

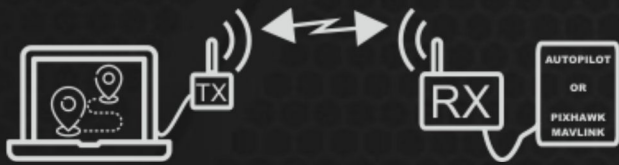
New Version 2020

To work from 15-30Km

Range max. 100Km



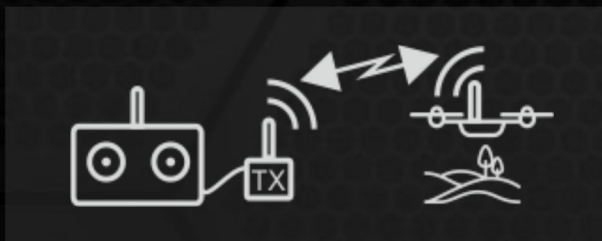
Transparent Data Link / Mavlink Telemetry



AES 128 Encryption



Radio Control



Vehicles

DRONES, UAV, MULTIROTORS, RPAS, VANT, UAV,
 AIRCRAFT, HELICOPTERS, UUV, UGV, ROV, USV, ASV,
 CARS, BOATS, ROBOTS...



www.xlrs.eu

BTSD1 Transmitter and RXLRS Receiver



ISM band 863-950Mhz
or 433Mhz

Radio Control

Transparent /Mavlink
Data Link

AES128
Encryption



Professional system prepared for all types of FPV applications with 500mW RF Power and -110dBm sensitivity to work between 15-30Km (LOS) and with a maximum range of 100km.

NEW

Version 2

By default it has: Radio Control, Transparent/Mavlink Data link and AES128 Encryption.

New RXD1, the mixes are performed on the standar RC transmitter.



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Radio Control

Connect the trainer port of your standard RC Transmitter (Futaba, Hitec, Spektrum, Sanwa, Tactic...) to the SPPM input of the BTSD1 and will automatically detect the Joysticks and channels of the RC transmitter.

The mixes are performed on the standar RC transmitter.

BTSD1 is powered through the USB port at 5V but also if you need it you can use a DC-DC converter and feed through its RC transmitter or using an external battery.

Radio Encrypted



The system uses AES 128 encryption, The Radio Control information and the data of the radiomodem (Data Link Transparent) or Mavlink Telemetry are encrypted.

Compatibility with autopilots and route software



The XLRS system is compatible with any autopilot that works with the Mavlink protocol: Pixhawk, Pixhawk Cube, APM, Mini Pix, etc.

Is also with any route software with mavlink protocol: Mission Planner, QGround Control, etc.



BTSD1 - Route Software

On the ground BTSD1 Transmitter sends and receives data via USB or TTL serial port.

RXD1 - Autopilot or other devices

The RXD1 receiver connects directly to the autopilot through the MODEM port and can also connect the SPPM (Serial PPM) output to send up to 16 servos to control them from the autopilot.



RXD1

Professional Receiver

Radio Control & Transparent Data Link Receiver

CE 869Mhz
FCC 902Mhz
Custom...



**Radio Control &
Telemetry**

**Powerful and Safe
with control**

New Concept

The mixes are performed on the standar RC transmitter, button activation and assignment of encoders are performed in the RX and not in the TX XLRS as is usual in amateur RC systems.

TECHNICAL SPECIFICATIONS

Range of Work	15-30Km
Maximum Range	100Km
Frequency	CE: 869,4-869,65Mhz. FCC: 902-927,5Mhz. CUSTOM: 433Mhz, others...
Multi Band	RXD1-89-200: 863, 866, 868, 902, 915, 950Mhz. RXD1-43-200: 433Mhz.
Max RF power	CE: 500mW (+27dBm). FCC: 500mW (+27dBm). CUSTOM: 1W (+30dBm).
Sensitivity max	-110dBm @50kb.
Modulation	50 or 100Kb. FHSS. 2-GFSK.
Stability	TXCO +-1ppm.
Encryption	AES 128 bits.
Voltage	5V. Min 4.5V. Max 6Vcc.
Consumption	Standby 70mA. Max. TX(500mW) 540mA@12mS.
Connectivity:	RC, Telemetry, USB, RCBus, SPPM, COM5, MODEM.
Dimension:	70,78 x 35,75 x 14,78mm.
Weight:	30g (Without ant.) 47g (With ant. 5dBi).

