13 – 16.5 GHz 20W Power Amplifier Module

Ed.	*Par / By*	*Le*	*Observation*	*Validé par*
0	**A. Billy**	**22/09/2016**	**Création** (ET16006)	**J.Belluot**

Electrical features *Caractéristiques électriques*		All parameters specified @ baseplate temperature of +25°C and supply of 28Vdc, unless otherwise specified – standard config.	
Electrical parameters *Paramètres électriques*	**Measuring conditions** *Conditions de mesure*	**AA-MCS specifications** *Spécifications AA-MCS*	**Units** *Unités*
Bandwidth *Bande de fréquence*		13 – 16.5	GHz
Output power *Puissance de sortie*	CW @ Psat	42 min. 43 typ.	dBm
Input power *Puissance d'entrée*	CW @ Psat Maximum level	3 typ. **+5 max.**	dBm
Gain *Gain*	@ 0dBm input power	40 typ. (includes gain compensation versus temperature)	dB
In band Gain ripple *Ondulation de gain*	@ 0dBm input power	+/- 1 max.	dB
Impedance *Impedance*		50	Ohms
Input / Output VSWR *TOS d'entrée / sortie*	Input Output	3 :1 max. 2:1 typ. 3 :1 max. 2:1 typ.	
Load mismatch *Résistance au TOS de charge*	Standard Optional	3:1 max. isolator protection (*)	
Time for RF on/off (blanking) *Vitesse d'exctinction RF*	10-90% RF rise / fall time	0.5 typ. 1 max.	us
Power density in blanking mode *Densité spectrale de puissance*	In 2 MHz BW	-120 max. RF switch in TX path and gate bias cut-off	dBm
Spurious *Parasites*	@ Psat	-60 max.	dBc
OIP3 *OIP3*	@ 5W / carrier Spacing = 1MHz	48 typ.	dBm
Facteur de bruit *Noise figure*	@ +25°C	14 typ.	dB

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Electrical parameters *Paramètres électriques*	**Measuring conditions** *Conditions de mesure*	**AA-MCS specifications** *Spécifications AA-MCS*	**Units** *Unités*
Operating class *Classe de fonctionnement*		AB on GaN devices	
Supply voltage *Tension d'alimentation*	"Vcc" – standard optional	+25 min. +28 typ. +29 max. +18 min. +28 typ. +36 max.	Vdc
Current consumption *Courant consommé*	Blanking ON Small signal @Psat	0.2 typ. 0.5 typ. 3 typ. 3.5 max.	A
Tension de control température *Temperature voltage monitoring*	Positive slope	10 -300mV @ -30°C 0V @ 0°C +600mV @ +60°C	mV/°C

Control, Alarms and Monitoring *Contrôles, Alarmes et Informations*		
Parameters *Paramètres*	**Description** *Description*	**Spécifications** *Specifications*
Noise quieting / RF blanking control *Commande d'extinction RF*	1 solder pin TTL command "Blanking"	Low or Not Connected = RF Output ON High = RF Output OFF (Muted)
Temperature analog signal *Lecture temperature*	1 solder Pin	Analog Analog, refer to Electrical features

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Mechanical features *Caractéristiques mécaniques*			
Parameters *Paramètres*	**Measuring conditions** *Conditions de mesure*	**AA-MCS specifications** *Spécifications AA-MCS*	**Units** *Unités*
Length x width x height *Longueur x largeur x Hauteur*	L x W x H ISO 2768-mH	110 x 65 x 24 max. (without connectors) (see drawings below)	mm
RF Connectors *Connectique RF*	Input / Output	SMA female	-
Supply & Control connectors *Connecteurs de contrôle et alim.*	Supply + GND "Blanking" & "Temperature"	Solderable feedthru and pins	
Weight *Masse*		450 max.	g
Housing *Châssis*		Aluminium coated with Nickel	
Sealing *Etanchéité*		Hermetically sealed	

Mechanical interfaces:

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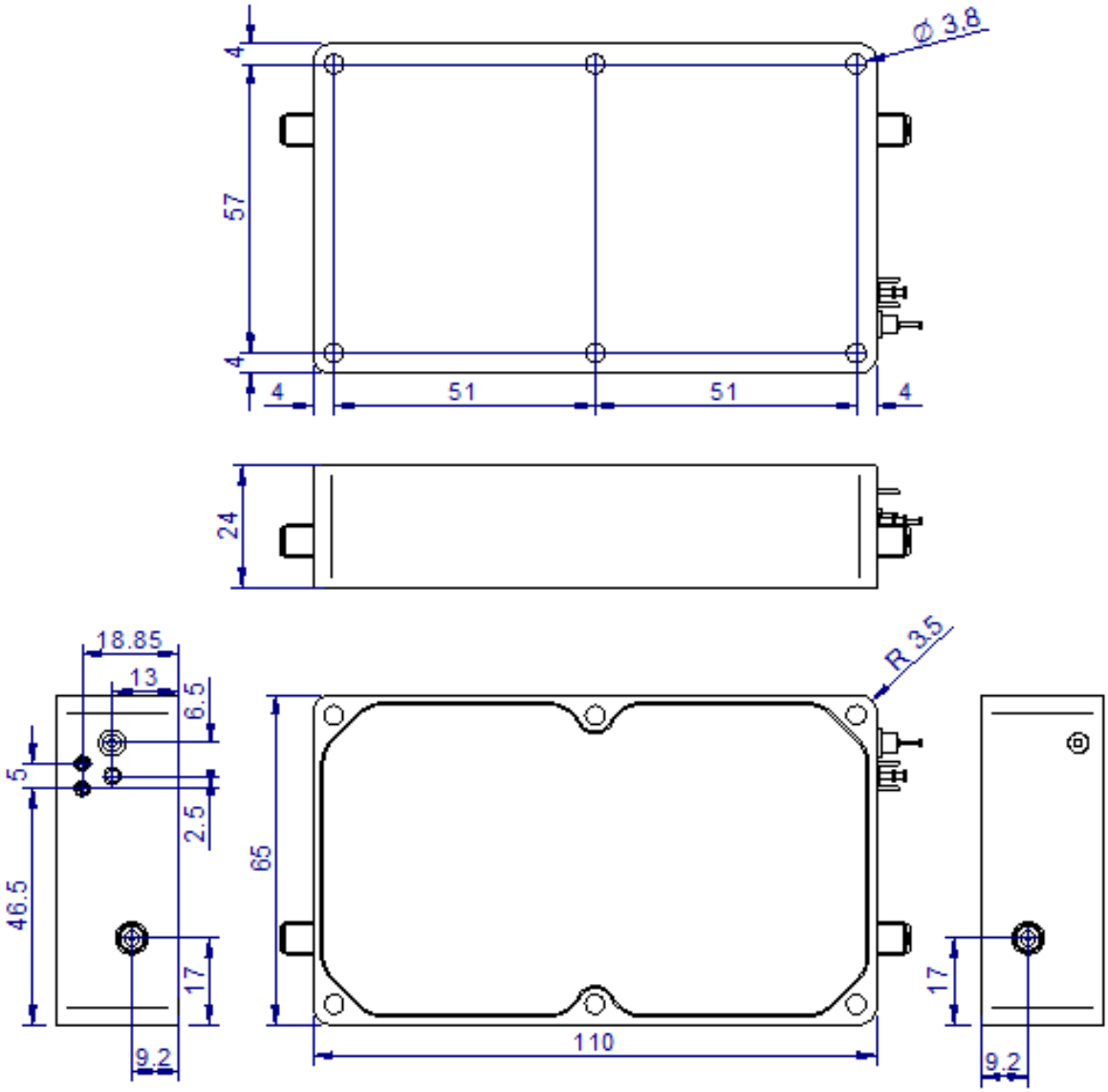
Mechanical drawing:



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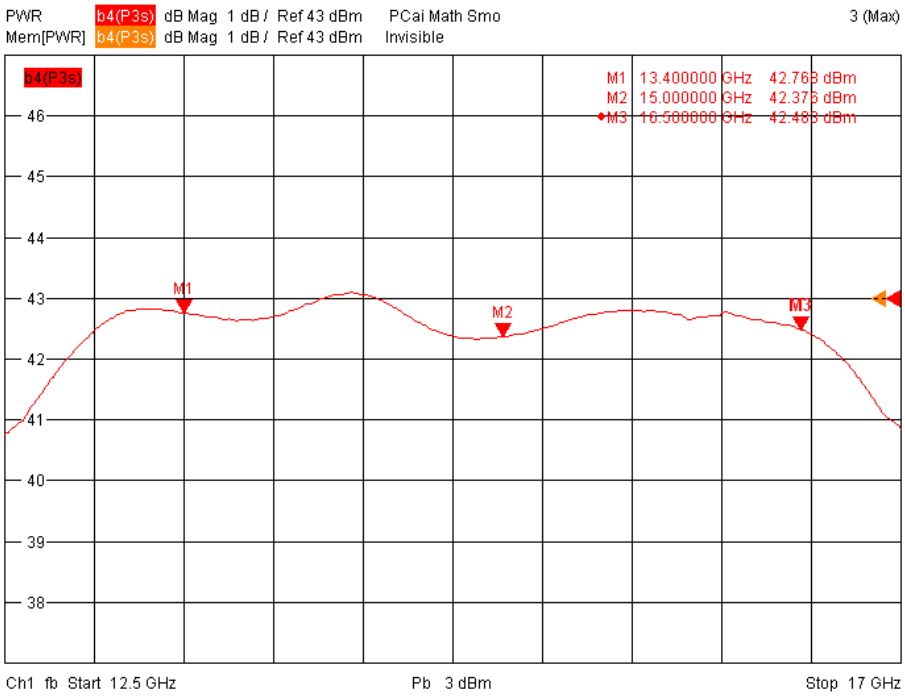
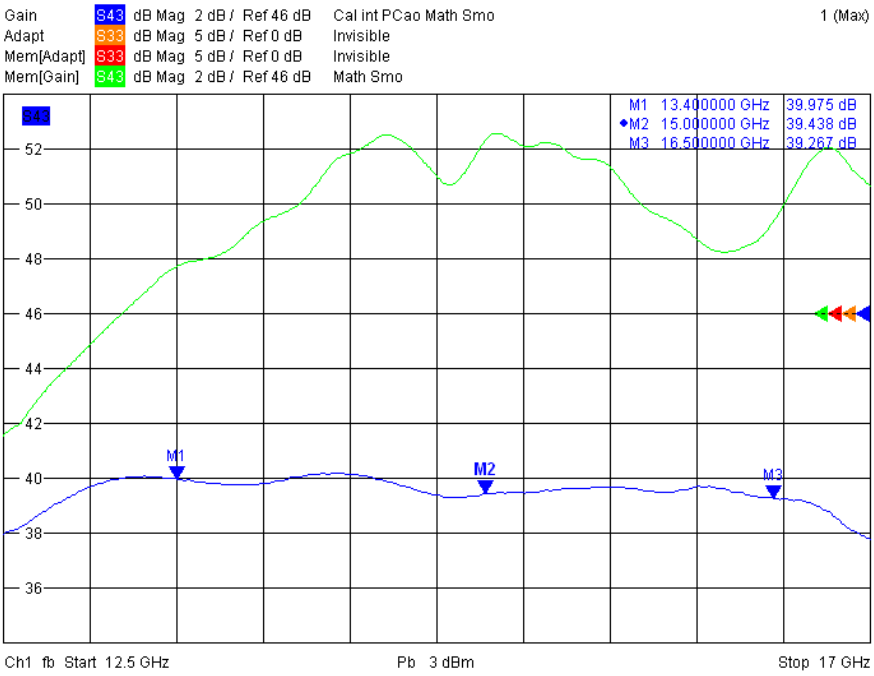
Conditions environnementales *Environmental conditions*			
Parameters *Paramètres*	**Measuring conditions** *Conditions de mesure*	**AA-MCS specifications** *Spécifications AA-MCS*	**Units** *Unités*
Cold temperature operation *Température de service à froid*	Case temperature	-32 min.	°C
Cold temperature storage *Température de stockage à froid*	Case temperature	-46 min.	°C
Dry heat temperature operation *Température de service à chaud*	Case temperature	+85 max. (includes automatic shutdown with recovery when baseplate temperature exceeds +90°C)	°C
Dry heat temperature storage *Température de stockage à chaud*	Case temperature	+85 max.	°C
Altitude *Altitude*		30 000 max.	ft
Sand and dust *Sable et poussières*		As per MIL-STD-810G method 510.5 procedure I & II	
Humidity *Humidité*	97% @ +26°C	As per MIL-STD-810G method 507.5 procedure II	%
Functional random vibrations *Vibrations aléatoires opération*		MIL-STD-810G method 514.5 procedure I Airborne	
Functional shocks *Chocs fonctionnels*		As per MIL-STD-810G method 516.6 procedure I 20g	
Functional acceleration *Accélération fonctionnelle*		Forward 12g Back 4g Up 4g Down 2g Lateral 3g	



