W-DMX F-1 BlackBox G6 WDMX BlackBox F1 G6 Transceiver

# W-DMX F-1 BlackBox G6 WDMX BlackBox F1 G6 Transceiver User Manual



Contents




## W-DMX F-1 BlackBox G6 WDMX BlackBox F1 G6 Transceiver


## Specifications

- **Product Name:** W-DMXTM BlackBox G6
- **Models:** F-1, F-2, R-512
- **Revision:** December 2020
- **Website:** [www.wirelessdmx.com](http://www.wirelessdmx.com)
- **Contact Tel:** +46 522 511 511
- **Contact Email:** [helpdesk@wirelessdmx.com](mailto:helpdesk@wirelessdmx.com)

## User Manual

The W-DMXTM BlackBox G6 User Manual provides detailed information on the setup, operation, and maintenance of the wireless DMX system. It includes safety instructions, user interface details, hardware specifications, upgrade procedures, and compliance information.

**WARNING:** This product must be earthed.

1. Please read these instructions and safety instructions carefully before using this product.
2. Keep these instructions for future reference.
3. Never plug the product into the mains supply while it is still in its packaging. Never cover during use.
4. Only use indoors and in dry spaces, except where otherwise explicitly stated.
5. Verify that the product has not been damaged in transport before you make use of it.
6. Keep the product out of the reach of animals, children and persons who require supervision.
7. This product is intended for professional use only.

8. Always place the product on a stable, solid and flat base or safely secure it.
9. Do not use the product near hot surfaces or objects.
10. The mains cable must be regularly and carefully checked for damage to the cable, the plug and other parts. In the event of damage, the product must not be used until the main cable has been replaced. If the product needs to be cleaned, the adapter or main cable must be disconnected from the main supply.
11. Repairs must only be carried out by a qualified person.
12. Note that the connected voltage and current correspond to the sticker on the product.
13. Never submerge the product or the mains cable in water or any other liquid, in order to prevent electric shocks, fire, injury and other hazards.
14. Never carry the product by the cables and do not put the cord around sharp edges.

**Your Wireless DMX G6 System**

- Welcome to the Wireless DMX family! We hope you enjoy your brand-new devices – Wireless
- Solution is the industry's leading system for transmitting and receiving DMX signals reliably, and we thrive on avid users like you who use our products. We appreciate all your constructive feedback!

**Before you use it, you must know: that there are two main operating modes:**

- [TX] Transmitter (to transmit DMX data as wireless signals)
- [RX] Receiver (to receive wireless signals and output as DMX)

Most of our products are transceivers, meaning they can transmit or receive W-DMX™ signals, depending on how you set them up

## Safety information

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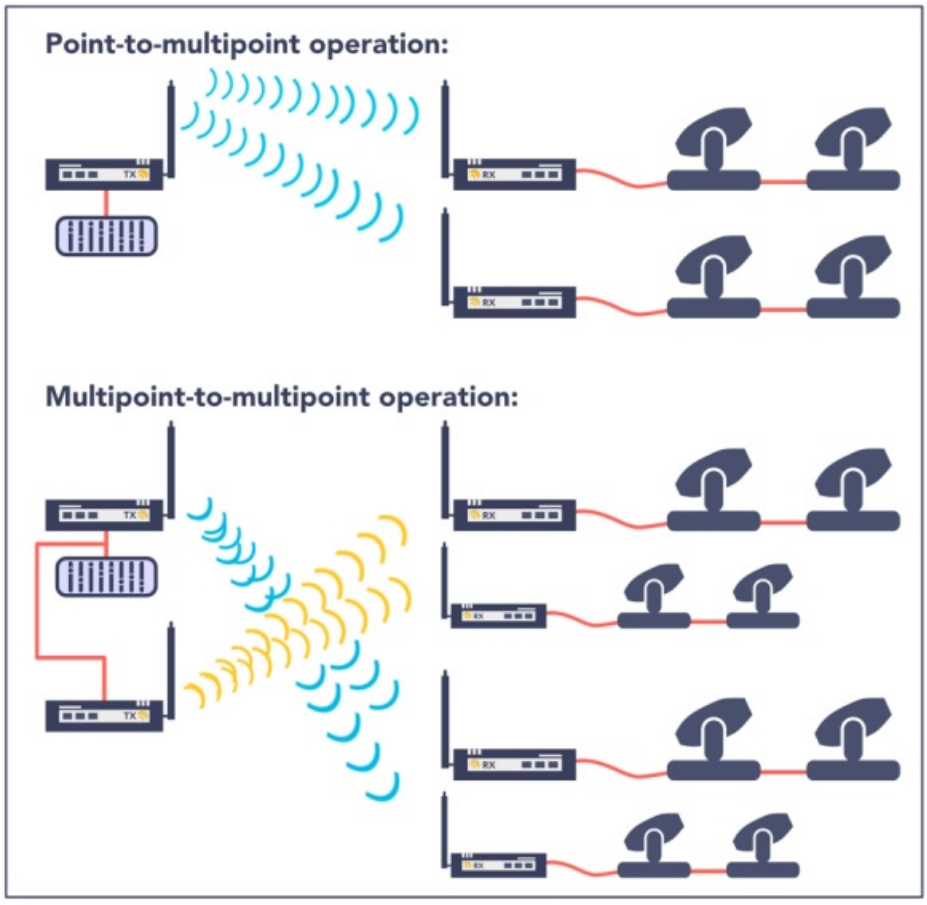
Most of our products are transceivers, meaning they can transmit or receive W-DMX™ signals, depending on how you set them up:

- | Product | TX | RX | RDM | WiFi |
|---|---|---|---|---|
| BlackBox G6 F-1 G5 | ✓ | ✓ | ✓ | (✓[1]) |
| BlackBox G6 F-2 G5 | ✓ | ✓ | ✓ | (✓[2]) |
| BlackBox G6 R-512 | | ✓ | ✓ | |

  All G6 products are backward compatible with Generation 3. To operate in compatibility mode, please refer to 6.5 in this manual. By using the product in a compatibility mode, you will lose some of the features present in other modes. Please refer to our helpdesk service if you want to find out more about which features you won't be able to use in compatibility mode.
- W-DMX™ G6 is compatible with CRMX™ protocol from LumenRadio AB. To use CRMX™ in your WDMX™ G6 product you will need to install the appropriate license on your device. This can be done using the W-DMX™ Configurator App.
- You may find W-DMX™ being used by several lighting manufacturers – this protocol, if specifically named "W-DMX™" will work in an identical way as a branded Wireless Solution product, and it is therefore compatible with our transmitters and receivers.

**The W-DMX™ Technology**
W-DMX™ is engineered by Wireless Solution Sweden to provide the same quality, reliability and performance as any wired DMX link. The technology allows you to establish point-to-point links, point-to-multipoint and multipoint-to-multipoint:

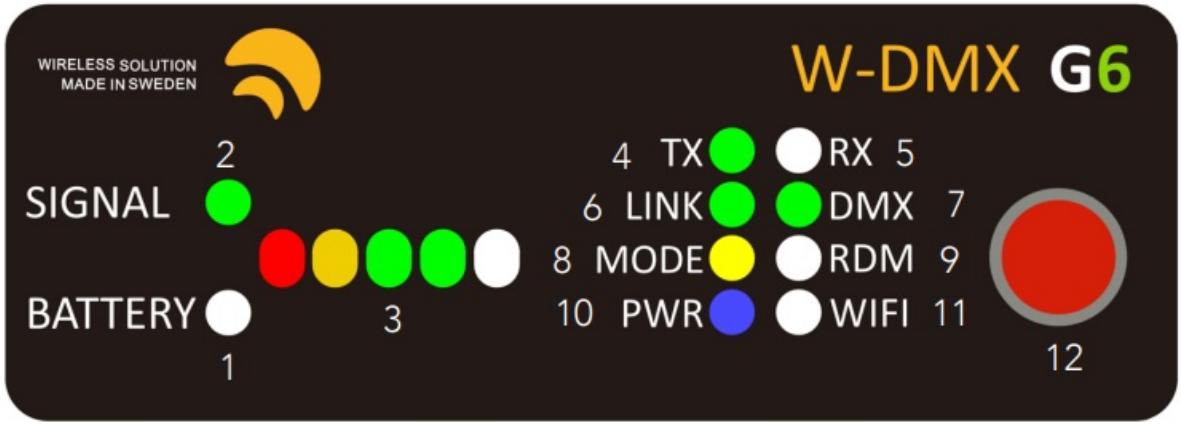


W-DMX™ is unique in its use of advanced radio technologies that are also used in mobile phones and military communication.
Rather than using fixed frequency channels, W-DMX™ uses Adaptive Frequency Hopping technology to continually check the radio channels for interferences and to rapidly move operations to clear radio channels. The checks are carried out in combination with another advanced technology: time division multiple access. This technology makes the most efficient use of every visited frequency channel.

## User Interface

Though the interface display appears simple, there is a lot of information you can read back, which will help you properly set up your system and help you understand how your devices are operating.

### F-1 and R-512 models




1. BATTERY Not used on the BlackBox series.
2. SIGNAL Indicates that the Signal status is showing signal strength.
3. SIGNAL STATUS On a receiver; indicates the received signal quality. On a transmitter; indicates the configured output power.
4. TX Device is operating as a transmitter.
5. RX Device is operating as a receiver.
6. LINK On a transmitter; states it's ready to establish a link.
    1. On a receiver;
        1. **Off:** not linked to any transmitter
        2. **On:** active link from a transmitter
        3. **Blinking:** Linked to a transmitter but the link is lost [either the transmitter is out of range or turned off].
7. DMX Indicates whether DMX data is present.
8. MODE Indicates the radio mode [See chapter 3.4].
9. RDM Flashes when there is RDM traffic activity.
10. PWR States the power condition of the device.
11. **WIFI Indicate WiFi status;**
    1. **Off:** No WiFi installed, or WiFi is disabled
    2. **On:** WiFi is enabled and a protocol configured.
    3. **Blinking slowly:** WiFi is enabled, but no protocol is configured.
    4. **Blinking rapidly:** WiFi is enabled and receiving ArtNet or Streaming ACN data.

**Red function button.**

**F-2 model**

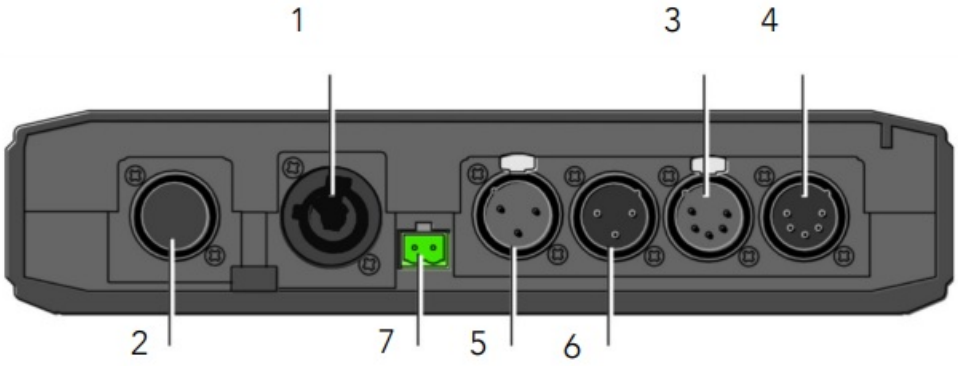
- Red function button Radio A
- TX Device is operating as a transmitter.
- LINK On a transmitter; states it's ready to establish a link.

**On a receiver**

- **Off:** not linked to any transmitter
- **On:** active link from a transmitter
- **Blinking:** Linked to a transmitter but the link is lost [either the transmitter is out of range or turned off].
- MODE Indicates the radio mode [See chapter 3.4].
- PWR States the power condition of the device.
- RX Device is operating as a receiver.
- DMX Indicates whether DMX data is present.
- RDM Flashes when there is RDM traffic activity.
- WIFI Indicate WiFi status;
  - **Off:** No WiFi installed, or WiFi is disabled
  - **On:** WiFi is enabled and a protocol configured.
  - **Blinking slowly:** WiFi is enabled, but no protocol is configured.
  - **Blinking rapidly**: WiFi is enabled and receiving ArtNet or Streaming ACN data.
- SIGNAL STATUS On a receiver; indicates the received signal quality. On a transmitter; indicates the configured output power.
- Red function button Radio B

## Hardware

**F-1 and R-512 models**




1. AC Power Supply connector, powerCON® TRUE1® 90- 250V / 50-440 Hz (for other voltage and frequency options, contact manufacturer)
2. WiFi antenna

   **NOTE:** Option to be purchased separately – contact manufacturer. Not available on R-512 model.

3. XLR female 5 pins [DMX out]
4. F-1: XLR male 5 pin [DMX in] R- 512: XLR female 5 pins [DMX out]
5. XLR female 3 pins [DMX out]
6. F-1: XLR male 3 pin [DMX in] R- 512: XLR female 3 pins [DMX out]
7. DC Power Supply Connector, 5.08mm

   **NOTE:** 12V DC power supply [Polarity marked on the box] ±20%, reverse polarity protected. Use a UL/ETL class 2 power supply.

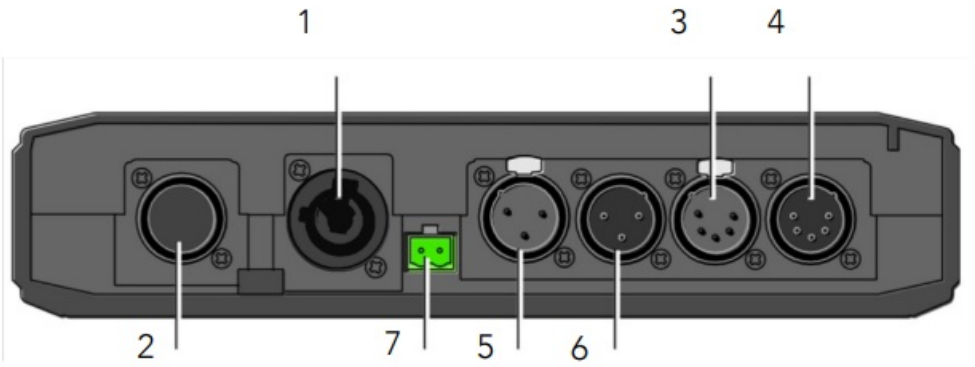
**Contents included**
When you purchase a new BlackBox, the following items are included:

- BlackBox device [F-1 or R-512]
- User Manual
- Antenna adapter [90 Deg]
- 3dBi antenna
- Mounting brackets
- Phoenix DC connector

**Working Temperature:** -10º to 45º Celsius, storage temperature -20º to 50º Celsius. Max. humidity 90% (non-condensing). For working conditions outside this limit, contact the manufacturer. Dimensions: W x D x H: 260 x 210 x 70 mm [10.2” x 8.3” x 2.8”] | Net: 1 Kg [2.2 lb.]

**NOTE:** Power cable is not included.

**F-2 model**




1. AC Power Supply connector, powerCON® TRUE1® 90- 250V / 50-440 Hz (for other voltage and frequency options, contact manufacturer)
2. WiFi antenna

   **NOTE:** Option to be purchased separately – contact manufacturer. Not available on the R-512 model.
3. XLR female 5 pins [DMX out Radio A]
4. XLR male 5 pins [DMX in Radio A]
5. XLR female 5 pins [DMX out Radio B]
6. XLR male 5 pins [DMX in Radio B]
7. DC Power Supply Connector, 5.08mm

**NOTE:** 12V DC power supply [Polarity marked on the box] ±20%, reverse polarity protected. Use a UL/ETL class 2 power supply.

**Contents included**
When you purchase a new BlackBox, the following items are included:

- BlackBox F-2 device
- User Manual
- 2pcs. antenna adapter [90 Deg]
- 2pcs. 3dBi antenna
- Mounting brackets
- Phoenix DC connector

**Working Temperature:** -10º to 45º Celsius, storage temperature -20º to 50º Celsius. Max. humidity 90% (non-condensing). For working conditions outside this limit, contact the manufacturer. Dimensions: W x D x H: 260 x 210 x 70 mm [10.2” x 8.3” x 2.8”] | Net: 1 Kg [2.2 lb.]

**NOTE:** Power cable is not included.

## Operation

All W-DMX™ G6 devices use similar user interfaces, however some model-specific differences may apply.

