

Product Features

- Doherty amplifier design
- GaN on SiC HEMT
- Small and light weight
- 50 Ohm Input/Output impedance matched
- Highly reliable and rugged design
- High efficiency, High Gain
- 50W typical P_{AVG}

Application

- WCDMA & LTE DPD amplifier
- General purpose RF amplifier



Description

The RTP21050-10 is designed for RF system application frequencies from 2110MHz to 2170MHz, with high gain. This Pallet Amplifier uses GaN on SiC HEMT technology which performs high breakdown voltage, high linearity, high efficiency. The RTP21050-10 is a multi-tone and multi-band DPD application amplifier.

Electrical Specifications @ VDD=+31VDC, T=25°C, 50Ω

PARAMETER	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	2110	-	2170	MHz
Output Power	P _{AVG}	-	47	-	dBm
Output Power @ Psat G.C.P	P _{sat}	-	55.5	-	dBm
Small Signal Gain	SSG	50	55	-	dB
Small Signal Gain Flatness	ΔG	-	± 1.0	± 2	dB
Gain Variation	ΔGt		± 3.0		dB
ACLR @ WCDMA 20MHz 4FA	ACLR	-23	-25		dBc
ACLR with DPD	ACLR		-55		dBc
Forward Coupling	FC	-39	-38	-37	dB
Operating Voltage	VDC		31	-	Volt
Efficiency @ Pout 50Watt	E	-	39	-	%

* Test Signal Condition : WCDMA 5MHz 2FA, 4FA tone spacing 5-50MHz (PAR 7.5dB), Test DPD solution : Optichron DPD

Environmental Characteristics

PARAMETER	Symbol	Min	Typ	Max	Unit
Operating Temperature	T _c	-30	-	+60	°C
Storage Temperature	T _s	-40	-	+90	°C

Mechanical Specifications

PARAMETER	Value	Units	Limits
Dimensions (L x W x H)	140 x 170 x 20	mm	Max
Weight	695	g	Typical
RF Connectors In/Out/Coupling	SMA Female/SMA Female/MCX Female		
DC Connectors / Controls	5569-08(8pin), 5267-03A(3pin)		
Cooling	External Heat sink + airflow		

RF Interface Connectors

Pin #	DESCRIPTION	Specifications
1	RF IN	RF Input signal
2	RF OUT	RF Output signal
3	RF FWD Port	RF Forward Detection signal For Feed-back

DC Connector

- 5569-08 (4.2mm PITCH, 8Pin)

