ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

OF

FCC Applicant:	Compal Electronics, Inc No.581 & 581-1, Ruiguang Rd., Neihu District, Taipei, (114) Taiwan
Product Name:	5G M.2 Module
Brand Name:	Compal
Model No.:	RXM-G1
Model Difference:	N/A
Report Number:	E2/2019/A0033
FCC ID	GKRRXMG1
FCC Rule Part:	2 , 22H & 24E & 27 C
Issue Date:	Jun. 04, 2020
Date of Test:	Feb. 27, 2020 ~ May 20, 2020
Date of EUT Received:	Oct. 31, 2019

We hereby certify that:
The above equipment was tested by SGS Taiwan Ltd. Central RF Lab The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.26-2015 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits.
The test results of this report relate only to the tested sample identified in this report.

Approved By: _____
Blue Yang / Asst. Manager

Testing Laboratory
3702

Revision History				
Report Number	**Revision**	**Description**	**Issue Date**	**Remark**
E2/2019/A0033	Rev.00	Original.	Jun. 04, 2020	Revised By: Karen Huang

Note:

1、Disclaimer

Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.

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1 GENERAL PRODUCT INFORMATION

1.1 Product Description

General:

Product Name:	5G M.2 Module
Brand Name:	Compal
Model No.:	RXM-G1
Model Difference:	N/A
Hardware Version:	DVT-1
Software Version:	RXMG1.00.00.036
Power Supply:	DC 3.3V
IMEI:	359047100009060

1.2 Operation Frequency Range

DC_2A_n5A Chnnal List For SCS 15KHz

LTE Bandwidth	NR Bandwidth	Channel	LTE Freuqncy (MHZ)	NR Frequency (MHZ)
20	5	Low	1860	826.5
		Mid	1880	836.5
		High	1900	846.5
20	10	Low	1860	829
		Mid	1880	836.5
		High	1900	844
20	15	Low	1860	831.5
		Mid	1880	836.5
		High	1900	841.5
20	20	Low	1860	834
		Mid	1880	836.5
		High	1900	839

DC_2A_n41A Chnnal List For SCS 30KHz

LTE Bandwidth	NR Bandwidth	Channel	LTE Freuqncy (MHZ)	NR Frequency (MHZ)
20	20	Low	1860	2506.02
		Mid	1880	2592.99
		High	1900	2679.99
20	40	Low	1860	2516.01
		Mid	1880	2592.99
		High	1900	2670
20	50	Low	1860	2521.02
		Mid	1880	2592.99
		High	1900	2664.99
20	60	Low	1860	2526
		Mid	1880	2592.99
		High	1900	2659.98
20	80	Low	1860	2536.02
		Mid	1880	2592.99
		High	1900	2649.99
20	90	Low	1860	2541
		Mid	1880	2592.99
		High	1900	2644.98
20	100	Low	1860	2546.01
		Mid	1880	2592.99
		High	1900	2640

DC_2A_n71A Chnnal List For SCS 15KHz

LTE Bandwidth	NR Bandwidth	Channel	LTE Freuqncy (MHZ)	NR Frequency (MHZ)
20	5	Low	1860	665.5
		Mid	1880	680.5
		High	1900	695.5
20	10	Low	1860	668
		Mid	1880	680.5
		High	1900	693
20	15	Low	1860	670.5
		Mid	1880	680.5
		High	1900	690.5
20	20	Low	1860	673
		Mid	1880	680.5
		High	1900	688

DC_5A_n2A Chnnal List For SCS 15KHz

LTE Bandwidth	NR Bandwidth	Channel	LTE Freuqncy (MHZ)	NR Frequency (MHZ)
10	5	Low	829	1852.5
		Mid	836.5	1880
		High	844	1907.5
10	10	Low	829	1855
		Mid	836.5	1880
		High	844	1905
10	15	Low	829	1857.5
		Mid	836.5	1880
		High	844	1902.5
10	20	Low	829	1860
		Mid	836.5	1880
		High	844	1900

DC_5A_n66A Chnnal List For SCS 15KHz

LTE Bandwidth	NR Bandwidth	Channel	LTE Freuqncy (MHZ)	NR Frequency (MHZ)
10	5	Low	829	1712.5
		Mid	836.5	1745
		High	844	1777.5
10	10	Low	829	1715
		Mid	836.5	1745
		High	844	1775
10	15	Low	829	1717.5
		Mid	836.5	1745
		High	844	1722.5
10	20	Low	829	1720
		Mid	836.5	1745
		High	844	1770

DC_12A_n2A Chnnal List For SCS 15KHz

LTE Bandwidth	NR Bandwidth	Channel	LTE Freuqncy (MHZ)	NR Frequency (MHZ)
10	5	Low	704	1852.5
		Mid	707.5	1880
		High	711	1907.5
10	10	Low	704	1855
		Mid	707.5	1880
		High	711	1905
10	15	Low	704	1857.5
		Mid	707.5	1880
		High	711	1902.5
10	20	Low	704	1860
		Mid	707.5	1880
		High	711	1900

DC_12A_n66A Chnnal List For SCS 15KHz

LTE Bandwidth	NR Bandwidth	Channel	LTE Freuqncy (MHZ)	NR Frequency (MHZ)
10	5	Low	704	1712.5
		Mid	707.5	1745
		High	711	1777.5
10	10	Low	704	1715
		Mid	707.5	1745
		High	711	1775
10	15	Low	704	1717.5
		Mid	707.5	1745
		High	711	1722.5
10	20	Low	704	1720
		Mid	707.5	1745
		High	711	1770

DC_13A_n66A Chnnal List For SCS 15KHz

LTE Bandwidth	NR Bandwidth	Channel	LTE Freuqncy (MHZ)	NR Frequency (MHZ)
10	5	Low	782	1712.5
		Mid	782	1745
		High	782	1777.5
10	10	Low	782	1715
		Mid	782	1745
		High	782	1775
10	15	Low	782	1717.5
		Mid	782	1745
		High	782	1722.5
10	20	Low	782	1720
		Mid	782	1745
		High	782	1770

DC_25A_n41A Chnnal List For SCS 30KHz

LTE Bandwidth	NR Bandwidth	Channel	LTE Freuqncy (MHZ)	NR Frequency (MHZ)
20	20	Low	1860	2506.02
		Mid	1882.5	2592.99
		High	1905	2679.99
20	40	Low	1860	2516.01
		Mid	1882.5	2592.99
		High	1905	2670
20	50	Low	1860	2521.02
		Mid	1882.5	2592.99
		High	1905	2664.99
20	60	Low	1860	2526
		Mid	1882.5	2592.99
		High	1905	2659.98
20	80	Low	1860	2536.02
		Mid	1882.5	2592.99
		High	1905	2649.99
20	90	Low	1860	2541
		Mid	1882.5	2592.99
		High	1905	2644.98
20	100	Low	1860	2546.01
		Mid	1882.5	2592.99
		High	1905	2640

DC_26A_n41A Chnnal List For SCS 30KHz

LTE Bandwidth	NR Bandwidth	Channel	LTE Freuqncy (MHZ)	NR Frequency (MHZ)
15	20	Low	831.5	2506.02
		Mid	836.5	2592.99
		High	841.5	2679.99
15	40	Low	831.5	2516.01
		Mid	836.5	2592.99
		High	841.5	2670
15	50	Low	831.5	2521.02
		Mid	836.5	2592.99
		High	841.5	2664.99
15	60	Low	831.5	2526
		Mid	836.5	2592.99
		High	841.5	2659.98
15	80	Low	831.5	2536.02
		Mid	836.5	2592.99
		High	841.5	2649.99
15	90	Low	831.5	2541
		Mid	836.5	2592.99
		High	841.5	2644.98
15	100	Low	831.5	2546.01
		Mid	836.5	2592.99
		High	841.5	2640

DC_30A_n5A Chnnal List For SCS 15KHz

LTE Bandwidth	NR Bandwidth	Channel	LTE Freuqncy (MHZ)	NR Frequency (MHZ)
10	5	Low	2310	826.5
		Mid	2310	836.5
		High	2310	846.5
10	10	Low	2310	829
		Mid	2310	836.5
		High	2310	844
10	15	Low	2310	831.5
		Mid	2310	836.5
		High	2310	841.5
10	20	Low	2310	834
		Mid	2310	836.5
		High	2310	839

DC_48A_n5A Chnnal List For SCS 15KHz

LTE Bandwidth	NR Bandwidth	Channel	LTE Freuqncy (MHZ)	NR Frequency (MHZ)
20	5	Low	3560	826.5
		Mid	3625	836.5
		High	3690	846.5
20	10	Low	3560	829
		Mid	3625	836.5
		High	3690	844
20	15	Low	3560	831.5
		Mid	3625	836.5
		High	3690	841.5
20	20	Low	3560	834
		Mid	3625	836.5
		High	3690	839

DC_48A_n66A Chnnal List For SCS 15KHz

LTE Bandwidth	NR Bandwidth	Channel	LTE Freuqncy (MHZ)	NR Frequency (MHZ)
20	5	Low	3560	1712.5
		Mid	3625	1745
		High	3690	1777.5
20	10	Low	3560	1715
		Mid	3625	1745
		High	3690	1775
20	15	Low	3560	1717.5
		Mid	3625	1745
		High	3690	1722.5
20	20	Low	3560	1720
		Mid	3625	1745
		High	3690	1770

DC_66A_n5A Chnnal List For SCS 15KHz

LTE Bandwidth	NR Bandwidth	Channel	LTE Freuqncy (MHZ)	NR Frequency (MHZ)
20	5	Low	1720	826.5
		Mid	1745	836.5
		High	1770	846.5
20	10	Low	1720	829
		Mid	1745	836.5
		High	1770	844
20	15	Low	1720	831.5
		Mid	1745	836.5
		High	1770	841.5
20	20	Low	1720	834
		Mid	1745	836.5
		High	1770	839

DC_66A_n41A Chnnal List For SCS 30KHz

LTE Bandwidth	NR Bandwidth	Channel	LTE Freuqncy (MHZ)	NR Frequency (MHZ)
20	20	Low	1720	2506.02
		Mid	1745	2592.99
		High	1770	2679.99
20	40	Low	1720	2516.01
		Mid	1745	2592.99
		High	1770	2670
20	50	Low	1720	2521.02
		Mid	1745	2592.99
		High	1770	2664.99
20	60	Low	1720	2526
		Mid	1745	2592.99
		High	1770	2659.98
20	80	Low	1720	2536.02
		Mid	1745	2592.99
		High	1770	2649.99
20	90	Low	1720	2541
		Mid	1745	2592.99
		High	1770	2644.98
20	100	Low	1720	2546.01
		Mid	1745	2592.99
		High	1770	2640

DC_66A_n71A Chnnal List For SCS 15KHz

LTE Bandwidth	NR Bandwidth	Channel	LTE Freuquncy (MHZ)	NR Frequency (MHZ)
20	5	Low	1720	665.5
		Mid	1745	680.5
		High	1770	695.5
20	10	Low	1720	668
		Mid	1745	680.5
		High	1770	693
20	15	Low	1720	670.5
		Mid	1745	680.5
		High	1770	690.5
20	20	Low	1720	673
		Mid	1745	680.5
		High	1770	688

1.3 Antenna Designation

Vendor	Type	Model Name	Band	Frequency (MHz)	Peak Antenna Gain (dBi)
Pulse	PIFA	ANT0	NR Band 2	1850 ~ 1910	4
			NR Band 5	824 ~ 849	2.9
			NR Band 41	2496 ~ 2690	3.4
			NR Band 66	1710 ~ 1780	4.5
			NR Band 71	663 ~ 698	2.6

1.4 Test Methodology of Applied Standards

FCC 47 CFR Part 2, 22H, 24E, 27C
ANSI C63.26-2015
KDB971168 D01 Power Meas license Digital System v03r01
KDB412172 D01 Determining ERP and EIRP v01r01

1.5 Test Facility

SGS Taiwan Ltd. Central RF Lab (TAF code 3702)
No.2, Keji 1st Rd., Guishan District, Taoyuan City, Taiwan 333

FCC Designation number: TW0028

1.6 Special Accessories

No special accessories were used during testing.

1.7 Equipment Modifications

There was no modifications incorporated into the EUT.

1.8 Radiated Emission Test Sites For Measurements From 9 kHz To 30 MHz

Radiated emission below 30MHz is measured in a 9m*9m*6m semi-anechoic chamber,
the measurements correspond to those obtained at an open-field test site.
There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

2 SYSTEM TEST CONFIGURATION

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The EUT (Transmitter) was operated in the continuous transmission mode employed with the simulator of the Base Station that fixates at test default channels to fix the Tx frequency which was for the purpose of the measurements.

2.3 Test Procedure

2.3.1 Conducted Measurement at Antenna Port

The EUT is placed on a table which is 0.8 m above ground plane. A low loss of RF cable was used to connect the antenna port of EUT to measurement equipment.

2.3.2 Radiated Emissions (ERP/EIRP)

The EUT is placed on a turn table, for emission measurements below 1 GHz is 0.8 m above ground plane, for emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both Horizontal and Vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made “while keeping the antenna in the ‘cone of radiation’ from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response.” is still within the 3dB illumination BW of the measurement antenna according to the requirements in Section 8 and 13.

2.4 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 attenuation factor between EUT conducted port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly EUT RF output level.
Note:
The spectrum analyzer offset is derived from RF cable loss and attenuator factor.
Following shows an offset computation in physical test.

	RF cable loss (dB)	Attenuation factor(dB)	offset(dB)
Low Band (Below 1GHz)	3.6	10	13.6
High Band (Above 1 GHz)	3.8	10	13.8

2.5 Final Amplifier Voltage and Current Information:

5G NR Band	DC voltage (V)	DC current (mA)
n2	3.3	470
n5		460
n41		460
n66		470
n71		470

2.6 Configuration of Tested System

Fig. 2-1 Configuration of Tested System (Fixed Channel-Conducted)

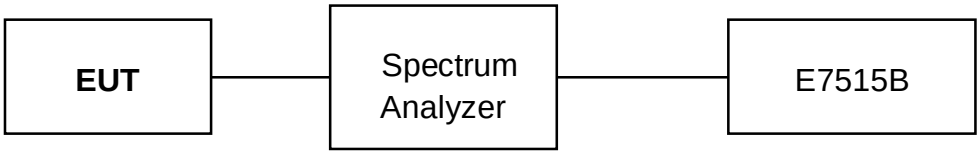
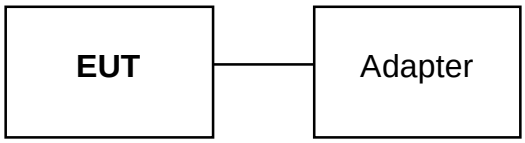


Fig. 2-2 Configuration of Tested System (Fixed Channel-Radiated)



Remote Side

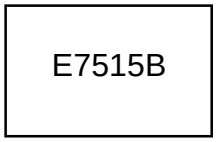


Table 2-1 Equipment Used in

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1.	UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY59321566	shielded	Un-shielded

3 SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§2.1046(a)	RF Power Output	Compliant
§22.913(a)(5) §24.232(c) §27.50(c)(10) §27.50(d)(4) §27.50(h)(2)	ERP/ EIRP measurement	Compliant
§2.1049(h)	99% & 26dB Occuupied Bandwidth	Compliant
§2.1051 §22.917(a) §24.238(a) §27.53(g) §27.53(h) §27.53(m)(4)	Out of Band Emissions at Antenna Terminals and Band Edge / Emission mask requirements	Compliant
§2.1051 §22.917(a) §24.238(a) §27.53(g) §27.53(h) §27.53(m)(4)	Field Strength of Spurious Radiation	Compliant
§24.232(d) §27.50(d)(5)	Peak to Average Ratio	Compliant
§2.1055(a)(1) §22.355 §24.235 §27.54	Frequency Stability	Compliant

4 DESCRIPTION OF TEST MODES

4.1 The Worst Test Modes and Channel Details

1. The EUT has been tested under operating condition.
2. The EUT only supports with below SCS and Bandwidth in each 5G NR Band.

5G NR BAND	SCS (kHz)	Bandwidth (MHz)
n2	15	5, 10, 15, 20
n5	15	5, 10, 15, 20
n41	30	20, 40, 50, 60, 80, 90, 100
n66	15	5, 10, 15, 20
n71	15	5, 10, 15, 20

3. Due to each single LTE Band transmission gernerates higher power than the LTE transmission in ENDC mode, the test results of each single LTE band transmission are demonstrated in the test report E2/2019/A0029 as the worst case senarios.
4. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, X(E1)Y(E2)Z(H) axis and antenna ports. The worst case was found as listed below. Following channel(s) was (were) selected for the final test as listed below:

5G NR BAND	H PLAN	E1 PLAN	E2 PLAN
n2			V
n5			V
n41			V
n66			V
n71			V

5. The worst case scenarios are determined by the ENDC combinations that generate the highest output power, the occupied bandwidth, peak to average ratio and unwanted emission test results are only be presented with the ENDC combinations of the worst case.

4.2 Measurement Configuration

Test Items	Band	Test			Band width										Modulation								RB #		
		L	M	H	5	10	15	20	40	50	60	80	90	100	DFT-S-OFDM Pi/2 BPSK	DFT-S-OFDM QPSK	DFT-S-OFDM 16QAM	DFT-S-OFDM 64QAM	DFT-S-OFDM 256QAM	CP-OFDM QPSK	CP-OFDM 16QAM	CP-OFDM 64QAM	CP-OFDM 256QAM	1RB Left	1RB Right	Full
Max. Output Power	L5 + n2A	v	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v	v
	L12 + n2A	v	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v	v
	L2 + n5A	v	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v	v
	L30 + n5A	v	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v	v
	L48 + n5A	v	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v	v
	L66 + n5A	v	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v	v
	L2 + n41A	v	v	v	-	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	L25 + n41A	v	v	v	-	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	L26 + n41A	v	v	v	-	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	L66 + n41A	v	v	v	-	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	L5 + n66A	v	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v	v
	L12+ n66A	v	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v	v
	L13+ n66A	v	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v	v
	L48+ n66A	v	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v	v
	L2 + n71A	v	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v	v
	L66 + n71A	v	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v	v
DC current	L5 + n2A	-	v	-	-	-	-	v	-	-	-	-	-	-	-	-	-	v	-	-	-	-	-	-	v
	L66 + n5A	-	v	-	-	-	-	v	-	-	-	-	-	-	-	-	v	-	-	-	-	-	-	-	v
	L26 + n41A	-	v	-	-	-	-	-	-	-	-	-	-	v	-	-	-	-	-	-	v	-	-	-	v
	L48+ n66A	-	v	-	-	-	-	v	-	-	-	-	-	-	v	-	-	-	-	-	-	-	-	-	v
	L66 + n71A	-	v	-	-	-	-	v	-	-	-	-	-	-	-	-	-	-	-	-	-	v	-	-	-	v

Test Items	Band	Test			Band width										Modulation								RB #		
		L	M	H	5	10	15	20	40	50	60	80	90	100	DFT-S-OFDM Pi/2 BPSK	DFT-S-OFDM QPSK	DFT-S-OFDM 16QAM	DFT-S-OFDM 64QAM	DFT-S-OFDM 256QAM	CP-OFDM QPSK	CP-OFDM 16QAM	CP-OFDM 64QAM	CP-OFDM 256QAM	1RB Left	1RB Right	Full
26dB and 99%	L5 + n2A	v	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	-	-	v
	L66 + n5A	v	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	-	-	v
	L26 + n41A	v	v	v	-	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	-	-	v
	L48+ n66A	v	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	-	-	v
	L66 + n71A	v	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	-	-	v
Peak-to-Average Ratio	L5 + n2A	v	v	v	-	-	-	v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	v	-	-	v
	L66 + n5A	v	v	v	-	-	-	v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	v	-	-	v
	L26 + n41A	v	v	v	-	-	-	-	-	-	-	-	-	v	-	-	-	-	-	-	-	-	v	-	-	v
	L48+ n66A	v	v	v	-	-	-	v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	v	-	-	v
	L66 + n71A	v	v	v	-	-	-	v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	v	-	-	v

Test Items	Band	Test			Band width										Modulation								RB #		
		L	M	H	5	10	15	20	40	50	60	80	90	100	DFT-S-OFDM Pi/2 BPSK	DFT-S-OFDM QPSK	DFT-S-OFDM 16QAM	DFT-S-OFDM 64QAM	DFT-S-OFDM 256QAM	CP-OFDM QPSK	CP-OFDM 16QAM	CP-OFDM 64QAM	CP-OFDM 256QAM	1RB Left	1RB Right	Full
Band Edge	L5 + n2A	v	-	v	-	-	-	v	-	-	-	-	-	-	-	-	-	v	-	-	-	-	v	v	v
	L66 + n5A	v	-	v	-	-	-	v	-	-	-	-	-	-	-	-	v	-	-	-	-	-	v	v	v
	L26 + n41A	v	-	v	-	-	-	-	-	-	-	-	-	v	-	-	-	-	-	v	-	-	v	v	v
	L48+ n66A	v	-	v	-	-	-	v	-	-	-	-	-	-	v	-	-	-	-	-	-	-	v	v	v
	L66 + n71A	v	-	v	-	-	-	v	-	-	-	-	-	-	-	-	-	-	-	-	v	-	v	v	v
Conducted Emission	L5 + n2A	v	v	v	-	-	-	v	-	-	-	-	-	-	-	-	-	v	-	-	-	-	-	-	v
	L66 + n5A	v	v	v	-	-	-	v	-	-	-	-	-	-	-	-	v	-	-	-	-	-	-	-	v
	L26 + n41A	v	v	v	-	-	-	-	-	-	-	-	-	v	-	-	-	-	-	v	-	-	-	-	v
	L48+ n66A	v	v	v	-	-	-	v	-	-	-	-	-	-	v	-	-	-	-	-	-	-	-	-	v
	L66 + n71A	v	v	v	-	-	-	v	-	-	-	-	-	-	-	-	-	-	-	-	v	-	-	-	v

Test Items	Band	Test			Band width										Modulation								RB #		
		L	M	H	5	10	15	20	40	50	60	80	90	100	DFT-S-OFDM Pi/2 BPSK	DFT-S-OFDM QPSK	DFT-S-OFDM 16QAM	DFT-S-OFDM 64QAM	DFT-S-OFDM 256QAM	CP-OFDM QPSK	CP-OFDM 16QAM	CP-OFDM 64QAM	CP-OFDM 256QAM	1RB Left	1RB Right	Full
Radiated Emission	L5 + n2A	v	v	v	-	-	-	v	-	-	-	-	-	-	-	-	-	v	-	-	-	-	-	-	v
	L12 + n2A	v	v	v	-	-	-	v	-	-	-	-	-	-	v	-	-	-	-	-	-	-	-	-	v
	L2 + n5A	v	v	v	-	-	-	v	-	-	-	-	-	-	-	-	-	v	-	-	-	-	-	-	v
	L30 + n5A	v	v	v	-	-	-	v	-	-	-	-	-	-	-	-	-	v	-	-	-	-	-	-	v
	L48 + n5A	v	v	v	-	-	-	v	-	-	-	-	-	-	-	-	-	v	-	-	-	-	-	-	v
	L66 + n5A	v	v	v	-	-	-	v	-	-	-	-	-	-	-	-	-	v	-	-	-	-	-	-	v
	L2 + n41A	v	v	v	-	-	-	-	v	-	-	-	-	-	-	-	-	v	-	-	-	-	-	-	v
	L25 + n41A	v	v	v	-	-	-	-	-	-	-	-	v	-	-	v	-	-	-	-	-	-	-	-	v
	L26 + n41A	v	v	v	-	-	-	-	-	-	-	-	-	v	-	-	-	-	-	-	v	-	-	-	v
	L66 + n41A	v	v	v	-	-	-	-	-	-	-	-	-	v	-	-	-	-	-	-	v	-	-	-	v
	L5 + n66A	v	v	v	-	-	-	v	-	-	-	-	-	-	v	-	-	-	-	-	-	-	-	v	-
	L12+ n66A	v	v	v	-	-	-	v	-	-	-	-	-	-	v	-	-	-	-	-	-	-	-	v	-
	L13+ n66A	v	v	v	-	-	-	v	-	-	-	-	-	-	v	-	-	-	-	-	-	-	-	v	-
	L48+ n66A	v	v	v	-	-	-	v	-	-	-	-	-	-	v	-	-	-	-	-	-	-	-	-	v
	L2 + n71A	v	v	v	-	-	-	v	-	-	-	-	-	-	-	-	-	-	-	-	-	v	-	-	v
	L66 + n71A	v	v	v	-	-	-	v	-	-	-	-	-	-	-	-	-	-	-	-	-	v	-	-	v

Note: List of frequency bands mentioned in the measurement configuration, for comparison with 3GPP, please refer to the following table.

Band	3GPP inter-EN-DC configuration in FR1
L5 + n2A	DC_5A_n2A
L12 + n2A	DC_12A_n2A
L2 + n5A	DC_2A_n5A
L30 + n5A	DC_30A_n5A
L48 + n5A	DC_48A_n5A
L66 + n5A	DC_66A_n5A
L2 + n41A	DC_2A_n41A
L25 + n41A	DC_25A_n41A
L26 + n41A	DC_26A_n41A
L66 + n41A	DC_66A_n41A
L5 + n66A	DC_5A_n66A
L12+ n66A	DC_12A_n66A
L13+ n66A	DC_13A_n66A
L48+ n66A	DC_48A_n66A
L2 + n71A	DC_2A_n71A
L66+n71A	DC_66A_n71A

5 MEASUREMENT UNCERTAINTY

Test Items	Uncertainty
RF Power Output	+/- 1.10 dB
ERP/ EIRP measurement	Vertical Polarization = +/- 4.74dB Horizontal Polarization =+/- 4.62dB
Occupied Bandwidth	+/- 5.19 Hz
Out of Band Emissions at Antenna Terminals and Band Edge	+/- 0.70 dB
Peak to Average Ratio	+/- 0.70 dB
Frequency Stability vs. Temperature	+/- 5.19 Hz
Frequency Stability vs. Voltage	+/- 5.19 Hz
Temperature	+/- 0.65 °C
Humidity	+/- 4.6 %
DC / AC Power Source	DC= +/- 0.13%, AC=+/- 0.2%

Radiated Spurious Emission:

Measurement uncertainty (Polarization : **Vertical**)	9kHz – 30MHz: +/- 2.87 dB
	30MHz - 180MHz: +/- 3.37dB
	180MHz -417MHz: +/- 3.19dB
	0.417GHz-1GHz: +/- 3.19dB
	1GHz - 18GHz: +/- 4.04dB
	18GHz - 40GHz: +/- 4.04dB

Measurement uncertainty (Polarization : **Horizontal**)	9kHz – 30MHz: +/- 2.87 dB
	30MHz - 167MHz: +/- 4.22dB
	167MHz -500MHz: +/- 3.44dB
	0.5GHz-1GHz: +/- 3.39dB
	1GHz - 18GHz: +/- 4.08dB
	18GHz - 40GHz: +/- 4.08dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

6 MAXMUM OUTPUT POWER

6.1 Standard Applicable

A base station simulator was used to establish communication with the EUT. Its parameters were set to transmit the maximum power on the EUT. The measured power in the radio frequency on the transmitter output terminals.

6.1.1 ERP/EIRP LIMIT

According to FCC §2.1046

FCC 22.913(a)

(5) mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

FCC 24.232(c)

Mobile and portable stations are limited to 2 W EIRP.

FCC 27.50(c)

(10) Portable stations (hand-held devices) are limited to 3 watts ERP.

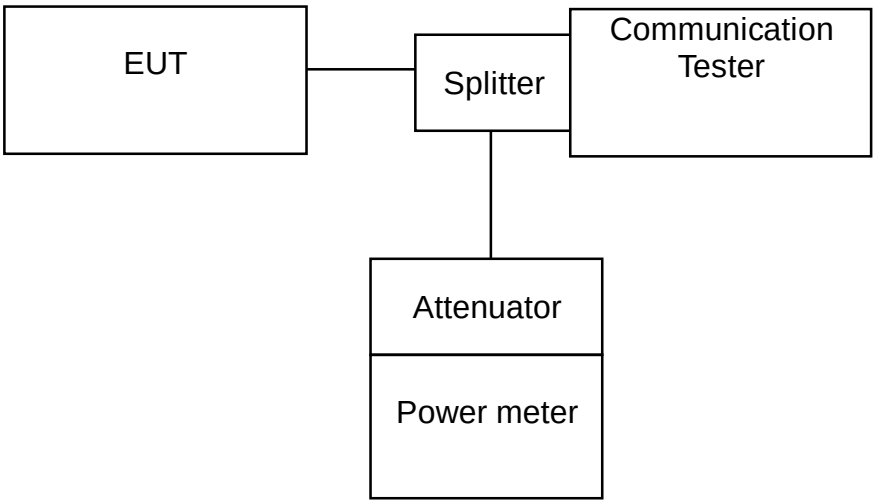
FCC 27.50(d)

(4) Mobile, and portable (hand-held) stations operating in the 1710-1755 MHz, 1695-1710 MHz and 1755-1780 MHz bands are limited to 1W EIRP.

FCC 27, 50(h)

(2) Mobile and other user stations transmitting in the BRS and EBS bands are limited to 2 W EIRP.

6.2 Test Set-up



Note: *Measurement setup for testing on Antenna connector*

6.3 Output Power Measurement Applicable Guideance

The transmitter output was connected to a calibrated attenuator, the other end of which was connected to a power meter. Transmitter output was read off the power meter in dBm. The power output at the transmitter antenna port was determined by adding the value of the attenuator to the power meter reading.

The Procedure of KDB941225 (SAR Measurement Procedures for 3G devices, (WCD-MA/HSPA) was used for EUT and Base station setting. RMC 12.2kps is used for this testing, and KDB 971168 D01 Power Meas License Digital System as the supplemental test method-ology to adjust the proper setting obtaining the measurement results.
All LTE bands conducted average power is obtained from the simulator telecommunication test set.

6.4 Determining ERP and/or EIRP from conducted RF output power measurements

According to KDB 412172 D01 Power Approach,

EIRP = P_T+G_T-L_C,

ERP= EIRP-2.15,

Where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power (expressed in the same units as PT, typically dBW, dBm, or power spectral density (PSD)2), relative to either a dipole antenna (ERP) or an isotropic antenna (EIRP);

P_T = transmitter output power, expressed in dBW, dBm, or PSD;

G_T = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

6.5 Measurement Equipment Used

Conducted Emission (measured at antenna port) Test Site					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer	KEYSIGHT	N9010A	MY51440113	07/15/2019	07/14/2020
UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY59321566	12/17/2019	12/16/2020
DC Block	PASTERNACK	PE8210	RF32	11/20/2019	11/19/2020
Splitter	Woken	DOM35LW1A2	RF83	11/20/2019	11/19/2020
Splitter	Woken	DOM35LW1E1	RF01	11/20/2019	11/19/2020
Coaxial Cables	Woken	00100A1F1A185C	RF229	11/20/2019	11/19/2020
Coaxial Cables	Woken	00100A1F1A185C	RF230	11/20/2019	11/19/2020
Coaxial Cables	Woken	00100A1F1A185C	RF231	11/20/2019	11/19/2020

6.6 Measurement Results:

Observation has been done on each modulation with the widest bandwidth and Full RB to determine the worst case modulation for further evaluations that conducted on each bandwidth and the Lowest and Highest 1 RB configurations.

Antenna Gain : 2.9

L2 + n5A		RB	NR Channel	Freq. (MHz)	NR			EIRP Limit	Margin (dBm)
Modulation	Band width				LTE Power	Power (dBm/10MHz)	EIRP		
DFT-S-OFDM Pi/2 BPSK	LTE 20 + NR 20	FULL	167300	836.5	24.05	20.98	23.88	38.45	-14.57
DFT-S-OFDM QPSK	LTE 20 + NR 20	FULL	167300	836.5	24.1	21.51	24.41	38.45	-14.04
DFT-S-OFDM 16QAM	LTE 20 + NR 20	FULL	167300	836.5	24.04	21.51	24.41	38.45	-14.04
DFT-S-OFDM 64QAM	LTE 20 + NR 20	FULL	167300	836.5	24.04	21.56	24.46	38.45	-13.99
DFT-S-OFDM P256QAM	LTE 20 + NR 20	FULL	167300	836.5	24.07	20.62	23.52	38.45	-14.93
CP-OFDM QPSK	LTE 20 + NR 20	FULL	167300	836.5	24.12	21.55	24.45	38.45	-14.00
CP-OFDM 16QAM	LTE 20 + NR 20	FULL	167300	836.5	24.13	21.52	24.42	38.45	-14.03
CP-OFDM 64QAM	LTE 20 + NR 20	FULL	167300	836.5	24.53	**22.39**	25.29	38.45	-13.16
CP-OFDM 256QAM	LTE 20 + NR 20	FULL	167300	836.5	24.56	18.44	21.34	38.45	-17.11
CP-OFDM 64QAM	LTE 20 + NR 20	1RB Left	167300	836.5	24.01	19.95	22.85	38.45	-15.60
CP-OFDM 64QAM	LTE 20 + NR 20	1RB Right	167300	836.5	24.01	21.12	24.02	38.45	-14.43
CP-OFDM 64QAM	LTE 20 + NR 15	FULL	167300	836.5	24.03	21.62	24.52	38.45	-13.93
CP-OFDM 64QAM	LTE 20 + NR 10	FULL	167300	836.5	24.06	21.65	24.55	38.45	-13.90
CP-OFDM 64QAM	LTE 20 + NR 5	FULL	167300	836.5	24.03	21.20	24.10	38.45	-14.35
CP-OFDM 64QAM	LTE 20 + NR 20	FULL	166800	834	24.07	22.20	25.10	38.45	-13.35
CP-OFDM 64QAM	LTE 20 + NR 20	FULL	167800	839	24.11	22.31	25.21	38.45	-13.24

Antenna Gain : 3.4

L2 + n41A		RB	NR Channel	Freq. (MHz)	NR			EIRP Limit	Margin (dBm)
Modulation	Band width				LTE Power	Power (dBm/10MHz)	EIRP		
DFT-S-OFDM Pi/2 BPSK	LTE 20 + NR 100	FULL	509202	2546.01	22.43	20.48	23.88	33	-9.12
DFT-S-OFDM QPSK	LTE 20 + NR 100	FULL	518598	2592.99	22.41	20.47	23.87	33	-9.13
DFT-S-OFDM 16QAM	LTE 20 + NR 100	FULL	518598	2592.99	22.37	20.51	23.91	33	-9.09
DFT-S-OFDM 64QAM	LTE 20 + NR 100	FULL	518598	2592.99	22.34	20.50	23.90	33	-9.10
DFT-S-OFDM P256QAM	LTE 20 + NR 100	FULL	518598	2592.99	22.4	20.42	23.82	33	-9.18
CP-OFDM QPSK	LTE 20 + NR 100	FULL	518598	2592.99	22.54	20.44	23.84	33	-9.16
CP-OFDM 16QAM	LTE 20 + NR 100	FULL	518598	2592.99	22.47	20.36	23.76	33	-9.24
CP-OFDM 64QAM	LTE 20 + NR 100	FULL	518598	2592.99	22.48	20.33	23.73	33	-9.27
CP-OFDM 256QAM	LTE 20 + NR 100	FULL	518598	2592.99	22.33	18.34	21.74	33	-11.26
DFT-S-OFDM 16QAM	LTE 20 + NR 100	1RB Left	518598	2592.99	22.5	19.04	22.44	33	-10.56
DFT-S-OFDM 16QAM	LTE 20 + NR 100	1RB Right	518598	2592.99	22.32	17.97	21.37	33	-11.63
DFT-S-OFDM 16QAM	LTE 20 + NR 90	FULL	518598	2592.99	22.47	20.61	24.01	33	-8.99
DFT-S-OFDM 16QAM	LTE 20 + NR 80	FULL	518598	2592.99	22.89	20.47	23.87	33	-9.13
DFT-S-OFDM 16QAM	LTE 20 + NR 60	FULL	518598	2592.99	22.99	20.48	23.88	33	-9.12
DFT-S-OFDM 16QAM	LTE 20 + NR 50	FULL	518598	2592.99	21.74	20.19	23.59	33	-9.41
DFT-S-OFDM 16QAM	LTE 20 + NR 40	FULL	518598	2592.99	22.48	**20.75**	24.15	33	-8.85
DFT-S-OFDM 16QAM	LTE 20 + NR 20	FULL	518598	2592.99	21.74	20.46	23.86	33	-9.14
DFT-S-OFDM 16QAM	LTE 20 + NR 40	FULL	509202	2546.01	22.73	20.69	24.09	33	-8.91
DFT-S-OFDM 16QAM	LTE 20 + NR 40	FULL	528000	2640	22.54	20.33	23.73	33	-9.27

Antenna Gain : 2.6

L2 + n71A		RB	NR Channel	Freq. (MHz)	NR			EIRP Limit	Margin (dBm)
Modulation	Band width				LTE Power	Power (dBm/10MHz)	EIRP		
DFT-S-OFDM Pi/2 BPSK	LTE 20 + NR 20	FULL	136100	680.5	24.14	23.67	26.27	38.45	-12.18
DFT-S-OFDM QPSK	LTE 20 + NR 20	FULL	136100	680.5	24.08	23.49	26.09	38.45	-12.36
DFT-S-OFDM 16QAM	LTE 20 + NR 20	FULL	136100	680.5	24.07	23.19	25.79	38.45	-12.66
DFT-S-OFDM 64QAM	LTE 20 + NR 20	FULL	136100	680.5	23.7	23.20	25.80	38.45	-12.65
DFT-S-OFDM P256QAM	LTE 20 + NR 20	FULL	136100	680.5	24.22	22.64	25.24	38.45	-13.21
CP-OFDM QPSK	LTE 20 + NR 20	FULL	136100	680.5	24.23	23.59	26.19	38.45	-12.26
CP-OFDM 16QAM	LTE 20 + NR 20	FULL	136100	680.5	24.31	23.58	26.18	38.45	-12.27
CP-OFDM 64QAM	LTE 20 + NR 20	FULL	136100	680.5	24.19	**23.99**	26.59	38.45	-11.86
CP-OFDM 256QAM	LTE 20 + NR 20	FULL	136100	680.5	24.16	21.32	23.92	38.45	-14.53
CP-OFDM 64QAM	LTE 20 + NR 20	1RB Left	136100	680.5	24.08	20.09	22.69	38.45	-15.76
CP-OFDM 64QAM	LTE 20 + NR 20	1RB Right	136100	680.5	24.26	21.02	23.62	38.45	-14.83
CP-OFDM 64QAM	LTE 20 + NR 15	FULL	136100	680.5	24.21	20.81	23.41	38.45	-15.04
CP-OFDM 64QAM	LTE 20 + NR 15	FULL	136100	680.5	24.18	20.82	23.42	38.45	-15.03
CP-OFDM 64QAM	LTE 20 + NR 10	FULL	136100	680.5	24.12	20.66	23.26	38.45	-15.19
CP-OFDM 64QAM	LTE 20 + NR 5	FULL	136100	680.5	24.08	20.64	23.24	38.45	-15.21
CP-OFDM 64QAM	LTE 20 + NR 20	FULL	134600	673	24.24	20.25	22.85	38.45	-15.60
CP-OFDM 64QAM	LTE 20 + NR 20	FULL	137600	688	24.21	21.14	23.74	38.45	-14.71

Antenna Gain : 4

L5 + n2A		RB	NR Channel	Freq. (MHz)	NR			EIRP Limit	Margin (dBm)
Modulation	Band width				LTE Power	Power (dBm/10MHz)	EIRP		
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	FULL	376000	1880	22.72	23.17	27.17	33.00	-5.83
DFT-S-OFDM QPSK	LTE 10 + NR 20	FULL	376000	1880	22.8	23.14	27.14	33.00	-5.86
DFT-S-OFDM 16QAM	LTE 10 + NR 20	FULL	376000	1880	22.85	23.10	27.10	33.00	-5.90
DFT-S-OFDM 64QAM	LTE 10 + NR 20	FULL	376000	1880	22.79	**23.38**	27.38	33.00	-5.62
DFT-S-OFDM P256QAM	LTE 10 + NR 20	FULL	376000	1880	22.48	22.32	26.32	33.00	-6.68
CP-OFDM QPSK	LTE 10 + NR 20	FULL	376000	1880	22.52	23.03	27.03	33.00	-5.97
CP-OFDM 16QAM	LTE 10 + NR 20	FULL	376000	1880	22.49	22.22	26.22	33.00	-6.78
CP-OFDM 64QAM	LTE 10 + NR 20	FULL	376000	1880	22.64	22.84	26.84	33.00	-6.16
CP-OFDM 256QAM	LTE 10 + NR 20	FULL	376000	1880	22.6	20.34	24.34	33.00	-8.66
DFT-S-OFDM 64QAM	LTE 10 + NR 20	1RB Left	376000	1880	22.68	22.87	26.87	33.00	-6.13
DFT-S-OFDM 64QAM	LTE 10 + NR 20	1RB Right	376000	1880	22.8	22.84	26.84	33.00	-6.16
DFT-S-OFDM 64QAM	LTE 10 + NR 15	FULL	376000	1880	22.57	23.31	27.31	33.00	-5.69
DFT-S-OFDM 64QAM	LTE 10 + NR 10	FULL	376000	1880	22.64	23.19	27.19	33.00	-5.81
DFT-S-OFDM 64QAM	LTE 10 + NR 5	FULL	376000	1880	22.52	23.00	27.00	33.00	-6.00
DFT-S-OFDM 64QAM	LTE 10 + NR 20	FULL	372000	1860	22.81	21.41	25.41	33.00	-7.59
DFT-S-OFDM 64QAM	LTE 10 + NR 20	FULL	380000	1900	22.48	21.79	25.79	33.00	-7.21

Antenna Gain : 4.5

L5 + n66A		RB	NR Channel	Freq. (MHz)	NR			EIRP Limit	Margin (dBm)
Modulation	Band width				LTE Power	Power (dBm/10MHz)	EIRP		
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	FULL	351000	1755	23.56	19.24	23.74	30.00	-6.26
DFT-S-OFDM QPSK	LTE 10 + NR 20	FULL	351000	1755	23.51	19.23	23.73	30.00	-6.27
DFT-S-OFDM 16QAM	LTE 10 + NR 20	FULL	351000	1755	23.58	19.09	23.59	30.00	-6.41
DFT-S-OFDM 64QAM	LTE 10 + NR 20	FULL	351000	1755	23.62	19.16	23.66	30.00	-6.34
DFT-S-OFDM P256QAM	LTE 10 + NR 20	FULL	351000	1755	23.59	19.07	23.57	30.00	-6.43
CP-OFDM QPSK	LTE 10 + NR 20	FULL	351000	1755	23.58	18.97	23.47	30.00	-6.53
CP-OFDM 16QAM	LTE 10 + NR 20	FULL	351000	1755	23.6	18.98	23.48	30.00	-6.52
CP-OFDM 64QAM	LTE 10 + NR 20	FULL	351000	1755	23.54	19.07	23.57	30.00	-6.43
CP-OFDM 256QAM	LTE 10 + NR 20	FULL	351000	1755	23.5	18.20	22.70	30.00	-7.30
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	1RB Left	351000	1755	23.7	19.01	23.51	30.00	-6.49
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	1RB Right	351000	1755	23.67	**19.34**	23.84	30.00	-6.16
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 15	FULL	351000	1755	23.61	19.29	23.79	30.00	-6.21
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 10	FULL	351000	1755	23.54	19.19	23.69	30.00	-6.31
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 5	FULL	351000	1755	22.17	19.27	23.77	30.00	-6.23
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	FULL	344000	1720	23.69	18.69	23.19	30.00	-6.81
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	FULL	358000	1790	22.02	19.19	23.69	30.00	-6.31

