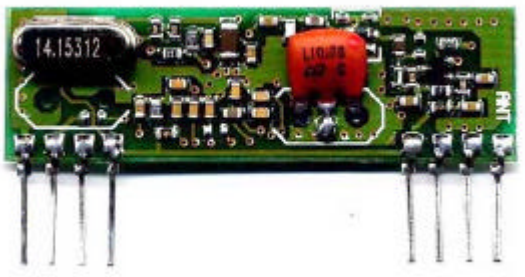
WEN SHING DATA SHEET

Receiver Module : RWS-A916 (916.5MHz)

***Frequency Range: 916.5 MHz** ***Modulate Mode: ASK** ***Circuit Shape: PLL** ***Date Rate: 3K~100 Kbps** ***Sensitivity: -112 dB** ***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

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

Absolute Maximum Rating

Rating	Value	Units
Power Supply and All Input/Output Pins	**-0.3 to +12.0**	**V**
Non-Operating Case Temperature	**-20 to +85**	**C**
Soldering Temperature (10 seconds)	**230**	**C**

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

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Operating Frequency	**fO**		**913.80**		**914.20**	**MHz**
Modulation Type						**Data Rate**
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 sleep, -85 dBm signal)	**tSR**	**3**		**200**		**us**
Sleep Mode Current	**IS**				**5**	**uA**
Power Supply Voltage Range	**VCC**		**2.7**		**5**	**Vdc**
Operating Ambient Temperature	**TA**		**-40**		**+85**	**C**

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

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
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 Supply						
Input Signal for 10 BER, 25 C		**1**		**-98**	**dBm**	
Rejection, 30 MHz	**RREJ**		**55**			**dB**
Sleep to Receive Switch Time (100 ms sleep, -85 dBm signal)	**tSR**	**3**		**200**		**u s**
Sleep Mode Current	**IS**				**5**	**uA**
Power Supply Voltage Range	**VCC**		**2.7**		**3.5**	**Vdc**
Operating Ambient Temperature	**TA**		**-40**		**+85**	**C**

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

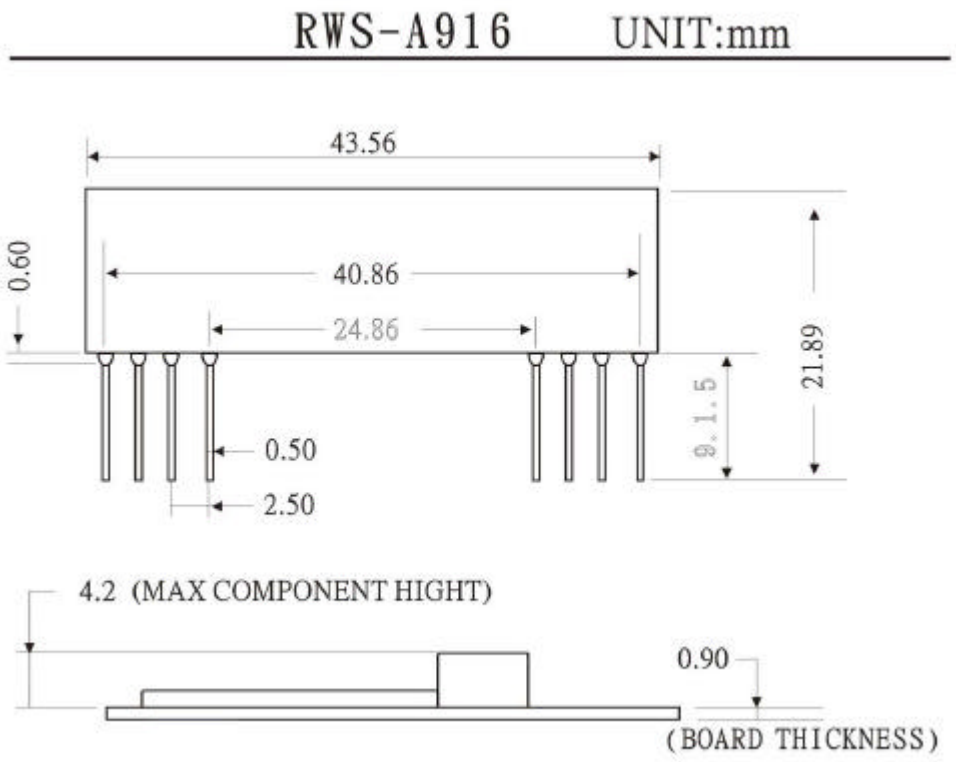
Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Operating Frequency		**fO**	**913.80**		**914.20**	**MHz**
Modulation Type				**OOK**		
Data Rate				**2.4**		**kbps**
Receiver Performance (OOK @ 2.4 kbps)		**IR**			**1.8**	**mA**
Input Current, 3 Vdc Supply						
Input Signal for 10 BER, 25 C			**1**		**+98**	**dBm**
Rejection, 30 MHz	**RREJ**		**55**			**dB**
Sleep to Receive Switch Time (100 ms sleep, -85 dBm signal)	**tSR**	**3**		**200**		**u s**
Sleep Mode Current	**IS**				**5**	**uA**
Power Supply Voltage Range	**VCC**		**2.7**		**3.5**	**Vdc**
Operating Ambient Temperature	**TA**		**-40**		**+85**	**C**