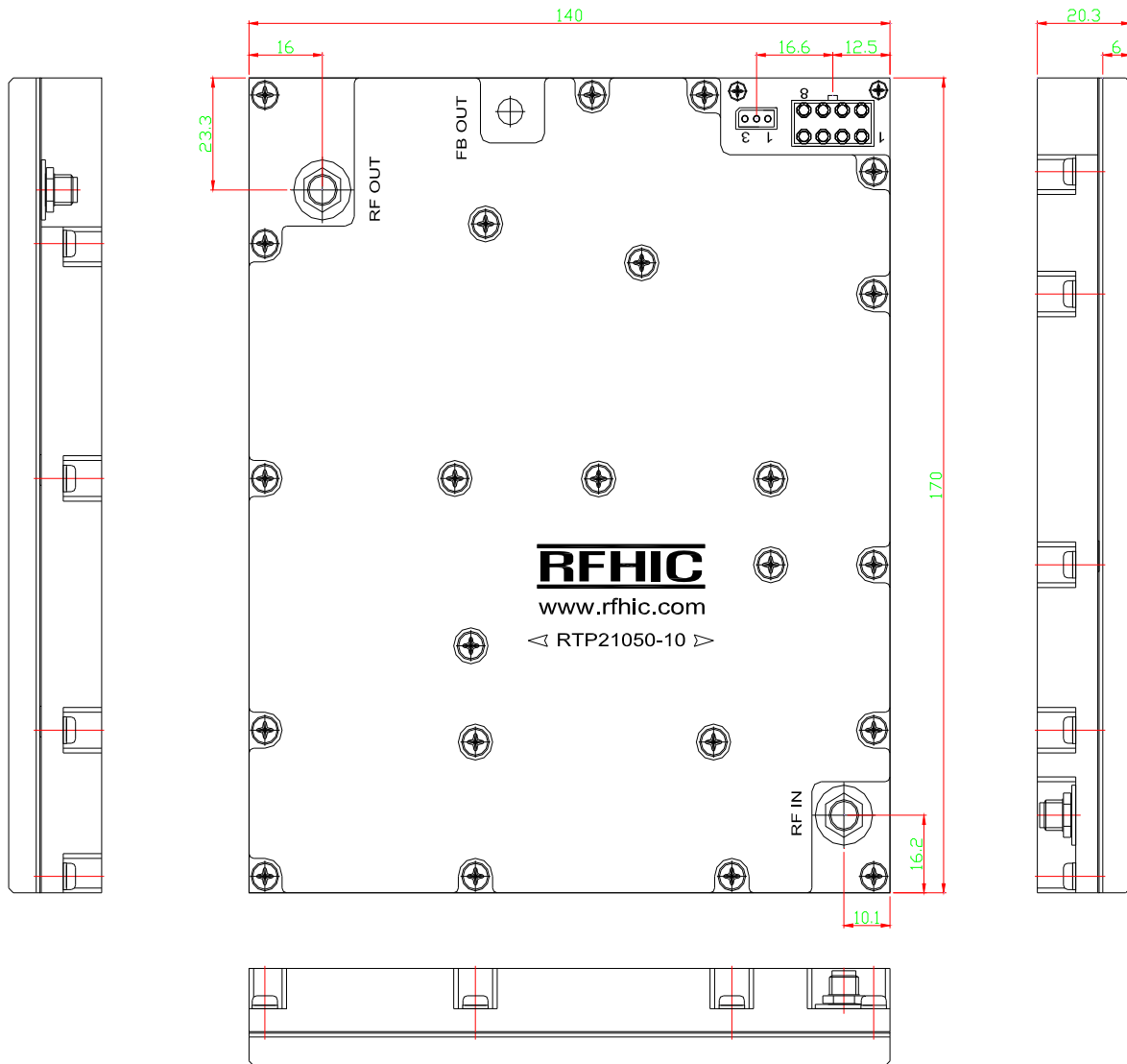
Pin #	DESCRIPTION	Specifications
1,2,3	Drive, Main Amp +Vdd	+31Vdc
4	Gain Block Amp +Vgg	+5.6V
5,6,7,8	GND	Ground

- 5267-03A (2.5mm PITCH, 3Pin)

Pin #	DESCRIPTION	Specifications
1	GND	Ground
2	Enable	TTL High Enable
3	Temp. Monitor	Reporting Temperature data [0.75V/25°C(10mV/°C)]

