

PEAK TO AVERAGE POWER (PAPR) BAND

66a



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Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFL	27-Feb-20	27-Feb-21
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

Because the conducted Output Power was measured using a RMS Average detector, the Peak to Average Power Ratio (PAPR) was measured to show that the maximum peak-max-hold spectrum to the maximum of the average spectrum does not exceed the rule part defined limit.

The PAPR measurement method is described in ANSI C63.26 section 5.2.3.4.

The PAPR was measured using the CCDF function of the spectrum analyzer.

Per 27.50(d)(5), RSS-139 section 6.5, the PAPR limit shall not exceed 13 dB for more than the ANSI described 0.1% of the time.

PEAK TO AVERAGE POWER (PAPR) BAND 66a



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EUT:	AHFIC	Work Order:	NOKI0007
Serial Number:	K9180317594	Date:	6-Apr-20
Customer:	Nokia Solutions and Networks	Temperature:	22.4 °C
Attendees:	Mitch Hill, John Rattavong	Humidity:	49.5% RH
Project:	None	Barometric Pres.:	1013 mbar
Tested by:	Brandon Hobbs	Power:	54 VDC
		Job Site:	TX03
TEST SPECIFICATIONS		Test Method	
FCC 27:2020		ANSI C63.26:2015	
RSS-139:2015		RSS-139:2015	
COMMENTS			
All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. The hottest port was used for testing. The worst case port was determined in the original client test report. The carrier power was set to maximum for all testing.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature 	
		PAPR Value (dB)	PAPR Limit (dB)
			Results

Band 66a, 2110 MHz - 2180 MHz, 5G

Port 3

5 MHz Bandwidth

QPSK Modulation

Low Channel, 2112.5 MHz	7.70	13	Pass
Mid Channel, 2145 MHz	7.71	13	Pass
High Channel, 2177.5 MHz	7.69	13	Pass

16-QAM Modulation

Low Channel, 2112.5 MHz	7.68	13	Pass
Mid Channel, 2145 MHz	7.69	13	Pass
High Channel, 2177.5 MHz	7.68	13	Pass

64-QAM Modulation

Low Channel, 2112.5 MHz	7.75	13	Pass
Mid Channel, 2145 MHz	7.78	13	Pass
High Channel, 2177.5 MHz	7.77	13	Pass

256-QAM Modulation

Low Channel, 2112.5 MHz	7.72	13	Pass
Mid Channel, 2145 MHz	7.73	13	Pass
High Channel, 2177.5 MHz	7.73	13	Pass

10 MHz Bandwidth

QPSK Modulation

Low Channel, 2115.0 MHz	7.77	13	Pass
Mid Channel, 2145 MHz	7.77	13	Pass
High Channel, 2175 MHz	7.80	13	Pass

16-QAM Modulation

Low Channel, 2115.0 MHz	7.79	13	Pass
Mid Channel, 2145 MHz	7.77	13	Pass
High Channel, 2175 MHz	7.76	13	Pass

64-QAM Modulation

Low Channel, 2115.0 MHz	7.77	13	Pass
Mid Channel, 2145 MHz	7.78	13	Pass
High Channel, 2175 MHz	7.79	13	Pass

256-QAM Modulation

Low Channel, 2115.0 MHz	7.82	13	Pass
Mid Channel, 2145 MHz	7.80	13	Pass
High Channel, 2175 MHz	7.78	13	Pass

15 MHz Bandwidth

QPSK Modulation

Low Channel, 2117.5 MHz	7.81	13	Pass
Mid Channel, 2145 MHz	7.77	13	Pass
High Channel, 2172.5 MHz	7.80	13	Pass

16-QAM Modulation

Low Channel, 2117.5 MHz	7.80	13	Pass
Mid Channel, 2145 MHz	7.76	13	Pass
High Channel, 2172.5 MHz	7.80	13	Pass

64-QAM Modulation

Low Channel, 2117.5 MHz	7.75	13	Pass
Mid Channel, 2145 MHz	7.75	13	Pass
High Channel, 2172.5 MHz	7.80	13	Pass

256-QAM Modulation

Low Channel, 2117.5 MHz	7.79	13	Pass
Mid Channel, 2145 MHz	7.77	13	Pass
High Channel, 2172.5 MHz	7.82	13	Pass

20 MHz Bandwidth

QPSK Modulation

Low Channel, 2120 MHz	7.73	13	Pass
Mid Channel, 2145 MHz	7.70	13	Pass
High Channel, 2170 MHz	7.77	13	Pass

16-QAM Modulation

Low Channel, 2120 MHz	7.76	13	Pass
Mid Channel, 2145 MHz	7.72	13	Pass
High Channel, 2170 MHz	7.78	13	Pass

64-QAM Modulation

Low Channel, 2120 MHz	7.72	13	Pass
Mid Channel, 2145 MHz	7.67	13	Pass
High Channel, 2170 MHz	7.73	13	Pass

256-QAM Modulation

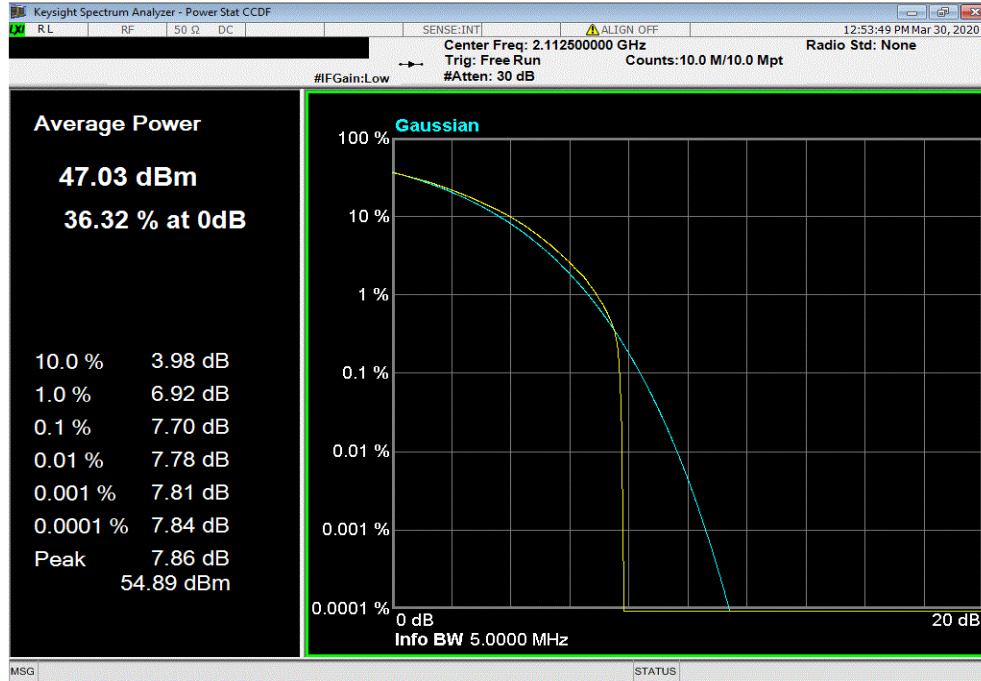
Low Channel, 2120 MHz	7.77	13	Pass
Mid Channel, 2145 MHz	7.71	13	Pass
High Channel, 2170 MHz	7.78	13	Pass

PEAK TO AVERAGE POWER (PAPR) BAND 66a

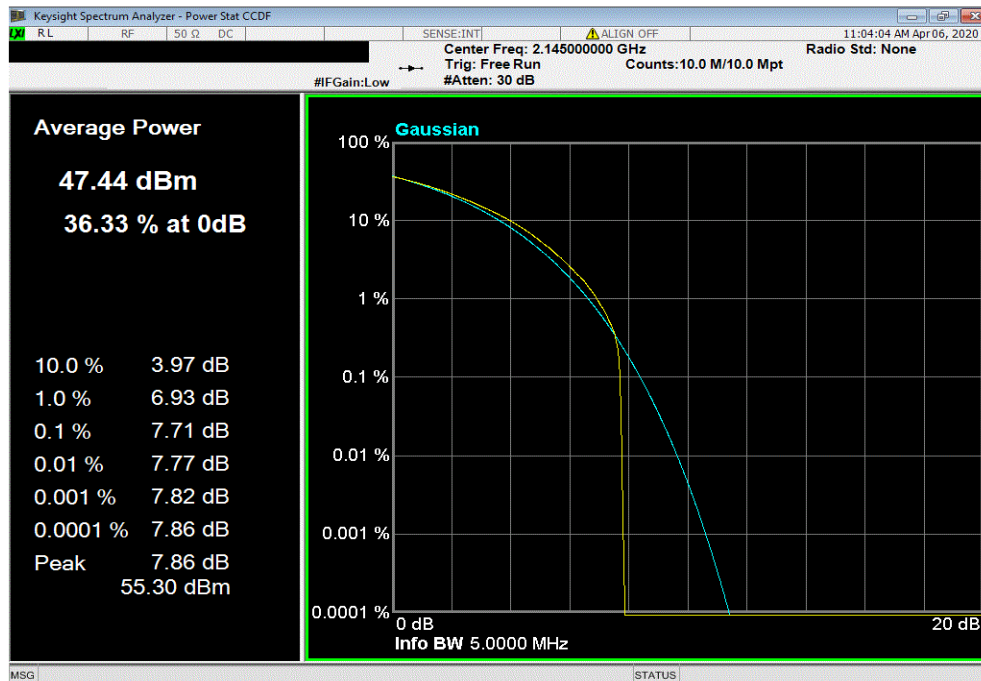


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Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 5 MHz Bandwidth, QPSK Modulation , Low Channel, 2112.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.7	13	Pass



Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 5 MHz Bandwidth, QPSK Modulation , Mid Channel, 2145 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.71	13	Pass

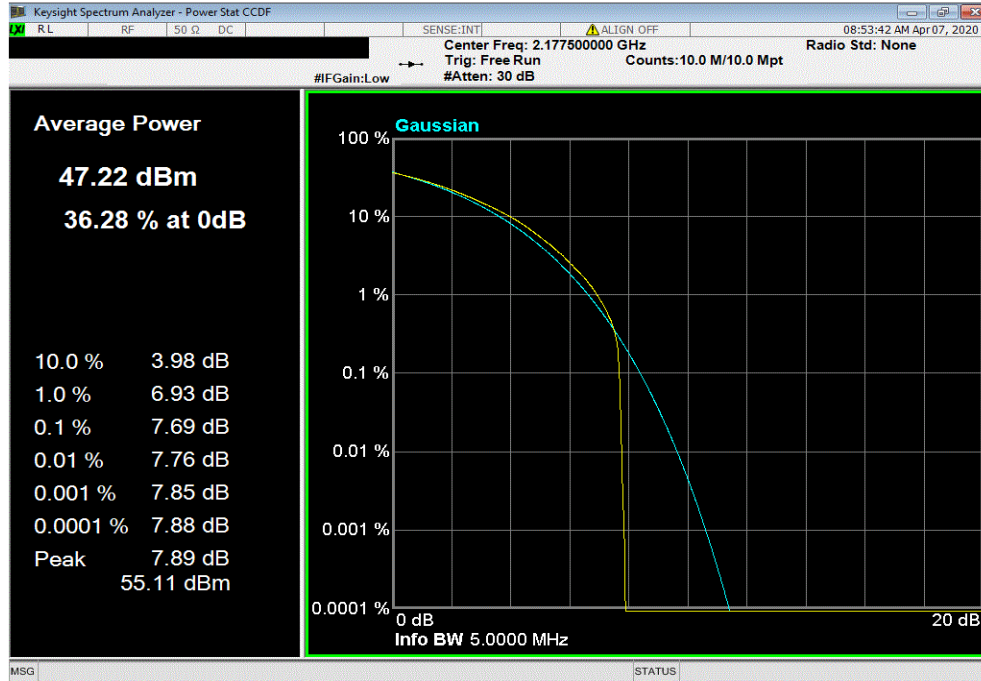


PEAK TO AVERAGE POWER (PAPR) BAND 66a

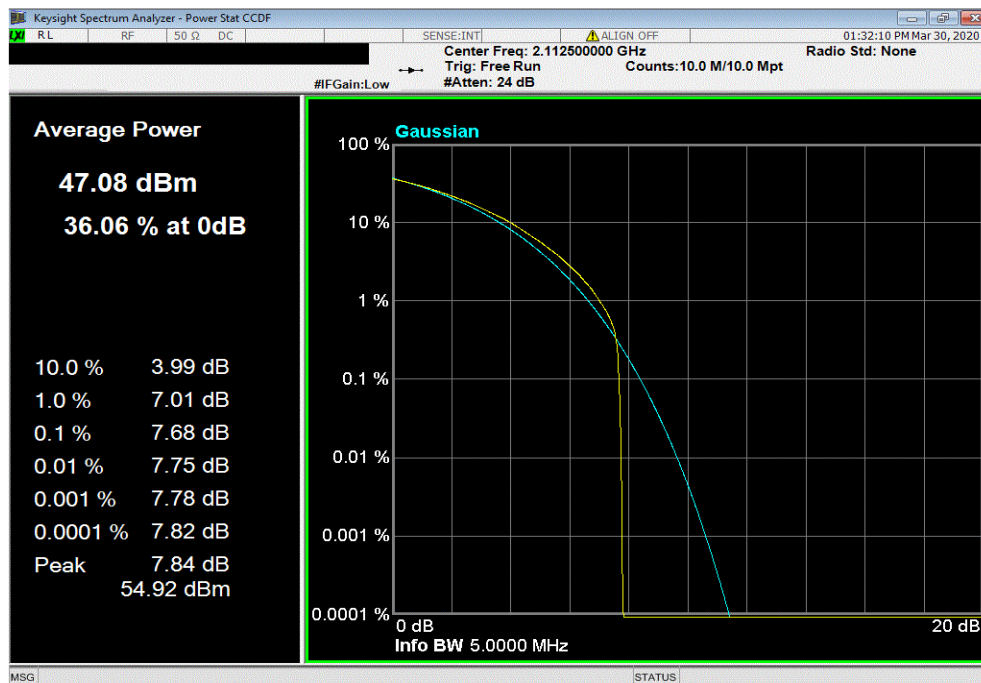


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Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 5 MHz Bandwidth, QPSK Modulation , High Channel, 2177.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.69	13	Pass



Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 5 MHz Bandwidth, 16-QAM Modulation, Low Channel, 2112.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.68	13	Pass

