

WIRELESS DMX

LIGHTING CONTROLS



FOR PERMANENT ARCHITECTURAL INSTALLATIONS

CITY

THEATRICAL

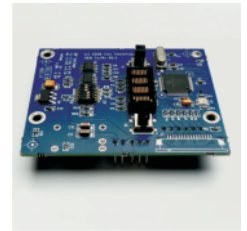
NEW YORK • LONDON

WIRELESS DMX LIGHTING CONTROL

DMX512 is a standard for digital communication networks that are commonly used to control stage lighting and effects. It was originally intended as a standardized method for controlling light dimmers, which, prior to DMX512, had employed various incompatible proprietary protocols. However, it soon became the primary method for linking not only controllers and dimmers, but also more advanced fixtures and special effects devices such as fog machines and moving lights, and has also expanded to uses in non-theatrical interior and

architectural lighting. DMX512 has been used at scales ranging from strings of Christmas lights to electronic billboards.

Wireless DMX adapters have become popular, especially in architectural lighting installations where cable lengths can be prohibitively long. Such networks typically employ a wireless transmitter at the controller, with strategically placed receivers near the fixtures to convert the wireless signal back to conventional DMX wired network signals.



WORLD CLASS PRODUCTS

City Theatrical has been a world leader in the development of wireless DMX for over a decade and is the choice of lighting professionals when their production or installation depends on reliable wireless DMX data. Thousands of shows and installations have placed their trust in the products of the SHoW DMX® family to meet their lighting needs.

City Theatrical's technology leadership was reinforced in 2008 when we received the first patent ever granted for wireless DMX and RDM, U.S. patent #7,432,803

Our years of experience have enabled us to build a radio with the highest levels of fidelity in the industry, and increased resistance to interference. This translates to better shows and installations for you in crowded broadcast environments.

THE SHoW DMX® FAMILY

The heart of all of our wireless products is our ShoW DMX Neo® radio. It is available in the following product forms, each designed for a particular application.

SHoW DMX Neo -Transceiver

This workhorse of Broadway and London's West End is equally at home in any large scale interior installation. It features a user friendly interface, three broadcast modes, industry leading RDM and Ethernet capabilities and can function as either transmitter or receiver.

SHoW DMX Neo -Receiver

The receiver-only version of Neo has all the DMX features without broadcast capabilities. It is offered at a lower price point, and is similarly suited for interior applications.

SHoW DMX Vero Net™ -Transceiver

Our Vero Net Transceiver has all the features of the Neo transceiver, minus the fully configurable onboard user interface (not required for most permanent installations). It is packaged in a NEMA 4 / IP66 rated enclosure, is designed for outdoor installations with all liquid tight cable entries and is contractor ready with included mounting bracket and 4.5dBi omni antenna.

SHoW DMX Vero™ -Transceiver

30% smaller than our Vero Net unit, Vero has all the features (less Ethernet) and is packaged similarly for outdoor use.

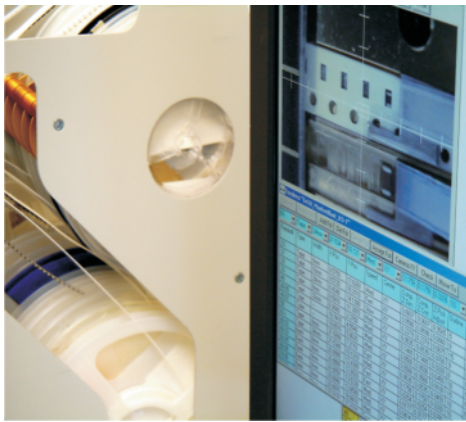
SHoW DMX® OEM -Radio Module

Our OEM radio modules are a low cost and simple way for manufacturers to add wireless DMX to their products using a small printed circuit board.

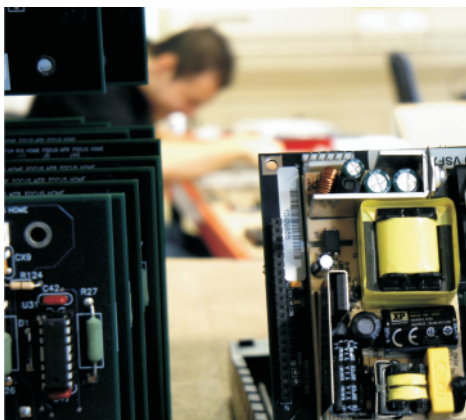
THE CITY THEATRICAL DIFFERENCE

We design and develop our own products. Our engineering team are our inventors.

