



DPD/PA TEST REPORT

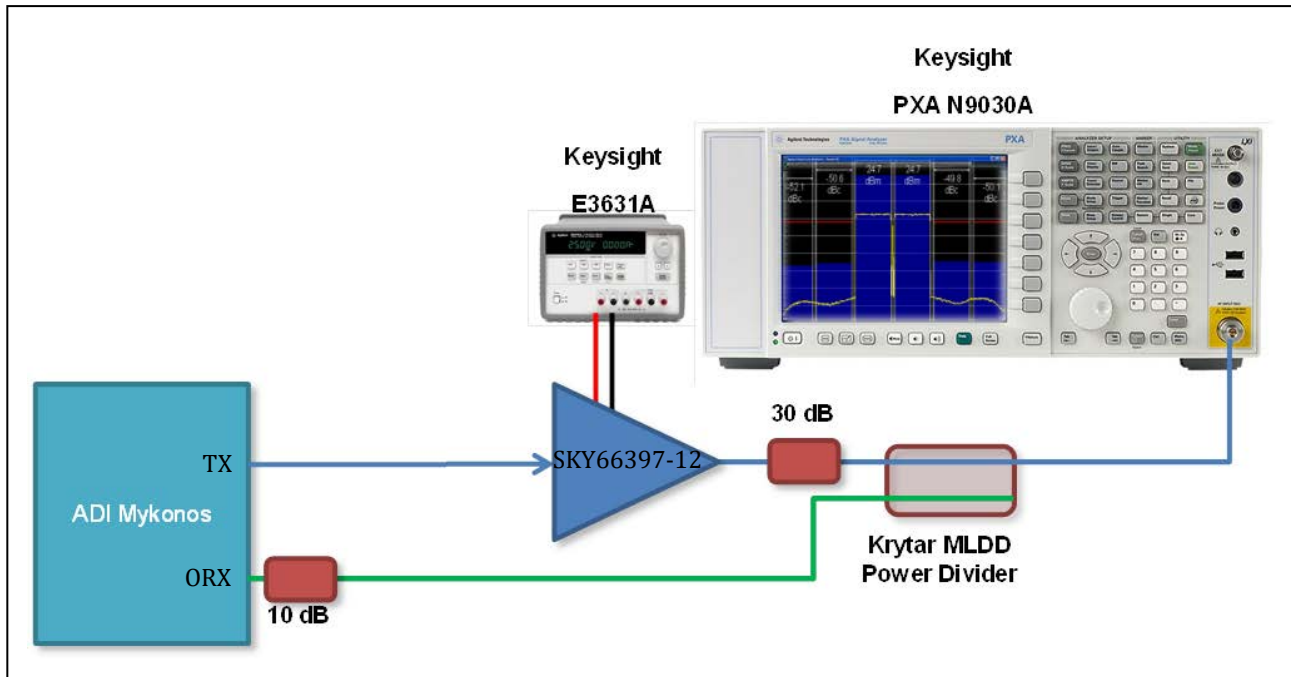
RF Transceiver	AD9375
Power Amplifier	SKY66397-12
PA Type	High Efficiency Semi-Linear PA
Transistor Type	SWKS HBT
Operating Frequency Range (MHz)	2496 – 2690
Gain (dB)	35
Power Added Efficiency	31% @ +28 dBm
OP3dB (dBm)	+36
Supply Voltage	+5 V
Bandwidths Tested	40 MHz



SUMMARY

Frequency	Output Power (dBm rms)	Signal Bandwidth	Test Signal	ACLR +1 (dBc)	ACLR-1 (dBc)	ACLR+2 (dBc)	ACLR-2 (dBc)	Power Added Efficiency (%)
2516MHz (Bottom)	+28	40 MHz	ETM3.1 20 MHz LTE 2 Carrier	-49.5	-49.5	-50.3	-50.2	31.5
2630 MHz (Middle)	+28	40 MHz	ETM3.1 20 MHz LTE 2 Carrier	-52.6	-52.6	-53.6	-52.8	31.1
2670 MHz (Top)	+28	40 MHz	ETM3.1 20 MHz LTE 2 Carrier	-50.6	-51.0	-50.1	-50.5	30.9

