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**Overview**

The blackbird RX RDM is our first IP65 rated CRMX Wireless DMX RDM receiver. A strong, reliable and lightweight housing made out of aluminium, integrates the same Lumenradio based hardware like our tiny sparrow series. A couple of safety and mounting features gives the user a much better experience and reliability at work. We could also follow a strongly request by our community: the blackbird series features an internal battery, which is strong enough to stay linked a whole working day. To make the experience even smoother, an intelligent load share technology let's you can charge and use the blackbird RX at the same time.

- made out of industry-grade aluminium
- IP65 class rated housing
- internal rechargeable Li-Ion battery
- intelligent charging
- 3/8" thread for industry standard screw
- Supports DMX512-A (ANSI E1.11) and RDM (ANSI E1.20)<sup>1</sup>
- Cognitive coexistence – dynamically avoids occupied 2.4GHz frequencies
- DMX fidelity and frame integrity
- DMX frame rate and frame size auto sensing
- Fixed 5 ms end-to-end latency
- Automatic legacy (W-DMX G3, G4 and G4S) compatibility mode

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<sup>1</sup> RDM support only for RX or FX in RX mode selection



## General Functionality

- micro USB, min. 1A power supply
- integrated Li-Ion battery<sup>2</sup>
- temperature working range: -20°C - +40°C
- IP class: IP65 housing<sup>3</sup>
- antenna connector: RP-TNC female
- antenna: RP-TNC male, 2.5dBi
- housing: industry-grade aluminium
- connector: USB mini for charge or continuously power
- on/off switch with blue LED indication
- DMX:

### blackbird FX:

Transmitter TX (FX mode configured as transmitter)

- DMX IN
- supports DMX512-A (ANSI E1.11)
- Neutrik XLR 3 or XLR 5 female, with Neutrik male/male adapter

Receiver RX (FX mode configured as receiver)

- DMX OUT
- supports DMX512-A (ANSI E1.11) and RDM (ANSI E1.20)
- Neutrik XLR 3 or XLR 5 female

### blackbird RX RDM:

- DMX OUT
- supports DMX512-A (ANSI E1.11) and RDM (ANSI E1.20)
- Neutrik XLR 3 or XLR 5 female
- range ~400m (line of sight)
- battery duration w/ full charge ~24h

## Dimensions

size: 117mm x 82mm x 29mm (w/o cable & antenna)

weight: 346gram

## Keyboard and User Interface

### Charging the blackbird series:

"full" LED: shows **green** when charging is finished




"charge" LED: shows **orange** while charging

"low" LED: shows **red** if the capacity is below 20%

## Wireless DMX Interface

Note: A new blackbird FX is pre-configured as a receiver. You need to follow the steps below to switch to transmitter mode (TX)

### -> changing FX mode TX <-> RX <-

- 1) Press the link button  5 times, followed by one long push will enter FX mode selection.
- 2) Now the status LED will start flashing to indicate the currently selected FX mode (refer to diagrams below for details).
- 3) Each short push  will toggle the currently selected FX mode.
- 4) To save the selection, perform a long push . This will save the selection and re-initialize the module.

Note: If no selection is made within 15 seconds from the last push, mode selection will be cancelled and normal operation will resume in the previously selected FX mode.

Flashing fast: Receiver mode selected



Flashing slow: Transmitter mode selected



<sup>2</sup> 2.600mAh - on full charge lasts for RX model approx. 24h

<sup>3</sup> Standard Neutrik XLR5 or XL3 -> IP40. IP65 option available

## The „Status“ LED

### blackbird FX:

**Transmitter TX** (FX mode configured as transmitter)  
"dmx" LED: shows **green** if receiving a valid DMX signal  
"signal" LED: is off in TX mode  
"status" LED: shows **blue** for different working states:

**Receiver RX** (FX mode configured as receiver)  
"dmx" LED: shows **green** if receiving a valid DMX signal  
"signal" LED: shows **red** if the signal is below 10% or no signal  
"status" LED: shows **blue** for different working states:  
(see below for blackbird RX)

Transmitter is stand-by/linked, but no active DMX data:



Transmitter is linked. Receiving DMX data:




Transmitter searching/linking for available receiver:





Transmitter unlinking receiver:



## Linking

1. Ensure the antenna is connected. The unit is powered.
2. On the transmitter, a short press on the link-button .
3. The transmitter will search for any unlinked receiver. The receiver's status LED will flash for 10 seconds, normal operation will resume.
4. The status LED will change to a steady on-state afterwards if linked successfully.

## UnLinking

1. Unlink one receiver: press and hold the link button  on the receiver for more than 3 seconds to unlink. Their status LED will go off.
2. Unlink all receivers: On the transmitter, press and hold the link button  for more than 3 seconds to unlink all linked receivers.

### blackbird RX RDM:

"dmx" LED: shows **green** if receiving a valid DMX signal  
"signal" LED: shows **red** if the signal is below 10% or no signal  
"status" LED: shows **blue** for different working states:

Receiver is not linked to a transmitter:



Receiver is linked, but not connected to a transmitter - no active radio signal:



Receiver is linked and connected to a transmitter. No active DMX data:



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



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## Linking

1. Ensure the antenna is connected. The unit is powered and it's not linked already - status LED is off, DMX & signal is off
2. On the transmitter, 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 will change to a steady on-state on successfully linked receivers.

## UnLinking

1. Unlink one receiver: press and hold the link button  for more than 3 seconds to unlink from a transmitter. The status LED will go off.
2. Unlink all receivers: On the transmitter, press and hold the link button  for more than 3 seconds to unlink all linked receivers.

## Troubleshooting

- „Signal“ LED shows red. Radio signal quality <10% or no signal at all.
  - Solution -> Try to get a better radio signal by avoiding obstacles, like walls. The best radio signal you'll get by line of sight to the transmitter. Tested distance on field: around 400m (line of sight).
- No DMX data on DMX fixture:
  - Check the DMX LED (green - receiving DMX data), if the transmitter sending correct DMX data, the radio signal strength, or the DMX cable.
- Status LED is flashing continuously slow, regardless any function:
  - please contact your local dealer for help.



Need more help? See our support files @ [www.radicalwireless.com](http://www.radicalwireless.com)

Note: subject to change without further notice.

## Approvals & Certificates

### CE - Certification of Compliances:

- TiMo RX RDM and TiMo FX RDM comply with the European Union (2014/53/EU), ETSI EN 300 328 V1.8.1 & V1.9.1
- tiny sparrow TX, tiny sparrow RX 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&68 Class B



### Order numbers:

blackbird FX:	A0301 (standard with XLR5 female) A0301-3 (XLR3 female) A0301-IP65 Neutrik XLR5 IP65 option A0301-3IP65 Neutrik XLR3 IP65 option
blackbird RX RDM:	A0302 (standard with XLR5 female) A0302-3 (XLR3 female) A0302-IP65 Neutrik XLR5 IP65 option A0302-3IP65 Neutrik XLR3 IP65 option