MICRO LAMBDA WIRELESS, INC.

PERMANENT MAGNET YTO COMMERCIAL ANALOG DRIVERS BA-SERIES

FEATURES

- 2 GHz to 22 GHz
- Compensation for Temperature Drift
- Voltage Regulators for Improved Stability
- 0-10 Volt Tuning Resolution
- Remote Oscillator/Driver Location

DESCRIPTION

Micro Lambda ***MLPM Series*** Permanent Magnet YIG Oscillators are available with integrated analog driver circuits. These drivers eliminate the need for customers to design or develop their own driver circuits and sophisticated test and alignment procedures. Integrating a driver at Micro Lambda's factory ensures peak performance. Alignment and compensation with the particular YIG oscillator can be maximized down to the component level.

All drivers in this series provide input voltage regulators and compensation circuits to improve frequency drift. All voltages required by the YIG oscillator, except the heater inputs are supplied by the voltage regulators.

COMMERCIAL ANALOG DRIVERS	**Permanent Magnet YTOs, BA & BF SERIES**
DRIVER INPUT & RESPONSE	SPECIFICATION (0 to +65 deg. C)
Main Coil Driver Function	
Tuning Command	0 Volts = Lowest Frequency
	+10 Volts = Highest Frequency
Tuning Accuracy	+/- 10 MHz
(excluding hysteresis)	
Tuning Speed (Note 1)	10 mS for 1 GHz step to within +/-10 MHz.
	(residual FM is 10 kHz Pk-Pk)
Sweep Speed (Note 2)	100 mS up / 10 mS 1 GHz retrace, Linearity @ 0.1%
(0-10 Volt Ramp)	(residual FM is 10 kHz Pk-Pk)
Main Driver Inputs	
Supply Voltage & Current (Note 3)	+12 V +/- .5 V @ 265 mA, Max.
	-12 V +/- .5 V @ 165 mA, Max.
Supply Voltage Pushing	+/- 100 kHz, Max. @ +/- .5 Vdc
Supply Voltage Ripple	10 mV Ripple Pk-Pk over 2 kHz to 3 MHz
Ground	Chassis Ground
Input Impedance	> 10 k-Ohms
Common Rejection Mode	> 40 dB
YIG Heater Voltage & Current	+15 Vdc ±4 Vdc @ 300 mA surge for 2 seconds, 50 mA steady state
	Polarity independent : ±12 Vdc or ±15 Vdc acceptable
FM Coil Driver (BF Option)	
Voltage	+/- 10 V
Current	+/- 100 mA
Input Impedance	10 k-Ohms
Sensitivity (Note 4)	+/- 2.5 MHz/V
Frequency Deviation	+/- 25 MHz

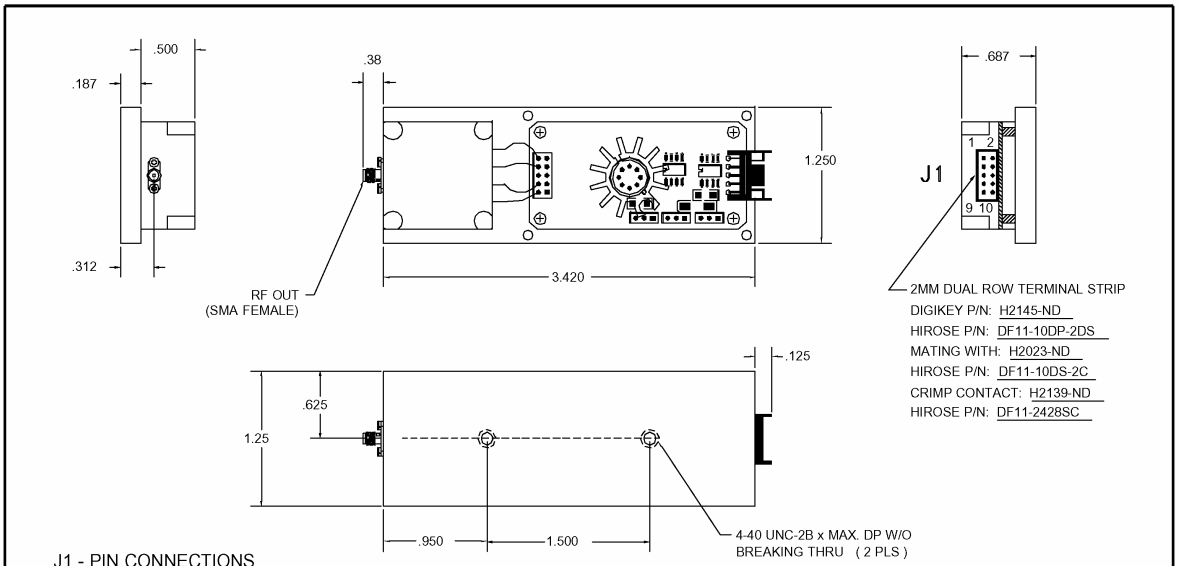
Note 1: Optional 1mS Tuning Speeds Available.
2: Optional 10 mS Sweep Speed Available.
3. Some YIG devices require higher voltages - Check with factory.
4: FM Coil Sensitivity Adjustment Available. Sensitivity Stated is Average Over Frequency Range.

