

*RC4 Wireless*

*RC4Magic-900™ Series 3*

# *DMXio*

*Wireless DMX  
Transceivers*



902 – 928MHz Secure Wireless DMX  
with RC4Magic-900 Private System IDs

## ***Disclaimers***

WIRING AND INSTALLATION OF BATTERIES, DIMMERS, AND LOADS MUST BE IN ACCORDANCE WITH APPLICABLE LOCAL AND NATIONAL ELECTRICAL CODES.

RC4 Wireless devices and equipment are operated at the user's own risk and RC4 Wireless accepts no liability, either direct or consequential, as a result of using this equipment.

### ***Not for Use Where Human Safety May Be At Risk***

RC4 Wireless accepts no liability for direct, indirect, or consequential damages resulting from the use of any RC4 Wireless product or group of products. RC4 Wireless does not guarantee the suitability of any product for any purpose; user assumes all risk. RC4 dimmers must be used strictly in accordance with manufacturer's instructions and cannot be used for unsupervised operation. RC4 Wireless products must be installed and operated only by qualified technicians, as outlined in the manufacturer's documentation, and should be inspected and tested on a regular basis to ensure proper and safe operation.

### ***Not for Control of Pyrotechnical Devices***

RC4 Wireless products should not be used to control pyrotechnics of any kind. A brief output surge on dimmer outputs during power-up could trigger these devices. RC4 Wireless accepts no liability if RC4 equipment is used for this or any other purpose.

### ***Product Safety***

RC4 receiver/dimmers are capable of controlling very large currents at up to 35VDC. Dimmers should not be allowed to operate at dangerous temperatures. Appropriately sized wire and connectors must be used, along with suitable ventilation and external fuses rated for the load being operated.

Additional information is provided in this manual, but this manual is not intended to be a comprehensive electrical safety guide.

### ***Radio Frequency Compliance***

RC4Magic-900 operates in the 902 – 928 MHz ISM band and is certified for use in The United States, Canada, Brazil, and Singapore. Some other jurisdictions may allow all or portions of this band to be used, but specific certifications have not been obtained.

See section RC4Magic-900 RF Specifications for additional compliance information.

# Table of Contents

Disclaimers	2
Not for Use Where Human Safety May Be At Risk .....	2
Not for Control of Pyrotechnical Devices .....	2
Product Safety.....	2
Radio Frequency Compliance.....	2
Harmonized Design for a World of Choices	5
RC4Magic-900™ Series 3.....	5
RC4Magic-900 DMXio Wireless DMX Transceiver	6
Wireless DMX.....	6
Data Privacy and Security.....	6
DMX Data Connections.....	7
DMX Termination.....	7
DMXio Transmitter Mode.....	7
Channel Range Limiting.....	8
DMXio Receiver Mode.....	8
Power Requirements.....	8
Signal Range and Antenna Options.....	8
Restore Defaults .....	9
DMXio User Interface	9
LED Indicators.....	10
DMX/RF Data - Yellow .....	10
COP/RX/TX - Green .....	11
RF Power/RSSI - Red.....	11
DMX Channel Range Limit - Yellow .....	11
DMX Termination - Green .....	11
RF Connect - Blue .....	11
Selected ID Indication .....	12
Power-Up Button Functions.....	12
IDo (zero) .....	12

ID1.....	12
ID2.....	12
ID3 Public.....	13
RC4 CodeLoader Enable.....	13
Single-Button Functions.....	13
RX/TX (Receive/Transmit Mode).....	13
TX Low Channel.....	14
TX High Channel.....	14
Dongle Mode.....	14
Func/Shift Two-Button Functions.....	15
RF Power.....	15
DMX Termination.....	15
Set Defaults.....	15
<b>RC4Magic-900 Series 3 DMXio Device Specifications</b> .....	<b>17</b>
Transmitter Mode.....	17
Receiver Mode.....	17
RC4Magic-900 DMX Protocol Compliance.....	18
RC4Magic-900 RF Specifications.....	18
<b>How to Reach RC4 Wireless</b> .....	<b>19</b>
Physical Address.....	19
Telephone / Fax.....	19
Internet.....	19

## *Harmonized Design for a World of Choices*

RC4 Wireless has been making the world's most popular low-voltage wireless dimmers since 1991. Today, RC4 offers the first and only fully harmonized cross-platform wireless dimmer design that is compatible with all leading wireless DMX data protocols worldwide: RC4Magic™, RC4Magic-900™, Lumen Radio CRMX™, and Wireless Solution W-DMX™. With only minor hardware differences between families, and a nearly identical user-interface across all RC4 Series-3 devices, a new standard is set for ease-of-use and range of features.

