Power Amplifiers

TA1140

400-450 MHz 50 W Power Amplifier

Description

This class AB LDMOS module is designed for both military and commercial applications. It is capable of supporting any signal type and modulation format, including but not limited to 3-4G telecom, WLAN, OFDM, DVB, and CW/AM/FM. The latest device technologies and design methods are employed to offer high power density, efficiency, and linearity in a small, lightweight package.

Features

Optional Heatsink
High Speed On/Off Control
Over / Under / Reverse Voltage Protection
Temp. Monitor Output

Specifications subject to change without notice. Typical performance at +12VDC +25°C, and in a 50Ω system.

RF / Electrical				
Parameter	**Min**	**Typ.**	**Max**	**Unit**
Operating Frequency	400		450	MHz
PSat Power Output		+47.0		dBm
Gain	50.0	52.0		dB
Gain Flatness		1.5	2.0	dB [1]
Input Return Loss		-12		dB
Operating Voltage	+11	+12	+13	VDC
Current Draw		8.5	9.5	A
Switching Time		1.0	2.0	uS

1 – Gain flatness recorded represents a peak-peak measurement across the **entire operating band**. Gain flatness is typically much lower across significant portions of this band. Consult the gain response plots for details if available.

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TRIAD RF SYSTEMS

TA1140

400-450 MHz 50 W Power Amplifier

Mechanical		
Parameter	**Value**	**Unit**
Dimensions (L x W x H)	3.15 x 2.58 x 0.7	in
RF Connectors (Input / Output)	SMA-F / SMA-F	--
DC / Control Connector	9 Pin D-Sub	--
Cooling	Baseplate Conduction - Optional Heatsink Available	--
Mounting	4-40 Thru Holes	--
Weight	7	oz.
Weight with Heatsink	12	oz.

Environmental / Protections			
Parameter	**Min**	**Max**	**Unit**
Operating Temp. (Housing Temp.)	-40	+85	°C
Humidity Range	0-100		%
Altitude	0-30,000		ft.
Shock / Vibration	MIL-STD-810 and equivalents		--
Max RF Input	+4		dBm
PA Baseplate Shutoff Temperature	+ 90		°C

Input/Output Pins		
Amplifier Connector Type:	9 Pin D-Sub Male	
Triad Cable Part Number:	CBL30	
Pin Number	**Label**	**Description**
1	I/O	TTL Hi or No Connection = Enable, TTL Lo = Disable
2	TEMP	Temp Monitor: Temp in DegC = (Vout - 0.5V) *100
3	+VDC	Supply Voltage - Range Specified in Datasheet
4	+VDC	Supply Voltage - Range Specified in Datasheet
5	+VDC	Supply Voltage - Range Specified in Datasheet
6	NC	No Connection
7	TEMP TRIP	TTL Hi during over temp condition
8	GND	Ground
9	GND	Ground

Configuration Options	
Model Number	**Description**
TA1140	No Heat Sink Included
TA1140 – HS	Standard Heat Sink
TA1140 – HSF	Heat Sink with Integrated Cooling Fan
TA1140 – HSX	Custom Heat Sink Configuration
TA1140 – D0X	Custom Amplifier Configuration (issued by Triad upon customer request)

