RF⇌RS-232/485/422
UT-901 User manual

A. Summary

RF transceiver, developed by self-owned R&D power, Industrial grade, MODBUS, ASCII protocol supported, P2P, Point to Multi-P working mode, high-grade protection for interference, signal, easy to use, highly reliability with very reasonable price

UT-901 widely applicable for industrial automation, process control, central monitor station, Water Conservancy, warehouse surveillance, petrol field monitor, mine machinery, stage equip. Power distribution, railway, access, car parking, etc. Who needs remote acquire data and proceed application.

UT-901, comply with standard RS-232/422/485,Convert RF signal to balance differential RS-232 or RS-485/422., with built-in Transient Voltage Surging protection: TVS. Highly reliable in suppress lightning, 600W protection for each line for surging and lightning. RS-232 side as Db9 male; RS-422/485 side as binding post Zero-delay auto-transmission, delicate auto-control data stream I/O without RTS/DTR needed, jump wire setup as well Plug and plug, compilable to common software.

UT-901, working mode: point to point; point to multi-point

Load capacity: 128 RS422/485 devices

Baud rate:1200-38400KBPS; Data traffic indicator

B. Specification:

1、Frequency：433MHz SIM ，standard: 16 channel
2、Interface: RS-232、RS-485、RS-422;
3、Port：RS-232 side as Db9 male; RS-485/422 as post
RF side as SMA
4、Protection：600W lightning &surging protection for RS-485/422
5、Voltage range：9-30VDC
6、Power supply：9V400mA
7、Baud rate：1200 bps、 2400 bps、 4800 bps、9600 bps、
19200bps、 38400bps
8、Working mode：transceiver, asynchronous half duplex
9、Indicator：PWR,TXD,RXD
10. Antenna resisstor：50Ω（360° rotateable, 90° fold SMA）
11、Delicated RF transceiver chip, (40mW 150mW 405mW 520mW)
12、Temperature：-40℃~ +80℃
13、Humidity：10%90%RH
14、Size： 97mm×65mm×26mm（w/o antenna）
15、Distance：RF 433MHz: 300M（wide space）
RS-232 5m（1200bps-38400bps）
RS-485/422 1200m（1200bps-38400bps）
16、Power consumption（factory set:1）

Power	1	2	3	4
mW	520	405	120	40
dbm	21.71	26.07	21.76	16.02

Sensitivity vs baud rate：

Baud rate	1200bps	2400bps	4800bps	9600bps	19200bps	38400bps
Sensitivity	-122dBm	-120dBm	-118dBm	-116dBm	-113dBm	-110dBm

C. Pinout definition:

RS-232

Db9 male (PIN)	RS-232 signal
1	(RXD)
2	(TXD)
3	GND
1,4,6,7,8,9	null

RS-485/RS-422

Post	Signal	RS-422	RS-485
1	T/R+	T(A+)	RS-485 (A+)
2	T/R-	T(B-)	RS-485 (B-)
3	RXD+	R(A+)	Null
4	RXD-	R(B-)	Null

D. Installation

Connect GND with SMA, connect the power supply, Auto-adapt RS232/RS-485/422, no jump wire needed, STP or UTP

UT-901 working mode：

1、Point to multi-point: four wire-full-duplex

2、Point to point: 2 wire/ half duplex

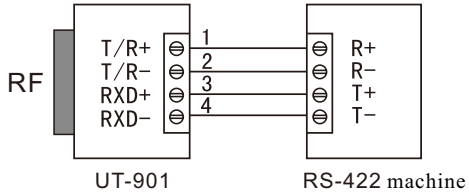
3、Point to point: 2 wire/ half duplex

In order to reduce interference, a terminal-ressistor 120Ω/ 1/4Wcould be added accordingly to properly situation.

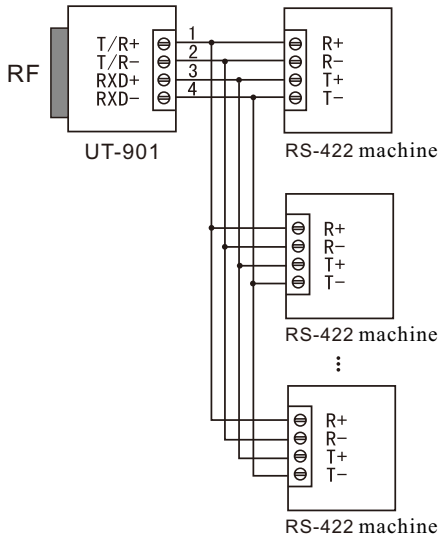
五、Connection

RF to RS-422

1、RS-422 Point to point

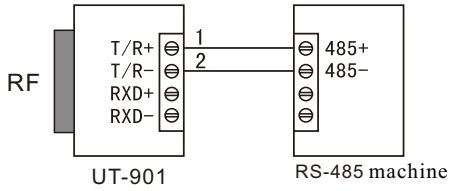


2、RS-422 Point to Multi-point

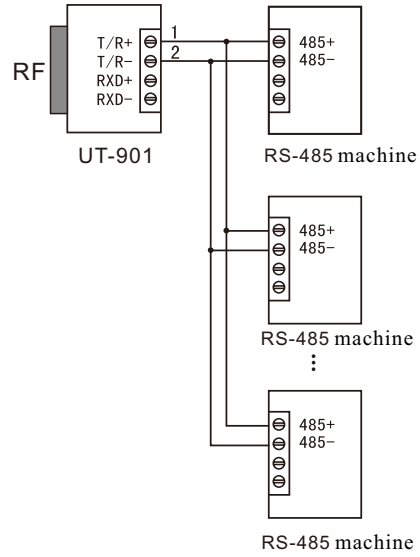


RF to RS-485

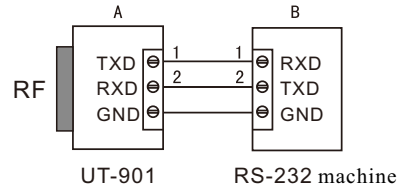
1、RS-485 P2P



2、RS-485 point to multi-point



3、UT-901 to RS-232



F、Debug :

1、Communication failure

A、Check RS-232 connection

B、Check RS-485/RS-422 coonection

C、Check power supply

D、Check connection pin wire

E、Does TXD light is blinking?

F、Does RXD light is blinking?\

G、Does antenna is fixed properly?

2、Data loss or error

A、Make sure the baud rate,format is matching each other