

Solid State Personal Communication Power Amplifier

HD29214

935 – 960 MHz / 25Watts CW, 4Watts CDMA

- Solid-state linear design
- Small and lightweight
- Suitable for CW, GSM, ESMR, iDEN, TDMA & multi FA CDMA
- 50 ohm input/output impedance
- High reliability and ruggedness
- Built in Output Isolator
- Built in monitoring and ALC circuit



ELECTRICAL SPECIFICATIONS @ +28 VDC, 25°C, 50 Ω System

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	935		960	MHz
Output Power CW	P_{SAT}	40			Watt
Output Power @ 1 dB Gain Compression Point	P_{1dB}	25			Watt
Output Power CDMA	P_{CDMA}	4			Watt
Small Signal Gain	G_{SS}	44	46	48	dB
Gain Flatness (ALC On)	ΔG			± 0.5	dB
Third Order Intercept Point 2–Tones, $P_{OUT} = 4$ W Avg., $\Delta = 500$ KHz	IP3	+56	+58		dBm
Input/Output Return Loss	S_{11} / S_{22}			-14	dB
Noise Figure	NF		7	10	dB
Harmonics @ P1 dB Gain Compression Point	H			-45	dBc
Spurious Signals	Spur		-70	-60	dBc
Operating Voltage	V_{DC}	26	28	30	Volt
Supply Current @ $P_{OUT} = 25$ W CW	I_{DD}		3.0		Amp
Supply Current @ $P_{OUT} = 4$ W with 2-tones	I_{DD}		2.0	2.5	Amp

MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Limits
Dimensions	5.0 x 3.75 x 1.0	Inch	Max
Weight	1.0	lb.	Max
RF Connectors In/Out	SMA female		
DC Connectors	Dsub, 9 Pins, Male		
Cooling	External Heatsink		



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ENVIRONMENTAL CHARACTERISTICS

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	Tc	-10		+50	°C
Storage Temperature	Tstg	-40		+85	°C
Relative humidity (non-condensing)	RH			95	%

PROTECTIONS

Input Overdrive	+6 dBm				Max
Over Power Shutdown	45 dBm				Min
Load VSWR @ 25W output power	∞ @ all load phase & amplitude				Nom
Thermal Overload	85°C shutdown				Max

INTERFACE CONNECTORS

D-Sub, 9-Pin

Pin #	Description	Specifications
1	Forward Power Monitor	Continuous Analog voltage relative to forward power via RMS detector FWDM: 13 – 43 dBm @ 0 – 5 V (100 mV/dB) 28dBm output = $V_{FWD} = 2.5 V_{DC}$
2	Reverse Power Monitor	Continuous Analog voltage relative to reflected power via RMS detector REVM: 13 – 43 dBm @ 0 - 5V (100 mV/dB) 28dBm output = $V_{REV} = 2.5 V_{DC}$
3	ALC ON/OFF	ALC ON = TTL “Low” ALC OFF = TTL “High”
4	ALC Level	Continuous adjustable range via analog input levels Setting Point (ASP): 33 – 44 dBm @ 0 – 5 V (100 mV/dB) Error Range (AER): ±1.5 dB Response Time (ART): 100 mS/dB
5	Mute	Amplifier Enable: TTL “Low” or Open Amplifier Disable: TTL “High”
6	+VDD	$+28 \pm 2 V_{DC}$
7	+VDD	$+28 \pm 2 V_{DC}$
8	GND	Ground
9	GND	Ground
LED	LED Indicator	Output Power level indicator referenced to ALC setting (Independent of ALC ON or OFF)