Antenna Gain : 4

L12 + n2A		RB	NR Channel	Freq. (MHz)	NR			EIRP Limit	Margin (dBm)
Modulation	Band width				LTE Power	Power (dBm/10MHz)	EIRP		
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	FULL	376000	1880	21.55	**22.98**	26.98	33.00	-6.02
DFT-S-OFDM QPSK	LTE 10 + NR 20	FULL	376000	1880	21.52	22.96	26.96	33.00	-6.04
DFT-S-OFDM 16QAM	LTE 10 + NR 20	FULL	376000	1880	21.51	22.95	26.95	33.00	-6.05
DFT-S-OFDM 64QAM	LTE 10 + NR 20	FULL	376000	1880	21.49	22.51	26.51	33.00	-6.49
DFT-S-OFDM P256QAM	LTE 10 + NR 20	FULL	376000	1880	21.32	20.38	24.38	33.00	-8.62
CP-OFDM QPSK	LTE 10 + NR 20	FULL	376000	1880	21.56	21.40	25.40	33.00	-7.60
CP-OFDM 16QAM	LTE 10 + NR 20	FULL	376000	1880	21.47	21.45	25.45	33.00	-7.55
CP-OFDM 64QAM	LTE 10 + NR 20	FULL	376000	1880	21.39	21.03	25.03	33.00	-7.97
CP-OFDM 256QAM	LTE 10 + NR 20	FULL	376000	1880	21.42	18.53	22.53	33.00	-10.47
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	1RB Left	376000	1880	21.59	22.38	26.38	33.00	-6.62
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	1RB Right	376000	1880	21.57	21.36	25.36	33.00	-7.64
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 15	FULL	376000	1880	21.4	22.97	26.97	33.00	-6.03
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 10	FULL	376000	1880	21.51	22.78	26.78	33.00	-6.22
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 5	FULL	376000	1880	21.43	22.28	26.28	33.00	-6.72
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	FULL	372000	1860	21.34	20.59	24.59	33.00	-8.41
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	FULL	380000	1900	21.57	21.22	25.22	33.00	-7.78

Antenna Gain : 4.5

L12 + n66A		RB	NR Channel	Freq. (MHz)	NR			EIRP Limit	Margin (dBm)
Modulation	Band width				LTE Power	Power (dBm/10MHz)	EIRP		
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	FULL	351000	1755	23.83	21.54	26.04	30.00	-3.96
DFT-S-OFDM QPSK	LTE 10 + NR 20	FULL	351000	1755	23.74	21.60	26.10	30.00	-3.90
DFT-S-OFDM 16QAM	LTE 10 + NR 20	FULL	351000	1755	23.74	21.52	26.02	30.00	-3.98
DFT-S-OFDM 64QAM	LTE 10 + NR 20	FULL	351000	1755	23.84	20.93	25.43	30.00	-4.57
DFT-S-OFDM P256QAM	LTE 10 + NR 20	FULL	351000	1755	23.87	19.93	24.43	30.00	-5.57
CP-OFDM QPSK	LTE 10 + NR 20	FULL	351000	1755	23.74	20.71	25.21	30.00	-4.79
CP-OFDM 16QAM	LTE 10 + NR 20	FULL	351000	1755	23.76	20.69	25.19	30.00	-4.81
CP-OFDM 64QAM	LTE 10 + NR 20	FULL	351000	1755	23.91	20.33	24.83	30.00	-5.17
CP-OFDM 256QAM	LTE 10 + NR 20	FULL	351000	1755	23.94	19.01	23.51	30.00	-6.49
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	1RB Left	351000	1755	23.82	21.43	25.93	30.00	-4.07
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	1RB Right	351000	1755	23.86	**21.85**	26.35	30.00	-3.65
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 15	FULL	351000	1755	23.88	21.63	26.13	30.00	-3.87
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 10	FULL	351000	1755	23.86	21.59	26.09	30.00	-3.91
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 5	FULL	351000	1755	23.81	21.73	26.23	30.00	-3.77
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	FULL	344000	1720	23.76	21.31	25.81	30.00	-4.19
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	FULL	358000	1790	23.78	21.75	26.25	30.00	-3.75

Antenna Gain : 4.5

L13 + n66A		RB	NR Channel	Freq. (MHz)	NR			EIRP Limit	Margin (dBm)
Modulation	Band width				LTE Power	Power (dBm/10MHz)	EIRP		
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	FULL	351000	1755	23.86	21.51	26.01	30.00	-3.99
DFT-S-OFDM QPSK	LTE 10 + NR 20	FULL	351000	1755	23.78	21.49	25.99	30.00	-4.01
DFT-S-OFDM 16QAM	LTE 10 + NR 20	FULL	351000	1755	23.51	21.47	25.97	30.00	-4.03
DFT-S-OFDM 64QAM	LTE 10 + NR 20	FULL	351000	1755	23.81	21.32	25.82	30.00	-4.18
DFT-S-OFDM P256QAM	LTE 10 + NR 20	FULL	351000	1755	23.83	19.95	24.45	30.00	-5.55
CP-OFDM QPSK	LTE 10 + NR 20	FULL	351000	1755	23.85	20.72	25.22	30.00	-4.78
CP-OFDM 16QAM	LTE 10 + NR 20	FULL	351000	1755	23.86	20.71	25.21	30.00	-4.79
CP-OFDM 64QAM	LTE 10 + NR 20	FULL	351000	1755	23.81	20.30	24.80	30.00	-5.20
CP-OFDM 256QAM	LTE 10 + NR 20	FULL	351000	1755	23.7	18.05	22.55	30.00	-7.45
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	1RB Left	351000	1755	23.81	21.43	25.93	30.00	-4.07
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	1RB Right	351000	1755	23.98	21.74	26.24	30.00	-3.76
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 15	FULL	351000	1755	23.75	21.61	26.11	30.00	-3.89
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 10	FULL	351000	1755	23.81	21.55	26.05	30.00	-3.95
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 5	FULL	351000	1755	23.71	21.67	26.17	30.00	-3.83
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	FULL	344000	1720	23.96	21.14	25.64	30.00	-4.36
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	FULL	358000	1790	23.45	**22.03**	26.53	30.00	-3.47

Antenna Gain : 3.4

L25 + n41A		RB	NR Channel	Freq. (MHz)	NR			EIRP Limit	Margin (dBm)
Modulation	Band width				LTE Power	Power (dBm/10MHz)	EIRP		
DFT-S-OFDM Pi/2 BPSK	LTE 20 + NR 100	FULL	509202	2546.01	22.1	20.48	23.88	33	-9.12
DFT-S-OFDM QPSK	LTE 20 + NR 100	FULL	518598	2592.99	21.92	20.57	23.97	33	-9.03
DFT-S-OFDM 16QAM	LTE 20 + NR 100	FULL	518598	2592.99	21.82	20.54	23.94	33	-9.06
DFT-S-OFDM 64QAM	LTE 20 + NR 100	FULL	518598	2592.99	21.79	20.56	23.96	33	-9.04
DFT-S-OFDM P256QAM	LTE 20 + NR 100	FULL	518598	2592.99	21.87	20.51	23.91	33	-9.09
CP-OFDM QPSK	LTE 20 + NR 100	FULL	518598	2592.99	22.06	20.45	23.85	33	-9.15
CP-OFDM 16QAM	LTE 20 + NR 100	FULL	518598	2592.99	21.93	20.54	23.94	33	-9.06
CP-OFDM 64QAM	LTE 20 + NR 100	FULL	518598	2592.99	22.04	20.51	23.91	33	-9.09
CP-OFDM 256QAM	LTE 20 + NR 100	FULL	518598	2592.99	22.32	18.42	21.82	33	-11.18
DFT-S-OFDM QPSK	LTE 20 + NR 100	1RB Left	518598	2592.99	21.87	18.57	21.97	33	-11.03
DFT-S-OFDM QPSK	LTE 20 + NR 100	1RB Right	518598	2592.99	21.8	19.50	22.90	33	-10.10
DFT-S-OFDM QPSK	LTE 20 + NR 90	FULL	518598	2592.99	21.67	**21.67**	25.07	33	-7.93
DFT-S-OFDM QPSK	LTE 20 + NR 80	FULL	518598	2592.99	22.13	20.03	23.43	33	-9.57
DFT-S-OFDM QPSK	LTE 20 + NR 60	FULL	518598	2592.99	22.52	20.40	23.80	33	-9.20
DFT-S-OFDM QPSK	LTE 20 + NR 50	FULL	518598	2592.99	21.79	20.49	23.89	33	-9.11
DFT-S-OFDM QPSK	LTE 20 + NR 40	FULL	518598	2592.99	22.42	20.62	24.02	33	-8.98
DFT-S-OFDM QPSK	LTE 20 + NR 20	FULL	518598	2592.99	22.19	20.44	23.84	33	-9.16
DFT-S-OFDM QPSK	LTE 20 + NR 90	FULL	509202	2546.01	22.7	20.29	23.69	33	-9.31
DFT-S-OFDM QPSK	LTE 20 + NR 90	FULL	528000	2640	22.41	20.34	23.74	33	-9.26

Antenna Gain : 3.4

L26 + n41A		RB	NR Channel	Freq. (MHz)	NR			EIRP Limit	Margin (dBm)
Modulation	Band width				LTE Power	Power (dBm/10MHz)	EIRP		
DFT-S-OFDM Pi/2 BPSK	LTE 15+ NR 100	FULL	509202	2546.01	21.72	21.68	25.08	33	-7.92
DFT-S-OFDM QPSK	LTE 15+ NR 100	FULL	518598	2592.99	21.22	21.69	25.09	33	-7.91
DFT-S-OFDM 16QAM	LTE 15+ NR 100	FULL	518598	2592.99	21.6	21.70	25.10	33	-7.90
DFT-S-OFDM 64QAM	LTE 15+ NR 100	FULL	518598	2592.99	21.54	21.72	25.12	33	-7.88
DFT-S-OFDM P256QAM	LTE 15+ NR 100	FULL	518598	2592.99	21.4	21.74	25.14	33	-7.86
CP-OFDM QPSK	LTE 15+ NR 100	FULL	518598	2592.99	21.57	21.76	25.16	33	-7.84
CP-OFDM 16QAM	LTE 15+ NR 100	FULL	518598	2592.99	21.67	**21.78**	25.18	33	-7.82
CP-OFDM 64QAM	LTE 15+ NR 100	FULL	518598	2592.99	21.61	21.68	25.08	33	-7.92
CP-OFDM 256QAM	LTE 15+ NR 100	FULL	518598	2592.99	21.55	19.41	22.81	33	-10.19
CP-OFDM 16QAM	LTE 15+ NR 100	1RB Left	518598	2592.99	21.62	19.59	22.99	33	-10.01
CP-OFDM 16QAM	LTE 15+ NR 100	1RB Right	518598	2592.99	21.43	19.84	23.24	33	-9.76
CP-OFDM 16QAM	LTE 15 + NR 90	FULL	518598	2592.99	21.79	21.55	24.95	33	-8.05
CP-OFDM 16QAM	LTE 15 + NR 80	FULL	518598	2592.99	21.62	21.54	24.94	33	-8.06
CP-OFDM 16QAM	LTE 15 + NR 60	FULL	518598	2592.99	21.94	21.46	24.86	33	-8.14
CP-OFDM 16QAM	LTE 15 + NR 50	FULL	518598	2592.99	22.01	21.38	24.78	33	-8.22
CP-OFDM 16QAM	LTE 15 + NR 40	FULL	518598	2592.99	21.94	21.45	24.85	33	-8.15
CP-OFDM 16QAM	LTE 15 + NR 20	FULL	518598	2592.99	21.63	21.64	25.04	33	-7.96
CP-OFDM 16QAM	LTE 15 + NR 90	FULL	509202	2546.01	21.85	21.49	24.89	33	-8.11
CP-OFDM 16QAM	LTE 15 + NR 90	FULL	528000	2640	21.81	21.41	24.81	33	-8.19

Antenna Gain : 2.9

L30 + n5A		RB	NR Channel	Freq. (MHz)	NR			EIRP Limit	Margin (dBm)
Modulation	Band width				LTE Power	Power (dBm/10MHz)	EIRP		
DFT-S-OFDM Pi/2 BPSK	LTE 10 + NR 20	FULL	167300	836.5	24.3	18.09	20.99	38.45	-17.46
DFT-S-OFDM QPSK	LTE 10 + NR 20	FULL	167300	836.5	24.21	18.12	21.02	38.45	-17.43
DFT-S-OFDM 16QAM	LTE 10 + NR 20	FULL	167300	836.5	24.32	**18.35**	21.25	38.45	-17.20
DFT-S-OFDM 64QAM	LTE 10 + NR 20	FULL	167300	836.5	24.26	18.17	21.07	38.45	-17.38
DFT-S-OFDM P256QAM	LTE 10 + NR 20	FULL	167300	836.5	24.21	18.09	20.99	38.45	-17.46
CP-OFDM QPSK	LTE 10 + NR 20	FULL	167300	836.5	24.24	18.10	21.00	38.45	-17.45
CP-OFDM 16QAM	LTE 10 + NR 20	FULL	167300	836.5	24.18	18.05	20.95	38.45	-17.50
CP-OFDM 64QAM	LTE 10 + NR 20	FULL	167300	836.5	24.26	18.15	21.05	38.45	-17.40
CP-OFDM 256QAM	LTE 10 + NR 20	FULL	167300	836.5	24.14	18.16	21.06	38.45	-17.39
DFT-S-OFDM 16QAM	LTE 10 + NR 20	1RB Left	167300	836.5	24.32	18.30	21.20	38.45	-17.25
DFT-S-OFDM 16QAM	LTE 10 + NR 20	1RB Right	167300	836.5	24.3	17.91	20.81	38.45	-17.64
DFT-S-OFDM 16QAM	LTE 10 + NR 15	FULL	167300	836.5	24.22	18.14	21.04	38.45	-17.41
DFT-S-OFDM 16QAM	LTE 10 + NR 10	FULL	167300	836.5	24.3	18.02	20.92	38.45	-17.53
DFT-S-OFDM 16QAM	LTE 10 + NR 5	FULL	167300	836.5	24.2	18.20	21.10	38.45	-17.35
DFT-S-OFDM 16QAM	LTE 10 + NR 20	FULL	166800	834	20.3	18.26	21.16	38.45	-17.29
DFT-S-OFDM 16QAM	LTE 10 + NR 20	FULL	167800	839	24.1	18.31	21.21	38.45	-17.24

Antenna Gain : 2.9

L48 + n5A		RB	NR Channel	Freq. (MHz)	NR			EIRP Limit	Margin (dBm)
Modulation	Band width				LTE Power	Power (dBm/10MHz)	EIRP		
DFT-S-OFDM Pi/2 BPSK	LTE 20 + NR 20	FULL	167300	836.5	20.95	23.13	26.03	38.45	-12.42
DFT-S-OFDM QPSK	LTE 20 + NR 20	FULL	167300	836.5	20.96	23.88	26.78	38.45	-11.67
DFT-S-OFDM 16QAM	LTE 20 + NR 20	FULL	167300	836.5	20.94	**24.81**	27.71	38.45	-10.74
DFT-S-OFDM 64QAM	LTE 20 + NR 20	FULL	167300	836.5	20.98	24.33	27.23	38.45	-11.22
DFT-S-OFDM P256QAM	LTE 20 + NR 20	FULL	167300	836.5	21.01	22.34	25.24	38.45	-13.21
CP-OFDM QPSK	LTE 20 + NR 20	FULL	167300	836.5	20.97	23.67	26.57	38.45	-11.88
CP-OFDM 16QAM	LTE 20 + NR 20	FULL	167300	836.5	20.94	23.89	26.79	38.45	-11.66
CP-OFDM 64QAM	LTE 20 + NR 20	FULL	167300	836.5	20.99	23.26	26.16	38.45	-12.29
CP-OFDM 256QAM	LTE 20 + NR 20	FULL	167300	836.5	20.95	20.36	23.26	38.45	-15.19
DFT-S-OFDM 16QAM	LTE 20 + NR 20	1RB Left	167300	836.5	20.95	24.03	26.93	38.45	-11.52
DFT-S-OFDM 16QAM	LTE 20 + NR 20	1RB Right	167300	836.5	20.95	23.76	26.66	38.45	-11.79
DFT-S-OFDM 16QAM	LTE 20 + NR 15	FULL	167300	836.5	20.99	24.75	27.65	38.45	-10.80
DFT-S-OFDM 16QAM	LTE 20 + NR 10	FULL	167300	836.5	20.97	24.64	27.54	38.45	-10.91
DFT-S-OFDM 16QAM	LTE 20 + NR 5	FULL	167300	836.5	20.96	24.17	27.07	38.45	-11.38
DFT-S-OFDM 16QAM	LTE 20 + NR 15	FULL	166800	834	20.81	24.75	27.65	38.45	-10.80
DFT-S-OFDM 16QAM	LTE 20 + NR 15	FULL	167800	839	20.93	24.75	27.65	38.45	-10.80

Antenna Gain : 4.5

L48 + n66A		RB	NR Channel	Freq. (MHz)	NR			EIRP Limit	Margin (dBm)
Modulation	Band width				LTE Power	Power (dBm/10MHz)	EIRP		
DFT-S-OFDM Pi/2 BPSK	LTE 20 + NR 20	FULL	351000	1755	23.91	**23.49**	27.99	30.00	-2.01
DFT-S-OFDM QPSK	LTE 20 + NR 20	FULL	351000	1755	23.84	22.56	27.06	30.00	-2.94
DFT-S-OFDM 16QAM	LTE 20 + NR 20	FULL	351000	1755	23.75	21.87	26.37	30.00	-3.63
DFT-S-OFDM 64QAM	LTE 20 + NR 20	FULL	351000	1755	23.79	21.33	25.83	30.00	-4.17
DFT-S-OFDM P256QAM	LTE 20 + NR 20	FULL	351000	1755	23.73	19.98	24.48	30.00	-5.52
CP-OFDM QPSK	LTE 20 + NR 20	FULL	351000	1755	23.66	20.78	25.28	30.00	-4.72
CP-OFDM 16QAM	LTE 20 + NR 20	FULL	351000	1755	23.78	20.78	25.28	30.00	-4.72
CP-OFDM 64QAM	LTE 20 + NR 20	FULL	351000	1755	23.68	20.37	24.87	30.00	-5.13
CP-OFDM 256QAM	LTE 20 + NR 20	FULL	351000	1755	23.84	18.03	22.53	30.00	-7.47
DFT-S-OFDM Pi/2 BPSK	LTE 20 + NR 20	1RB Left	351000	1755	23.76	22.69	27.19	30.00	-2.81
DFT-S-OFDM Pi/2 BPSK	LTE 20 + NR 20	1RB Right	351000	1755	23.86	23.24	27.74	30.00	-2.26
DFT-S-OFDM Pi/2 BPSK	LTE 20 + NR 15	FULL	351000	1755	23.84	23.38	27.88	30.00	-2.12
DFT-S-OFDM Pi/2 BPSK	LTE 20 + NR 10	FULL	351000	1755	23.78	21.52	26.02	30.00	-3.98
DFT-S-OFDM Pi/2 BPSK	LTE 20 + NR 5	FULL	351000	1755	23.41	22.78	27.28	30.00	-2.72
DFT-S-OFDM Pi/2 BPSK	LTE 20 + NR 20	FULL	344000	1720	23.91	21.23	25.73	30.00	-4.27
DFT-S-OFDM Pi/2 BPSK	LTE 20 + NR 20	FULL	358000	1790	24.17	23.41	27.91	30.00	-2.09

Antenna Gain : 2.9

L66 + n5A		RB	NR Channel	Freq. (MHz)	NR			EIRP Limit	Margin (dBm)
Modulation	Band width				LTE Power	Power (dBm/10MHz)	EIRP		
DFT-S-OFDM Pi/2 BPSK	LTE 20 + NR 20	FULL	167300	836.5	20.65	21.40	24.30	38.45	-14.15
DFT-S-OFDM QPSK	LTE 20 + NR 20	FULL	167300	836.5	20.63	23.82	26.72	38.45	-11.73
DFT-S-OFDM 16QAM	LTE 20 + NR 20	FULL	167300	836.5	20.79	**24.89**	27.79	38.45	-10.66
DFT-S-OFDM 64QAM	LTE 20 + NR 20	FULL	167300	836.5	20.63	24.35	27.25	38.45	-11.20
DFT-S-OFDM P256QAM	LTE 20 + NR 20	FULL	167300	836.5	20.64	22.33	25.23	38.45	-13.22
CP-OFDM QPSK	LTE 20 + NR 20	FULL	167300	836.5	20.6	23.71	26.61	38.45	-11.84
CP-OFDM 16QAM	LTE 20 + NR 20	FULL	167300	836.5	20.62	23.68	26.58	38.45	-11.87
CP-OFDM 64QAM	LTE 20 + NR 20	FULL	167300	836.5	20.63	23.24	26.14	38.45	-12.31
CP-OFDM 256QAM	LTE 20 + NR 20	FULL	167300	836.5	20.7	20.41	23.31	38.45	-15.14
DFT-S-OFDM 16QAM	LTE 20 + NR 20	1RB Left	167300	836.5	20.66	24.84	27.74	38.45	-10.71
DFT-S-OFDM 16QAM	LTE 20 + NR 20	1RB Right	167300	836.5	20.69	23.52	26.42	38.45	-12.03
DFT-S-OFDM 16QAM	LTE 20 + NR 15	FULL	167300	836.5	20.65	23.55	26.45	38.45	-12.00
DFT-S-OFDM 16QAM	LTE 20 + NR 10	FULL	167300	836.5	20.72	23.31	26.21	38.45	-12.24
DFT-S-OFDM 16QAM	LTE 20 + NR 5	FULL	167300	836.5	20.7	22.80	25.70	38.45	-12.75
DFT-S-OFDM 16QAM	LTE 20 + NR 20	FULL	166800	834	20.66	24.74	27.64	38.45	-10.81
DFT-S-OFDM 16QAM	LTE 20 + NR 20	FULL	167800	839	20.65	24.56	27.46	38.45	-10.99

Antenna Gain : 3.4

L66 + n41A		RB	NR Channel	Freq. (MHz)	NR			EIRP Limit	Margin (dBm)
Modulation	Band width				LTE Power	Power (dBm/10MHz)	EIRP		
DFT-S-OFDM Pi/2 BPSK	LTE 20 + NR 100	FULL	509202	2546.01	22.19	20.22	23.62	33	-9.38
DFT-S-OFDM QPSK	LTE 20 + NR 100	FULL	518598	2592.99	22.04	19.89	23.29	33	-9.71
DFT-S-OFDM 16QAM	LTE 20 + NR 100	FULL	518598	2592.99	21.79	20.41	23.81	33	-9.19
DFT-S-OFDM 64QAM	LTE 20 + NR 100	FULL	518598	2592.99	21.84	20.51	23.91	33	-9.09
DFT-S-OFDM P256QAM	LTE 20 + NR 100	FULL	518598	2592.99	21.73	20.24	23.64	33	-9.36
CP-OFDM QPSK	LTE 20 + NR 100	FULL	518598	2592.99	21.89	20.12	23.52	33	-9.48
CP-OFDM 16QAM	LTE 20 + NR 100	FULL	518598	2592.99	22.05	19.74	23.14	33	-9.86
CP-OFDM 64QAM	LTE 20 + NR 100	FULL	518598	2592.99	21.88	20.06	23.46	33	-9.54
CP-OFDM 256QAM	LTE 20 + NR 100	FULL	518598	2592.99	22.19	17.84	21.24	33	-11.76
DFT-S-OFDM 64QAM	LTE 20 + NR 100	1RB Left	518598	2592.99	22.1	18.04	21.44	33	-11.56
DFT-S-OFDM 64QAM	LTE 20 + NR 100	1RB Right	518598	2592.99	22.17	18.67	22.07	33	-10.93
DFT-S-OFDM 64QAM	LTE 20 + NR 90	FULL	518598	2592.99	22.23	19.81	23.21	33	-9.79
DFT-S-OFDM 64QAM	LTE 20 + NR 80	FULL	518598	2592.99	21.84	20.40	23.80	33	-9.20
DFT-S-OFDM 64QAM	LTE 20 + NR 60	FULL	518598	2592.99	21.8	20.52	23.92	33	-9.08
DFT-S-OFDM 64QAM	LTE 20 + NR 50	FULL	518598	2592.99	22.12	19.74	23.14	33	-9.86
DFT-S-OFDM 64QAM	LTE 20 + NR 40	FULL	518598	2592.99	21.91	20.32	23.72	33	-9.28
DFT-S-OFDM 64QAM	LTE 20 + NR 20	FULL	518598	2592.99	21.83	20.47	23.87	33	-9.13
DFT-S-OFDM 64QAM	LTE 20 + NR 100	FULL	509202	2546.01	21.97	20.13	23.53	33	-9.47
DFT-S-OFDM 64QAM	LTE 20 + NR 100	FULL	528000	2640	21.7	**20.62**	24.02	33	-8.98

Antenna Gain : 2.6

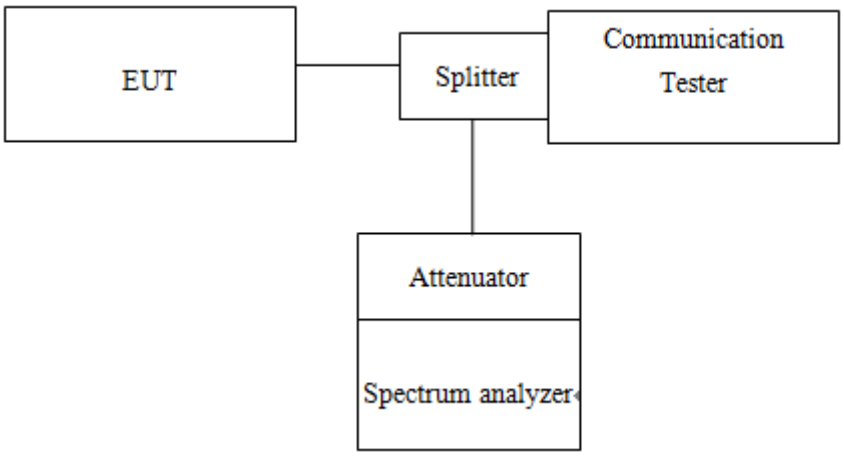
L66 + n71A		RB	NR Channel	Freq. (MHz)	NR			EIRP Limit	Margin (dBm)
Modulation	Band width				LTE Power	Power (dBm/10MHz)	EIRP		
DFT-S-OFDM Pi/2 BPSK	LTE 20 + NR 20	FULL	136100	680.5	24.81	23.74	26.34	38.45	-12.11
DFT-S-OFDM QPSK	LTE 20 + NR 20	FULL	136100	680.5	24.67	23.47	26.07	38.45	-12.38
DFT-S-OFDM 16QAM	LTE 20 + NR 20	FULL	136100	680.5	24.66	23.17	25.77	38.45	-12.68
DFT-S-OFDM 64QAM	LTE 20 + NR 20	FULL	136100	680.5	24.67	23.14	25.74	38.45	-12.68
DFT-S-OFDM P256QAM	LTE 20 + NR 20	FULL	136100	680.5	24.91	22.65	25.25	38.45	-12.71
CP-OFDM QPSK	LTE 20 + NR 20	FULL	136100	680.5	24.98	24.07	26.67	38.45	-13.20
CP-OFDM 16QAM	LTE 20 + NR 20	FULL	136100	680.5	24.99	24.12	26.72	38.45	-11.78
CP-OFDM 64QAM	LTE 20 + NR 20	FULL	136100	680.5	24.93	**24.29**	26.89	38.45	-11.73
CP-OFDM 256QAM	LTE 20 + NR 20	FULL	136100	680.5	24.85	21.33	23.93	38.45	-11.56
CP-OFDM 64QAM	LTE 20 + NR 20	1RB Left	136100	680.5	24.91	21.93	24.53	38.45	-14.52
CP-OFDM 64QAM	LTE 20 + NR 20	1RB Right	136100	680.5	24.72	21.82	24.42	38.45	-13.92
CP-OFDM 64QAM	LTE 20 + NR 20	FULL	136100	680.5	24.66	21.72	24.32	38.45	-14.03
CP-OFDM 64QAM	LTE 20 + NR 15	FULL	136100	680.5	24.77	22.60	25.20	38.45	-14.13
CP-OFDM 64QAM	LTE 20 + NR 10	FULL	136100	680.5	24.88	22.43	25.03	38.45	-13.25
CP-OFDM 64QAM	LTE 20 + NR 5	FULL	136100	680.5	24.99	21.87	24.47	38.45	-13.42
CP-OFDM 64QAM	LTE 20 + NR 20	FULL	134600	673	24.78	22.19	24.79	38.45	-13.98
CP-OFDM 64QAM	LTE 20 + NR 20	FULL	137600	688	25.27	22.75	25.35	38.45	-13.66

7 OCCUPIED BANDWIDTH MEASUREMENT

7.1 Standard Applicable

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power.

7.2 Test Set-up



7.3 Measurement Procedure

99% &26dB Bandwidth with detector peak

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW was set to about 1% of emission BW, VBW= 3 times RBW, -26dBc display line was placed on the screen (or 26dB bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace. Then set RBW to 99% bandwidth, RBW= 1%, VBW= 3 RBW, with span > 2 * Signal BW, set % Power = 99%.

7.4 Measurement Equipment Used

Conducted Emission (measured at antenna port) Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	KEYSIGHT	N9010A	MY51440113	07/15/2019	07/14/2020
UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY59321566	12/17/2019	12/16/2020
DC Block	PASTERNACK	PE8210	RF32	11/20/2019	11/19/2020
Splitter	Woken	DOM35LW1A2	RF83	11/20/2019	11/19/2020
Splitter	Woken	DOM35LW1E1	RF01	11/20/2019	11/19/2020
Coaxial Cables	Woken	00100A1F1A185C	RF229	11/20/2019	11/19/2020
Coaxial Cables	Woken	00100A1F1A185C	RF230	11/20/2019	11/19/2020
Coaxial Cables	Woken	00100A1F1A185C	RF231	11/20/2019	11/19/2020

7.5 Measurement Result

Each bandwidth has been evaluated with the modulation that generated highest output power.

n2A		Channel	Freq. (MHz)	OBW	
Modulation	Band width			26dB(MHz)	99%(MHz)
DFT-S-OFDM Pi/2 BPSK	NR 20	376000	1880	18.98	17.869
DFT-S-OFDM QPSK	NR 20	376000	1880	19	17.875
DFT-S-OFDM 16QAM	NR 20	376000	1880	19.08	17.943
DFT-S-OFDM 64QAM	NR 20	376000	1880	20.22	18.974
DFT-S-OFDM 256QAM	NR 20	376000	1880	19.08	17.91
CP-OFDM QPSK	NR 20	376000	1880	20.17	19.001
CP-OFDM 16QAM	NR 20	376000	1880	20.15	19.032
CP-OFDM 64QAM	NR 20	376000	1880	20.14	18.989
CP-OFDM 256QAM	NR 20	376000	1880	20.18	18.966
DFT-S-OFDM 64QAM	NR 15	376000	1880	14.74	13.462
DFT-S-OFDM 64QAM	NR 10	376000	1880	10.3	8.9918
DFT-S-OFDM 64QAM	NR 20	376000	1880	4.921	4.5561
DFT-S-OFDM 64QAM	NR 5	372000	1860	19.01	17.855
DFT-S-OFDM 64QAM	NR 20	380000	1900	19.07	17.889

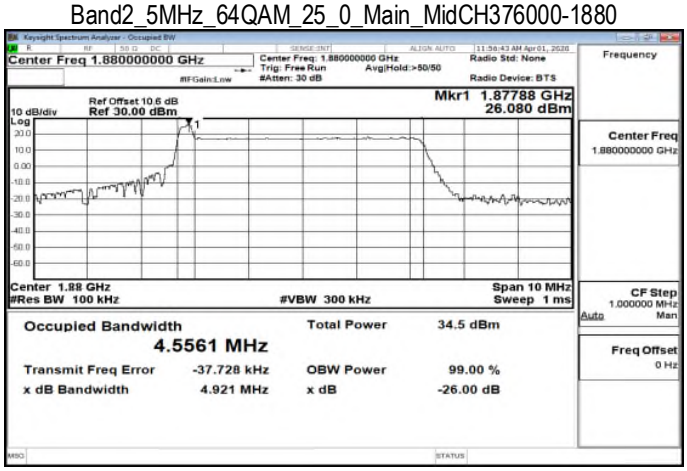
n5A		Channel	Freq. (MHz)	OBW	
Modulation	Band width			26dB(MHz)	99%(MHz)
DFT-S-OFDM Pi/2 BPSK	NR 20	167300	836.5	19.06	17.993
DFT-S-OFDM QPSK	NR 20	167300	836.5	19.07	17.985
DFT-S-OFDM 16QAM	NR 20	167300	836.5	18.99	17.9
DFT-S-OFDM 64QAM	NR 20	167300	836.5	19.09	17.836
DFT-S-OFDM 256QAM	NR 20	167300	836.5	19.04	17.864
CP-OFDM QPSK	NR 20	167300	836.5	20.08	18.94
CP-OFDM 16QAM	NR 20	167300	836.5	20.14	18.98
CP-OFDM 64QAM	NR 20	167300	836.5	20.08	18.95
CP-OFDM 256QAM	NR 20	167300	836.5	20.15	18.914
DFT-S-OFDM 16QAM	NR 15	167300	836.5	15.1	14.136
DFT-S-OFDM 16QAM	NR 10	167300	836.5	10.1	9.3556
DFT-S-OFDM 16QAM	NR 20	167300	836.5	4.815	4.5461
DFT-S-OFDM 16QAM	NR 5	166800	824.46	18.98	17.925
DFT-S-OFDM 16QAM	NR 20	167800	828.38	19.05	17.881

n41A		Channel	Freq. (MHz)	OBW	
Modulation	Band width			26dB(MHz)	99%(MHz)
DFT-S-OFDM Pi/2 BPSK	NR 100	518598	2592.99	99.45	95.993
DFT-S-OFDM QPSK	NR 100	518598	2592.99	112.9	96.163
DFT-S-OFDM 16QAM	NR 100	518598	2592.99	116.7	96.21
DFT-S-OFDM 64QAM	NR 100	518598	2592.99	124.9	96.442
DFT-S-OFDM 256QAM	NR 100	518598	2592.99	99.62	96.061
CP-OFDM QPSK	NR 100	518598	2592.99	171.5	97.657
CP-OFDM 16QAM	NR 100	518598	2592.99	150.8	97.695
CP-OFDM 64QAM	NR 100	518598	2592.99	127.5	97.493
CP-OFDM 256QAM	NR 100	518598	2592.99	100.6	97.23
CP-OFDM 16QAM	NR 90	518598	2592.99	143.2	87.438
CP-OFDM 16QAM	NR 80	518598	2592.99	117.8	77.583
CP-OFDM 16QAM	NR 60	518598	2592.99	67.65	57.848
CP-OFDM 16QAM	NR 50	518598	2592.99	58.84	47.607
CP-OFDM 16QAM	NR 40	518598	2592.99	43.28	37.932
CP-OFDM 16QAM	NR 20	518598	2592.99	24.59	18.276
CP-OFDM 16QAM	NR 100	509202	2546.01	100.9	97.192
CP-OFDM 16QAM	NR 100	528000	2640	108.8	97.514

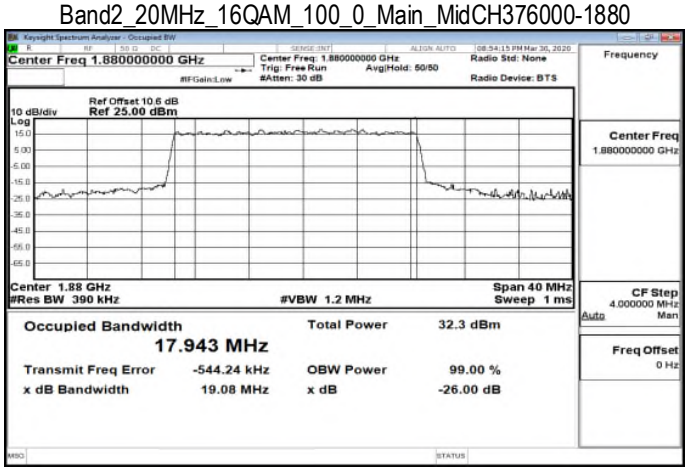
n66A		Channel	Freq. (MHz)	OBW	
Modulation	Band width			26dB(MHz)	99%(MHz)
DFT-S-OFDM Pi/2 BPSK	NR 20	349000	1644.74	19.19	17.944
DFT-S-OFDM QPSK	NR 20	349000	1644.74	19.22	17.954
DFT-S-OFDM 16QAM	NR 20	349000	1644.74	19.17	17.909
DFT-S-OFDM 64QAM	NR 20	349000	1644.74	19.16	17.926
DFT-S-OFDM 256QAM	NR 20	349000	1644.74	19.07	17.942
CP-OFDM QPSK	NR 20	349000	1644.74	19.11	17.913
CP-OFDM 16QAM	NR 20	349000	1644.74	19.09	17.974
CP-OFDM 64QAM	NR 20	349000	1644.74	19.12	17.968
CP-OFDM 256QAM	NR 20	349000	1644.74	19.07	17.933
DFT-S-OFDM Pi/2 BPSK	NR 15	349000	1644.74	14.39	13.47
DFT-S-OFDM Pi/2 BPSK	NR 10	349000	1644.74	10.08	8.9821
DFT-S-OFDM Pi/2 BPSK	NR 20	349000	1644.74	4.837	4.5554
DFT-S-OFDM Pi/2 BPSK	NR 5	344000	1710.46	19.11	17.935
DFT-S-OFDM Pi/2 BPSK	NR 20	354000	1759.38	19.12	17.914

n71A		Channel	Freq. (MHz)	OBW	
Modulation	Band width			26dB(MHz)	99%(MHz)
DFT-S-OFDM Pi/2 BPSK	NR 20	136100	680.5	19.11	17.901
DFT-S-OFDM QPSK	NR 20	136100	680.5	18.98	17.902
DFT-S-OFDM 16QAM	NR 20	136100	680.5	18.92	17.953
DFT-S-OFDM 64QAM	NR 20	136100	680.5	19.04	17.843
DFT-S-OFDM 256QAM	NR 20	136100	680.5	19.04	17.851
CP-OFDM QPSK	NR 20	136100	680.5	20.06	18.937
CP-OFDM 16QAM	NR 20	136100	680.5	20.09	19.005
CP-OFDM 64QAM	NR 20	136100	680.5	20.13	19.002
CP-OFDM 256QAM	NR 20	136100	680.5	20.02	18.91
CP-OFDM 64QAM	NR 15	136100	680.5	15.13	14.177
CP-OFDM 64QAM	NR 10	136100	680.5	10.09	9.2998
CP-OFDM 64QAM	NR 20	136100	680.5	4.92	4.5543
CP-OFDM 64QAM	NR 5	134600	663.46	20.07	18.934
CP-OFDM 64QAM	NR 20	137600	677.38	20.04	18.961

Band2_5MHz_64QAM_25_0_Main_MidCH376000-1880



Band2_20MHz_16QAM_100_0_Main_MidCH376000-1880



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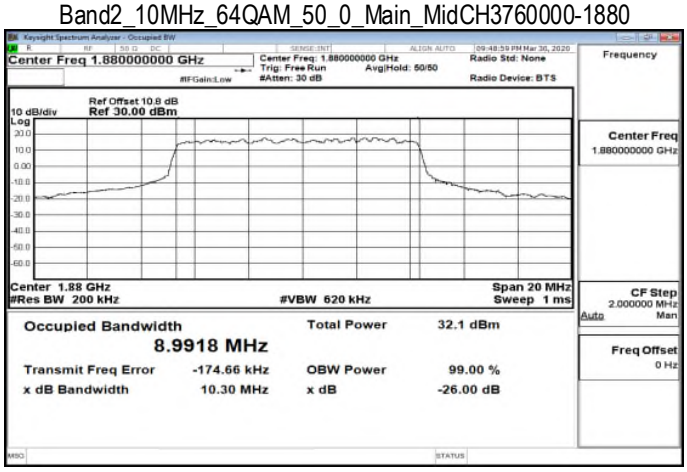

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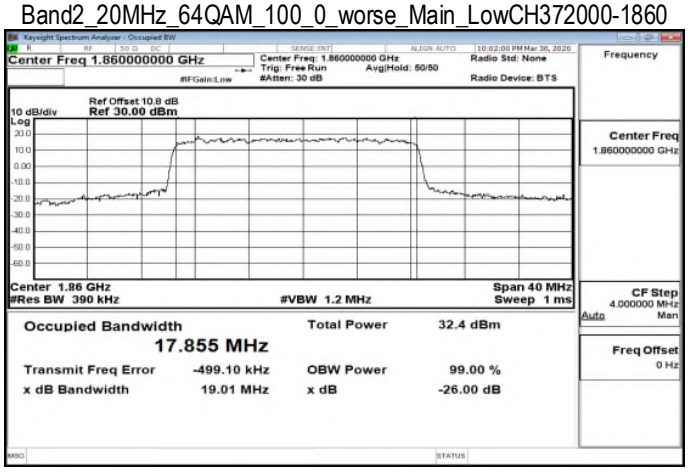
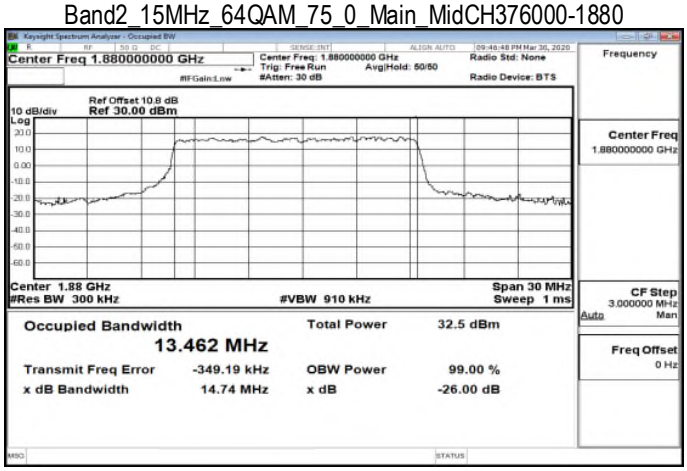
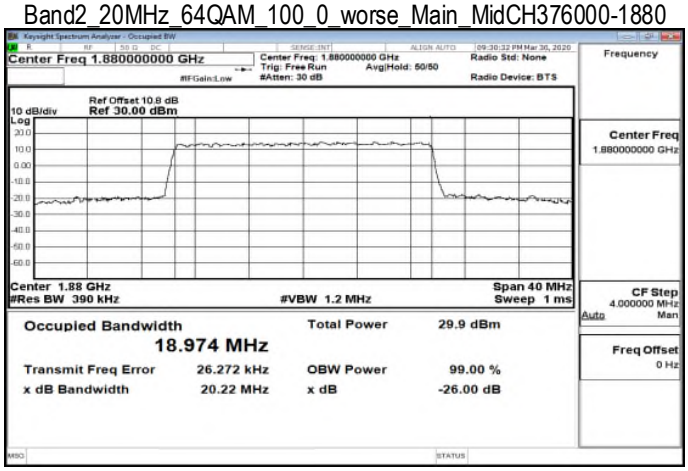


