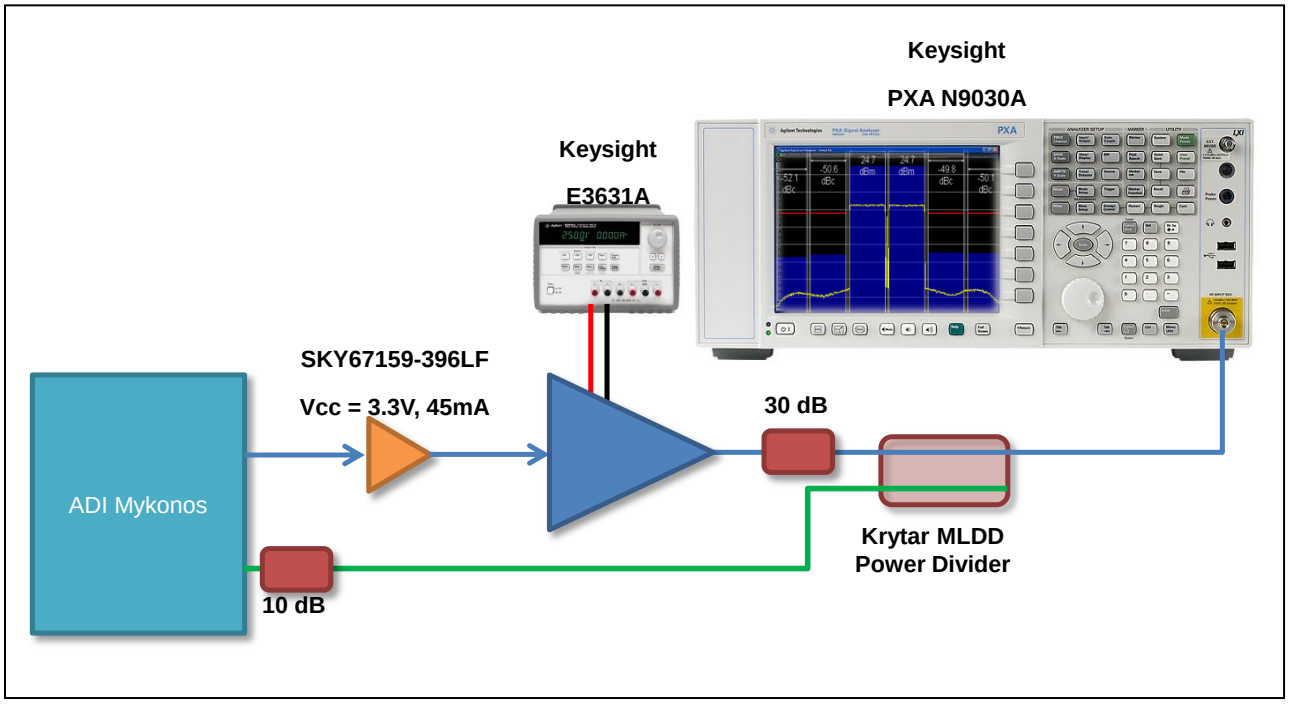
DPD/PA TEST REPORT

RF Transceiver	AD9375
Power Amplifier	SKY66296-11
PA Type	High Efficiency Semi-Linear PA
Transistor Type	SWKS HBT
Operating Frequency Range (MHz)	700 – 800 MHz
Gain (dB)	34 (min)
Power Added Efficiency	36%
OP3dB (dBm)	+35
Supply Voltage	5V
Bandwidths Tested	10MHz

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 (%)
733 MHz (Bottom)	+27.8	10MHz	ETM3.1 10MHz LTE	-48.3	-48.4	-55.8	-56.4	36.6
750 MHz (Middle)	+28	10MHz	ETM3.1 10MHz LTE	-51.75	-51.25	-61.8	-60.3	36.8
763 MHz (Top)	+28	10MHz	ETM3.1 10MHz LTE	-52.4	-52.2	-61.3	-60.9	36.2

BLOCK DIAGRAM



ACLR RESULTS BOTTOM/MIDDLE/TOP FREQUENCIES

733 MHZ, 10MHZ BANDWIDTH ACLR RESULTS

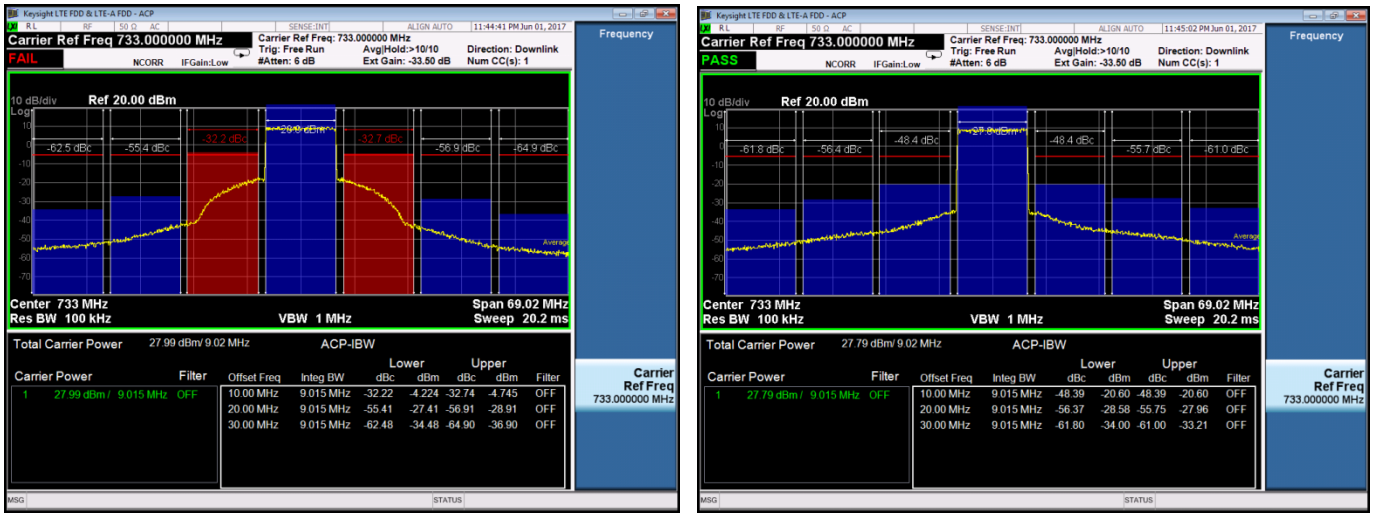


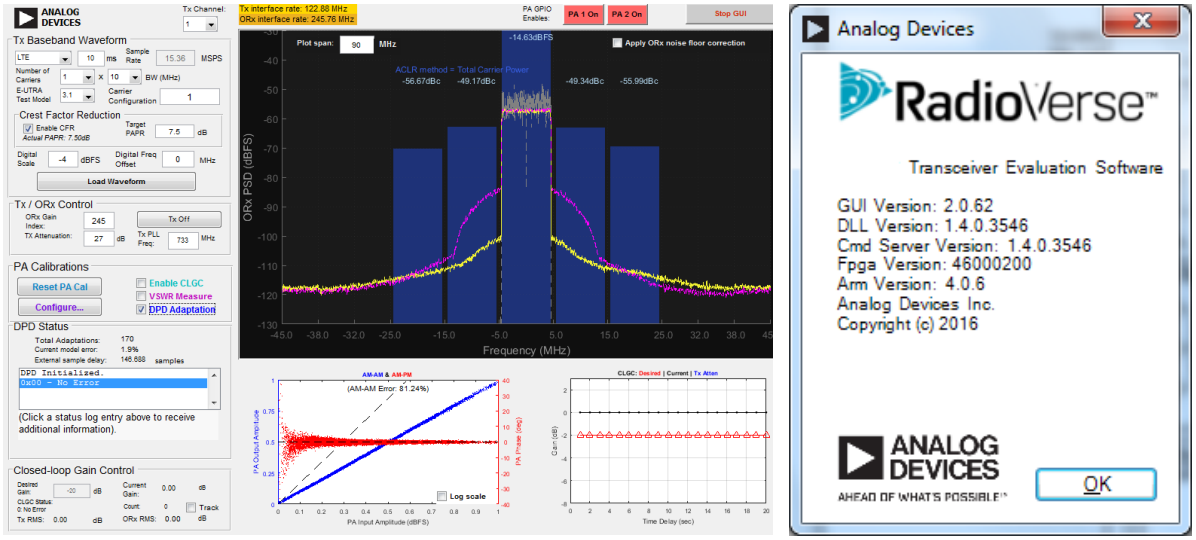
Figure: 1. Frequency 733 MHz, 10MHz ETM3.1Signal

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	-32.7	-32.2	-56.9	-55.4	-64.9	-62.5	349	36.1
After DPD	+27.8	-48.4	-48.4	-55.7	-56.4	-61	-61.8	344	36.6

Table 1: Summary of Results: Frequency: 733 MHz, 10MHZ ETM3.1 Signal

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

AD9375 DPD configuration



750 MHZ, 10MHZ BANDWIDTH ACLR RESULTS

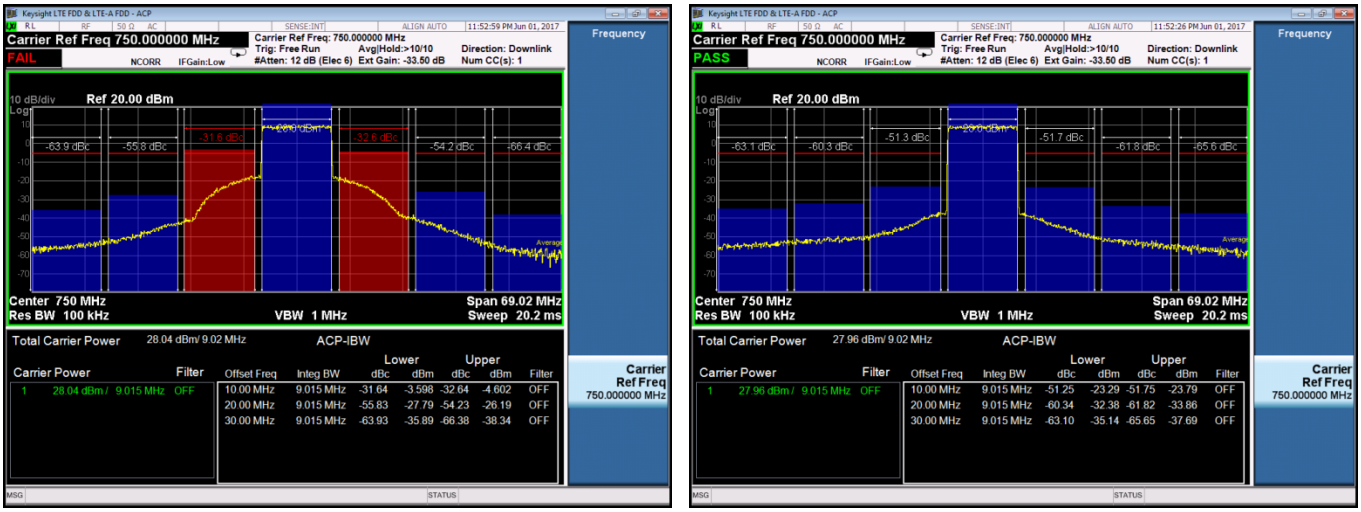


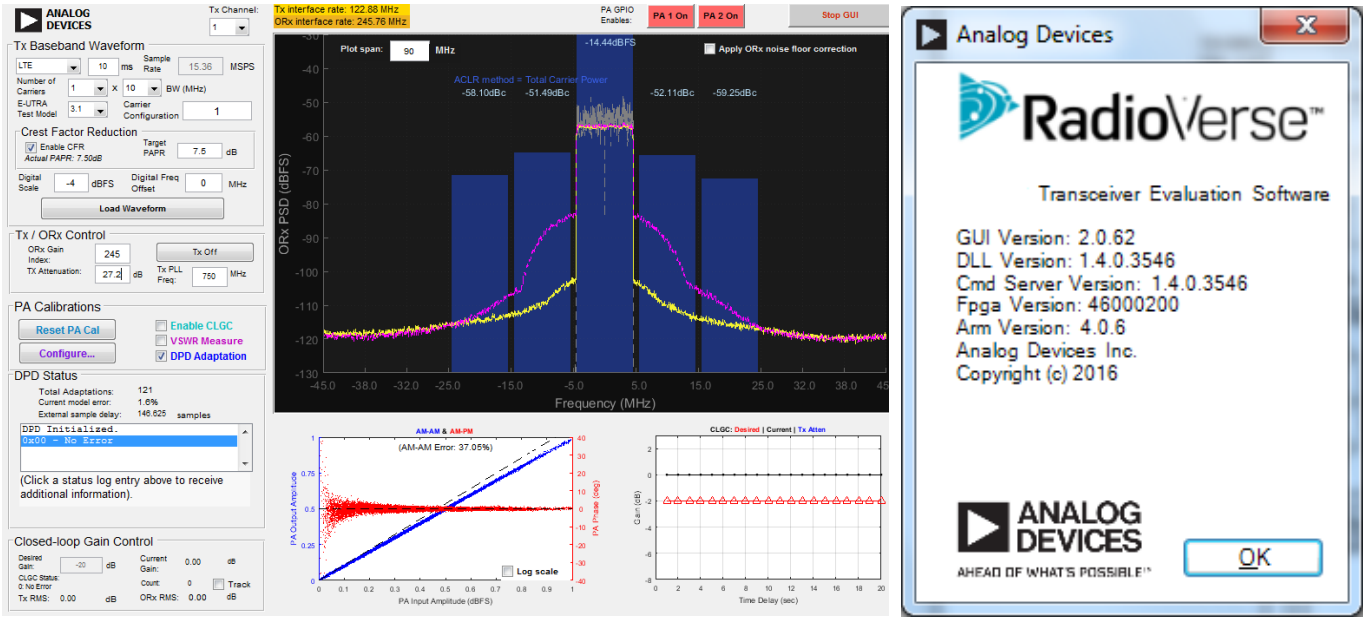
Figure 2: Frequency 750 MHz, 10MHz ETM3.1Signal

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	-32.6	-31.6	-54.2	-55.8	-66.4	-63.9	346	36.4
After DPD	+28	-51.75	-51.2	-61.8	-60.34	-65.7	-63.1	342	36.8

Table 2: Summary of Results: Frequency: 750 MHz, 10MHZ ETM3.1Signal

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

AD9375 DPD configuration



763 MHZ, 10MHZ BANDWIDTH ACLR RESULT

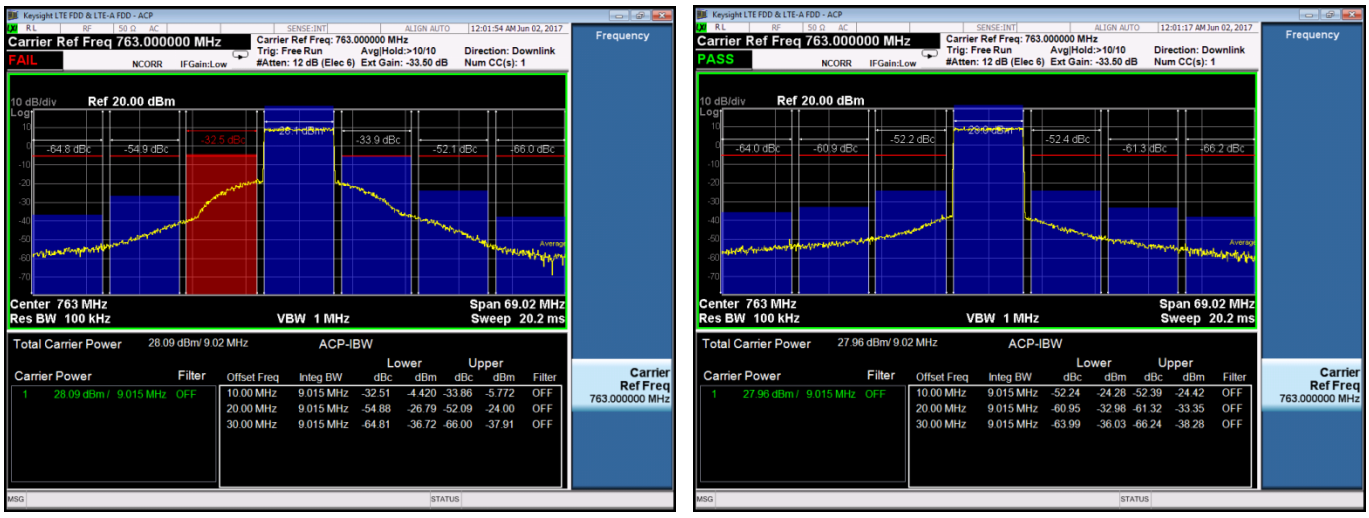


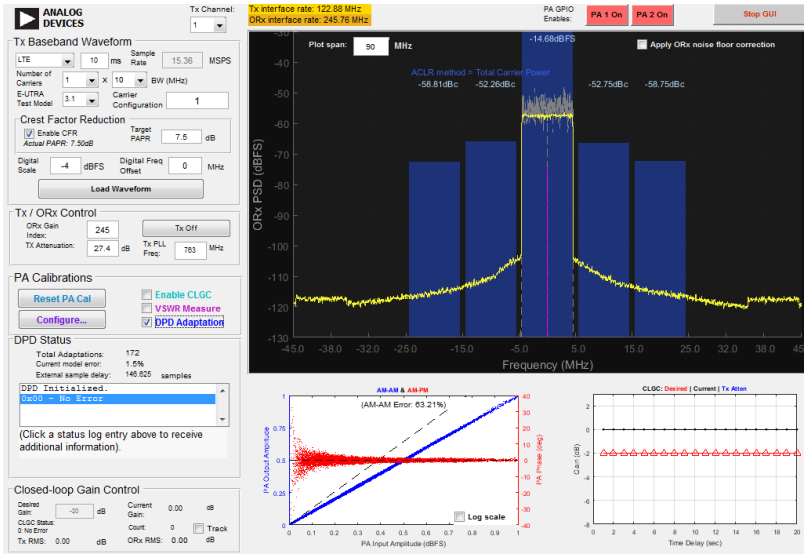
Figure 3: Frequency 763 MHz, 10MHz ETM3.1Signal

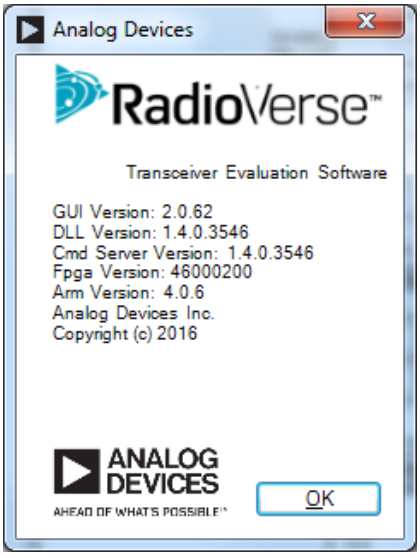
Before/After DPD	Output Power (rms)	ACLR+1 (dBc)	ACLR-1 (dBc)	ACLR+2 (dBc)	ACLR-2 (dBc)	ACLR+3 (dBc)	ACLR-3 (dBc)	Drain Current (mA)	PAE (%)
Before DPD	+28.1	-33.9	-32.5	-52.1	-54.9	-66	-64.8	351	35.9
After DPD	+28	-52.4	-52.2	-61.3	-61	-66.2	-64	395	36.2

Table 3: Summary of Results: Frequency: 763 MHz, 10MHZ ETM3.1 Signal

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

AD9375 DPD configuration





WIDEBAND PLOTS, BOTTOM/MIDDLE/TOP FREQUENCIES

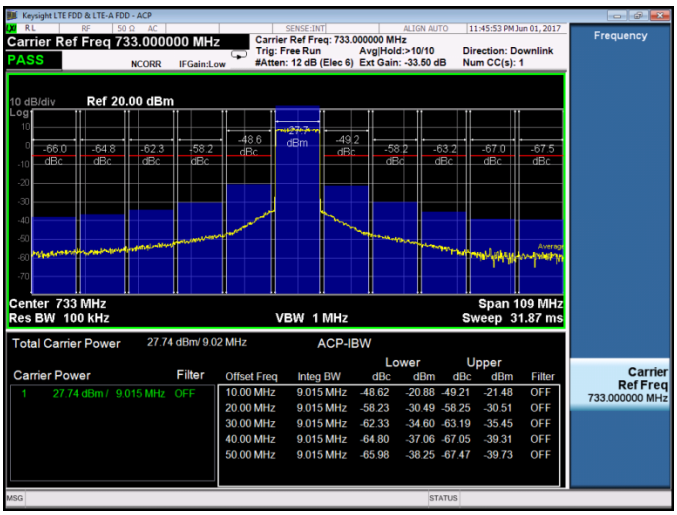


Figure 4: Wideband Spectrum Analyser Plot: Frequency 733 MHZ, 10MHz ETM3.1 Signal

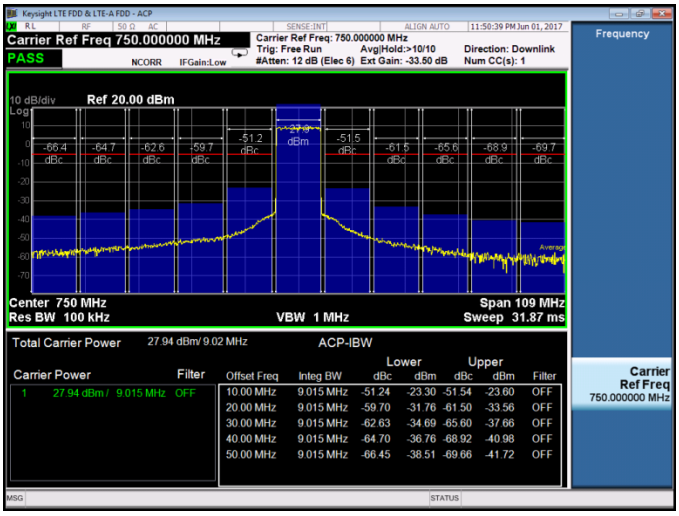


Figure 5: Wideband Spectrum Analyser Plot: Frequency 750 MHZ, 10MHz ETM3.1 Signal

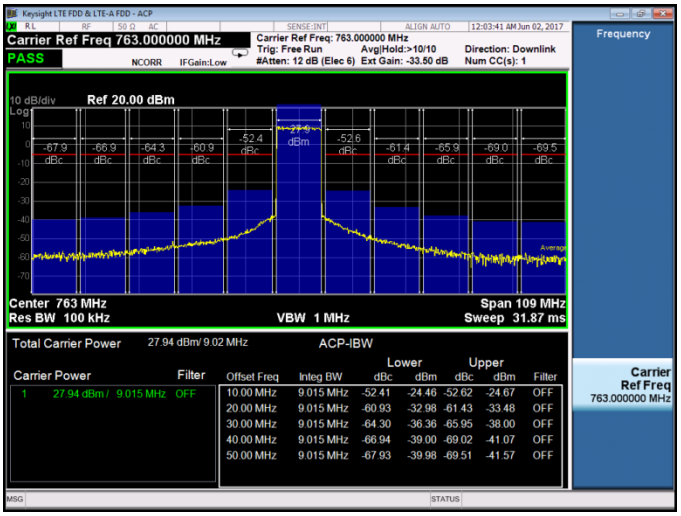


Figure 6: Wideband Spectrum Analyser Plot: Frequency 763 MHZ, 10MHz ETM3.1 Signal

ACLR VS POUT

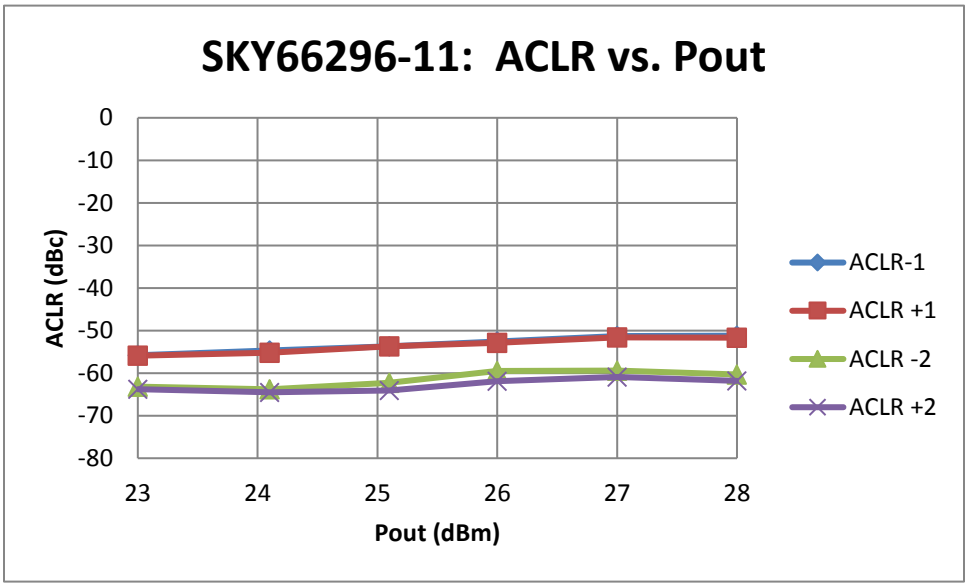


Figure 7: ACLR vs Output Power (750 MHz)

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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