

C3LS SERIES C-BAND FREQUENCY SYNTHESIZER

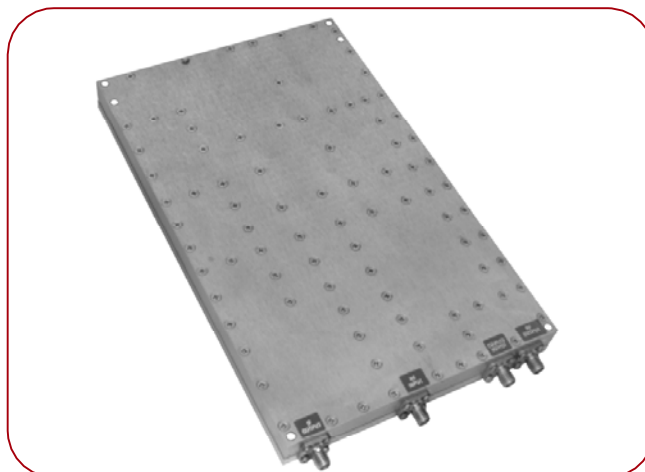
C3LS SERIES:
5.480 – 5.880 GHz

FEATURES

- State of the Art Phase Noise
- 1 kHz standard step size
- Low-profile construction
- 20 dB Better than INTELSAT phase noise
- Low power dissipation
- Complete C-band SATCOM coverage in single unit
- MIL-STD-188-164A microphonic compliant
- ETSI 300019-1-4 shock and vibration compliant

OPTIONS

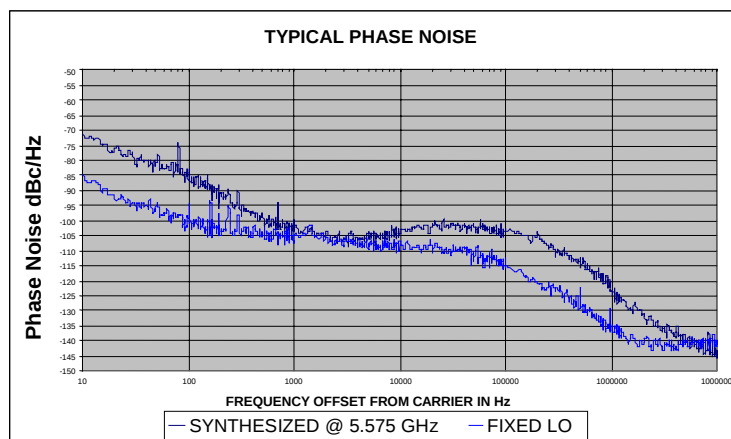
- Custom frequency bands
- Fixed LO frequencies options
- High output power
- Custom step sizes
- Custom packaging



GUI INTERFACE (for serial programming):

Now available at

<http://amps.miteq.com/Amps2007/synthesizers/SynthControl.zip>



C3LS line of synthesizers are state of the art in performance, with superior phase noise and low power dissipation, covering C-band SATCOM band in one unit. The cost effective C3LS line is ruggedized for outdoor application, giving sufficient margin to the designers to meet stringent system requirements. 100% screening guarantees performance over the specified temperature range.

MECHANICAL SPECIFICATIONS

Outline drawing 155489
Size 8"x5"x0.7"
Weight..... 2 pounds
typical
RF connectors..... SMA female
DC power JST 7-pin
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 (non-operational)..... 30 Gs, 10 ms pulse
Vibration (survival)..... 20 to 2000 Hz
random to .04 G²/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)
	5.480 – 5.880 GHz	1080 MHz 1330 MHz 1440 MHz
Step size	1 kHz (Note 3, 4)	
Output power	+13 dBm minimum	+13 ±2 dBm
Output power variation	±1.5 dB maximum	
Input reference frequency	10 MHz	
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)	
Offset from carrier		
10 Hz	-63 dBc	-68 dBc
100 Hz	-80 dBc	-90 dBc
1 kHz	-98 dBc	-101 dBc
10 kHz	-100 dBc	-106 dBc
100 kHz	-100 dBc	-106 dBc
300 kHz	-100 dBc	-106 dBc
1 MHz	-115 dBc	-135 dBc
10 MHz	-140 dBc	-145 dBc
Harmonic output	-15 dBc typical	-20 dBc typical
Output impedance	50 ohm nominal	
Load VSWR	1.5:1 maximum, all phases	
Summary alarm	In lock TTL 1	
VCO lock voltage	0.5 – 14 volts	
Frequency control	RS485 (4 wire)	
Acquisition time (to phase lock)	40 ms typical 100 ms maximum	
Regulation	±5%	
Noise and ripple	10 mV p-p maximum	
DC power requirements	+15 volts, 0.55 amps Typical +5.2 volts, 0.6 amps Typical	
Outline drawing	155489	

