

SMS-DA Direct Analog Synthesizer

FEATURES

- Direct Synthesizer with DDS Baseband
- 1.25 - 18 GHz Output Bandwidth
- 1.0 Hz Resolution
- Fast Switching Speed - 350 nS
- Small Package: 6.5"x 6.0"x 1.0"
- Very Low Phase Noise

APPLICATIONS

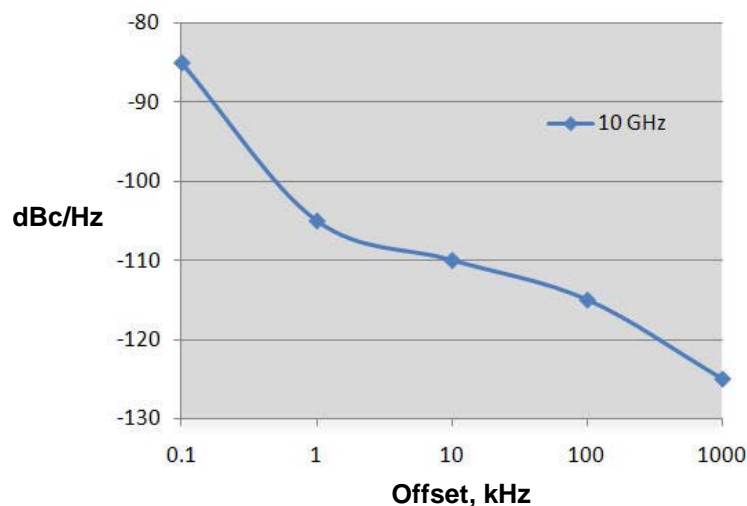
- EW / SIGINT
- Radar Test Equipment
- Microwave Radio
- Instrumentation Module



DESCRIPTION

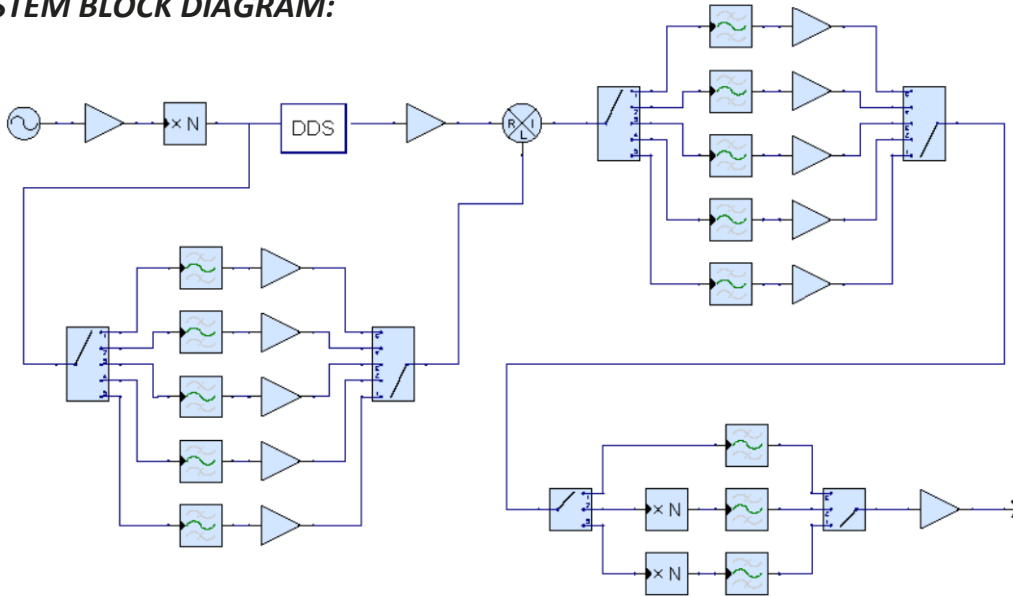
The SMS-DA Direct Frequency Synthesizer offers sub 400 nS tuning speed, multi-octave bandwidth, and a small footprint for the most demanding Radar and EW applications. It utilizes the classic 'mix-up and divide' approach to generate a base-band signal with 200 MHz of bandwidth. Frequency translators and multipliers then expand the base signal to cover the spectrum required by the customer. A Direct Digital Synthesizer (DDS) provides fine frequency resolution, and can be 'phase corrected' to provide phase coherent operation over some bands. Programming complexity is minimized by an internal FPGA, which performs all mathematical calculations required to set the DDS frequency, update phase, and switch bands. A lightweight aluminum housing provides a rugged enclosure and minimizes EMI susceptibility.

