



DPD/PA Test Report

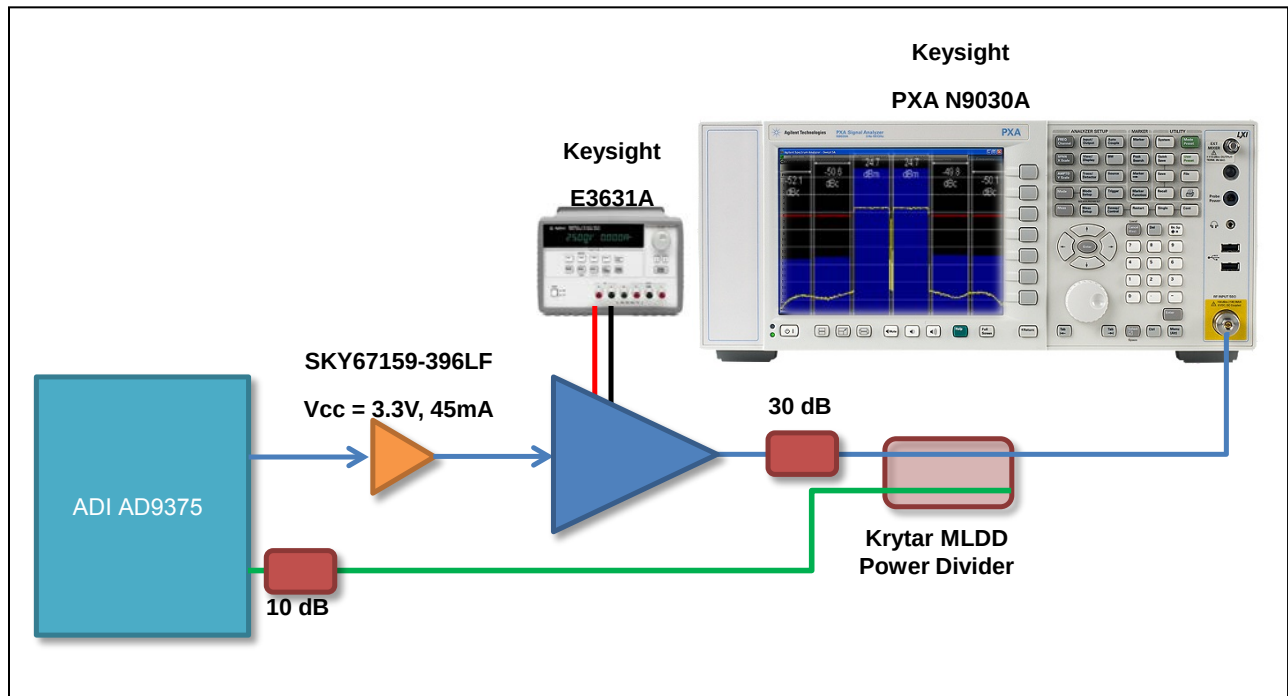
RF Transceiver	AD9375
Power Amplifier	SKY66297-11
PA Type	High Efficiency Semi-Linear PA
Transistor Type	SWKS HBT
Operating Frequency Range (MHz)	2496 – 2690
Gain (dB)	32 (min)
Power Added Efficiency	32% (CW)
OP3dB (dBm)	+35.5
Supply Voltage	5 V
Bandwidths Tested	20 MHz



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 (%)
2630MHz (Bottom)	28	20 MHz	E-TM3.1 20 MHz LTE	-51.23	-52.12	-56.7	-56.5	30
2650MHz (Middle)	28	20 MHz	E-TM3.1 20 MHz LTE	-52.1	-53.9	-57.9	-58.7	30.4
2680MHz (Top)	28	20 MHz	E-TM3.1 20 MHz LTE	-50.7	-52.2	-56.3	-57.4	30.6

BLOCK DIAGRAM



ACLR RESULTS BOTTOM/MIDDLE/TOP FREQUENCIES

2630 MHz, 20 MHz BANDWIDTH ACLR RESULTS

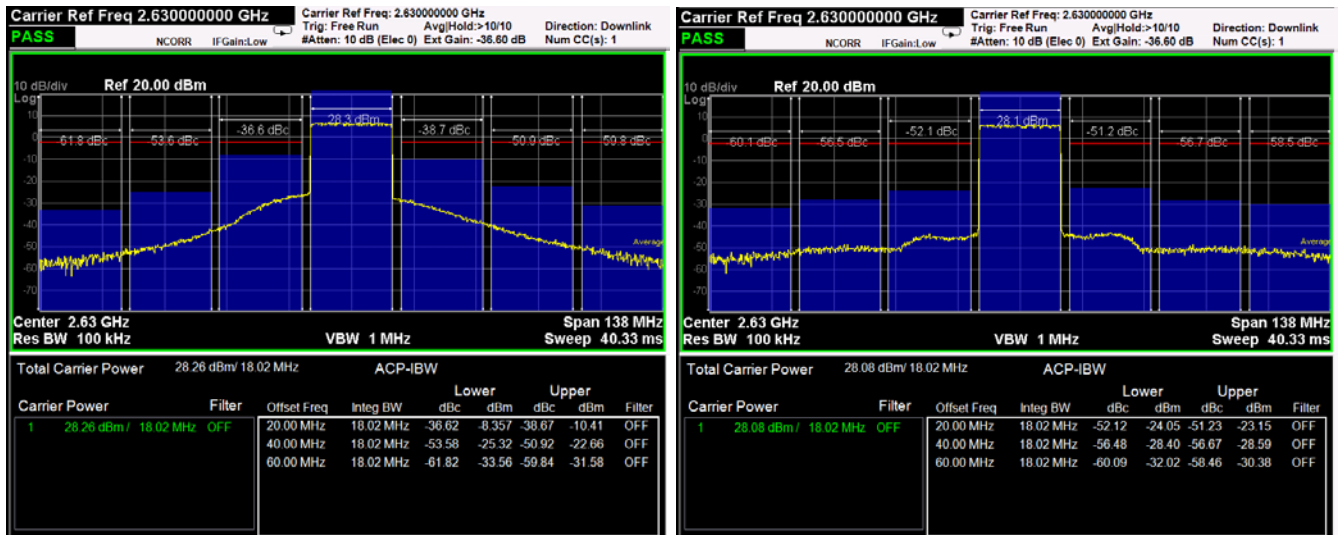


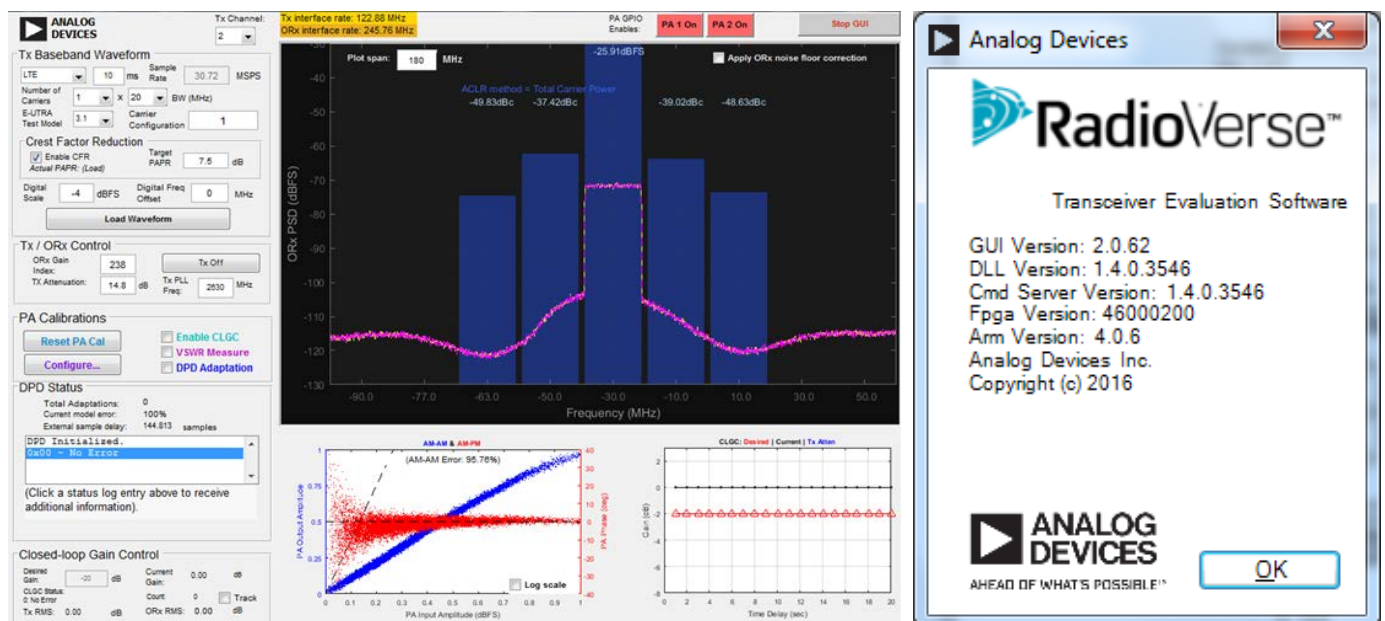
Figure 1. SKY66297-11 @ 2630 MHz, 20 MHz E-TM3.1 signal before/after DPD