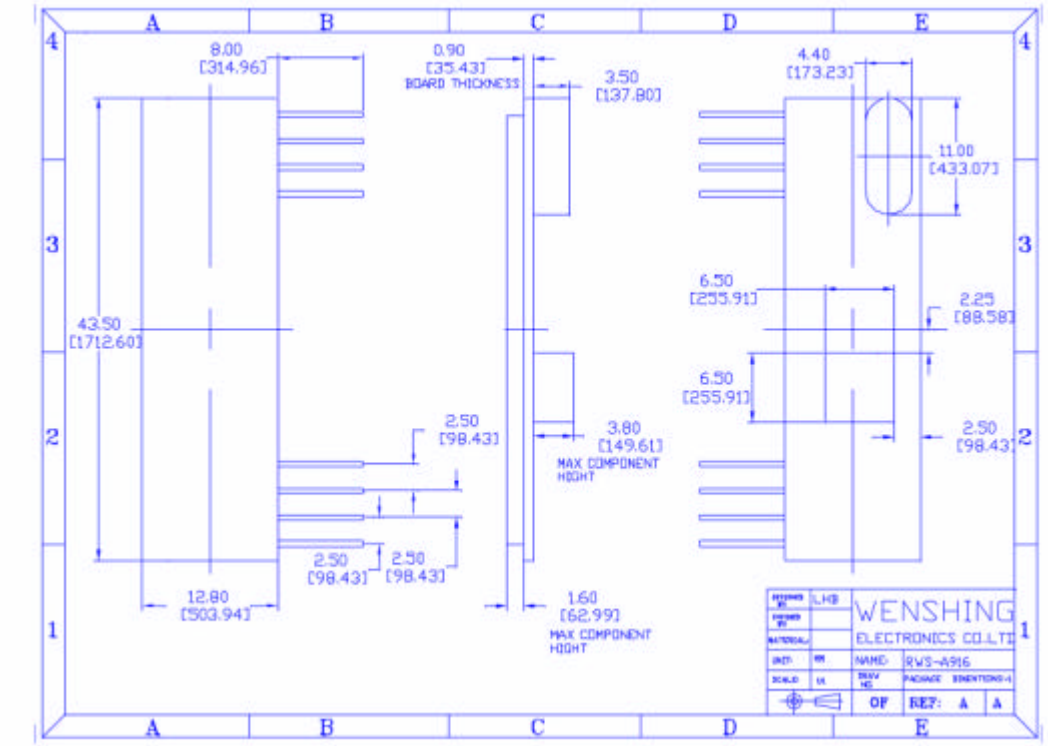
Receiver Set-Up, 3.0 Vdc, -40 to +85

Item	Symbol	OOK	OOK	ASK	Units	Notes
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**	**u s**	**single bit**

