

AVERAGE POWER



XMM 2020.12.30.0

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
Block - DC	Fairview Microwave	SD3379	AMM	2020-09-21	2021-09-21
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFL	2021-03-11	2022-03-11
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to maximum.

The method in ANSI C63.26-2015 paragraph 5.2.4.4 was used to make these measurements.

The RF conducted emission testing was performed on one port. The AZQW antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in the "Output Power - All Ports" report section) and antenna port 8 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i, and 6.4.

The total average transmit power of all antenna ports was determined per ANSI C63.26-2015 paragraph 6.4.3.1.


Per section 27.50(d)(2)(ii) the Equivalent Isotropically Radiated Power (EIRP) of the transceiver cannot exceed 1640 W/MHz. EIRP as defined by the FCC is the total power output from the cell site antenna.

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TstTx 2021.03.19.1

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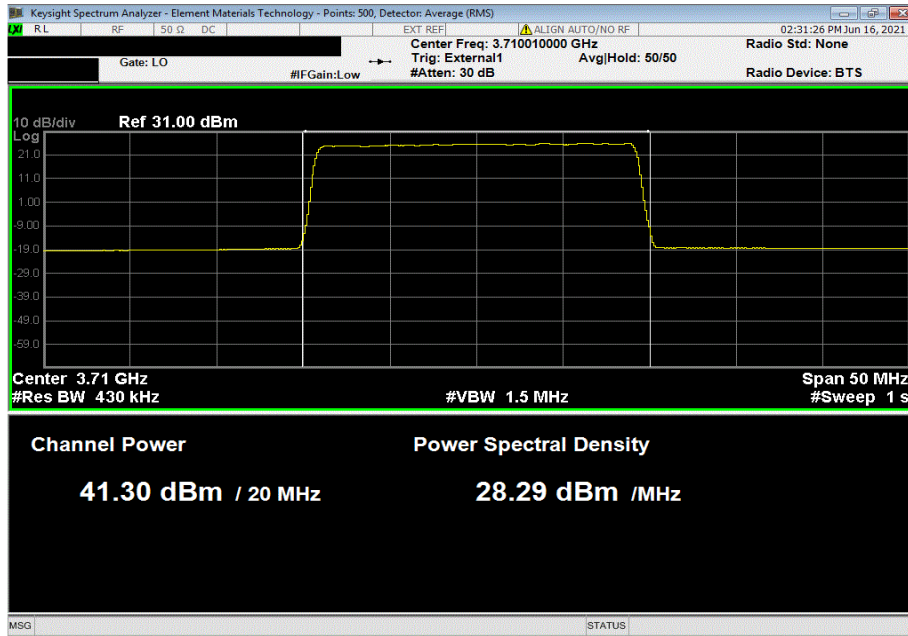
EUT: Aircscale Base Transceiver Station Remote Radio Head Model AZQW			Work Order: NOKI0028				
Serial Number: YK211100168			Date: 18-Jun-21				
Customer: Nokia Solutions and Networks			Temperature: 21 °C				
Attendees: John Rattanavong, David Le			Humidity: 52.9% RH				
Project: None			Barometric Pres.: 1019 mbar				
Tested by: Brandon Hobbs		Power: 54VDC	Job Site: TX05				
TEST SPECIFICATIONS			Test Method				
FCC 27:2021			ANSI C63.26:2015				
COMMENTS							
All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. The output power was measured for a single carrier over the carrier channel bandwidth on port 8. The total output power for multiport (2x2 MIMO, 4x4 MIMO & 8x8 MIMO) operation was determined based upon ANSI 63.26 clauses 6.4.3.1 and 6.4.3.2.4 (10 log Nout). The total output power for two port operation is single port power + 3dB [i.e. 10log(2)]. The total output power for four port operation is single port power + 6dB [i.e. 10log(4)]. The total output power for eight port operation is single port power + 9dB [i.e. 10log(8)]. External 1 gating was set using a trig delay = 86.2us and a gate length = 3.714ms. The carrier power was set to maximum for all testing.							
DEVIATIONS FROM TEST STANDARD							
None							
Configuration #	2	Signature 					
		Initial Value dBm/Carrier BW	Duty Cycle	Single Port dBm/Carrier BW	Two Port (2x2 MIMO) dBm/Carrier BW	Four Port (4x4 MIMO) dBm/Carrier BW	Eight Port (8x8 MIMO) dBm/Carrier BW
Band n77, 3700 MHz - 3980 MHz, 5G NR							
Port 8							
20 MHz BW							
256-QAM Modulation							
Low Ch. 3710.01 MHz		41.303	0	41.30	44.30	47.30	50.30
Mid Ch. 3840 MHz		41.492	0	41.49	44.49	47.49	50.49
High Ch. 3969.99 MHz		41.465	0	41.47	44.47	47.47	50.47
40 MHz BW							
256-QAM Modulation							
Low Ch. 3720 Mhz		44.557	0	44.56	47.56	50.56	53.56
Mid Ch. 3840 MHz		44.739	0	44.74	47.74	50.74	53.74
High Ch. 3960 MHz		44.59	0	44.59	47.59	50.59	53.59
60 MHz BW							
256-QAM Modulation							
Low Ch. 3730.02 MHz		45.867	0	45.87	48.87	51.87	54.87
Mid Ch. 3840 MHz		45.804	0	45.80	48.80	51.80	54.80
High Ch. 3949.98 MHz		45.949	0	45.95	48.95	51.95	54.95
80 MHz BW							
256-QAM Modulation							
Low Ch. 3740.01 MHz		45.649	0	45.65	48.65	51.65	54.65
Mid Ch. 3840 MHz		45.87	0	45.87	48.87	51.87	54.87
High Ch. 3939.99 MHz		45.742	0	45.74	48.74	51.74	54.74
100 MHz BW							
QPSK Modulation							
Mid Ch. 3840 MHz		45.991	0	45.99	48.99	51.99	54.99
16-QAM Modulation							
Mid Ch. 3840 MHz		46.012	0	46.01	49.01	52.01	55.01
64-QAM Modulation							
Mid Ch. 3840 MHz		45.973	0	45.97	48.97	51.97	54.97
256-QAM Modulation							
Low Ch. 3750 MHz		45.592	0	45.59	48.59	51.59	54.59
Mid Ch. 3840 MHz		45.954	0	45.95	48.95	51.95	54.95
High Ch. 3930 MHz		46.026	0	46.03	49.03	52.03	55.03

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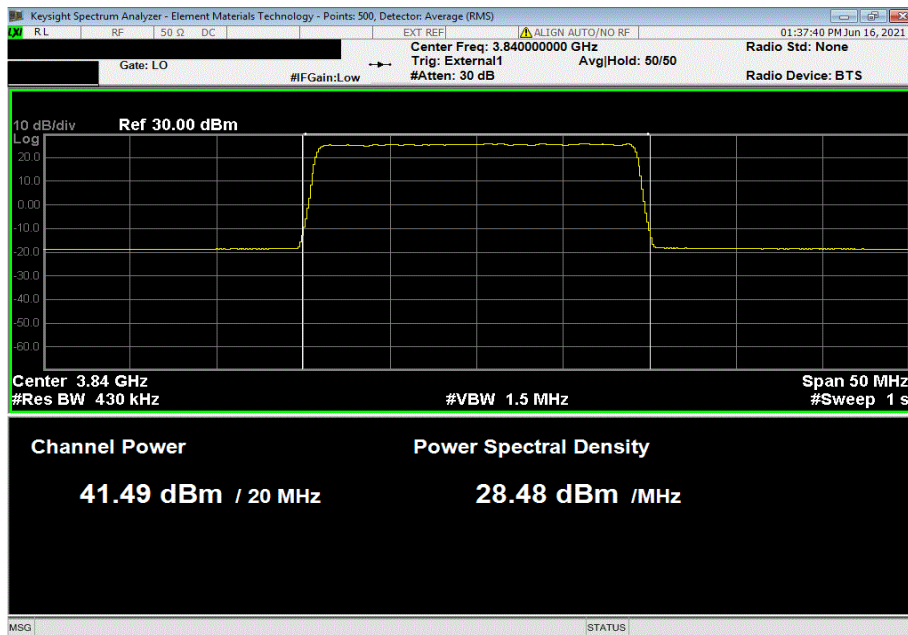


TbTx 2021.03.19.1 XMi 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 20 MHz BW, 256-QAM Modulation, Low Ch.3710.01 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	Eight Port (8x8 MIMO)	
dBm/Carrier BW		dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	
41.303	0	41.303	44.303	47.303	50.303	



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 20 MHz BW, 256-QAM Modulation, Mid Ch. 3840 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	Eight Port (8x8 MIMO)	
dBm/Carrier BW		dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	
41.492	0	41.492	44.492	47.492	50.492	

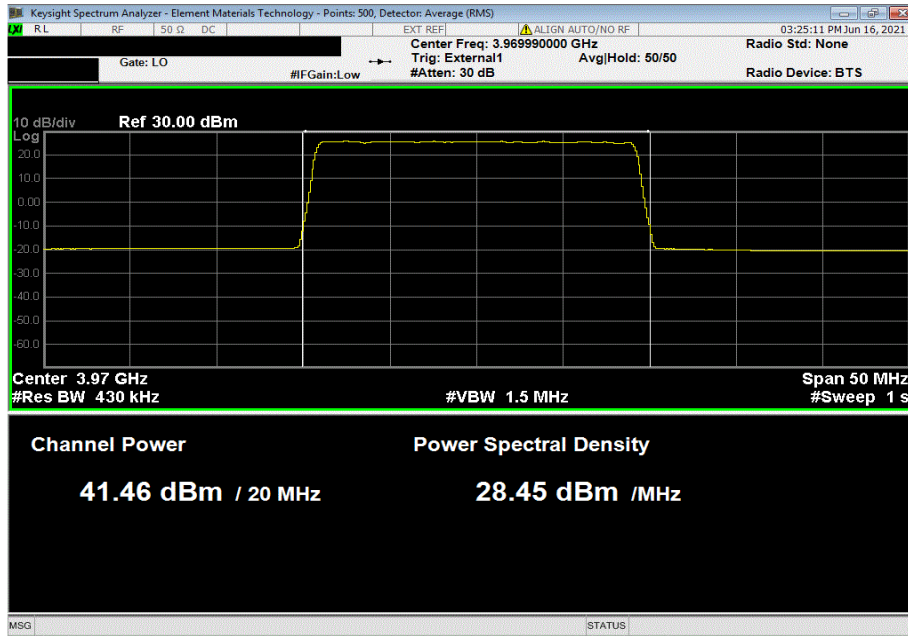


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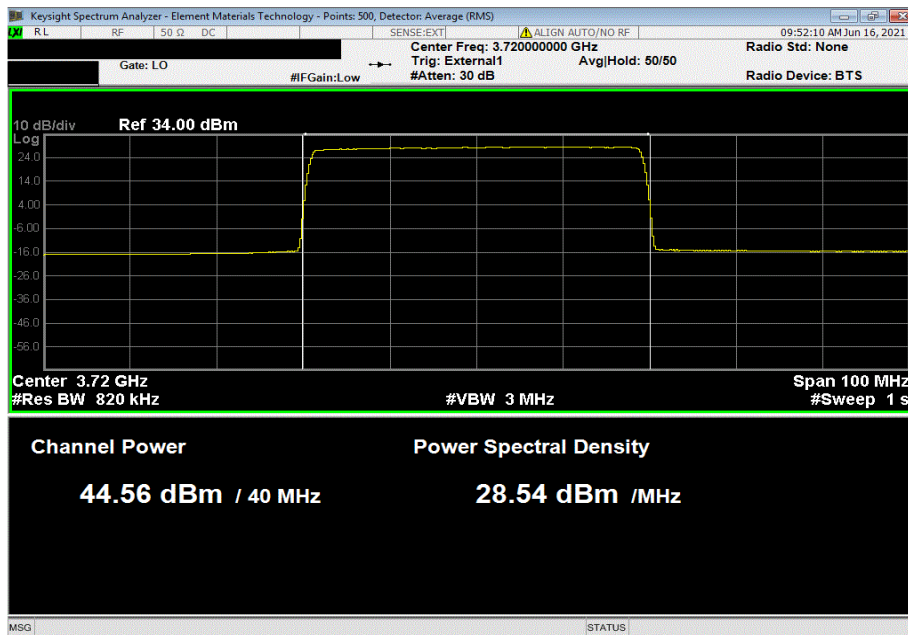


