

S2LS SERIES S-BAND FREQUENCY SYNTHESIZER

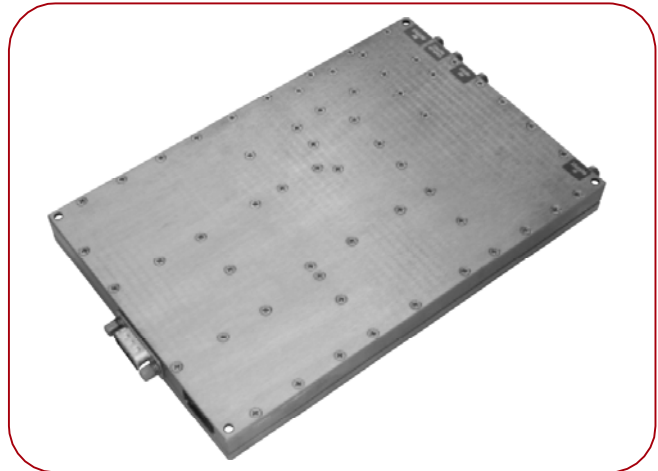
S2LS SERIES: 3.300 – 3.800 GHz

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) |
|----------------------------------|---------------------------------------------------------------|-------------------|
| | 3.300 – 3.800 GHz | 1380 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 | -60 dBc | -77 dBc |
| 100 Hz | -70 dBc | -87 dBc |
| 1 kHz | -78 dBc | -97 dBc |
| 10 kHz | -88 dBc | -100 dBc |
| 100 kHz | -103 dBc | -100 dBc |
| 1 MHz | -128 dBc | -125 dBc |
| 10 MHz | -145 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, 0.18 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:

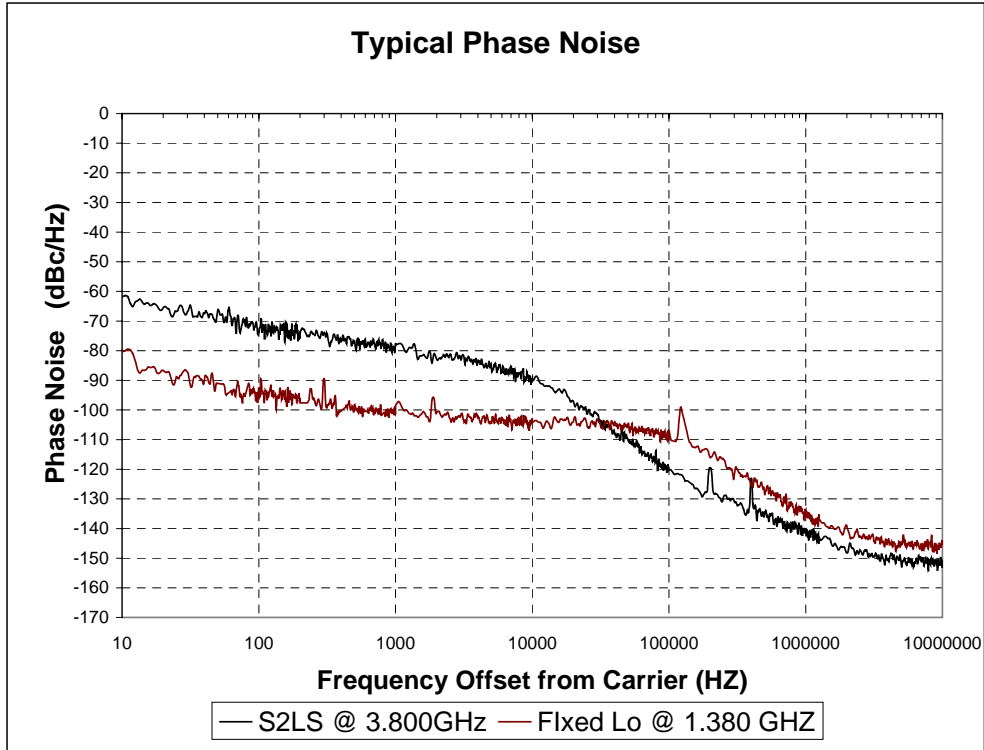
S2LS- M

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

Example: S2LS-3.30-3.80-125k-1150-5M part number for frequency synthesizer covering 3.30 to 3.80 GHz with a step size of 125 KHz, a LO frequency of 1150 MHz, and a reference frequency of 5 MHz.



S-BAND FREQUENCY SYNTHESIZER



OUTLINE DRAWING

S2LS SERIES OUTLINE:

