FS-BT485A

RS232/RS422/RS485 generic Bluetooth serial port adapter user's manual

Bluetooth is a short-range wireless communication technologies, working in 2.4 GHz 的 the ISM band,

the band Green free band of the genus, use the band the radio resource management departments to apply

for license. Bluetooth has adopted a frequency hopping spread spectrum in the way, have good shielding,

entered industrial control areas, more and more applications in industrial automation, distributed data

acquisition, intelligent transport, electricity, hydraulics, and many other industries, industrial control interface implemented as RS232/RS485/RS422 transparent wireless transmission of signals.

FS-BT485A(FS is a registered trademark of the FourStar electronic FOURSTAR), Bluetooth serial port adapter is also known as RS232/RS422/RS485 go Bluetooth is a FourStar electronic research's industrial-grade Bluetooth serial port adapter, the implementation of RS232、 RS485、RS422 transparent Bluetooth wireless transfer without alteration original serial communication protocols and software, just simple setting to override the original copper wire cable transmission, this product is by UART data formats for transparent transmit data, apply to all comply with UART The various data formats RS232、 RS485、RS422 interface.

Some field bus such as PROFIBUS、 PPI、 MPI、Modbus 、 CC-link 、PC-Link, etc., although its physical communication port to RS485 interface, but they do not comply with UART data format, so do not apply to this product!

Particularly suitable for use FS-BT485A On occasions:

★ move or rotate serial communication between devices;

★ in the opposite, opposite the river or highway or railway or communication between devices;

★ other submarine cables all inconvenient for communication between the devices;
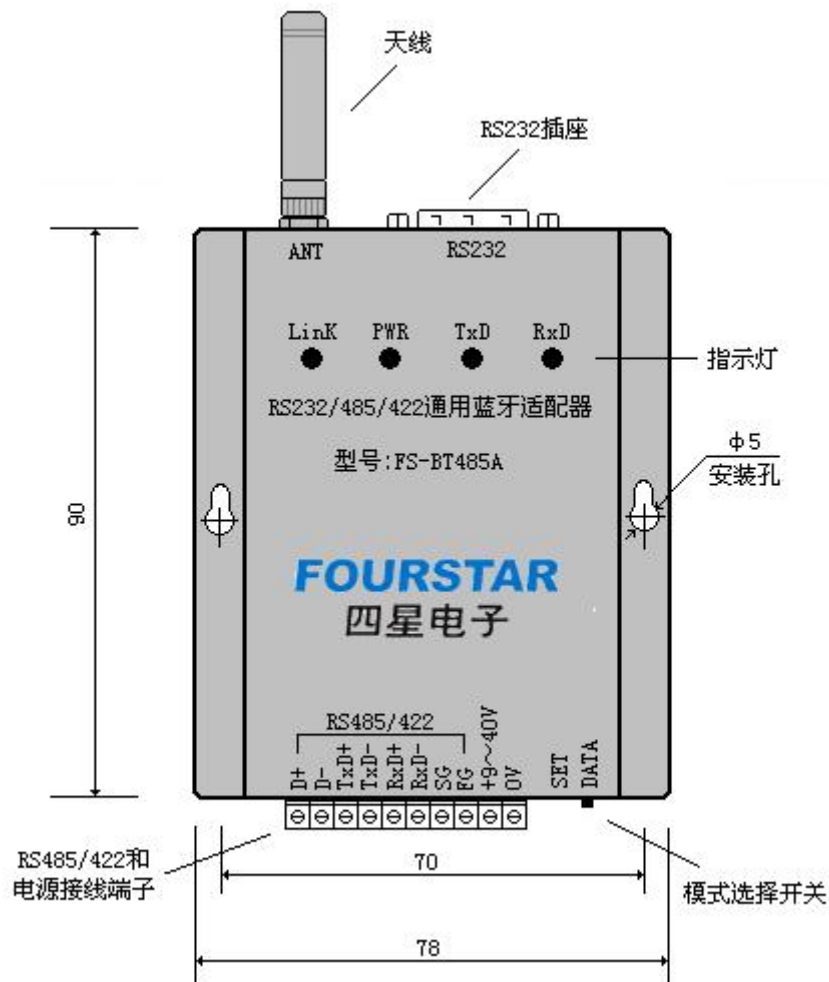
Product characteristics and key technical indicators