Typical Phase Noise, SMS-DA

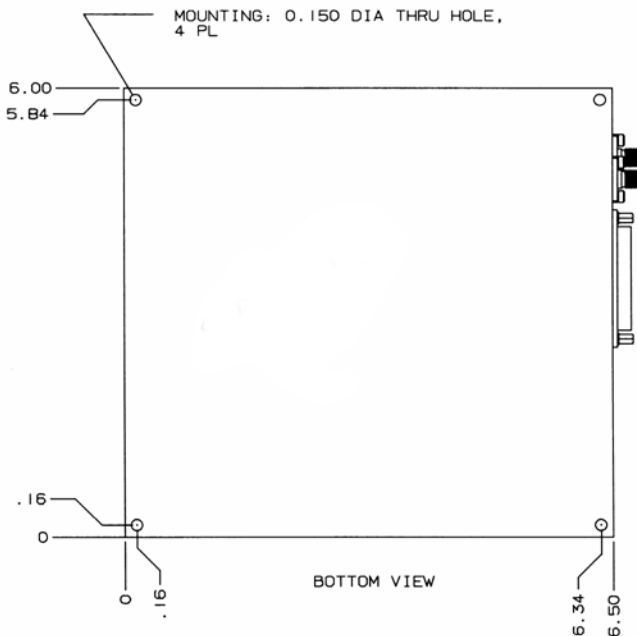


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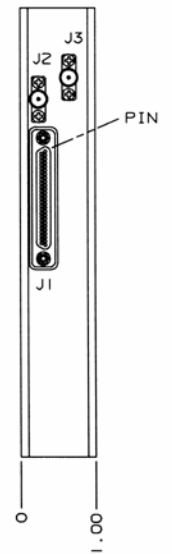
SYSTEM BLOCK DIAGRAM:



PACKAGE OUTLINE:



- CONNECTORS:
- J1 - MICRO D-51 CONNECTOR, PINS:
GLENAIR P/N MWM2L-51-2PSB
JACKPOST: #2-56, 0.150 DP
 - J2 - SMA(F): 10 / 100 MHz INPUT
 - J3 - SMA(F): RF OUTPUT



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PERFORMANCE SPECIFICATIONS *

PARAMETER	VALUE	OPTIONS
Frequency Range:	1.25 - 18 GHz	Up to 40 GHz
DDS Bandwidth:	200 MHz	
Step Size:	1.0 Hz	User defined
Tuning Speed:	< 350 nS, any frequency	
Output Power:	+ 10 dBm	+ 20 dBm
Power Variation:	+/- 3 dB	
Harmonics:	-20 dBc	-40 dBc
Spurious:	-55 dBc @ 5 - 10 GHz	
	-60 dBc @ < 5 GHz	
	-50 dBc @ >10 GHz	
Phase Noise (typical @ 10 GHz):	(see plot)	
100 Hz	-85 dBc/Hz	
1 kHz	-105 dBc/Hz	
10 kHz	-110 dBc/Hz	
100 kHz	-115 dBc/Hz	
1 MHz	-125 dBc/Hz	
Frequency Accuracy:	Determined by External Reference	
Reference Frequency:	100 MHz External	Internal, w/ Ext 10 MHz
Input Reference Power:	+5 to +10 dBm	
Programming (LVTTTL):	Parallel 36-bit, w/ Lock Det	BCD, User defined
Supply Voltage:	+5 VDC, 2500 mA	
	+15 VDC, 250 mA	
	- 5 VDC, 800 mA	
Environmental:		
Vibration	(as required)	
Shock	(as required)	
Operating Temp	-10 to +70 deg. C	-40 to +85 deg. C
Physical:	6.5" x 6.0" x 1.0", SMA(F)	
	Micro-D 51 pin connector	Custom Package

* Other configurations available, consult factory

For more Information Contact:

Spinnaker Microwave Inc.
3281 Kifer Rd
Santa Clara CA, 95051
408-732-9828

www.spinnakermicro.com



Certificate # A2498US