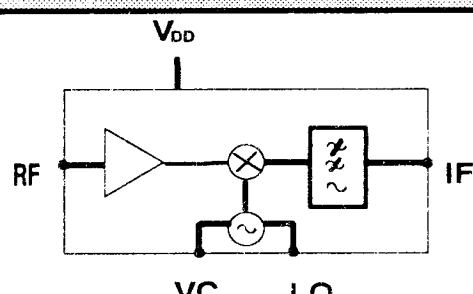


FEATURES	FUNCTIONAL BLOCK DIAGRAM
• Monolithic DBS Tuner IC • On chip Oscillator • 8 dB Noise Figure • 9 dB Conversion Gain • Single +5V Supply • Small Size • Low Cost • High Reliability • Surface Mount Package	

The ANADIGICS DBS (Direct Broadcast Satellite) Tuner IC is intended for use in high volume, low cost manufacturing of compact DBS tuners for satellite receivers and integrated satellite ready TV/VTR receivers.

The ADC20010 Tuner IC provides DBS tuner manufacturers the ability to produce, in high volumes, tuners with low component count, minimal tuning, small size, high reliability and exceptional price-performance ratios.

The ADC20010 offers a high degree of functionality in a very small and user friendly configuration.

ABSOLUTE MAXIMUM RATINGS

PARAMETER	MIN.	MAX.	UNITS
V_{DD}/V_{IF}	0	+ 7	V
V_{LO}	- 5	+ 5	V
V_{RF}	- 10	+ 0.5	V
Case Temperature	- 55	+ 85	° C
Storage Temperature	- 55	+ 100	° C
Input Power RF		+ 10	dBm
Input Power LO		+ 17	dBm

ELECTRICAL SPECIFICATIONS

(Packaged unit, TA = 25 °C, V_{DD} = + 5V)

