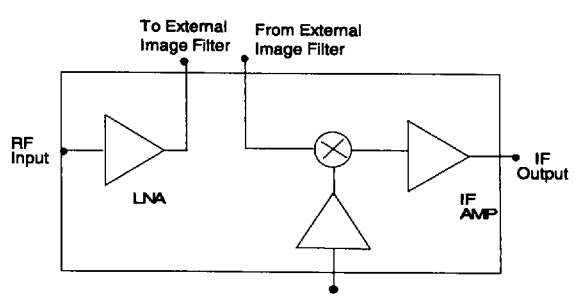


FEATURES	FUNCTIONAL BLOCK DIAGRAM
■ Monolithic Down Converter ■ 2.5 dB Noise Figure ■ 20 dB Conversion Gain ■ Single +5V Supply ■ 14 Pin SOIC ■ Low Power Consumption	 The diagram shows a block for the AWR8001 receiver. It has an 'RF Input' on the left, which goes into an 'LNA' (Low Noise Amplifier) block. The output of the LNA goes to a 'To External Image Filter' port. The 'From External Image Filter' port goes into a mixer (represented by a circle with an 'X'). The mixer also receives a 'Local Oscillator Input' from below. The output of the mixer goes into an 'IF AMP' (Intermediate Frequency Amplifier) block, which then produces the 'IF Output' on the right.

The ANADIGICS Wireless receiver is a fully monolithic downconverter intended for cellular telephone, cordless telephone and wireless local area network (LAN) applications in the 800 MHz to 1 GHz frequency range.

The high level of integration enables wireless manufacturers to produce in high volume, receivers with reduced component count, resulting in higher reliability and lower cost.

The very small package and low current consumption make the AWR8001 ideal for both hand held and battery operated applications.

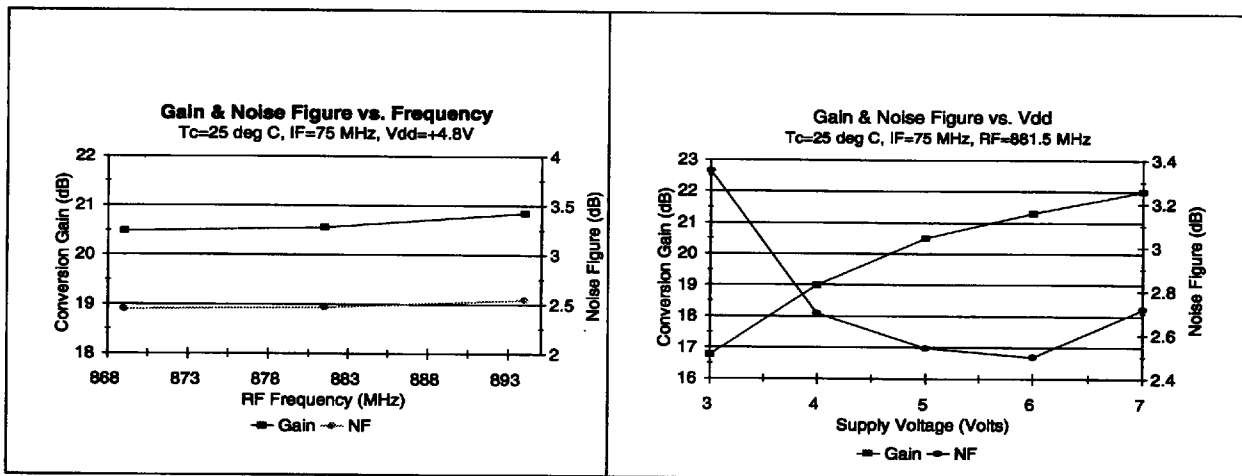
ABSOLUTE MAXIMUM RATINGS

PARAMETER	MIN.	MAX.	UNITS
V_{DD}/V_{IF}		+ 8	V
$V_{RF}/V_{LO}/V_{LNA\ Out}/V_{MIXER}$		+ 10	V
Storage Temperature	- 55	+150	°C
Input Power RF(All Ports)		+ 10	dBm