TbTx 2021.03.19.1 XMI 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 20 MHz BW, 256-QAM Modulation, High Ch. 3969.99 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	Eight Port (8x8 MIMO)	
dBm/Carrier BW		dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	
41.465	0	41.465	44.465	47.465	50.465	



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 40 MHz BW, 256-QAM Modulation, Low Ch. 3720 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	Eight Port (8x8 MIMO)	
dBm/Carrier BW		dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	
44.557	0	44.557	47.557	50.557	53.557	

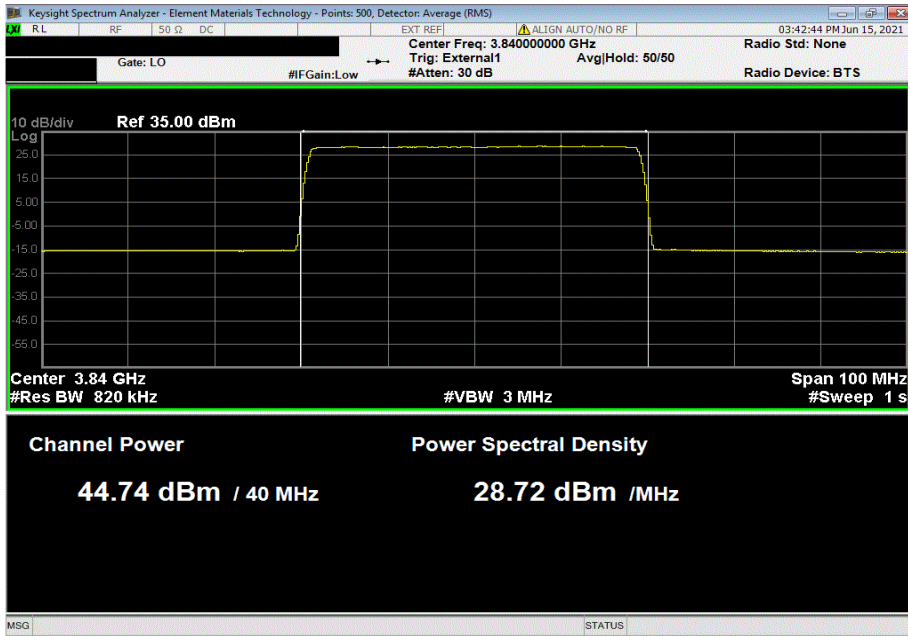


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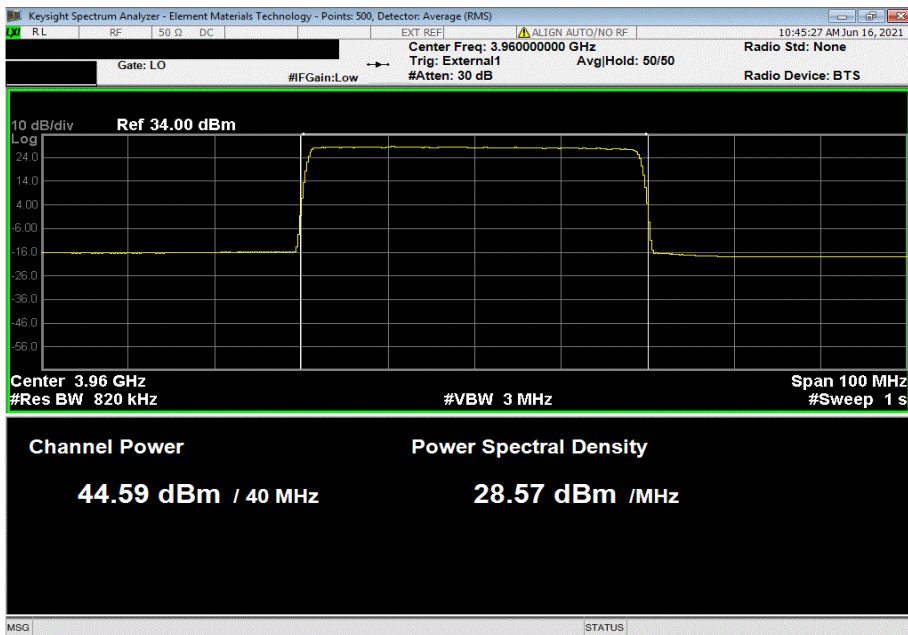


TbTx 2021.03.19.1 XMt 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 40 MHz BW, 256-QAM Modulation, Mid Ch. 3840 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	Eight Port (8x8 MIMO)	
dBm/Carrier BW		dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	
44.739	0	44.739	47.739	50.739	53.739	



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 40 MHz BW, 256-QAM Modulation, High Ch. 3960 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	Eight Port (8x8 MIMO)	
dBm/Carrier BW		dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	
44.59	0	44.59	47.59	50.59	53.59	

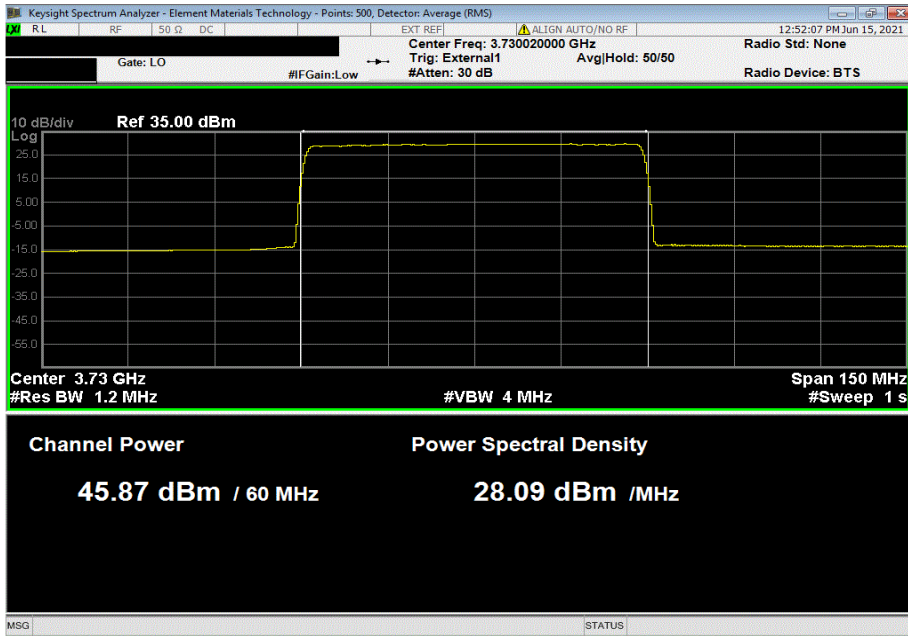


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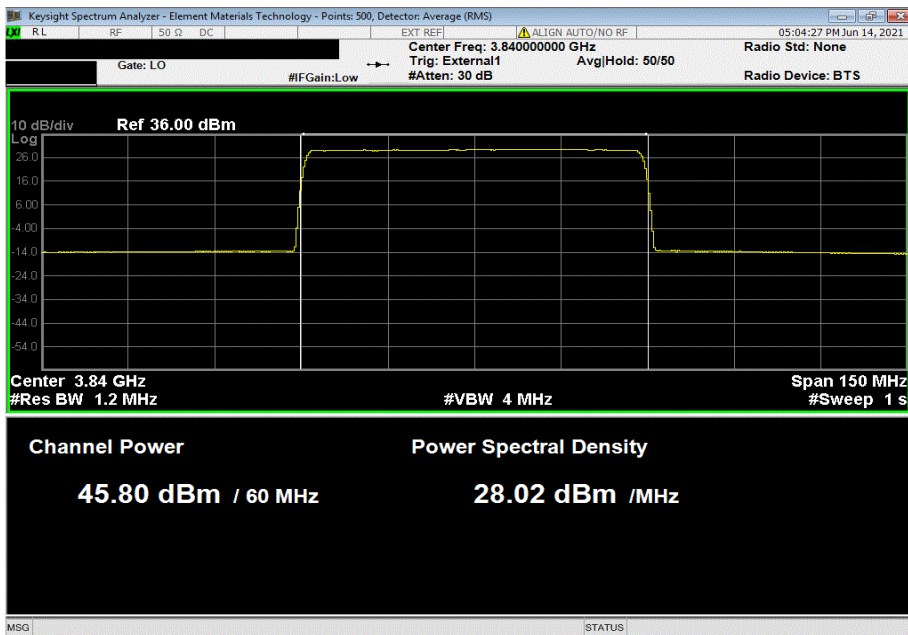


TbTx 2021.03.19.1 XMI 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 60 MHz BW, 256-QAM Modulation, Low Ch. 3730.02 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	Eight Port (8x8 MIMO)	
dBm/Carrier BW		dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	
45.867	0	45.867	48.867	51.867	54.867	



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 60 MHz BW, 256-QAM Modulation, Mid Ch. 3840 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	Eight Port (8x8 MIMO)	
dBm/Carrier BW		dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	
45.804	0	45.804	48.804	51.804	54.804	

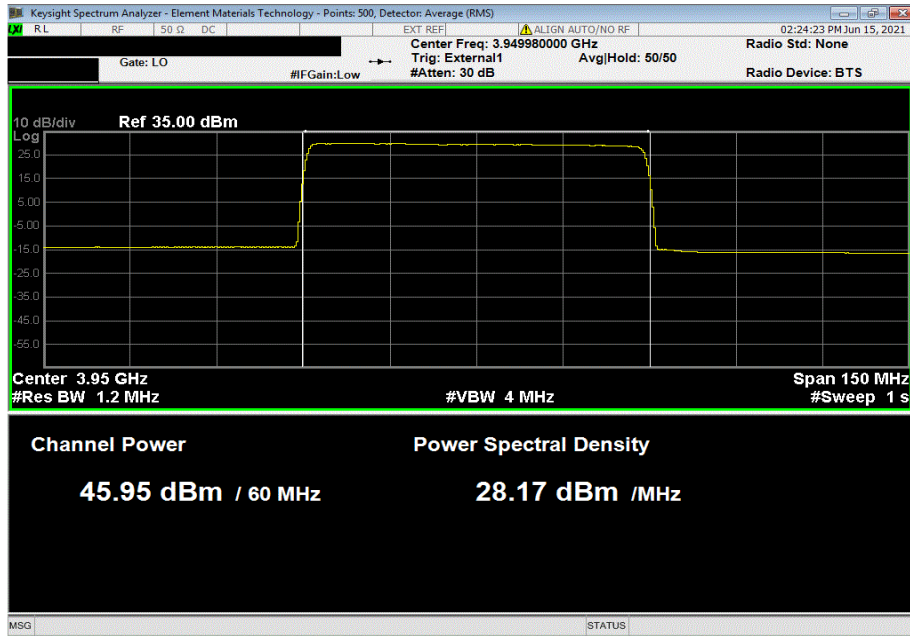


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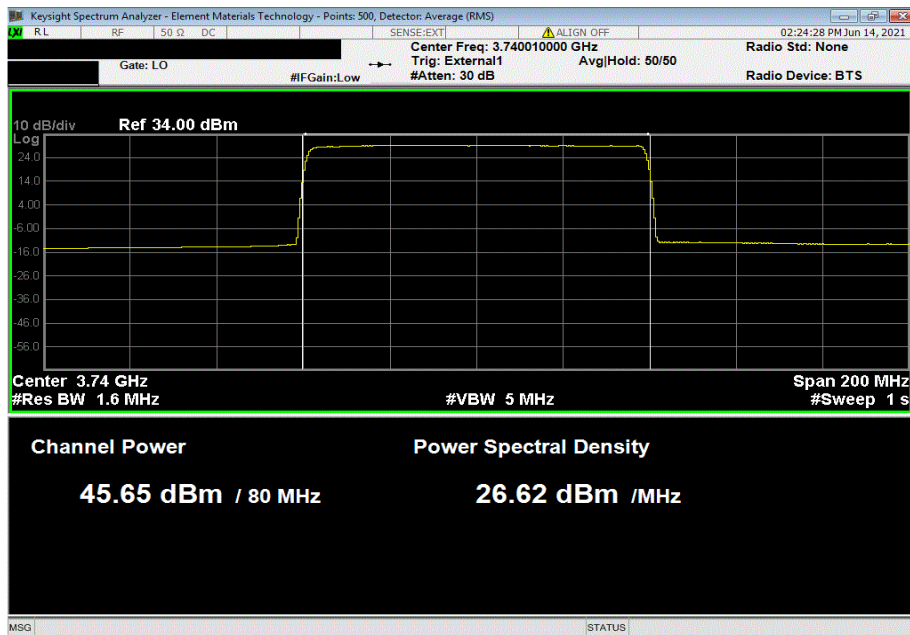