BLOCK DIAGRAM



ACLR RESULTS BOTTOM/MIDDLE/TOP FREQUENCIES

2516MHZ, 40 MHZ BANDWIDTH ACLR RESULTS

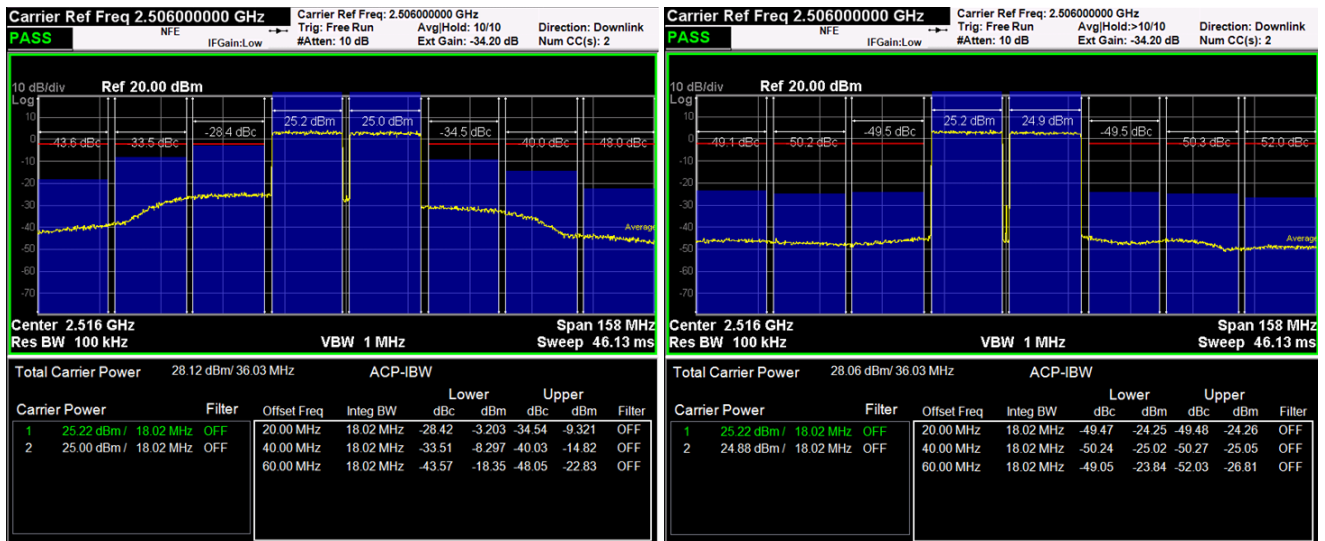


Figure 1. SKY66397-12 @ 2516MHz, 20 MHz ETM3.1 signal 2Carrier before/after DPD

Before/After DPD	Output Power (rms)	ACLR+1 (dBc)	ACLR-1 (dBc)	ACLR+2 (dBc)	ACLR-2 (dBc)	ACLR+3 (dBc)	ACLR-3 (dBc)	Drain Current (mA)	PAE (%)
Before DPD	+28.1	-34.5	-28.4	-40.0	-33.5	-48.1	-43.6	413	31.3
After DPD	+28.1	-49.5	-49.5	-50.3	-50.2	-52.0	-49.1	410	31.5

Table 1. Summary of Results: Frequency: 2516MHz, 20MHz ETM3.1 Signal 2Carrier

PA settings: Vcc1 = Vcc2 = Vcc3 = VBias = 5.0 V, Ven = 2.0 V Signal Used : ETM3.1

AD9375 DPD configuration

GUI Version: 2.0.68
 DLL Version: 1.5.2.3566
 Cmd Server Version: 1.5.2.3566
 Fpga Version: 46000200
 Arm Version: 5.2.2
 Analog Devices Inc.
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2630 MHZ, 40 MHZ BANDWIDTH ACLR RESULTS

