

---

**Wireless RS232 High Power Transceiver (2W)**

---

**Instruction Manual Revision History**

<b>Version</b>	<b>Date</b>	<b>Changes</b>
V1.02	Mar. 2, 2009	1 <sup>st</sup> . Edition
V1.03	May. 23, 2009	2 <sup>nd</sup> . Edition
V1.04	Jun. 02, 2009	3 <sup>rd</sup> . Edition
V1.05	Jun. 04, 2009	4 <sup>th</sup> . Edition
V1.05	Aug. 28, 2009	5 <sup>th</sup> . Edition
V1.06	Oct. 08, 2009	6 <sup>th</sup> . Edition
V2.00	Feb.10, 2012	7 <sup>th</sup> . Edition

## Content

<b>Important Event</b> .....	3
➤ Declaration .....	3
➤ Warranty.....	3
➤ Un-warranty Scope Description.....	3
➤ Contact Us.....	3
<b>Key Feature</b> .....	4
<b>Application</b> .....	4
<b>Characteristic</b> .....	4
<b>Block Diagram</b> .....	5
<b>View</b> .....	5
<b>Accessory</b> .....	6
<b>Command Summary</b> .....	7

## Important Event

- This product is in general use for the equipment on the premise of the development, design, manufacture. Do not use that require high security purposes, such as machinery or medical, aviation equipment, machinery and transport-related deaths are directly or indirectly related to the system.
- This product should be in this brochure by the instructions of the types and rated voltage power under the current proper use. If violation of this statement by the safety records of the supply operation, I am afraid our company cannot afford any of the responsibility.
- Do not self-decomposition, alteration, repair of the products also will cause fire, electric shock, fault, and dangerous. In addition, their decomposition, alteration, and repair the product, failure is not within the scope of warranty.
- The products are not waterproof, so please do not use and touch water. Take off and on also please note. Rain, spray, drinks, steam, sweat may be a failure.
- Use of this product, please be sure to use according to the statement recorded by the use of methods to operate. Please do not violate particular attention to the matter reminded to use.
- Please respect this statement recorded by the note. When consumers in contravention of this statement recorded note of the operation, I am afraid our company could not shoulder any responsibility.
- Products are defective, the Company will be responsible for free to amend the flaws, or to the same flawless product or its equivalent products in exchange. However, the Company does not assume based on the requirements of the flaw and loss responsibility.
- The Company reserves the right to retain without notice to users of the cases, the product of hardware / software (version upgrade) is with the right to edit.

## Declaration

This product provides different frequency for user selection to meet different telecommunication regulation and FCC/CE on different countries.

## Warranty

The warranty time is within one year from purchased date. The warranty scope are used in normal situation and none vandalism. (Some function harmful out of warranty scope and Vandalism are Un-warranty).

## Un-warranty Scope Description

- Because the natural disaster, accident or human factor to cause the bad damage.
- Violate the product instruction manual to cause the damage of the products.
- The improper assemble causes damage.
- The products used the unsanctioned accessory to cause damaged.
- Overstep the allowed used environment to cause the products damaged.

## Contact Us

WENSHING ELECTRONICS CO., LTD.

No.82, Chong De St. 11054 Shin Yi Dist, Taipei, Taiwan

Tel: +886-2-27353055

Fax: +886-2-27328813

## Key Feature

- UHF Band Wireless Data Transceiver
- Exclusive Hopping Technology
- RF Output Power up to 2W
- Sensitivity up to -118dBm
- Voltage Supply from Switching Adapter
- RS232 Interface
- Transceiver Data Rate 1.6Kbps~128Kbps

