Power Amplifiers

TA1205

3000-3600 MHz 10 W Power Amplifier

Description

This class A GaN 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

Over / Under / Reverse Voltage Protection

High Speed On/Off Control

Optional Heatsink

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	3000		3600	MHz
PSat Power Output		+40.0		dBm
Gain	22.0	23.0		dB
Gain Flatness			1.5	dB [1]
Input Return Loss	-10	-13		dB
Operating Voltage	+ 9	+12	+20	VDC
Current Draw		2.5	3.5	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

TA1205

3000-3600 MHz 10 W Power Amplifier

Mechanical		
Parameter	**Value**	**Unit**
Dimensions (L x W x H)	4 x 2.3 x 0.512	in
RF Connectors (Input / Output)	SMA-F / SMA-F	--
DC / Control Connector	9 Pin Micro-D	--
Cooling	Baseplate Conduction - Optional Heatsink Available	--
Mounting	4-40 Thru Holes	--
Weight	5	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	+20		dBm
PA Baseplate Shutoff Temperature	+ 85		°C

Input/Output Pins		
Amplifier Connector Type:	9 Pin Micro-D Male	
Triad Cable Part Number:	CBL28	
Pin Number	**Label**	**Description**
1	+VDC	Supply Voltage - Range Specified in Datasheet
2	+VDC	Supply Voltage - Range Specified in Datasheet
3	NC	No Connection
4	NC	No Connection
5	TEMP	Analog Temperature Sensor Output
6	GND	Ground
7	GND	Ground
8	NC	No Connection
9	TX/RX	3.3V TTL. High = TX, Low (or No Connection) = RX

Configuration Options	
Model Number	**Description**
TA1205	No Heat Sink Included
TA1205 – HS	Standard Heat Sink
TA1205 – HSF	Heat Sink with Integrated Cooling Fan
TA1205 – HSX	Custom Heat Sink Configuration
TA1205 – D0X	Custom Amplifier Configuration (issued by Triad upon customer request)

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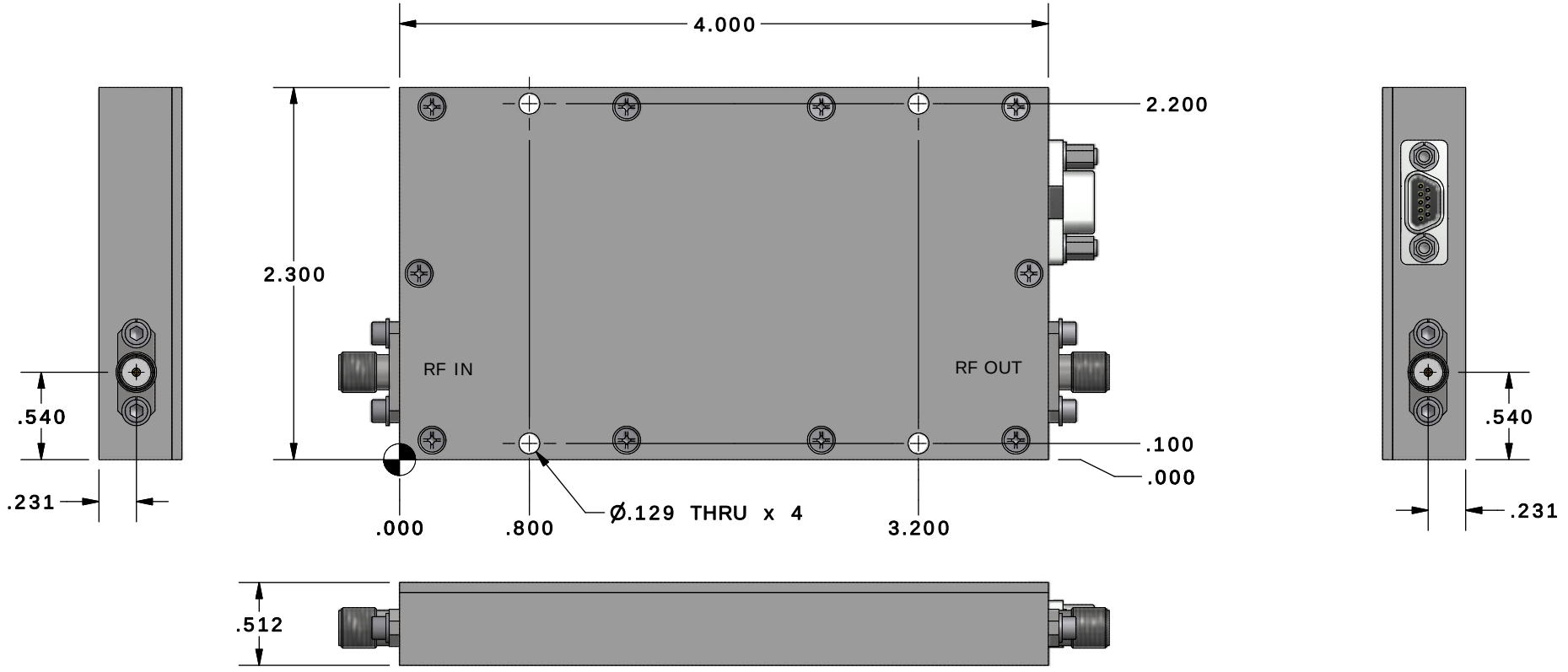
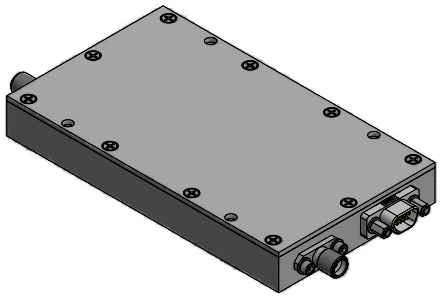
rev 03/6/19

