

POWER SPECTRAL DENSITY BAND 25



XMit 2019.09.05

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	Keysight	N9010A	AFM	19-Mar-19	19-Mar-20
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. 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.

Per FCC part 24.232(a)(1), 24.232(a)(2) and RSS 133 6.4, the Equivalent Isotropically Radiated Power (EIRP) of the transceiver cannot exceed 1640 Watts/MHz.

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Tel: 2019.08.30.0 XM: 2019.08.05

EUT:	AHFIA	Work Order:	NOKI0008
Serial Number:	K9174623559	Date:	18-Feb-20
Customer:	Nokia of America Corporation	Temperature:	22.1 °C
Attendees:	Mitch Hill, John Rattanavong	Humidity:	25% RH
Project:	None	Barometric Pres.:	1033 mbar
Tested by:	Brandon Hobbs	Power:	54VDC
		Job Site:	TX09

TEST SPECIFICATIONS		Test Method
FCC 24E:2020		ANSI C63.26:2015
RSS-132:2013		RSS-132:2013

COMMENTS
 All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. The data was taken using the highest output power port which was found in the original client provided test report.

DEVIATIONS FROM TEST STANDARD
 None

Configuration #	2	Signature	
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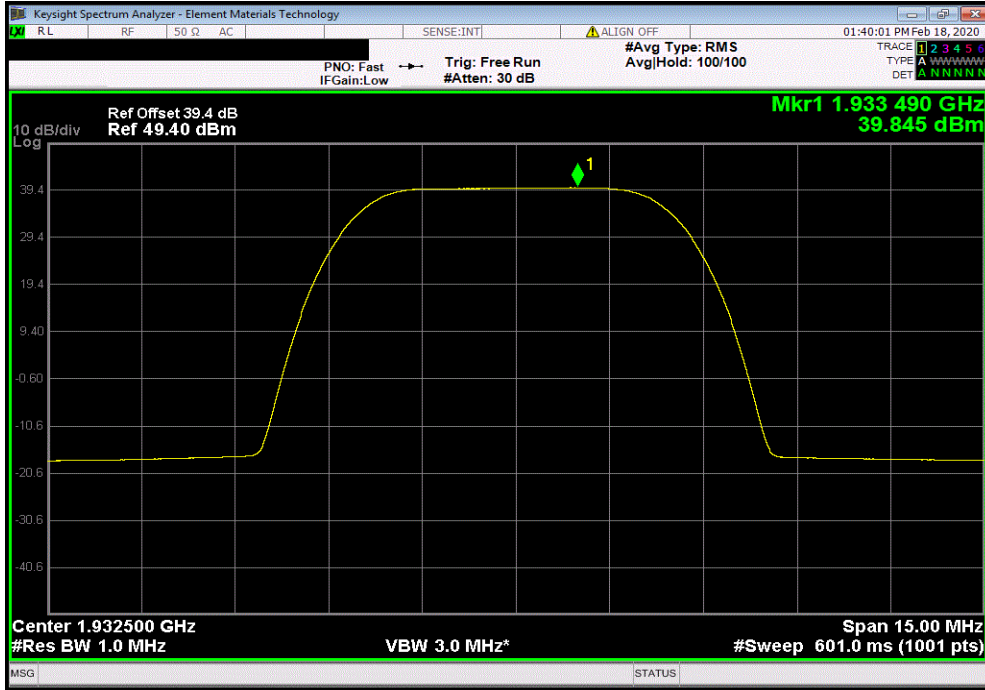
Band 25 (Single Carrier) Port 4	Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results
QPSK						
5 MHz						
Low Channel, 1932.5 MHz	39.845	0	Not Provided	39.8	62	N/A
Mid Channel, 1962.5 MHz	39.837	0	Not Provided	39.8	62	N/A
High Channel, 1992.5 MHz	39.924	0	Not Provided	39.9	62	N/A
10 MHz						
Low Channel, 1935 MHz	36.752	0	Not Provided	36.8	62	N/A
Mid Channel, 1962.5 MHz	36.636	0	Not Provided	36.6	62	N/A
High Channel, 1990 MHz	36.765	0	Not Provided	36.8	62	N/A
15 MHz						
Low Channel, 1937.5 MHz	35.033	0	Not Provided	35.0	62	N/A
Mid Channel, 1962.5 MHz	34.88	0	Not Provided	34.9	62	N/A
High Channel, 1987.5 MHz	35.032	0	Not Provided	35.0	62	N/A
20 MHz						
Low Channel, 1940 MHz	33.951	0	Not Provided	34.0	62	N/A
Mid Channel, 1962.5 MHz	33.763	0	Not Provided	33.8	62	N/A
High Channel, 1985 MHz	33.801	0	Not Provided	33.8	62	N/A
16-QAM						
5 MHz						
Low Channel, 1932.5 MHz	40.082	0	Not Provided	40.1	62	N/A
Mid Channel, 1962.5 MHz	40.203	0	Not Provided	40.2	62	N/A
High Channel, 1992.5 MHz	40.284	0	Not Provided	40.3	62	N/A
10 MHz						
Low Channel, 1935 MHz	37.466	0	Not Provided	37.5	62	N/A
Mid Channel, 1962.5 MHz	37.28	0	Not Provided	37.3	62	N/A
High Channel, 1990 MHz	37.418	0	Not Provided	37.4	62	N/A
15 MHz						
Low Channel, 1937.5 MHz	36.494	0	Not Provided	36.5	62	N/A
Mid Channel, 1962.5 MHz	36.377	0	Not Provided	36.4	62	N/A
High Channel, 1987.5 MHz	36.619	0	Not Provided	36.6	62	N/A
20 MHz						
Low Channel, 1940 MHz	35.489	0	Not Provided	35.5	62	N/A
Mid Channel, 1962.5 MHz	35.334	0	Not Provided	35.3	62	N/A
High Channel, 1985 MHz	35.43	0	Not Provided	35.4	62	N/A
64-QAM						
5 MHz						
Low Channel, 1932.5 MHz	39.786	0	Not Provided	39.8	62	N/A
Mid Channel, 1962.5 MHz	39.85	0	Not Provided	39.9	62	N/A
High Channel, 1992.5 MHz	39.971	0	Not Provided	40.0	62	N/A
10 MHz						
Low Channel, 1935 MHz	37.048	0	Not Provided	37.0	62	N/A
Mid Channel, 1962.5 MHz	36.837	0	Not Provided	36.8	62	N/A
High Channel, 1990 MHz	36.868	0	Not Provided	36.9	62	N/A
15 MHz						
Low Channel, 1937.5 MHz	35.121	0	Not Provided	35.1	62	N/A
Mid Channel, 1962.5 MHz	34.916	0	Not Provided	34.9	62	N/A
High Channel, 1987.5 MHz	35.134	0	Not Provided	35.1	62	N/A
20 MHz						
Low Channel, 1940 MHz	33.911	0	Not Provided	33.9	62	N/A
Mid Channel, 1962.5 MHz	33.829	0	Not Provided	33.8	62	N/A
High Channel, 1985 MHz	34.013	0	Not Provided	34.0	62	N/A
256-QAM						
5 MHz						
Low Channel, 1932.5 MHz	39.816	0	Not Provided	39.8	62	N/A
Mid Channel, 1962.5 MHz	39.882	0	Not Provided	39.9	62	N/A
High Channel, 1992.5 MHz	39.942	0	Not Provided	39.9	62	N/A
10 MHz						
Low Channel, 1935 MHz	36.948	0	Not Provided	36.9	62	N/A
Mid Channel, 1962.5 MHz	36.76	0	Not Provided	36.8	62	N/A
High Channel, 1990 MHz	36.885	0	Not Provided	36.9	62	N/A
15 MHz						
Low Channel, 1937.5 MHz	35.067	0	Not Provided	35.1	62	N/A
Mid Channel, 1962.5 MHz	34.886	0	Not Provided	34.9	62	N/A
High Channel, 1987.5 MHz	35.16	0	Not Provided	35.2	62	N/A
20 MHz						
Low Channel, 1940 MHz	33.918	0	Not Provided	33.9	62	N/A
Mid Channel, 1962.5 MHz	33.752	0	Not Provided	33.8	62	N/A
High Channel, 1985 MHz	33.893	0	Not Provided	33.9	62	N/A

