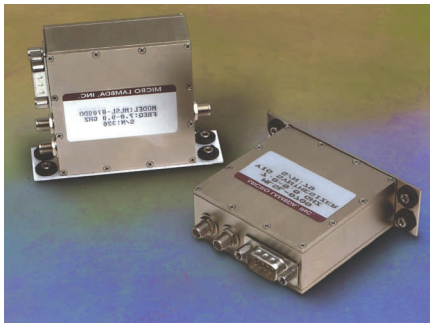
MICRO LAMBDA WIRELESS, INC.

MLSL "IC" SERIES
PMYTO BASED SYNTHESIZERS
2-12 GHz 2 GHz TUNING



FEATURES

2-12 GHz Frequency Coverage
2 GHz Tuning Ranges
Superior Phase Noise
Small Size and Low Power Consumption
Internal Crystal Oscillator

DESCRIPTION

Micro Lambda's new MLSL-IC Series of permanent magnet YIG (PMYTO) based synthesizers incorporate an internal crystal oscillator. These synthesizers provide superior phase noise, typically –98 dBc/Hz @ 10 kHz offset, in X-Band and are available in 2 GHz tuning bandwidths between 2 GHz and 12 GHz. Frequency doublers are optional through 24 GHz. Spurious performance is -70 dBc and switching speed is 100 mS. Micro Lambda's **MLSL** Series PMYTO based synthesizers are 2.5" x 2.5" x 1.0" and consume less than 6 watts. The micro-controller utilized in the MLSL synthesizers is non-volatile and remembers the tuned frequency after a power down incident.

PERFORMANCE SPECIFICATIONS - IC Series

(Operating Case Temperature: 0º to +60º C Baseplate) (Note 4)

Model No.	MLSL-0305IC (Note 1)	MLSL-0406IC	MLSL-0507IC	MLSL-0608IC
RF Specifications				
Output Frequency (Note 2)	3-5 GHz	4-6 GHz	5-7 GHz	6-8 GHz
Output Power Min.	+12 dBm	+12 dBm	+12 dBm	+10 dBm
Po Variation Over Temp./Freq.	+/-2 dB	+/-2 dB	+/-2 dB	+/- 2 dB
Step Size, Min. (Note 3)	500 kHz	500 kHz	500 kHz	500 kHz
Switching Speed, 100 MHz step.	100 mS, Typ.	100 mS, Typ.	100 mS, Typ.	100 mS, Typ.
Output Impedance	50 Ohms	50 Ohms	50 Ohms	50 Ohms
Load VSWR	2.0:1	2.0:1	2.0:1	2.0:1
Harmonics	-12 dBc	-12 dBc	-12 dBc	-15 dBc
Spurious > 10 kHz	-70 dBc	-70 dBc	-70 dBc	-70 dBc
Phase Noise @ 100 Hz Offset, Typ.	-53 dBc/Hz	-53 dBc/Hz	-53 dBc/Hz	-53 dBc/Hz
@ 1 kHz Offset, Typ.	-65 dBc/Hz	-62 dBc/Hz	-62 dBc/Hz	-60 dBc/Hz
@ 10 kHz Offset	-98 dBc/Hz	-98 dBc/Hz	-96 dBc/Hz	-96 dBc/Hz
@ 100 kHz Offset	-122 dBc/Hz	-122 dBc/Hz	-120 dBc/Hz	-120 dBc/Hz
@ 1 MHz Offset	-144 dBc/Hz	-144 dBc/Hz	-142 dBc/Hz	-142 dBc/Hz
Internal Ref. Osc. - Fixed Freq.	10 MHz	10 MHz	10 MHz	10 MHz
Internal Ref. Osc. Stability	+/-2.5 ppm	+/-2.5 ppm	+/-2.5 ppm	+/-2.5 ppm
Supply Voltage & Current				
+15 Vdc (+5%,-2%), Max.	425 mA	425 mA	425 mA	425 mA
Supply Voltage Ripple (Pk-Pk from 2 kHz to 3 MHz)	10 mV	10 mV	10 mV	10 mV
Digital Control Format	3-Line Serial	3-Line Serial	3-Line Serial	3-Line Serial
Phase Lock Alarm	High=Locked	High=Locked	High=Locked	High=Locked
Connections				
Reference Input	SMA-F	SMA-F	SMA-F	SMA-F
RF Output	SMA-F	SMA-F	SMA-F	SMA-F
Control/Alarm	DB9	DB9	DB9	DB9
Case Style				
Horizontal Option	151-008	151-008	151-008	151-008

Notes: 1) 2-4 GHz available.
2) Units can be set to a customer selected fixed frequency. No control interface is required.
3) Smaller step size available.
4) Special operating temperature ranges available.

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MLSL IC - Series PERFORMANCE SPECIFICATIONS

(Operating Case Temperature: 0º to +60º C Baseplate) (Note 4)

Model No.	MLSL-0709IC	MLSL-0810IC	MLSL-0911IC	MLSL-1012IC
RF Specifications				
Output Frequency (Note 2)	7-9 GHz	8-10 GHz	9-11 GHz	10-12 GHz
Output Power Min.	+10 dBm	+10 dBm	+10 dBm	+8 dBm
Po Variation Over Temp./Freq.	+/-2 dB	+/-2 dB	+/-2 dB	+/- 2 dB
Step Size, Min. (Note 3)	500 kHz	500 kHz	500 kHz	500 kHz
Switching Speed, 100 Mhz step	100 mS, Typ.	100 mS, Typ.	100 mS, Typ.	100 mS, Typ.
Output Impedance	50 Ohms	50 Ohms	50 Ohms	50 Ohms
Load VSWR	2.0:1	2.0:1	2.0:1	2.0:1
Harmonics	-15 dBc	-15 dBc	-15 dBc	-15 dBc
Spurious > 10 kHz	-70 dBc	-70 dBc	-70 dBc	- 70 dBc
Phase Noise @ 100 Hz Offset, Typ.	-53 dBc/Hz	-53 dBc/Hz	-53 dBc/Hz	-53 dBc/Hz
@ 1 kHz Offset, Typ.	-60 dBc/Hz	-60 dBc/Hz	-60 dBc/Hz	-60 dBc/Hz
@ 10 kHz Offset	-94 dBc/Hz	-93 dBc/Hz	-87 dBc/Hz	-87 dBc/Hz
@ 100 kHz Offset	-118 dBc/Hz	-117 dBc/Hz	-110 dBc/Hz	-110 dBc/Hz
@ 1 MHz Offset	-140 dBc/Hz	-139 dBc/Hz	-133 dBc/Hz	-133 dBc/Hz
Internal Ref. Osc. - Fixed Freq.	10 MHz	10 MHz	10 MHz	10 MHz
Internal Ref. Osc. Stability	+/-2.5 ppm	+/-2.5 ppm	+/-2.5 ppm	+/-2.5 ppm
Supply Voltage & Current				
+15 Vdc (+5%,-2%) Max.	425 mA	475 mA	475 mA	475 mA
Supply Voltage Ripple (Pk-Pk from 2 kHz to 3 MHz)	10 mV	10 mV	10 mV	10 mV
Digital Control Format	3-Line Serial	3-Line Serial	3-Line Serial	3-Line Serial
Phase Lock Alarm	High=Locked	High=Locked	High=Locked	High=Locked
Connections				
Reference Input	SMA-F	SMA-F	SMA-F	SMA-F
RF Output	SMA-F	SMA-F	SMA-F	SMA-F
Control/Alarm	DB9	DB9	DB9	DB9
Case Style				
Horizontal Option	151-008	151-008	151-008	151-008

Notes: 2) Units can be set to a customer selected fixed frequency. No control interface is required.
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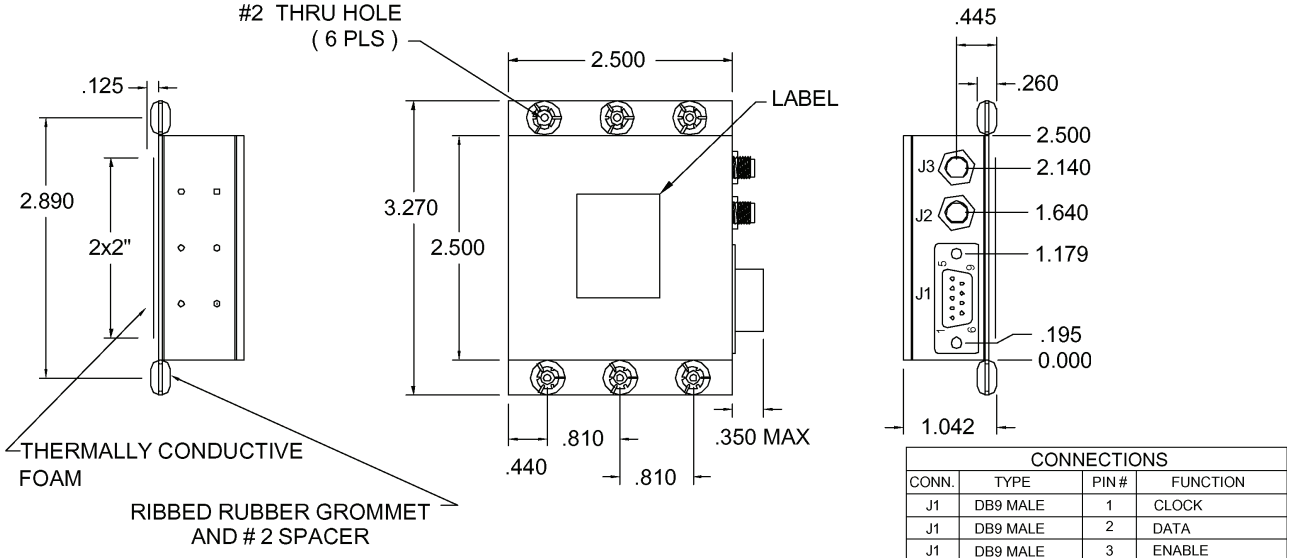
4) special operating temperature ranges available.

Outline Drawing: 151-008



WEIGHT: 7 Oz.

CONNECTIONS			
CONN.	TYPE	PIN #	FUNCTION
J1	DB9 MALE	1	CLOCK
J1	DB9 MALE	2	DATA
J1	DB9 MALE	3	ENABLE
J1	DB9 MALE	4	LOCK DET OUT
J1	DB9 MALE	5	N/C
J1	DB9 MALE	6	+15 VDC
J1	DB9 MALE	7	+5 VDC
J1	DB9 MALE	8	COMMON
J1	DB9 MALE	9	LOGIC COMMON
J2	SMA FEMALE	1	CRYSTAL MON.
J3	SMA FEMALE	1	RF OUT