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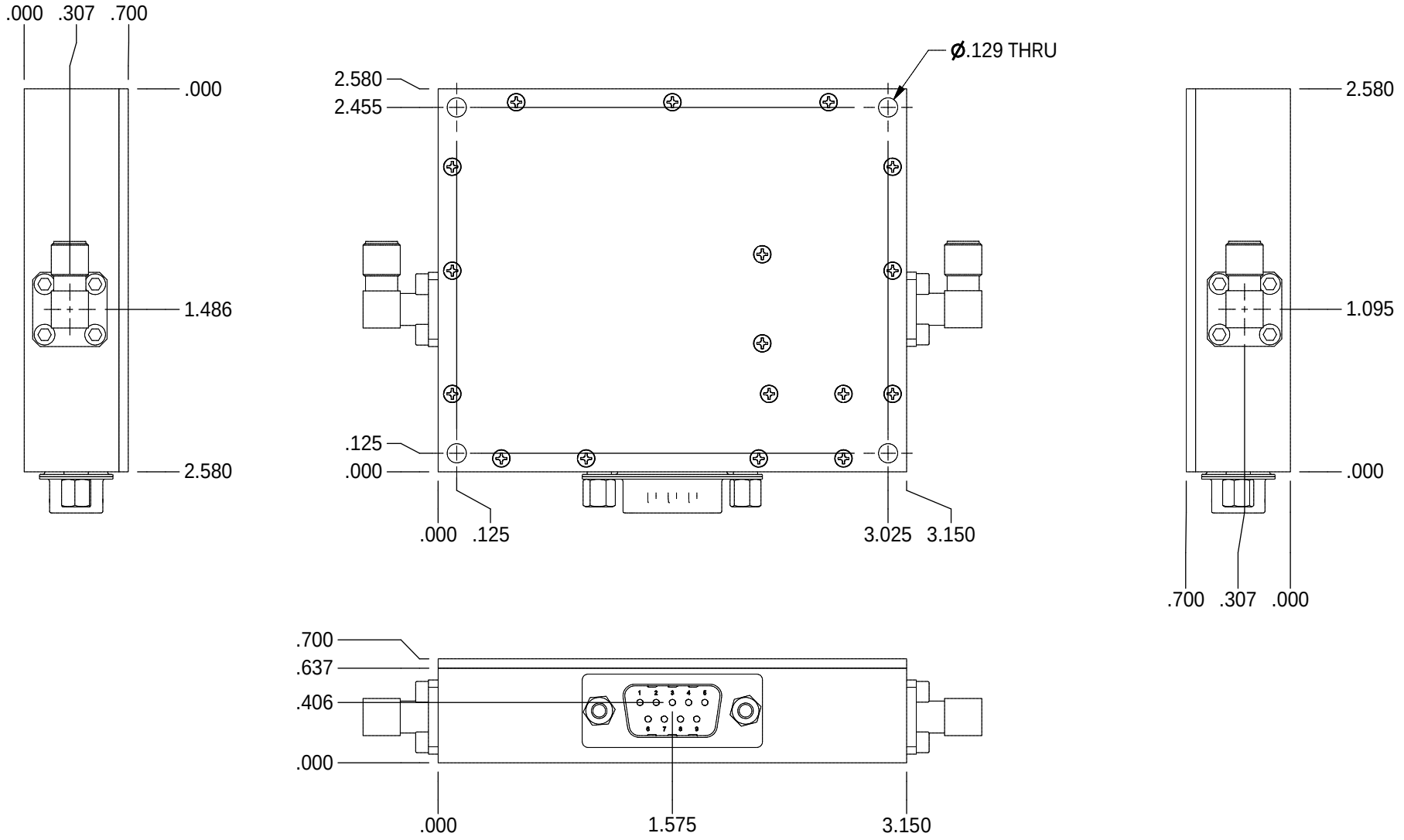
rev 06/25/18

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0	INITIAL RELEASE	4/7/14	DH
1	E18367	8/14/18	SC