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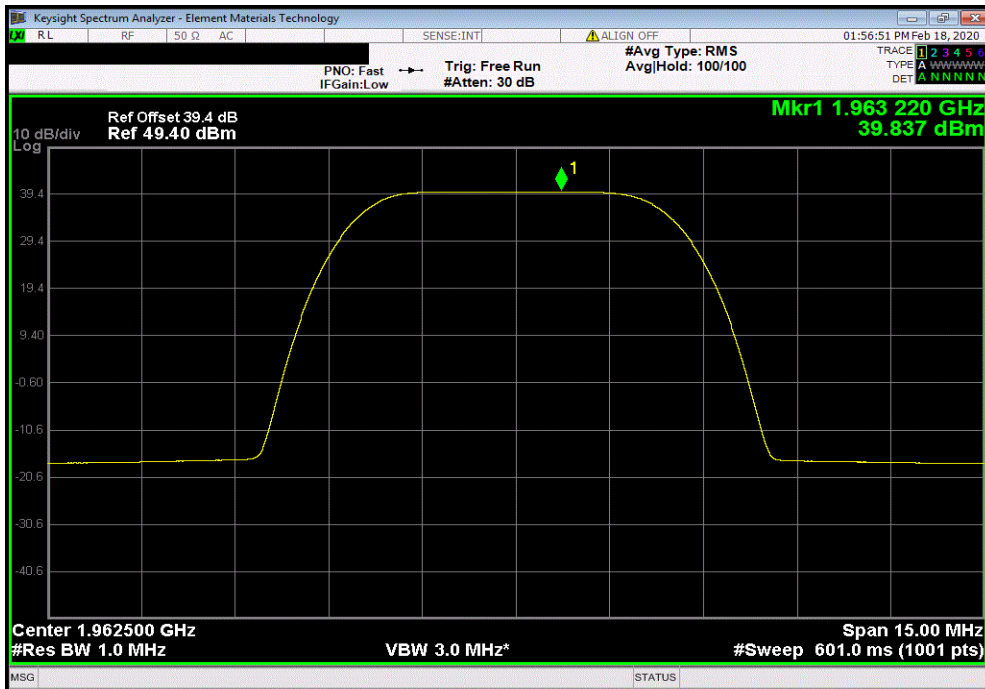


TbTx 2019.08.30.0 XMI 2019.09.05

Band 25 (Single Carrier) Port 4, QPSK, 5 MHz, Low Channel, 1932.5 MHz						
Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results	
39.845	0	Not Provided	39.85	62	N/A	



Band 25 (Single Carrier) Port 4, QPSK, 5 MHz, Mid Channel, 1962.5 MHz						
Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results	
39.837	0	Not Provided	39.84	62	N/A	