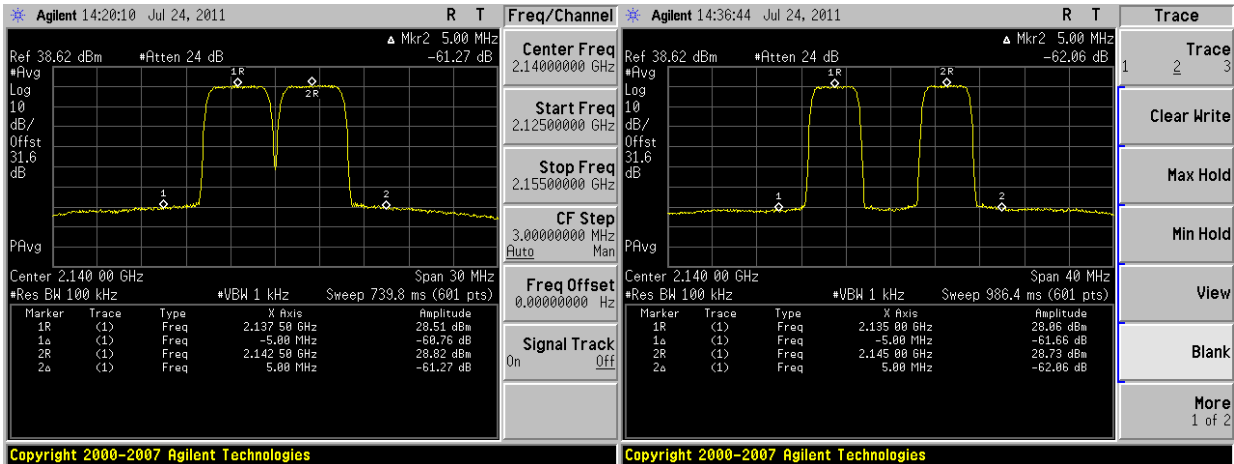
* RF connector and DC connector custom design available.

Outline Drawing

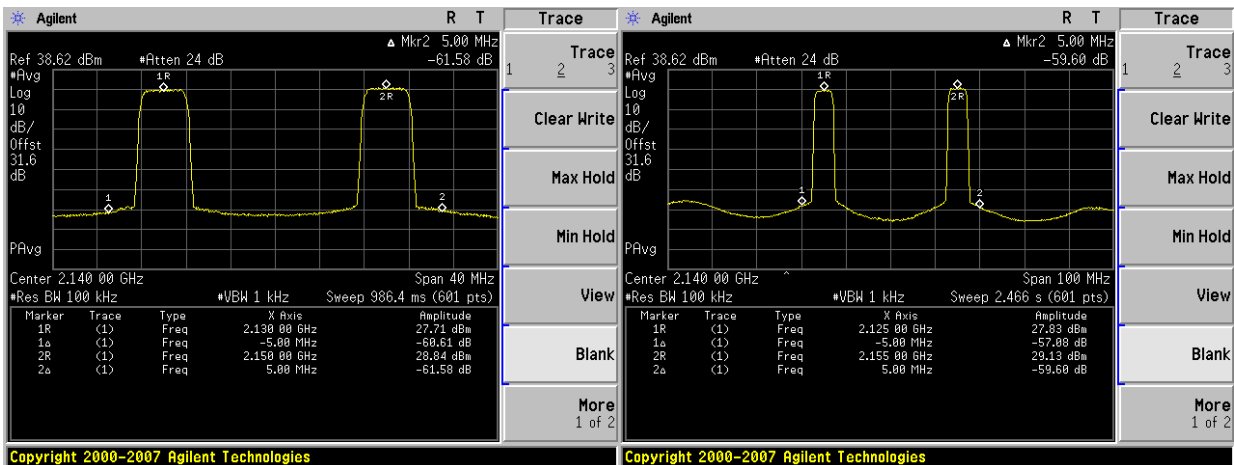


Typical Output Spectrum @ WCDMA 5MHz 2FA (PAR 7.5dB) : Pout =50W(47dBm)

