The W-DMX BlackBox range represents the pinnacle of wireless engineering excellence applied to the control of lighting systems.

In common with all W-DMX BlackBox products, the indoor series transmitters offer simple setup and reliable operation. Minimal cabling requirements and multiple power input options ensure that the transmitters can be easily incorporated into new and existing installations. The initial configuration procedure couldn't be simpler. Just one press of the front panel button is all that's required to search for, and link with unallocated receivers. That's it. Operation can then begin immediately to control any fixtures that are DMX cabled to the receivers.

There are three main transmitter options within the indoor series to suit your exact requirements:

S-1 Single DMX universe transmitter.

S-2 Dual DMX universe transmitter.

T-1 Pro Single DMX universe transceiver with internal battery backup to provide up to two hours operation without power input. T-1 Pro units can be switched between transmitter and receiver modes as required. Two T-1 Pro units (one in each mode) can be wired together to create a signal repeater to extend transmission distances even further.

All units are delivered with a multi purpose bracket for easy mounting and rigging as well as a standard 2 dBi rubber whip antenna. A multitude of other antennae options are available to increase the standard transmission range of 700m (2300 feet) to an incredible 2300m (7550 feet). All indoor series transmitters use the licence free 2.45GHz ISM band and are specifically certified for use in the United States, Canada, Japan and all European Union countries. The efficient automated anti-interference techniques employed provide another distinct advantage. In order to send multiple DMX universes, you can place numerous BlackBox transmitters in close proximity without harming transmission signals - a real advantage for large, distributed installations.

All indoor series transmitters are housed within tough diecast aluminium casings which are suitable for both indoor and fair weather outdoor operation.
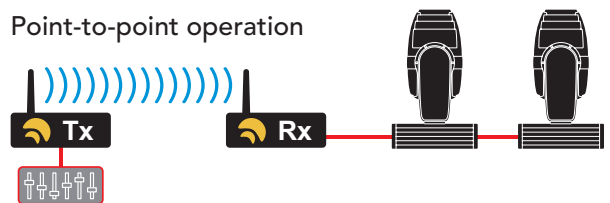
For all these reasons and more, in every independent comparison with competing products BlackBox W-DMX units continually take first place for distance covered, resilience against interference, and ease of installation and operation.
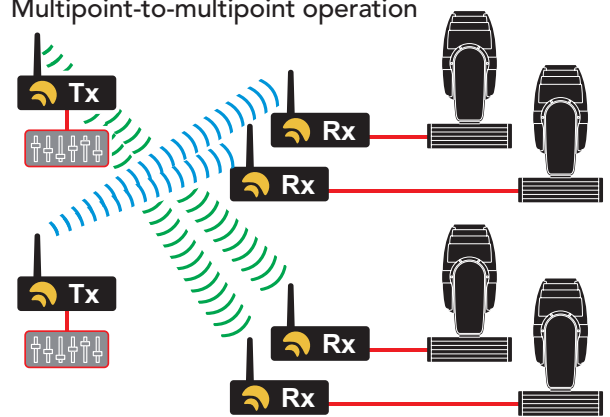
What is W-DMX?

The W-DMX technology lies at the heart of every one of our BlackBox products. W-DMX is specifically engineered by Wireless Solution Sweden AB to provide the same quality, reliability and performance as any hardwired DMX data link. In fact W-DMX gives you greater freedom to create reliable point-to-point, point-to-multipoint and even multipoint-to-multipoint installations over large distances.

Point-to-point operation

Multipoint-to-multipoint operation

W-DMX is unique in its use of certain advanced radio techniques which are more often found in mobile phone and military communications. Rather than using fixed frequency channels, W-DMX uses adaptive frequency hopping technology (as well as TDMA and GFSK technqiues) to continually check for interference and to rapidly move operation over to clear radio channels. The frequency hops occur one thousand times every second to ensure smooth, efficient and robust operation.

The advantage of such technology will quickly become clear to you: consistent and wide ranging control of your lighting systems over potentially great distances.

wireless solution

Specifications

DMX interface
- Full compliance with USITT DMX-512 (1990) & 512-A standards
- Maximum number of transceivers on a single bus: 32 (compliant with the EIA/TIA RS-485 standard)
- Data Rate: 250 kbps (slew rate limited to minimise EMI)
- Electrostatic discharge protection: ±15kV
- DMX frame rate and frame size: Auto sensing
- Frame rate: 1 (min) to 44 (max) frames per second
- Frame size: 1 (min) to 512 (max) channels
- Loss of DMX input or radio link: After one second (if there is no resumption), the DMX output will cease to transmit and go into a high impedance mode.
- Recovery from loss of DMX input or radio link: Less than 1 second.