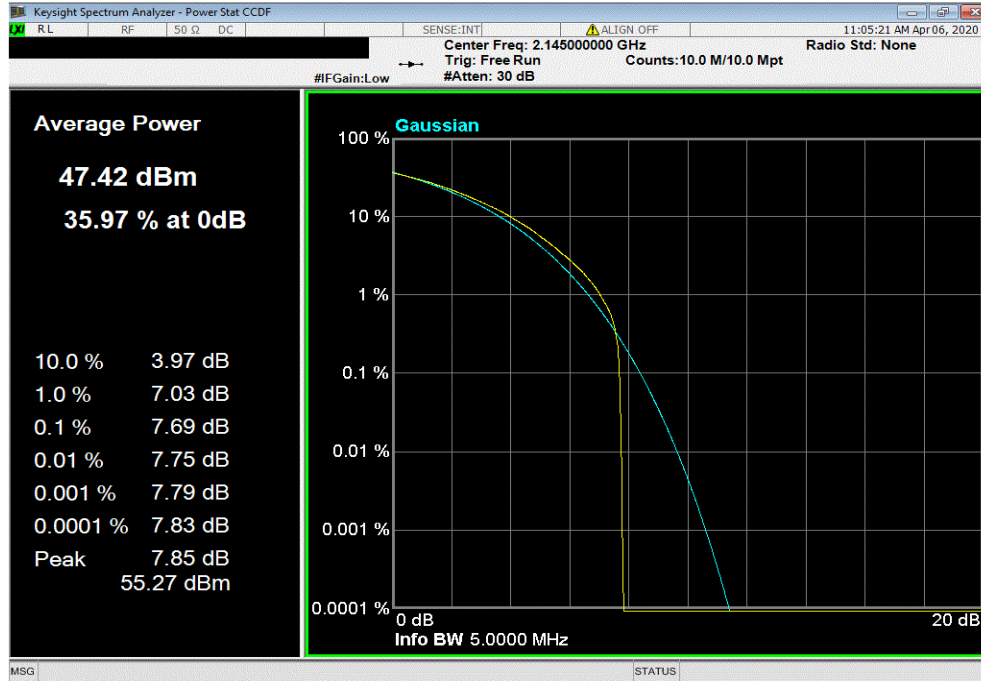


PEAK TO AVERAGE POWER (PAPR) BAND 66a

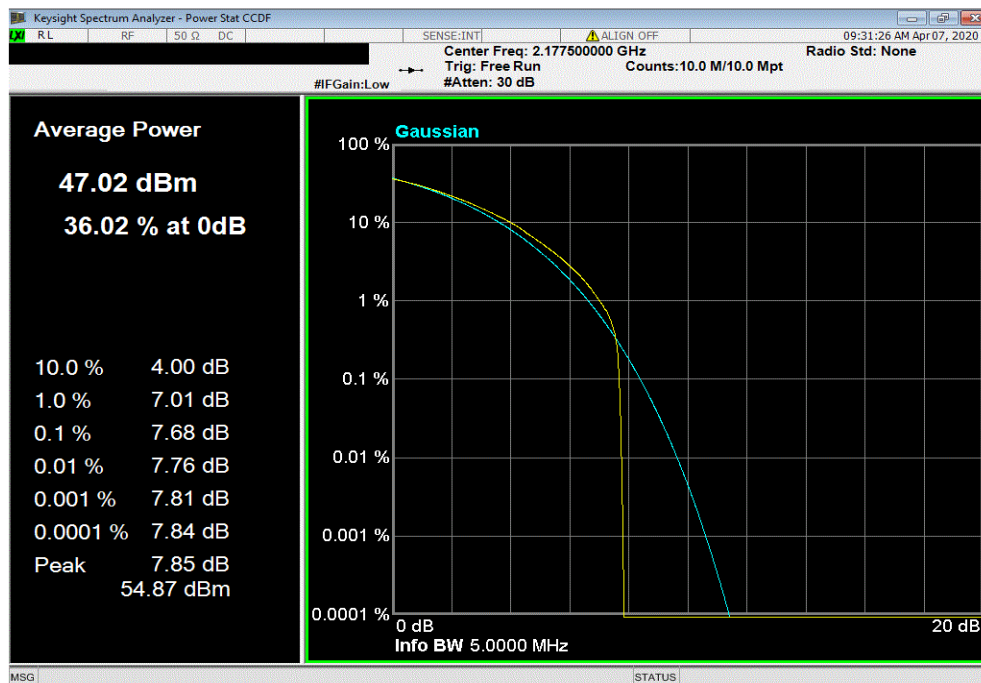


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Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 5 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2145 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.69	13	Pass



Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 5 MHz Bandwidth, 16-QAM Modulation, High Channel, 2177.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.68	13	Pass

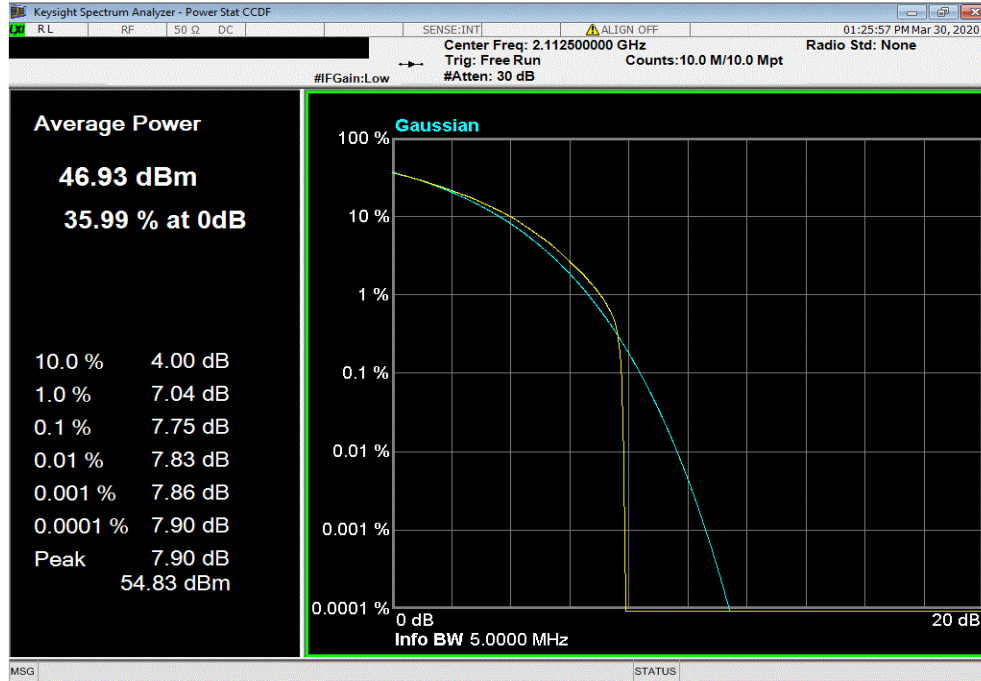


PEAK TO AVERAGE POWER (PAPR) BAND 66a

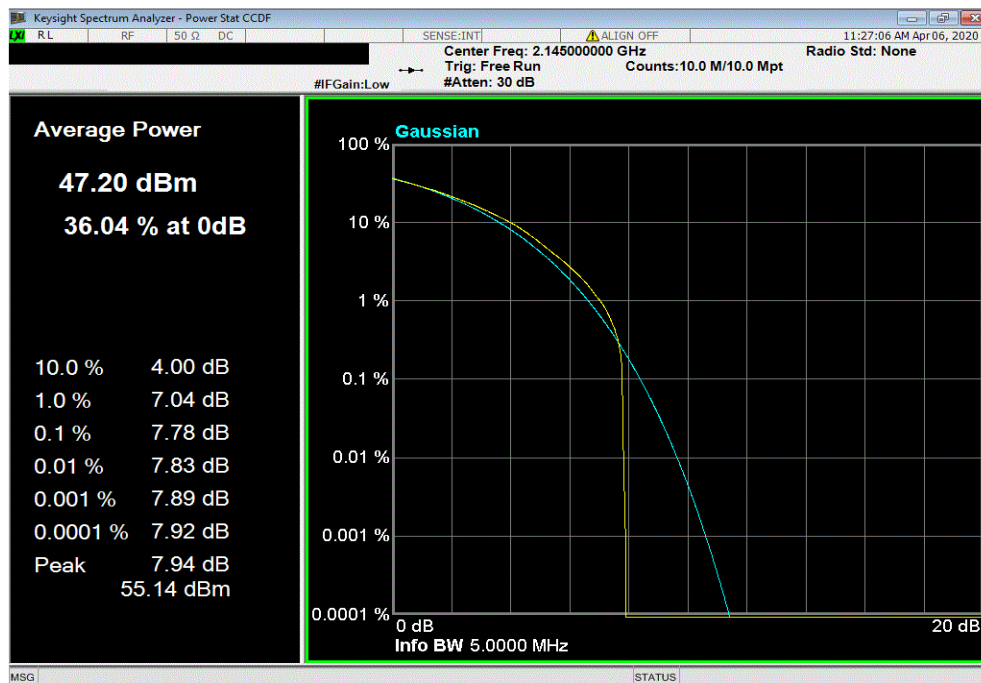


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Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 5 MHz Bandwidth, 64-QAM Modulation, Low Channel, 2112.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.75	13	Pass

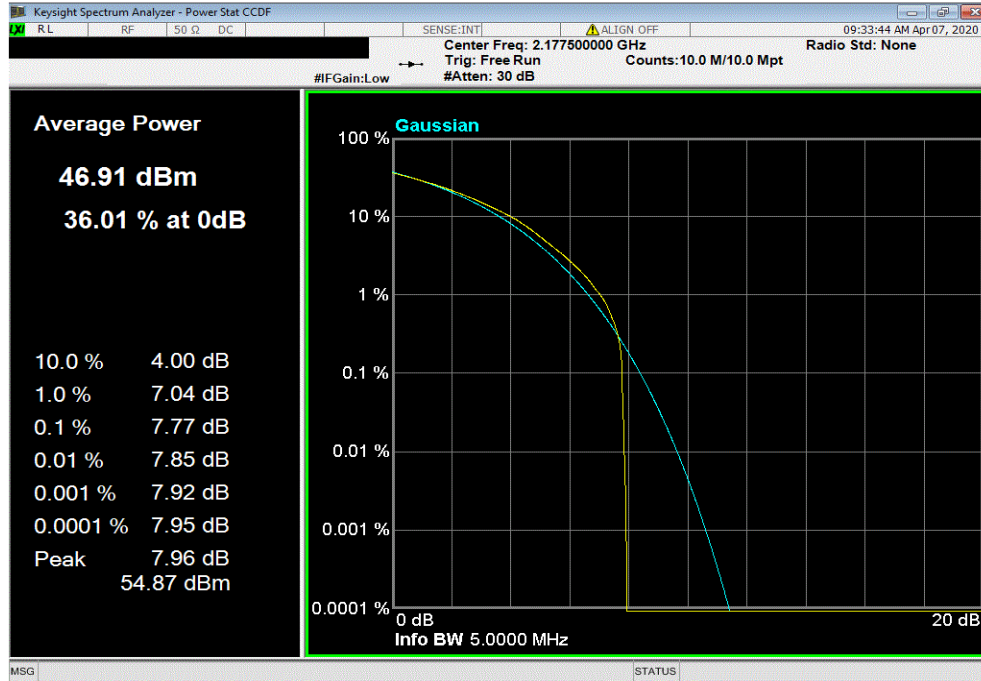


Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 5 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2145 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.78	13	Pass

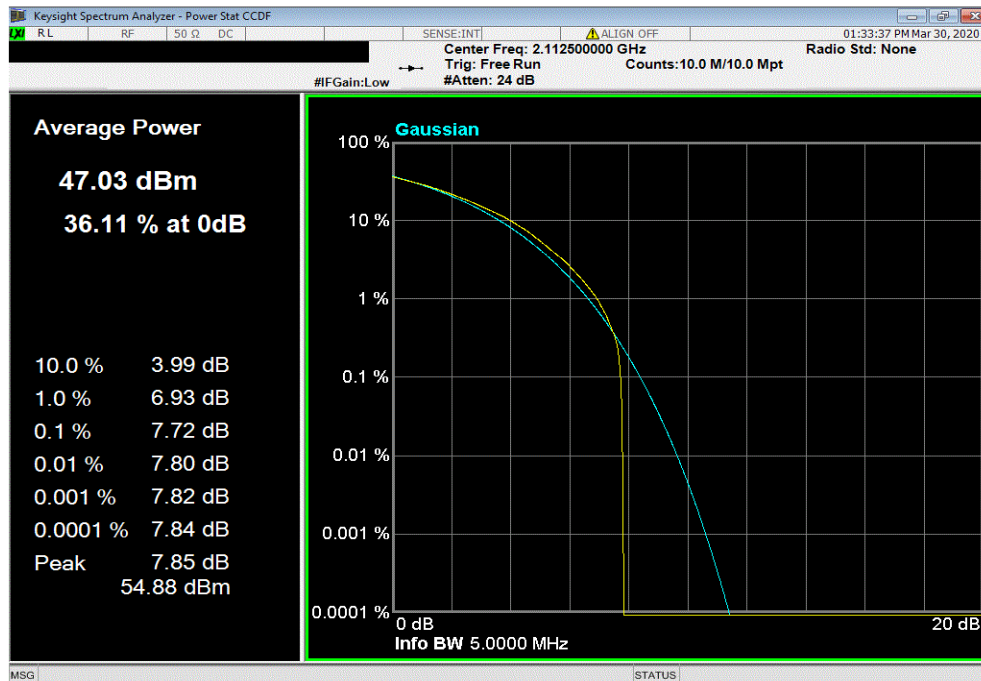


PEAK TO AVERAGE POWER (PAPR) BAND 66a

Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 5 MHz Bandwidth, 64-QAM Modulation, High Channel, 2177.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.77	13	Pass

