



RF TEST REPORT

Report No.: SET2020-00269

Product: LTE Base Station

FCC ID: 2AG32SBS81040

IC: 20982-SBS81040

Model No. : sBS81040

Applicant: Baicells Technologies Co., Ltd.

Address: 3F, Hui Yuan Development Building, No.1 Shangdi Information
Industry Base, Haidian Dist., Beijing, China.

Dates of Testing: 12/20/2019 —01/07/2020

Issued by: CCIC Southern Testing Co., Ltd.

Lab Location: Electronic Testing Building, No. 43 Shahe Road, Xili Street,
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Tel: 86 755 26627338 **Fax:** 86 755 26627238

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Test Report

Product.....: LTE Base Station

Brand Name.....: BaiCells

Trade Name.....: BaiCells

Applicant.....: Baicells Technologies Co., Ltd.

Applicant Address.....: 3F, Hui Yuan Development Building, No.1 Shangdi
Information Industry Base, Haidian Dist., Beijing, China.

Manufacturer.....: Baicells Technologies Co., Ltd.

Manufacturer Address.....: 3F, Hui Yuan Development Building, No.1 Shangdi
Information Industry Base, Haidian Dist., Beijing, China.

Test Standards.....: 47 CFR FCC Part 2/27
RSS-Gen issue 5 March 2019
RSS-199 issue 3 December 2016

Test Result.....: PASS

Tested by.....: Vincent
2020.01.13

Vincent, Test Engineer

Reviewed by.....: Chris You
2020.01.13

Chris You, Senior Engineer

Approved by.....: Shuangwen Zhang
2020.01.13

ShuangwenZhang, Manager



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Change History		
Issue	Date	Reason for change
1.0	20120.01.13	First edition



1. GENERAL INFORMATION

1.1 EUT Description

EUT Type	LTE Base Station
Model No.	sBS81040
Software Version	BaiBS_RTD_3.4.8
Hardware version	Ver.B
EUT supports Radios application	LTE Band 41
Frequency Range	FCC:2501MHz~2685MHz IC:2575MHz~2615MHz
Number of Carriers	Maximum 2 carriers
Support Channel Bandwidth	10MHz, 15MHz, 20MHz
Type of Modulation	QPSK, 16QAM, 64QAM
Antenna Type	External Antenna
Permission Antenna Gain	17dBi
Power Supply	DC 48V

1.2 Test Channel

Configuration MIMO-SC

FCC

Test Channel	Frequency		
	10M	15M	20M
lowest	2501	2503.5	2506
Middle	2593	2593	2593
Highest	2685	2682.5	2680

IC

Test Channel	Frequency		
	10M	15M	20M
lowest	2575	2577.5	2580
Middle	2595	2595	2595
Highest	2615	2612.5	2610

Configuration MIMO-MC

FCC

Test Channel	Frequency		
	10M	15M	20M
lowest	2506	2511	2516
Middle	2593	2593	2593
Highest	2680	2675	2670

IC

Test Channel	Frequency		
	10M	15M	20M
lowest	2580	2585	2590
Middle	2595	2595	2595
Highest	2610	2605	2600

1.3 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

Test Mode	Description
E-TM1.1	Keep the EUT in data communicating mode (QPSK). (SC: Single Carrier) (MC: Multiple Carrier)
E-TM3.1	Keep the EUT in data communicating mode (64QAM). (SC: Single Carrier) (MC: Multiple Carrier)

1.4 Test Standards and Results

Test detailed items/section required by FCC IC rules and results are as below:

No.	Section		Description	Result
	FCC	IC		
1	2.1046 27.50(h)(1)(ii)	RSS-Gen Section 6.12 RSS-199 Section 4.4	Transmitter Output Power	PASS
2	Report only	RSS-199 Section 4.4	Peak to Average Ratio	PASS
3	2.1047	RSS-199 Section 4.1	Modulation Characteristics	PASS
4	2.1049 27.53(m)(6)	RSS-Gen Section 6.6 RSS-199 Section 4.2	Emission Bandwidth	PASS
5	2.1051 27.53(m)(2)	RSS-Gen Section 6.13 RSS-199 Section 4.5(a)	Spurious Emission at antenna Terminal	PASS
6	2.1051 27.53(m)(2)	RSS-Gen Section 6.13 RSS-199 Section 4.5(a)	Field Strength of Spurious Radiation	PASS
7	2.1055(a)(1)(b) 2.1055(d)(1)(2) 27.54	RSS-Gen Section 6.11 RSS-199 Section 4.3	Frequency stability	PASS

1.5 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

47 CFR FCC Part 27

KDB 662911 D01 Multiple Transmitter Output v02r01

ANSI/TIA/EIA-603-E 2016

ANSI C63.26-2015

1.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 6B and 10dB attenuator.

Example:

$$\begin{aligned}\text{Offset (dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 6 + 10 = 16(\text{dB})\end{aligned}$$

1.7 Facilities and Accreditations

1.7.1 Test Facilities

NVLAP Lab Code: 201008-0

CCIC-SET is a third party testing organization accredited by NVLAP according to ISO/IEC 17025. The accreditation certificate number is 201008-0.

FCC- Designation Number: CN5031

CCIC Southern Testing Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Designation Number: CN5031, valid time is until December 31, 2020.

ISED Registration: 11185A

CCIC Southern Testing Co., Ltd. EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 11185A-1 on Aug. 04, 2016, valid time is until Dec. 31, 2020

1.7.2 Test Environment Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15°C - 35°C
Relative Humidity (%):	30% - 60%
Atmospheric Pressure (kPa):	86KPa-106KPa

2. TEST REQUIREMENTS

2.1 Transmitter Output power

2.1.1 Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.1.2 Limit

FCC:(1) Main, booster and base stations. (i) The maximum EIRP of a main, booster or base station shall not exceed $33 \text{ dBW} + 10\log(X/Y) \text{ dBW}$, where X is the actual channel width in MHz and Y is either 6 MHz if prior to transition or the station is in the MBS following transition or 5.5 MHz if the station is in the LBS and UBS following transition, except as provided in paragraph (h)(1)(ii) of this section.

IC: For base station equipment, refer to SRSP-517 for the maximum permissible e.i.r.p. (Fixed and base stations (except fixed subscriber stations) are limited to a maximum permissible equivalent isotropically radiated power (e.i.r.p.) of 1640 W/MHz (i.e. no more than 1640 W e.i.r.p. in any 1 MHz band segment) with an antenna height above average terrain (HAAT) up to 300 metres.).

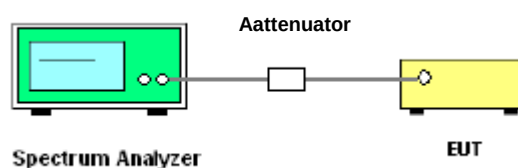
2.1.3 Test Procedures

1. The RF output of EUT was connected to Spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
2. Set EUT RBW=1MHz, VBW=3MHz, Detector mode=RMS. Trace mode: power averaging Over 100 sweeps
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.

Note: The duty cycle correction = $10 \log(1/\text{duty cycle}) = 10 \log(1/(6.75/10)) = 1.7(\text{dB})$

Offset factory = ATT loss + Cable loss + Duty cycle correction = $40 + 1.3 + 1.7 = 43(\text{dB})$

2.1.4 Test Setup





2.1.5 Test Results

Configuration MIMO-SC

For FCC measurement data:

Transmit Output power								
Bandwidth	Test Mode	Test Channel	Chain 0 Output power (dBm)	Chain 1 Output power (dBm)	Total Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP LIMIT (dBm)
10MHz	E-TM1.1	Low	41.95	41.84	44.91	17	61.91	65.22
		Middle	42.58	42.32	45.46	17	62.46	
		High	42.40	42.15	45.29	17	62.29	
	E-TM3.1	Low	41.87	41.78	44.84	17	61.84	
		Middle	42.30	42.51	45.42	17	62.42	
		High	42.29	42.24	45.28	17	62.28	
Transmit Output power								
Bandwidth	Test Mode	Test Channel	Chain 0 Output power (dBm)	Chain 1 Output power (dBm)	Total Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP LIMIT (dBm)
15MHz	E-TM1.1	Low	41.72	41.78	44.76	17	61.76	66.98
		Middle	42.36	42.33	45.36	17	62.36	
		High	42.07	42.11	45.10	17	62.10	
	E-TM3.1	Low	41.76	41.65	44.72	17	61.83	
		Middle	42.67	42.38	45.54	17	62.54	
		High	42.04	42.12	45.09	17	62.33	
Transmit Output power								
Bandwidth	Test Mode	Test Channel	Chain 0 Output power (dBm)	Chain 1 Output power (dBm)	Total Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP LIMIT (dBm)
20MHz	E-TM1.1	Low	41.92	41.93	44.94	17	61.94	68.23
		Middle	42.63	42.53	45.59	17	62.59	
		High	42.51	42.39	45.46	17	62.46	
	E-TM3.1	Low	41.98	41.98	44.99	17	61.99	
		Middle	42.67	42.65	45.67	17	62.67	
		High	42.51	42.55	45.54	17	62.54	



For IC measurement data:

Transmit Output power								
Bandwidth	Test Mode	Test Channel	Chain 0 Output power (dBm)	Chain 1 Output power (dBm)	Total Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP LIMIT (dBm)
10MHz	E-TM1.1	Low	42.26	42.51	45.40	17	62.40	72.15
		Middle	42.56	42.44	45.51	17	62.51	
		High	42.63	42.59	45.62	17	62.62	
	E-TM3.1	Low	42.40	42.60	45.51	17	62.35	
		Middle	42.56	42.42	45.50	17	62.50	
		High	42.66	42.63	45.66	17	62.62	
Transmit Output power								
Bandwidth	Test Mode	Test Channel	Chain 0 Output power (dBm)	Chain 1 Output power (dBm)	Total Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP LIMIT (dBm)
15MHz	E-TM1.1	Low	42.28	42.18	45.24	17	62.24	73.91
		Middle	42.47	42.27	45.38	17	62.38	
		High	42.25	42.37	45.32	17	62.32	
	E-TM3.1	Low	42.12	42.28	45.21	17	62.21	
		Middle	42.17	42.42	45.31	17	62.31	
		High	42.43	42.56	45.51	17	62.51	
Transmit Output power								
Bandwidth	Test Mode	Test Channel	Chain 0 Output power (dBm)	Chain 1 Output power (dBm)	Total Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP LIMIT (dBm)
20MHz	E-TM1.1	Low	42.62	42.52	45.58	17	62.58	75.16
		Middle	42.74	42.71	45.74	17	62.74	
		High	42.68	42.69	45.70	17	62.70	
	E-TM3.1	Low	42.64	42.56	45.61	17	62.61	
		Middle	42.78	42.52	45.66	17	62.66	
		High	42.58	42.71	45.66	17	62.66	



Configuration MIMO-MC(C1+C2)

For FCC measurement data:

Transmit Output power								
Bandwidth	Test Mode	Test Channel	Chain 0 Output power C1+C2(dBm)	Chain 1 Output power C1+C2(dBm)	Total Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP LIMIT (dBm)
10MHz	E-TM1.1	Low	42.18	41.93	45.07	17	62.07	65.22
		Middle	42.25	42.13	45.20	17	62.20	
		High	42.06	42.10	45.09	17	62.09	
	E-TM3.1	Low	41.98	42.12	45.06	17	62.06	
		Middle	42.18	42.16	45.18	17	62.18	
		High	41.88	41.93	44.92	17	61.92	
Transmit Output power								
Bandwidth	Test Mode	Test Channel	Chain 0 Output power C1+C2(dBm)	Chain 1 Output power C1+C2(dBm)	Total Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP LIMIT (dBm)
15MHz	E-TM1.1	Low	41.83	41.94	44.90	17	61.90	66.98
		Middle	42.24	42.18	45.22	17	62.22	
		High	41.96	41.84	44.91	17	61.91	
	E-TM3.1	Low	41.93	41.85	44.90	17	61.90	
		Middle	42.34	42.31	45.34	17	62.34	
		High	42.18	42.14	45.17	17	62.17	
Transmit Output power								
Bandwidth	Test Mode	Test Channel	Chain 0 Output power C1+C2(dBm)	Chain 1 Output power C1+C2(dBm)	Total Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP LIMIT (dBm)
20MHz	E-TM1.1	Low	42.03	42.05	45.05	17	62.05	68.23
		Middle	42.45	42.38	45.43	17	62.43	
		High	42.39	42.33	45.37	17	62.37	
	E-TM3.1	Low	41.95	41.91	44.94	17	61.94	
		Middle	42.52	42.41	45.48	17	62.48	
		High	42.38	42.34	45.37	17	62.37	



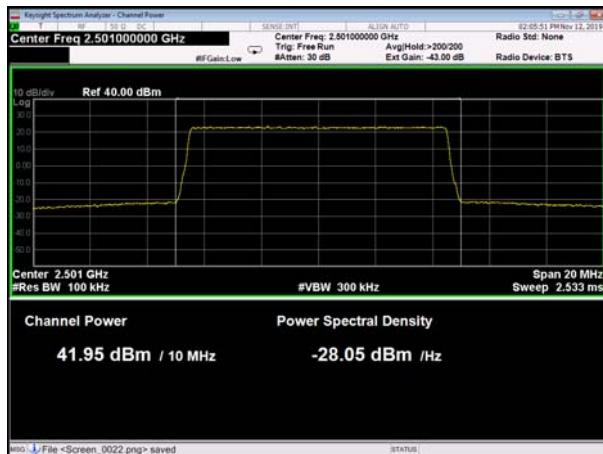
For IC measurement data:

Transmit Output power								
Bandwidth	Test Mode	Test Channel	Chain 0 Output power C1+C2(dBm)	Chain 1 Output power C1+C2(dBm)	Total Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP LIMIT (dBm)
10MHz	E-TM1.1	Low	42.15	42.36	45.27	17	62.27	72.15
		Middle	42.41	42.48	45.46	17	62.46	
		High	42.55	42.47	45.52	17	62.52	
	E-TM3.1	Low	42.32	42.19	45.27	17	62.27	
		Middle	42.38	42.27	45.34	17	62.34	
		High	42.35	42.24	45.31	17	62.31	
Transmit Output power								
Bandwidth	Test Mode	Test Channel	Chain 0 Output power C1+C2(dBm)	Chain 1 Output power C1+C2(dBm)	Total Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP LIMIT (dBm)
15MHz	E-TM1.1	Low	41.96	42.08	45.03	17	62.03	73.91
		Middle	42.04	42.11	45.09	17	62.09	
		High	42.01	41.98	45.01	17	62.01	
	E-TM3.1	Low	41.83	41.92	44.89	17	61.89	
		Middle	42.01	41.91	44.97	17	61.97	
		High	41.97	42.05	45.02	17	62.02	
Transmit Output power								
Bandwidth	Test Mode	Test Channel	Chain 0 Output power C1+C2(dBm)	Chain 1 Output power C1+C2(dBm)	Total Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP LIMIT (dBm)
20MHz	E-TM1.1	Low	41.85	41.92	44.90	17	61.90	75.16
		Middle	42.34	42.35	45.36	17	62.36	
		High	42.31	42.28	45.31	17	62.31	
	E-TM3.1	Low	41.91	41.83	44.88	17	61.88	
		Middle	42.21	42.18	45.21	17	62.21	
		High	42.08	42.12	45.11	17	62.11	

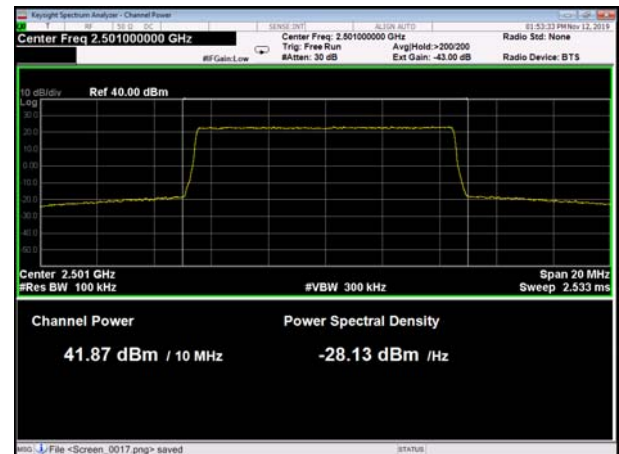
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FCC test data , Chain 0

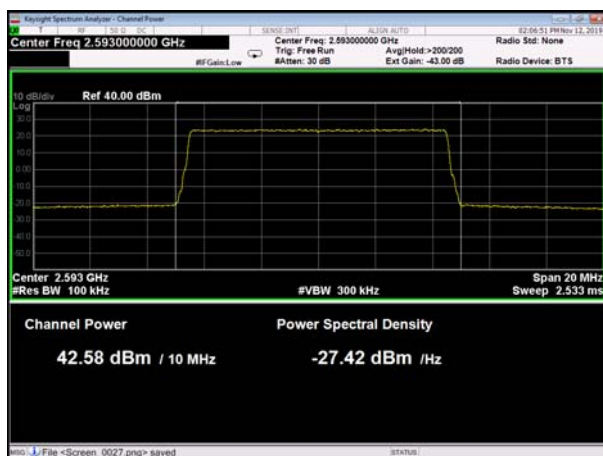
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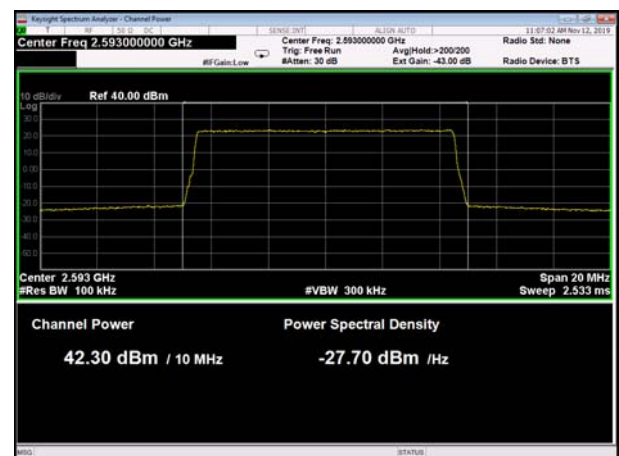
10MHz- Low CH E-TM3.1



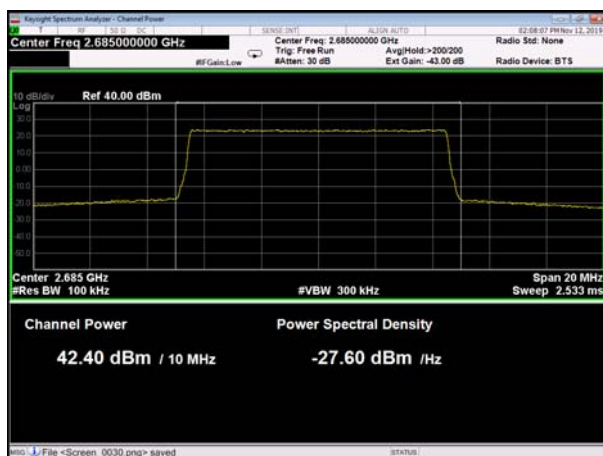
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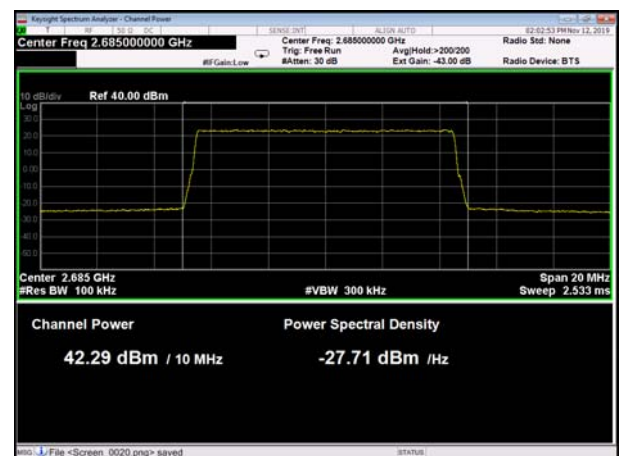
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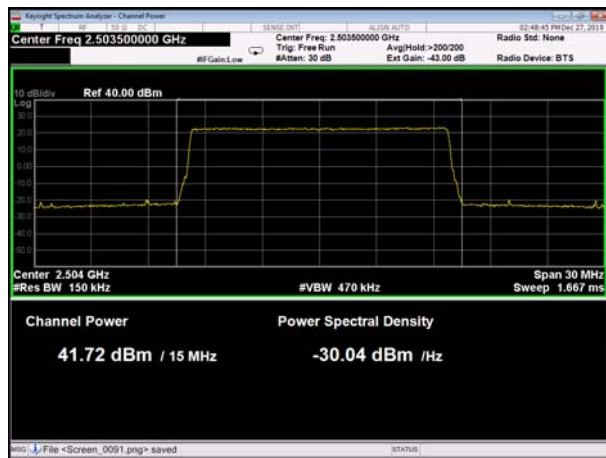
10MHz- High CH E-TM1.1