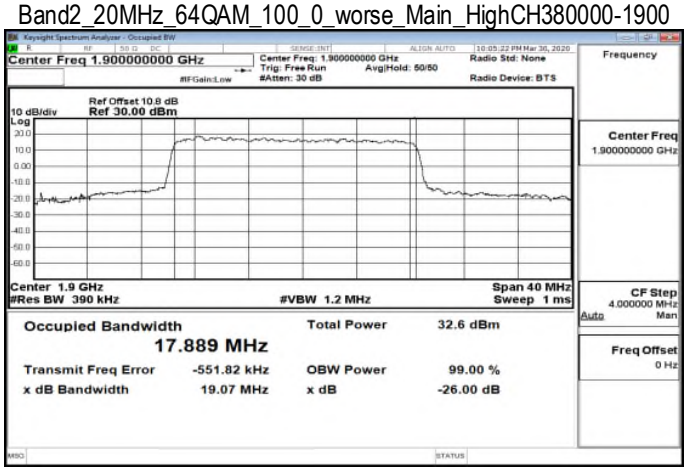
Band2_15MHz_64QAM_75_0_Main_MidCH376000-1880



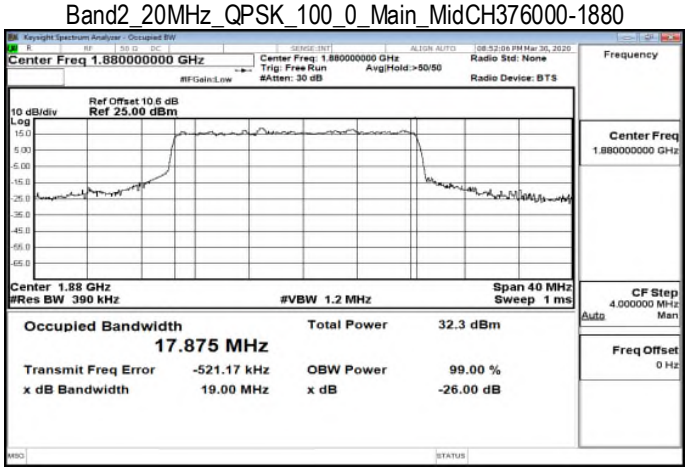
Band2_20MHz_64QAM_100_0_worse_Main_MidCH376000-1880



Band2_20MHz_64QAM_100_0_worse_Main_HighCH380000-1900



Band2_20MHz_QPSK_100_0_Main_MidCH376000-1880



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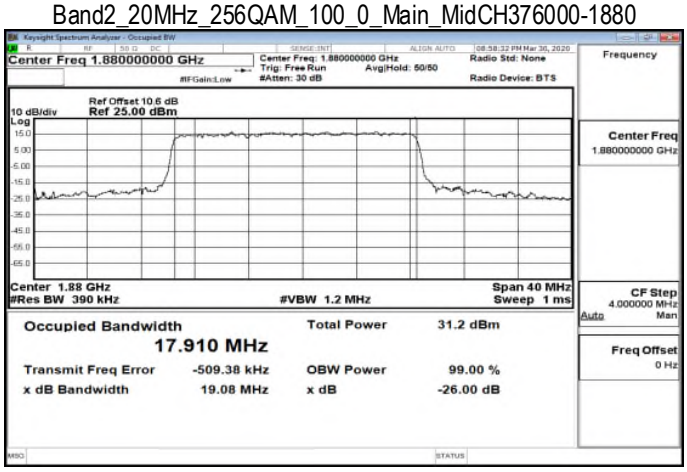
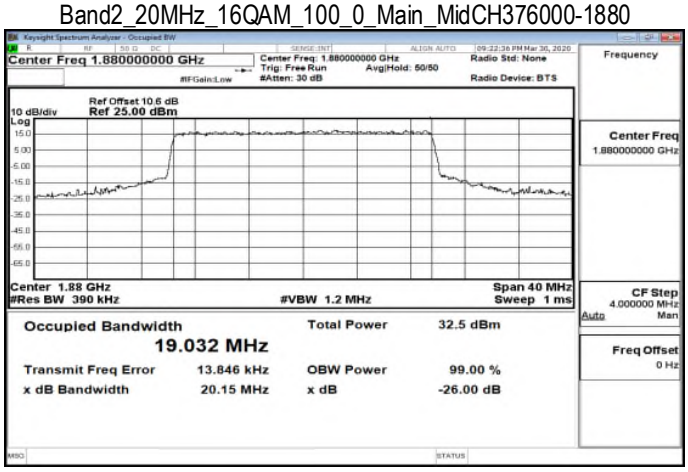
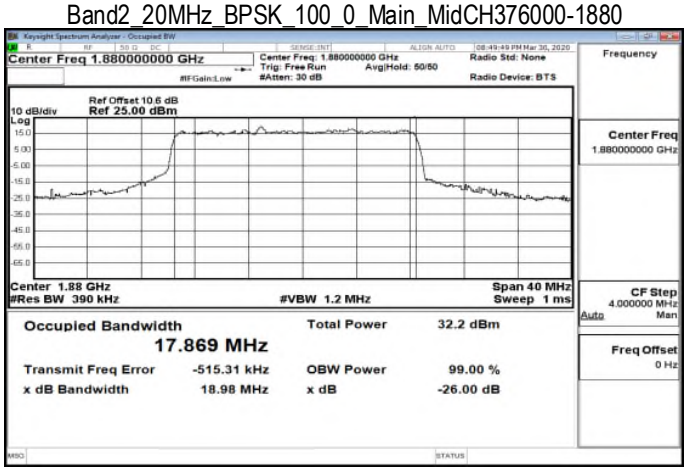


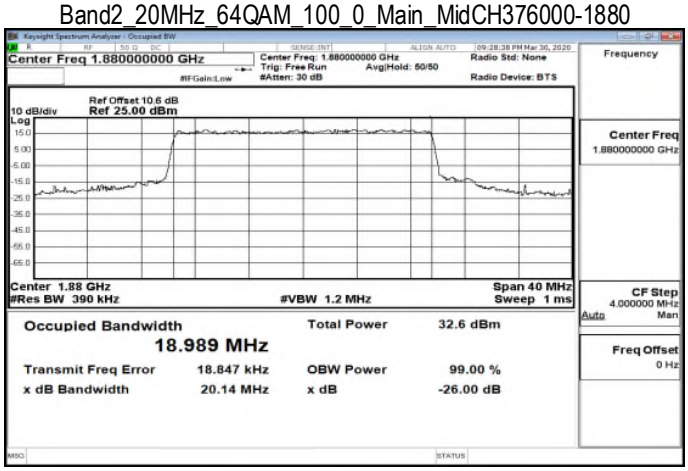
Band2_20MHz_16QAM_100_0_Main_MidCH376000-1880



Band2_20MHz_BPSK_100_0_Main_MidCH376000-1880



Band2_20MHz_64QAM_100_0_Main_MidCH376000-1880



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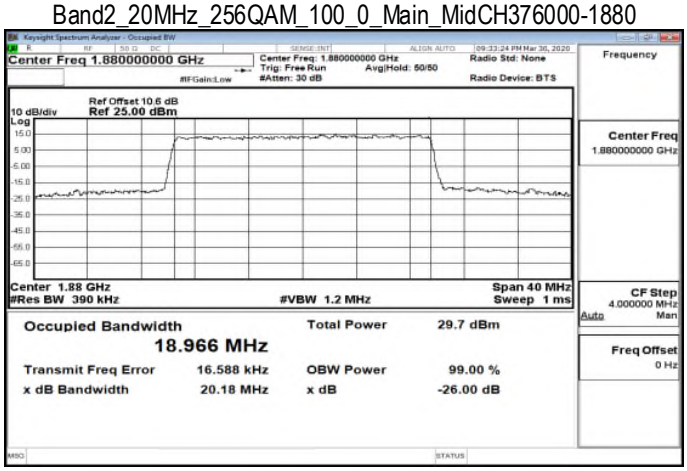
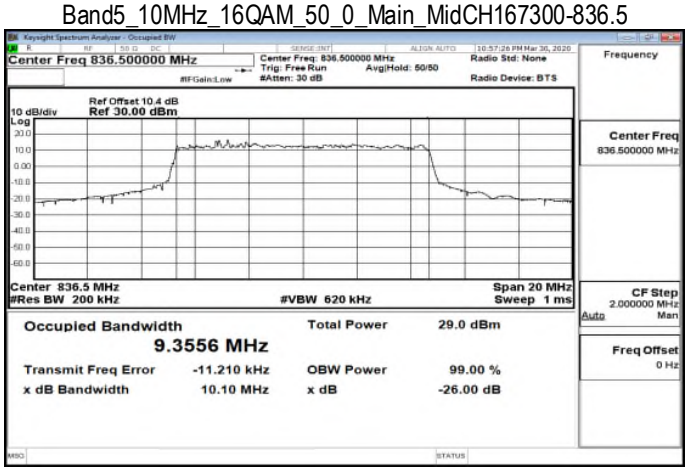
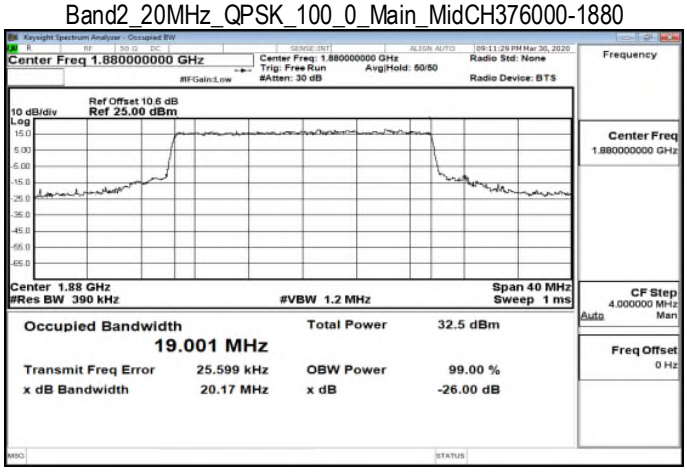


Band5_10MHz_16QAM_50_0_Main_MidCH167300-836.5



Band2_20MHz_QPSK_100_0_Main_MidCH376000-1880



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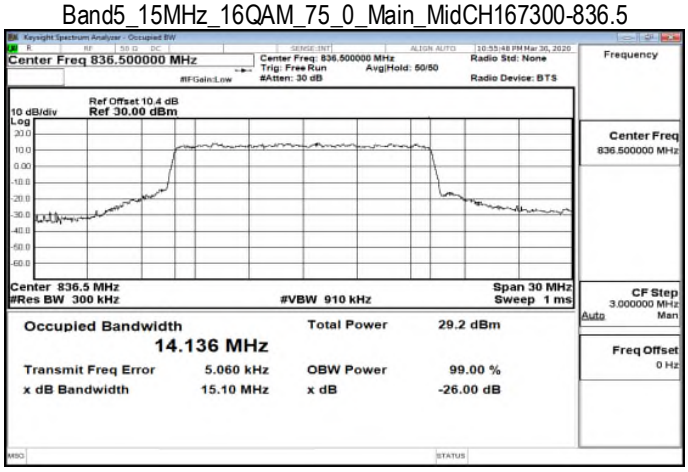
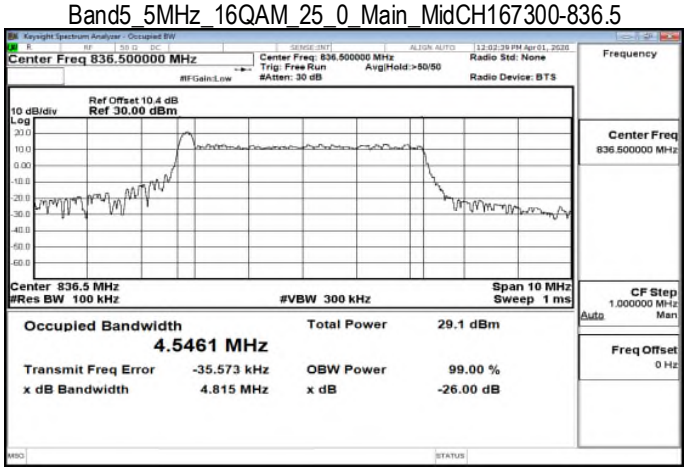
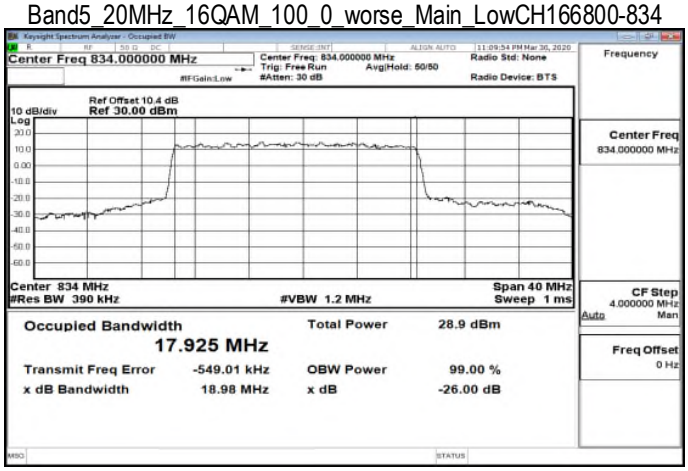


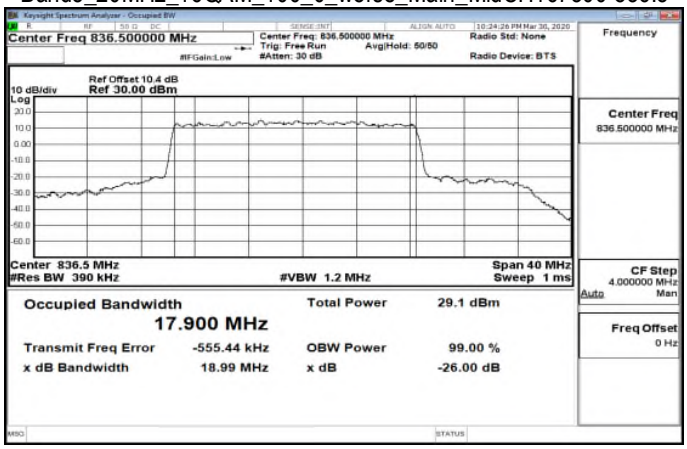
Band5_5MHz_16QAM_25_0_Main_MidCH167300-836.5



Band5_20MHz_16QAM_100_0_worse_Main_LowCH166800-834



Band5_20MHz_16QAM_100_0_worse_Main_MidCH167300-836.5



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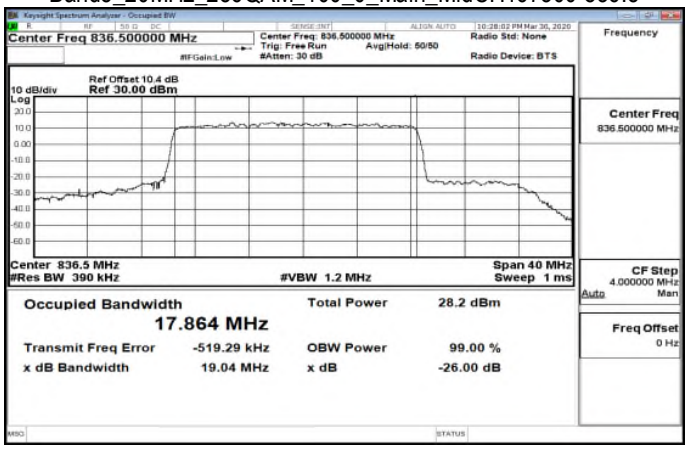
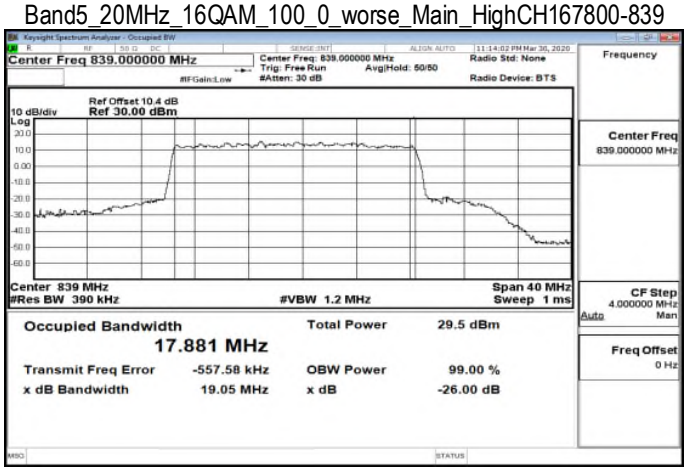
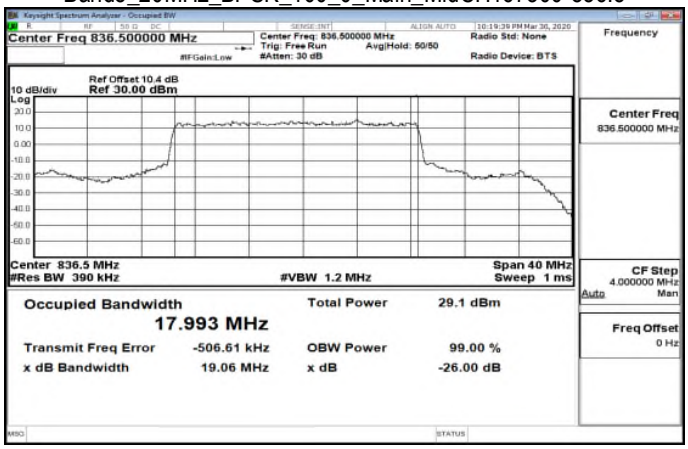


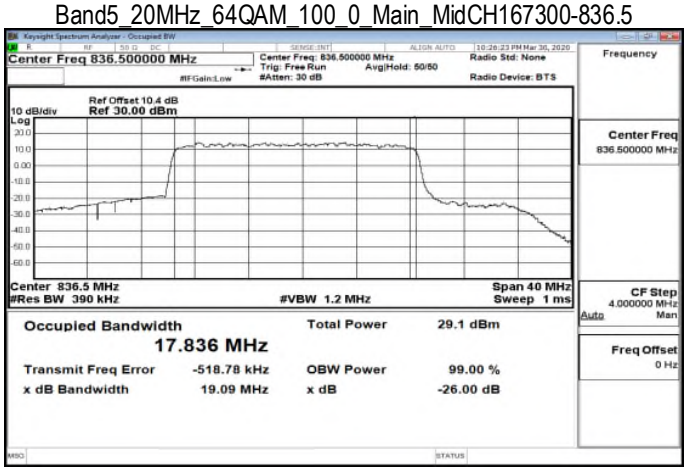
Band5_20MHz_16QAM_100_0_worse_Main_HighCH167800-839



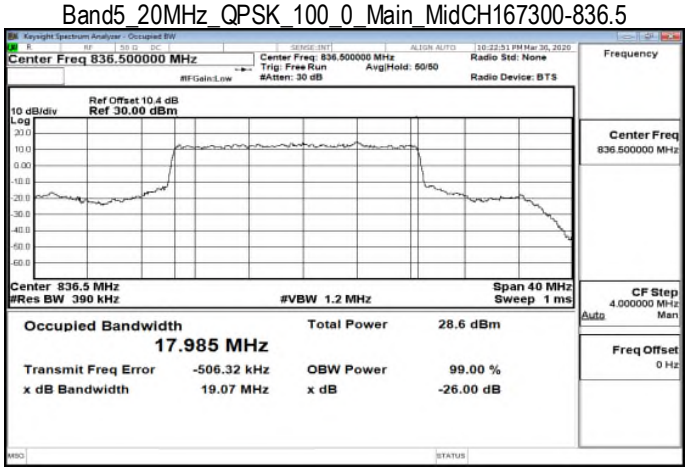
Band5_20MHz_BPSK_100_0_Main_MidCH167300-836.5



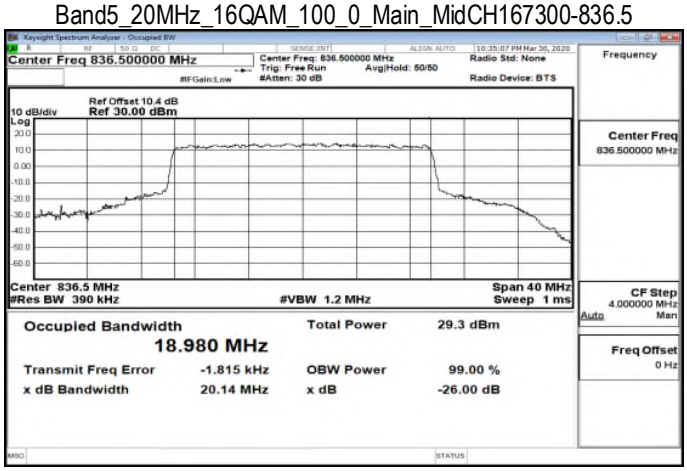
Band5_20MHz_64QAM_100_0_Main_MidCH167300-836.5



Band5_20MHz_QPSK_100_0_Main_MidCH167300-836.5



Band5_20MHz_16QAM_100_0_Main_MidCH167300-836.5



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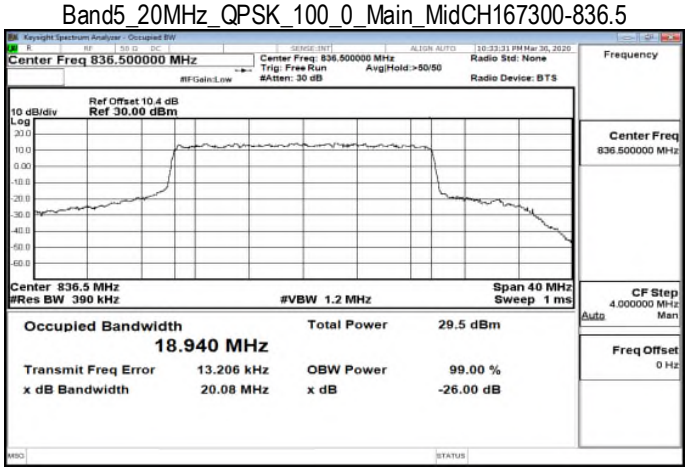
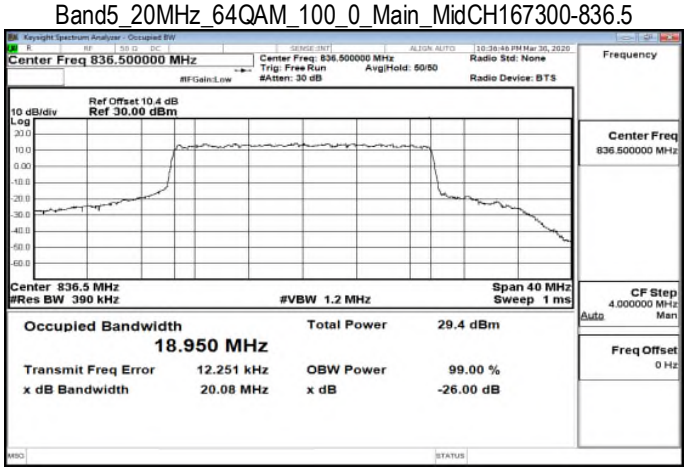
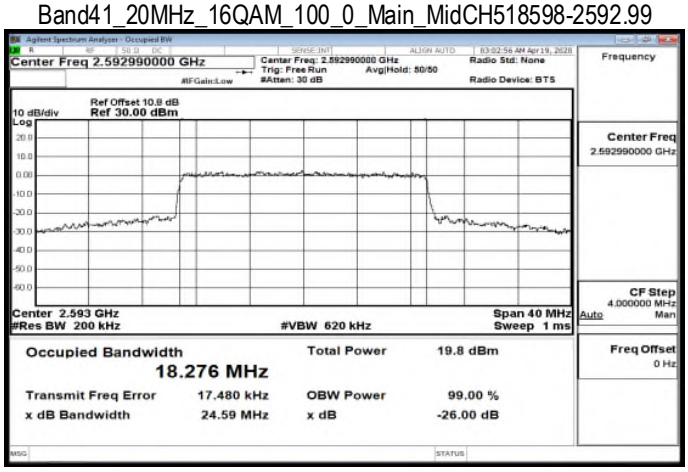


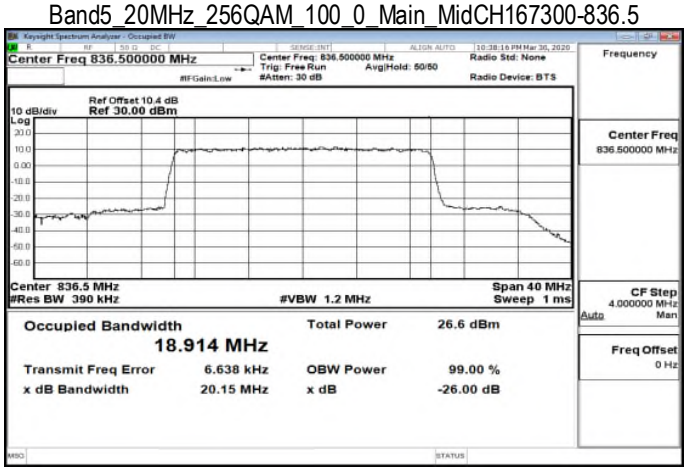
Band5_20MHz_64QAM_100_0_Main_MidCH167300-836.5



Band41_20MHz_16QAM_100_0_Main_MidCH518598-2592.99



Band5_20MHz_256QAM_100_0_Main_MidCH167300-836.5



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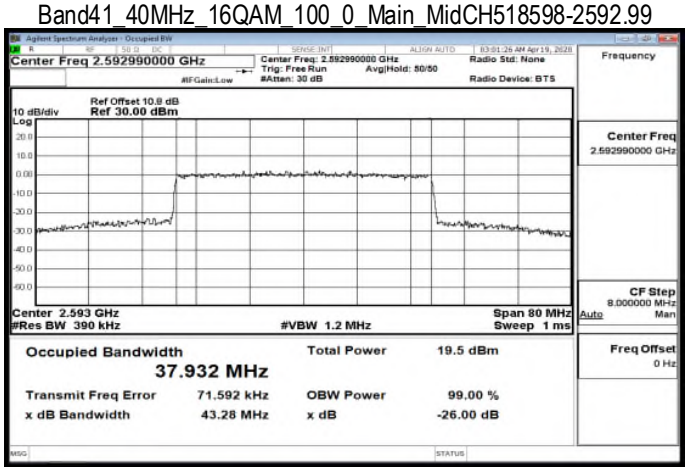
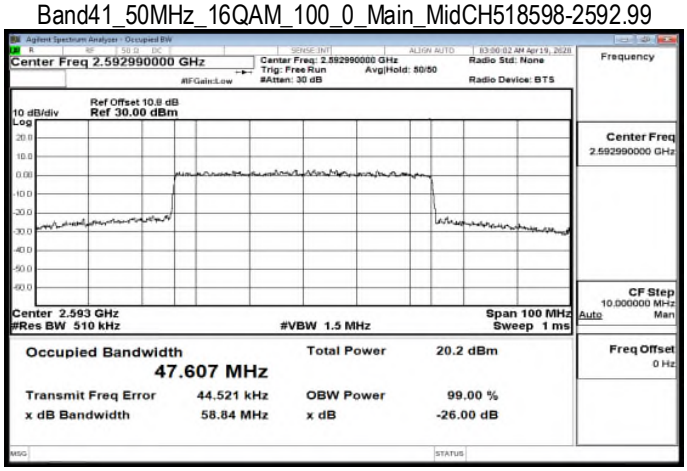
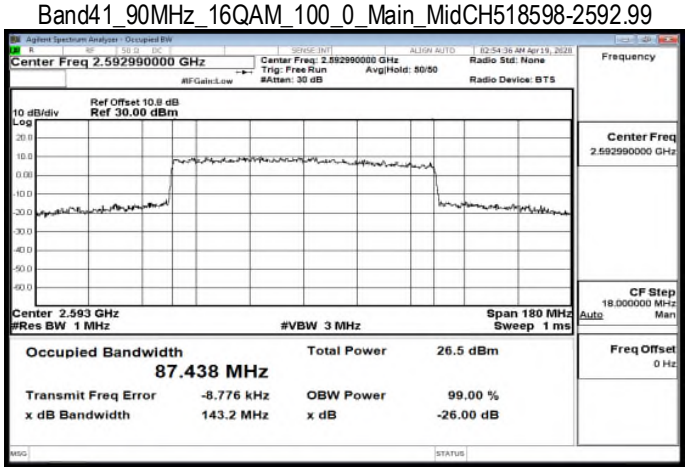


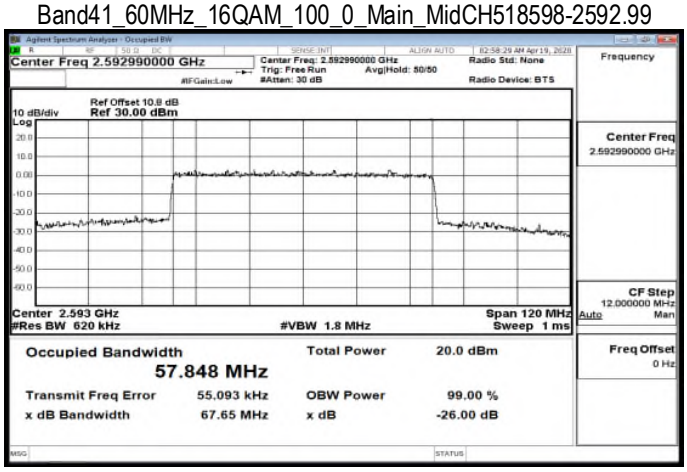
Band41_50MHz_16QAM_100_0_Main_MidCH518598-2592.99



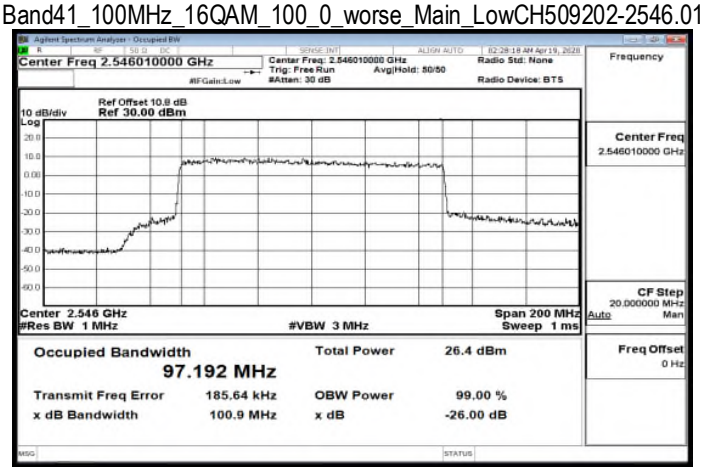
Band41_90MHz_16QAM_100_0_Main_MidCH518598-2592.99



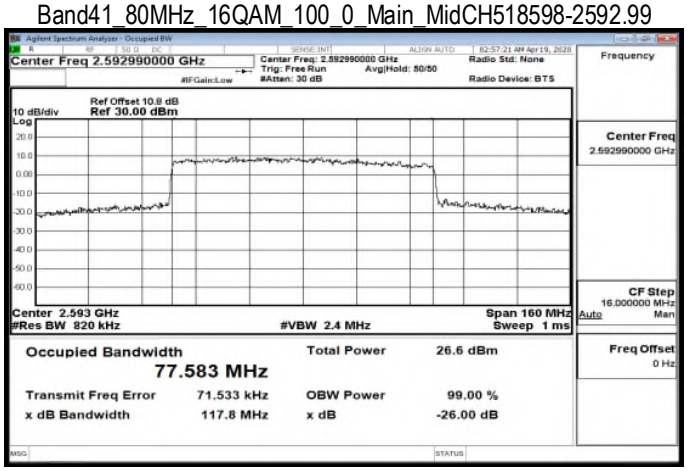
Band41_60MHz_16QAM_100_0_Main_MidCH518598-2592.99



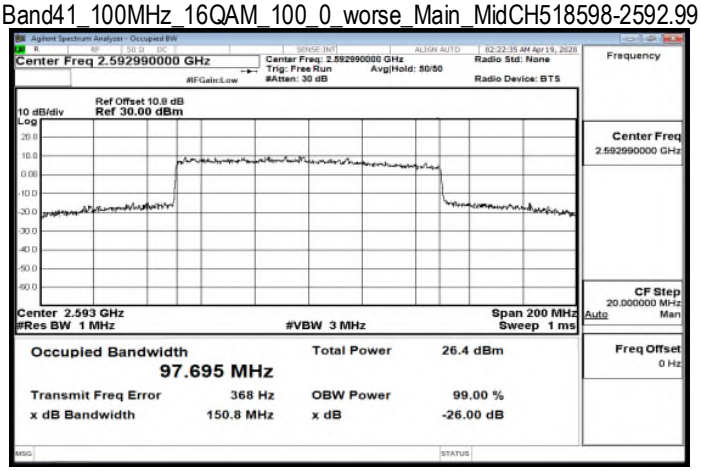
Band41_100MHz_16QAM_100_0_worse_Main_LowCH509202-2546.01



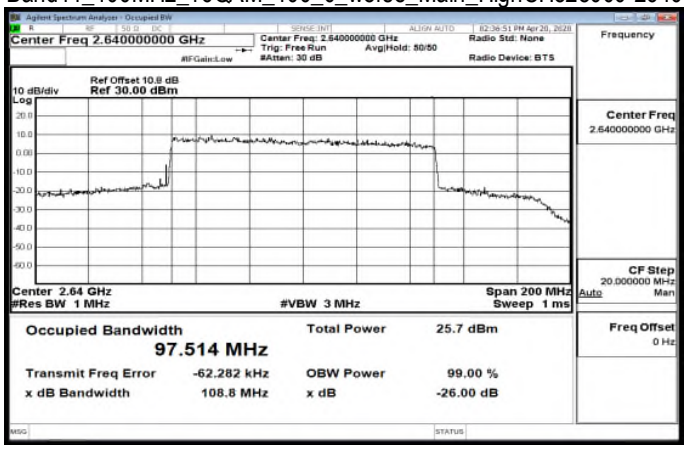
Band41_80MHz_16QAM_100_0_Main_MidCH518598-2592.99



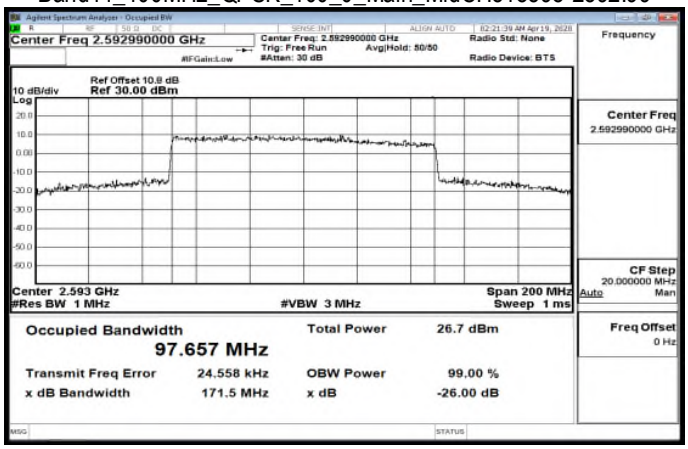
Band41_100MHz_16QAM_100_0_worse_Main_MidCH518598-2592.99



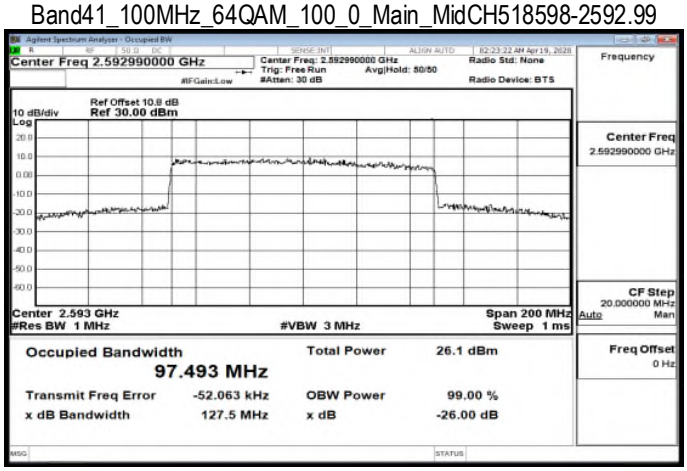
Band41_100MHz_16QAM_100_0_worse_Main_HighCH528000-2640



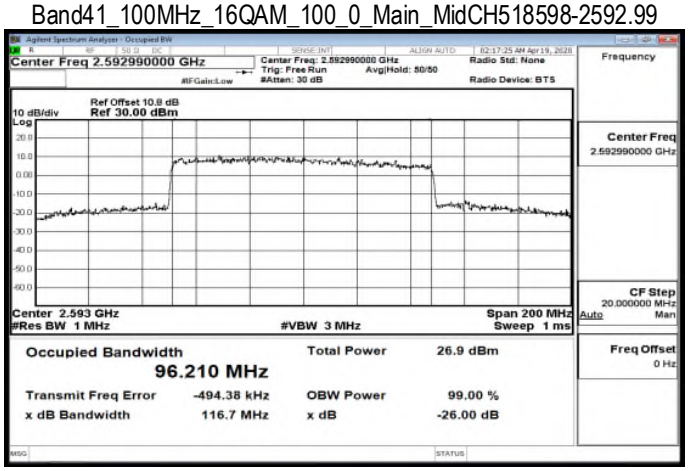
Band41_100MHz_QPSK_100_0_Main_MidCH518598-2592.99



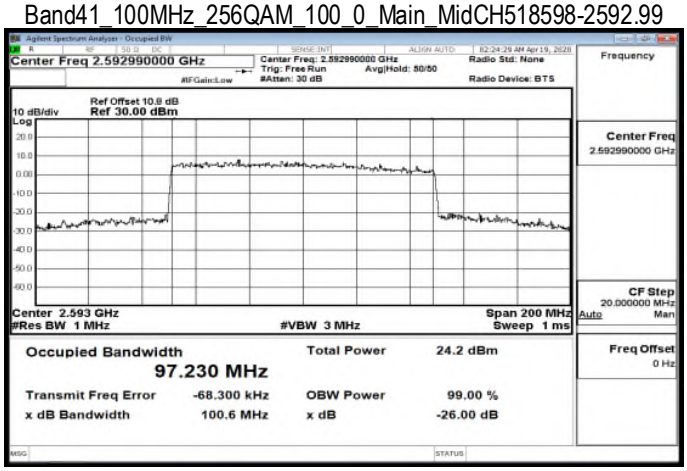
Band41_100MHz_64QAM_100_0_Main_MidCH518598-2592.99



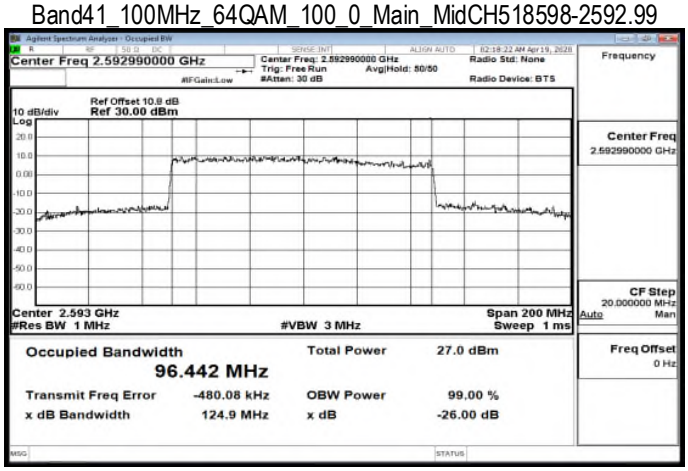
Band41_100MHz_16QAM_100_0_Main_MidCH518598-2592.99



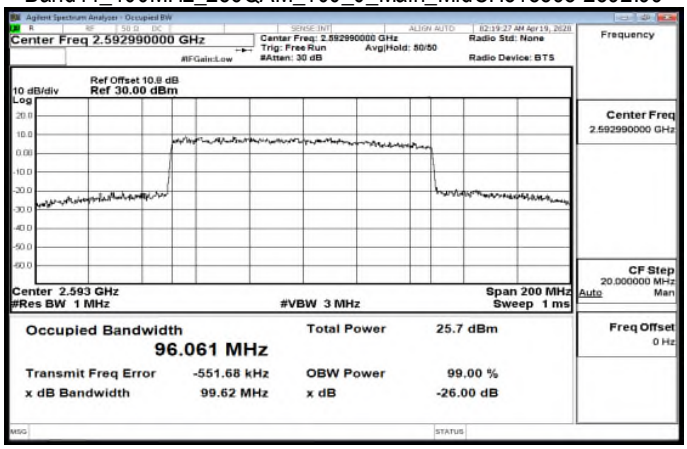
Band41_100MHz_256QAM_100_0_Main_MidCH518598-2592.99



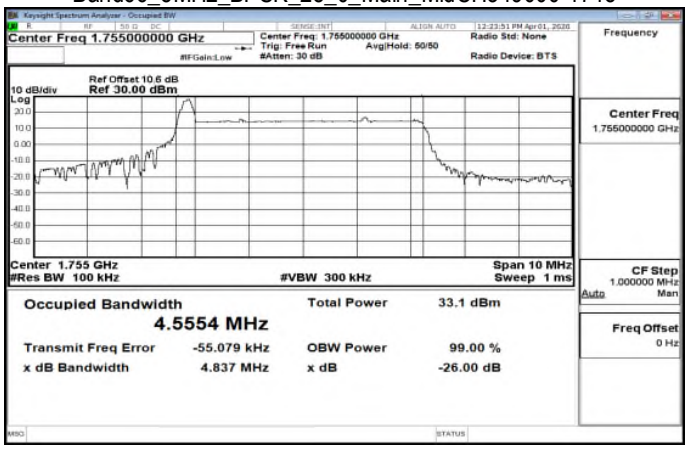
Band41_100MHz_64QAM_100_0_Main_MidCH518598-2592.99



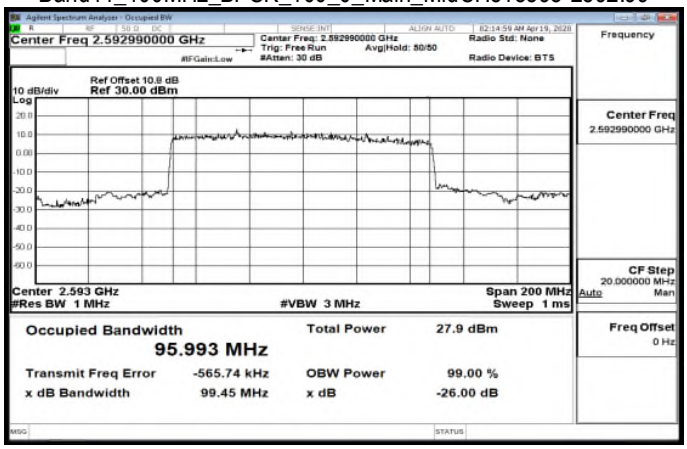
Band41_100MHz_256QAM_100_0_Main_MidCH518598-2592.99