This manual is for RC4Magic-900™ Series 3 DMXio Wireless DMX Transceivers, including specific details pertinent to RC4Magic-900™ Unique System IDs, and RC4MagicPC™ remote configuration software.

### ***RC4Magic-900™ Series 3***

First launched in 2006 and widely considered the most popular wireless dimming in theatre, The original 2.4GHz RC4Magic system continues to grow and improve. With the introduction of RC4Magic-900™, higher power and longer range is now available, in an RF band that is far less congested.

***The 902-928MHz band can only be used in The United States, Canada, Brazil, and Singapore.***



# RC4Magic-900 DMXio Wireless DMX

## Transceiver

### Wireless DMX

A pair of RC4Magic-900 Series 3 DMXio units replaces a DMX data cable in lighting control applications. Configure one device as a transmitter, and one or more devices as receivers.

Any number of DMXio receivers can be used. Thus, a multi-unit RC4Magic-900 Series 3 system can take the place of splitters, isolators, and distribution boxes, providing superior electrical isolation while eliminating unsightly wiring.



RC4Magic-900 devices work reliably to 800 feet (243m) or more outdoors, and marginally less indoors. The DMXio is easily configured as a transmitter or receiver with the push of a button, and remembers this and other settings on every power-up.

The wireless data from a DMXio transmitter can also be received by RC4Magic-900 wireless dimmers, including RC4Magic-900 Series 3

DMX2dim, DMX4dim, DMX4dim-500, and other RC4Magic-900 devices.

### Data Privacy and Security

Each RC4Magic-900 Series 3 system is programmed with three unique system IDs. RC4 IDs serve as system identifiers and encryption keys, ensuring interference-free operation anywhere, anytime. Every RC4 user and project has their own IDs. Private IDs are shared only by explicit request with a written agreement between all parties involved. (Wireless DMX systems made by others give you selectable channels or IDs, but they are the same for everyone; that is *not* the case with RC4Magic-900.)

RC4Magic-900 divides the 902-928MHz rf spectrum into 64 individual channels. Frequency Hopping Spread Spectrum (FHSS) then distributes wireless DMX data over a minimum of 25 of those channels. With the help of RC4MagicPC software, the end-user (you) can choose which channels will be used, providing another level of differentiation and security. All devices must be set to the same ID and channels to successfully lock and communicate.

RC4Magic Data Security doesn't stop there! The hopping pattern used by the FHSS process varies for each System ID, further isolating separate systems from one another. RC4Magic-900 is the most secure wireless DMX system available at any price.

Multiple RC4Magic-900 Series 3 systems using different IDs and channel groups can operate at the same time in the same space, and each system will provide a separate wireless DMX universe on its own private wireless network. In a space with little or no other radio activity, there is enough bandwidth in the 902-928MHz band to support at least 3 full-speed RC4Magic-900 systems (often more than 3), each with any number of receivers and dimmers. The ability to select channels within the spectrum also allows other critical systems in the same band to be avoided.

One wireless DMX universe with up to 512 channels uses one RC4Magic-900 system ID. A DMXio transmitter on a separate ID is required for each different wireless DMX universe you use. Thus, 4 System IDs provide 4 individual wireless universes, provided you have enough RC4Magic-900 hardware to make use of them. You can add RC4Magic-900 devices to your system at any time – just tell us your System IDs when you order.

## ***DMX Data Connections***

The DMXio provides male and female 5-pin XLR connectors, compliant with USITT DMX512/1990. Internally, these two connectors are directly wired together with no active electronics in the signal path. They can be used for data pass-through and will not fail in the event of DMXio power failure.