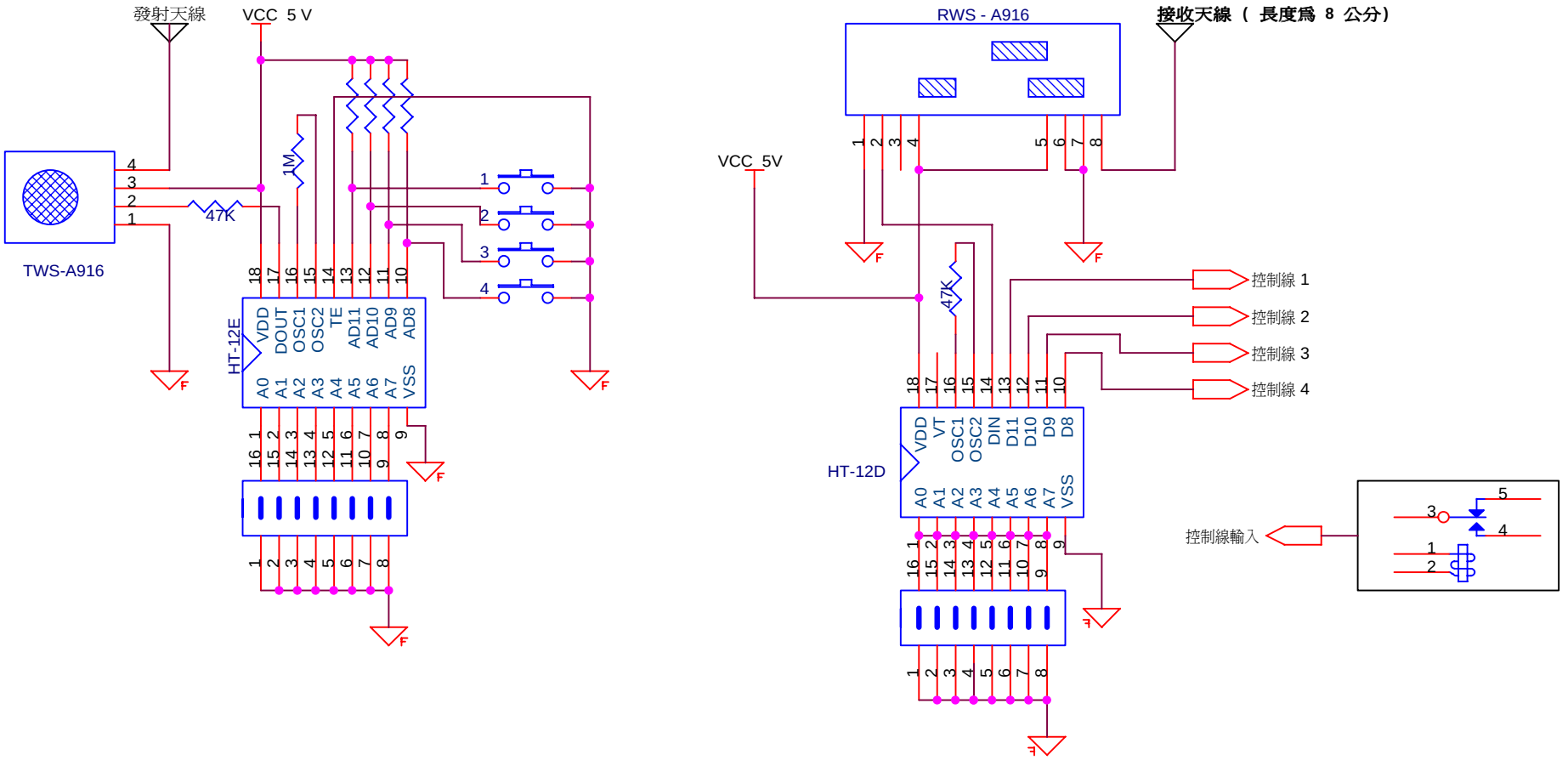
Maximum Signal Pulse	SPMAX	1666.68	208.32	34.72	us	4 bits of same value
AGCCAP Capacitor	CAGC	-	-	2200	pF	10% ceramic
PKDET Capacitor	CPKD	-	-	0.001	u F	10% ceramic
BBOUT Capacitor	CBBO	0.1	0.015	0.0027	u F	10% ceramic
LPFADJ Resistor	RLPF	240	30	12	K	5%
RREF Resistor	RREF	100	100	100	K	1%
THLD2 Resistor	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 GND	270 to GND	1000 toVCC	k	5%
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 Inductor	LESD	100	100	100	nH	50 ohm antenna

Application Note:




8.00
[314.96]
0.90
[35.43]
BOARD THICKNESS
3.50
[137.80]
4.40
[173.23]
11.00
[433.07]
6.50
[255.91]
2.25
[88.58]
43.50
[1712.60]
6.50
[255.91]
2.50
[98.43]
3.80
[149.61]
MAX COMPONENT HIGHT
2.50
[98.43]
2.50
[98.43]
2.50
[98.43]
12.80
[503.94]
1.60
[62.99]
MAX COMPONENT HIGHT
WENSHING
ELECTRONICS CO.,LTD
NAME: RWS-A916
OF
REF: A
A

示範電路圖



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Size A	Document Number <Doc>	Rev <RevCode>
Date: 星期三, 八月 01, 2001	Sheet 1 of 1	