Power characteristics
- High voltage input: 90-260VAC
- Low voltage input: 12VDC (T-1 Pro and S-2: 12-24VDC)
- Average current (transmit mode): 450mA @ 12VDC
- Average current (T-1 receive mode): 200mA @12VDC

Battery operation (T-1 Pro only)
- 1 hour operation from fully charged in transmit mode
- 2 hours operation from fully charged in receive mode

RF characteristics
W-DMX uses Frequency Hopping Spread Spectrum (FHSS) and changes frequency every 910uS
- Operational frequency range: 2402-2479MHz (ISM band)
- EU/ASIA RF output power: 20dBm or 100mW
- FCC RF output power: 25dBm or 275mW
- Channel bandwidth: 1 MHz
- Sensitivity at 0.1% Packet Error Rate: 95dBm
- Tested link range 450m (Low power EU mode using standard antennae in an urban area)

Approvals
- FCC: 15.247&68 Class B; Canada ICES 003; Japan ARIB STD-T66
- CE; EN 301 489-1; 301 489-17; EN 300-328-1; EN 300-328-2; EN 609 50

Enclosure
- Diecast aluminium casing
- Operating temp range: S-1 / S-2: 0°C to +55°C (32°F to 131°F)
  T-1 Pro: -20°C to +55°C (-4°F to 131°F)
- Dimensions (W x H x D): 219 x 45 x 131mm (8.6" x 1.8" x 5.2")
- Weight: 1005g / 35.45oz

Connectors
- N-type female antenna connector, N – RP-SMA adaptor included
- 2 Neutrik® XLR 5-pin gold plated DMX connectors
- 2 RJ45, DMX over Cat5 cable links
- 1 RJ45, W-DMX PC-link / Internal link (T-1 Pro only)
- 1 DC input, pluggable terminal strip, Phonix® MSTB 2,5
- 1 AC input, IEC-6C

Supplied accessories
- AC power cord / DC power connector / Standard antenna Antenna adaptor / Mounting brackets / User guide

Part codes

	S-1	S-2	T-1 Pro
ETSI/FCC approved *(power output: 100mW/300mW max.)*	A40001	A40005	A40003
Japan ARIB approved *(power output: 100mW max.)*	A40001J	A40005J	A40003J

Front and rear panel details

S-1

RADIO ON: Indicates that *Level* display is showing signal strength
BATT Not used

Level Provides indication of radio output signal strength

FUNCTION Press and release to search for and link with receivers

LINK ON: Normal operation FLASH: Unlinking all receivers RAPID FLASH: Linking with receivers

DATA ON: Transmitting DMX data
RX & CTRL Not used

POWER ON: Correct power input present

S-2

Antenna connector

FUNCTION Press and release to search for and link with receivers (for each universe)

LINK (for each universe) ON: Normal operation FLASH: Unlinking all receivers RAPID FLASH: Linking with receivers

DATA (for each universe) ON: Transmitting DMX data

CTRL (for each universe) ON: Indicates that W-DMX bus link is active

T-1 Pro

RADIO ON: Indicates that *Level* display is showing signal strength

BATT ON: Indicates that *Level* display is showing battery charge

Level Provides alternate indications of radio signal strength and battery charge every two seconds. The RADIO and BATT indicators confirm which function is currently being shown.

FUNCTION Operation depends upon current operation mode: transmit or receive.

LINK
TX MODE: ON: Normal operation FLASH: Unlinking all receivers RAPID FLASH: Linking with receivers
RX MODE: OFF: Not linked to a transmitter ON: Linked to a transmitter RAPID FLASH: Linking to a transmitter

DATA ON: Transmitting/ receiving DMX data
TX/RX Indicate current operation mode

CTRL ON: Indicates that W-DMX bus link is active
POWER OFF: Off or using battery ON: External power input FLASH: Charging battery

Press to change between battery (T-1 only) (green indicator) and external power input (red indicator) operation.

DC power input

Reserved

XLR 5pin DMX connector

XLR 5pin DMX connector

Mode button (T-1 only) Press to change between transmitter and receiver.

AC power input (90-250VAC)

RJ-45 DMX connector

RJ-45 DMX connector + DC power in

W-DMX bus port (T-1 only) connection to another T-1 unit or to a PC.

Release 1-0c (June 2007) Specifications subject to change without notice

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