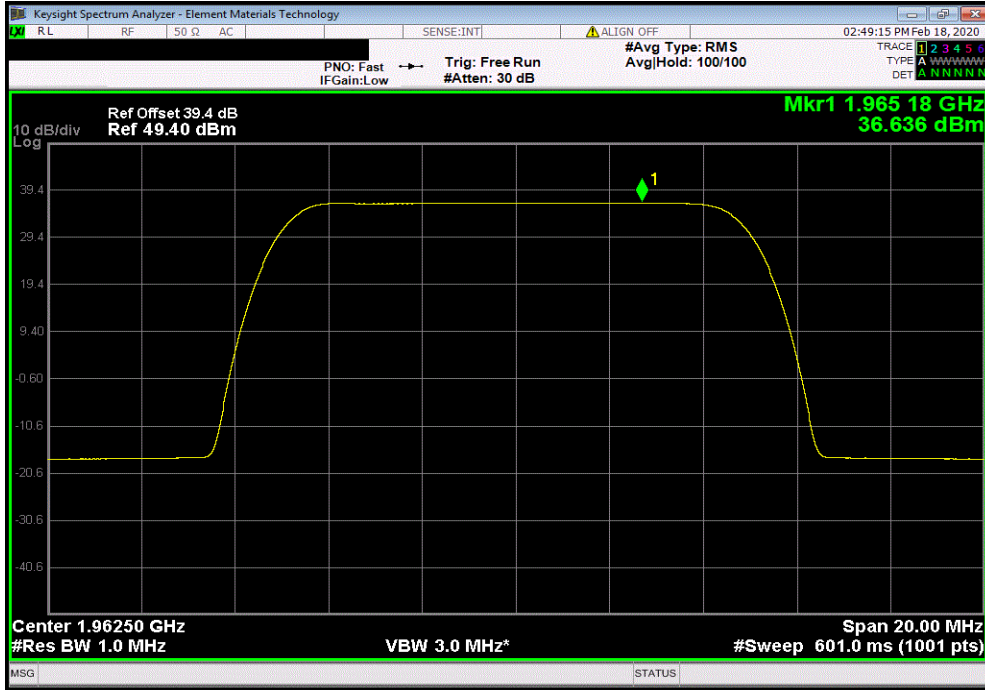


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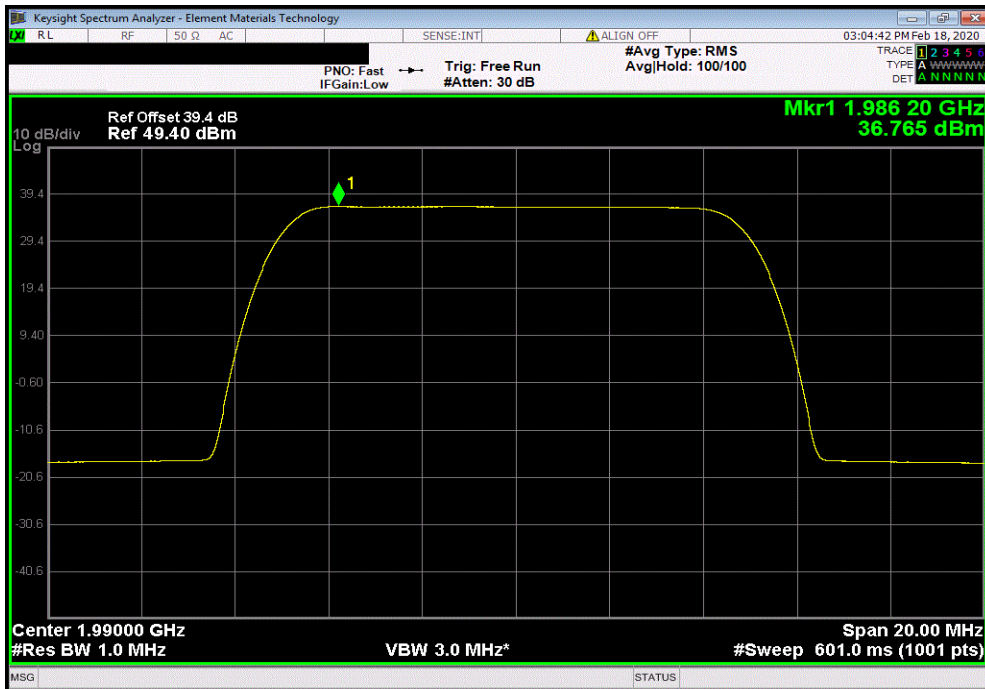


TbITx 2019.08.30.0 XMII 2019.09.05

Band 25 (Single Carrier) Port 4, QPSK, 10 MHz, Mid Channel, 1962.5 MHz						
Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results	
36.636	0	Not Provided	36.64	62	N/A	



Band 25 (Single Carrier) Port 4, QPSK, 10 MHz, High Channel, 1990 MHz						
Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results	
36.765	0	Not Provided	36.77	62	N/A	

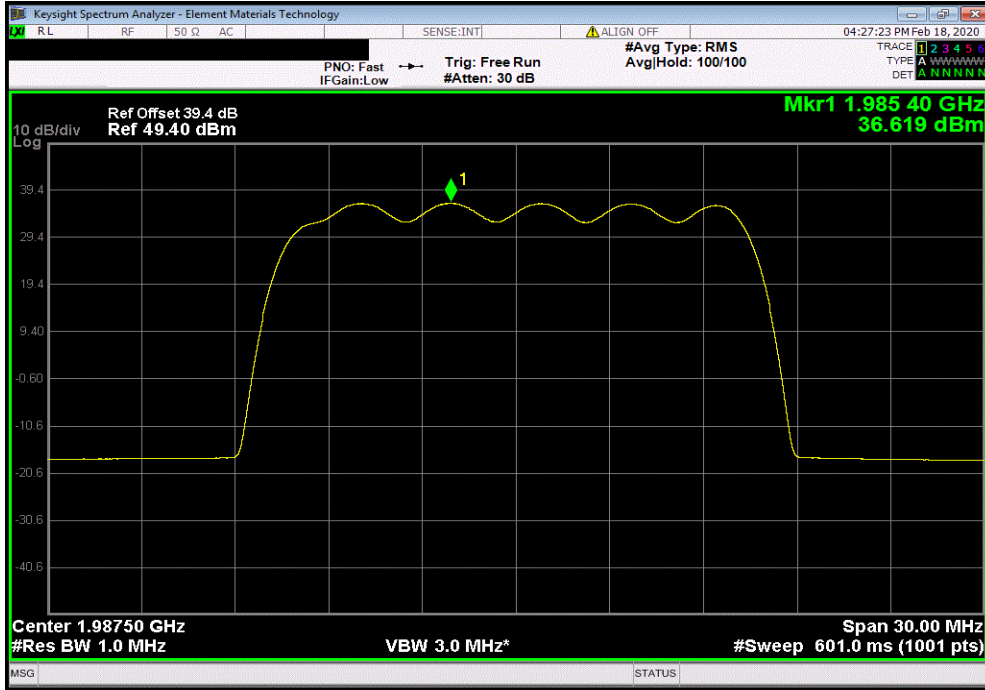


POWER SPECTRAL DENSITY BAND 25

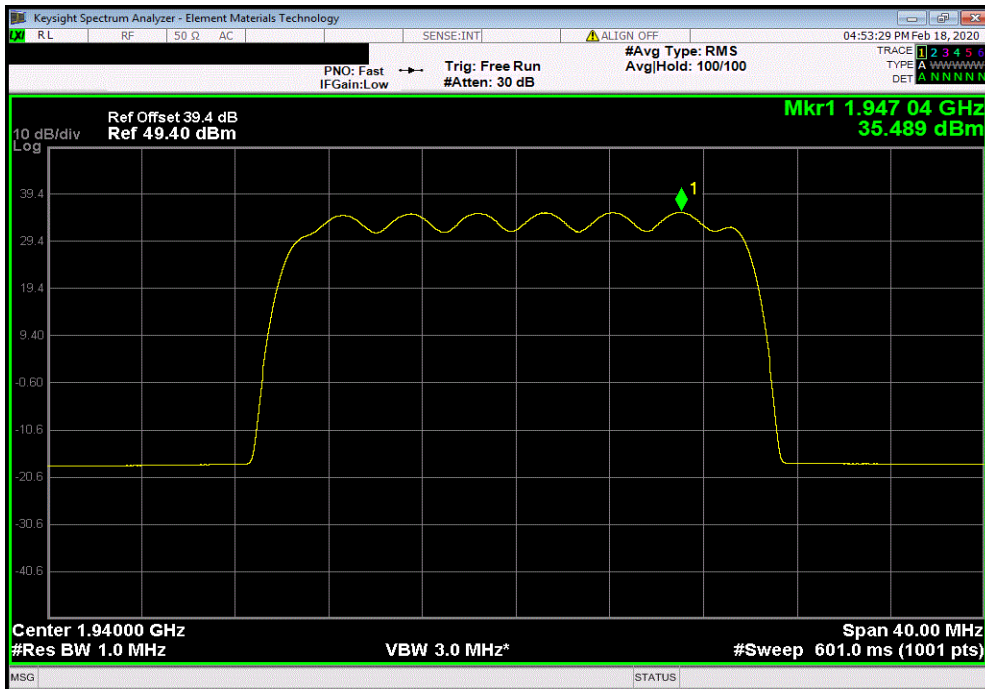


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Band 25 (Single Carrier) Port 4, 16-QAM, 15 MHz, High Channel, 1987.5 MHz						
Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results	
36.619	0	Not Provided	36.62	62	N/A	



