ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

OF

FCC Applicant:	VanMoof Asia Ltd. No. 9, Lane 71, Section 1, Hangzhou South Road, Zhongzheng District, Taipei City, 100
Product Name:	Electrified Bike SECTION A SUB-ASSY
Brand Name:	Vanmoof
Model No.:	VM13-144
Model Difference:	N/A
Report Number:	ER/2020/50029
FCC ID	2AWDQ-VM-ES3-SEC-A
FCC Rule Part:	2 , 22H & 24E & 27 C
Issue Date:	Jun. 22, 2020
Date of Test:	May 11, 2020 ~ Jun. 05, 2020
Date of EUT Received:	May 11, 2020

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: Jay. Lin

Jay Lin / Asst. Supervisor

Testing Laboratory
3702

Revision History				
Report Number	**Revision**	**Description**	**Issue Date**	**Remark**
ER/2020/50029	Rev.00	Original.	Jun. 22, 2020	Revised By: Elle Chang

Note:

1、Disclaimer

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

Contents

1 GENERAL PRODUCT INFORMATION

1.1 Product Description

General:

Product Name:	Electrified Bike SECTION A SUB-ASSY	
Brand Name:	Vanmoof	
Model No.:	VM13-144	
Model Difference:	N/A	
Hardware Version:	N/A	
Software Version:	N/A	
Power Supply:	Operate voltage 36V	
	Battery Charger:	Model No.: BC222360040, Supplier: VANMOOF
IMEI:	357649071625190	

1.2 Operation Frequency Range

Operating Frequency (MHz)			
WCDMA / HSPA+ Band II	1852.4	-	1907.6
WCDMA / HSPA+ Band V	826.4	-	846.6

LTE Band	BW (MHz)	Operation Frequency (MHz)		
2	1.4	1850.7	-	1909.3
	3	1851.5	-	1908.5
	5	1852.5	-	1907.5
	10	1855.0	-	1905.0
	15	1857.5	-	1902.5
	20	1860.0	-	1900.0
4	1.4	1710.7	-	1754.3
	3	1711.5	-	1753.5
	5	1712.5	-	1752.5
	10	1715.0	-	1750.0
	15	1717.5	-	1747.5
	20	1720.0	-	1745.0
5	1.4	824.7	-	848.3
	3	825.5	-	847.5
	5	826.5	-	846.5
	10	829.0	-	844.0
12	1.4	699.7	-	715.3
	3	700.5	-	714.5
	5	701.5	-	713.5
	10	704.0	-	711.0

1.3 Antenna Designation

Vendor	Type	Antenna Part No.	Modulation	Frequency (MHz)			Peak Antenna Gain (dBi)
VanMoof Asia Ltd.	Internal	N/A	WCDMA / HSPA Band II	1852.4	~	1907.6	3.01
			WCDMA / HSPA Band V	826.4	~	846.6	0.41
			LTE Band 2	1850	~	1910	3.01
			LTE Band 4	1710	~	1755	-5.47
			LTE Band 5	824	~	849	0.41
			LTE Band 12	699	~	716	0.79

1.4 Type of Emission & Max ERP/EIRP Power Measurement Result:

	ERP / EIRP (dBm)		W	99%	Type of Emission
WCDMA Band II	26.05	EIRP	0.403	4.0713	4M07F9W
HSDPA Band II	25.98	EIRP	0.396	4.0671	4M07F9W
HSUPA Band II	25.86	EIRP	0.385	4.0642	4M06F9W
WCDMA Band V	23.68	ERP	0.233	4.0663	4M07F9W
HSDPA Band V	23.58	ERP	0.228	4.0697	4M07F9W
HSUPA Band V	23.55	ERP	0.226	4.0758	4M08F9W

LTE Band	BW	Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
2	1.4	QPSK	24.91	EIRP	0.310	1.1056	1M11G7D
		16QAM	24.14	EIRP	0.259	1.1070	1M11D7W
2	3	QPSK	24.88	EIRP	0.308	2.7014	2M70G7D
		16QAM	24.23	EIRP	0.265	2.7052	2M71D7W
2	5	QPSK	24.96	EIRP	0.313	4.4985	4M50G7D
		16QAM	24.32	EIRP	0.270	4.4932	4M49D7W
2	10	QPSK	24.83	EIRP	0.304	9.0337	9M03G7D
		16QAM	23.76	EIRP	0.238	8.9837	8M98D7W
2	15	QPSK	25.58	EIRP	0.361	13.555	13M6G7D
		16QAM	23.77	EIRP	0.238	13.542	13M5D7W
2	20	QPSK	25.46	EIRP	0.352	18.028	18M0G7D
		16QAM	24.78	EIRP	0.301	18.039	18M0D7W
LTE Band	BW	Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
4	1.4	QPSK	16.76	EIRP	0.047	1.1023	1M10G7D
		16QAM	15.86	EIRP	0.039	1.1048	1M10D7W
4	3	QPSK	16.71	EIRP	0.047	2.7015	2M70G7D
		16QAM	15.90	EIRP	0.039	2.7056	2M71D7W
4	5	QPSK	16.84	EIRP	0.048	4.4933	4M49G7D
		16QAM	16.27	EIRP	0.042	4.4935	4M49D7W
4	10	QPSK	16.29	EIRP	0.043	9.0171	9M02G7D
		16QAM	15.20	EIRP	0.033	8.9866	8M99D7W
4	15	QPSK	16.96	EIRP	0.050	13.539	13M5G7D
		16QAM	15.16	EIRP	0.033	13.543	13M5D7W
4	20	QPSK	16.77	EIRP	0.048	18.034	18M0G7D
		16QAM	16.16	EIRP	0.041	18.050	18M1D7W

LTE Band	BW	Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
5	1.4	QPSK	20.16	ERP	0.104	1.1017	1M10G7D
		16QAM	19.48	ERP	0.089	1.1048	1M10D7W
5	3	QPSK	19.96	ERP	0.099	2.7007	2M70G7D
		16QAM	19.24	ERP	0.084	2.7047	2M70D7W
5	5	QPSK	20.05	ERP	0.101	4.4962	4M50G7D
		16QAM	19.39	ERP	0.087	4.4957	4M50D7W
5	10	QPSK	20.08	ERP	0.102	9.0300	9M03G7D
		16QAM	18.42	ERP	0.070	8.9896	8M99D7W
LTE Band	BW	Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
12	1.4	QPSK	20.71	ERP	0.118	1.1010	1M10G7D
		16QAM	19.96	ERP	0.099	1.1041	1M10D7W
12	3	QPSK	20.51	ERP	0.112	2.7042	2M70G7D
		16QAM	19.83	ERP	0.096	2.7028	2M70D7W
12	5	QPSK	20.49	ERP	0.112	4.4971	4M50G7D
		16QAM	19.93	ERP	0.098	4.4945	4M49D7W
12	10	QPSK	20.54	ERP	0.113	9.0540	9M05G7D
		16QAM	18.97	ERP	0.079	9.0002	9M00D7W

1.5 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

TS 151 010-1 is used to set, and measure the output power.

1.6 Test Facility

SGS Taiwan Ltd. Central RF Lab (TAF code 3702)
No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan 24803

FCC Designation number: TW0027

1.7 Special Accessories

No special accessories were used during testing.

1.8 Equipment Modifications

There was no modifications incorporated into the EUT.

1.9 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)	0.8	13.2	14
High Band (Above 1 GHz)	1.2	13.2	14.4

2.5 Final Amplifier Voltage and Current Information:

Test Mode	DC voltage (V)	DC current (mA)
WCDMA B2	36	261
WCDMA B5		264
LTE Band 2		228
LTE Band 4		217
LTE Band 5		227
LTE Band 12		224

2.6 Configuration of Tested System

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

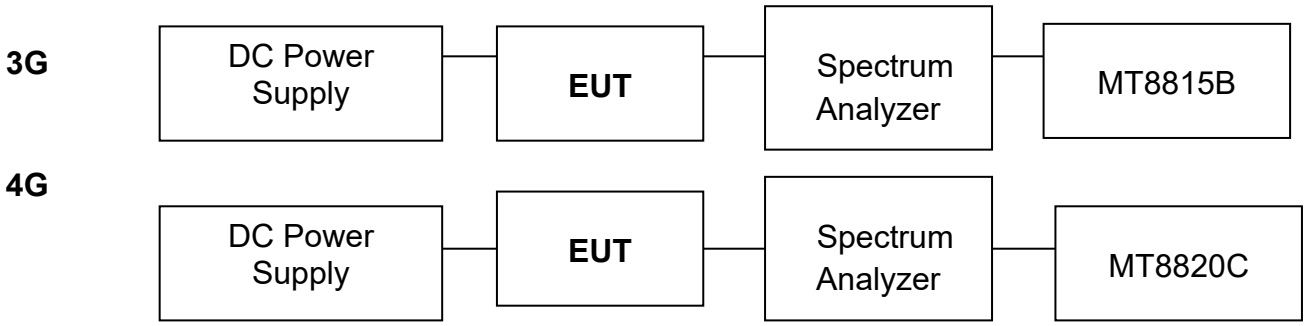
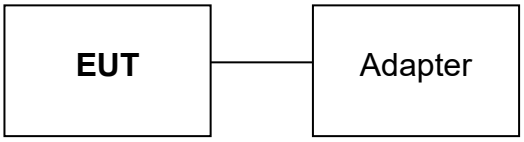


Fig. 2-2 Configuration of Tested System (Fixed Channel-Radiated)



Remote Side

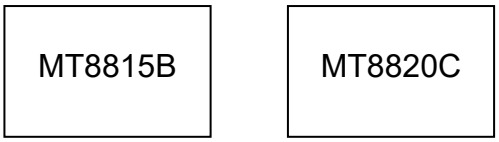


Table 2-1 Equipment Used in

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1.	Radio Communication Analyer	Anritsu	MT8820C	6200995019	shielded	Un-shielded
2.	Radio Communication Analyer	Anritsu	MT8815B	6200711454	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)	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)	Out of Band Emissions at Antenna Terminals and Band Edge / Emission mask re-quirements	Compliant
§2.1053 §24.238(a) §27.53(g) §27.53(h) §22.917(a)	Field Strength of Spurious Radiation	Compliant
§24.232(d) §27.50(B)	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. 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:

BAND	H PLAN	E1 PLAN	E2 PLAN
WCDMA/HSPA Band II	V		
WCDMA/HSPA Band V	V		
LTE Band 2	V		
LTE Band 4	V		
LTE Band 5	V		
LTE Band 12	V		

4.2 Measurement Configuration

Test Items	WCDMA / HSPA Bands	Test Channel		
		L	M	H
ERP	Band V	v	v	v
EIRP	Bnad II	v	v	v
FREQUENCY STABILITY	Bnad II	-	v	-
	Band V	-	v	-
OCCUPIED BANDWIDTH	Bnad II	v	v	v
	Band V	v	v	v
PEAK TO AVERAGE RATIO	Bnad II	v	v	v
	Band V	v	v	v
BAND EDGE	Bnad II	v	-	v
	Band V	v	-	v
CONDCUDETED EMISSION	Bnad II	v	v	v
	Band V	v	v	v
RADIATED EMISSION	Bnad II	v	v	v
	Band V	v	v	v

Test Items	Band	Test Channel			Bandwidth (MHz)						Modulation			RB #		
		L	M	H	1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full
Max. Output Power	2	v	v	v	v	v	v	v	v	v	v	v		v	v	v
	4	v	v	v	v	v	v	v	v	v	v	v		v	v	v
	5	v	v	v	v	v	v	v	-	-	v	v		v	v	v
	12	v	v	v	v	v	v	v	-	-	v	v		v	v	v
Freqency Stability	2	-	v	-			v				v	-	-	-	-	v
	4	-	v	-			v				v	-	-	-	-	v
	5	-	v	-			v		-	-	v	-	-	-	-	v
	12	-	v	-			v		-	-	v	-	-	-	-	v

