blackbird FX BLE

Overview

Introducing the cutting-edge blackbird FX BLE, our latest addition to our renowned series of IP65 rated CRMX Wireless DMX devices. Building upon the success of our previous FX and RX models, the blackbird FX BLE sets a new standard with its advanced Lumenradio module, housed in a robust yet lightweight casing crafted from aerospace-grade aluminium 6061, known for its exceptional durability.

Experience seamless connectivity like never before with the incorporation of Bluetooth technology, allowing effortless pairing and convenient settings adjustment via dedicated mobile iOS or Android apps. The blackbird FX BLE supports RDM to remotely control compatible lighting fixtures or devices, like LED controller.

Elevating user safety and ease, this device is equipped with enhanced secure features and mounting options, ensuring reliability and efficiency in every work scenario. Answering the demands of our valued community, the blackbird series boasts an internal battery robust enough to sustain continuous operation throughout a full working day.

Moreover, its intelligent load share technology enables simultaneous charging and usage, guaranteeing an uninterrupted workflow. Streamline your workflow with the blackbird FX BLE - the epitome of reliability, innovation, and efficiency in wireless DMX technology.

Did I mention?
The blackbird series boasts an impressive IP65 certification. That's right! It's designed to thrive even in the harshest weather conditions, ensuring uninterrupted operation during heavy rain or snow.

Features

- CNC-milled housing from industry-grade 6061 aluminium
- IP65 class rated housing
- builtin rechargeable Li-Ion battery
- intelligent load-sharing technology
- 3/8" thread mount for industry standard screw
- Supports DMX512-A (ANSI E1.11) and RDM (ANSI E1.20)[1]
- DMX fidelity and frame integrity
- DMX frame rate and frame size auto sensing
- Fixed 5 ms end-to-end latency
- Connectivity based on Bluetooth Smart (BLE), allowing for easy connection from any phone or tablet
- Cognitive coexistence – dynamically avoids occupied 2.4GHz frequencies
- Automatic legacy (W-DMX G3, G4 and G4S) compatibility mode
- Receives CRMX[2], CRMX Classic, W-DMX G3, G4, G4S and G5
- Transmit CRMX Classic, W-DMX G3 or G4S
- Settings can be changed via the Lumenradio's Toolbox app

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[1] RDM support only in RX receiver mode

General Functionality

- Wireless Connectivity   Lumenradio CRMX Technology
- Wireless Protocols   DMX/RDM (CRMX, WDMX), Bluetooth
- IP protection class   IP65 housing[1]
- Built-In Battery   rechargeable Li-Ion battery 2.600mA[2]
- Temperature working range   -20°C - +40°C
- Antenna connector   RP-TNC female
- Antenna   high quality RP-TNC male, 2.5dBi
- Housing   industry-grade 6061 aluminium
- USB Connector   micro USB, min. 1A power supply
- Power IN/OFF   mandatory IP67 switch with blue LED indication
- XLR Connector   Neutrik XLR 5 or XLR 3[3] female, with Neutrik male/male adapter
- DMX / RDM Data   In Transmitter TX mode
    - DMX IN via XLR cable
    - Support for DMX512-A (ANSI E1.11)

    In Receiver RX mode
    - DMX OUT via XLR cable
    - supports DMX512-A (ANSI E1.11) and RDM (ANSI E1.20)
- Dimensions   117mm x 82mm x 29mm (w/o cable & antenna)
- Weight   346g

LED Indicators and User Interface

LED Indicators

"full"	green	the battery is fully charged
"charge"	orange	while charging
"low"	red	the battery charge is below 20%
"dmx"	green	receiving a valid DMX signal
"signal"	red	CRMX/WDMX signal is below 10% or transmitter is not in reach (off in TX mode)
"status"	blue	indicates different statuses of the unit - see following pages

! Note: if the blackbird FX BLE is in receiver mode and is not linked to a known transmitter all LEDs are off !

User Interface

Link Button   ⊙   for change FX modes or link/unlink procedure

[1] The DMX connector is a standard Neutrik XLR with IP40. IP65 option is available on request
[2] 2.600mAh - when fully charged, the battery lasts approx. 24 hours in receiver RX mode
[3] Standard on order is XLR5. XLR3 connector is available on request

Wireless DMX Interface and Usage

The new blackbird FX BLE is based in a very new hardware. This allows you to use Lumenradio's Toolbox app via Bluetooth to change settings. The app is freely available for iOS and Android.

With this app you can change settings, like RX / TX mode change, transmitting power, DMX behavior on signal loss, or easily update your blackbirds to the latest Lumenradio firmware.