Band 25 (Single Carrier) Port 4, 16-QAM, 20 MHz, Low Channel, 1940 MHz						
Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results	
35.489	0	Not Provided	35.49	62	N/A	

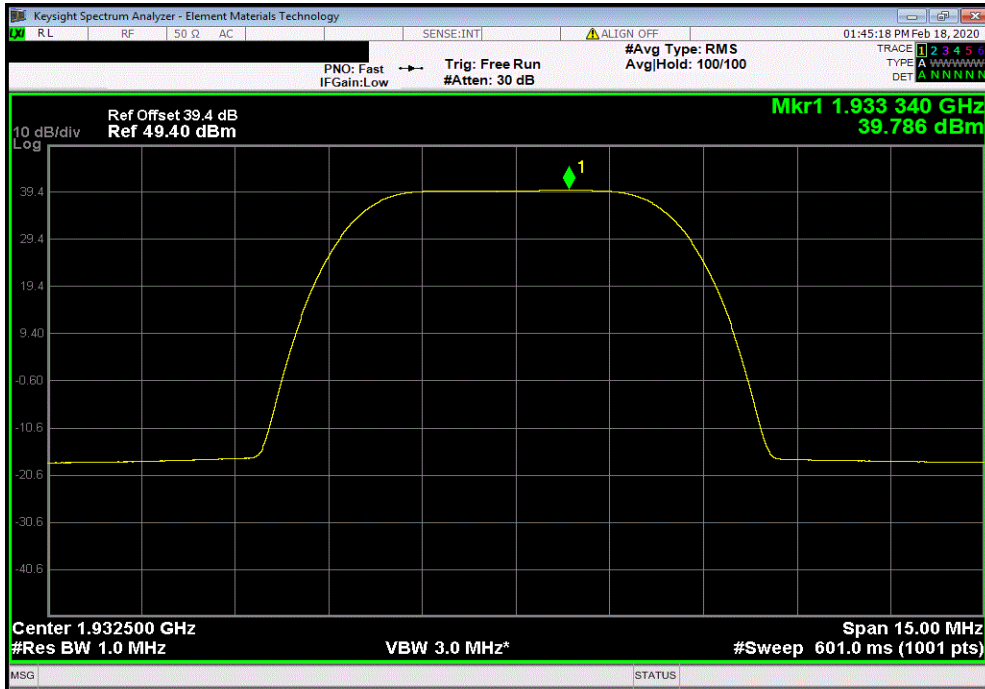


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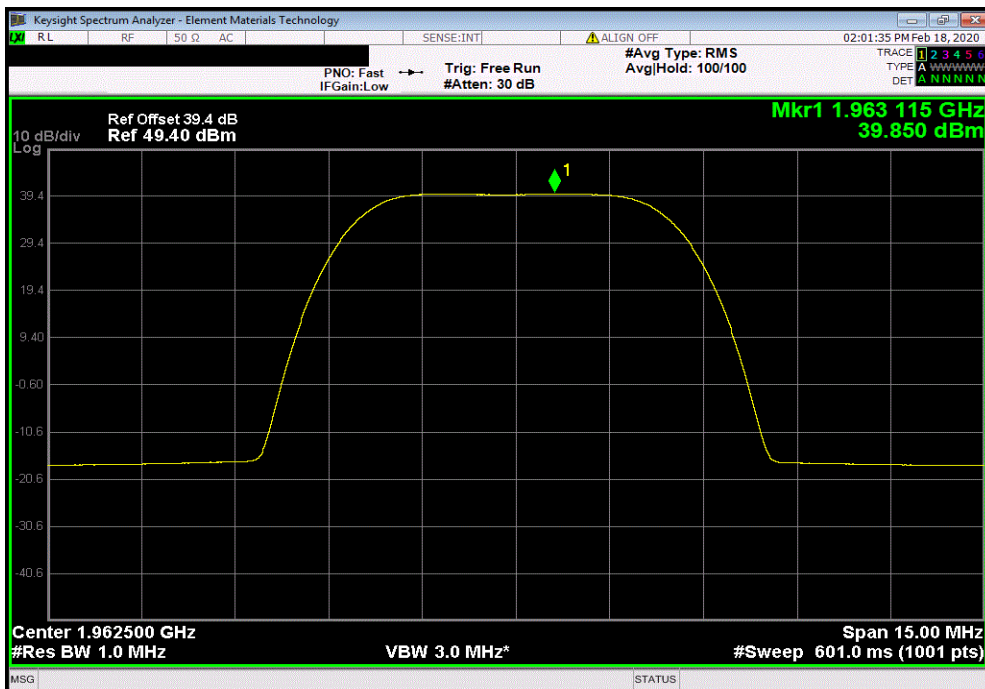


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Band 25 (Single Carrier) Port 4, 64-QAM, 5 MHz, Low Channel, 1932.5 MHz						
Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results	
39.786	0	Not Provided	39.79	62	N/A	



Band 25 (Single Carrier) Port 4, 64-QAM, 5 MHz, Mid Channel, 1962.5 MHz						
Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results	
39.85	0	Not Provided	39.85	62	N/A	