Permanent Magnet YIG Oscillators with Positive Input Analog Drivers (0º C to +65º C)

Model Number	Frequency GHz	Accuracy (MHz) *	Current +12 V (mA)	Current -12 V (mA)	Outline Drawing	Outline Drawing (BF Option)
Bi-Polar						
MLPM-0204BA	2-4	+/- 10	265	165	61-064	61-064-1
MLPM-0305BA	3-5	+/- 10	265	165	61-064	61-064-1
MLPM-0406BA	4-6	+/- 10	265	165	61-064	61-064-1
MLPM-0507BA	5-7	+/- 10	265	165	61-064	61-064-1
MLPM-0608BA	6-8	+/- 10	265	165	61-064	61-064-1
MLPM-0709BA	7-9	+/- 10	265	165	61-064	61-064-1
MLPM-0810BA	8-10	+/- 10	265	165	61-064	61-064-1
MLPM-0911BA	9-11	+/- 10	265	165	61-064	61-064-1
MLPM-1012BA	10-12	+/- 10	265	165	61-064	61-064-1
MLPM-1113BA	11-13	+/- 10	265	165	61-064	61-064-1
MLPM-1214BA	12-14	+/- 10	265	165	61-064	61-064-1
FET						
MLPM-0911FBA	9-11	+/- 10	265	165	61-064	61-064-1
MLPM-1012FBA	10-12	+/- 10	265	165	61-064	61-064-1
MLPM-1113FBA	11-13	+/- 10	265	165	61-064	61-064-1
MLPM-1214FBA	12-14	+/- 10	265	165	61-064	61-064-1
MLPM-1315FBA	13-15	+/- 10	265	165	61-064	61-064-1
MLPM-1416FBA	14-16	+/- 10	265	165	61-063	61-087
MLPM-1517FBA	15-17	+/- 10	265	165	61-063	61-087
MLPM-1618FBA	16-18	+/- 10	265	165	61-063	61-087
MLPM-1719FBA	17-19	+/- 10	265	165	61-063	61-087
MLPM-1820FBA	18-20	+/- 10	265	165	61-063	61-087

Model Number	Frequency GHz	Accuracy (MHz) *	Current +15 V (mA)	Current -15 V (mA)	Outline Drawing	Outline Drawing (BF Option)
Ultra-Wide Tuning Range						
MLPW-0812BA	8-12	+/- 15	315	215	61-063	61-087
MLPW-1014BA	10-14	+/- 15	315	215	61-063	61-087
MLPW-1418BA	14-18	+/- 15	315	215	61-063	61-087
MLPW-1822BA	18-22	+/- 15	315	215	61-063	61-087

* Accuracy includes frequency drift and linearity errors over the temperature range.