FEATURES

- Control max up to 16 CH RC.** Using the 7CH physical and the autopilot CH through SPPM in CH7.
- 8 Multifunction outputs** for RC servos.
- 1 SPPM / CPPM:** 8-16 (Config.) RC channels in CH7.
- 1 Micro USB:** Update and configuration.
- 1 RCBUS:** Connect XOSD for serial communication.
- 1 MODEM port:** MAVLINK Telemetry and transparent radio modem.
- 1 Red Led:** TX RF or Transmit packets.
- 1 Blue Led:** Link RF or Received packets.
- 1 Connector antenna RC:** SMA-Female.

Compatible with XLRS devices:

TX: BTSD1, XPAD2 V3, XPAD3 V3, GCSD4V2...
OSD: XOSDV2, XOSD3, XOSD3-2G4...

Hardware improvements:

Microcontroller with double memory FLASH, RAM and Eeprom.
 Improved PCB, more protection in general.
 Improved box, more robust, screws on inserts.
 Internal protection against reverse polarity on + 5V servo connectors.
 EDS protection and RF Filters in USB.
 ESD protection (static) for all pins including servos.
 Pins servos protection against short circuits and overloads.

MAVLINK protocol, compatible with autopilots:

APM, Pixhawk, PX4, etc.
No additional radiomodem is required.

Compatible with autopilots with S-BUS?

Yes, depending on the autopilot you can connect directly to CH7 (SPPM) or you can use a PPM to S-BUS converter.

**Some product features
are optional.*

XLRS
EXTENDED

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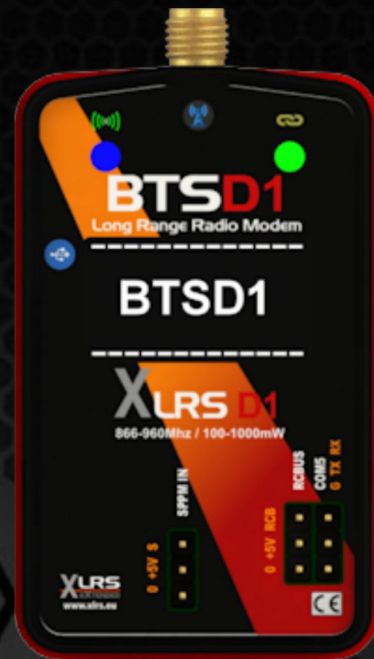
Manufactured by DMD. Digital Micro Devices. ©2020

New Version 2020

CE 869Mhz

FCC 902Mhz

Custom...



TECHNICAL SPECIFICATIONS XLRSD RADIO

Range of Work	15-30Km.
Maximum Range	100Km.
Frequency	CE: 869,4-869,65Mhz. FCC: 902-927,5Mhz. CUSTOM: 433Mhz, others...
Multi Band	BTSD1-89: 863, 866, 868, 902, 915, 950Mhz. BTSD1-43: 433Mhz.
Max RF power	CE: 500mW (+27dBm). FCC: 500mW (+27dBm). CUSTOM: 1W (+30dBm).
Sensitivity max	-110dBm @50kb.
Modulation	50 or 100Kb. FHSS. 2-GFSK.
Stability	TXCO +-1ppm.
Encryption	AES 128 bits.
Voltage	5V. Min 4.5V. Max 6Vcc.
Average Consumption	175mA @100Kb/40Hz. 260mA @50Kb/40Hz.
Max. Consumption	450mA @500mW. 850mA @1000mW.
Connectivity	RC, Telemetry, USB, RCBus, Input SPPM, COM5.
Dimensions	59 x 36 x 17mm.
Weight	48g.
Box	Plastic PLA.