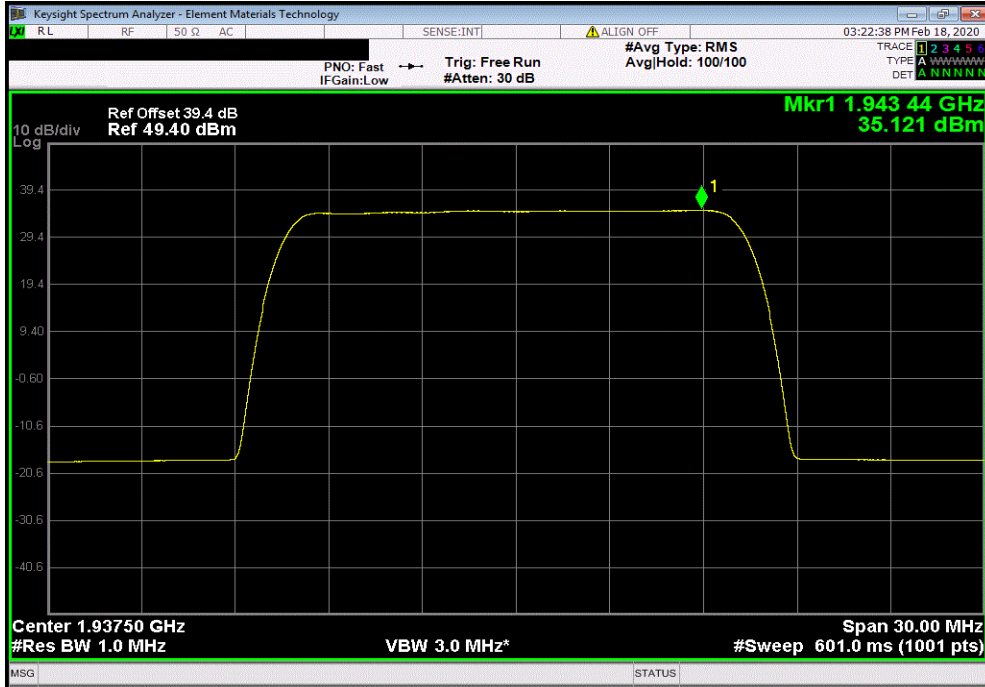


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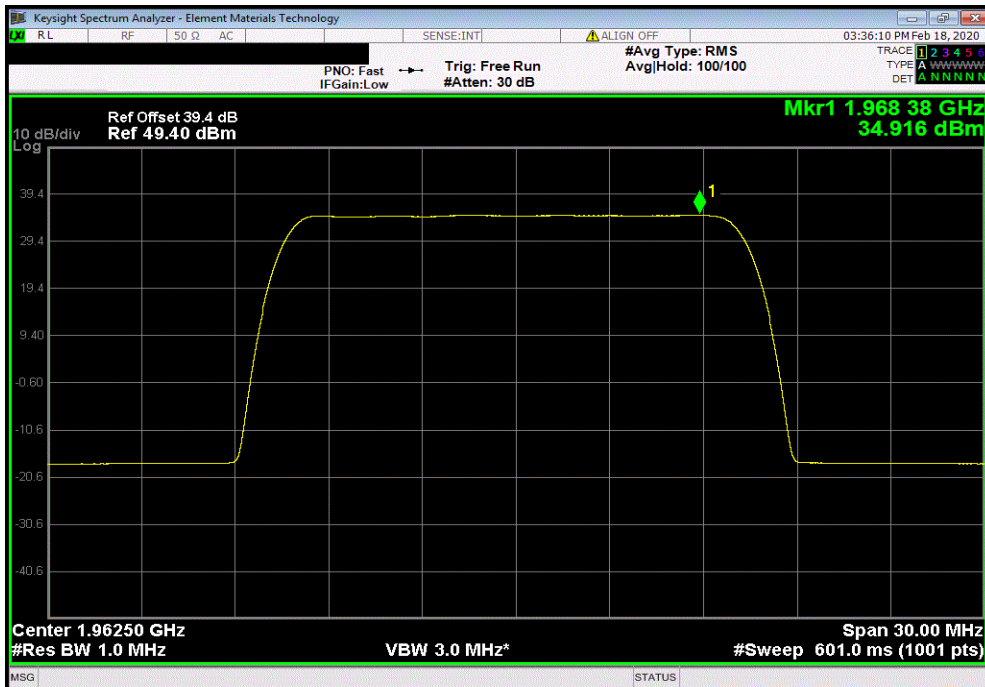


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Band 25 (Single Carrier) Port 4, 64-QAM, 15 MHz, Low Channel, 1937.5 MHz						
Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results	
35.121	0	Not Provided	35.12	62	N/A	



Band 25 (Single Carrier) Port 4, 64-QAM, 15 MHz, Mid Channel, 1962.5 MHz						
Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results	
34.916	0	Not Provided	34.92	62	N/A	