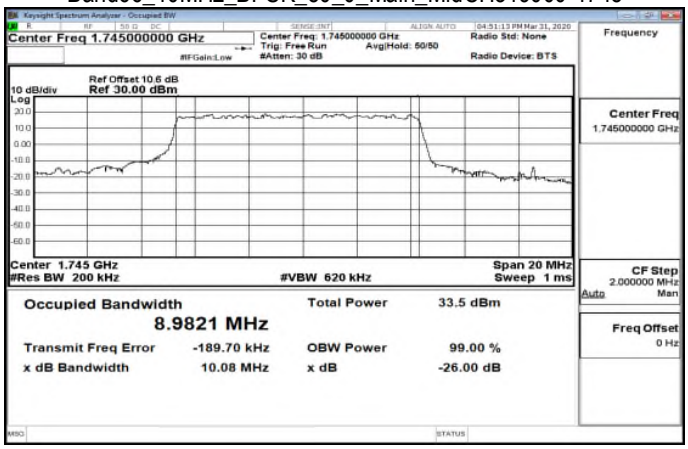
Band66_5MHz_BPSK_25_0_Main_MidCH349000-1745



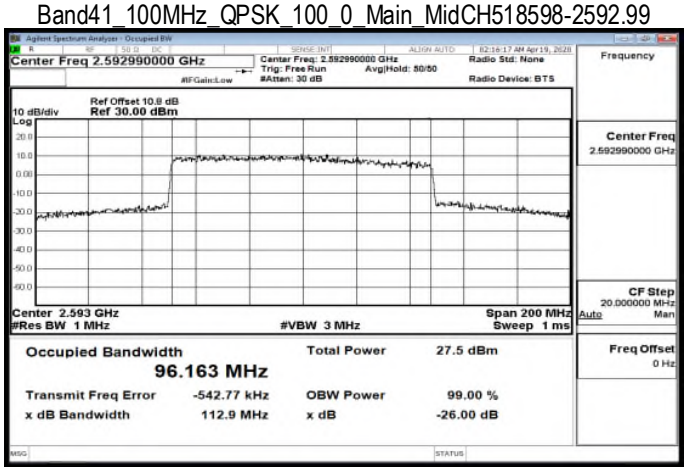
Band41_100MHz_BPSK_100_0_Main_MidCH518598-2592.99



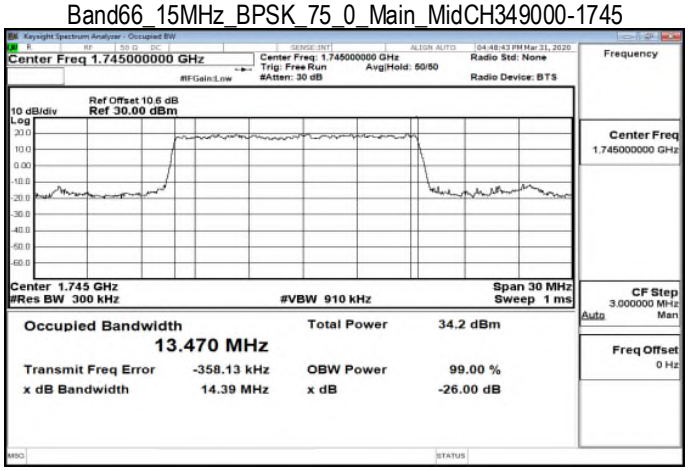
Band66_10MHz_BPSK_50_0_Main_MidCH349000-1745



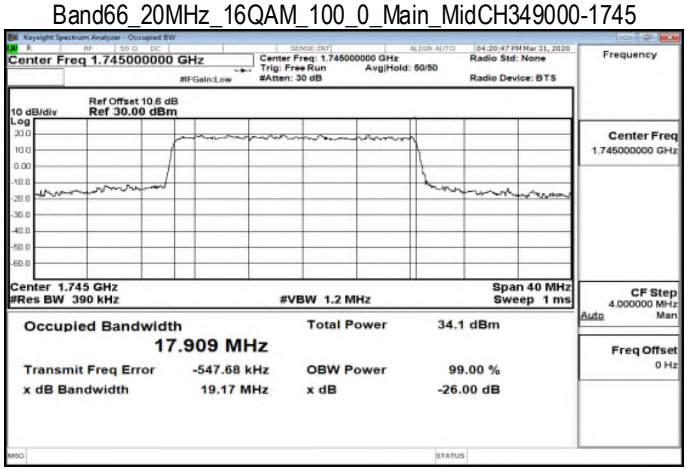
Band41_100MHz_QPSK_100_0_Main_MidCH518598-2592.99



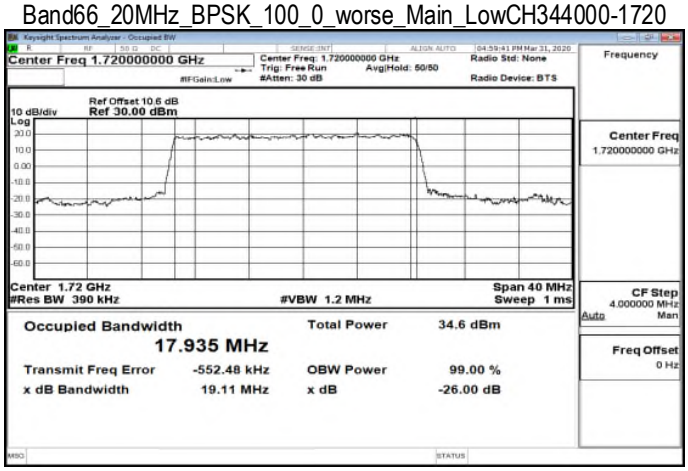
Band66_15MHz_BPSK_75_0_Main_MidCH349000-1745



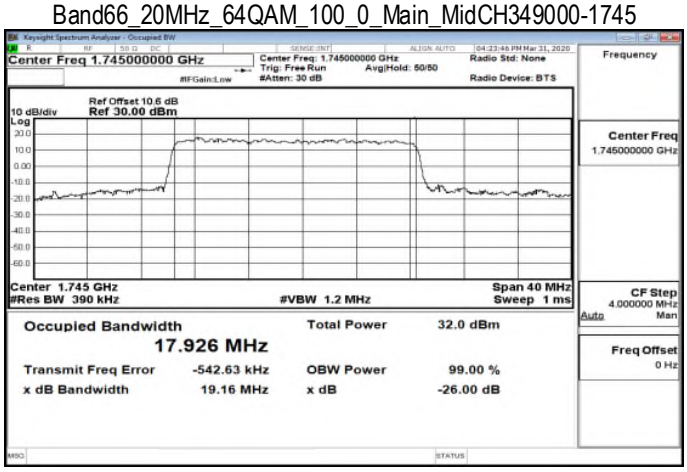
Band66_20MHz_16QAM_100_0_Main_MidCH349000-1745



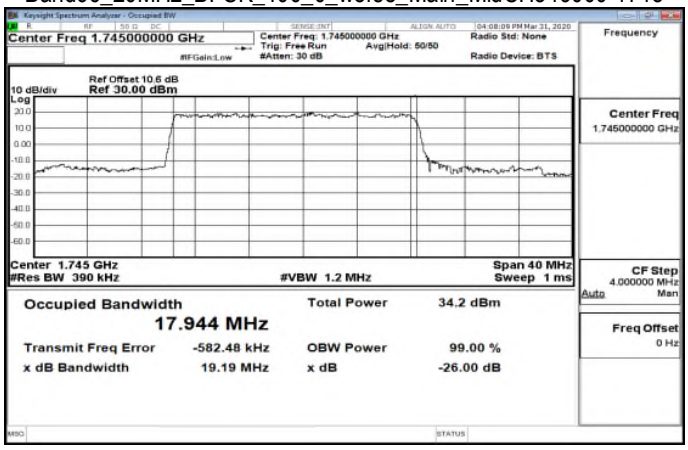
Band66_20MHz_BPSK_100_0_worse_Main_LowCH344000-1720



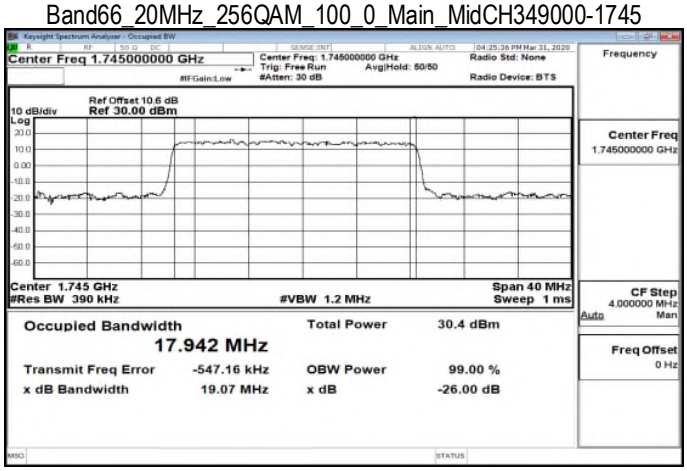
Band66_20MHz_64QAM_100_0_Main_MidCH349000-1745



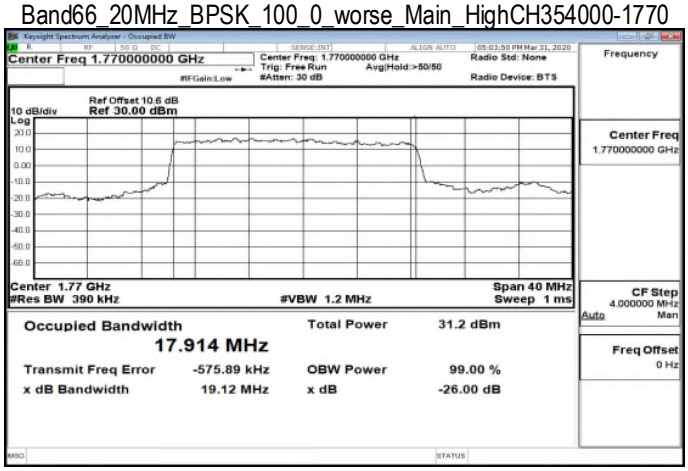
Band66_20MHz_BPSK_100_0_worse_Main_MidCH349000-1745



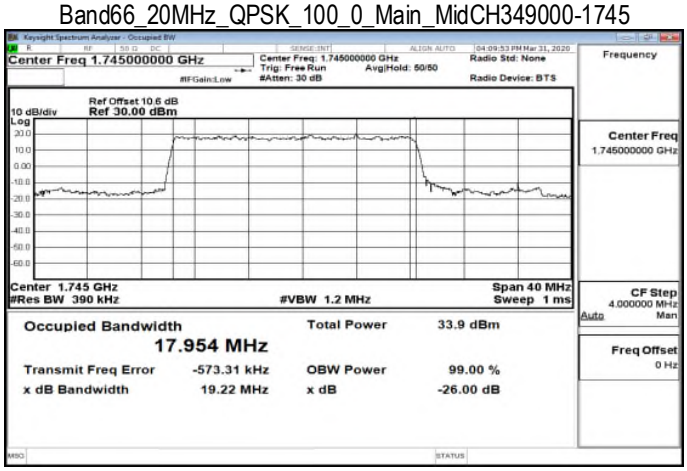
Band66_20MHz_256QAM_100_0_Main_MidCH349000-1745



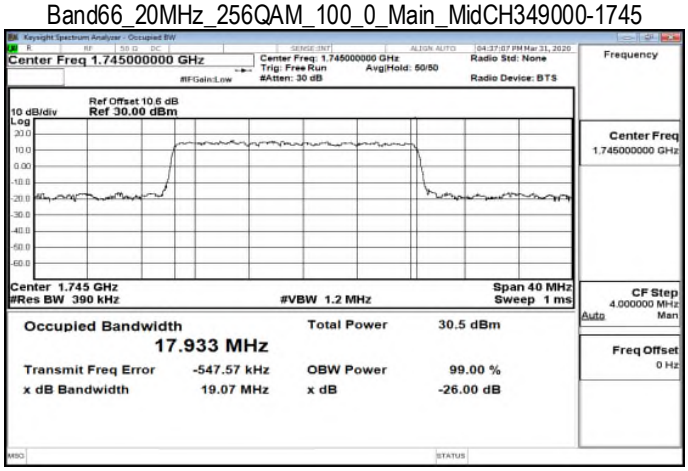
Band66_20MHz_BPSK_100_0_worse_Main_HighCH354000-1770



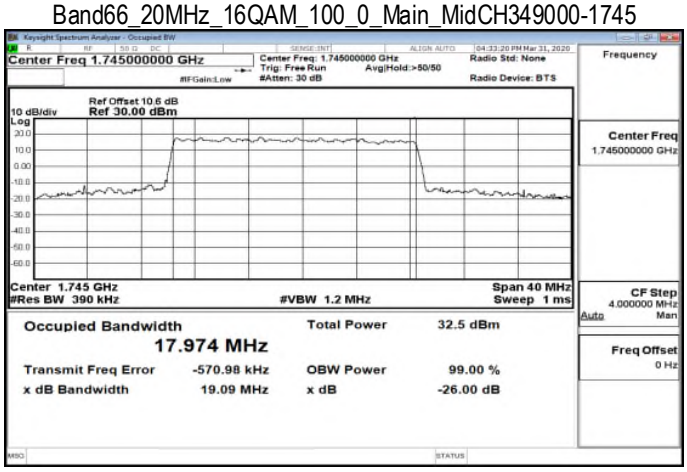
Band66_20MHz_QPSK_100_0_Main_MidCH349000-1745



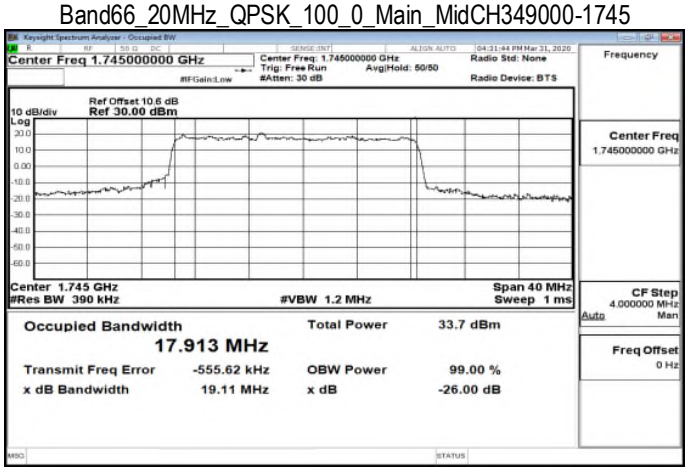
Band66_20MHz_256QAM_100_0_Main_MidCH349000-1745



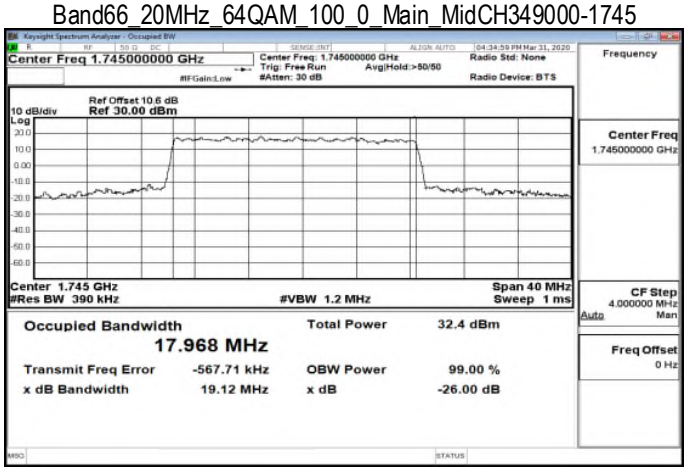
Band66_20MHz_16QAM_100_0_Main_MidCH349000-1745



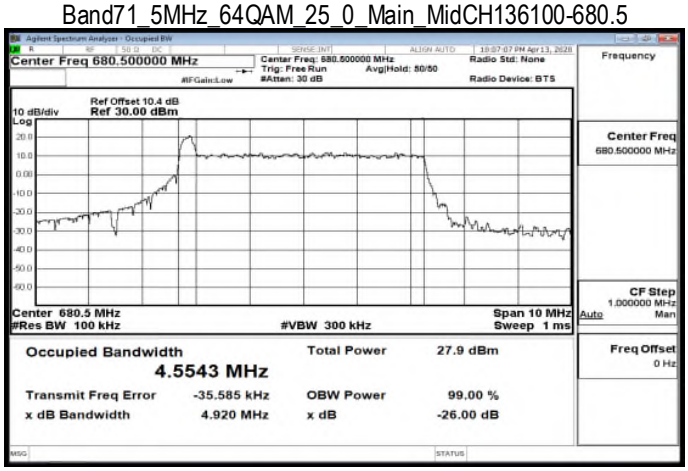
Band66_20MHz_QPSK_100_0_Main_MidCH349000-1745



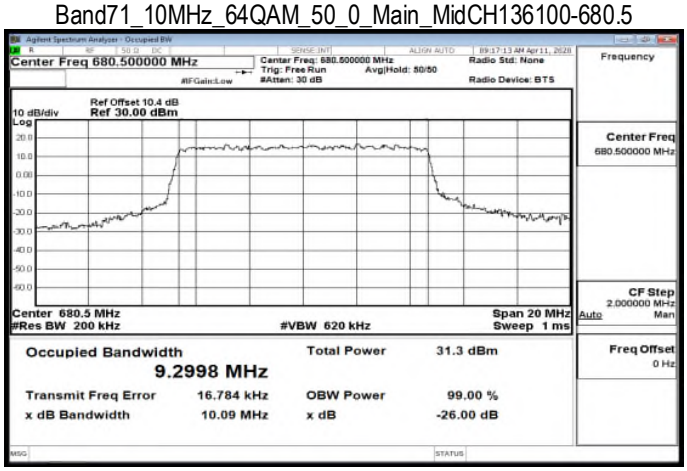
Band66_20MHz_64QAM_100_0_Main_MidCH349000-1745



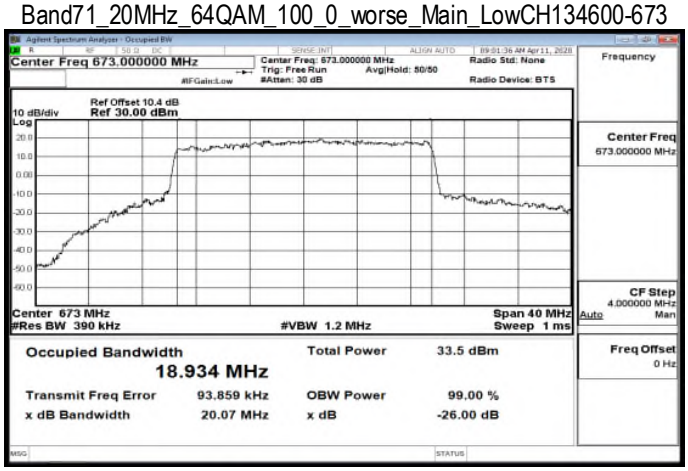
Band71_5MHz_64QAM_25_0_Main_MidCH136100-680.5



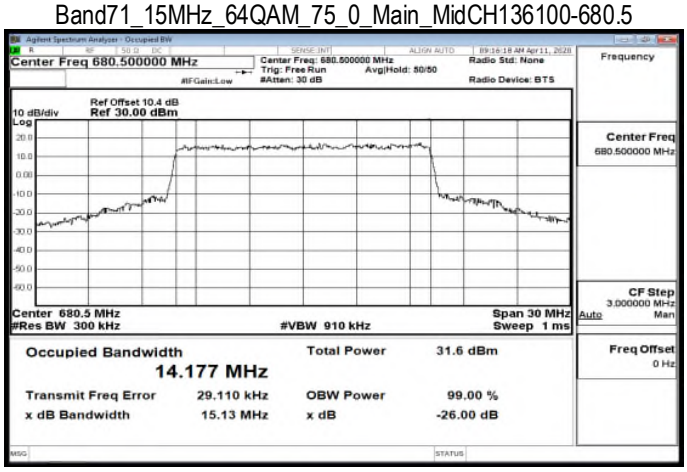
Band71_10MHz_64QAM_50_0_Main_MidCH136100-680.5



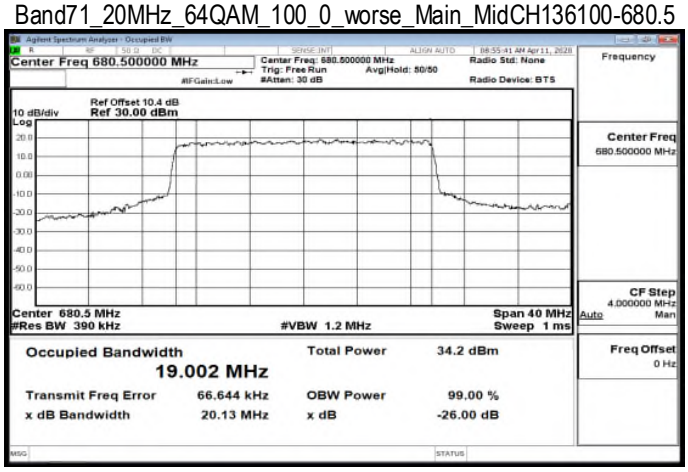
Band71_20MHz_64QAM_100_0_worse_Main_LowCH134600-673



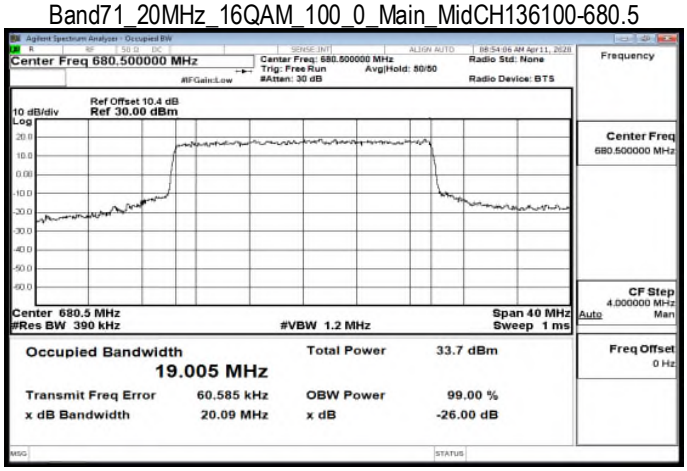
Band71_15MHz_64QAM_75_0_Main_MidCH136100-680.5



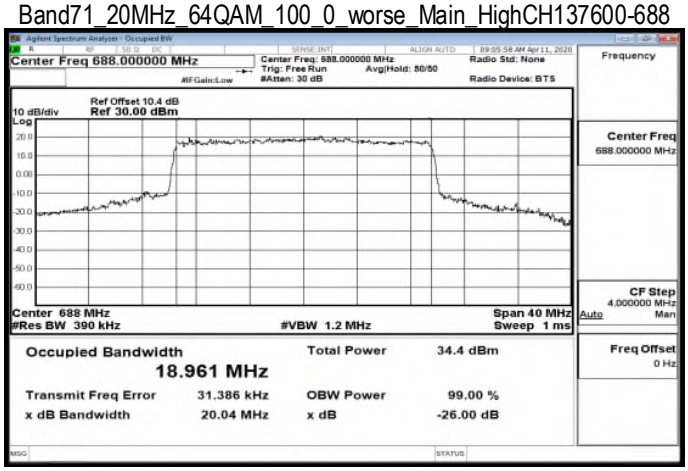
Band71_20MHz_64QAM_100_0_worse_Main_MidCH136100-680.5



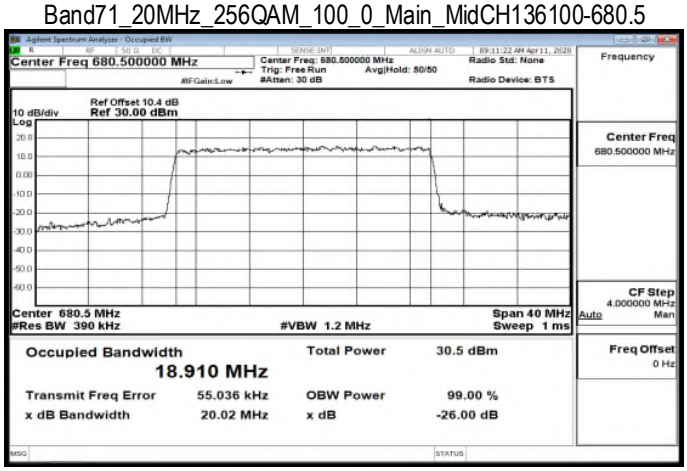
Band71_20MHz_16QAM_100_0_Main_MidCH136100-680.5



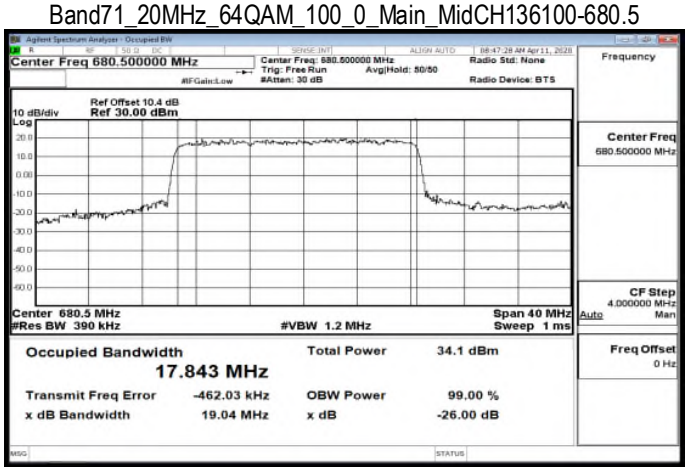
Band71_20MHz_64QAM_100_0_worse_Main_HighCH137600-688



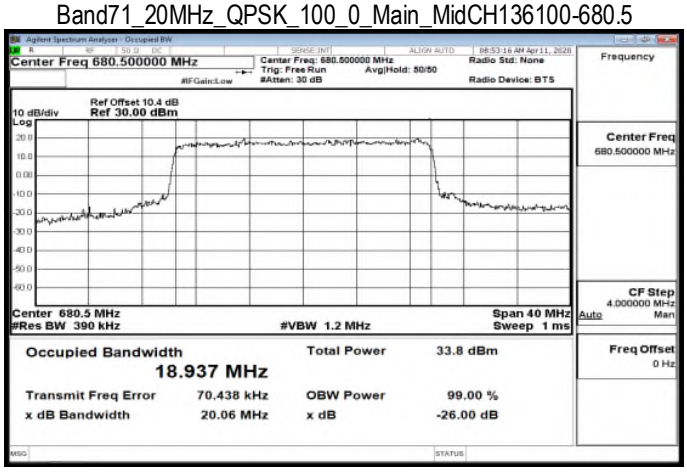
Band71_20MHz_256QAM_100_0_Main_MidCH136100-680.5



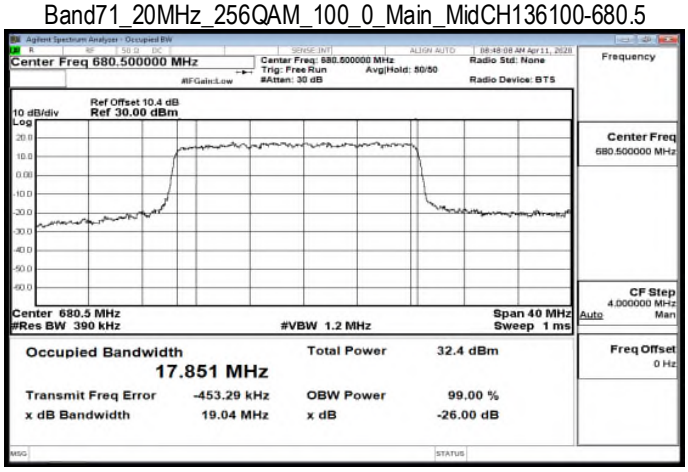
Band71_20MHz_64QAM_100_0_Main_MidCH136100-680.5



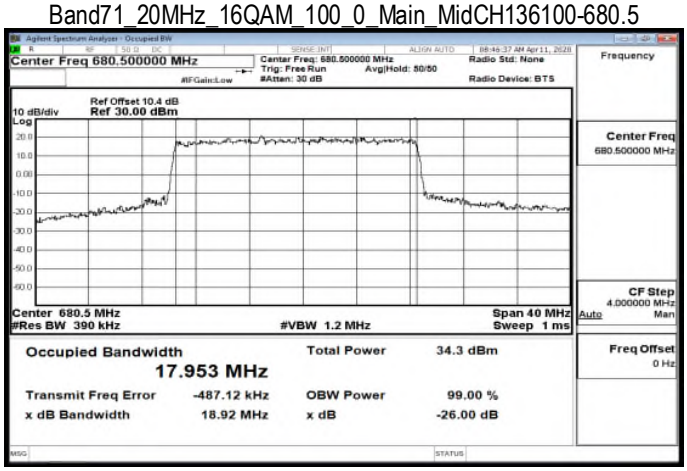
Band71_20MHz_QPSK_100_0_Main_MidCH136100-680.5



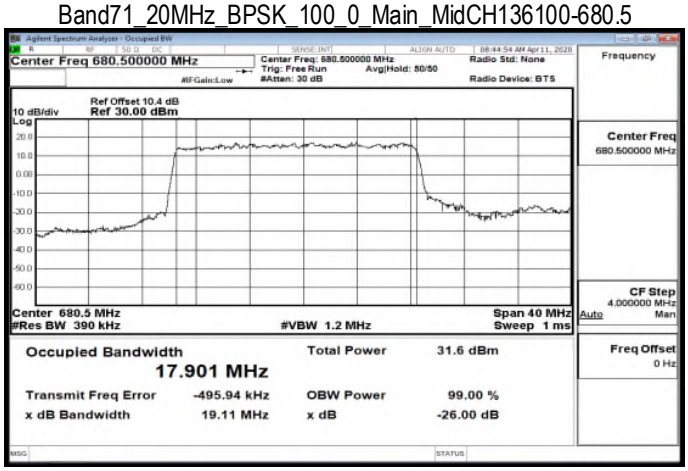
Band71_20MHz_256QAM_100_0_Main_MidCH136100-680.5



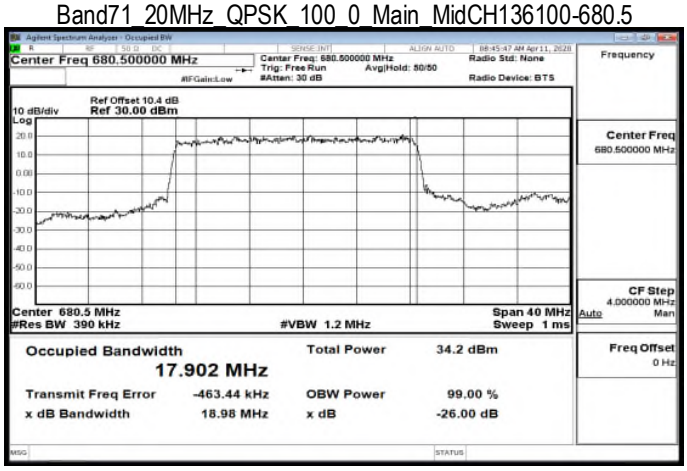
Band71_20MHz_16QAM_100_0_Main_MidCH136100-680.5



Band71_20MHz_BPSK_100_0_Main_MidCH136100-680.5



Band71_20MHz_QPSK_100_0_Main_MidCH136100-680.5



8 OUT OF BAND EMISSION AT ANTENNA TERMINALS

8.1 Standard Applicable

FCC §22.917(a), §24.238(a), §27.53(h)

Out of band emissions.The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

FCC §27.53(g)

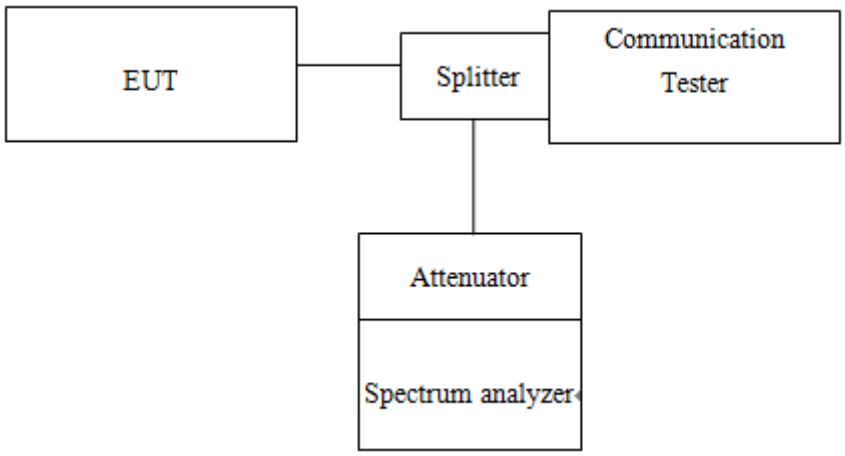
Compliance for operations in the 600 MHz, 698-746 MHz, 746-758 MHz and the 776-788 MHz band with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

FCC §27.53(m) (4) (6)

For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

Measurement procedure. Compliance with these rules is based on the use of measurement nstrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed; for mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 megahertz or 1 percent of emission bandwidth, as specified; or 1 megahertz or 2 percent for mobile digital stations, except in the band 2495-2496 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. With respect to television operations, measurements must be made of the separate visual and aural operating powers at sufficiently frequent intervals to ensure compliance with the rules.

8.2 Test SET-UP



8.3 Measurement Procedure

8.3.1 Conducted Emission

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.

1. To connect Antenna Port of EUT to Spectrum.
2. Set RBW = 1MHz & VBW = 1MHz on Spectrum.
3. Allow trace to fully stabilize
4. Repeat above procedures until all default test channel measured were complete.

8.3.2 Band Edge

1. To connect Antenna Port of EUT to Spectrum.
2. The band edge of low and high channels for the highest RF powers was measured. Setting RBW ≥ 1% EBW.
3. The only N41 Band used RBW offset method and describe in C63.26 section 5.7.2 the correrrtion factor is following:
   Corrcrtion factor = 10 log [(reference bandwidth 1MHz) / (measurement bandwidth 100KHz) =10dB
4. Allow trace to fully stabilize
5. Repeat above procedures until all default test channel measured were complete.

8.4 Measurement Equipment Used

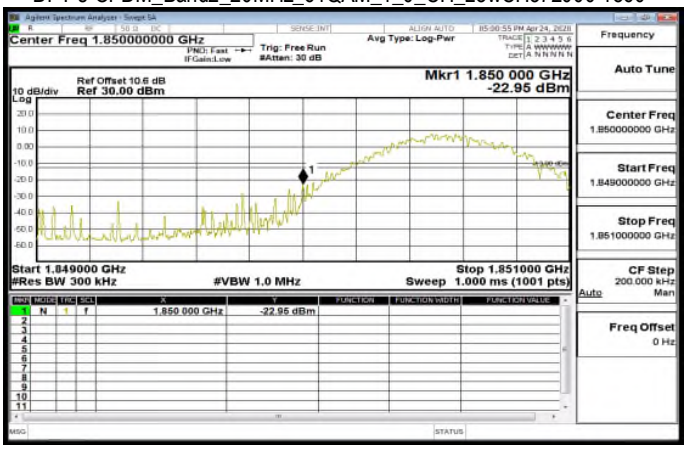
Conducted Emission (measured at antenna port) Test Site					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer	KEYSIGHT	N9010A	MY51440113	07/15/2019	07/14/2020
UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY59321566	12/17/2019	12/16/2020
DC Block	PASTERNACK	PE8210	RF32	11/20/2019	11/19/2020
Splitter	Woken	DOM35LW1A2	RF83	11/20/2019	11/19/2020
Splitter	Woken	DOM35LW1E1	RF01	11/20/2019	11/19/2020
Coaxial Cables	Woken	00100A1F1A185C	RF229	11/20/2019	11/19/2020
Coaxial Cables	Woken	00100A1F1A185C	RF230	11/20/2019	11/19/2020
Coaxial Cables	Woken	00100A1F1A185C	RF231	11/20/2019	11/19/2020

8.5 Measurement Result:

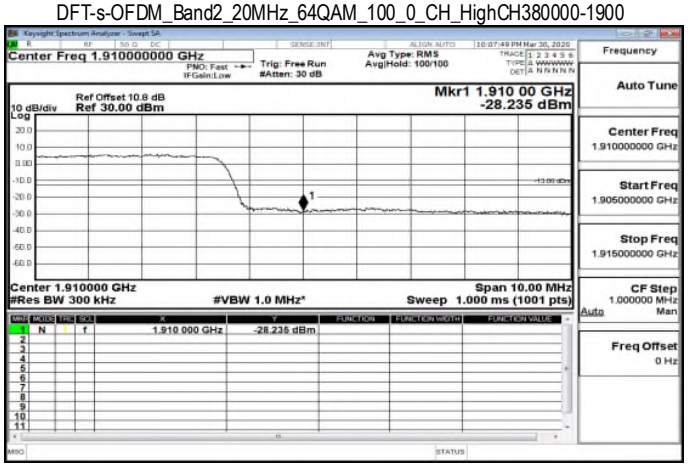
Refer to next pages.

Band Edge

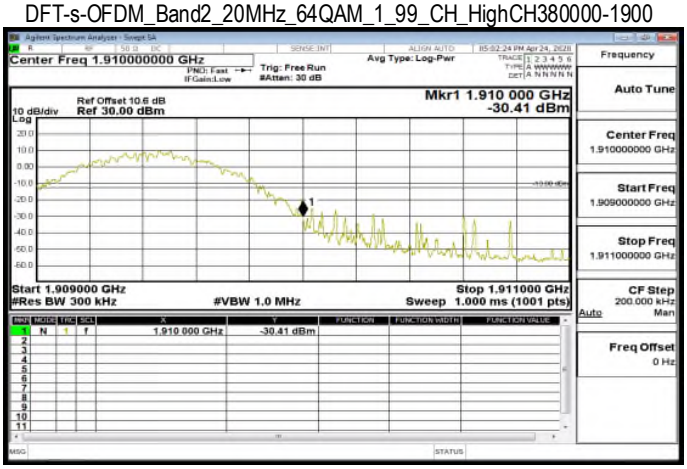
DFT-s-OFDM_Band2_20MHz_64QAM_1_0_CH_LowCH372000-1860



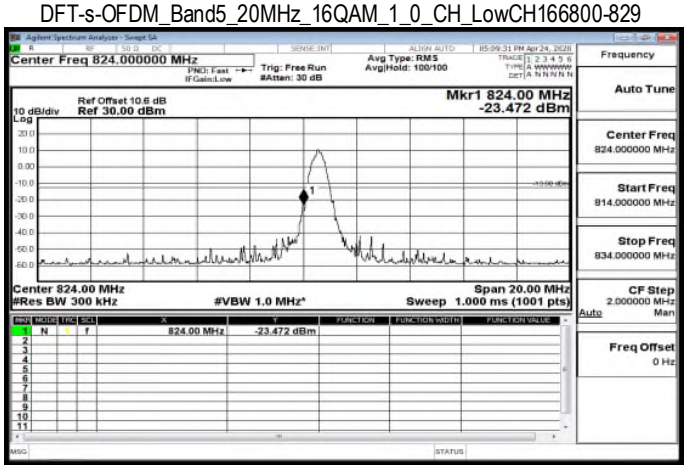
DFT-s-OFDM_Band2_20MHz_64QAM_100_0_CH_HighCH380000-1900



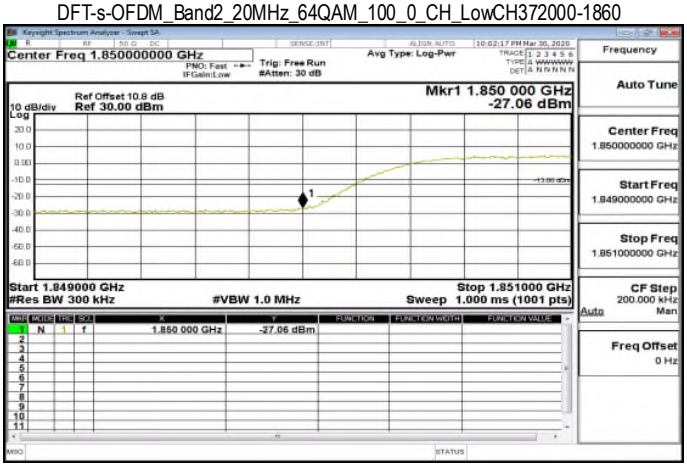
DFT-s-OFDM_Band2_20MHz_64QAM_1_99_CH_HighCH380000-1900



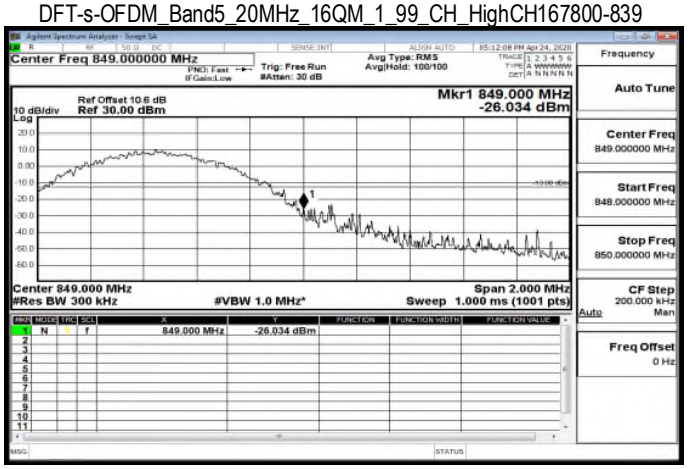
DFT-s-OFDM_Band5_20MHz_16QAM_1_0_CH_LowCH166800-829



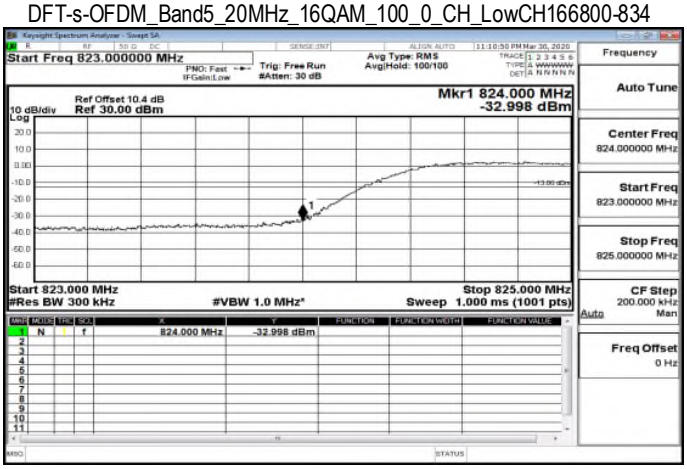
DFT-s-OFDM_Band2_20MHz_64QAM_100_0_CH_LowCH372000-1860



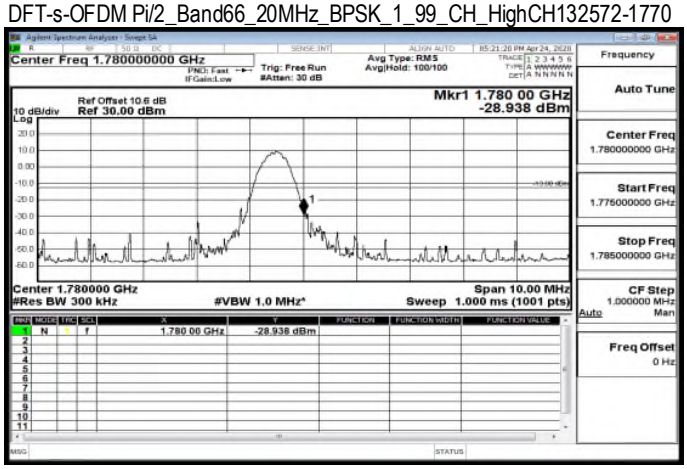
DFT-s-OFDM_Band5_20MHz_16QM_1_99_CH_HighCH167800-839



