

PEAK TO AVERAGE POWER (PAPR) CCDF



XMIT 2020.03.25.0

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 FCC part 24.232(d) and RSS 133 6.4, the PAPR limit shall not exceed 13 dB for more than the ANSI described 0.1% of the time.

RF conducted emissions testing was performed only on one port. The testing was performed on the same version of hardware (FHFB) as the original certification test. The FHFB antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in the original certification testing) and antenna port 1 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraph 5.7.2i.

PEAK TO AVERAGE POWER (PAPR) CCDF



TbT+ 2020.09.08.0 BETA XMI 2020.03.25.0

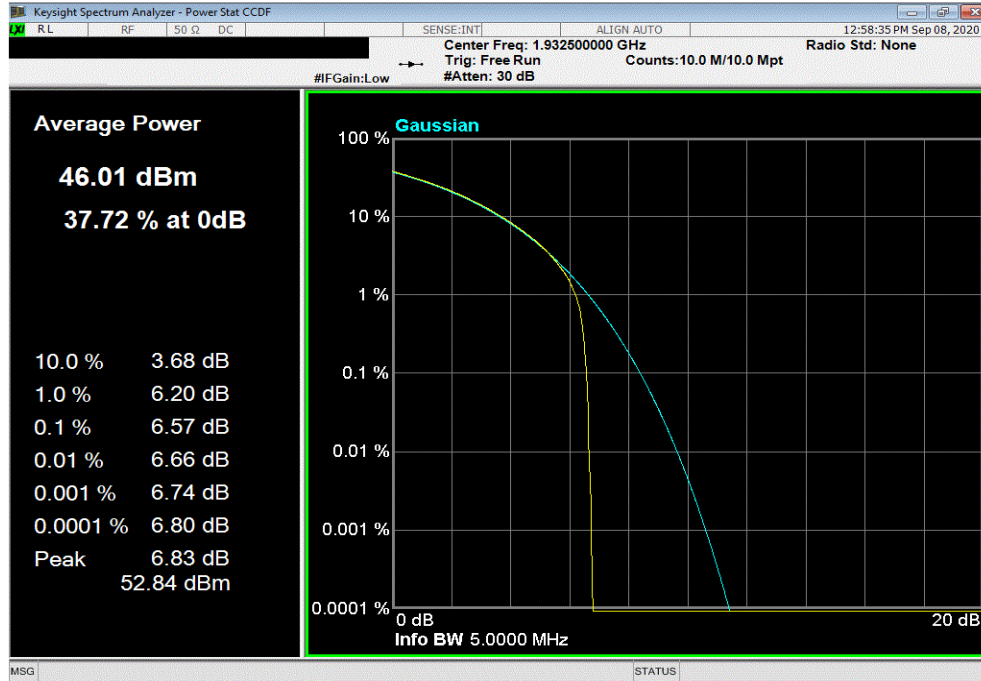
EUT: FHFB (FCC C2PC)		Work Order: NOKI0021
Serial Number: L9144200604		Date: 10-Sep-20
Customer: Nokia of America Corporation		Temperature: 22.9 °C
Attendees: Mitchell Hill, John Rattanavong		Humidity: 51.5% RH
Project: None		Barometric Pres.: 1024 mbar
Tested by: Brandon Hobbs	Power: 54 VDC	Job Site: TX05
TEST SPECIFICATIONS		
FCC 24E:2020		Test Method
RSS-133:2018		ANSI C63.26:2015
COMMENTS		RSS-133:2018
All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. The carrier power was set to maximum except for the 15MHz channel bandwidth band edge frequencies. The power was reduced by 1 dB at the 15MHz channel bandwidth "High Channel" (1987.5MHz) and "Low Channel" (1937.5MHz).		
DEVIATIONS FROM TEST STANDARD		
None		
Configuration #	2	Signature
		PAPR Value (dB) PAPR Limit (dB) Results
Band 25, 1930 MHz - 1995 MHz, 5G		
Port 1		
5 MHz Bandwidth		
QPSK Modulation		
Low Channel, 1932.5 MHz		6.57 13 Pass
Mid Channel, 1962.5 MHz		6.52 13 Pass
High Channel, 1992.5 MHz		6.58 13 Pass
16-QAM Modulation		
Low Channel, 1932.5 MHz		6.71 13 Pass
Mid Channel, 1962.5 MHz		6.67 13 Pass
High Channel, 1992.5 MHz		6.73 13 Pass
64-QAM Modulation		
Low Channel, 1932.5 MHz		6.51 13 Pass
Mid Channel, 1962.5 MHz		6.49 13 Pass
High Channel, 1992.5 MHz		6.54 13 Pass
256-QAM Modulation		
Low Channel, 1932.5 MHz		6.62 13 Pass
Mid Channel, 1962.5 MHz		6.57 13 Pass
High Channel, 1992.5 MHz		6.63 13 Pass
10 MHz Bandwidth		
QPSK Modulation		
Low Channel, 1935.0 MHz		6.74 13 Pass
Mid Channel, 1962.5 MHz		6.52 13 Pass
High Channel, 1990 MHz		6.67 13 Pass
16-QAM Modulation		
Low Channel, 1935.0 MHz		6.81 13 Pass
Mid Channel, 1962.5 MHz		6.65 13 Pass
High Channel, 1990 MHz		6.79 13 Pass
64-QAM Modulation		
Low Channel, 1935.0 MHz		6.73 13 Pass
Mid Channel, 1962.5 MHz		6.51 13 Pass
High Channel, 1990 MHz		6.65 13 Pass
256-QAM Modulation		
Low Channel, 1935.0 MHz		6.77 13 Pass
Mid Channel, 1962.5 MHz		6.59 13 Pass
High Channel, 1990 MHz		6.72 13 Pass
15 MHz Bandwidth		
QPSK Modulation		
Low Channel, 1937.5 MHz		7.56 13 Pass
Mid Channel, 1962.5 MHz		6.51 13 Pass
High Channel, 1987.5 MHz		7.50 13 Pass
16-QAM Modulation		
Low Channel, 1937.5 MHz		7.66 13 Pass
Mid Channel, 1962.5 MHz		6.57 13 Pass
High Channel, 1987.5 MHz		7.58 13 Pass
64-QAM Modulation		
Low Channel, 1937.5 MHz		7.43 13 Pass
Mid Channel, 1962.5 MHz		6.47 13 Pass
High Channel, 1987.5 MHz		7.45 13 Pass
256-QAM Modulation		
Low Channel, 1937.5 MHz		7.45 13 Pass
Mid Channel, 1962.5 MHz		6.49 13 Pass
High Channel, 1987.5 MHz		7.48 13 Pass
20 MHz Bandwidth		
QPSK Modulation		
Low Channel, 1940 MHz		6.97 13 Pass
Mid Channel, 1962.5 MHz		6.44 13 Pass
High Channel, 1985 MHz		7.51 13 Pass
16-QAM Modulation		
Low Channel, 1940 MHz		7.02 13 Pass
Mid Channel, 1962.5 MHz		6.52 13 Pass
High Channel, 1985 MHz		7.54 13 Pass
64-QAM Modulation		
Low Channel, 1940 MHz		6.97 13 Pass
Mid Channel, 1962.5 MHz		6.46 13 Pass
High Channel, 1985 MHz		7.51 13 Pass
256-QAM Modulation		
Low Channel, 1940 MHz		6.92 13 Pass
Mid Channel, 1962.5 MHz		6.45 13 Pass
High Channel, 1985 MHz		7.48 13 Pass

PEAK TO AVERAGE POWER (PAPR) CCDF

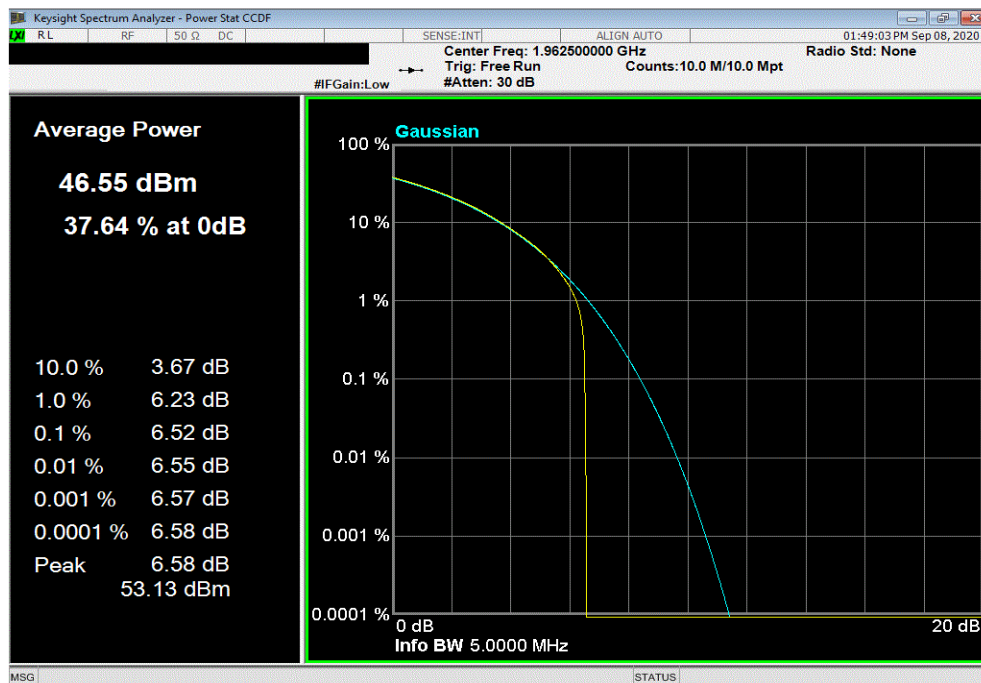


TMTx 2020.09.08.0 BETA XMI 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 5 MHz Bandwidth, QPSK Modulation, Low Channel, 1932.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.57	13	Pass			



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 5 MHz Bandwidth, QPSK Modulation, Mid Channel, 1962.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.52	13	Pass			

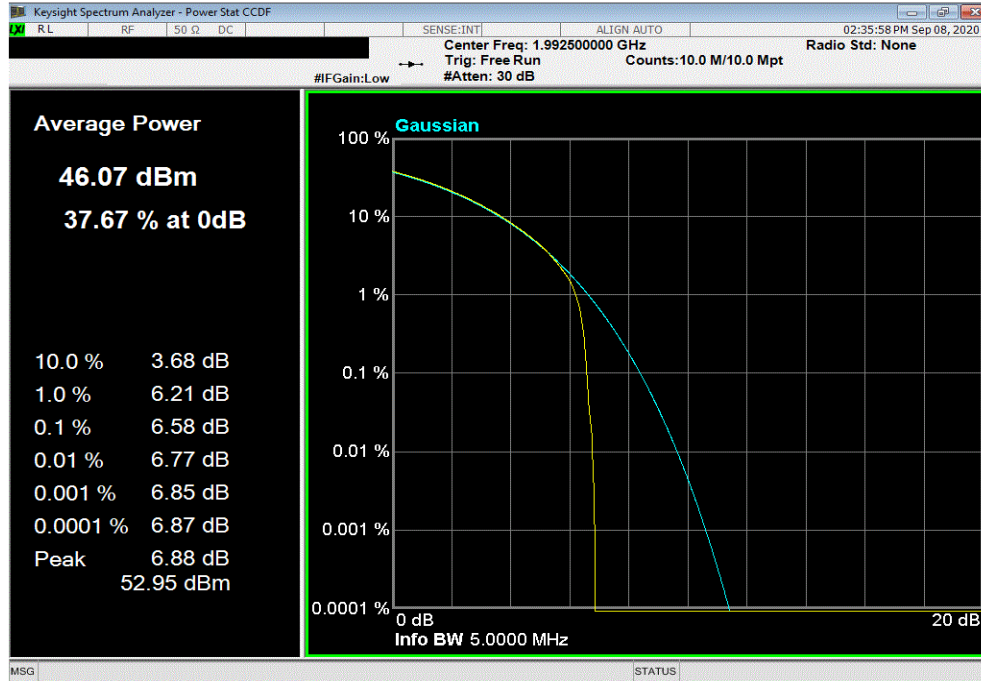


PEAK TO AVERAGE POWER (PAPR) CCDF

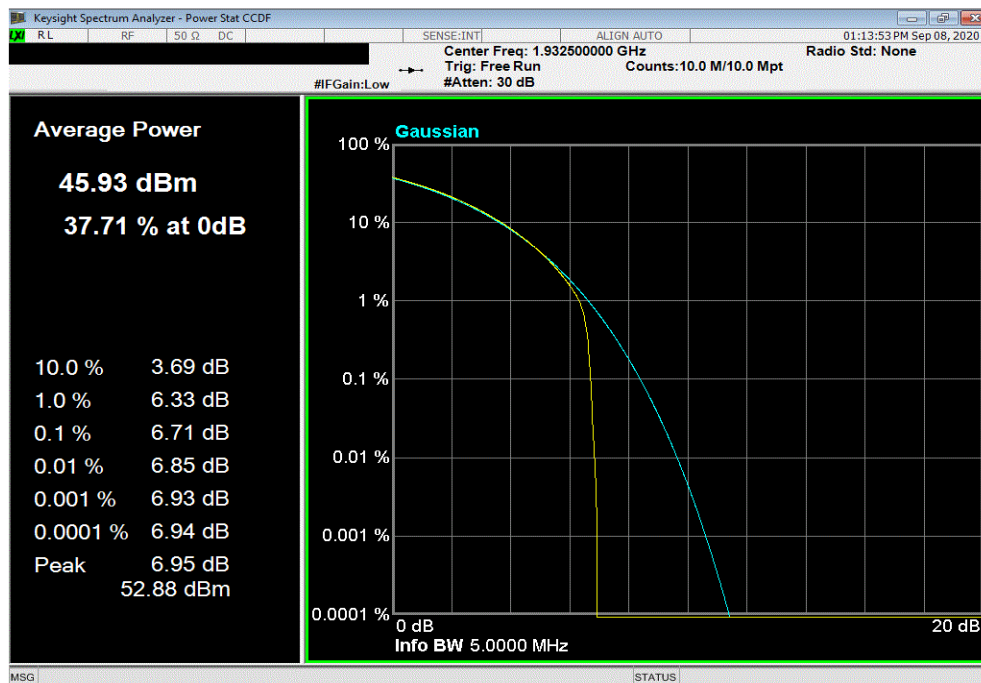


TMTx 2020.09.08.0 BETA XMI 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 5 MHz Bandwidth, QPSK Modulation, High Channel, 1992.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.58	13	Pass



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 5 MHz Bandwidth, 16-QAM Modulation, Low Channel, 1932.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.71	13	Pass

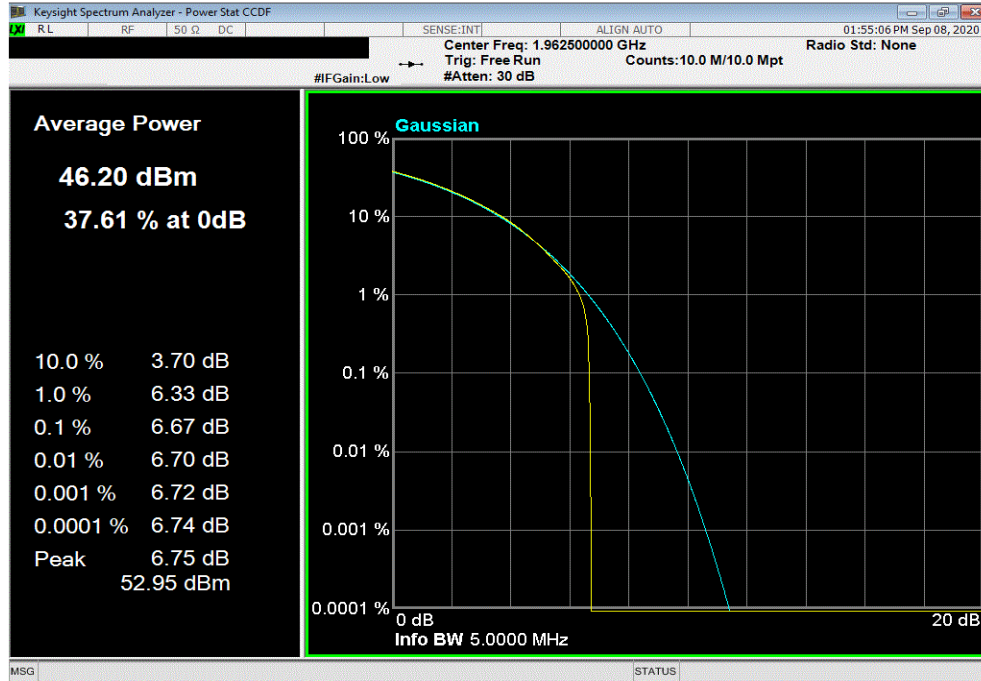


PEAK TO AVERAGE POWER (PAPR) CCDF

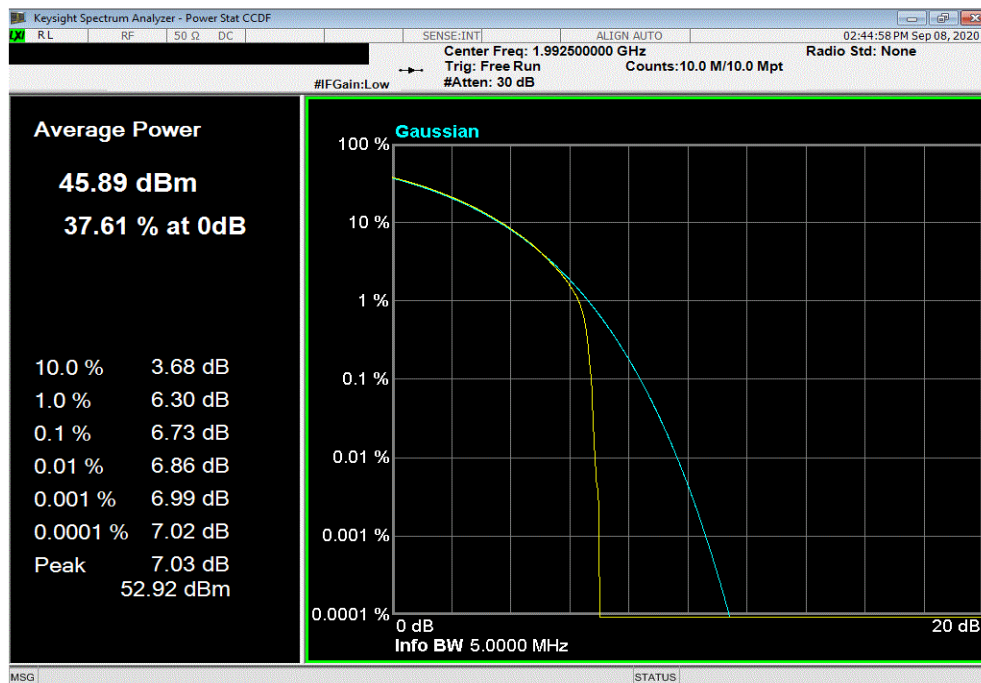


TMTx 2020.09.08.0 BETA XMI 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 5 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 1962.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.67	13	Pass



