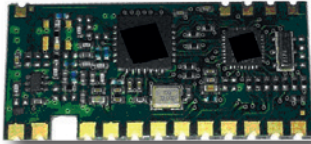
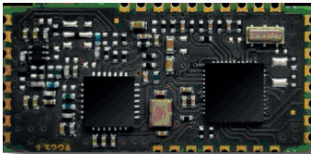


TRANSCEIVER FOR LONG DISTANCE COMMUNICATION WITH “LoRa SSM”



XTR-8LR10



XTR-8LR100

XTR-8LR10 and XTR-8LR100 are half duplex transceiver for long range radio communication based on a patented “LoRa SSM” modulation spread spectrum technique, providing high interference immunity, high sensitivity and very low power consumption. The Semtech solution allows much longer distances compared to the classical ISM band radio front-ends with several km of range.

Compared to standard modulation techniques, XTR-8LR10/XTR-8LR100 improves up to 20 dB the receiver sensitivity, allowing long distances by using low power in transmission and low consumption, inexpensive power supply circuits and low cost batteries. The module provides configurable spreading sequences and different signal bandwidth options. Also error correction schemes can be set. This enables the user to choose the perfect balance between range, interference robustness and data rate for multiple wireless applications.

LoRa® is the physical layer or the wireless modulation utilized to create the long range communication link. Many legacy wireless systems use frequency shifting keying (FSK) modulation as the physical layer because it is a very efficient modulation for achieving low power. LoRa® is based on chirp spread spectrum modulation, which maintains the same low power characteristics as FSK modulation but significantly increases the communication range. Chirp spread spectrum has been used in military and space communication for decades due to the long communication distances that can be achieved and robustness to interference, but LoRa® is the first low cost implementation for commercial usage.

Transceiver works in 868~868,6 MHz (25 mW version 8LR10), 869,4~869,65 MHz (25 mW, version 8LR10), 869,70~870,00 MHz (25 mW, version 8LR10), 869,4~869,65 MHz (100 mW, version 8LR100) European band with possibility to set the channel width. The radio-modem with

UART input interface, working on data packages (max. size 255 bytes). It can handle addressing schemes for point-to-multipoint star networks. Main radio parameters might be set up smoothly via command mode procedure, offering the user flexibility and multiple solutions to the many problems involved in the field.

MAIN FEATURES

- » No encoding or preamble requested
- » AT command mode for set up of parameters
- » HyperTerminal compatible
- » UART interface: data rate 9600, 19200, 115200 bps
- » Sensitivity: -118 dBm ... -144 dBm
- » Operating voltage: 3.3V

XTR-8LR100

- » Channels 7 max.
- » Small form factor: 37 mm×18 mm×2.2 mm
- » Emitted power: max. 100 mW
- » Standard distance: 8000 m

XTR-8LR10

- » Channels 3 max.
- » Small form factor: 33.5 mm×15.4 mm×2.4 mm
- » Emitted power: max. 20 mW
- » Standard distance: 6000 m

APPLICATIONS

- » Home and building automation
- » SCADA
- » Irrigation control
- » Energy monitoring
- » Automatic Meter Reading
- » Alarm equipment
- » Industrial sensors

Available on request is a DEMO-BOARD_XTR8LR100, an evaluation board for testing the XTR-8LR100/XTR-8LR10 transceiver performance. The board can be supplied with an external supply or with 4 AA batteries for stand-alone tests. Included also a stylus antenna working in 868MHz bandwidth connectable to the SMA connector, in this setting you can realize a budget-link test through the diagnostics led. For indoor test the demoboard is equipped of an USB connector simulating the COM port realized with CIFTDI1235-C and as already mentioned with an SMA connector for radio input/output for make easier the equipment connection.