TbTx 2021.03.19.1 XMI 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 60 MHz BW, 256-QAM Modulation, High Ch. 3949.98 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	Eight Port (8x8 MIMO)	
dBm/Carrier BW		dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	
45.949	0	45.949	48.949	51.949	54.949	



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 80 MHz BW, 256-QAM Modulation, Low Ch. 3740.01 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	Eight Port (8x8 MIMO)	
dBm/Carrier BW		dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	
45.649	0	45.649	48.649	51.649	54.649	

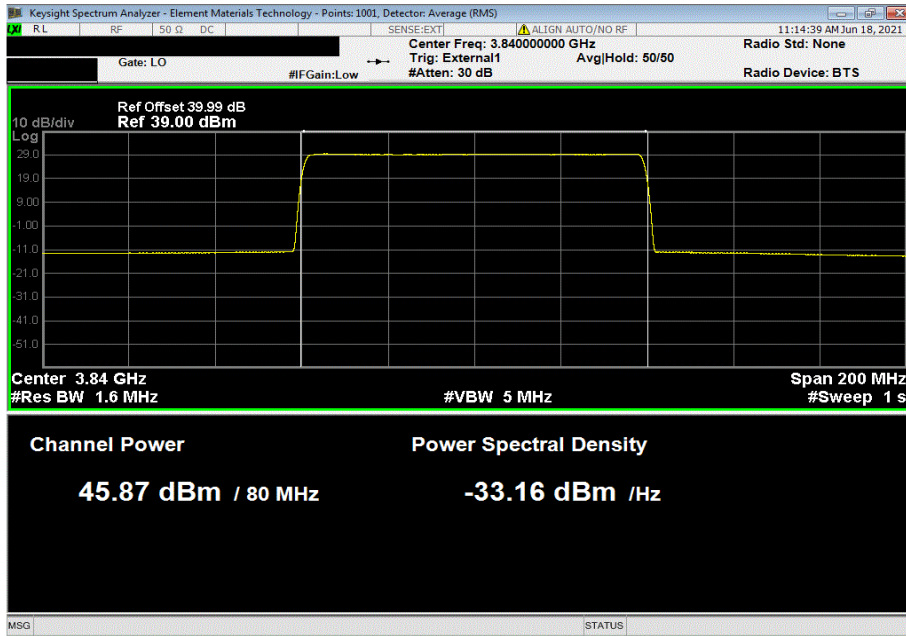


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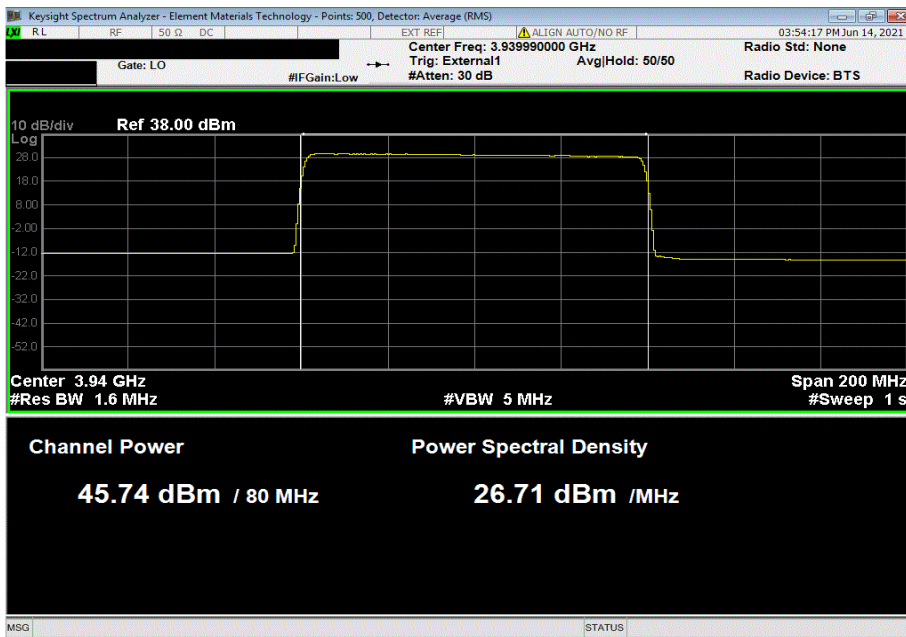


TbTx 2021.03.19.1 XMM 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 80 MHz BW, 256-QAM Modulation, Mid Ch. 3840 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	Eight Port (8x8 MIMO)	
dBm/Carrier BW		dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	
45.87	0	45.87	48.87	51.87	54.87	



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 80 MHz BW, 256-QAM Modulation, High Ch. 3939.99 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	Eight Port (8x8 MIMO)	
dBm/Carrier BW		dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	
45.742	0	45.742	48.742	51.742	54.742	

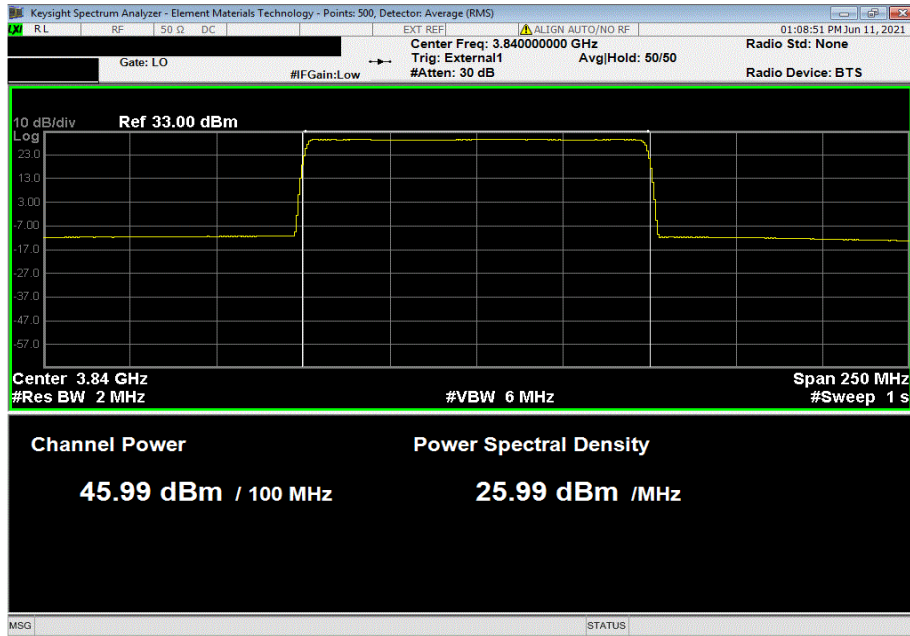


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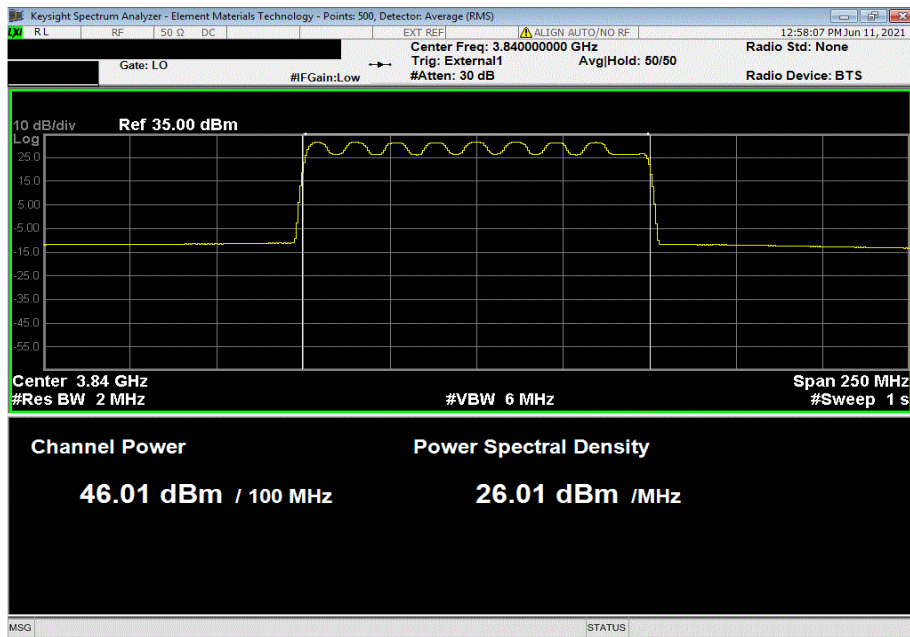


TbTx 2021.03.19.1 XMI 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 100 MHz BW, QPSK Modulation, Mid Ch. 3840 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	Eight Port (8x8 MIMO)	
dBm/Carrier BW		dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	
45.991	0	45.991	48.991	51.991	54.991	



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 100 MHz BW, 16-QAM Modulation, Mid Ch. 3840 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	Eight Port (8x8 MIMO)	
dBm/Carrier BW		dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	
46.012	0	46.012	49.012	52.012	55.012	

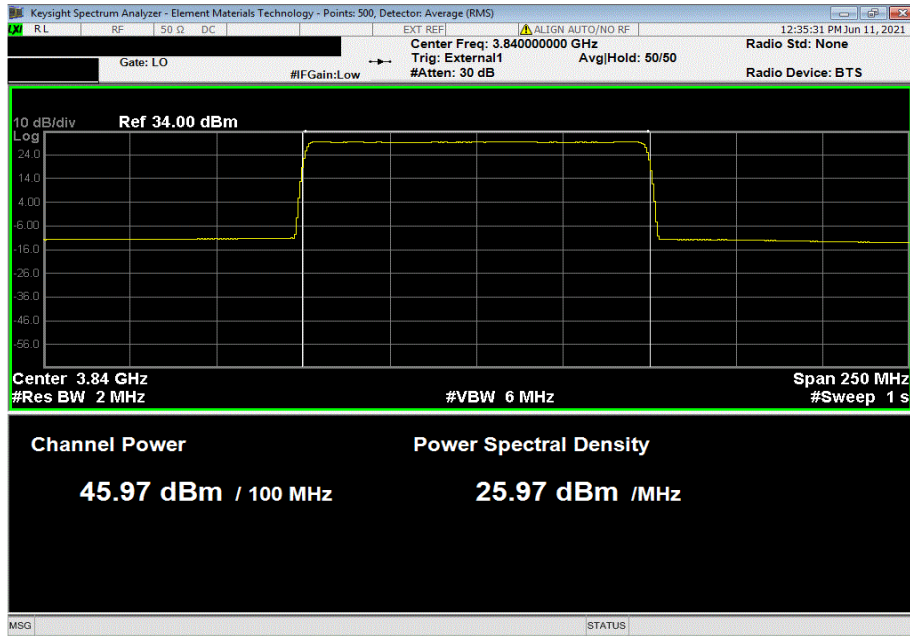


AVERAGE POWER

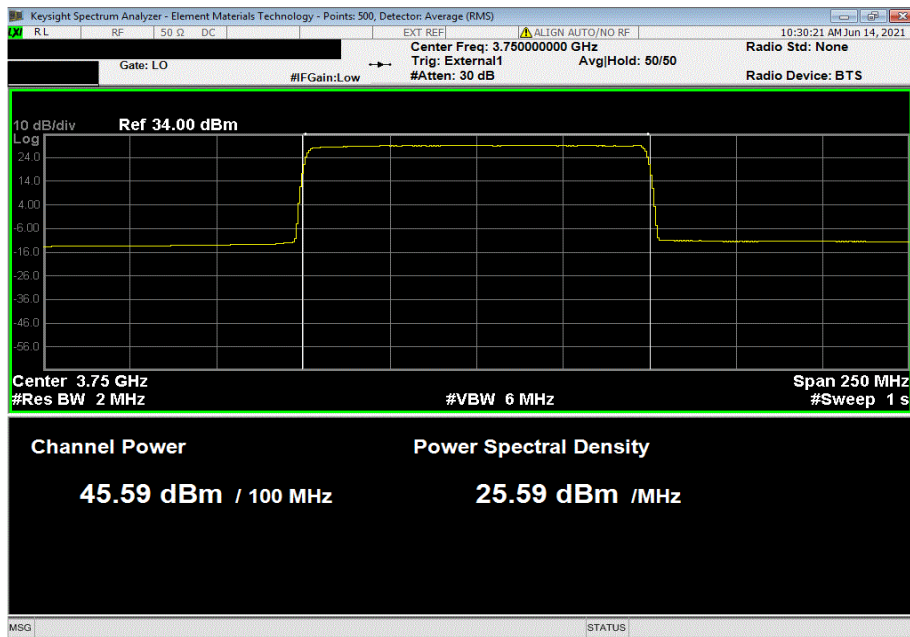


TbTx 2021.03.19.1 XMt 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 100 MHz BW, 64-QAM Modulation, Mid Ch. 3840 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	Eight Port (8x8 MIMO)	
dBm/Carrier BW		dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	
45.973	0	45.973	48.973	51.973	54.973	