Saturated output power @ Pin = +3dBm & 25°c



Blue : Gain @ Psat– Green : small signal gain (@ 25°c)

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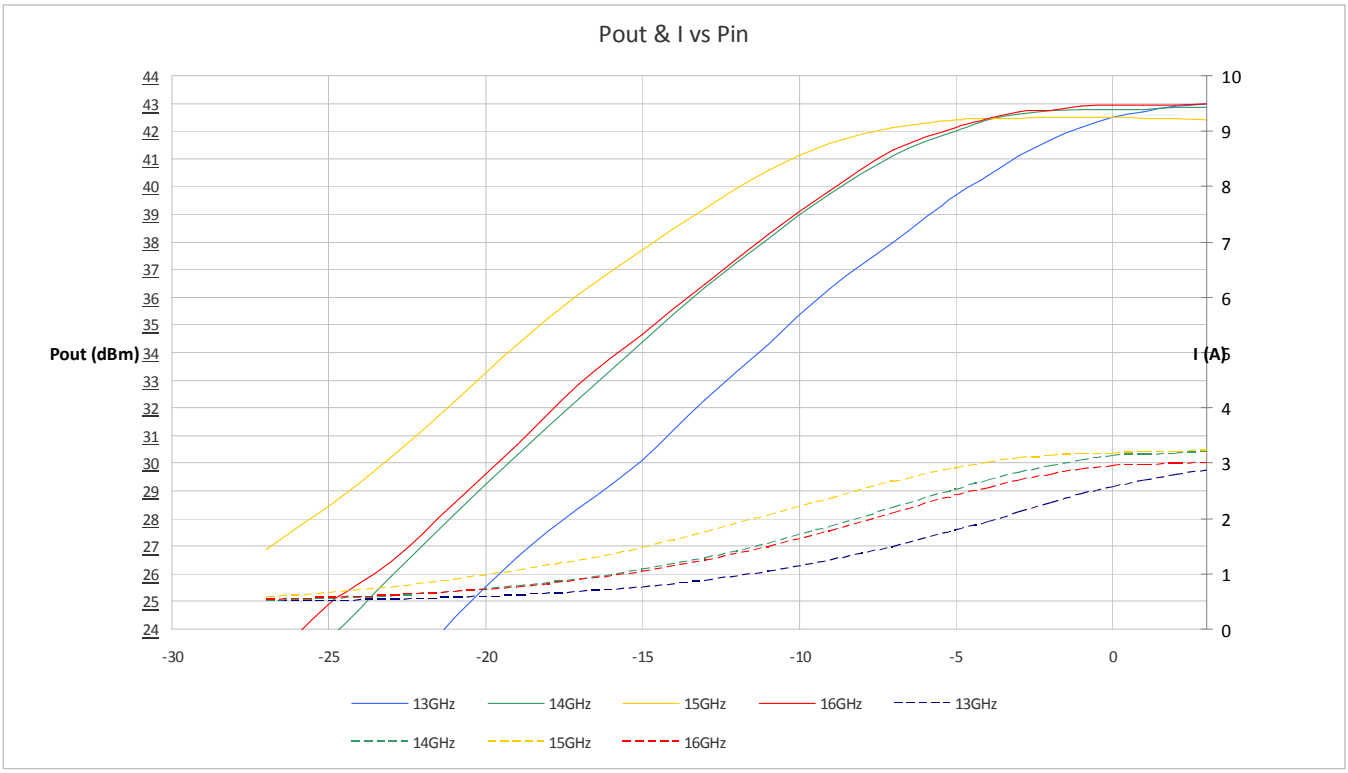