Test Items	Band	Test Channel			Bandwidth (MHz)						Modulation			RB #		
		L	M	H	1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full
26dB and 99% Bandwidth	2	v	v	v	v	v	v	v	v	v	v	v		-	-	v
	4	v	v	v	v	v	v	v	v	v	v	v		-	-	v
	5	v	v	v	v	v	v	v	-	-	v	v		-	-	v
	12	v	v	v	v	v	v	v	-	-	v	v		-	-	v
Peak-to-Average Ratio	2	v	v	v	v	v	v	v	v	v		v		-	-	v
	4	v	v	v	v	v	v	v	v	v		v		-	-	v
	5	v	v	v	v	v	v	v	-	-		v		-	-	v
	12	v	v	v	v	v	v	v	-	-		v		-	-	v

Test Items	Band	Test Channel			Bandwidth (MHz)						Modulation			RB #		
		L	M	H	1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full
Band Edge	2	v	-	v	v	v	v	v	v	v	v	-	-	v	v	v
	4	v	-	v	v	v	v	v	v	v	v	-	-	v	v	v
	5	v	-	v	v	v	v	v	-	-	v	-	-	v	v	v
	12	v	-	v	v	v	v	v	-	-	v	-	-	v	v	v
Conducted Emission	2	v	v	v	v	v	v	v	v	v	v	-	-	v	-	-
	4	v	v	v	v	v	v	v	v	v	v	-	-	v	-	-
	5	v	v	v	v	v	v	v	-	-	v	-	-	v	-	-
	12	v	v	v	v	v	v	v	-	-	v	-	-	v	-	-

Test Items	Band	Test Channel			Bandwidth (MHz)						Modulation			RB #		
		L	M	H	1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full
Radiated Emission	2	v	v	v					v		v			v		
	4	v	v	v					v		v			v		
	5	v	v	v	v				-	-	v			v		
	12	v	v	v	v				-	-	v			v		

5 MEASUREMENT UNCERTAINTY

Test Items	Uncertainty
RF Power Output	+/- 1.10 dB
ERP/ EIRP measurement	Vertical Polarization = +/- 4.74dB Horizontal Polarization =+/- 4.62dB
99% 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)

(9) Control and mobile stations in the 698-746 MHz band are limited to 30 watts ERP.

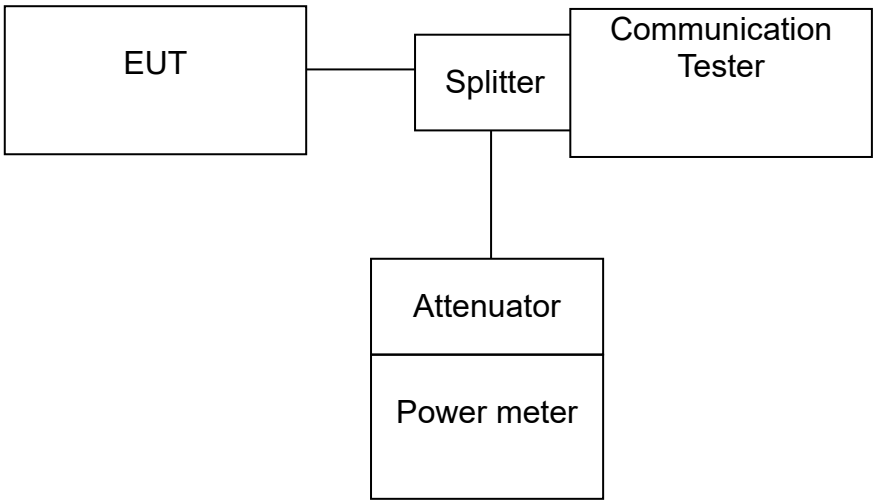
(10) Portable stations (hand-held devices) are limited to 3 watts ERP.

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.

(7) Mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band are limited to 2 watts 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. TS 151 010-1 is reference to conduct the test measurement of output power.
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.**
DC Power Supply	Agilent	E3640A	MY40005907	10/22/2019	10/21/2020
Radio Communication Analyer	Anritsu	MT8815B	6200711454	04/01/2020	03/31/2021
Radio Communication Analyer	Anritsu	MT8820C	6200995019	04/01/2020	03/31/2021

6.6 WCDMA & HSPA Measurement Results:

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The EUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7). RMC 12.2kps is used for this testing.

WCDMA/HSUPA/HSDPA Band II Result:

EUT Mode	Freq. (MHz)	CH	Conducted Avg. Power (dBm)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
WCDMA	1852.4	9262	23.10	2.95	23.90	26.05	33.00	-6.95
	1880.0	9400	23.05	2.95	23.85	26.00	33.00	-7.00
	1907.6	9538	23.10	2.95	23.90	26.05	33.00	-6.95
HSDPA	1852.4	9262	23.03	2.95	23.83	25.98	33.00	-7.02
	1880.0	9400	22.99	2.95	23.79	25.94	33.00	-7.06
	1907.6	9538	22.99	2.95	23.79	25.94	33.00	-7.06
HSUPA	1852.4	9262	22.91	2.95	23.71	25.86	33.00	-7.14
	1880.0	9400	22.89	2.95	23.69	25.84	33.00	-7.16
	1907.6	9538	22.81	2.95	23.61	25.76	33.00	-7.24

WCDMA/HSUPA/HSDPA Band V Result:

EUT Mode	Freq. (MHz)	CH	Conducted Avg. Power (dBm)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
WCDMA	826.4	4132	23.13	0.41	21.39	23.54	38.50	-14.96
	836.6	4183	23.11	0.41	21.37	23.52	38.50	-14.98
	846.6	4233	23.27	0.41	21.53	23.68	38.50	-14.82
HSDPA	826.4	4132	23.02	0.41	21.28	23.43	38.50	-15.07
	836.6	4183	23.08	0.41	21.34	23.49	38.50	-15.01
	846.6	4233	23.17	0.41	21.43	23.58	38.50	-14.92
HSUPA	826.4	4132	23.00	0.41	21.26	23.41	38.50	-15.09
	836.6	4183	23.09	0.41	21.35	23.50	38.50	-15.00
	846.6	4233	23.14	0.41	21.40	23.55	38.50	-14.95

6.6.1 HSPA (HSDPA & HSUPA) Release 6:

The following 4 Sub-Tests were completed according to the test requirements outlined in section 5.2A of the 3GPP TS34.121-1 specification. All TX RMS power requirements for Power Class 3 were met according to table 5.2AA.5 and 5.2B.5 All UE channels and power ratio's are set according to table C10.1.4 & C11.1.3 in the 3GPP TS34.121-1. RMC 12.2kps is used for this testing.

6.6.2 HSDPA SUB-TEST Setting

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH(FOR HSDPA)

Sub-test	β_c	β_d	β_d ***(SF)***	β_c/β_d	β_{HS} (*Note1, Note 2*)	**CM (dB)** *(Note 3)*	**MPR (dB)** *(Note 3)*	**RMC (Kbps)**
1	2/15	15/15	64	2/15	4/15	0.0	0.0	12.2
2	12/15 *(Note 4)*	15/15 *(Note 4)*	64	12/15 *(Note 4)*	24/15	1.0	0.0	12.2
3	15/15	8/15	64	15/8	30/15	1.5	0.5	12.2
4	15/15	4/15	64	15/4	30/15	1.5	0.5	12.2

Note: *The recommended HSDPA MPRs are implemented as per following sub-tests.*

Mode	Sub test	Avg. Power (dBm) Channel		
		9262.00	9400.00	9538.00
HSDPA II	1	23.03	22.99	22.99
	2	22.57	22.56	22.57
	3	22.09	22.11	22.08
	4	21.85	21.84	21.87

Mode	Sub test	Avg. Power (dBm) Channel		
		4132.00	4183.00	4233.00
HSDPA V	1	23.02	23.08	23.17
	2	22.54	22.58	22.71
	3	22.04	22.14	22.22
	4	21.77	21.89	21.98

6.6.3 HSPA SUB-TEST Setting

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH(FOR HSUPA)

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS}	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (Codes)	CM (dB)	MPR (dB)	AG Index	E-TFCI	RMC (Kbps)
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75	12.2
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67	12.2
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed}1: 47/15 β_{ed}2: 47/15	4 4	2	2.0	1.0	15	92	12.2
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71	12.2
5	15/15 (Note 4)	15/15 (Note 4)	64	15/15 (Note 4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81	12.2

Note: *The recommended HSUPA MPRs are implemented as per following sub-tests.*

Mode	Sub test	Avg. Power (dBm) Channel		
		9262.00	9400.00	9538.00
HSUPA II	1	22.91	22.89	22.81
	2	22.42	22.44	22.45
	3	21.95	22.03	22.00
	4	22.42	22.48	22.46
	5	22.44	22.51	22.50

Mode	Sub test	Avg. Power (dBm) Channel		
		4132.00	4183.00	4233.00
HSUPA V	1	23.00	23.09	23.14
	2	22.65	22.68	22.70
	3	22.21	22.21	22.26
	4	22.70	22.62	22.75
	5	22.72	22.66	22.71

6.6.4 WCDMA/HSDPA/HSUPA band II, V

The EUT output power was controlled by simulator and enter max rated power 24dBm. The EUT is going to be set to max output power to 24dBm then record the read. The min. power was measures by a function key “minimum power” then record the read. It is -52.3dBm. The power variation can be 0.1dB step by setting.

6.7 LTE Measurement Results:

Antenna gain (dBi) 3.01

LTE Band 2_Uplink frequency band : 1850 to 1910 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
1.4	18607	1850.7	QPSK	1	0	21.67	24.68	33	-8.32
				1	5	21.81	24.82	33	-8.18
				3	2	21.86	24.87	33	-8.13
				6	0	20.88	23.89	33	-9.11
	18900	1880	QPSK	1	0	21.02	24.03	33	-8.97
				1	5	21.19	24.20	33	-8.8
				3	2	21.90	24.91	33	-8.09
				6	0	20.84	23.85	33	-9.15
	19193	1909.3	QPSK	1	0	21.80	24.81	33	-8.19
				1	5	21.66	24.67	33	-8.33
				3	2	21.84	24.85	33	-8.15
				6	0	20.84	23.85	33	-9.15
	18607	1850.7	16QAM	1	0	21.13	24.14	33	-8.86
				1	5	21.03	24.04	33	-8.96
				3	2	20.85	23.86	33	-9.14
				6	0	19.90	22.91	33	-10.09
	18900	1880	16QAM	1	0	20.63	23.64	33	-9.36
				1	5	20.78	23.79	33	-9.21
				3	2	20.28	23.29	33	-9.71
				6	0	19.93	22.94	33	-10.06
	19193	1909.3	16QAM	1	0	21.13	24.14	33	-8.86
				1	5	20.10	23.11	33	-9.89
				3	2	20.91	23.92	33	-9.08
				6	0	19.97	22.98	33	-10.02

Antenna gain (dBi) 3.01

LTE Band 2_Uplink frequency band : 1850 to 1910 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
3	18615	1851.5	QPSK	1	0	21.87	24.88	33	-8.12
				1	14	21.52	24.53	33	-8.47
				8	4	20.80	23.81	33	-9.19
				15	0	20.84	23.85	33	-9.15
	18900	1880	QPSK	1	0	21.58	24.59	33	-8.41
				1	14	21.72	24.73	33	-8.27
				8	4	20.83	23.84	33	-9.16
				15	0	20.85	23.86	33	-9.14
	19185	1908.5	QPSK	1	0	21.72	24.73	33	-8.27
				1	14	21.80	24.81	33	-8.19
				8	4	20.88	23.89	33	-9.11
				15	0	20.87	23.88	33	-9.12
	18615	1851.5	16QAM	1	0	21.09	24.10	33	-8.9
				1	14	20.91	23.92	33	-9.08
				8	4	19.84	22.85	33	-10.15
				15	0	19.94	22.95	33	-10.05
	18900	1880	16QAM	1	0	20.69	23.70	33	-9.3
				1	14	20.99	24.00	33	-9
				8	4	19.83	22.84	33	-10.16
				15	0	19.98	22.99	33	-10.01
	19185	1908.5	16QAM	1	0	21.22	24.23	33	-8.77
				1	14	20.92	23.93	33	-9.07
				8	4	19.91	22.92	33	-10.08
				15	0	20.02	23.03	33	-9.97