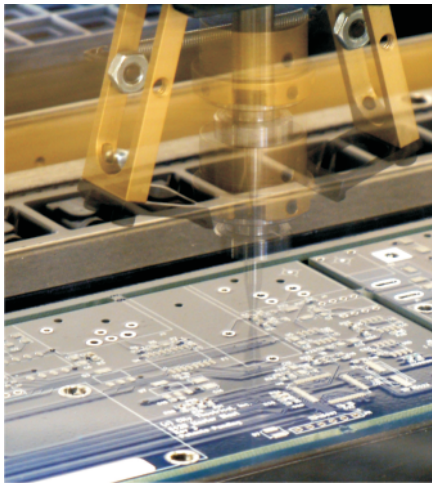
We manufacture our own products. Our wireless products are built in our Carlstadt, NJ factory where we control production, quality, inventory, and service.



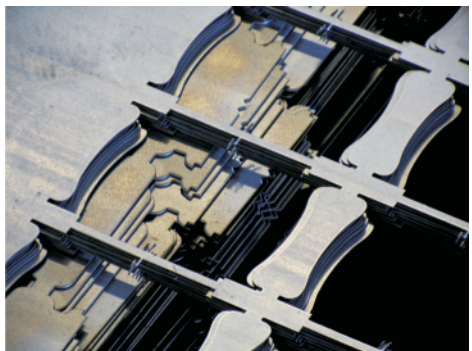
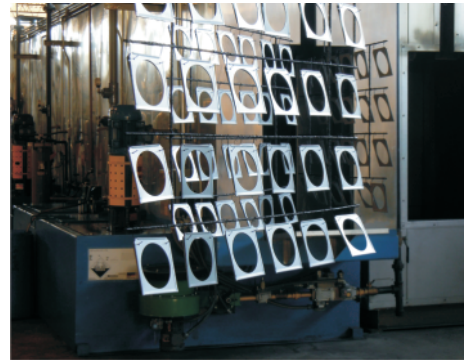
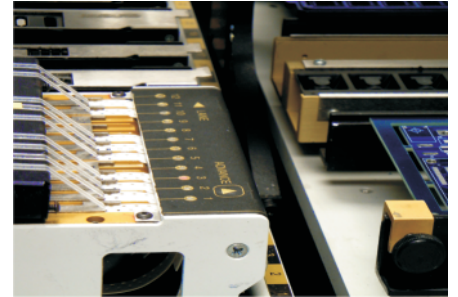
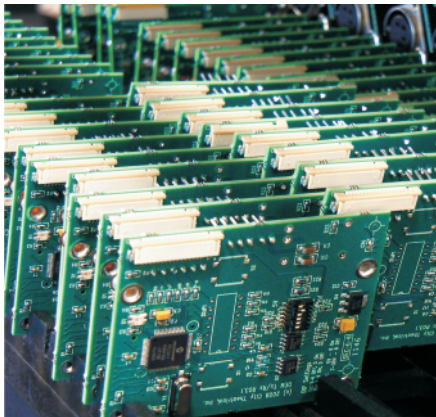
Our team is filled with knowledgeable people in both the U.S. and U.K. When you speak to our team you get the technical help you need, often from a front line engineer. When your installation or production depends on fast help, you can count on us.



Our system is maximized to be able to coexist with other wireless users in an increasingly crowded wireless spectrum. SHoW DMX has numerous ways to craft the smallest radio footprint obtainable, including an easy on board user interface, and RDM (Remote Device Management) control from any RDM controller, including our own included RDM controller.



Since the launch of SHoW DMX in 2008 City Theatrical has maintained the highest data fidelity levels in the world, as proven in our independent testing lab report.



STATE-OF-THE-ART TECHNOLOGY

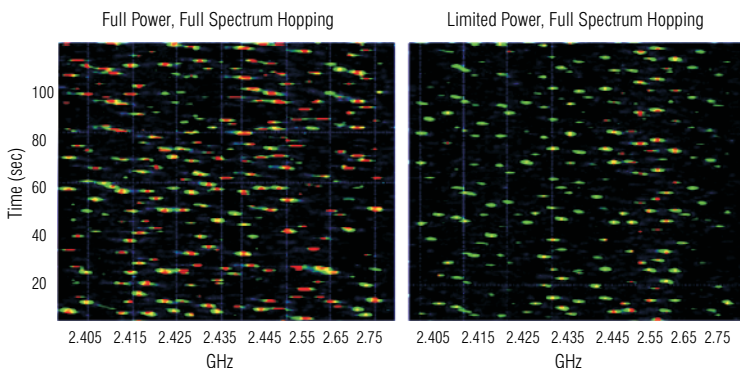
High Speed Broadcast Data Rate with Optimized Data Format

The SHoW DMX Transceiver's through-air data rate is 1Mbps, and the broadcast data packet has been optimized for half-duplex wireless DMX delivery so that the available 1Mbps through-air data rate is utilized as efficiently as possible.