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 100 MHz BW, 256-QAM Modulation, Low Ch. 3750 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	Eight Port (8x8 MIMO)	
dBm/Carrier BW		dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	
45.592	0	45.592	48.592	51.592	54.592	

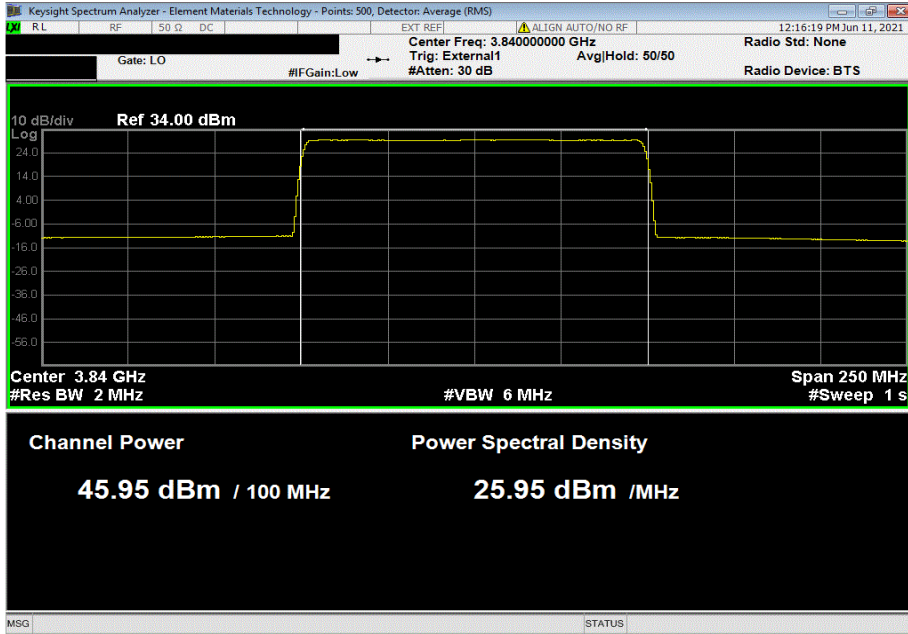


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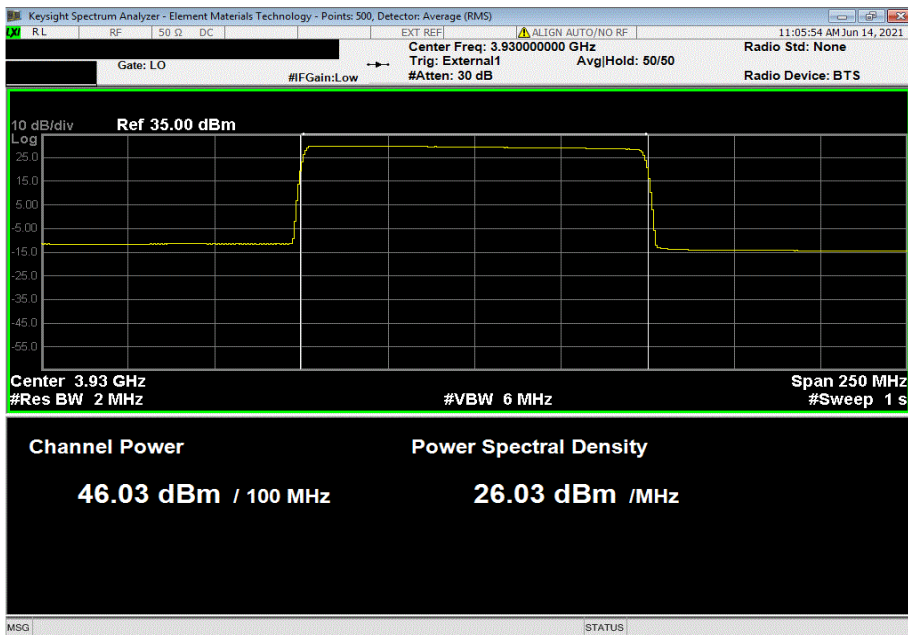


TbTx 2021.03.19.1 XMI 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 100 MHz BW, 256-QAM Modulation, Mid Ch. 3840 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	Eight Port (8x8 MIMO)	
dBm/Carrier BW		dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	
45.954	0	45.954	48.954	51.954	54.954	



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 100 MHz BW, 256-QAM Modulation, High Ch. 3930 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	Eight Port (8x8 MIMO)	
dBm/Carrier BW		dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	
46.026	0	46.026	49.026	52.026	55.026	



AVERAGE POWER - ALL PORTS

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
Block - DC	Fairview Microwave	SD3379	AMM	2020-09-21	2021-09-21
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFL	2021-03-11	2022-03-11

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

The method in section 5.2.4.4 of ANSI C63.26 was used to make the measurement. This method uses trace averaging across ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding $[10 \log (1 / D)]$, where D is the duty cycle, to the measured power to compute the average power during the actual transmission times.

RF conducted emissions testing was performed on all eight ports at NR100 middle channel to demonstrate that the AZQW antenna ports are essentially electrically identical. AZQW antenna port 8 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i, and 6.4. The results in this report section show that AZQW antenna port 8 has the highest RF conducted output power level.

AVERAGE POWER - ALL PORTS



TstTx 2021.03.19.1 XMIT 2020.12.30.0

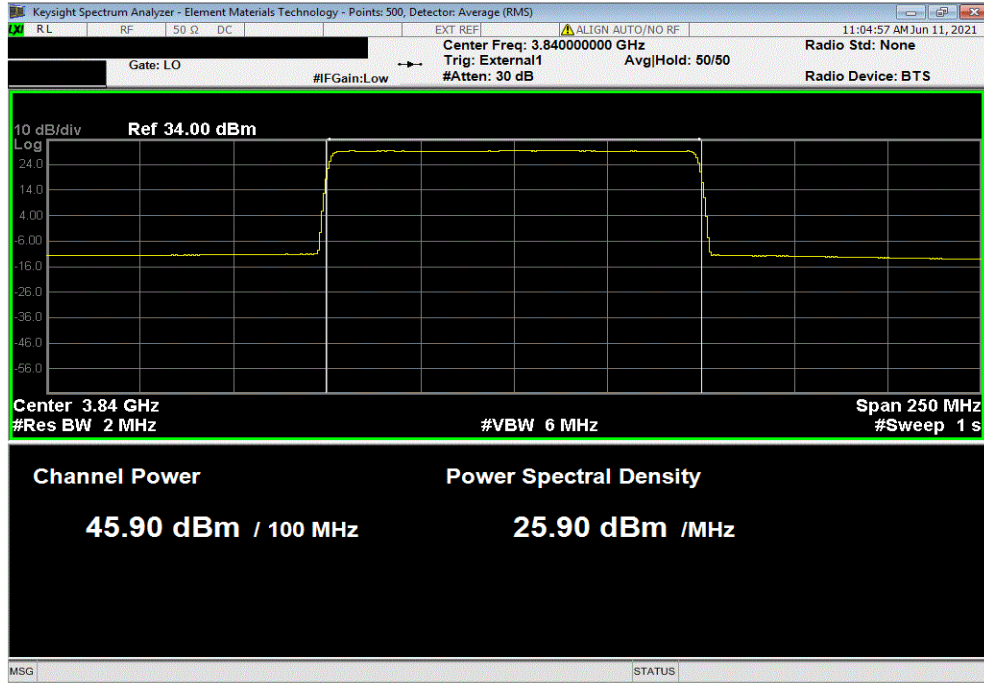
EUT: Aircscale Base Transceiver Station Remote Radio Head Model AZQW		Work Order: NOKI0028	
Serial Number: YK211100168		Date: 11-Jun-21	
Customer: Nokia Solutions and Networks		Temperature: 21.6 °C	
Attendees: John Rattavong, David Le, Mitchell Hill		Humidity: 54.9% RH	
Project: None		Barometric Pres.: 1015 mbar	
Tested by: Brandon Hobbs		Power: 54VDC	
Job Site: TX05			
TEST SPECIFICATIONS		Test Method	
FCC 27:2021		ANSI C63.26:2015	
COMMENTS			
All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. The output power was measured for a single carrier over the carrier channel bandwidth on port 8. External 1 gating was set using a trig delay = 86.2us and a gate length = 3.714ms. Band n77 NR100 carriers are enabled at maximum power (40 watts/carrier).			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature	
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)
		Value (dBm)	Limit (dBm)
			Results
Band n77, 3700 MHz - 3980 MHz, 5G NR			
Port 1			
	100 MHz BW		
	256-QAM Modulation		
	Mid Ch.3840.04 MHz	45.895	0
		45.9	Inside Tolerance
			N/A
Port 2			
	100 MHz BW		
	256-QAM Modulation		
	Mid Ch.3840.04 MHz	45.814	0
		45.8	Inside Tolerance
			N/A
Port 3			
	100 MHz BW		
	256-QAM Modulation		
	Mid Ch.3840.04 MHz	45.906	0
		45.9	Inside Tolerance
			N/A
Port 4			
	100 MHz BW		
	256-QAM Modulation		
	Mid Ch.3840.04 MHz	45.662	0
		45.7	Inside Tolerance
			N/A
Port 5			
	100 MHz BW		
	256-QAM Modulation		
	Mid Ch.3840.04 MHz	45.76	0
		45.8	Inside Tolerance
			N/A
Port 6			
	100 MHz BW		
	256-QAM Modulation		
	Mid Ch.3840.04 MHz	45.906	0
		45.9	Inside Tolerance
			N/A
Port 7			
	100 MHz BW		
	256-QAM Modulation		
	Mid Ch.3840.04 MHz	45.787	0
		45.8	Inside Tolerance
			N/A
Port 8			
	100 MHz BW		
	256-QAM Modulation		
	Mid Ch.3840.04 MHz	45.954	0
		46	Inside Tolerance
			N/A

AVERAGE POWER - ALL PORTS

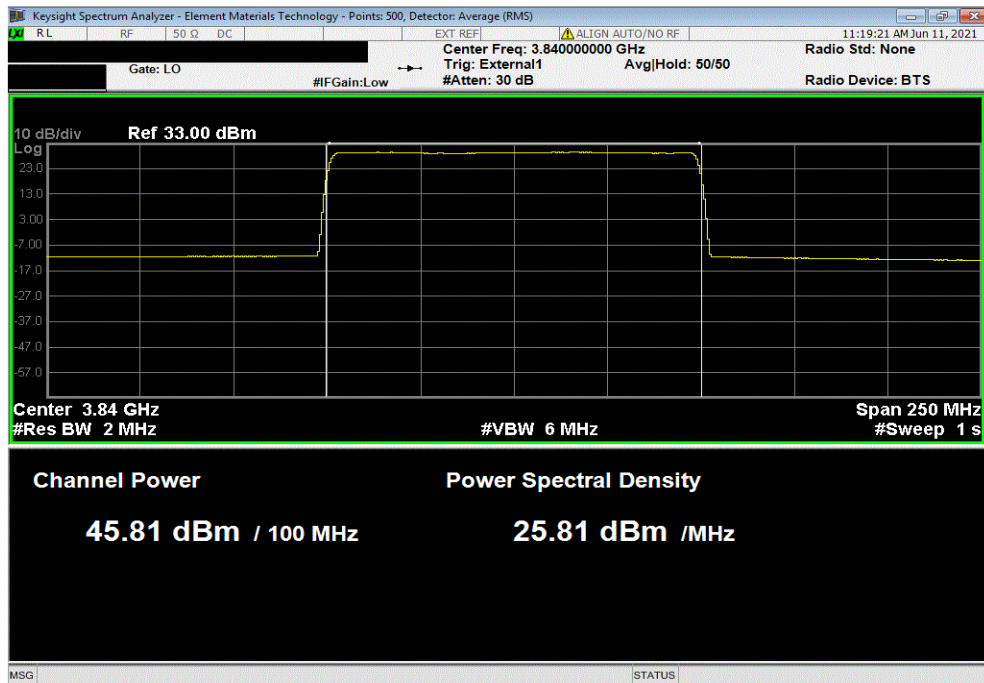


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Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 1, 100 MHz BW, 256-QAM Modulation, Mid Ch.3840.04 MHz						
Avg Cond	Duty Cycle	Value	Limit			
Pwr (dBm)	Factor (dB)	(dBm)	(dBm)	Results		
45.895	0	45.9	Inside Tolerance	N/A		



