
Wireless Hi Sensitivity Receiver Module (RF ASK)

**Version History**

Version	Date	Changes
V1.01	Jan.29, 2000	1 st . Edition

The RWS-A916 Module receiver is ideal for short-range wireless control and data applications where robust operation, small size, low power consumption and low cost are required. The RWS-A916 MODULE All critical RF functions are contained in the MODULE, simplifying and speeding design-in. The RWS-A916 is sensitive and stable. A wide dynamic range log detector, in combination with digital RSSI and a compound data slicer, provide robust performance in the presence of on-channel interference or noise. FCC 15.249 and similar regulations. CAUTION: Electrostatic Sensitive Device. Observe precautions when handling.

Notes:

1. OOK BER measured with no DS1 threshold (DS2 disabled), and data encoded for DC-balance with a run length limited to 4 bit periods.
2. ASK BER measured with a 25 mV DS1 threshold, DS2 threshold 6 dB below peak, and data encoded for DC-balance with a run length limited to 4 bit periods.
3. Sleep to receive recovery time is for the sleep period and signal level indicated, -40 to 60 C.Recovery time will increase at higher temperatures, for longer sleep intervals and lower signal levels.9600BSP to change 100KBPS cut capacitance a.b.c.

- Frequency Range: 916.5 MHz
- Modulate Mode: ASK
- Circuit Shape: PLL
- Data Rate: 3K~100 K BPS
- Sensitivity: -112 dBm
- Channel Spacing: 200 KHZ
- Supply Voltage: 2.7~ 5.5 V
- High Sensitivity Passive Design.
- Simple To Apply with Low External Count.
- Designed for Short-Range Wireless Control and Data Communications
- Supports RF Data Transmission Rates Up to 200 kbps
- 2.4 V, Low Current Operation plus Sleep Mode
- Stable, Easy to Use, Low External Parts Count

Absolute Maximum Rating

Rating	Value	Unit
Power Supply and All Input / Output Pins	-0.3 to +4.0	V
Non-Operating Case Temperature	-10 to +70	°C
Soldering Temperature(10 seconds)	230	°C

Electrical Characteristic, 200 kbps On-Off Keyed, Low-Current RX Mode

Characteristic	Sym	Note	Min	Type	Max	Unit
Operating Frequency	fO		913.80		914.20	MHz
Receiver Performance (OOK @ 2.4 kbps)						ASK
Input Current, 3.6 Vdc Supply	IR				0.9	mA
Input Signal for 10 BER, 25 C		1		-98		dBm
Rejection, 30 MHz	RREJ		55			dB
Sleep to Receive Switch Time (100 ms)	tSR	3		200		us
sleep, -85 dBm signal)						
Sleep Mode Current	IS				5	uA
Power Supply Voltage Range	VCC		2.7		5	Vdc
Operating Ambient Temperature	TA		-10		+70	°C

Electrical Characteristic, 19.2 kbps On-Off Keyed, High-Sensitivity RX Mode

Characteristic	Sym	Note	Min	Type	Max	Unit
Operating Frequency		fO	913.80		914.20	MHz
Modulation Type			OOK			
Data Rate			2.4			kbps
Receiver Performance (OOK @ 2.4 kbps)		IR			1.8	mA
Input Current, 3 Vdc		1		-98	dBm	

Supply Input Signal for 10 BER, 25 C Rejection, 30 MHz	RREJ		55			dB
Sleep to Receive Switch Time (100 ms sleep, -85 dBm signal)	tSR	3		200		us
Sleep Mode Current	IS				5	uA
Power Supply Voltage Range	VCC		2.7		3.5	Vdc
Operating Ambient Temperature	TA		-10		+70	°C

Electrical Characteristic, 115.2 kbps Amplitude-Shift Keyed, High-Sensitivity RX Mode

