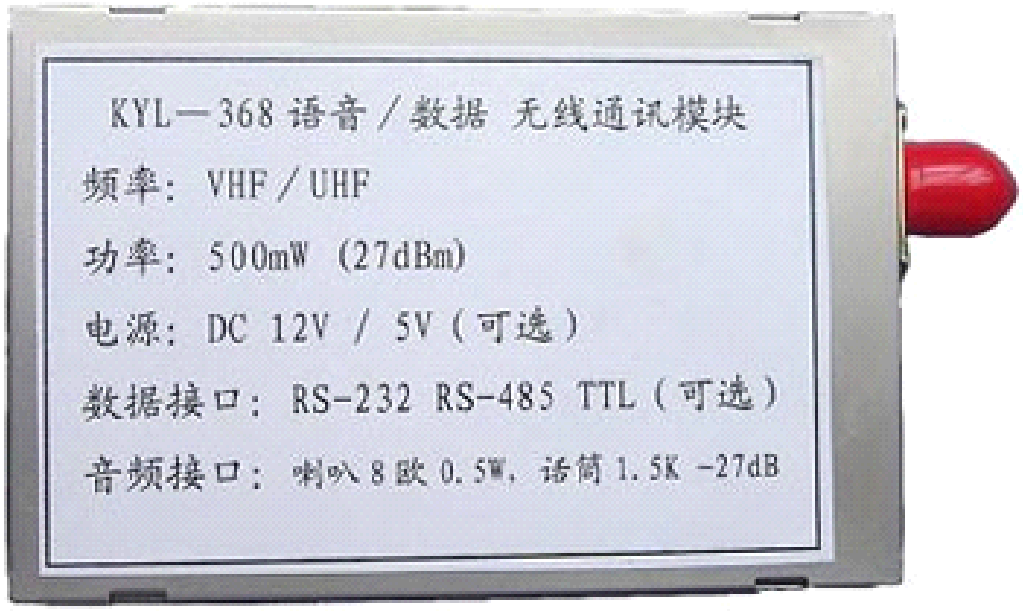
KYL-600L Wireless audio and Data Radio Module User Manual



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Before using the product please read the use manual carefully.
Any question in technical, you can contact us.
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About KYL-600L:

KYL-600L, the data radio module adopt double VCO structure, high stability TXCO, integration RF and so on advanced technique; at the same time it use the advanced rectify fault arithmetic in software. So it has high stability and reliability. It is the first equipment for the user in the field of industry control, water conservancy, electric power, oil field and so on. This product can provide multiple MODEM communication protocols so that users have more choice. Of course, we can design according to users' demands, or we can provide technique support and second development for users for free.

1. Specifications:

Operating Voltage: DC 5V
Carrier Frequency: VHF/UHF 230-400MHz
Interface: standard RS-232/RS-485/TTL Selectable
Baud Rate: 1200/2400/4800bps Selectable
Channel spacing: 25kHz
Frequency stability: ±2.5ppm
Modulation: FFSK; Channels: 16
Impedance: 50Ω
Transfer distance:3km(BER=10-3@9600bps);
Temperature: -25℃~+65℃
Size: 70x46x12mm(without antenna port)
Weight:180g

2. Receiver:

* Receiving sensibility: ≤0.25μV (12dB SINAD)
* Signal-to-Noise: ≤-40dB
* Adjacent channel selectivity: ≥70dB

* Intermodulation rejection: ≥65dB
* Clutter and images rejection: ≥70dB

* Receiving current: 50mA

* Audio Output power: 0.5W（8Ω，10% distortion）

* Receiving distortion: ≤3%

3. Transmitter:

* RF power: ≤500mW （1W/2W customized）

* Transmitting current: 300mA

* Modulation: FFSK

* Audio distortion: ≤3%

* Frequency deviation: ±5.0kHz

* Adjacent channel power: ≥70dB

* Transmitter startup time: ≤50m
* Surplus Frequency Modulation: ≤-40dB
* Modulation distortion: ≤3%
* Modulation sensibility: 5mV

* Transmission distance: 3Km

* Volts D.C.: 5V (12V optional)

4. Features about KYL-600L:

1) Design based on the special use of the wireless data transmission in the industrial automatization field.

2) Provide high stability, high reliability and low cost data transmission.

3) Standard connection: RS-232/485/TTL

4) Facility for installation and maintenance, Flexible networking configuration, suitable for the field of multiple point but decentralization and complex geography environment.

5) Metal shell, good shielding performance, providing frequency passage.

6) Providing many MODEM communication protocols

7) To adapt different user structure, we can develop various size modules and offer sufficient technology support for client use the module and second development for free.