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 5 MHz Bandwidth, 16-QAM Modulation, High Channel, 1992.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.73	13	Pass

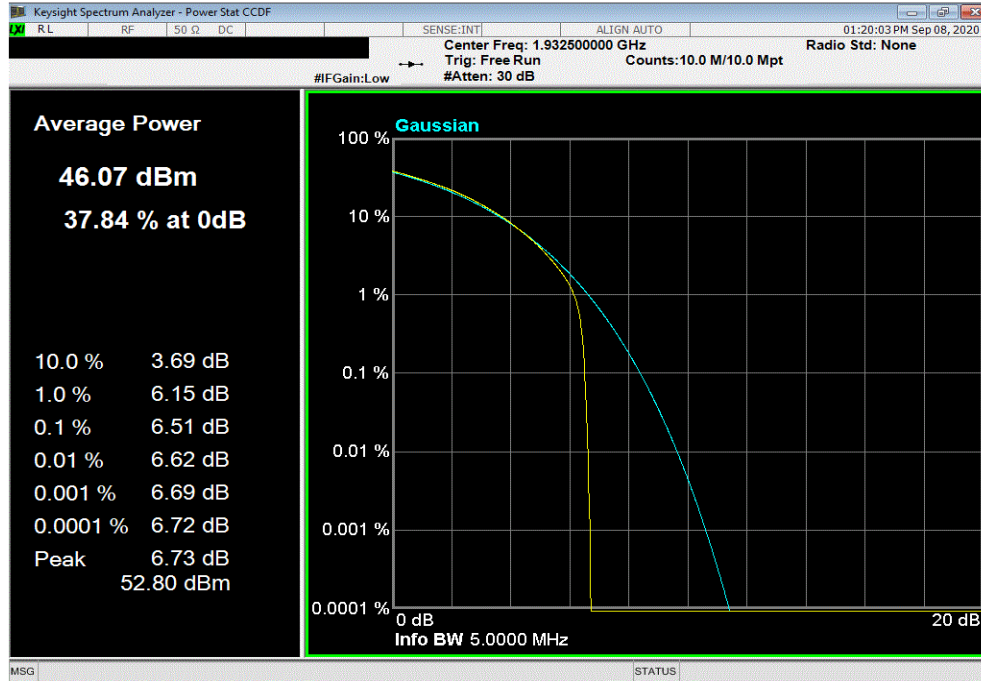


PEAK TO AVERAGE POWER (PAPR) CCDF

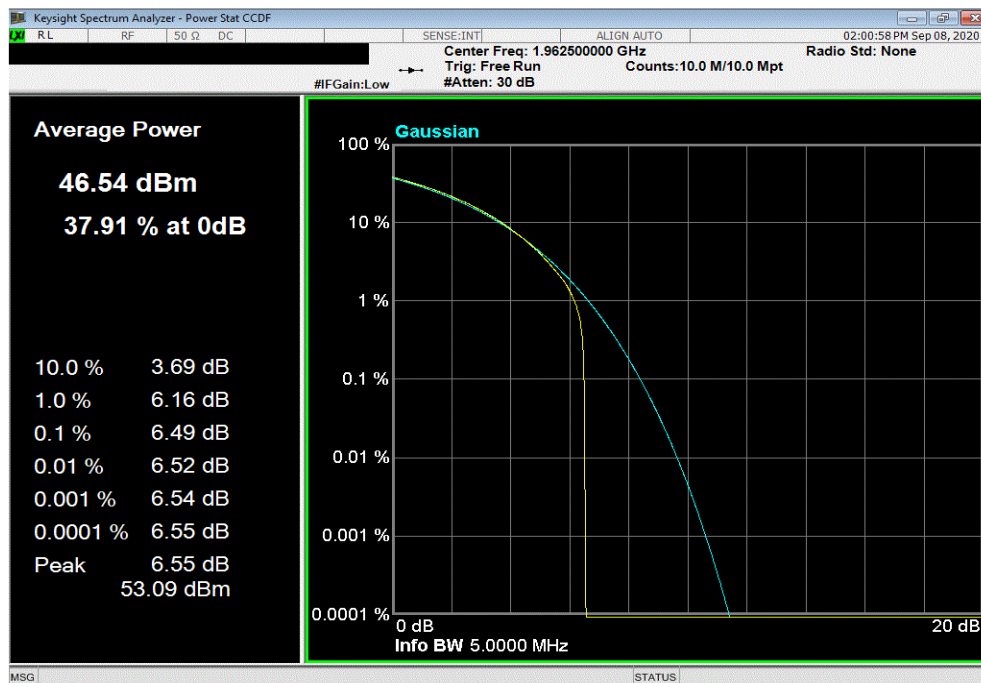


TMTx 2020.09.08.0 BETA XMI 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 5 MHz Bandwidth, 64-QAM Modulation, Low Channel, 1932.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.51	13	Pass			



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 5 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 1962.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.49	13	Pass			

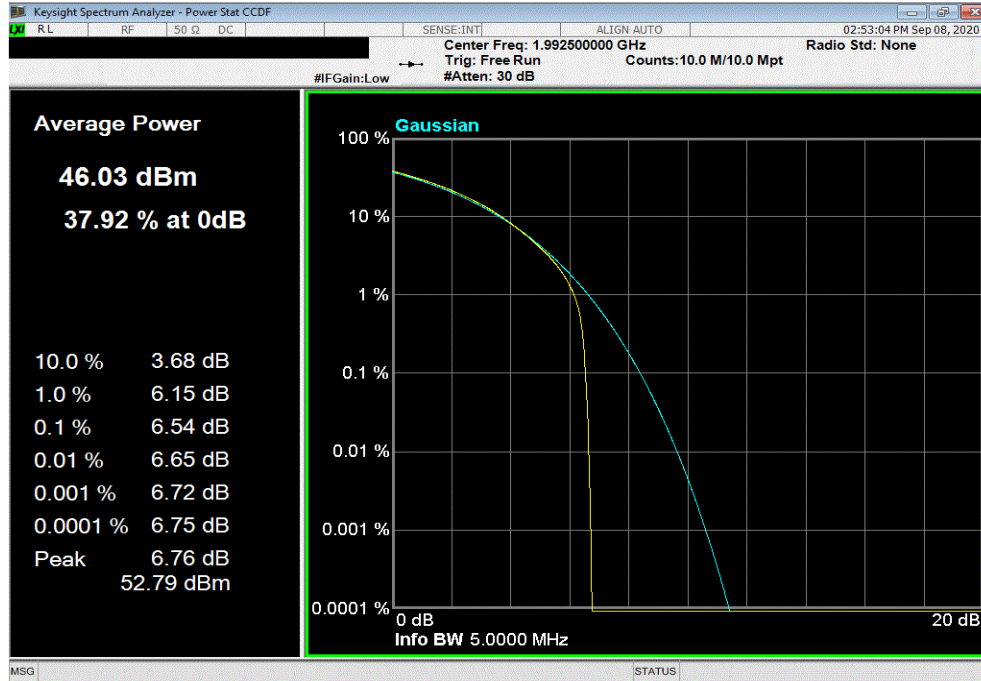


PEAK TO AVERAGE POWER (PAPR) CCDF

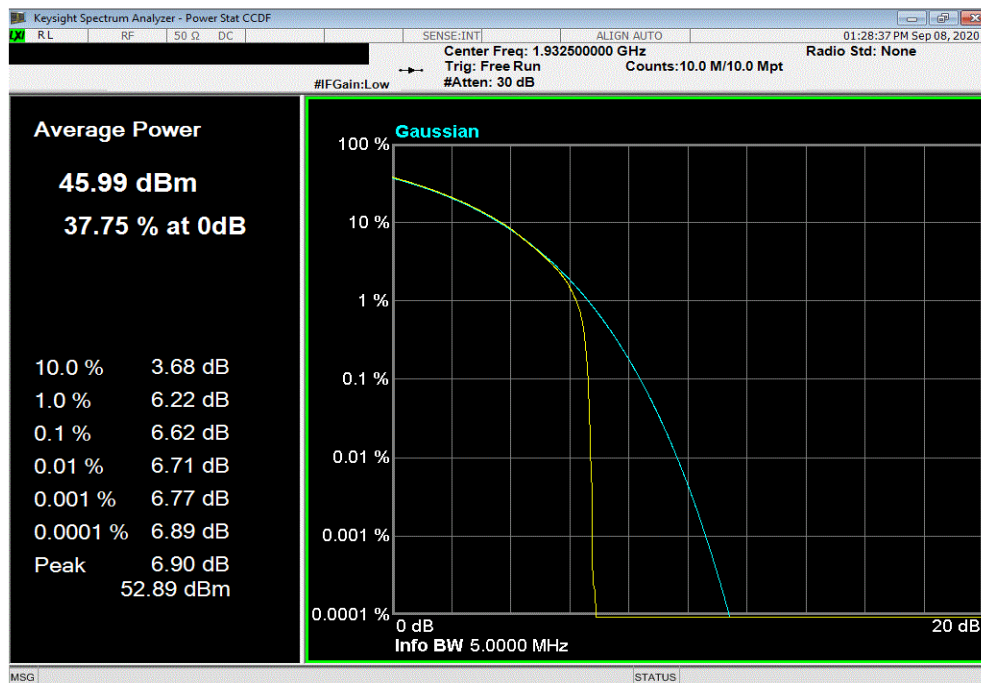


TMTx 2020.09.08.0 BETA XMI 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 5 MHz Bandwidth, 64-QAM Modulation, High Channel, 1992.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.54	13	Pass			



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 5 MHz Bandwidth, 256-QAM Modulation, Low Channel, 1932.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.62	13	Pass			

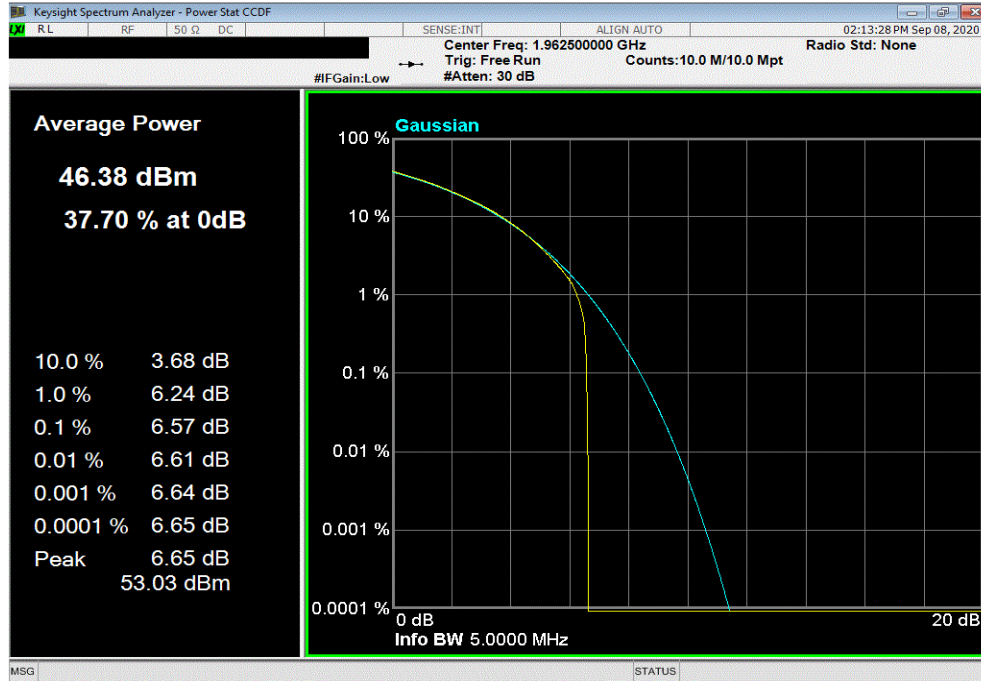


PEAK TO AVERAGE POWER (PAPR) CCDF

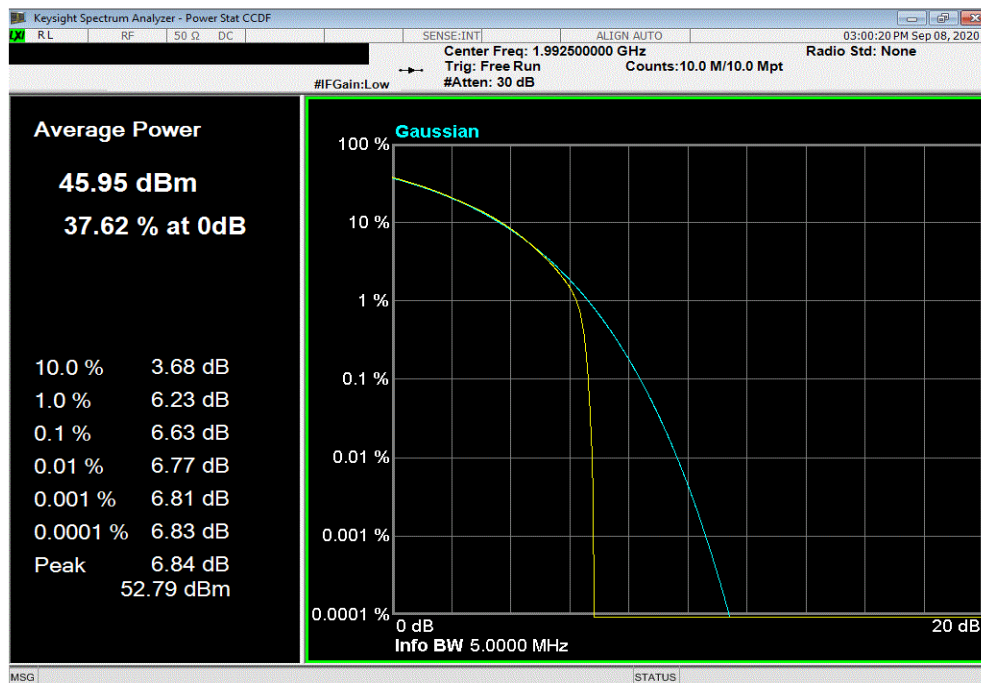


TMTx 2020.09.08.0 BETA XMI 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 5 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 1962.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.57	13	Pass



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 5 MHz Bandwidth, 256-QAM Modulation, High Channel, 1992.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.63	13	Pass

