

YS-1100U RF Data Transceiver



YS-1100 series is high data rate module for Serial data to RF. It bases on high performance RF IC and MCU, works on 433Mhz ISM frequency band, half duplex integrated receiving and transmitting. Modules could directly connect with monolithic processors, PC, RS485 devices, and other UART components with RS-232, RS-485 and UART/TTL level interface port. Transparent data interface, nakedness, and wide temperature design handles most industrial application though indoor/outdoor environments.

1. Products Main Features

- High data rate. Low power consumption and low cost;
- Carrier frequency: 433MHz or ISM others optional;
- Interface: RS-232/ RS-485/ TTL optional;
- Multi-channels: 16 channels, expandable for 32 channels;
- Adjustable Baud rate: 1200/2400/4800/9600/19200/38400bps, 115kpbs;
- Transparent data transmission: What has been received is exactly what has been transmitted, suitable for any standard or non-standard user protocols;
- Interface format: 8N1/8E1/8O1 user-defined, or customization for other format interface;
- Modulation: GFSK. Based on the Gaussian Frequency Shift Keying (GFSK) modulation, High anti-interference and Low BER (Bit error Rate);
- Half duplex: Integration of receiver and transmitter , 10ms auto change for receiving and sending;
- Widen Temperature: -35...+75 C (-31~167 F);
- Working humidity: 10%~90% relative humidity without condensation;
- Impedance : 50Ω (SMA antenna port, multiple antenna options available);

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 and positioning in coal mine;
- Industrial automatic data collection, Wireless Data Acquisition, Wireless sensor, SCADA.

3. Specifications

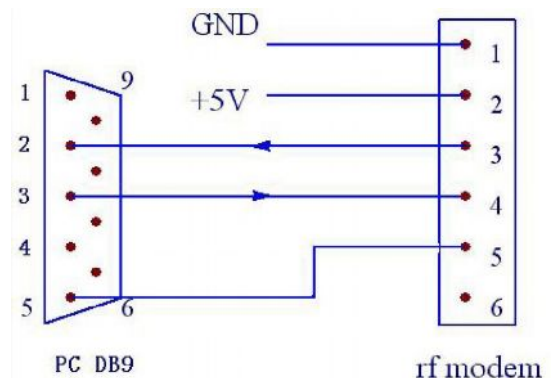
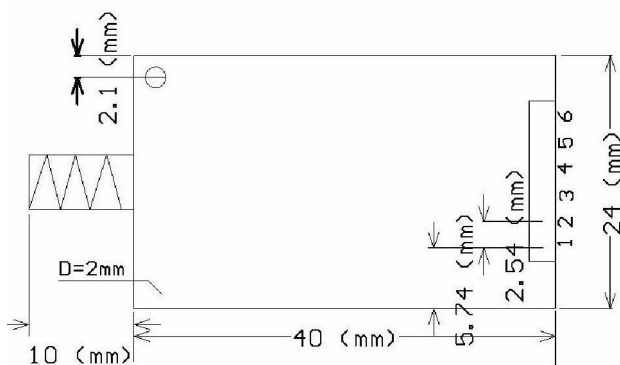
- RF power: <50mW/ 17dBm;
- Receiving current: <20mA;
- Transmitting current: <40mA;
- Power supply: DC 3.3-5 V;
- Receiving sensitivity:
 - 108 dBm (@9600bps)
 - 112 dBm (@ 1200bps);
- Size: 47mmx24mmx6mm (without antenna port);
- Range:
 - <300m (BER=10⁻⁵ @9600bps, when antenna is 2m above ground in open area)
 - <500m (BER=10⁻⁵ @ 1200bps, when antenna is 2m above ground in open area).

4. Interface definition

Pin No.	Pin name	Description	Level	Connection with terminal	Remands
1	GND	Grounding of power supply		Ground	
2	Vcc	Power supply DC	+3.3—5.5V		
3	Rx232 TXD	Data transmitting,	RS 232	RxD	1.Red LED flash when transmitting; 2.One type interface valid at
	TTL TXD	Data transmitting	TTL		
	RS485 A	RS485 A	-		
4	Rx232 RXD	Data receiving	RS 232	TxD	1.Green LED flash when receiving; 2.One type interface valid at
	TTL RXD	Data receiving	TTL		
	RS485 B	RS485 B			
5	DGND	Digital grounding			NC
6	NC	Test in factory			NC

NOTE: Generally the module is in receiving status.

5. Installation dimension



6. Setting of channel, interface, and data format

User can view and change the module's parameter setting by testing software "YSPRG110.EXE" in the CD (Free): interface and air baud rate, channel No. and Interface format.

Corresponding frequency points at 433MHz of 1~16 channels

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	425.250MHZ	2	426.250MHZ	3	427.250MHZ	4	428.250MHZ
5	429.250MHZ	6	430.250MHZ	7	431.250MHZ	8	432.250MHZ
9	433.250MHZ	10	434.250MHZ	11	435.250MHZ	12	436.250MHZ
13	437.250MHZ	14	438.250MHZ	15	439.250MHZ	16	440.250MHZ

7. Antenna configuration

Many appropriate antennas for low power RF modules are selected for meeting different user antenna configurations. Please ask our Sales office for further information about the antenna's dimension and performance. The standard antennas are exterior flabelliform rubber antenna with helical SMA joint, magnetic car antenna.



Package Standard: one module + A0# Helical SMA antennas + L0# 6pin line

Notes:

- Modules can share DC power supply with other equipment, Ensure the supply is stable (ideally <math><10\text{mVpk}</math> 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.