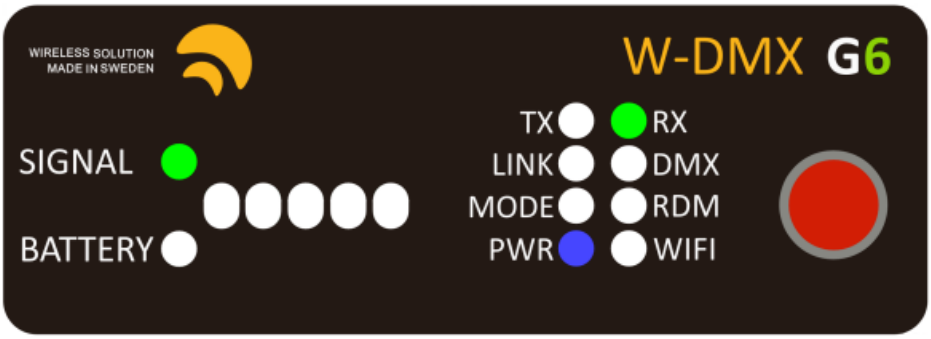
**Basic setup – Linking devices**
A basic setup is defined by the link between two devices. This means that, to send data from a transmitter to a receiver, it’s necessary to link the devices:

Press the red function button, on the transmitter momentarily and the LINK LED starts flashing.


**NOTE:** All available (currently unlinked) receivers, as long as they are turned on and compatible with the transmitter’s radio mode, will pair with this transmitter. The LINK LED of each receiver will flash for 5 seconds, and then stay static once linked up.
There is no limit of the number of receivers that can link up with a transmitter – there can be an infinite number of receivers all paired with a single transmitter.
**NOTE**: An F-2 in RX mode will not link RADIO B unless RADIO A is already linked. This is to allow easy linking to different transmitters.

**Unlinking devices**
There are two ways to unlink devices – individual unlink, or group unlink:

**Individual unlink:**
Press and hold the red function button, on each receiver that you wish to unlink, for at least 3 seconds. The LINK LED will turn off.




**Group unlink:**
Press and hold the red function button on the transmitter for at least 3 seconds. This will unlink all currently powered receivers that are linked to this transmitter.

**Linking multiple transmitters with multiple receivers**
When multiple receivers need to be linked up with different transmitters, repeat the process in 6.1., but turn off all receivers you do not wish to pair up. For example:

- If you have 2 transmitters and 10 receivers, pair the first transmitter to 5 receivers, while the last five are turned off.
- After that, turn the last five receivers, and pair them to the second transmitter.

  **NOTE:** This will not affect any receiver that has already been paired up.

**Switching FLEX mode**
All units identified as transceivers can be changed between transmitter or receiver – the units capable of operating in both modes are listed in chapter 2.
FLEX mode determines if the unit is used in transmit mode (TX) or receive mode (RX):

1. Press the red function button rapidly 5 times.
2. Press and hold the red function button for at least 3 seconds.
3. The LINK and DATA LEDs will flash alternating.
4. Each time you press the red function button you will step through the available modes, this will be indicated by a flashing RX or TX LED.
5. Press and hold the red function button

**Changing the FLEX mode of an F-2 unit**
In an F-2 unit, the FLEX mode works the same as above, however, both universes are controlled using the RADIO A red function button.

- **TX – TX:** Both universes operate as transmitters
- **RX – RX:** Both universes operate as receivers

**Changing MODE**
There are a few operating modes within all W-DMX™ products using different generations of the communication protocol. The W-DMXTM G6 supports several modes to maximize compatibility with different generations of equipment. When operating as an RX the device will automatically switch to the correct mode depending on the

mode of the transmitter that is linking to it. The following modes are supported when operating as an RX:

| | MODE LED |
|---|---|
| G3 | Green |
| G4 | Red |
| G4S | Violet |
| G5 | Amber |
| CRMX³ | White |

While operating as a TX you can change between modes at any given moment:

1. Press the red function button rapidly 3 times.
2. Press and hold the red function button for at least 3 seconds.
3. Each time you press the red function button you will step through the available modes; this will be indicated by the MODE LED.
4. Press and hold the red function button to save and exit.

**NOTE:** When operating as TX, some modes are not supported.
**NOTE:** All changes shall be made to the transmitter. It's necessary to re-link all receivers after changing control modes.

**W-DMX™ Configurator app & Bluetooth**
All configuration and operation can be performed from the W-DMX™ Configurator app that is available from the App Store on iOS and Google Play on Android.



W-DMX™ Configurator app, search for "W-DMX Configurator" on the App Store or Google Play.
**Setting PIN code**
To avoid unauthorized access to W-DMX™ G6 devices, it is recommended to set a PIN code for your device. This is done from the W-DMX™ Configurator app.

