

LFTS SERIES FREQUENCY SYNTHESIZER

LFTS SERIES: 155 – 330 MHz

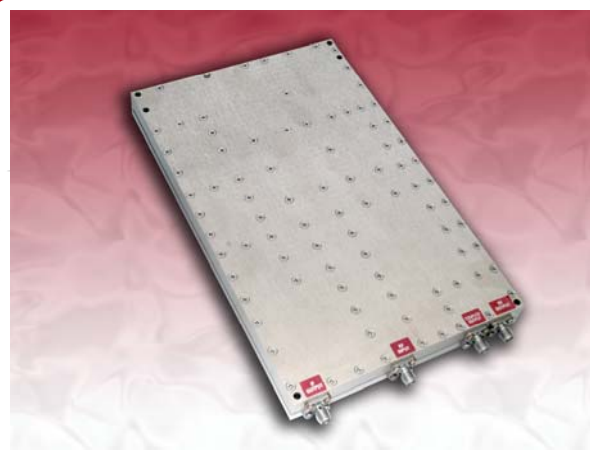
FEATURES

- Standard step size: 1 KHz
- INTELSAT phase noise compliant
- Field tested reliability
- Low power dissipation
- MIL-STD-188-164A microphonic compliant
- ETSI 300019-1-4 compliant

OPTIONS

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

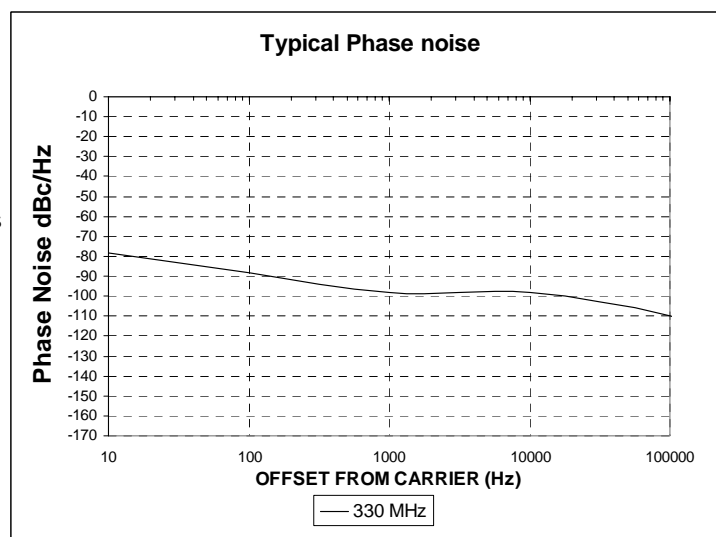
MITEQ's LFTS series of UHF-band low phase noise synthesizers offer an economical solution for UHF-band INTELSAT satellite communications applications. In addition to the 1 kHz step size, the LFTS series synthesizers provide a standard second output used as the second conversion LO for dual conversion up- and downconverters. MITEQ's field test design, and low power dissipation leads to lower MTBF & higher reliability.



GUI INTERFACE (for serial programming):

Now available at

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



MECHANICAL SPECIFICATIONS

Outline drawing	177326
Weight	1.0 pounds typical
RF connectors	SMA female
DC power connectors	JST-7 pin header
Control connector	34-pin header for parallel operation or 20 pin serial

ENVIRONMENTAL SPECIFICATIONS

Temperature	
Operating	0 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)
	155 – 330 MHz	OPTIONAL
Step size	1000 Hz (Note 3)	
Output power	+13 dBm minimum	+13 ±2 dBm
Output power variation	±1.5 dB maximum	
Input reference frequency	5 or 10 MHz (Note 4)	
Input power level	0 ±3 dBm	
Spurious outputs In-band Out-of-band	-65 dBc minimum -65 dBc minimum	-80 dBc minimum -70 dBc minimum
Phase noise	See graph (Note 5)	
Offset from carrier 10 Hz 100 Hz 1 kHz 10 kHz 100 MHz 1 MHz	@ 330 MHz -78 dBc -88 dBc -98 dBc -98 dBc -110 dBc -130 dBc	N/A
Harmonic output	-20 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) / Parallel	
Acquisition time (to phase lock)	30 ms typical 100 ms maximum	
Summary alarm	In lock TTL 1	
VCO lock voltage	2 – 11 volts	
DC power requirements	+15 volts, 0.3 amps Typical +5.2 volts, .9 amps Typical	
Outline drawing	177326	

ORDERING INFORMATION:

LFTS- - - - - **M**

Start Freq.

