

Wideband Low Noise Synthesizer Module 4.0 TO 10.0 GHz

FEATURES

Wide Frequency Coverage
Compact Size
Low Phase Noise & Spurious
250 kHz step size option

APPLICATIONS

Ideal for ATE
Frequency Converters
SatCom
Telecom



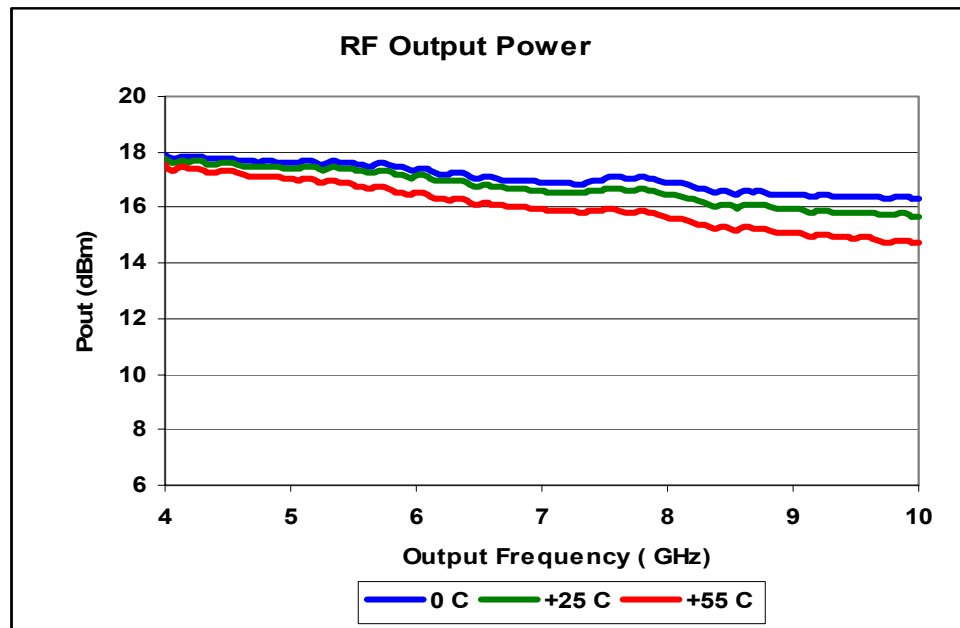
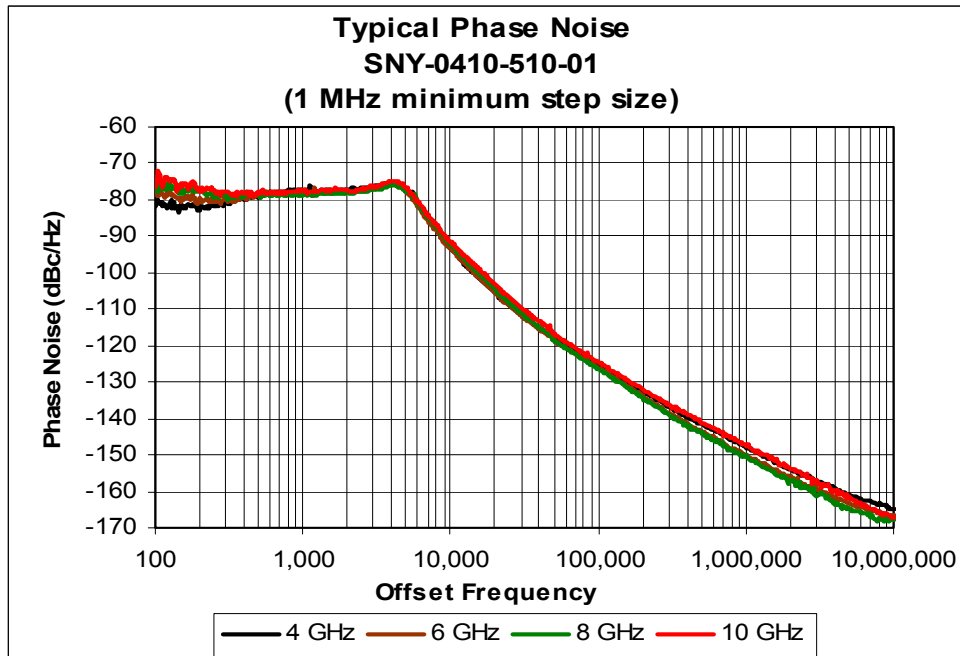
DESCRIPTION

The SNY-0410-510-01 is a low noise, wide tuning range synthesizer in a compact chassis suitable for VXI or PXI applications. Extremely cost effective for the frequency coverage, this unit provides phase noise and spurious response that is unmatched in wide-band VCO based synthesizers.

Parameters	Model #	SNY-0410-510-01	
	Units	Specification Limit	
General			
Nominal Frequency Range	GHz	4.0 to 10.0	
Tuning Step Size	MHz	1	
Power Level	dBm, min.	13	
Power Variation (Freq & Temp.)	dB, max	+/-2	
Harmonic Level	dBc, typ	-12	
Spurious Level (> 100 kHz from Carrier)	dBc, max	-70	
Switching Speed	mSec, typ.	50	
Output Impedance	Ohms	50	
Phase Noise			
	Offset Freq.	Typical	Maximum
SSB Phase Noise	100 Hz*	dBc/Hz	-74 -68
	1 kHz*	dBc/Hz	-77 -72
	10 kHz	dBc/Hz	-93 -88
	100 kHz	dBc/Hz	-125 -120
	1 MHz	dBc/Hz	-147 -142
Frequency Reference			
External	MHz	10	
Power Level	dBm	0 ± 3 dB	
Input Impedance	Ohms	50	
Digital Interface			
Tuning Format	Serial	Serial TTL/CMOS	
Serial Bits		24 bit Binary Channel, 3 wire	
Phase Lock Indicator	TTL	High=Lock	
DC Power			
Volts = +15.00	Amps, typ.	0.8	
Volts = +5.00	Amps, typ.	0.20	
Packaging & Environmental			
Operational Case Temperature	Degrees C	0 TO +55	
Humidity	% RH, max	95	
Altitude	Feet ASL	10,000	
Weight	Oz., typ	12	
Size (See attached envelope drawing)	Inches	2.56 x 4.00 x 0.80	