Upgradable and Configurable: DMDStudio Soft.

FEATURES

- Display OLED** Black/White for viewing data.
- USB (Micro-B)** Mavlink Telemetry / Transparent Data Link, DMDStudio communication and Power.
- Red Led TX** RF or transmit packets.
- Blue Led** Link RF or received packets.
- Input SPPM** Connection to the trainer port of any standard RC transmitter.
- RCBUS** Serial Communication XLRSD Systems.
- COM5** Auxiliar Serial Port, Mavlink Telemetry and Transparent Data Link.
- Connector antenna:** SMA-Female.

Radio Control:

Connect the trainer port of your standard RC Transmitter (Futaba, Hitec, Spektrum, Sanwa...) to the SPPM input of the BTSD1.

The mixes are performed on the standard RC Transmitter.

MAVLINK protocol, compatible with software:

Mission Planner, QGroundcontrol, etc.

It can be used in different RC models:

UAV, DRONES, VANT, RPAS, UUV, UGV, ROV, MULTIROTORS, CARS, HELICOPTERS, BOATS, etc.

**Some product features are optional.*

CONTENT

- 1- BTSD1-89, Transmitter, Transparent Data Link and Radio Control.
- 1- RXD1-89, Professional Receiver RC and Telemetry.
- 2- ANTGSM900, Omnidirectional antenna 868-928Mhz 5dBi.



ACCESSORIES

- 1- LAT54_SMAH/SMAM. Cable SMA-Female to SMA-Male, 540mm.
- 1- CABLE_SERVO_HH. Cable Servo RC Female to Female, 200mm.
- 1- CABLE_EXT_SERVO_MH. Extensor Cable Servo RC Male to Female, 300mm.
- 1- CABLE_PX4_RX. Adapted Cable for Pixhawk-RX, 300mm.
- 1- CABLE_MJRC. Cable Audio Stereo MiniJack 3.5M/M to RC Female Connector.
- 1- CABLE_SIMFPV. Adapted cable RC standard Transmitter trainer port to Female MiniJack.
- 1- CABLE_USB/MICROUSB. Cable USB-A Male to Micro USB-B Male, 2m.
- 1- XLRS Neck Lanyard for remote controller.

CONTENT

- 1- BTSD1-43, Transmitter, Transparent Data Link and Radio Control.
- 1- RXD1-43, Professional Receiver RC and Telemetry.
- 2- ANTGSM433, Omnidirectional antenna 433Mhz 5dBi.



ACCESSORIES

- 1- LAT54_SMAH/SMAM. Cable SMA-Female to SMA-Male, 540mm.
- 1- CABLE_SERVO_HH. Cable Servo RC Female to Female, 200mm.
- 1- CABLE_EXT_SERVO_MH. Extensor Cable Servo RC Male to Female, 300mm.
- 1- CABLE_PX4_RX. Adapted Cable for Pixhawk-RX, 300mm.
- 1- CABLE_MJRC. Cable Audio Stereo MiniJack 3.5M/M to RC Female Connector.
- 1- CABLE_SIMFPV. Adapted cable RC standard Transmitter trainer port to Female MiniJack.
- 1- CABLE_USB/MICROUSB. Cable USB-A Male to Micro USB-B Male, 2m.
- 1- XLRS Neck Lanyard for remote controller.

XLRS D1 V2 Manual:

Manual BTSD1.

Manual RXLRS.

Default configuration D1 System.

Radio Control: Connect BTSD1 with RC Transmitter.

Mavlink Telemetry: Connection and configuration XLRS system (RX and XOSD) with Pixhawk and Mission Planner.

XLRS connection diagrams.

DMDStudio Manual:



Learn more about:

Servos XLRS.

XLRS objects.

XLRS Radio Links and Radio Control. Basics notions.

Range, RSSI, Noise in environments UAV – Drones.

Range Test XLRS.

RF Band ISM-ICM.

* The information and images shown in this datasheet, are only referential and may differ from the final product.

* The ranges shown are estimates and in optimal conditions.