## ***DMX Termination***

A DMX terminator is built into the DMXio and can be toggled on/off by pressing one button. The state of termination (on or off) is remembered and will be restored when power is cycled.

Note, however, that termination is not engaged when the DMXio is not powered on.

## ***DMXio Transmitter Mode***

As a transmitter, the DMXio decodes the DMX universe arriving at the DMX connector, encodes and encrypts it, and broadcasts it using Frequency Hopping Spread Spectrum (FHSS) digital radio. Unlike wired DMX, the RC4 wireless signal includes error checking and correction codes, and is not affected by minor interruptions and interference. DMX channels that are changing are allocated more bandwidth than channels that are not changing, and all channels are broadcast with appropriate speed, redundancy and accuracy.

## ***Channel Range Limiting***

By default, the DMXio transmits the entire DMX universe arriving at the wired DMX data input. The universe can be any number of channels from one to 512. The maximum number of channels in a DMX universe is 512, but some controllers produce fewer (some common numbers of channels are 64, 128, and 256).

To reduce wireless bandwidth consumption, it is sometimes desirable to limit the number of DMX channels actually being transmitted. For example, if you are using RC4Magic-900 to wirelessly control two DMX4dim wireless dimmers, with a separate DMX channel assigned to each dimmer, you only need to transmit data for eight channels. If they are contiguous channels (say, 400 – 407), then limiting the transmitter to just that range reduces the required wireless bandwidth by as much as 99.98%!

If you're not sure how many channels you are using, or if you are using DMXio units for full-universe cable replacement, stay with the default settings and transmit the entire universe.

## ***DMXio Receiver Mode***

As a receiver, the DMXio decodes the wireless signal from the transmitter, rebuilds the DMX universe, and regenerates a standard DMX signal with the same number of channels and the same packet rate as the data going into the transmitter. DMX in and out are compliant with USITT DMX512/1990.

When Channel Range Limiting is used at the transmitter, channels that are not being sent are output by the receiver with a value of zero.

## ***Power Requirements***

Power can come from the supplied wall transformer, from external batteries, or (optionally via internal jumpers) from XLR pins 4 and 5. A pack of five (or more) AA or AAA batteries, or even a small 9V battery, can be used for portable operation with, for example, a Goddard Design DMXter, a BCI Pocket Console DMX, a Fleenor Gizmo, or any other DMX signal source. The input voltage range is 5V – 35VDC, and the RC4Magic-900 DMXio consumes approximately 1W of power when transmitting with maximum RF power (250mW).

## ***Signal Range and Antenna Options***

In many cases, the DMXio can be connected right at your lighting console or other controller, before your DMX signal continues to other devices in your system. The distance from console to indoor stage is rarely more than 100 feet, well within the 500 foot range of RC4Magic-900.

When operating outdoors, place the transmitter (or the transmitter antenna) above people's heads and other obstructions for reliable range exceeding 800 feet.

Line-of-sight is not required for RC4Magic-900, but dense objects between devices — like concrete walls — will attenuate the radio signal and reduce the available range.

The standard model RC4Magic-900 DMXio uses an RP-SMA antenna connector. A simple 3 dBi “rubber duck” antenna is provided.

***For longest possible range, use high-gain and/or directional 50-ohm antennas tuned for the 902-928MHz band.***

## **Restore Defaults**

If user settings for System ID, DMX termination, or channel limiting have been changed, you might want to restore everything back to defaults when setting up for a new project. This is easily done by pressing two buttons together.

Further details about this and other functions are described later in this manual, in the section Func/Shift Two-Button Functions.

## **DMXio User Interface**

The DMXio user interface consists of six LEDs and five recessed buttons. The LEDs are behind small round holes; the buttons are behind small slotted openings. DMXio settings rarely need to be changed, and keeping the buttons recessed ensures settings will not be accidentally changed while handling the device. It also reduces the likelihood of tampering.

Buttons should be operated by inserting a small tool – like a bent paperclip – into the slotted openings.



Do not insert anything into the round LED holes. Doing so could damage the device and may not be covered by the RC4Magic-900 Warranty.

Selecting an RC4Magic-900 System ID is done by holding a button while powering up a unit. These are “power-up” or “hidden” functions.

