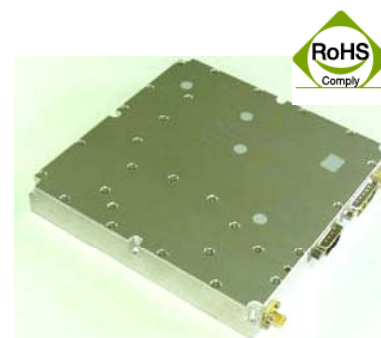


Product Features

- Solid-state linear design
- Small and light weight
- Suitable for UMTS
- 50 Ohm Input/Output impedance
- High reliability and ruggedness
- Built in Output Isolator
- Built in monitoring circuit
- High efficiency

Application

- UMTS Repeater



Description

This HPA Module is a high gain, wide dynamic range amplifier module. It has superior performance comes with a modest price tag. Custom design available.

Electrical Specifications @ VDD=+27VDC, T=25°C, 50Ω System

PARAMETER	Symbol	Specification	
Frequency Range	BW	2130 ~ 2150MHz	
Output Power	P	39dBm/4FA Average max.	
SPECTRUM EMISSION MASK (WCDMA 4CARRIERS)	SEM	PER 3GPP TS-25.141 @+39dBm (WCDMA 2FA)	
ACLR (WCDMA 4 CARRIERS) @ Po=+39dBm max.	ACLR	< -51dBc @± 5MHz < -53dBc @±10MHz	@ +26V ~ +28V @ +25°C
RF Gain	G	50dB ±1dB @frequency range, +27V, -20 ~ +70°C	
Gain Variation Over Dynamic Range	ΔG_{TEMP}	±1.0dB max. @ Po=+20dBm~+39dBm(Δ Pin:-20dB), 27V, +25 °C	
Normal Operating Voltage	VDC	+27V ±1V	
Gain Flatness	ΔG	Peak to peak 1.0 dB Over operating frequency Peak to peak 0.2 dB Over any 3.84MHz	
Input Return Loss	S11/S22	-18dB min.	
Harmonics (2nd)	H	-50dBc (min)	
Current Consumption	IDD	3.5A max. @+27V, +25 °C, Po=+39dBm 4A max. @+27V, +25 °C, Po=ALC point	
Operating Temperature	To	-20 °C ~ + 70 °C (Case temp)	
Over power Alarm	OPA	41.5dBm±0.5dB	
Input Power ALC	ALC	Operating point	41.5dBm ± 0.5dB
		Operating range	15dB. Accuracy ±0.5dB
Detect Accuracy		±0.5dB	Po=+21dBm~+42dBm
		±1dB	Po=+0dBm~+10dBm
EVM	EVM	less 2%	

Pin assign(9 Pin D-sub)

Pin #	Description	Specifications
1	Enable/disable	Enable: TTL low, Disable: TTL high
2	Over power alarm	Normal: short(under 300Ω), Alarm: open, (@ Pout > 41.5dBm, Shutdown)
3	VSWR alarm	Normal: short(under 300Ω), Alarm: open (@ S22 > 3:1)
4	ALC alarm	Normal: short(under 300Ω), Alarm: open (@ ALC operating)
5	Output power monitor	0.0V~4.5V (-10dBm ~ 42dBm) @ 0 – 4.5V (80mV/dB)
6	Over temp, alarm	Normal: short(under 300Ω), Alarm: open, (@ Temp > 85 °C)
7	NC	
8,9	GND	Ground
Connector type		D-Sub connector 9PIN Male(Jack) (EMI Connector)