Antenna gain (dBi) 3.01

LTE Band 2_Uplink frequency band : 1850 to 1910 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
5	18625	1852.5	QPSK	1	0	21.46	24.47	33	-8.53
				1	24	21.57	24.58	33	-8.42
				12	6	20.83	23.84	33	-9.16
				25	0	20.85	23.86	33	-9.14
	18900	1880	QPSK	1	0	21.46	24.47	33	-8.53
				1	24	21.51	24.52	33	-8.48
				12	6	20.66	23.67	33	-9.33
				25	0	20.84	23.85	33	-9.15
	19175	1907.5	QPSK	1	0	21.95	24.96	33	-8.04
				1	24	20.96	23.97	33	-9.03
				12	6	20.91	23.92	33	-9.08
				25	0	20.92	23.93	33	-9.07
	18625	1852.5	16QAM	1	0	20.70	23.71	33	-9.29
				1	24	20.24	23.25	33	-9.75
				12	6	19.88	22.89	33	-10.11
				25	0	19.82	22.83	33	-10.17
	18900	1880	16QAM	1	0	20.88	23.89	33	-9.11
				1	24	20.94	23.95	33	-9.05
				12	6	19.89	22.90	33	-10.1
				25	0	19.93	22.94	33	-10.06
	19175	1907.5	16QAM	1	0	21.31	24.32	33	-8.68
				1	24	21.29	24.30	33	-8.7
				12	6	19.95	22.96	33	-10.04
				25	0	19.99	23.00	33	-10

Antenna gain (dBi) 3.01

LTE Band 2_Uplink frequency band : 1850 to 1910 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
10	18650	1855	QPSK	1	0	21.04	24.05	33	-8.95
				1	49	20.94	23.95	33	-9.05
				25	12	20.75	23.76	33	-9.24
				50	0	20.83	23.84	33	-9.16
	18900	1880	QPSK	1	0	21.14	24.15	33	-8.85
				1	49	20.86	23.87	33	-9.13
				25	12	19.84	22.85	33	-10.15
				50	0	20.91	23.92	33	-9.08
	19150	1905	QPSK	1	0	21.33	24.34	33	-8.66
				1	49	21.82	24.83	33	-8.17
				25	12	20.85	23.86	33	-9.14
				50	0	20.93	23.94	33	-9.06
	18650	1855	16QAM	1	0	20.37	23.38	33	-9.62
				1	49	19.14	22.15	33	-10.85
				25	12	19.81	22.82	33	-10.18
				50	0	19.89	22.90	33	-10.1
	18900	1880	16QAM	1	0	19.53	22.54	33	-10.46
				1	49	20.18	23.19	33	-9.81
				25	12	19.90	22.91	33	-10.09
				50	0	19.94	22.95	33	-10.05
	19150	1905	16QAM	1	0	20.75	23.76	33	-9.24
				1	49	19.08	22.09	33	-10.91
				25	12	19.89	22.90	33	-10.1
				50	0	19.93	22.94	33	-10.06

Antenna gain (dBi) 3.01

LTE Band 2_Uplink frequency band : 1850 to 1910 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
15	18675	1857.5	QPSK	1	0	21.26	24.27	33	-8.73
				1	74	21.00	24.01	33	-8.99
				36	18	19.63	22.64	33	-10.36
				75	0	21.12	24.13	33	-8.87
	18900	1880	QPSK	1	0	22.44	25.45	33	-7.55
				1	74	20.95	23.96	33	-9.04
				36	18	20.89	23.90	33	-9.1
				75	0	20.98	23.99	33	-9.01
	19125	1902.5	QPSK	1	0	22.57	25.58	33	-7.42
				1	74	20.84	23.85	33	-9.15
				36	18	21.10	24.11	33	-8.89
				75	0	21.16	24.17	33	-8.83
	18675	1857.5	16QAM	1	0	20.55	23.56	33	-9.44
				1	74	20.23	23.24	33	-9.76
				36	18	20.05	23.06	33	-9.94
				75	0	20.17	23.18	33	-9.82
	18900	1880	16QAM	1	0	20.65	23.66	33	-9.34
				1	74	20.15	23.16	33	-9.84
				36	18	19.93	22.94	33	-10.06
				75	0	19.97	22.98	33	-10.02
	19125	1902.5	16QAM	1	0	20.76	23.77	33	-9.23
				1	74	20.14	23.15	33	-9.85
				36	18	20.11	23.12	33	-9.88
				75	0	20.20	23.21	33	-9.79

Antenna gain (dBi) 3.01

LTE Band 2_Uplink frequency band : 1850 to 1910 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
20	18700	1860	QPSK	1	0	22.34	25.35	33	-7.65
				1	99	20.65	23.66	33	-9.34
				50	25	21.02	24.03	33	-8.97
				100	0	21.19	24.20	33	-8.8
	18900	1880	QPSK	1	0	22.29	25.30	33	-7.7
				1	99	21.71	24.72	33	-8.28
				50	25	19.76	22.77	33	-10.23
				100	0	20.92	23.93	33	-9.07
	19100	1900	QPSK	1	0	22.45	25.46	33	-7.54
				1	99	21.66	24.67	33	-8.33
				50	25	20.07	23.08	33	-9.92
				100	0	21.21	24.22	33	-8.78
	18700	1860	16QAM	1	0	21.61	24.62	33	-8.38
				1	99	19.06	22.07	33	-10.93
				50	25	20.05	23.06	33	-9.94
				100	0	20.21	23.22	33	-9.78
	18900	1880	16QAM	1	0	20.66	23.67	33	-9.33
				1	99	20.01	23.02	33	-9.98
				50	25	18.82	21.83	33	-11.17
				100	0	19.94	22.95	33	-10.05
	19100	1900	16QAM	1	0	21.77	24.78	33	-8.22
				1	99	21.05	24.06	33	-8.94
				50	25	19.09	22.10	33	-10.9
				100	0	20.24	23.25	33	-9.75

Antenna gain (dBi) -5.47

LTE Band 4_Uplink frequency band : 1710 to 1755 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
1.4	19957	1710.7	QPSK	1	0	21.72	16.25	30	-13.75
				1	5	21.71	16.24	30	-13.76
				3	2	22.16	16.69	30	-13.31
				6	0	21.01	15.54	30	-14.46
	20175	1732.5	QPSK	1	0	21.53	16.06	30	-13.94
				1	5	21.78	16.31	30	-13.69
				3	2	21.79	16.32	30	-13.68
				6	0	20.80	15.33	30	-14.67
	20393	1754.3	QPSK	1	0	22.23	16.76	30	-13.24
				1	5	22.22	16.75	30	-13.25
				3	2	22.20	16.73	30	-13.27
				6	0	21.19	15.72	30	-14.28
	19957	1710.7	16QAM	1	0	20.88	15.41	30	-14.59
				1	5	21.14	15.67	30	-14.33
				3	2	21.09	15.62	30	-14.38
				6	0	20.09	14.62	30	-15.38
	20175	1732.5	16QAM	1	0	20.99	15.52	30	-14.48
				1	5	20.99	15.52	30	-14.48
				3	2	20.82	15.35	30	-14.65
				6	0	19.92	14.45	30	-15.55
	20393	1754.3	16QAM	1	0	21.33	15.86	30	-14.14
				1	5	20.93	15.46	30	-14.54
				3	2	20.91	15.44	30	-14.56
				6	0	20.15	14.68	30	-15.32

Antenna gain (dBi) -5.47

LTE Band 4_Uplink frequency band : 1710 to 1755 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
3	19965	1711.5	QPSK	1	0	22.04	16.57	30	-13.43
				1	14	21.53	16.06	30	-13.94
				8	4	20.97	15.50	30	-14.5
				15	0	20.95	15.48	30	-14.52
	20175	1732.5	QPSK	1	0	21.42	15.95	30	-14.05
				1	14	21.70	16.23	30	-13.77
				8	4	20.67	15.20	30	-14.8
				15	0	19.98	14.51	30	-15.49
	20385	1753.5	QPSK	1	0	22.18	16.71	30	-13.29
				1	14	22.04	16.57	30	-13.43
				8	4	21.15	15.68	30	-14.32
				15	0	21.18	15.71	30	-14.29
	19965	1711.5	16QAM	1	0	21.37	15.90	30	-14.1
				1	14	20.47	15.00	30	-15
				8	4	20.01	14.54	30	-15.46
				15	0	19.97	14.50	30	-15.5
	20175	1732.5	16QAM	1	0	20.61	15.14	30	-14.86
				1	14	20.91	15.44	30	-14.56
				8	4	19.77	14.30	30	-15.7
				15	0	19.71	14.24	30	-15.76
	20385	1753.5	16QAM	1	0	20.96	15.49	30	-14.51
				1	14	20.59	15.12	30	-14.88
				8	4	20.19	14.72	30	-15.28
				15	0	20.20	14.73	30	-15.27

Antenna gain (dBi) -5.47

LTE Band 4_Uplink frequency band : 1710 to 1755 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
5	19975	1712.5	QPSK	1	0	22.14	16.67	30	-13.33
				1	24	21.47	16.00	30	-14
				12	6	20.88	15.41	30	-14.59
				25	0	20.91	15.44	30	-14.56
	20175	1732.5	QPSK	1	0	21.80	16.33	30	-13.67
				1	24	21.69	16.22	30	-13.78
				12	6	20.73	15.26	30	-14.74
				25	0	20.45	14.98	30	-15.02
	20375	1752.5	QPSK	1	0	22.31	16.84	30	-13.16
				1	24	22.03	16.56	30	-13.44
				12	6	21.16	15.69	30	-14.31
				25	0	21.14	15.67	30	-14.33
	19975	1712.5	16QAM	1	0	20.83	15.36	30	-14.64
				1	24	20.98	15.51	30	-14.49
				12	6	19.93	14.46	30	-15.54
				25	0	19.79	14.32	30	-15.68
	20175	1732.5	16QAM	1	0	21.21	15.74	30	-14.26
				1	24	20.58	15.11	30	-14.89
				12	6	19.78	14.31	30	-15.69
				25	0	19.69	14.22	30	-15.78
	20375	1752.5	16QAM	1	0	21.74	16.27	30	-13.73
				1	24	21.44	15.97	30	-14.03
				12	6	20.13	14.66	30	-15.34
				25	0	20.13	14.66	30	-15.34

Antenna gain (dBi) -5.47

LTE Band 4_Uplink frequency band : 1710 to 1755 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
10	20000	1715	QPSK	1	0	21.15	15.68	30	-14.32
				1	49	21.75	16.28	30	-13.72
				25	12	19.91	14.44	30	-15.56
				50	0	19.86	14.39	30	-15.61
	20175	1732.5	QPSK	1	0	21.08	15.61	30	-14.39
				1	49	21.76	16.29	30	-13.71
				25	12	20.78	15.31	30	-14.69
				50	0	19.75	14.28	30	-15.72
	20375	1750	QPSK	1	0	21.42	15.95	30	-14.05
				1	49	21.29	15.82	30	-14.18
				25	12	21.21	15.74	30	-14.26
				50	0	21.21	15.74	30	-14.26
	20000	1715	16QAM	1	0	20.46	14.99	30	-15.01
				1	49	20.05	14.58	30	-15.42
				25	12	19.91	14.44	30	-15.56
				50	0	18.94	13.47	30	-16.53
	20175	1732.5	16QAM	1	0	20.38	14.91	30	-15.09
				1	49	19.06	13.59	30	-16.41
				25	12	19.78	14.31	30	-15.69
				50	0	18.82	13.35	30	-16.65
	20375	1750	16QAM	1	0	20.67	15.20	30	-14.8
				1	49	20.40	14.93	30	-15.07
				25	12	19.13	13.66	30	-16.34
				50	0	20.14	14.67	30	-15.33

