KYL-600H Data Radio Modem

User Manual

Shenzhen KYL Communication Equipment Co., Ltd

Address: Room 305-307, Building 1, Zhuguang Innovation Science and Technology Park, Xili, Nanshan District, Shenzhen, China

Tel: +0086-755- 86643962

Fax: +0086-755-83408785

Skype：rf-data

E_mail: sales01@rf-data.com；

Website: http://www.rf-data.com

Before using the product please read the use manual carefully.
Any question in technical, you can contact us.

I: About KYL-600H

KYL-600H, the data radio module adopt double phase-lock loop, 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.

II: Features:

1. Specifications:

* Double phase-lock loop, double VCO structure, high stability
* providing many MODEM communication protocols
* Metal shell metal, good shielding performance.
* Carrier frequency: VHF/UHF
* Air data rate: 1200/2400bps
* Interface: TTL/RS-232/RS-485 selectable
* Modulation: FSK/MSK
* Frequency stability: ±2.5ppm
* Channel spacing: 25 kHz
* Antenna impedance: 50 ohm
* Temperature: -30~+70C
* Supply voltage: 12V
* Size: 96x60x20mm (without radiator)
* Transmission distance can reach 12Km
* 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.

2. receiver:

* Receiving sensibility: ≤-119dBm (more than 12dB SINAD)
* Adjacent channel selectivity: ≥65dB
* Intermodulation rejection: ≥65dB
* Clutter and images rejection: ≥70Db

3. Transmitter:

* RF power: 5W
* Frequency deviation: ≥ 5.0kHz
* Adjacent channel power: ≥70dB
* Transmitting current: ≤1.5A

III: Application of KYL-600H:

KYL-600H the data radio module is suitable for:

* 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
* Wireless RS232/RS485 conversion/connector;
* Point to multi-point wireless network, wireless on-the-spot bus and automatic data collection system;

IV: How to use the KYL-600H data radio module KYL-600H provide RS-232, RS-485 and UART/TTL level interface port for direct connection with PC, RS485 devices, monolithic processors and other UART components kinds of applications.

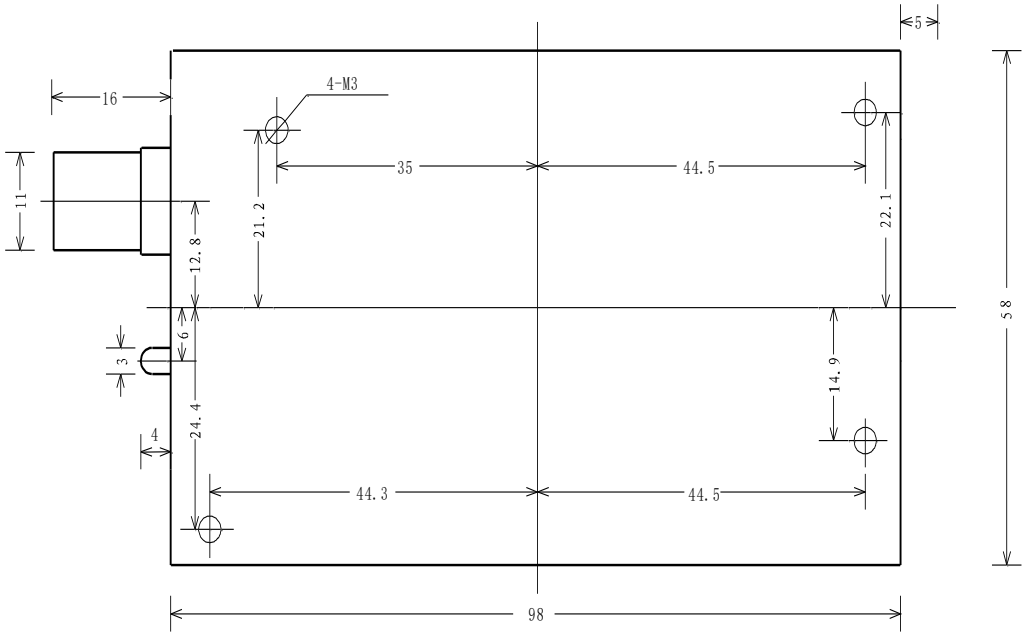
1. Power supply

KYL-600H work with supply voltage+12.0V DC. By using better ripple factor, KYL-600H transceivers can also share power supply with other equipment. If possible, a voltage-stabilizing chip with 12V voltage is more recommended as the only power supply than switch power supply. But if only switch power supply available, the jam by switch pulse to the transceivers should be avoided. In addition, the reliable grounding must be used if there is other device in the system equipment.