Stop Freq.

Step Size	M or K (MHz/KHz)
1	1000
2	500
3	250
4	125
5	62.5
6	31.25
7	15.625
8	7.8125
9	3.90625
10	1.953125
11	0.9765625
12	0.48828125
13	0.244140625
14	0.1220703125
15	0.06103515625
16	0.030517578125
17	0.0152587890625
18	0.00762939453125
19	0.003814697265625
20	0.0019073486328125
21	0.00095367431640625
22	0.000476837158203125
23	0.0002384185791015625
24	0.00011920928955078125
25	5.9604644775390625e-05
26	2.9802322387695312e-05
27	1.4901161193847656e-05
28	7.450580596923828e-06
29	3.725290298461914e-06
30	1.862645149230957e-06
31	9.313225746154785e-07
32	4.656612873077392e-07
33	2.328306436538696e-07
34	1.164153218269348e-07
35	5.82076609134674e-08
36	2.91038304567337e-08
37	1.455191522836685e-08
38	7.275957614183425e-09
39	3.637978807091712e-09
40	1.818989403545856e-09
41	9.09494701772928e-10
42	4.54747350886464e-10
43	2.27373675443232e-10
44	1.13686837721616e-10
45	5.6843418860808e-11
46	2.8421709430404e-11
47	1.4210854715202e-11
48	7.105427357601e-12
49	3.5527136788005e-12
50	1.7763568394002e-12
51	8.881784197001e-13
52	4.4408920985005e-13
53	2.2204460492502e-13
54	1.1102230246251e-13
55	5.5511151231255e-14
56	2.7755575615627e-14
57	1.3877787807813e-14
58	6.9388939039065e-15
59	3.4694469519532e-15
60	1.7347234759766e-15
61	8.673617379883e-16
62	4.3368086899415e-16
63	2.1684043449707e-16
64	1.0842021724854e-16
65	5.421010862427e-17
66	2.7105054312135e-17
67	1.3552527156067e-17
68	6.7762635780335e-18
69	3.3881317890167e-18
70	1.6940658945084e-18
71	8.470329472542e-19
72	4.235164736271e-19
73	2.1175823681355e-19
74	1.0587911840677e-19
75	5.2939559203385e-20
76	2.6469779601692e-20
77	1.3234889800846e-20
78	6.617444900423e-21
79	3.3087224502115e-21
80	1.6543612251057e-21
81	8.2718061255285e-22
82	4.1359030627642e-22
83	2.0679515313821e-22
84	1.033975765691e-22
85	5.169878828455e-23
86	2.5849394142275e-23
87	1.2924697071137e-23
88	6.4623485355685e-24
89	3.2311742677842e-24
90	1.6155871338921e-24
91	8.0779356694605e-25
92	4.0389678347302e-25
93	2.0194839173651e-25
94	1.0097419586825e-25
95	5.0487097934125e-26
96	2.5243548967062e-26
97	1.2621774483531e-26
98	6.3108872417655e-27
99	3.1554436208827e-27
100	1.5777218104414e-27

Lo Freq.
(MHz)

Ref. Freq.
(MHz)

Example:

Example:
1. LFTS-155-330-1k-010M part number for frequency synthesizer covering 0.155 to 0.330 GHz with a step size of 1 KHz and a reference frequency of 10M.

2. LFTS-.155-.330-1k –920-010M part number for frequency synthesizer covering 0.155 to 0.330 GHz with a step size of 1 KHz a fixed LO of 920 MHz and a reference frequency of 10M.



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LFTS SERIES OUTLINE DRAWING: 177326