Antenna gain (dBi) -5.47

LTE Band 4_Uplink frequency band : 1710 to 1755 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
15	20025	1717.5	QPSK	1	0	22.43	16.96	30	-13.04
				1	74	21.79	16.32	30	-13.68
				36	18	20.86	15.39	30	-14.61
				75	0	20.94	15.47	30	-14.53
	20175	1732.5	QPSK	1	0	21.18	15.71	30	-14.29
				1	74	21.72	16.25	30	-13.75
				36	18	19.73	14.26	30	-15.74
				75	0	20.85	15.38	30	-14.62
	20325	1747.5	QPSK	1	0	21.36	15.89	30	-14.11
				1	74	21.10	15.63	30	-14.37
				36	18	19.79	14.32	30	-15.68
				75	0	21.24	15.77	30	-14.23
	20025	1717.5	16QAM	1	0	20.63	15.16	30	-14.84
				1	74	19.99	14.52	30	-15.48
				36	18	18.87	13.40	30	-16.6
				75	0	19.88	14.41	30	-15.59
	20175	1732.5	16QAM	1	0	20.44	14.97	30	-15.03
				1	74	19.00	13.53	30	-16.47
				36	18	18.73	13.26	30	-16.74
				75	0	18.89	13.42	30	-16.58
	20325	1747.5	16QAM	1	0	20.60	15.13	30	-14.87
				1	74	20.33	14.86	30	-15.14
				36	18	20.09	14.62	30	-15.38
				75	0	20.19	14.72	30	-15.28

Antenna gain (dBi) -5.47

LTE Band 4_Uplink frequency band : 1710 to 1755 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
20	20050	1720	QPSK	1	0	22.24	16.77	30	-13.23
				1	99	21.41	15.94	30	-14.06
				50	25	20.69	15.22	30	-14.78
				100	0	20.83	15.36	30	-14.64
	20175	1732.5	QPSK	1	0	22.22	16.75	30	-13.25
				1	99	21.65	16.18	30	-13.82
				50	25	20.74	15.27	30	-14.73
				100	0	19.84	14.37	30	-15.63
	20300	1745	QPSK	1	0	22.20	16.73	30	-13.27
				1	99	21.77	16.30	30	-13.7
				50	25	19.96	14.49	30	-15.51
				100	0	21.19	15.72	30	-14.28
	20050	1720	16QAM	1	0	21.63	16.16	30	-13.84
				1	99	19.71	14.24	30	-15.76
				50	25	18.64	13.17	30	-16.83
				100	0	18.76	13.29	30	-16.71
	20175	1732.5	16QAM	1	0	21.56	16.09	30	-13.91
				1	99	19.12	13.65	30	-16.35
				50	25	18.72	13.25	30	-16.75
				100	0	19.82	14.35	30	-15.65
	20300	1745	16QAM	1	0	21.60	16.13	30	-13.87
				1	99	20.13	14.66	30	-15.34
				50	25	18.99	13.52	30	-16.48
				100	0	20.05	14.58	30	-15.42

Antenna gain (dBi) 0.41

LTE Band 5_Uplink frequency band : 824 to 849 MHz										
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	ERP Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
1.4	20407	824.7	QPSK	1	0	21.15	19.41	21.56	38.45	-16.89
				1	5	21.81	20.07	22.22	38.45	-16.23
				3	2	21.77	20.03	22.18	38.45	-16.27
				6	0	20.46	18.72	20.87	38.45	-17.58
	20525	836.5	QPSK	1	0	21.61	19.87	22.02	38.45	-16.43
				1	5	21.90	20.16	22.31	38.45	-16.14
				3	2	21.90	20.16	22.31	38.45	-16.14
				6	0	20.84	19.10	21.25	38.45	-17.2
	20643	848.3	QPSK	1	0	21.56	19.82	21.97	38.45	-16.48
				1	5	21.77	20.03	22.18	38.45	-16.27
				3	2	21.81	20.07	22.22	38.45	-16.23
				6	0	20.52	18.78	20.93	38.45	-17.52
	20407	824.7	16QAM	1	0	20.60	18.86	21.01	38.45	-17.44
				1	5	20.62	18.88	21.03	38.45	-17.42
				3	2	19.87	18.13	20.28	38.45	-18.17
				6	0	19.82	18.08	20.23	38.45	-18.22
	20525	836.5	16QAM	1	0	21.07	19.33	21.48	38.45	-16.97
				1	5	21.22	19.48	21.63	38.45	-16.82
				3	2	20.63	18.89	21.04	38.45	-17.41
				6	0	20.02	18.28	20.43	38.45	-18.02
	20643	848.3	16QAM	1	0	20.91	19.17	21.32	38.45	-17.13
				1	5	20.84	19.10	21.25	38.45	-17.2
				3	2	20.62	18.88	21.03	38.45	-17.42
				6	0	19.93	18.19	20.34	38.45	-18.11

Antenna gain (dBi) 0.41

LTE Band 5_Uplink frequency band : 824 to 849 MHz										
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	ERP Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
3	20415	825.5	QPSK	1	0	21.39	19.65	21.80	38.45	-16.65
				1	14	21.65	19.91	22.06	38.45	-16.39
				8	4	20.69	18.95	21.10	38.45	-17.35
				15	0	20.43	18.69	20.84	38.45	-17.61
	20525	836.5	QPSK	1	0	21.69	19.95	22.10	38.45	-16.35
				1	14	21.70	19.96	22.11	38.45	-16.34
				8	4	20.81	19.07	21.22	38.45	-17.23
				15	0	20.81	19.07	21.22	38.45	-17.23
	20635	847.5	QPSK	1	0	21.54	19.80	21.95	38.45	-16.5
				1	14	21.43	19.69	21.84	38.45	-16.61
				8	4	20.78	19.04	21.19	38.45	-17.26
				15	0	20.79	19.05	21.20	38.45	-17.25
	20415	825.5	16QAM	1	0	20.56	18.82	20.97	38.45	-17.48
				1	14	20.59	18.85	21.00	38.45	-17.45
				8	4	19.85	18.11	20.26	38.45	-18.19
				15	0	19.84	18.10	20.25	38.45	-18.2
	20525	836.5	16QAM	1	0	20.98	19.24	21.39	38.45	-17.06
				1	14	20.72	18.98	21.13	38.45	-17.32
				8	4	19.96	18.22	20.37	38.45	-18.08
				15	0	19.97	18.23	20.38	38.45	-18.07
	20635	847.5	16QAM	1	0	20.70	18.96	21.11	38.45	-17.34
				1	14	20.85	19.11	21.26	38.45	-17.19
				8	4	19.91	18.17	20.32	38.45	-18.13
				15	0	19.91	18.17	20.32	38.45	-18.13

Antenna gain (dBi) 0.41

LTE Band 5_Uplink frequency band : 824 to 849 MHz										
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	ERP Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
5	20425	826.5	QPSK	1	0	21.41	19.67	21.82	38.45	-16.63
				1	24	21.68	19.94	22.09	38.45	-16.36
				12	6	20.72	18.98	21.13	38.45	-17.32
				25	0	20.73	18.99	21.14	38.45	-17.31
	20525	836.5	QPSK	1	0	21.79	20.05	22.20	38.45	-16.25
				1	24	21.66	19.92	22.07	38.45	-16.38
				12	6	20.76	19.02	21.17	38.45	-17.28
				25	0	20.78	19.04	21.19	38.45	-17.26
	20625	846.5	QPSK	1	0	21.58	19.84	21.99	38.45	-16.46
				1	24	21.30	19.56	21.71	38.45	-16.74
				12	6	20.73	18.99	21.14	38.45	-17.31
				25	0	20.46	18.72	20.87	38.45	-17.58
	20425	826.5	16QAM	1	0	21.13	19.39	21.54	38.45	-16.91
				1	24	21.01	19.27	21.42	38.45	-17.03
				12	6	19.84	18.10	20.25	38.45	-18.2
				25	0	19.85	18.11	20.26	38.45	-18.19
	20525	836.5	16QAM	1	0	20.77	19.03	21.18	38.45	-17.27
				1	24	20.61	18.87	21.02	38.45	-17.43
				12	6	19.92	18.18	20.33	38.45	-18.12
				25	0	19.83	18.09	20.24	38.45	-18.21
	20625	846.5	16QAM	1	0	20.80	19.06	21.21	38.45	-17.24
				1	24	20.84	19.10	21.25	38.45	-17.2
				12	6	19.79	18.05	20.20	38.45	-18.25
				25	0	19.81	18.07	20.22	38.45	-18.23

Antenna gain (dBi) 0.41

LTE Band 5_Uplink frequency band : 824 to 849 MHz										
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	ERP Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
10	20450	829	QPSK	1	0	21.65	19.91	22.06	38.45	-16.39
				1	49	21.64	19.90	22.05	38.45	-16.4
				25	12	20.70	18.96	21.11	38.45	-17.34
				50	0	20.70	18.96	21.11	38.45	-17.34
	20525	836.5	QPSK	1	0	21.82	20.08	22.23	38.45	-16.22
				1	49	21.66	19.92	22.07	38.45	-16.38
				25	12	18.91	17.17	19.32	38.45	-19.13
				50	0	20.81	19.07	21.22	38.45	-17.23
	20600	844	QPSK	1	0	21.70	19.96	22.11	38.45	-16.34
				1	49	20.57	18.83	20.98	38.45	-17.47
				25	12	19.78	18.04	20.19	38.45	-18.26
				50	0	19.81	18.07	20.22	38.45	-18.23
	20450	829	16QAM	1	0	20.14	18.40	20.55	38.45	-17.9
				1	49	19.20	17.46	19.61	38.45	-18.84
				25	12	19.82	18.08	20.23	38.45	-18.22
				50	0	18.85	17.11	19.26	38.45	-19.19
	20525	836.5	16QAM	1	0	19.29	17.55	19.70	38.45	-18.75
				1	49	19.18	17.44	19.59	38.45	-18.86
				25	12	19.91	18.17	20.32	38.45	-18.13
				50	0	20.00	18.26	20.41	38.45	-18.04
	20600	844	16QAM	1	0	20.16	18.42	20.57	38.45	-17.88
				1	49	19.17	17.43	19.58	38.45	-18.87
				25	12	19.83	18.09	20.24	38.45	-18.21
				50	0	19.82	18.08	20.23	38.45	-18.22

Antenna gain (dBi) 0.79

LTE Band 12_Uplink frequency band : 699 to 716 MHz										
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	ERP Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
1.4	23017	699.7	QPSK	1	0	21.37	20.01	22.16	34.77	-12.61
				1	5	22.00	20.64	22.79	34.77	-11.98
				3	2	22.04	20.68	22.83	34.77	-11.94
				6	0	21.00	19.64	21.79	34.77	-12.98
	23095	707.5	QPSK	1	0	21.90	20.54	22.69	34.77	-12.08
				1	5	21.92	20.56	22.71	34.77	-12.06
				3	2	21.93	20.57	22.72	34.77	-12.05
				6	0	20.93	19.57	21.72	34.77	-13.05
	23173	715.5	QPSK	1	0	22.07	20.71	22.86	34.77	-11.91
				1	5	22.03	20.67	22.82	34.77	-11.95
				3	2	22.04	20.68	22.83	34.77	-11.94
				6	0	21.07	19.71	21.86	34.77	-12.91
	23017	699.7	16QAM	1	0	20.82	19.46	21.61	34.77	-13.16
				1	5	20.97	19.61	21.76	34.77	-13.01
				3	2	20.87	19.51	21.66	34.77	-13.11
				6	0	20.05	18.69	20.84	34.77	-13.93
	23095	707.5	16QAM	1	0	21.09	19.73	21.88	34.77	-12.89
				1	5	21.32	19.96	22.11	34.77	-12.66
				3	2	20.41	19.05	21.20	34.77	-13.57
				6	0	20.00	18.64	20.79	34.77	-13.98
	23173	715.5	16QAM	1	0	21.22	19.86	22.01	34.77	-12.76
				1	5	21.18	19.82	21.97	34.77	-12.8
				3	2	20.14	18.78	20.93	34.77	-13.84
				6	0	20.04	18.68	20.83	34.77	-13.94