DRAWN	DEAN	12/1/2015
DESIGNED	Dean	4/7/2014
CHECKED		
ENG APPROVED		
MFG APPROVED		

DIMENSIONS ARE IN INCHES
UNLESS SPECIFIED OTHERWISE
TOLERANCES
DECIMALS .XX ±.01 .XXX ±.005
FRACTIONS ±1/32
ANGLES ±2°

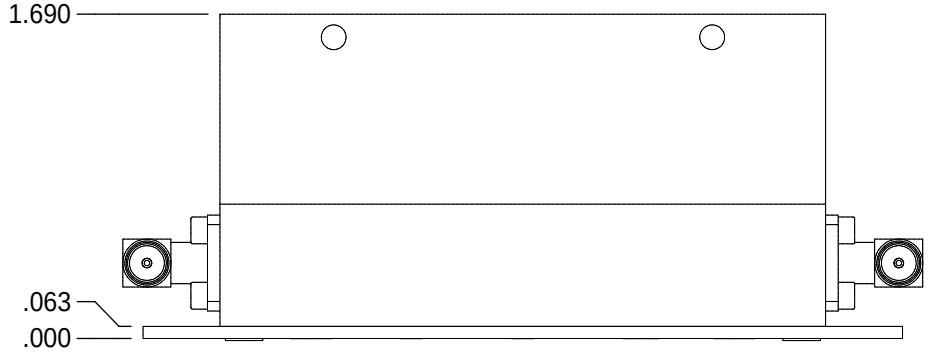
TRIAD RF SYSTEMS
11 HARTS LANE, SUITE I
EAST BRUNSWICK, NJ 08816
855-558-1001

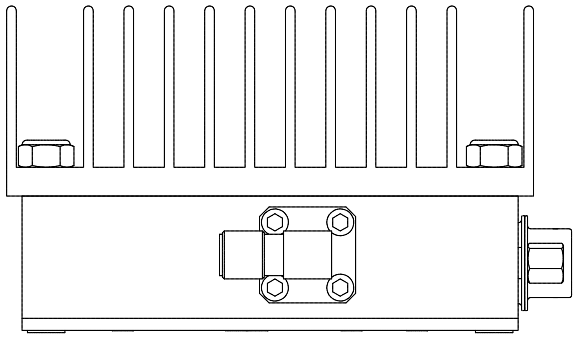
HOUSING OUTLINE DRAWING 146

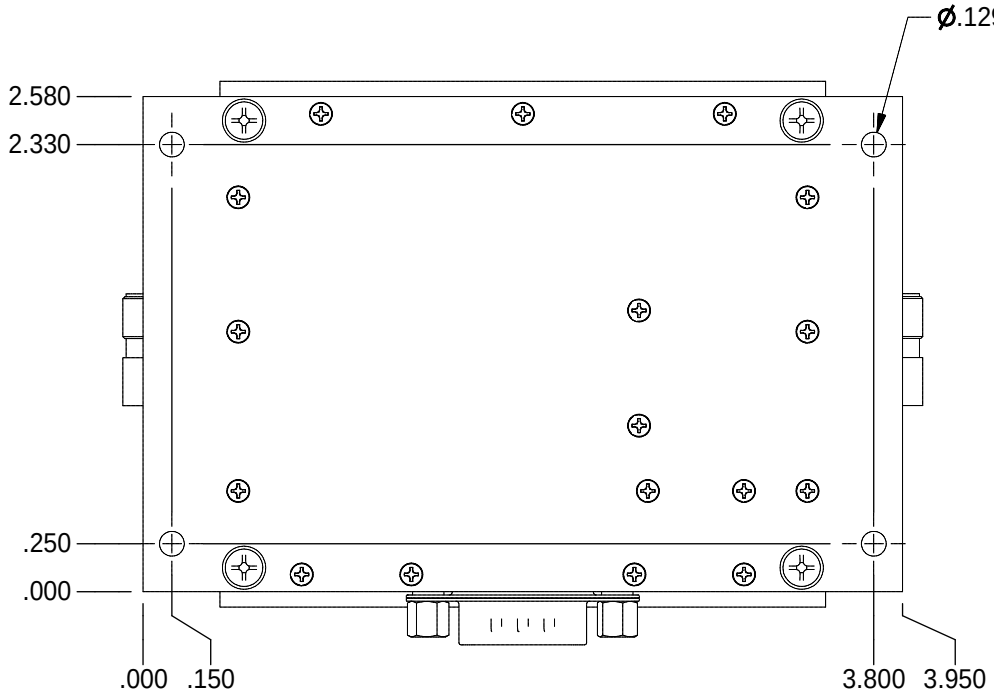
SIZE	DWG NO.	REV
A	OL_146	1

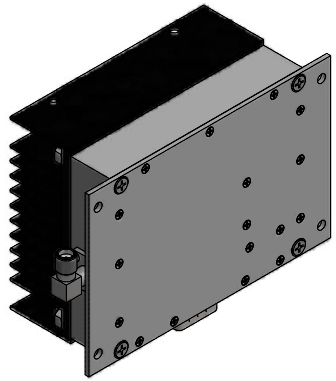
SCALE: NONE | CAGE CODE 67DZ3 | SHEET 1 OF 3

