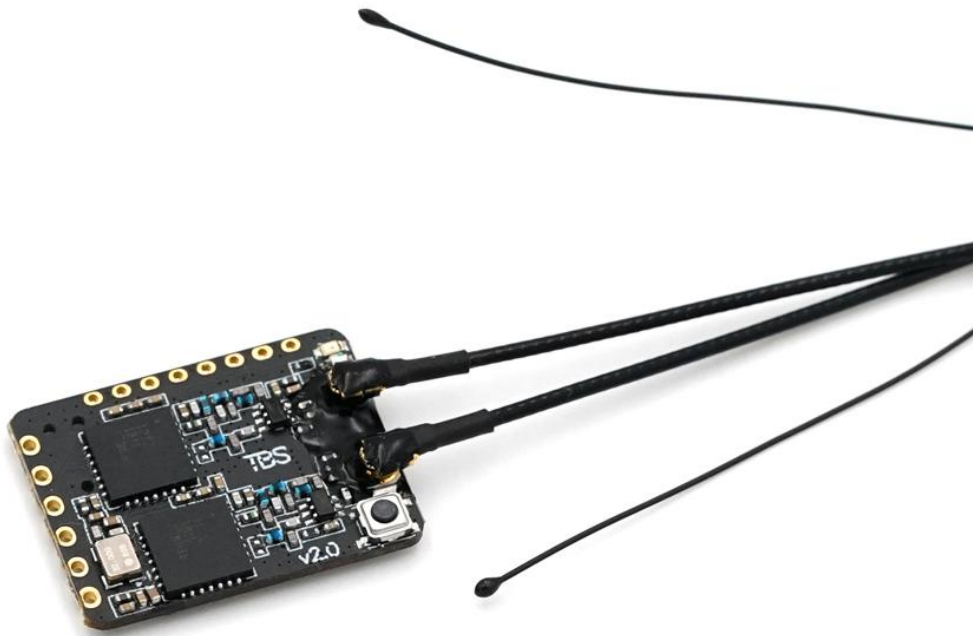# TBS CROSSFIRE Nano diversity RX

Quickstart guide

The CROSSFIRE Diversity Nano RX is the TBS CROSSFIRE Diversity 8ch RX in a nano package. Next level reliability and range in a form factor that will blow minds.

The small size allows you to save space and weight, while still retaining the key features that make the CROSSFIRE system flexible and reliable.

Key features:

- Super compact, only 24 x 18 mm (1.8g)
- Same feature set like TBS CROSSFIRE DIVERSITY RX receiver (Redundant RF stages, 1s backup battery circuitry for RF beacons, SBUS, CRSF, SmartAudio, MAVLInk, Serial Bridge, FLARM)
- Telemetry support
- Full range receiver
- 5V voltage input
- Integrated backup battery charger - **no over-discharge protection, use a battery with BMS**!
- 2.54mm pitch front connector and 2mm pitch side connector

Note:

*** Firmware 2.87 or newer required! ***

How to: Update TX / Update RX

Wiring receiver

The receiver does not come with any connectors on-board, this is intending to allow for flexible and more varied setups, i.e. it is easier to add a connector than to remove a pre-soldered one.

Use normal servo-wires to either connect directly to the soldering pads/vias or use a 2.54mm pin header to mount it to a motherboard.
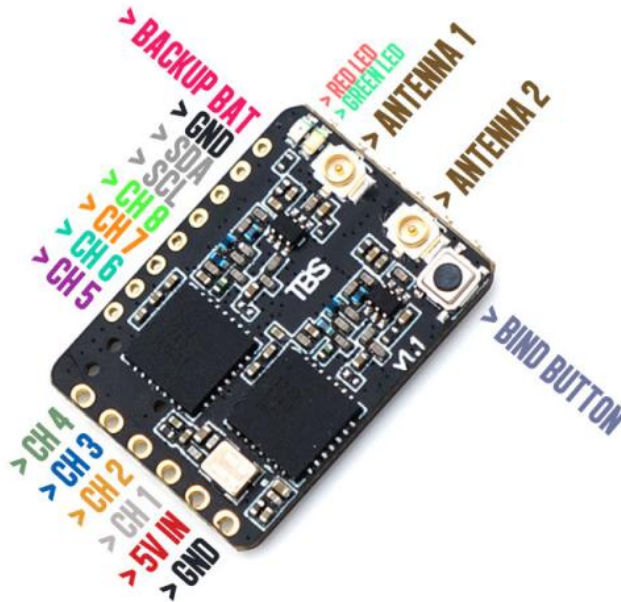
Output CH1 to CH8 are multi-purpose and support the below functionality.