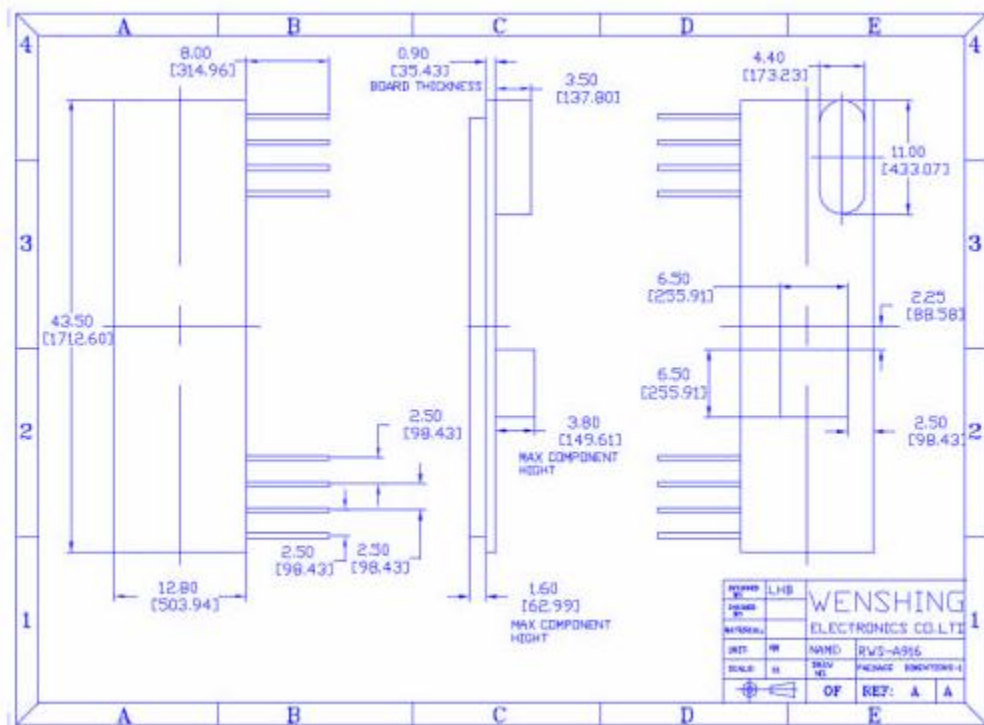
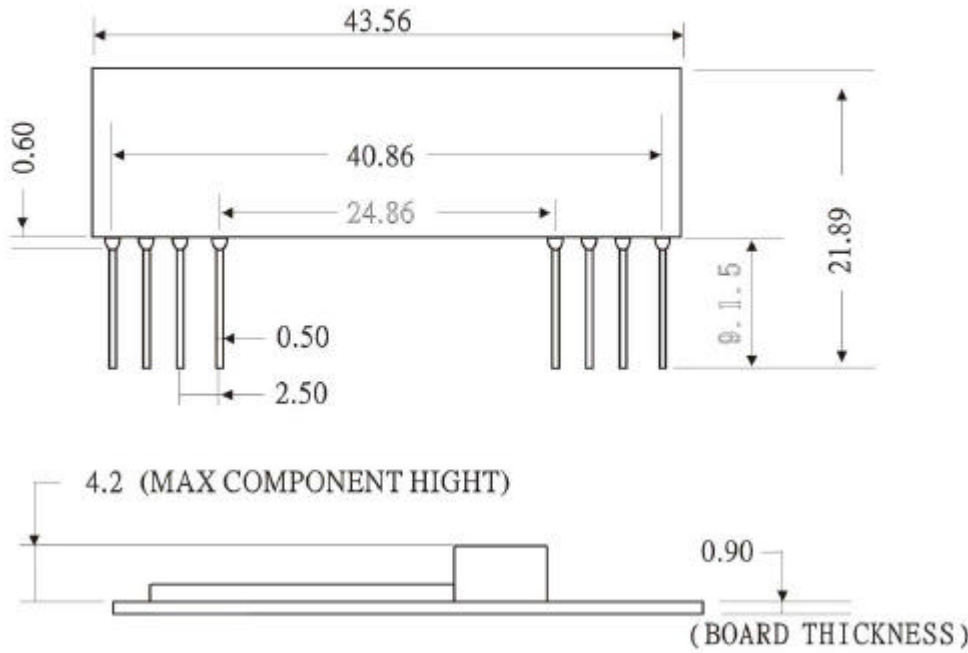
Characteristic	Sym	Note	Min	Type	Max	Unit
Operating Frequency		fO	913.80		914.20	MHz
Modulation Type				OOK		
Data Rate				2.4		kbps
Receiver Performance (OOK @ 2.4 kbps) Input Current, 3 Vdc Supply Input Signal for 10 BER, 25 C Rejection, 30 MHz Sleep to Receive Switch Time (100 mssleep, -85 dBm signal)		IR			1.8	mA
			1		+98	dBm
	RREJ		55			dB
	tSR	3		200		u s
	IS				5	uA
Power Supply Voltage Range	VCC		2.7		3.5	Vdc
Operating Ambient Temperature	TA		-10		+70	°C

