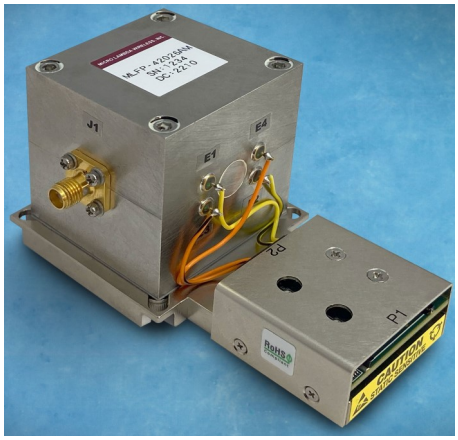
MICRO LAMBDA WIRELESS, INC.

YIG TUNED BAND REJECT FILTERS WITH COMMERCIAL ANALOG AM DRIVERS



FEATURES

- 500 MHz to 50 GHz
- Input Regulators for Improved Stability
  - Versus Power Supply Variations
- 0 to 10 Volt Tuning
- 0º C to +65º C Temperature Range

DESCRIPTION

MICRO LAMBDA YIG Band Reject Filters, model types MLFR-Series, MLFRD-Series and MLUN-Series are available with integrated analog driver circuits.

MICRO LAMBDA 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 that peak performance will be achieved at the time of manufacture. Alignment and compensation with the particular YIG filter can be maximized down to the component level.

All drivers in this series provide input voltage regulators, and compensation circuits to improve frequency drift.

YIG drivers act as a Voltage-To-Current convertor (constant current source) converting standard 0-10 Volts numbers into mA of current to tune a magnetic tuning coil.

POSITIVE INPUT ANALOG DRIVERS AM Series

MICRO LAMBDA positive analog drivers are available for commercial environments. Standard products provide 0-10 Volt tuning input and operate over the 0° to 65° temperature range.

The AM series of analog driver provide the main coil current from the +15 volt input line. Current increases linearly from 0 mA = 0 GHz at a rate of approximately 50 mA per 1 GHz. A 2-8 GHz filter will require 100 mA @ 2 GHz and 400 mA @ 8 GHz.

In special cases, speed-up circuits like those used to improve the tuning speed of YIG oscillators can also be included to provide both fast-tuned filters and with good accuracy. Filter parameters can be maximized during factory alignment to meet customer specific requirements.

AVAILABLE OPTIONS FOR AM-SERIES COMMERCIAL ANALOG DRIVERS

- **Optional Tuning Speeds**
- **Optional Sweep Speeds**

MICRO LAMBDA WIRELESS, INC.

YIG TUNED BAND REJECT FILTERS WITH COMERCIAL ANALOG DRIVERS AM SERIES

YIG TUNED BAND REJECT FILTERS WITH
COMMERCIAL ANALOG DRIVERS

DRIVER INPUT & RESPONSE	SPECIFICATION (0 to +65 deg. C)
Main Coil Driver Function	
Tuning Command (P1-1, 2)	0 Volts = Lowest Frequency +10 Volts = Highest Frequency
Tuning Accuracy (excluding hysteresis)	See Table
Tuning Speed (Note 1)	2 mS for 1 GHz step to within +/-10 MHz.
Sweep Speed (Note 2) (0-10 Volt Ramp)	50 mS up / 10 mS retrace for 1 GHz, Linearity @ 0.1%
Main Driver Inputs	
Supply Voltage & Current (P1-6)	+15 V +/- .5 V @ Filter Tuning Current + 50 mA, Max.
(P1-5)	-15 V +/- .5 V @ 50 mA, Max.
Supply Voltage Pushing	+/- 100 kHz, Max. @ +/- .5 Vdc
Supply Voltage Ripple	10 mV Ripple Pk-Pk from 2 kHz to 3 MHz
Ground (P1-4, 12)	Chassis Ground
YIG Heater Voltage & Current (P1-7, 8)	+24 Vdc ±4 Vdc @ 300 to 750 mA surge for 2 seconds, 100 - 150 mA steady state depending on filter type Polarity independent : ±12 Vdc or ±15 Vdc acceptable
Input Impedance	> 10 k-Ohms
Common Rejection Mode	> 40 dB

Note 1: Optional .5 mS Tuning Speeds Available

2: Optional 5 mS Sweep Speed Available

MICRO LAMBDA WIRELESS, INC.