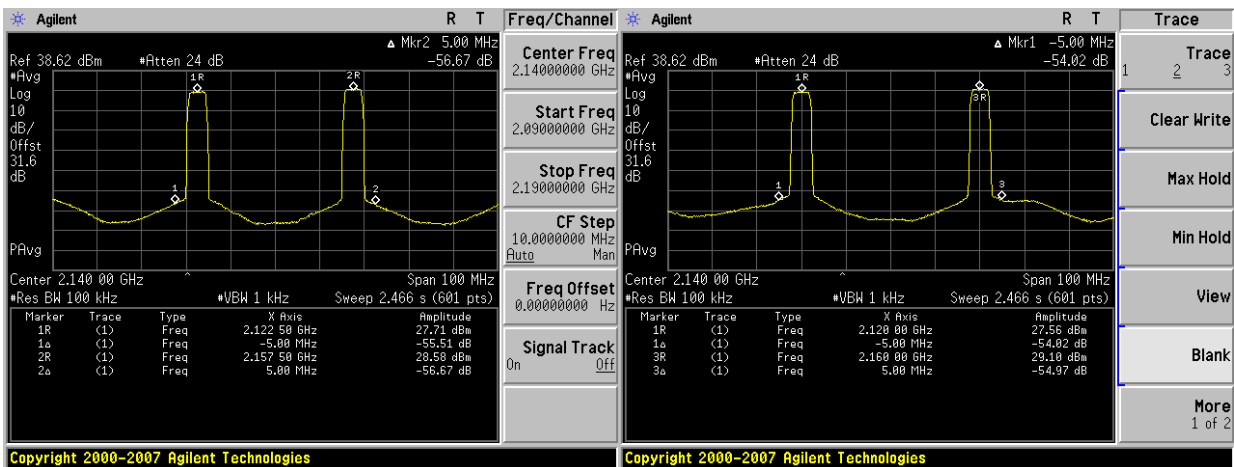
- 5MHz Tone spacing, 10MHz Bandwidth - - 10MHz Tone spacing, 15MHz Bandwidth -



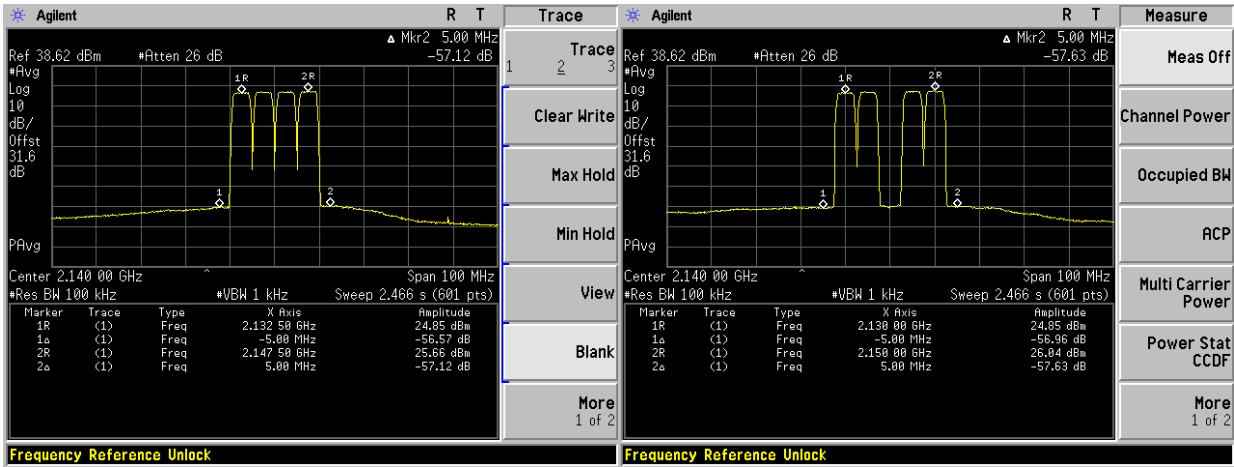
- 20MHz Tone spacing, 25MHz Bandwidth - - 30MHz Tone spacing, 35MHz Bandwidth -