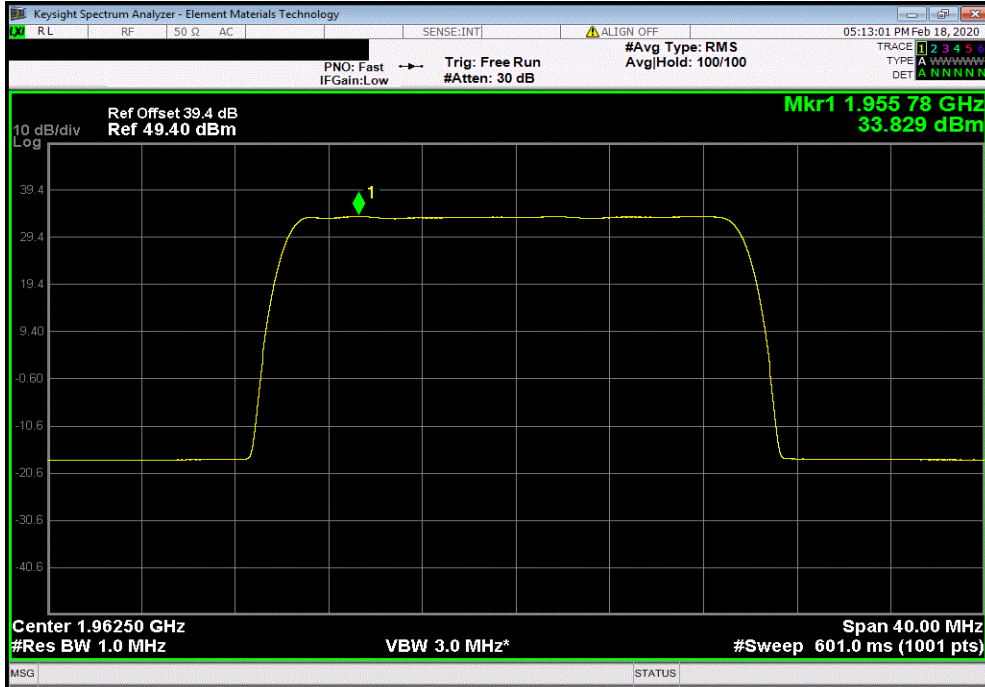


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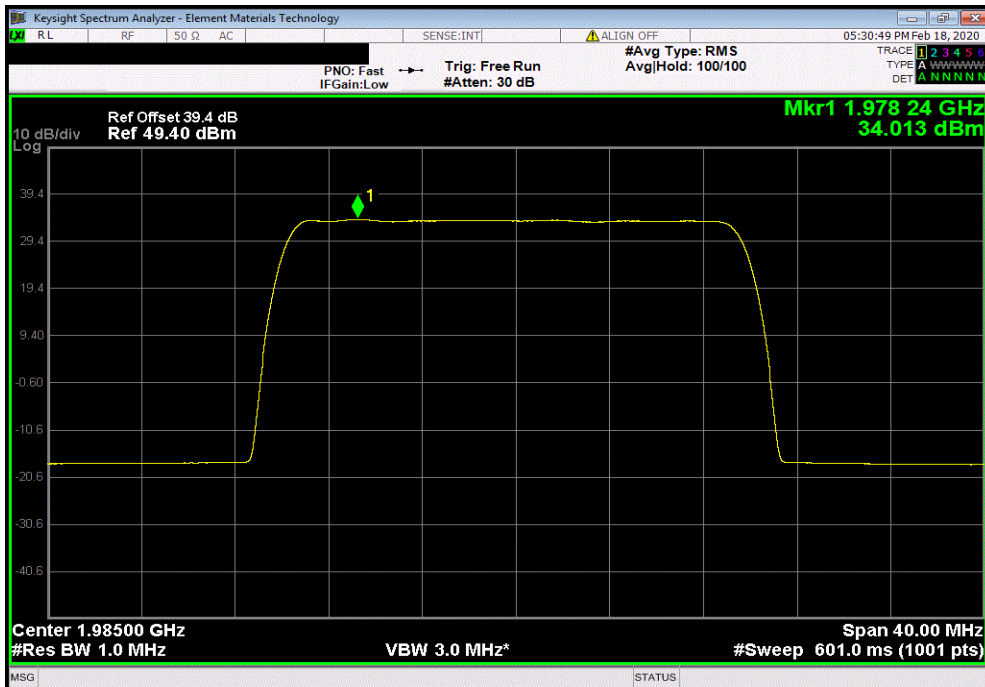


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Band 25 (Single Carrier) Port 4, 64-QAM, 20 MHz, Mid Channel, 1962.5 MHz						
Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results	
33.829	0	Not Provided	33.83	62	N/A	



Band 25 (Single Carrier) Port 4, 64-QAM, 20 MHz, High Channel, 1985 MHz						
Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results	
34.013	0	Not Provided	34.01	62	N/A	

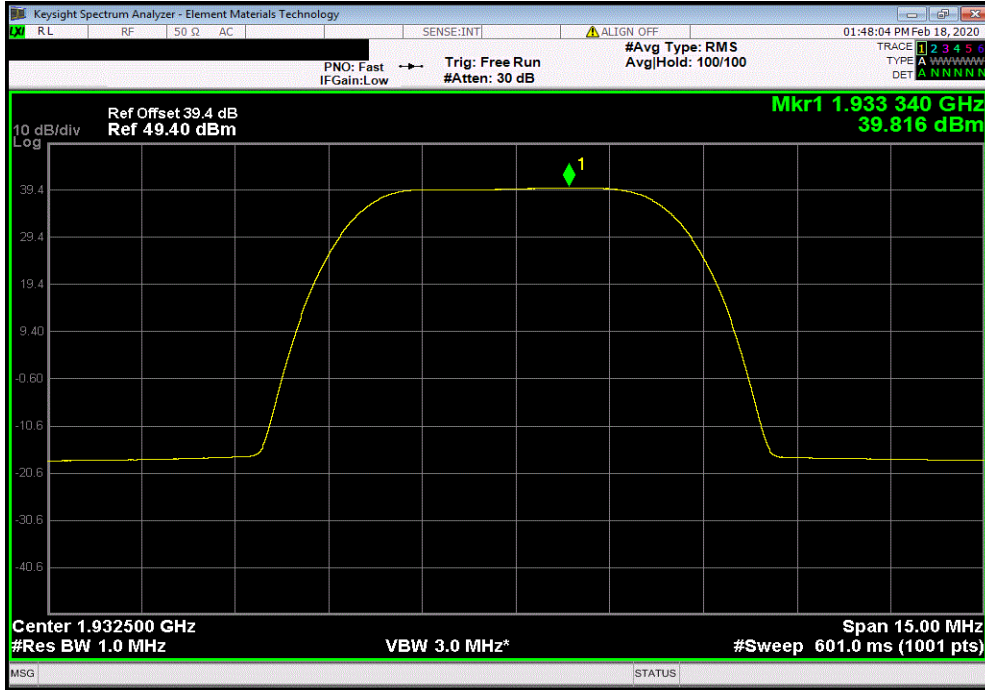


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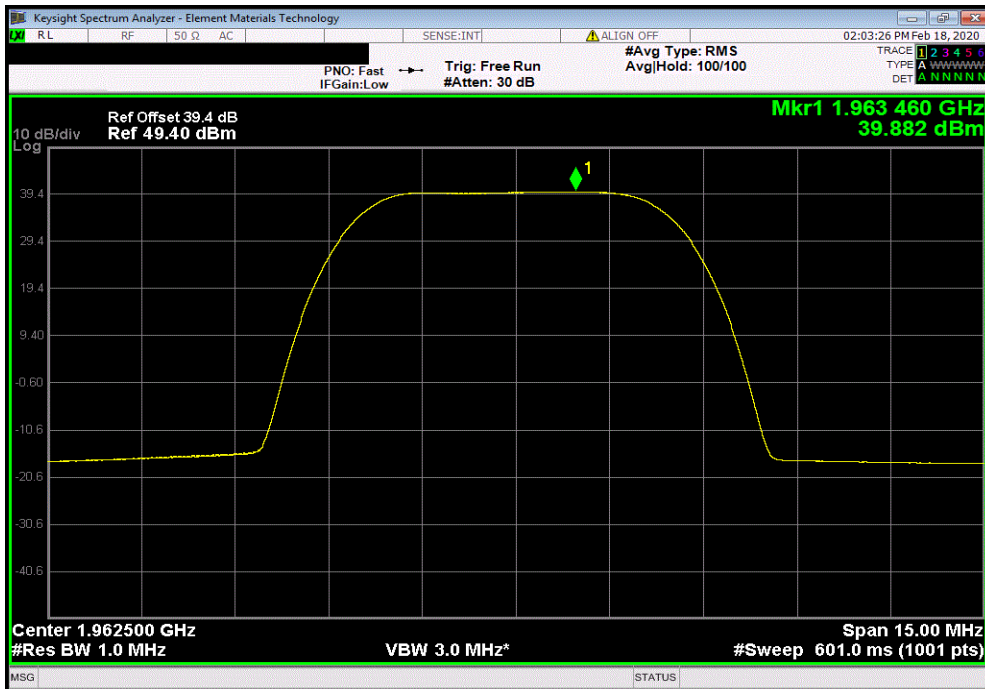