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0	INITIAL RELEASE	4/10/17	SC





DRAWN	scoppi	4/10/2017
DESIGNED	scoppi	4/4/2017
CHECKED		
ENG APPROVED		
MFG APPROVED		

DIMENSIONS ARE IN INCHES
UNLESS SPECIFIED OTHERWISE
TOLERANCES

DECIMALS	FRACTIONS	ANGLES
.XX ±.01 .XXX ±.005	±1/32	±2°

TRIAD RF SYSTEMS
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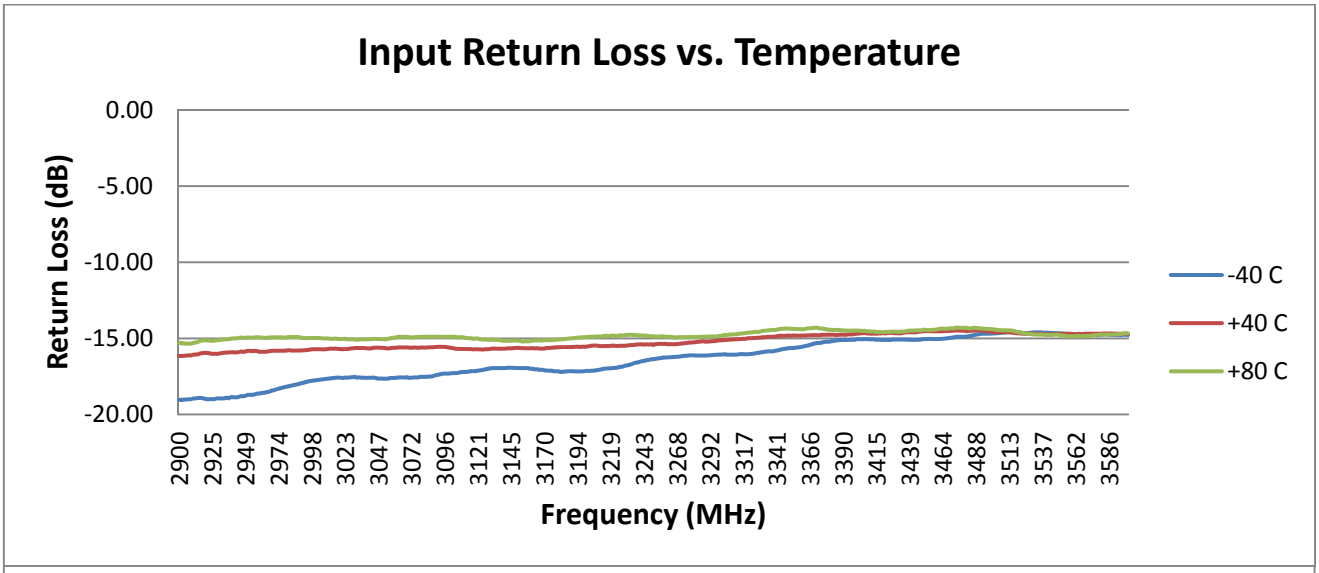
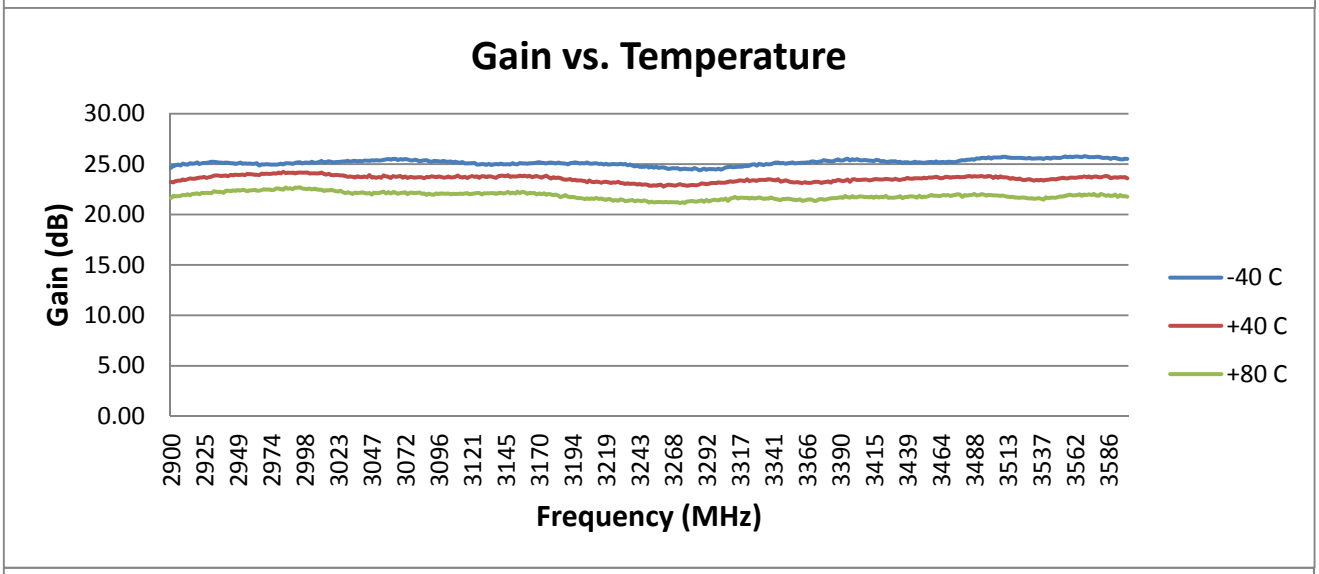
HOUSING OUTLINE DRAWING 168

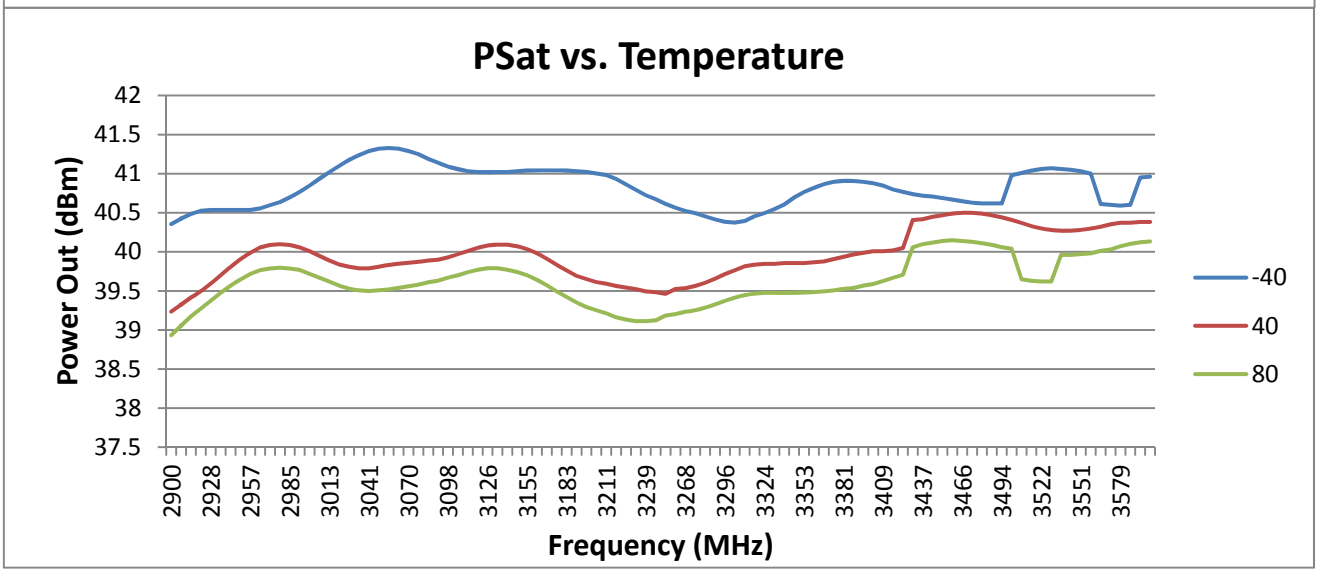
SIZE	DWG NO.	REV
A	OL_168	0

SCALE: NONE	CAGE CODE 67DZ3	SHEET 1 OF 1

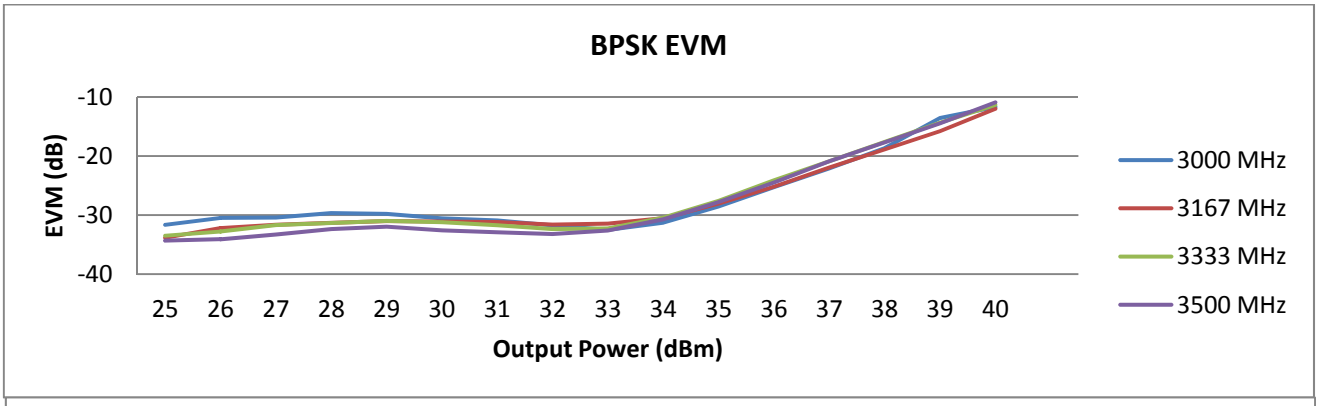
RF Performance

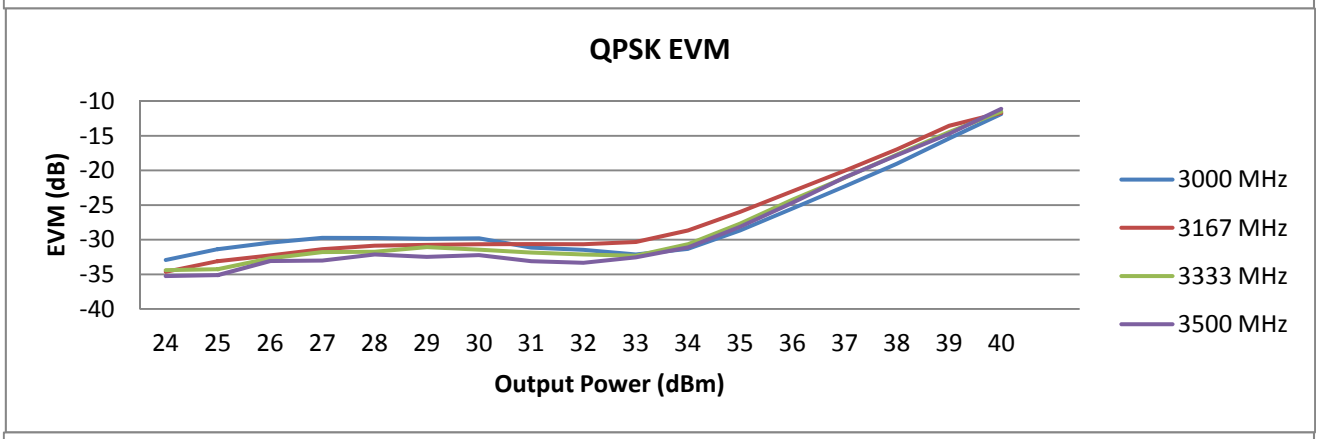


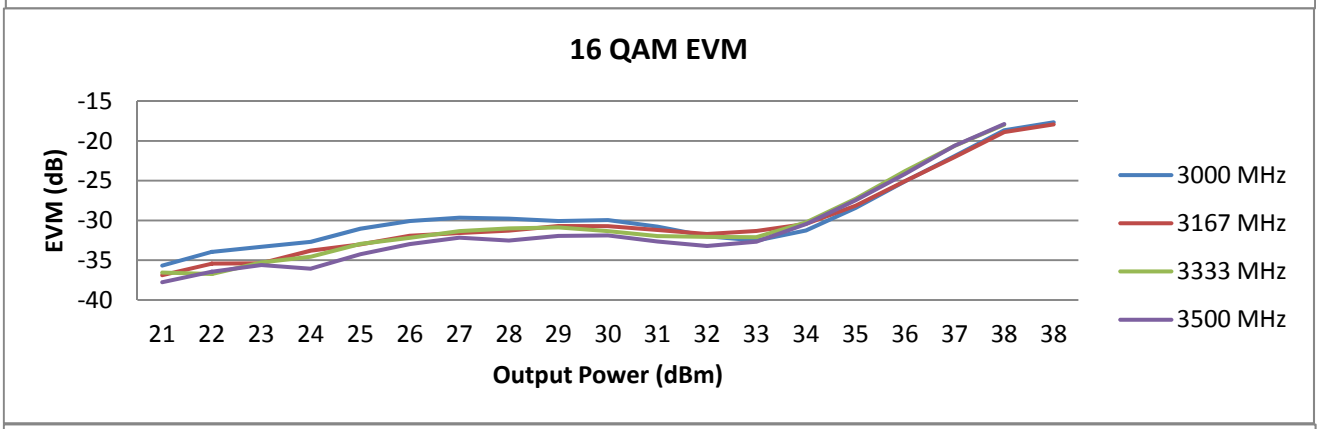


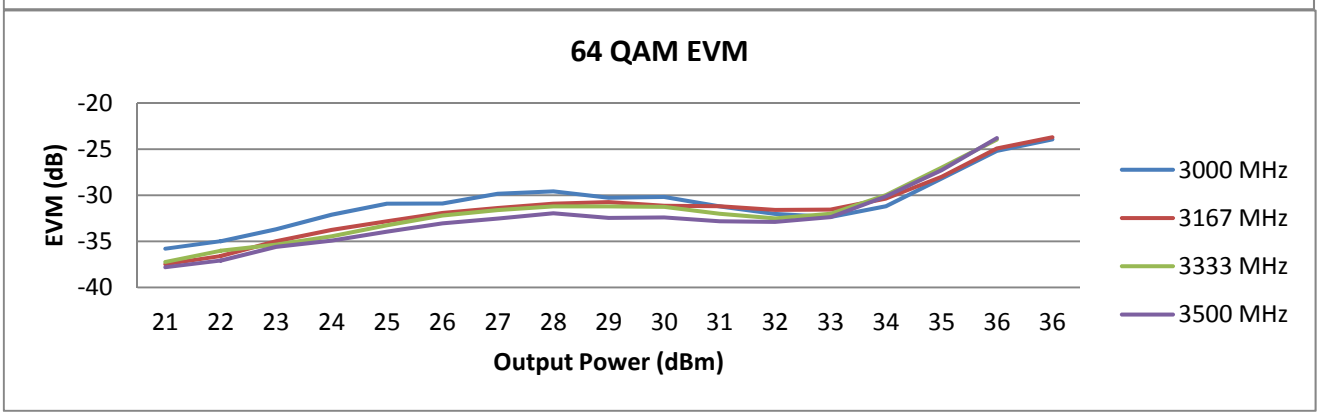