The most commonly used features and functions are accessed by pressing one button while the unit is powered on and operating. For example, the RX/TX button toggles between receiver and transmitter modes.

A few additional features are accessed using the Func/Shift button: Hold the Shift button then tap another button.



**The label on the bottom of the DMXio provides a legend for the LEDs and buttons.** All settings are saved in non-volatile memory and are restored on each subsequent power-up.

## **LED Indicators**

With the DMXio mounting flanges down and the connectors facing you, the LEDs left-to-right are:



### **DMX/Rf Data - Yellow**

In transmitter mode, this indicator is on when valid DMX data is present at the wired DMX data connector. If DMX data is discontinued, this indicator will remain on for the data time-out period, usually 1 second. This is because the DMX specification allows data packets to be spaced up to 1 second apart.

In receiver mode, this indicator blinks on receipt of RF packets. When many DMX channels are changing rapidly, blinking is fast and flickery; when channels are in a steady state, blinking is somewhat slower. Irregular or inconsistent blinking often indicates drop-outs caused by a poor RF connection when, for example, devices are too far apart.

***On power-up, this is one of two LEDs that indicate the selected RC4 System ID. See Selected ID Indication at the end of this section.***

### ***COP/RX/TX - Green***

COP means *computer operating properly* and is indicated with a slow cyclical blink.

When the COP indicator is primarily on (illuminated) then the DMXio is in transmitter mode. The COP feature causes it to blink off briefly but regularly.

When the COP indicator is primarily off (dark) then the DMXio is in receiver mode. The COP feature causes it to blink on briefly but regularly.

If the RC4 CodeLoader feature is enabled on power-up, this indicator will remain solidly on for 5 seconds. If CodeLoading does not commence within those 5 seconds, normal device operation resumes.

***On power-up, this is one of two LEDs that indicate the selected RC4 System ID. See Selected ID Indication at the end of this section.***

### ***RF Power/RSSI - Red***

In transmitter mode, this LED indicates the strength of the RF signal. It blinks faster with higher power levels.

In receiver mode, this LED is a receive signal strength indicator (RSSI). Faster blinking indicates a stronger more robust signal.

*Early firmware versions do not yet have the receiver RSSI display feature implemented. CodeLoader updates will provide this when available.*

### ***DMX Channel Range Limit - Yellow***

If the range of transmit channels has been reduced (Transmit Low Channel is higher than 1, or Transmit High Channel is lower than 512) then this indicator is on. This is a warning that not all channels are being transmitted.

### ***DMX Termination - Green***

If DMX termination is enabled, this indicator is on and an internal terminator is applied to the XLR connections.

### ***RF Connect - Blue***

For normal transmit and receive operation, this indicator steadily blinks. When radio functions are being reconfigured internally, slight stutters of the blink are visible and are normal.

## ***Selected ID Indication***

On power-up, the DMXio indicates which RC4Magic-900 System ID is active with a series of blinks on the two left-most LEDs. A blink-pattern legend is provided on the bottom device label.

If the DMX/RF Data LED (*yellow*) blinks several times, then **ID<sub>0</sub>** (zero) is selected.

If the COP/RX/TX LED (*green*) blinks several times, then **ID<sub>1</sub>** is selected.

If both of the above LEDs blink *together*, simultaneously, then **ID<sub>2</sub>** is selected.

If those same two LEDs *toggle back and forth*, then **ID<sub>3</sub>**, the **RC4 Public ID**, is selected.

To ensure any device can always be accessed for reconfiguration, the Public ID<sub>3</sub> always enables and uses the first 25 rf channels and a default hopping pattern. Thus, the Public ID does not offer the same high level of data security provided by Private IDs 0, 1, and 2.

## ***Power-Up Button Functions***

If a button is held down during DMXio power-up, then a power-up “hidden” function is invoked. These are for selecting an RC4Magic-900 System ID, or enabling the RC4 CodeLoader for firmware installation.



All RC4 users and projects are assigned three unique private system IDs. The IDs programmed into your units belong only to you. Most RC4Magic-900 systems operate on ID<sub>0</sub> (zero), the default setting when shipped. There is no need to change this setting unless multiple wireless DMX universes are being used. Each separate ID supports a separate and unique wireless DMX universe, independent and different from other RC4Magic-900 users.