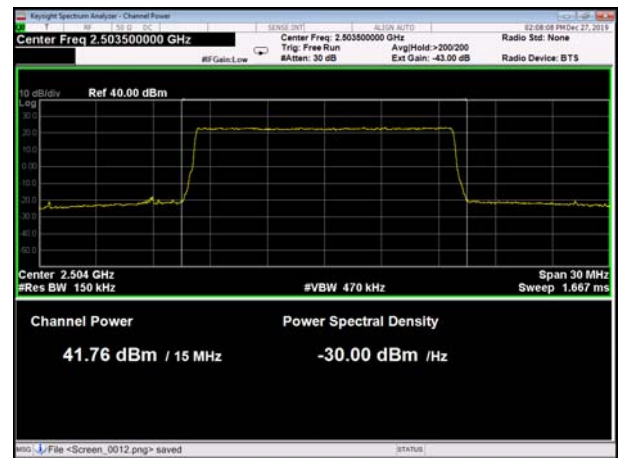
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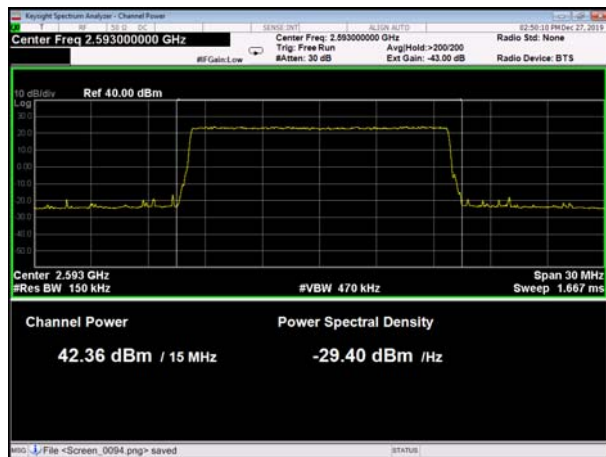
15MHz- Low CH E-TM1.1



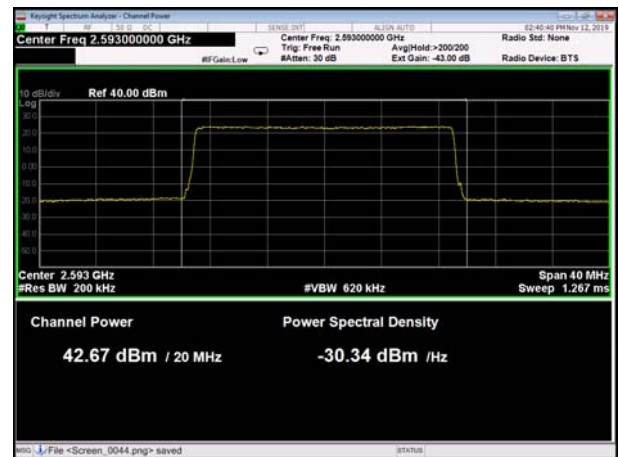
15MHz- Low CH E-TM3.1



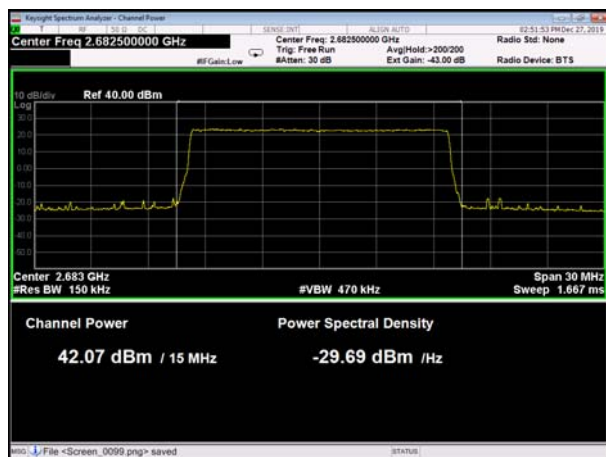
15MHz- Middle CH E-TM1.1



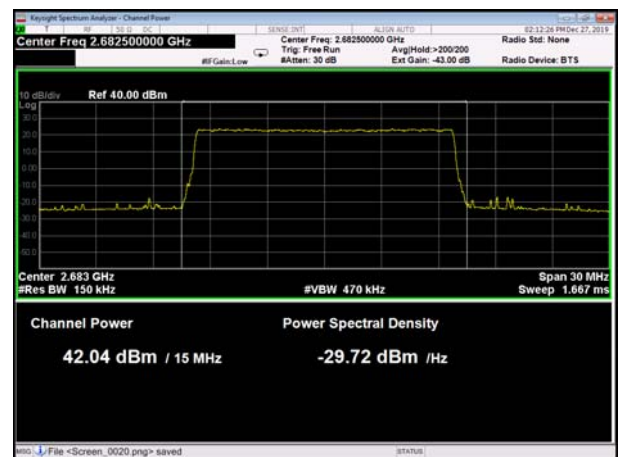
15MHz- Middle CH E-TM3.1



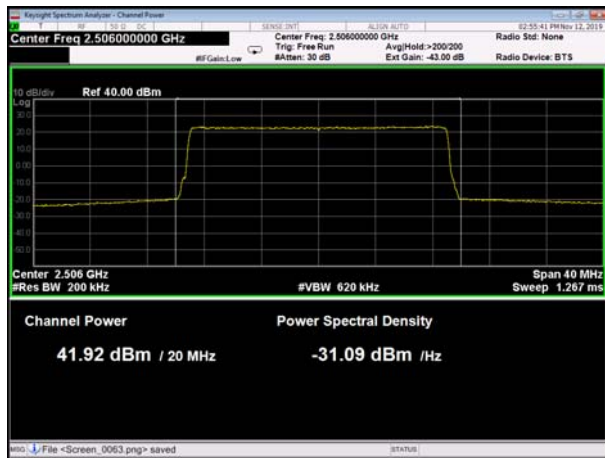
15MHz- High CH E-TM1.1



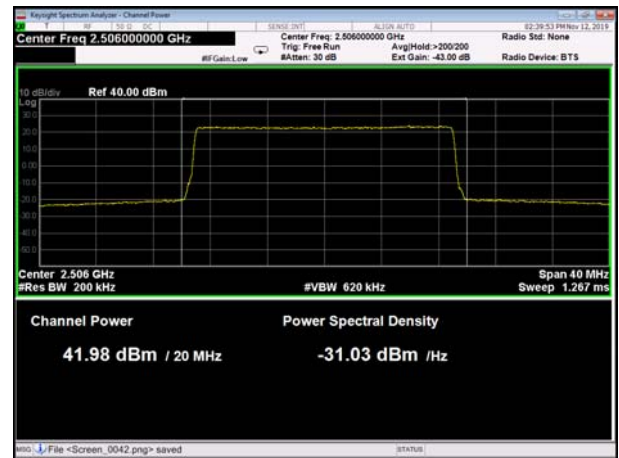
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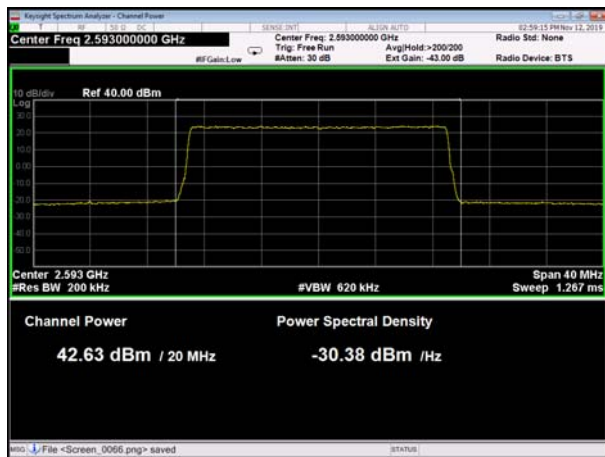
20MHz- Low CH E-TM1.1