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Band 25 (Single Carrier) Port 4, 256-QAM, 5 MHz, Low Channel, 1932.5 MHz						
Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results	
39.816	0	Not Provided	39.82	62	N/A	



Band 25 (Single Carrier) Port 4, 256-QAM, 5 MHz, Mid Channel, 1962.5 MHz						
Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results	
39.882	0	Not Provided	39.88	62	N/A	

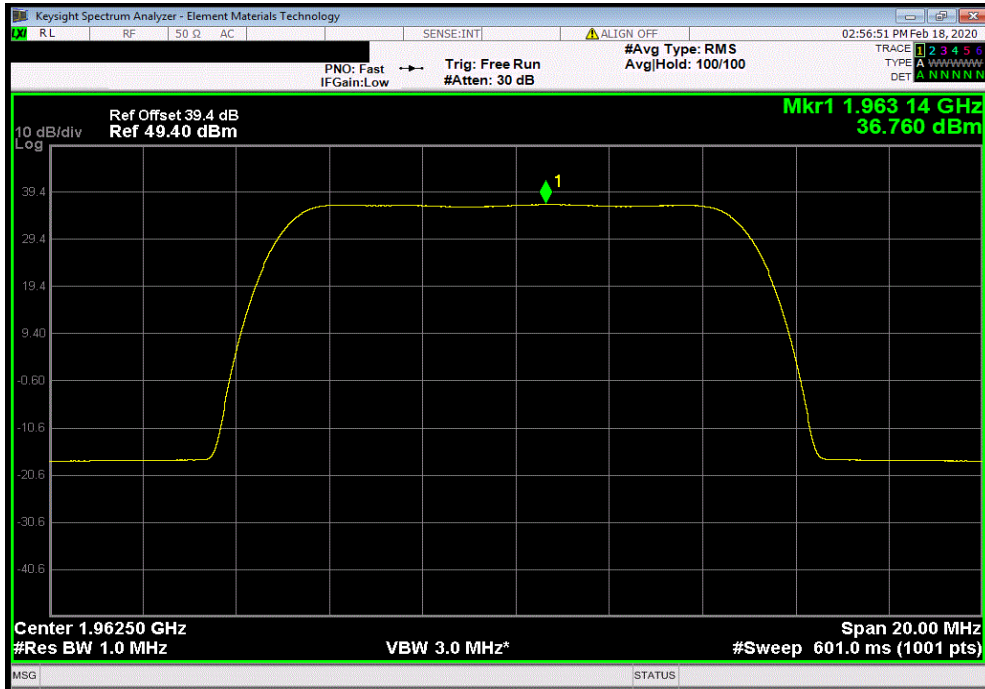


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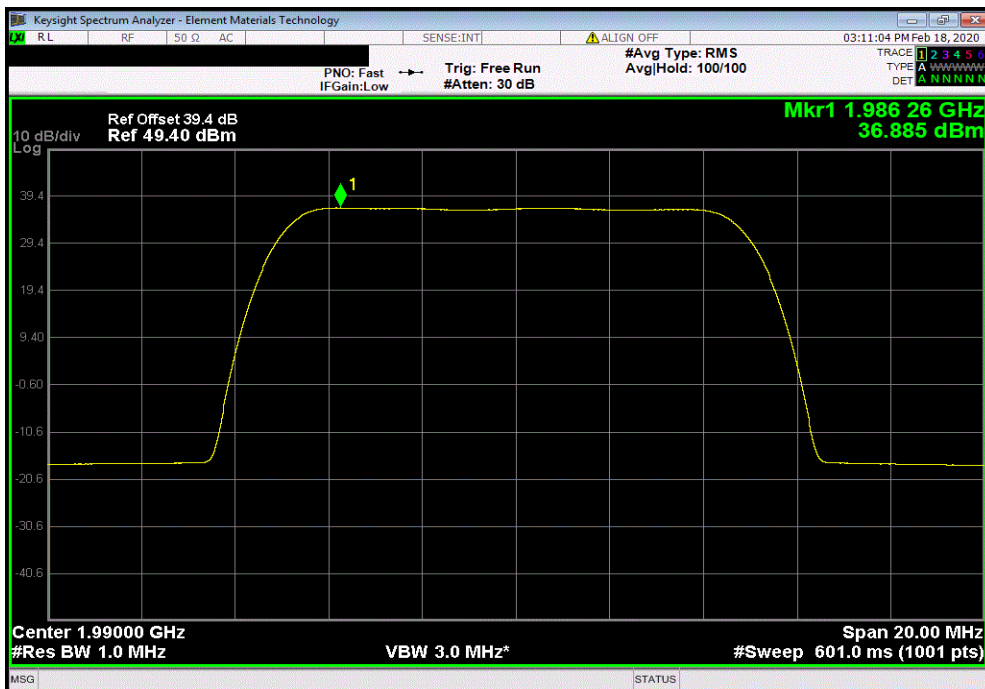


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Band 25 (Single Carrier) Port 4, 256-QAM, 10 MHz, Mid Channel, 1962.5 MHz						
Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results	
36.76	0	Not Provided	36.76	62	N/A	



Band 25 (Single Carrier) Port 4, 256-QAM, 10 MHz, High Channel, 1990 MHz						
Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results	
36.885	0	Not Provided	36.89	62	N/A	