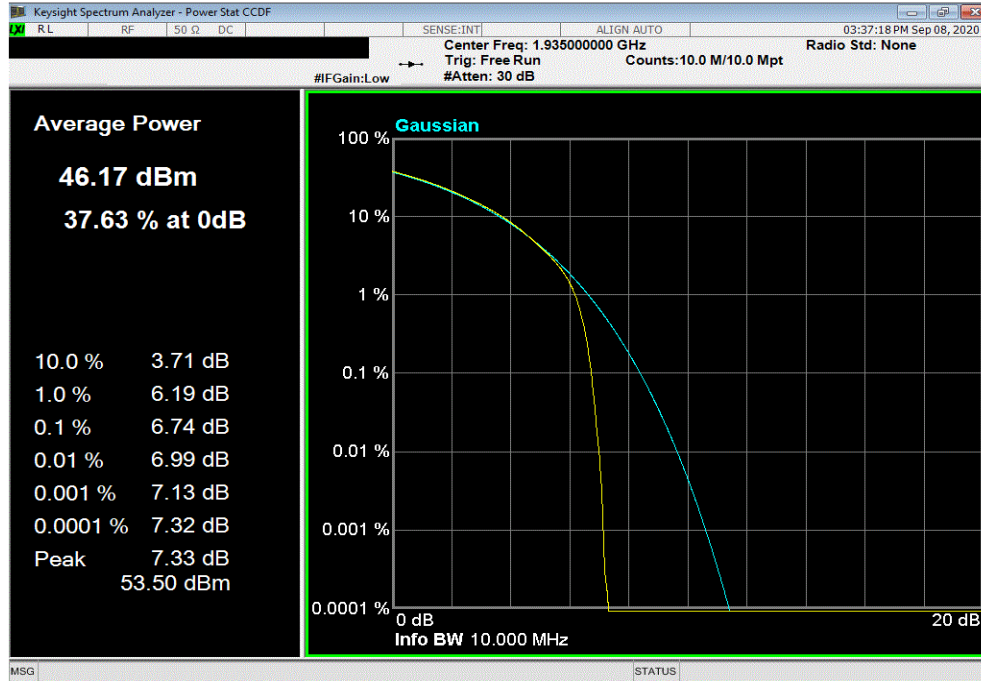


PEAK TO AVERAGE POWER (PAPR) CCDF

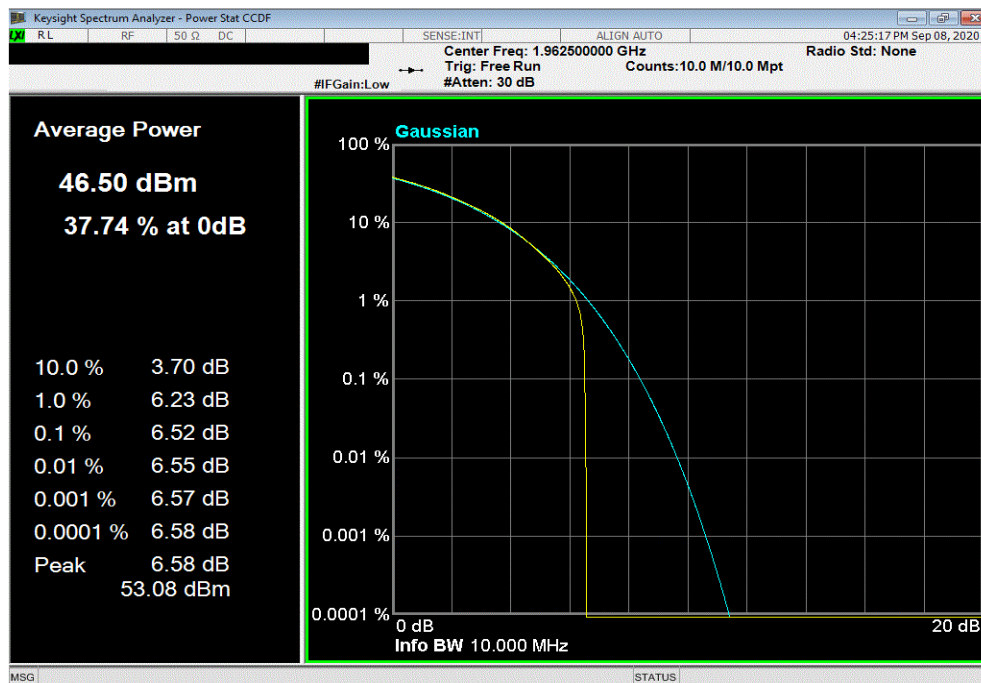


TMTx 2020.09.08.0 BETA XMt 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 10 MHz Bandwidth, QPSK Modulation , Low Channel, 1935.0 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.74	13	Pass			



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 10 MHz Bandwidth, QPSK Modulation , Mid Channel, 1962.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.52	13	Pass			

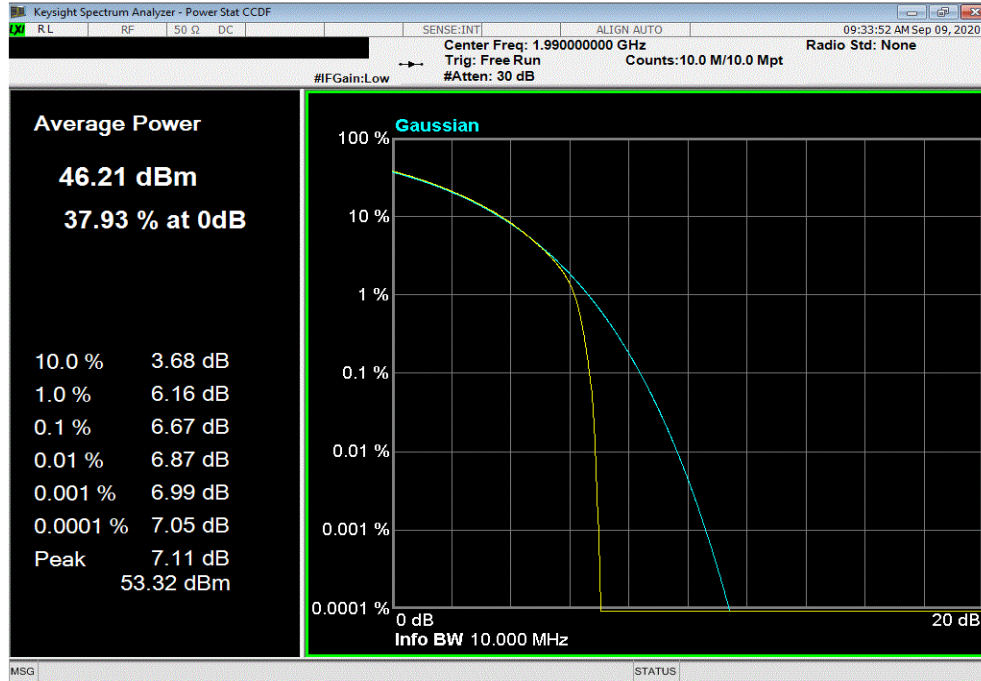


PEAK TO AVERAGE POWER (PAPR) CCDF

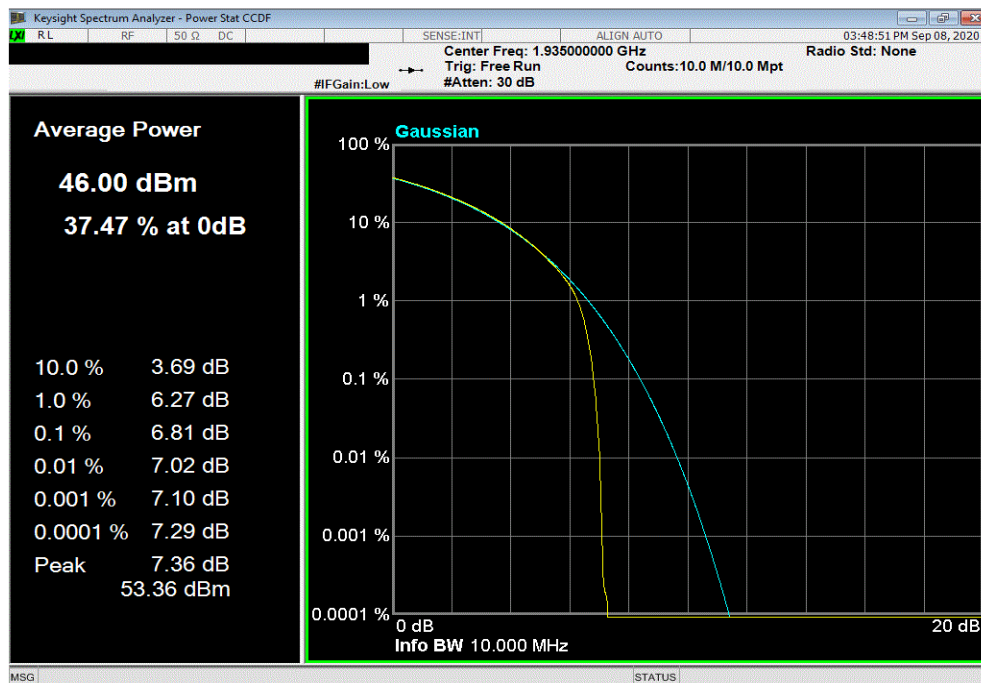


TMTx 2020.09.08.0 BETA XMI 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 10 MHz Bandwidth, QPSK Modulation, High Channel, 1990 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.67	13	Pass



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 10 MHz Bandwidth, 16-QAM Modulation, Low Channel, 1935.0 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.81	13	Pass

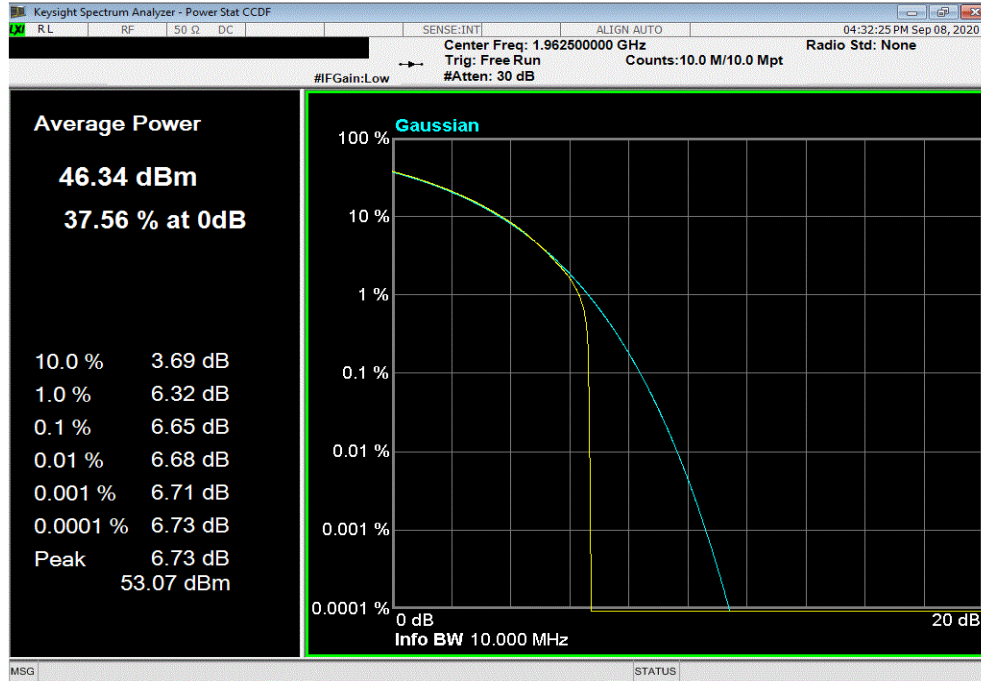


PEAK TO AVERAGE POWER (PAPR) CCDF

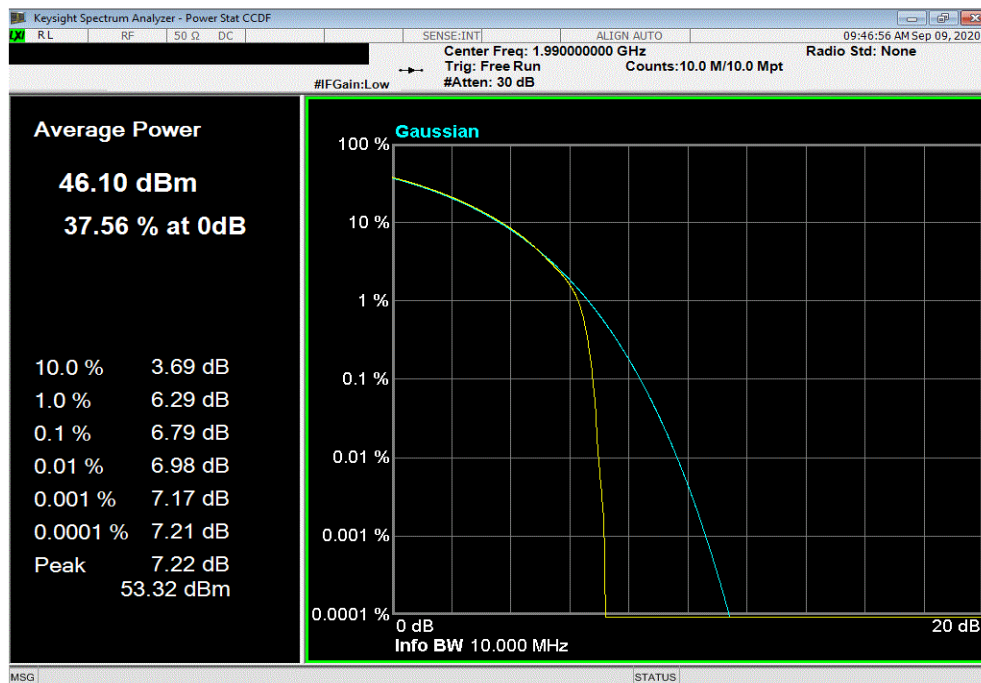


TMTx 2020.09.08.0 BETA XMI 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 1962.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.65	13	Pass



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 10 MHz Bandwidth, 16-QAM Modulation, High Channel, 1990 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.79	13	Pass

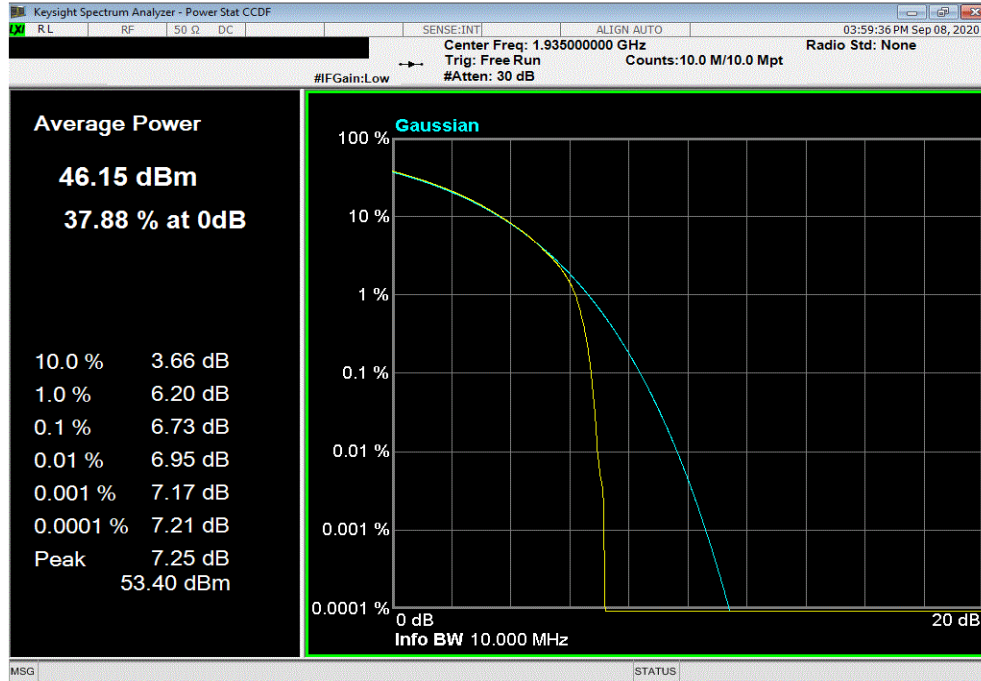


PEAK TO AVERAGE POWER (PAPR) CCDF

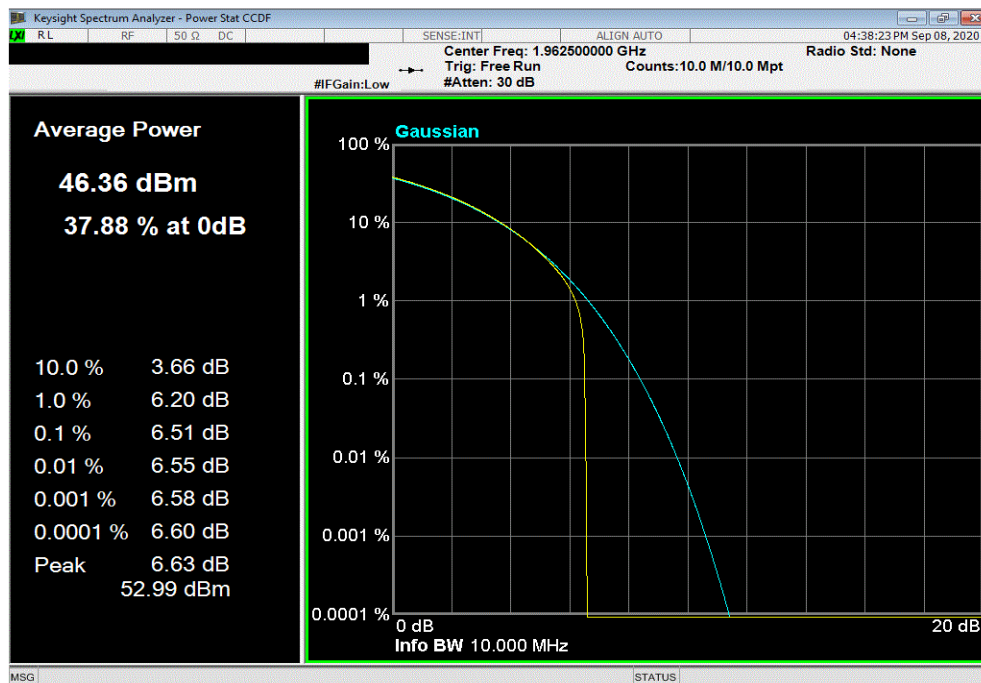


TMTx 2020.09.08.0 BETA XMt 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 10 MHz Bandwidth, 64-QAM Modulation, Low Channel, 1935.0 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.73	13	Pass			