### ***ID<sub>0</sub> (zero)***

Private and Unique RC4 System ID<sub>0</sub> (zero) is selected if the ID<sub>0</sub> button is held during power-up. This is the default ID selection for new devices, and after Restore Defaults has been executed.

### ***ID<sub>1</sub>***

Private and Unique RC4 System ID<sub>1</sub> is selected if the ID<sub>1</sub> button is held during power-up.

### ***ID<sub>2</sub>***

Private and Unique RC4 System ID<sub>2</sub> is selected if the ID<sub>2</sub> button is held during power-up.

## ***ID3 Public***

The non-private common ID<sub>3</sub> is selected if the ID<sub>3</sub> button is held during power-up. ID<sub>3</sub> is the Public ID and is the same on all RC4Magic-900 Series 3 devices ever built. This allows devices from different systems, owned by different people, to be used together. It also ensures that when set to this ID any RC4Magic-900 device can be accessed for configuration, regardless even if numerous parameters have been changed.

The Public ID is also used when initially setting up RC4MagicPC with a remote control dongle or with a DMXio in Dongle Mode. Until your computer has connected to one of your devices and learned your unique system IDs, it does not know what they are. After learning, RC4MagicPC software securely stores them on your PC.

## ***RC4 CodeLoader Enable***

The RC4 CodeLoader is resident in every RC4 Series 3 device and is carefully protected. It is enabled by holding the Func/Shift button during power-up. Then, if CodeLoading does not commence within 5 seconds, the DMXio reverts to normal operation.

RC4 firmware files are encrypted before release, and decrypted by the CodeLoader, inside the DMXio. The RC4 CodeLoader also guards the device's unique serial number and RDM address. (Every RDM device in the world must have its own unique address.) Updating firmware in your DMXio will never corrupt this important device-specific information.

The RC4 CodeLoader facilitates firmware updating without corrupting user settings and configurations, provided the new firmware does not substantially change the list of available settings and their ranges. In most cases, a firmware maintenance release can be installed without effecting DMX channels, curves, and other user or application settings.

Connection to a host PC for CodeLoading is done with an [RC4 Series 3 USB CodeLoader Cable](#). One end plugs into the DMX miniplug port on the Series 3 device, the other end plugs into a USB port on the PC.

The RC4 CodeLoader application runs natively on Microsoft Windows. All you need is a working PC, an Internet connection (to retrieve new RC4 code files), a USB port, and the RC4 CodeLoader Cable.

## ***Single-Button Functions***

The most commonly used DMXio functions are accessed with a single press of a single button. All settings (except Dongle Mode) are saved in non-volatile memory and restored on subsequent power-ups.

## ***RX/TX (Receive/Transmit Mode)***

Press this button to toggle between receive and transmit mode, restarting the DMXio in the new mode.

## ***TX Low Channel***

This feature uses RC4 OneTouch™ – the same process used to assign channels and curves on RC4 wireless dimmers. You need a DMX controller capable of clearing all DMX channels to numeric zero and bringing up a single channel to a level above 20%.

To set the TX Low Channel:

1. Connect a DMX console or other controller.
2. Clear all DMX channels to zero. Beware of fixture profiles that clear, for example, moving-light pan/tilt channels to a central level, rather than true zero. All DMX channels must be at actual zero.
3. Bring up the lowest DMX channel you want to transmit wirelessly. Set it to any level that is higher than 20%. It should be the only non-zero DMX channel.
4. Press and release the TX Low Channel button.

That's it! If you have selected a channel that is higher than 1, or if the TX High Channel is already set to a value lower than 512, the DMX Channel Range Limit LED will be on.

You can disable this feature by either setting TX Low Channel to 1 using the process above, or using the Restore Defaults function.

## ***TX High Channel***

To set the TX High Channel:

1. Connect a DMX console or other controller.
2. Clear all DMX channels to zero. Bring up the highest DMX channel you want to transmit wirelessly. Set it to any level that is higher than 20%. It should be the only non-zero channel.
3. Press and release the TX High Channel button.