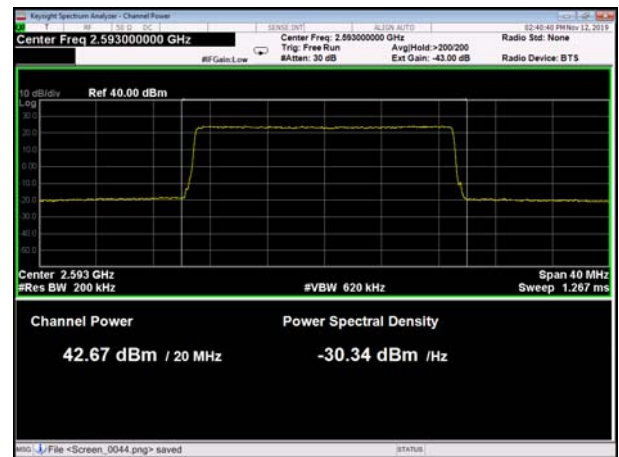
20MHz- Low CH E-TM3.1



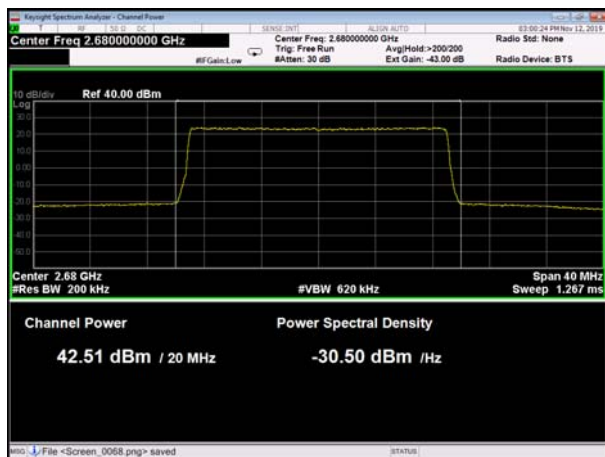
20MHz- Middle CH E-TM1.1



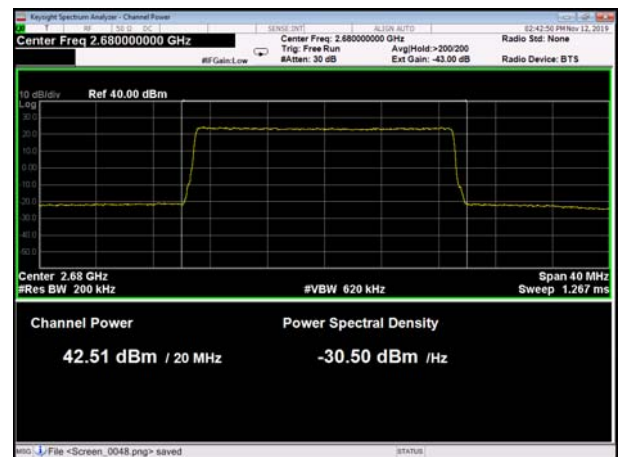
20MHz- Middle CH E-TM3.1



20MHz- High CH E-TM1.1



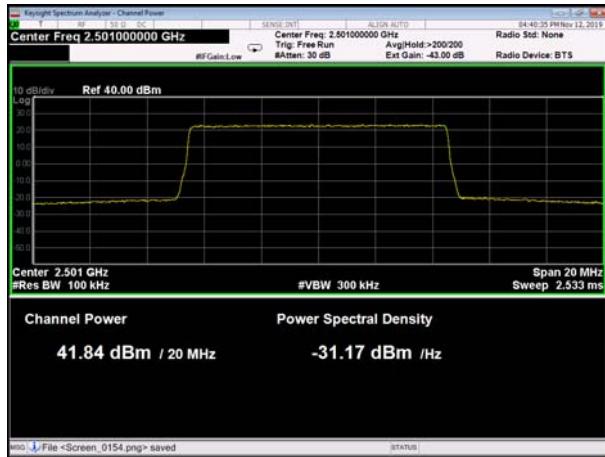
20MHz- High CH E-TM3.1



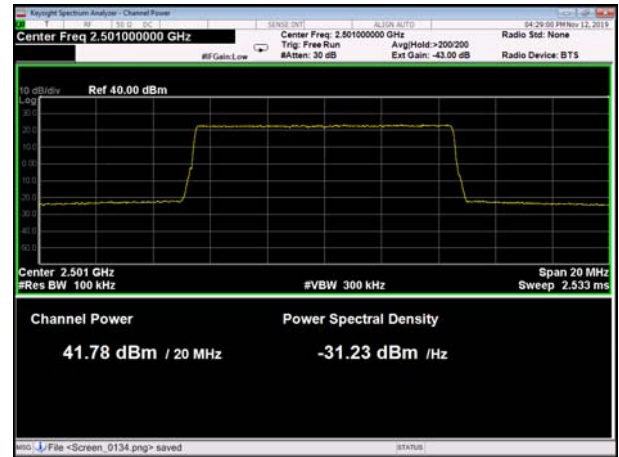


Chain 1

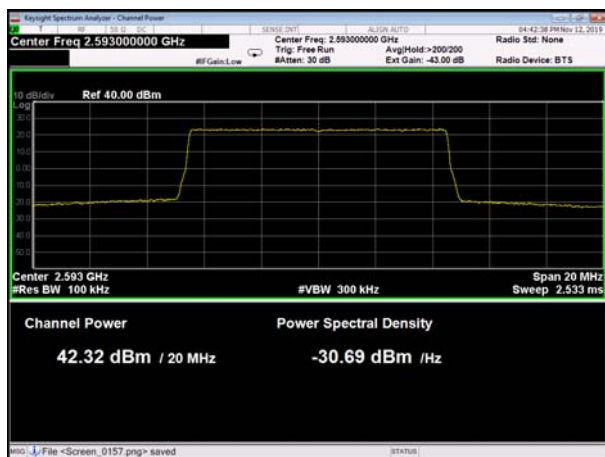
10MHz- Low CH E-TM1.1



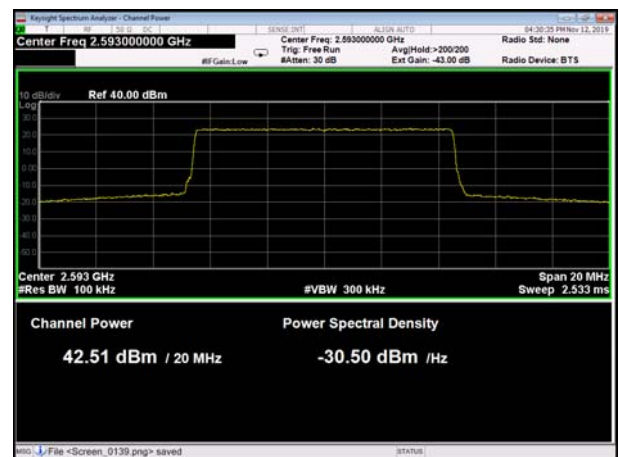
10MHz- Low CH E-TM3.1



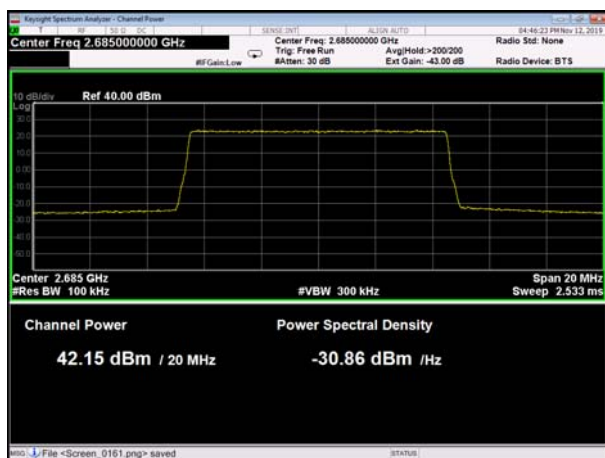
10MHz- Middle CH E-TM1.1



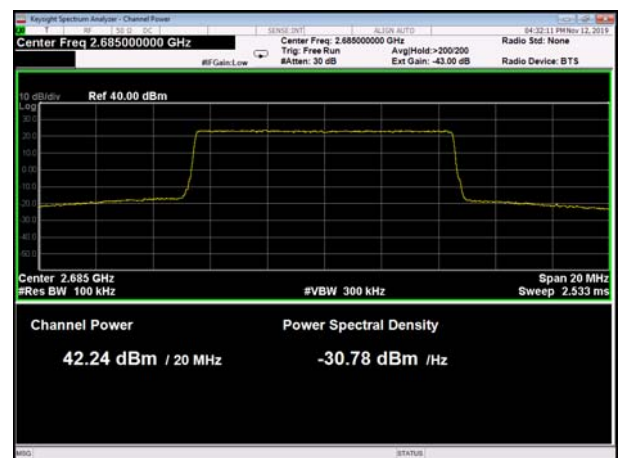
10MHz- Middle CH E-TM3.1



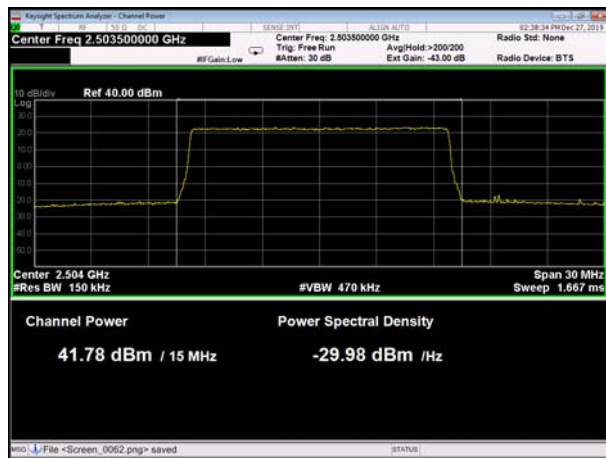
10MHz- High CH E-TM1.1



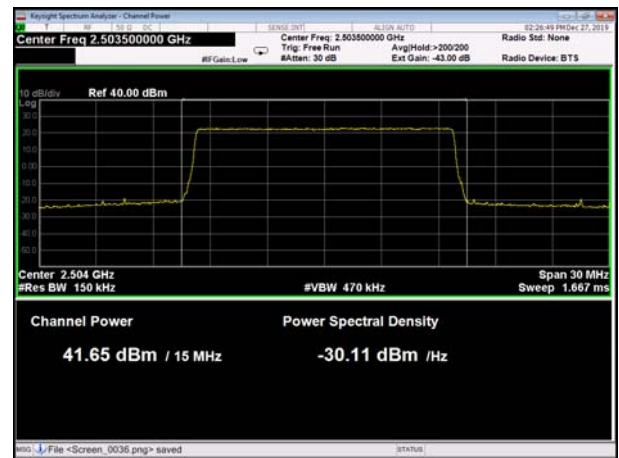
10MHz- High CH E-TM3.1



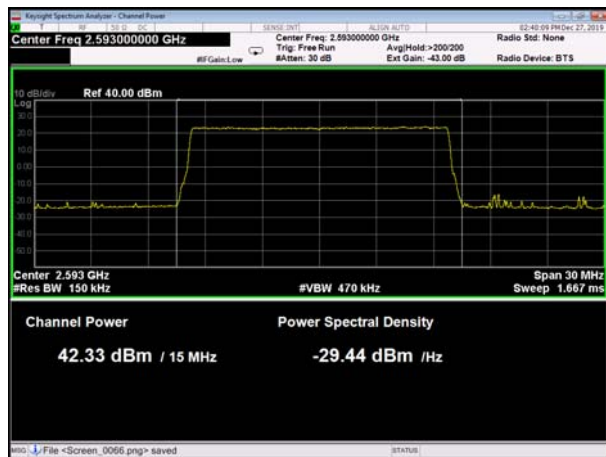
15MHz- Low CH E-TM1.1



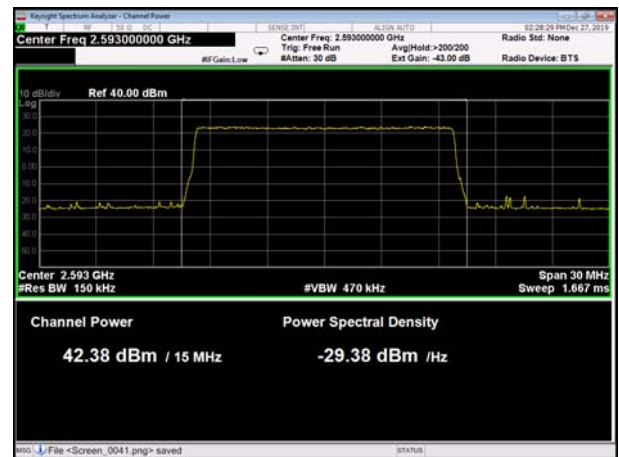
15MHz- Low CH E-TM3.1



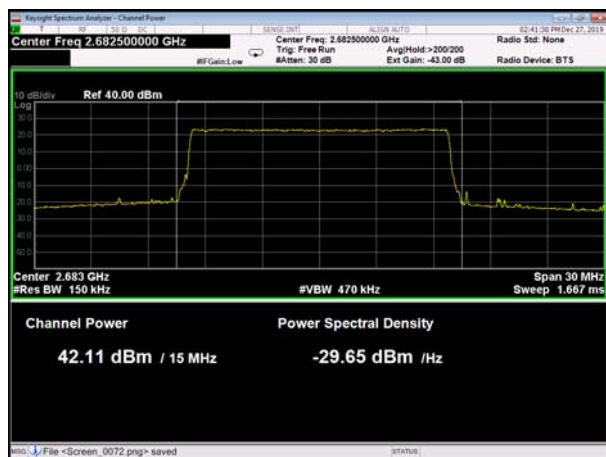
15MHz- Middle CH E-TM1.1



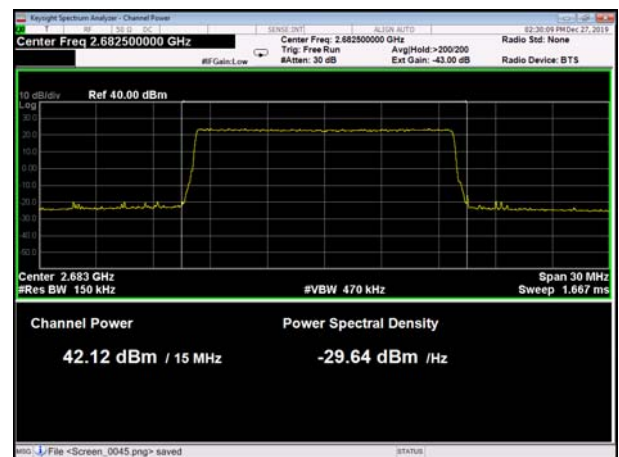
15MHz- Middle CH E-TM3.1



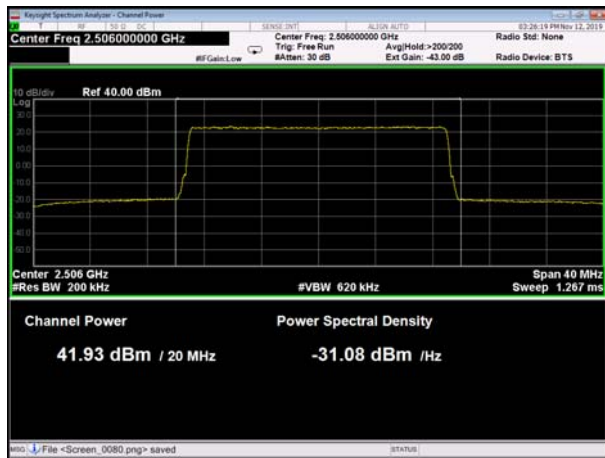
15MHz- High CH E-TM1.1



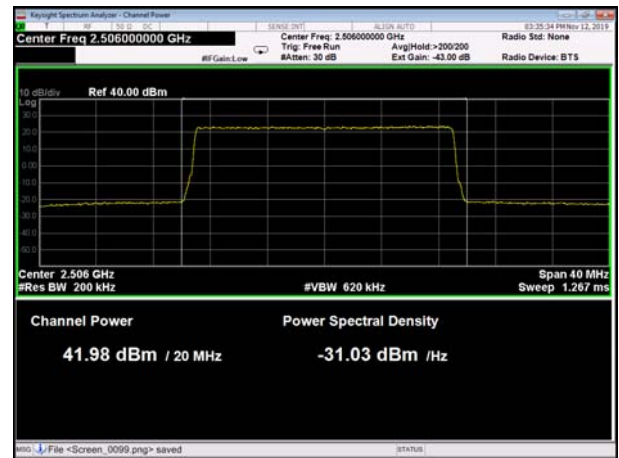
15MHz- High CH E-TM3.1



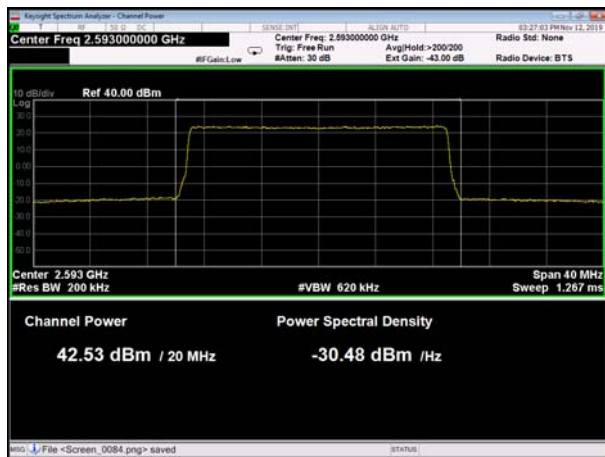
20MHz- Low CH E-TM1.1



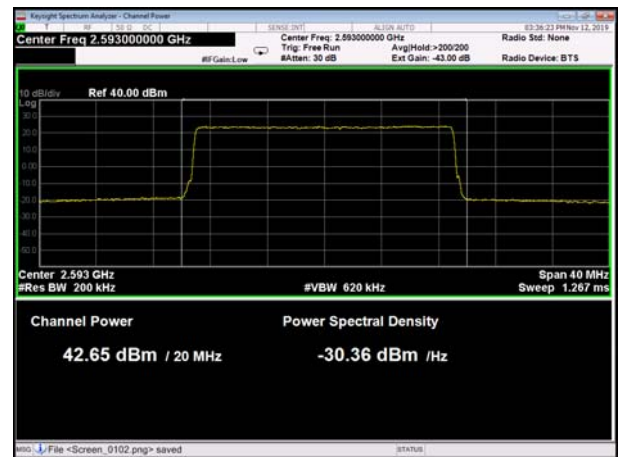
20MHz- Low CH E-TM3.1



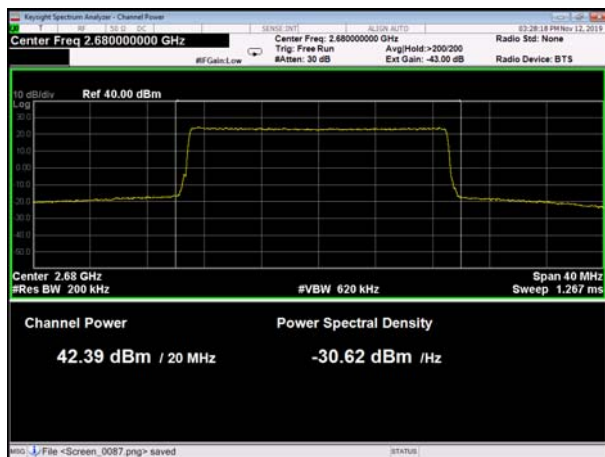
20MHz- Middle CH E-TM1.1



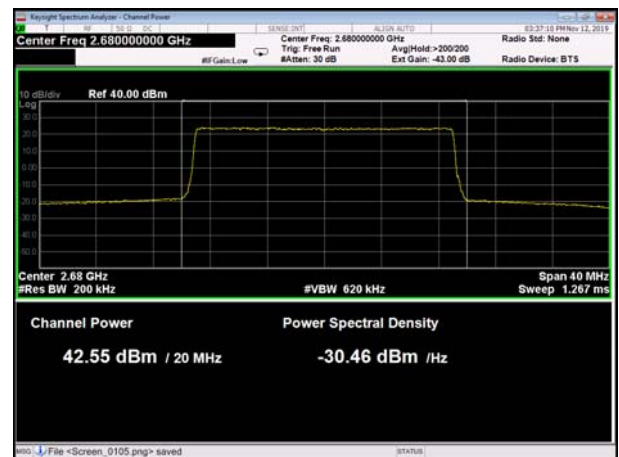
20MHz- Middle CH E-TM3.1



20MHz- High CH E-TM1.1



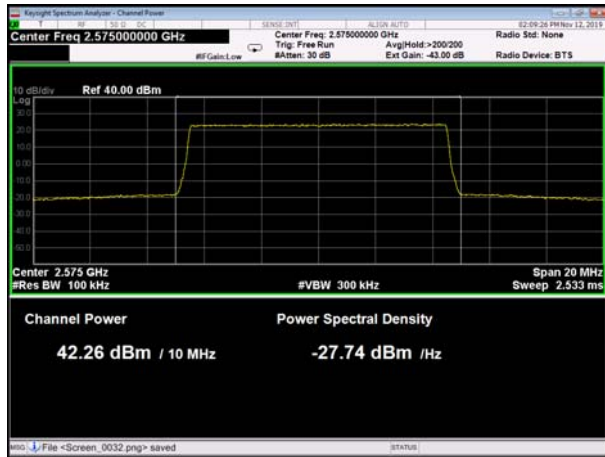
20MHz- High CH E-TM3.1



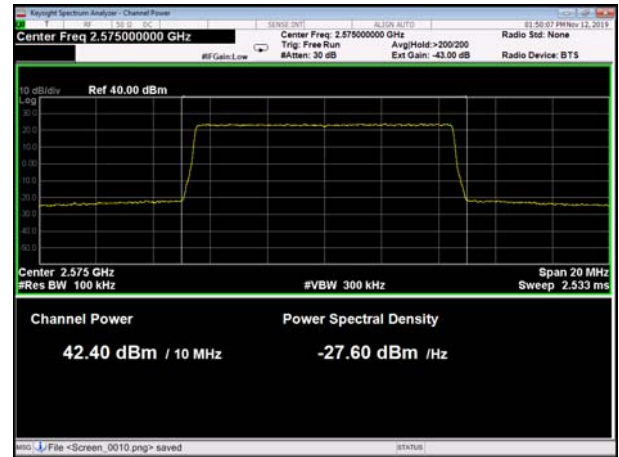


IC test data , Chain 0

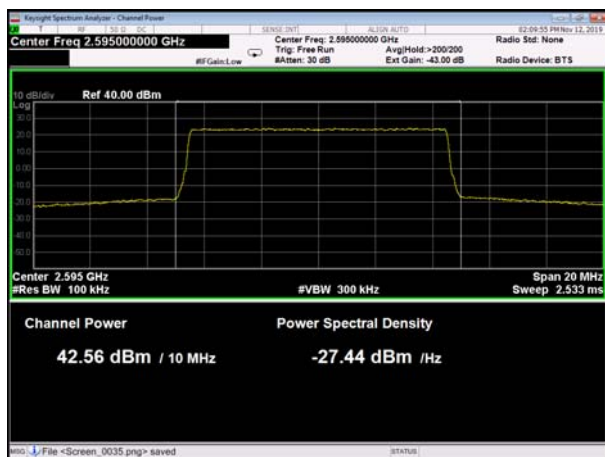
10MHz- Low CH E-TM1.1



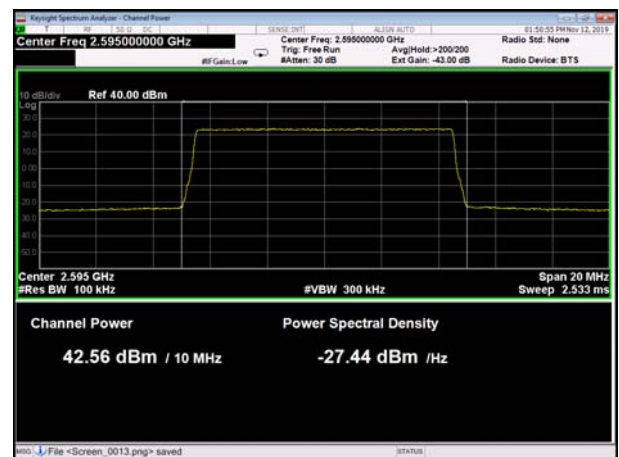
10MHz- Low CH E-TM3.1



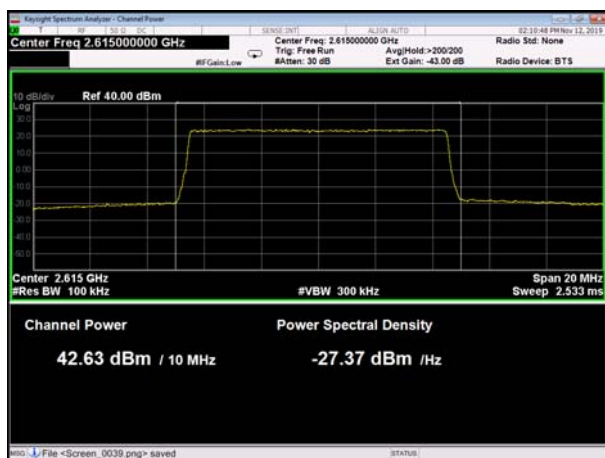
10MHz- Middle CH E-TM1.1



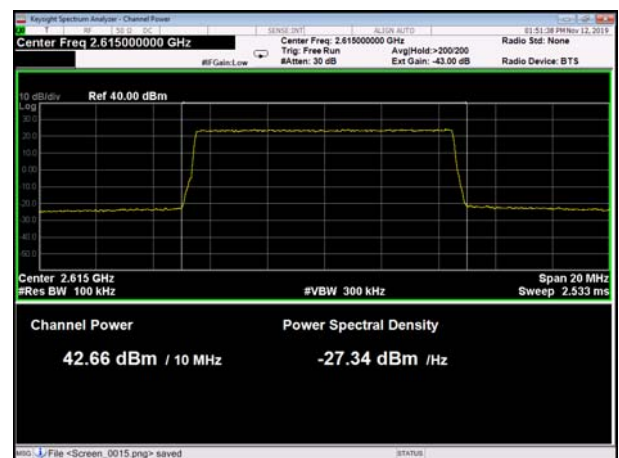
10MHz- Middle CH E-TM3.1



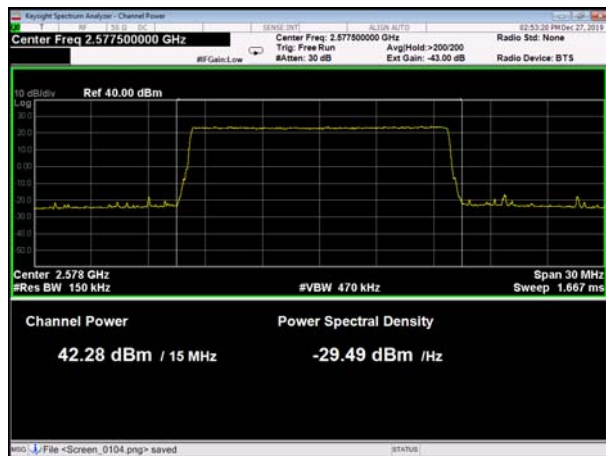