Antenna gain (dBi) 0.79

LTE Band 12_Uplink frequency band : 699 to 716 MHz										
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	ERP Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
3	23025	700.5	QPSK	1	0	21.83	20.47	22.62	34.77	-12.15
				1	14	21.87	20.51	22.66	34.77	-12.11
				8	4	20.97	19.61	21.76	34.77	-13.01
				15	0	20.96	19.60	21.75	34.77	-13.02
	23095	707.5	QPSK	1	0	21.77	20.41	22.56	34.77	-12.21
				1	14	21.48	20.12	22.27	34.77	-12.5
				8	4	20.90	19.54	21.69	34.77	-13.08
				15	0	20.93	19.57	21.72	34.77	-13.05
	23165	714.5	QPSK	1	0	21.79	20.43	22.58	34.77	-12.19
				1	14	21.72	20.36	22.51	34.77	-12.26
				8	4	21.09	19.73	21.88	34.77	-12.89
				15	0	20.99	19.63	21.78	34.77	-12.99
	23025	700.5	16QAM	1	0	21.19	19.83	21.98	34.77	-12.79
				1	14	20.89	19.53	21.68	34.77	-13.09
				8	4	19.93	18.57	20.72	34.77	-14.05
				15	0	19.98	18.62	20.77	34.77	-14
	23095	707.5	16QAM	1	0	20.82	19.46	21.61	34.77	-13.16
				1	14	20.56	19.20	21.35	34.77	-13.42
				8	4	19.92	18.56	20.71	34.77	-14.06
				15	0	19.94	18.58	20.73	34.77	-14.04
	23165	714.5	16QAM	1	0	20.22	18.86	21.01	34.77	-13.76
				1	14	20.87	19.51	21.66	34.77	-13.11
				8	4	19.99	18.63	20.78	34.77	-13.99
				15	0	20.00	18.64	20.79	34.77	-13.98

Antenna gain (dBi) 0.79

LTE Band 12_Uplink frequency band : 699 to 716 MHz										
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	ERP Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
5	23035	701.5	QPSK	1	0	21.57	20.21	22.36	34.77	-12.41
				1	24	21.51	20.15	22.30	34.77	-12.47
				12	6	20.97	19.61	21.76	34.77	-13.01
				25	0	20.96	19.60	21.75	34.77	-13.02
	23095	707.5	QPSK	1	0	21.85	20.49	22.64	34.77	-12.13
				1	24	21.78	20.42	22.57	34.77	-12.2
				12	6	20.87	19.51	21.66	34.77	-13.11
				25	0	20.87	19.51	21.66	34.77	-13.11
	23155	713.5	QPSK	1	0	21.49	20.13	22.28	34.77	-12.49
				1	24	21.60	20.24	22.39	34.77	-12.38
				12	6	20.91	19.55	21.70	34.77	-13.07
				25	0	21.02	19.66	21.81	34.77	-12.96
	23035	701.5	16QAM	1	0	21.29	19.93	22.08	34.77	-12.69
				1	24	20.42	19.06	21.21	34.77	-13.56
				12	6	19.95	18.59	20.74	34.77	-14.03
				25	0	19.91	18.55	20.70	34.77	-14.07
	23095	707.5	16QAM	1	0	20.88	19.52	21.67	34.77	-13.1
				1	24	20.77	19.41	21.56	34.77	-13.21
				12	6	19.97	18.61	20.76	34.77	-14.01
				25	0	19.85	18.49	20.64	34.77	-14.13
	23155	713.5	16QAM	1	0	21.21	19.85	22.00	34.77	-12.77
				1	24	20.95	19.59	21.74	34.77	-13.03
				12	6	20.00	18.64	20.79	34.77	-13.98
				25	0	20.00	18.64	20.79	34.77	-13.98

Antenna gain (dBi) 0.79

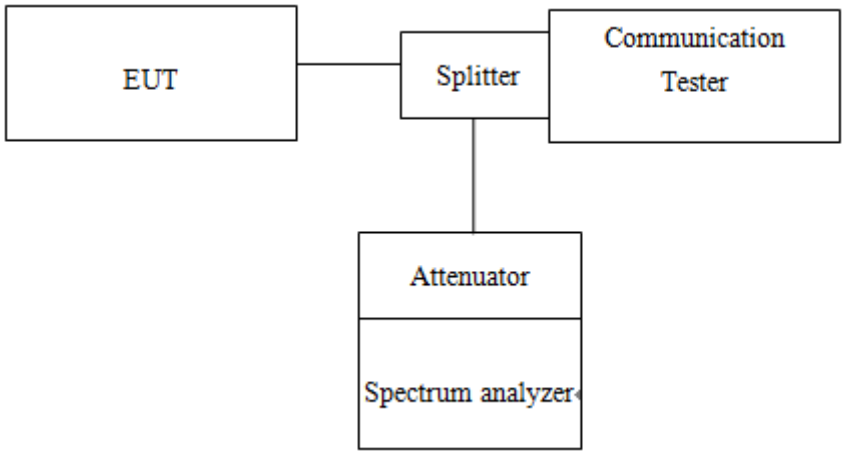
LTE Band 12_Uplink frequency band : 699 to 716 MHz										
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	ERP Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
10	23060	704	QPSK	1	0	21.88	20.52	22.67	34.77	-12.1
				1	49	20.77	19.41	21.56	34.77	-13.21
				25	12	19.87	18.51	20.66	34.77	-14.11
				50	0	19.88	18.52	20.67	34.77	-14.1
	23095	707.5	QPSK	1	0	21.76	20.40	22.55	34.77	-12.22
				1	49	21.77	20.41	22.56	34.77	-12.21
				25	12	20.85	19.49	21.64	34.77	-13.13
				50	0	19.81	18.45	20.60	34.77	-14.17
	23130	711	QPSK	1	0	21.76	20.40	22.55	34.77	-12.22
				1	49	21.90	20.54	22.69	34.77	-12.08
				25	12	20.94	19.58	21.73	34.77	-13.04
				50	0	20.96	19.60	21.75	34.77	-13.02
	23060	704	16QAM	1	0	20.31	18.95	21.10	34.77	-13.67
				1	49	19.20	17.84	19.99	34.77	-14.78
				25	12	18.91	17.55	19.70	34.77	-15.07
				50	0	18.89	17.53	19.68	34.77	-15.09
	23095	707.5	16QAM	1	0	19.15	17.79	19.94	34.77	-14.83
				1	49	20.10	18.74	20.89	34.77	-13.88
				25	12	19.90	18.54	20.69	34.77	-14.08
				50	0	19.86	18.50	20.65	34.77	-14.12
	23130	711	16QAM	1	0	19.22	17.86	20.01	34.77	-14.76
				1	49	20.33	18.97	21.12	34.77	-13.65
				25	12	18.95	17.59	19.74	34.77	-15.03
				50	0	19.93	18.57	20.72	34.77	-14.05

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.
PXA Spectrum Analyzer	Agilent	N9030A	MY53120760	04/21/2020	04/20/2021
DC Power Supply	Agilent	E3640A	MY40005907	10/22/2019	10/21/2020
Temperature Chamber	TERCHY	MHG-120LF	911009	05/20/2020	05/19/2021
Radio Communication Analyer	Anritsu	MT8815B	6200711454	04/01/2020	03/31/2021
Attenuator	Mini-Circuit	BW-S10W2+	2	01/02/2020	01/01/2021
DC Block	Mini-Circuits	BLK-18-S+	1	01/02/2020	01/01/2021
Splitter	RF-LAMBAD	RFLT2W1G18G	11-JSPF412-018	01/02/2020	01/01/2021

7.5 Measurement Result

Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		WCDMA II	HSDPA II	HSUPA II	WCDMA II	HSDPA II	HSUPA II
1852.40	9262	4.07130	4.06710	4.05290	4.625	4.612	4.628
1880.00	9400	4.06140	4.05960	4.06420	4.615	4.593	4.595
1907.60	9538	4.06230	4.05430	4.05510	4.626	4.612	4.599

Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		WCDMA V	HSDPA V	HSUPA V	WCDMA V	HSDPA V	HSUPA V
826.40	4132	4.05660	4.05870	4.05700	4.589	4.572	4.632
836.60	4183	4.06630	4.06970	4.06590	4.594	4.604	4.586
846.60	4233	4.05970	4.06340	4.07580	4.619	4.578	4.592

LTE BAND 2 Channel bandwidth: 1.4MHz					
Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		QPSK	16QAM	QPSK	16QAM
1850.7	18607	1.1032	1.1046	1.329	1.365
1880.0	18900	1.1041	1.1051	1.377	1.340
1909.3	19193	1.1056	1.1070	1.356	1.390

LTE BAND 2 Channel bandwidth: 3MHz					
Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		QPSK	16QAM	QPSK	16QAM
1851.5	18615	2.7005	2.7023	3.015	3.021
1880.0	18900	2.7008	2.7001	2.983	3.037
1908.5	19185	2.7014	2.7052	3.012	3.021

LTE BAND 2 Channel bandwidth: 5MHz					
Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		QPSK	16QAM	QPSK	16QAM
1852.5	18625	4.4944	4.4932	5.063	5.072
1880.0	18900	4.4985	4.4918	5.081	5.063
1907.5	19175	4.4904	4.4853	5.073	5.096

LTE BAND 2 Channel bandwidth: 10MHz					
Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		QPSK	16QAM	QPSK	16QAM
1855.0	18650	9.0213	8.9700	10.340	10.140
1880.0	18900	9.0337	8.9827	10.330	10.120
1905.0	19150	9.0199	8.9837	10.380	10.160

LTE BAND 2 Channel bandwidth: 15MHz					
Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		QPSK	16QAM	QPSK	16QAM
1857.5	18675	13.525	13.504	15.640	15.770
1880.0	18900	13.520	13.525	15.770	15.850
1902.5	19125	13.555	13.542	15.920	15.880

LTE BAND 2 Channel bandwidth: 20MHz					
Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		QPSK	16QAM	QPSK	16QAM
1860.0	18700	17.998	18.006	20.730	20.350
1880.0	18900	18.018	18.010	20.640	20.380
1900.0	19100	18.028	18.039	20.660	20.570

LTE BAND 4 Channel bandwidth: 1.4MHz					
Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		QPSK	16QAM	QPSK	16QAM
1710.7	19957	1.1012	1.1048	1.321	1.348
1732.5	20175	1.0996	1.1019	1.338	1.350
1754.3	20393	1.1023	1.1031	1.336	1.357

LTE BAND 4 Channel bandwidth: 3MHz					
Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		QPSK	16QAM	QPSK	16QAM
1711.5	19965	2.6986	2.7056	2.976	3.031
1732.5	20175	2.6989	2.7039	2.991	3.019
1753.5	20385	2.7015	2.6967	2.980	3.028

LTE BAND 4 Channel bandwidth: 5MHz					
Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		QPSK	16QAM	QPSK	16QAM
1712.5	19957	4.4926	4.4906	5.088	5.068
1732.5	20175	4.4933	4.4905	5.097	5.032
1752.5	20375	4.4933	4.4935	5.083	5.096

LTE BAND 4 Channel bandwidth: 10MHz					
Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		QPSK	16QAM	QPSK	16QAM
1715.0	20000	9.0028	8.9726	10.36	10.070
1732.5	20175	9.0171	8.9842	10.34	10.140
1750.0	20350	9.0108	8.9866	10.18	10.060

LTE BAND 4 Channel bandwidth: 15MHz					
Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		QPSK	16QAM	QPSK	16QAM
1717.5	20025	13.502	13.509	15.670	15.910
1732.5	20175	13.511	13.533	15.620	15.840
1747.5	20325	13.539	13.543	15.710	16.000