● Bluetooth band:2.40GHz —2.48GHz, ISM band

● Bluetooth protocol: Bluetooth v1.2

● Power ratings:Class1 (+ 20dBm)

● Received sensitivity: 85dBm

● Bluetooth communication distance: 300 m (broaden), after the high-gain antennas on matching up to 800 m (broaden)

● power supply voltage: ~ 9 wide 40VDC voltage power supply, power consumption of about 1W, the product internally DC/DC isolation modules will be external power supply and internal circuit isolation, external power supply can be taken from any device not a total of land issues.

● communication rate: 1.2Kbps～406.8Kbps, for standard baud rate

●UART serial port formats：data bit：8bit，parity bit：Odd、Even、None，stop bit：1、2

● Interface RS232 three line signal: , TXD, RXD, GND without fluidic signal

● RS485/422 interface cable's largest communication distance : Max of 1200m, RS232 interface cable's largest communication distance: Max of 15m

● Interface protection: The powers port: the pole connects an anti- protection, lead to flow protection, 500W lightning surge protection

RS485 port: 500W lightning surge protection

RS232/RS422 ports: surge protection

●Work temperature:-40~+85 ℃ , relative humidity: 0~95% (not congealed)

● Shape size: 90 × 78 × 24(long × breadth × high) wall hang type aluminum hulls

●Heavy　Measure: 150 g

Product shape structure

Antenna：this product is standard device 2.4 GHz，3dB antenna, to enhance communication in distance, optional 9dB 、13dB 、24dB , etc., high-gain antennas, communication distance may consult the antenna vendor.

The following table is FourStar electronic use different gain antenna measured distance from the Bluetooth communication:

Antenna specifications	Bluetooth maximum distance, spacious zones of communication)
2.4 G，3dB Rod antenna (standard)	400m
2.4 G，9dB Rod antenna	800m
2.4 G，9dB antenna	500m

Need to note is that data in a table is in open zone environment measured, Indoors or have a barrier of circumstances, the Bluetooth communication range has a larger decrease, the actual situation is complex, needs to be measured according to a live environment.

Actual application should reduce barrier, maximize pairing two Bluetooth module

Mutual "can see" visible. As far as possible don't install a product metal in order to prevent signal inside the cabinet is shielded, can use electric cable blue tooth string is proper to go together with machine derivation of the gearing is in the cabinet outside, or use sucker antenna to arrive antenna derivation to outside in the cabinet.

Indicator light**:** the product palette with four LED indicators, the status of its work as follows:

Indicator light	Flashing on	Blink	Quenching
link （blue）	Build chain	The chain is not built	Parameter sets the mode
PWR （red）	Power the normal	Fault	Fault or not power-on
TXD （yellow）	Failure or signal polarity reversed	Transfer data	Fault or not power-on
RXD （green）	Failure or signal polarity reversed	Transfer data	Fault or not power-on

RS232 outlet： RS232 receptacle for the standard DB9M needle seat, its signal is defined as follows:

RS485/422 and power terminals: for the European3.81 plug-in terminals whose signal is defined as follows:

RS232 outlet (DB9M) signal definition RS485/422 Terminal signals defined

PIN numbers	Signal names	Speaks
1	DCD	Unused
2	RXD	RS232 signal reception
3	TXD	RS232The signal send
4	DTR	Terminal ready
5	GND	Signal ground

6	DSR	Unused	Ordinal	Signal names	Note
7	RTS	Send the request	1	D +	RS485 signals are
8	CTS	Unused	2	D-	RS485 of the signal negative
9	RI	Unused	3	TXD +	RS422 Send a signal being
			4	TXD-	RS422 Send the signal negative
			5	RXD +	RS422 to receive signals are
			6	RXD-	RS422 receive signal negative
			7	SG	RS485/422 signal ground
			8	FG	Shield (casing)
			9	+9～40V	Add-in DC power supply are
			10	0V	Add-in DC power negative

when users choose to use RS232、 RS485、RS422 one of three interfaces, you can then use direct wiring, and do not need to switch or jumper settings for trouble, such as internal logic will automatically identify which interface you are using, this is a major characteristic of the product.