**Reset PIN code**
If you have forgotten your PIN code, you can reset it by following the following procedure:

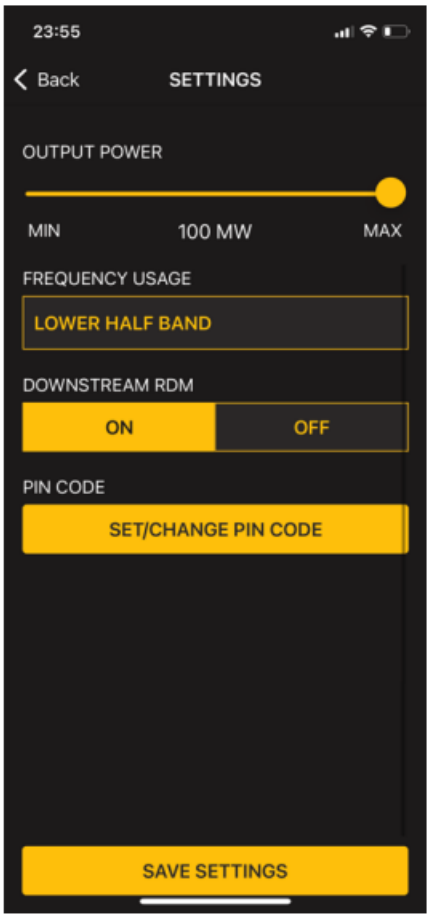
1. Press the red function button rapidly 7 times.
2. Press and hold the red function button for at least 3 seconds.
3. The device will now reboot with the PIN code disabled.

**Turning Bluetooth on/off**
The MODE LED will flash with a blue light every two seconds when Bluetooth is enabled. When Bluetooth is disabled, no blue flashes will appear on the MODE LED.

Bluetooth can be switched on or off at any time:

1. Press the red function button rapidly 2 times.
2. Press and hold the red function button for at least 3 seconds.
3. The device will now reboot with the Bluetooth mode toggled.

**RDM**
As default, all products come with RDM disabled. To use RDM, this must be enabled from within the W-DMXTM Configurator app.




The changes must be done on the transmitter and on each receiver that needs to do downstream RDM.

**Frequency usage**
Sometimes some cases require some extra frequency planning. To make this easier for you, the W-DMXTM Configurator app provides some pre-set options for frequency usage;

- Full band
- The lower or upper half
- Lower, mid or upper third

Selecting any of these settings, except for the Full band, limits the device's frequency hopping so that it leaves the other parts of the bands untouched.

**Upgrades and Updates**
Before starting to install any upgrade options, make sure you have updated to the latest firmware version.

**WiFi upgrade**
The WiFi upgrade pack comes with detailed instructions on how to install the WiFi module and how to configure it.

The WiFi module supports ArtNet I/II/III with RDM and Streaming ACN.

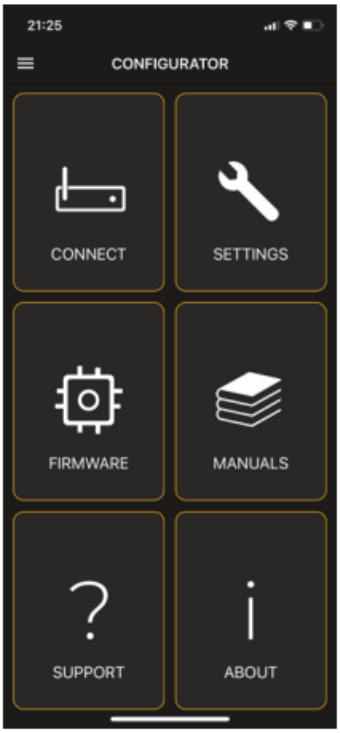
**CRMX™ upgrade**
CRMX™ – the radio protocol of LumenRadio's wireless DMX and RDM systems – can be used by your BlackBox G6 units. It requires a software option that can be purchased separately.
Install the option using the W-DMX™ Configurator app.