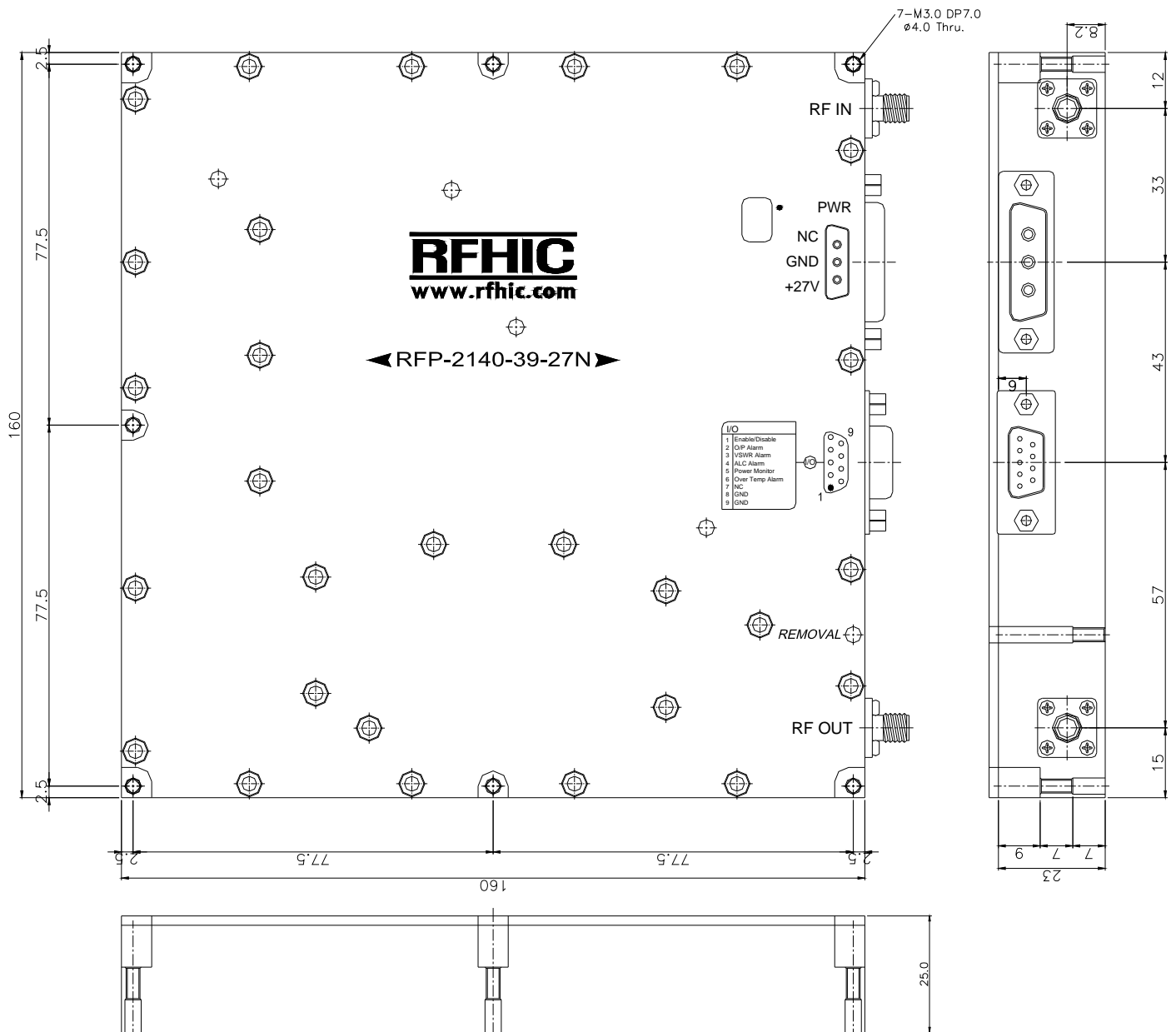
Pin assign(3W3_male)

Pin Description	A1. 27Vdc
	A2. GND
	A3. NC

RF Connector

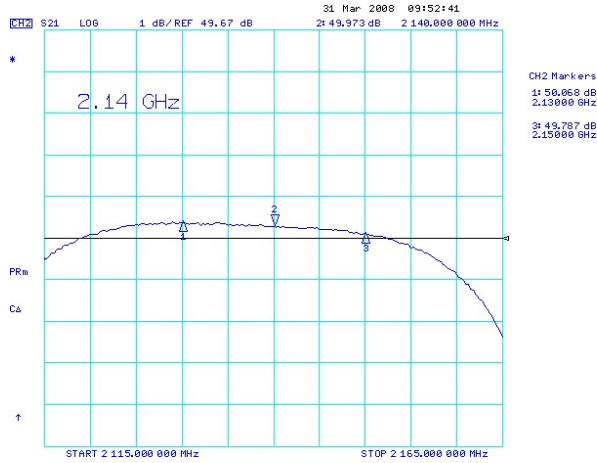
RF Connector	Input connector	SMA type/ Female, 4 Hole
	Output port	SMA type/ Female, 4Hole
Dimension(W * D * H)	160mm * 160mm * 25mm	