Receiver pin	Output type Diversity RX (Nano)	Default value
1	PWM CH1 (PWM Ch1 to 12), PPM, RSSI, LQ, RSSI/LQ, CRSF TX	PWM Ch. 1
2	PWM CH2 (PWM Ch1 to 12), RSSI, LQ, RSSI/LQ, CRSF RX	PWM Ch. 2
3	PWM CH3 (PWM Ch1 to 12), RSSI, LQ, RSSI/LQ, SBUS, n.i.SBUS, Serial TX, MAVLink TX, CRSF TX, DSMX, SmartAudio	PWM Ch. 3
4	PWM CH4 (PWM Ch1 to 12), RSSI, LQ, RSSI/LQ, Serial RX, MAVLink RX, CRSF RX	PWM Ch. 4
5	PWM CH5 (PWM Ch1 to 12), RSSI, LQ, RSSI/LQ, Serial RTS	PWM Ch. 5
6	PWM CH6 (PWM Ch1 to 12), RSSI, LQ, RSSI/LQ, Serial RTS	PWM Ch. 6
7	PWM CH7 (PWM Ch1 to 12), RSSI, LQ, RSSI/LQ, Serial RX, MAVLink RX, CRSF RX	PWM Ch. 7
8	PWM CH8 (PWM Ch1 to 12), RSSI, LQ, RSSI/LQ, SBUS, n.i.SBUS, Serial TX, MAVLink TX, CRSF TX, DSMX, SmartAudio	PWM Ch. 8

TBS CROSSFIRE
true connectivity

Receiver LED Color

Receiver LED indicators	Description
Solid green	The link is up and running OK
Solid red	No packages received from the transmitter and receiver is in failsafe mode
Slow red blinking	The receiver needs an update, confirmation on the TX is required
Slow green blinking	The receiver is in binding mode/ Find mode active
Fast green blinking	Receiver bootloader active or firmware upgrade running
Green is flashing	diversity RX is in Find-mode (up to 1 min. delay between flashing)
Double green blinking	Authentication running/ error. Rebind your receiver if it remains longer than a few seconds
Red/ Green blinking, any pattern	firmware issue, run the emergency update for the receiver, then rebind it

LiPo LED indicator	Status
Red blinking	Backup battery is charging
Solid red	Backup battery is fully charged

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Antenna

The antennas use a U.FL connector. Connect the antenna with the U.FL connector to the socket on the receiver. To ensure that it does not disconnect or unseat, run the coax cable across the receiver board over to the servo channel end and secure it with the heat shrink tubing.

Binding

Make sure you have updated the firmware to at least version 2.87! The binding is super simple.

1. Power up the TBS CROSSFIRE transmitter
2. On the standard transmitter, enter the configuration menu by pressing and holding the joystick for 3 seconds, select "General" and "Binding" - a message "Binding" will start blinking, waiting for the receiver. On the micro transmitter, a short press on the button will initiate binding mode.
3. Power up the receiver (without pressing the Bind button!), if your receiver has not been previously bound, it will automatically bind. Otherwise, press and release the "BIND" button on the receiver to initiate binding. You need to push the button within one minute to avoid the timeout. If the status LED starts flashing slowly the receiver has switched successfully to bind mode.
4. Within a few seconds, the process will finish with a "Binding complete" message on the standard transmitter, or a solid green LED on the micro transmitter. If it doesn't bind, please verify that your firmware is to the newest version on both the receiver and the transmitter. You may want to bind through the LUA script on the Micro TX to walk through the wizard on the firmware update.

BST connectivity

The TBS CROSSFIRE Diversity Nano RX comes with a fully-featured BST port. To connect it to other devices like TBS CORE PRO, FPVision layer, GPS, or other TBS peripherals, a custom cable needs to be made. BST connector usually has 5 pins, but on the CROSSFIRE Nano RX only SDA, SCL, and GND have to be connected. The best practice is to use a BST cable, cut the connector on one, and cut the unused wires on the other connector. Then solder the required wires accordingly.

BST cable pinout:

Further Information

This manual is a quick start guide that does not include all functions and information in detail or at all.

For further information check the official TBS CROSSFIRE manual:

English version/ German version