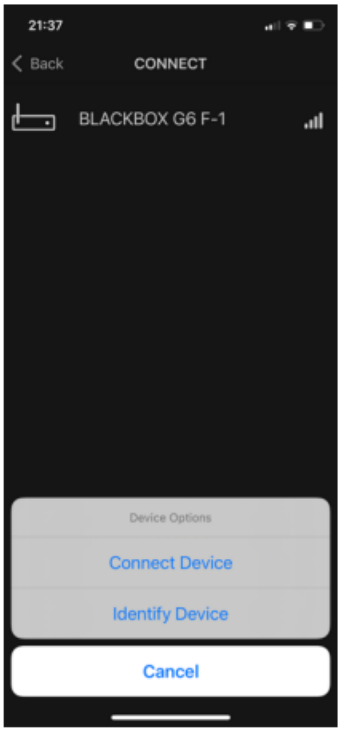
**Firmware Update**
Wireless Solution is committed to developing and improving its wireless technology – this means that we now and then release new firmware versions. Sometimes it might be added functionality, but since even the best makes mistakes sometimes – we might release bug fixes also. All G6 products is updateable, either via the W-DMX™ G6 update cable or – more conveniently – via our W-DMX™ Configurator App for iOS and Android.

New firmware versions can be found on Wireless Solution's portal at **https://my.wirelessdmx.com** or will be downloaded automatically in the W-DMX™ Configurator app.

**Instructions for installing firmware updates from the app**

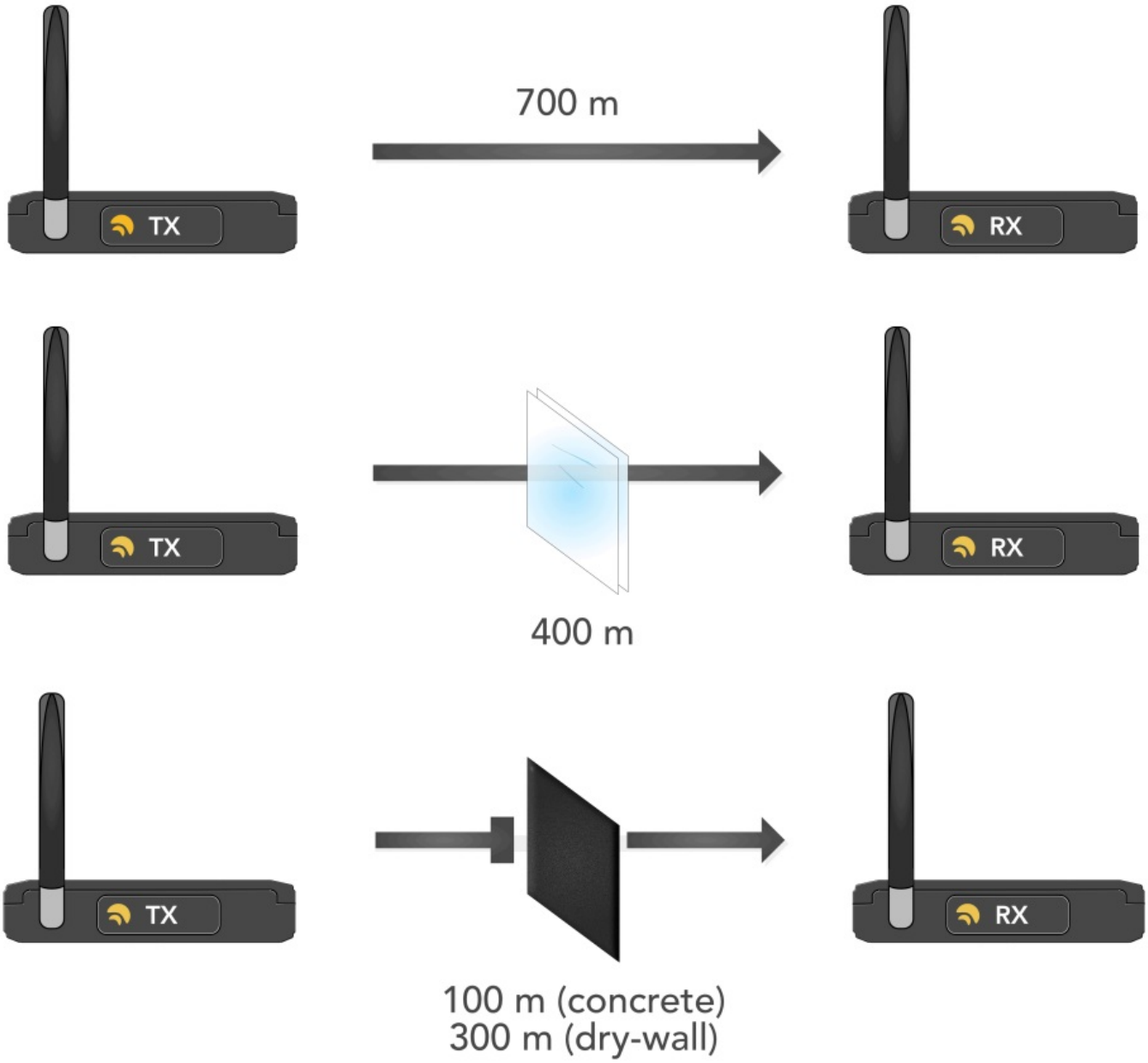
1. Start the W-DMX Configurator app on your iOS or Android device.
2. Click "Connect" and you will be presented with a list of nearby devices. The list is sorted by an approximated distance.
3. Click a device in the list and choose "Identify Device" if you are unsure which unit to connect to.
4. Click "Connect Device" to connect to the desired device.
5. In the main screen of the app, click "Firmware" to automatically update to the latest firmware for your device.