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 2, 100 MHz BW, 256-QAM Modulation, Mid Ch.3840.04 MHz						
Avg Cond	Duty Cycle	Value	Limit			
Pwr (dBm)	Factor (dB)	(dBm)	(dBm)	Results		
45.814	0	45.8	Inside Tolerance	N/A		

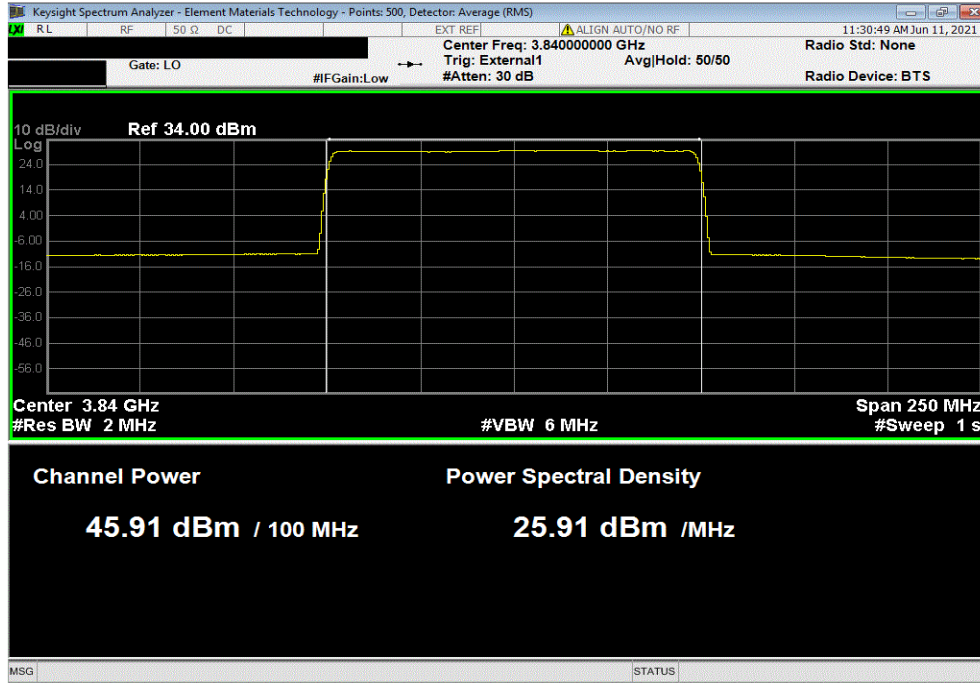


AVERAGE POWER - ALL PORTS

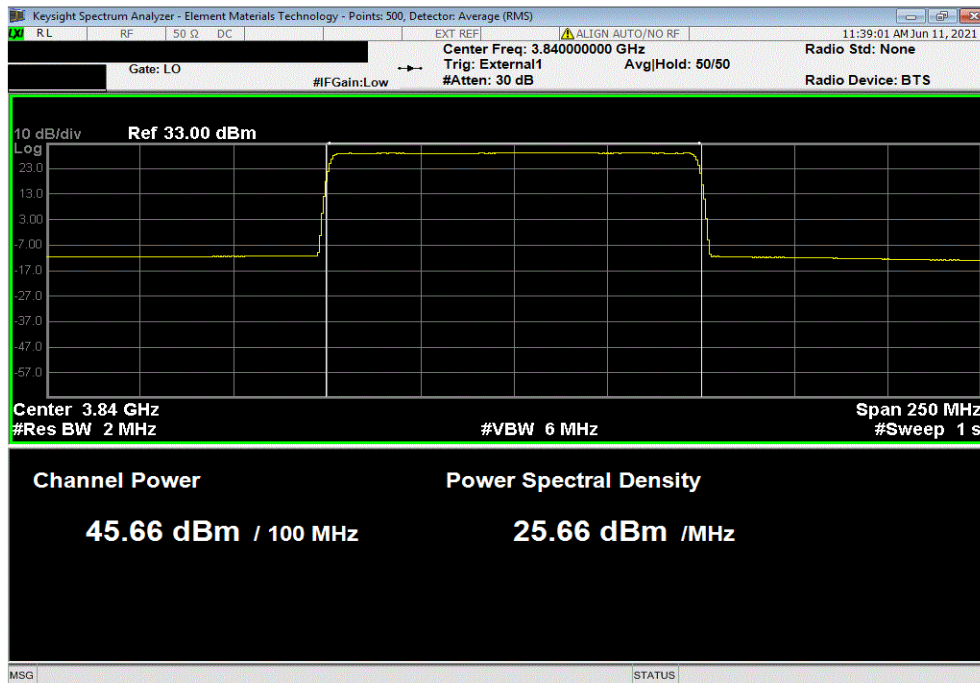


TbTx 2021.03.19.1 XMM 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 3, 100 MHz BW, 256-QAM Modulation, Mid Ch.3840.04 MHz						
Avg Cond	Duty Cycle	Value	Limit			
Pwr (dBm)	Factor (dB)	(dBm)	(dBm)	Results		
45.906	0	45.9	Inside Tolerance	N/A		



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 4, 100 MHz BW, 256-QAM Modulation, Mid Ch.3840.04 MHz						
Avg Cond	Duty Cycle	Value	Limit			
Pwr (dBm)	Factor (dB)	(dBm)	(dBm)	Results		
45.662	0	45.7	Inside Tolerance	N/A		

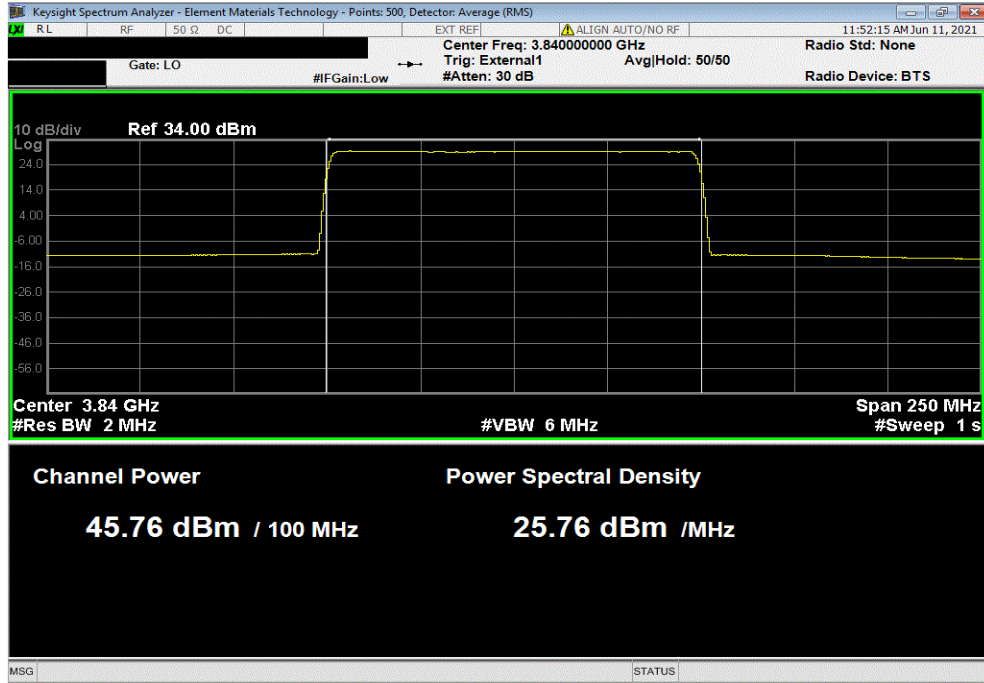


AVERAGE POWER - ALL PORTS

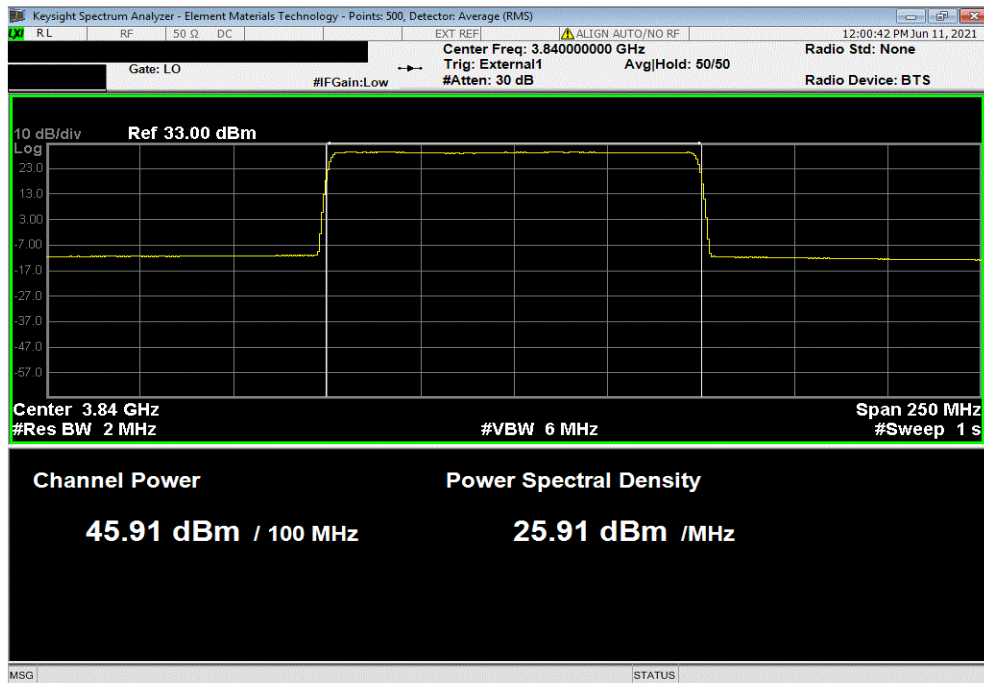


TbTx 2021.03.19.1 XMM 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 5, 100 MHz BW, 256-QAM Modulation, Mid Ch.3840.04 MHz						
Avg Cond	Duty Cycle	Value	Limit			
Pwr (dBm)	Factor (dB)	(dBm)	(dBm)	Results		
45.76	0	45.8	Inside Tolerance	N/A		



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 6, 100 MHz BW, 256-QAM Modulation, Mid Ch.3840.04 MHz						
Avg Cond	Duty Cycle	Value	Limit			
Pwr (dBm)	Factor (dB)	(dBm)	(dBm)	Results		
45.906	0	45.9	Inside Tolerance	N/A		

