

Model ATC-2630
Zigbee to RS232/422/485 Converter
User's Manual



Introduction

The ATC-2630 is a cost effective and highly integrated Serial-to-ZigBee wireless Converter. Built on ZigBee technology, the ATC-2630 is ideal for a range of applications from simple RS-232 cable replacement to sophisticated multi-drop RS-485 networks and everything in between. Available in RS-232 /RS-422/RS-485.

ZigBee is the global wireless language connecting dramatically different devices to work together and enhance everyday life. The ZigBee Alliance is a non-profit association of more than 280 member companies driving development of ZigBee wireless technology. The Alliance promotes world-wide adoption of ZigBee as the leading wirelessly networked, sensing and control standard for use in energy, home, commercial and industrial areas.

Features:

- Utilizes globally available 2.4 GHz ISM band
- Control and Configuration by ATC utility software
- 65535 unique node addresses, IDs allow multiple large networks to coexist.
- Powerful ARM® Cortex® -M3 inside
- Power Output, max. +5 dBm
- Complete IEEE 802.15.4 spec compliant
- Typical Receiver Sensitivity -100dBm
- Typical Throughput rate 115200bps
- Obstructed signal range to 500 meters @12dBm/PA and

-100dBm/LNA

- Multiple Low Power Operating modes
- 3-in-1 RS-232/422/485 interface Max 115.2Kbps Serial interface .
- Supports 4- and 2-wire RS-485 with AUTO-SEND™
- Supports industrial 24VDC power input
- Terminal block accessories for easy RS-422/485 serial wiring
- Easy and powerful configuration program
- Approval CE, RoHS

Hardware Description

1. RS-232 Pinout: (DB9 Male)

(DB9Male)	Signal	I/O
PIN2	RXD	IN
PIN3	TXD	OUT
PIN5	GND	-

2. RS-422/485 Pinout: (six Terminal from left)

Terminal No	1	2	3	4	5	6
RS-422	T+	T-	R+	R-	VIN	GND
RS-485	485+	485-	-	-	VIN	GND

3. Power Supply:

ATC-2630 Zigbee converter can adopt the product's 9V power adapter for power supply or adopt power from other DC power or device.(+9--+24V@500-100mA).

4. LED indication :

- LINK — Indication Zigbee Link, Always light mean the converter working as Coordinator. Flash as slave or router
- TXD — Data Sending from Zigbee to serial port
- RXD — Data receiving from serial port to Zigbee
- PWR — Indication Power

5. Connection Diagram

RS-232 Connection

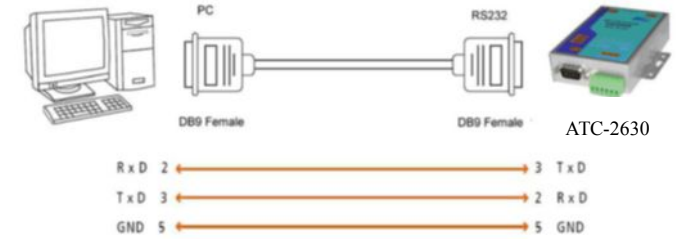


Figure 1

RS-422 Connection

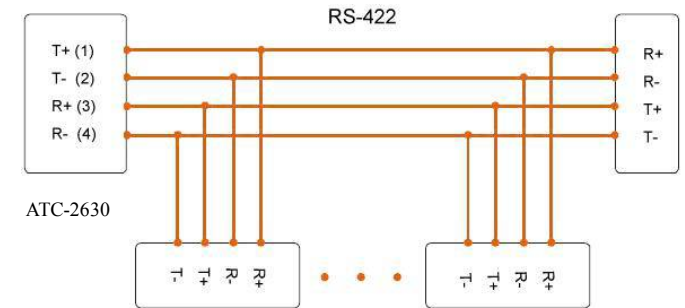


Figure 2

RS-485 Connection

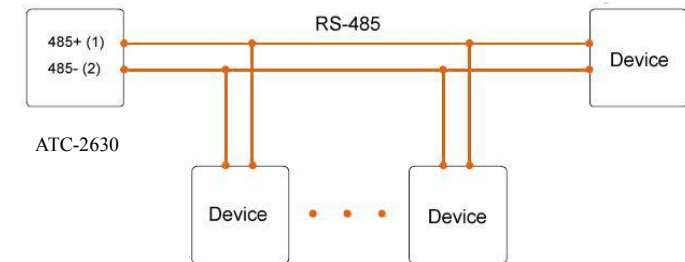


Figure 3

Wireless Working Mode

In the process of transmission, Router will automatically find out the best routing path and automatically provide relay for data transmission (user setting is not required and Router can be placed as required)