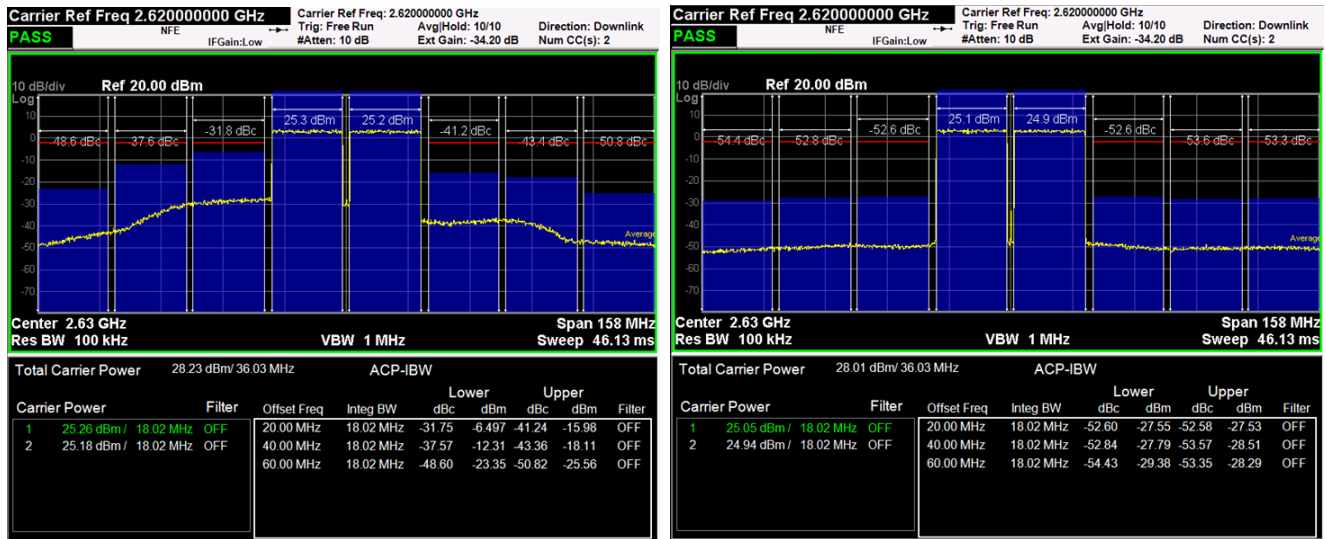


Figure 2. SKY66397-12 @ 2630 MHz, 20 MHz ETM3.1 signal 2Carrier before/after DPD

Before/After DPD	Output Power (rms)	ACLR+1 (dBc)	ACLR-1 (dBc)	ACLR+2 (dBc)	ACLR-2 (dBc)	ACLR+3 (dBc)	ACLR-3 (dBc)	Drain Current (mA)	PAE (%)
Before DPD	+28.2	-41.2	-31.8	-43.4	-37.6	-50.8	-48.6	422	31.3
After DPD	+28.0	-52.6	-52.6	-53.6	-52.8	-53.4	-54.4	406	31.1

Table 2. Summary of Results: Frequency: 2630 MHz, 20MHz ETM3.1 Signal 2Carrier

PA settings: Vcc1 = Vcc2 = Vcc3 = Vbias = 5.0 V, Ven = 2.0 V Signal Used: ETM3.1

AD9375 DPD configuration

2670 MHZ, 40 MHZ BANDWIDTH ACLR RESULTS



Figure 3. SKY66397-11 @ 2670 MHz, 20 MHz ETM3.1 signal 2Carrier before/after DPD

Before/After DPD	Output Power (rms)	ACLR+1 (dBc)	ACLR-1 (dBc)	ACLR+2 (dBc)	ACLR-2 (dBc)	ACLR+3 (dBc)	ACLR-3 (dBc)	Drain Current (mA)	PAE (%)
Before DPD	+28.2	-37.3	-31.2	-39.7	-37.1	-46.1	-48.0	430	30.7
After DPD	+28.0	-50.6	-51.0	-50.1	-50.5	-52.0	-52.9	408	30.9