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 10 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 1962.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.51	13	Pass			

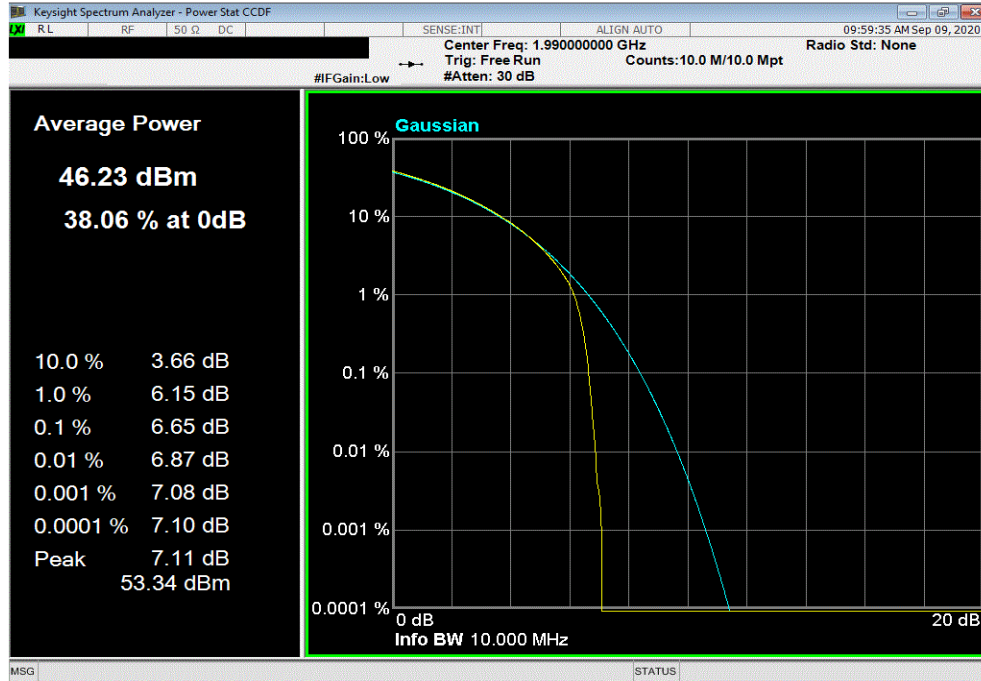


PEAK TO AVERAGE POWER (PAPR) CCDF

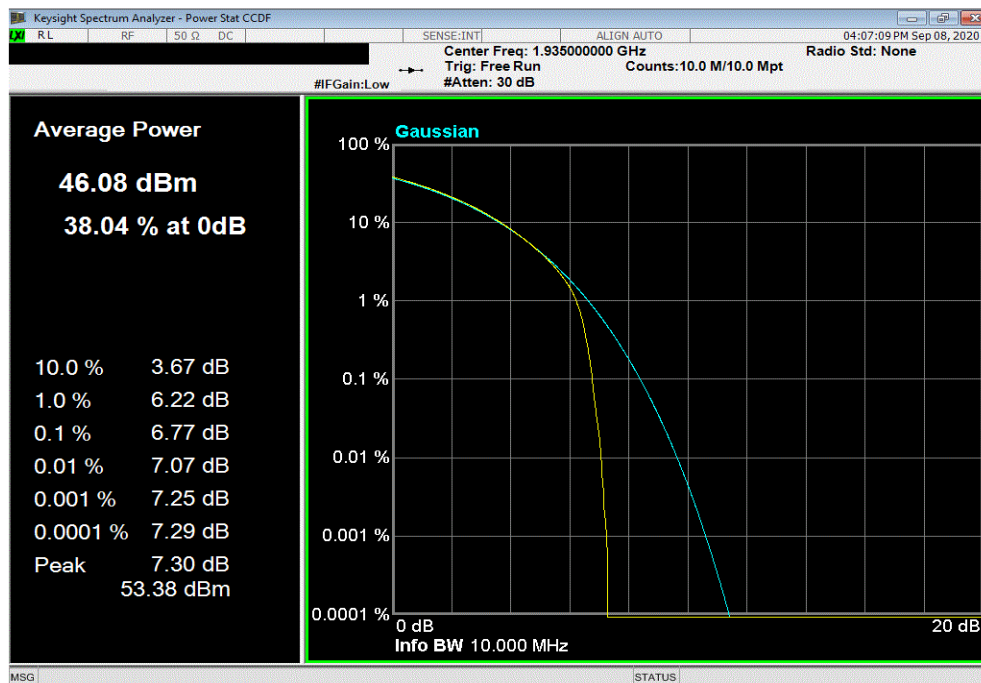


TMTx 2020.09.08.0 BETA XMt 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 10 MHz Bandwidth, 64-QAM Modulation, High Channel, 1990 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.65	13	Pass			



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 10 MHz Bandwidth, 256-QAM Modulation, Low Channel, 1935.0 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.77	13	Pass			

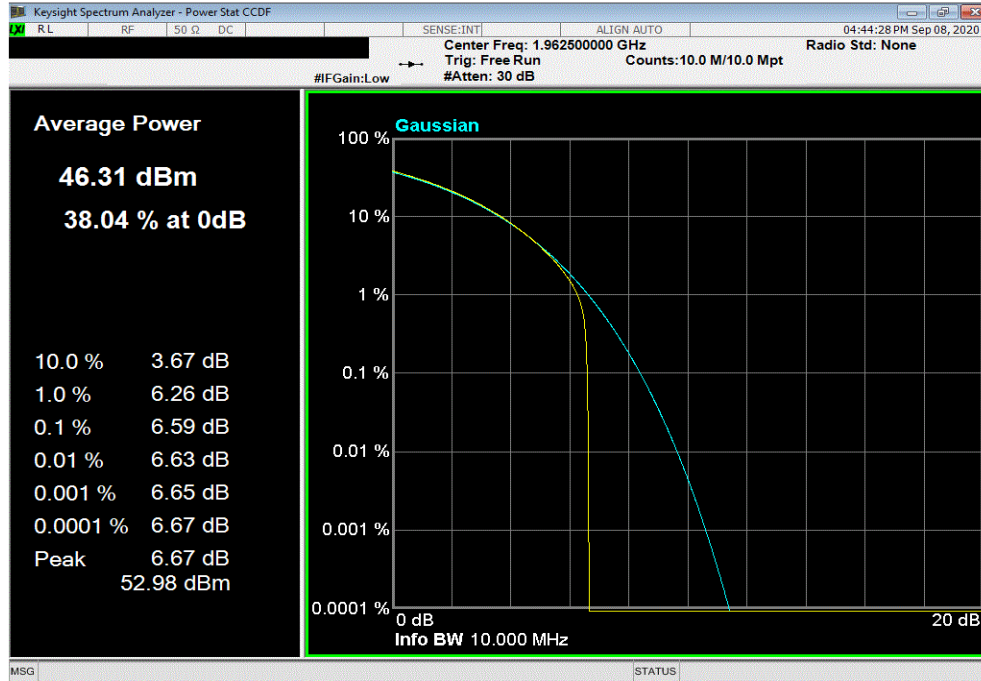


PEAK TO AVERAGE POWER (PAPR) CCDF

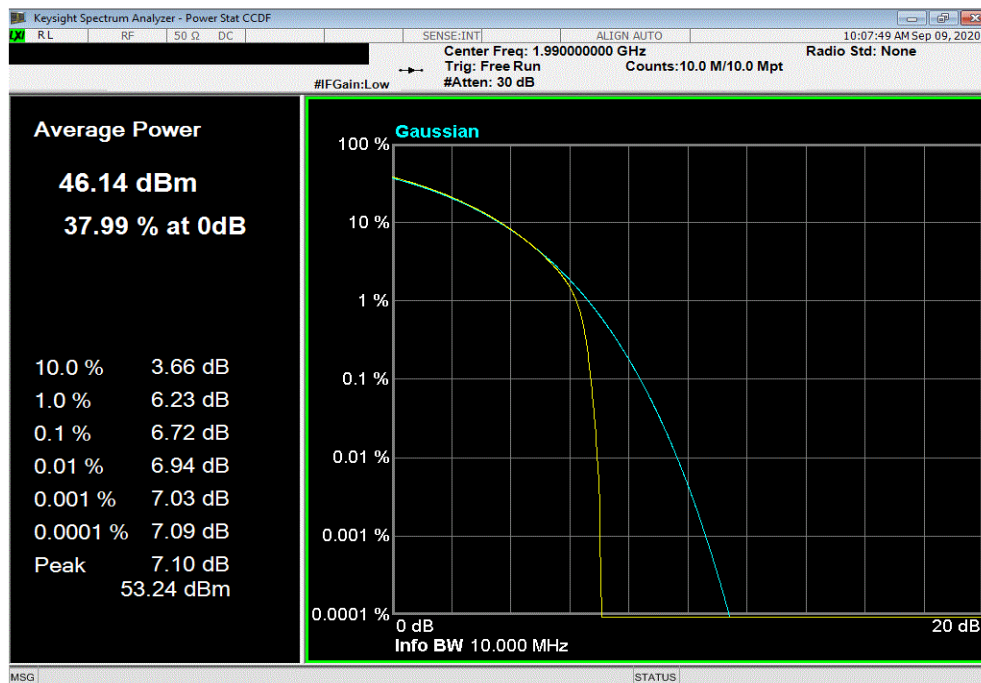


TMTx 2020.09.08.0 BETA XMI 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 1962.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.59	13	Pass



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 10 MHz Bandwidth, 256-QAM Modulation, High Channel, 1990 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.72	13	Pass

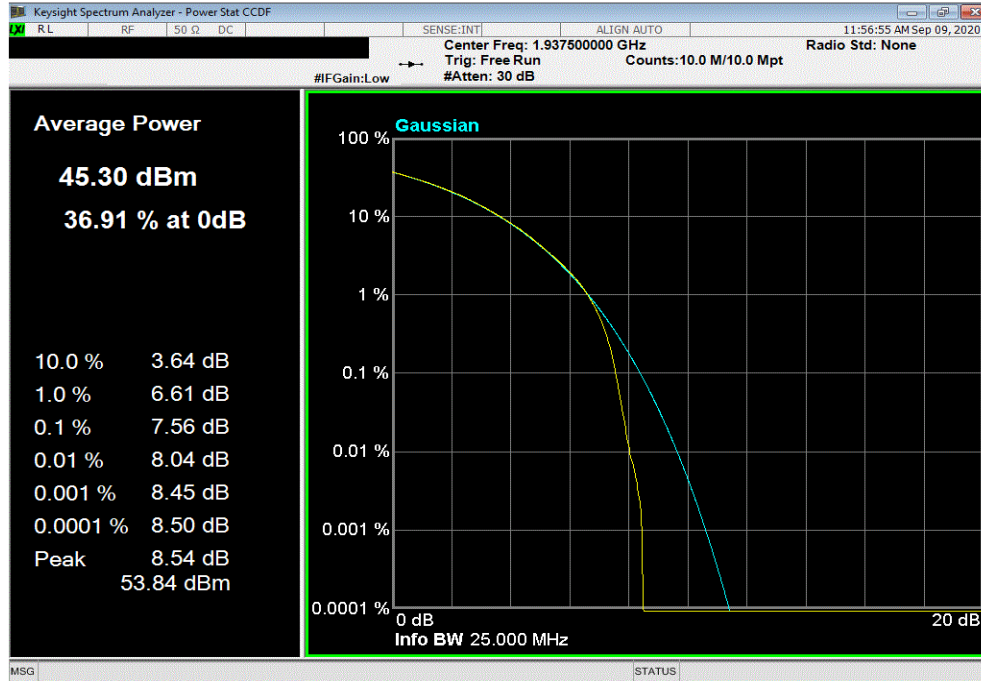


PEAK TO AVERAGE POWER (PAPR) CCDF

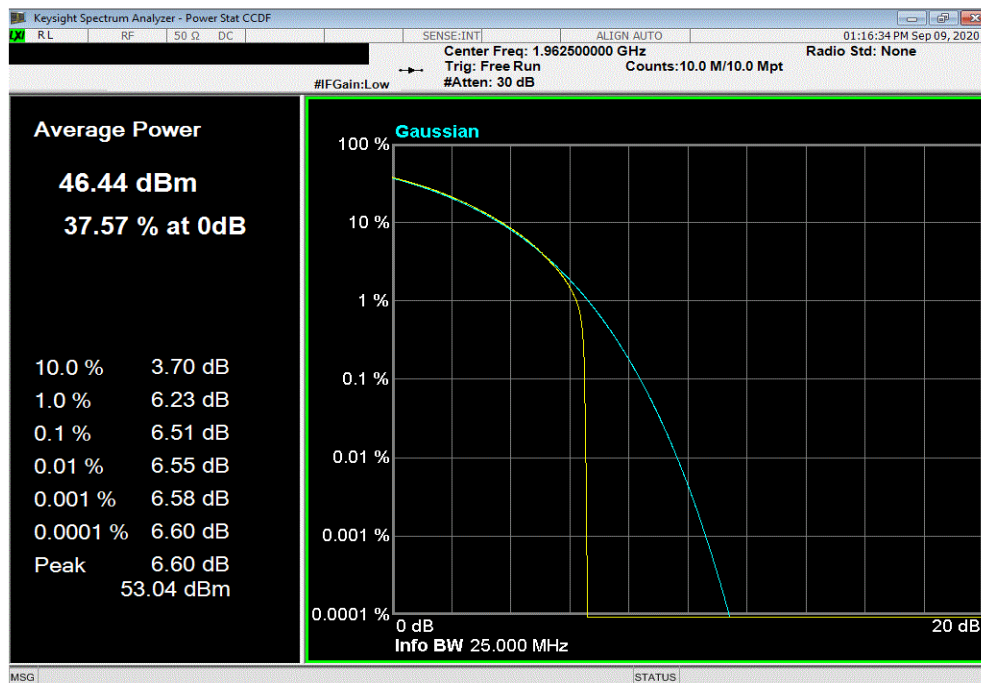


TMTx 2020.09.08.0 BETA XMI 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 15 MHz Bandwidth, QPSK Modulation , Low Channel, 1937.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.56	13	Pass



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 15 MHz Bandwidth, QPSK Modulation , Mid Channel, 1962.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.51	13	Pass

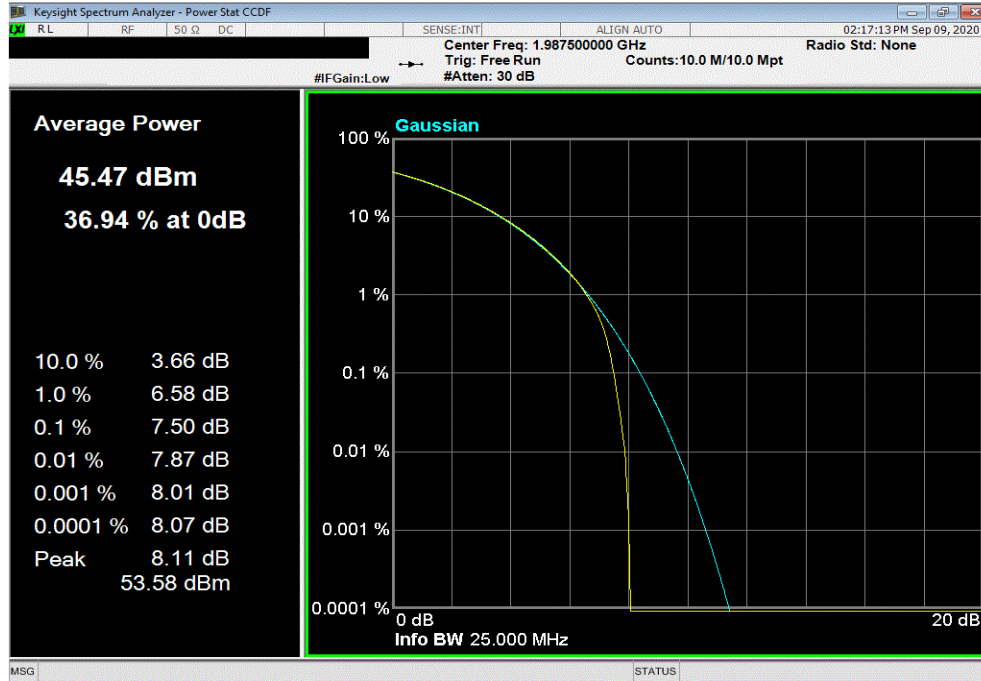


PEAK TO AVERAGE POWER (PAPR) CCDF

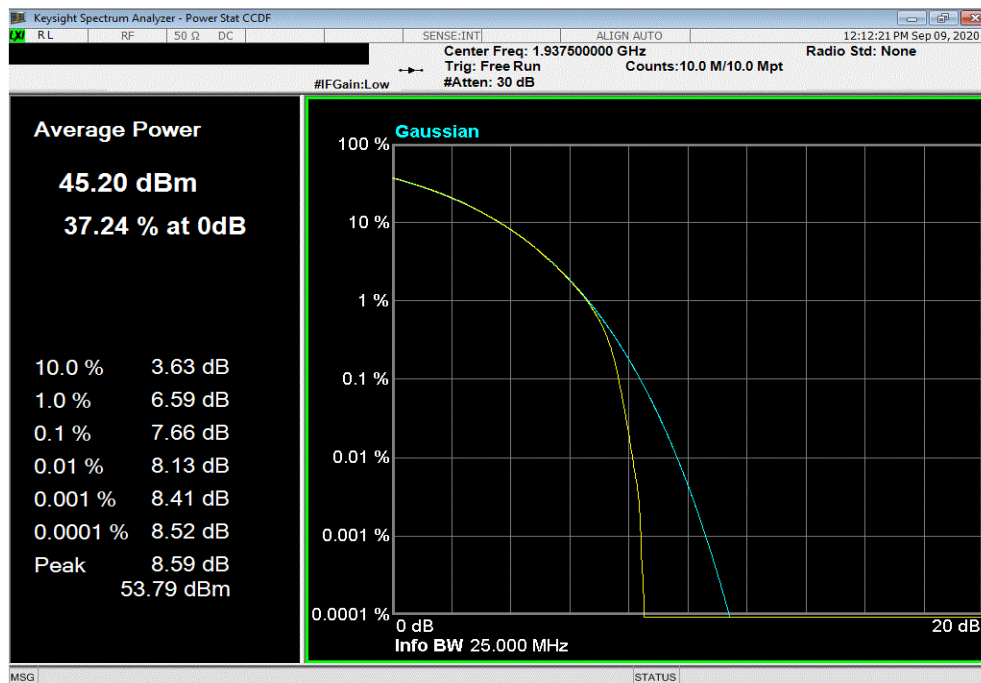


TMTx 2020.09.08.0 BETA XMI 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 15 MHz Bandwidth, QPSK Modulation , High Channel, 1987.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.5	13	Pass			