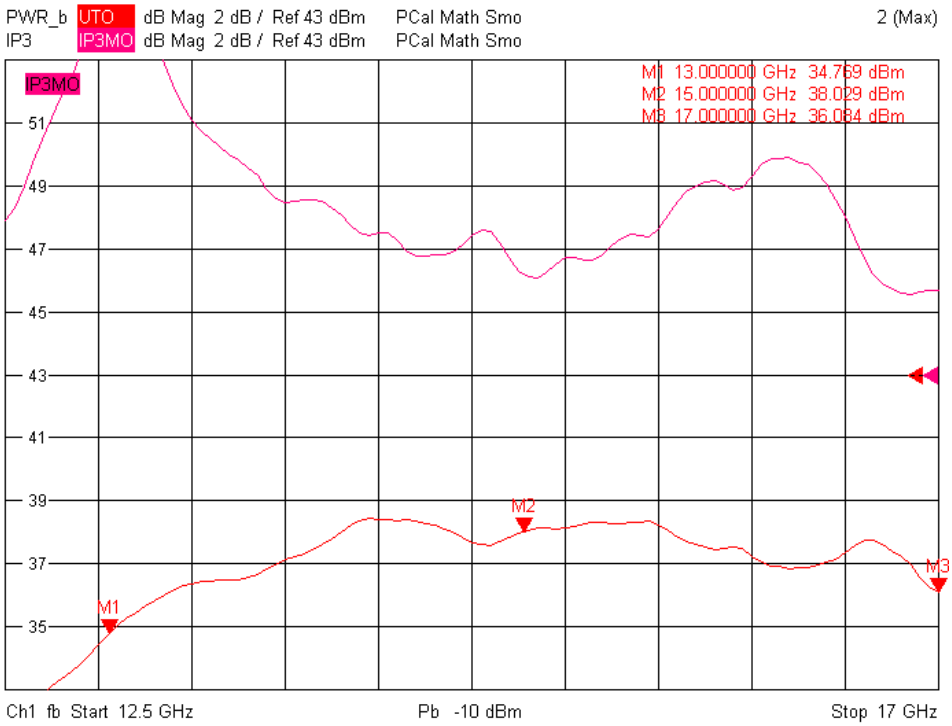

Pink : Output IP3 @ 40dBm output power/tone – 1MHz spacing