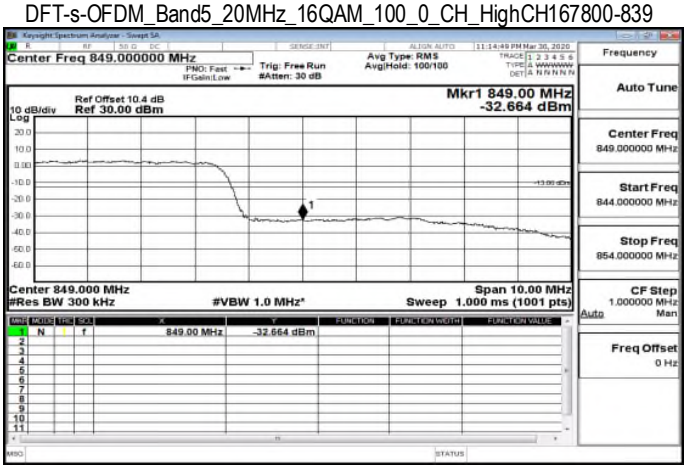
DFT-s-OFDM_Band5_20MHz_16QAM_100_0_CH_LowCH166800-834



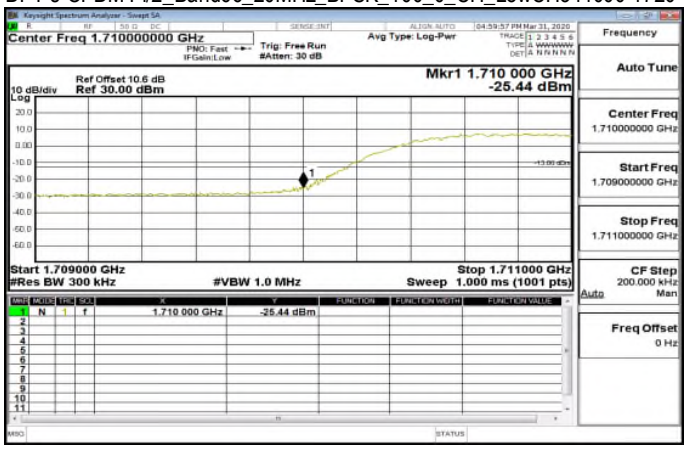
DFT-s-OFDM Pi/2_Band66_20MHz_BPSK_1_99_CH_HighCH132572-1770



DFT-s-OFDM_Band5_20MHz_16QAM_100_0_CH_HighCH167800-839



DFT-s-OFDM Pi/2_Band66_20MHz_BPSK_100_0_CH_LowCH344000-1720



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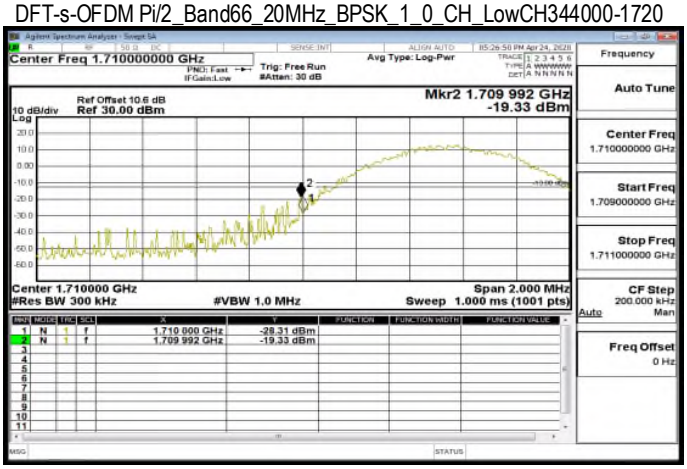
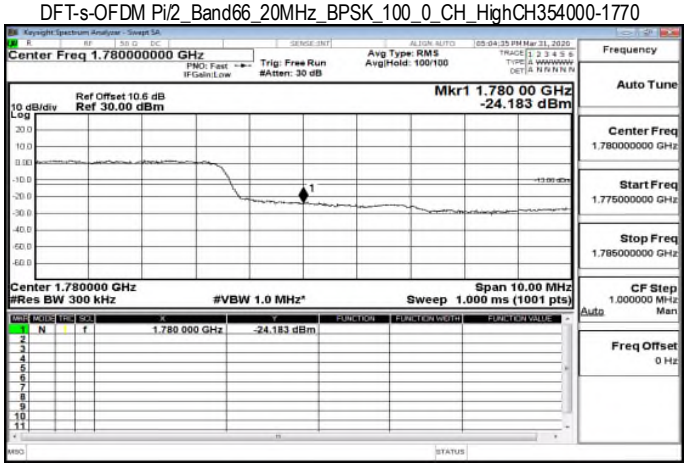
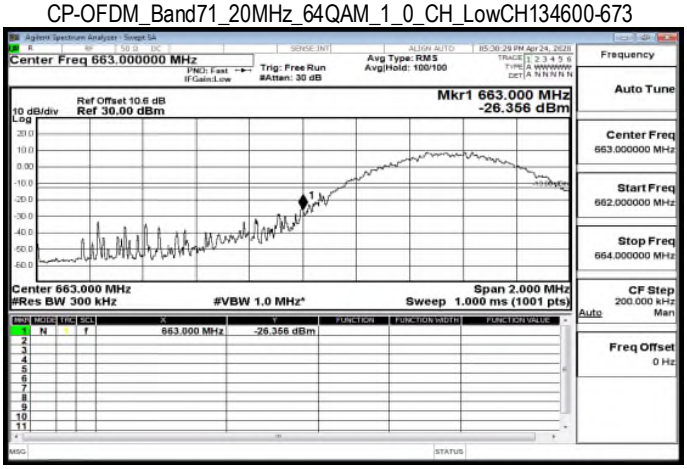


DFT-s-OFDM Pi/2_Band66_20MHz_BPSK_100_0_CH_HighCH354000-1770



CP-OFDM_Band71_20MHz_64QAM_1_0_CH_LowCH134600-673



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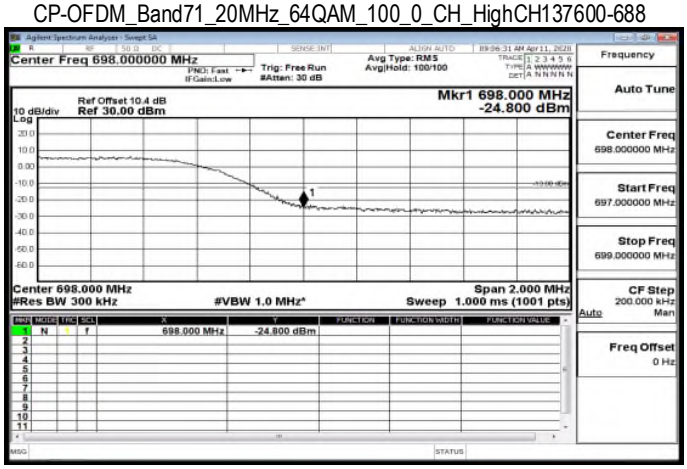
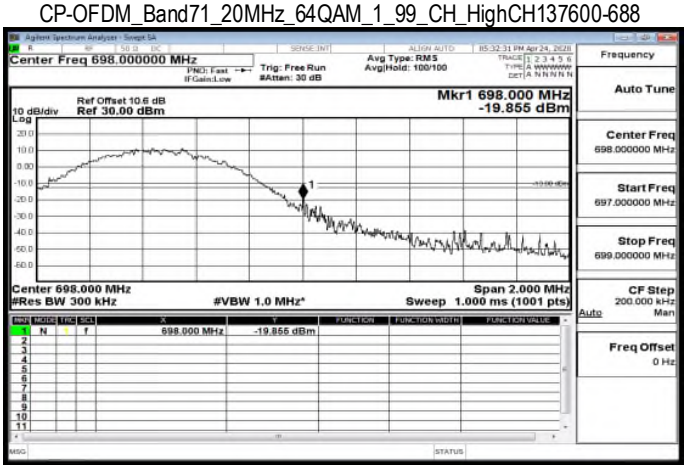
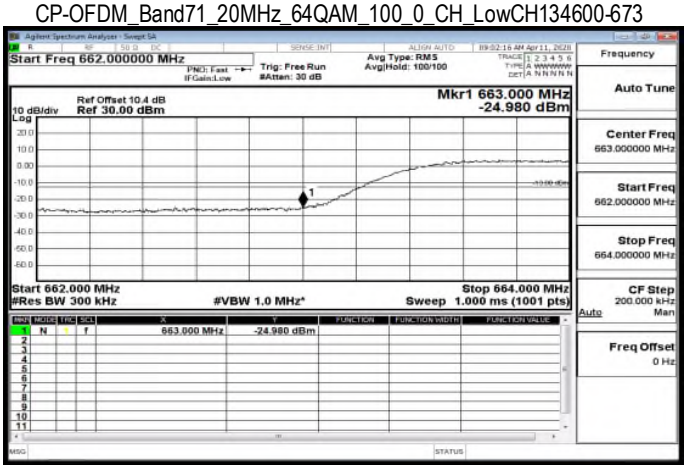


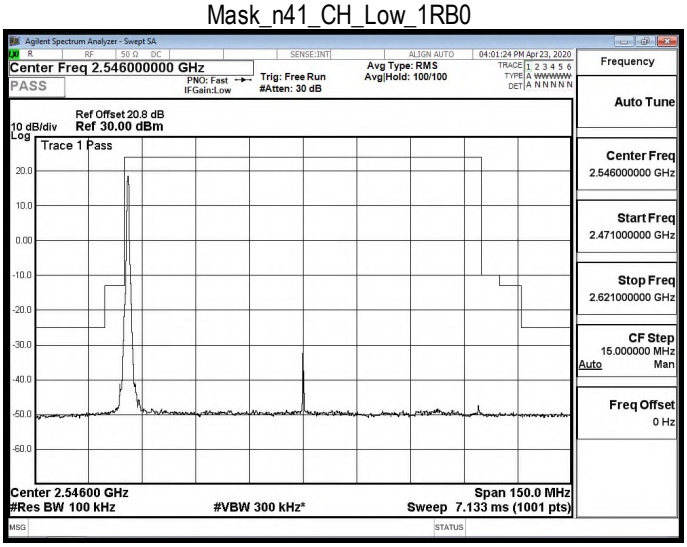
CP-OFDM_Band71_20MHz_64QAM_1_99_CH_HighCH137600-688



CP-OFDM_Band71_20MHz_64QAM_100_0_CH_LowCH134600-673



Mask_n41_CH_Low_1RB0



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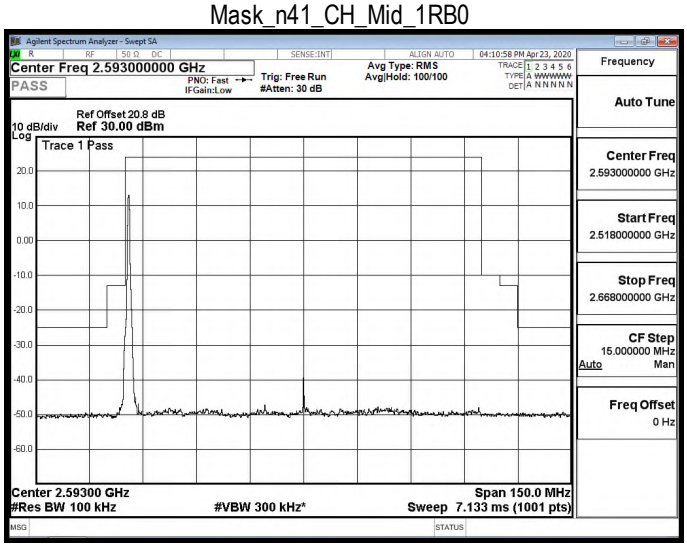

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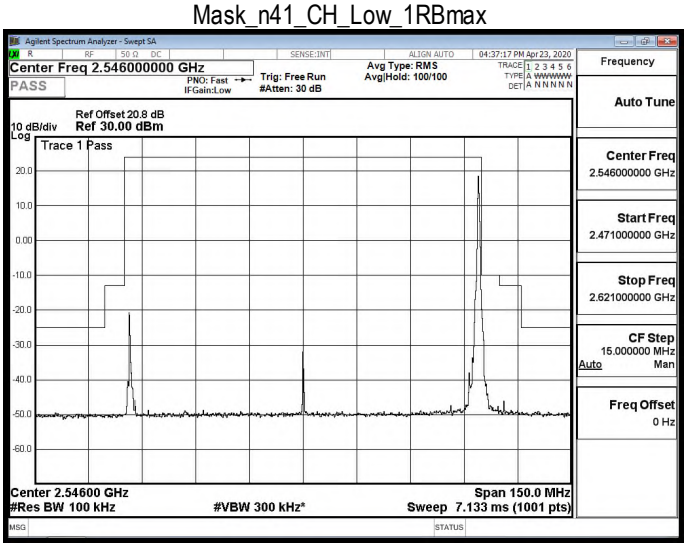

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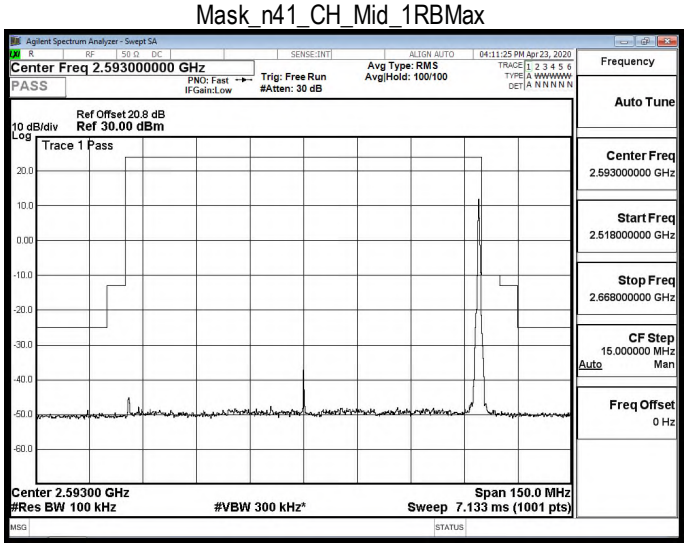
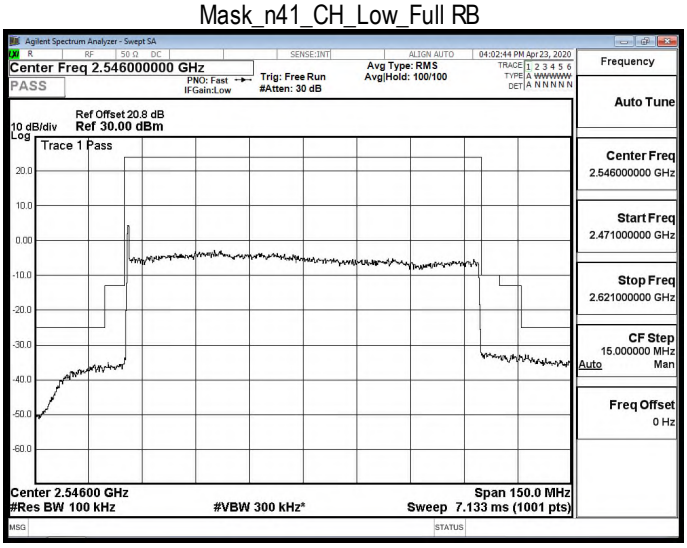
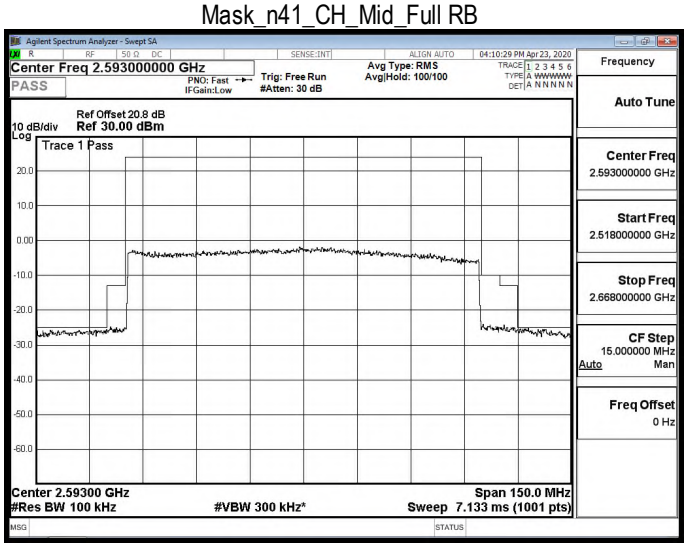


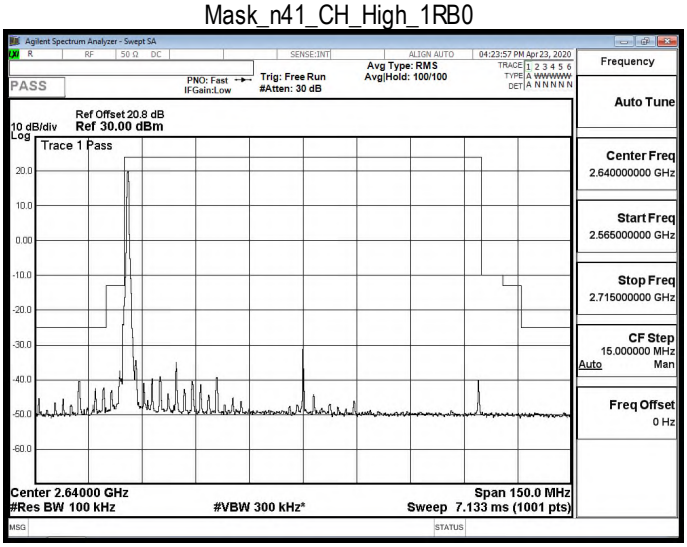
Mask_n41_CH_Low_Full RB



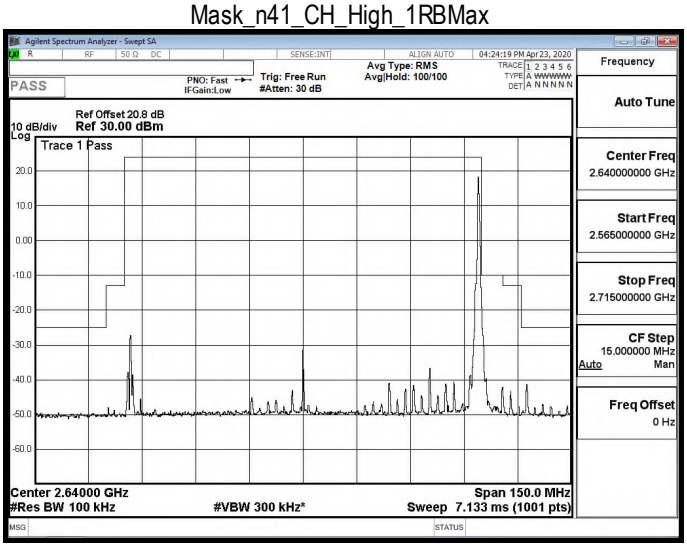
Mask_n41_CH_Mid_Full RB



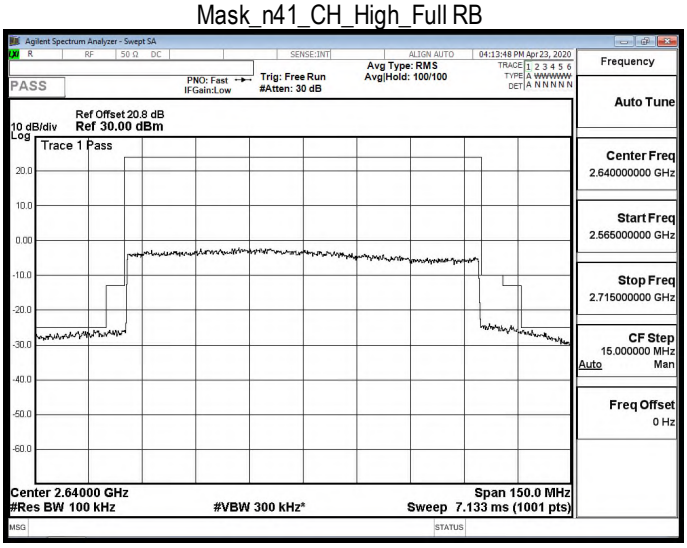
Mask_n41_CH_High_1RB0



Mask_n41_CH_High_1RBMax



Mask_n41_CH_High_Full RB



DFT-s-OFDM
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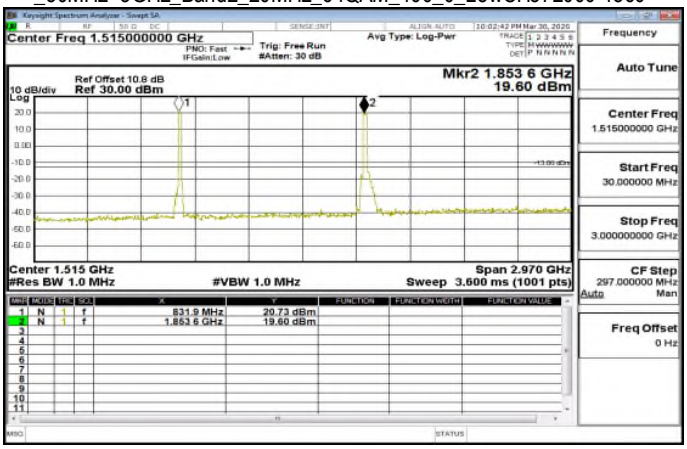

DFT-s-OFDM
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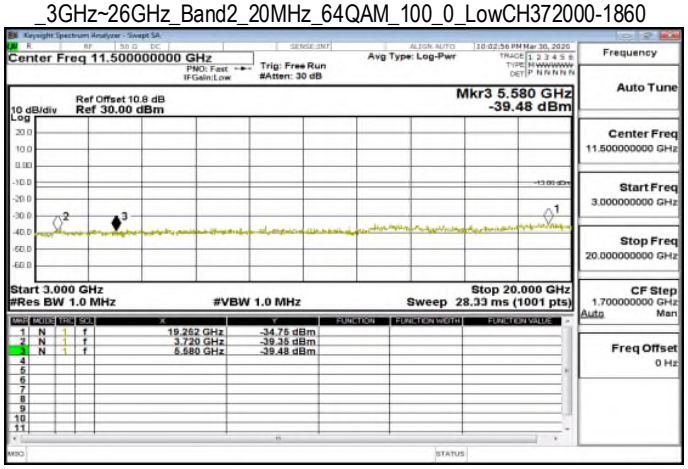

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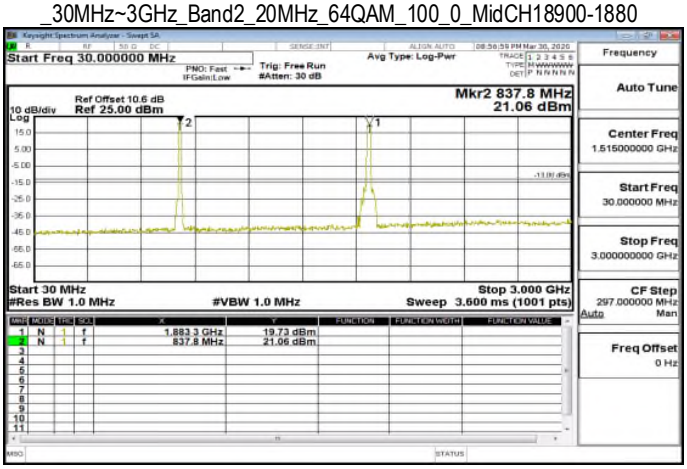

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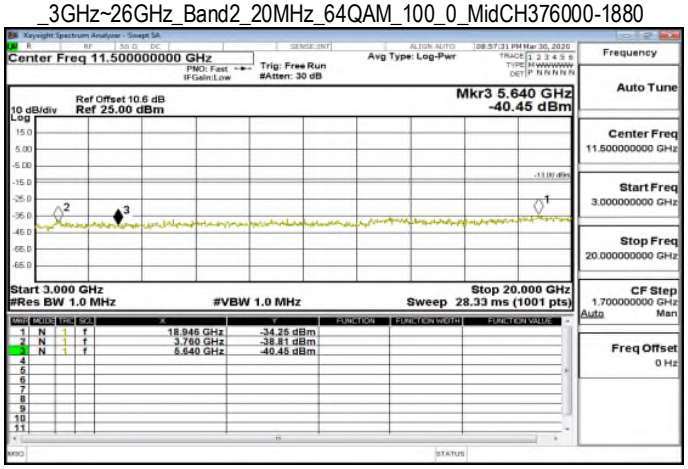

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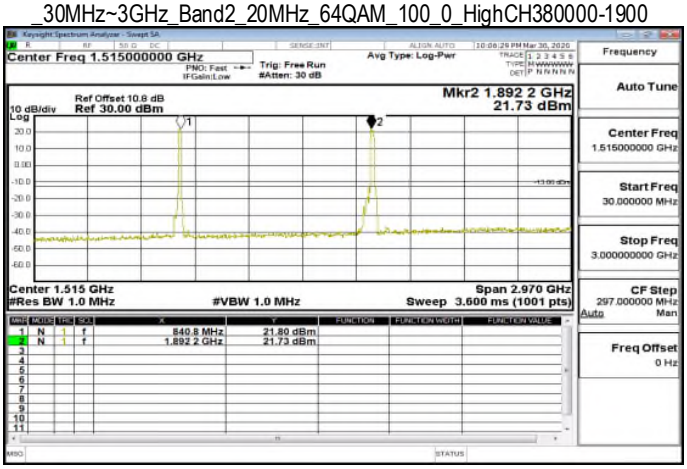

DFT-s-OFDM
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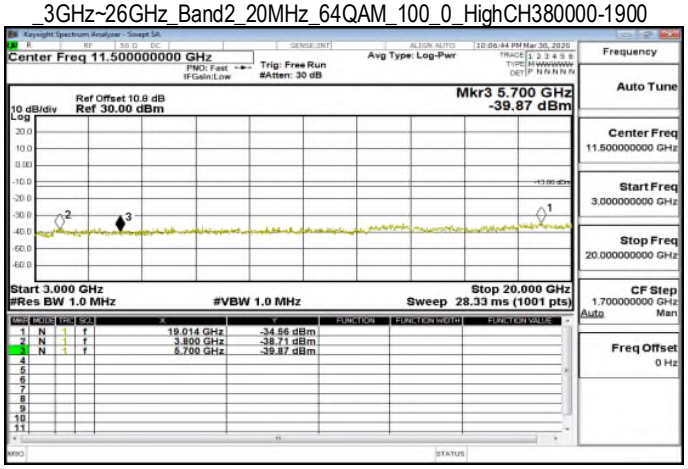

DFT-s-OFDM
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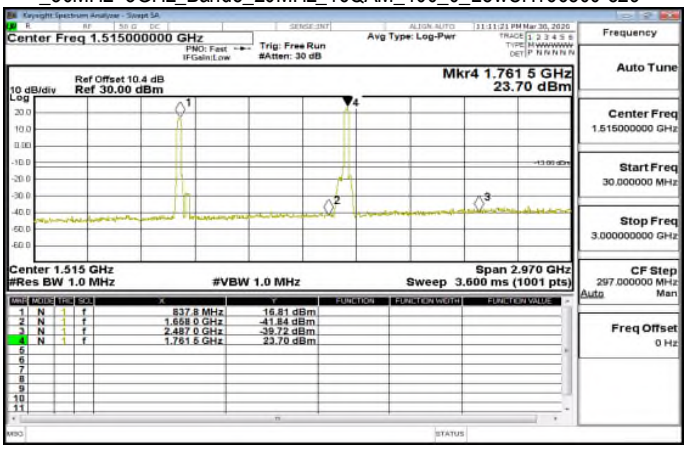

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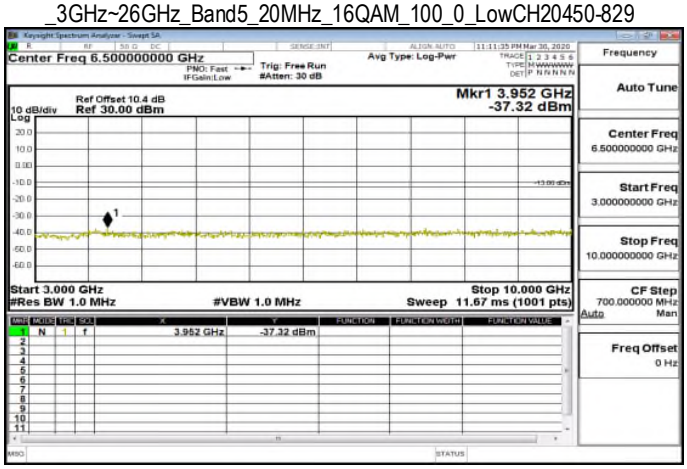

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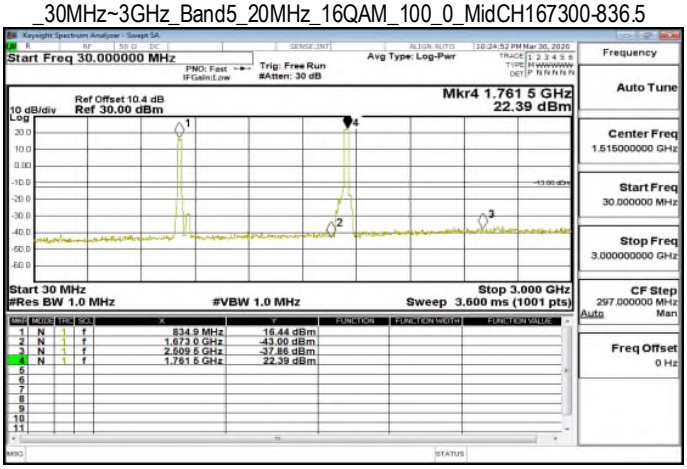

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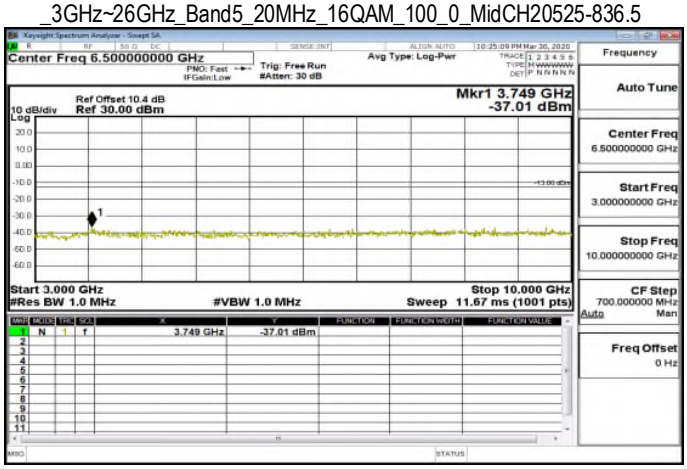
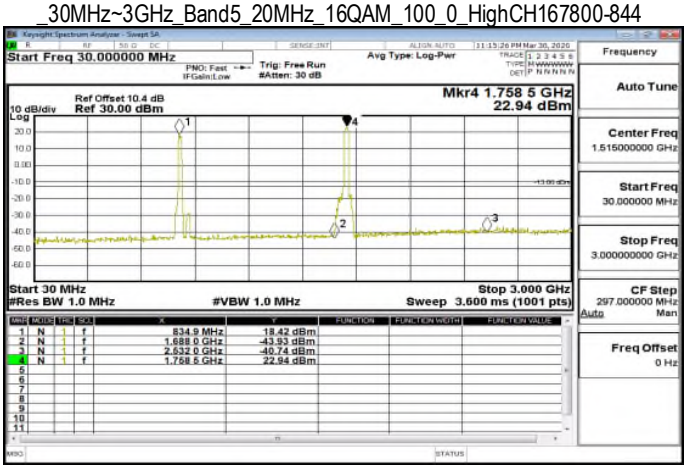
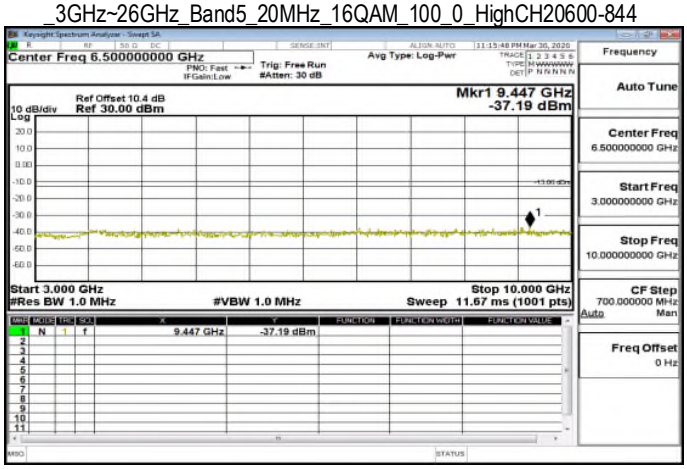


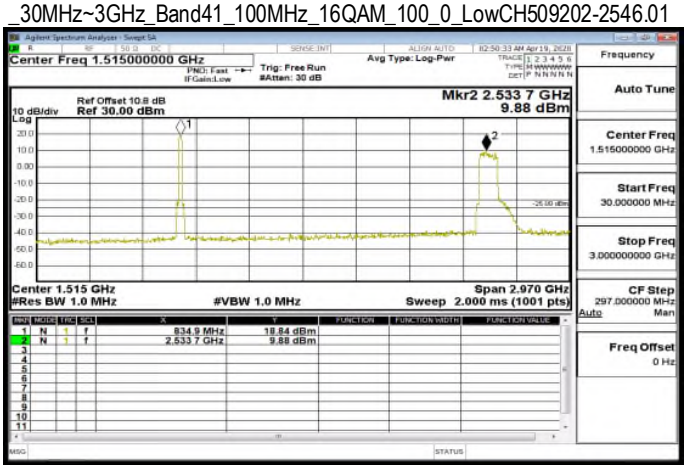
DFT-s-OFDM
_30MHz~3GHz_Band5_20MHz_16QAM_100_0_HighCH167800-844



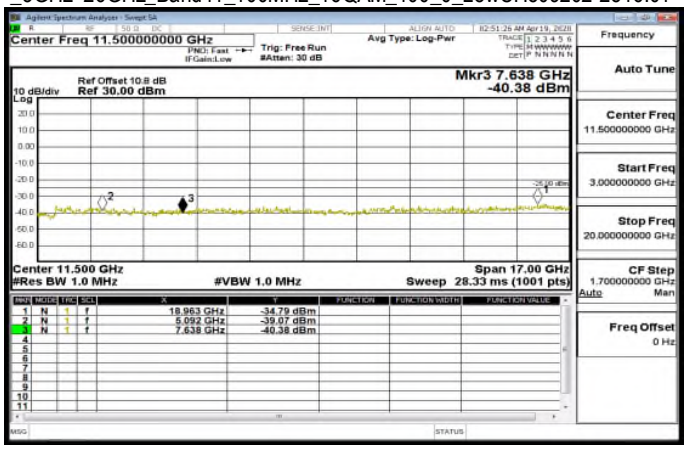
DFT-s-OFDM
_3GHz~26GHz_Band5_20MHz_16QAM_100_0_HighCH20600-844



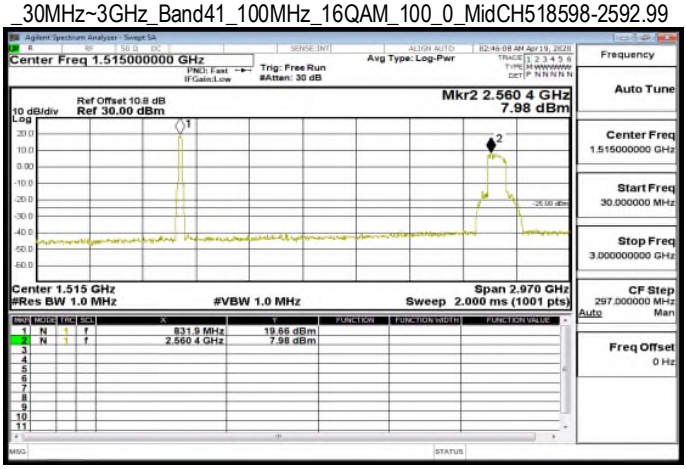
CP-OFDM
_30MHz~3GHz_Band41_100MHz_16QAM_100_0_LowCH509202-2546.01



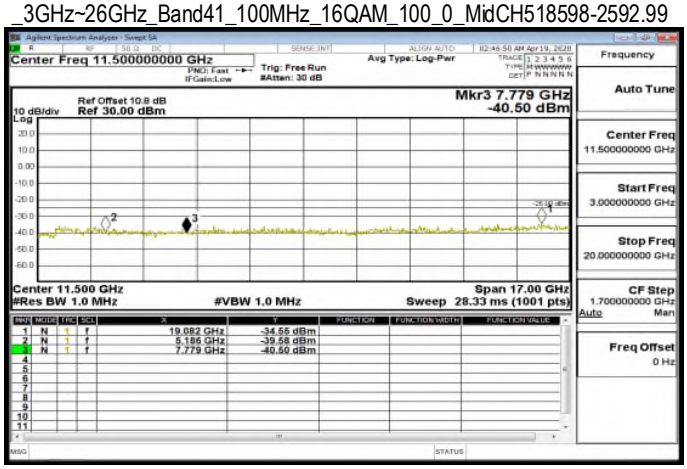
CP-OFDM
_3GHz~26GHz_Band41_100MHz_16QAM_100_0_LowCH509202-2546.01



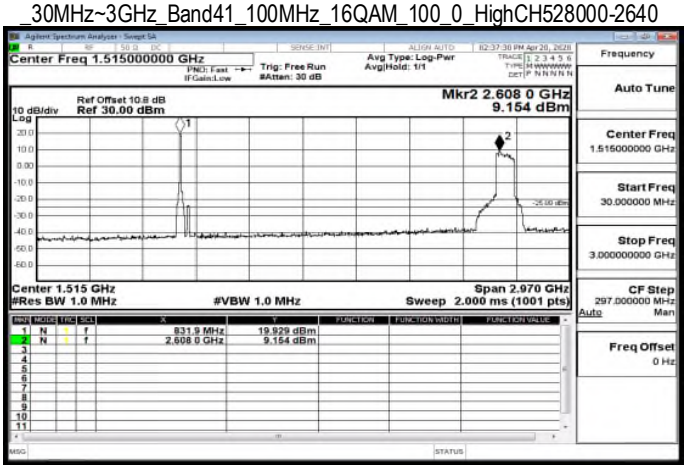
CP-OFDM
_30MHz~3GHz_Band41_100MHz_16QAM_100_0_MidCH518598-2592.99



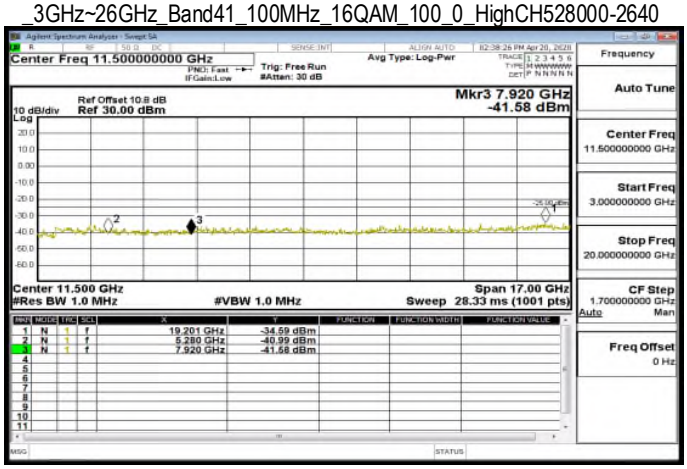
CP-OFDM
_3GHz~26GHz_Band41_100MHz_16QAM_100_0_MidCH518598-2592.99



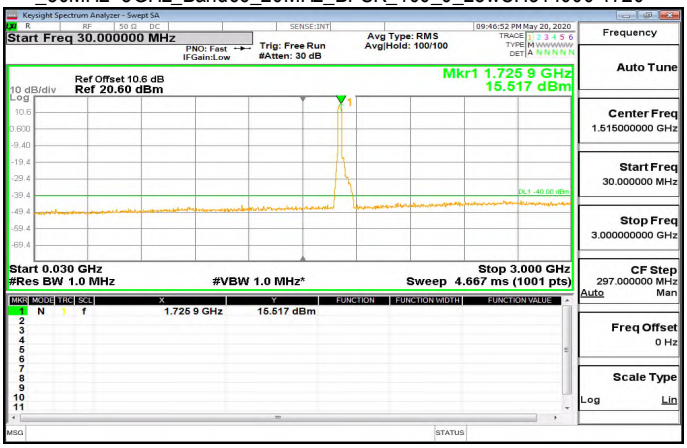
CP-OFDM
_30MHz~3GHz_Band41_100MHz_16QAM_100_0_HighCH528000-2640



CP-OFDM
_3GHz~26GHz_Band41_100MHz_16QAM_100_0_HighCH528000-2640

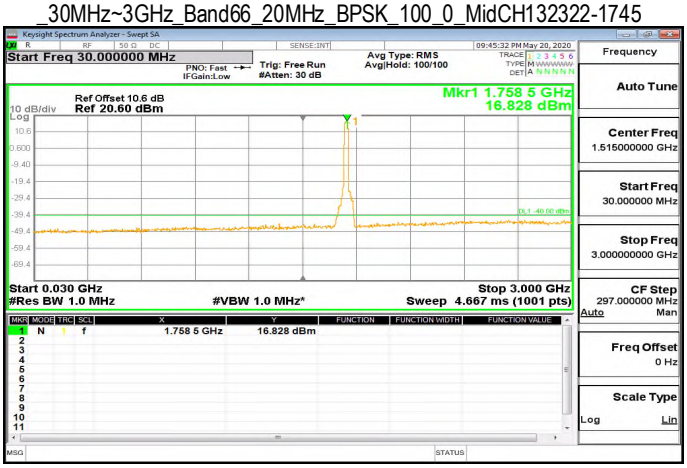


DFT-s-OFDM Pi/2
_30MHz~3GHz_Band66_20MHz_BPSK_100_0_LowCH344000-1720

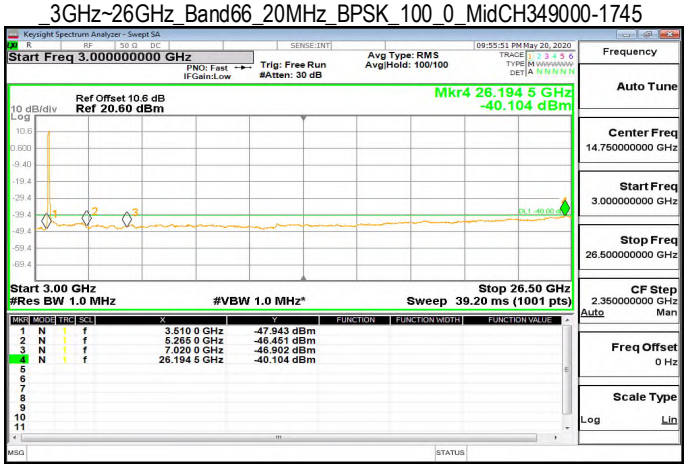


DFT-s-OFDM Pi/2
_3GHz~26GHz_Band66_20MHz_BPSK_100_0_LowCH344000-1720

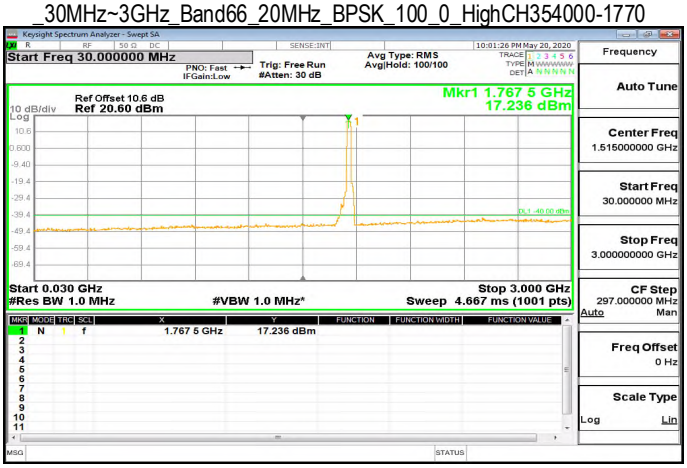
DFT-s-OFDM Pi/2
_30MHz~3GHz_Band66_20MHz_BPSK_100_0_MidCH132322-1745