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 15 MHz Bandwidth, 16-QAM Modulation, Low Channel, 1937.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.66	13	Pass			

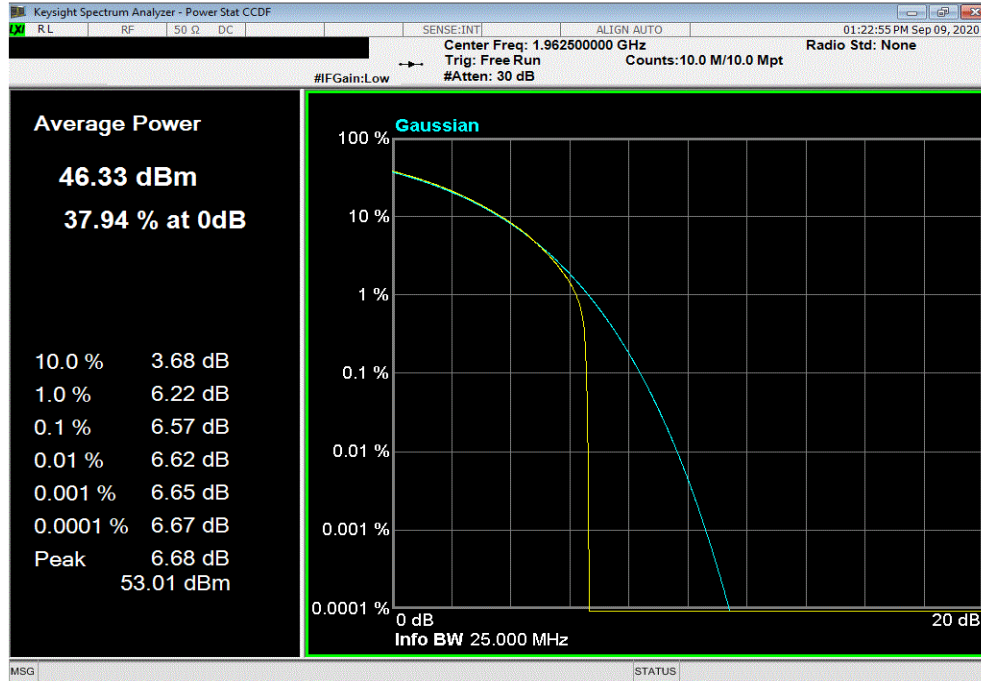


PEAK TO AVERAGE POWER (PAPR) CCDF

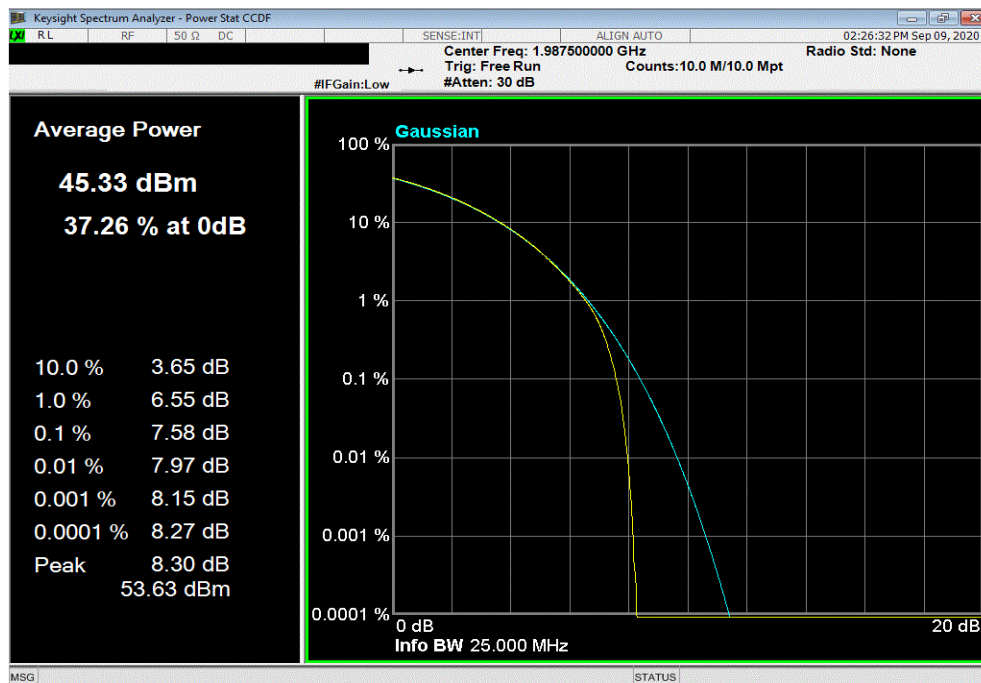


TMTx 2020.09.08.0 BETA XMI 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 15 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 1962.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.57	13	Pass



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 15 MHz Bandwidth, 16-QAM Modulation, High Channel, 1987.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.58	13	Pass

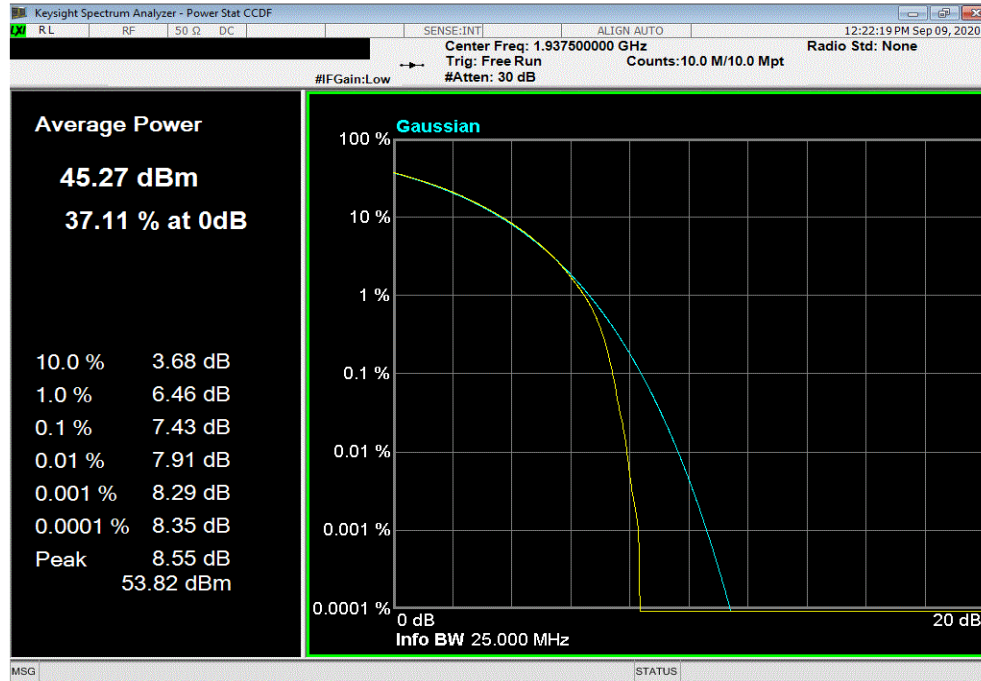


PEAK TO AVERAGE POWER (PAPR) CCDF

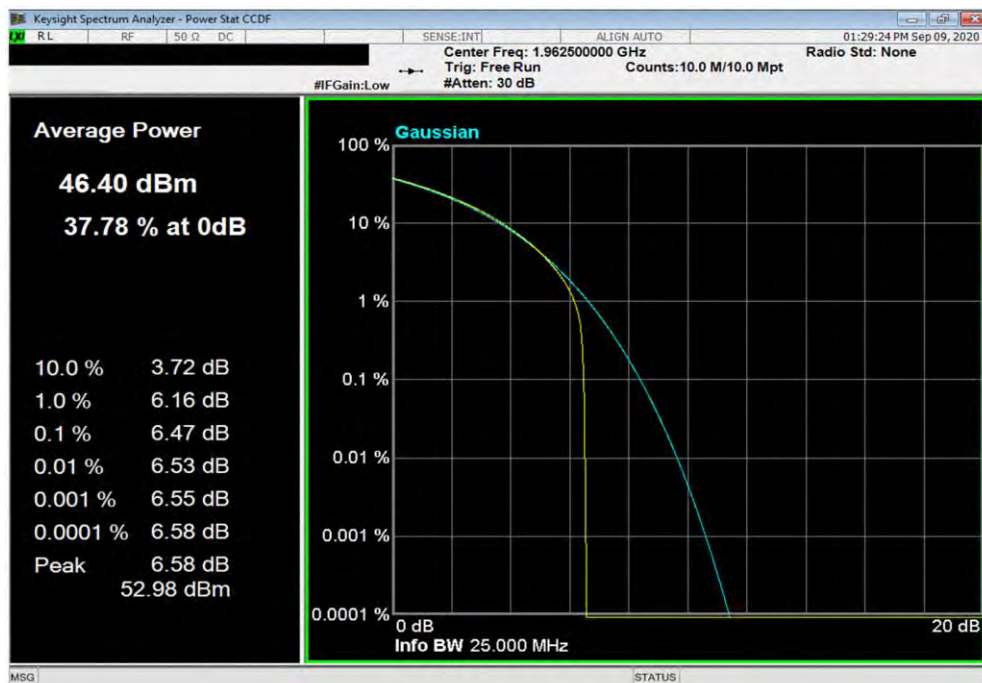


TMTx 2020.09.08.0 BETA XMR 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 15 MHz Bandwidth, 64-QAM Modulation, Low Channel, 1937.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.43	13	Pass			



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 15 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 1962.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.47	13	Pass			

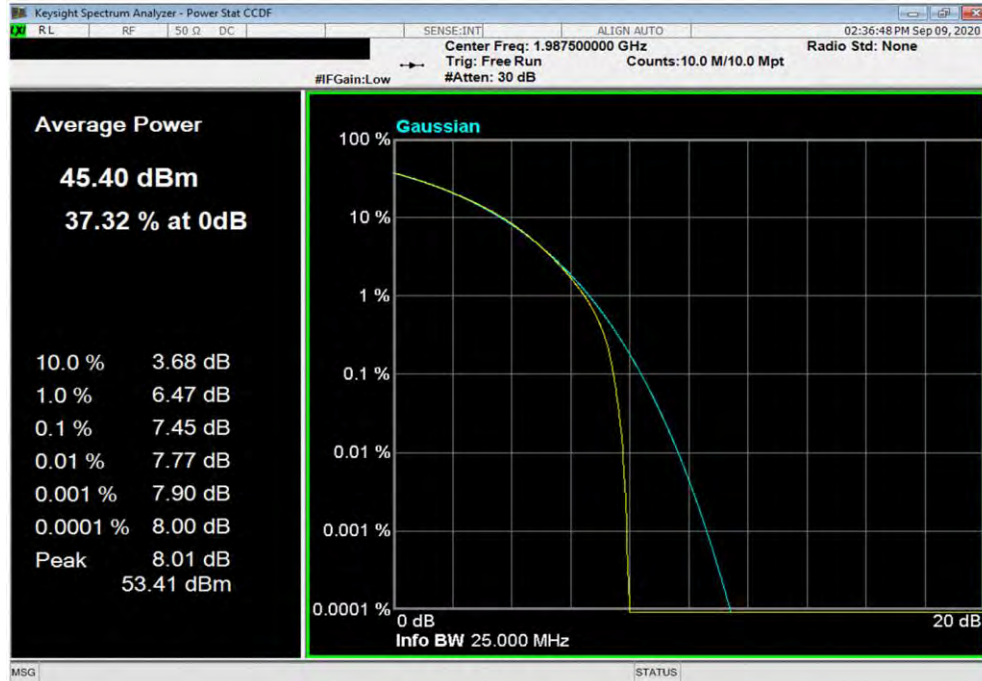


PEAK TO AVERAGE POWER (PAPR) CCDF

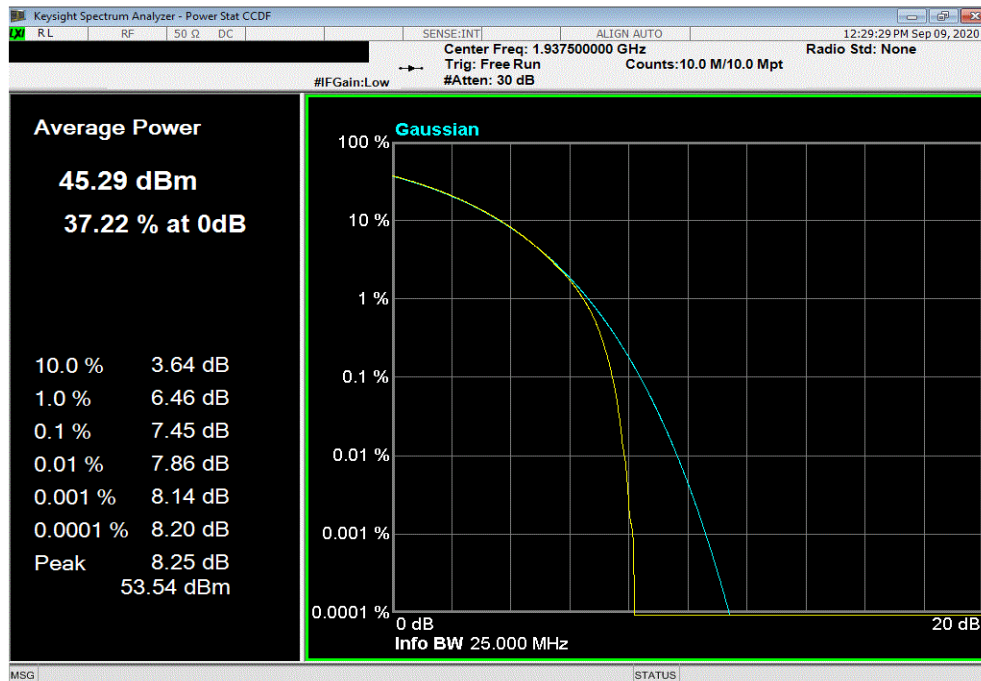


TMTx 2020.09.08.0 BETA XMI 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 15 MHz Bandwidth, 64-QAM Modulation, High Channel, 1987.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.45	13	Pass			



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 15 MHz Bandwidth, 256-QAM Modulation, Low Channel, 1937.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.45	13	Pass			