HEATSINK



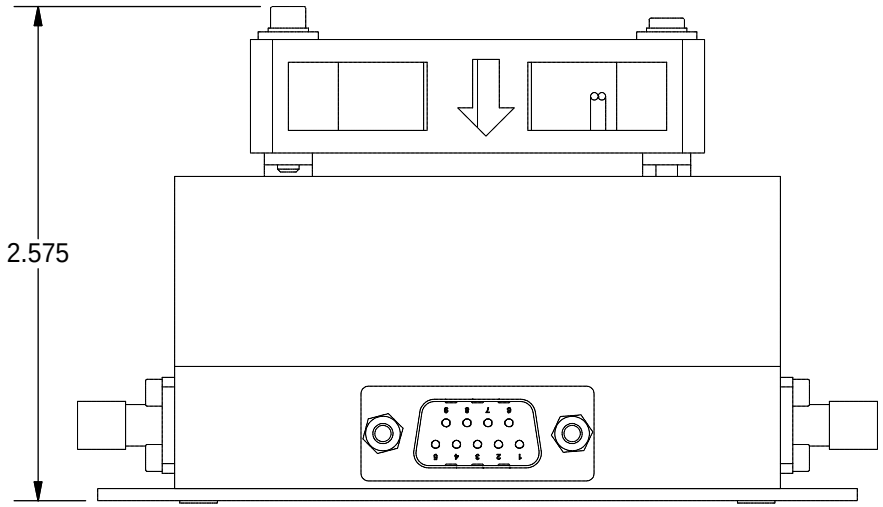


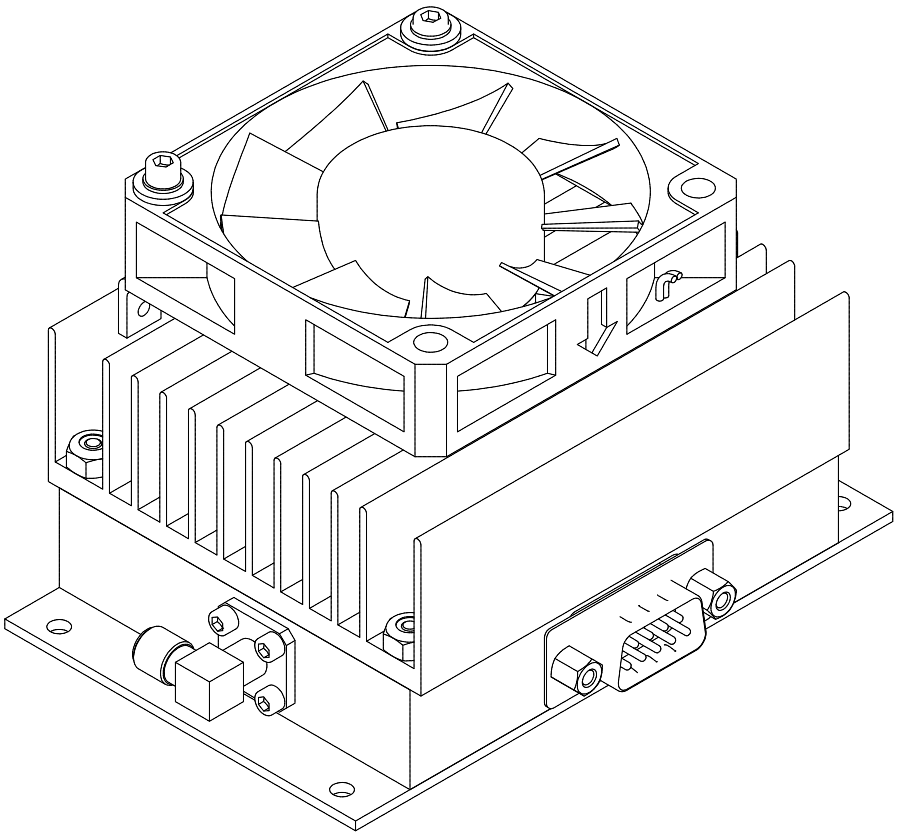




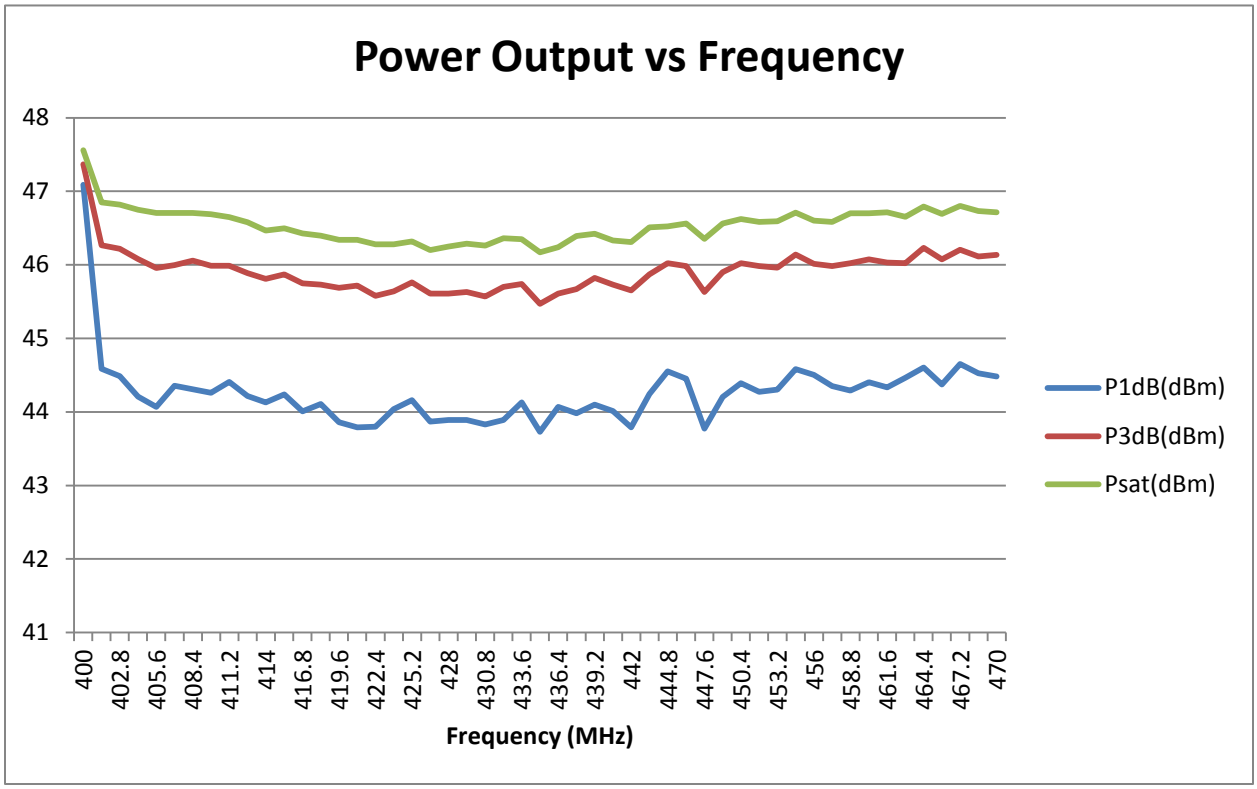
DRAWN	DEAN	12/1/2015	HOUSING OUTLINE DRAWING 146
DESIGNED	Dean	4/7/2014	
CHECKED			SIZE A / DWG NO. OL_146 / REV 1
ENG APPROVED			
MFG APPROVED			SCALE: NONE / CAGE CODE 67DZ3 / SHEET 2 OF 3