That's it! If you have selected a channel that is lower than 512, or if the TX Low Channel is already set to a value higher than 1, the DMX Channel Range Limit LED will be on.

You can disable this feature by either setting TX High Channel to 512 using the process above, or using the Restore Defaults function.

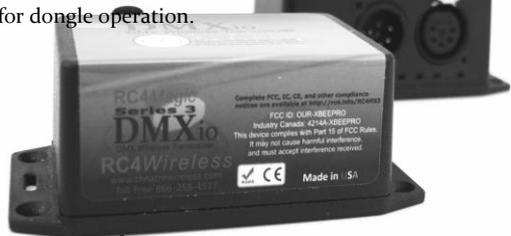
## ***Dongle Mode***

An RC4Magic DMXio can be used as a wireless RF interface for RC4MagicPC software. This is an alternative to using a dedicated USB Dongle. To put the DMXio in Dongle Mode:

- Power up the DMXio and wait for it to complete the start-up sequence (ID indication, followed by running as a transmitter or receiver).
- Press the Dongle Mode button. The LEDs on the DMXio will begin chasing left-to-right, indicating that Dongle Mode is active and ready to send data wirelessly. Occasionally these LEDs will chase right-to-left to indicate that data has been received wirelessly.

- Connect the DMXio to your PC using the RC4 CodeLoader cable. This delivers control data from RC4MagicPC software to the radio circuitry inside the DMXio.
- Launch RC4MagicPC software and select the COM port for the CodeLoader cable. Select the System ID to be used. Click any other Tab in the software to commence connection with the DMXio Dongle. These steps are identical for using a dedicated USB Dongle.

The DMXio must be in dongle mode and connected with the CodeLoader cable before running RC4MagicPC. Otherwise, the software will not be able to properly configure the rf circuitry for dongle operation.



## **Func/Shift Two-Button Functions**

Lesser used DMXio features and functions are accessed by pressing and holding the Func/Shift button and then briefly pressing (or tapping) one other button.

### **RF Power**

Hold Shift/Func and tap the ID0 button to increment to the next RF power level. If the level is at maximum, it rolls over to the minimum on the next button press. Higher power levels are indicated by faster blinking of the RF Power LED.

### **DMX Termination**

Hold Shift/Func and press the ID1 button to toggle DMX termination on/off. The current state is indicated by the DMX Termination LED. When the LED is on, termination is active.

### **Set Defaults**

Hold Shift/Func and press ID3 to restore all internal DMXio settings to defaults. This includes:

- Select ID0 (zero)
- TX Low Channel is 1
- TX High Channel is 512
- DMX termination is off
- RF power is at maximum (250mW)

## ***Manufacturer's Warranty***

The RC4Magic Lifetime Warranty is the best in the business and almost unlimited. If you have not misused or abused the device, we will fix it for free, forever. When timing is critical, we can often ship a refurbished replacement unit the same day you contact us, along with materials for returning your old unit. We may ask that you pay the cost of overnight shipping to get it there faster. Otherwise, we'll ship regular mail/post at our cost.

Examples of misuse or abuse not covered under warranty include, but are not limited to:

- Dimmer outputs ganged without ensuring they are configured identically
- Overvoltage (more than 35VDC applied)
- AC mains voltage applied
- Device operated underwater or while saturated with water
- Device crushed by a car, forklift, sledgehammer, etc.
- Device set on fire (not as a result of component failure under normal operating conditions)

Very few RC4Magic-900 devices are returned for repair. Treat your RC4 devices with care and you're set for life!

## ***RC4Magic-900 Series 3***

# ***DMXio Device Specifications***

- Dimensions: 3.4" x 2.3" x 1.55" nominal (approx. 86mm x 59mm x 40mm)  
Mounting flanges extend an additional 0.5" (13mm),  
for a bottom footprint of 4.4" x 2.3" (112mm x 59mm)
- DMX Connections: 5-pin male and female XLRs for DMX in and out,  
internally wired together
- Power Input: 6VDC – 35VDC, 1W  
Standard 2.1mm power receptacle, center positive  
Internal jumper option to take power from XLR pins 4 and 5
- 3 user-selectable RC4 Private System IDs, plus the RC4Magic-900 Public ID  
(each ID supports one independent DMX universe)
- User selectable Transmit or Receive modes (press one button to toggle).
- User selectable internal DMX termination (press two buttons to toggle on/off).