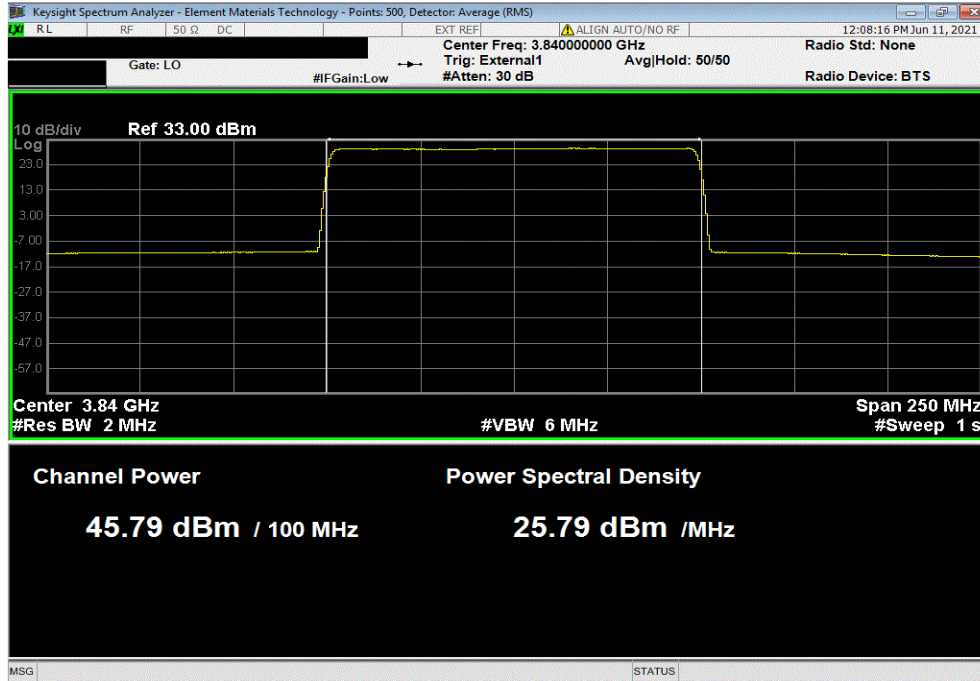


AVERAGE POWER - ALL PORTS

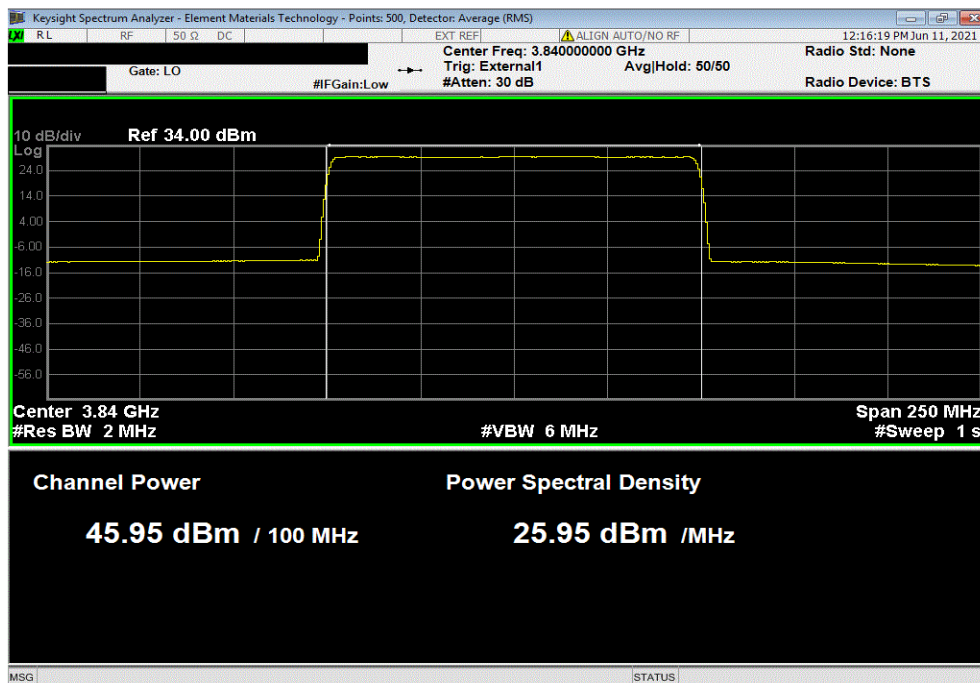


Ts/Tx 2021.03.19.1 XMM 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 7, 100 MHz BW, 256-QAM Modulation, Mid Ch.3840.04 MHz						
Avg Cond	Duty Cycle	Value	Limit			
Pwr (dBm)	Factor (dB)	(dBm)	(dBm)	Results		
45.787	0	45.8	Inside Tolerance	N/A		



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 100 MHz BW, 256-QAM Modulation, Mid Ch.3840.04 MHz						
Avg Cond	Duty Cycle	Value	Limit			
Pwr (dBm)	Factor (dB)	(dBm)	(dBm)	Results		
45.954	0	46	Inside Tolerance	N/A		



PEAK AND AVERAGE (PAPR) CCDF

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
Block - DC	Fairview Microwave	SD3379	AMM	2020-09-21	2021-09-21
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17
Analyzer - Signal Analyzer	Keysight Technologies	N9030B	R291	2020-06-13	2021-07-13

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 27.50(j) (4), the peak to average ratio may not exceed 13dB for more than the ANSI C63.26 described 0.1% of the time.

The RF conducted emission testing was performed on one port. The AZQW antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in the "Output Power - All Ports" report section) and antenna port 8 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i, and 6.4.

PEAK AND AVERAGE (PAPR) CCDF



TstTx 2021.03.19.1 XMIT 2020.12.30.0

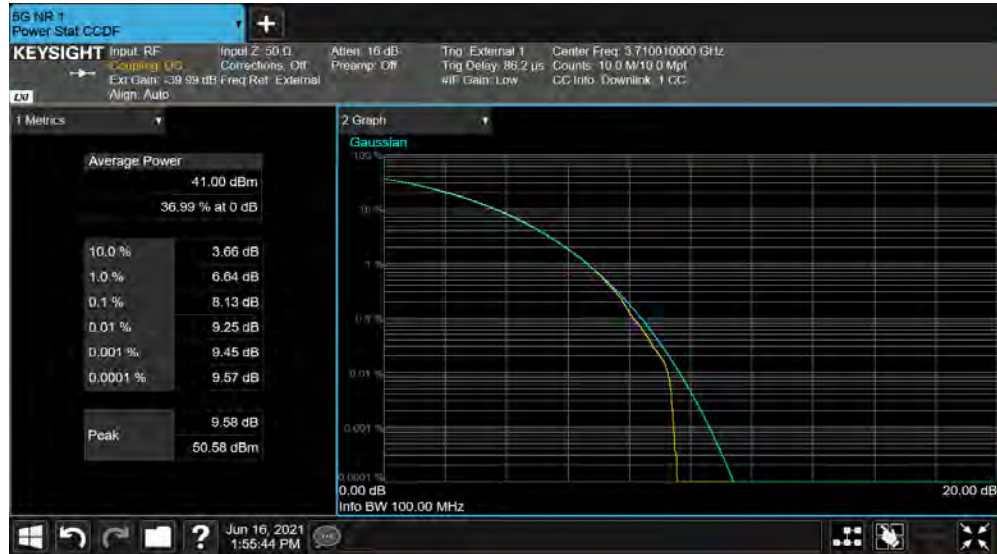
EUT: Aircscale Base Transceiver Station Remote Radio Head Model AZQW		Work Order: NOKI0028	
Serial Number: YK211100168		Date: 17-Jun-21	
Customer: Nokia Solutions and Networks		Temperature: 21 °C	
Attendees: John Rattanaovong, David Le		Humidity: 53.7% RH	
Project: None		Barometric Pres.: 1019 mbar	
Tested by: Brandon Hobbs	Power: 54VDC	Job Site: TX05	
TEST SPECIFICATIONS		Test Method	
FCC 27:2021		ANSI C63.26:2015	
COMMENTS			
All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. External 1 gating was set using a trig delay = 86.2us and a gate length = 3.714ms. 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 n77, 3700 MHz - 3980 MHz, 5G NR			
Port 8			
20 MHz BW			
256-QAM Modulation			
	Low Ch. 3710.01 MHz	8.13	13 Pass
	Mid Ch. 3840 MHz	8.03	13 Pass
	High Ch. 3969.99 MHz	8.18	13 Pass
40 MHz BW			
256-QAM Modulation			
	Low Ch. 3720 MHz	8.02	13 Pass
	Mid Ch. 3840 MHz	8.08	13 Pass
	High Ch. 3960 MHz	8.00	13 Pass
60 MHz BW			
256-QAM Modulation			
	Low Ch. 3730.02 MHz	7.80	13 Pass
	Mid Ch. 3840 MHz	7.69	13 Pass
	High Ch. 3949.98 MHz	7.88	13 Pass
80 MHz BW			
256-QAM Modulation			
	Low Ch. 3740.01 MHz	7.87	13 Pass
	Mid Ch. 3840 MHz	7.73	13 Pass
	High Ch. 3939.99 MHz	7.91	13 Pass
100 MHz BW			
QPSK Modulation			
	Mid Ch. 3840 MHz	7.73	13 Pass
16-QAM Modulation			
	Mid Ch. 3840 MHz	7.71	13 Pass
64-QAM Modulation			
	Mid Ch. 3840 MHz	7.71	13 Pass
256-QAM Modulation			
	Low Ch. 3750 MHz	7.85	13 Pass
	Mid Ch. 3840 MHz	7.72	13 Pass
	High Ch. 3930 MHz	7.95	13 Pass

PEAK AND AVERAGE (PAPR) CCDF

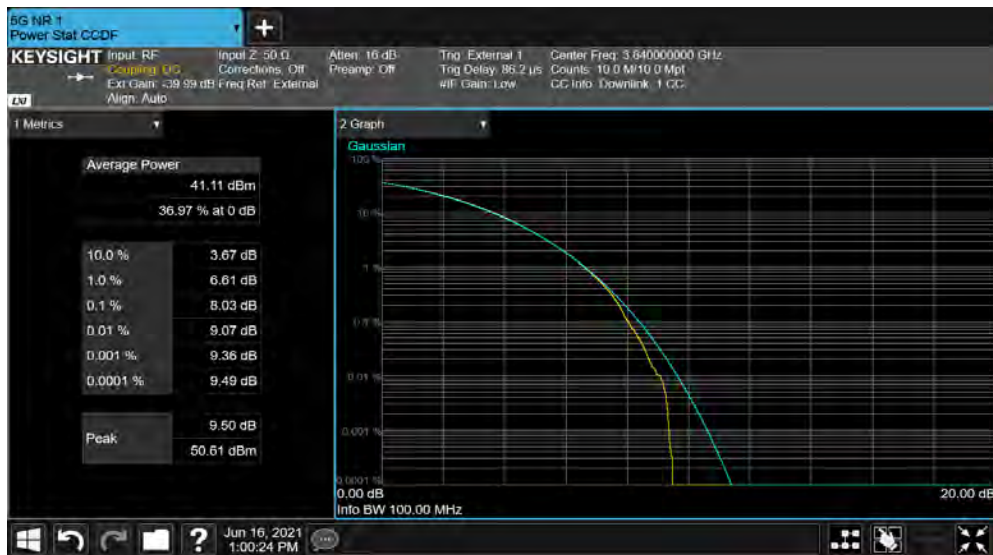


TbTx 2021.03.19.1 XMI 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 20 MHz BW, 256-QAM Modulation, Low Ch.3710.01 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				8.13	13	Pass



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 20 MHz BW, 256-QAM Modulation, Mid Ch. 3840 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				8.03	13	Pass



PEAK AND AVERAGE (PAPR) CCDF

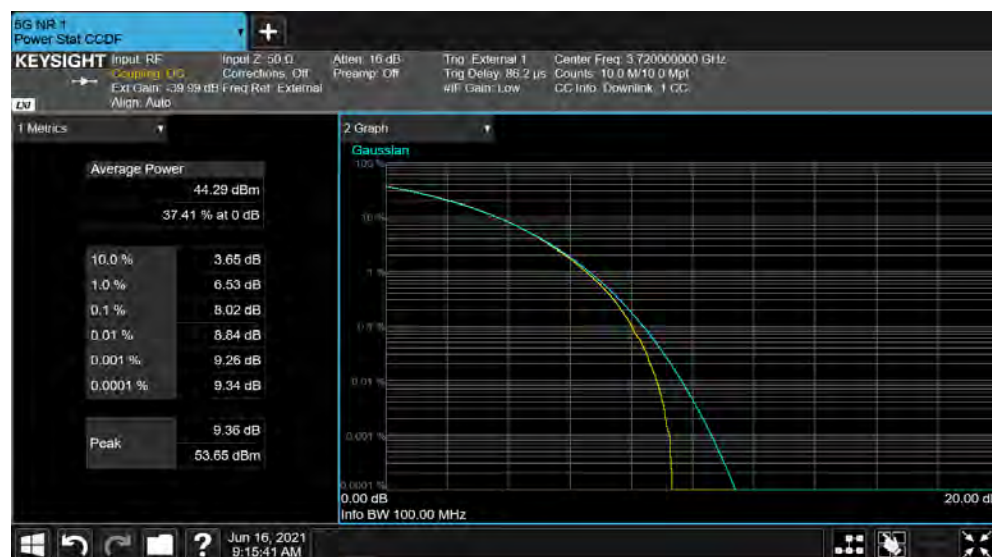


TbTx 2021.03.19.1 XMI 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 20 MHz BW, 256-QAM Modulation, High Ch. 3969.99 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				8.18	13	Pass



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 40 MHz BW, 256-QAM Modulation, Low Ch. 3720 Mhz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				8.02	13	Pass