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	-38.7	-36.6	-50.9	-53.6	-59.8	-62	433	29.1
After DPD	+28.1	-51.8	-51.9	-56.4	-56.2	-57.4	-60.4	422	30

Table 1. Summary of Results: Frequency: 2310MHz, 20 MHz E-TM3.1 Signal

PA settings: Vcc1 = Vcc2 = Vcc3 = Vbias = 5.0 V, Ven = 2.0 V Signal Used: E-TM3.1

AD9375 DPD configuration



2650 MHZ, 20 MHZ BANDWIDTH ACLR RESULTS

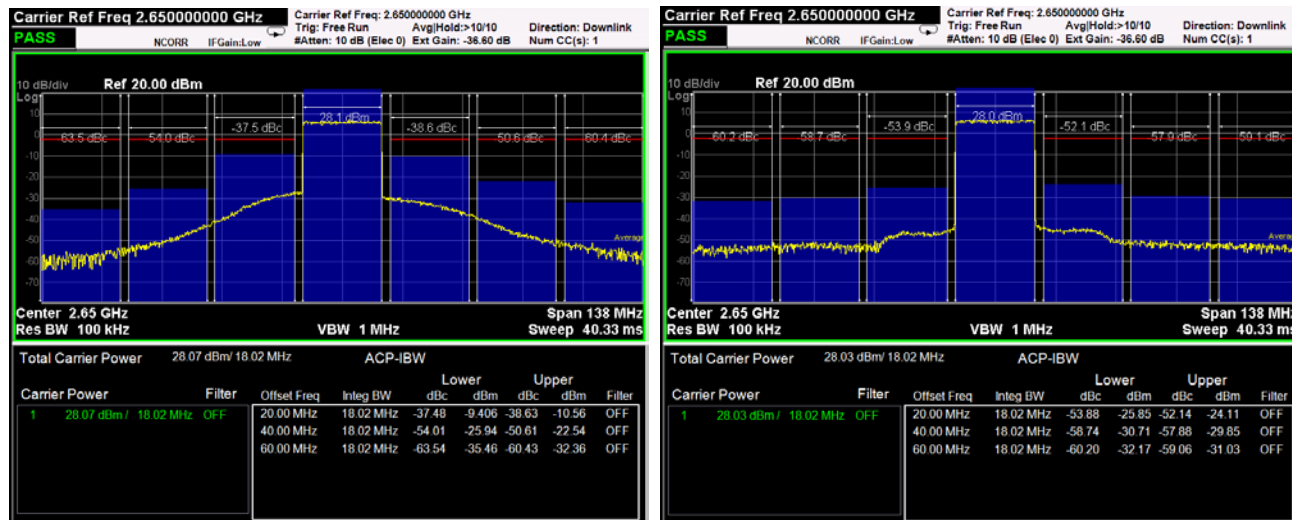