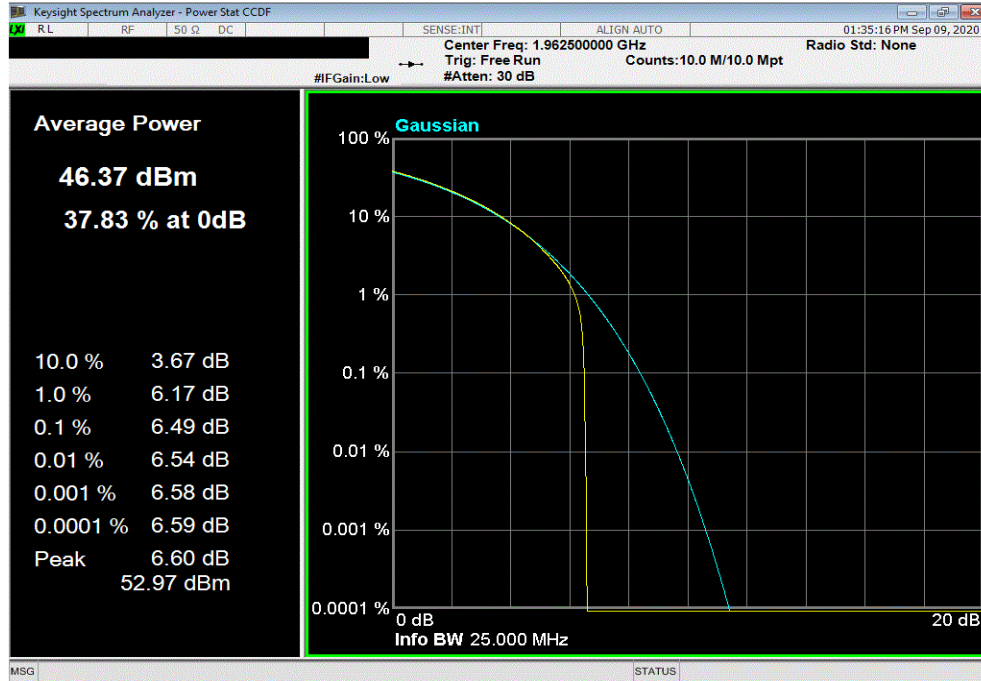


PEAK TO AVERAGE POWER (PAPR) CCDF

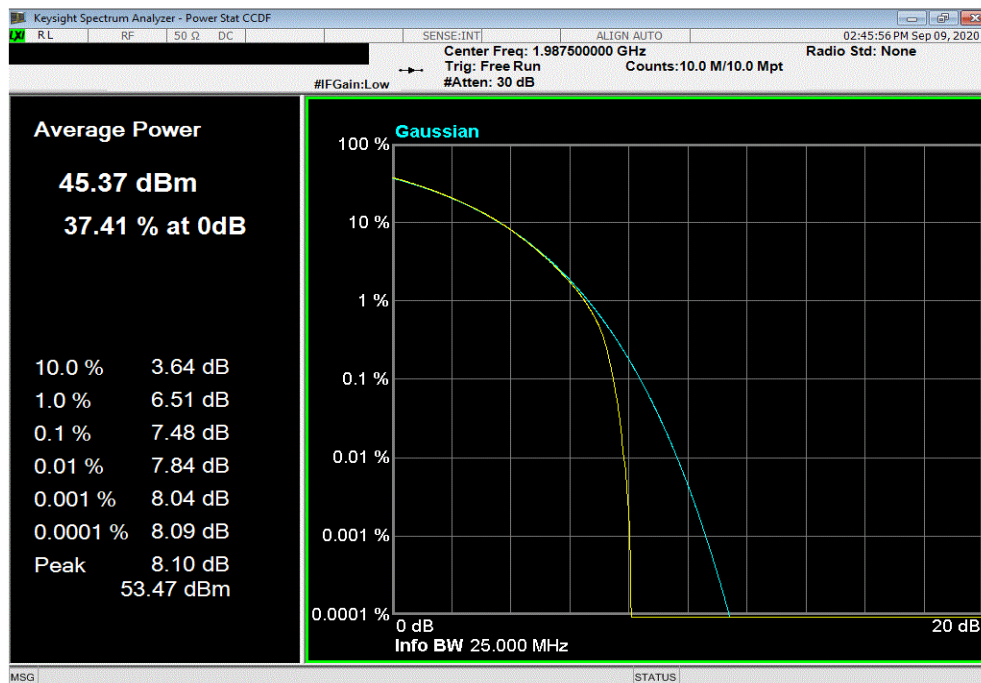


TMTx 2020.09.08.0 BETA XMt 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 15 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 1962.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.49	13	Pass			



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 15 MHz Bandwidth, 256-QAM Modulation, High Channel, 1987.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.48	13	Pass			

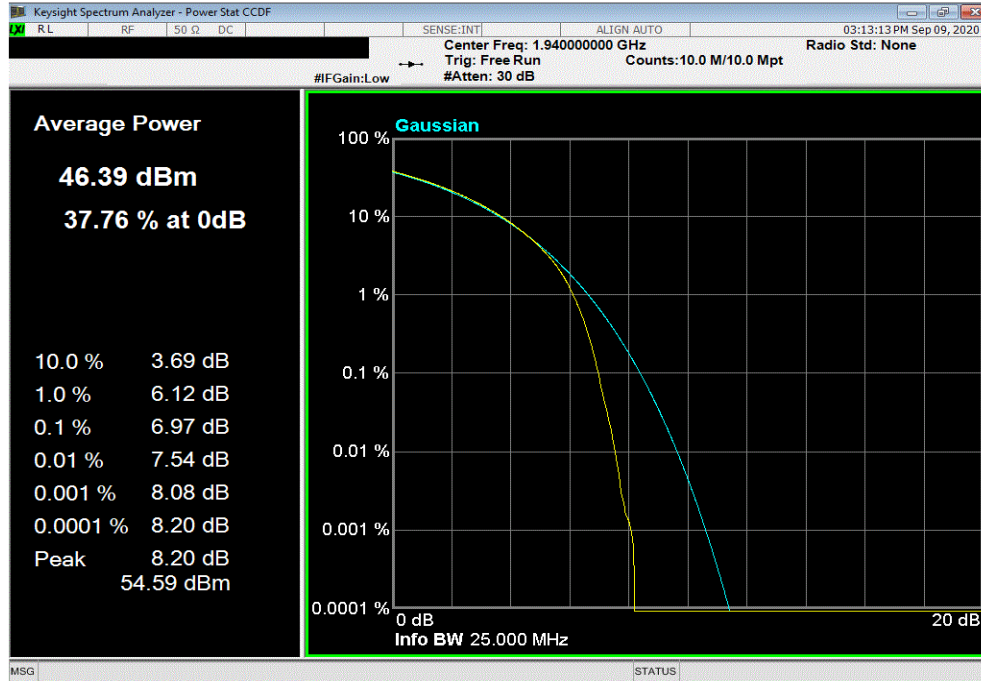


PEAK TO AVERAGE POWER (PAPR) CCDF

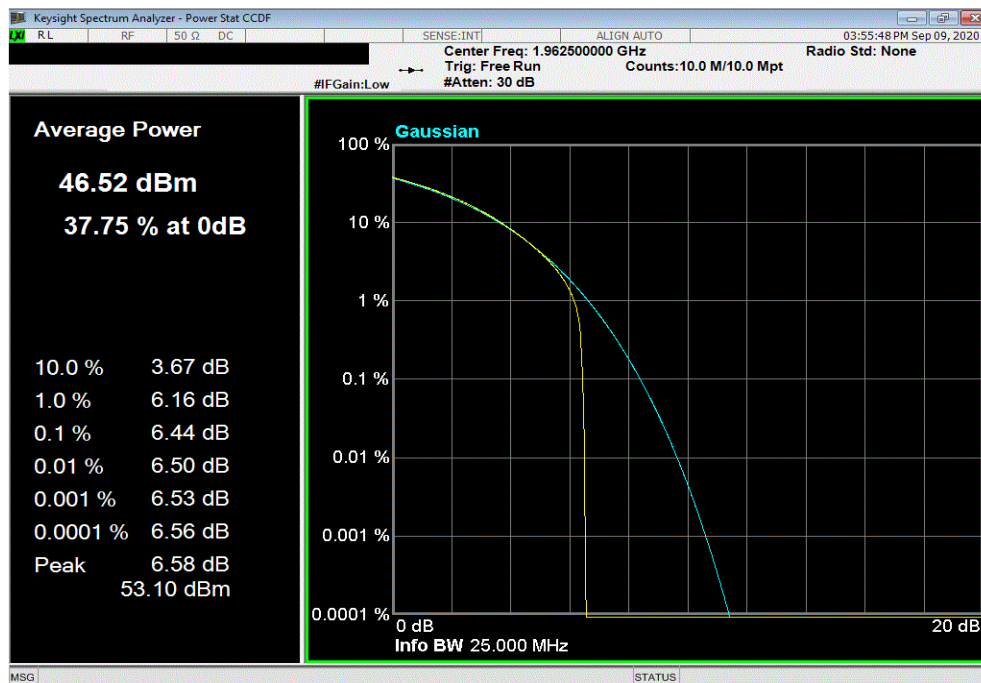


TMTx 2020.09.08.0 BETA XMt 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 20 MHz Bandwidth, QPSK Modulation , Low Channel, 1940 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.97	13	Pass			



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 20 MHz Bandwidth, QPSK Modulation , Mid Channel, 1962.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.44	13	Pass			

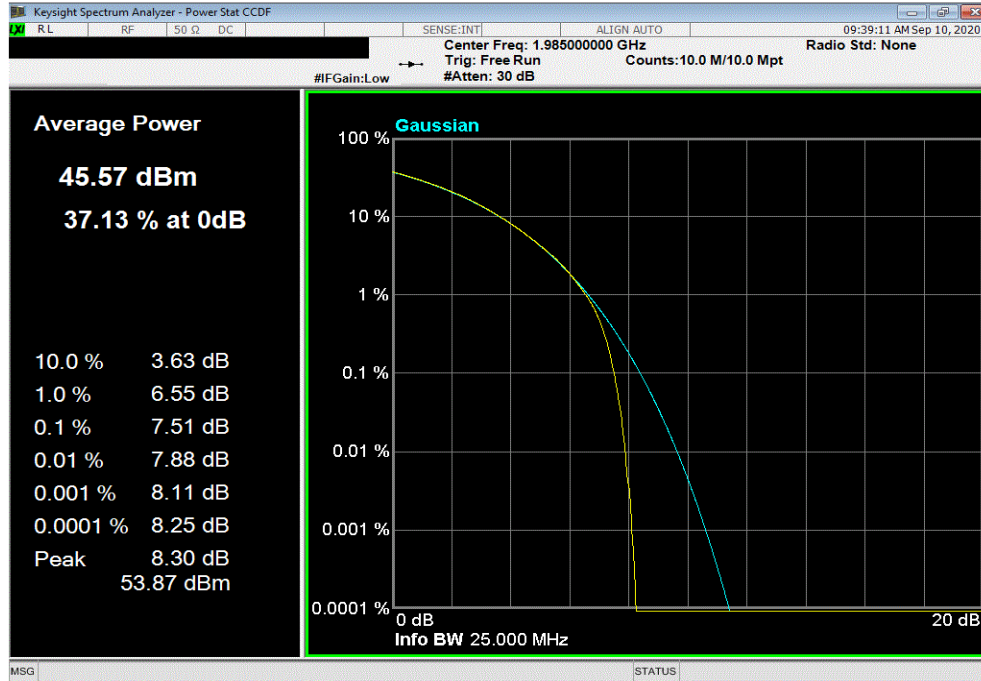


PEAK TO AVERAGE POWER (PAPR) CCDF

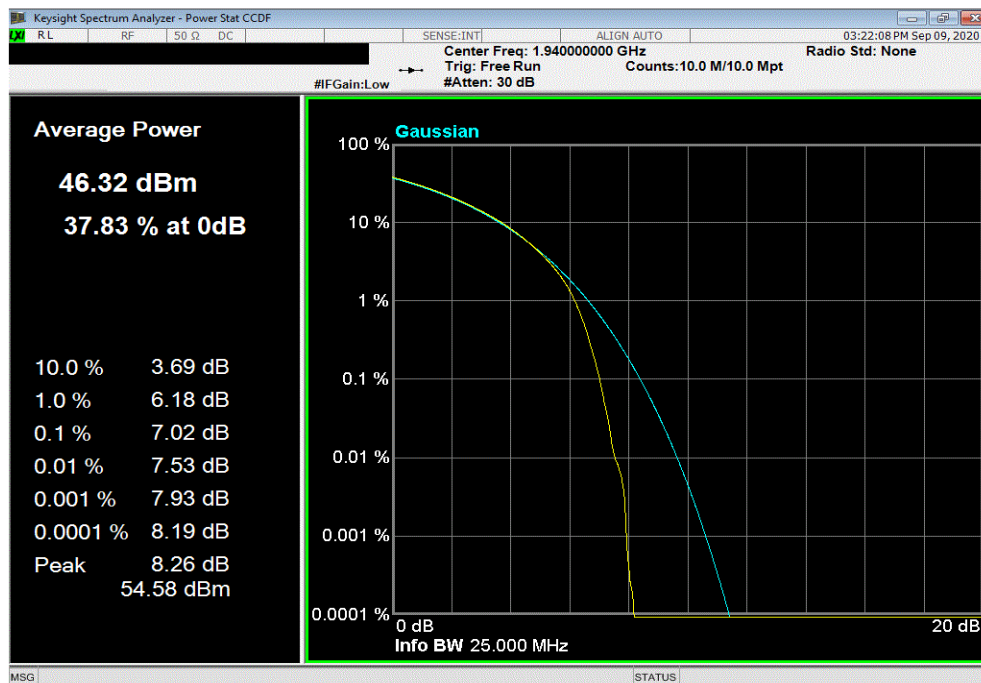


TMTx 2020.09.08.0 BETA XMt 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 20 MHz Bandwidth, QPSK Modulation , High Channel, 1985 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.51	13	Pass



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 20 MHz Bandwidth, 16-QAM Modulation, Low Channel, 1940 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.02	13	Pass

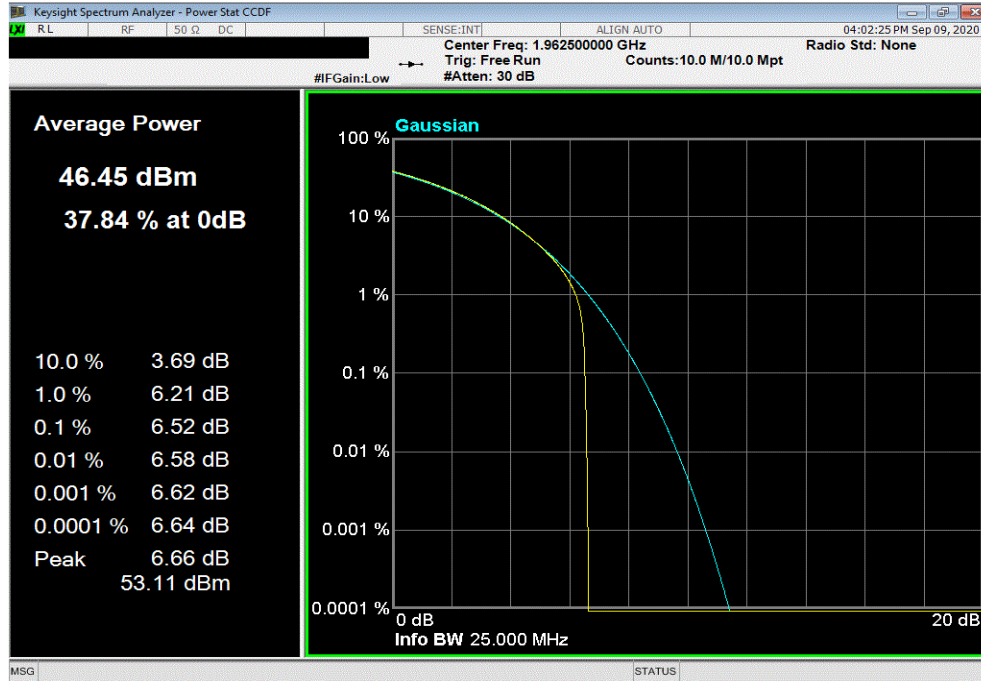


PEAK TO AVERAGE POWER (PAPR) CCDF

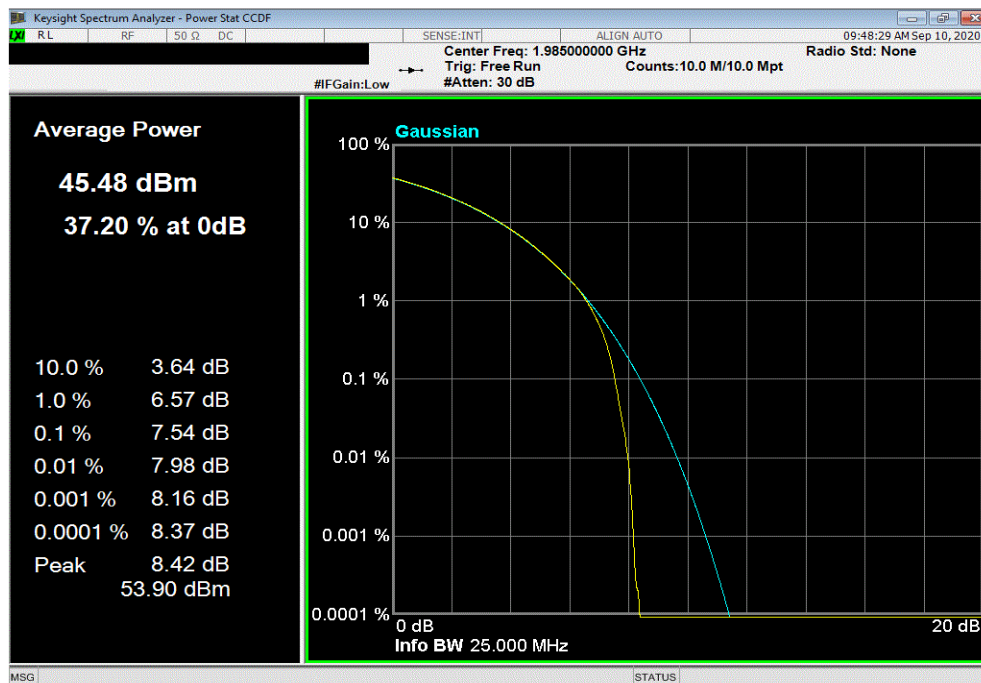


TMTx 2020.09.08.0 BETA XMI 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 20 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 1962.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.52	13	Pass			