Adjustable Output Power

The broadcast power of the CTI SHoW DMX Neo system is adjustable to allow the user to calibrate the system's broadcast power to match the requirements of the venue. This means that for very long range applications the Transceiver can be dialed up to the maximum level, while for places where more than one system is likely to be used in relatively close proximity, or where SHoW DMX is being used in the same environment with other more vulnerable wireless systems (e. g. Wi-Fi), a lower power setting can be used. Adjustable output power can be coupled with SHoW DMX's other advanced features to provide the "greenest", smallest, radio footprint available in wireless DMX delivery.

Adjustable Output Power



In these Wi-Spy screen shots, the effect of limiting output power can be seen. The left hand screen contains more red, denoting more high powered radio activity. The right hand screen is mainly green, showing lower power activity and less potential interference with other radios in the area.

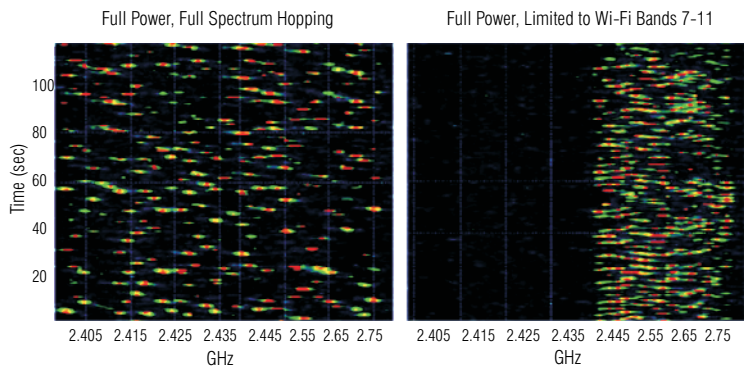
Full Bandwidth Hopping

SHoW DMX Neo offers more than one kind of user-selectable FHSS hopping mode. In full bandwidth hopping mode, the system will continuously hop across the full 2.4Ghz spectrum, providing the most robust and interference-immune delivery mode available. The system supports 16 different full bandwidth hopping patterns, which can be used at any power setting, allowing a number of separate systems to broadcast multiple DMX Universes in the same venue or setting.

Limited Bandwidth Hopping

In the Limited Bandwidth Hopping mode, the SHoW DMX system is assigned to one of three sub-bands of the full 2.4Ghz spectrum. Each sub-band occupies approximately 2/5s of the full band, with one sub-band positioned at the low end, one in the center, and one at the high end of the full spectrum. The three sub-bands overlap and each avoids some combination of Wi-Fi channels. This will allow the SHoW DMX Neo Transceiver to be set to broadcast in a different area of the spectrum than other equipment being used in the area to minimize or eliminate interference with Wi-Fi or other channel specific or limited bandwidth equipment.

Limited Bandwidth Hopping



In these Wi-Spy screen shots, the effect of limiting the SHoW DMX bandwidth to Wi-Fi bands 7-12 is clearly shown. In the right hand screen, the portion of the spectrum below 2.466GHz is nearly devoid of activity. Other Wi-Fi signals could operate freely in that area.

Synchronized Hopping (patent pending)

CTI's proprietary system synchronizes the DMX frame rate to match the FHSS hopping period preventing fragmentation of the DMX slot information.

Adaptive Hopping

In SHoW DMX Neo Adaptive Hopping Mode, Adaptive Spread Spectrum Frequency Hopping identifies and masks off hopping channels that have interference, replacing them in the hop sequence with alternate channels. If users choose not to use manual settings, they can choose this setting instead.

Ultra Low Latency

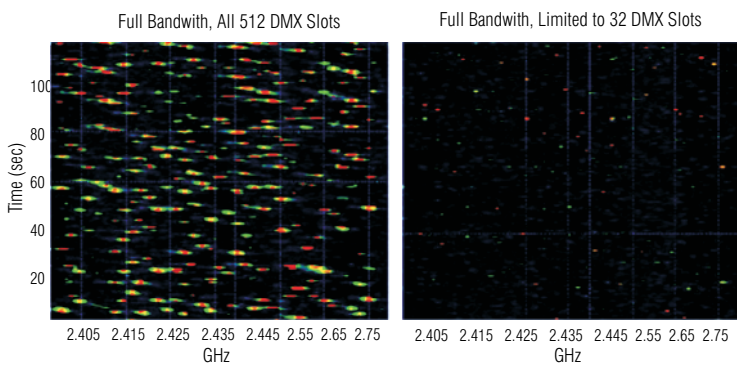
All SHoW DMX Neo products have latency of 7ms or less to insure that your wired and wireless data will always appear exactly alike.