DFT-s-OFDM Pi/2
_3GHz~26GHz_Band66_20MHz_BPSK_100_0_MidCH349000-1745

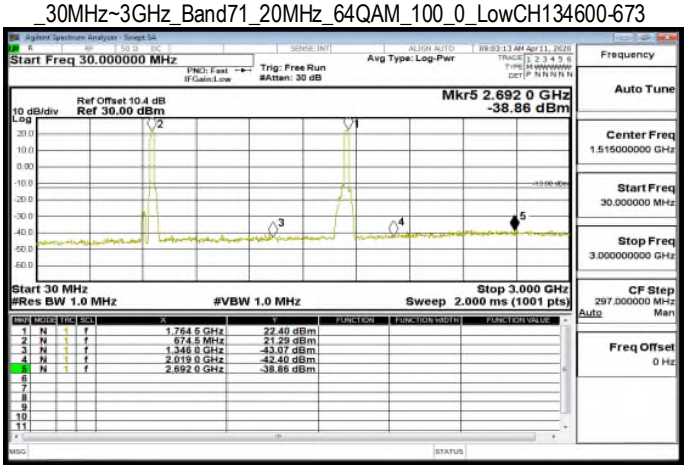


DFT-s-OFDM Pi/2
_30MHz~3GHz_Band66_20MHz_BPSK_100_0_HighCH354000-1770

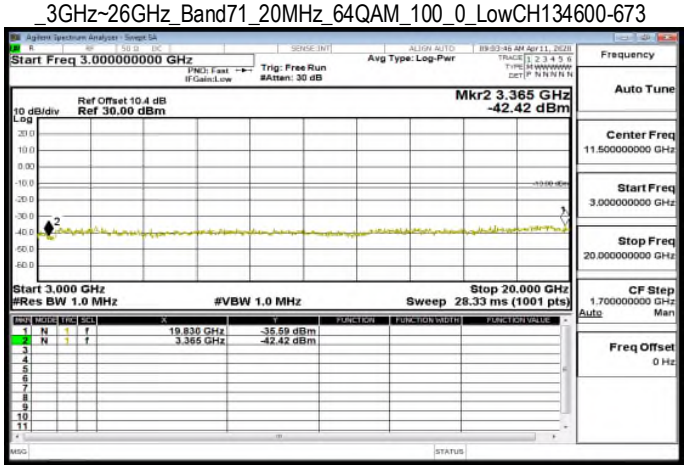


DFT-s-OFDM Pi/2
_3GHz~26GHz_Band66_20MHz_BPSK_100_0_HighCH354000-1770

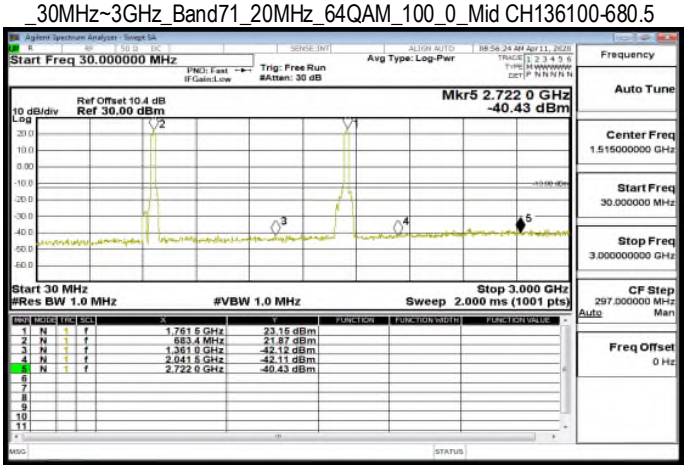
CP-OFDM
_30MHz~3GHz_Band71_20MHz_64QAM_100_0_LowCH134600-673



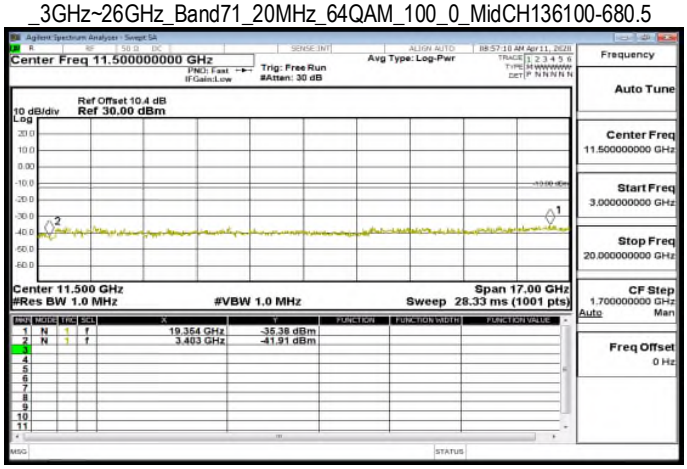
CP-OFDM
_3GHz~26GHz_Band71_20MHz_64QAM_100_0_LowCH134600-673



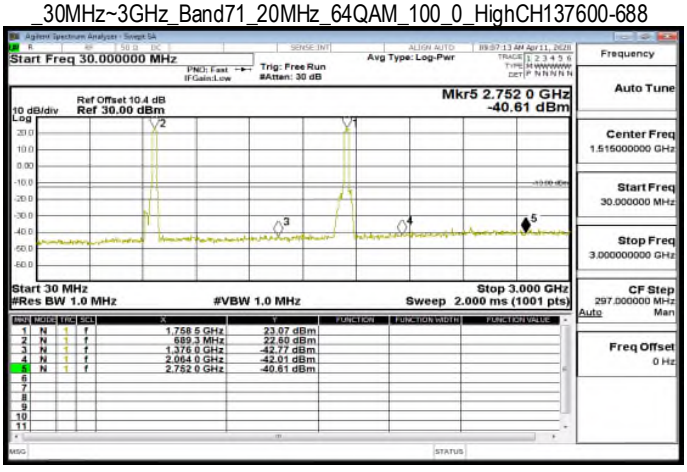
CP-OFDM
_30MHz~3GHz_Band71_20MHz_64QAM_100_0_Mid CH136100-680.5



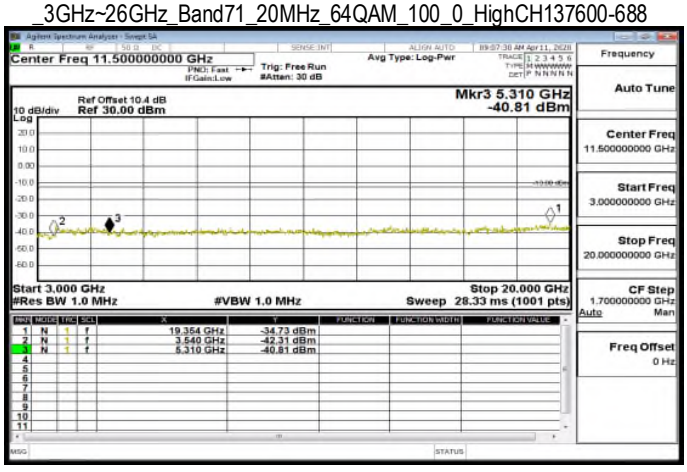
CP-OFDM
_3GHz~26GHz_Band71_20MHz_64QAM_100_0_MidCH136100-680.5



CP-OFDM
_30MHz~3GHz_Band71_20MHz_64QAM_100_0_HighCH137600-688



CP-OFDM
_3GHz~26GHz_Band71_20MHz_64QAM_100_0_HighCH137600-688



9 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

9.1 Standard Applicable

According to FCC §2.1053,

FCC §22.917(a), §24.238(a), §27.53(h)

Out of band emissions.The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

FCC §27.53(g)

Compliance for operations in the 600 MHz, 698-746 MHz, 746-758 MHz and the 776-788 MHz band with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

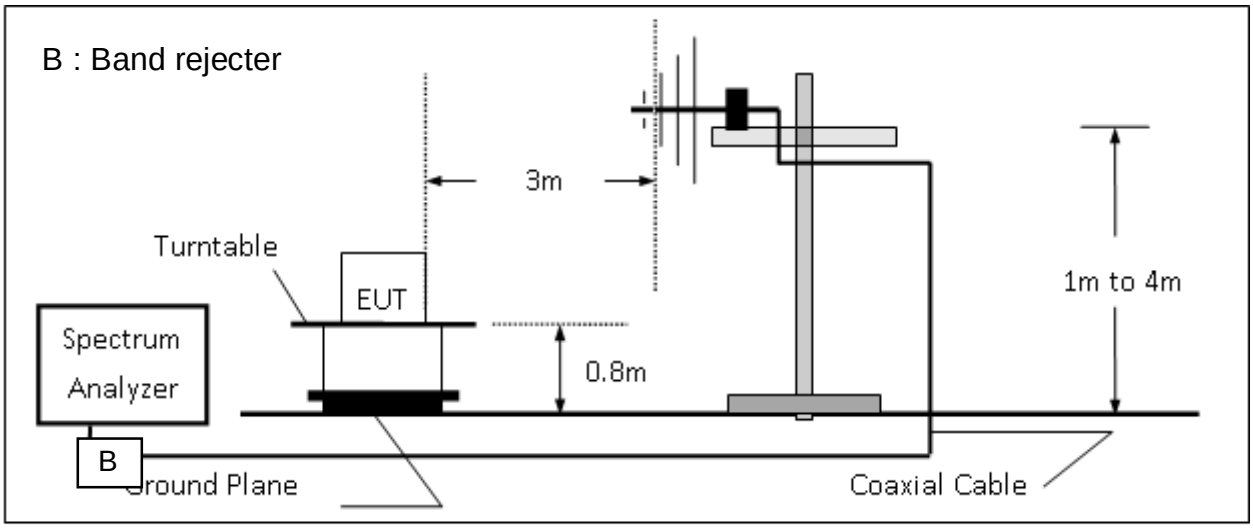
FCC §27.53(m) (4) (6)

For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

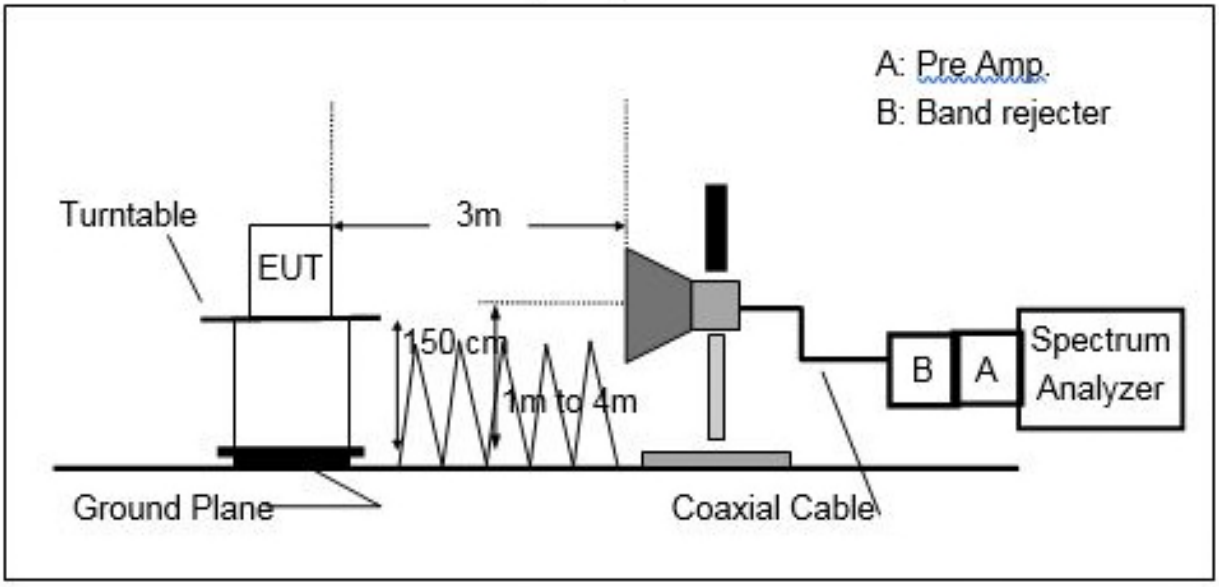
Measurement procedure. Compliance with these rules is based on the use of measurement nstrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed; for mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 megahertz or 1 percent of emission bandwidth, as specified; or 1 megahertz or 2 percent for mobile digital stations, except in the band 2495-2496 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. With respect to television operations, measurements must be made of the separate visual and aural operating powers at sufficiently frequent intervals to ensure compliance with the rules.

EUT Setup

Radiated Emission Test Set-Up, Frequency Below 1000MHz



Radiated Emission Test Set-UP Frequency Over 1 GHz



9.2 Measurement Procedure:

The EUT was placed on a non-conductive; the measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequencies (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

ERP (dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

EIRP (dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

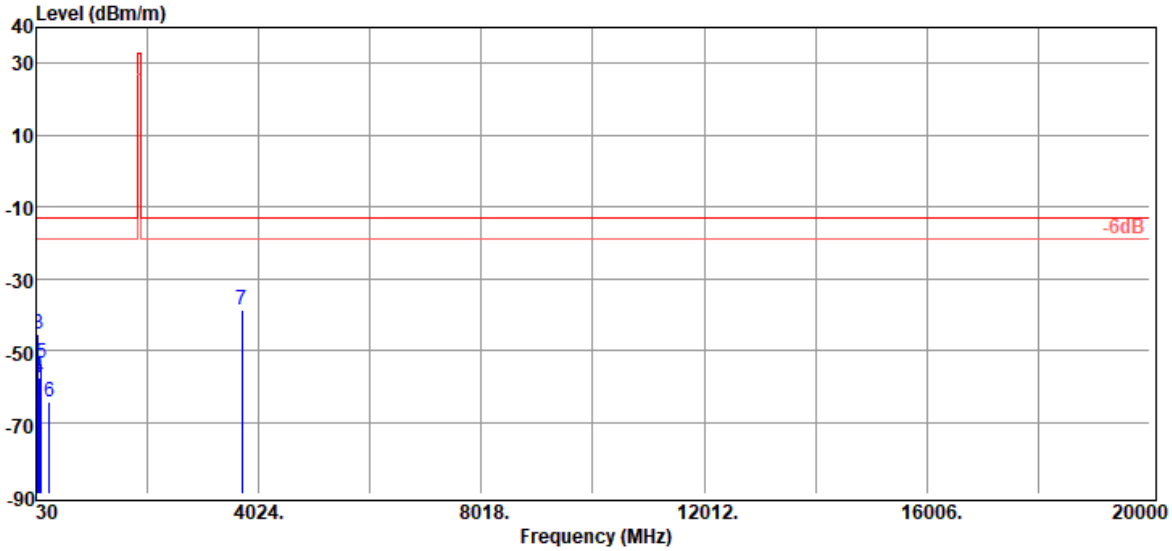
9.3 Measurement Equipment Used:

ERP, EIRP MEASUREMENT EQUIPMENT List 966 Chamber					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Broadband Antenna	TESEQ	CBL 6112D	35240	09/09/2019	09/08/2020
Horn Antenna	Schwarzbeck	BBHA9170	185	08/07/2019	08/06/2020
Horn Antenna	Schwarzbeck	BBHA9120D	1187	01/10/2020	01/09/2021
Spectrum Analyzer	R&S	FSV-40	10058	01/03/2020	01/02/2021
EMI Test Receiver	R&S	ESU 40	100363	04/15/2019	04/14/2020
UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY59321566	12/17/2019	12/16/2020
Pre-Amplifier	EMC Instruments	EMC330	980096	11/20/2019	11/19/2020
Pre-Amplifier	EMC Instruments	EMC0011830	980199	11/20/2019	11/19/2020
Pre-Amplifier	EMC Instruments	EMC184045B	980135	11/20/2019	11/19/2020
Notch Filter	Woken	EWT-54-0037	RF54	11/20/2019	11/19/2020
Notch Filter	Woken	EWT-54-0038	RF55	11/20/2019	11/19/2020
Coaxial Cable	Huber Suhner	SUCOFLEX 104	MY17388/4	11/20/2019	11/19/2020
Coaxial Cable	Huber Suhner	RG 214/U	W22.03	11/20/2019	11/19/2020
Coaxial Cable	Huber Suhner	SUCOFLEX 104	MY17413/4	11/20/2019	11/19/2020

9.4 Measurement Result: (worst case)

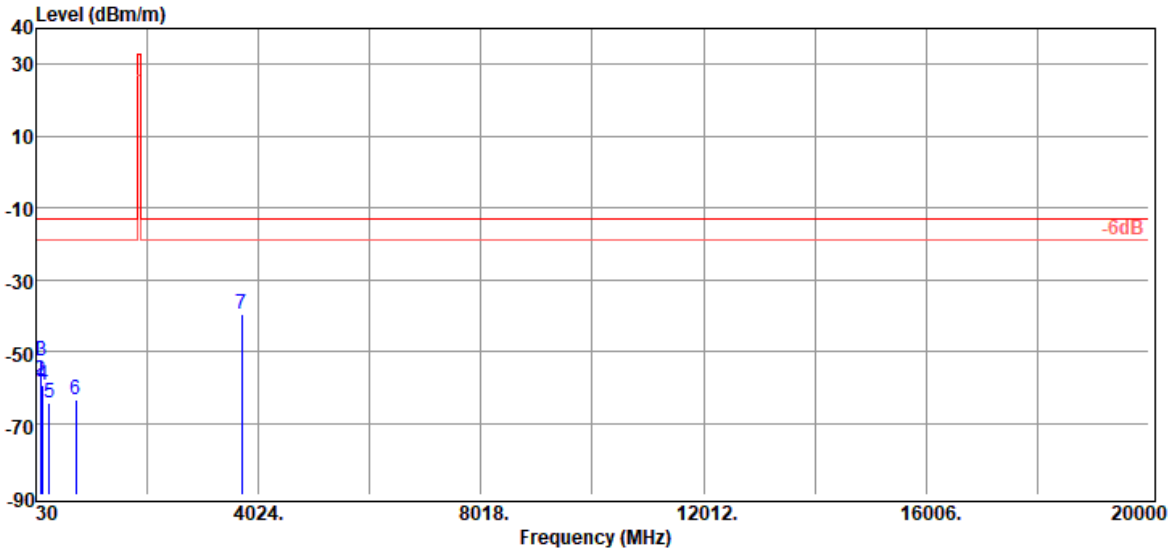
Radiated Spurious Emission Measurement Result: DC_5A_n2A

Report Number	:E2/2019/A0033	Test Date	:2020-02-27
Operation Mode	:L5A + n2A	Temp./Humi.	:21.2/64
Test Mode	:TX CH LOW	Antenna Pol.	:VERTICAL
EUT Pol	:E2 Plan	Engineer	:Ashton
Test Frequency	:1860 MHz		



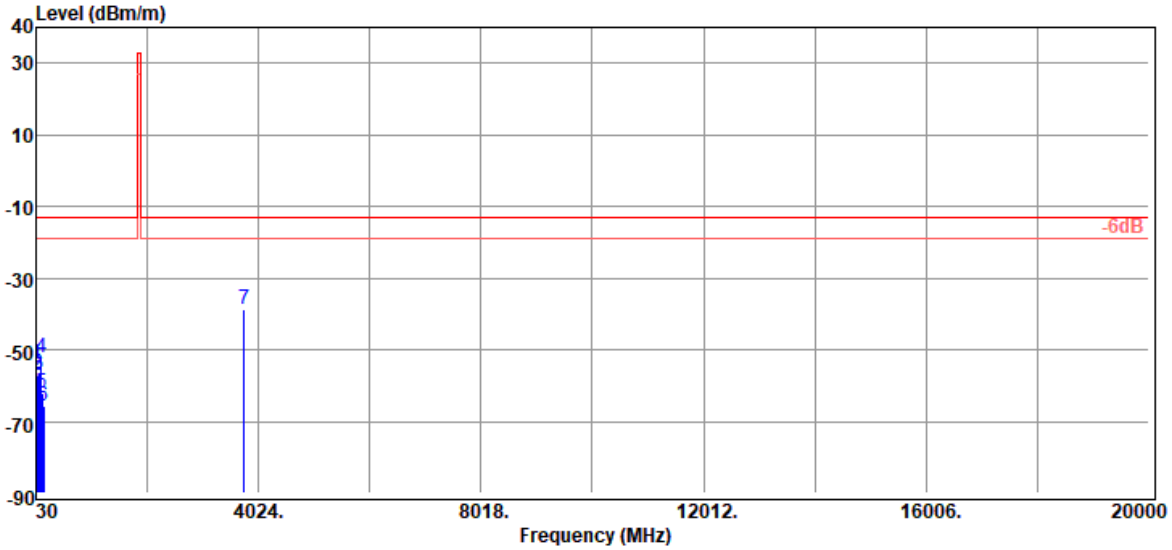
Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
41.64	-56.23	-36.45	-18.92	-0.86	-13.00	-43.23
55.22	-57.61	-40.20	-16.48	-0.93	-13.00	-44.61
64.92	-45.56	-30.85	-13.71	-1.00	-13.00	-32.56
77.53	-57.69	-47.42	-9.15	-1.12	-13.00	-44.69
118.27	-53.50	-44.97	-7.08	-1.45	-13.00	-40.50
272.50	-64.28	-60.34	-1.63	-2.31	-13.00	-51.28
3720.00	-38.77	-39.86	12.34	-11.25	-13.00	-25.77

Report Number	:E2/2019/A0033	Test Date	:2020-02-27
Operation Mode	:L5A + n2A	Temp./Humi.	:21.2/64
Test Mode	:TX CH LOW	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Ashton
Test Frequency	:1860 MHz		



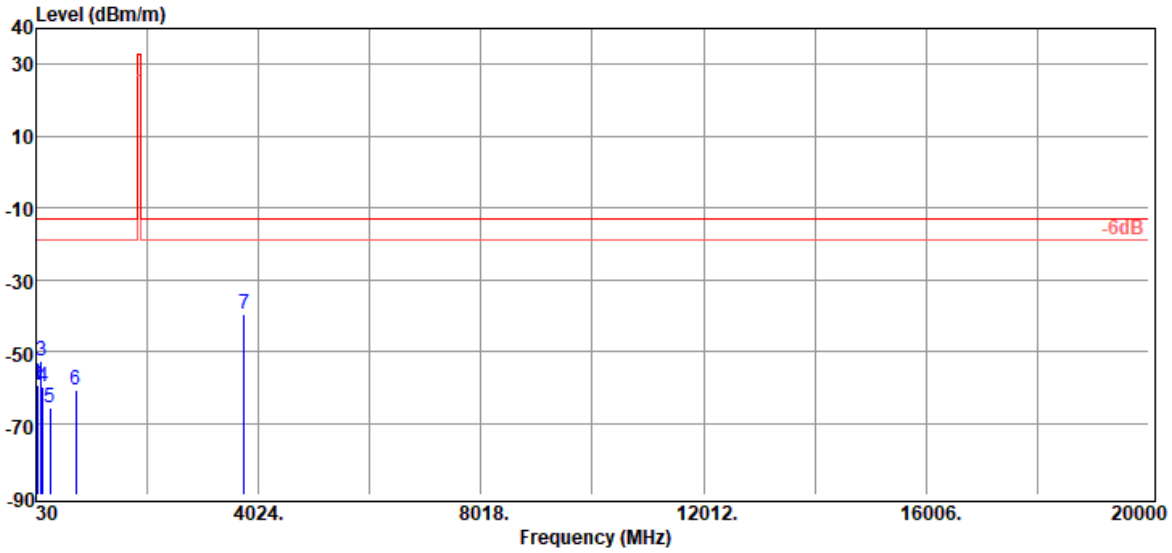
Freq.	EIRP/ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	dBm	dBm	dBi/dBd	dB	dBm	dB
37.76	-52.87	-32.72	-19.35	-0.80	-13.00	-39.87
105.66	-58.13	-49.90	-6.83	-1.40	-13.00	-45.13
118.27	-52.85	-44.32	-7.08	-1.45	-13.00	-39.85
149.31	-59.56	-50.42	-7.46	-1.68	-13.00	-46.56
268.62	-64.56	-60.69	-1.60	-2.27	-13.00	-51.56
745.86	-63.25	-57.45	-1.61	-4.19	-13.00	-50.25
3720.00	-39.50	-40.59	12.34	-11.25	-13.00	-26.50

Report Number	:E2/2019/A0033	Test Date	:2020-02-27
Operation Mode	:L5A + n2A	Temp./Humi.	:21.2/64
Test Mode	:TX CH MID	Antenna Pol.	:VERTICAL
EUT Pol	:E2 Plan	Engineer	:Ashton
Test Frequency	:1880 MHz		



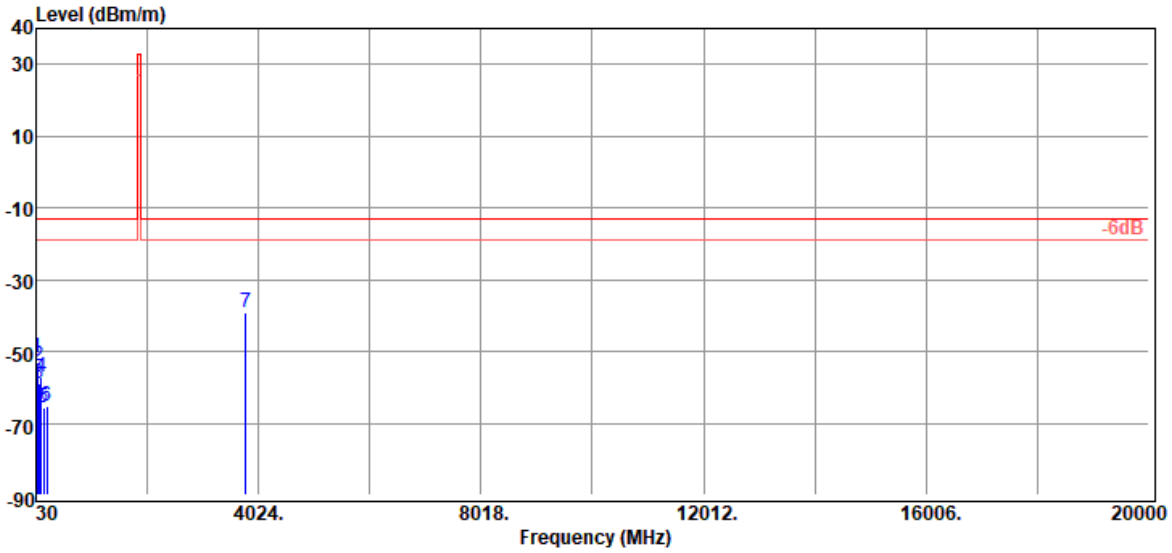
Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
42.61	-53.91	-34.24	-18.81	-0.86	-13.00	-40.91
56.19	-57.38	-40.18	-16.25	-0.95	-13.00	-44.38
78.50	-56.85	-46.87	-8.84	-1.14	-13.00	-43.85
118.27	-52.33	-43.80	-7.08	-1.45	-13.00	-39.33
140.58	-62.10	-52.80	-7.64	-1.66	-13.00	-49.10
167.74	-65.76	-57.58	-6.45	-1.73	-13.00	-52.76
3760.00	-38.94	-40.28	12.42	-11.08	-13.00	-25.94

Report Number	:E2/2019/A0033	Test Date	:2020-02-27
Operation Mode	:L5A + n2A	Temp./Humi.	:21.2/64
Test Mode	:TX CH MID	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Ashton
Test Frequency	:1880 MHz		



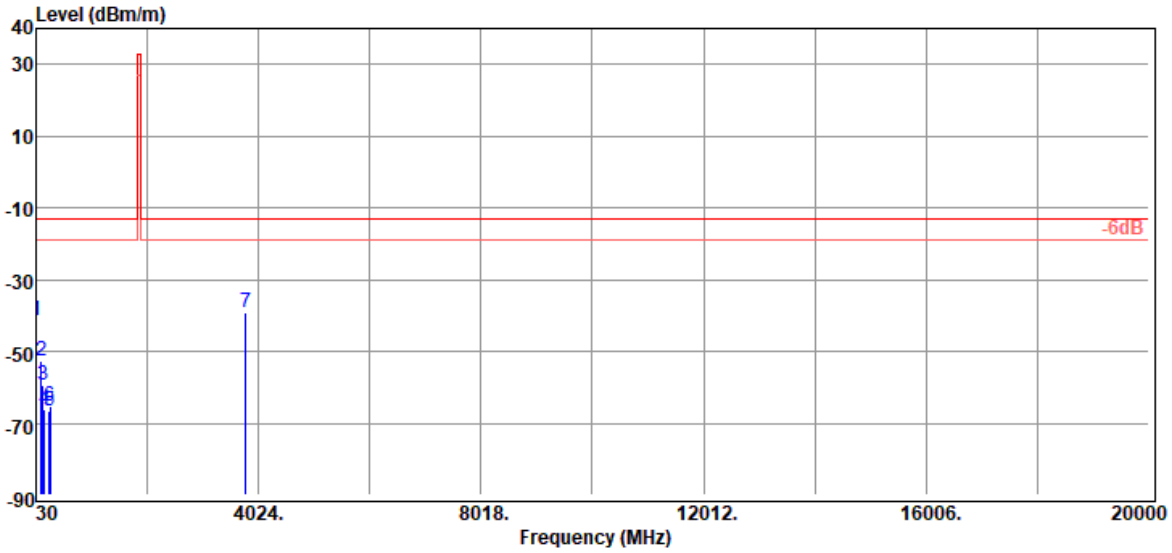
Freq.	EIRP/ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	dBm	dBm	dBi/dBd	dB	dBm	dB
37.76	-59.12	-38.97	-19.35	-0.80	-13.00	-46.12
50.37	-59.36	-40.99	-17.50	-0.87	-13.00	-46.36
118.27	-52.60	-44.07	-7.08	-1.45	-13.00	-39.60
148.34	-60.00	-50.81	-7.51	-1.68	-13.00	-47.00
282.20	-65.66	-61.56	-1.67	-2.43	-13.00	-52.66
740.04	-60.86	-55.11	-1.56	-4.19	-13.00	-47.86
3760.00	-39.52	-40.86	12.42	-11.08	-13.00	-26.52

Report Number	:E2/2019/A0033	Test Date	:2020-02-27
Operation Mode	:L5A + n2A	Temp./Humi.	:21.2/64
Test Mode	:TX CH HIGH	Antenna Pol.	:VERTICAL
EUT Pol	:E2 Plan	Engineer	:Ashton
Test Frequency	:1900 MHz		



Freq.	EIRP/ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	dBm	dBm	dBi/dBd	dB	dBm	dB
42.61	-51.77	-32.10	-18.81	-0.86	-13.00	-38.77
67.83	-54.06	-40.23	-12.83	-1.00	-13.00	-41.06
78.50	-59.15	-49.17	-8.84	-1.14	-13.00	-46.15
117.30	-57.34	-48.80	-7.09	-1.45	-13.00	-44.34
167.74	-65.76	-57.58	-6.45	-1.73	-13.00	-52.76
227.88	-65.10	-61.59	-1.32	-2.19	-13.00	-52.10
3800.00	-39.01	-40.59	12.50	-10.92	-13.00	-26.01

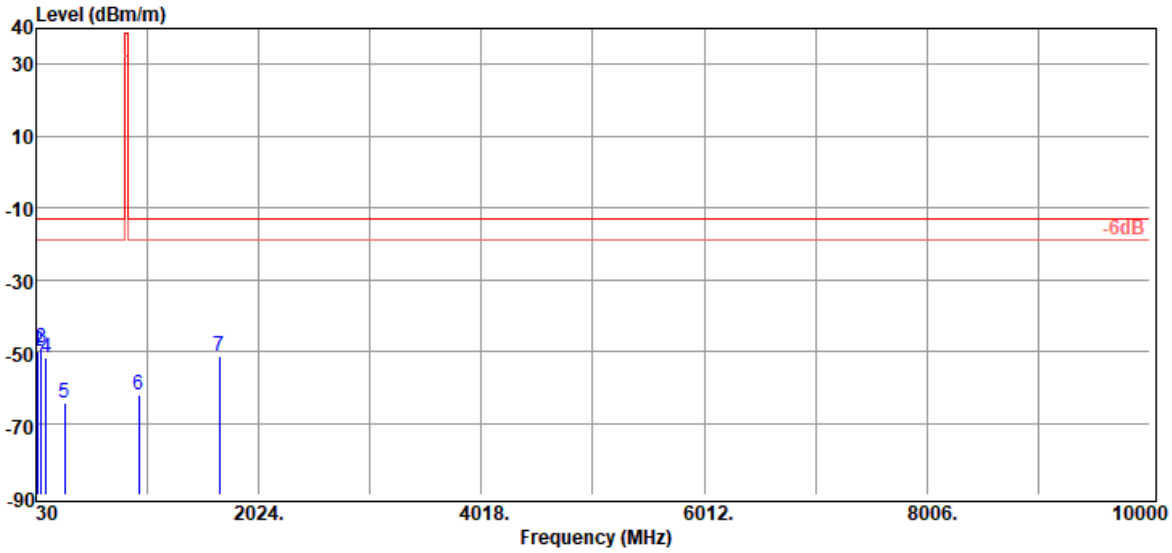
Report Number	:E2/2019/A0033	Test Date	:2020-02-27
Operation Mode	:L5A + n2A	Temp./Humi.	:21.2/64
Test Mode	:TX CH HIGH	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Ashton
Test Frequency	:1900 MHz		



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
35.82	-41.39	-20.99	-19.64	-0.76	-13.00	-28.39
120.21	-52.80	-44.29	-7.06	-1.45	-13.00	-39.80
147.37	-59.60	-50.36	-7.57	-1.67	-13.00	-46.60
175.50	-66.37	-59.37	-5.26	-1.74	-13.00	-53.37
267.65	-66.64	-62.77	-1.60	-2.27	-13.00	-53.64
287.05	-65.05	-60.91	-1.66	-2.48	-13.00	-52.05
3800.00	-39.12	-40.70	12.50	-10.92	-13.00	-26.12

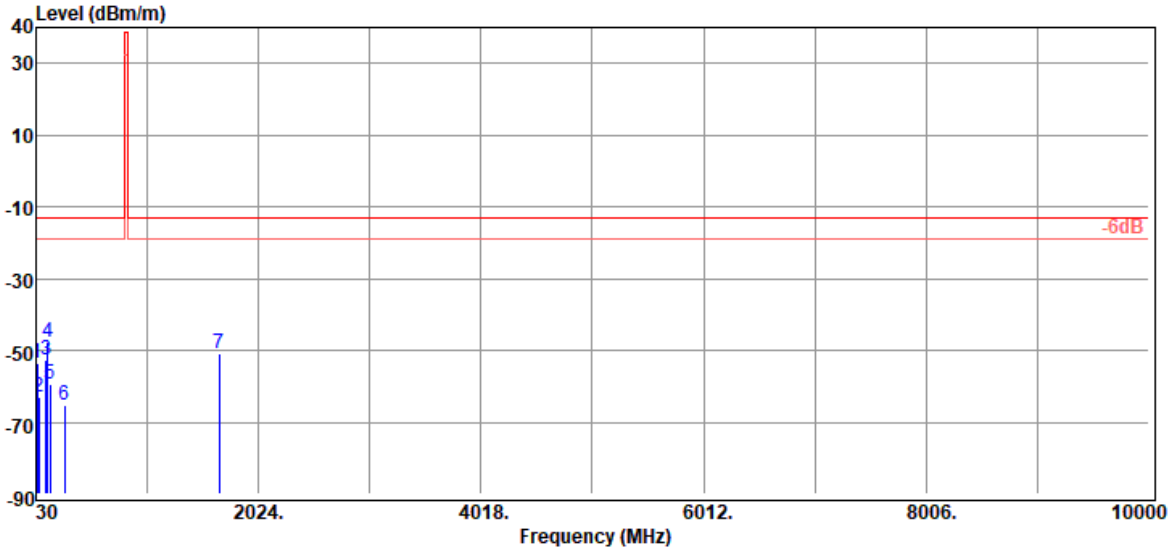
Radiated Spurious Emission Measurement Result: DC_66A_n5A

Report Number	:E2/2019/A0033	Test Date	:2020-02-27
Operation Mode	:L66A + n5A	Temp./Humi.	:21.9/65
Test Mode	:TX CH LOW	Antenna Pol.	:VERTICAL
EUT Pol	:E2 Plan	Engineer	:Ashton
Test Frequency	:834 MHz		



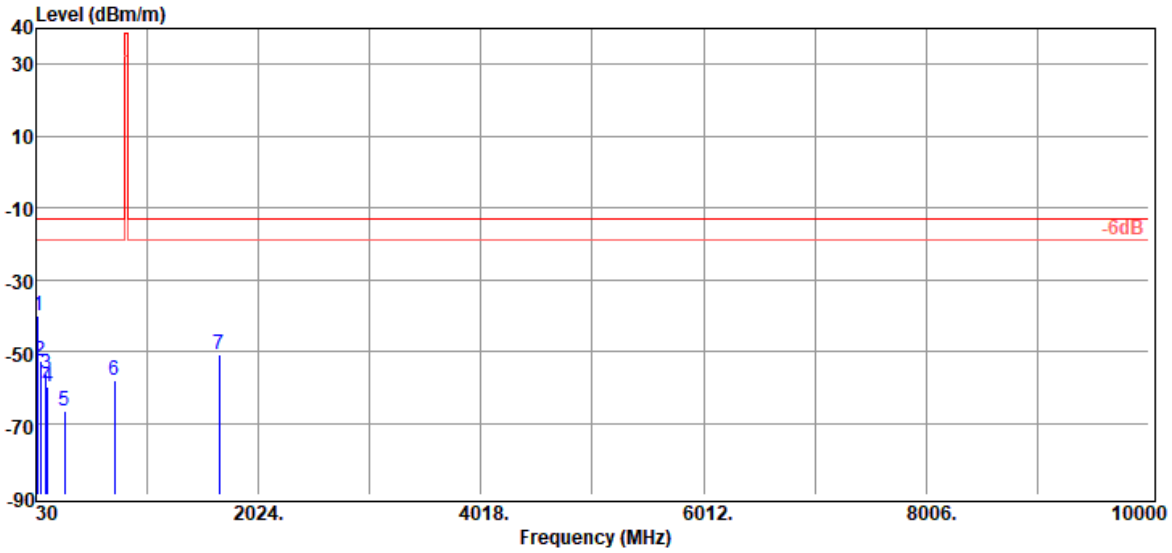
Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
34.85	-49.90	-29.40	-19.77	-0.73	-13.00	-36.90
51.34	-50.06	-31.85	-17.33	-0.88	-13.00	-37.06
75.59	-48.85	-37.91	-9.85	-1.09	-13.00	-35.85
118.27	-51.91	-43.38	-7.08	-1.45	-13.00	-38.91
285.11	-64.29	-60.19	-1.64	-2.46	-13.00	-51.29
949.56	-62.07	-55.59	-1.68	-4.80	-13.00	-49.07
1668.00	-51.13	-52.96	9.48	-7.65	-13.00	-38.13

Report Number	:E2/2019/A0033	Test Date	:2020-02-27
Operation Mode	:L66A + n5A	Temp./Humi.	:21.9/65
Test Mode	:TX CH LOW	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Ashton
Test Frequency	:834 MHz		



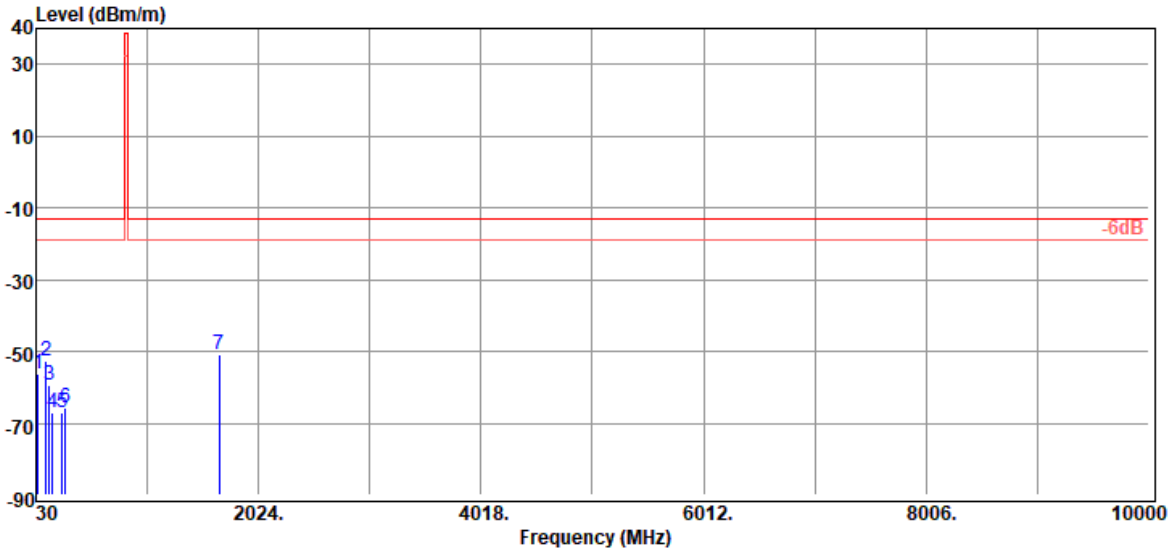
Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
37.76	-53.65	-33.50	-19.35	-0.80	-13.00	-40.65
56.19	-63.23	-46.03	-16.25	-0.95	-13.00	-50.23
118.27	-52.81	-44.28	-7.08	-1.45	-13.00	-39.81
132.82	-47.85	-38.84	-7.35	-1.66	-13.00	-34.85
158.04	-59.61	-50.86	-7.07	-1.68	-13.00	-46.61
288.99	-65.11	-60.93	-1.68	-2.50	-13.00	-52.11
1668.00	-50.97	-52.80	9.48	-7.65	-13.00	-37.97

Report Number	:E2/2019/A0033	Test Date	:2020-02-27
Operation Mode	:L66A + n5A	Temp./Humi.	:21.8/64
Test Mode	:TX CH MID	Antenna Pol.	:VERTICAL
EUT Pol	:E2 Plan	Engineer	:Ashton
Test Frequency	:836.5 MHz		