OUTLINE DRAWING



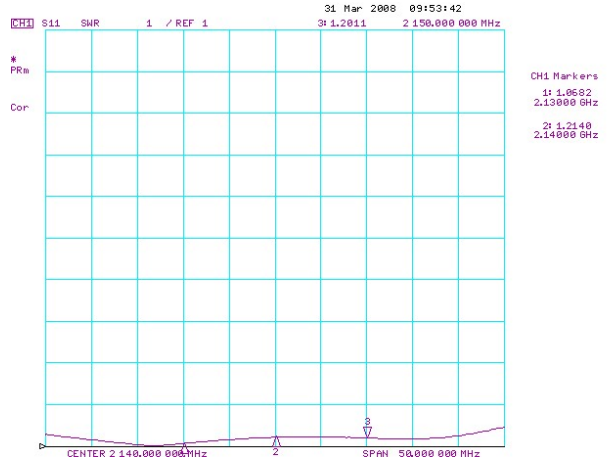
TYPICAL PERFORMANCE

GAIN & GAIN FLATNESS

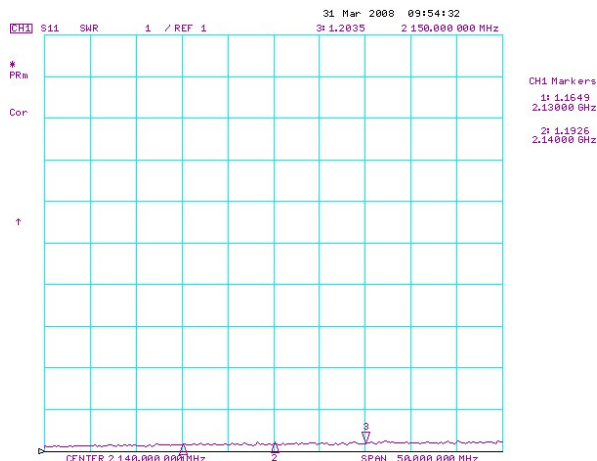


S22

S11

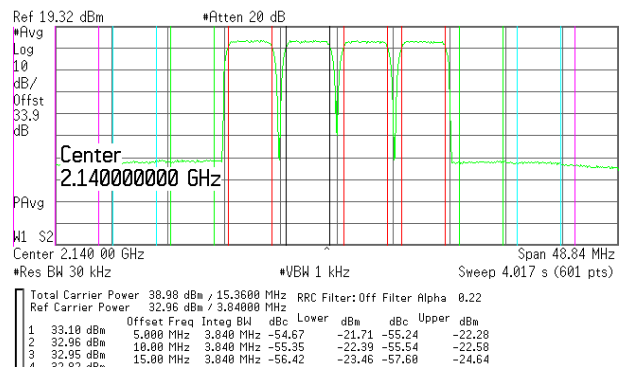


ACLR 4FA @ Pout=39dBm, Current=2.956A



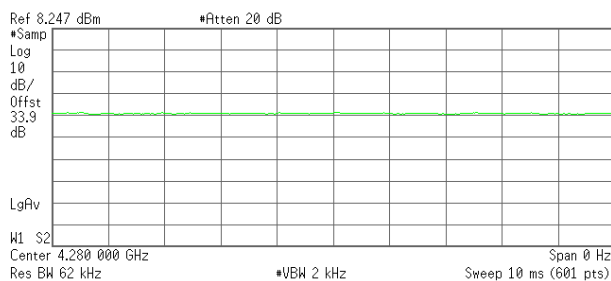
2nd harmonic

Agilent 16:37:44 Mar 28, 2008



Spectrum Emission Mask (IF)

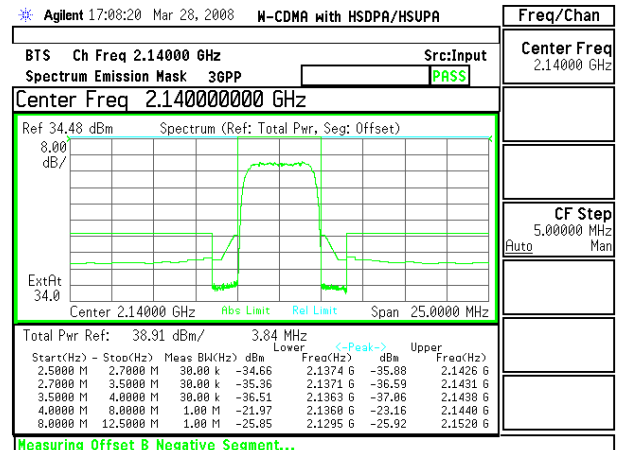
Agilent 16:38:17 Mar 28, 2008



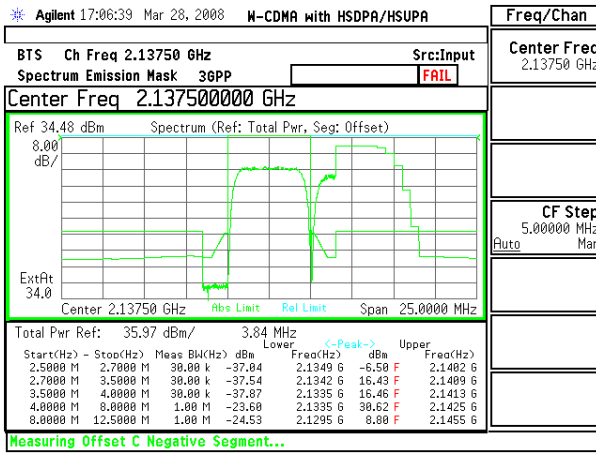
Frequency	Amplitude
1 2.140 GHz	39.13 dBm
2 4.280 GHz	-69.93 dBc

