

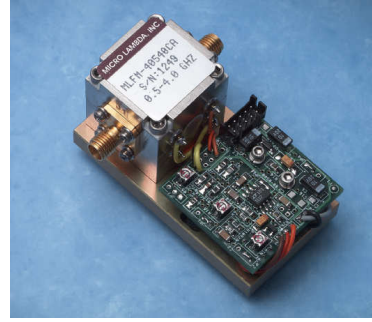


MICRO LAMBDA WIRELESS, INC.

MINIATURE YIG FILTERS WITH COMMERCIAL ANALOG DRIVERS CA SERIES

FEATURES

- 500 MHz to 18 GHz
- Compensation for Temperature Drift
- Low-Profile Package
- Input Regulators for Improved Stability
 - Versus Power Supply Variations
- 0-10 Volt Tuning Resolution



DESCRIPTION

MICRO LAMBDA YIG Filters, model types MLFI Series, MLFM-Series and MLFD-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 Voltage-To-Current converters, converting standard 0-10 DC voltages into mA of current to tune a magnetic tuning coil.

POSITIVE INPUT ANALOG DRIVERS CA 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 CA 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.

Frequency drift performance can be optimized with the inclusive temperature compensation circuits within the driver. This yields filter/driver combinations set at the factory with excellent frequency accuracy performance.

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 CA-SERIES COMMERCIAL ANALOG DRIVERS

- Optional Tuning Speeds
- Optional Sweep Speeds

STANDARD POSITIVE INPUT ANALOG DRIVER SELECTION GUIDE: CA SERIES

YIG TUNED FILTERS WITH
COMMERCIAL ANALOG DRIVERS
.5-18 GHz CA 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 (excluding hysteresis)	See Table
Tuning Speed (Note 1)	5 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	+15 V +/- .5 V @ Filter Tuning Current + 50 mA, Max. -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	Chassis Ground
YIG Heater Voltage & Current	+24 Vdc ±4 Vdc @ 500 mA surge for 2 seconds, 150 mA steady state 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

Bandpass Filters with Analog Drivers CA Series: Mini Profile Filter (0° C to +65° C)

MODEL NUMBER	# Stages	Frequency GHz	3 dB Bandwidth (MHz)	Accuracy (MHz) *	Current +15V (mA)	Current -15V (mA)	Outline Drawing
MLFI-41002CA	4	1.0 to 2.0	20	+/- 6	150	50	21-037
MLFI-42004CA	4	2.0 to 4.0	30	+/- 8	250	50	21-037
MLFI-44008CA	4	4.0 to 8.0	40	+/- 12	450	50	21-037
MLFI-42008CA	4	2.0 to 8.0	30	+/- 13	450	50	21-037
MLFI-61002CA	6	1.0 to 2.0	25	+/- 6	150	50	21-037
MLFI-62004CA	6	2.0 to 4.0	40	+/- 8	250	50	21-037
MLFI-64008CA	6	4.0 to 8.0	45	+/- 12	450	50	21-037
MLFI-62008CA	6	2.0 to 8.0	40	+/- 13	450	50	21-037

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

Bandpass Filters with Analog Drivers CA Series: 1" Cube Filter (0° C to +65° C)