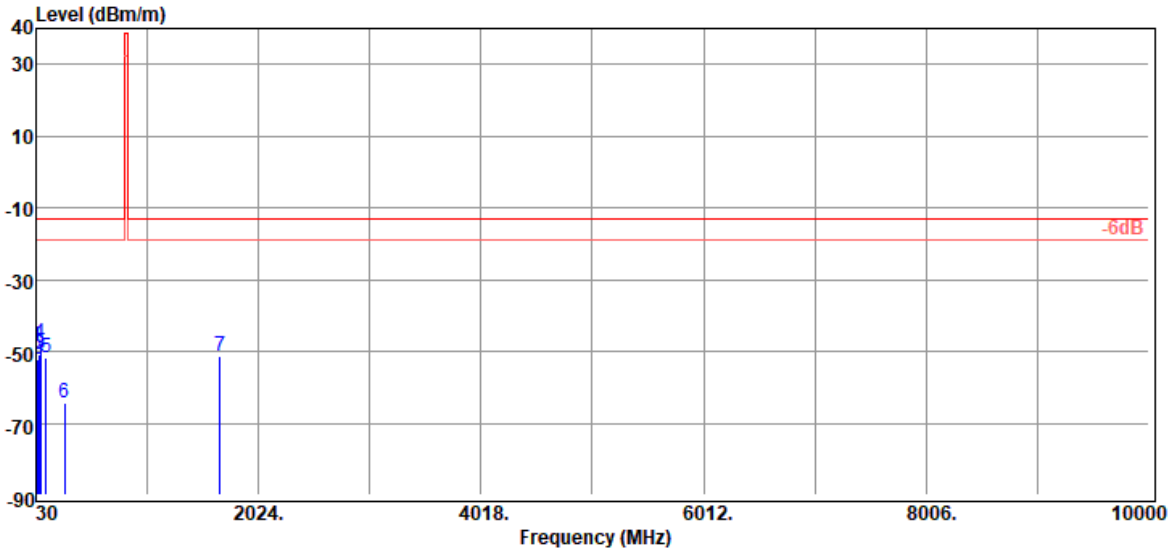
Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
44.55	-40.10	-20.73	-18.51	-0.86	-13.00	-27.10
67.83	-52.75	-38.92	-12.83	-1.00	-13.00	-39.75
119.24	-56.33	-47.84	-7.04	-1.45	-13.00	-43.33
132.82	-59.80	-50.79	-7.35	-1.66	-13.00	-46.80
285.11	-66.67	-62.57	-1.64	-2.46	-13.00	-53.67
734.22	-58.18	-52.50	-1.42	-4.26	-13.00	-45.18
1673.00	-51.09	-52.94	9.53	-7.68	-13.00	-38.09

Report Number	:E2/2019/A0033	Test Date	:2020-02-27
Operation Mode	:L66A + n5A	Temp./Humi.	:21.8/64
Test Mode	:TX CH MID	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Ashton
Test Frequency	:836.5 MHz		



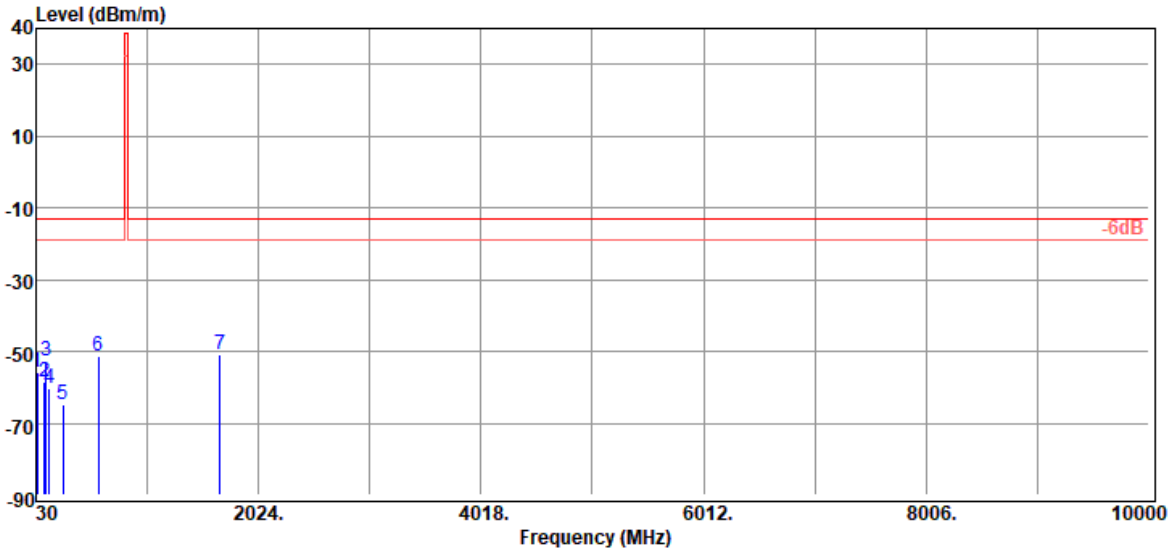
Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
51.34	-56.13	-37.92	-17.33	-0.88	-13.00	-43.13
118.27	-52.86	-44.33	-7.08	-1.45	-13.00	-39.86
148.34	-59.30	-50.11	-7.51	-1.68	-13.00	-46.30
177.44	-66.98	-60.37	-4.87	-1.74	-13.00	-53.98
267.65	-66.94	-63.07	-1.60	-2.27	-13.00	-53.94
294.81	-65.49	-61.43	-1.55	-2.51	-13.00	-52.49
1673.00	-50.95	-52.80	9.53	-7.68	-13.00	-37.95

Report Number	:E2/2019/A0033	Test Date	:2020-02-27
Operation Mode	:L66A + n5A	Temp./Humi.	:21.8/66
Test Mode	:TX CH HIGH	Antenna Pol.	:VERTICAL
EUT Pol	:E2 Plan	Engineer	:Ashton
Test Frequency	:839 MHz		



Freq.	EIRP/ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	dBm	dBm	dBi/dBd	dB	dBm	dB
35.82	-48.81	-28.41	-19.64	-0.76	-13.00	-35.81
43.58	-51.99	-32.42	-18.71	-0.86	-13.00	-38.99
63.95	-51.00	-35.97	-14.03	-1.00	-13.00	-38.00
72.68	-47.66	-35.68	-10.94	-1.04	-13.00	-34.66
118.27	-51.72	-43.19	-7.08	-1.45	-13.00	-38.72
283.17	-64.32	-60.22	-1.66	-2.44	-13.00	-51.32
1678.00	-51.09	-52.96	9.58	-7.71	-13.00	-38.09

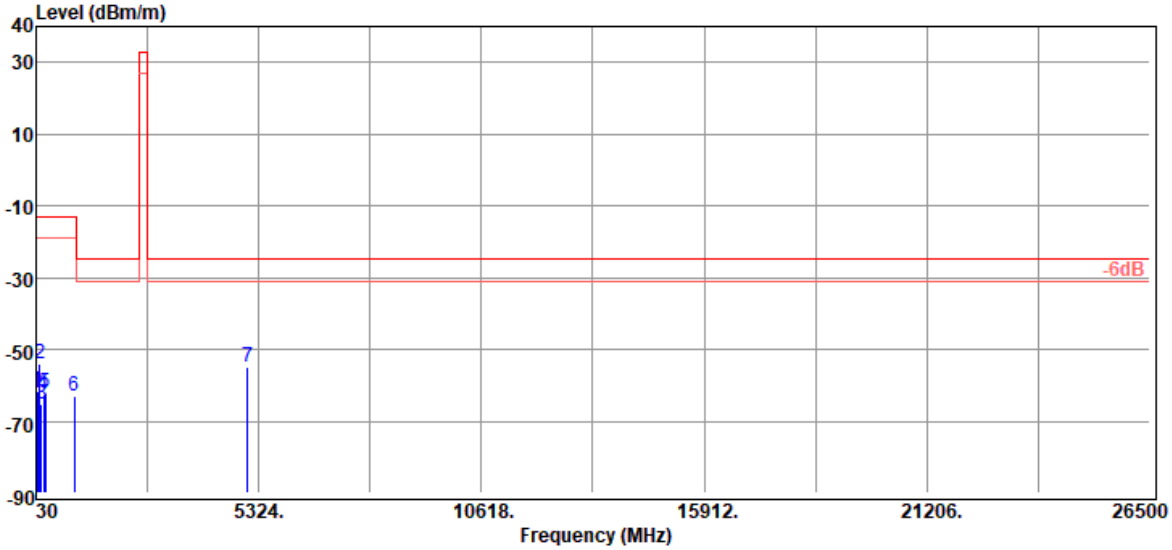
Report Number	:E2/2019/A0033	Test Date	:2020-02-27
Operation Mode	:L66A + n5A	Temp./Humi.	:21.8/66
Test Mode	:TX CH HIGH	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Ashton
Test Frequency	:839 MHz		



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
41.64	-55.88	-36.10	-18.92	-0.86	-13.00	-42.88
104.69	-58.37	-50.20	-6.78	-1.39	-13.00	-45.37
118.27	-52.85	-44.32	-7.08	-1.45	-13.00	-39.85
149.31	-60.13	-50.99	-7.46	-1.68	-13.00	-47.13
269.59	-64.85	-60.97	-1.61	-2.27	-13.00	-51.85
586.78	-51.12	-45.96	-1.41	-3.75	-13.00	-38.12
1678.00	-50.94	-52.81	9.58	-7.71	-13.00	-37.94

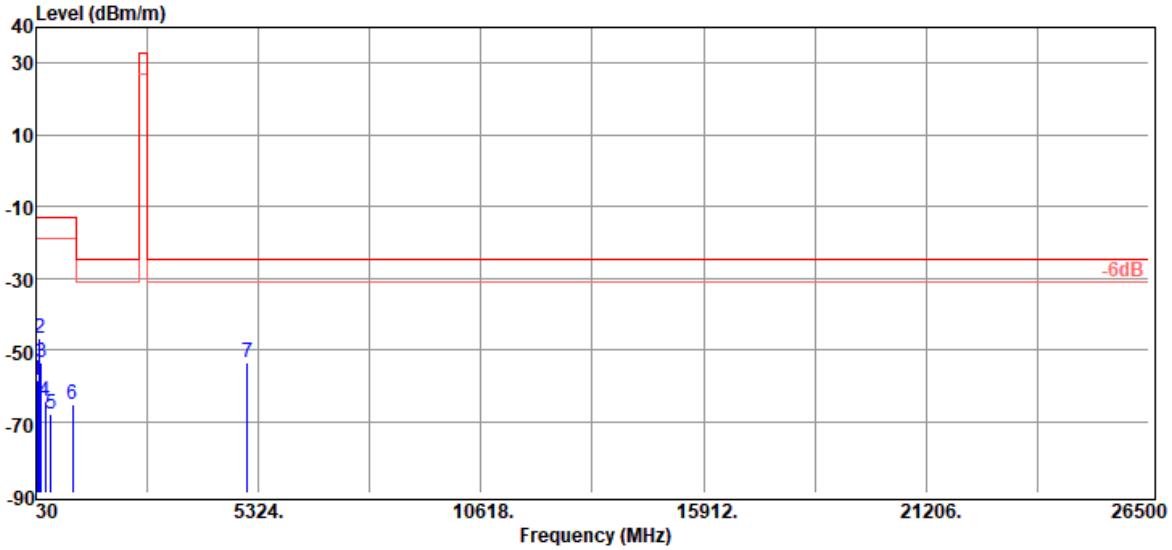
Radiated Spurious Emission Measurement Result: DC_26A_n41A

Report Number	:E2/2019/A0033	Test Date	:2020-04-14
Operation Mode	:L26A + n41a	Temp./Humi.	:22.5/51
Test Mode	:TX CH LOW	Antenna Pol.	:VERTICAL
EUT Pol	:E2 Plan	Engineer	:Enzo
Test Frequency	:2526 MHz		



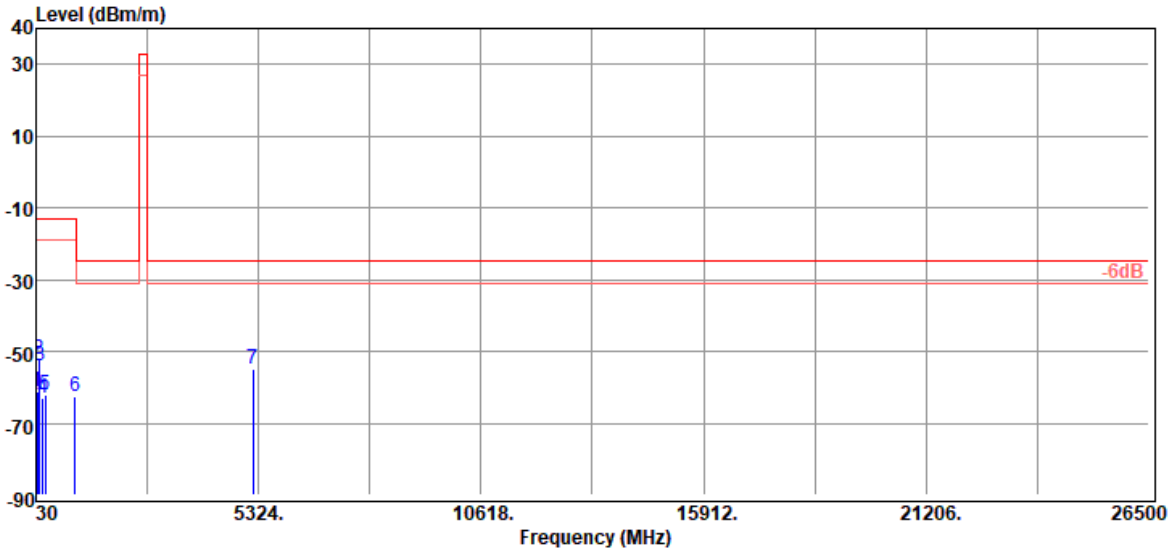
Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
57.16	-61.51	-44.49	-16.06	-0.96	-13.00	-48.51
118.27	-54.06	-45.53	-7.08	-1.45	-13.00	-41.06
158.04	-65.17	-56.42	-7.07	-1.68	-13.00	-52.17
203.63	-62.77	-58.73	-1.96	-2.08	-13.00	-49.77
252.13	-61.93	-58.14	-1.55	-2.24	-13.00	-48.93
942.77	-63.10	-56.65	-1.65	-4.80	-13.00	-50.10
5052.00	-54.70	-55.55	12.40	-11.55	-25.00	-29.70

Report Number	:E2/2019/A0033	Test Date	:2020-04-14
Operation Mode	:L26A + n41a	Temp./Humi.	:22.5/51
Test Mode	:TX CH LOW	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Enzo
Test Frequency	:2526 MHz		



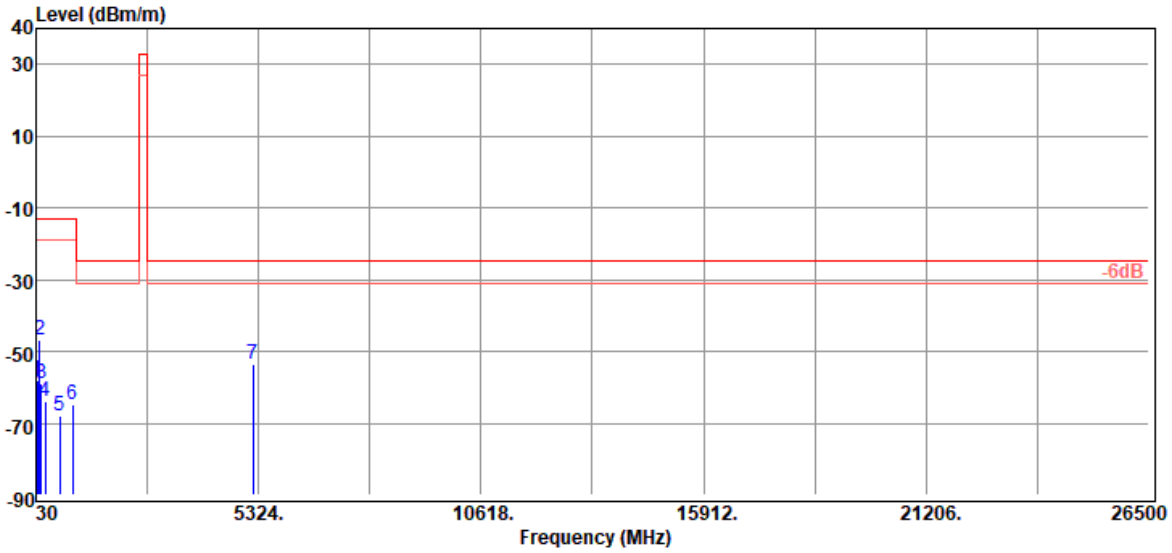
Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
56.19	-58.41	-41.21	-16.25	-0.95	-13.00	-45.41
118.27	-46.96	-38.43	-7.08	-1.45	-13.00	-33.96
155.13	-53.53	-44.64	-7.21	-1.68	-13.00	-40.53
253.10	-64.34	-60.56	-1.54	-2.24	-13.00	-51.34
385.99	-67.95	-63.58	-1.53	-2.84	-13.00	-54.95
897.18	-65.28	-59.29	-1.38	-4.61	-13.00	-52.28
5052.00	-53.78	-54.63	12.40	-11.55	-25.00	-28.78

Report Number	:E2/2019/A0033	Test Date	:2020-04-14
Operation Mode	:L26A + n41a	Temp./Humi.	:22.5/51
Test Mode	:TX CH MID	Antenna Pol.	:VERTICAL
EUT Pol	:E2 Plan	Engineer	:Enzo
Test Frequency	:2592.99 MHz		



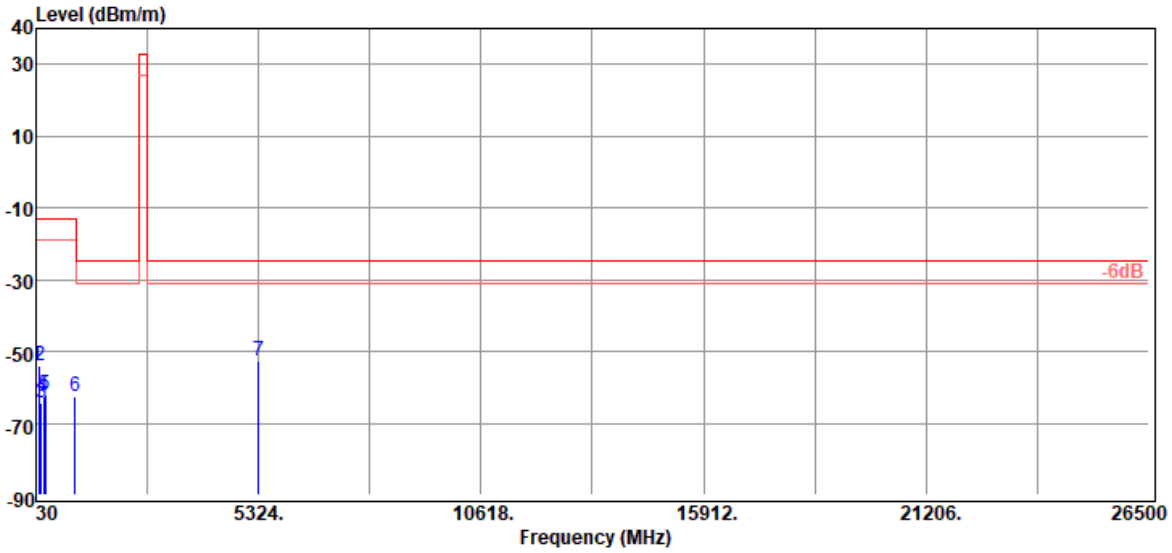
Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
49.40	-61.40	-42.81	-17.73	-0.86	-13.00	-48.40
93.05	-52.33	-45.35	-5.77	-1.21	-13.00	-39.33
118.27	-54.19	-45.66	-7.08	-1.45	-13.00	-41.19
201.69	-63.01	-58.88	-2.05	-2.08	-13.00	-50.01
252.13	-61.95	-58.16	-1.55	-2.24	-13.00	-48.95
964.11	-62.35	-55.46	-1.64	-5.25	-13.00	-49.35
5185.98	-55.07	-55.75	12.64	-11.96	-25.00	-30.07

Report Number	:E2/2019/A0033	Test Date	:2020-04-14
Operation Mode	:L26A + n41a	Temp./Humi.	:22.5/51
Test Mode	:TX CH MID	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Enzo
Test Frequency	:2592.99 MHz		



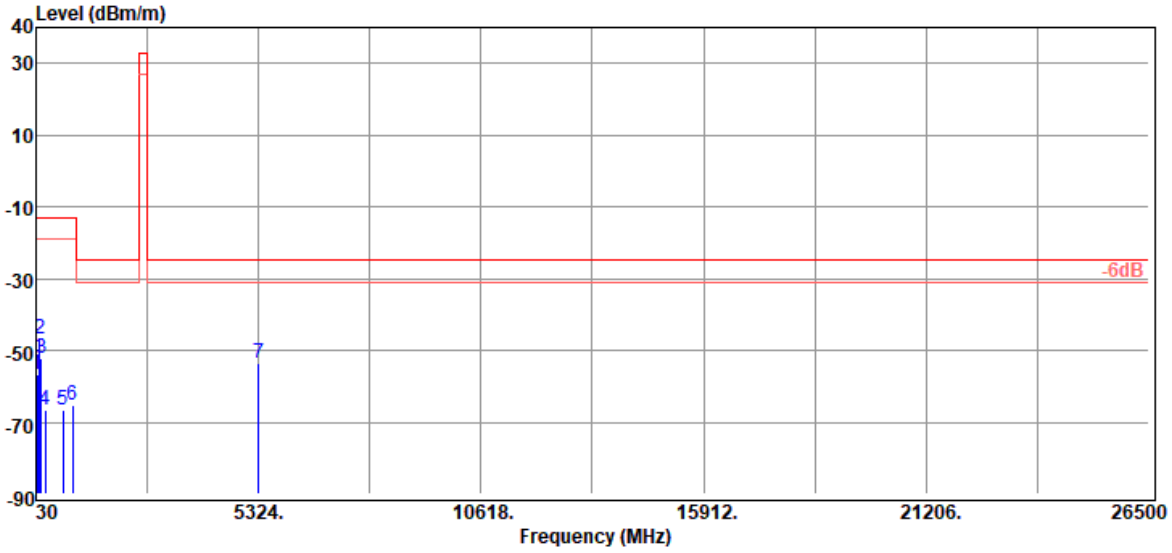
Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
55.22	-57.87	-40.46	-16.48	-0.93	-13.00	-44.87
118.27	-46.93	-38.40	-7.08	-1.45	-13.00	-33.93
155.13	-58.95	-50.06	-7.21	-1.68	-13.00	-45.95
251.16	-63.99	-60.20	-1.56	-2.23	-13.00	-50.99
585.81	-67.94	-62.79	-1.40	-3.75	-13.00	-54.94
893.30	-65.01	-58.98	-1.42	-4.61	-13.00	-52.01
5185.98	-53.55	-54.23	12.64	-11.96	-25.00	-28.55

Report Number	:E2/2019/A0033	Test Date	:2020-04-14
Operation Mode	:L26A + n41a	Temp./Humi.	:22.5/51
Test Mode	:TX CH HIGH	Antenna Pol.	:VERTICAL
EUT Pol	:E2 Plan	Engineer	:Enzo
Test Frequency	:2659.98 MHz		



Freq.	EIRP/ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	dBm	dBm	dBi/dBd	dB	dBm	dB
35.82	-54.15	-33.75	-19.64	-0.76	-13.00	-41.15
118.27	-53.88	-45.35	-7.08	-1.45	-13.00	-40.88
158.04	-64.15	-55.40	-7.07	-1.68	-13.00	-51.15
205.57	-62.58	-58.63	-1.87	-2.08	-13.00	-49.58
253.10	-62.00	-58.22	-1.54	-2.24	-13.00	-49.00
962.17	-62.74	-55.87	-1.62	-5.25	-13.00	-49.74
5319.96	-52.70	-54.43	13.38	-11.65	-25.00	-27.70

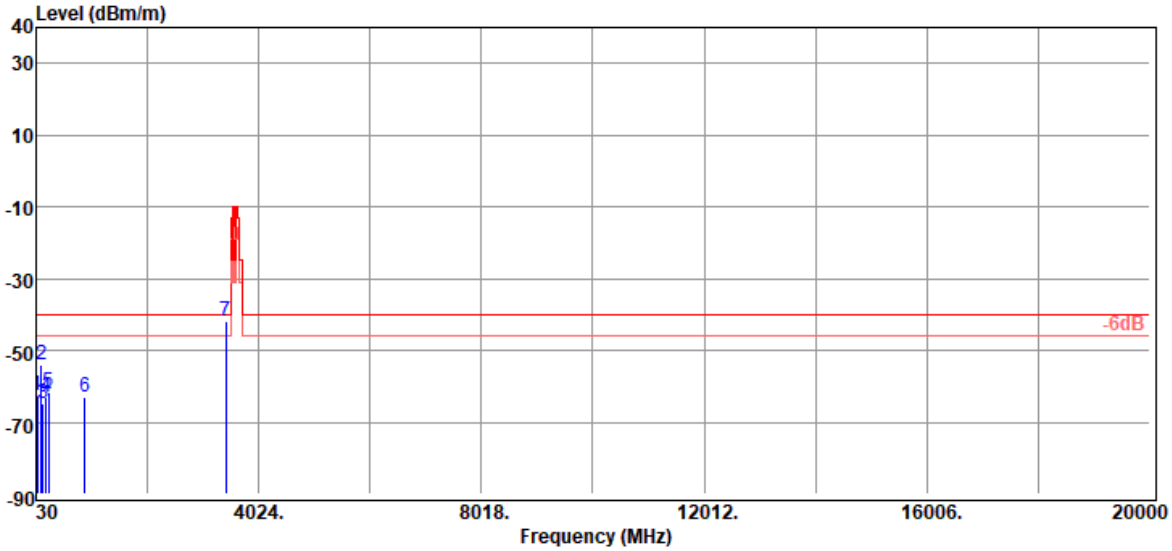
Report Number	:E2/2019/A0033	Test Date	:2020-04-14
Operation Mode	:L26A + n41a	Temp./Humi.	:22.5/51
Test Mode	:TX CH HIGH	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Enzo
Test Frequency	:2659.98 MHz		



Freq.	EIRP/ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	dBm	dBm	dBi/dBd	dB	dBm	dB
64.92	-56.67	-41.96	-13.71	-1.00	-13.00	-43.67
118.27	-46.97	-38.44	-7.08	-1.45	-13.00	-33.97
153.19	-52.27	-43.35	-7.24	-1.68	-13.00	-39.27
247.28	-66.51	-62.60	-1.68	-2.23	-13.00	-53.51
666.32	-66.52	-61.43	-1.19	-3.90	-13.00	-53.52
902.03	-65.06	-59.05	-1.38	-4.63	-13.00	-52.06
5319.96	-53.34	-55.07	13.38	-11.65	-25.00	-28.34

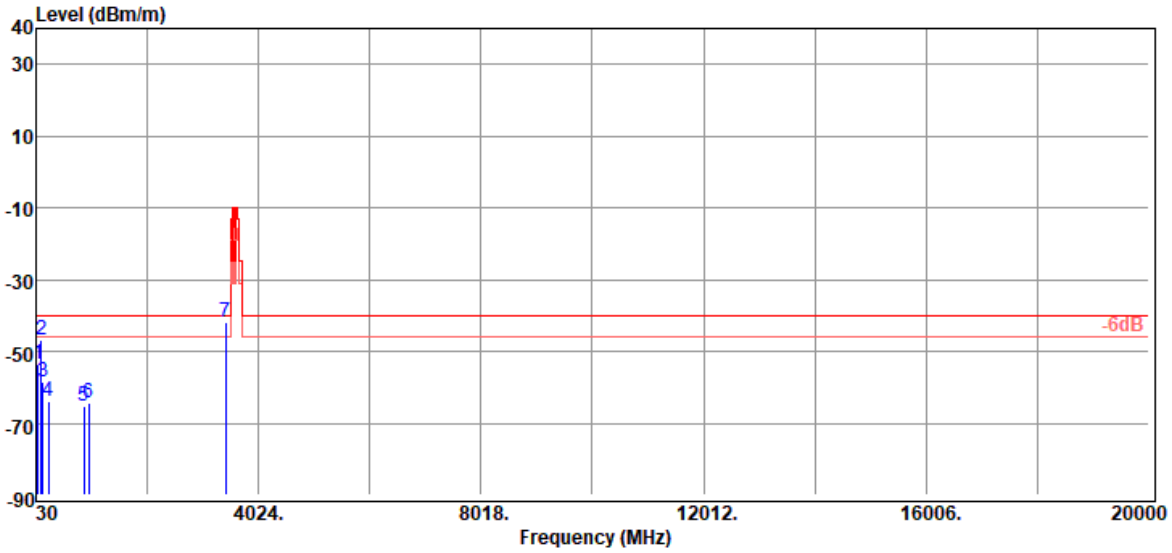
Radiated Spurious Emission Measurement Result: DC_48A_n66A

Report Number	:E2/2019/A0033	Test Date	: 2020-05-19
Operation Mode	:L48A + n66a	Temp./Humi.	:24.2/57
Test Mode	:TX CH LOW	Antenna Pol.	:VERTICAL
EUT Pol	:E2 Plan	Engineer	:Enzo
Test Frequency	:1720 MHz		



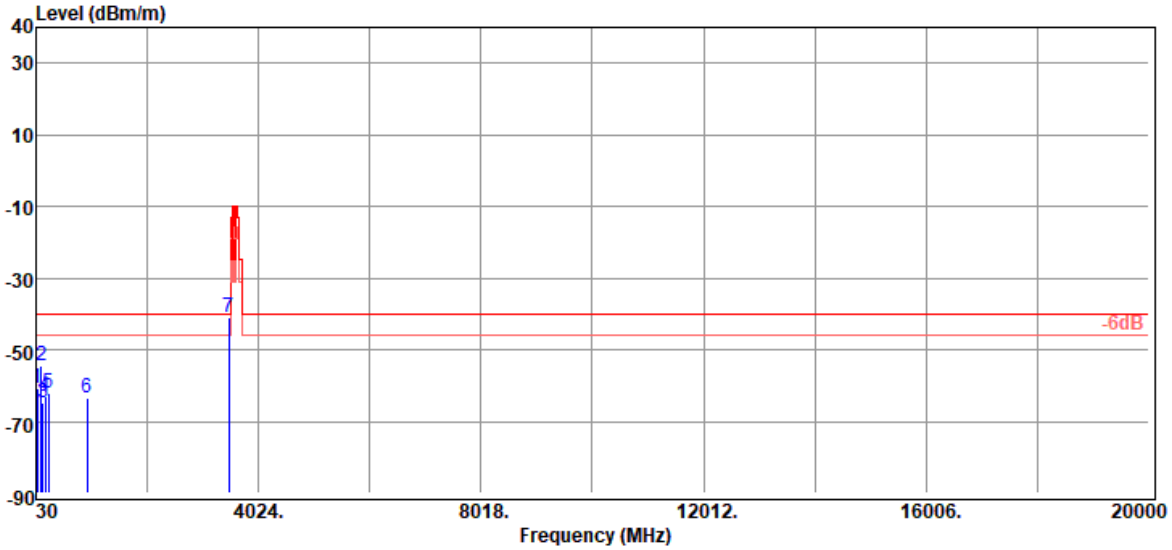
Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
56.19	-62.41	-45.21	-16.25	-0.95	-40.00	-22.41
118.27	-54.05	-45.52	-7.08	-1.45	-40.00	-14.05
157.07	-64.87	-56.17	-7.02	-1.68	-40.00	-24.87
204.60	-62.94	-58.94	-1.92	-2.08	-40.00	-22.94
252.13	-61.70	-57.91	-1.55	-2.24	-40.00	-21.70
903.97	-62.89	-56.85	-1.40	-4.64	-40.00	-22.89
3440.00	-41.84	-43.27	12.62	-11.19	-40.00	-1.84

Report Number	:E2/2019/A0033	Test Date	: 2020-05-19
Operation Mode	:L48A + n66a	Temp./Humi.	:24.3/57
Test Mode	:TX CH LOW	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Enzo
Test Frequency	:1720 MHz		



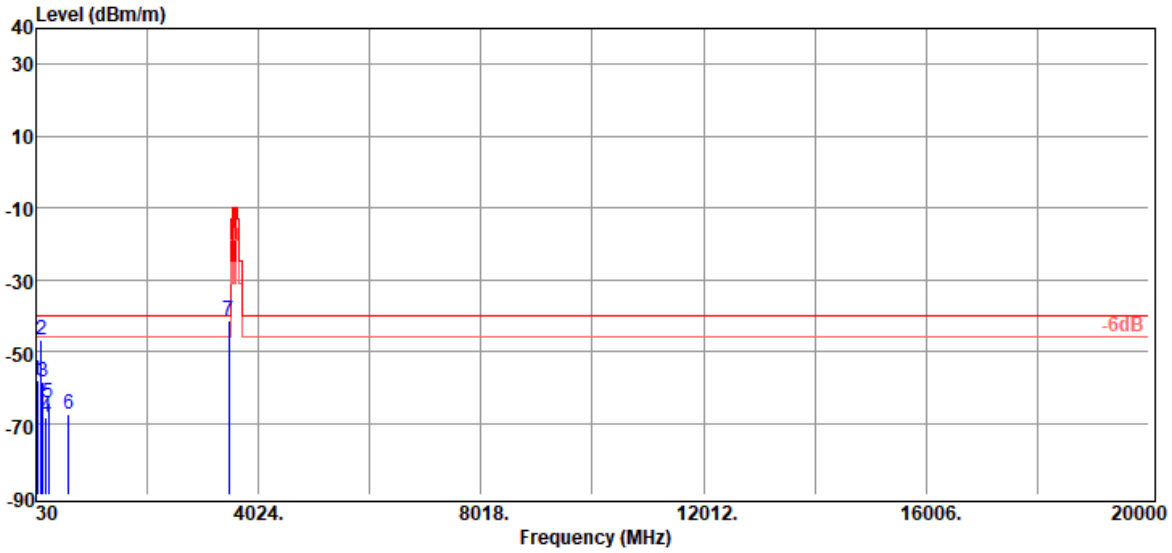
Freq.	EIRP/ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	dBm	dBm	dBi/dBd	dB	dBm	dB
65.89	-53.34	-39.04	-13.30	-1.00	-40.00	-13.34
118.27	-47.02	-38.49	-7.08	-1.45	-40.00	-7.02
159.01	-58.50	-49.81	-7.01	-1.68	-40.00	-18.50
253.10	-64.00	-60.22	-1.54	-2.24	-40.00	-24.00
887.48	-65.38	-59.27	-1.42	-4.69	-40.00	-25.38
983.51	-64.46	-58.07	-1.48	-4.91	-40.00	-24.46
3440.00	-41.72	-43.15	12.62	-11.19	-40.00	-1.72

Report Number	:E2/2019/A0033	Test Date	: 2020-05-19
Operation Mode	:L48A + n66a	Temp./Humi.	:24.2/57
Test Mode	:TX CH MID	Antenna Pol.	:VERTICAL
EUT Pol	:E2 Plan	Engineer	:Enzo
Test Frequency	:1745 MHz		



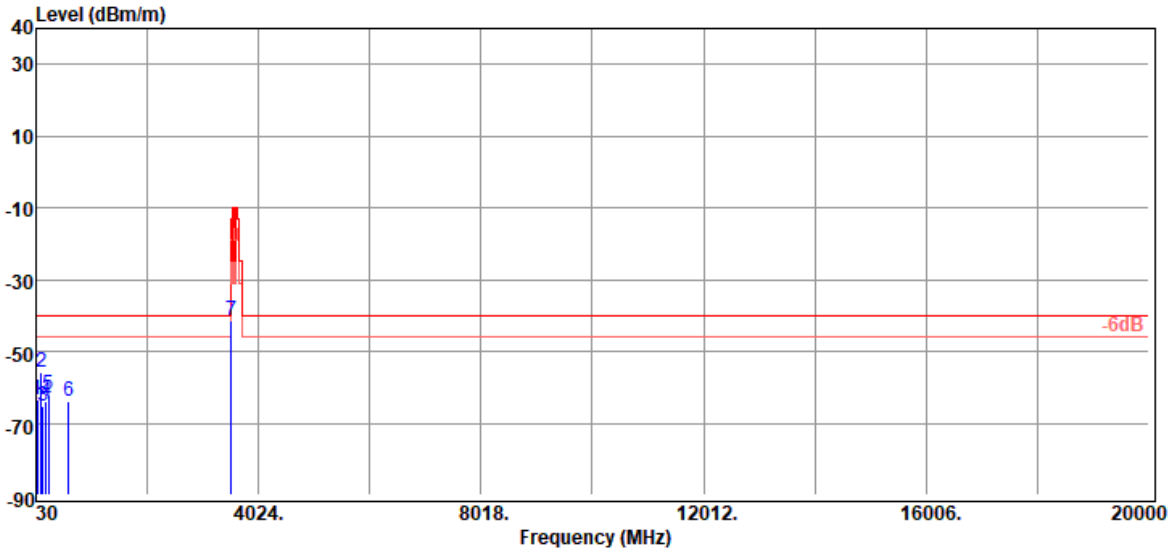
Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
56.19	-60.96	-43.76	-16.25	-0.95	-40.00	-20.96
119.24	-54.24	-45.75	-7.04	-1.45	-40.00	-14.24
155.13	-64.88	-55.99	-7.21	-1.68	-40.00	-24.88
201.69	-63.02	-58.89	-2.05	-2.08	-40.00	-23.02
253.10	-62.05	-58.27	-1.54	-2.24	-40.00	-22.05
944.71	-63.59	-57.16	-1.63	-4.80	-40.00	-23.59
3490.00	-41.06	-42.55	12.36	-10.87	-40.00	-1.06

Report Number	:E2/2019/A0033	Test Date	: 2020-05-19
Operation Mode	:L48A + n66a	Temp./Humi.	:24.2/57
Test Mode	:TX CH MID	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Enzo
Test Frequency	:1745 MHz		



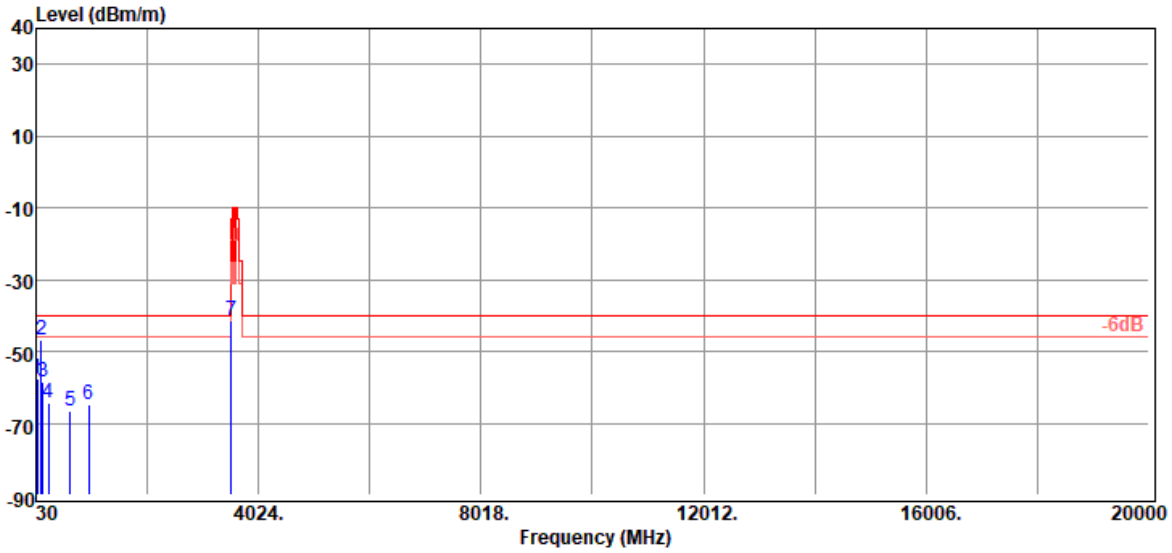
Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
56.19	-58.22	-41.02	-16.25	-0.95	-40.00	-18.22
118.27	-47.02	-38.49	-7.08	-1.45	-40.00	-7.02
154.16	-58.60	-49.72	-7.20	-1.68	-40.00	-18.60
206.54	-68.26	-64.37	-1.81	-2.08	-40.00	-28.26
250.19	-64.26	-60.45	-1.58	-2.23	-40.00	-24.26
619.76	-67.38	-62.21	-1.59	-3.58	-40.00	-27.38
3490.00	-41.27	-42.76	12.36	-10.87	-40.00	-1.27

Report Number	:E2/2019/A0033	Test Date	:2020-05-19
Operation Mode	:L48A + n66a	Temp./Humi.	:24.3/58
Test Mode	:TX CH HIGH	Antenna Pol.	:VERTICAL
EUT Pol	:E2 Plan	Engineer	:Ashton
Test Frequency	:1770 MHz		



Freq.	EIRP/ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	dBm	dBm	dBi/dBd	dB	dBm	dB
48.43	-63.28	-44.53	-17.89	-0.86	-40.00	-23.28
118.27	-55.85	-47.32	-7.08	-1.45	-40.00	-15.85
159.01	-65.35	-56.66	-7.01	-1.68	-40.00	-25.35
204.60	-63.83	-59.83	-1.92	-2.08	-40.00	-23.83
252.13	-62.26	-58.47	-1.55	-2.24	-40.00	-22.26
614.91	-64.13	-58.69	-1.66	-3.78	-40.00	-24.13
3540.00	-41.26	-42.57	12.30	-10.99	-40.00	-1.26

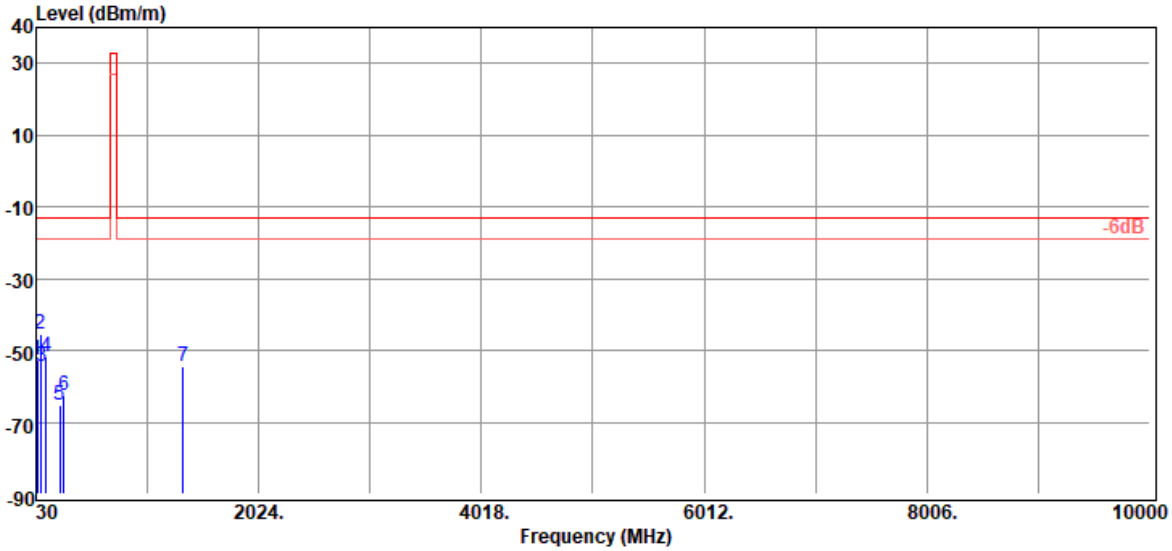
Report Number	:E2/2019/A0033	Test Date	: 2020-05-19
Operation Mode	:L48A + n66a	Temp./Humi.	:24.3/58
Test Mode	:TX CH HIGH	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Ashton
Test Frequency	:1770 MHz		