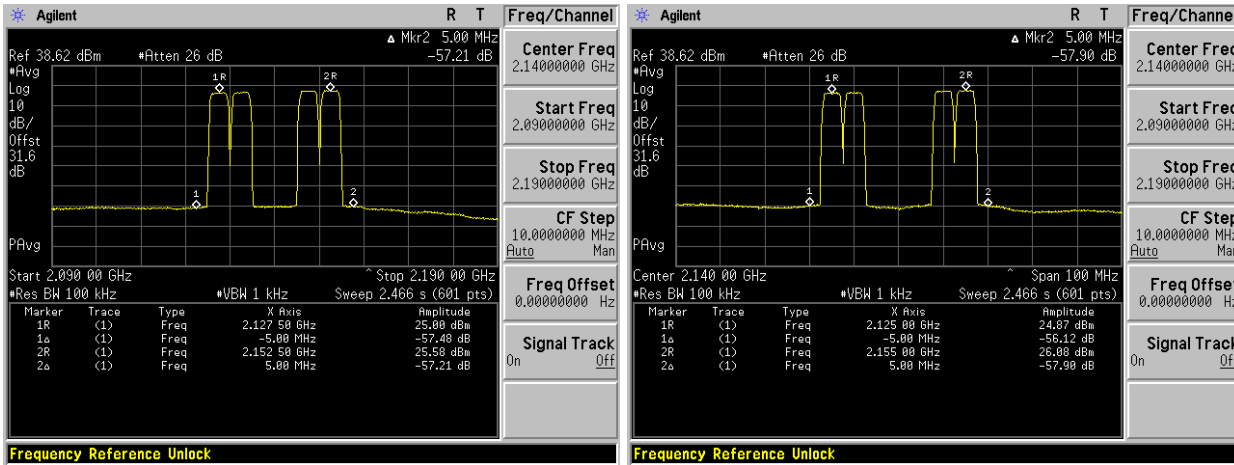
- 35MHz Tone spacing, 40MHz Bandwidth - - 40MHz Tone spacing, 45MHz Bandwidth -



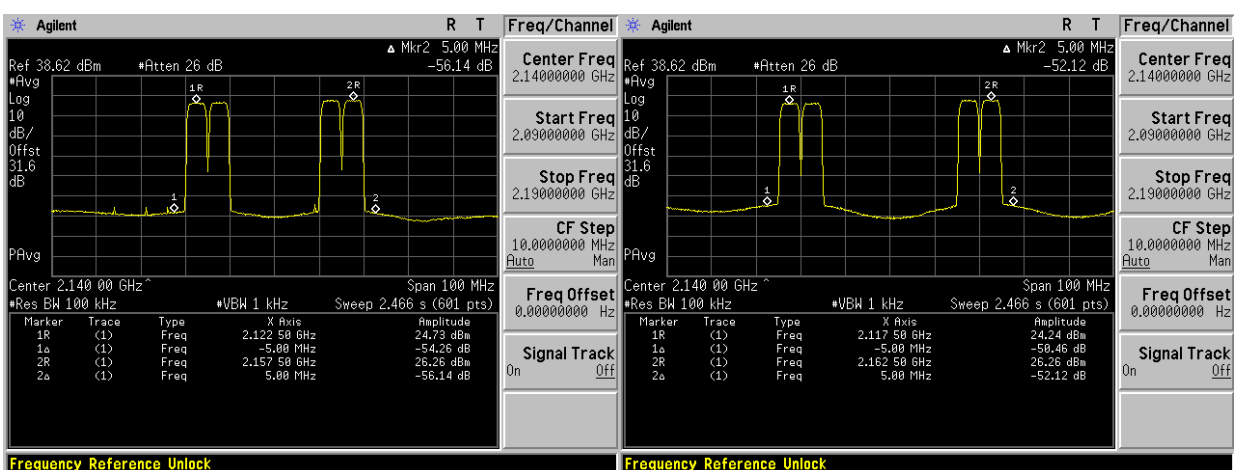
Typical Output Spectrum @ WCDMA 5MHz 4FA (PAR 7.5dB) : Pout =50W(47dBm)
- 10MHz Tone spacing, 20MHz Bandwidth - - 15MHz Tone spacing, 25MHz Bandwidth -



- 20MHz Tone spacing, 30MHz Bandwidth - - 25MHz Tone spacing, 35MHz Bandwidth -



- 30MHz Tone spacing, 40MHz Bandwidth - - 40MHz Tone spacing, 50MHz Bandwidth -



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