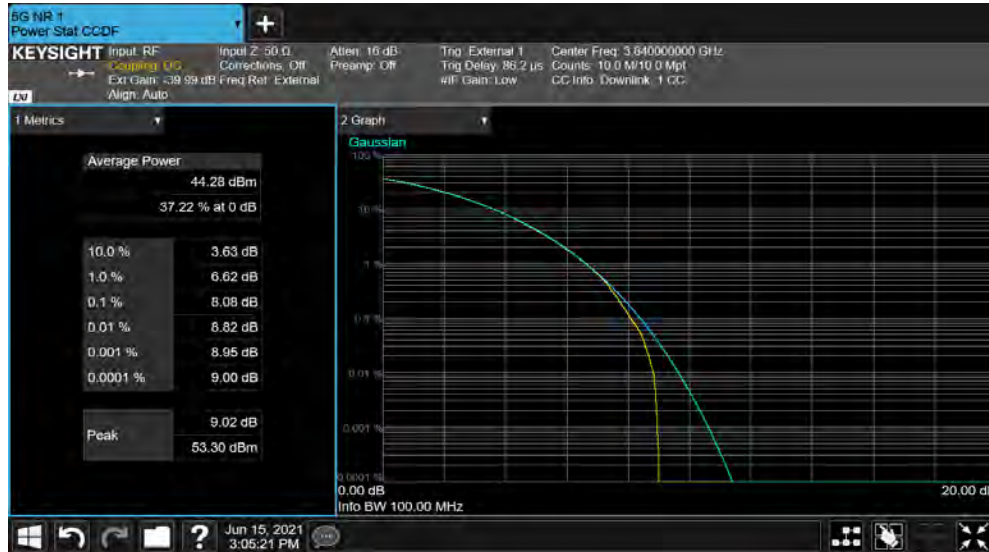


PEAK AND AVERAGE (PAPR) CCDF

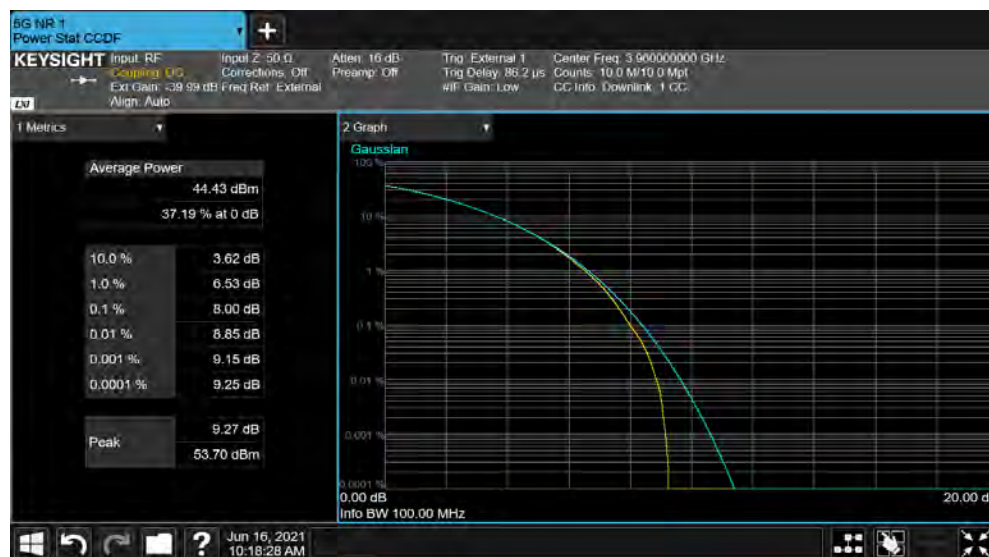


TbTx 2021.03.19.1 XMit 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 40 MHz BW, 256-QAM Modulation, Mid Ch. 3840 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				8.08	13	Pass



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 40 MHz BW, 256-QAM Modulation, High Ch. 3960 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				8	13	Pass

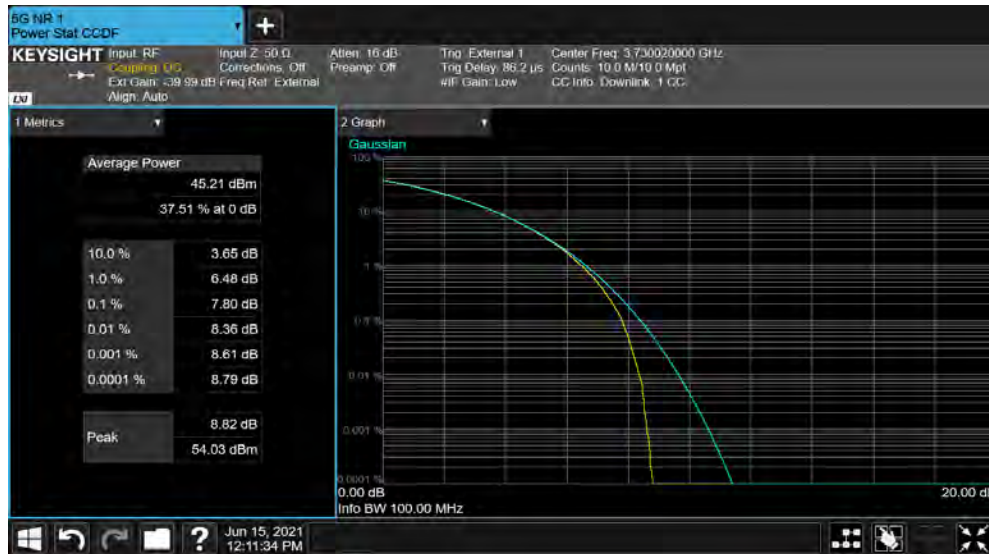


PEAK AND AVERAGE (PAPR) CCDF

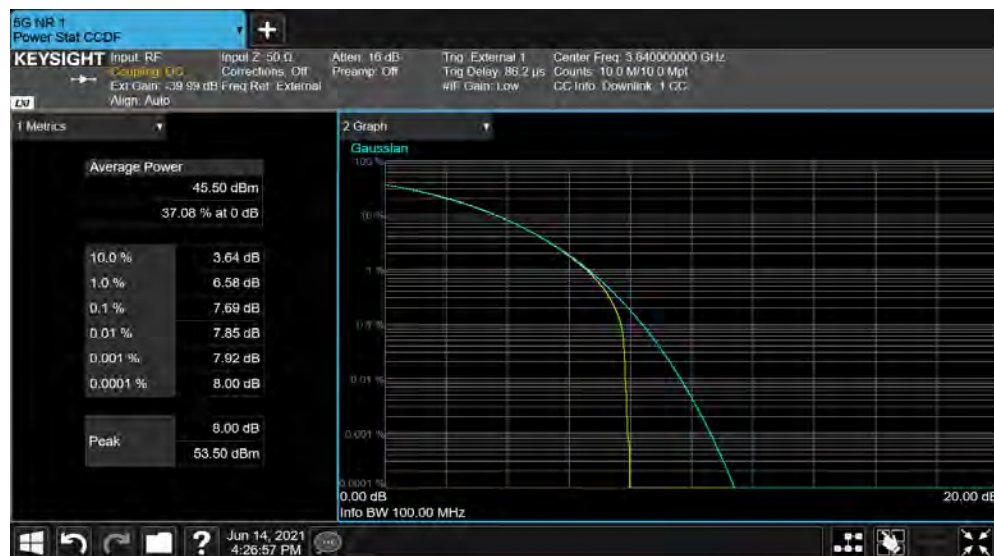


TbTx 2021.03.19.1 XMI 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 60 MHz BW, 256-QAM Modulation, Low Ch. 3730.02 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.8	13	Pass



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 60 MHz BW, 256-QAM Modulation, Mid Ch. 3840 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.69	13	Pass

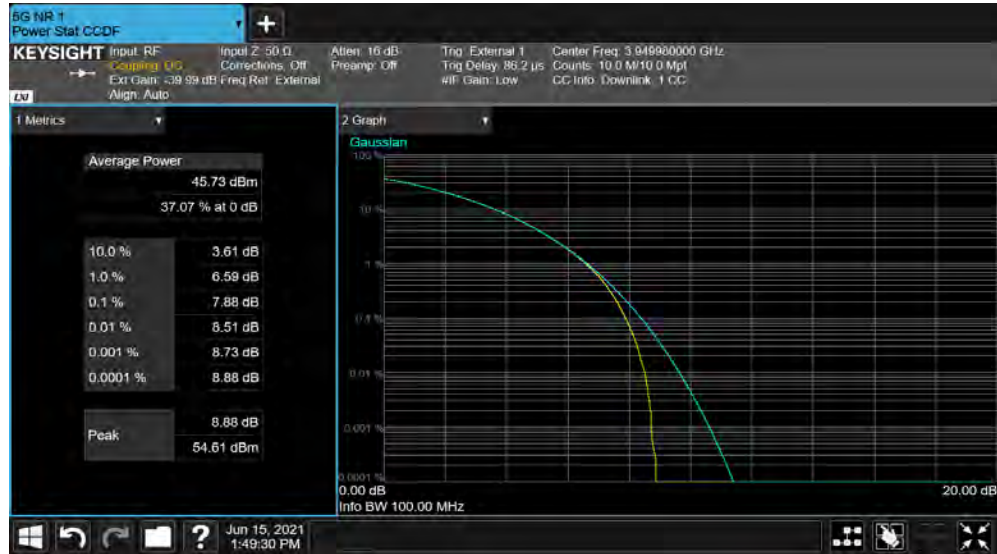


PEAK AND AVERAGE (PAPR) CCDF

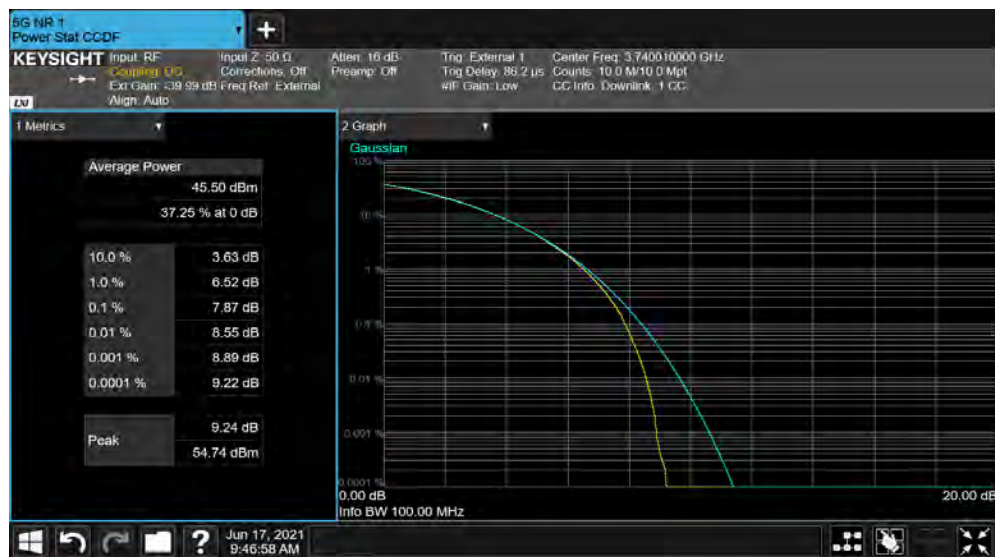


TbTx 2021.03.19.1 XMI 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 60 MHz BW, 256-QAM Modulation, High Ch. 3949.98 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.88	13	Pass



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 80 MHz BW, 256-QAM Modulation, Low Ch. 3740.01 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.87	13	Pass