Limited Burst DMX Output

Limited Burst mode reduces the number of DMX channels and the amount of radio energy that is broadcast by the SHoW DMX Neo system. If you don't need all 512 DMX values and you need to control the radio energy in your system as much as possible, then you can use Limited Burst to target only the DMX channels you need, and reduce your radio footprint even further.

In Limited Burst mode, the user may select any contiguous group of 32/51 (Classic/Neo) or more DMX values in multiples of 32/51 values. These may be assigned to any starting address that will accommodate the burst allowing the end device to maintain normal addressing.

Limited Burst DMX Output



In these screen shots, it can be seen that while operating at full power, but limited to an output of 32 DMX channels, SHoW DMX has a very small radio footprint. Some shows don't require all 512 channels to be broadcast via wireless, and this is an excellent option to reduce radio interference with other users in the same venue.

Simple Default Plug and Play Mode

The SHoW DMX Neo system has a sophisticated user interface allowing complete control of a number of settings, but in its default mode, SHoW DMX is completely plug and play. In its factory mode, or by resetting factory defaults, Transmitter and Receiver will wake up in contact with each other and no other settings are needed, unless the user chooses to make them. With all its sophistication, the SHoW DMX Neo system is also one of the simplest systems.

RDM

City Theatrical has been a leader in wireless RDM ever since our first SHoW DMX product in 2008 and we have continued to improve the speed and quality of our RDM interface.

SHoW DMX Neo provides fully functional RDM Proxy and RDM Responder operations with any RDM controller, and will provide fast and effective communication with any PLASA compliant RDM device, including all RDM Controllers and Responders. CTI works closely with the RDM development community to assure that SHoW DMX Neo continues to play well with others in the RDM world as well as the wireless world.

RDM Functions

1. RDM Controller Functions: Transmitters have some RDM controller functions accessible via the user interface.
2. RDM Proxy Functions: Transmitters and Receivers act together as an RDM proxy system, providing a bidirectional half-duplex RDM link between the controller and any RDM device being controlled via the SHoW DMX system.
3. RDM Discovery/Unique Device IDs: Each unit is programmed with a unique RDM device ID that will identify the unit, permitting RDM discovery, as well as communication with and control of each specific device.
4. Receiver Received Signal Strength: The system remotely polls each Receiver for its received signal strength via standard RDM.
5. RDM Responder Features: SHoW DMX Dimmers have appropriate RDM features such as UID/discovery, DMX addressing, battery power status, etc.
6. SHoW DMX Neo and Vero Net Transceivers include an RDM controller (PC based).

Lost Data Replacement

SHoW DMX Neo "heals" incomplete data packets with the most recent correct data.

Ethernet Based Protocols

The SHoW DMX Transmitter is provided with an RJ 45 connector and additional processing capacity to allow sACN, Art-Net, KiNet, and Pathport input and output.