YIG TUNED BAND REJECT FILTERS WITH COMMERCIAL ANALOG DRIVERS AM SERIES

Band Reject Filters with Positive Input Analog Drivers (0º C to +65º C)

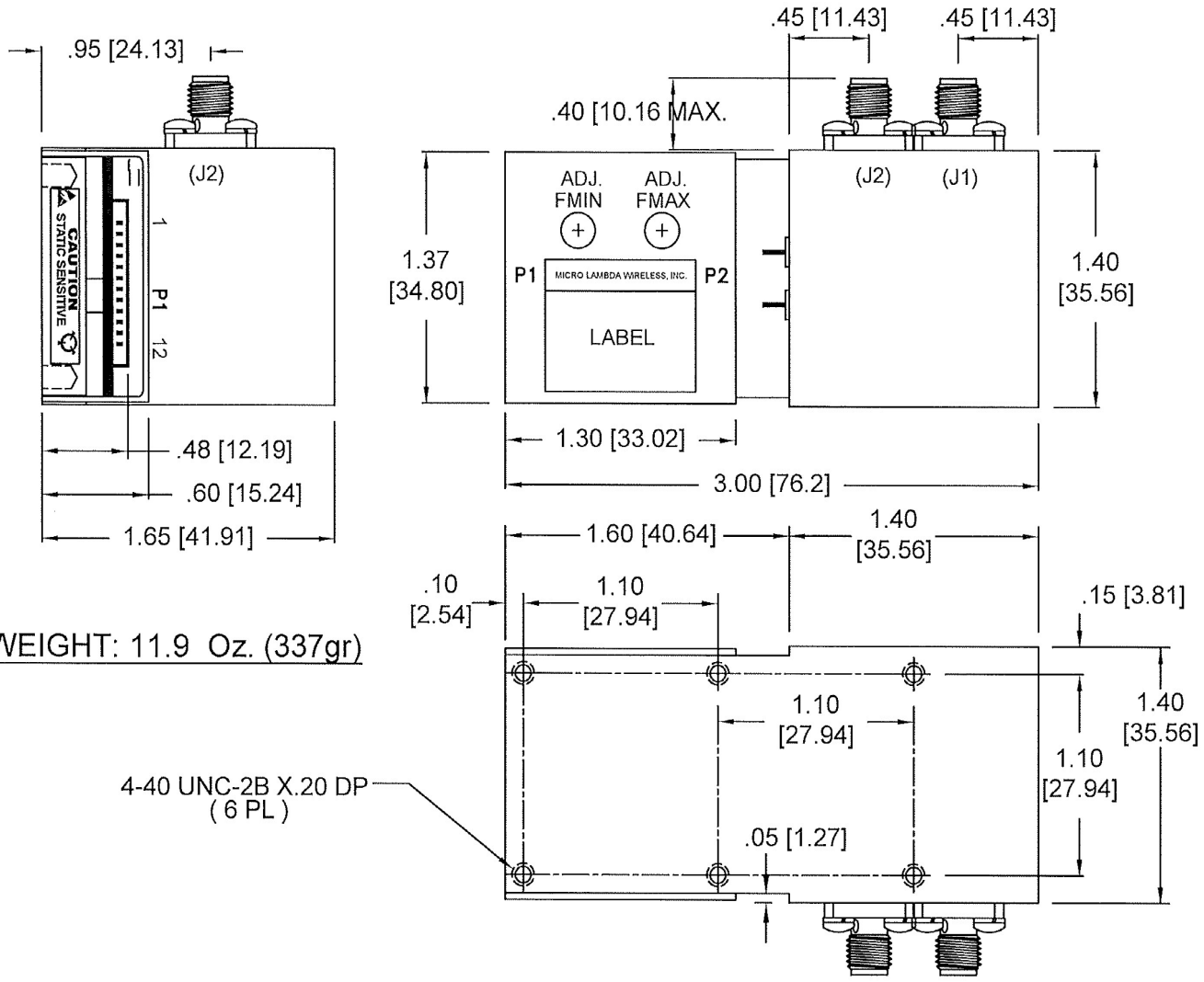
Model Number	Frequency GHz	3 dB Bandwidth (MHz)	40 dB Bandwidth (MHz)	Accuracy (MHz) *	Current +15 V (mA)	Current -15 V (mA)	Outline Drawing
MLFR-0102AM	1.0 to 2.0	100	10	+/- 5	250	50	99-0021-177
MLFR-0204AM	2.0 to 4.0	125	15	+/- 7	350	50	99-0021-177
MLFR-0408AM	4.0 to 8.0	150	20	+/- 10	550	50	99-0021-177
MLFR-0812AM	8.0 to 12.4	150	25	+/- 12	750	50	99-0021-177
MLFR-1218AM	12.4 to 18.0	150	25	+/- 12	1050	50	99-0021-177
MLFR-0502AM	0.50 to 2.0	150	5 @ 30dB	+/- 5	250	50	99-0021-177
MLFR-0206AM	2.0 to 6.0	150	20	+/- 10	450	50	99-0021-177
MLFR-0208AM	2.0 to 8.0	150	15	+/- 14	550	50	99-0021-177
MLFR-0212AM	2.0 to 12.0	150	10	+/- 15	750	50	99-0021-177
MLFR-0218AM	2.0 to 18.0	150	10	+/- 25	1050	50	99-0021-177
MLFR-0220AM	2.0 to 20.0	150	5	+/- 25	1050	50	99-0021-177
MLFR-0418AM	4.0 to 18.0	150	10	+/- 20	1050	50	99-0021-177
MLFR-160418AM	4.0 to 18.0	150	30	+/- 20	1050	50	99-0021-177
MLFR-0618AM	6.0 to 18.0	150	25	+/- 18	1050	50	99-0021-177
MLFR-160618AM	6.0 to 18.0	150	40	+/- 20	1050	50	99-0021-177
MLFR-0818AM	8.0 to 18.0	150	35	+/- 18	1050	50	99-0021-177
MLFR-160818AM	8.0 to 18.0	150	50	+/- 18	1050	50	99-0021-177