10MHz- High CH E-TM1.1



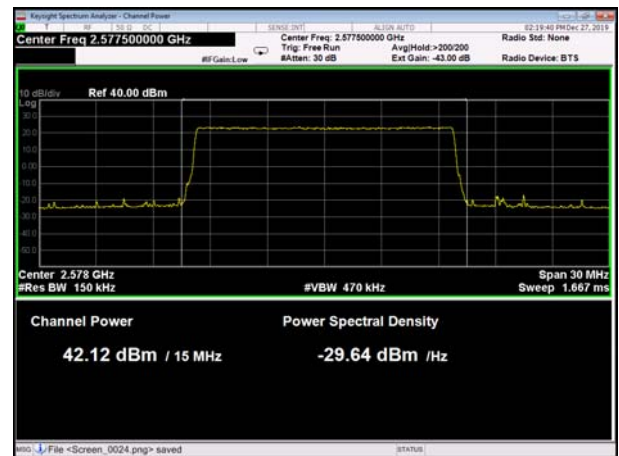
10MHz- High CH E-TM3.1



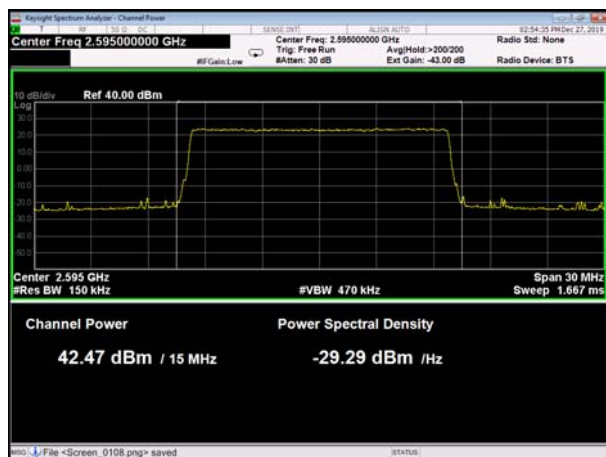
15MHz- Low CH E-TM1.1



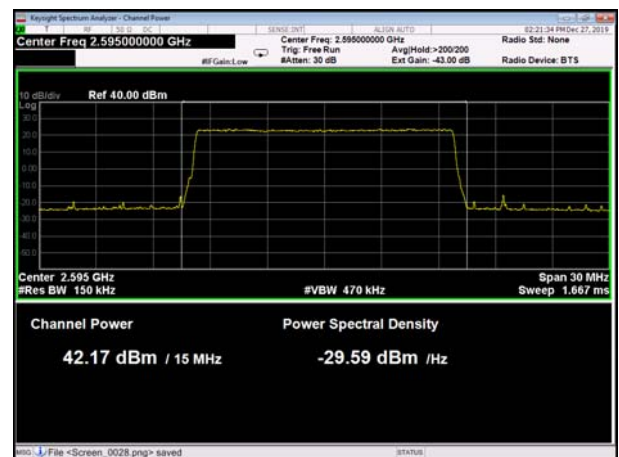
15MHz- Low CH E-TM3.1



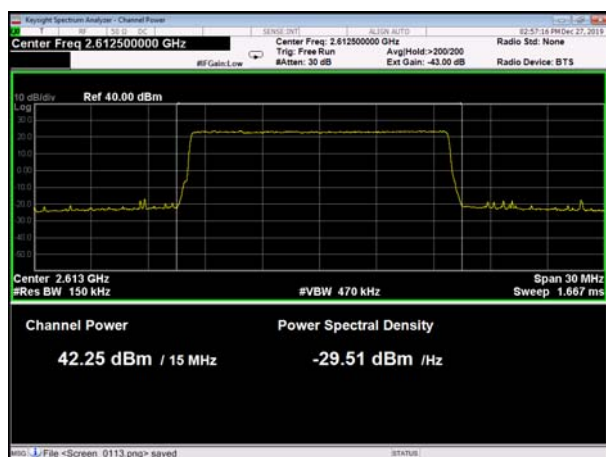
15MHz- Middle CH E-TM1.1



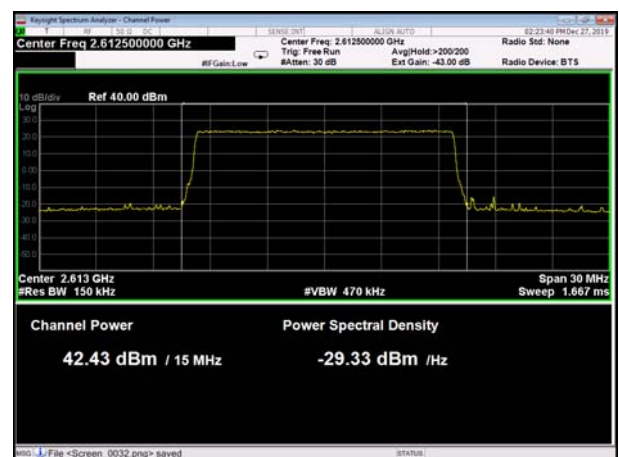
15MHz- Middle CH E-TM3.1



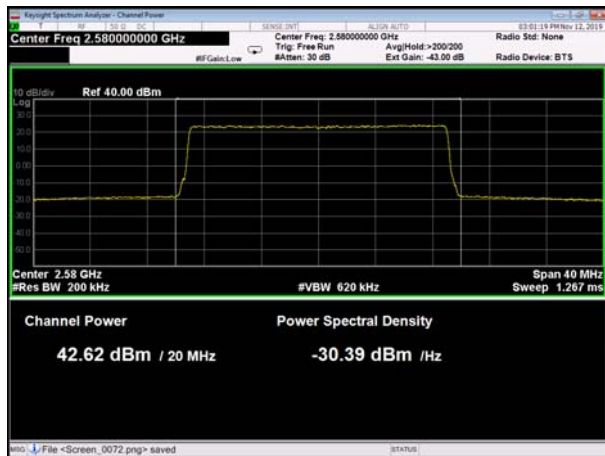
15MHz- High CH E-TM1.1



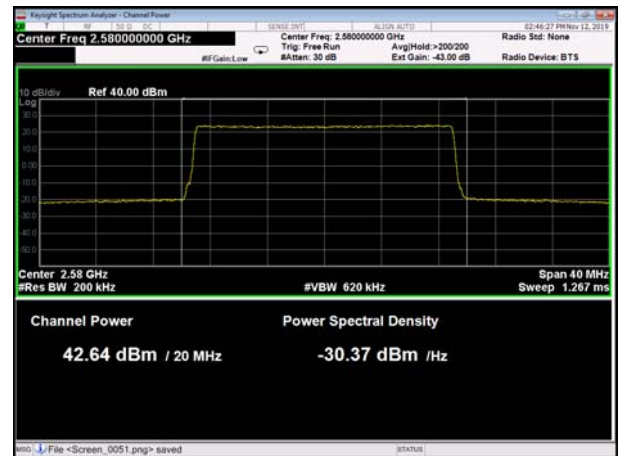
15MHz- High CH E-TM3.1



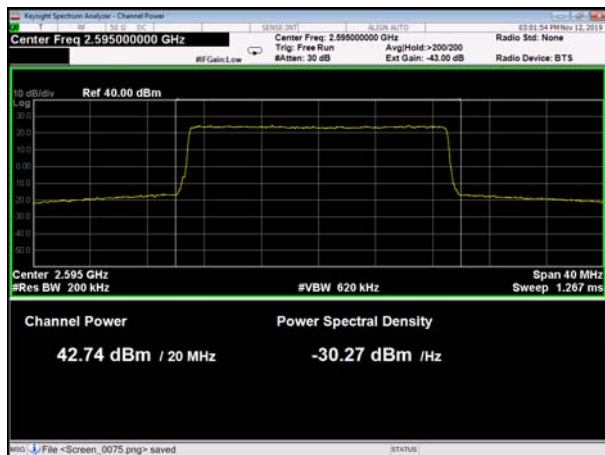
20MHz- Low CH E-TM1.1



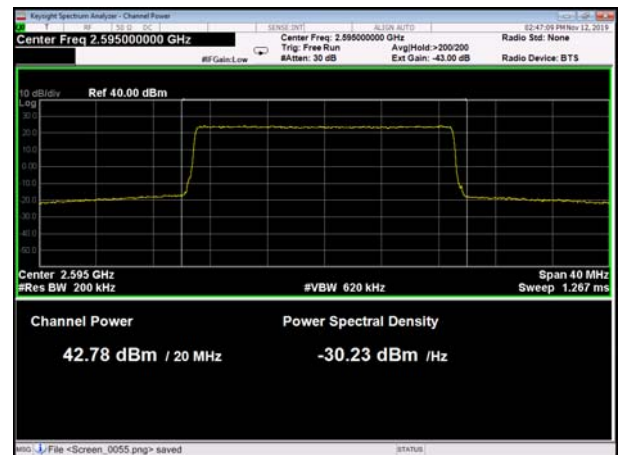
20MHz- Low CH E-TM3.1



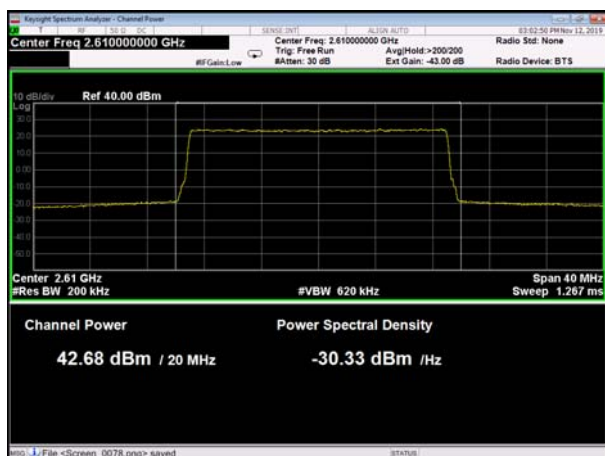
20MHz- Middle CH E-TM1.1



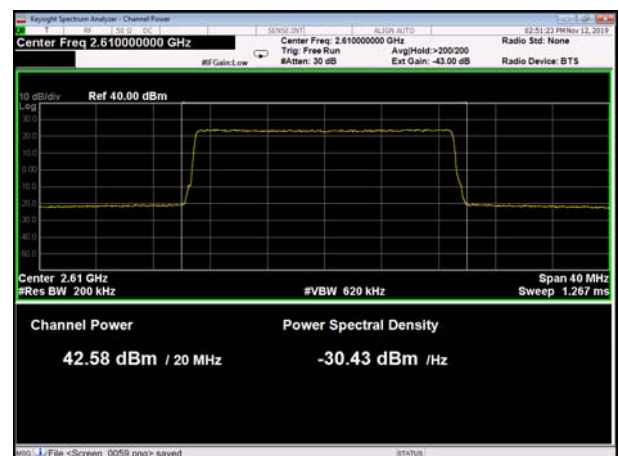
20MHz- Middle CH E-TM3.1



20MHz- High CH E-TM1.1

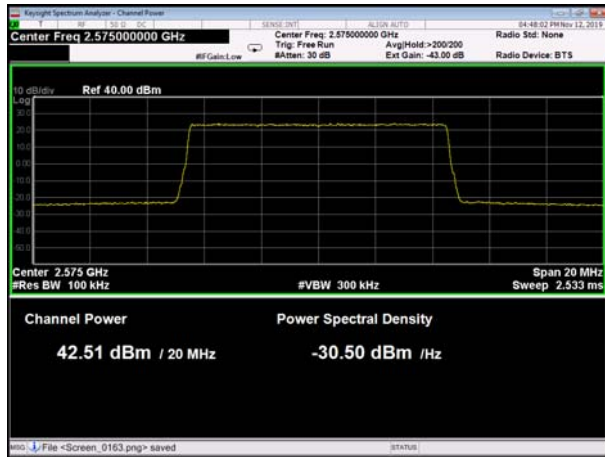


20MHz- High CH E-TM3.1

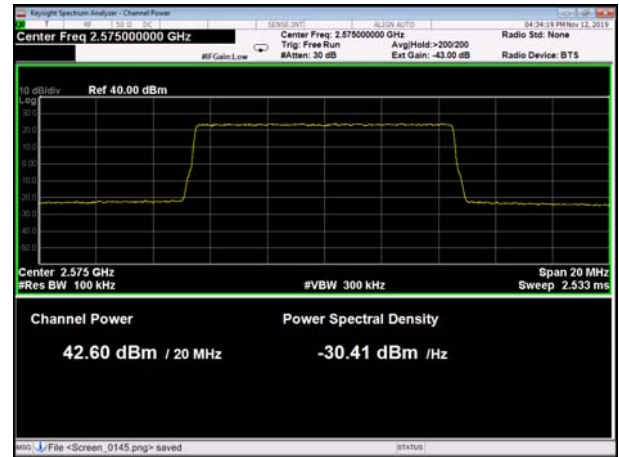


Chain 1

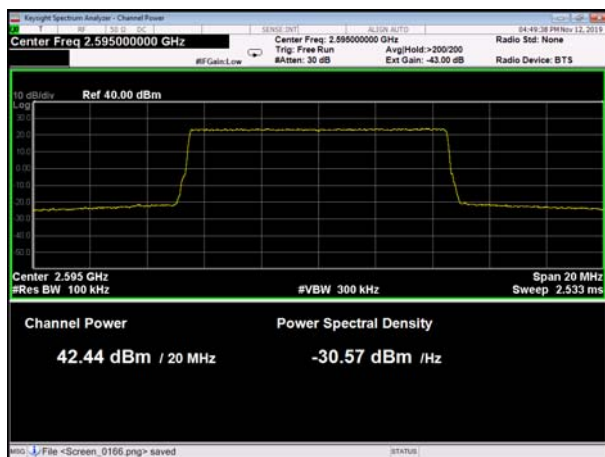
10MHz- Low CH E-TM1.1



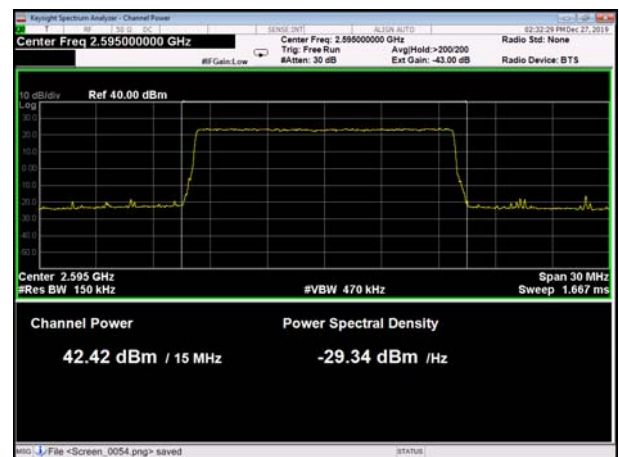
10MHz- Low CH E-TM3.1



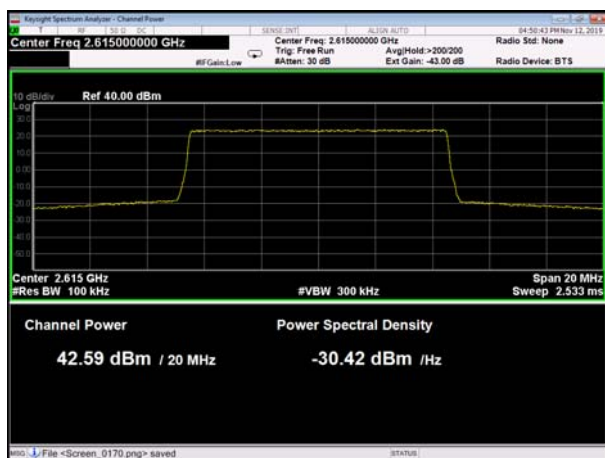
10MHz- Middle CH E-TM1.1



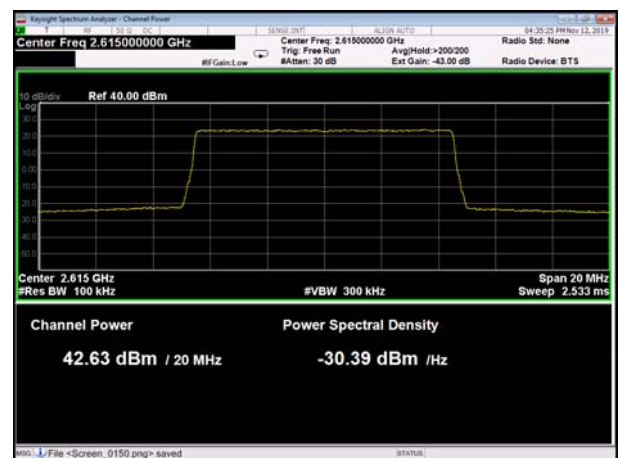
10MHz- Middle CH E-TM3.1



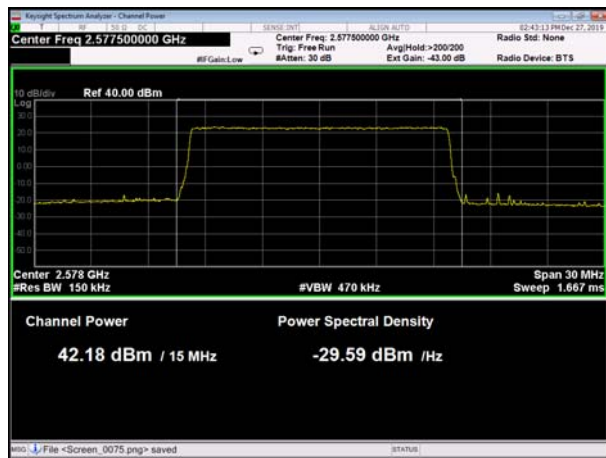
10MHz- High CH E-TM1.1



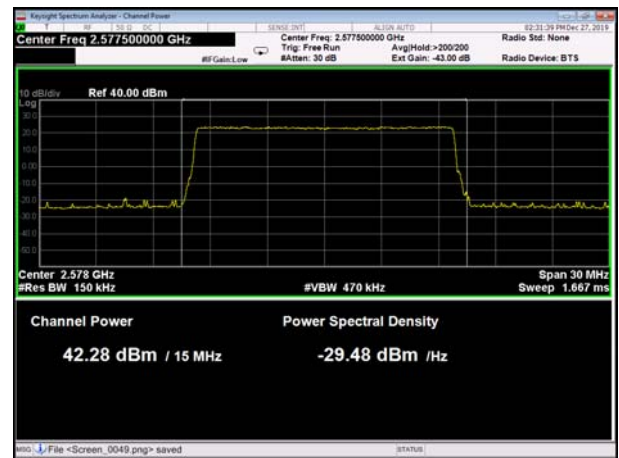
10MHz- High CH E-TM3.1



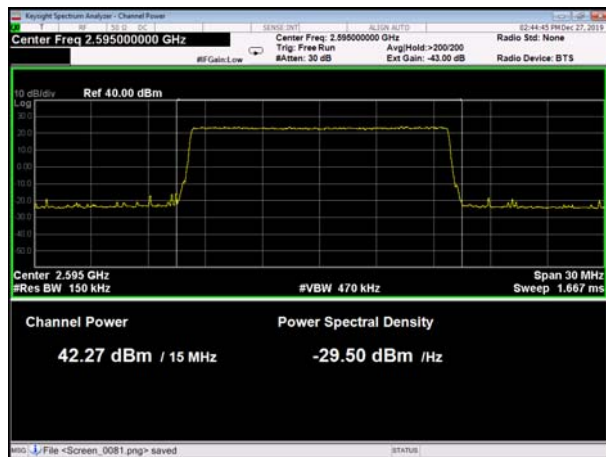
15MHz- Low CH E-TM1.1



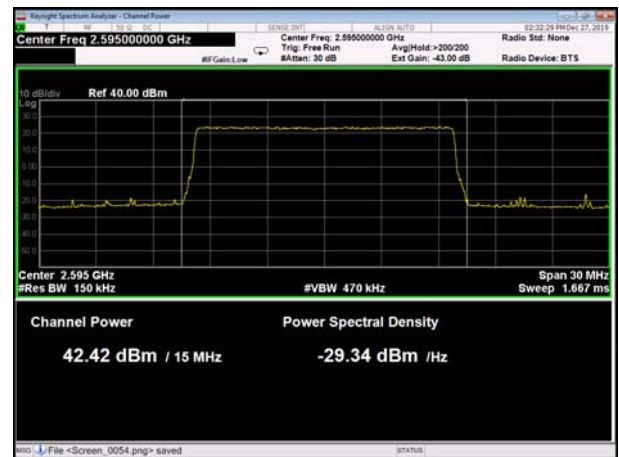
15MHz- Low CH E-TM3.1



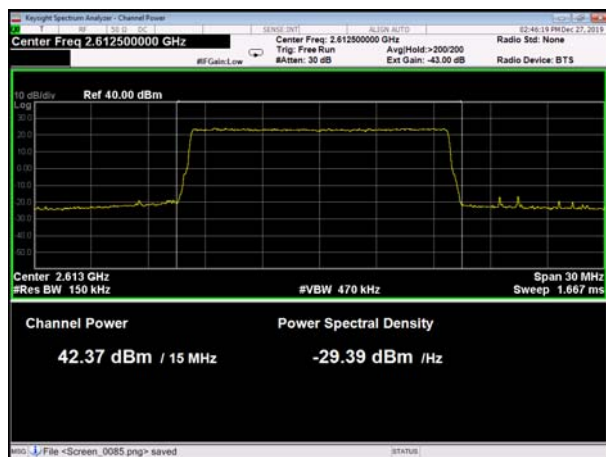
15MHz- Middle CH E-TM1.1



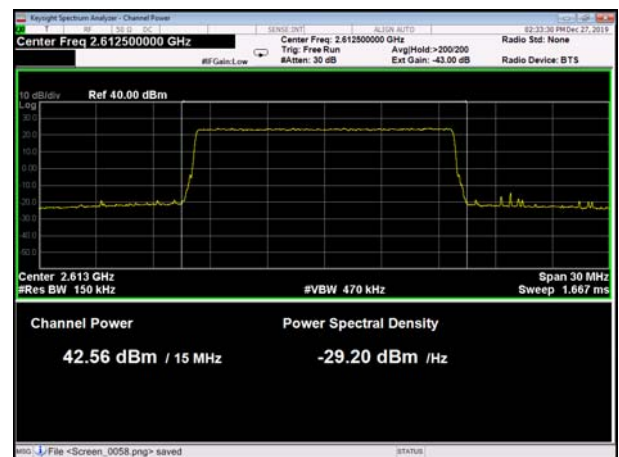
15MHz- Middle CH E-TM3.1



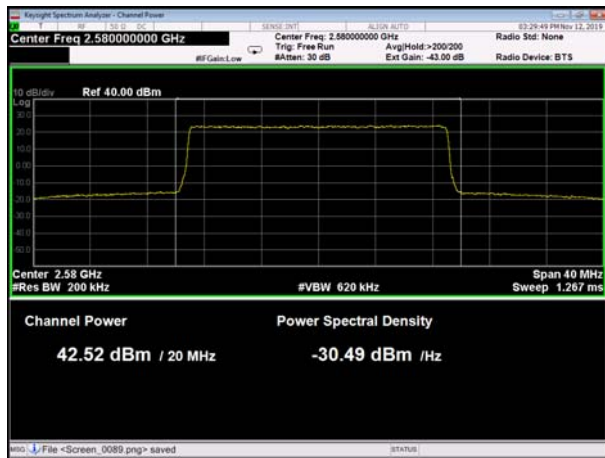
15MHz- High CH E-TM1.1



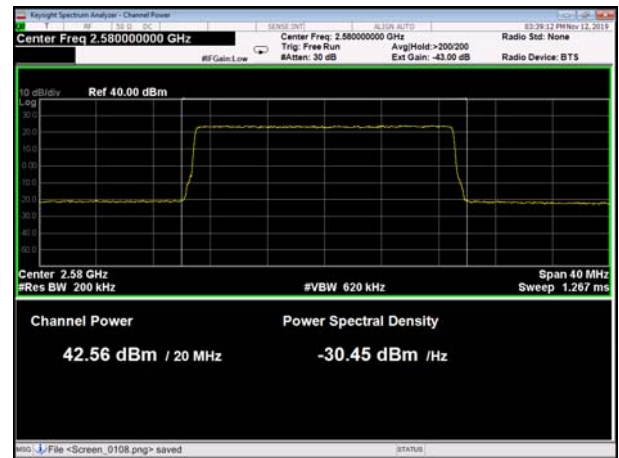
15MHz- High CH E-TM3.1



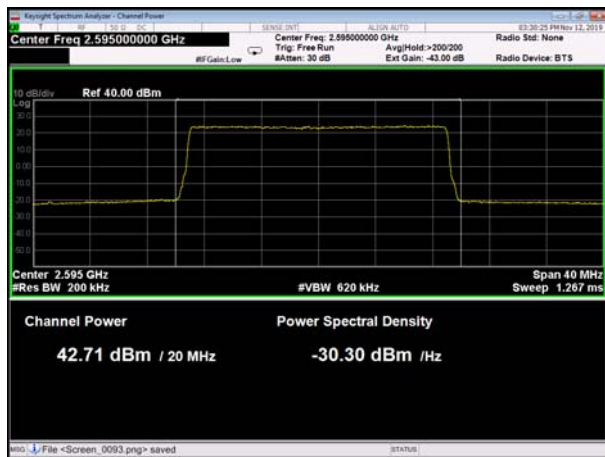
20MHz- Low CH E-TM1.1



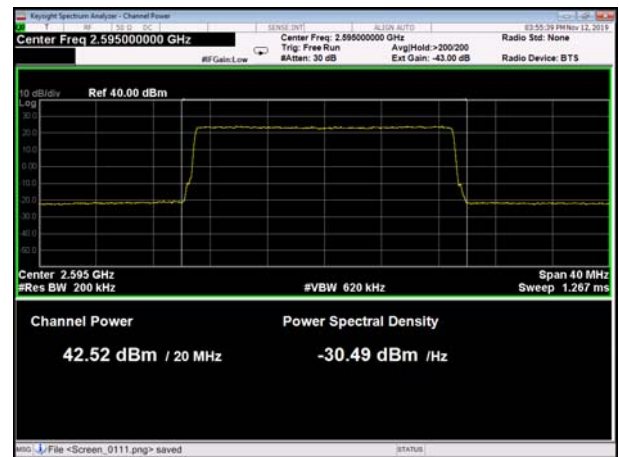
20MHz- Low CH E-TM3.1