LTE BAND 4 Channel bandwidth: 20MHz					
Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		QPSK	16QAM	QPSK	16QAM
1720.0	20050	17.955	18.001	20.600	20.310
1732.5	20175	18.002	18.006	20.530	20.400
1745.0	20300	18.034	18.050	20.760	20.570

LTE BAND 5 Channel bandwidth: 1.4MHz					
Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		QPSK	16QAM	QPSK	16QAM
824.7	20407	1.1017	1.1020	1.320	1.357
836.5	20525	1.1016	1.1048	1.328	1.356
848.3	20643	1.1011	1.1027	1.327	1.344

LTE BAND 5 Channel bandwidth: 3MHz					
Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		QPSK	16QAM	QPSK	16QAM
825.5	20415	2.7007	2.7028	2.985	3.023
836.5	20525	2.6984	2.7047	2.989	3.037
847.5	20635	2.6973	2.7045	3.012	3.030

LTE BAND 5 Channel bandwidth: 5MHz					
Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		QPSK	16QAM	QPSK	16QAM
826.5	20425	4.4962	4.4935	5.108	5.064
836.5	20525	4.4959	4.4957	5.081	5.121
846.5	20625	4.4896	4.4918	5.089	5.077

LTE BAND 5 Channel bandwidth: 10MHz					
Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		QPSK	16QAM	QPSK	16QAM
829.0	20450	9.0127	8.9896	10.400	10.220
836.5	20525	9.0300	8.9845	10.310	10.140
844.0	20600	8.9827	8.9715	10.240	10.190

LTE BAND 12 Channel bandwidth: 1.4MHz					
Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		QPSK	16QAM	QPSK	16QAM
699.7	23017	1.1006	1.1009	1.321	1.348
707.5	23095	1.1010	1.1041	1.325	1.343
715.3	23173	1.0996	1.1018	1.333	1.351

LTE BAND 12 Channel bandwidth: 3MHz					
Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		QPSK	16QAM	QPSK	16QAM
700.5	23025	2.6986	2.6986	2.986	3.021
707.5	23095	2.7002	2.7025	2.978	3.042
714.5	23165	2.7042	2.7028	3.009	3.014

LTE BAND 12 Channel bandwidth: 5MHz					
Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		QPSK	16QAM	QPSK	16QAM
701.5	23035	4.4873	4.4846	5.055	5.022
707.5	23095	4.4933	4.4907	5.074	5.071
713.5	23155	4.4971	4.4945	5.067	5.023

LTE BAND 12 Channel bandwidth: 10MHz					
Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		QPSK	16QAM	QPSK	16QAM
704.0	23060	9.0540	9.0002	10.400	10.350
707.5	23095	9.0224	8.9846	10.190	10.030
711.0	23130	8.9773	8.9464	10.240	10.040

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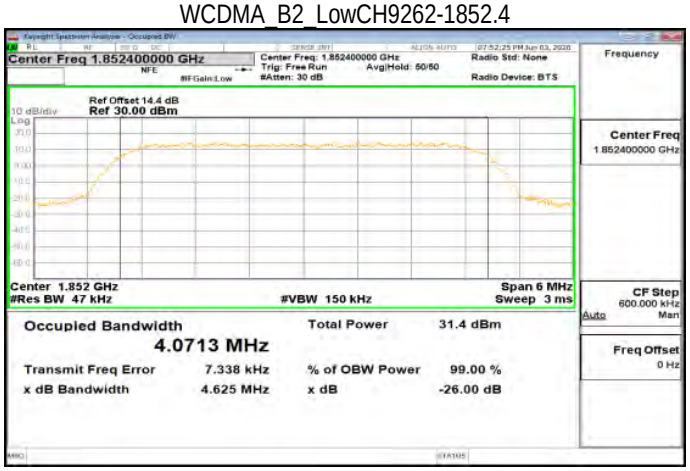

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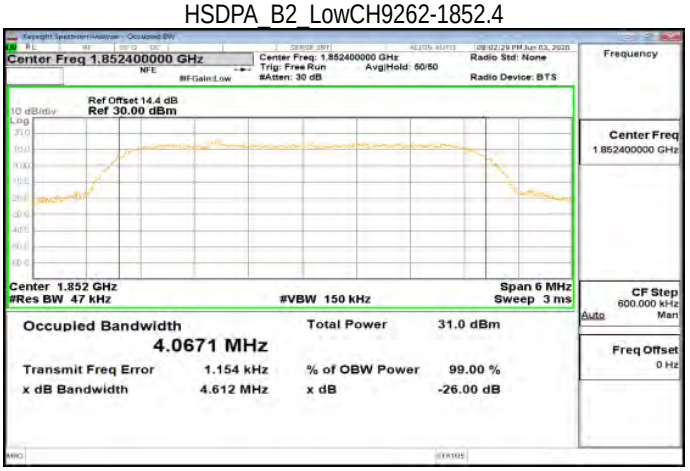

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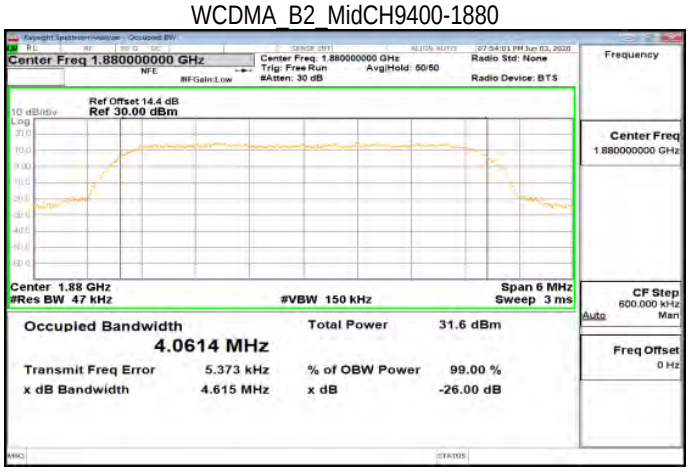

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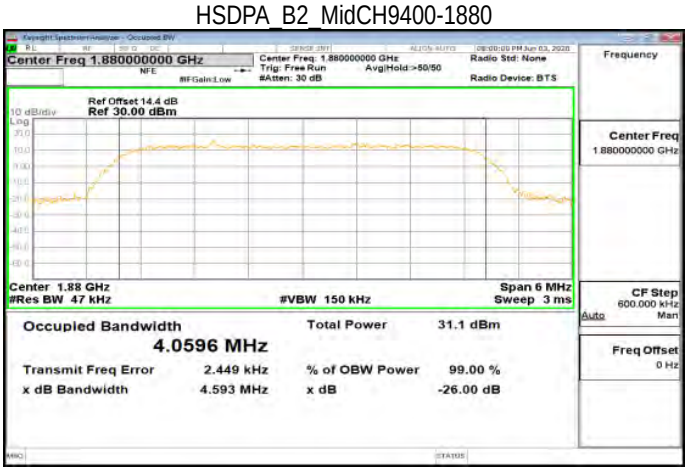

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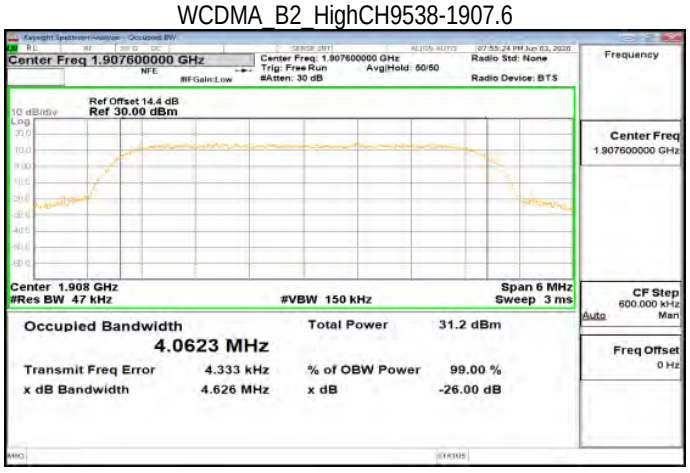

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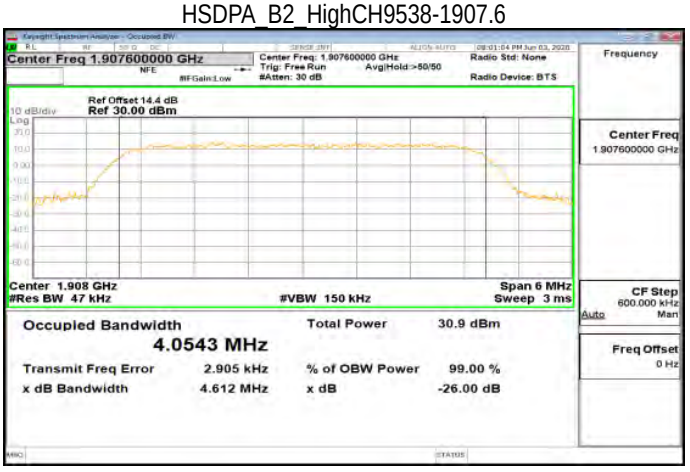

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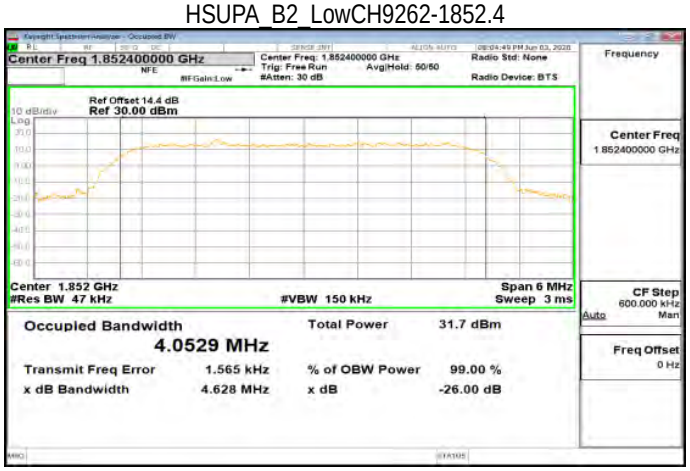

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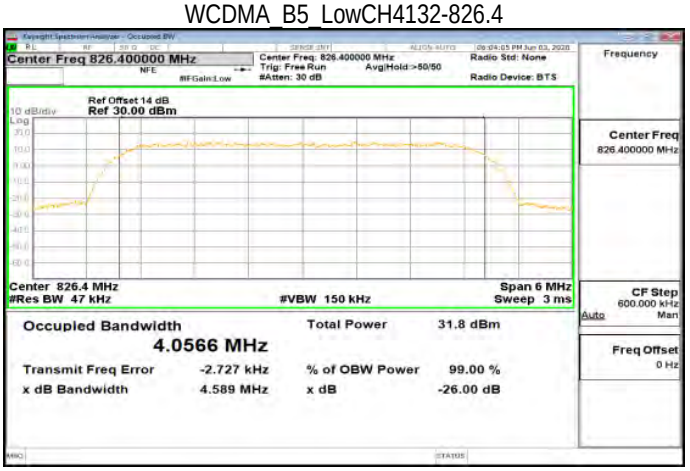

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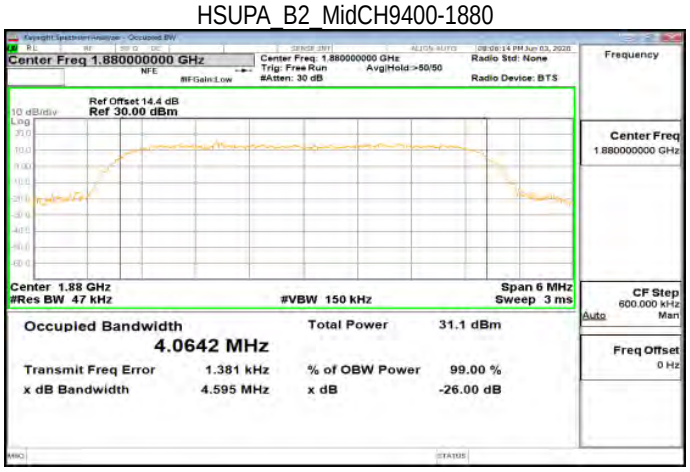