There are also Lighting Control apps available which you can control your lights thorugh Bluetooth without the need of having a lighting console.

Note: A new blackbird FX BLE is normaly preconfigured as a receiver RX.
          You must perform the following steps to switch to transmitter (TX) mode.

If you want to change the FX modes without the app, you can simply do this directly by executing a specific sequence by pressing the LINK button on your blackbird FX BLE.

1) Press the link button ◎ 5 times, followed by one long press will enter FX mode selection.

2) Now the status LED starts flashing to indicate the currently selected FX mode (see diagrams below for details).

3) Each short press will toggle the currently selected FX mode.

4) To save your selection, perform a long press ◎ until the LEDs change behavior. This saves the selection and reinitializes the module.

Note: If no selection is made within 15 seconds of the last button being pressed, the mode selection is canceled and normal operation continues in the previously selected FX mode.

STATUS LED indication

Indication when changing TX / RX mode:

Flashing fast: Receiver mode selected

Flashing slow: Transmitter mode selected

In Transmitter mode TX:

Transmitter is in standby mode, but is not getting any active valid DMX data

Transmitter receives valid DMX data

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Transmitter searchs for available (unlinked) receiver

Transmitter unlinks connected (linked) receiver[1]

In Receiver mode RX:

Receiver is not linked to a known transmitter[2]

Receiver is bound/linked to a transmitter, but not in reach - no active radio signal

Receiver is linked and connected to a transmitter. Not receiving valid DMX data

Receiver is linked and connected to a transmitter. Receiving valid DMX data

LINK / UNLINK PROCEDURE

In Transmitter mode TX:

Linking

1)   Ensure the unit is powered and the antenna is attached

2)   On the blackbird FX BLE perform a short press on the LINK button ◎

3)   The unit will search for any unlinked receiver. The receiver STATUS LED will flash for 10 seconds, normal operation will resume

4)   The STATUS LED then lights up constantly when the device has been successfully connected

UnLinking

1)   Unlink only one receiver: press and hold the LINK button ◎ on the receiver for longer than 3 seconds to unlink. All LEDs will go off

2)   Unlink all receivers: On the transmitter, press and hold the link button ◎ for longer than 3 seconds to unlink all linked receivers

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[1] This puts the receiver back to unlinked mode. This is very useful if a transmitter needs to be replaced. With the new transmitter, easily perform a search to re-link the previous unlinked receiver
[2] In this state, press LINK on a transmitter to simply connect this unit.

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In Receiver mode RX:

Linking

1) Ensure the unit is powered, the antenna is attached and it is not bound/linked to a transmitter
   All LEDs are off (dmx, signal, status)

2) On the transmitter perform a short press on the LINK button ◎

3) The transmitter will search for any unlinked receiver. The receiver STATUS LED will flash for 10 seconds, normal operation will resume

4) The STATUS LED then lights up constantly when the device has been successfully linked

UnLinking

1) Unlink a receiver from a transmitter: press and hold the LINK button ◎ on the receiver for longer than 3 seconds to unlink. All LEDs will go off

2) Unlink all receivers: On the linked transmitter, press and hold the link button ◎ for longer than 3 seconds to unlink all linked receiver

Troubleshooting

Just in case that something does not go as expected, we have this section for you to help

- „Signal" LED shows continously red.
  Issue ->   Radio signal quality is below <10% or no signal at all

  Solution ->   Try to get a better radio signal by avoiding obstacles such as walls or metal fences.
  You get the best radio signal when you have line of sight to the transmitter.
  Distance tested in the field: approx. 400 m (line of sight)

- No DMX data on the DMX fixture / device
  Issue ->   There are many things that could be the reason for this. Try following:

  Solution ->   Check the DMX LED on your blackbird FX BLE - should be green (receiving DMX data)
  If the transmitter sends valid DMX data
  If the radio signal level strength is over 10% (no red LED)
  If the correct transmitter is linked to
  or if something wrong with the DMX cable(s)

Need more help? Get in contact with your local dealer or directly with us @ www.radicalwireless.com

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Approvals & Certificates

CE - Certification of Compliances:

- TiMoTwo FX comply with the European Union (2014/53/EU), ETSI EN 300 328 V2.2.2

- blackbird FX BLE corresponds to CE & RoHS (2011/65/EU)

- EMC/EMV tested according EN 55022 Class B RE

- IP class rating test: EN 60529:1991 + A1:2000 + A2:2013 & IEC 60529:1989 + A1:1999 + A2:2013

FCC:

- FCC part 15 modular approval - 15.247 - approval to 100mW

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