YS-C10U RF Data Transceiver

YS-C10U/1100U is a low power high-speed RF module for serial data transmission. It is based on high performance RF IC and MCU and works on the 433Mhz ISM band, in half dulpex with integrated receiving and transmission.

Modules can directly connect with monolithic processors, PC's, devices and other UART components with RS-232 or RS-485 level interface ports (TTL available upon request). Transparent data interface and wide temperature design handles most industrial applications indoor and outdoor.

1. Main Features

* Up to 115.2kbps High data rate
* Carrier frequency: 433MHz or ISM
* Standard: RS-232 or RS485 (TTL available upon request)
* Multi-channels for optional frequencies: 12 channels
* Adjustable Baud rate: 1200/2400/4800/9600/19200/38400/57600/115200bps
* Transparent data transmission: What has been received is exactly what has been transmitted
No special addressing or formatting of data is required, suitable for any standard or non-standard user protocols
* Interface format: 8N1/8E1/801
* Modulation: GFSK. Based on the Gaussian Frequency Shift Keying (GFSK) modulation,
* High anti-interference and low Bit Error Rate (BER)
* Half duplex: Integration of receiver and transmitter
* Impedance: 50 ohms (SMA antenna port)
* Widen Temperature: -35℃~+75℃ (-31~167 F)
* Working humidity: 10%~90% relative humidity without condensation

2. Application areas

* Automatic meter reading(AMR)
* Wireless smart terminal: POS, PDA
* Wireless electronic display screen, LED display
* RS-485 wired multi-drop system changeover wireless system
* Wireless remote control, Environment monitor, telemetry system
* Check attendance system, Queue-management system
* Industrial automatic data collection, Wireless Data Acquisition, Wireless sensor, SCADA

3. Specifications

* RF power: ≤50mW/ 17dBm
* Receiving current: <20mA
* Transmitting current: ≤40mA
* Power supply: DC 3.3-5 V
*Receiving sensitivity: -108 dBm (@9600bps)
  -112 dBm (@1200bps)
* Size: 47mm×24mm×6mm (without antenna port)
* Range: ≤300m (BER=10^{-5}@9600bps，when antenna is 2m above ground in open area)
 ≤500m (BER=10^{-5}@1200bps，when antenna is 2m above ground in open area)

4. Interface definition

RS232 Modules (DB9 female)		
Pin	Pin name	Description
1	GND	Power ground
2	TXD	Transmit
3	RXD	Receive
4	Vcc	-3.3 to 5.5VDC
5	DGND	Signal Ground
6	N/A	Factory test pin

RS485 Modules (DB9 female)		
Pin	Pin name	Description
1	GND	Power ground
2	D-	
3	D+	
4	N/A	
5	GND	Signal Ground
6	N/A	Factory test pin

Modules are supplied with 5VDC through the included USB cable. Alternatively modules can be powered through the included USB power adapter cable which makes you able to use any standard 110VAC/5VDC wall power adapter with a 5.5 x 2.1 x 11.5mm output jack.

5. Dimensions
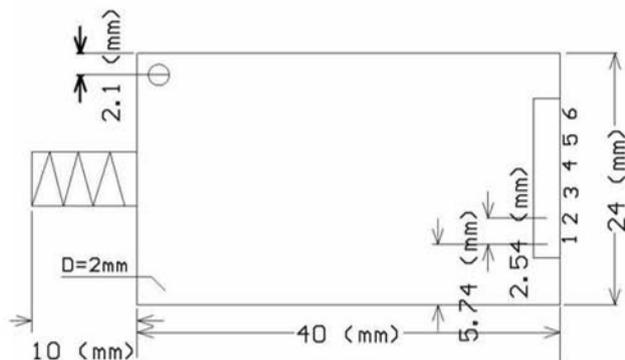
6. Setting of channel, interface, and data format

Settings can be viewed and configured by the included configuration sftware.

Corresponding frequency points at 433MHz of 1~12 channels

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	425.250MHZ	2	426.250MHZ	3	427.250MHZ	4	431.250MHZ
5	432.250MHZ	6	434.250MHZ	7	435.250MHZ	8	436.250MHZ
9	437.250MHZ	10	438.250MHZ	11	439.250MHZ	12	440.250MHZ

7. Antenna configuration

Different types of antennas can be used with the RF modem. Please ask our sales office for further information.

A0   A1   A2   A3   A4   L0

Notes:

◢ Modules can share DC power supply with other equipment, Ensure the supply is stable (ideally <10mVpk ripple).

◢ Keep the module away from other EMF generating components.

◢ Match 50Ω, 1/4wave antenna, high mount the antenna as close to the module as possible. Set antenna more than 2m above ground in open area to reach optimal range.

8. Power supply

The unit must be powered with 5VDC via external power supply or USB.

9. Package includes:

1pcs RF Modem
1pcs antenna
1pcs power supply cable for USB and external power supply