

SYN-A Digitally Tuned Oscillator (DTO) / Fast Tuning Synthesizer

FEATURES

- Functions as both DTO and Synthesizer
- 2 – 18 GHz Output
- < 50 uS Synthesized Tuning Speed
- < 2 uS DTO Tuning Speed
- 200 MHz FM Deviation

APPLICATIONS

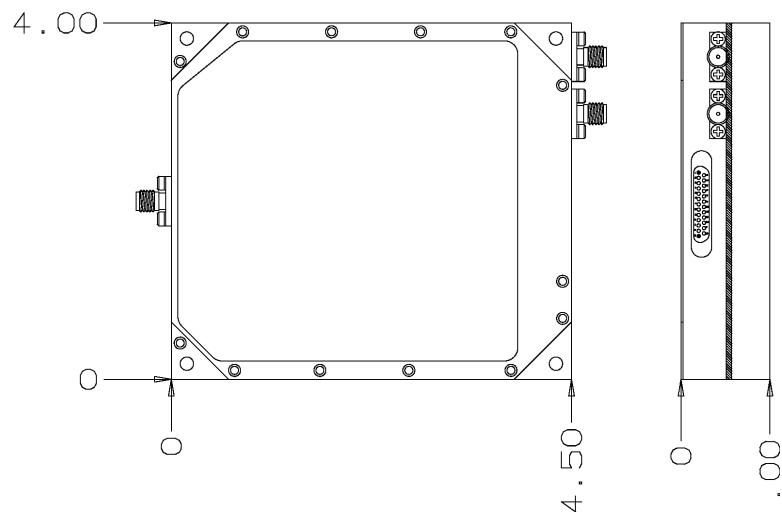
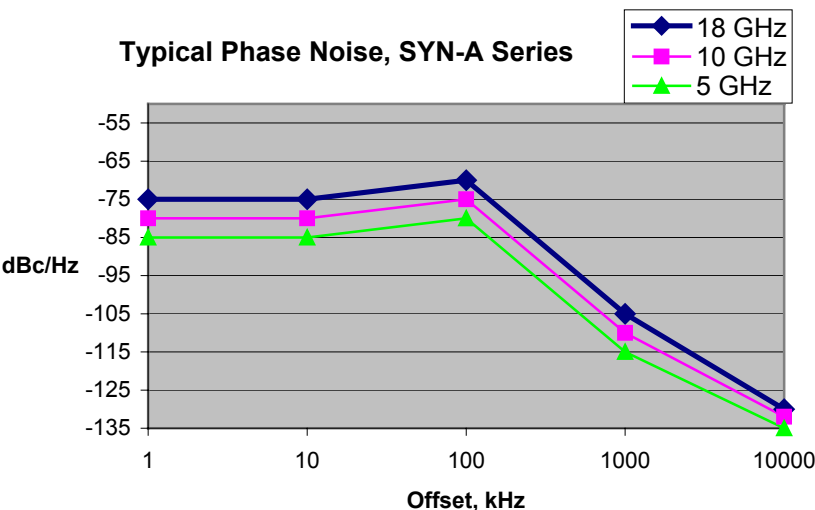
- EW / SIGINT
- Radar Test Equipment
- Microwave Radio
- Instrumentation Module



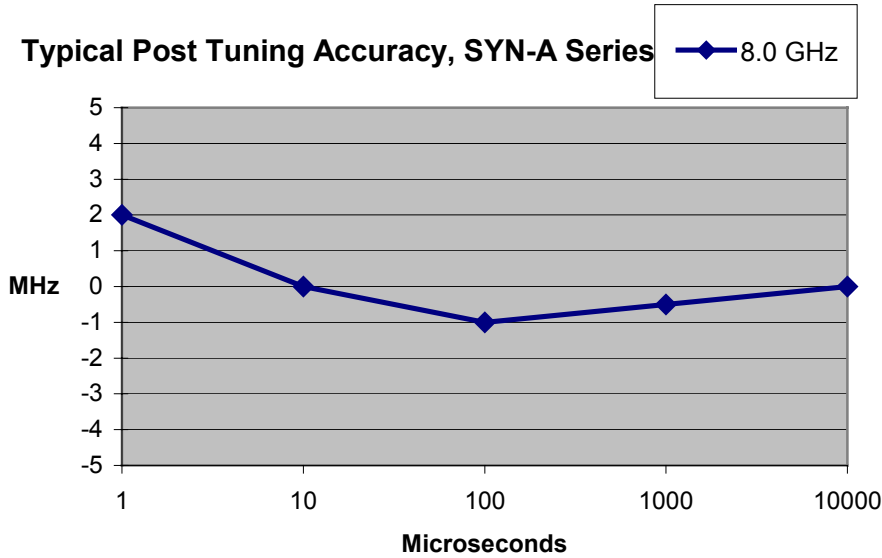
DESCRIPTION

The SYN-A functions as both a Frequency Synthesizer and a Digitally Tuned Oscillator covering 2 to 18 GHz continuously on one output. The design utilizes a 'baseband - upconvert' topology. This gives the user the ability to frequency modulate with over 200 MHz frequency deviation anywhere in the 2-18 GHz spectrum when operating open loop and keeps the total 'N' count low to enhance frequency resolution and phase noise when operated as a synthesizer. Unlike traditional DTO's which use internal heaters to control VCO drift, this unit uses a FLASH memory frequency table to correct for VCO temperature and post tuning drift errors. A field calibrate function can reduce open loop frequency errors to less than +/- 1 MHz over the entire operating temperature range.