Freq.	EIRP/ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	dBm	dBm	dBi/dBd	dB	dBm	dB
57.16	-57.65	-40.63	-16.06	-0.96	-40.00	-17.65
118.27	-46.98	-38.45	-7.08	-1.45	-40.00	-6.98
151.25	-58.55	-49.52	-7.35	-1.68	-40.00	-18.55
253.10	-64.17	-60.39	-1.54	-2.24	-40.00	-24.17
649.83	-66.71	-61.63	-1.28	-3.80	-40.00	-26.71
981.57	-64.67	-58.26	-1.50	-4.91	-40.00	-24.67
3540.00	-41.37	-42.68	12.30	-10.99	-40.00	-1.37

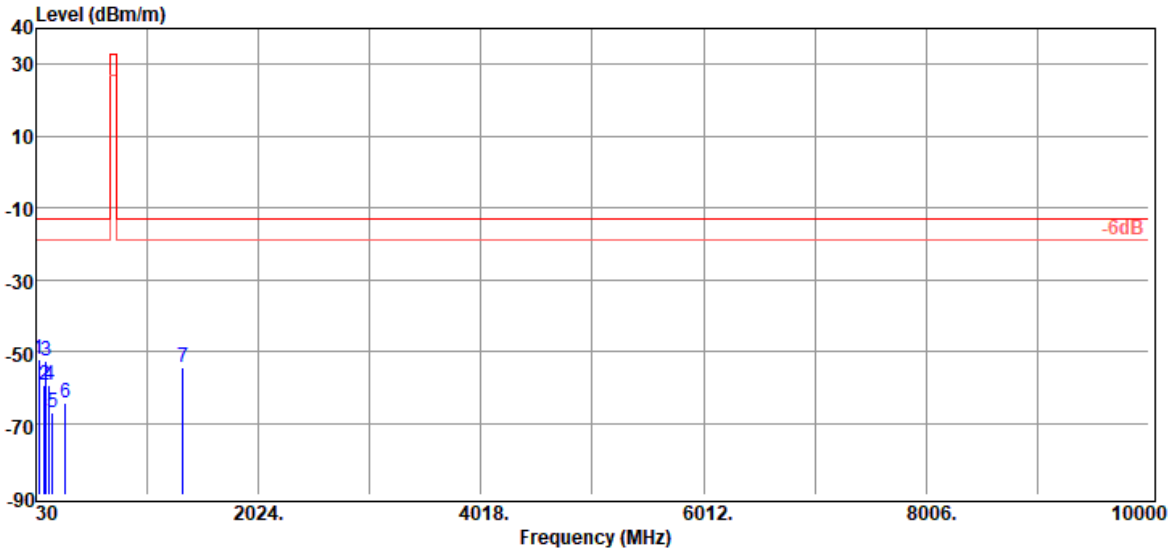
Radiated Spurious Emission Measurement Result: DC_66A_n71A

Report Number	:E2/2019/A0033	Test Date	:2020-02-27
Operation Mode	:L66A + n71A	Temp./Humi.	:22.0/65
Test Mode	:TX CH LOW	Antenna Pol.	:VERTICAL
EUT Pol	:E2 Plan	Engineer	:Ashton
Test Frequency	:673 MHz		



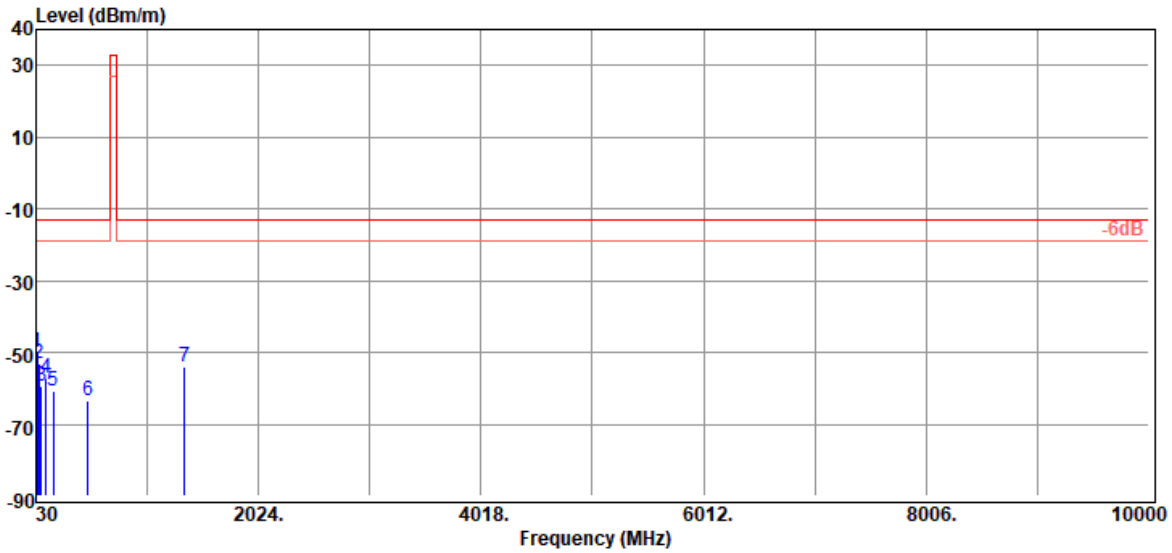
Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
40.67	-52.87	-32.99	-19.02	-0.86	-13.00	-39.87
66.86	-45.64	-31.59	-13.05	-1.00	-13.00	-32.64
76.56	-54.62	-44.03	-9.49	-1.10	-13.00	-41.62
117.30	-51.56	-43.02	-7.09	-1.45	-13.00	-38.56
240.49	-65.11	-61.05	-1.83	-2.23	-13.00	-52.11
280.26	-62.67	-58.56	-1.70	-2.41	-13.00	-49.67
1346.00	-54.43	-54.65	6.52	-6.30	-13.00	-41.43

Report Number	:E2/2019/A0033	Test Date	:2020-02-27
Operation Mode	:L66A + n71A	Temp./Humi.	:22.0/65
Test Mode	:TX CH LOW	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Ashton
Test Frequency	:673 MHz		



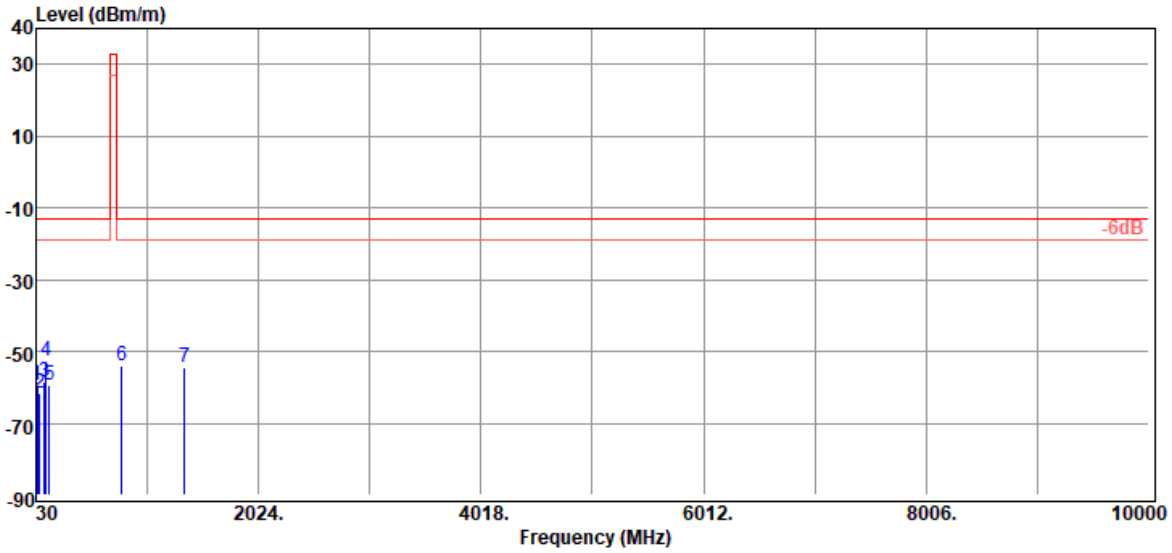
Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
58.13	-52.30	-35.59	-15.74	-0.97	-13.00	-39.30
105.66	-59.40	-51.17	-6.83	-1.40	-13.00	-46.40
117.30	-52.87	-44.33	-7.09	-1.45	-13.00	-39.87
148.34	-59.28	-50.09	-7.51	-1.68	-13.00	-46.28
179.38	-67.04	-60.78	-4.52	-1.74	-13.00	-54.04
289.96	-64.38	-60.18	-1.69	-2.51	-13.00	-51.38
1346.00	-54.52	-54.74	6.52	-6.30	-13.00	-41.52

Report Number	:E2/2019/A0033	Test Date	:2020-02-27
Operation Mode	:L66A + n71A	Temp./Humi.	:22.0/65
Test Mode	:TX CH MID	Antenna Pol.	:VERTICAL
EUT Pol	:E2 Plan	Engineer	:Ashton
Test Frequency	:680.5 MHz		



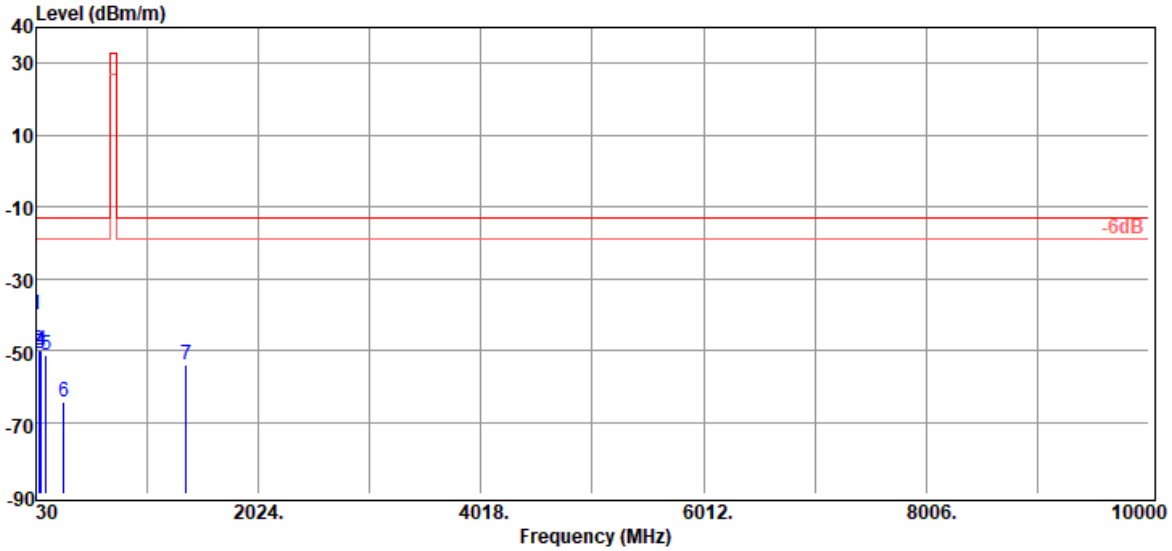
Freq.	EIRP/ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	dBm	dBm	dBi/dBd	dB	dBm	dB
38.73	-49.97	-29.89	-19.25	-0.83	-13.00	-36.97
58.13	-53.18	-36.47	-15.74	-0.97	-13.00	-40.18
78.50	-59.22	-49.24	-8.84	-1.14	-13.00	-46.22
117.30	-57.38	-48.84	-7.09	-1.45	-13.00	-44.38
186.17	-60.56	-55.32	-3.42	-1.82	-13.00	-47.56
492.69	-63.54	-59.00	-1.05	-3.49	-13.00	-50.54
1361.00	-54.13	-54.38	6.61	-6.36	-13.00	-41.13

Report Number	:E2/2019/A0033	Test Date	:2020-02-27
Operation Mode	:L66A + n71A	Temp./Humi.	:22.0/65
Test Mode	:TX CH MID	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Ashton
Test Frequency	:680.5 MHz		



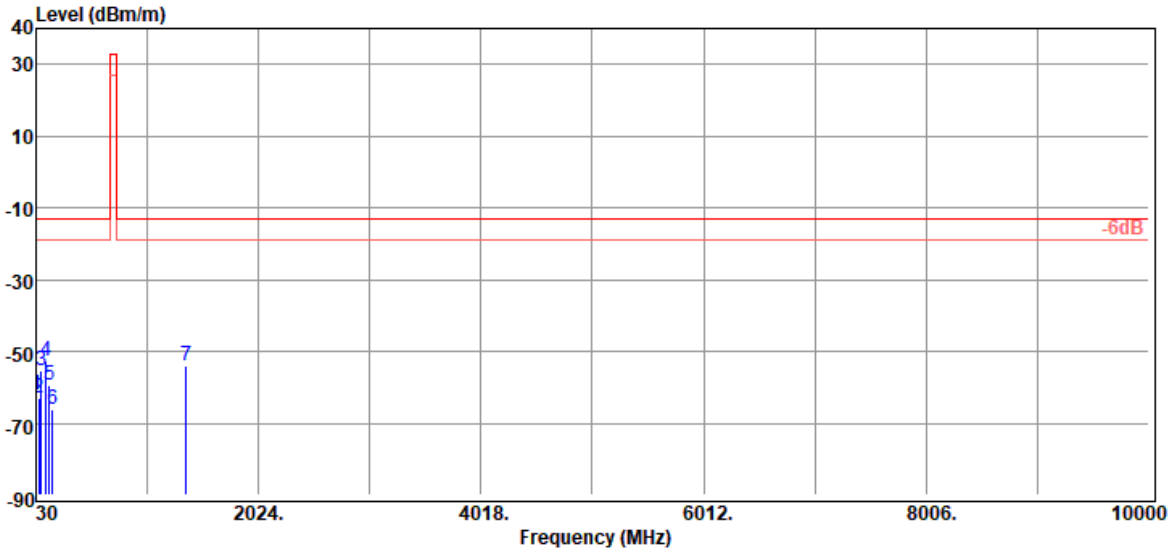
Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
38.73	-59.38	-39.30	-19.25	-0.83	-13.00	-46.38
64.92	-61.58	-46.87	-13.71	-1.00	-13.00	-48.58
105.66	-58.74	-50.51	-6.83	-1.40	-13.00	-45.74
117.30	-52.59	-44.05	-7.09	-1.45	-13.00	-39.59
149.31	-59.39	-50.25	-7.46	-1.68	-13.00	-46.39
798.24	-53.82	-47.90	-1.63	-4.29	-13.00	-40.82
1361.00	-54.43	-54.68	6.61	-6.36	-13.00	-41.43

Report Number	:E2/2019/A0033	Test Date	:2020-02-27
Operation Mode	:L66A + n71A	Temp./Humi.	:22.0/64
Test Mode	:TX CH HIGH	Antenna Pol.	:VERTICAL
EUT Pol	:E2 Plan	Engineer	:Ashton
Test Frequency	:688 MHz		



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
36.79	-39.98	-19.77	-19.43	-0.78	-13.00	-26.98
57.16	-49.86	-32.84	-16.06	-0.96	-13.00	-36.86
62.98	-50.91	-35.65	-14.26	-1.00	-13.00	-37.91
77.53	-49.79	-39.52	-9.15	-1.12	-13.00	-36.79
118.27	-51.32	-42.79	-7.08	-1.45	-13.00	-38.32
279.29	-64.32	-60.23	-1.69	-2.40	-13.00	-51.32
1376.00	-54.12	-54.46	6.76	-6.42	-13.00	-41.12

Report Number	:E2/2019/A0033	Test Date	:2020-02-27
Operation Mode	:L66A + n71A	Temp./Humi.	:22.0/64
Test Mode	:TX CH HIGH	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Ashton
Test Frequency	:688 MHz		



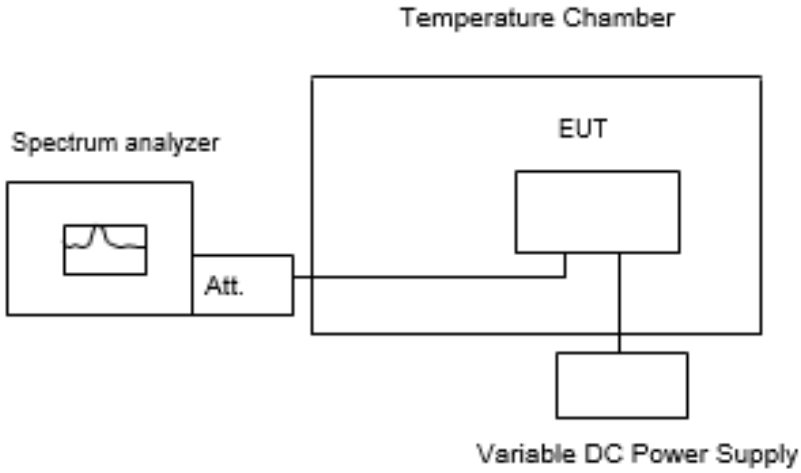
Freq.	EIRP/ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	dBm	dBm	dBi/dBd	dB	dBm	dB
33.88	-61.93	-41.38	-19.84	-0.71	-13.00	-48.93
55.22	-62.96	-45.55	-16.48	-0.93	-13.00	-49.96
73.65	-55.44	-43.88	-10.50	-1.06	-13.00	-42.44
119.24	-52.75	-44.26	-7.04	-1.45	-13.00	-39.75
148.34	-59.57	-50.38	-7.51	-1.68	-13.00	-46.57
177.44	-66.10	-59.49	-4.87	-1.74	-13.00	-53.10
1376.00	-54.10	-54.44	6.76	-6.42	-13.00	-41.10

10 FREQUENCY STABILITY MEASUREMENT

10.1 Standard Applicabl

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

10.2 Test Set-up



Note: *Measurement setup for testing on Antenna connector*

10.3 Measurement Procedure

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to –30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

Set chamber temperature to 25℃. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.
Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint as declared by the manufacturer, record the maximum frequency change.

10.4 Measurement Equipment Used

Conducted Emission (measured at antenna port) Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	KEYSIGHT	N9010A	MY51440113	07/15/2019	07/14/2020
UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY59321566	12/17/2019	12/16/2020
DC Block	PASTERNACK	PE8210	RF32	11/20/2019	11/19/2020
Splitter	Woken	DOM35LW1A2	RF83	11/20/2019	11/19/2020
Splitter	Woken	DOM35LW1E1	RF01	11/20/2019	11/19/2020
Coaxial Cables	Woken	00100A1F1A185C	RF229	11/20/2019	11/19/2020
Coaxial Cables	Woken	00100A1F1A185C	RF230	11/20/2019	11/19/2020
Coaxial Cables	Woken	00100A1F1A185C	RF231	11/20/2019	11/19/2020

10.5 Measurement Result

Reference Freq.:	n2A Mid 20M CH 376000 Channel	1880	MHz DFT-S-OFDM 64QAM	
Power Supply Vdc	Temp. (℃)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)
Freq. ERROR vs. VOLTAGE				
3.465	25	1880.000021	21	2091
3.3	25	1880.000024	24	2091
3.135	25	1880.000019	19	2091
2.9 (End Point)	25	1880.000017	17	2091
Freq. ERROR vs. Temp.				
3.3	-30	1879.999985	-15	2091
3.3	-20	1879.999981	-19	2091
3.3	-10	1879.999979	-21	2091
3.3	0	1879.999983	-17	2091
3.3	10	1880.000015	15	2091
3.3	20	1879.999982	-18	2091
3.3	30	1879.999981	-19	2091
3.3	40	1879.999988	-12	2091
3.3	50	1879.999984	-16	2091

Reference Freq.:	n5A Mid 20M CH 167300 Channel	836.5	MHz DFT-S-OFDM 16QAM
Power Supply Vdc	Temp. (℃)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)
Freq. ERROR vs. VOLTAGE				
3.465	25	836.500011	11	6488
3.3	25	836.500025	25	6488
3.135	25	836.500015	15	6488
2.9 (End Point)	25	836.500021	21	6488
Freq. ERROR vs. Temp.				
3.3	-30	836.499985	-15	6488
3.3	-20	836.499981	-19	6488
3.3	-10	836.499979	-21	6488
3.3	0	836.499983	-17	6488
3.3	10	836.500015	15	6488
3.3	20	836.499980	-20	6488
3.3	30	836.499975	-25	6488
3.3	40	836.499985	-15	6488
3.3	50	836.500017	17	6488

Reference Freq.:	n41A Mid 100M CH 518598 Channel	2592.99	MHz CP-OFDM 16QAM
Power Supply Vdc	Temp. (℃)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)
Freq. ERROR vs. VOLTAGE				
3.465	25	2592.990020	20	6338
3.3	25	2592.990017	17	6338
3.135	25	2592.990019	19	6338
2.9 (End Point)	25	2592.990011	11	6338
Freq. ERROR vs. Temp.				
3.3	-30	2592.990017	17	6338
3.3	-20	2592.989985	-15	6338
3.3	-10	2592.989989	-11	6338
3.3	0	2592.989976	-24	6338
3.3	10	2592.990011	11	6338
3.3	20	2592.989976	-24	6338
3.3	30	2592.989981	-19	6338
3.3	40	2592.989983	-17	6338
3.3	50	2592.989980	-20	6338

Reference Freq.:	n66A Mid 20M CH 349000 Channel	1645	MHz DFT-S-OFDM Pi/2 BPSK
Power Supply Vdc	Temp. (℃)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)
Freq. ERROR vs. VOLTAGE				
3.465	25	1644.740021	21	6488
3.3	25	1644.740014	14	6488
3.135	25	1644.740019	19	6488
2.9 (End Point)	25	1644.740021	21	6488
Freq. ERROR vs. Temp.				
3.3	-30	1644.739981	-19	6488
3.3	-20	1644.739976	-24	6488
3.3	-10	1644.739979	-21	6488
3.3	0	1644.739980	-20	6488
3.3	10	1644.740011	11	6488
3.3	20	1644.739981	-19	6488
3.3	30	1644.739983	-17	6488
3.3	40	1644.739982	-18	6488
3.3	50	1644.740013	13	6488

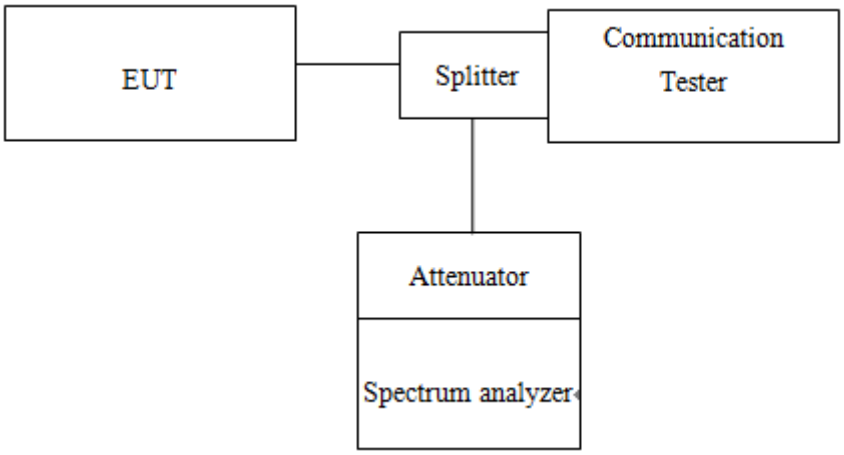
Reference Freq.:	n71A Mid 20M CH 136100 Channel	680.5	MHz CP-OFDM 64QAM
Power Supply Vdc	Temp. (℃)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)
Freq. ERROR vs. VOLTAGE				
3.465	25	680.500011	11	6488
3.3	25	680.500015	15	6488
3.135	25	680.500011	11	6488
2.9 (End Point)	25	680.500008	8	6488
Freq. ERROR vs. Temp.				
3.3	-30	680.499984	-16	6488
3.3	-20	680.499989	-11	6488
3.3	-10	680.499992	-8	6488
3.3	0	680.500008	8	6488
3.3	10	680.500009	9	6488
3.3	20	680.500011	11	6488
3.3	30	680.500015	15	6488
3.3	40	680.500014	14	6488
3.3	50	680.500011	11	6488

11 PEAK TO AVERAGE RATIO

11.1 Standard Applicable

The peak-to-average ratio (PAR) of the transmission may not exceed 13dB.

11.2 Test SET-UP



11.3 Measurement Procedure

1. KDB 971168 D01 is employed as the following procedure is proper adjusted accordingly:
2. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth; & internal =1ms
3. Set the number of counts to a value that stabilizes the measured CCDF curve.

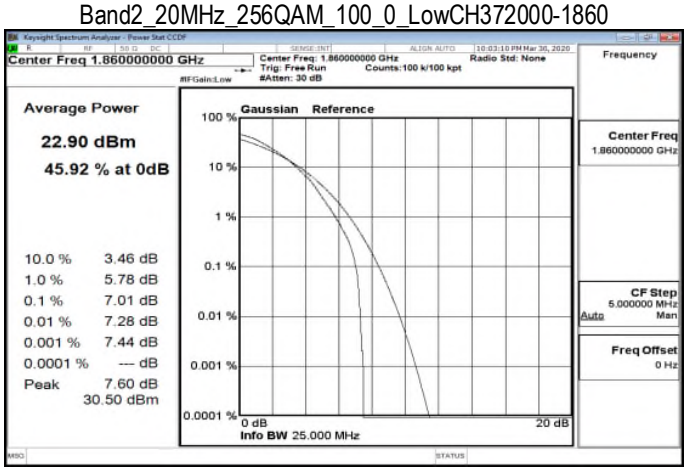
11.4 Measurement Equipment Used

Conducted Emission (measured at antenna port) Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	KEYSIGHT	N9010A	MY51440113	07/15/2019	07/14/2020
UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY59321566	12/17/2019	12/16/2020
DC Block	PASTERNACK	PE8210	RF32	11/20/2019	11/19/2020
Splitter	Woken	DOM35LW1A2	RF83	11/20/2019	11/19/2020
Splitter	Woken	DOM35LW1E1	RF01	11/20/2019	11/19/2020
Coaxial Cables	Woken	00100A1F1A185C	RF229	11/20/2019	11/19/2020
Coaxial Cables	Woken	00100A1F1A185C	RF230	11/20/2019	11/19/2020
Coaxial Cables	Woken	00100A1F1A185C	RF231	11/20/2019	11/19/2020

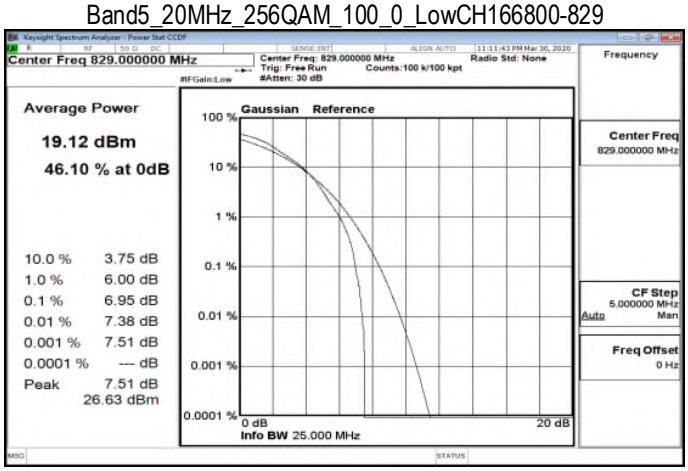
11.5 Measurement Result

n2A (DFT-s-OFDM)		Freq. (MHz)	PAPR	
Band width	Channel		256QAM	EIRP
20 MHz	372000	1860	7.44	13
20 MHz	376000	1880	7.84	13
20 MHz	380000	1900	7.60	13
n5A (DFT-s-OFDM)		**Freq. (MHz)**	**PAPR**	
Band width	**Channel**		**256QAM**	**Limit**
20 MHz	166800	834	7.51	13
20 MHz	167300	836.5	7.08	13
20 MHz	167800	839	7.68	13
n41A (CP-OFDM)		**Freq. (MHz)**	**PAPR**	
Band width	**Channel**		**256QAM**	**Limit**
100 MHz	509202	2546	11.57	13
100 MHz	518598	2593	12.65	13
100 MHz	528000	2640	12.79	13
n66A (DFT-s-OFDM)		**Freq. (MHz)**	**PAPR**	
Band width	**Channel**		**256QAM**	**Limit**
20 MHz	344000	1710.5	7.82	13
20 MHz	349000	1644.7	7.31	13
20 MHz	354000	1759.4	6.93	13
n71A (CP-OFDM)		**Freq. (MHz)**	**PAPR**	
Band width	**Channel**		**256QAM**	**Limit**
20 MHz	134600	673	8.39	13
20 MHz	136100	680.5	8.72	13
20 MHz	137600	688	8.17	13

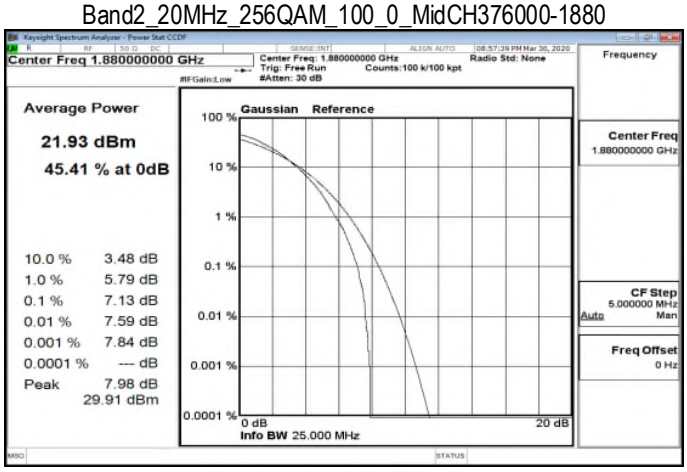
Band2_20MHz_256QAM_100_0_LowCH372000-1860



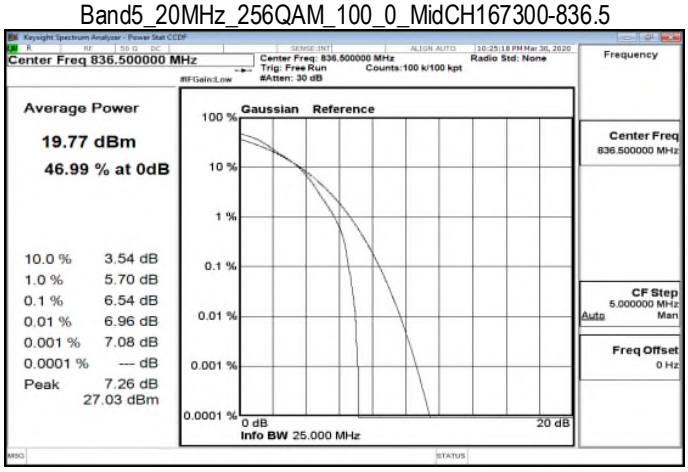
Band5_20MHz_256QAM_100_0_LowCH166800-829



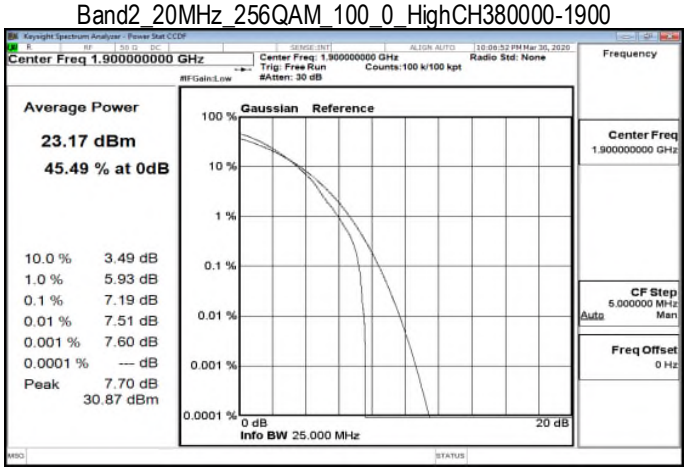
Band2_20MHz_256QAM_100_0_MidCH376000-1880



Band5_20MHz_256QAM_100_0_MidCH167300-836.5



Band2_20MHz_256QAM_100_0_HighCH380000-1900



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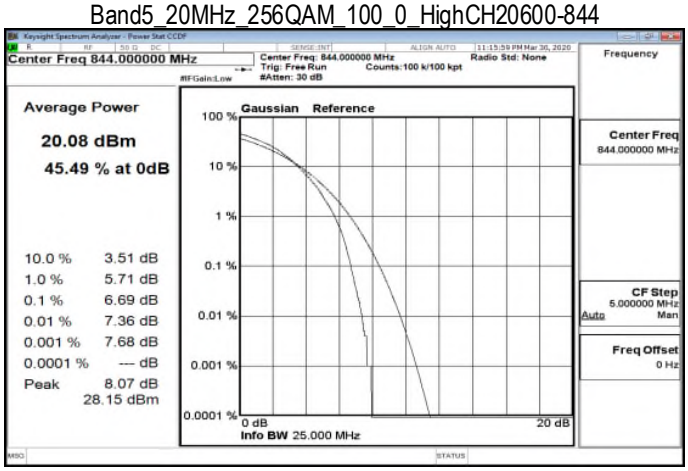
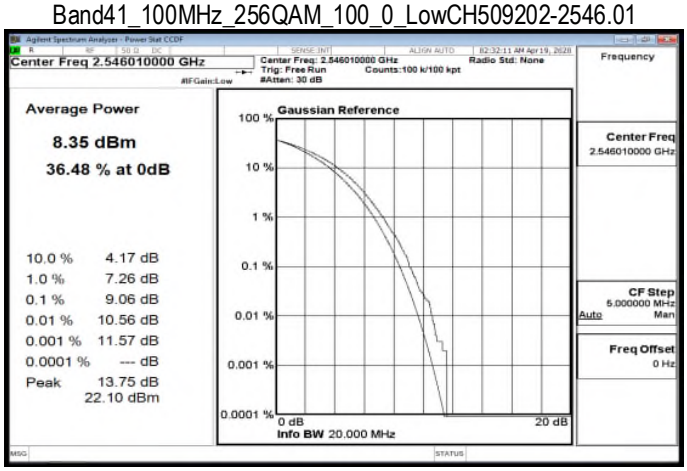
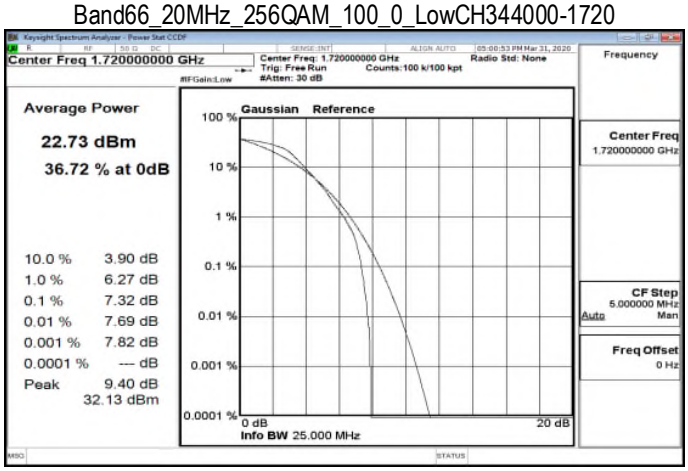


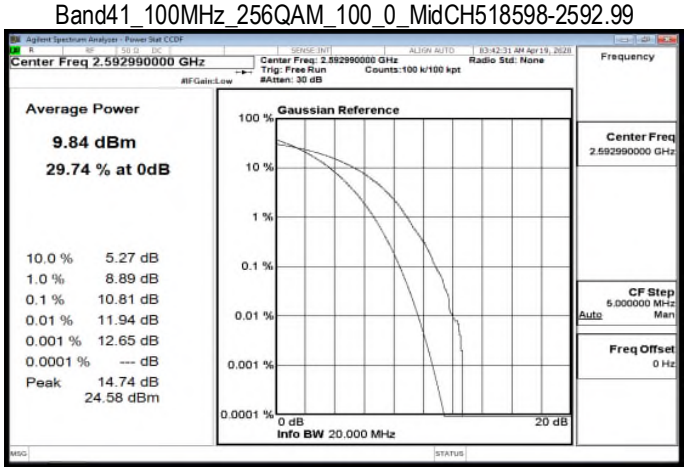
Band41_100MHz_256QAM_100_0_LowCH509202-2546.01



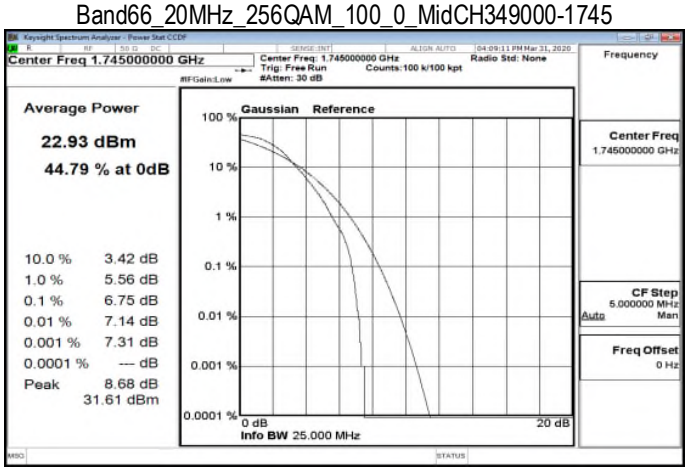
Band66_20MHz_256QAM_100_0_LowCH344000-1720



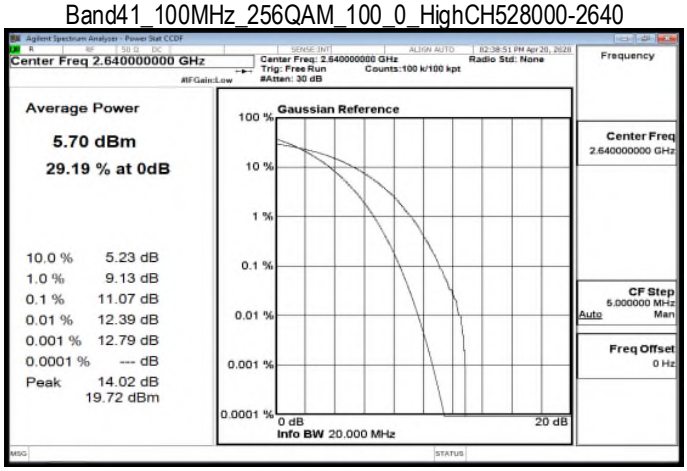
Band41_100MHz_256QAM_100_0_MidCH518598-2592.99



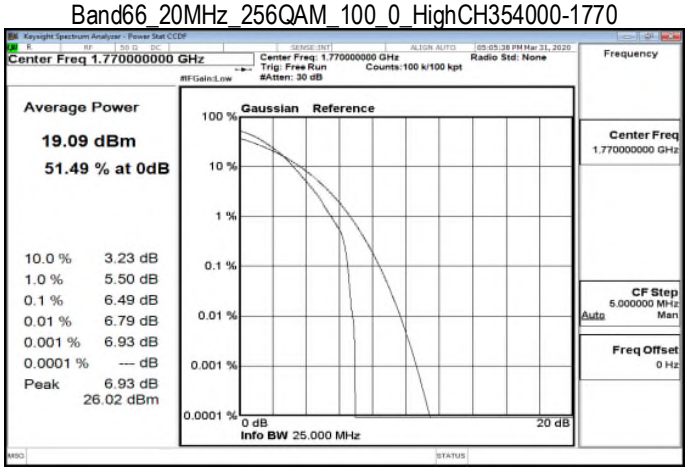
Band66_20MHz_256QAM_100_0_MidCH349000-1745



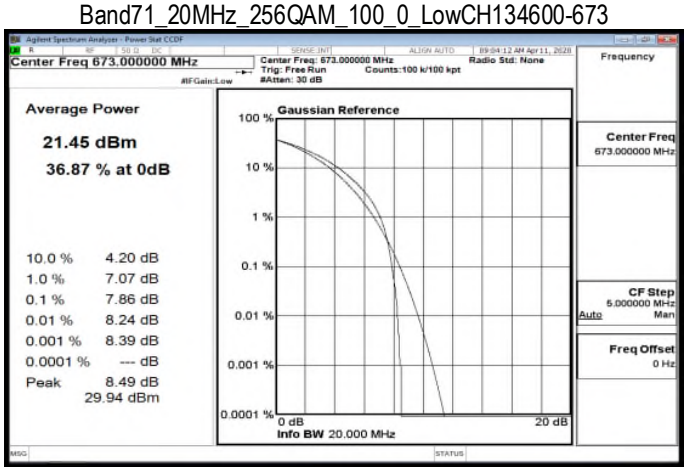
Band41_100MHz_256QAM_100_0_HighCH528000-2640



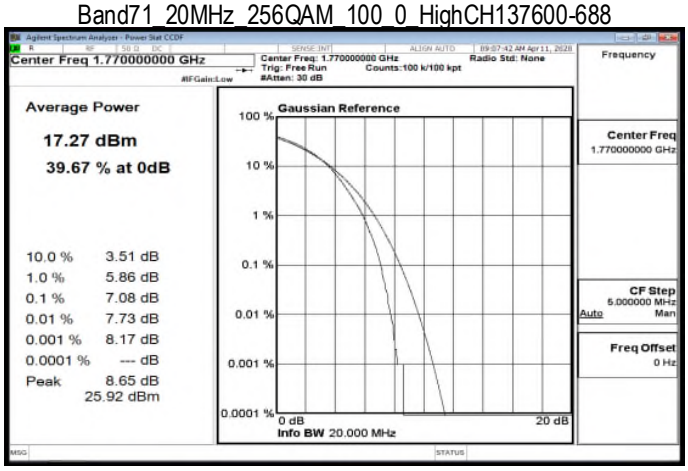
Band66_20MHz_256QAM_100_0_HighCH354000-1770



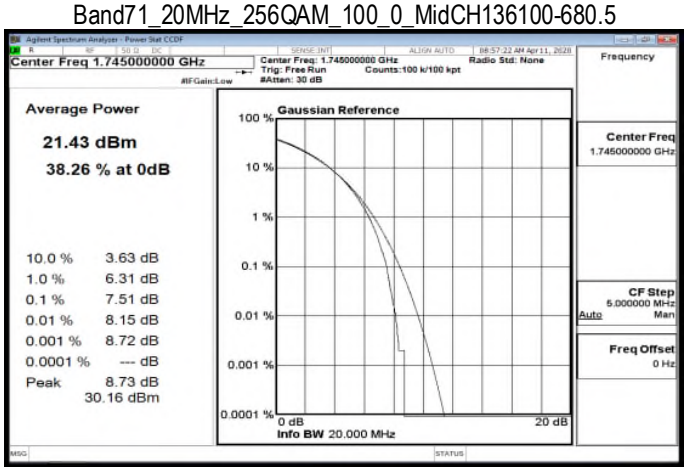
Band71_20MHz_256QAM_100_0_LowCH134600-673



Band71_20MHz_256QAM_100_0_HighCH137600-688



Band71_20MHz_256QAM_100_0_MidCH136100-680.5



~ End of Report ~