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 20 MHz Bandwidth, 16-QAM Modulation, High Channel, 1985 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.54	13	Pass			

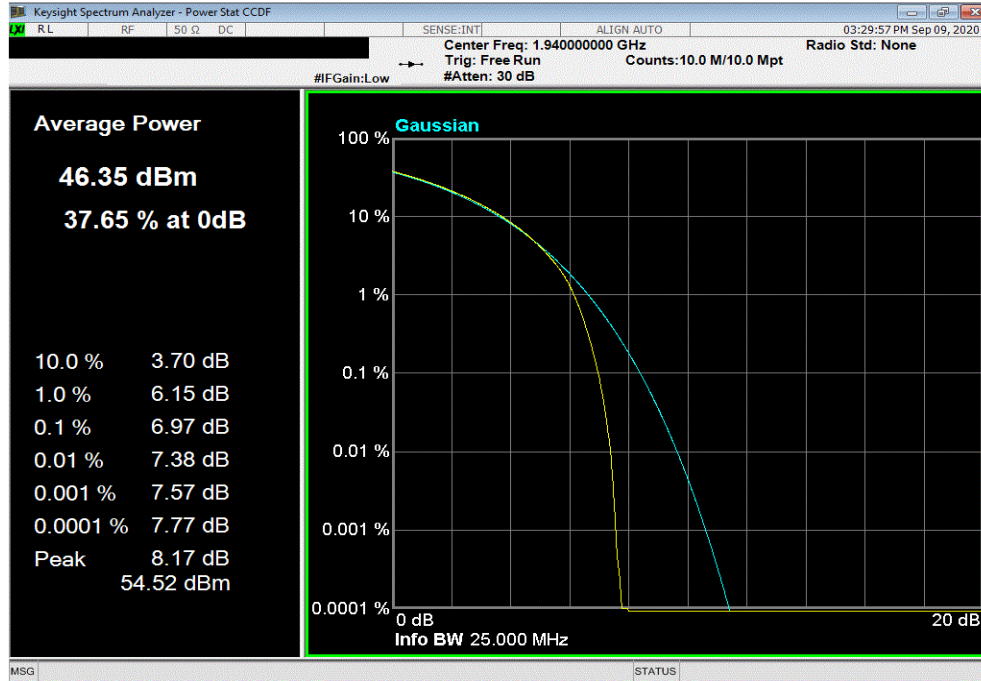


PEAK TO AVERAGE POWER (PAPR) CCDF

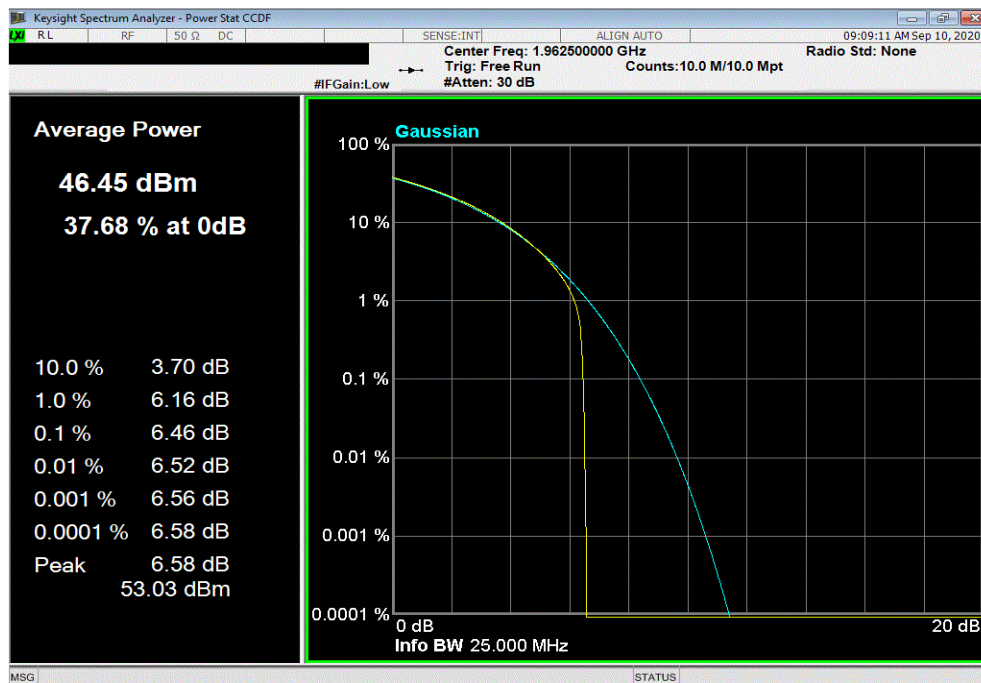


TMTx 2020.09.08.0 BETA XMI 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 20 MHz Bandwidth, 64-QAM Modulation, Low Channel, 1940 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.97	13	Pass			



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 20 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 1962.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.46	13	Pass			

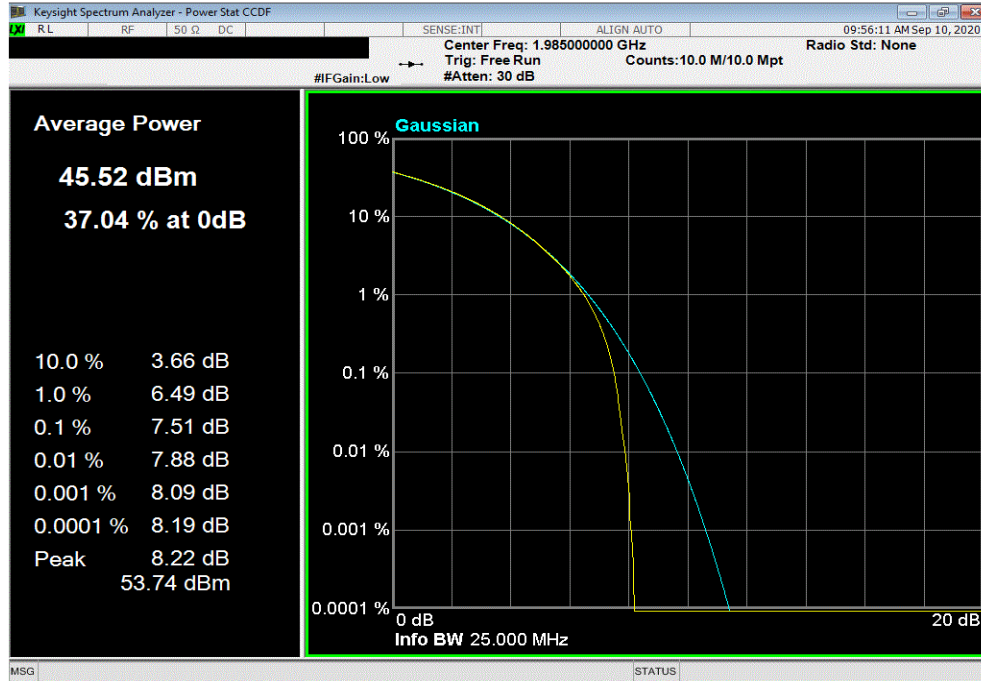


PEAK TO AVERAGE POWER (PAPR) CCDF

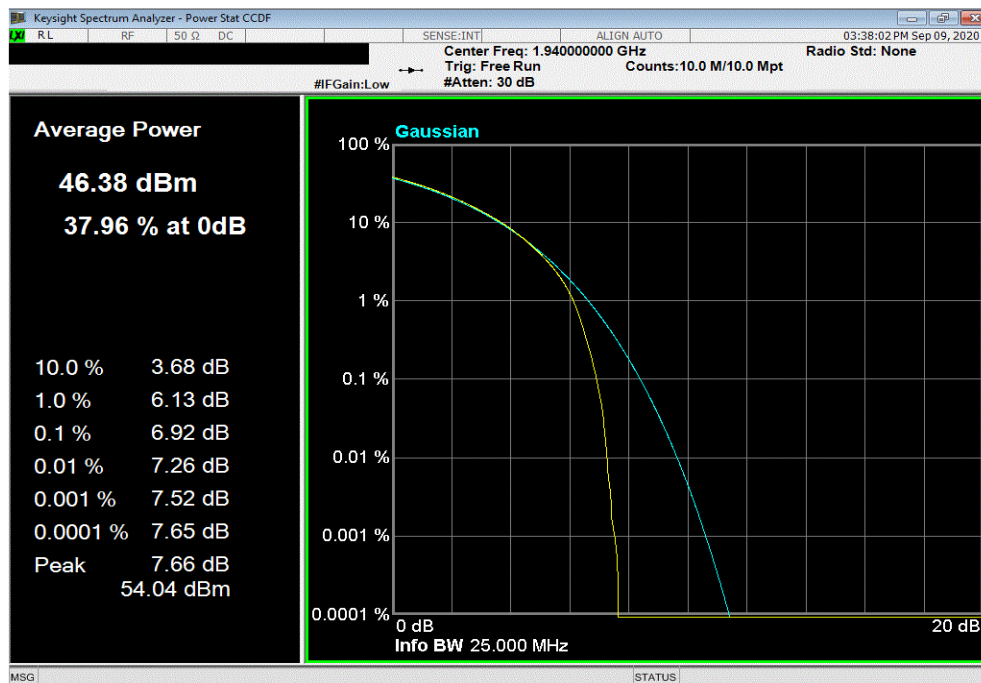


TMTx 2020.09.08.0 BETA XMI 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 20 MHz Bandwidth, 64-QAM Modulation, High Channel, 1985 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.51	13	Pass



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 20 MHz Bandwidth, 256-QAM Modulation, Low Channel, 1940 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.92	13	Pass

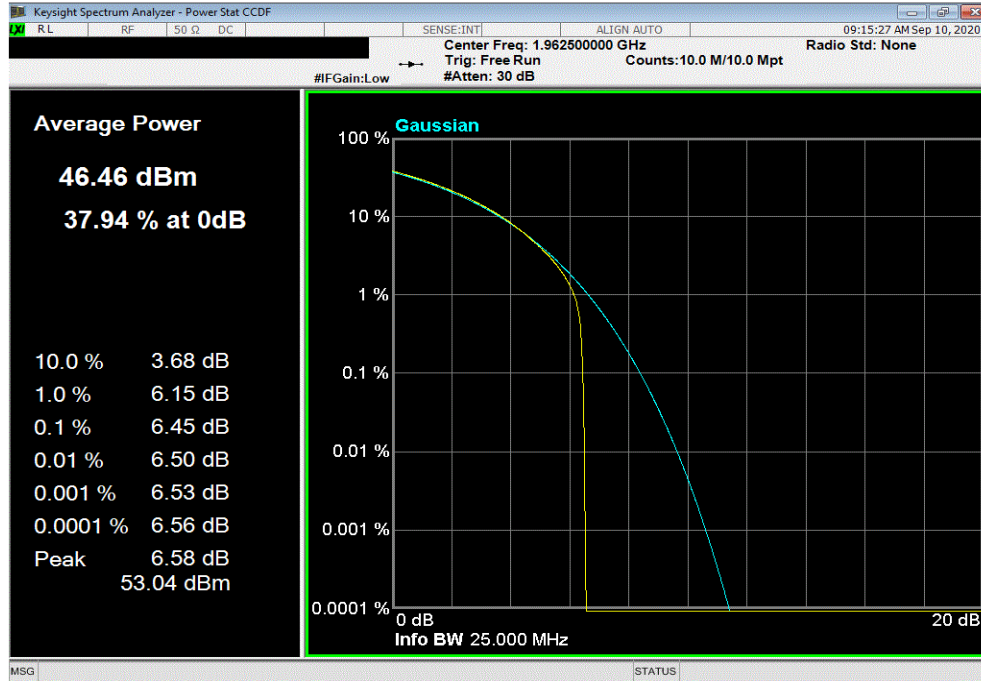


PEAK TO AVERAGE POWER (PAPR) CCDF

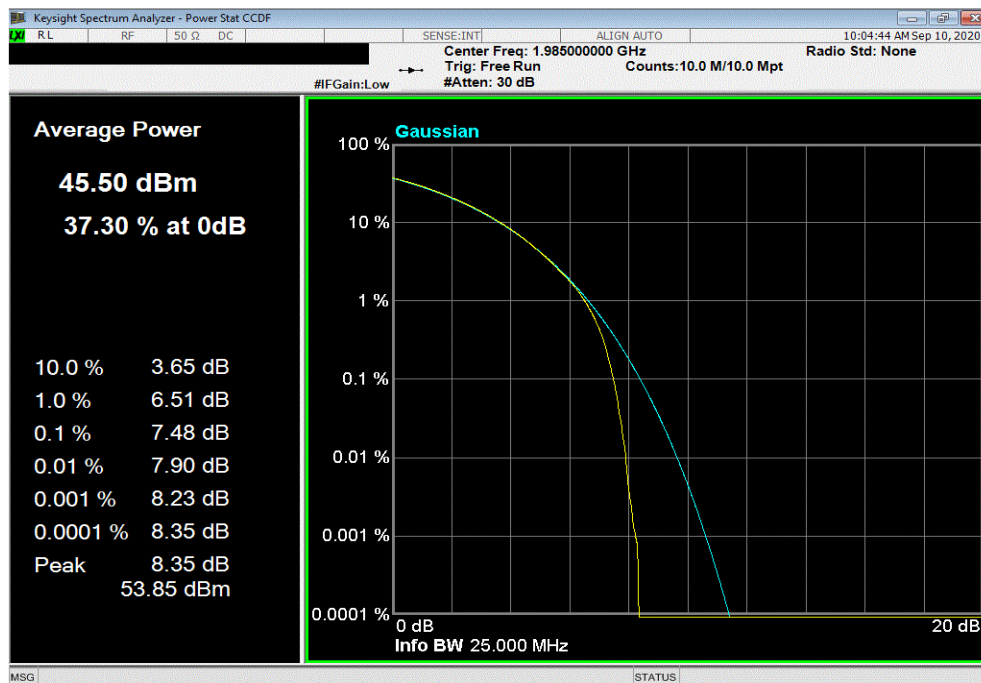


TMTx 2020.09.08.0 BETA XMI 2020.03.25.0

Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 20 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 1962.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.45	13	Pass			



Band 25, 1930 MHz - 1995 MHz, 5G, Port 1, 20 MHz Bandwidth, 256-QAM Modulation, High Channel, 1985 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	7.48	13	Pass			



PEAK TO AVERAGE POWER (PAPR) CCDF INNER CHANNELS



XMIT 2020.03.25.0

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 FCC part 24.232(d) and RSS 133 6.4, the PAPR limit shall not exceed 13 dB for more than the ANSI described 0.1% of the time.

RF conducted emissions testing was performed only on one port. The testing was performed on the same version of hardware (FHFB) as the original certification test. The FHFB antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in the original certification testing) and antenna port 1 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraph 5.7.2i.