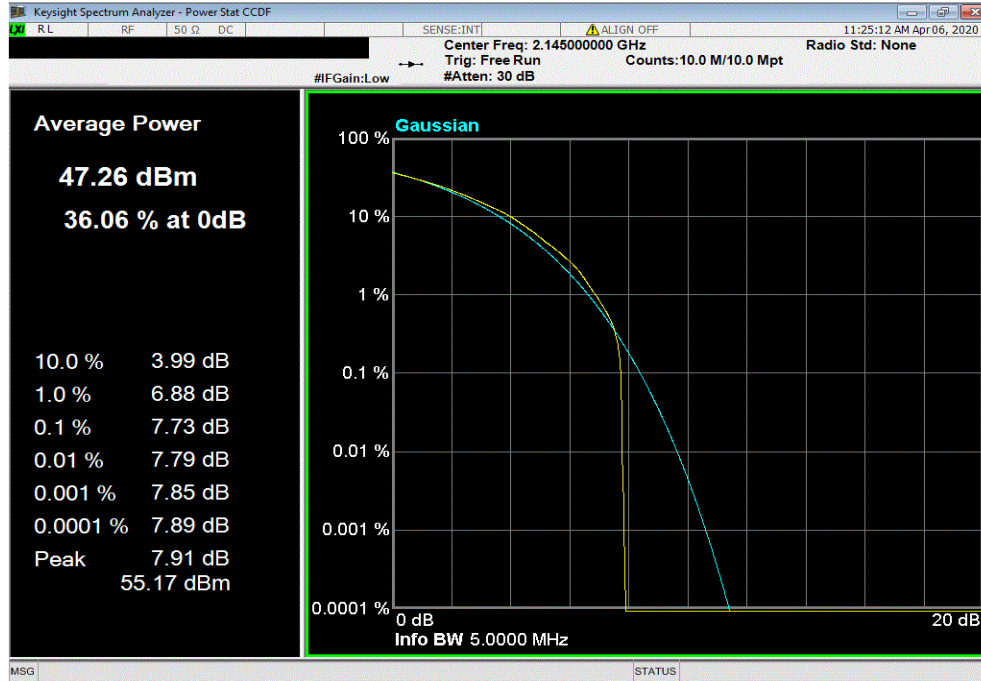


Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 5 MHz Bandwidth, 256-QAM Modulation, Low Channel, 2112.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.72	13	Pass

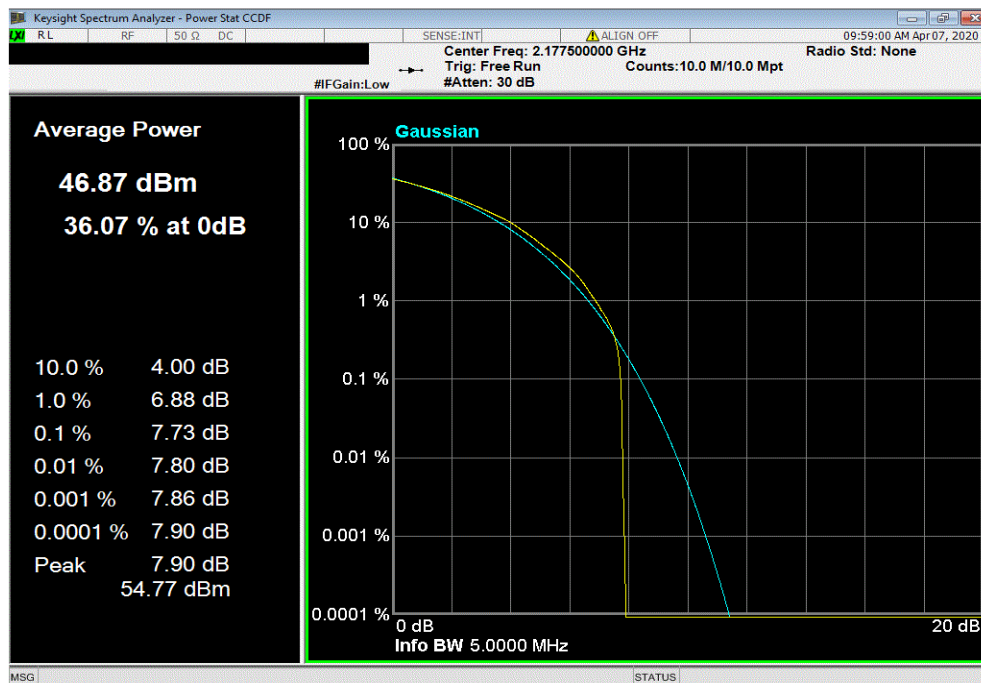


PEAK TO AVERAGE POWER (PAPR) BAND 66a

Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 5 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2145 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.73	13	Pass			

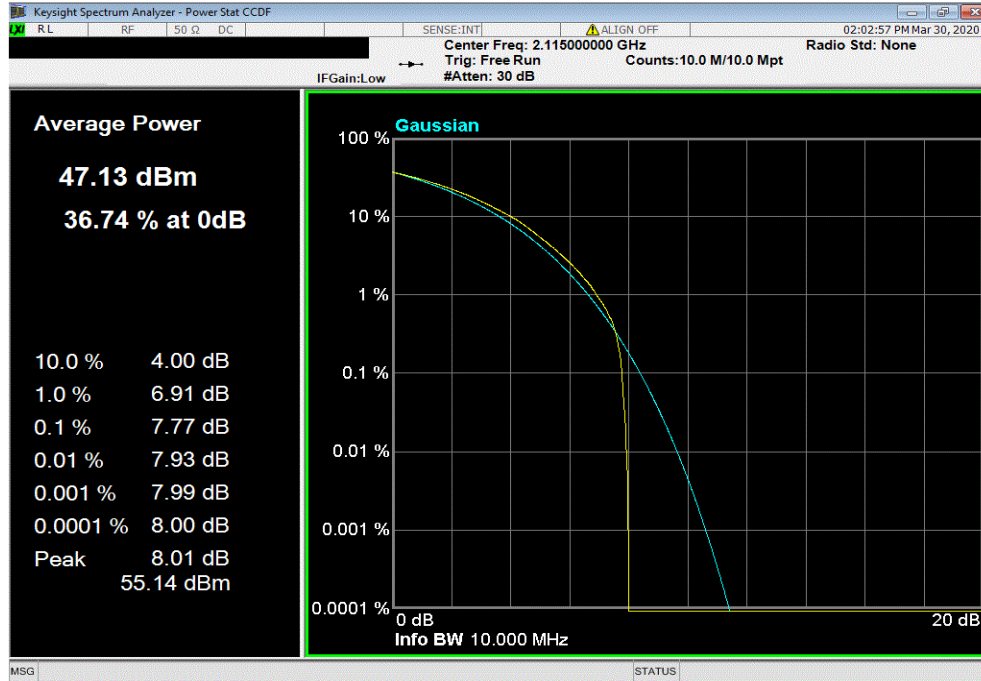


Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 5 MHz Bandwidth, 256-QAM Modulation, High Channel, 2177.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.73	13	Pass			

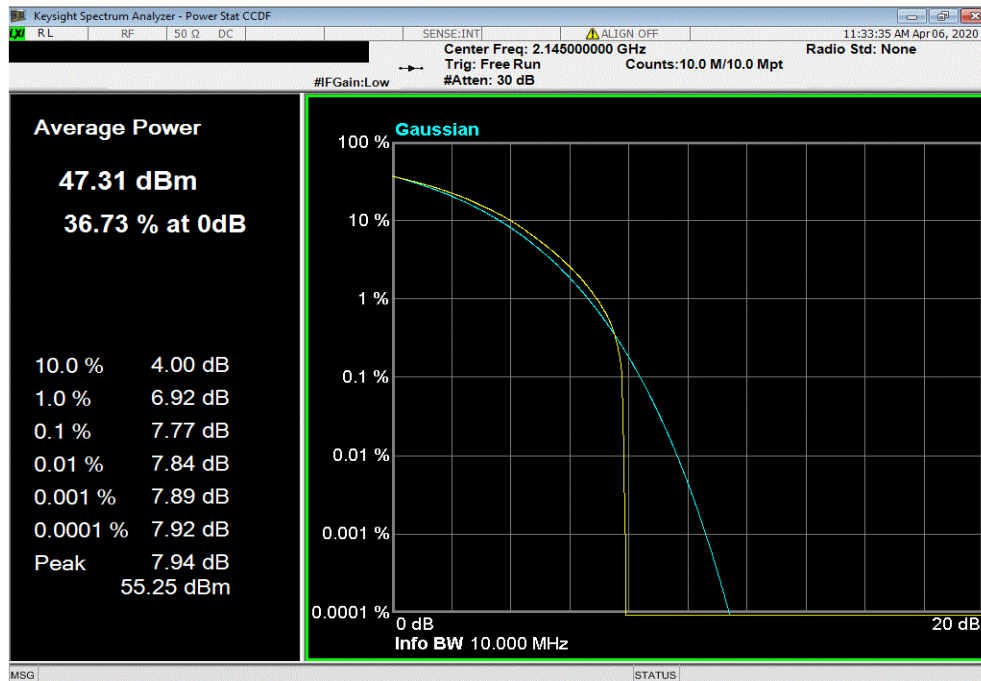


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Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 10 MHz Bandwidth, QPSK Modulation , Low Channel, 2115.0 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.77	13	Pass			

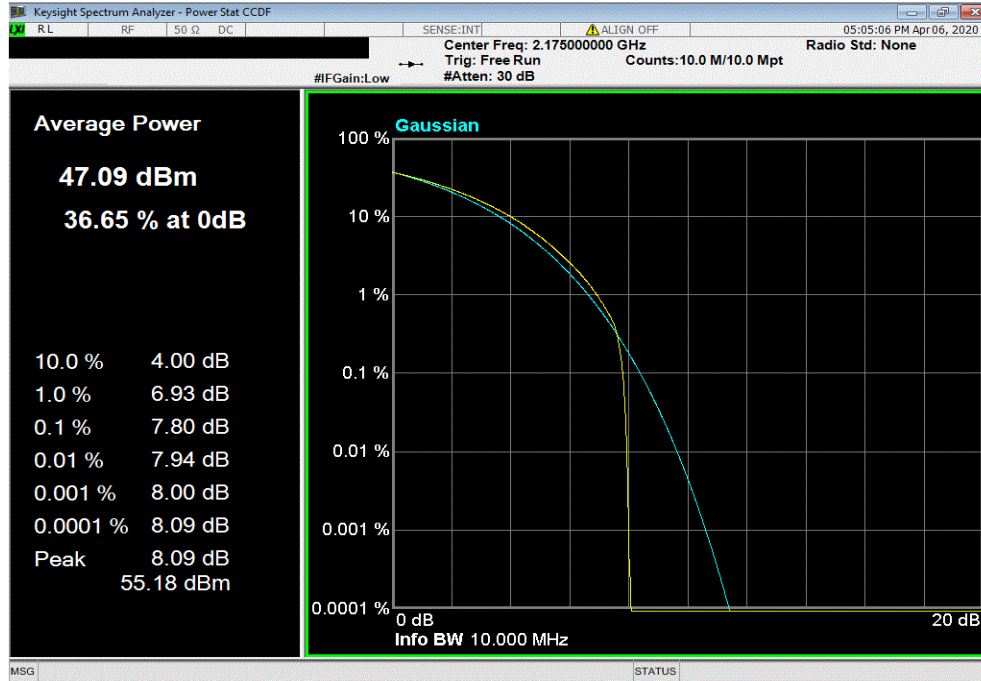


Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 10 MHz Bandwidth, QPSK Modulation , Mid Channel, 2145 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.77	13	Pass			

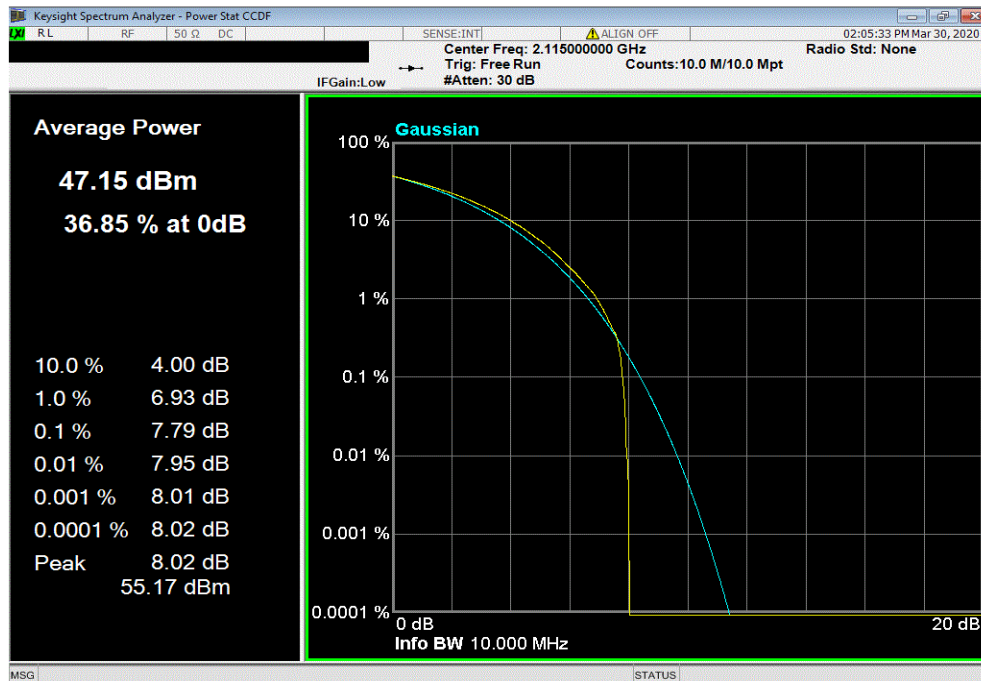


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Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 10 MHz Bandwidth, QPSK Modulation, High Channel, 2175 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.8	13	Pass			