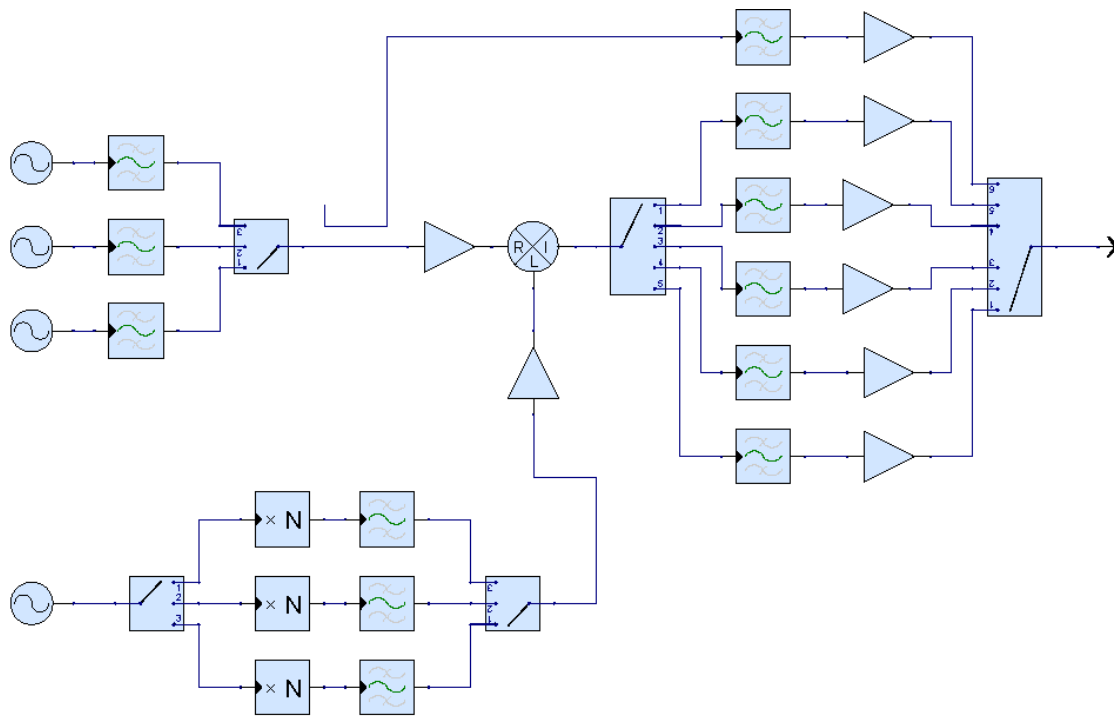
Typical Phase Noise, SYN-A Series



SYN-A
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SYSTEM BLOCK DIAGRAM:



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PERFORMANCE SPECIFICATIONS *

PARAMETER	VALUE	OPTIONS
Frequency Range	2 – 18 GHz	
Bandwidth	16 GHz (2-18 GHz out)	
Step Size	1 MHz	
Tuning Speed	< 50 uS Synth / < 3 uS DTO	< 30 uS
Output Power	+ 7 dBm	+ 20 dBm
Power Variation	+/- 4 dB	
Harmonics	-20 dBc	-30 dBc
Spurious	-60 dBc	
Phase Noise (typical @ 10 GHz)	(see plot)	
1 kHz	-80 dBc/Hz	
10 kHz	-80 dBc/Hz	
100 kHz	-75 dBc/Hz	
1 MHz	-110 dBc/Hz	
Frequency Accuracy	Same as Reference	
Input Reference Frequency	10-200 MHz	Internal Reference
Input Reference Power	-3 to +3 dBm	
Programming (LVTTTL)	Parallel N-bit, w/ Lock Det	Serial, RS-232
Supply Voltage	+5 VDC, 1000 mA +15 VDC, 350 mA -5 VDC, 150 mA	
Environmental		
Vibration	(as required)	
Shock	(as required)	
Operating Temp	-20 to +75 deg. C	-40 to +85 deg. C
Physical	4.0" x 4.5" x 1.0", SMA(F)	Custom Package

* Other configurations available, consult factory



Certificate # A2498US