



What's in the box?

In addition to this guide, the package includes the following items:



RFU-400 Module + ANT-104-02

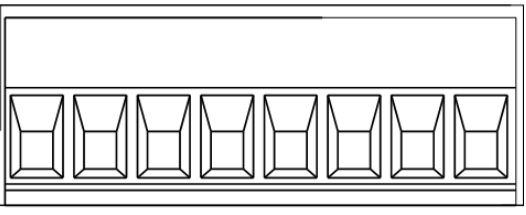


Screwdriver

1. Specifications & Features

- Frequency Range: **433.1 MHz ~ 434.6 MHz (default channel is 4: 433.5 MHz)**
- Channel Spacing: 100 kHz
- Channel Number: 16
- Output Power: Default 10 dBm, Max 19 dBm
- Modulation Technique: 2GFSK
- Group ID: 0 ~ 7
- RF Data Rate: 650 ~ 57600 bps
- Communication distance: 500 m (in open areas with 9600 bps and 10 dBm output power)
- Antenna Connector: RPSMA
- Serial Port: COM 0 (RS-232 and RS-485 bypass)
- COM Port Data Rate: 1200 ~ 115200 bps
- COM Port Data Format: N,8,1 / O,8,1 / E,8,1
- Support RF Repeater Mode
- LED: PWR, RF_Tx, RF_Rx
- 2500 Vrms photocouple isolation on power.
- ± 4 kV ESD to contact.
- Reverse polarity protection and Short protection on power.
- Power requirement $+10 V_{DC} \sim +30 V_{DC}$.
- Power consumption 1 W @ $24 V_{DC}$.
- Operating Temperature: $-25^{\circ}\text{C} \sim +75^{\circ}\text{C}$.
- Storage Temperature: $-30^{\circ}\text{C} \sim +80^{\circ}\text{C}$.
- Humidity: 10 to 90% RH (Non-condensing)
- Module Dimensions (not include antenna): 33 mm x 106 mm x 85 mm (W x L x H)
- Antenna Dimension: 108 mm x $\varnothing 10\text{mm}$

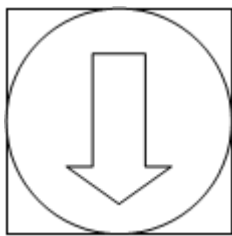
2. Pin Assignment

	Pin	Description
 <p>+Vs GND D+ D- F.G. GND TxD RxD DC Input RS-485 COM 0 RS-232</p>	RxD	RS-232
	TxD	
	GND	
	F.G.	Frame Ground
	D-	RS-485
	D+	
	GND	Power:
	+Vs	+10 ~ +30 V _{DC} , 1A

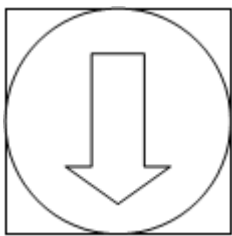
3. LED

LED	Behavior	Description
PWR	On	+10 ~ +30 V _{DC} Power On
	Off	Power Off
RF_Tx	On	RF is transmitting data
	Off	RF is no data to transmit
RF_Rx	Always On	RF is receiving data, signal strength high
	100ms Flash	RF is receiving data, signal strength middle
	500ms Flash	RF is receiving data, signal strength low
	Off	RF is no data to receive

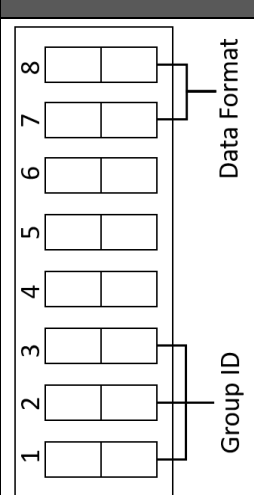

4. Rotary Switch

Switch Name	No	Baud rate (bps)	No	Baud rate (bps)
 <p>RF Baud Rate</p>	0*	Same with COM	1	57600
	2	38400	3	19200
	4	9600	5	4800
	6	2400	7	1200
	8	650	9 ~ E	reserved
	F	Firmware version		

* If COM rate is 115200 bps, the RF rate will set to 57600 bps.