If RS485/422 the cable length exceeded 50m required in the bus only one installation of a 120 terminal resistor, Europe will not repeat them here, users can have access to Fourstar electronic RS485-related product information or refer to EIA-RS485 standard specification.

Mode selection switches: of the switch selectable FS-BT485A ' second work mode:

DATA mod: data transfer mode, i.e. the Bluetooth serial port adapter's normal working mode.
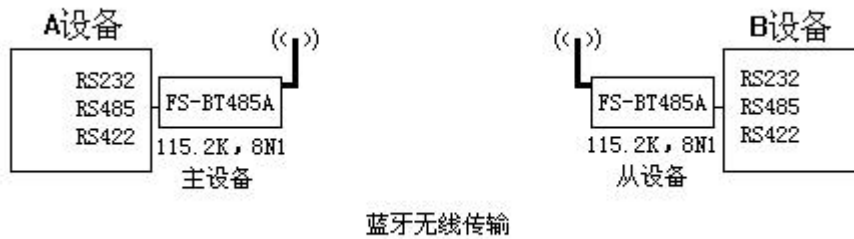
SET mod: parameters setup mode, set the software on at this time using FS-BT485A conducted parameter settings.

FS-BT485A The settings and used

FS-BT485A a " 1 master a from " pairing use ,before using conducted according to the fact that you want the parameter settings, regarding the data read with the product CD in the Bluetooth serial port setting software BT232Set use statements documentation and setting software from the official website of the four star electronic download. The following an instance to illustrate how to set up and use.

Suppose you have A、B of the two pieces of equipment   RS232 or RS485 or RS422 be used between interface for data communication cables, and its serial baud rate to 115.2Kbps , data format:8 data bit, no parity bit, 1 a stop bit (" 8N1), are required to get rid of the cable into the Bluetooth wireless transmission of data shown in the following figure:

To FS-BT485A mode selection switch dial to "set ", with the product's serial cable connection FS-BT485A and computer RS232 serial port, use BT232Set Settings software on the second FS-BT485A make the following settings:

Connection A devices FS-BT485A Set the as follows:

The master device

Bind an address from = ends as from the device's Bluetooth module addresses (you can first by the settings are read from the software) from the device

PIN = 00000000 codes (or other numbers, but must be bound by the from the device the same for the PIN code linking) paired

Baud rate of = 115200

Parity bit= NENO no

Stop bits = 1

The device name = FOURSTAR (can be set up a device name you like)

Cancel serial tips

Connection B devices FS-BT485A Set the as follows:

From the device

PIN = 00000000 codes (or other numbers, but must be the master device is the same as PIN to pairing

establish codes)

Baud rate of = 115200

Parity bit= NENO no

Stop bits = 1

The device name = FOURSTAR (can be set up a device name you like)

Cancel serial tips

Is set on completion, will second FS-BT485A mode selection switch dial to "data " location, Bluetooth

master device will automatically locate, paired and connected equipment from the end of the binding; but

the Bluetooth device is always in standby mode, waiting for the master device-side sponsor find, pairing

and connections, this process takes about 2～5 seconds, while blue indicator link Flash. Once you

master-slave module connection is successful, indicator becomes a link-on, when the master-slave

Bluetooth module just like a conductor, built in this State called "built chain " .The second after the chain

Bluetooth module can be carried out between serial ports of bi-directional data transfer transparent serial

port, and do not need to modify the original device communication protocols and software.