Agilent 17:08:20 Mar 28, 2008

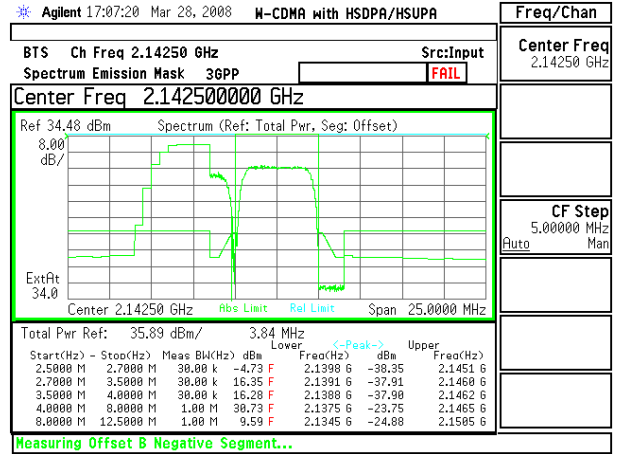
W-CDMA with HSDPA/HSUPA



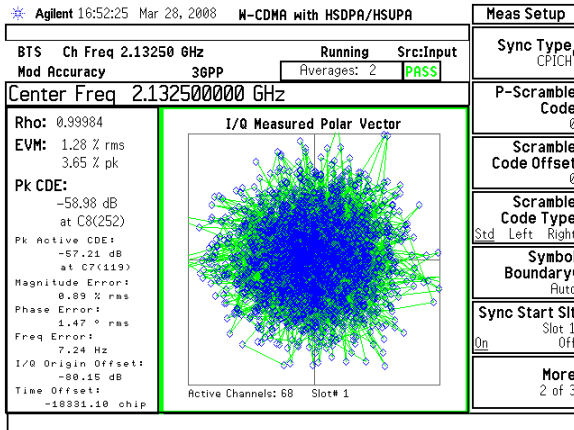
Spectrum Emission Mask (2FA, Lower)



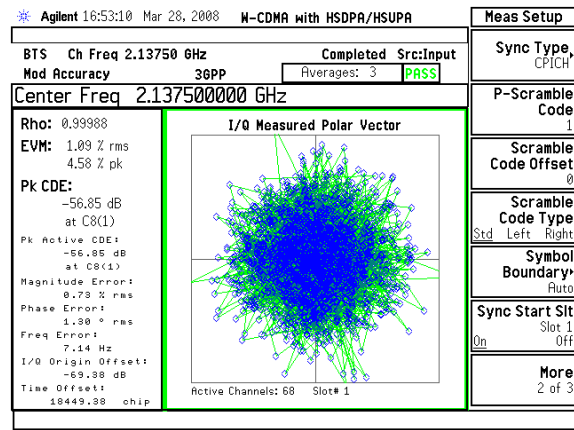
Spectrum Emission Mask (2FA, Upper)



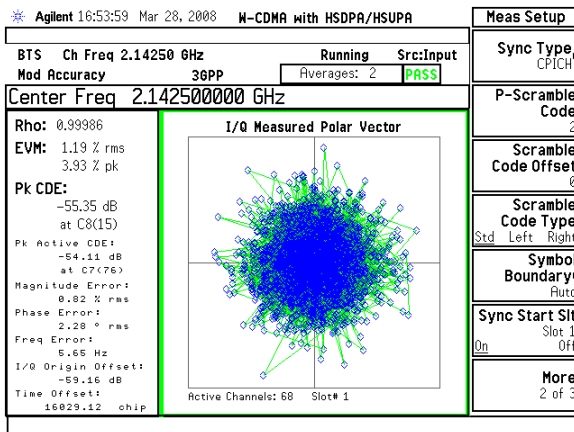
EVM (1st FA)



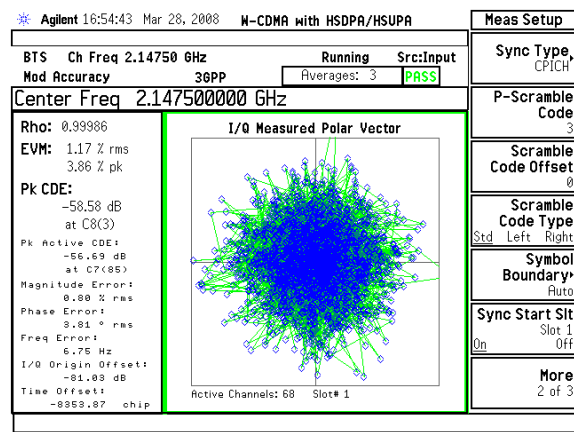
EVM (2nd FA)



EVM (3rd FA)



EVM (4th FA)



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