In case of failing to connect with the ground, it can form its own grounding but must be absolutely separated from the municipal electric supply. If lower power for lower power consumption needed, we can design to meet users' demands.

2. Installation

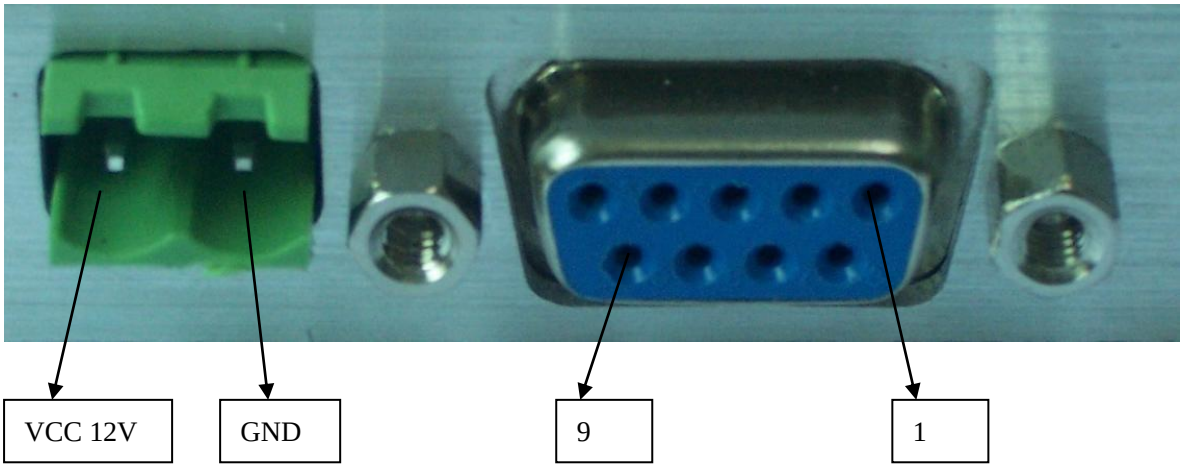
Installation dimension:



3. Interface definition:

Pin No.	Signal Name	Function	Level	Remarks
1	GND	Grounding of power supply		
2	A (TXD)	A of RS-485(TxD of RS-232 or TTL)		
3	B (RXD)	B of RS-485(RxD of RS-232 or TTL)		
4	NC			
5	DGND	Signal		
6	PPT	transmitt controlling		
7	MIC	MIC IN		
8	SP	Speaker Out-		-
9	Test	Inside testing		

4. The connection schematic diagram of KYL-600H transceivers with terminal



5. Setting of frequency value, interface rate, and data format

Before using KYL-600H, users can use our software to setting frequency value,interface rate and data format.

A. Users can programm any frequency value in the frequency range. Before ordering, clients need confirm the frequency range.

B. Users can choose the interface rate according to requirement.

C. Users can change the data format according to actual requirement.

6. Supported protocol and Transmit capability

KYL-600H standard transceiver offer transparent protocol to support various applications and protocols of users. If the user needs to decrease his cost or ease the workload of terminal CPU, we can add other specific functions based on the transparent protocol, such as addressing, data acquisition, command interpretation, etc.

As using FIFO mode, KYL-600H is able to satisfy user big data package transmission.

7. Description of Indicator light

a. The red and green lights are on about 50Ms at the same time after supplying the electricity.

b. The red light is normally on when transmitting data, while the red light will crush out after ending the data.

c. The green light is normally on when receiving the air signal, while the green light will crush out after receiving the air signal.

8. Standard configuration and Antenna configuration

i: Standard configuration:

***** One KYL-600H radio modem
***** one Power supply connector line
***** one data connector line
***** Helical TNC antennas（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 TNC antennas: KYL-ANT-S868-5-TNC

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

V. Application of KYL-600H Networking

The communication channel of KYL-600H 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-600H 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.

VI. Description of type