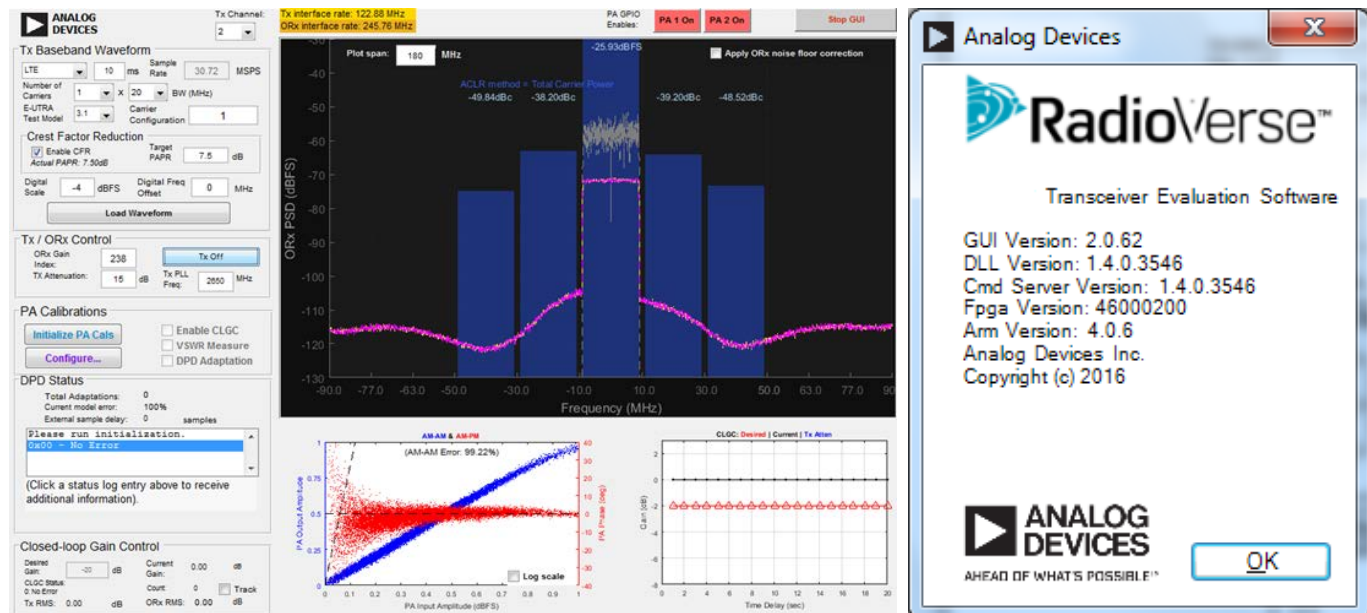
Figure 2. SKY66297-11 @ 2650 MHz, 20 MHz E-TM3.1 signal before/after DPD

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	-37.5	-38.6	-54	-50.6	-63.5	-60.4	411	30.7
After DPD	+28.1	-53.9	-52.1	-58.7	-57.9	-60.2	-59	414	30.4

Table 2. Summary of Results: Frequency: 2650 MHz, 20 MHz E-TM3.1 Signal

PA settings: Vcc1 = Vcc2 = Vcc3 = Vbias = 5.0 V, Ven = 2.0 V Signal Used: E-TM3.1

AD9375 DPD configuration



2680 MHz, 20 MHz BANDWIDTH ACLR RESULTS

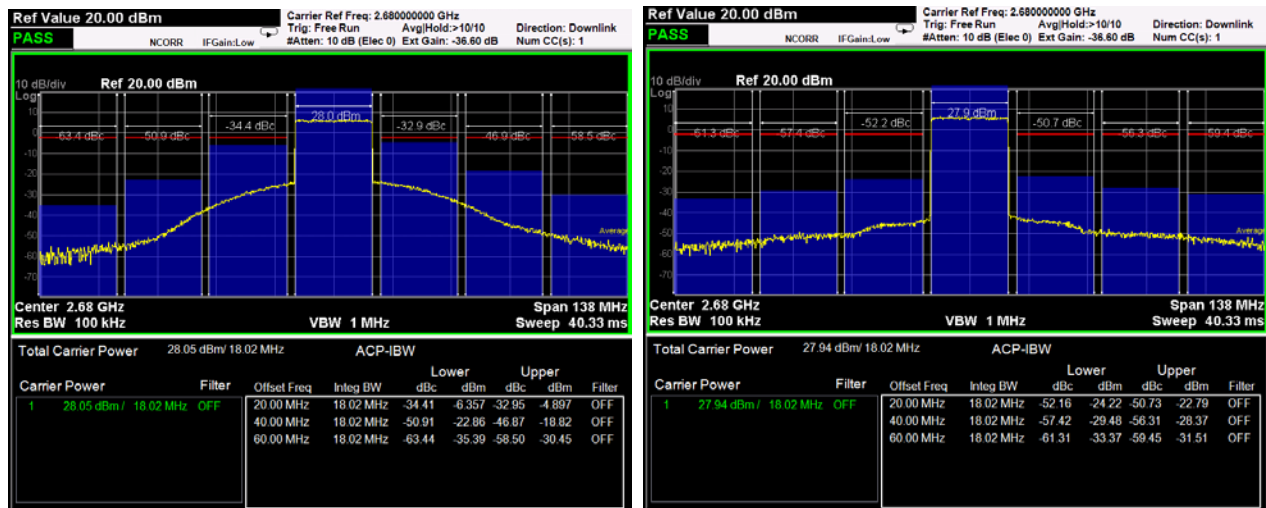


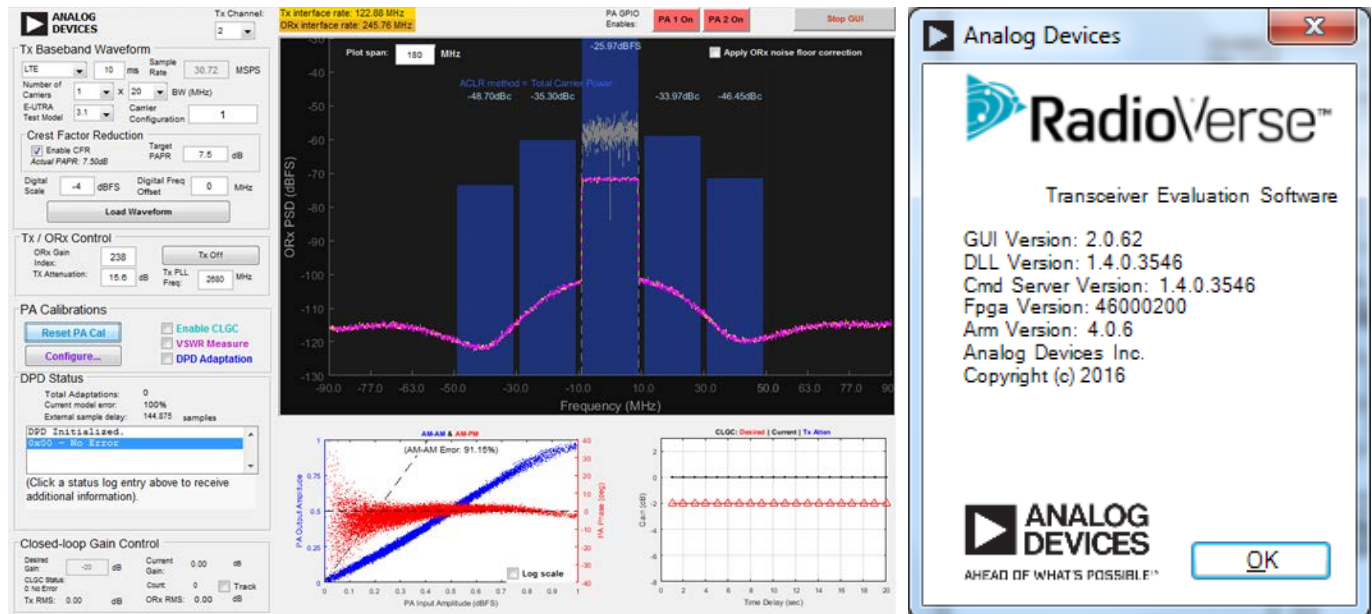
Figure 3. SKY66297-11 @ 2680MHz, 20 MHz E-TM3.1 signal before/after DPD

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	+28.0	-33	-34.4	-46.9	-50.9	-58.5	-63.4	414	30.4
After DPD	+27.8	-50.7	-52.2	-56.3	-57.4	-59.4	-61.3	409	30.8

Table 3. Summary of Results: Frequency: 2350 MHz, 20 MHz E-TM3.1 Signal

PA settings: Vcc1 = Vcc2 = Vcc3 = VBias = 5.0 V, Ven = 2.0 V Signal Used: E-TM3.1

AD9375 DPD configuration



WIDEBAND PLOTS, BOTTOM/MIDDLE/TOP FREQUENCIES

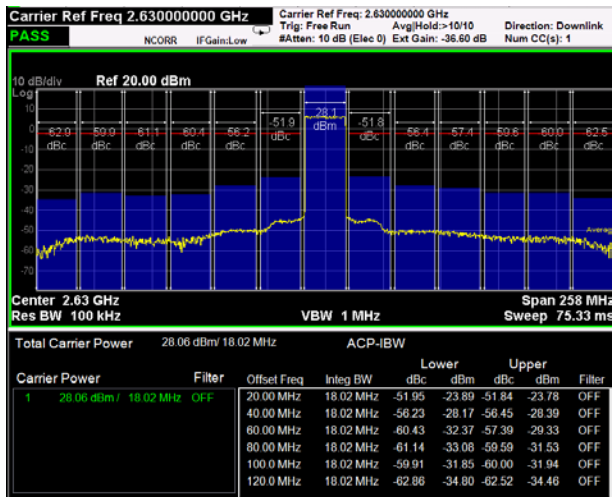


Figure 4. Wideband Spectrum Analyser Plot: Frequency 2630MHz, 20 MHz E-TM3.1 Signal

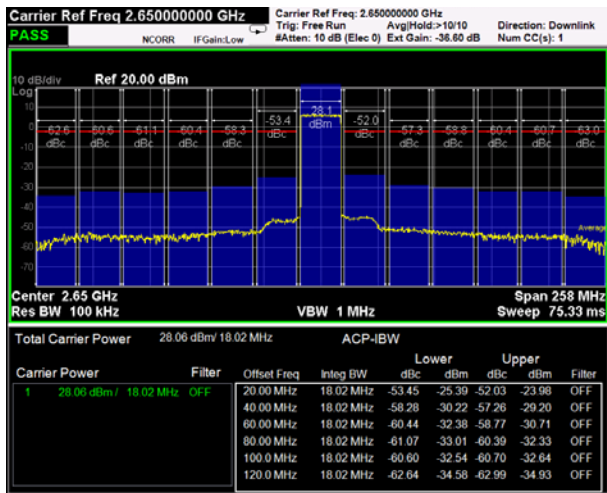


Figure 5. Wideband Spectrum Analyser Plot: Frequency 2650MHz, 20 MHz E-TM3.1 Signal

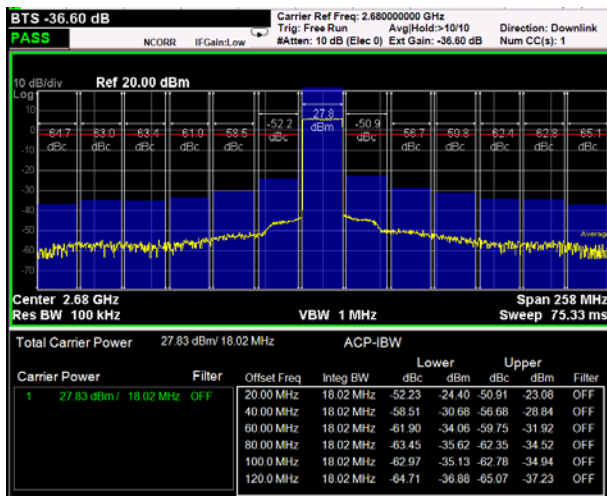


Figure 6. Wideband Spectrum Analyser Plot: Frequency 2680MHz, 20 MHz E-TM3.1 Signal

ACLR VS POUT

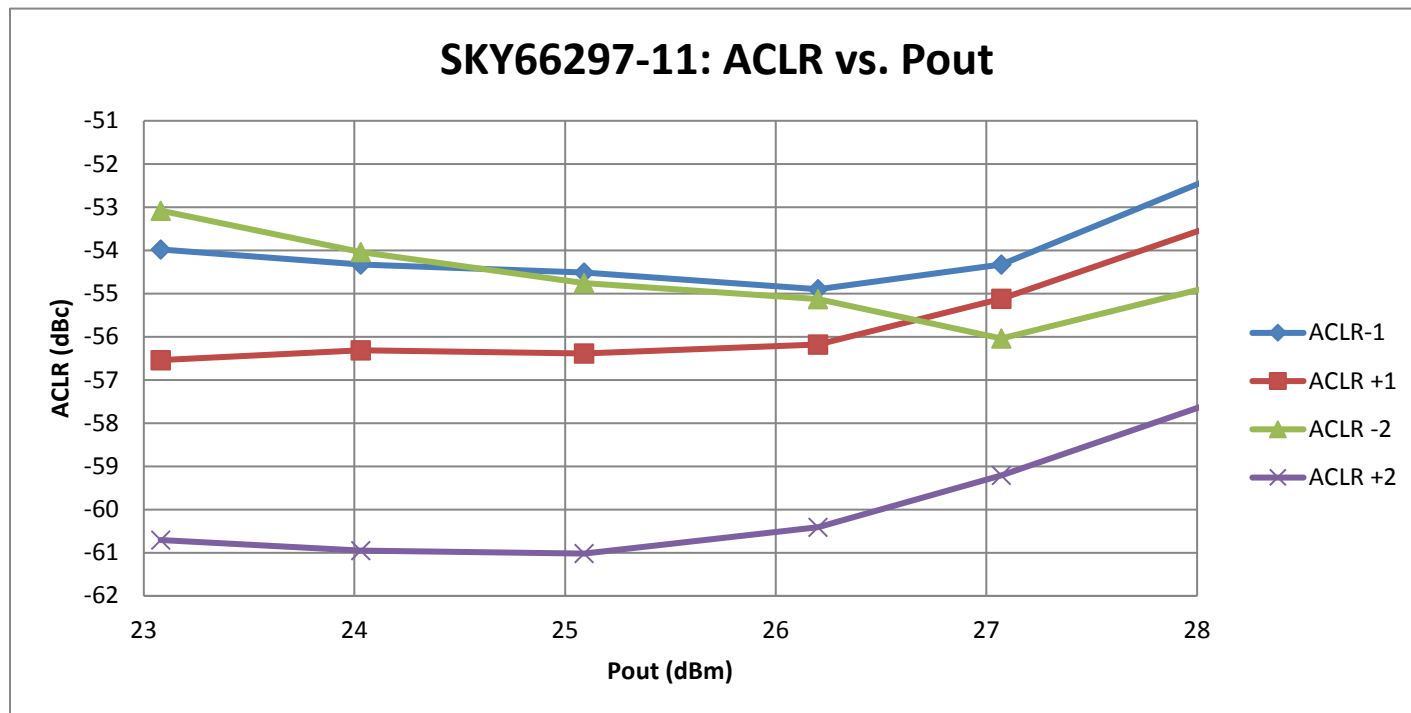


Figure 7. ACLR vs Output Power (Middle Frequency)

INDEX

DRIVER AMPLIFIER

Part Number	SKY67159-396LF	SKY67153-396LF
Frequency Range (GHz) :	0.2-3.8	0.7-3.8
Test Frequency (GHz) :	0.7 2.7 3.8	0.849 2.50 3.60
Gain Typ. (dB) :	17.5 @ 700 MHz 17.0 @ 2.7GHz 16.5 @ 3.8GHz	26 @ 849 MHz 19.0 @ 2.5GHz 16.5 @ 3.8GHz
OIP3 (dBm) :	31 29 27@ 3.8GHz	34.5 @ 849 MHz 36.0@ 2.5GHz 36.0@ 3.8GHz
OP1 dB (dBm) :	18 16 14.5@ 3.8GHz	21.5 @ 849 MHz 20.0@ 2.5GHz 18.0@ 3.8GHz
VDD (V) :	3.3 or 5	5
Supply Current Typ. (mA) :	45	80
Noise Figure Typ. (dB) :	0.95 1 1.3@ 3.8GHz	0.25 @ 849 MHz 0.50@ 2.5GHz 0.70@ 3.8GHz
Package (mm) :	8-pin DFN, 2 x 2 x 0.75	8-pin DFN, 2 x 2 x 0.75

TEST BENCH

Keysight PXA Signal Analyzer N9030A with 89601B LTE Option

Keysight E3631A Power Supply 3-Output Power Supply