Transparent transmission between the Coordinator and Router, the equivalent of a serial line, that users do not need to modify the device or PC software, you can have a wireless transmission into a wireless transmission (and automatic

routing)

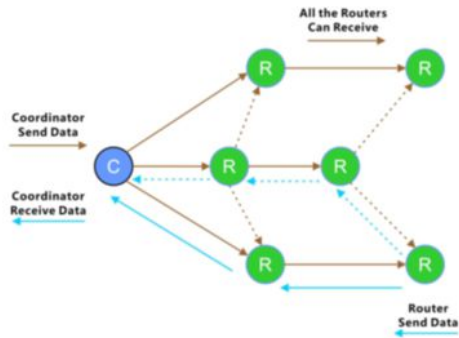


Figure 4 Zigbee router diagram

Applications

- Wireless remote control
- Building automation
- Personal area network
- Industrial control
- OEM equipment
- PC peripherals

Configuration and Operation

1. ATC-2630 Default Settings as following Zigbee Net Parameters

Point Type = Router

PAN ID = 2A01

Short Address = FFFE(Not Jion Zigbee Net)

Channel = 20

Select Antenna = External Antenna

MAC Add = 00 12 4B 00 13 12 DC 40

Transfer Parameter

Transfer Model = Transparency

User-defined Address = 6677

COM Parameters

Baud Rate = 38400

Data Bits = 8 Bits

Stop Bits = 1 Bit

Parity Bit = None

2. Configure ATC-2630

Step1. Use a configuration cross cable(have been adapted) to make an connection between the ATC-2630 and PC serial port.

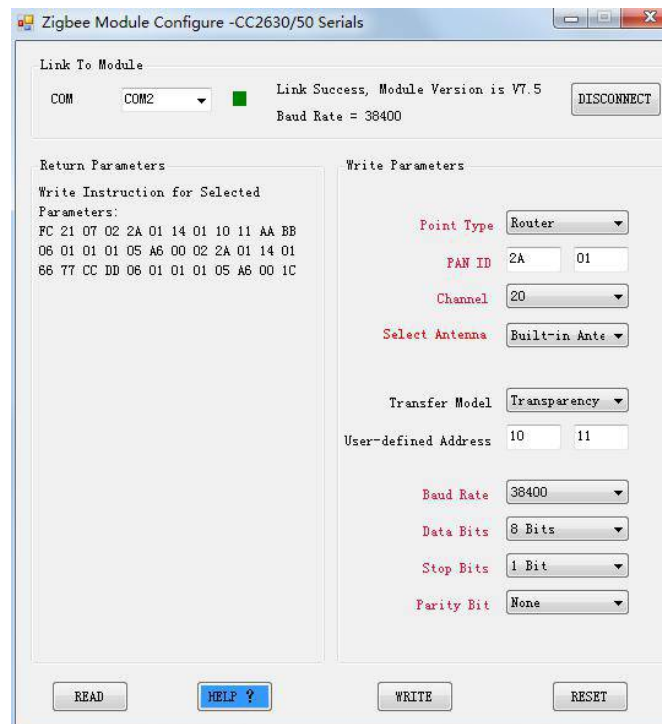
Step2. Intallation ATC_Zigbee_setup.You can see it on CD driver.You can see below application interface after finished.



Function Key

Figure 5 Function Key button location

Step4. Click the “Zigbee Module” button and the configuration interface will be turn to ATC-2630 parameter configuration. Select COM port number(You make sure you have already connect ATC-2630 on PC or laptop RS-232 serial port)and click “CONNECT” button.When the screen appears the following screen.it’s mean you can setting ATC-2630 now.



Step5.

Coordinator module parameters setting.

If you use Zigbee to build one wireless communication network.You should be setup at least one Zigbee Coordinator and one or many Zigbee router in one wireless network.

Zigbee wireless parameter as following:

Choose Point Type:Coordinator

Pan ID :2A 01

Channel:20

Select Antenna:External Antenna

(Build in Antenna is not support)

Transfer Model:Transparency

User-defined address:66 77(Ineffective)

Serial Port parameter as following

Baud Rate: 1200 to 115200bps (Default is:38400bps)

Data bits:8bits

Stop Bits:1 Bits

Parity Bit”None,odd,even (Default is none)

You need save above setting value to Coordinator after finished.Click **Write** button and you can get message”Write To Module Success.Effect after module Reset.Click Reset Button allow the module restart according save value.

Step6.

Router module parameters setting.

Just choose Point Type:Router

Others setting step is same as Coordinator

After the Coordinator is set and the parameters are pre-made to the Coordinator, you need to set the Point Type to the Router when you need to configure the Router parameters, or you can use the Router to automatically join the network. The Router can be configured without any settings. You only need to press the **function key** three times(See figure 5 show). Router can automatically find Coordinator and join the Zigbee network.