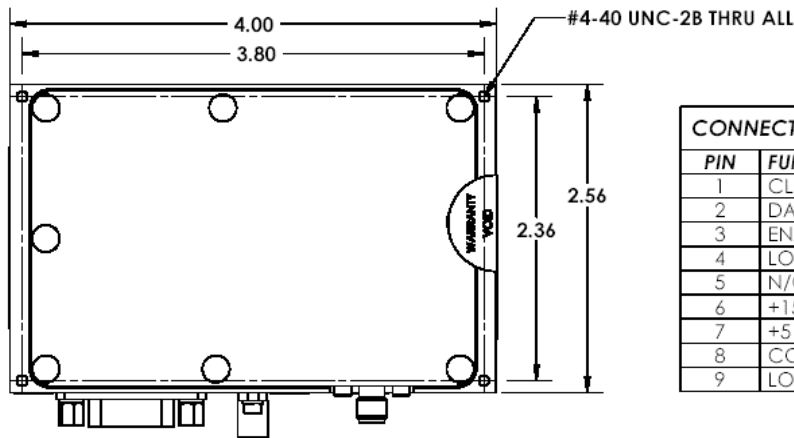
* Phase Noise at 100 Hz and 1 kHz is dependent on the performance of the 10 MHz reference signal.

Wideband Low Noise Synthesizer Module 4.0 TO 10.0 GHz



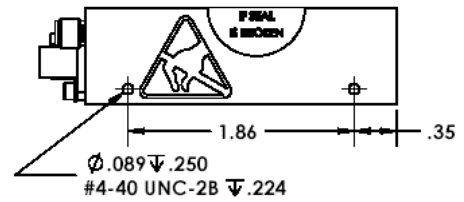
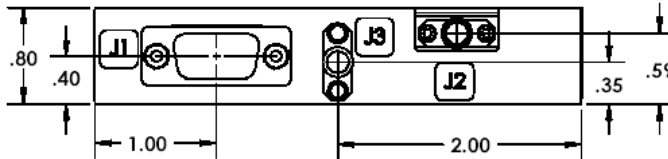
Wideband Low Noise Synthesizer Module 4.0 TO 10.0 GHz

Envelope Drawing



CONNECTOR TABLE (J1)	
PIN	FUNCTION
1	CLOCK
2	DATA
3	ENABLE
4	LOCK DET OUT
5	N/C
6	+15 VDC
7	+5 VDC
8	COMMON
9	LOGIC COMMON

J2 - RF OUT
 J3 - 10MHz REF IN





Wideband Low Noise Synthesizer Module 4.0 TO 10.0 GHz

SERIAL DATA INTERFACE INFORMATION FOR SNY-0410-510 SERIES MICROWAVE SYNTHESIZER Module

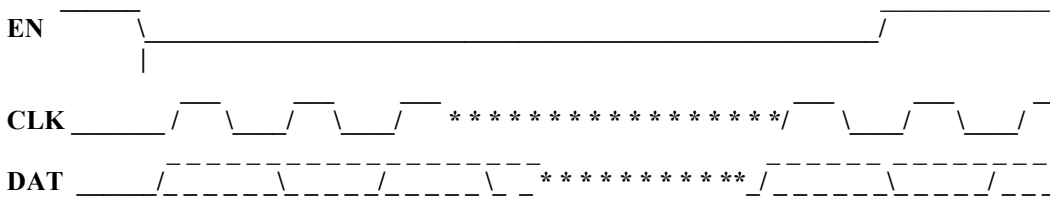
ELECTRICAL: The synchronous serial interface shall consist of a three-wire bus. Each of the wires shall be terminated in the synthesizer with an input circuit compatible with TTL and shall present a load not to exceed that of 2 LSTTL unit loads. The functions of the three wires are as follows:

- Clock (CLK) , active on the positive-going transition.
- Data (DAT) , Positive true, and
- Enable (EN) , Active on the positive-going transition.

PROTOCOL: The Clock shall be at rest in the low state and the Enable line at rest in the high state when data transmission is not in process. The Enable line shall be asserted low at the beginning of the transmission and brought high to latch the data into the synthesizer at the end of the transmission. The clock rate may vary between 200Hz and 20KHz as long as the ON time does not drop below 10 microseconds. Data is sent MSB first. Data is read on a positive clock pulse transition.

Control Logic: Serial 24 bits binary (8 binary bit ASCII 'C' character preceding a 16 bit binary word for frequency).

Frequency word (decimal) is Frequency in divided by minimum step size of synthesizer



Control Example

Example : To command to frequency 6002 MHz with synthesizer having a 1 MHz minimum step

Command Word: ASCII "C" Plus (Freq/ min. Freq Step). = ASCII"C" Plus 6002 (decimal)
 = 43 1772 (hex)
 = 0100 0011 0001 0111 0111 0010 (binary)

Customer Specific Applications

If you don't see what you need, contact us. MicroSource takes pride in being a world class, fast turn design center for microwave YIG based component, subsystems and synthesizers.