**Tips & tricks**
Some several tips and tricks could make your wireless transmission work better. Here's a few that should be followed:


It’s important that all antennas point to the same axis – wireless waves have a radial pattern that should be valued. There are a number of accessories that can help maintaining directionality.




There are limitations to how wireless waves propagate through air. Physical barriers like glass, concrete and walls will limit the transmission range. Always try to have a clear line of sight between transmitters and receivers.

Compliance Information

**FCC**

**FCC IDENTIFIER: XRSTIMOMWAN201**

**FCC Information to User**
This product does not contain any user-serviceable components and is to be used with approved antennas only. Any product changes or modifications will invalidate all applicable regulatory certifications and approvals

**FCC Guidelines for Human Exposure**
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

**FCC Declaration of Conformity**
We Wireless Solution Sweden AB, Majorebergsgatan 2, 451 75 Uddevalla, Sweden, declare under our sole responsibility that this product complies with Part 15 of FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

**FCC Radio Frequency Interference Warnings & Instructions**
This equipment has been tested and found to comply with the limits for a Class B digital device, under Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment uses and can radiate radio frequency energy and, if not installed and used by 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 or more of the following methods:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment to an electrical outlet on a circuit different from that which the radio receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

Modifications made to the product, unless expressly approved by Wireless Solution Sweden AB, could void the user’s right to operate the equipment.

**Industry Canada**
This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

**CE**
This product complies with the Essential Requirements of RED (Radio Equipment Directive) of the European Union (2014/53/EU). This product meets the requirements of relevant conformance standards. A detailed Declaration of Conformity is available upon request from the manufacturer.

**UKCA**
This product complies with the relevant statutory requirements in the United Kingdom. This product meets the requirements of relevant conformance standards. A detailed Declaration of Conformity is available for market surveillance upon request from the manufacturer.

## Warranty

Wireless Solution Sweden AB warrants this W-DMX™ branded hardware product against defects in materials and workmanship under normal use for a period of ONE (1) YEAR from the date of purchase by the original end-user purchaser (“Warranty Period”).
Products to be returned under warranty must be accompanied by an RMA Authorization Number. Wireless Solution AB does not warrant that the operation of the product will be uninterrupted or error-free. The manufacturer is not responsible for damage arising from failure to follow instructions relating to the product’s use.

helpdesk@wirelessdmx.com
Wireless Solution Sweden AB
Majorebergsvägen 2, 451 75 Uddevalla, Sweden

## FAQ

- **Q: How do I connect the BlackBox G6 system to a power source?**
  - A: The BlackBox G6 system must be connected to a properly grounded power source. Follow the instructions provided in the safety information section of the user manual to ensure a safe and correct connection.
- **Q: Can I use multiple BlackBox G6 systems simultaneously?**
  - A: Yes, multiple BlackBox G6 systems can be used simultaneously. Each system operates on its unique frequency to prevent interference between systems.

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## Documents / Resources

| | |
|---|---|
|  | W-DMX F-1 BlackBox G6 WDMX BlackBox F1 G6 Transceiver [pdf] User Manual<br>F-1 BlackBox G6 WDMX BlackBox F1 G6 Transceiver, F-1 BlackBox G6, WDMX BlackBox F1 G6 Transceiver, BlackBox F1 G6 Transceiver, G6 Transceiver, Transceiver |

## References

- Manual-Hub.com - Free PDF manuals!
- RMA
- User Manual