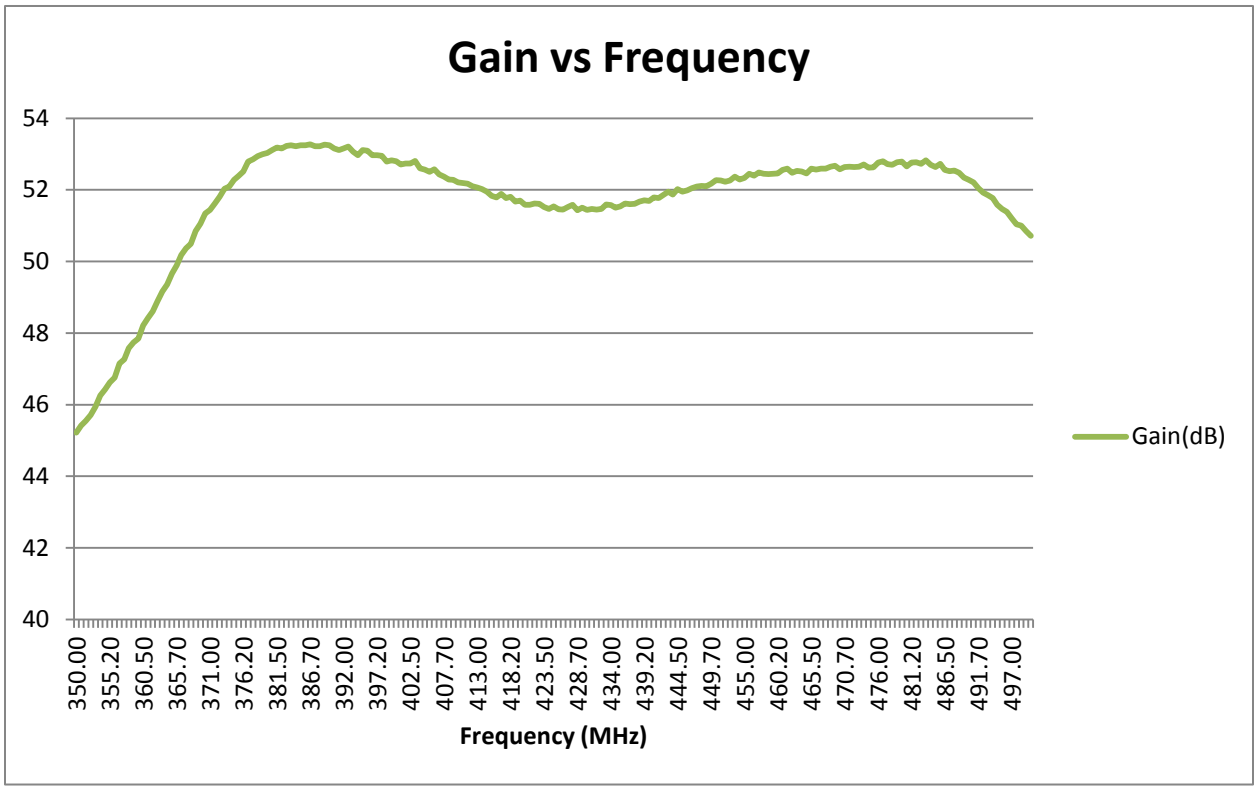
HEATSINK AND FAN





DRAWN	DEAN	12/1/2015	HOUSING OUTLINE DRAWING 146		
DESIGNED	Dean	4/7/2014	SIZE A	DWG NO. OL_146	REV 1
CHECKED			SCALE: NONE	CAGE CODE 67DZ3	SHEET 3 OF 3
ENG APPROVED					
MFG APPROVED					


Power Output vs Frequency
48
47
46
45
44
43
42
41
400
402.8
405.6
408.4
411.2
414
416.8
419.6
422.4
425.2
428
430.8
433.6
436.4
439.2
442
444.8
447.6
450.4
453.2
456
458.8
461.6
464.4
467.2
470
Frequency (MHz)
P1dB(dBm)
P3dB(dBm)
Psat(dBm)


Gain vs Frequency
54
52
50
48
46
44
42
40
350.00
355.20
360.50
365.70
371.00
376.20
381.50
386.70
392.00
397.20
402.50
407.70
413.00
418.20
423.50
428.70
434.00
439.20
444.50
449.70
455.00
460.20
465.50
470.70
476.00
481.20
486.50
491.70
497.00
Frequency (MHz)
Gain(dB)