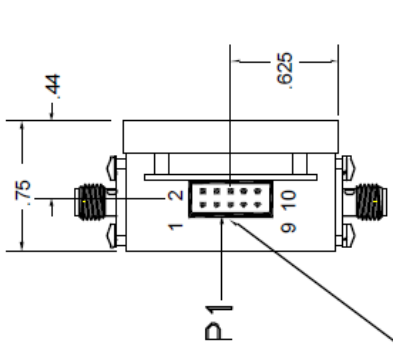
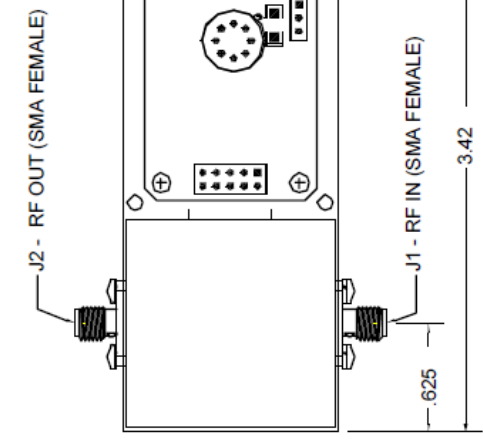
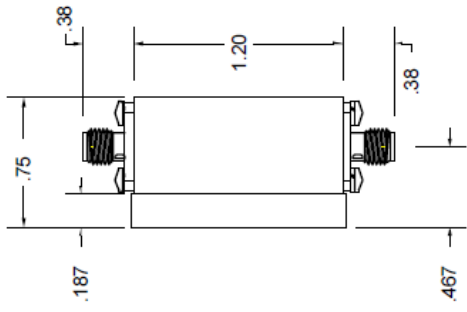
MODEL NUMBER	# Stages	Frequency GHz	3 dB Bandwidth (MHz)	Accuracy (MHz) *	Current +15V (mA)	Current -15V (mA)	Outline Drawing
MLFM-30520CA	3	0.5 to 2.0	15	+/- 7	150	50	21-051
MLFM-40540CA	4	0.5 to 4.0	15	+/- 10	250	50	21-051
MLFM-42008CA	4	2.0 to 8.0	30	+/- 13	450	50	21-051
MLFM-42018CA	4	2.0 to 18.0	30	+/- 13	950	50	21-051
MLFM-46018CA	4	6.0 to 18.0	40	+/- 13	950	50	21-051

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

**Dual Channel Bandpass Filters with Analog Drivers CA Series: 1" Cube Filter
(0° C to +65° C)**

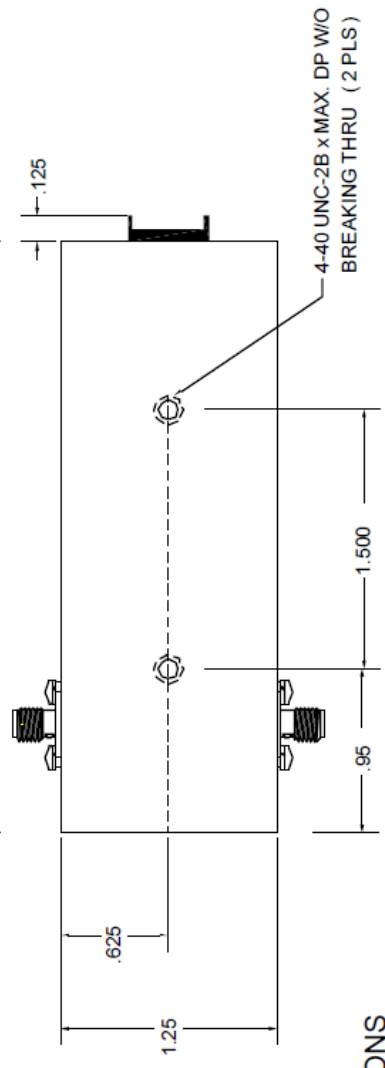
MODEL NUMBER	# Stages	Frequency GHz	3 dB Bandwidth (MHz)	Accuracy (MHz) *	Current +15V (mA)	Current -15V (mA)	Outline Drawing
MLFD-40540CA	Dual 2	0.5 to 4.0	15	+/- 10	250	50	21-062
MLFD-42008CA	Dual 2	2.0 to 8.0	20	+/- 13	450	50	21-062
MLFD-42018CA	Dual 2	2.0 to 18.0	30	+/- 13	950	50	21-062
MLFD-46018CA	Dual 2	6.0 to 18.0	30	+/- 13	950	50	21-062

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



2MM DUAL ROW TERMINAL STRIP
 DIGIKEY P/N: H2145-ND
 HIROSE P/N: DF11-10DP-2DS
 MATING WITH: H2031-ND
 HIROSE P/N: DF11-10DS-2C

WEIGHT : 4 Oz MAX.