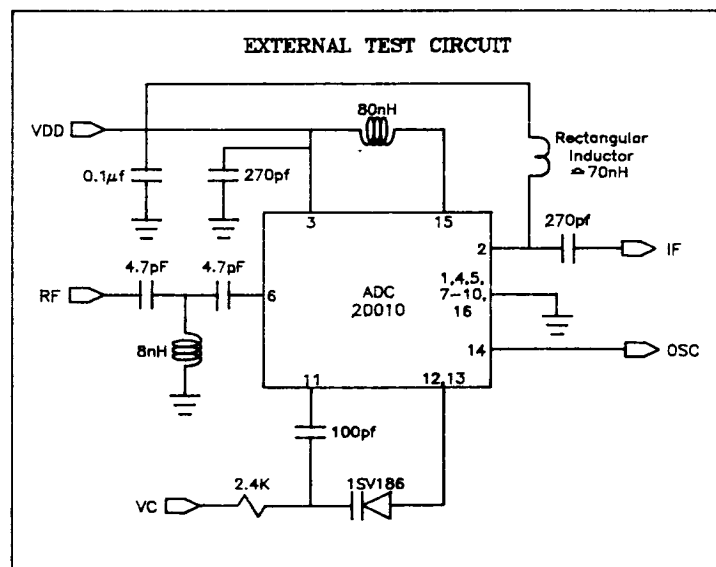
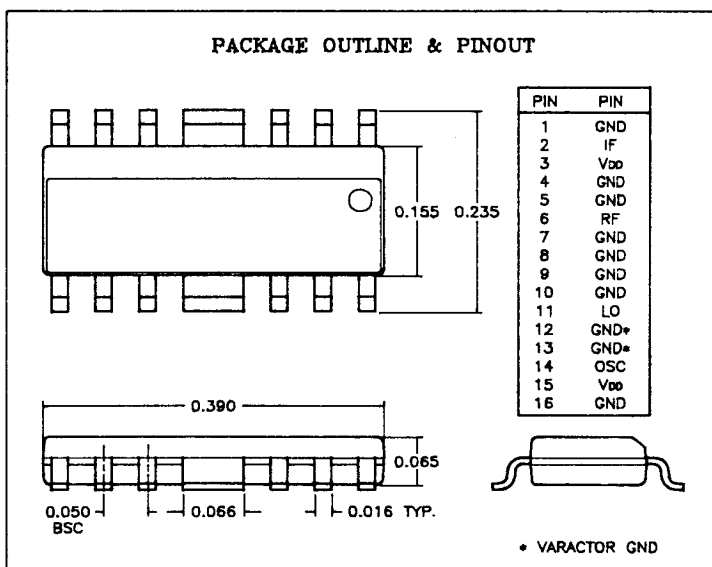
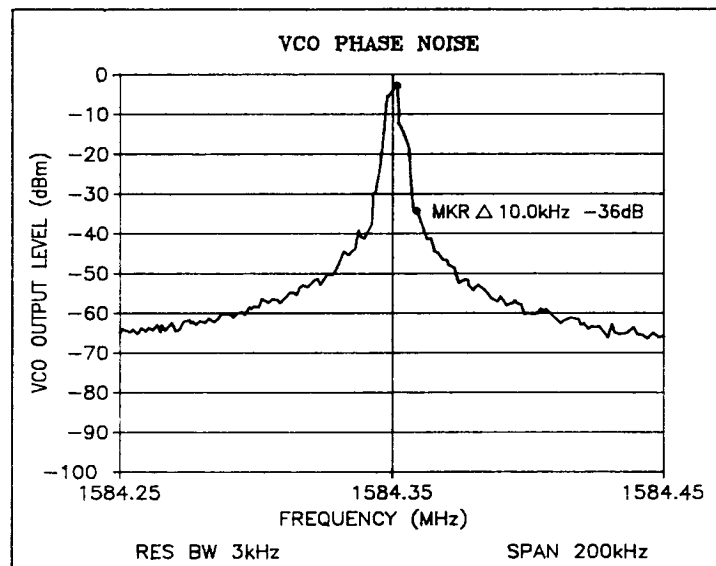
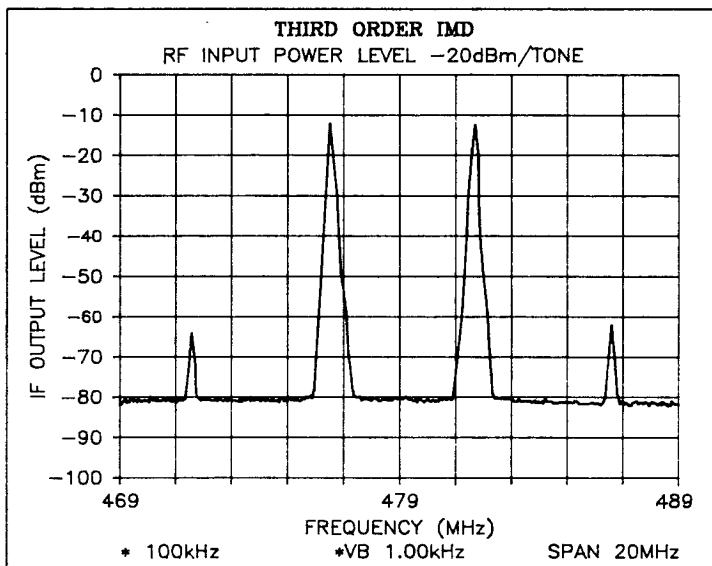
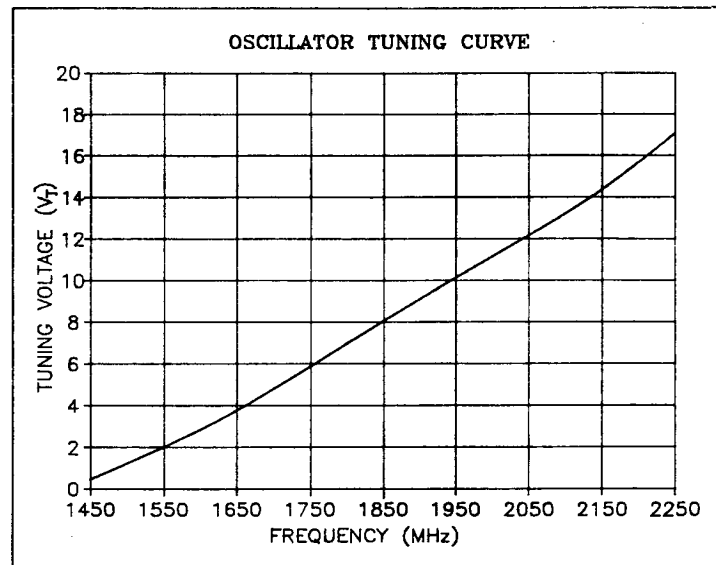
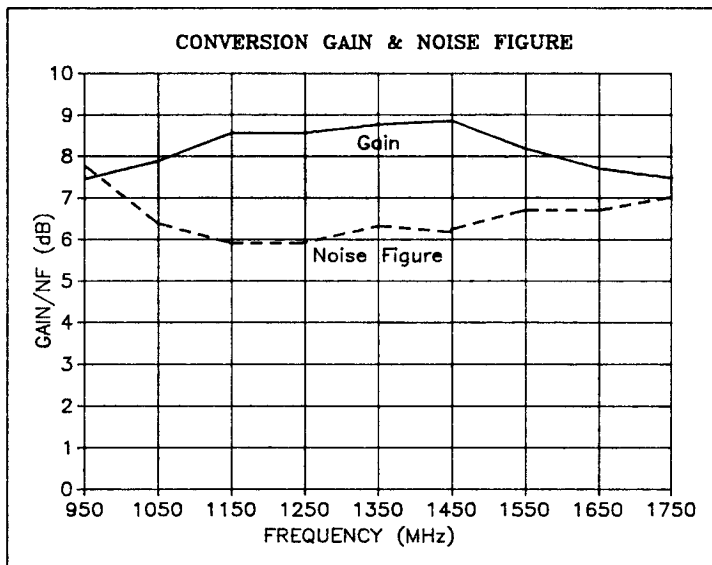
PARAMETER	MIN.	TYP.	MAX.	UNITS
Frequency				
RF	950		1750	MHz
LO ¹	1430		2230	MHz
IF		480		MHz
Conversion Gain ⁶	7	9		dB
SSB Noise Figure ⁶		8	9	dB
Third Order IMD ⁴ - 20 dBm Tones 5 MHz Apart		- 50	- 40	dBc
Second Order IMD (-20 dBm Input Level)		- 30	- 25	dBc
LO Leakage ^{1, 2}				
RF Port		- 35	- 30	dBm
IF Port		0	3	dBm
LO Output Level for PLL ³	- 8	- 4		dBm
Tuning Voltage ¹ (V _T)	1		20	Volts
VCO Phase Noise ⁵				
10 KHz Offset		- 70	- 65	dBc/Hz
100 KHz Offset		- 100	- 90	dBc/Hz
Input Impedance ⁷				
Output Impedance ⁷				
Power Supply Current (+ 5V)		60		mA