J1 - PIN CONNECTIONS

PIN NO	FUNCTION
1	CONTROL
2	CONTROL GND
3	GROUND
4	-SUPPLY
5	+SUPPLY
6	+ HTR or N/C
7	- HTR or N/C
8	FM +
9	FM -
10	N/C

REV	DESCRIPTION	DATE	APPROVED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCE ARE:
FRACTIONS DECIMALS ANGLES
± .xx ±.02
± .xxx ±.010
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

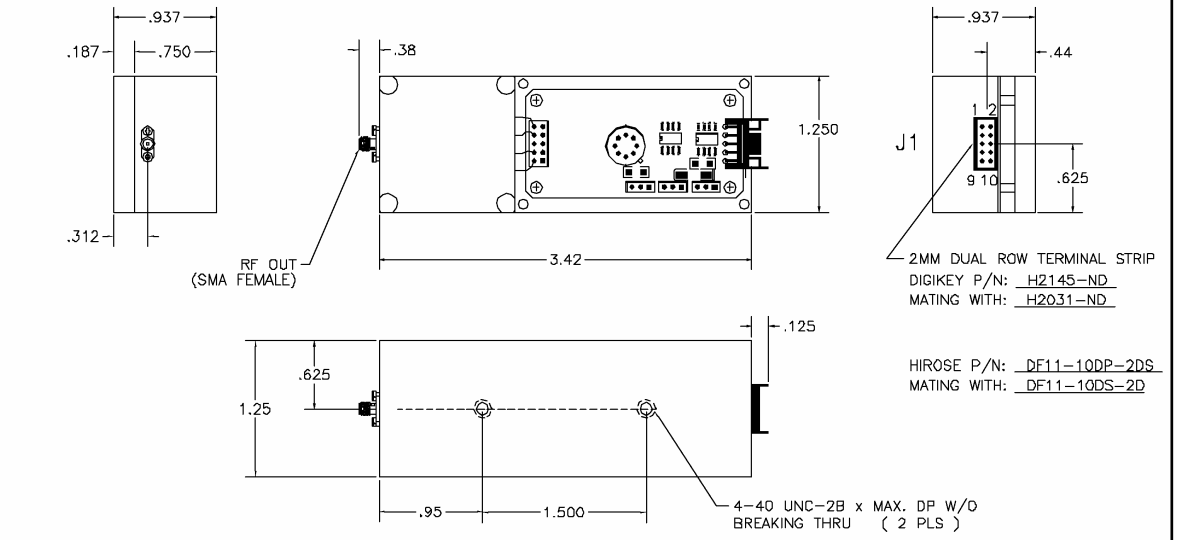
APPROVALS	DATE
DRAWN N.NGUYEN	8/27/02
ENGR	
MANUF	
Q.A.	

MICRO LAMBDA WIRELESS, INC.

PMO 1.00" W/ANALOG DRIVER (OPEN BOARD)

SIZE	CAGE	DWG. NO.	REV.
	0RN63	61 - 064	B

SCALE SHEET



J1 – PIN CONNECTIONS

PIN NO	FUNCTION
1	CONTROL
2	CONTROL RTN
3	GROUND
4	–SUPPLY
5	+SUPPLY
6	+ HTR or N/C
7	– HTR or N/C
8	FM +
9	FM –
10	N/C

REV	DESCRIPTION	DATE	APPROVED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCE ARE :
FRACTIONS DECIMALS ANGLES
± .xx ±.02
± .xxx ±.010
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

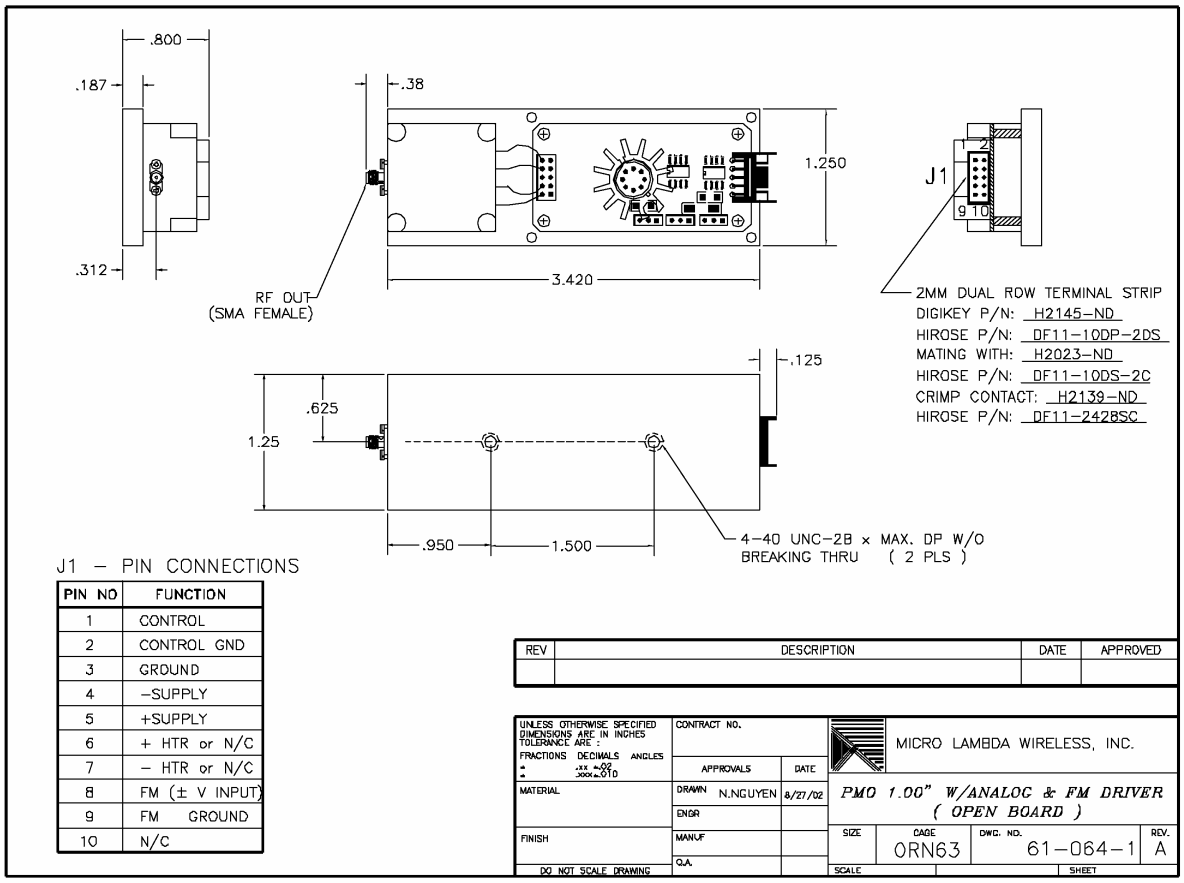
APPROVALS	DATE
DRAWN N.NGUYEN	8/27/02
ENGR	
MANUF	
Q.A.	

MICRO LAMBDA WIRELESS, INC

PMO 1.25" W/ANALOG DRV. (OPEN BOARD)

SIZE	CAGE	DWG. NO.	REV.
	0RN63	61 – 063	A

SCALE SHEET



J1 – PIN CONNECTIONS

PIN NO	FUNCTION
1	CONTROL
2	CONTROL GND
3	GROUND
4	-SUPPLY
5	+SUPPLY
6	+ HTR or N/C
7	– HTR or N/C
8	FM (± V INPUT)
9	FM GROUND
10	N/C

REV	DESCRIPTION	DATE	APPROVED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCE ARE :
FRACTIONS DECIMALS ANGLES
± .xx ±.02
± .xxx±.010
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

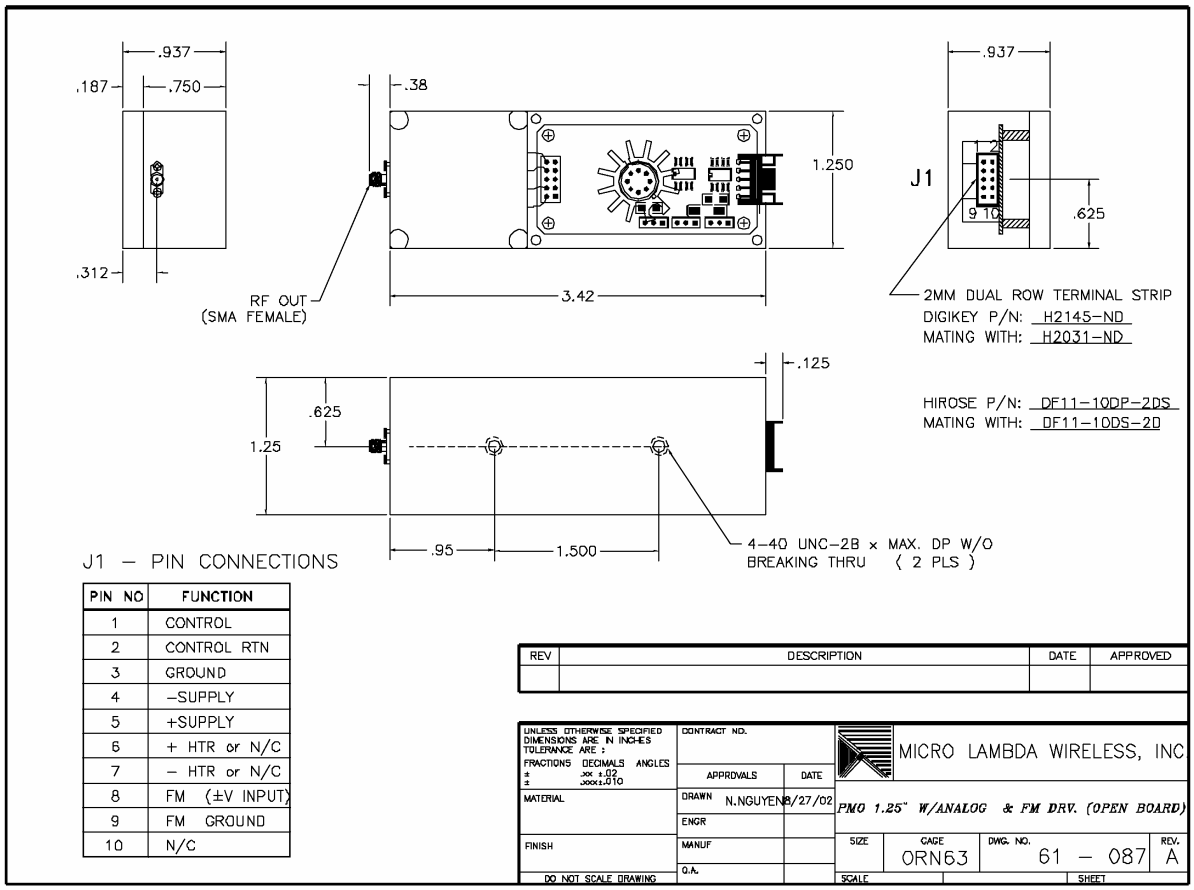
APPROVALS	DATE
DRAWN N.NGUYEN	8/27/02
ENGR	
MANUF	
Q.A.	

MICRO LAMBDA WIRELESS, INC.

PMO 1.00" W/ANALOG & FM DRIVER (OPEN BOARD)

SIZE	CAGE	DWG. NO.	REV.
	ORN63	61-064-1	A

SCALE SHEET



J1 – PIN CONNECTIONS

PIN NO	FUNCTION
1	CONTROL
2	CONTROL RTN
3	GROUND
4	-SUPPLY
5	+SUPPLY
6	+ HTR or N/C
7	– HTR or N/C
8	FM (±V INPUT)
9	FM GROUND
10	N/C

REV	DESCRIPTION	DATE	APPROVED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCE ARE :
FRACTIONS DECIMALS ANGLES
± .xx ±.02
± .xxx±.010
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN N.NGUYEN	8/27/02
ENGR	
MANUF	
Q.A.	

MICRO LAMBDA WIRELESS, INC

PMO 1.25" W/ANALOG & FM DRV. (OPEN BOARD)

SIZE	CAGE	DWG. NO.	REV.
	ORN63	61 – 087	A

SCALE SHEET