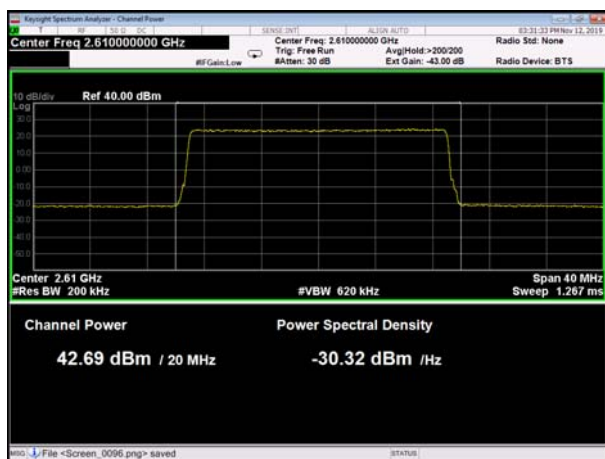
20MHz- Middle CH E-TM1.1



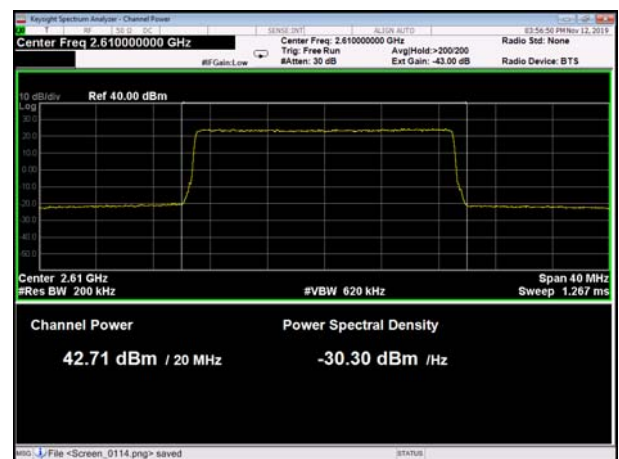
20MHz- Middle CH E-TM3.1



20MHz- High CH E-TM1.1



20MHz- High CH E-TM3.1



2.2 Peak to Average Ratio

2.2.1 Definition

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

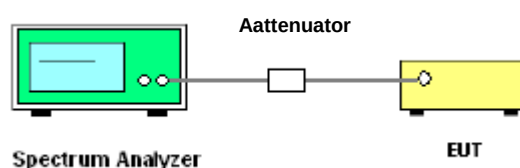
2.2.2 Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.2.3 Test Procedures

1. The EUT was connected to the spectrum analyzer .
2. Set the CCDF (Complementary Cumulative Distribution Function) option on the spectrum analyzer.
3. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
4. Record the deviation as Peak to Average Ratio.

2.2.4 Test Setup



2.2.5 Test Results of Peak-to-Average Ratio

For FCC measurement data:

10MHz Bandwidth E-TM1.1

Mode	Chain 0			Chain 1			Limit (dB)
Channel	Low	Middle	High	Low	Middle	High	13
Peak-to-Average Ratio (dB)	9.01	8.92	8.95	8.90	8.81	9.0	

15MHz Bandwidth E-TM1.1

Mode	Chain 0			Chain 1			Limit (dB)
Channel	Low	Middle	High	Low	Middle	High	13
Peak-to-Average Ratio (dB)	9.06	9.08	9.13	9.12	9.07	9.10	

20MHz Bandwidth E-TM1.1

Mode	Chain 0			Chain 1			Limit (dB)
Channel	Low	Middle	High	Low	Middle	High	13
Peak-to-Average Ratio (dB)	9.40	8.98	8.94	9.23	8.86	9.09	



For IC measurement data:

10MHz Bandwidth E-TM1.1

Mode	Chain 0			Chain 1			Limit (dB)
Channel	Low	Middle	High	Low	Middle	High	13
Peak-to-Average Ratio (dB)	8.90	9.14	8.96	8.92	8.88	8.82	

15MHz Bandwidth E-TM1.1

Mode	Chain 0			Chain 1			Limit (dB)
Channel	Low	Middle	High	Low	Middle	High	13
Peak-to-Average Ratio (dB)	9.18	9.17	9.02	9.08	9.07	9.11	

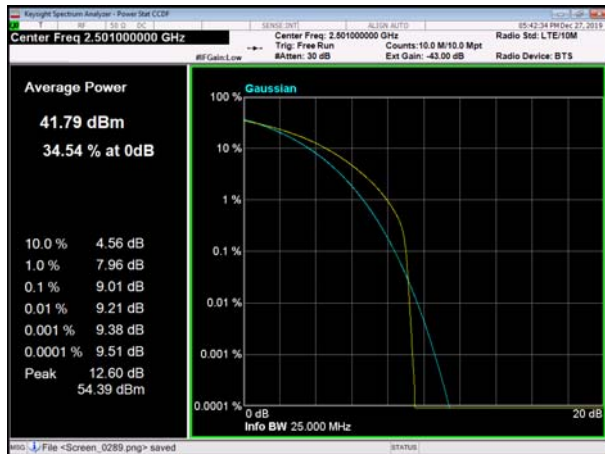
20MHz Bandwidth E-TM1.1

Mode	Chain 0			Chain 1			Limit (dB)
Channel	Low	Middle	High	Low	Middle	High	13
Peak-to-Average Ratio (dB)	8.9	9.06	8.89	8.86	9.01	8.89	

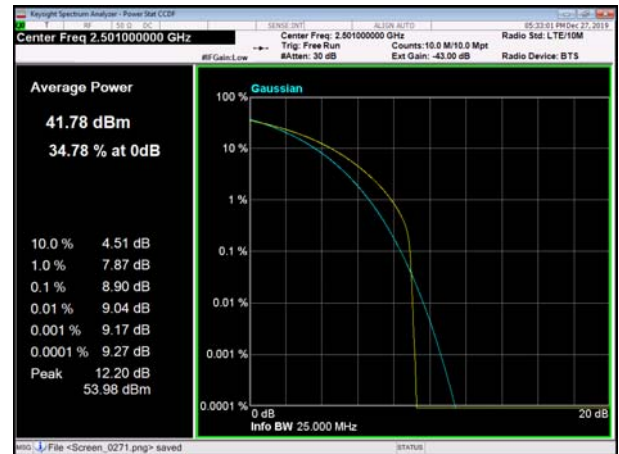
2.2.6 Test plot

For FCC measurement data:

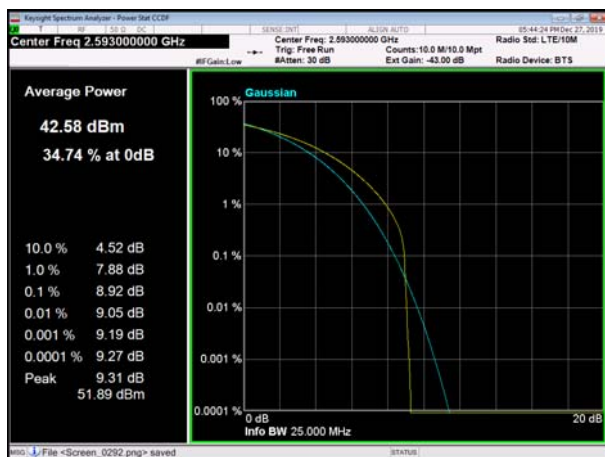
Chain0, 10MHz- Low CH E-TM1.1



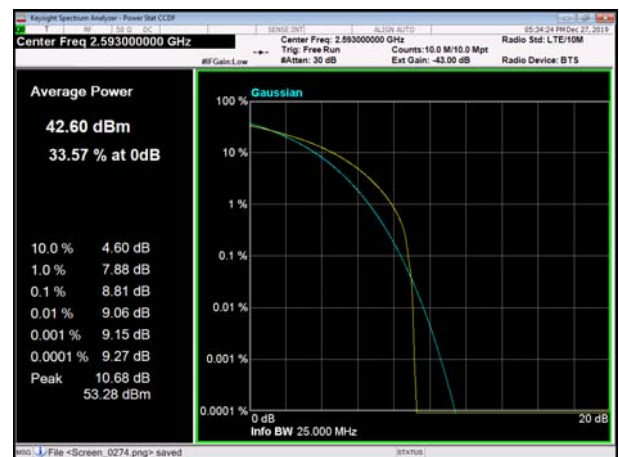
Chain1, 10MHz- Low CH E-TM1.1



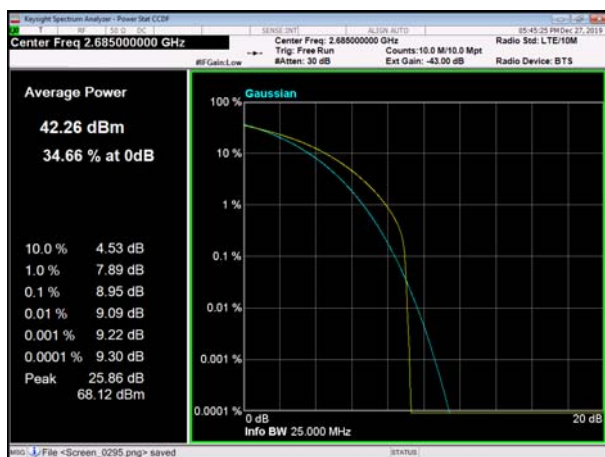
Chain0, 10MHz- Middle CH E-TM1.1



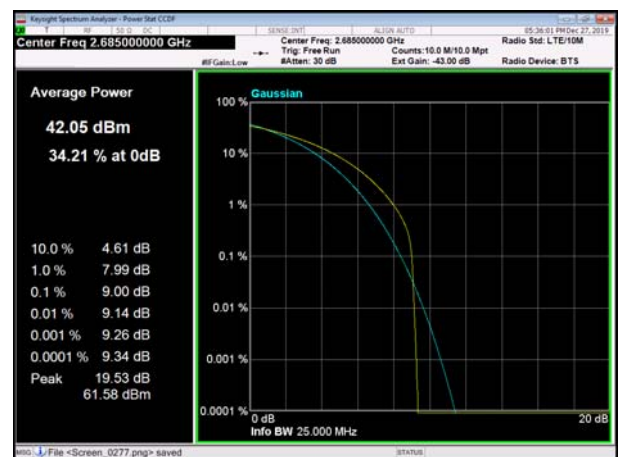
Chain1, 10MHz- Middle CH E-TM1.1



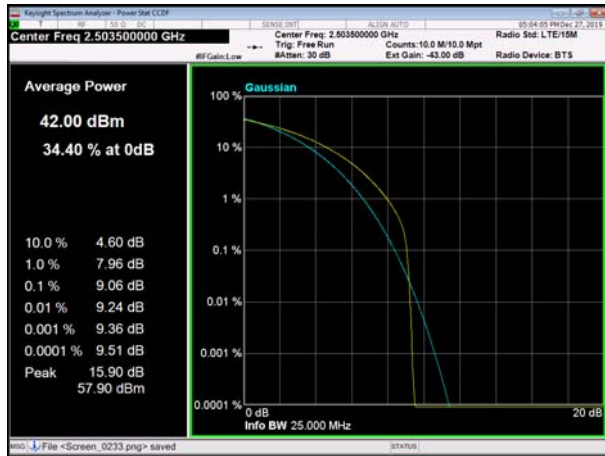
Chain0, 10MHz- High CH E-TM1.1



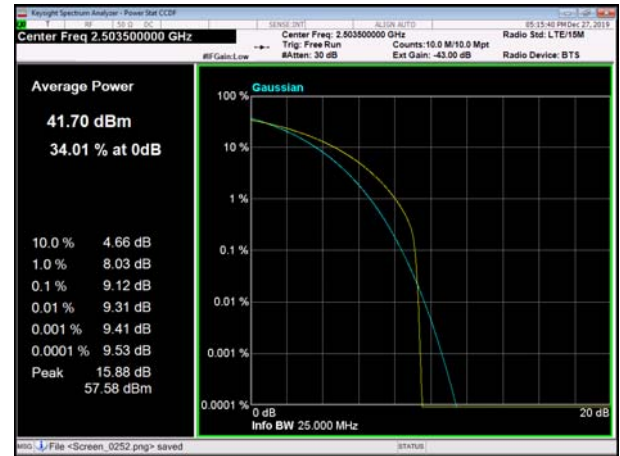
Chain1, 10MHz- High CH E-TM1.1



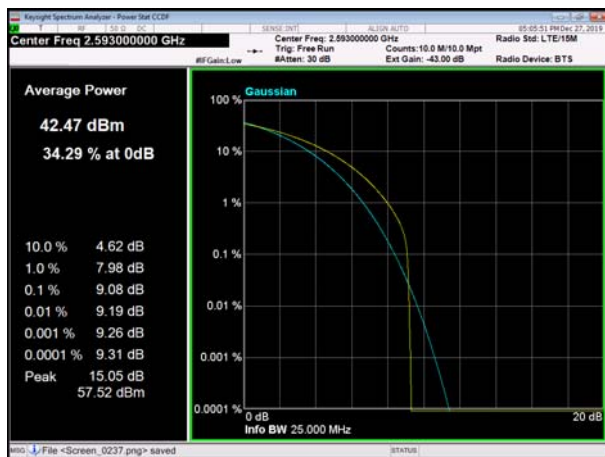
Chain0, 15MHz- Low CH E-TM1.1



Chain1, 15MHz- Low CH E-TM1.1



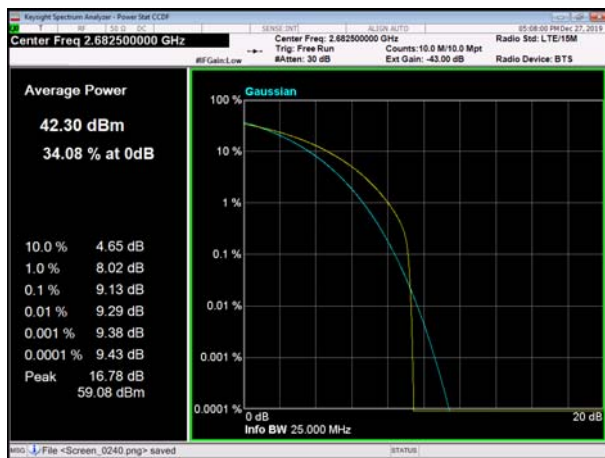
Chain0, 15MHz- Middle CH E-TM1.1



Chain1, 15MHz- Middle CH E-TM1.1



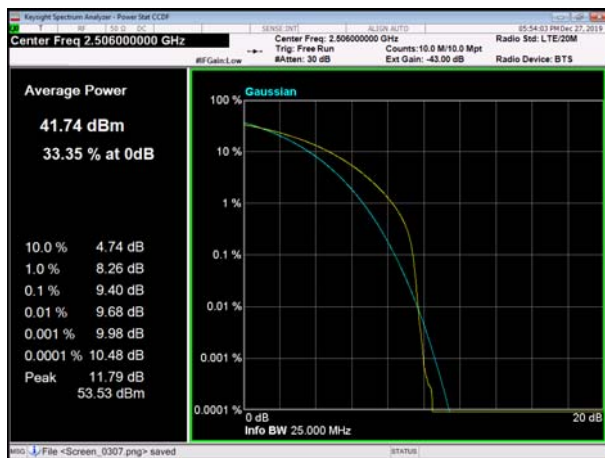
Chain0, 15MHz- High CH E-TM1.1



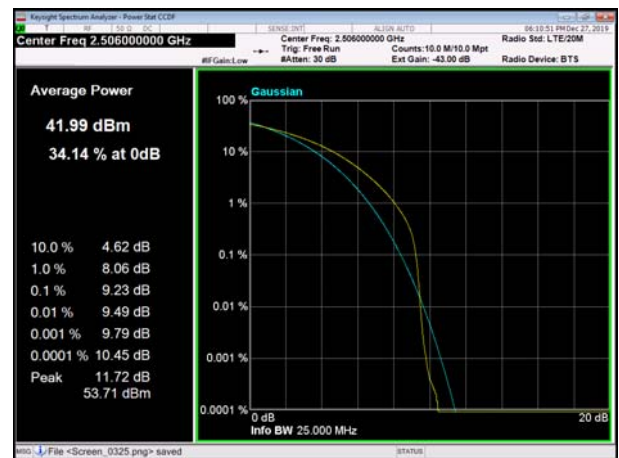
Chain1, 15MHz- High CH E-TM1.1



Chain0, 20MHz- Low CH E-TM1.1



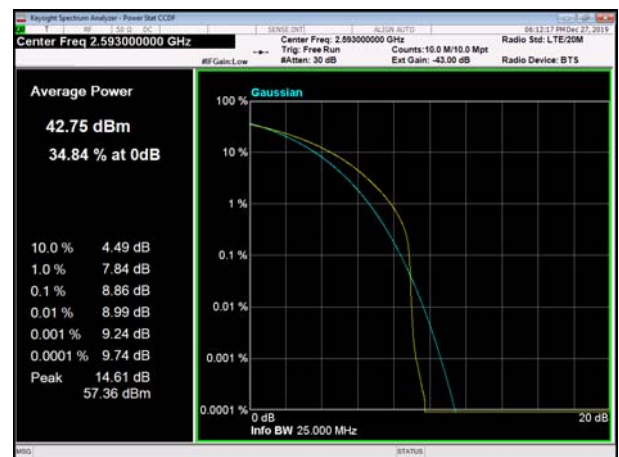
Chain1, 20MHz- Low CH E-TM1.1



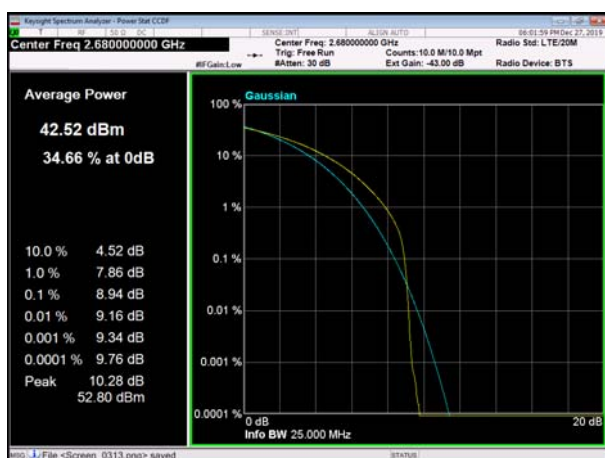
Chain1, 20MHz- Middle CH E-TM1.1



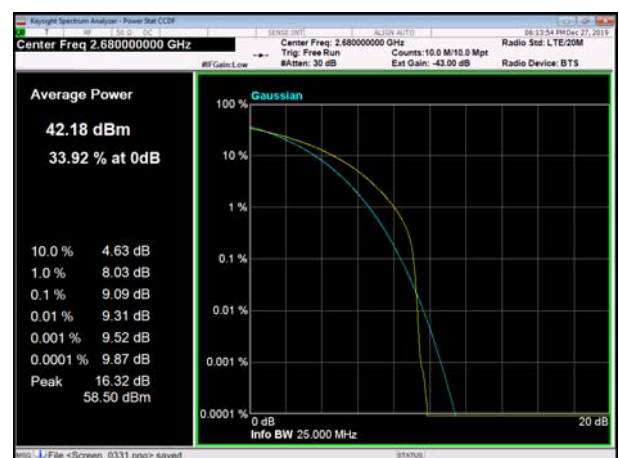
Chain1, 20MHz- Middle CH E-TM1.1



Chain1, 20MHz- High CH E-TM1.1

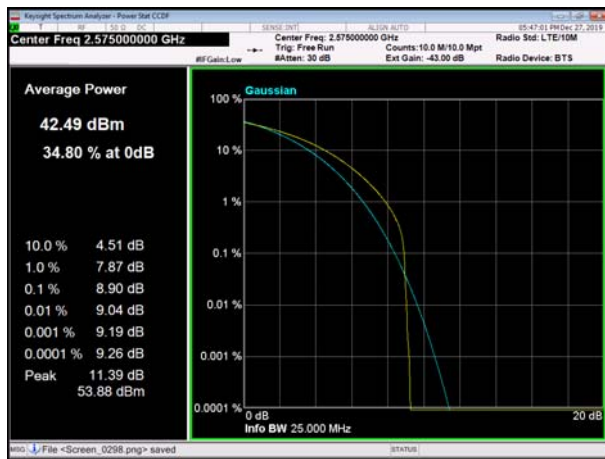


Chain1, 20MHz- High CH E-TM1.1

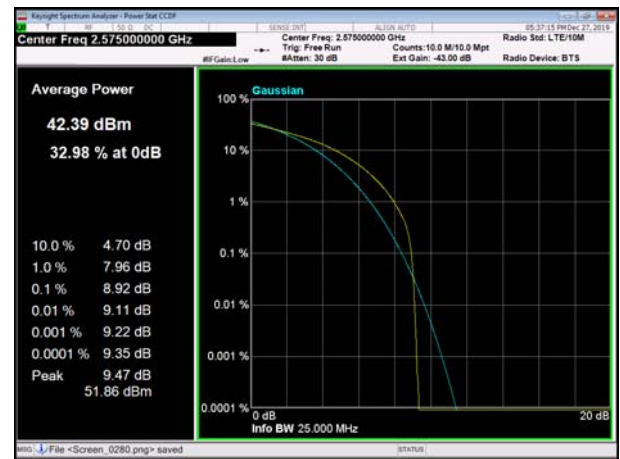


For IC measurement data:

Chain0, 10MHz- Low CH E-TM1.1



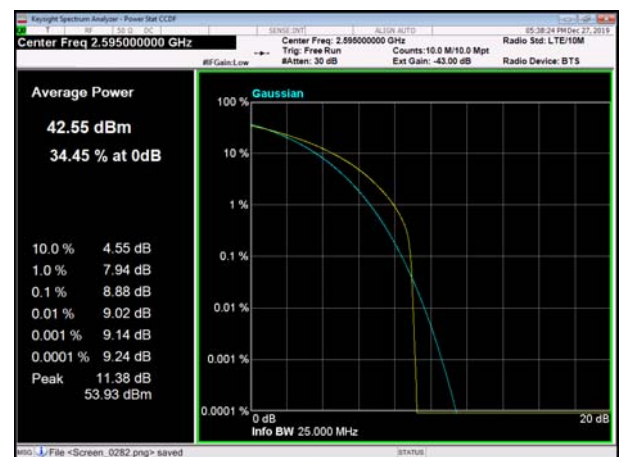
Chain1, 10MHz- Low CH E-TM1.1



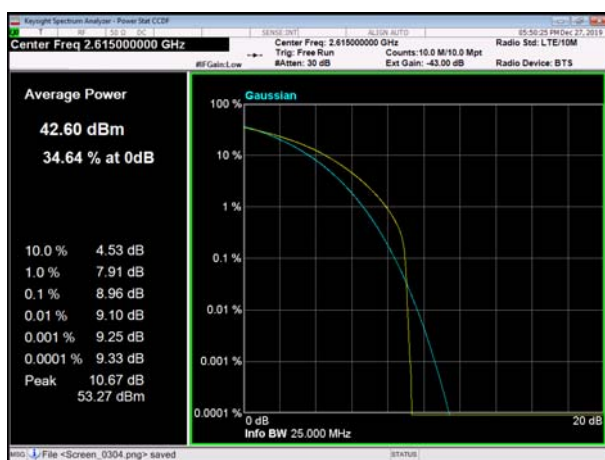
Chain0, 10MHz- Middle CH E-TM1.1



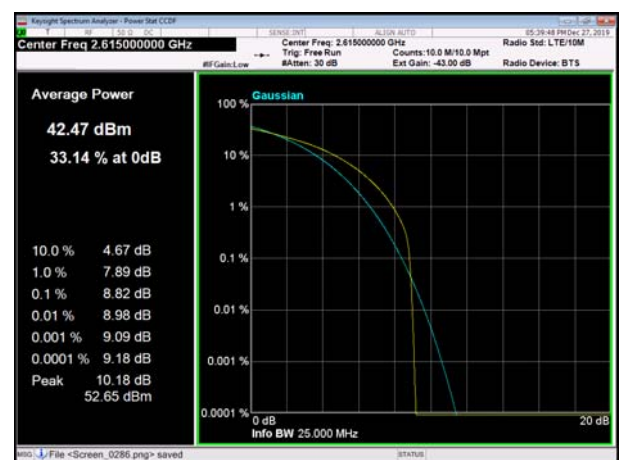
Chain1, 10MHz- Middle CH E-TM1.1



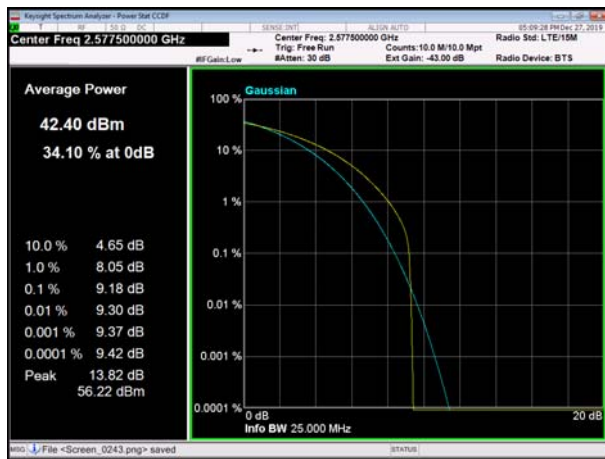
Chain0, 10MHz- High CH E-TM1.1



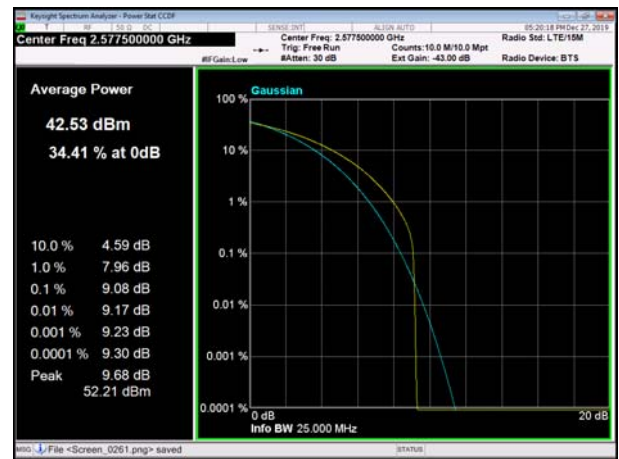
Chain1, 10MHz- High CH E-TM1.1



Chain0, 15MHz- Low CH E-TM1.1



Chain1, 15MHz- Low CH E-TM1.1



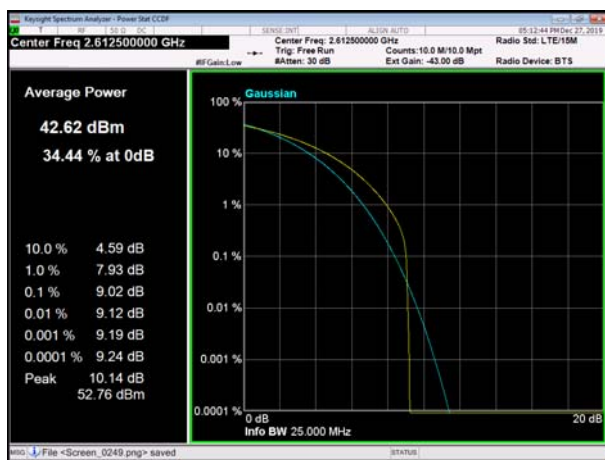
Chain0, 15MHz- Middle CH E-TM1.1



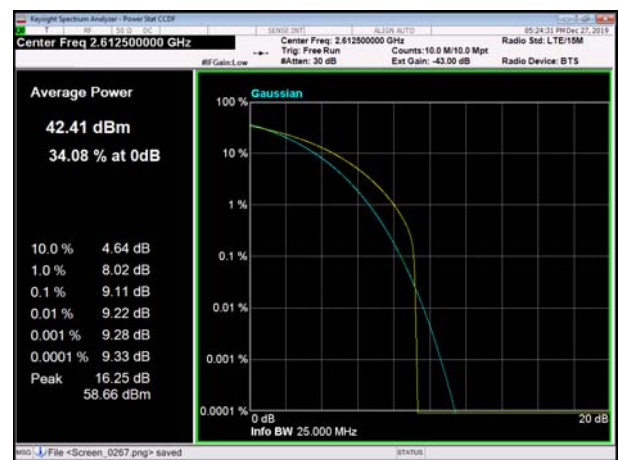
Chain1, 15MHz- Middle CH E-TM1.1



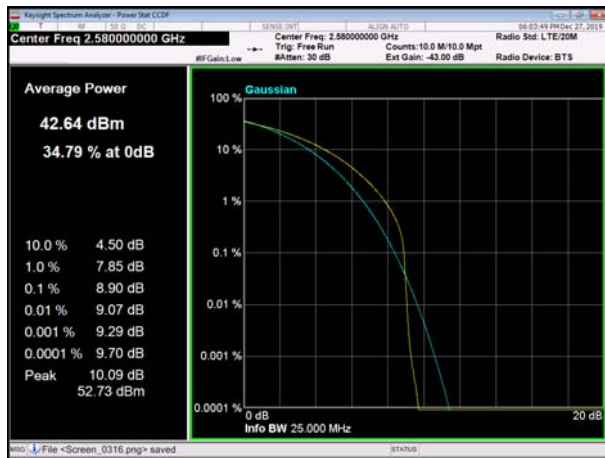
Chain0, 15MHz- High CH E-TM1.1



Chain1, 15MHz- High CH E-TM1.1



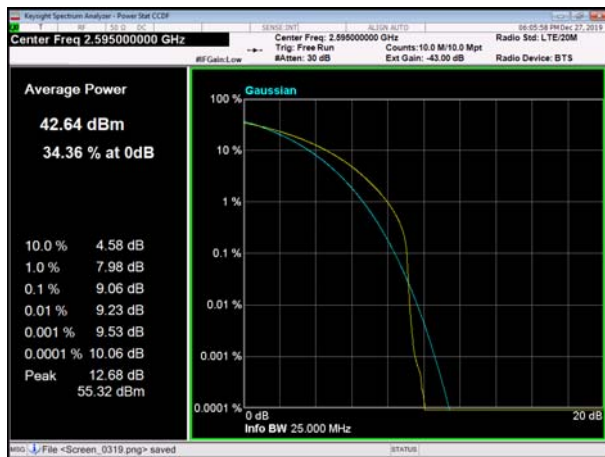
Chain0, 20MHz- Low CH E-TM1.1



Chain1, 20MHz- Low CH E-TM1.1



Chain1, 20MHz- Middle CH E-TM1.1



Chain1, 20MHz- Middle CH E-TM1.1



Chain1, 20MHz- High CH E-TM1.1



Chain1, 20MHz- High CH E-TM1.1



2.3 Occupied Bandwidth

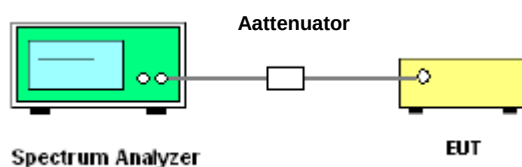
2.3.1 Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.3.2 Test Procedures

1. The EUT was connected to the spectrum analyzer
2. The RF output of the EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set RBW= 1% to 5% of the occupied bandwidth, VBW= 3*RBW, peak detector, trace maximum hold.

2.3.3 Test Setup



2.3.4 Test Results of 99% Occupied Bandwidth and 26dB Bandwidth

FCC Chain 0

Band width (MHz)	Test Mode	Test channel	99% Occupied Bandwidth (MHz)	26dB Occupied Bandwidth (MHz)
10MHz	E-TM1.1	Low	8.94	9.37
		Middle	8.94	9.32
		High	8.94	9.30
	E-TM3.1	Low	8.94	9.40
		Middle	8.94	9.37
		High	8.94	9.30
Band width (MHz)	Test Mode	Test channel	99% Occupied Bandwidth (MHz)	26dB Occupied Bandwidth (MHz)
15MHz	E-TM1.1	Low	13.41	13.93
		Middle	13.40	13.91
		High	13.42	13.94
	E-TM3.1	Low	13.41	13.98
		Middle	13.39	13.90
		High	13.41	13.92
Band width (MHz)	Test Mode	Test channel	99% Occupied Bandwidth (MHz)	26dB Occupied Bandwidth (MHz)
20MHz	E-TM1.1	Low	17.86	18.54
		Middle	17.86	18.60
		High	17.86	18.55
	E-TM3.1	Low	17.85	18.60
		Middle	17.86	18.54
		High	17.87	18.54

Chain 1

Band width (MHz)	Test Mode	Test channel	99% Occupied Bandwidth (MHz)	26dB Occupied Bandwidth (MHz)
10MHz	E-TM1.1	Low	8.94	9.36
		Middle	8.94	9.34
		High	8.93	9.34
	E-TM3.1	Low	8.94	9.36
		Middle	8.95	9.33
		High	8.94	9.34
Band width (MHz)	Test Mode	Test channel	99% Occupied Bandwidth (MHz)	26dB Occupied Bandwidth (MHz)
15MHz	E-TM1.1	Low	13.41	13.97
		Middle	13.41	13.98
		High	13.40	13.93
	E-TM3.1	Low	13.41	13.99
		Middle	13.42	13.97
		High	13.40	13.97
Band width (MHz)	Test Mode	Test channel	99% Occupied Bandwidth (MHz)	26dB Occupied Bandwidth (MHz)
20MHz	E-TM1.1	Low	17.87	18.56
		Middle	17.87	18.57
		High	17.86	18.56
	E-TM3.1	Low	17.85	18.65
		Middle	17.86	18.52
		High	17.87	18.53



IC Chain 0

Band width (MHz)	Test Mode	Test channel	99% Occupied Bandwidth (MHz)	26dB Occupied Bandwidth (MHz)
10MHz	E-TM1.1	Low	8.95	9.31
		Middle	8.94	9.35
		High	8.93	9.37
	E-TM3.1	Low	8.94	9.33
		Middle	8.93	9.37
		High	8.94	9.35
Band width (MHz)	Test Mode	Test channel	99% Occupied Bandwidth (MHz)	26dB Occupied Bandwidth (MHz)
15MHz	E-TM1.1	Low	13.41	13.95
		Middle	13.41	13.90
		High	13.40	13.99
	E-TM3.1	Low	13.41	13.91
		Middle	13.40	13.97
		High	13.40	13.95
Band width (MHz)	Test Mode	Test channel	99% Occupied Bandwidth (MHz)	26dB Occupied Bandwidth (MHz)
20MHz	E-TM1.1	Low	17.86	18.58
		Middle	17.87	18.53
		High	17.85	18.56
	E-TM3.1	Low	17.87	18.54
		Middle	17.85	18.54
		High	17.87	18.52