EVM Performance

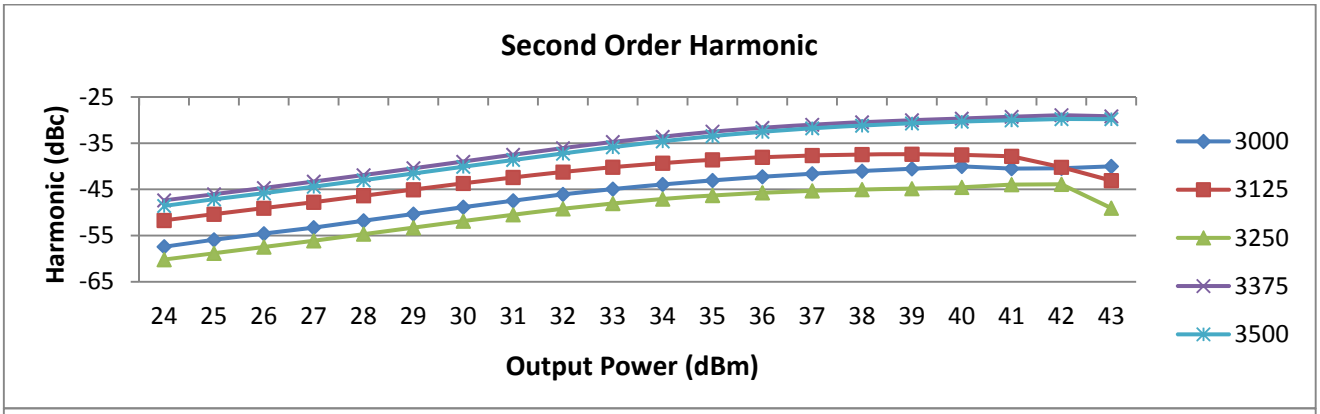


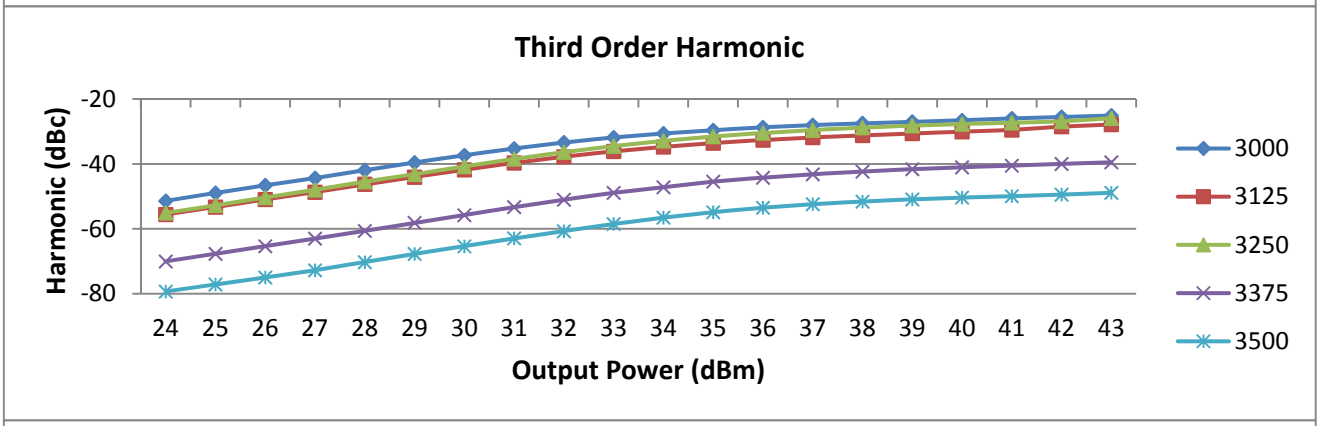


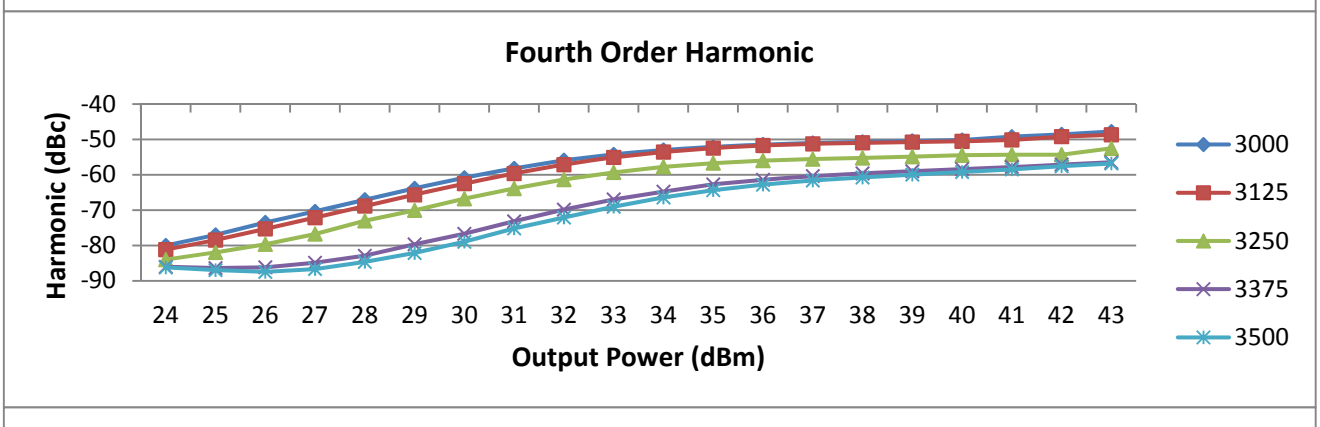


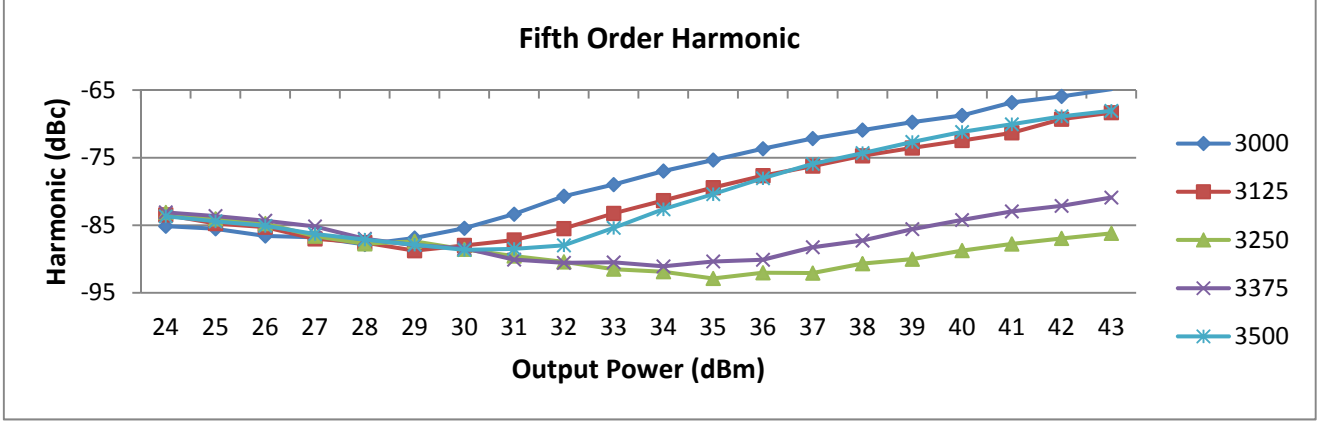


Harmonics


Second Order Harmonic
Harmonic (dBc)
-25
-35
-45
-55
-65
24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43
Output Power (dBm)
3000
3125
3250
3375
3500


Third Order Harmonic
Harmonic (dBc)
-20
-40
-60
-80
24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43
Output Power (dBm)
3000
3125
3250
3375
3500


Fourth Order Harmonic
Harmonic (dBc)
-40
-50
-60
-70
-80
-90
24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43
Output Power (dBm)
3000
3125
3250
3375
3500


Fifth Order Harmonic
Harmonic (dBc)
-65
-75
-85
-95
24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43
Output Power (dBm)
3000
3125
3250
3375
3500

DC Performance