SPECIFICATIONS

PRODUCTS



**SHoW DMX Vero Net™
TRANSCIVER**



**SHoW DMX Vero™
TRANSCIVER**



**SHoW DMX Neo®
TRANSCIVER**

Applications	Outdoor/indoor	Outdoor/Indoor	Indoor
Model	SHoW DMX Vero Net	SHoW DMX Vero	SHoW DMX NeoTransceiver
Catalog Number	7400-5708	7400-5707	5701
Broadcast Power	1mW ETSI 14mW ETSI 28mW ETSI 72mW ETSI	1mW ETSI 14mW ETSI 28mW ETSI 72mW ETSI	1mW ETSI 14mW ETSI 28mW ETSI 72mW ETSI
SHoW DMX Neo Broadcast Modes	Adaptive Neo Full Bandwith Neo Full Bandwith Neo Limited Bandwith Wi-Fi 1-6 Neo Limited Bandwith Wi-Fi 4-9 Neo Limited Bandwith Wi-Fi 7-11	Adaptive Neo Full Bandwith Neo Full Bandwith Neo Limited Bandwith Wi-Fi 1-6 Neo Limited Bandwith Wi-Fi 4-9 Neo Limited Bandwith Wi-Fi 7-11	Adaptive Neo Full Bandwith Neo Full Bandwith Neo Limited Bandwith Wi-Fi 1-6 Neo Limited Bandwith Wi-Fi 4-9 Neo Limited Bandwith Wi-Fi 7-11
SHoW DMX Classic Broadcast Modes	Full Bandwith Limited Bandwith Wi-Fi 1-6 Limited Bandwith Wi-Fi 4-9 Limited Bandwith Wi-Fi 7-11		Full Bandwith Limited Bandwith Wi-Fi 1-6 Limited Bandwith Wi-Fi 4-9 Limited Bandwith Wi-Fi 7-11
DMX Burst Modes	Full (512 Slots) Limited (Classic: 32-480 Slots; Neo, 51-467 Slots)	Full (512 Slots) Limited (Classic: 32-480 Slots; Neo, 51-467 Slots)	Full (512 Slots) Limited (Classic: 32-480 Slots; Neo, 51-467 Slots)
Ethernet Protocols Supported	Input: sACN, Art Net, KiNET, Pathport Output: sACN, Art Net, KiNET, Pathport		Input: sACN, Art Net, KiNET, Pathport Output: sACN, Art Net, KiNET, Pathport
Hopping Patterns	16	16	16
Show IDs	132	68	132
Radio Transceiver	CTI 5792	CTI 5792	CTI 5792
RF Sensitivity	-95dBm	-95dBm	-95dBm
RDM Features	RDM Proxy RDM Responder	RDM Proxy RDM Responder	RDM Proxy RDM Responder
Compliance Certifications	FCC, IC, CE	FCC, IC, CE	FCC, IC, CE
Power	100-240 VAC 50/60Hz 4W	100-240 VAC 50/60Hz3W	9-24VDC 100-240 VAC 50/60Hz 4W
Dimensions	7.75"w x 7.75"h x 5"d	5.5"w x 5.5"h x 5"d	6.25"w x 2.375"h x 5.125d
Weight	2 Lbs	2 Lbs	2 Lbs

ACCESSORIES



**SHoW DMX Neo®
RECEIVER**

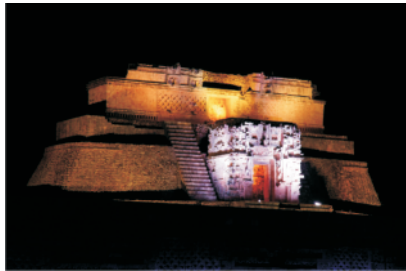


**SHoW DMX Neo®
OEM RADIO CARD**

Indoor	Direct Integration into OEM Products
SHoW DMX Neo Receiver	SHoW DMX Neo OEM Radio Card
5711	5792
1mW ETSI 14mW ETSI 28mW ETSI 72mW ETSI	1mW ETSI 14mW ETSI 28mW ETSI 72mW ETSI
Adaptive Neo Full Bandwith Neo Full Bandwith Neo Limited Bandwith WiFi 1-6 Neo Limited Bandwith WiFi 4-9 Neo Limited Bandwith WiFi 7-11	Adaptive Neo Full Bandwith Neo Full Bandwith Neo Limited Bandwith WiFi 1-6 Neo Limited Bandwith WiFi 4-9 Neo Limited Bandwith WiFi 7-11
Full Bandwith Limited Bandwith WiFi 1-6 Limited Bandwith WiFi 4-9 Limited Bandwith WiFi 7-11	Full Bandwith Limited Bandwith WiFi 1-6 Limited Bandwith WiFi 4-9 Limited Bandwith WiFi 7-11
Full (512 Slots) Limited (Classic: 32-480 Slots; Neo, 51-467 Slots)	Full (512 Slots) Limited (Classic: 32-480 Slots; Neo, 51-467 Slots)
16	16
132	132
CTI 5792	n/a
-95dBm	-95dBm
RDM Proxy RDM Responder	RDM Proxy RDM Responder
FCC, IC, CE ETL Listed	FCC, IC, CE
9-24VDC 100-240 VAC 50/60Hz 4W	5VDC 125mA
6.25"w x 2.375"h x 5.125d	1.65"w x 2.71"l. x 0.25h.
2 Lbs	1 oz

CATALOG NUMBER	DESCRIPTION
5630	Antenna, 7" 5dBi Omni
5730	Antenna, 2dBi Indoor Omni
5732	Antenna, 5dBi Outdoor Omni
5632	Antenna, 8dBi Directional Panel (w/indoor mounting bracket)
5670	Outdoor mounting bracket for #5632 8dBi Directional Panel Antenna
5634	Antenna, 10dBi Yagi (w/outdoor mount)
5636	Antenna, 14dBi Yagi (w/outdoor mount)
5637	Antenna Splitter
5638	Antenna Adapter Cable
5639	Gender Changer for #5637 Antenna Splitter
5631	SHoW DMX Antenna Cable





CITY THEATRICAL

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LIGHTING
ACCESSORIES**

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