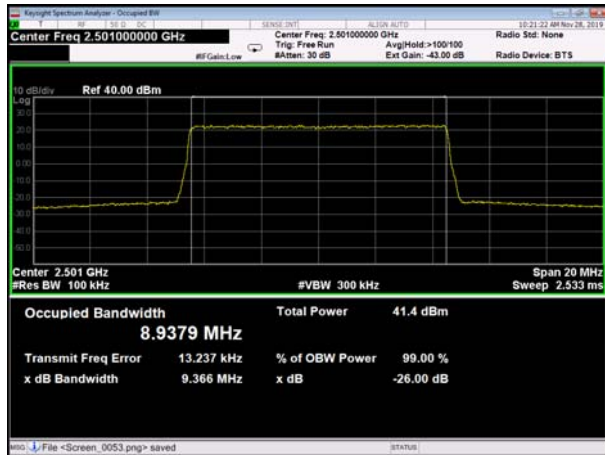
Chain 1

Band width (MHz)	Test Mode	Test channel	99% Occupied Bandwidth (MHz)	26dB Occupied Bandwidth (MHz)
10MHz	E-TM1.1	Low	8.94	9.38
		Middle	8.94	9.29
		High	8.93	9.32
	E-TM3.1	Low	8.94	9.32
		Middle	8.94	9.33
		High	8.94	9.33
Band width (MHz)	Test Mode	Test channel	99% Occupied Bandwidth (MHz)	26dB Occupied Bandwidth (MHz)
15MHz	E-TM1.1	Low	13.40	13.90
		Middle	13.41	13.93
		High	13.40	14.02
	E-TM3.1	Low	13.41	13.91
		Middle	13.40	13.92
		High	13.40	14.00
Band width (MHz)	Test Mode	Test channel	99% Occupied Bandwidth (MHz)	26dB Occupied Bandwidth (MHz)
20MHz	E-TM1.1	Low	17.86	18.57
		Middle	17.87	18.56
		High	17.85	18.56
	E-TM3.1	Low	17.85	18.62
		Middle	17.88	18.65
		High	17.86	18.58

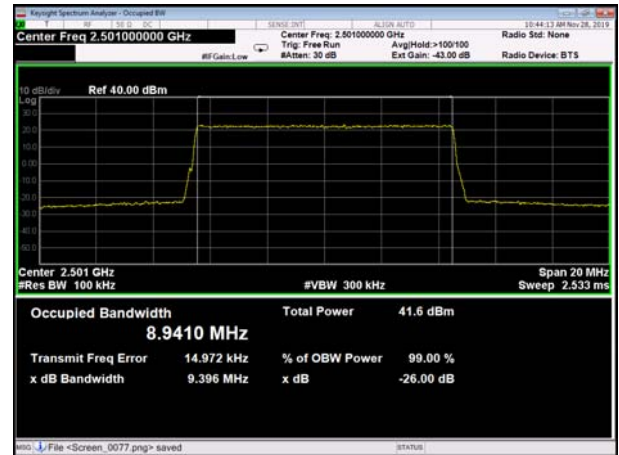
2.3.5 Test Results (Plots)

FCC Chain 0

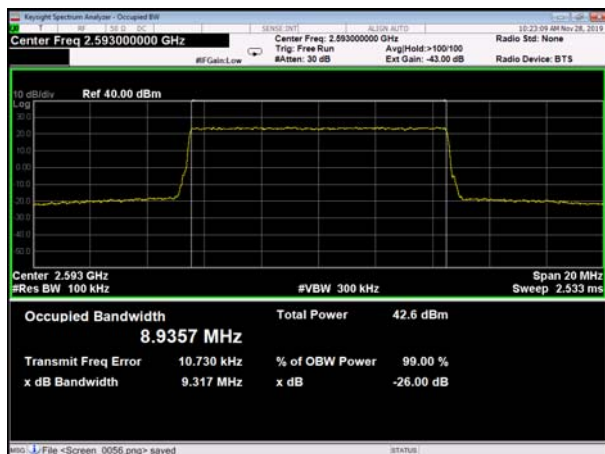
10MHz- Low CH E-TM1.1



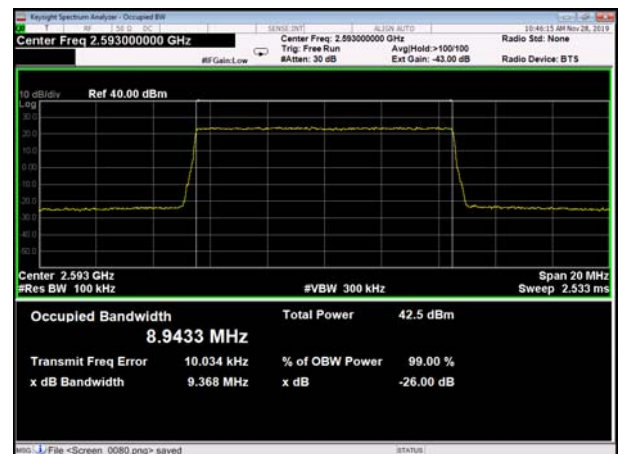
10MHz- Low CH E-TM3.1



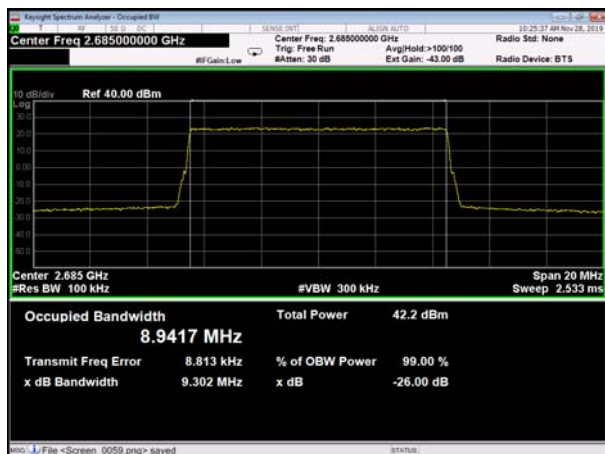
10MHz- Middle CH E-TM1.1



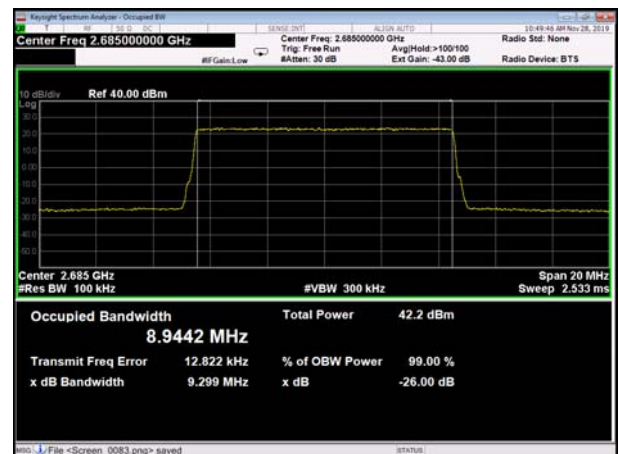
10MHz- Middle CH E-TM3.1



10MHz- High CH E-TM1.1



10MHz- High CH E-TM3.1



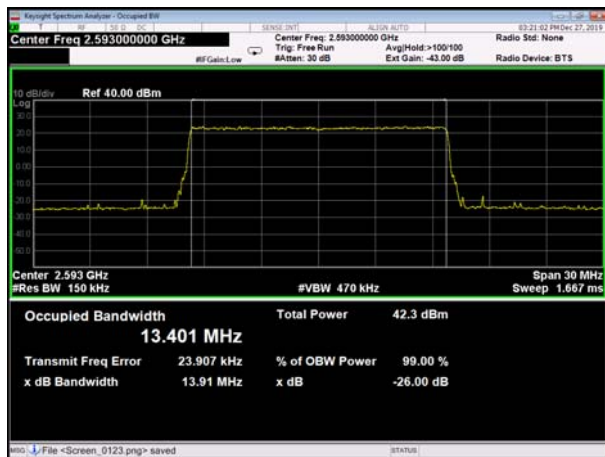
15MHz- Low CH E-TM1.1



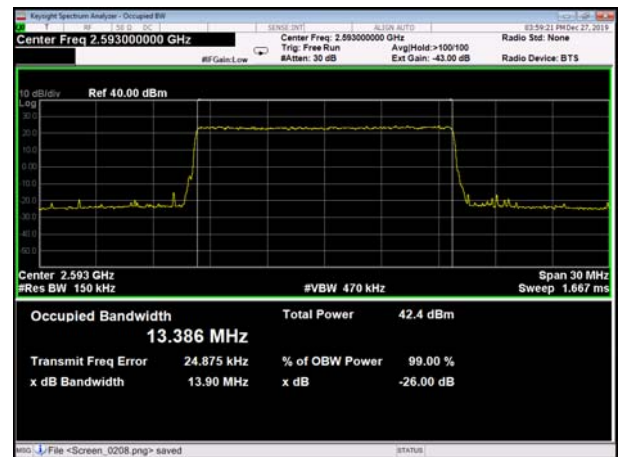
15MHz- Low CH E-TM3.1



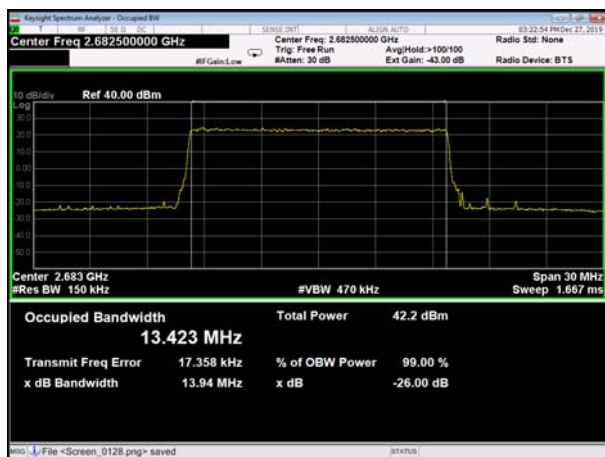
15MHz- Middle CH E-TM1.1



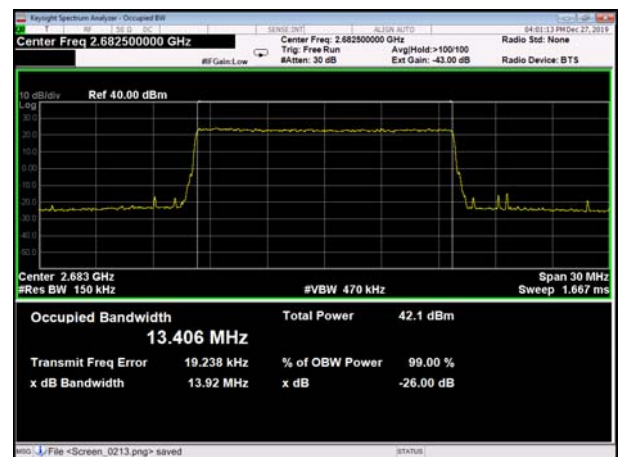
15MHz- Middle CH E-TM3.1



15MHz- High CH E-TM1.1



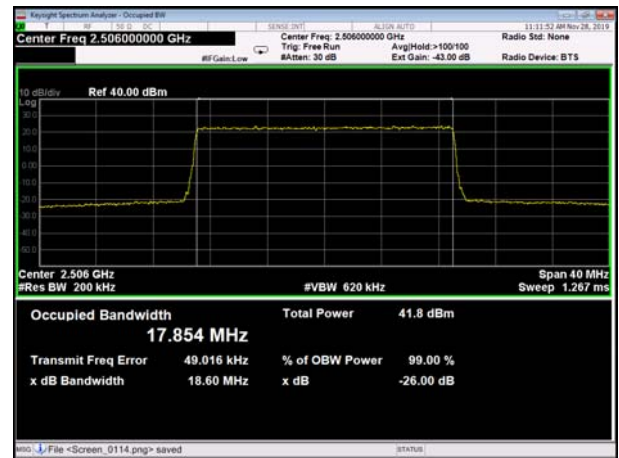
15MHz- High CH E-TM3.1



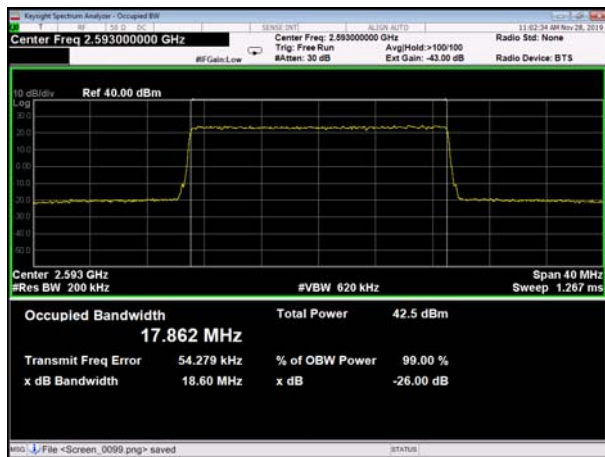
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20MHz- Low CH E-TM3.1



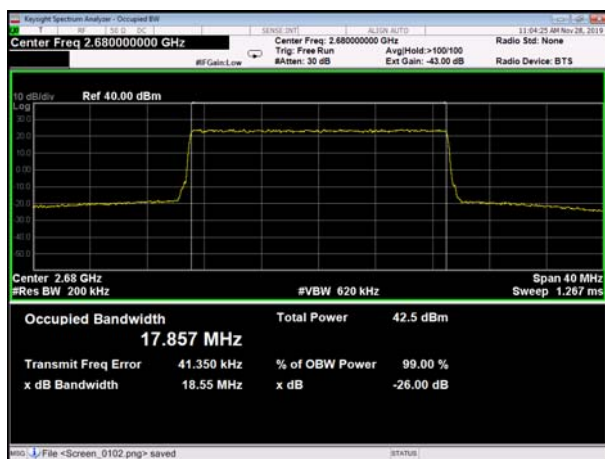
20MHz- Middle CH E-TM1.1



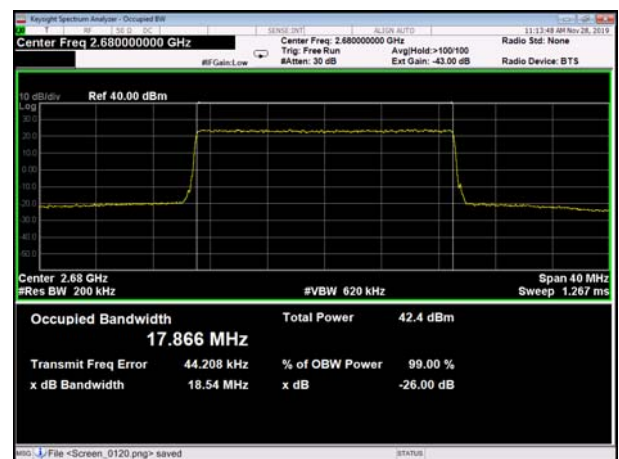
20MHz- Middle CH E-TM3.1



20MHz- High CH E-TM1.1



20MHz- High CH E-TM3.1



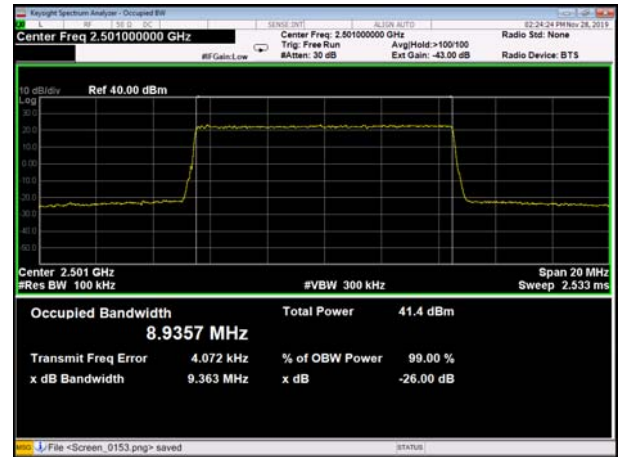


FCC Chain1

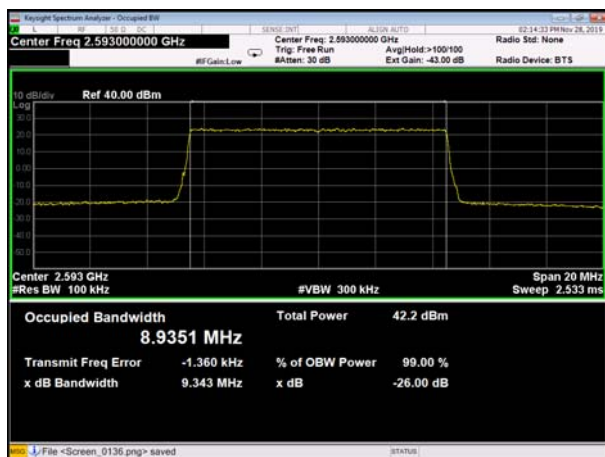
10MHz- Low CH E-TM1.1



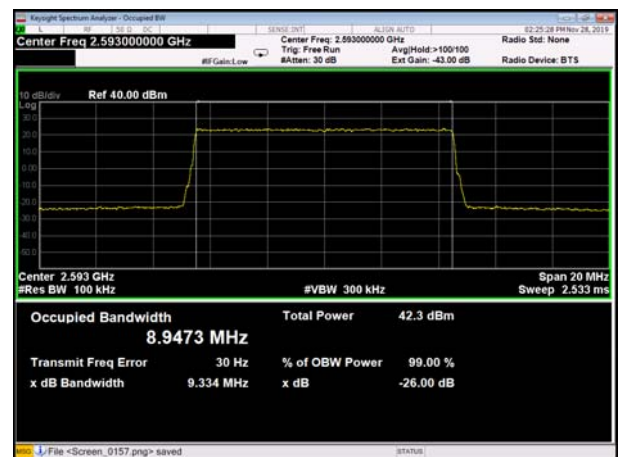
10MHz- Low CH E-TM3.1



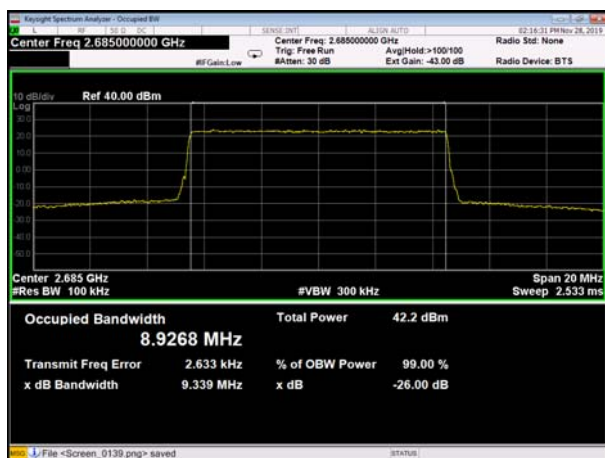
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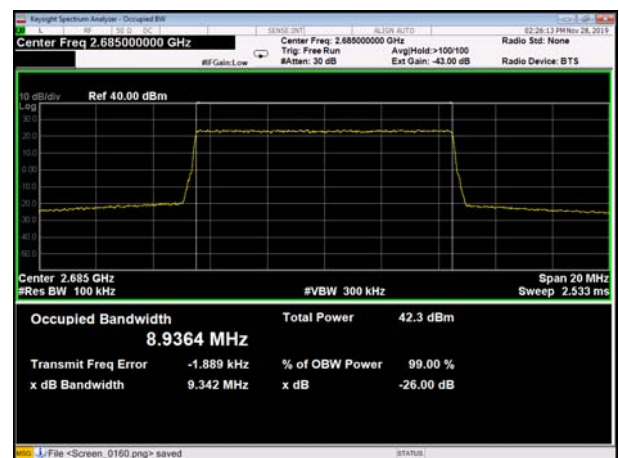
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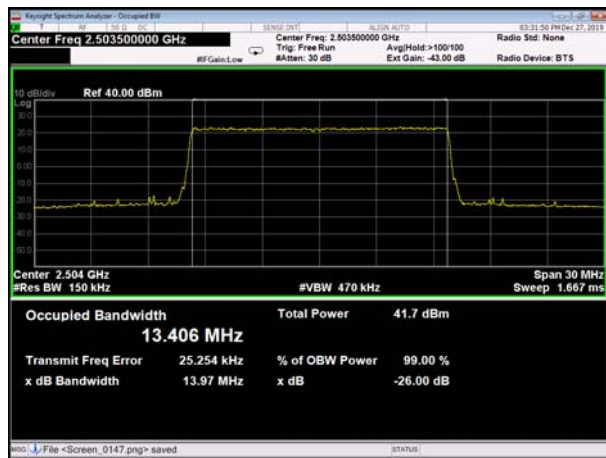
10MHz- High CH E-TM1.1