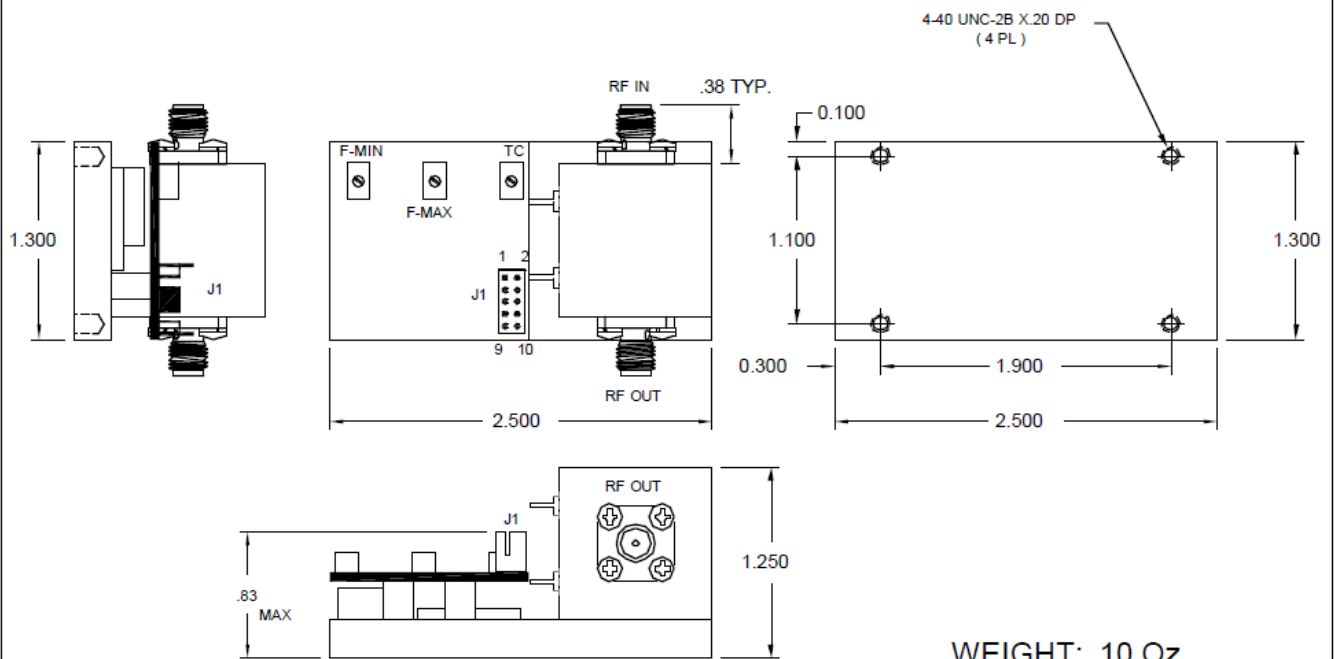
P1 - PIN CONNECTIONS

PIN NO	FUNCTION
1	CONTROL
2	CONTROL RTN
3	GROUND
4	-SUPPLY
5	+SUPPLY
6	HEATER +
7	HEATER -
8	N/C
9	N/C
10	N/C

REV	DESCRIPTION	DATE	APPROVED

		MICRO LAMBDA WIRELESS, INC.	
CONTRACT NO.		DATE	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCE ARE:		APPROVALS	
FRACTIONS	DECIMALS	DRAWN	DATE
$\frac{1}{16}$.005	N NGUYEN	6/22/04
$\frac{1}{32}$.003	ENGR	
$\frac{1}{64}$.001	MANUF	
MATERIAL		Q.A.	
FINISH			
1.2" MINI FILTER W/ANALOG DRY. (OPEN BOARD)		CAGE NO.	REV.
		0RN63	B
		DWG NO.	
		21 - 037	
		SCALE	SHEET

DO NOT SCALE DRAWING



WEIGHT: 10 Oz

J1 CONNECTION (INPUT)

DIGIKEY PART # : H2053-ND(2MM, VERTICAL)

MATING WITH # : H2031-ND

<i>PIN</i>	<i>FUNCTIONS</i>
1	CONTROL 0-10V
2	CTRL RTN
3	GND
4	-SUPPLY
5	+SUPPLY
6	HEATER +
7	HEATER -
8	FM + (*)
9	FM - (*)
10	GND

NOTES:

- 1- (*) : NOT USED FOR FILTER
- 2- RECOMMENDED WIRE SIZE = 20-22 GAUGE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCE ARE:

FRACTIONS DECIMALS ANGLES
 .001 ± .010
 .005 ± .005

MATERIAL
 DRAWN N.NGUYEN
 CHECKED

FINISH
 ISSUED
 DO NOT SCALE DRAWINGS

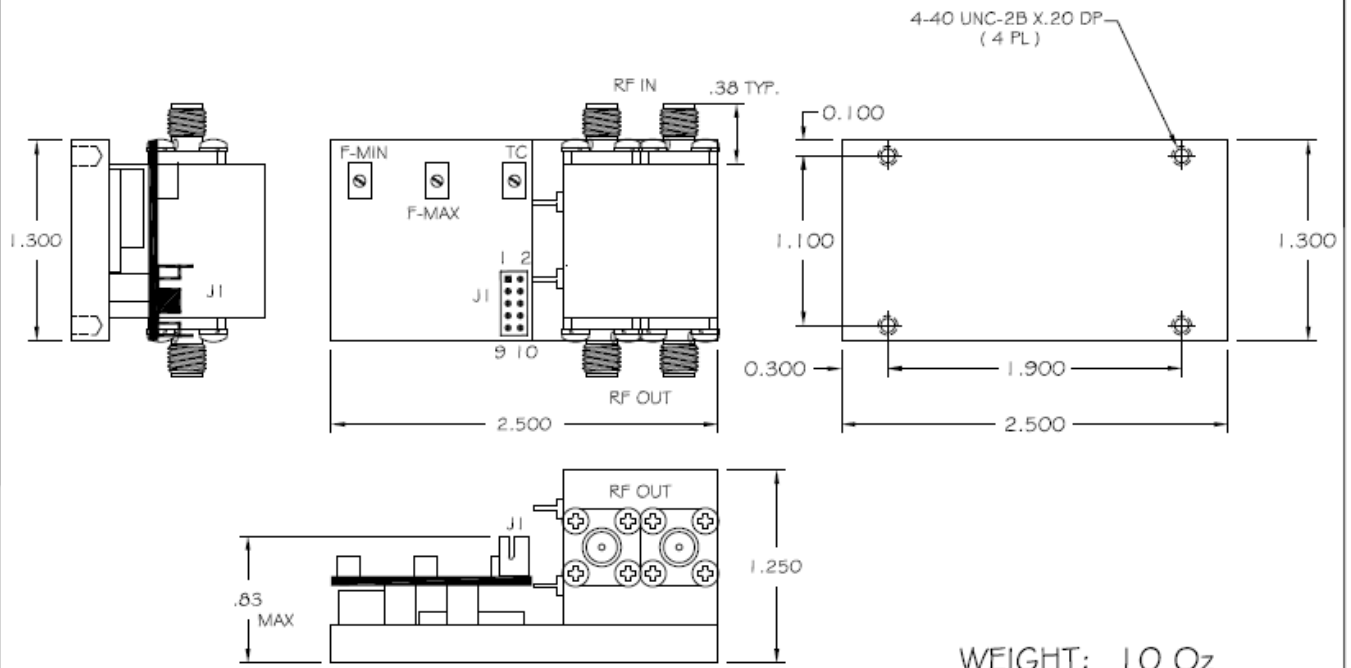
CONTRACT NO.	
APPROVALS	DATE
DATE	6/22/04
ISSUED	



MICRO LAMBDA WIRELESS, INC.

1" FILTER W/ 1.3" ANALOG DRIVER

SIZE	CAGE No	DWG. NO.	REV.
	ORN63	21 - 051	C



J1 CONNECTION (INPUT)

DIGIKEY PART # : H2053-ND(2MM, VERTICAL)

MATING WITH # : H2031-ND

PIN	FUNCTIONS
1	CONTROL 0-10V
2	CTRL RTN
3	GND
4	-SUPPLY
5	+SUPPLY
6	HEATER +
7	HEATER -
8	FM + (*)
9	FM - (*)
10	GND

NOTES:

- 1 - (*) : NOT USED FOR FILTER
- 2- RECOMMENDED WIRE SIZE = 20-22 GAUGE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCE ARE:

FRACTIONS DECIMALS ANGLES
 .015 .0010 .010
 .005 .0005 .005

CONTRACT NO.



MICRO LAMBDA, INC.

APPROVAL

DATE

DRAWN N.NGUYEN

8/13/01

CHECKED

ISSUED

1" DUAL FILTER W/ 1.3" ANALOG DRIVER

SIZE

CAGE No

DWG. NO.

REV.

ORNG3

21 - 062

DO NOT SCALE DRAWING