About

Name	Mac	Ip	Firmware	Status	1:Mode	1:Protocol	1:Sub...	1:Univ...	2:Mode	2:Protocol	2:Sub...	2:Univ...
● CRMX TX2	00:30: ...	192.168.0.162	2.1.0.0	Alive	DMX Out	Art-Net	0	1	DMX Out	Streaming ACN	0	1

Set the IP address for the CRMX unit

Set mode and protocol for port A

Set the subnet and universe for port A

Set mode and protocol for port B

Set the subnet and universe for port B

T-screw mounting

Each CRMX unit is supplied with two T-screws and nuts to allow it to be securely fixed to any mounting points, such as trussing.

To use a T-screw

1 Lower the T-screw into the slot on the side of the unit and then twist it clockwise to lock.

2 Place the rectangular nut onto the screw.

3 Turn the nut clockwise until it tightens across the slot, thus locking the T-screw securely within the slot.

4 You can now attach the unit to a secure mounting point. The T-screw is a size M8 bolt.
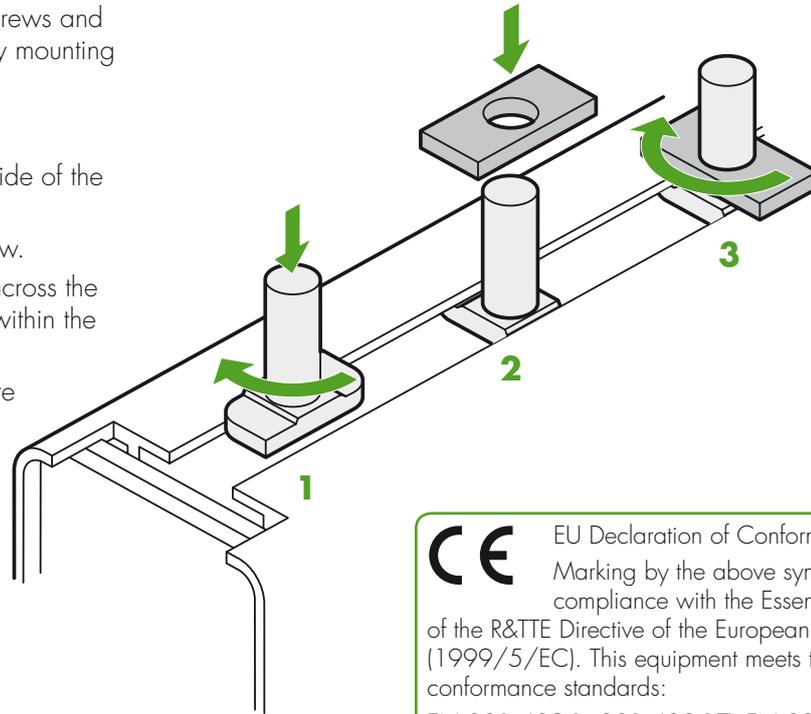
CRMX RDM controller

CRMX RDM controller (with instructions) is available for download from LumenRadio.com to be used with the RDM transmitters.

CE

EU Declaration of Conformity

Marking by the above symbol indicates compliance with the Essential Requirements of the R&TTE Directive of the European Union (1999/5/EC). This equipment meets the following conformance standards:

EN 301 489-1; 301 489-17; EN 300-328-1; EN 300-328-2; EN 609 50