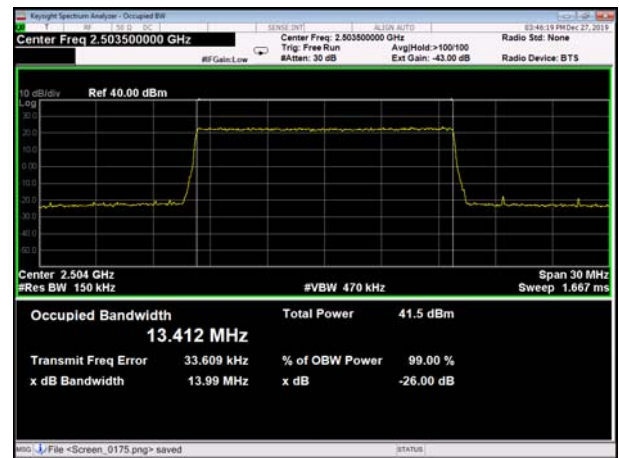
10MHz- High CH E-TM3.1



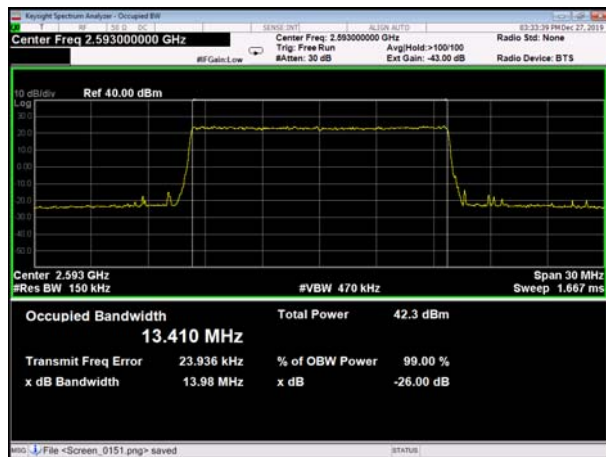
15MHz- Low CH E-TM1.1



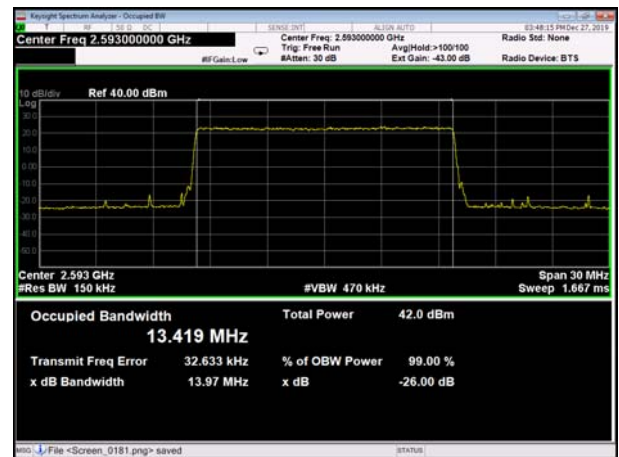
15MHz- Low CH E-TM3.1



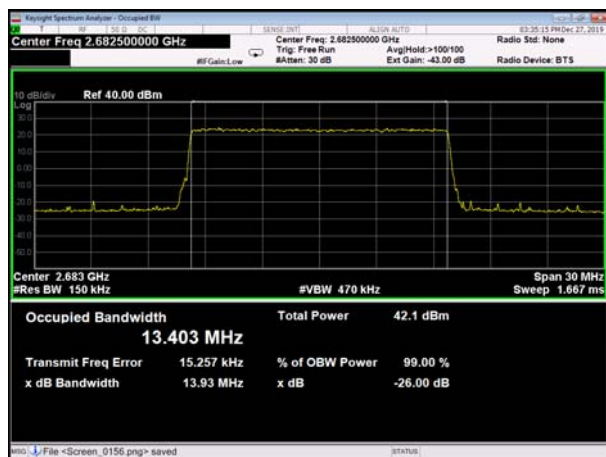
15MHz- Middle CH E-TM1.1



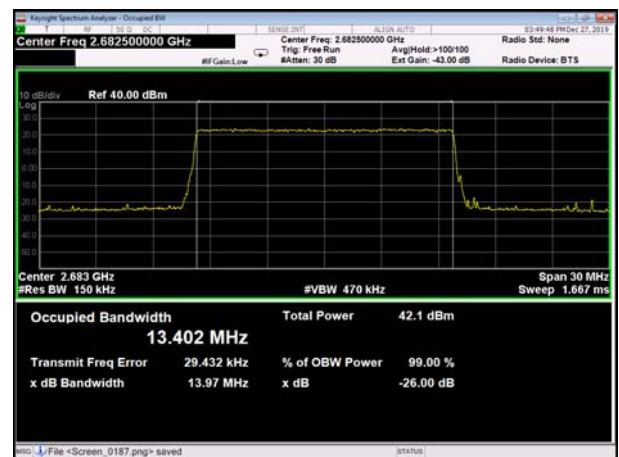
15MHz- Middle CH E-TM3.1



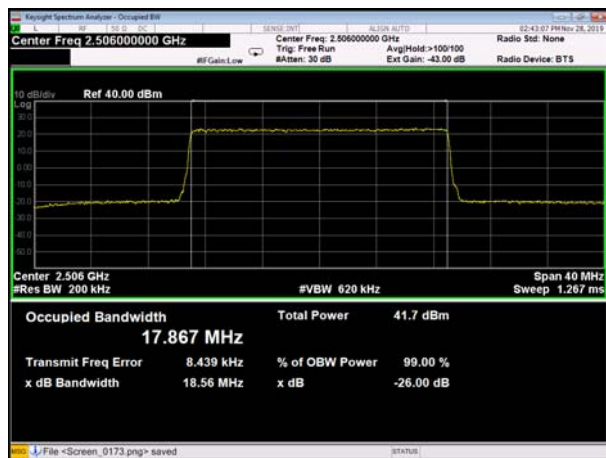
15MHz- High CH E-TM1.1



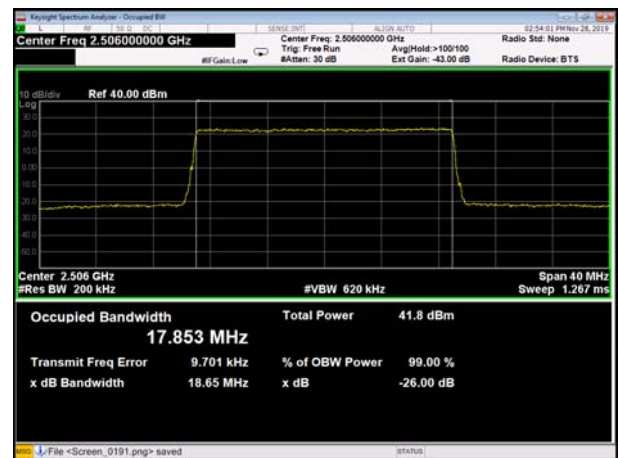
15MHz- High CH E-TM3.1



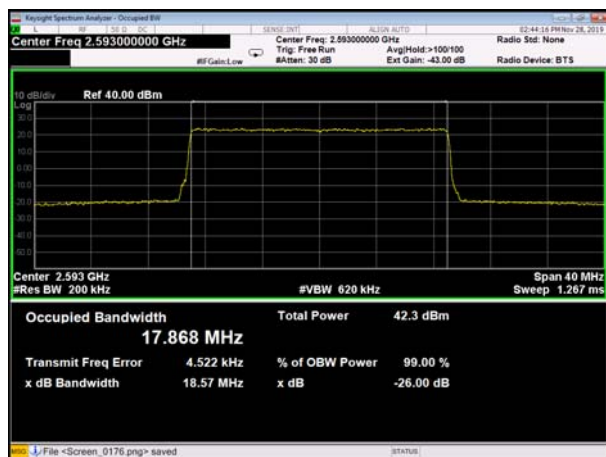
20MHz- Low CH E-TM1.1



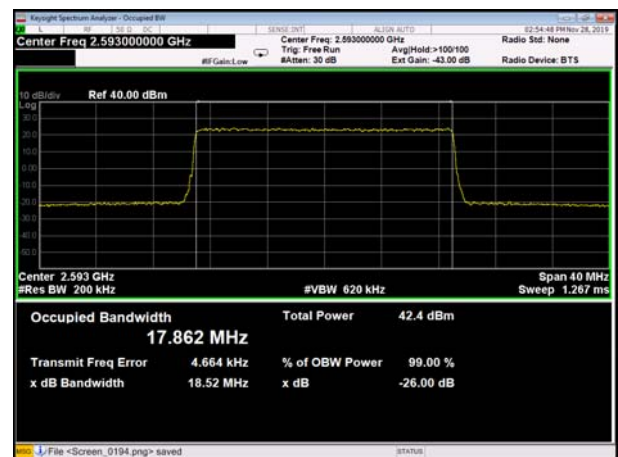
20MHz- Low CH E-TM3.1



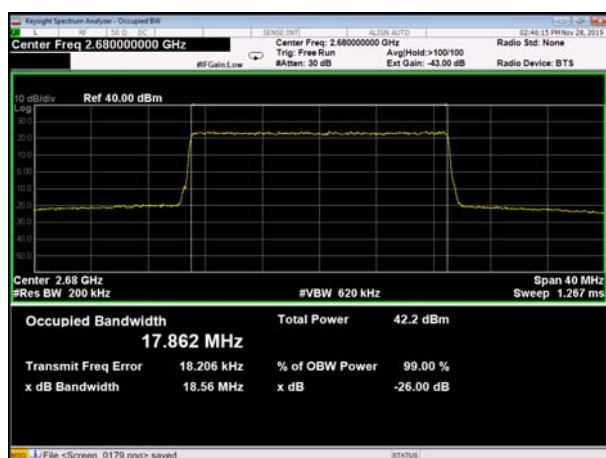
20MHz- Middle CH E-TM1.1



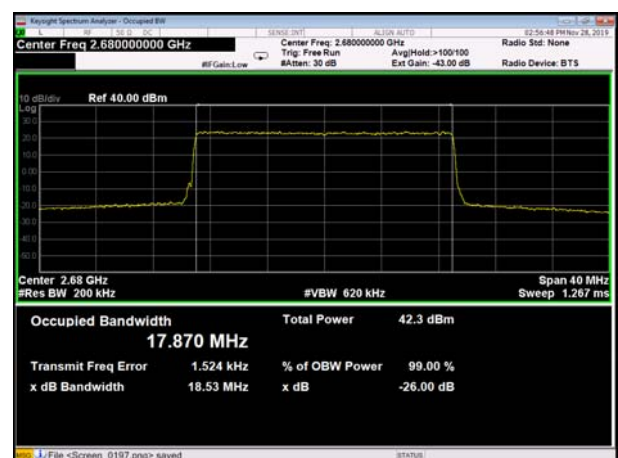
20MHz- Middle CH E-TM3.1



20MHz- High CH E-TM1.1



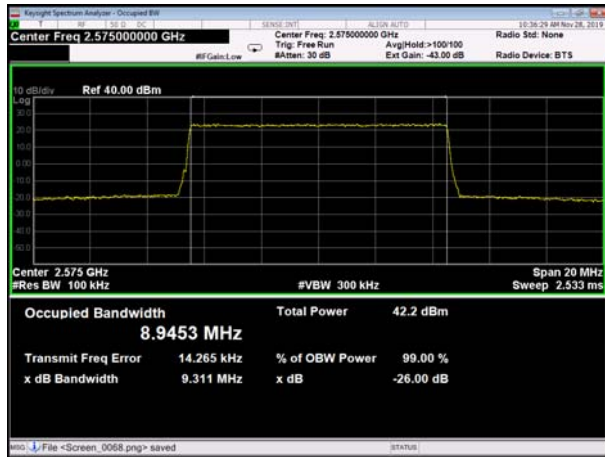
20MHz- High CH E-TM3.1



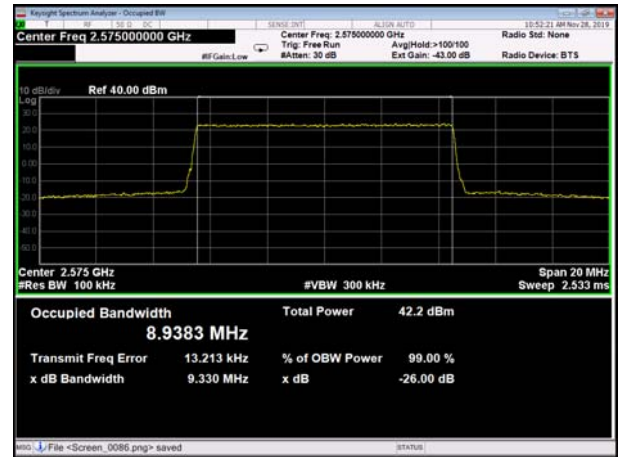


IC Chain 0

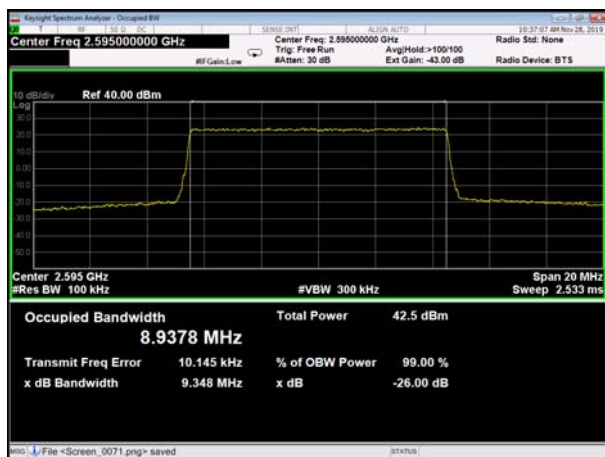
10MHz- Low CH E-TM1.1



10MHz- Low CH E-TM3.1



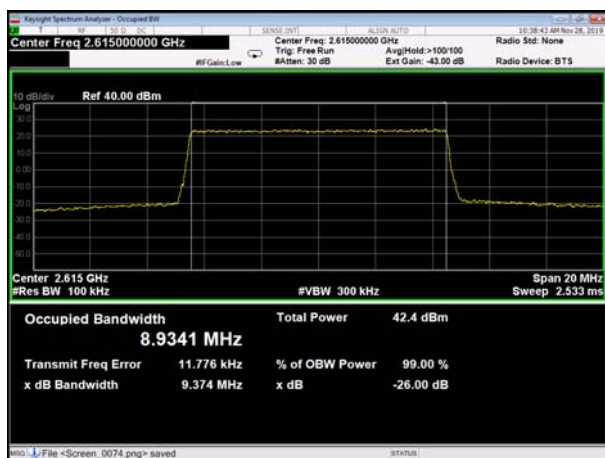
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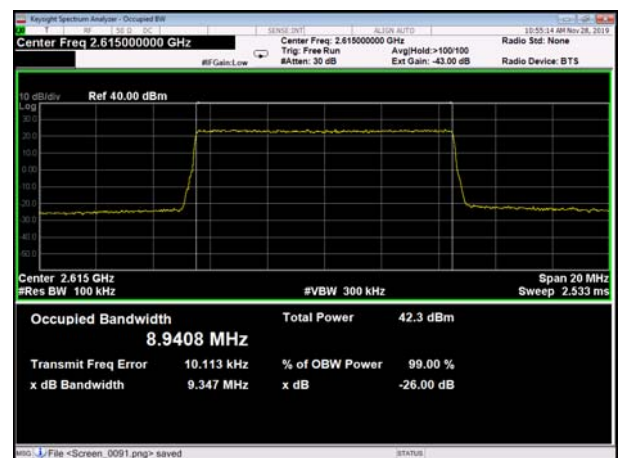
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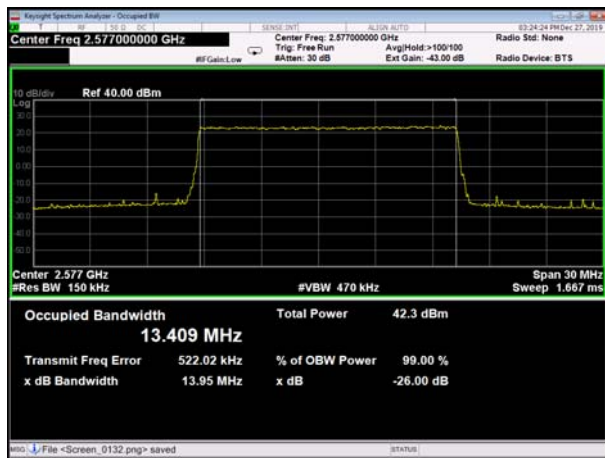
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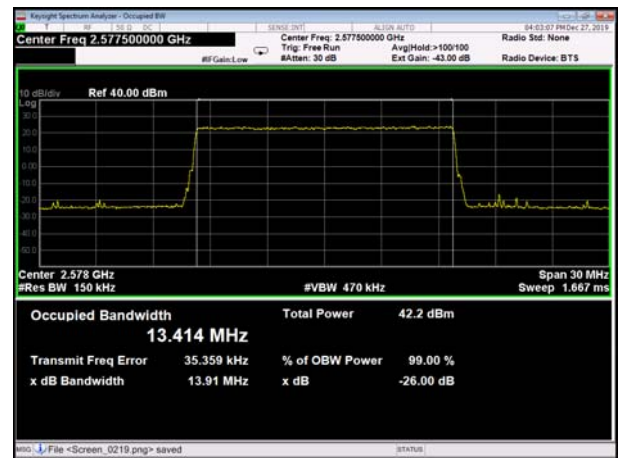
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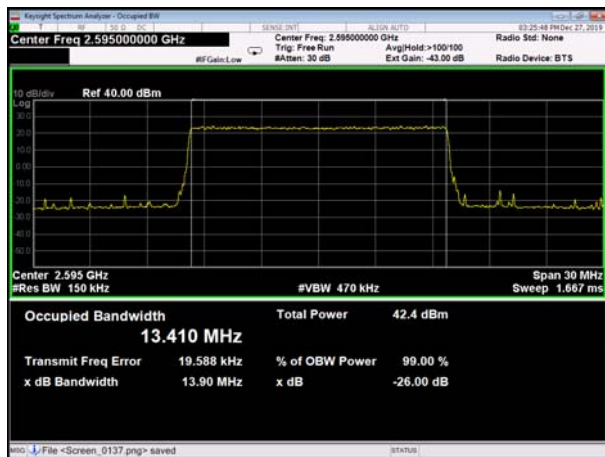
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15MHz- Low CH E-TM3.1



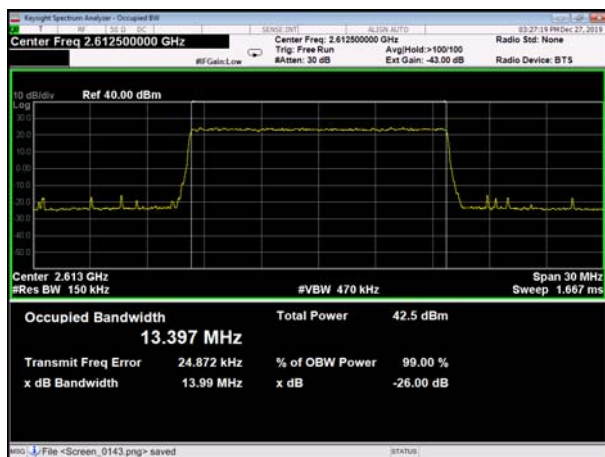
15MHz- Middle CH E-TM1.1



15MHz- Middle CH E-TM3.1



15MHz- High CH E-TM1.1



15MHz- High CH E-TM3.1