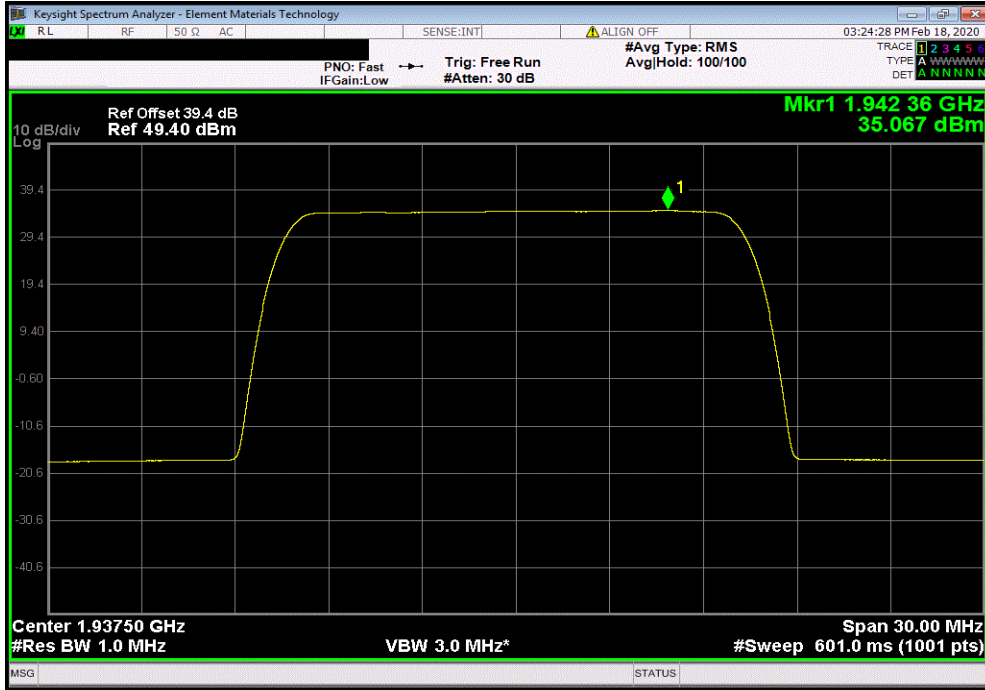


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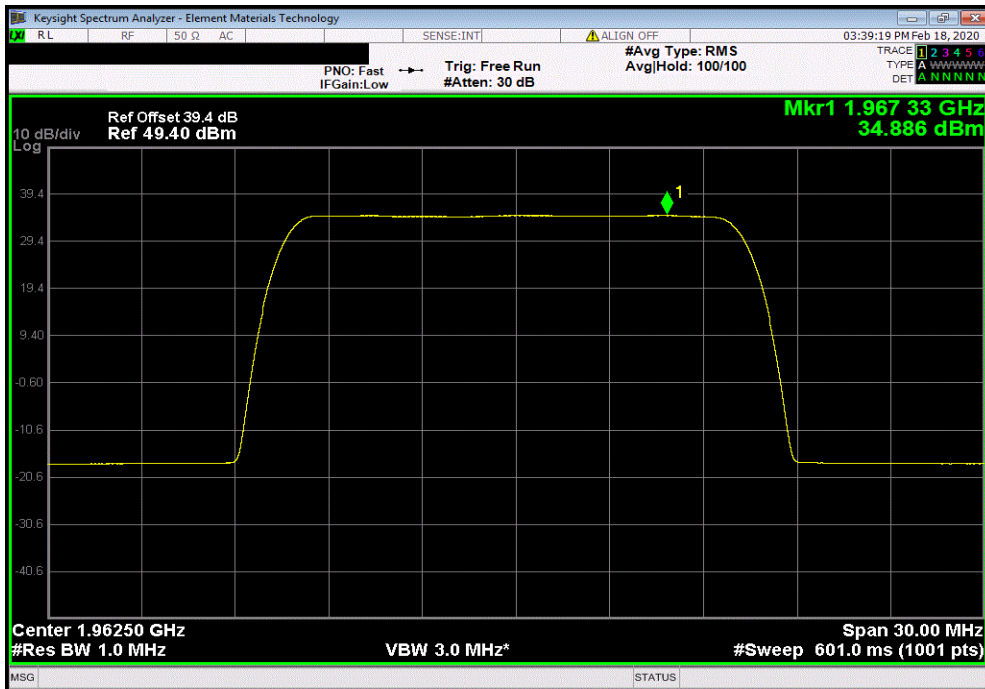


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Band 25 (Single Carrier) Port 4, 256-QAM, 15 MHz, Low Channel, 1937.5 MHz						
Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results	
35.067	0	Not Provided	35.07	62	N/A	



Band 25 (Single Carrier) Port 4, 256-QAM, 15 MHz, Mid Channel, 1962.5 MHz						
Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results	
34.886	0	Not Provided	34.89	62	N/A	

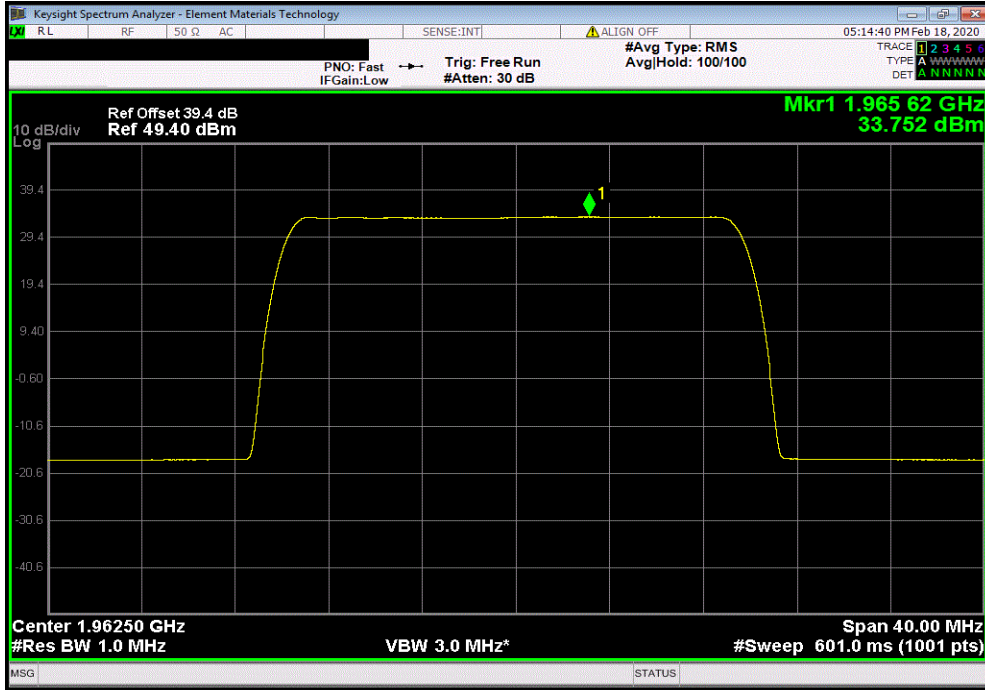


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Band 25 (Single Carrier) Port 4, 256-QAM, 20 MHz, Mid Channel, 1962.5 MHz						
Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results	
33.752	0	Not Provided	33.75	62	N/A	



Band 25 (Single Carrier) Port 4, 256-QAM, 20 MHz, High Channel, 1985 MHz						
Initial Power (dBm/MHz)	Duty Cycle Factor (dB)	Antenna Gain (dBi)	Final w/o Ant Gain Value (dBm/MHz)	Limit ERP (dBm/MHz)	Results	
33.893	0	Not Provided	33.89	62	N/A	