## ***Transmitter Mode***

- **Only 1 transmitter device should be operated on any single RC4Magic-900 System ID.**
- DMX Input: meets USITT DMX512/1990(4us) with 1-second data hold after dropout. Straight-thru hardware connection from DMX input to output for easy pass-through to additional DMX devices.
- DMX Channel Limiting: Set lowest and highest DMX channel using RC4 OneTouch (default is full 512-channel universe)
- RC4Magic-900 does not provide wireless RDM, but the devices do function as wired DMX responders and a subset of available features and functions can be configured using an RDM controller.

## ***Receiver Mode***

- **Any number of DMXio receivers may be used in a system.**
- DMX Output: meets USITT DMX512/1990.
- The DMX specification allows up to 32 devices on a DMX output. The DMXio data output exceeds this requirement and is capable of driving additional devices.
- Internally protected against static discharge and excessive line loading.

## ***RC4Magic-900 DMX Protocol Compliance***

- DMX inputs and outputs comply with USITT DMX512/1990(4us).
- Packets with non-zero start codes are not transmitted.  
RC4Magic-900 cannot transfer proprietary data or RDM packets.
- DMXio receiver output replicates DMXio transmitter input, providing the same number of DMX channels and the same number of packets per second (pps).
- Minimum number of DMX channels per packet: 1
- Maximum number of DMX channels per packet: 512
- Maximum packet-per-second rate:  
44.1 pps with 512 DMX channels, 1000pps with 1 DMX channel

## ***RC4Magic-900 RF Specifications***

- Indoor/Urban Range: Up to 600' (183 m), 500' (152 m) typical
- Outdoor Line-of-Sight Range: Up to 1 mile (1.6 km), 800+ feet (244 m) typical
- Transmit Power Output: Up to 250 mW (24 dBm) EIRP <sup>1</sup>
- Receiver Sensitivity: -101 dBm
- Operating Frequency: 902-928MHz ISM band, FHSS (Frequency Hopping Spread Spectrum)

### **RF Agency Approvals:**

United States FCC: **MCQ-XBPS3B**

902 MHz to 928MHz ISM band

Canada IC: **1846A-XBPS3B**

902 MHz to 928MHz ISM band

Brazil Anatel: **3727-12-1209 / (01)07899029304373**

902 MHz to 907.5 MHz and 915 MHz to 928 MHz <sup>1</sup>

Singapore IDA: **DA105737**

920 MHz to 925 MHz <sup>1</sup>

**1. To meet compliance requirements in Brazil and Singapore, RF Configuration MUST disallow use of channels/frequencies outside the stated ranges. RF channels are easily enabled/disabled using RC4MagicPC configuration software.**

## ***How to Reach RC4 Wireless***

### ***Physical Address***

RC4 Wireless is a registered trade-name of Soundsculpture Incorporated of North Carolina.

#### **Soundsculpture Incorporated / RC4 Wireless**

13604 Heathwood Court  
Raleigh, NC, 27615  
USA

### ***Telephone / Fax***

Toll Free 1-866-258-4577 (North America)  
North Carolina, USA, Local 919-229-9950  
London, UK +44 (0)20 3289 8765  
Emergency Cellular 919-400-3961  
Toll Free Fax 1-866-237-6641 (North America)

### ***Internet***

Email [techsupport@theatrewireless.com](mailto:techsupport@theatrewireless.com)  
Skype rc4acw  
Website [www.theatrewireless.com](http://www.theatrewireless.com)

If you like your RC4 Series 3 device, please take the time to let others know.  
Post information about your shows and productions at:  
[www.theatrewireless.com/customers/submit-your-project/](http://www.theatrewireless.com/customers/submit-your-project/)

**Like us on Facebook, and check out helpful tips we post from time to time:**  
[www.facebook.com/RC4Wireless](http://www.facebook.com/RC4Wireless)

**Follow us on Twitter for news about coming events and RC4 discount offers:**  
[www.twitter.com/RC4Wireless](http://www.twitter.com/RC4Wireless)