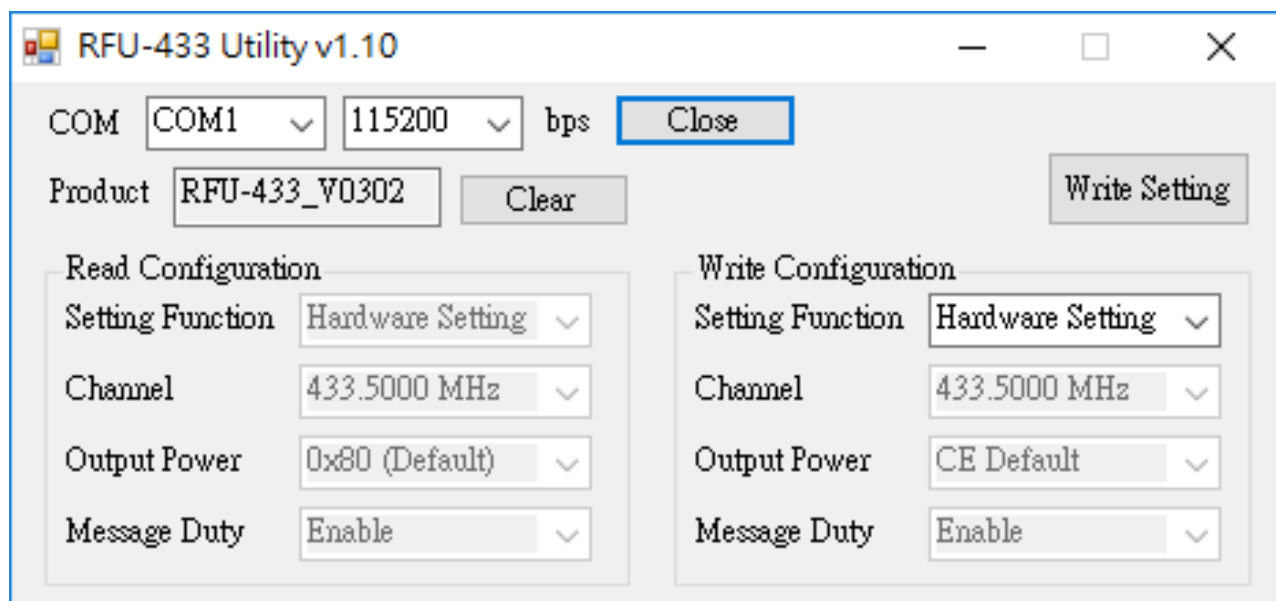
Switch Name	No	Baud rate (bps)	No	Baud rate (bps)
 <p>COM Rate</p>	0	115200	1	57600
	2	38400	3	19200
	4	9600	5	4800
	6	2400	7	1200
	8 ~ E	reserved		

5. DIP Switch

	No	Switch Name	Description														
	1 ~ 3	Group ID	RFU-433 with the same group ID can communicate with each other														
	4 ~ 6	reserved	reserved														
	7 ~ 8	COM data type	<table border="1"> <thead> <tr> <th>Data Type</th> <th>7</th> <th>8</th> </tr> </thead> <tbody> <tr> <td>N, 8, 1</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>O, 8, 1</td> <td>ON</td> <td>OFF</td> </tr> <tr> <td>E, 8, 1</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>*Repeater</td> <td>ON</td> <td>ON</td> </tr> </tbody> </table>	Data Type	7	8	N, 8, 1	OFF	OFF	O, 8, 1	ON	OFF	E, 8, 1	OFF	ON	*Repeater	ON
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N, 8, 1	OFF	OFF															
O, 8, 1	ON	OFF															
E, 8, 1	OFF	ON															
*Repeater	ON	ON															
	Set mode/Run mode		<table border="1"> <tbody> <tr> <td>Set</td> <td>Utility setting mode</td> </tr> <tr> <td>Run</td> <td>Normal firmware work</td> </tr> </tbody> </table>	Set	Utility setting mode	Run	Normal firmware work										
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*** Repeater Mode only supports 1 hub.**

6. RFU-433 Utility

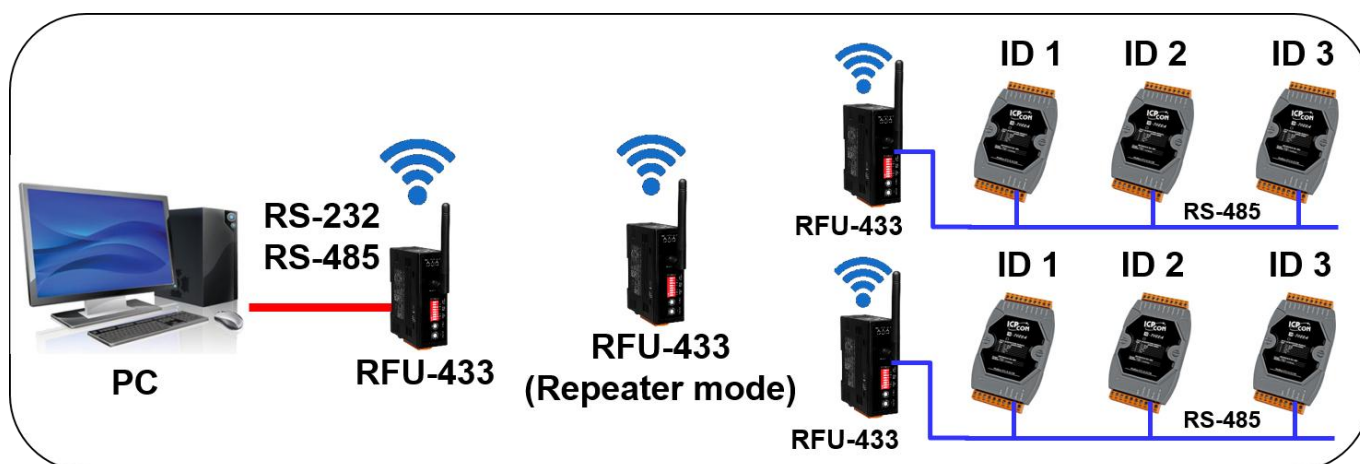


Users can select “Hardware Setting” or “Software Setting” through the utility. If use “Hardware Setting”, the “Channel” parameter will be fixed at 433.5 MHz, the “Output Power” parameter will be fixed at 10 dBm, and the “Message Duty” parameter will be fixed at enable 10% message duty. If use “Software Setting”, the “Channel”, “Output Power” and “Message Duty” parameters can be set by users.

7. Application Example



PC can control RS-485 modules 1 ~ 3 through a RFU-433.
And control modules 4 ~ 6 through another RFU-433.



If these two RFU-433 are far away.
Users can add a RFU-433 with repeater mode between these two RFU-433.