PEAK TO AVERAGE POWER (PAPR) CCDF INNER CHANNELS



TMxTx 2020.09.06.0 BETA XMt 2020.03.25.0

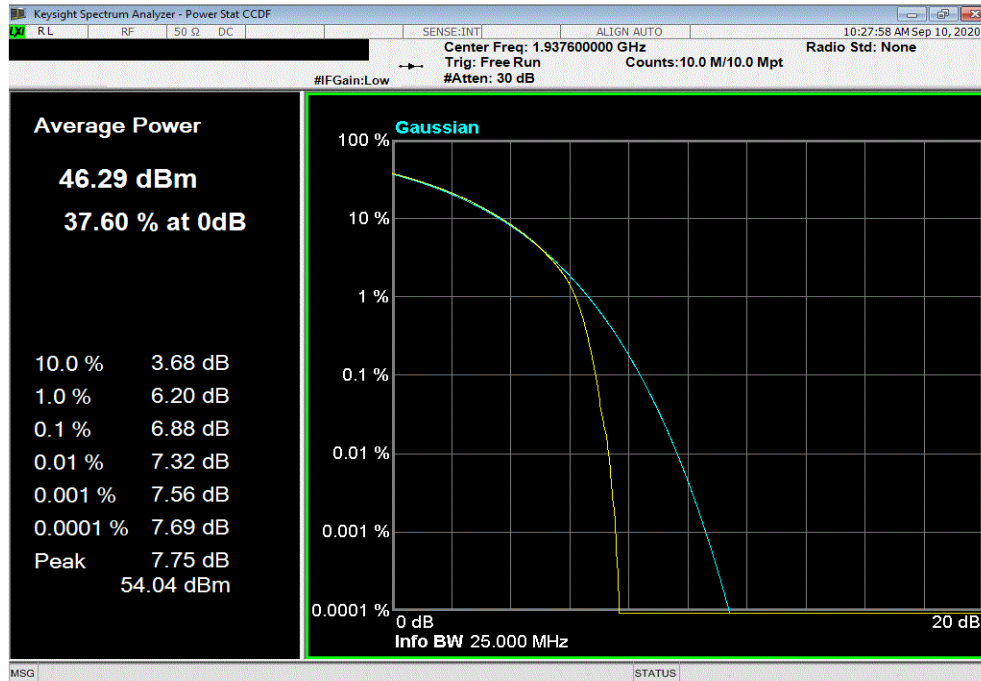
EUT: FHFB (FCC C2PC)		Work Order: NOKI0021	
Serial Number: L9144200604		Date: 10-Sep-20	
Customer: Nokia of America Corporation		Temperature: 22.5 °C	
Attendees: Mitchell Hill, John Rattanaovong		Humidity: 51.2% RH	
Project: None		Barometric Pres.: 1024 mbar	
Tested by: Brandon Hobbs		Power: 54 VDC	
Job Site: TX05			
TEST SPECIFICATIONS			
FCC 24E:2020		ANSI C63.26:2015	
RSS-133:2018		RSS-133:2018	
COMMENTS			
All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. 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
Port 1, Band n25, 1930 MHz - 1995 MHz			
15 MHz Bandwidth			
QPSK Modulation			
Low Channel +100kHz: 1937.6 MHz		6.88	13 Pass
High Channel -100kHz: 1987.4 MHz		6.73	13 Pass
16-QAM Modulation			
Low Channel +100kHz: 1937.6 MHz		6.97	13 Pass
High Channel -100kHz: 1987.4 MHz		6.84	13 Pass
64-QAM Modulation			
Low Channel +100kHz: 1937.6 MHz		6.80	13 Pass
High Channel -100kHz: 1987.4 MHz		6.71	13 Pass
256-QAM Modulation			
Low Channel +100kHz: 1937.6 MHz		6.82	13 Pass
High Channel -100kHz: 1987.4 MHz		6.75	13 Pass

PEAK TO AVERAGE POWER (PAPR) CCDF INNER CHANNELS

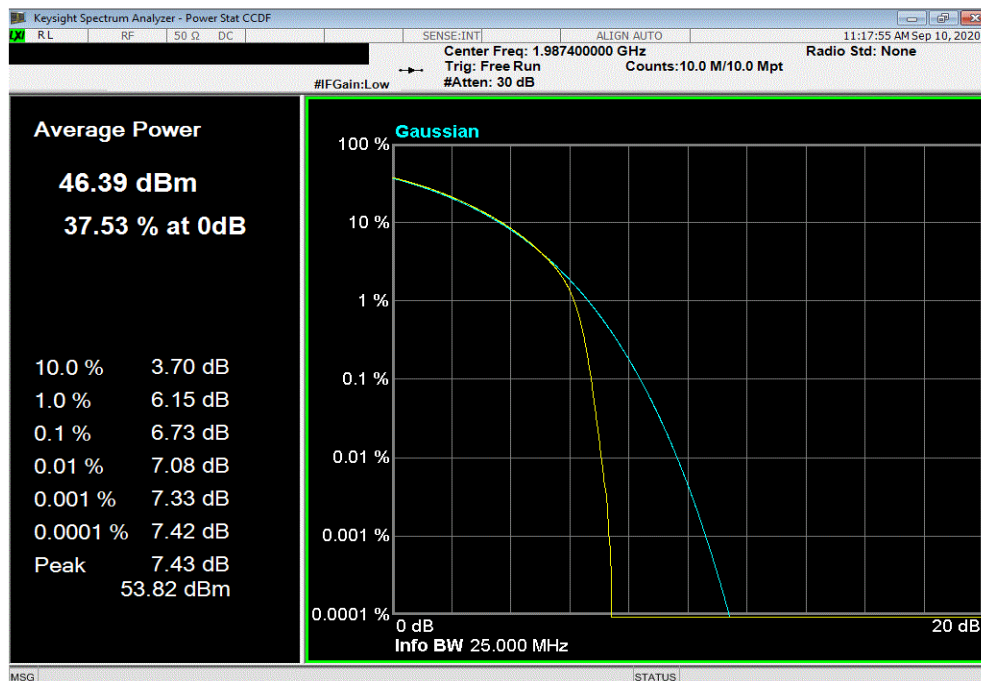


TMTx 2020.09.08.0 BETA XMI 2020.03.25.0

Port 1, Band n25, 1930 MHz - 1995 MHz , 15 MHz Bandwidth, QPSK Modulation, Low Channel +100kHz: 1937.6 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.88	13	Pass



Port 1, Band n25, 1930 MHz - 1995 MHz , 15 MHz Bandwidth, QPSK Modulation, High Channel -100kHz: 1987.4 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.73	13	Pass

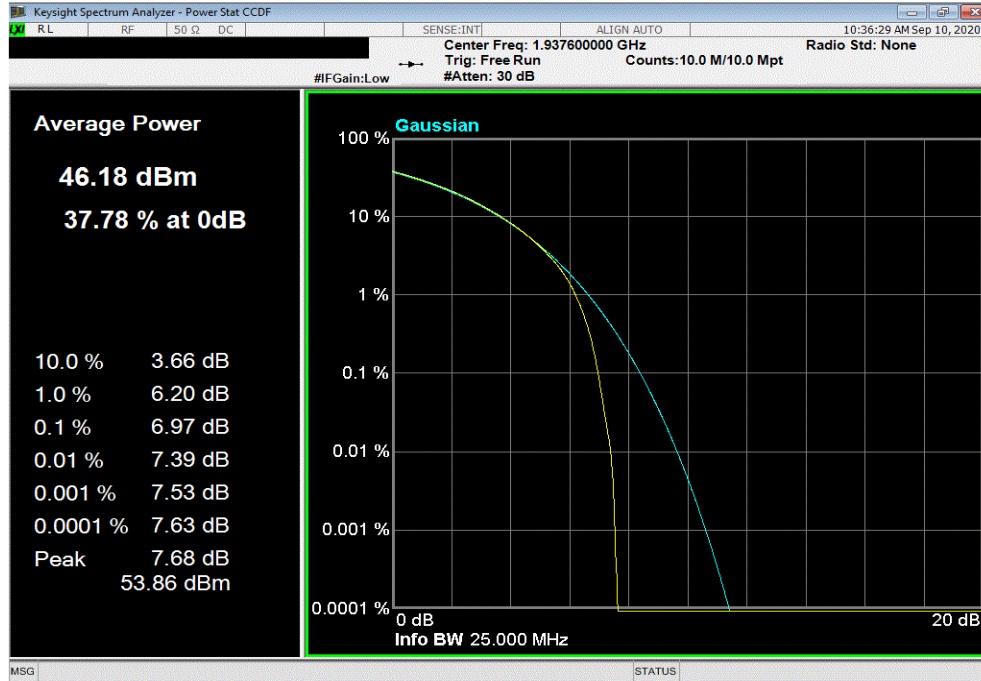


PEAK TO AVERAGE POWER (PAPR) CCDF INNER CHANNELS

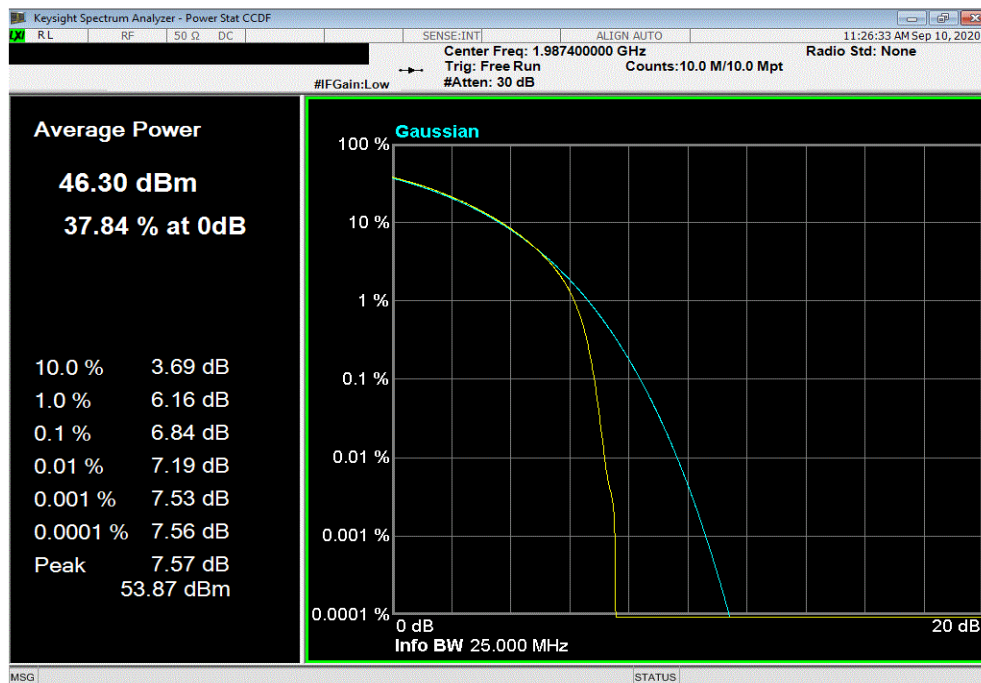


TMTx 2020.09.08.0 BETA XMI 2020.03.25.0

Port 1, Band n25, 1930 MHz - 1995 MHz , 15 MHz Bandwidth, 16-QAM Modulation , Low Channel +100kHz: 1937.6 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.97	13	Pass



Port 1, Band n25, 1930 MHz - 1995 MHz , 15 MHz Bandwidth, 16-QAM Modulation , High Channel -100kHz: 1987.4 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.84	13	Pass

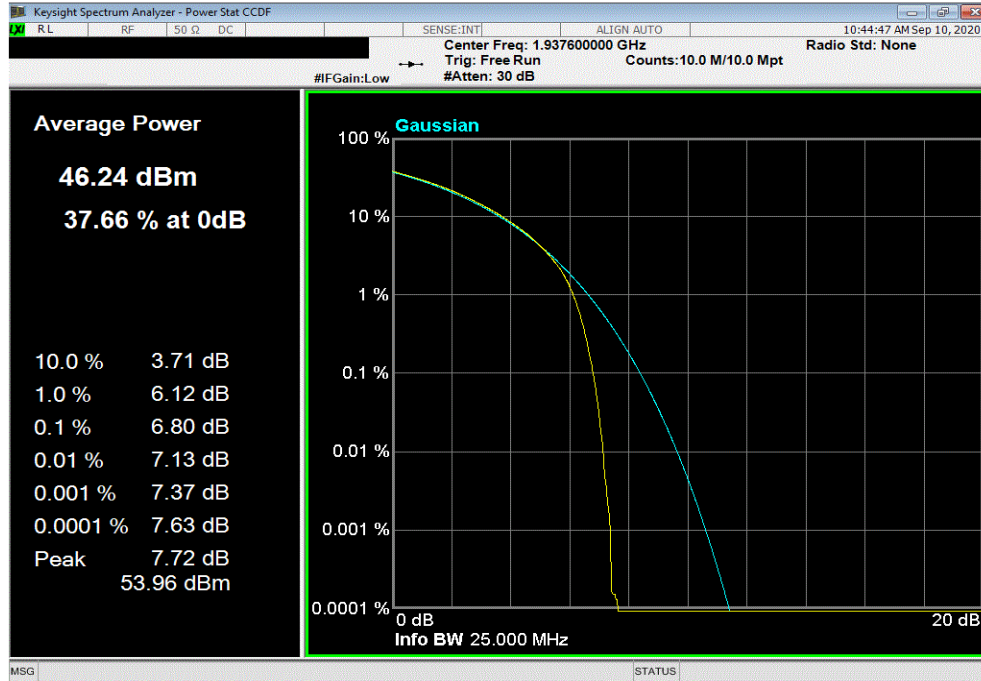


PEAK TO AVERAGE POWER (PAPR) CCDF INNER CHANNELS

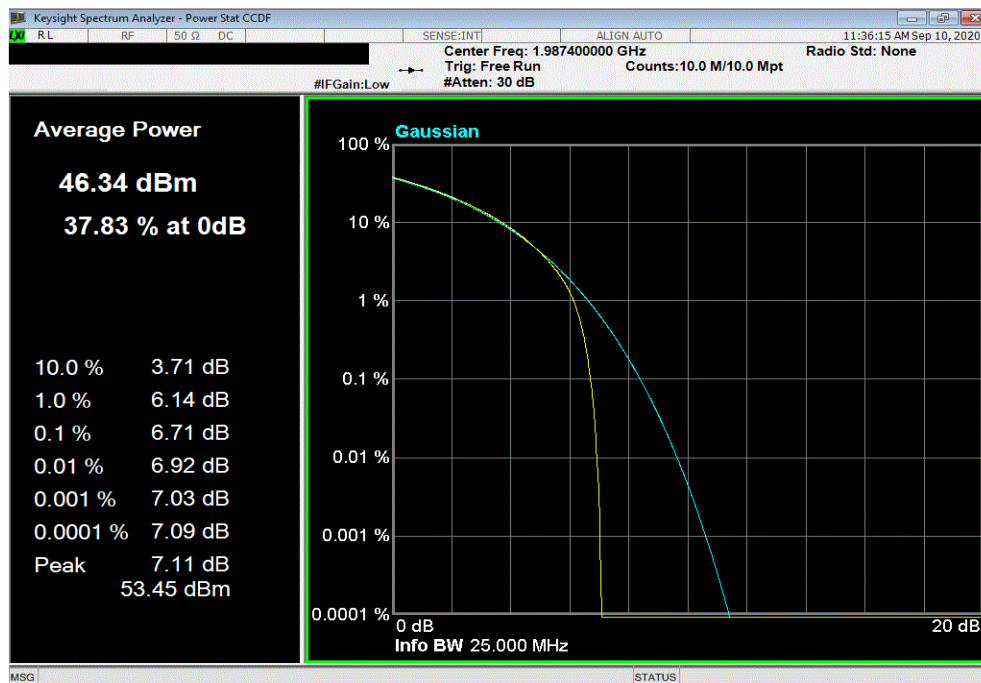


TMTx 2020.09.08.0 BETA XMI 2020.03.25.0

Port 1, Band n25, 1930 MHz - 1995 MHz , 15 MHz Bandwidth, 64-QAM Modulation, Low Channel +100kHz: 1937.6 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.8	13	Pass			



Port 1, Band n25, 1930 MHz - 1995 MHz , 15 MHz Bandwidth, 64-QAM Modulation, High Channel -100kHz: 1987.4 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	6.71	13	Pass			

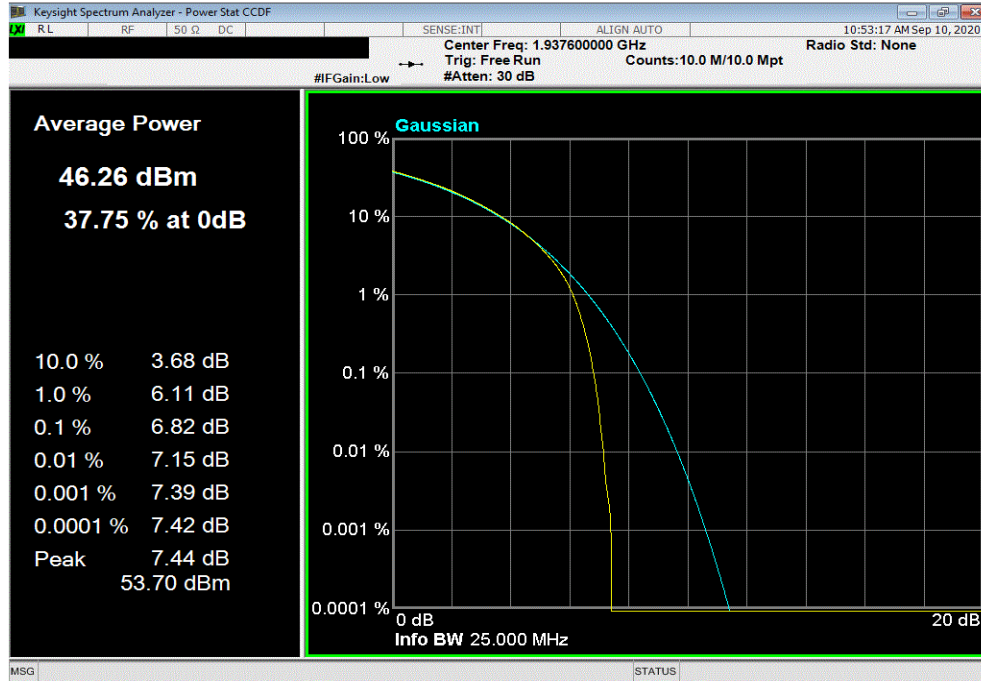


PEAK TO AVERAGE POWER (PAPR) CCDF INNER CHANNELS



TMTx 2020.09.08.0 BETA XMt 2020.03.25.0

Port 1, Band n25, 1930 MHz - 1995 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Low Channel +100kHz: 1937.6 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.82	13	Pass



Port 1, Band n25, 1930 MHz - 1995 MHz, 15 MHz Bandwidth, 256-QAM Modulation, High Channel -100kHz: 1987.4 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				6.75	13	Pass