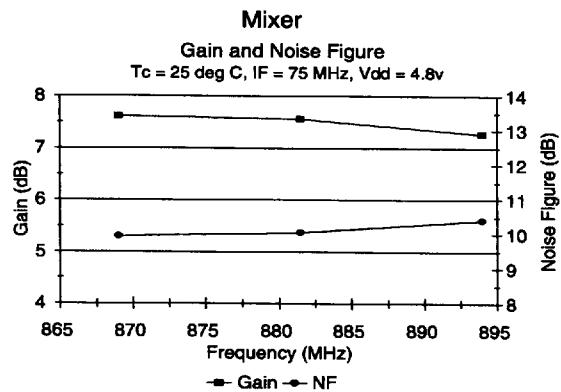
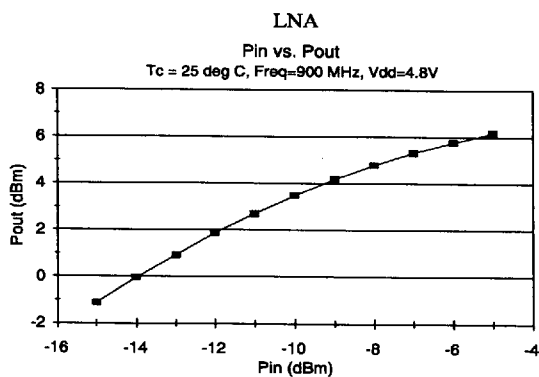
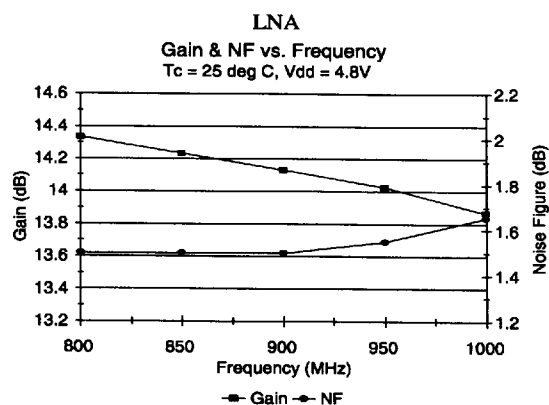
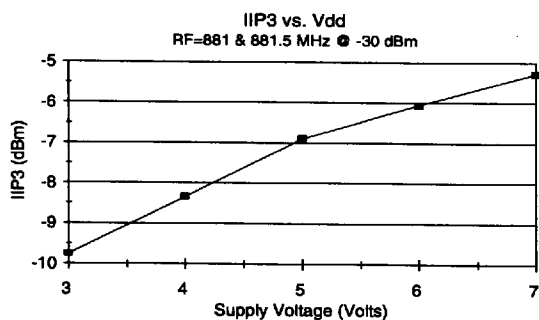
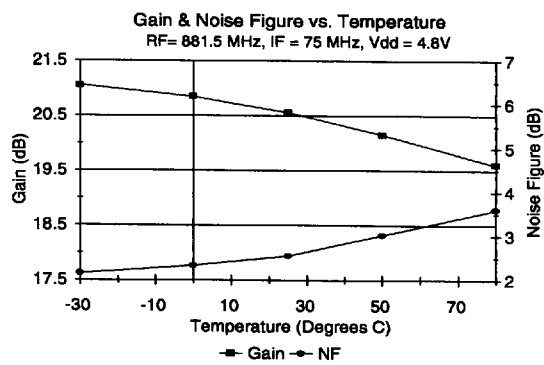
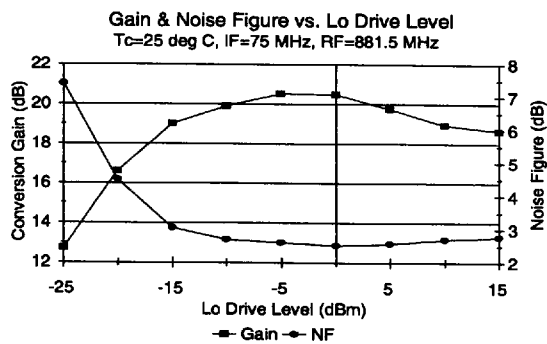
Electrical Specs ($V_{DD} = +5V$; RF = 881.5 MHz, LO = 956.5 MHz, IF = 75 MHz, $T_c = 25^\circ C$)

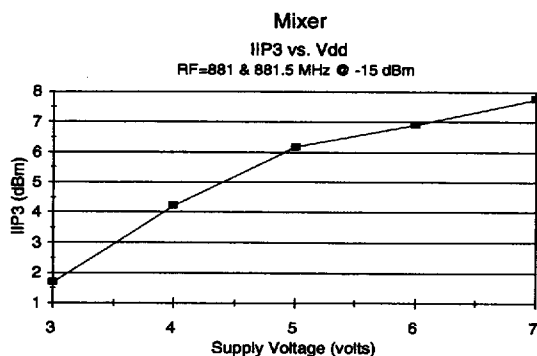
PARAMETER	MIN.	TYP.	MAX.	UNITS
Frequency Range RF IF	800 45		1000 150	MHz
Conversion Gain ¹	17	20		dB
Noise Figure ¹		2.5	3.5	dB
Input 3rd Order Intercept (IIP ₃)	- 10.5	- 7		dBm
LO Drive Level		- 5	0	dBm
RF Input Impedance ²	See Smith Chart			
IF Output Impedance ²	See Smith Chart			
Power supply current (+5V)		12	15	mA
Operating Temperature Range*	- 30		+ 85*	$^\circ C$
Operating Supply Voltage		5.0		Volts

* Operation above this temperature will degrade the median time to failure (MTF)

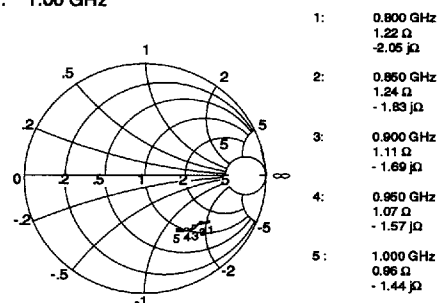


1. Measured with bandpass filter between LNA output and Mixer input.
2. Measured at the pin of the device, all other ports terminated into 50 Ω .