NOTES:

1. Measured in ANADIGICS Test Fixture with Toshiba 1SV186 off-chip varactor
2. Includes external coupling through test fixture.
3. Oscillator output for external PLL
4. Measured at 1450 & 1750 MHz
5. Measured using PLL (LBW=1KHz, Reference = 1.25 MHz, Step Size = 10 MHz).
6. Measured in Anadigics test set-up
7. See Smith Charts

adc20010

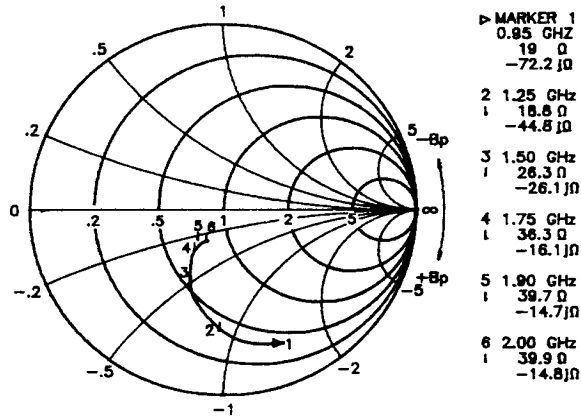
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ADC20010

AVERAGE S11 DATA (RF)

1. IMPEDANCE REFERENCE AT PIN 6
2. VCO ON $V_T = 3.20$ VOLTS
3. VDD = + 5 VOLTS
4. USE EXTERNAL BIAS TEE FOR IF

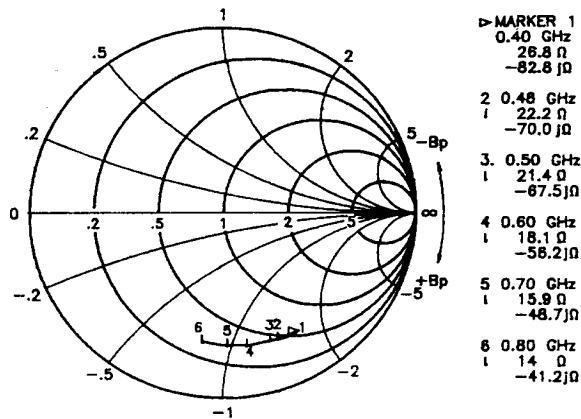


MEASURED IN 50Ω SYSTEM

ADC20010

AVERAGE S22 DATA (IF)

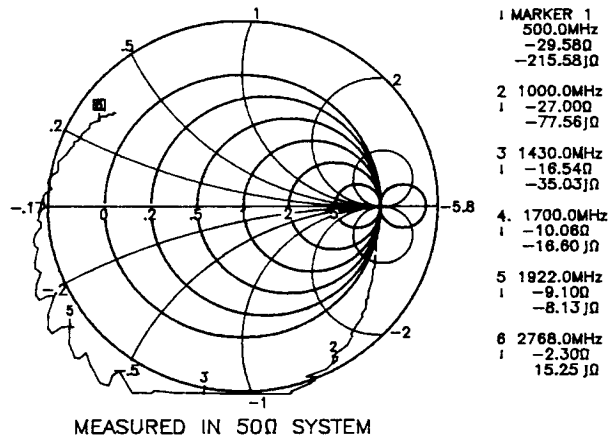
1. IMPEDANCE REFERENCE AT PIN 2
2. VCO ON $V_T = 3.20$ VOLTS
3. VDD = +5 VOLTS
4. USE EXTERNAL BIAS TEE FOR IF



MEASURED IN 50Ω SYSTEM

ADC20010 LO IMPEDANCE DATA (S33)

1. IMPEDANCE REFERENCE AT PIN 11
2. VDD = +5 VOLTS



20010C

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