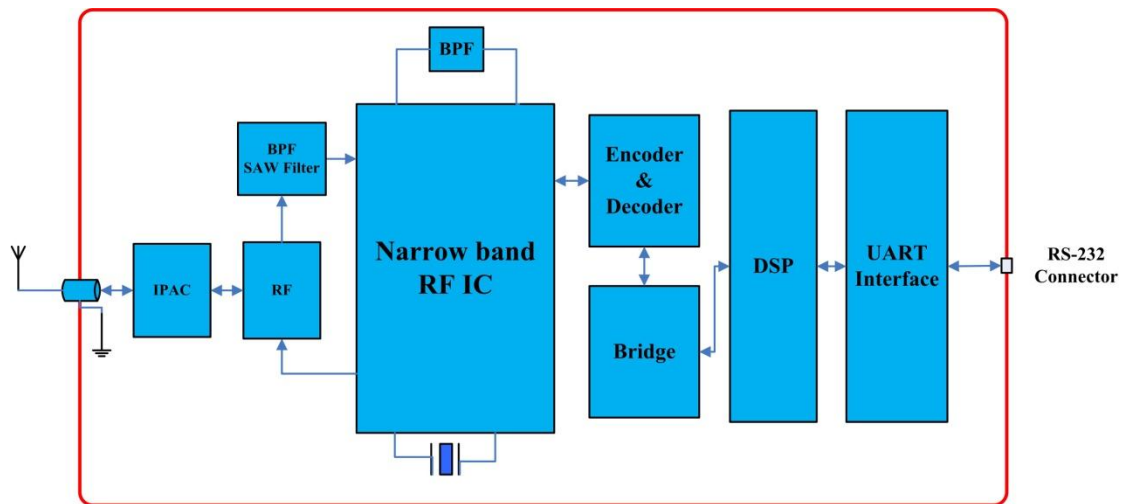
## Application

- Wireless Network
- Multi-Channel Home Automation Standard
- Wireless RS232
- Active RFID Base Station Transceiver

## Characteristic

Parameter	Min	Type	Max	Unit	Condition
<b>Operating Condition</b>					
Operating Temperature Range	-40		+85	°C	
Operating Supply Voltage	4.8	5	5.5	V	
<b>Current Consumption</b>					
RX Mode			40	mA	
TX Mode			1500	mA	2W Peak
Sleep Mode			23	mA	
<b>RF Characteristic</b>					
Frequency Range	922		928	MHz	
Data Rate	1.6		128	Kbps	GFSK
TX Output Power		33	34	dBm	
RX Sensitivity			-120	dBm	
Modulation		GFSK			
<b>Other</b>					
ESD			2000	V	
Interface Data Rate	1.2		115.2	Kbps	
Dimension	74.9 x 25.6 x 25.6			mm	

## Block Diagram



## View



## Accessory

- Antenna (Standard)



- Switching Adapter (Standard)



- Plug (Option)





Bit7 : 0 represents 1 stop bit , 1 represents 2 stop bit. As long as verification is present it should be set to 1.

Bit6~5 : 00= no verification , 10= odd verification , 01=even verification.

Bit4~3 : Default =0

Bit2~1 : Interface baud rate

Value	000	001	010	011	100	101	110	111
Rate(bps)	1200	2400	4800	9600	19.2K	38.4K	57.6K	115.2K

- ✧ 3~4Byte : Group ID(GID) , Setting Range 0000~FFFF
- ✧ 5<sup>th</sup> Byte : equipment ID(SID) , Setting Range 00~FF
- ✧ 6<sup>th</sup> Byte : no functional byte , Value should remain 0x00
- ✧ 7<sup>th</sup> Byte : Transmission rate , Setting Range 00~07 , RF transmission rate should be greater than interface baud rate to avoid data error.

Value	0	1	2	3	4	5	6	7
Rate(bps)	1800	3600	7200	14.4K	28.8K	57.6K	84K	172.8K

- ✧ 8~10Byte : Operating Frequency , MHz\*1000=KHz , then convert to 16 bits  
Ex. If a 925MHz operating frequency is desired, 925\*1000=925000=0x0E 1D 48 then 8th Byte=0E, 9th Byte=1D, 10th Byte=48 ; If a 924.5MHz operating frequency is desire, 924.5\*1000=924500=0x0E 1B 54, 8th Byte=0E , 9th Byte=1B, 10<sup>th</sup>Byte=54.
- ✧ 11<sup>th</sup> Byte :  
Bit0~Bit2 : output power , setting range 0~7

Reference Output Power		
dBm	Set Value	Hex (Bit0~Bit2)
7	0	000
18	1	001
24	2	010
28	3	011
31	4	100
32	5	101
32.5	6	110
33	7	111

Bit3~Bit5 : nonfunctional bits , should remain 000

Bit6~Bit7 : working mode , There are total of 4 different modes as followed

● **Mode 1 (Long Data transmission mode: Setting Value 00) :**

During this mode all units with the same GID will receive the transmission, use when data size is greater than 127bytes