A Bluetooth master device works only with an address to which it is binding and PIN code built from the

device with the same, so each chain of production chain pairing a Bluetooth module and other kin chain

pairings effect between Bluetooth modules, just like a different cable!

In fact two Bluetooth module can be set to different baud rate and data formats, as long as the

guarantee Bluetooth and connect serial baud rate and data of the same format, use Bluetooth serial port

adapter of this, the available second FS-BT485A composition baud rate converter or serial port parameters

converter. You can apply different baud rate, and serial data format of the device is attached to the same
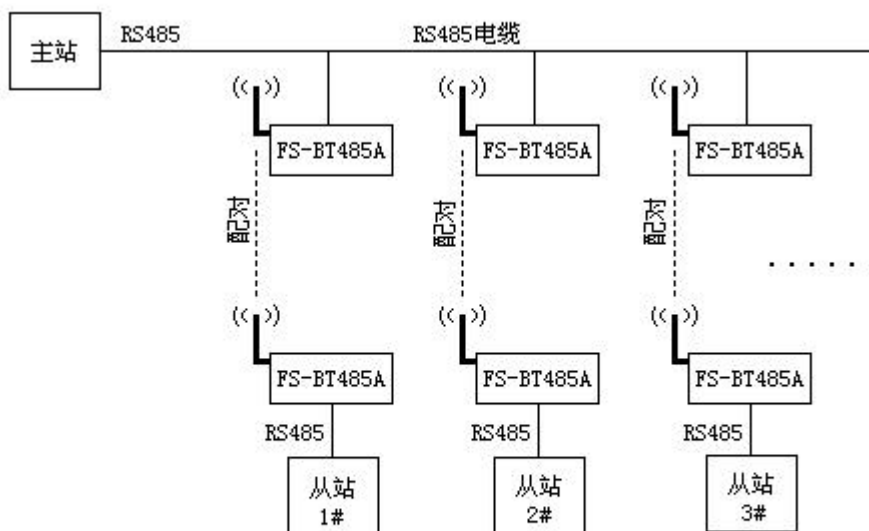
RS485 network.

Other applications diagram

RS485 multipoint networking communication:

traditional slave RS485 netting multipoint communication, as shown in the following figure, the main

station take the initiative to send commands calls each from station, have received from the station master

station with a command and related to themselves the address of the internal setting, if they are equal

compare the main station from the station and for data transfer, if not equal answer from the station shall
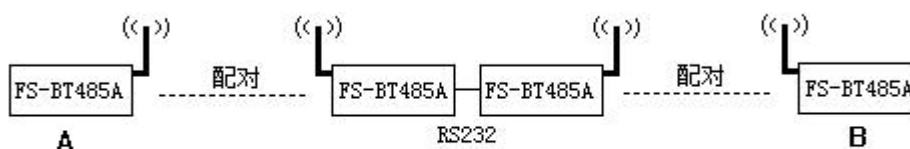
withhold.

Use FS-BT485A to implement RS485 Bluetooth wireless multipoint networking communication plan,

as shown in the following figure, this scenario than Bluetooth itself achievable 1 master bind 7 from the

multipoint communication scenarios clearer and easy to use, each pair binds pairing FS-BT485A effects

between, that is bind pairing a Bluetooth module after like a between conductors. This scenario does not

need to change the original RS485 communications protocols and software, and RS485 site quantity is not

restricted, and the same original cable communications.

RS485蓝牙无线多点组网通信方案

Bluetooth Repeater

Available second back-to-back connections FS-BT485A to implement Bluetooth radio signal relay and zoom in, and the number of such a Repeater and no restrictions, can increase the distance of Bluetooth wireless communication. The following figure, and A B for Bluetooth wireless communication between distances can be doubled, and each additional multiple of a Repeater, haul doubled.

用二个模块来实现蓝牙无线信号中继器

FS-BT485A per set put contains the following accessories:

FS-BT485A   1PCS

2.4 GHz, 3dB antenna 1PCS

RS232   cables (1m) 1PCS

CD (with manual and setting software) 1PCS