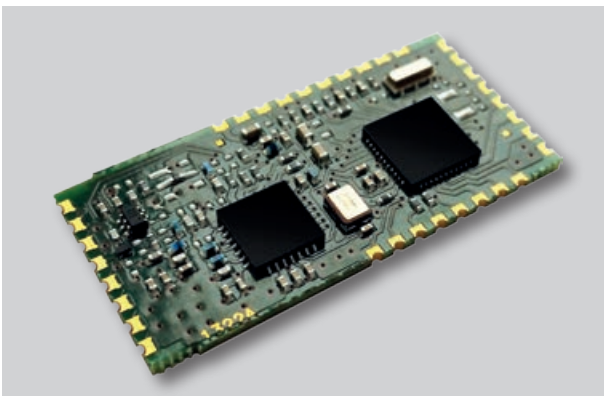


## LORA™ MODULES – LINE UP

**Low-Power Wide-Area Network (LPWAN) or Low-Power Network (LPN)** is a type of wireless telecommunication network designed to allow long range communications at a low bit rate among things (connected objects), such as sensors operated on a battery.<sup>[1][2]</sup>

**LoRaWAN™** is a Low Power Wide Area Network (LPWAN) specification intended for wireless battery operated Things in a regional, national or global network. LoRaWAN targets key requirements of Internet of Things such as secure bi-directional communication, mobility and localization services. Network architecture is typically laid out in a star-of-stars topology in which **gateways** is a transparent bridge relaying messages between **end-devices** and a central **network server** in the backend.



**XTR-8LR100 / XTR-8LR10**

Half-Duplex transceiver for long distance, (up to 12km) communication with LoRa™ modulation, able to ensure high immunity level against the interferences and a reduced energy consumption.

Working into European bandwidth 869.4 ÷ 869.65 MHz (100mW) and 868.0 ÷ 868,6 MHz (25mW) with link budget > 156 dBm.

The Transceiver Modules XTR-8LR100 and XTR-8LR10 with UART interface and an implemented data packet addressing technique allows a point-multipoint communication and 248 byte of max. payload.

Part Number	650201364G
Modulation	LoRa™
Supply	3V
Frequency	869.4 ÷ 869.6 MHz
Sensitivity	-118 to -145 dBm
RF output power	100 mW (max) / 25 mW (max)
Consumption	17 mA (RX) - 110 mA (TX)
Dimension	37 x 18 x 2.4 mm



**XTR-8LR-USB**

XTR-8LR-USB is a radio-modem with Usb interface, used as receiver or concentrator for data from XTR-8LR10 and XTR-8LR100 modules.

It can handle addressing data for point-to-multipoint or star networks, main radio parameters might be set up smoothly via command mode procedure, offering the user a variety of solutions and flexibility to the problems encountered in the field.

Part Number	650201428G
Modulation	LoRa™
Supply	5V by USB
Frequency	869.4 ÷ 869.6 MHz
Sensitivity	-118 to -145 dBm
RF output power	100 mW ERP
Consumption	20 mA (RX) - 135 mA (TX)
Dimension	69 x 25 x 13 mm

## LORA™ MODULES – LINE UP

Communication between end-devices and gateways is spread out on different **frequency channels** and **data rates**. The selection of the data rate is a trade-off between communication range and message duration.

Due to the spread spectrum technology, communications with different data rates do not interfere with each other and create a set of „virtual“ channels increasing the capacity of the gateway.

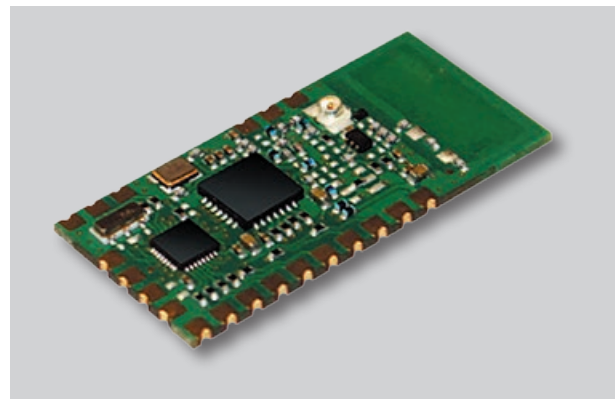


**XTR-8LR-4ZN**

XTR-8LR-4ZN is a keyfob with encrypted communication that combined with the XTR-8LR-DEC is used to activate remote loads. is used to activate remote loads. Two-way communication allows get acknowledgement of the status of the activated output.

Part Number	650201429G
Modulation	LoRa™
Supply	3V (CR2032 Lithium)
Frequency	868.30 MHz
Sensitivity	-122 dBm
RF output power	10 mW ERP
Consumption	35 mA
Dimension	72 x 39 x 11 mm

Compatible only with 650201431G



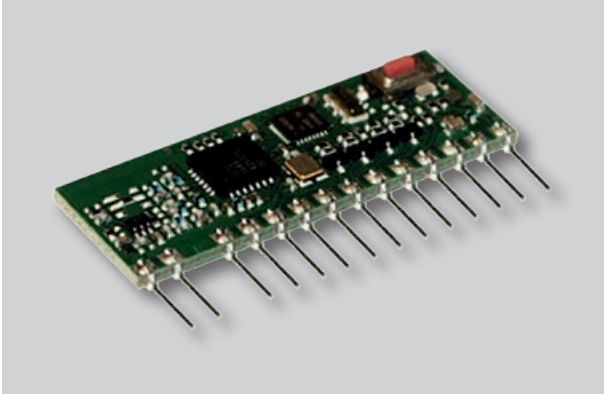
**XTR-8LR-ENC**

XTR-8LR-ENC is a transmitter with encrypted communication that combined with the XTR-8LR-DEC is used to activate remote loads. Two-way communication allows get acknowledgement of the status of the activated output.

Part Number	650201430G
Modulation	LoRa™
Supply	3V
Frequency	868.30 MHz
Sensitivity	-122 dBm
RF output power	20 mW ERP
Consumption	35 mA (TX) - < 1µA (PVDN)
Dimension	35.5 x 18 x 2.3 mm

Compatible only with 650201431G

## LORA™ MODULES – LINE UP



### XTR-8LR-DEC

XTR-8LR-DEC is a receiver with encrypted communication that combined with the XTR-8LR-ENC or with keyfob XTR-8LR-4ZN is used to activate remote loads

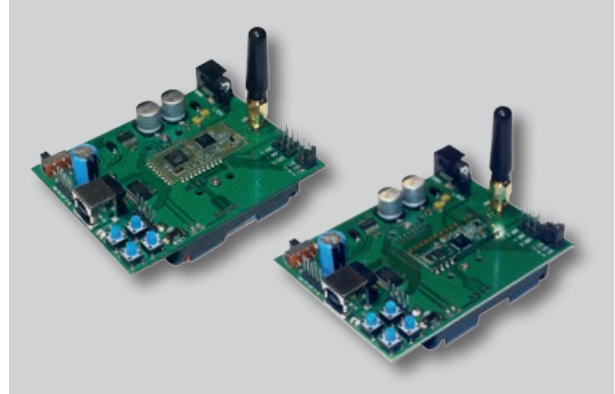
The module makes available four open-collector outputs and two lines of setting the output functioning mode, the cyclical receiver mode also allows a consumption < 1 mA, allowing use in battery powered applications. The output state will be acknowledged to its transmitter.

### XTR-8LRWAN

XTR-8LRWAN is designed to support LORAWAN™ protocol stack to provide Low Power Wide Area Network with features specifically needed to support low-cost, mobile, secure bi-directional communication for Internet of Things (IoT), machine-to-machine (M2M), smart city and industrial applications. (Design Phase)

Part Number	650201431G
Modulation	LoRa™
Supply	3V
Frequency	868.30 MHz
Sensitivity	-126 dBm
RF output power	20 mW
Consumption	< 1 mA (RX IDLE) - 16 mA (RX) - 35 mA (TX)
Dimension	38.5 x 16 x 3.8 mm

Compatible only with 650201429G & 650201430G



### DEMO-BOARD XTR-8LR100 & DEMO-BOARD XTR-8LR10

DEMO-BOARD XTR-8LR100 and DEMO-BOARD XTR-8LR10 is an evaluation board of the transceiver module XTR-8LR100 and module XTR-8LR10 which can easily check functionality, power consumption, commands and performance of radio link. The difference between the two demo board is on the mounted module, XTR-8LR100 that have mode of operation, Normal, Rx cycle, Tx ADC value and XTR-8LR10 that is implemented the Normal mode operation.

For more detail about the operation mode refer to the user manual of the used module. The device is able to work with external power supply or powered by four AA batteries, for tests in standalone.

It is included a stylus antenna operating on the 868 MHz band connected to the SMA connector, thereby using the test mode through some diagnostic led, it is possible to realize radio links. The DEMO-BOARD is equipped with a USB connector with COM port emulation realized with CI FTDI1235-C and an SMA input connector radio output for the RF connections measurement instruments.

Part Number	650201415G
Modulation	LoRa™
Supply	3V
Frequency	868 ÷ 870 MHz
Sensitivity	-115 to -137 dBm
RF output power	25 mW
Consumption	17 mA (RX) - 30 mA (TX)
Dimension	33.5 x 15.4 x 2.4 mm