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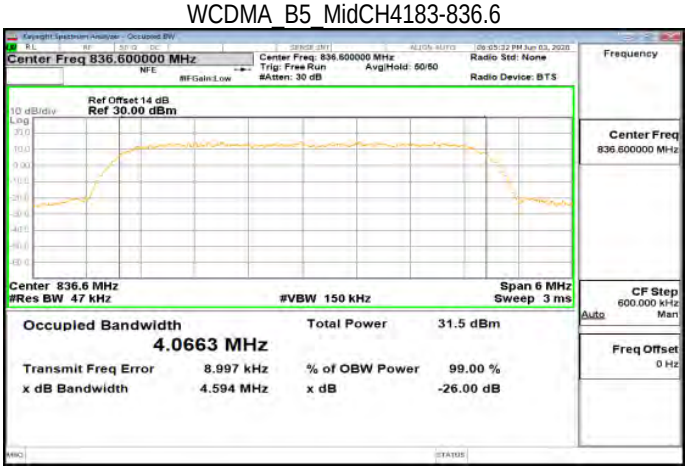

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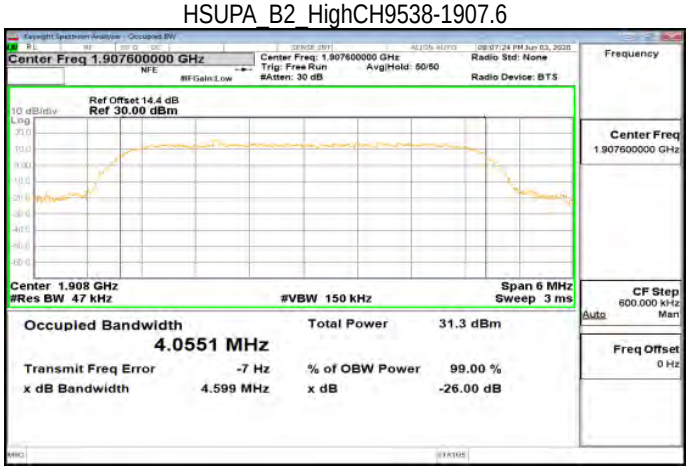

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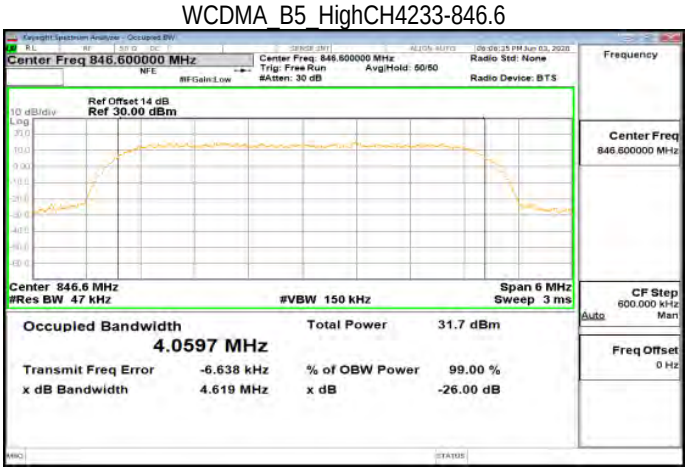

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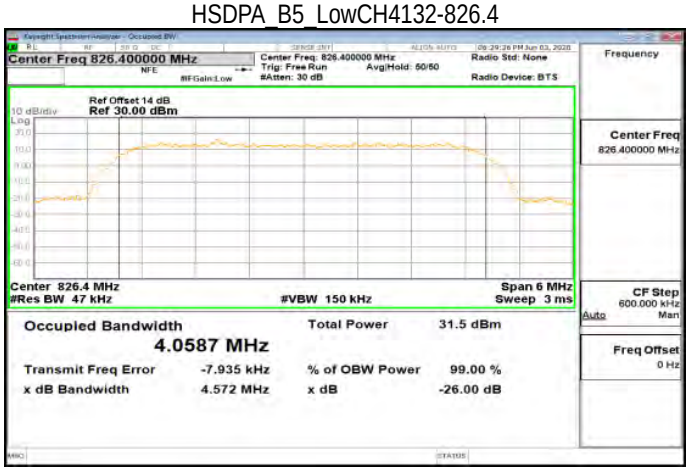

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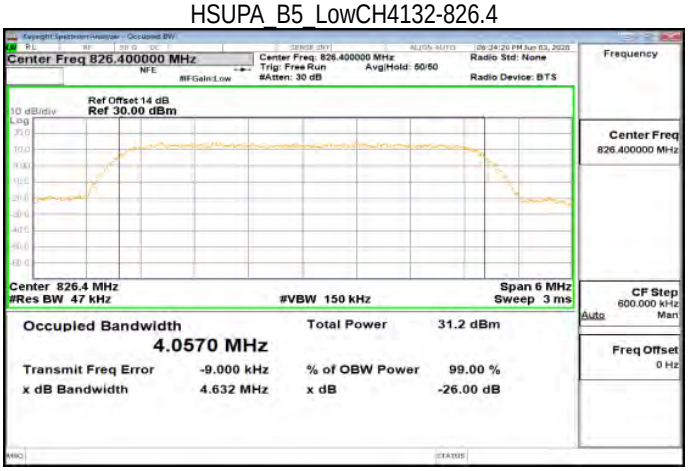

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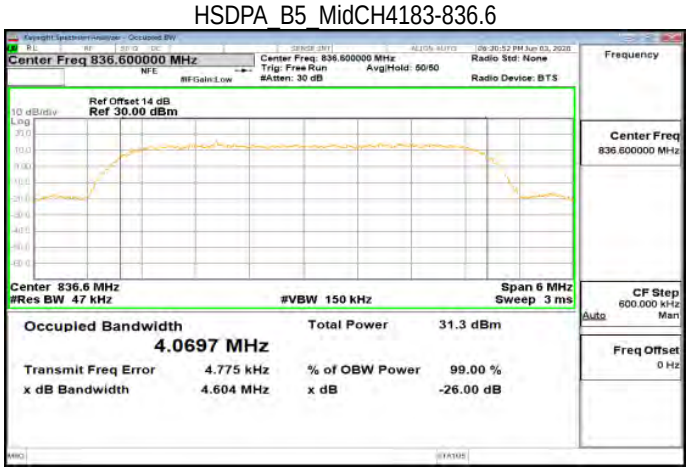

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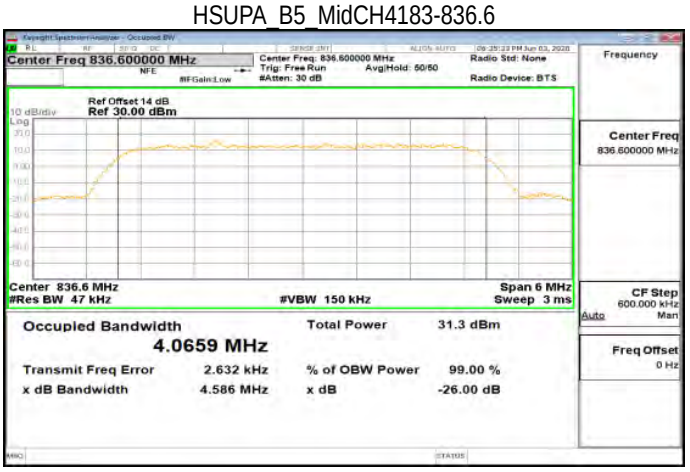

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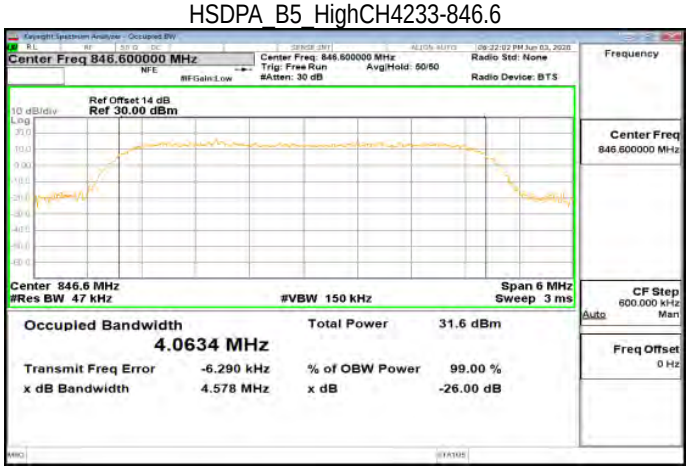

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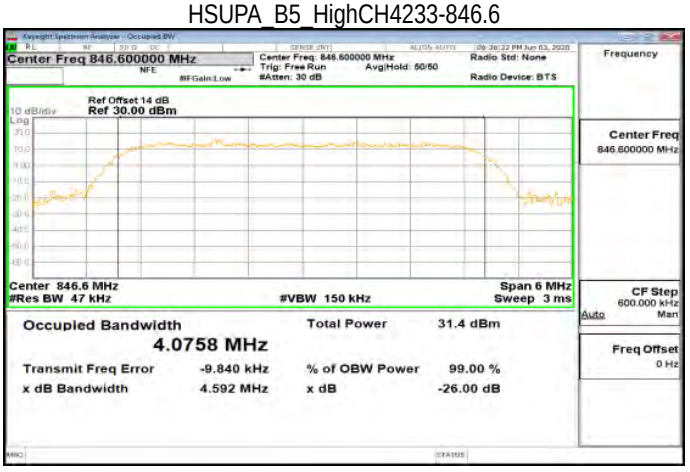
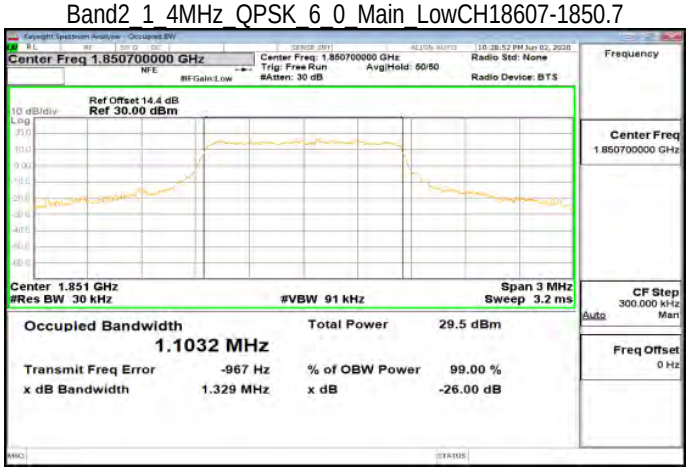


Band2_1_4MHz_QPSK_6_0_Main_LowCH18607-1850.7



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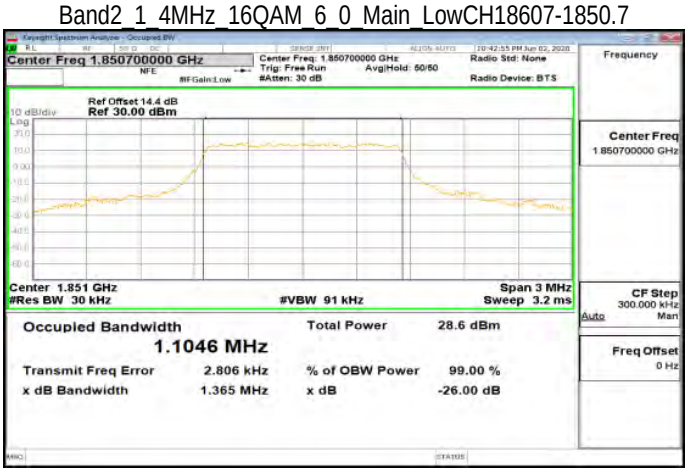