Table 3. Summary of Results: Frequency: 2670 MHz, 20MHz ETM3.1 Signal 2Carrier

PA settings: Vcc1 = Vcc2 = Vcc3 = VBias = 5.0 V, Ven = 2.0 V Signal Used : ETM3.1

AD9375 DPD configuration

IP Address: 192.168.1.10 Tx Channel: 2
 Tx Interface rate: 153.6 MHz ORx Interface rate: 307.2 MHz

PA Settings: PA1 GPIO: 0 PA2 GPIO: 0 PA 2 On

DPD Status: Total Adaptations: 846 Current model error: 1.8% External sample delay: 146.313 samples
 DPD Initialized. (OK) - No Error

DPD Configuration: Target PAPR: 7.5 dB Digital Scale: -3 dBFS Digital Freq Offset: 0 MHz

PA Calibrations: Enable CLCC: [] VSWR Measure: [] DPD Adaptation: []

DPD Error Metrics: AM-AM Error: 99.87% CLCC: Disabled | Correct | Tx Attrs

WIDEBAND PLOTS, BOTTOM/MIDDLE/TOP FREQUENCIES

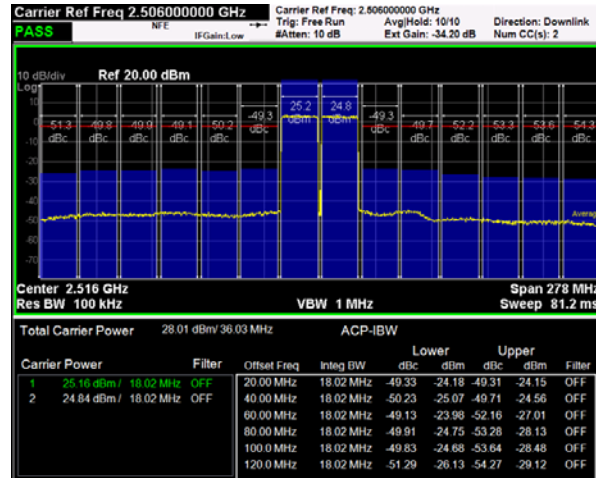


Figure 4. Wideband Spectrum Analyser Plot: Frequency 2516MHZ, 20 MHz ETM3.1 Signal 2Carrier

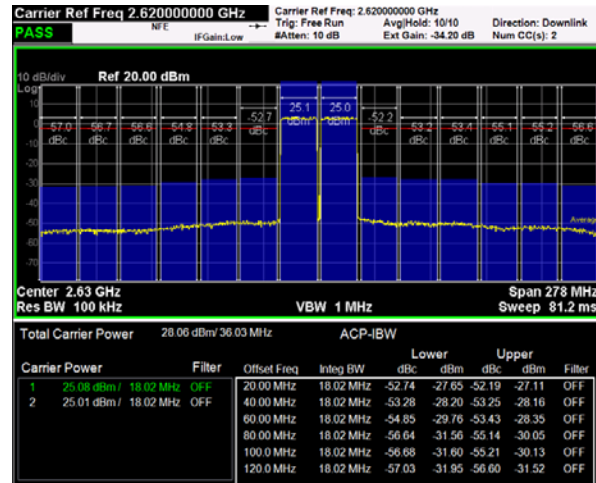


Figure 5. Wideband Spectrum Analyser Plot: Frequency 2630MHZ, 20 MHz ETM3.1 Signal 2Carrier