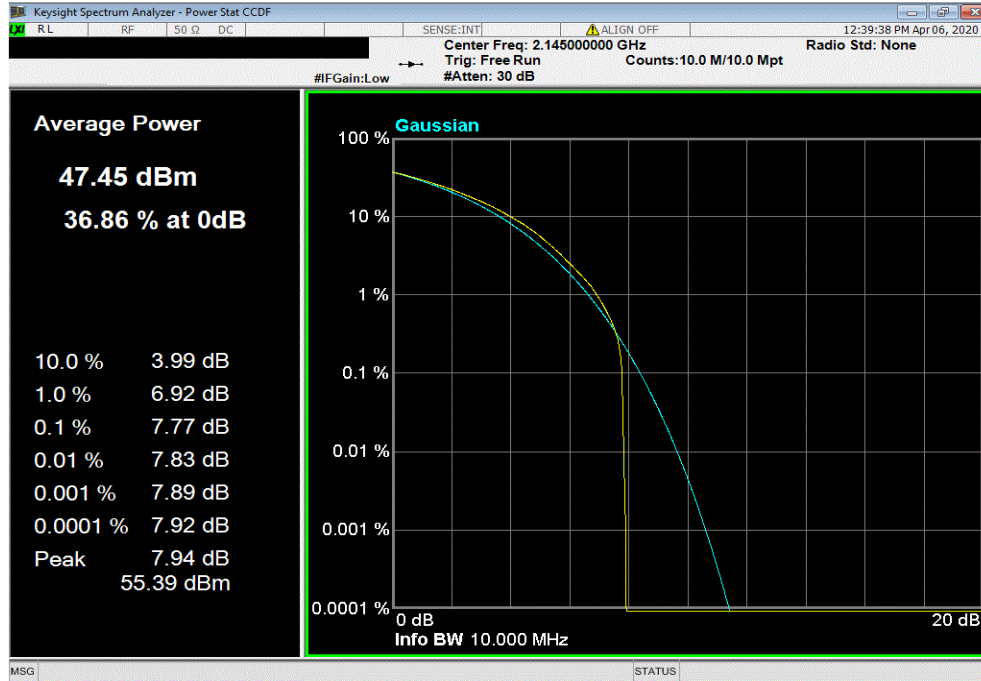


Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 10 MHz Bandwidth, 16-QAM Modulation, Low Channel, 2115.0 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.79	13	Pass			

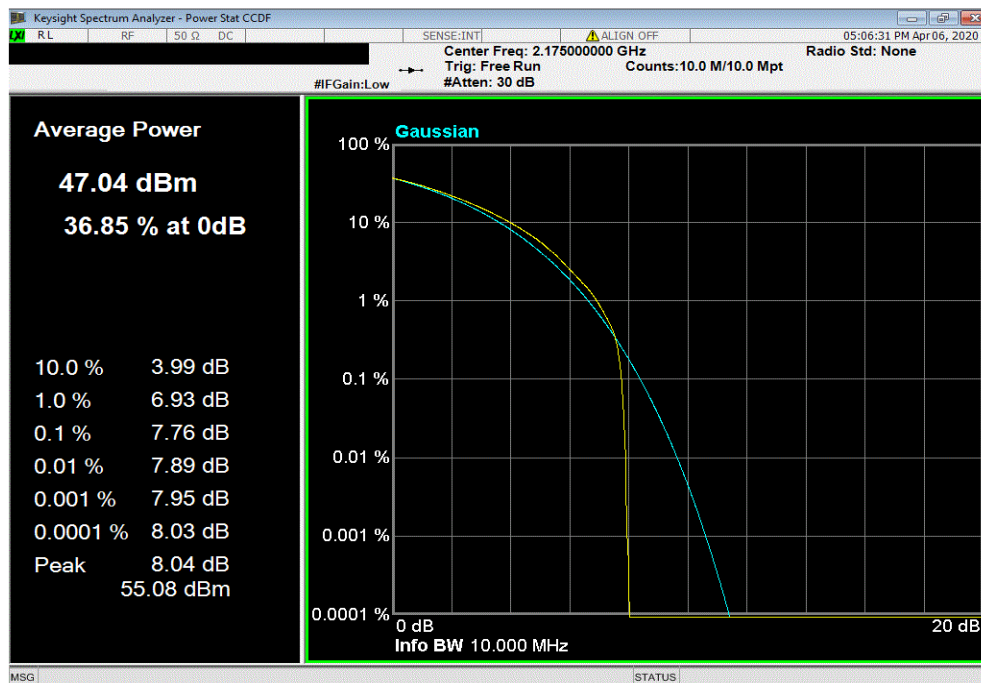


PEAK TO AVERAGE POWER (PAPR) BAND 66a

Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2145 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.77	13	Pass			

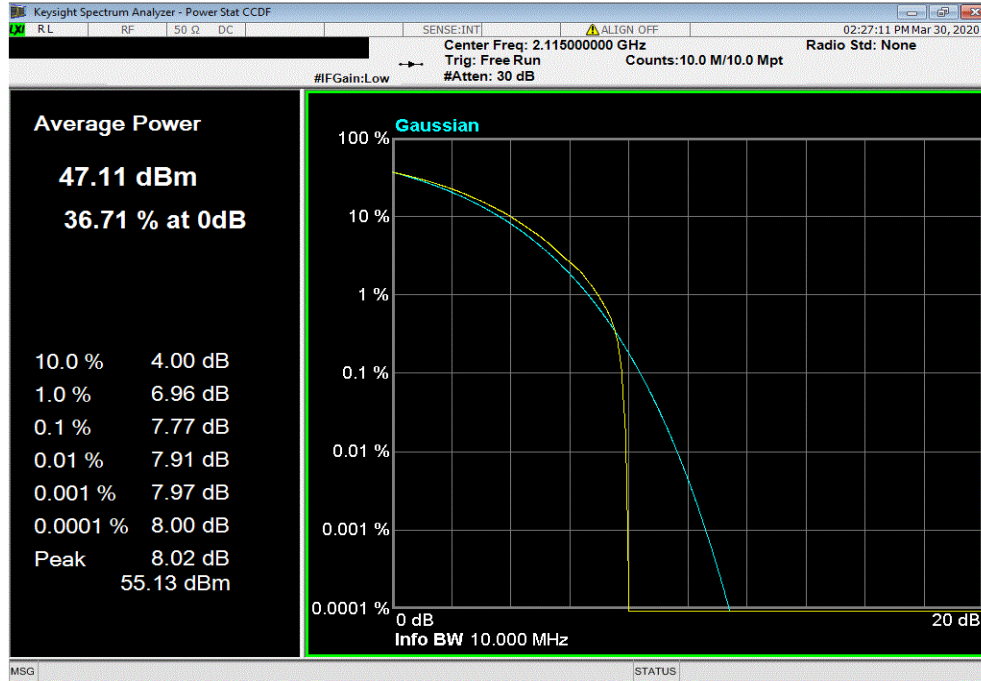


Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 10 MHz Bandwidth, 16-QAM Modulation, High Channel, 2175 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.76	13	Pass			

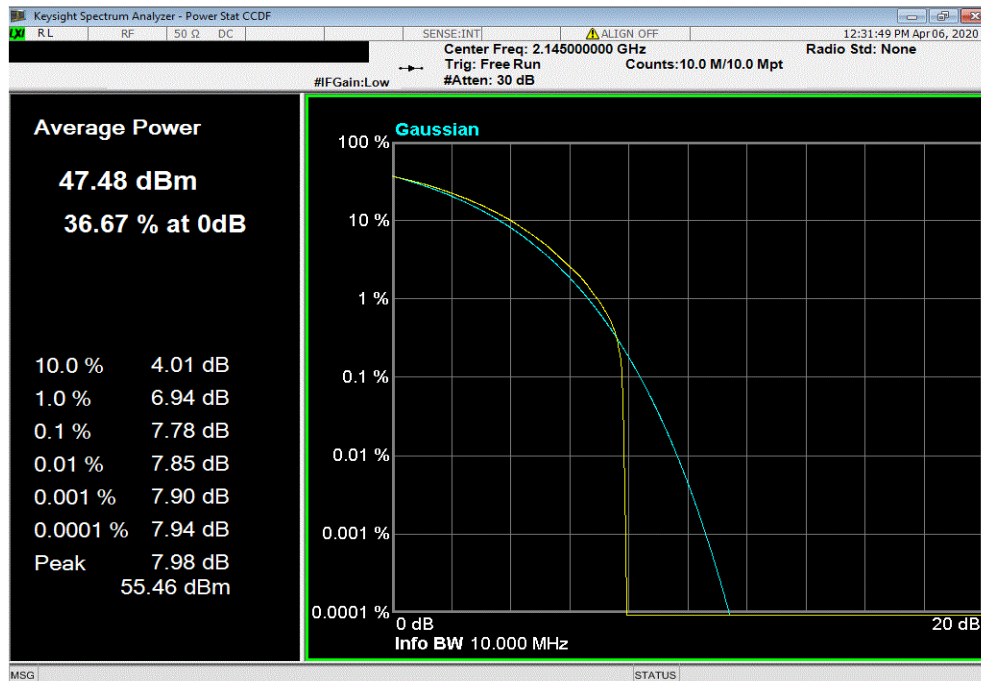


PEAK TO AVERAGE POWER (PAPR) BAND 66a

Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 10 MHz Bandwidth, 64-QAM Modulation, Low Channel, 2115.0 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.77	13	Pass

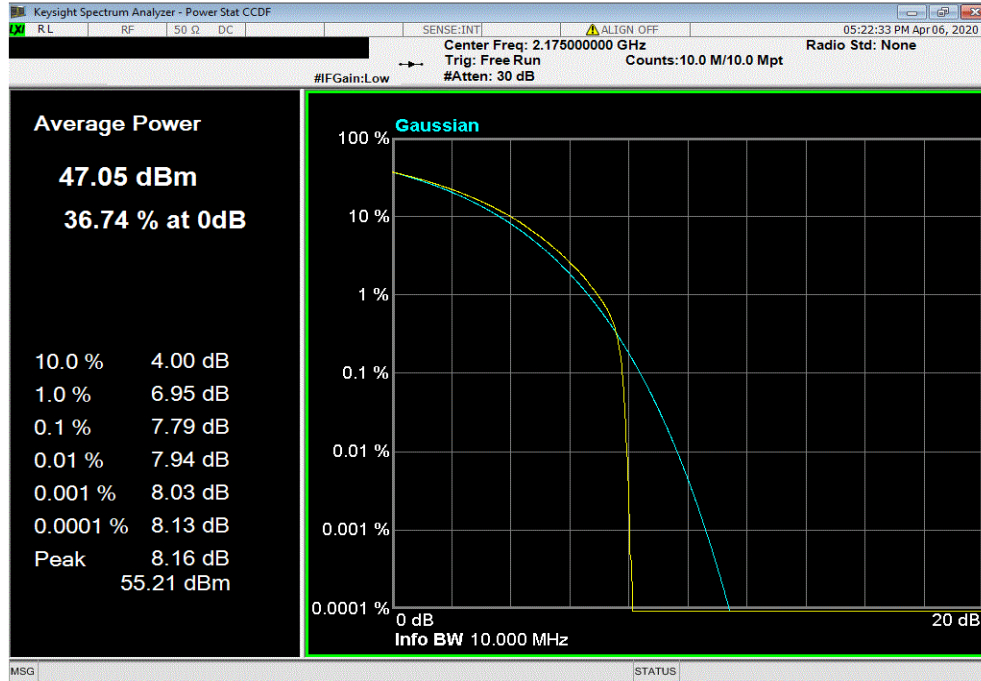


Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 10 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2145 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.78	13	Pass

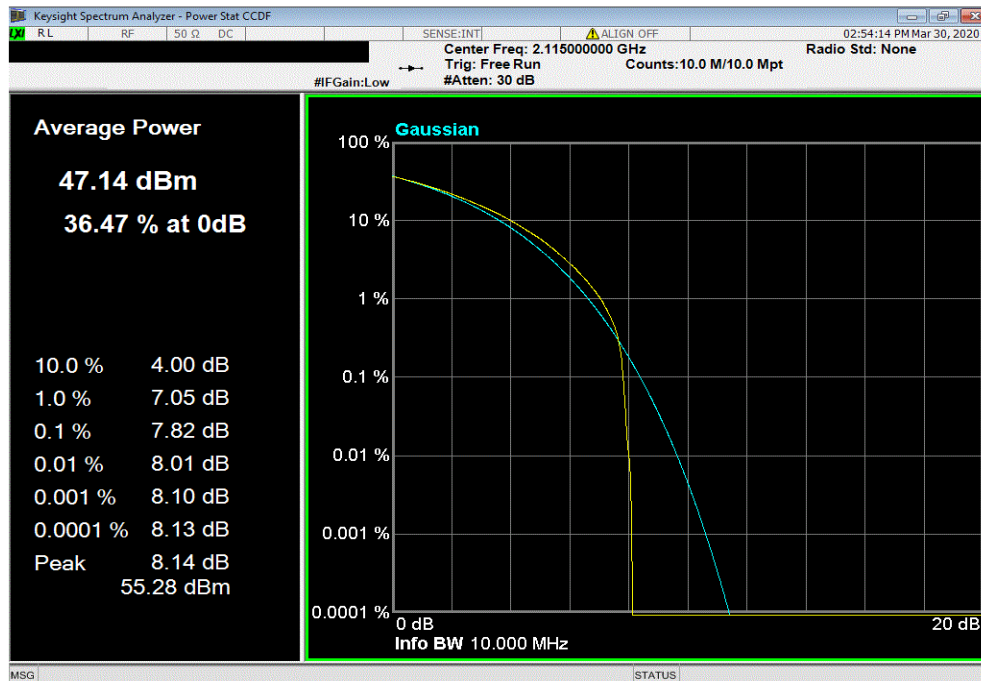


PEAK TO AVERAGE POWER (PAPR) BAND 66a

Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 10 MHz Bandwidth, 64-QAM Modulation, High Channel, 2175 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.79	13	Pass			

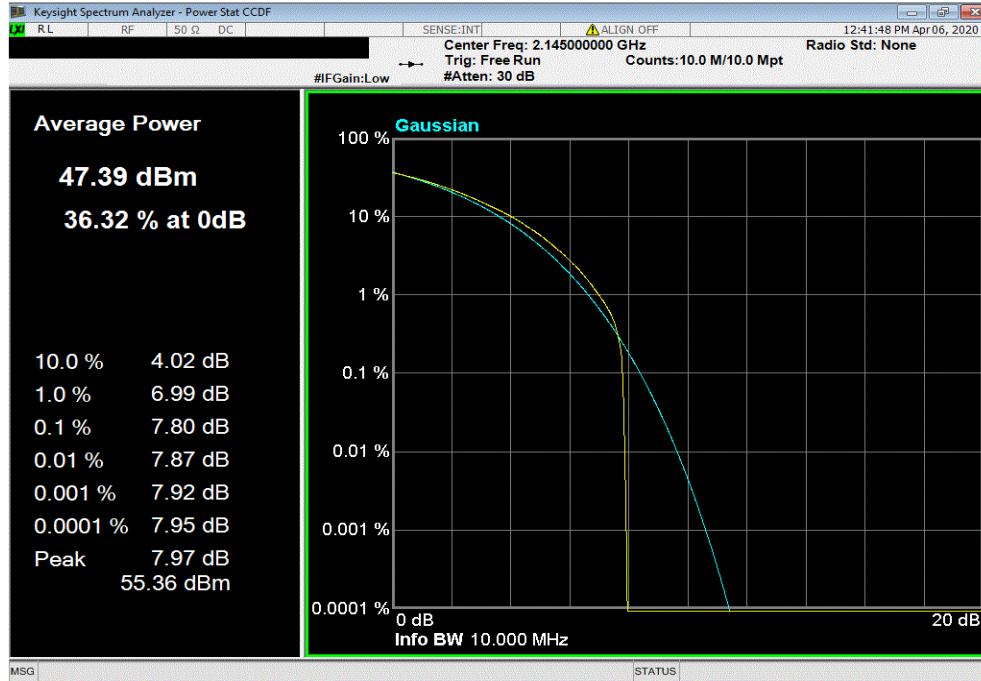


Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 10 MHz Bandwidth, 256-QAM Modulation, Low Channel, 2115.0 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.82	13	Pass			