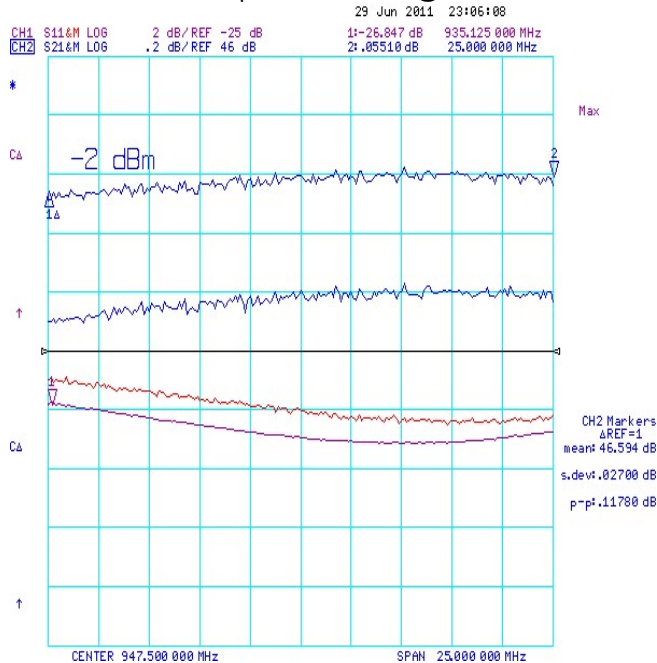
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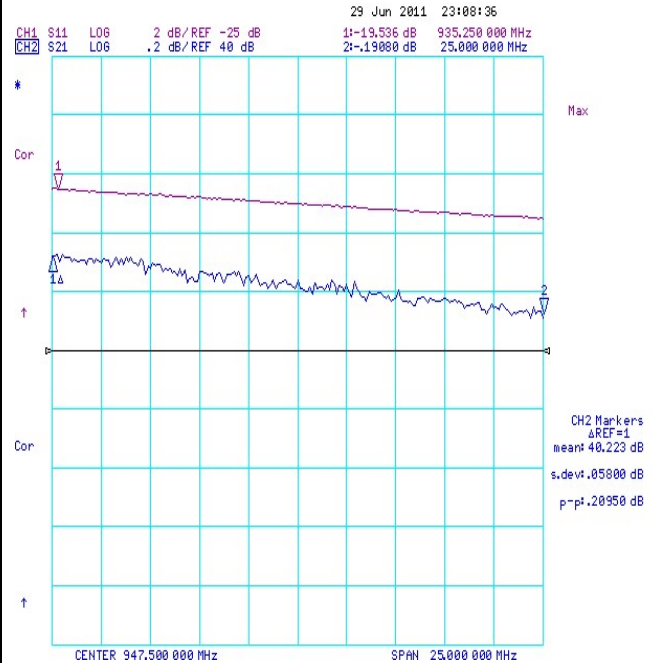
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TYPICAL PERFORMANCE PLOTS

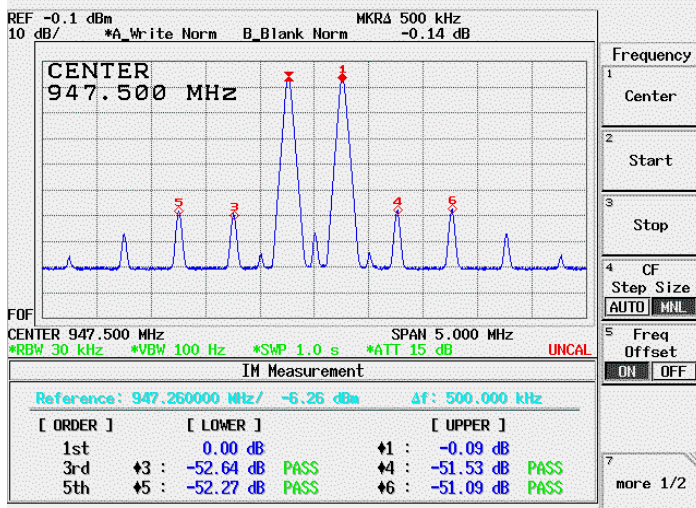
Top curve: Small signal gain @ Pin = -2dBm
2nd Curve: Large signal gain @ Pin = -20dBm
3rd Curve: Input Return Loss @ Pin = -20dBm
Bottom: Input Return Loss @ Pin = -2dBm



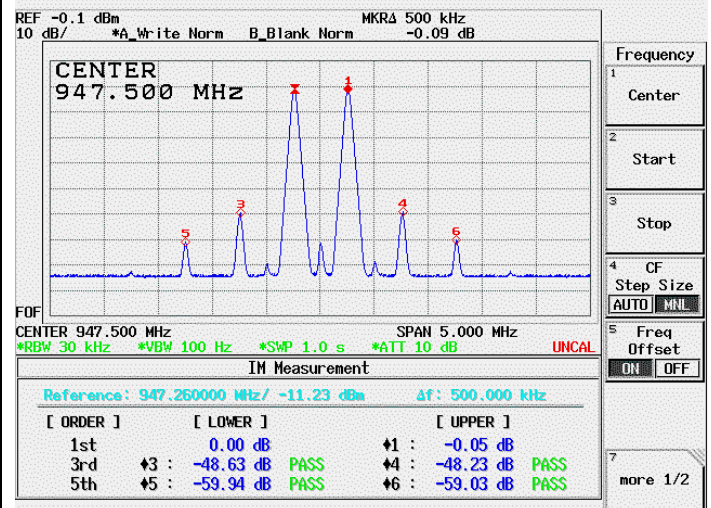
Top Curve: Input Return Loss
Bottom Curve: ALC Levelled @ Pout = 10W, Pin = 0dBm
Reference = 40dB



2-tone test @ Pout = 4W, Fc = 947.5MHz
Id = 1.1A



2-tone test @ Pout = 1.25W (31dBm), Fc = 947.5MHz
Id = 0.08A



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OUTLINE DRAWING