5. Size

* Product dimension: 70x46x12mm

* Antenna connection: TNC(SMA) -50Ω

* Interface definition:

Pin No.	Signal Name	Function	Level	Connection with terminal
1	VCC	Input power	12V	5V optional
2				
3	GND	Grounding of the power		
4				
5	A(TXD)	RS-485 A or TXD of RS-232		Choose RS-485 or RS-232
6	B(RXD)	RS-485 B or RXD of RS-232		
7	PTT	transmitt controlling	TTL	Low level
8	MIC	Input audio		Using micphone of 1-2kΩ and -27dB
9	SP	Output audio		8Ω 0.5
10	SQ	Receiveing	TTL	High level

6. Applications:

* Industrial automatic control and remote control

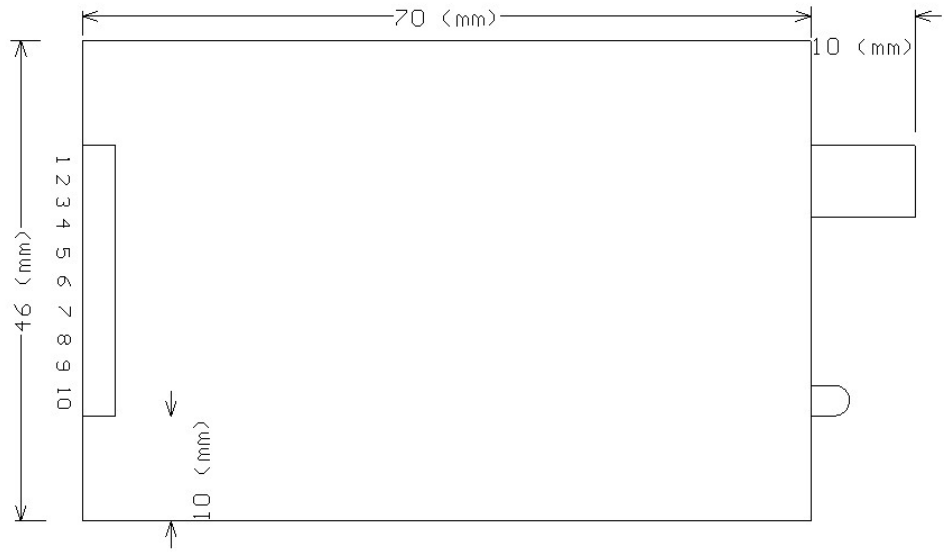
* Wireless data acquisition and SCADA

* Environment monitoring systems

* AMR Automatic Meter Reading
* Wireless alarm and security systems
* Building automation, security, wireless monitoring and control of room equipment, Access Control System;
* Wireless data transmission, automatic data collection system;
* Low power telemetry
* Data radio can be used for Wireless conference voting system;
* Mapping;
* Radio modem can be used for Sports training & competition;
* Wireless dishes ordering;
* Wireless POS, PDA wireless smart terminal;
* RF modem can be used for Electronic bus station and intelligent traffic;
* RF transmitter Wireless electronic display screen and queuing machine;
* Wireless telemetry Charging for parking, parking lot;
* Wireless modem Automobile inspection and four-wheel orientation;
* Wireless sensor Industrial wireless remote control and air conditioning remote controller;
* Data communication used for railway, oil field, dock and army.
* LED display in thruway and public places
* Point to multi-point wireless network, wireless on-the-spot bus and automatic data collection system;

7. The installing schematic

8.



8. Notices during the use of KYL-600L

1) The antenna should away from the power supply if use the switch power, because the transmitting of the antenna may affect the normal work of the switch power. When the transmission happen fault, checking the power voltage whether interfered from the antenna is one way of eliminating fault.

2) Use the min. grain wave and high anti-jamming switch power or batteries

3) The power capacity must meet D.C. 5~12V, more than 800mA output current

4) The space between the experiment Radio should be more than 5m. The antenna should span on the high to increase the distance of electric wave. It is important for using shortwave communication equipment in the city.

5) After connecting the antenna to the Radio, the space between the Radios should more than 10m, so avoiding signal backup.

6) The antenna plywood should nip in the connection inside the antenna, but not nip the antenna projectile, so avoiding the performance of the antenna.

7) High frequency cable don't come down directness, circle a circuit and fixup it on the frame for the best.

9. Standard configuration and Antenna configuration

i: Standard configuration:

* One KYL-600L RF module
* A 9pin flat Connection Line
* A whip antenna（about 10cm）

ii: Antenna configuration:

Many appropriative antennas for low power RF modules are selected for meeting different user antenna configuration. Please ask our Sales office for further information about the antenna's dimension and performance. The main options of antennas are exterior flagelliform rubber antenna with helical SMA joint, small osculum antenna, small rod antenna and elbow antenna. If the user has special demands on

antennas, we can design and produce for them specially.

a. Helical SMA antennas: KYL-ANT-S868-5-SMA

b. Elbow antenna : KYL-ANT-S433L-10-ESMA

c. Small rod antenna: KYL-ANT-S433-4-RSMA

d. Small osculum antenna: KYL-ANT-O433S-300H1.5-SMA

10.Application of KYL-600L Networking

The communication channel of KYL-600L is half duplex, which is most suitable for the communication mode of point to multi-point. Under this mode, one master station must be set, and all of the rest are slave stations. A unique address is given to each station. The coordination of communication is controlled by master station that uses data frames containing address code to transmit data or command. Slave station will receive all of the data and command and compare the received address code with local address code. If they are different, the data will be deserted without any response. If those address codes are the same, it means the data is sent to the local. Slave station will make different responses according to the transmitted data or command and send back the data of response. All these jobs must be performed by upper protocol, and it is assured that there is only one transmitter-receiver in the state of transmission in the communication network at any instant moment so as to avoid the cross-interference.

KYL-600L can also be used for point-to- point communication with easier operation. For the programming of serial port, all you have to do is to remember that its communication mode is semi duplex while always observing the time sequence of come-and-go for receiving and transmitting.