Notes:

1. Custom frequency bands available, consult factory.
2. Fixed LO frequencies available from 600 to 3000 MHz in 10 MHz integers.
3. Frequency accuracy ±0.002 ppm.
4. Other reference frequency option available, consult factory.
5. Close in Phase Noise dependent on reference.
6. Wider operating temperature ranges available.

ORDERING INFORMATION:

C3LS-□.□□□ – □.□□□ – □□□□ – □□□□ – □□□□ **M**

Start Freq.

Stop Freq.

Step Size

M or K
(MHz/KHz)

Lo Freq.
(MHz)

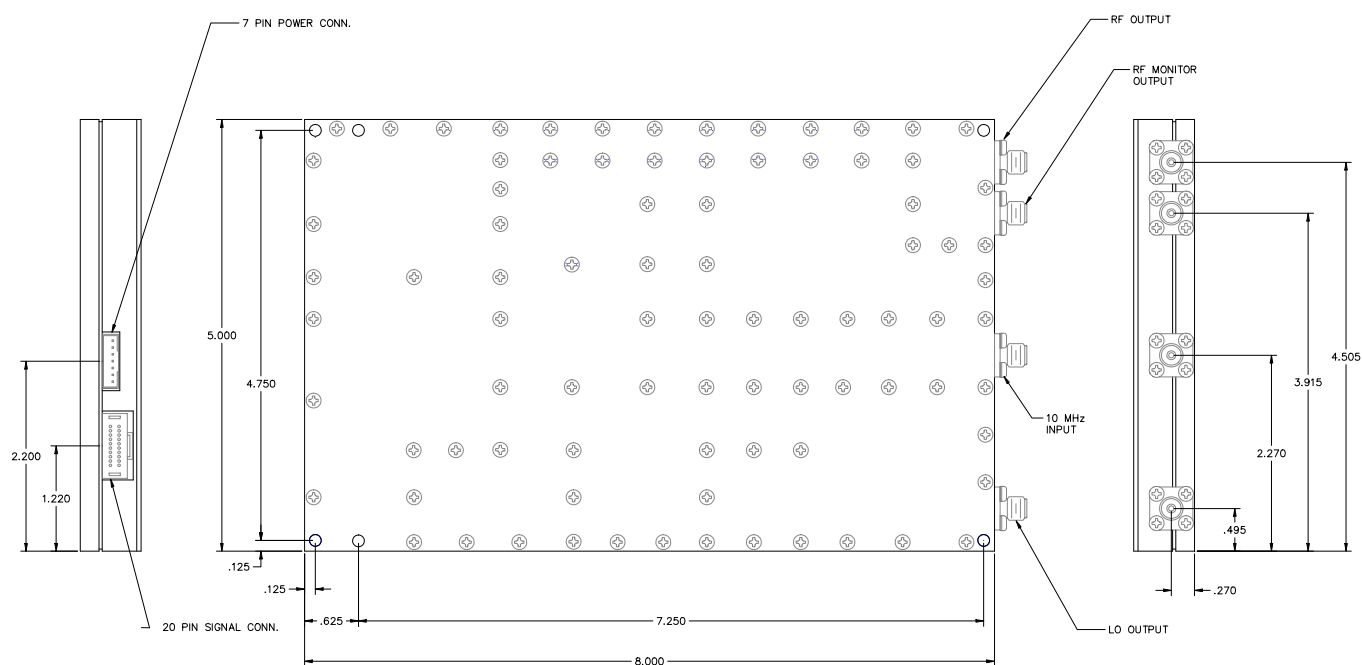
Ref. Freq.
(MHz)

Example: C3LS-4.52-5.575-1k-1150-10M part number for frequency synthesizer covering 4.52 to 5.57 GHz with a step size of 1 KHz, an LO frequency of 1150MHz and a reference frequency of 10MHz.



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C3LS SERIES OUTLINE:



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