Ultra Notch Band Reject Filters with Positive Input Analog Drivers (0º C to +65º C)

Model Number	Frequency GHz	3 dB Bandwidth (MHz)	60 dB Bandwidth (MHz)	Accuracy (MHz) *	Current +15 V (mA)	Current -15 V (mA)	Outline Drawing
MLUN-0305AM	.35 to .52	50	4 @ 30dB	+/- 2	100	50	99-0021-175
MLUN-0503AM	.50 to 3.0	80	6 @ 40dB	+/- 5	250	50	99-0021-175
MLUN-0206AM	2.0 to 6.0	120	20	+/- 10	450	50	99-0021-175
MLUN-0618AM	6.0 to 18.0	175	40	+/- 18	1050	50	99-0021-177
MLUN-0218AM	2.0 to 18.0	175	10	+/- 25	1050	50	99-0021-177
MLUN-0220AM	2.0 to 20.0	175	10	+/-25	1050	50	99-0021-177

* Accuracy includes frequency drift and linearity errors over the temperature range.
** Outline drawing is available from Factory.

Micro Lambda Wireless, Inc. - 46515 Landing Parkway, Fremont California 94538 * Phone (510) 770-9221 * Fax (510) 770-9213



WEIGHT: 11.9 Oz. (337gr)

INPUT

P1 ANALOG MODEL / P1 SERIAL MODEL

PIN	*FUNCTION*	*FUNCTION*
1	CONTROL-V 0-10V	CLOCK (SCLK)
2	CONTROL RETURN	DATA (MOSI)
3	N/C	SELECTn ($\overline{CS}$)
4	GROUND	GROUND
5	-V SUPPLY	-V SUPPLY
6	+V SUPPLY	+V SUPPLY
7	HEATER 1	HEATER 1
8	HEATER 2	HEATER 2
9	N/C	N/C
10	N/C	N/C
11	N/C	N/C
12	GROUND	GROUND

FILTER RF CONNECTIONS

CONN.	*TYPE*	*FUNCTION*
J1	SMA	RF INPUT
J2	SMA	RF OUTPUT

NOTES:

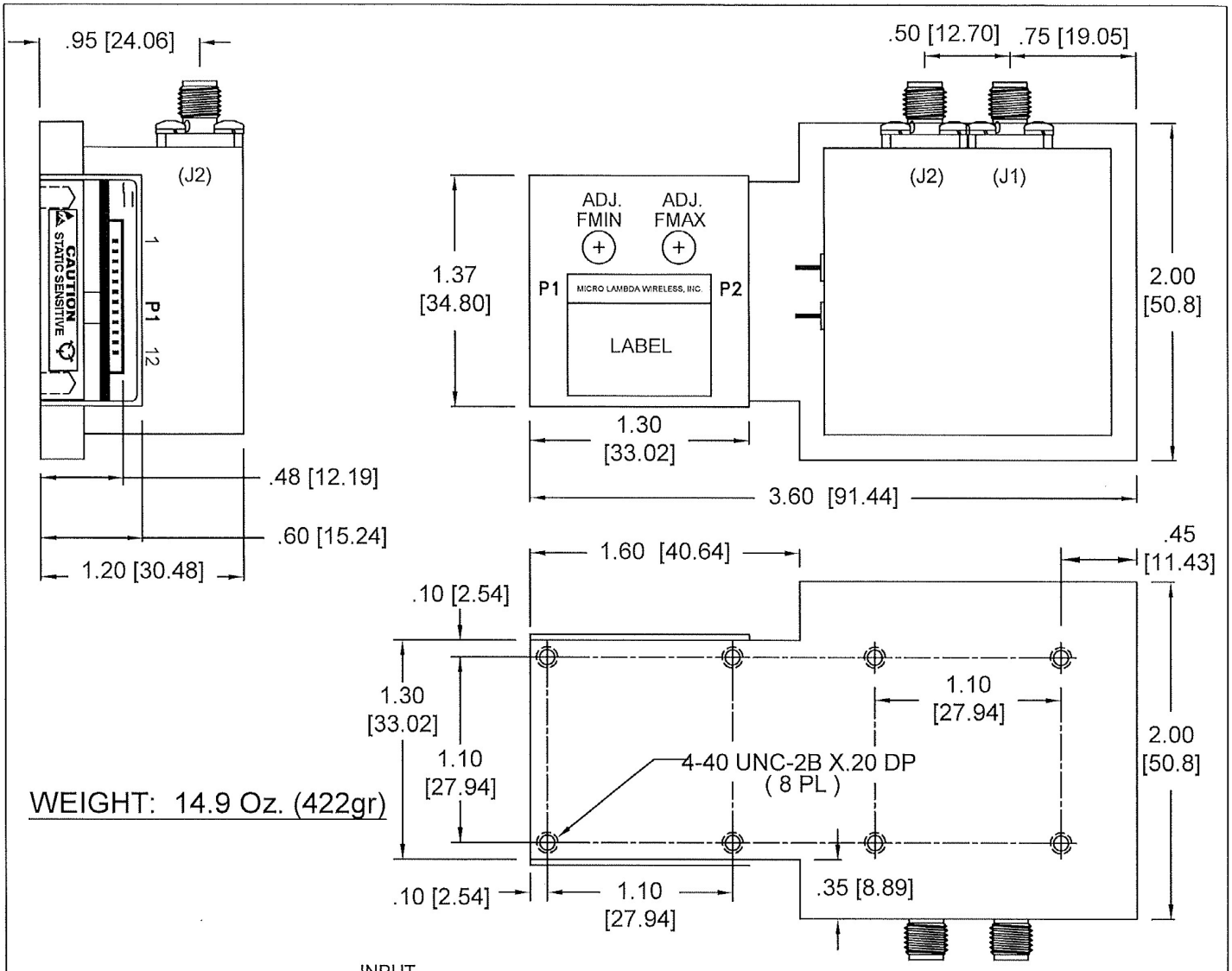
1- RECOMMENDED WIRE SIZE = 24 GAUGE
2- P1 CONNECTION:
   - MOLEX PART # : 5040501291(1.5MM)
   - MATING WITH # : 5040511201
   - CRIMP CONTACT : 5040520098
3- DIMENSIONS ARE IN INCHES
4- [ ] DIMENSIONS ARE IN MM.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCE ARE: FRACTIONS ± DECIMALS .xx ±.02 .xxx ±.010 ANGLES ±	CONTRACT NO.		
	APPROVALS	DATE	
MATERIAL	DRAWN N.NGUYEN	6/10/2022	
	CHECKED DS	6/10/22	
FINISH	ISSUED		
DO NOT SCALE DRAWING			

MICRO LAMBDA WIRELESS, INC.

ANALOG OR SERIAL DRIVER WITH 1.4"BR FILTER

SIZE	CAGE No	DWG. NO.	REV.
	0RN63	99 - 0021 - 177	A



WEIGHT: 14.9 Oz. (422gr)

INPUT

P1 ANALOG MODEL / P1 SERIAL MODEL

PIN	*FUNCTION*	*FUNCTION*
1	CONTROL-V 0-10V	CLOCK (SCLK)
2	CONTROL RETURN	DATA (MOSI)
3	N/C	SELECTn ($\overline{CS}$)
4	GROUND	GROUND
5	-V SUPPLY	-V SUPPLY
6	+V SUPPLY	+V SUPPLY
7	HEATER 1	HEATER 1
8	HEATER 2	HEATER 2
9	FM +/- 10V	N/C
10	FM RETURN	N/C
11	FAST/SLOWn	N/C
12	GROUND	GROUND

FILTER RF CONNECTIONS

CONN.	*TYPE*	*FUNCTION*
J1	SMA	RF INPUT
J2	SMA	RF OUTPUT

NOTES:

1- RECOMMENDED WIRE SIZE = 24 GAUGE
2- P1 CONNECTION:
   – MOLEX PART # : 5040501291(1.5MM)
   – MATING WITH # : 5040511201
   – CRIMP CONTACT : 5040520098
3- DIMENSIONS ARE IN INCHES
4- [ ] DIMENSIONS ARE IN MM.

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	6/10/2022
CHECKED DS	6/10/22
ISSUED	

MICRO LAMBDA WIRELESS, INC.

ANALOG OR SERIAL DRIVER WITH 1.7" UN BR FILTER

SIZE	CAGE No	DWG. NO.	REV.
	0RN63	99 - 0021 - 175	A