Receiver Set-Up, 3.0 Vdc, -10 to +70

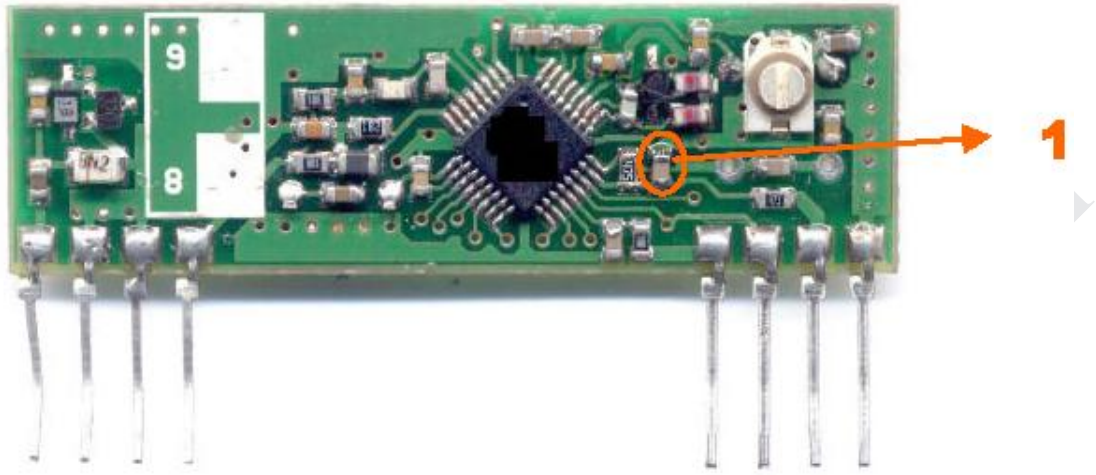
Item	Symbol	OOK	OOK	ASK	Unit	Note
Nominal NRZ Data Rate	DRNOM	2.4	19.2	115.2	kbps	see pages 1 & 2
Minimum Signal Pulse	SPMIN	416.67	52.08	8.68	us	single bit
Maximum Signal Pulse	SPMAX	1666.68	208.32	34.72	us	4 bits of same value
AGCCAP Capacitor	CAGC	-	-	2200	pF	10% ceramic
PKDET Capacitor	CPKD	-	-	0.001	u F	10% ceramic
BBOUT Capacitor	CBBO	0.1	0.015	0.0027	u F	10% ceramic
LPFADJ Resistor	RLPF	240	30	12	K	5%
RREF Resistor	RREF	100	100	100	K	1%
THLD2 Resistor	RTH2	-	-	100	K	1%, for 6 dB below peak
THLD1 Resistor	RTH1	10	27	100	K	1%, typical values
PRATE Resistor	RPR	1100	330	160	K	5%
PWIDTH Resistor	RPW	270 to	270 to	1000	k	5%
		GND	GND	toVCC		
DC Bypass Capacitor	CDCB	10	10	10	F	tantalum
RF Bypass Capacitor 1	CRFB1	27	27	27	pF	5% NPO
Antenna Tuning Inductor	LAT	10	10	10	nH	50 ohm antenna
Shunt Tuning/ESD	LESD	100	100	100	nH	50 ohm antenna

Size

UNIT:mm



速率提高方法說明



如果客戶需要自行提高,此型號的傳輸速率, 只需要更改1處電容(改為10P)

Demo Circuit