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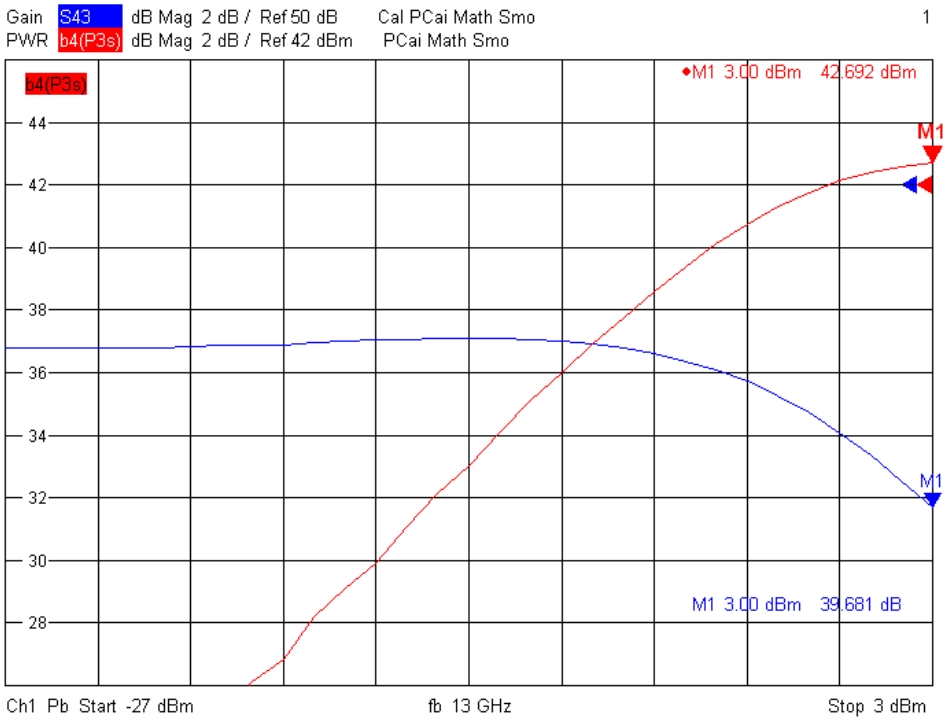
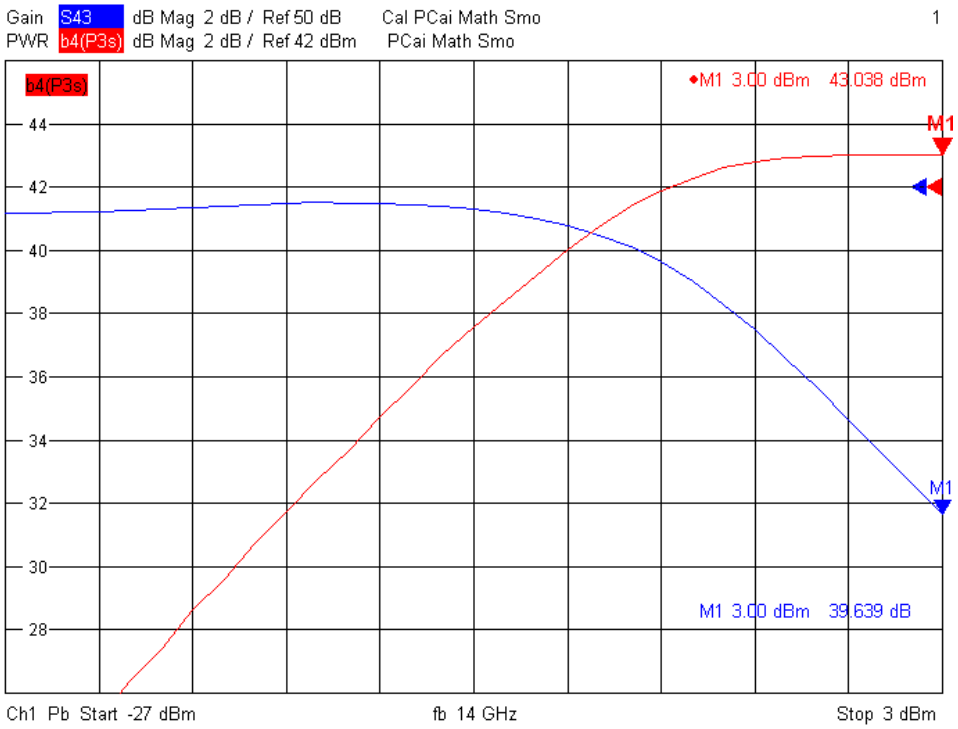