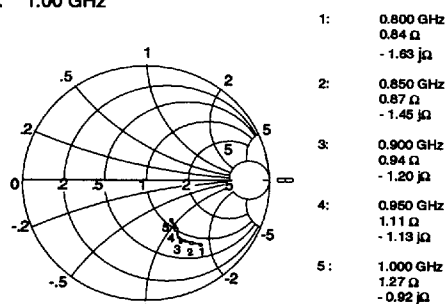


MIXER
INPUT IMPEDANCE
START: 0.80 GHz
STOP: 1.00 GHz



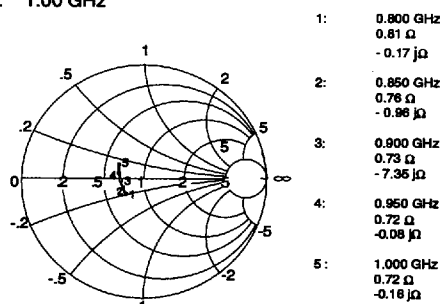
Normalized to 50 Ω

LNA
INPUT IMPEDANCE
START: 0.80 GHz
STOP: 1.00 GHz



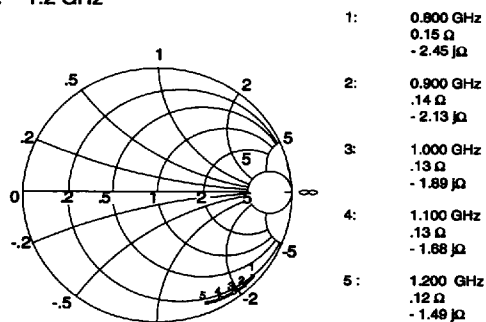
Normalized to 50 Ω

LNA
OUTPUT IMPEDANCE
START: 0.80 GHz
STOP: 1.00 GHz



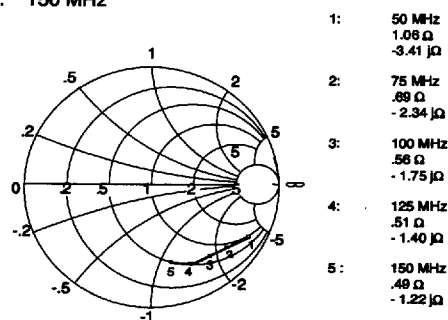
Normalized to 50 Ω

MIXER LO
INPUT IMPEDANCE
START: 0.80 GHz
STOP: 1.2 GHz

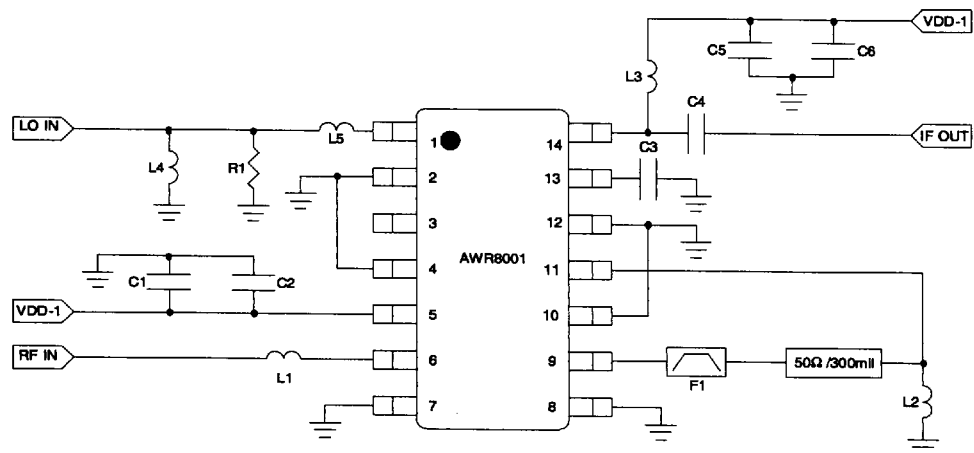


Normalized to 50 Ω

IF
OUTPUT IMPEDANCE
START: 50 MHz
STOP: 150 MHz



Normalized to 50 Ω



PIN	SIGNAL
1	LO _{IN}
2	GND
3	N/C
4	GND
5	V _{DD}
6	RF _{IN}
7	GND
8	GND
9	LNA _{OUT}
10	GND
11	MXR _{IN}
12	GND
13	C _{BY}
14	IF _{OUT} , V _{DD}

PARTS LIST		
ITEM	VALUE	TYPE
C1	0.033μf	0402
C2	0.033μf	0402
C3	0.033μf	0402
C4	15pf	0402
C5	33pf	0402
C6	0.033μf	0402
R1	510Ω	0603
L1	8.2nH	0603
L2	15nH	0603
L3	220nH	C.C. 0805
L4	4.7nH	0603
L5	8.2 nH	0603
F1	LFA30	869-894