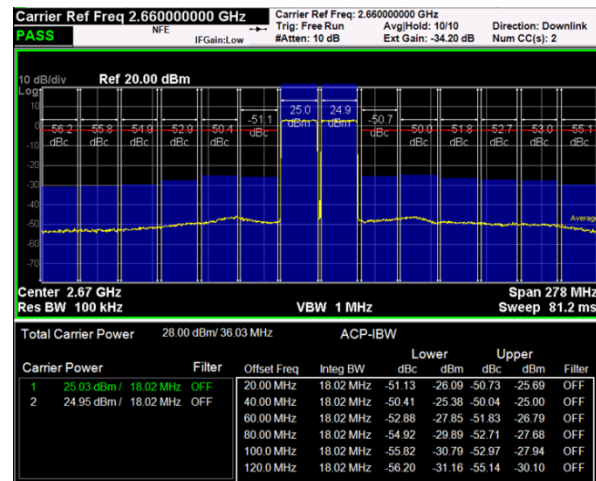


Figure 6. Wideband Spectrum Analyser Plot: Frequency 2670MHZ, 20 MHz ETM3.1 Signal 2Carrier

ACLR VS POUT

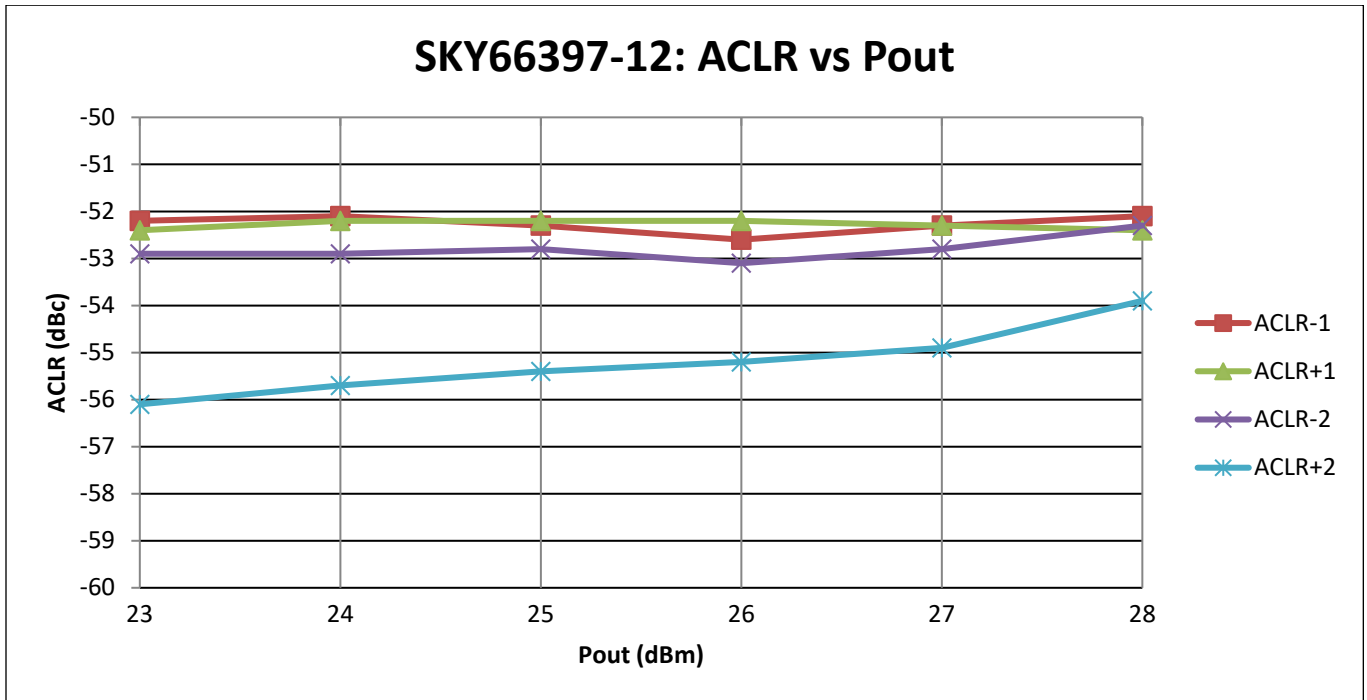


Figure 7. ACLR vs Output Power (2630 MHz)

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TEST BENCH

Keysight PXA Signal Analyzer N9030A with 89601B LTE Option

Keysight E3631A Power Supply 3-Output Power Supply