

S2LS SERIES S-BAND FREQUENCY SYNTHESIZER

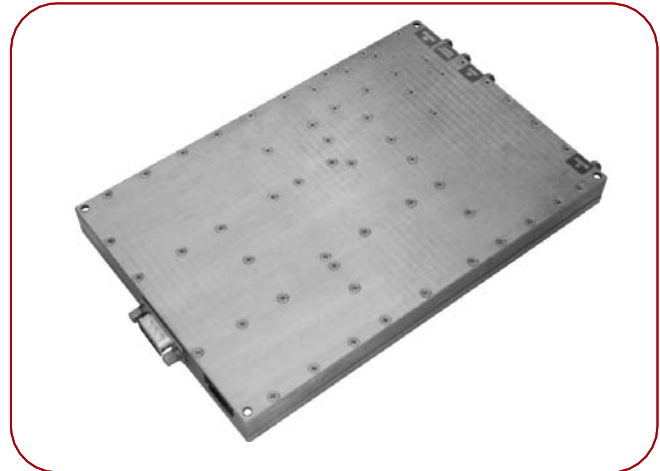
S2LS SERIES: 4.505 – 5.575 GHz

FEATURES

- 20 % bandwidth
- Step size: 62.5k, 50k, 100k, 125 kHz
- 5 dB better than INTELSAT phase noise
- Lowest power dissipation in industry
- Full C-band SATCOM coverage in single unit
- Standard L-band modem conversion units
- MIL-STD-188-164A microphonic compliant
- ETSI 300019-1-4 compliant

OPTIONS

- Custom frequency bands
- Fixed LO frequencies options
- Custom step sizes
- Custom packaging



MITEQ's S2LS series of S-band low phase noise synthesizers offer a low price alternative for S band INTELSAT satellite communications applications. In addition to the 125 kHz step size output at S-band, the S2LS series synthesizers provide a standard second output at L-band used as the second conversion LO for dual conversion up- and downconverters. With 5 watt power dissipation, +13 dBm output power and 65 dBc spurious suppression, the S2LS series will support the most stringent system applications.

MECHANICAL SPECIFICATIONS

Outline drawing	145334
Size	7.5"x5"x0.71"
Weight.....	1.0 pounds typical
RF connectors	SMA female
DC power connector	DEM 9P
Control connector.....	20-pin header

ENVIRONMENTAL SPECIFICATIONS

Temperature	
Operating	-10 to +65°C (Note 6)
Storage.....	-55 to +95°C
Humidity	Up to 95% at 40°C noncondensing
Shock (nonoperational).....	30 Gs, 10 ms pulse
Vibration (survival).....	20 to 2000 Hz random to .04 G ² /Hz
Altitude.....	Up to 13,500 feet
100% testing	Frequency range Output power Discrete power Spectral purity Phase bursts Alarm and monitors
100% screening	Temperature cycle/monitor

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ELECTRICAL SPECIFICATIONS

Output frequency range (Note 1)	Tunable	Fixed LO (Note 2)
	4.50 – 5.57 GHz	1440 MHz
Step size	62.5 kHz, 50 kHz, 100 kHz, 125 kHz (Note 3)	
Output power	+13 dBm minimum	+13 ±2 dBm
Output power variation	±1.5 dB maximum	
Input reference frequency	10 MHz OR 5 MHz (Note 4)	
Input power level	0 ±3 dBm	
Spurious outputs		
In-band	-65 dBc minimum	-80 dBc minimum
Out-of-band	-65 dBc minimum	-70 dBc minimum
Phase noise	See graph (Note 5)	
Offset from carrier	@ 5.57 GHz	@ 1380 MHz
10 Hz	-57 dBc	-77 dBc
100 Hz	-67 dBc	-87 dBc
1 kHz	-75 dBc	-97 dBc
10 kHz	-85 dBc	-100 dBc
100 kHz	-100 dBc	-100 dBc
1 MHz	-125 dBc	-125 dBc
10 MHz	-140 dBc	-140 dBc
Harmonic output	-15 dBc typical	-20 dBc typical
Output impedance	50 ohm nominal	
Load VSWR	1.5:1 maximum, all phases	
Regulation	±5%	
Noise and ripple	10 mV p-p maximum	
Frequency control	RS485 (4 wire)	
Acquisition time (to phase lock)	40 ms typical 100 ms maximum	
Summary alarm	In lock TTL 1	
VCO lock voltage	2 – 10 volts	
DC power requirements	+15 volts, 0.14 amps Typical +5.2 volts, 0.55 amps Typical	
Outline drawing	145334	

Notes:

1. Custom frequency bands available, consult factory.
2. Fixed LO frequencies available from 600 to 3000 MHz in 10 MHz integers.
3. Custom step size available, consult factory.
4. Other reference frequency option available, consult factory.
5. Close in Phase Noise dependent on reference.
6. Wider operating temperatures are available, consult factory.

ORDERING INFORMATION:

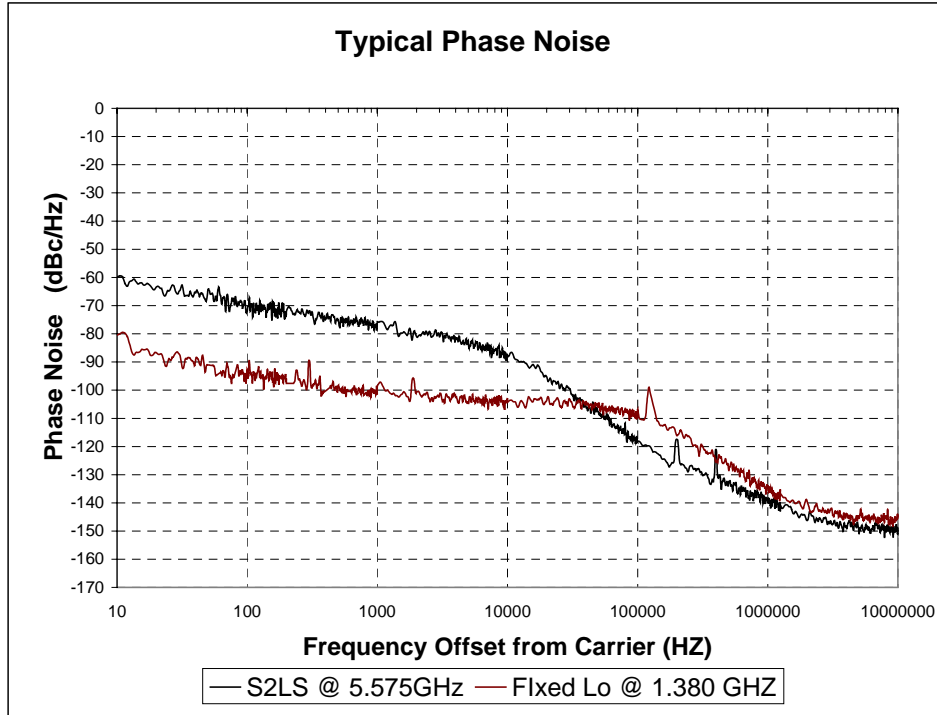
S2LS- M

Start Freq.
Stop Freq.
Step size
M or K
(MHz or KHz)
LO Frequency
MHz
Ref.
Frequency

Example: S2LS-4.505-5.575-125k-1150-5M part number for frequency synthesizer covering 4.505 to 5.575 GHz with a step size of 125 KHz, a LO frequency of 1150 MHz, and a reference frequency of 5 MHz.



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OUTLINE DRAWING

S2LS SERIES OUTLINE:

