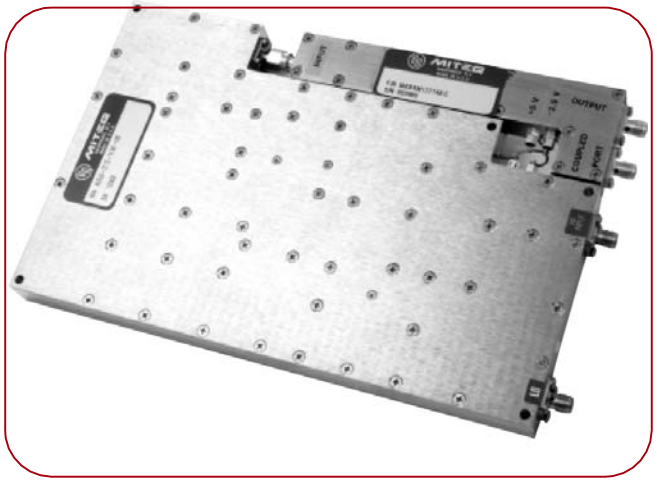
Ku3LS SERIES Ku-BAND FREQUENCY SYNTHESIZER

Ku3LS SERIES:
12.46-13.28 GHz

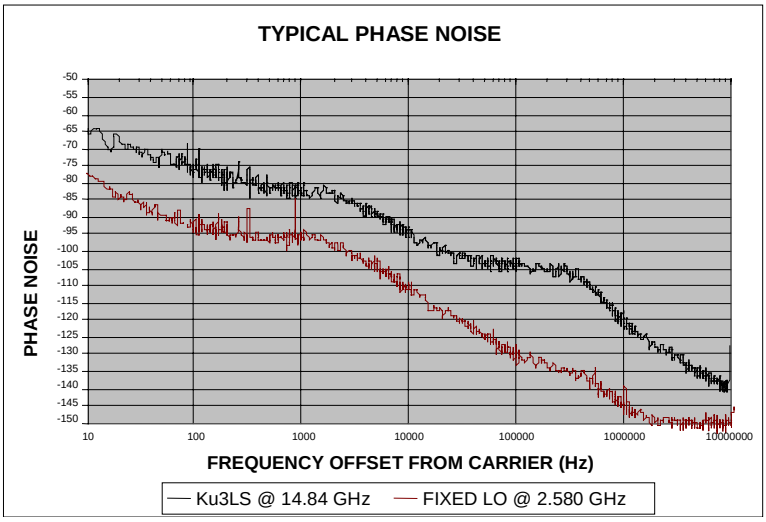


FEATURES

- Ideal for use in dual conversion Up and down converters
- 1 kHz standard step size
- Wide bandwidth
- Better than INTELSAT phase noise
- Large selection of fixed LO frequencies
- MIL-STD-188-164A microphonic compliant
- ETSI300019-1-4 shock and vibe compliant

OPTIONS

- Custom frequency bands
- Wide selection of fixed LO frequencies
- High output power
- Custom step size
- Custom packing



MITEQ's Ku3LS series of low phase noise synthesizers offer a low price alternative for Ku-band INTELSAT satellite communications applications. With standard 1kHz step size output at Ku-band, the Ku3LS series synthe- sizers are ideal for dual conversion up and down converters. With +13 dBm output power and 70 dBc spurious suppression, the Ku3LS series will support the most stringent system applications. Low power dissipation leads to higher MTBF.

MECHANICAL SPECIFICATIONS

Outline drawing 166483
Size ..... 8"x5"x0.7"
Weight..... 2 pounds typical
RF connectors..... SMA female
DC power/control connector..... JST 7pin header
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

MITEQ
100 Davids Drive, Hauppauge, NY 11788 • TEL: (631) 439-9220 • FAX: (631) 436-7430 • www.miteq.com

Ku3LS SERIES Ku-BAND FREQUENCY SYNTHESIZER

ELECTRICAL SPECIFICATIONS

	Tunable	Fixed LO (Note 2)
Output frequency range (Note 1)	12.46-13.28 GHz	1150 MHz 1080 MHz 2160 MHz
Step size	1 kHz (Note 3)	
Output power	+13 dBm minimum	+13 ±2 dBm
Output power variation	±2 dB maximum	
Input reference frequency	10 MHz (Note4)	
Input power level	0 ±3 dBm	
Spurious outputs		
In-band	-70 dBc minimum	-80 dBc minimum
Out-of-band	-65 dBc minimum	-70 dBc minimum
Phase noise	See graph (Note 5)	See graph
Offset from carrier		@ 2160 MHz
10 Hz	-62 dBc	-68 dBc
100 Hz	-70 dBc	-88 dBc
1 kHz	-75 dBc	-90 dBc
10 kHz	-85 dBc	-100 dBc
100 kHz	-97 dBc	-100 dBc
1 MHz	-115 dBc	-135 dBc
10 MHz	-135 dBc	-145 dBc
Harmonic output	-15 dBc	-20 dBc
Output impedance	50 ohm nominal	
Load VSWR	1.5:1 maximum, all phases	
Summary alarm	In-lock TTL 1	
VCO lock voltage	1 – 14 volts	
Frequency control	Serial RS485 (4 wire)	
Acquisition time (to phase lock)	40 ms typical 100 ms maximum	
DC power requirements	+15.3 volts, 0.5 amps typical +5.3 volts, 0.87 amps typical	
Regulation	±5%	
Noise and ripple	10 mV p-p maximum	
Outline drawings	166483	

Note:
1. Custom frequency bands available, consult factory.
2. Optional fixed LO frequencies available from 600 to 3000 MHz in 10 MHz integers.
3. Frequency accuracy ±0.004ppm.
4. Other reference frequency option available, consult factory.
5. Close in phase noise dependent on reference.
6. Wider operating temperature ranges available.

ORDERING INFORMATION:

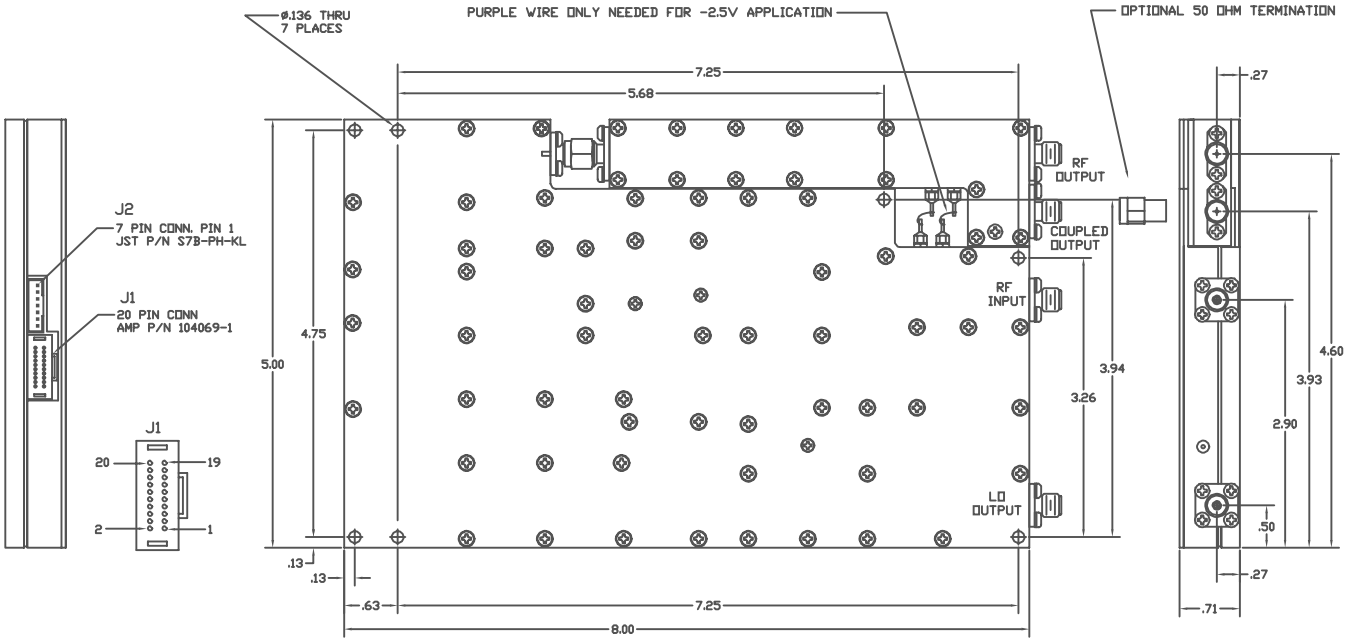
Ku3LS-_ _._ _ _ – _ _._ _ _ – _ _ _ __ - _ _ _ _ - _ _ _M

Start Freq. | Stop Freq. | Step Size | M or K (MHz/KHz) | Lo Freq. (MHz) | Ref. Freq. (MHz)

Example: Ku3LS-12.46-13.28-1k-1150-10M part number for frequency synthesizer covering 12.460 to 13.280 GHz with a step size of 1 KHz, and a LO of 1150.

MITEQ
100 Davids Drive, Hauppauge, NY 11788 • TEL: (631) 439-9220 • FAX: (631) 436-7430 • www.miteq.com

Ku3LS SERIES OUTLINE
166483



J1

DATA CONNECTION	
PIN 2	WAKE UP
PIN 4	DATA OUT +
PIN 5	DATA OUT -
PIN 8	DATA IN +
PIN 9	DATA IN -
PIN 10	ALARM

J2 7 PIN CONNECTOR
DC POWER CONNECTIONS

PIN #	SIGNAL
1	+5.2V
2	GND
3	+15V
4	GND
5	PHASE VOLTAGE
6	GND
7	TTL ALARM