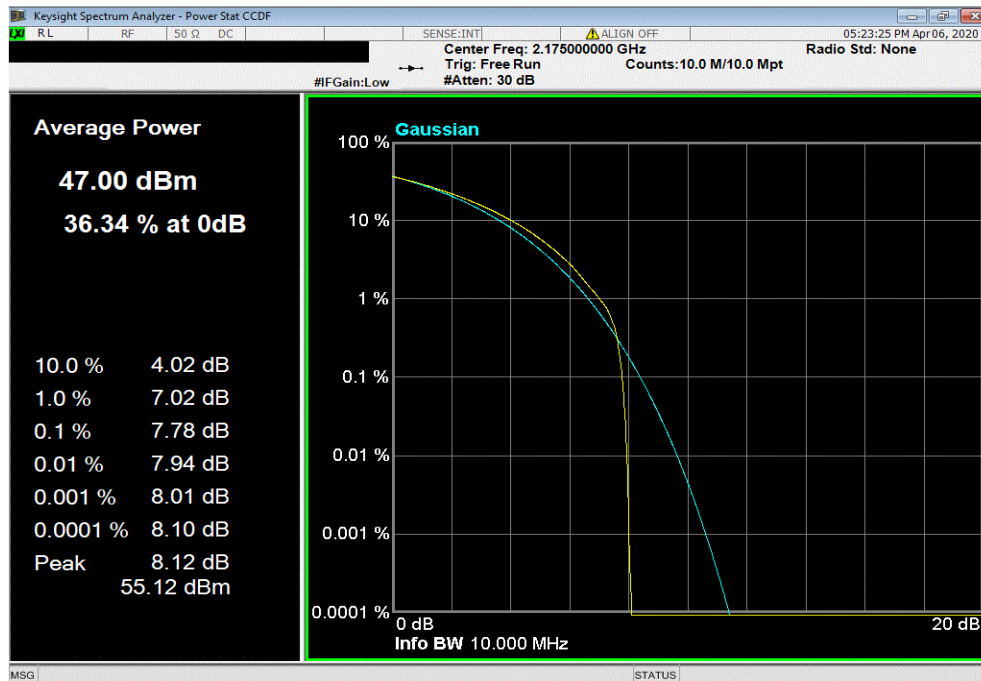


PEAK TO AVERAGE POWER (PAPR) BAND 66a

Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2145 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.8	13	Pass

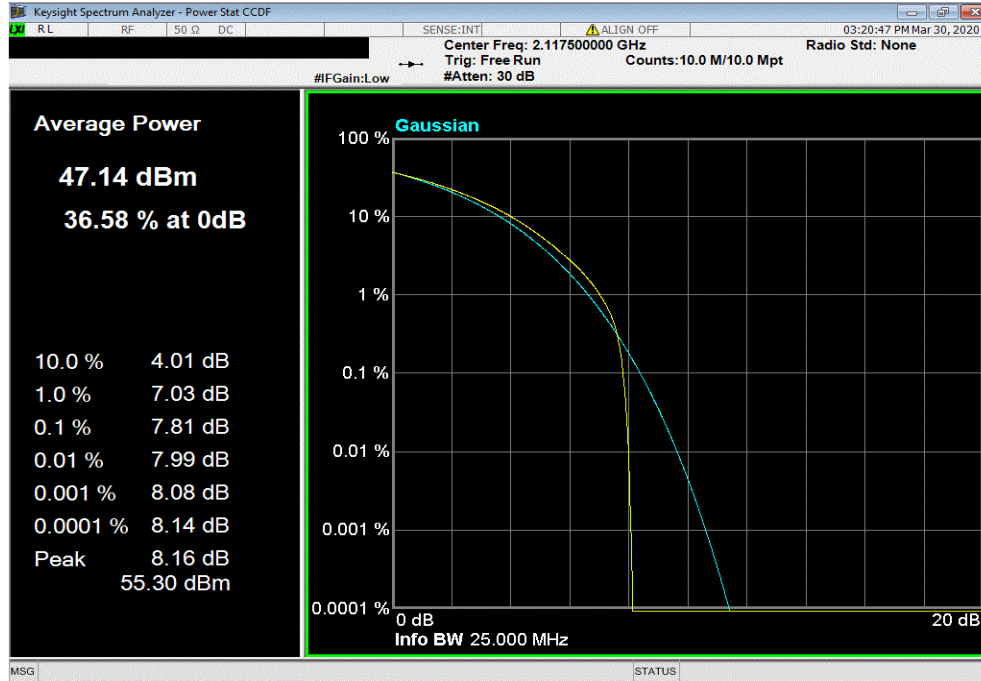


Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 10 MHz Bandwidth, 256-QAM Modulation, High Channel, 2175 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.78	13	Pass

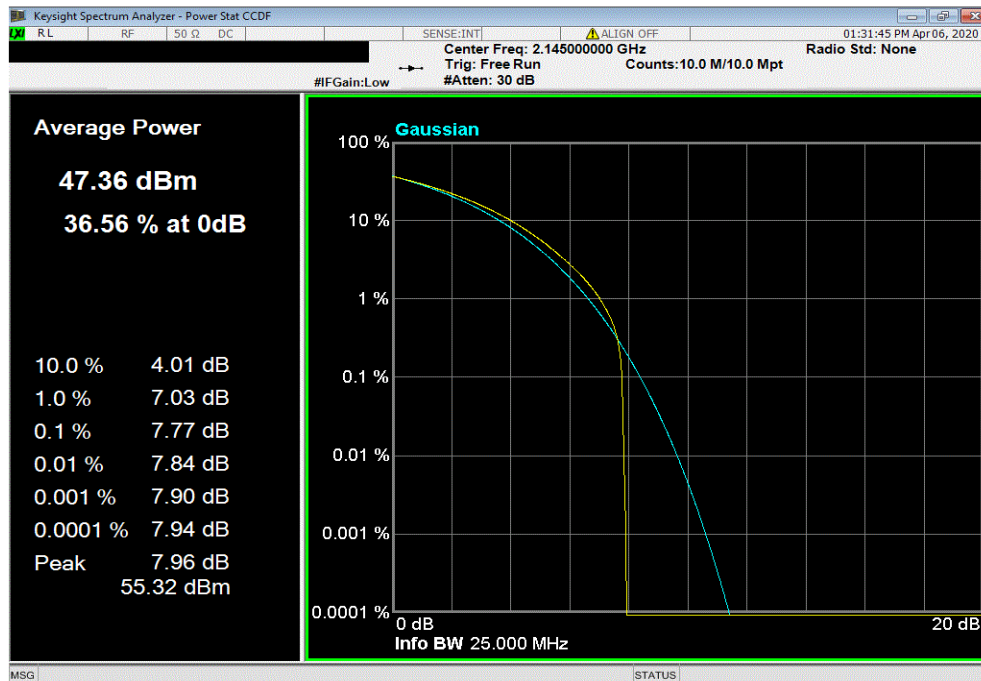


PEAK TO AVERAGE POWER (PAPR) BAND 66a

Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 15 MHz Bandwidth, QPSK Modulation , Low Channel, 2117.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.81	13	Pass

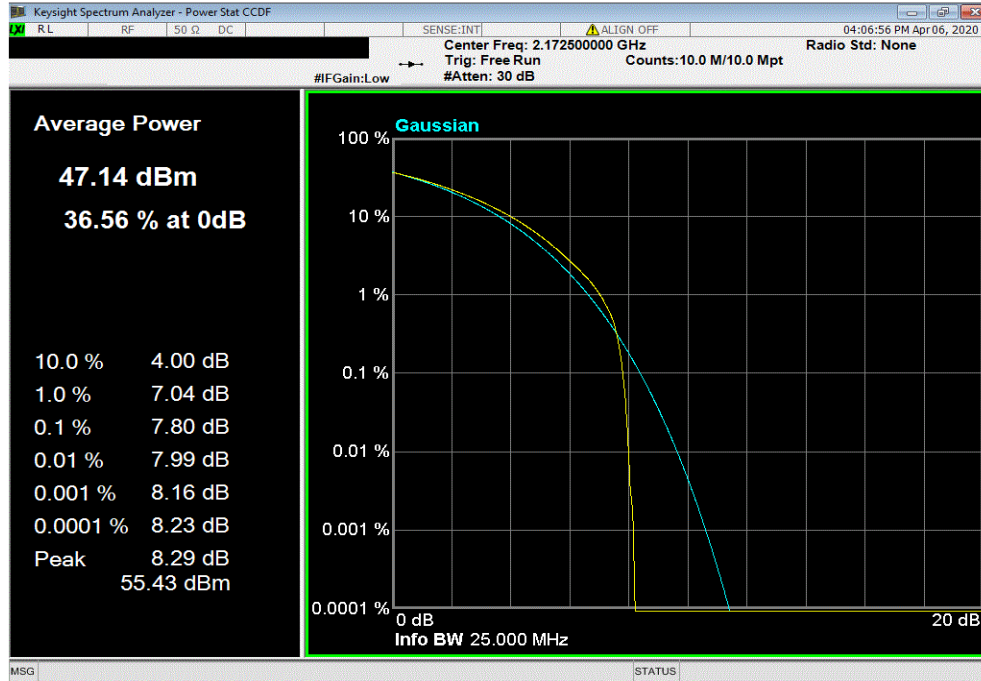


Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 15 MHz Bandwidth, QPSK Modulation , Mid Channel, 2145 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.77	13	Pass

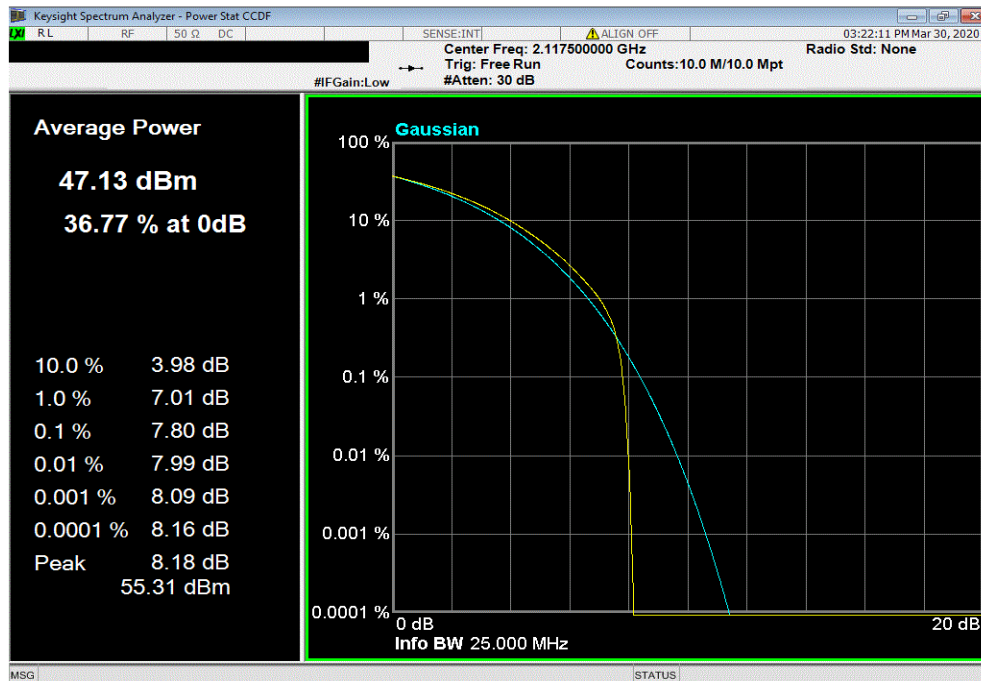


PEAK TO AVERAGE POWER (PAPR) BAND 66a

Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 15 MHz Bandwidth, QPSK Modulation, High Channel, 2172.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.8	13	Pass			

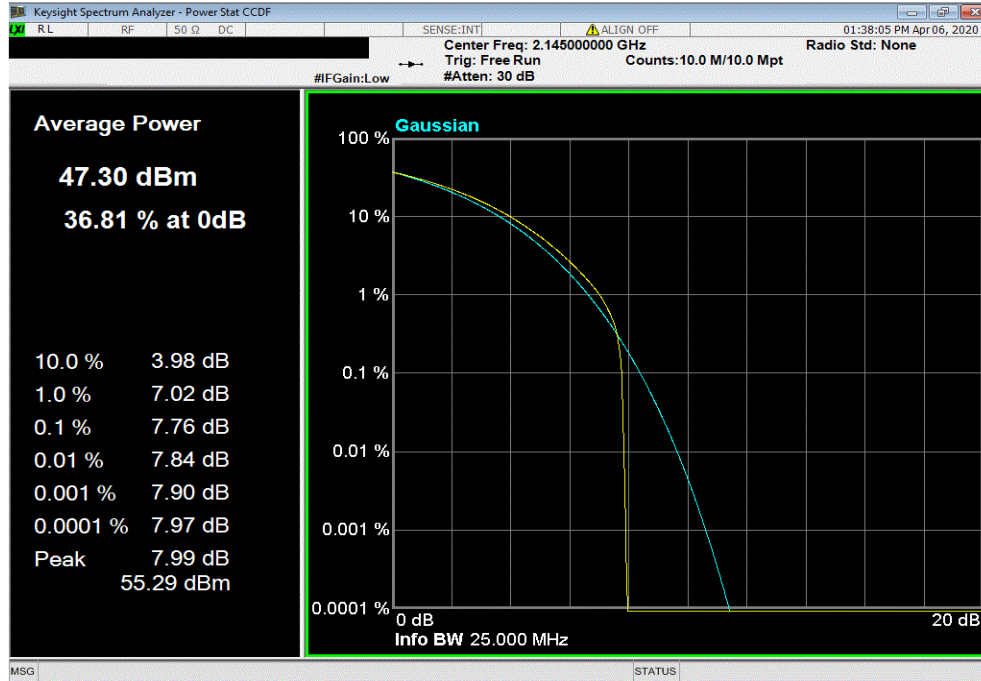


Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 15 MHz Bandwidth, 16-QAM Modulation, Low Channel, 2117.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.8	13	Pass			

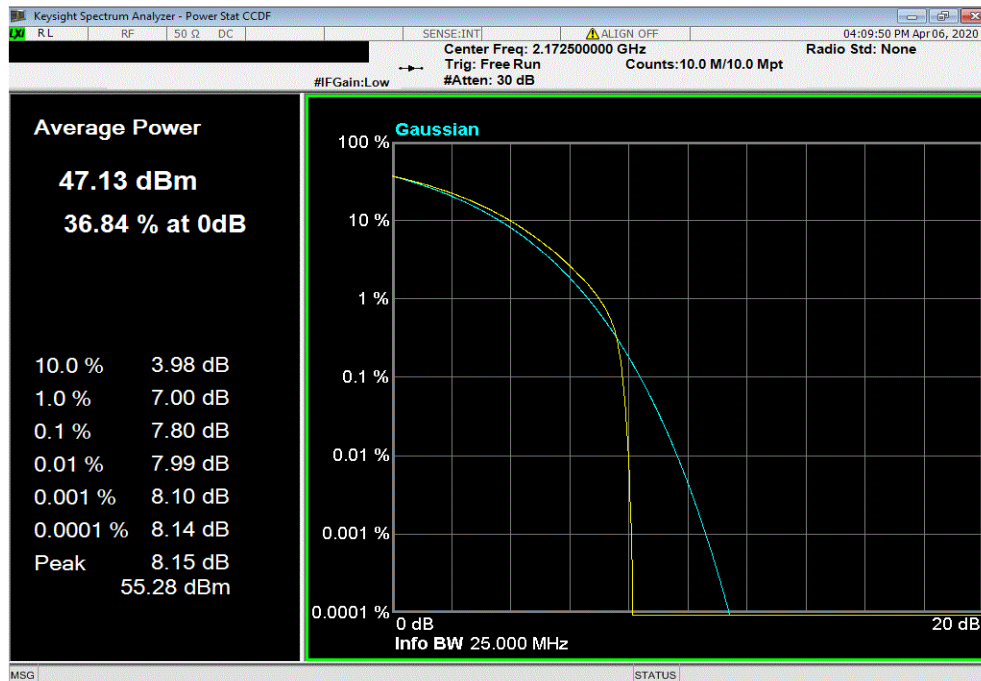


PEAK TO AVERAGE POWER (PAPR) BAND 66a

Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 15 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2145 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.76	13	Pass			

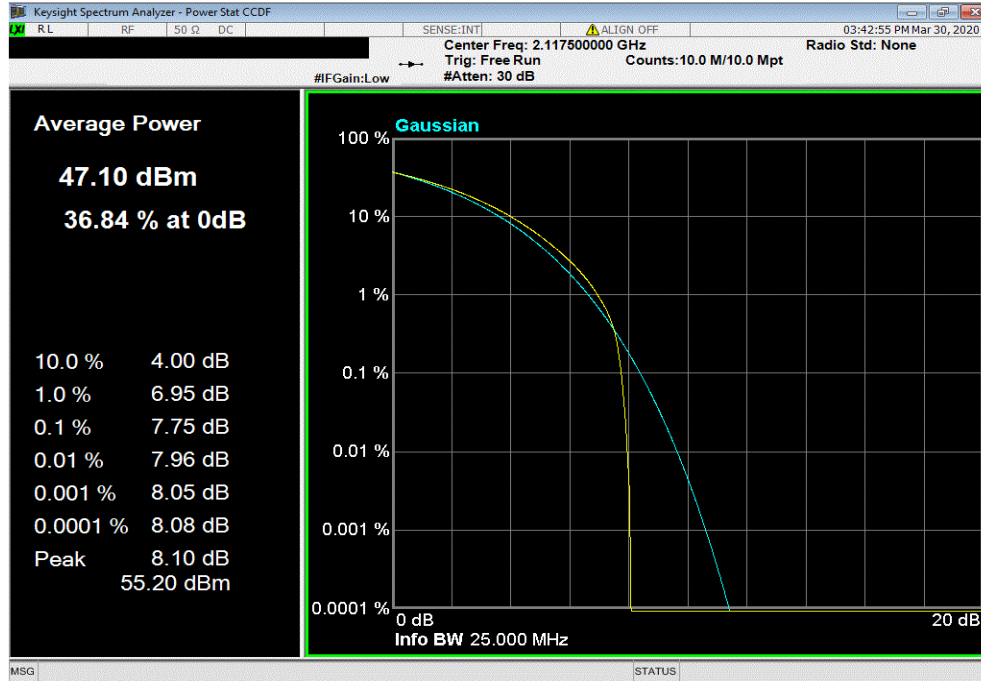


Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 15 MHz Bandwidth, 16-QAM Modulation, High Channel, 2172.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.8	13	Pass			

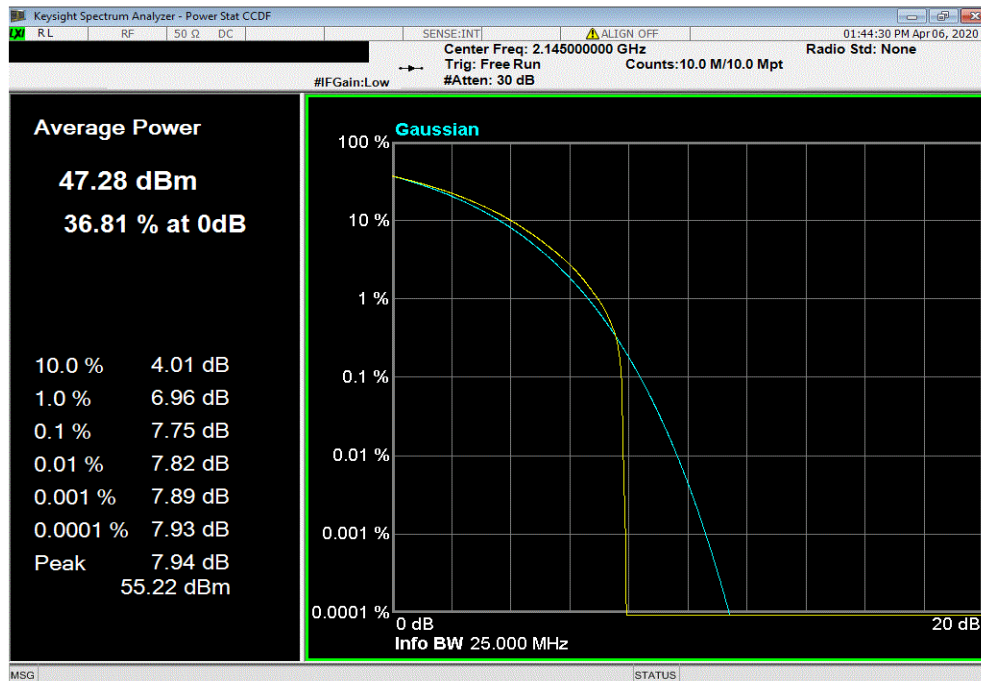


PEAK TO AVERAGE POWER (PAPR) BAND 66a

Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 15 MHz Bandwidth, 64-QAM Modulation, Low Channel, 2117.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.75	13	Pass			

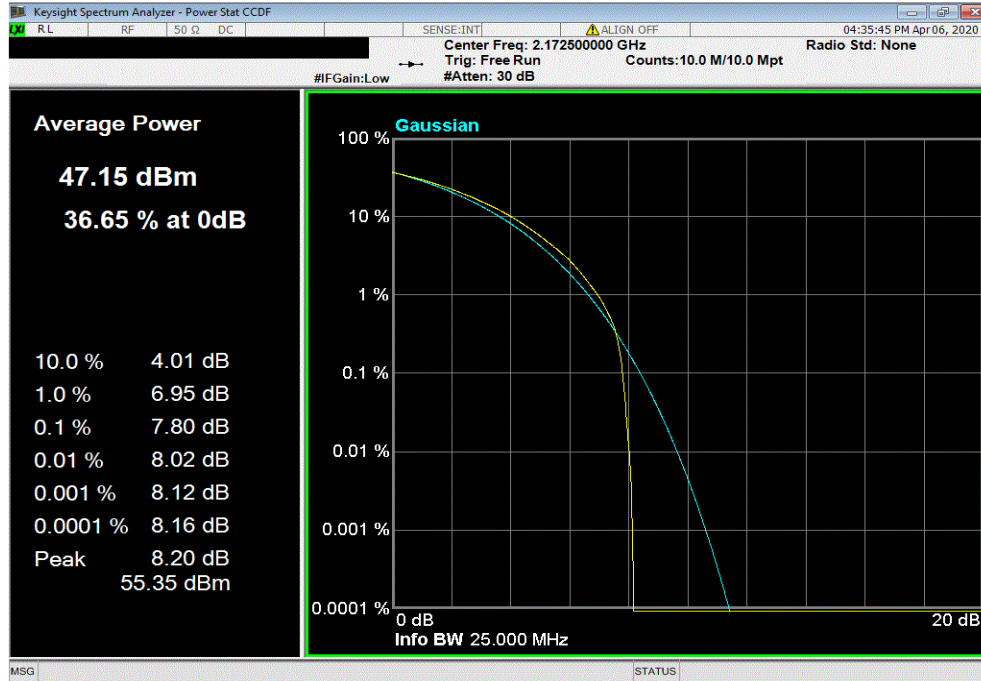


Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 15 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2145 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.75	13	Pass			

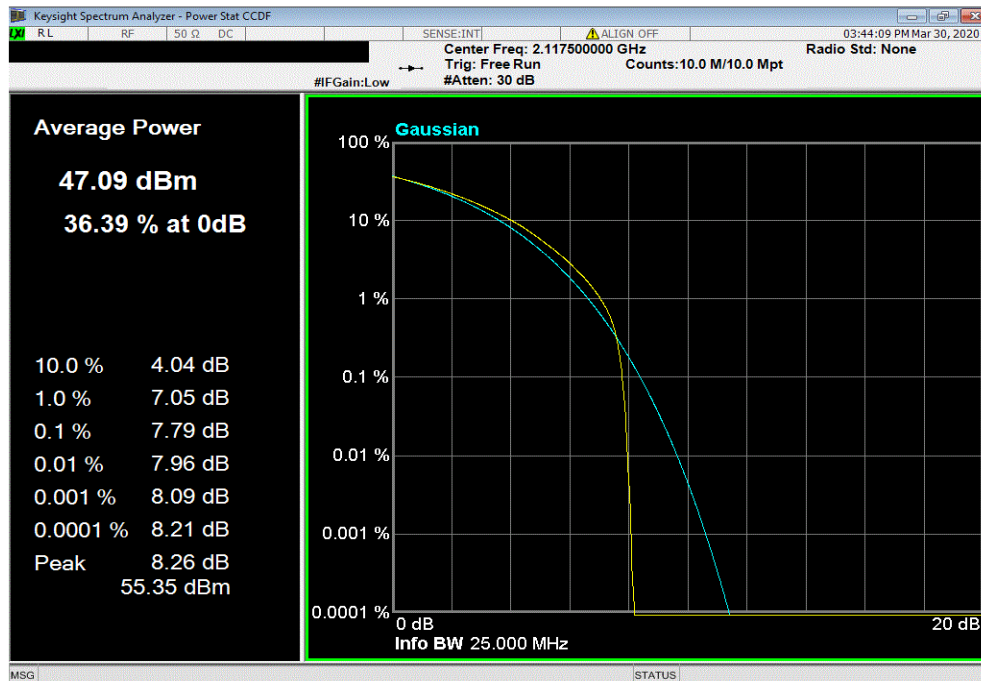


PEAK TO AVERAGE POWER (PAPR) BAND 66a

Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 15 MHz Bandwidth, 64-QAM Modulation, High Channel, 2172.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.8	13	Pass

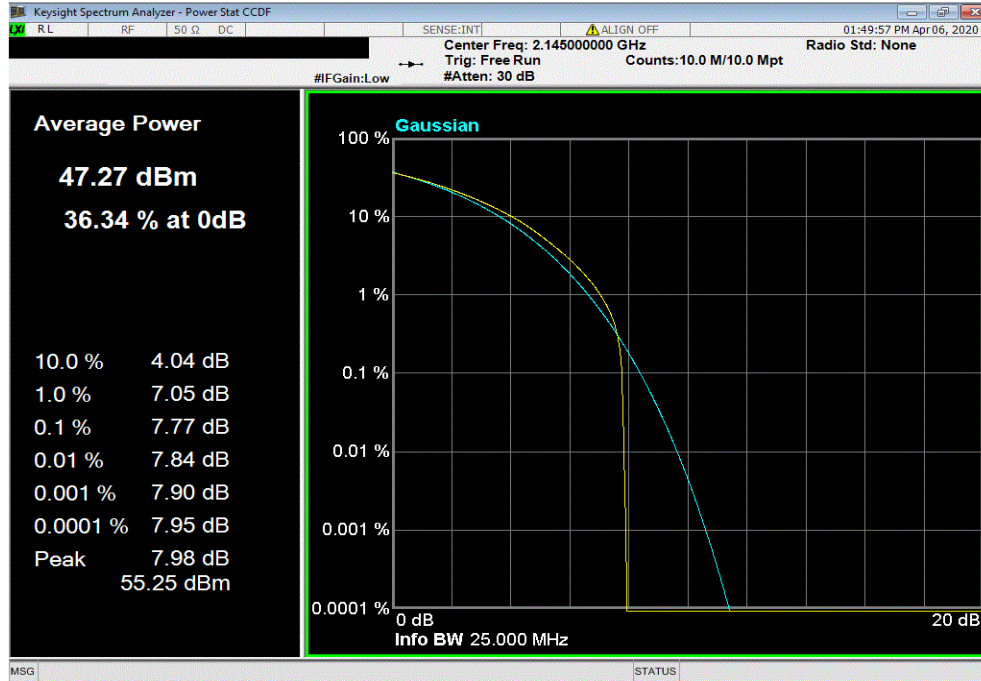


Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 15 MHz Bandwidth, 256-QAM Modulation, Low Channel, 2117.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.79	13	Pass

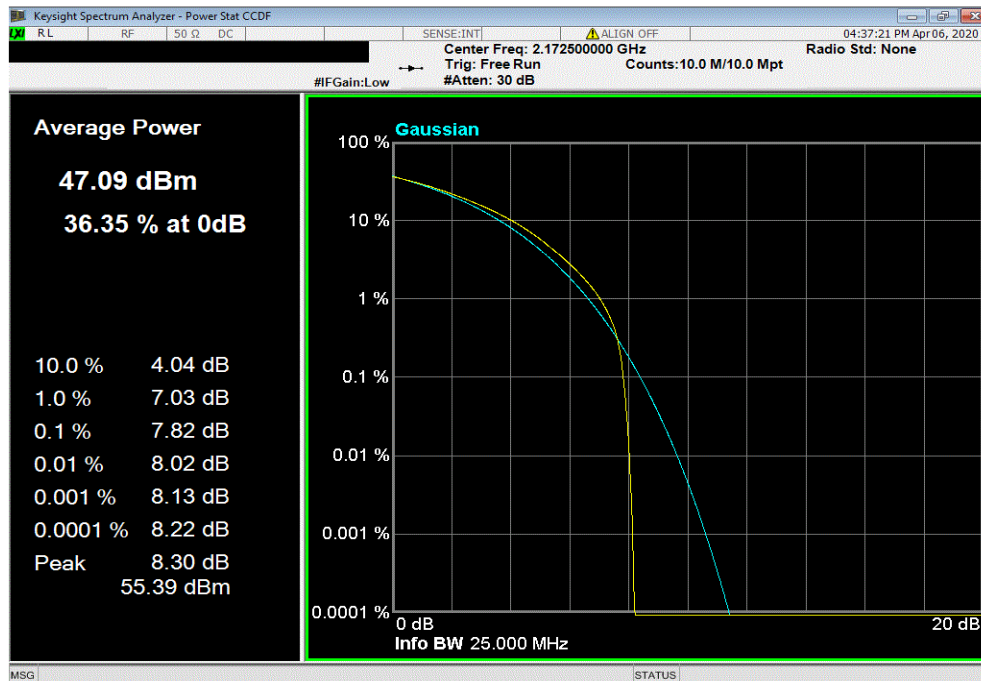


PEAK TO AVERAGE POWER (PAPR) BAND 66a

Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 15 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2145 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.77	13	Pass			



Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 15 MHz Bandwidth, 256-QAM Modulation, High Channel, 2172.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.82	13	Pass			

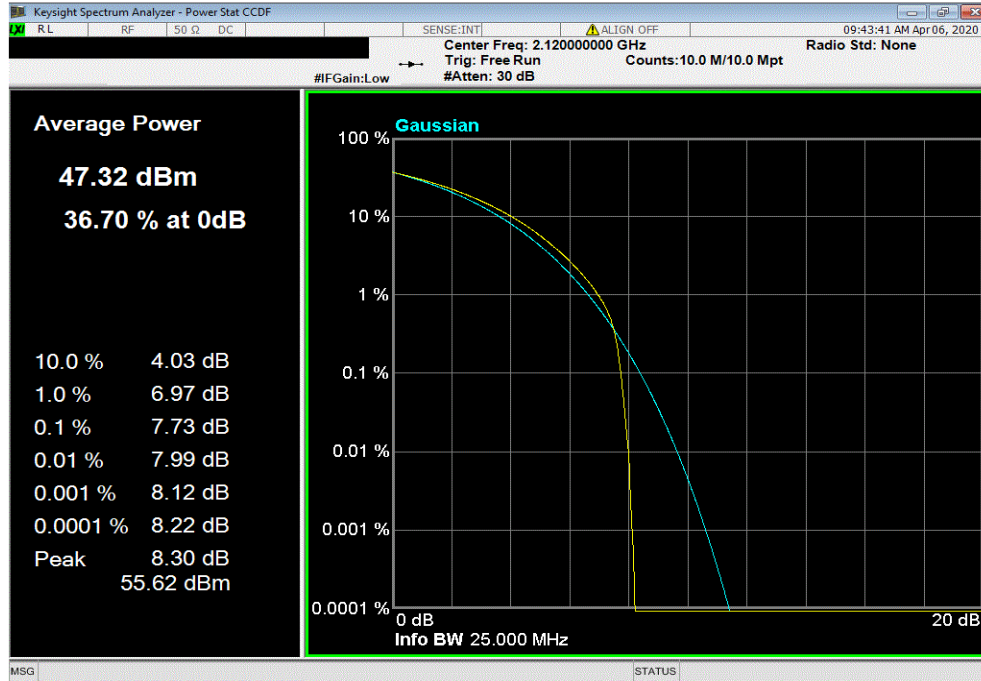


PEAK TO AVERAGE POWER (PAPR) BAND 66a

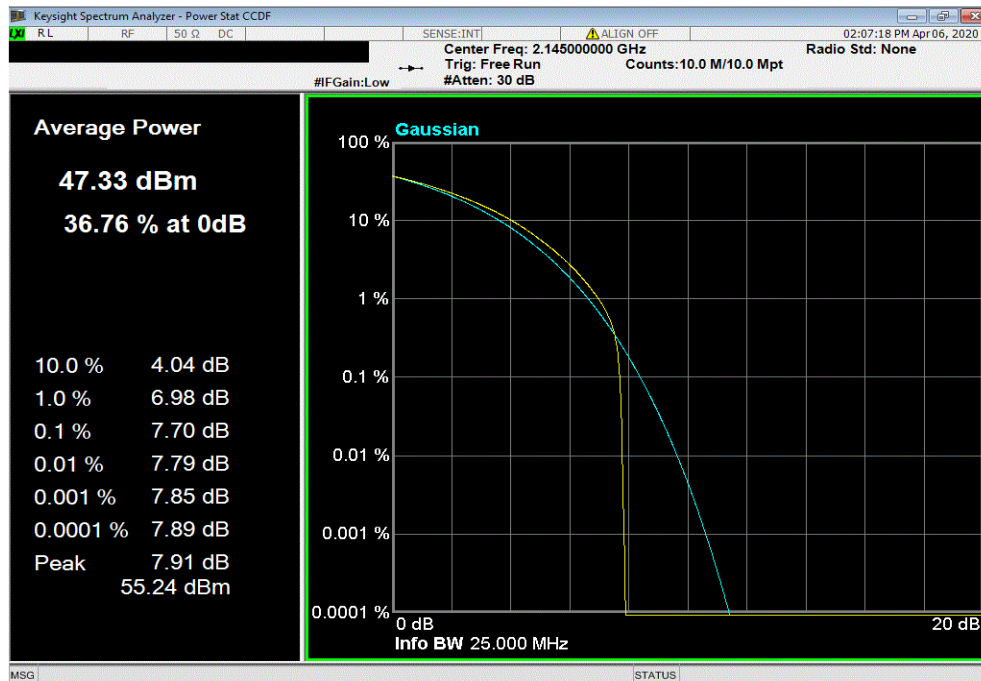


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Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 20 MHz Bandwidth, QPSK Modulation, Low Channel, 2120 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.73	13	Pass			

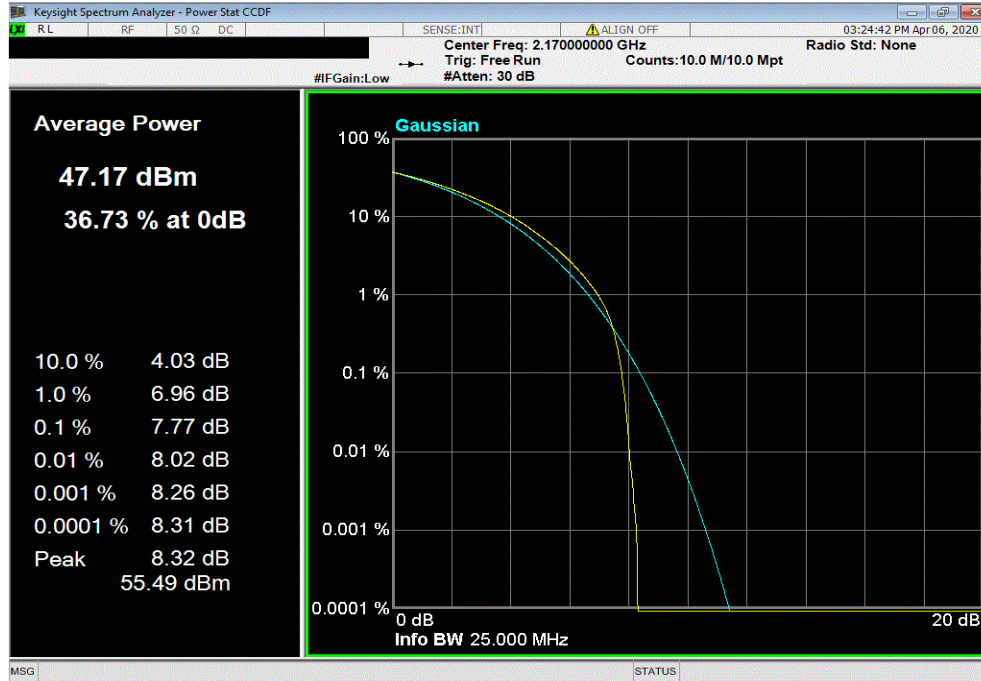


Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 20 MHz Bandwidth, QPSK Modulation, Mid Channel, 2145 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.7	13	Pass			

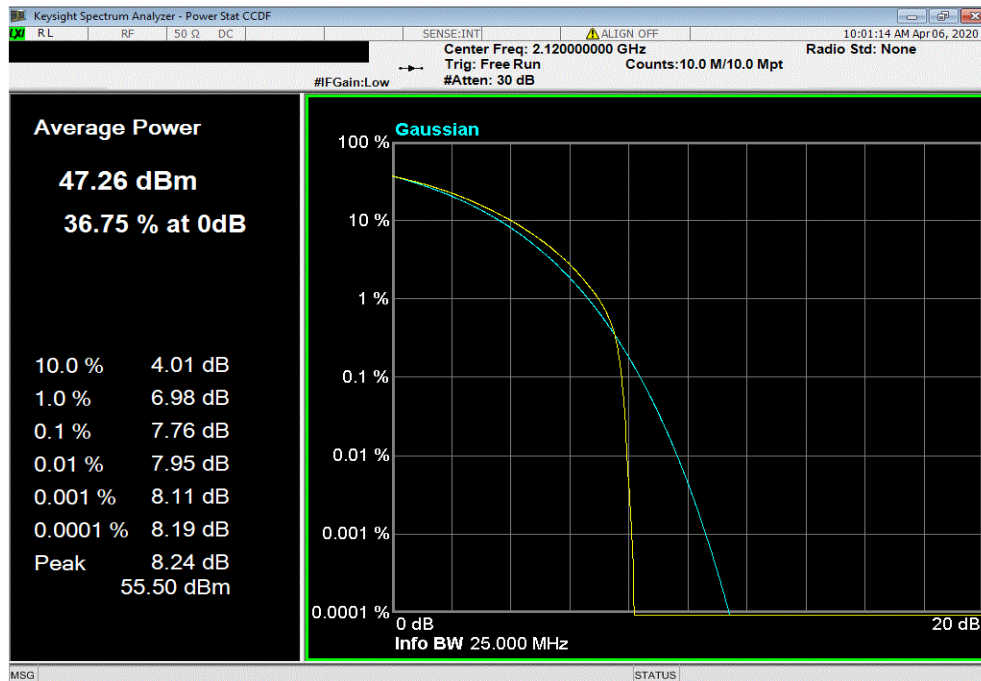


PEAK TO AVERAGE POWER (PAPR) BAND 66a

Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 20 MHz Bandwidth, QPSK Modulation, High Channel, 2170 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.77	13	Pass			



Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 20 MHz Bandwidth, 16-QAM Modulation, Low Channel, 2120 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.76	13	Pass			

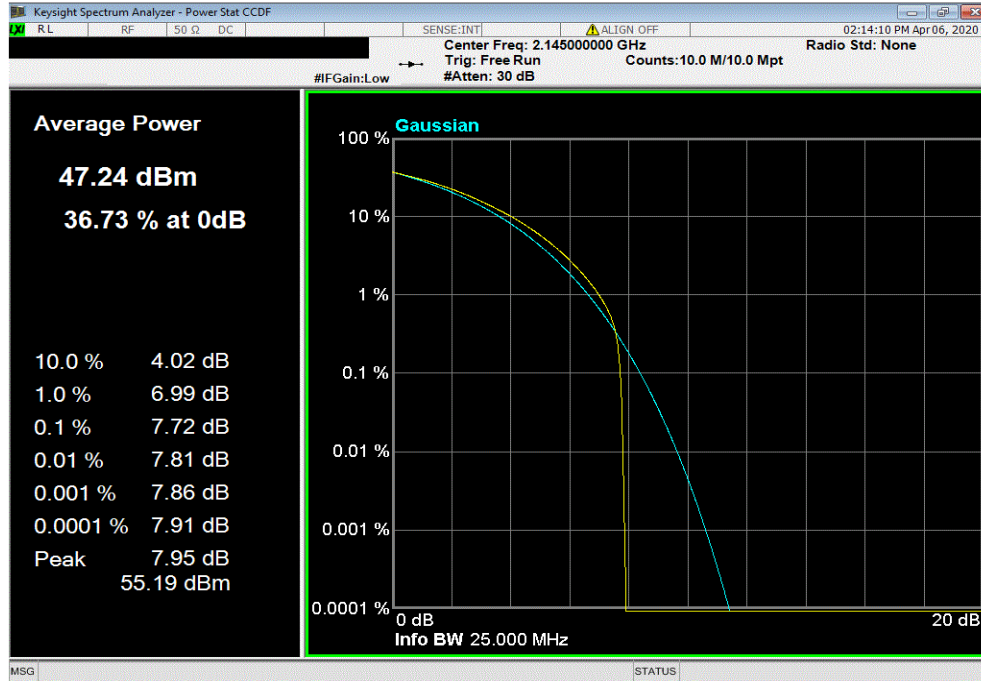


PEAK TO AVERAGE POWER (PAPR) BAND 66a

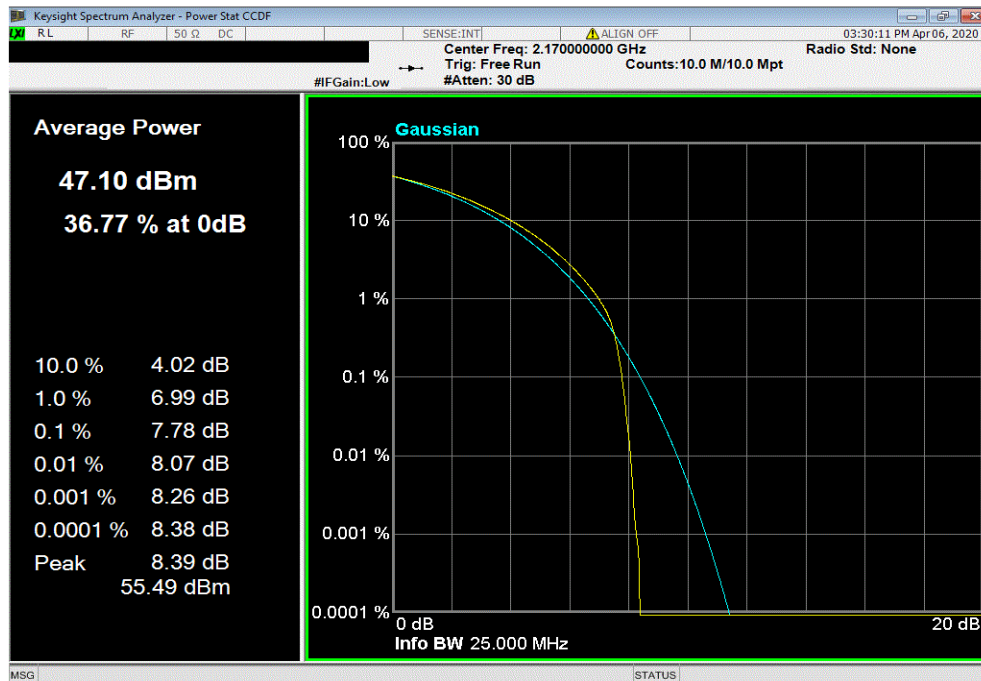


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Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 20 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2145 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.72	13	Pass

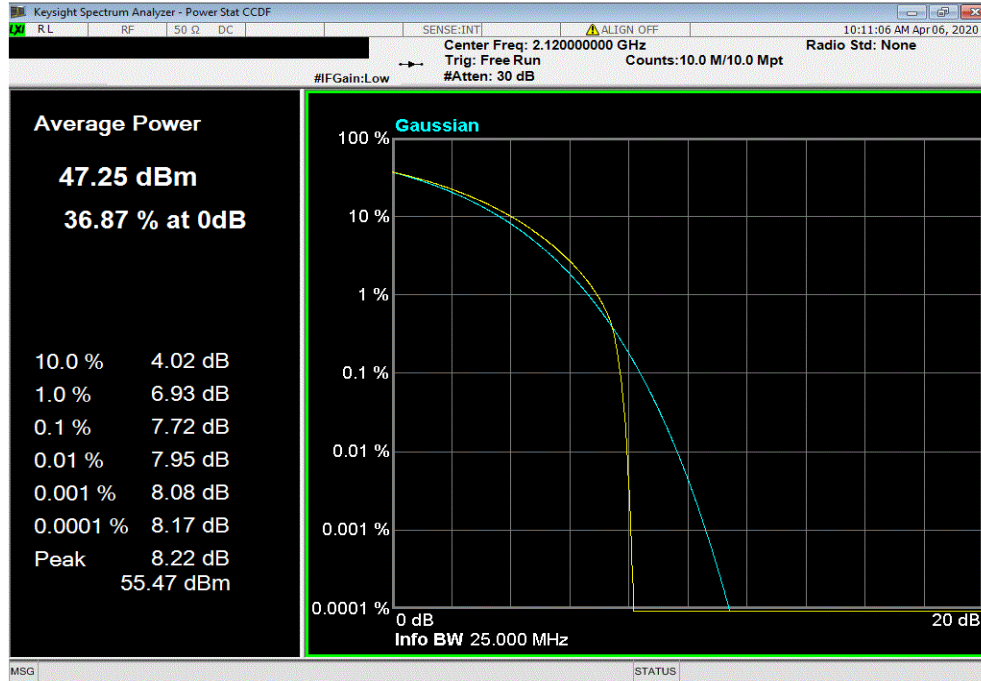


Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 20 MHz Bandwidth, 16-QAM Modulation, High Channel, 2170 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.78	13	Pass

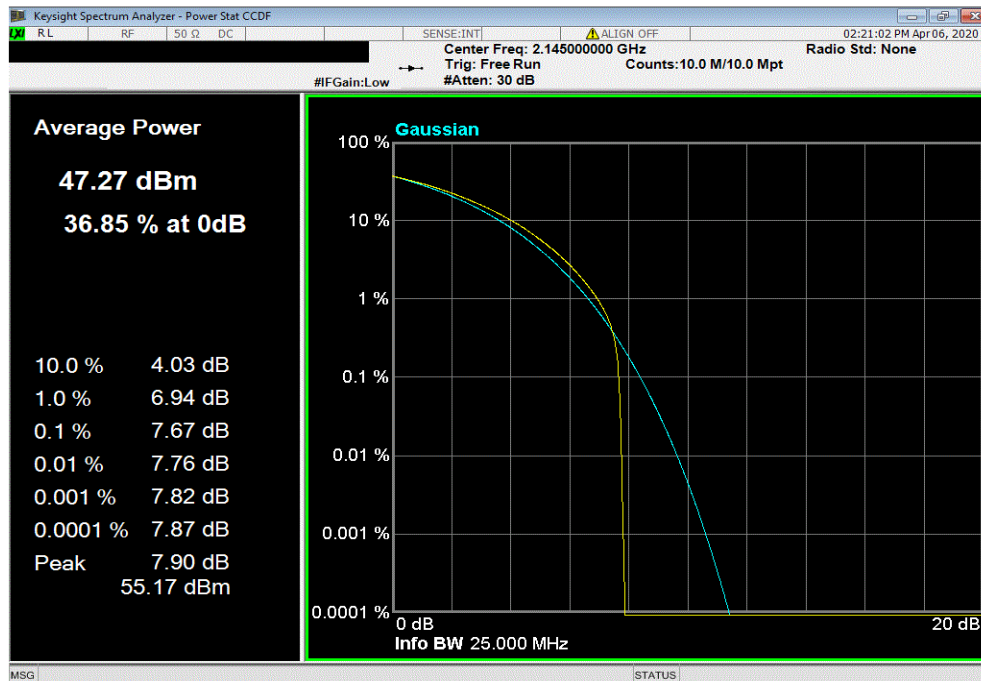


PEAK TO AVERAGE POWER (PAPR) BAND 66a

Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 20 MHz Bandwidth, 64-QAM Modulation, Low Channel, 2120 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.72	13	Pass



Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 20 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2145 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.67	13	Pass

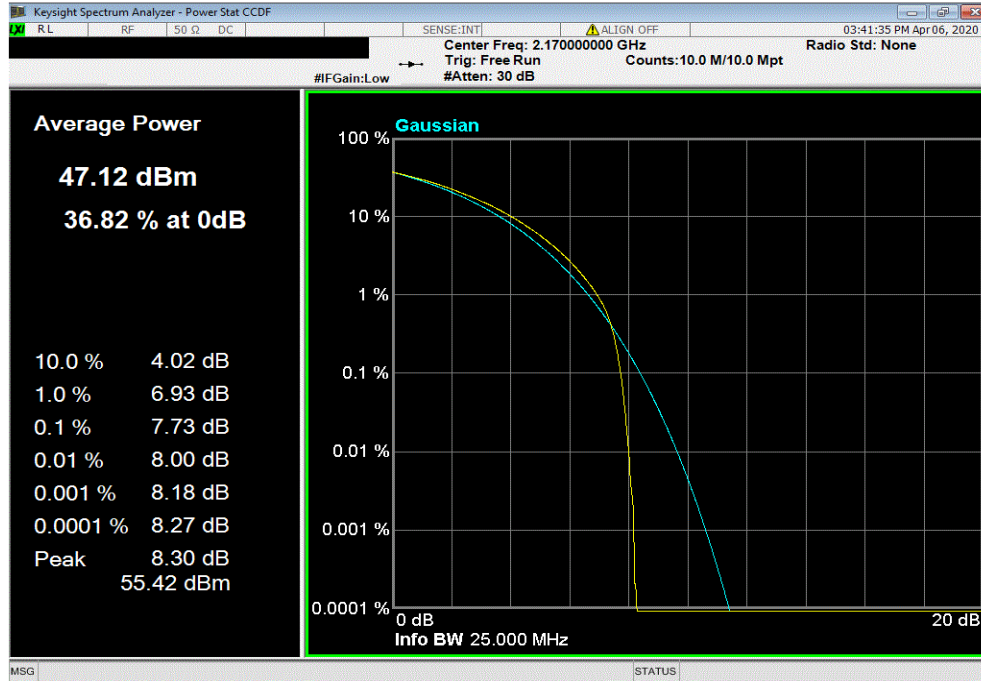


PEAK TO AVERAGE POWER (PAPR) BAND 66a

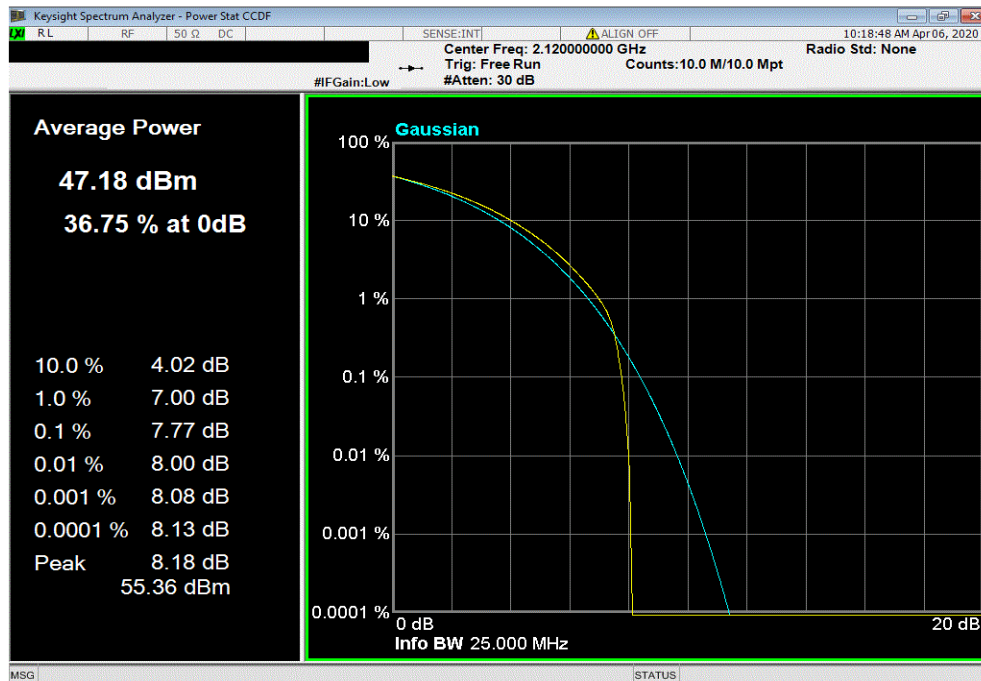


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Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 20 MHz Bandwidth, 64-QAM Modulation, High Channel, 2170 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.73	13	Pass

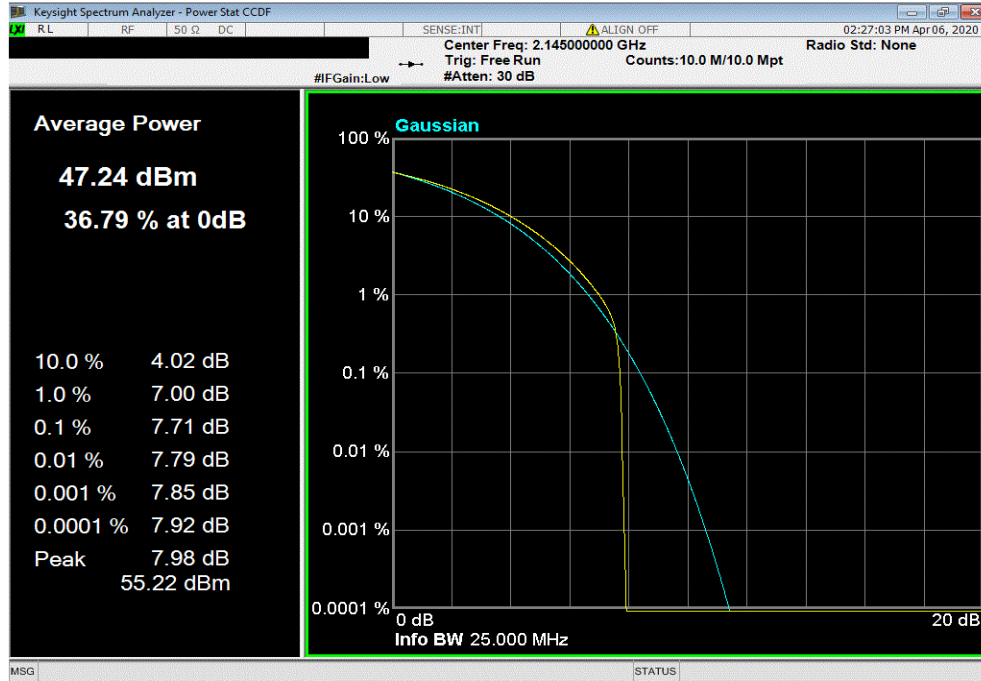


Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 20 MHz Bandwidth, 256-QAM Modulation, Low Channel, 2120 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.77	13	Pass



PEAK TO AVERAGE POWER (PAPR) BAND 66a

Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 20 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2145 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.71	13	Pass



Band 66a, 2110 MHz - 2180 MHz, 5G, Port 3, 20 MHz Bandwidth, 256-QAM Modulation, High Channel, 2170 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.78	13	Pass