Pout = f (Pin) @ 13GHz



Pout = f (Pin) @ 14GHz

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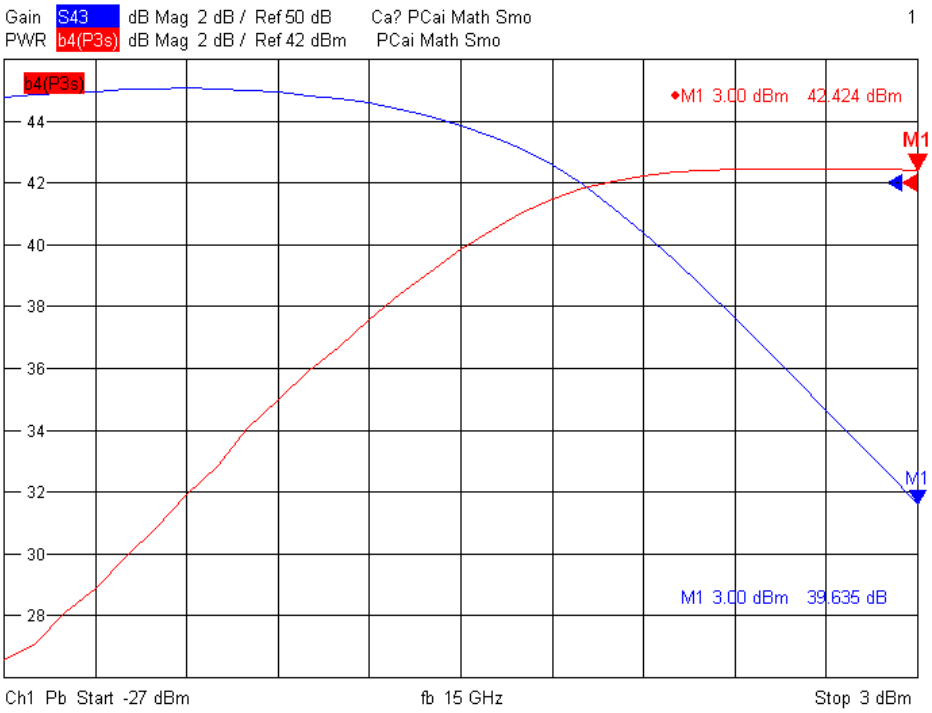
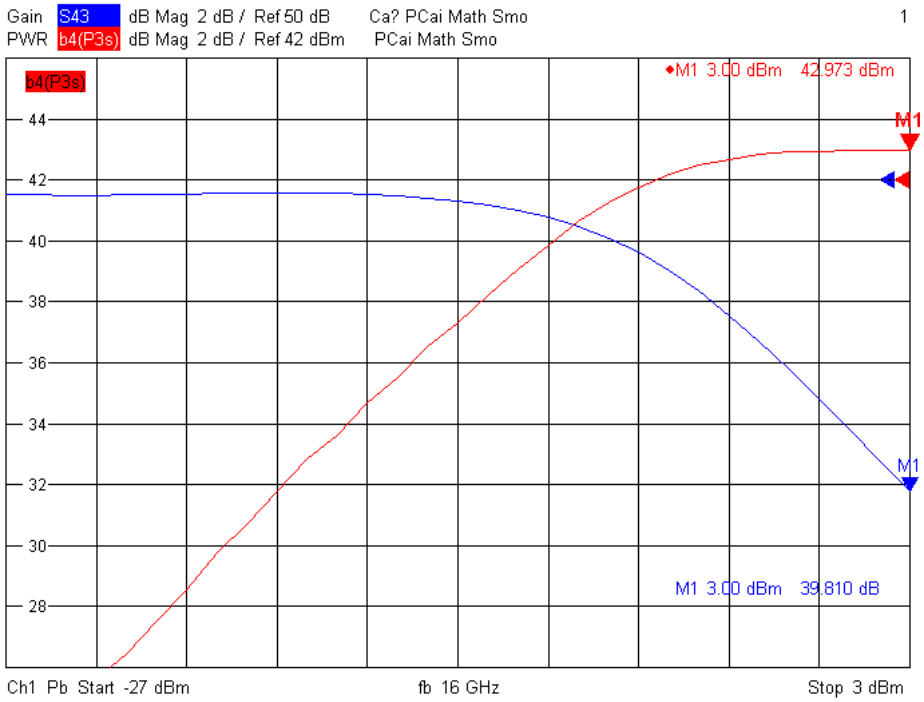


Pout = f (Pin) @ 15GHz



Pout = f (Pin) @ 16GHz

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