KYL-600M Wireless Data/Audio Module
User Manual

KYL-600M Audio module, with advanced arithmetic fault-rectify system in software design, adopting double VCO structure and high stability TXCO, it has good stability and reliability. This module is usually used for industry control, water conservancy, electric, oil field management, wireless alarm so on. It can custermise to VHF or UHF frequency band. Moreover, we can extend its functions and ODM products for you according to your specific application.

I**. Specifications:**
* Operating Voltage: DC5V
* Carrier Frequency: 230MHz
* Interface: standard RS-232/RS-485/TTL Selectable
* Baud Rate: 1200/2400 Selectable
* Channel spacing: 25kHz/12.5KHz
* Channel steps: 5KHz
* Frequency stability: ±2.5ppm
* Modulation: FFSK;
* Impedance: 50Ω
* Transfer distance:5km(BER=10-3@9600bps);
* Temperature: -30℃~+70℃
* Size: 70x46x12mm(without antenna port)
* Weight:180g

2.   **Receiver:**
* Receiving sensibility: ≤0.25μV (12dB SINAD)
* Signal-to-Noise: ≤-40dB
* Adjacent channel selectivity: ≥70dB
* Inter-modulation 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: 2W
* Transmitting current: 300mA
* Modulation: FFSK
* Audio distortion: ≤3%
* Frequency deviation: ±5.0kHz
* Adjacent channel power: ≥70dB
* Transmitter start up time: ≤50m
* Surplus Frequency Modulation: ≤-40dB
* Modulation distortion: ≤3％
* Modulation sensibility: 5mV
* Transmission distance: 5-7Km (to use a high gain antenna>5.5dBi)
* Volts D.C.: 5V DC

4. Features of KYL-600M:

1) Design for the special use of wireless voice transmission in industrial automation
2) High stability, good reliability and low power consumption
3) Standard Uart port available : RS-232/RS-485/TTL
4) Easy to install, flexible networking configuration, also suitable for multiple-point to point communication in decentralization and complex geography environment.
5) Metal shell, good shielding performance, flexible frequency band available.
6) Provide programming software or AT command for parameter configuration.
7) If needed, we may do some development based on existing product.

5. Size

Product dimension: 70x46x12mm
Antenna connection: TNC (SMA) -50Ω
Interface definition:

Pin No.	Signal name	Function	Level	Remarks
1	VCC	Power input	5V	5V D.C. Power supply
2				
3	GND	Ground of the power		
4				
5	A(TXD)	RS-485 A or TXD of RS-232		choose RS232 or RS485,only one valid
6	B(RXD)	RS-485 B or RXD of RS-232		
7	PTT	Transmitting control	TTL	Low level valid
8	MIC	Audio input control		Microphone with 1kΩ-2kΩ and -27dB is recommended
9	SP	Output audio		8Ω 0.5
10	SQ	receiving	TTL	High level

6. Applications:

* Wireless pagers
* APRS , SCADA
* Industrial automatic control and remote control
* Environment monitoring systems
* AMR (Automatic Meter Reading)
* Wireless data transmission, automatic data collection system;
* Sports training & competition;
* Wireless POS, PDA wireless smart terminal;
* Electronic bus station and intelligent traffic;
* RF transmitter Wireless electronic display screen;
* 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
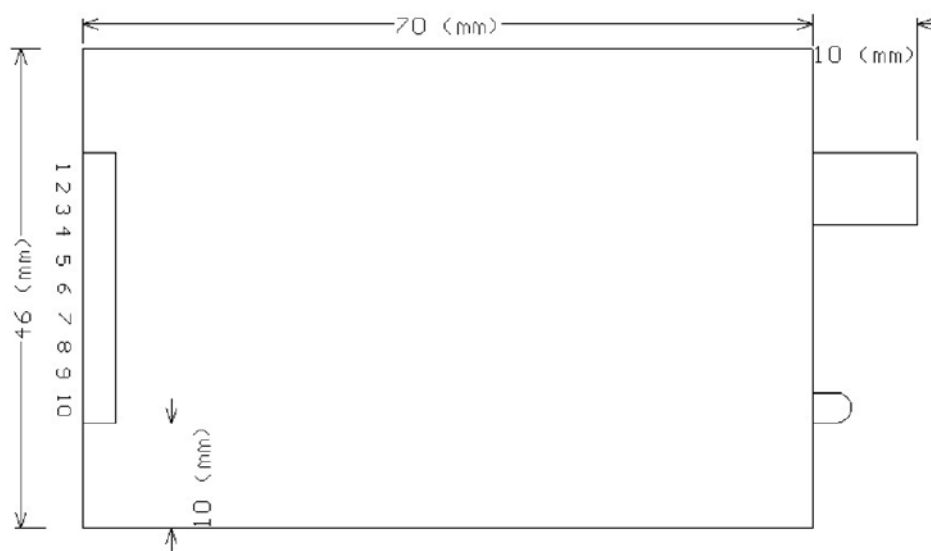
8. Notice

1) The antenna should be away from the power supply if using switch power, because the transmitting of the antenna may affect switch power. When wrong transmission happen, please check whether the antenna interfered power voltage.

2) Use min.grain wave and high anti-jam switch power or batteries to supply power

3) The power capacity must meet D.C. 5V, more than 3A output current.

4) The space between the experiments Radio should be more than 5m. The antenna should amount high to increase electric wave's idstance.

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

6) The antenna plywood should nip in the connection inside the antenna, not nip the antenna's projectile to maintain good result.

9. Standard configuration and Antenna configuration

i: Standard configuration:
   ＊One KYL-600M RF module
   ＊A 10 pin flat cable
   ＊A free whip antenna (to reach good communication, you'd better use a high gain antenna---5.5dBi gain antenna is recommended)

Antenna configuration:
The followings are free antenna you can choose. If you have other special requirements, please contact our sales office for more details.

Shenzhen KYL Communication Equipment Co., Ltd
Welcome to contact Minerva Zhao for more details
Tel : +86 755 86643962
Fax: +86 755 83408785
Web: www.rf-data.com
E-mail: sales01@rf-data.com
Skype: rf-data
Yahoo: losia2012
MSN: KYL-Minerva@outlook.com