- **Mode 2 (ID data mode 1 : Setting Value 01) :**

During this mode all equipment with the same GID will be able to transmit to equipment with the equipment with the designated SID , achieving 1 equipment transmitting to multiple transmitting equipments, each transmission need to be  $\leq 127$ Bytes ◦

**Transmission : 1<sup>st</sup> byte of the data should be the receiver's SID, the actual data starts after the 2<sup>nd</sup> byte.**

**Ex : Equipment A** with a SID of 55, equipment B with a SID of 88 and both of them with the same GID, under mode 2 A equipment wishes to transmit data 0x1234567890 a total of 5 bytes of data to equipment B. The data string transmitted from equipment A should be 0x881234567890 (a total of 6 bytes data), equipment B receives 551234567890(a total of 6 bytes of data) the first byte represents the transmitter's SID.

- **Mode 3 (ID data mode 2 : Setting Value 10) :**

During this mode you will be able to transmit to equipment with the designated GID and SID. Achieving 1 equipment transmitting to multiple transmitting equipments, each transmission needs to be  $\leq 127$ Bytes ◦

**Transmission : The data needs to comply with the rule of 13-32 Bytes**

**Ex :** Equipment A GID= AAAA SID=55 , Equipment B GID=BBBB SID=88 , Equipment C GID=CCCC SID=99. If equipment A wishes to transmit data string 0x1234567890(a total of 5 bytes) to equipment B Equipment A needs to transmit 0x04FFBBBB881234567890 (a total of 10 bytes) and equipment B receives 0x1234567890(a total of 5 bytes).

If equipment A wishes to transmit data string 0x1234567890 (a total of 5 bytes) routing through equipment B to equipment C , equipment A should transmit 0x08FFBBBB88FFCCCC991234567890 (a total of 14 bytes) equipment B will not be receiving any data only used for routing, equipment C receives 0x1234567890 (1 total of 5 bytes)

- **Mode 4 (internal ID data : Setting Value 11) :**

During this mode you may save designated GID and SID. The transmission will follow the designated GID and SID. You may route the data 14 times. :

- ✧ 12<sup>th</sup> Byte : unused byte , should remain 0x00
- ✧ 13~32 Byte : Preset routing path only activated in mode 4
- ✧ 13<sup>th</sup> : representing how many valid data are in 14-32 byte
- ✧ 14~32 Byte path :

◆ Ex1 : 04 FF 12 34 55 11 22 33 44~00

From 13<sup>th</sup> byte we can tell that there are 4 byte of valid information and

they are FF 12 34 55

FF 12 34 55 represents GID=1234 、 SID=55 ， When the equipment receive data via UR it will automatically transmits data to equipment with GID=1234 、 SID=55.

◆ Ex 2 : 05 FF 12 34 55 11 22 33 44 ~ 00

From the 13<sup>th</sup> byte we can tell that there are 5 bytes of valid information.

FF 12 34 55 11

FF 12 34 55 11 represents GID=1234 、 SID=55 及 11 ， When the equipment receives data via UR it will automatically transmits data to GID=1234 、 SID=55 then route to equipment with GID=1234 、 SID=11.

◆ Ex.3 : 06 FF 12 34 55 11 22 33 44 ~ 00

From the 13<sup>th</sup> Byte we can tell that there are 6 bytes of valid information and they are FF 12 34 55 11 22.

FF 12 34 55 11 22 represents GID=1234 、 SID=55 、 11 及 22 ， when the equipment receives data via UR it will automatically transmits data to equipment with GID=1234 、 SID=55 then route to equipment with GID=1234 、 SID=11 then routes to equipment with GID=1234 、 SID=22

◆ Ex 4 : 08 FF 12 34 55 FF 45 67 88 44 ~ 00

From the 13<sup>th</sup> byte we can tell that there are 8 byte of valid information and they are FF 12 34 55 FF 45 67 88

FF 12 34 55 FF 45 67 88 represents GID=1234 、 SID=55 and GID=4567 、 SID=88 ， when the device receives data via UR it will automatically transmits data to equipment with GID=1234 、 SID=55 then route to equipment with GID=4567 、 SID=88.