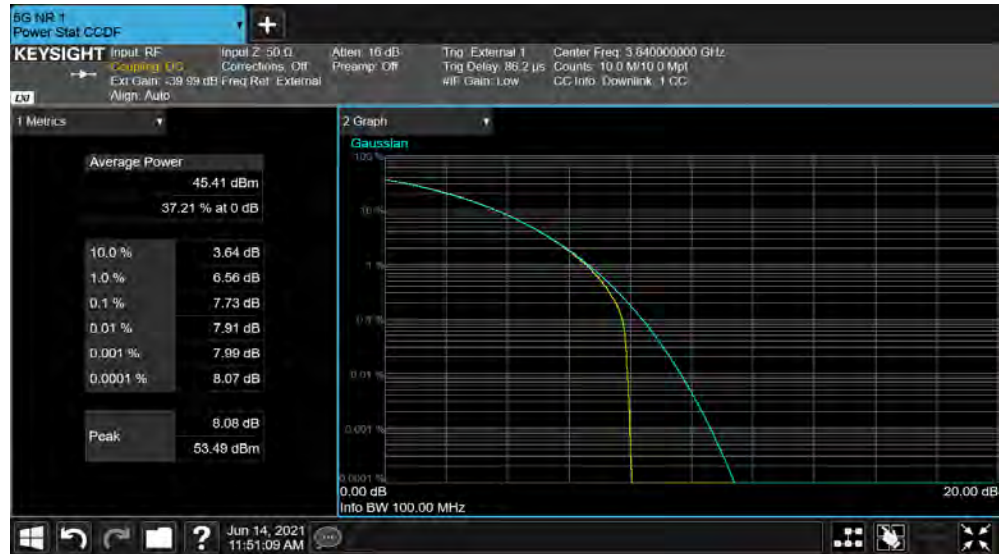


PEAK AND AVERAGE (PAPR) CCDF

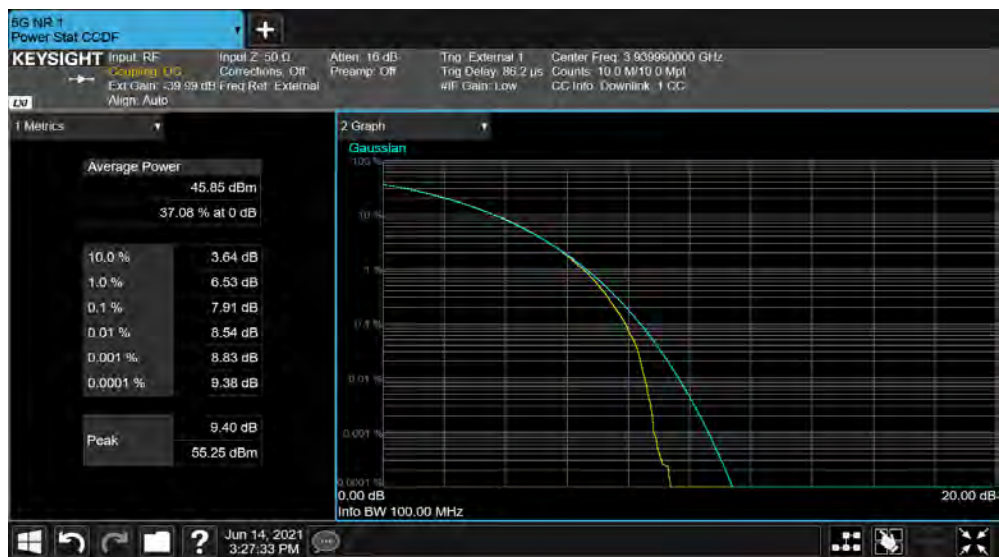


TbTx 2021.03.19.1 XMI 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 80 MHz BW, 256-QAM Modulation, Mid Ch. 3840 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.73	13	Pass



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 80 MHz BW, 256-QAM Modulation, High Ch. 3939.99 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.91	13	Pass

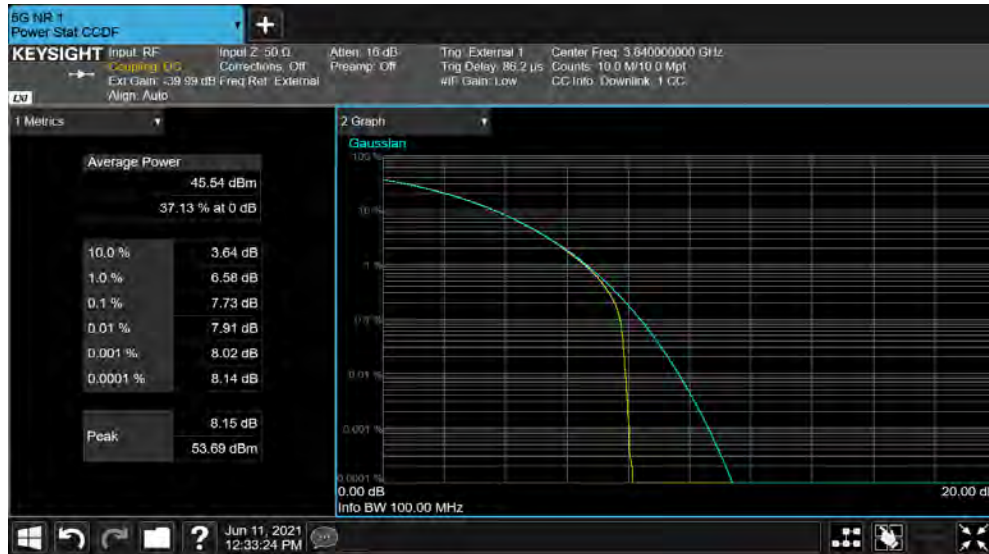


PEAK AND AVERAGE (PAPR) CCDF

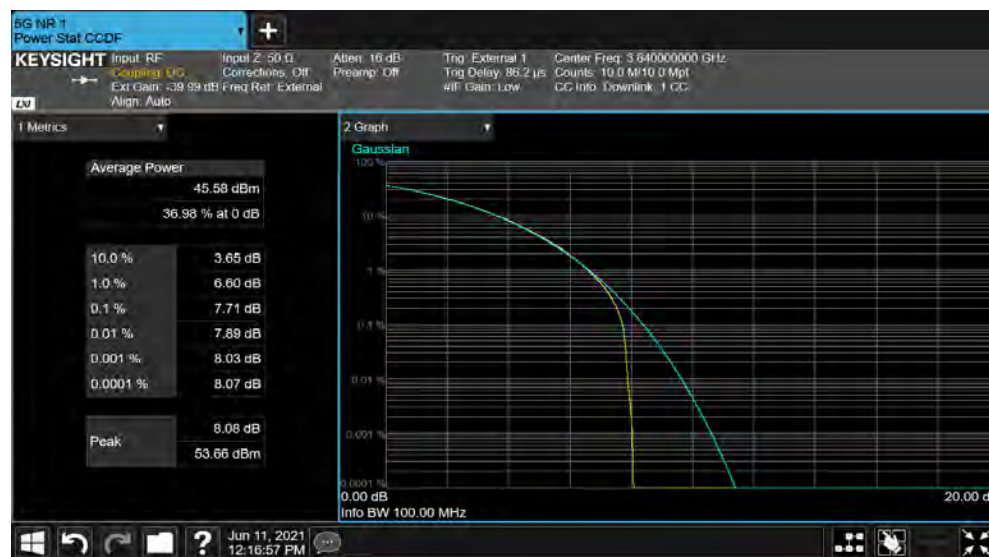


TbTx 2021.03.19.1 XMit 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 100 MHz BW, QPSK Modulation, Mid Ch. 3840 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.73	13	Pass



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 100 MHz BW, 16-QAM Modulation, Mid Ch. 3840 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.71	13	Pass

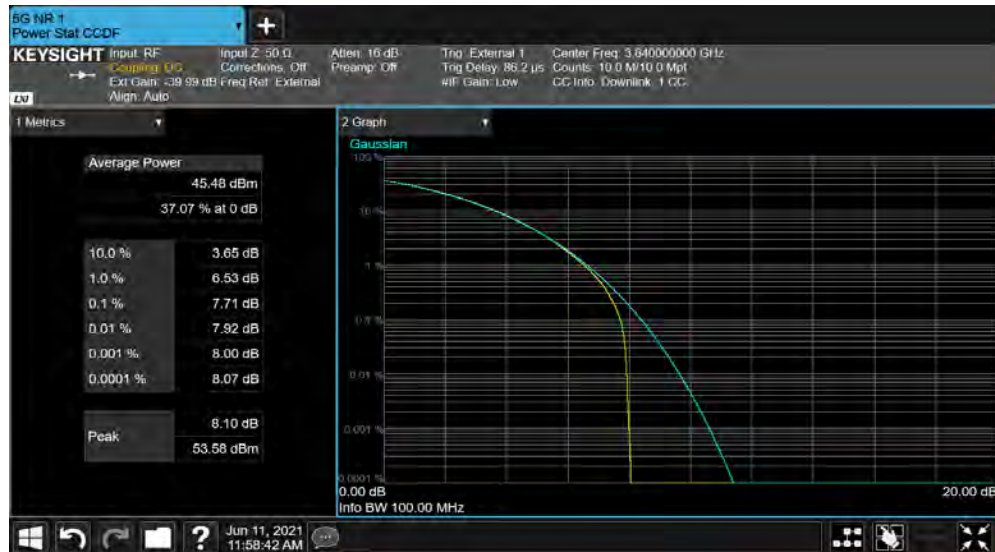


PEAK AND AVERAGE (PAPR) CCDF

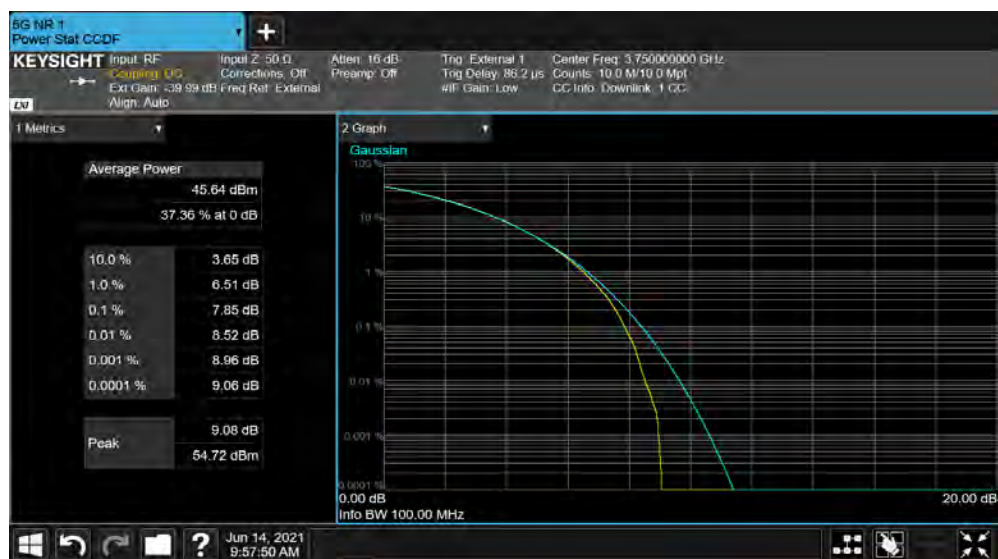


TbTx 2021.03.19.1 XMI 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 100 MHz BW, 64-QAM Modulation, Mid Ch. 3840 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.71	13	Pass



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 100 MHz BW, 256-QAM Modulation, Low Ch. 3750 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.85	13	Pass

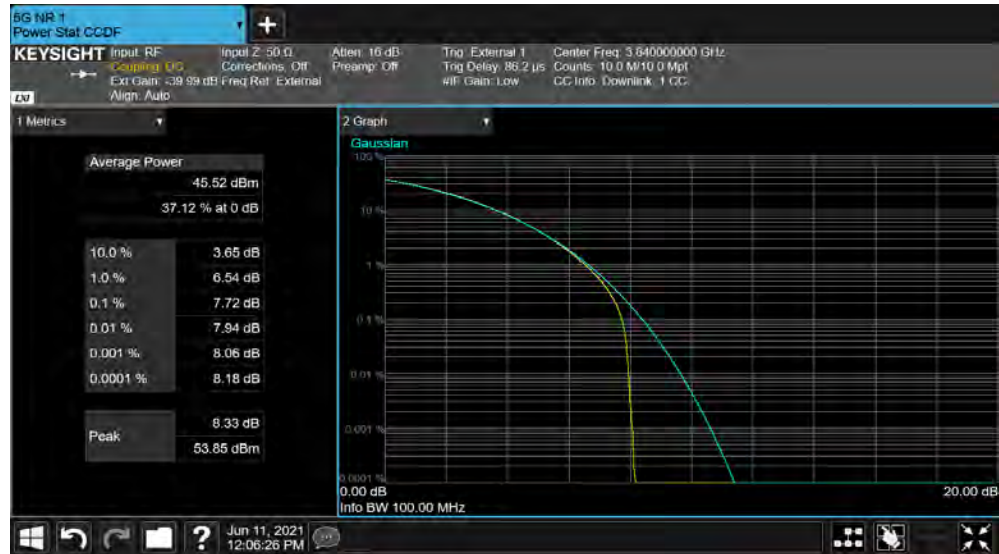


PEAK AND AVERAGE (PAPR) CCDF



TbTx 2021.03.19.1 XMI 2020.12.30.0

Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 100 MHz BW, 256-QAM Modulation, Mid Ch. 3840 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.72	13	Pass



Band n77, 3700 MHz - 3980 MHz, 5G NR, Port 8, 100 MHz BW, 256-QAM Modulation, High Ch. 3930 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.95	13	Pass