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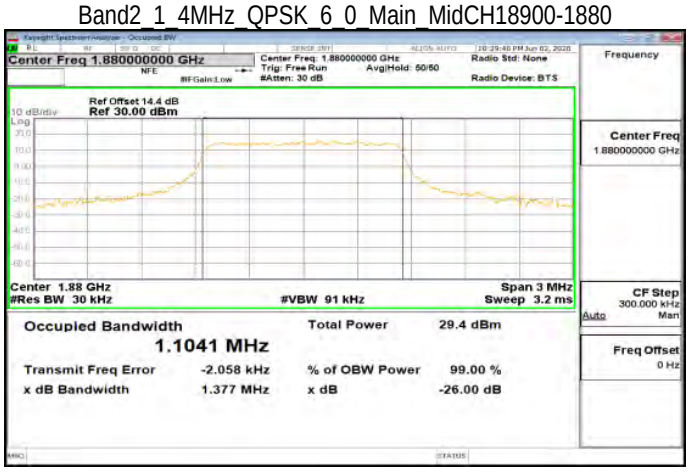
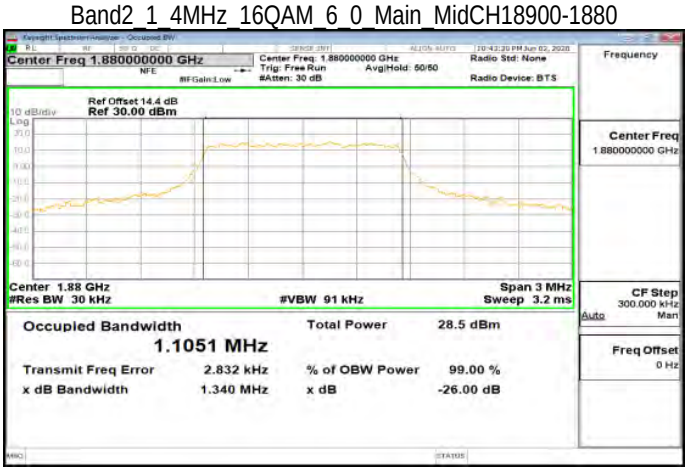


Band2_1_4MHz_16QAM_6_0_Main_MidCH18900-1880



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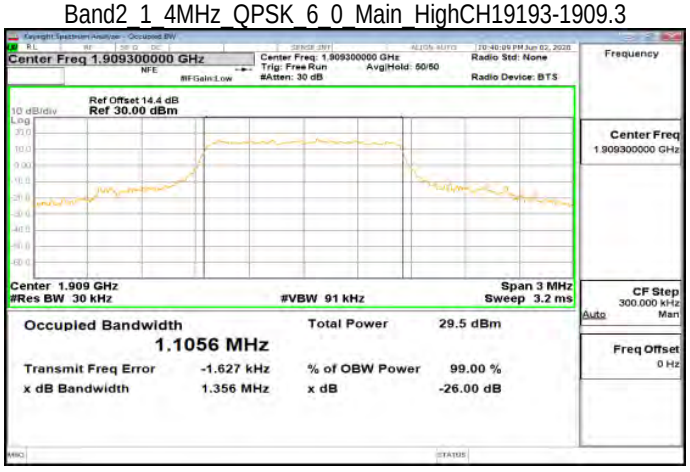
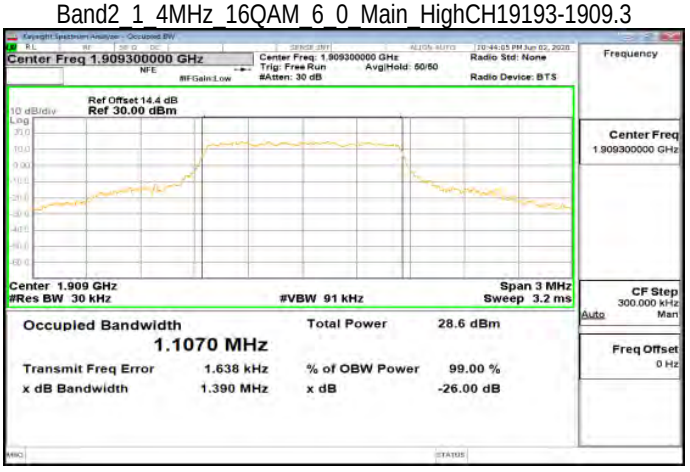


Band2_1_4MHz_16QAM_6_0_Main_HighCH19193-1909.3



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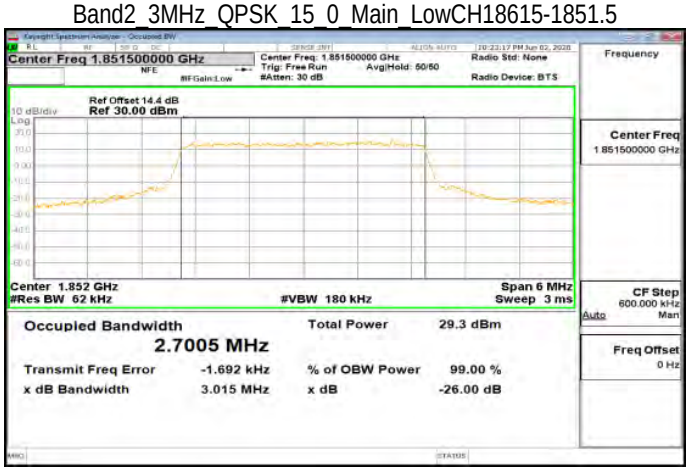

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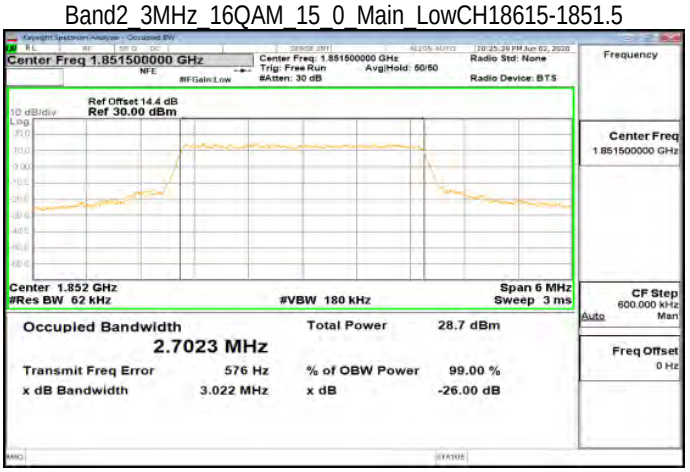
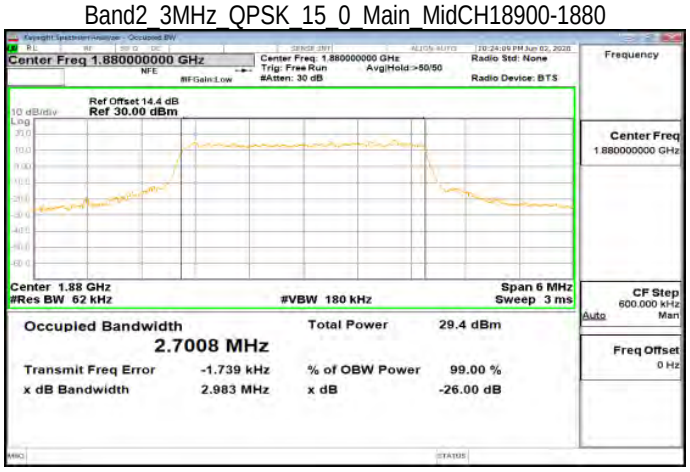


Band2_3MHz_QPSK_15_0_Main_MidCH18900-1880



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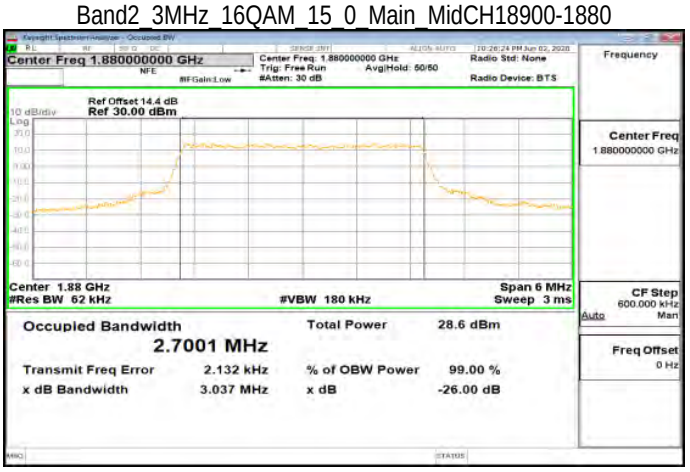
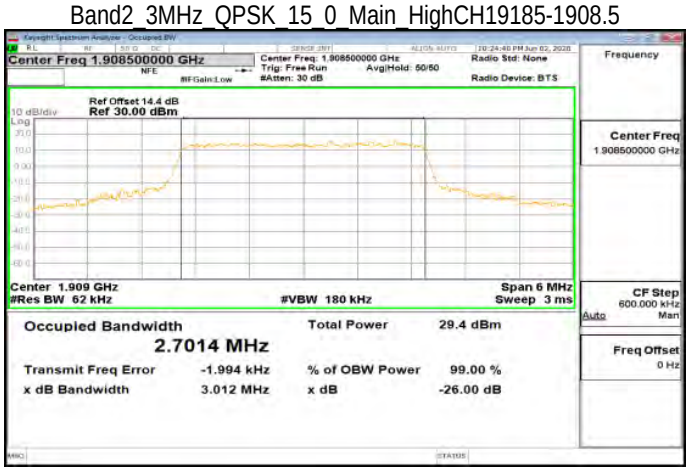
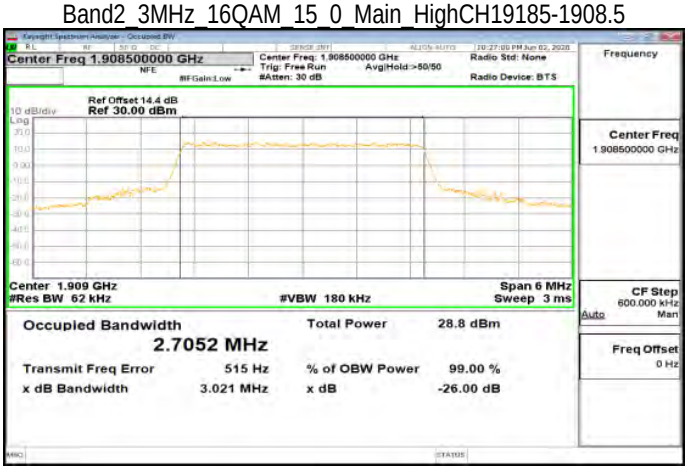


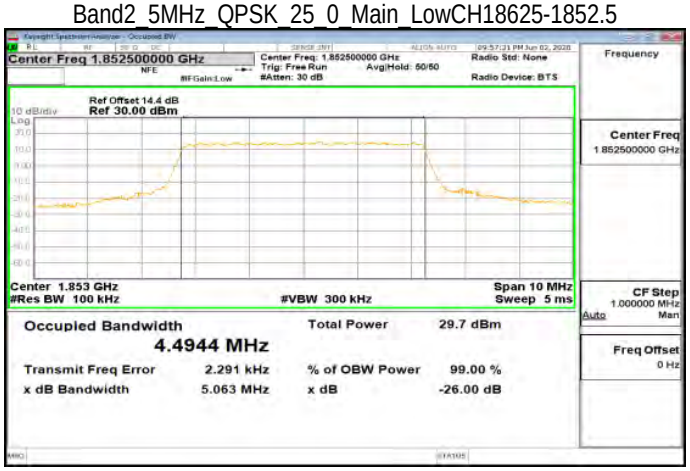
Band2_3MHz_QPSK_15_0_Main_HighCH19185-1908.5



Band2_3MHz_16QAM_15_0_Main_HighCH19185-1908.5



Band2_5MHz_QPSK_25_0_Main_LowCH18625-1852.5



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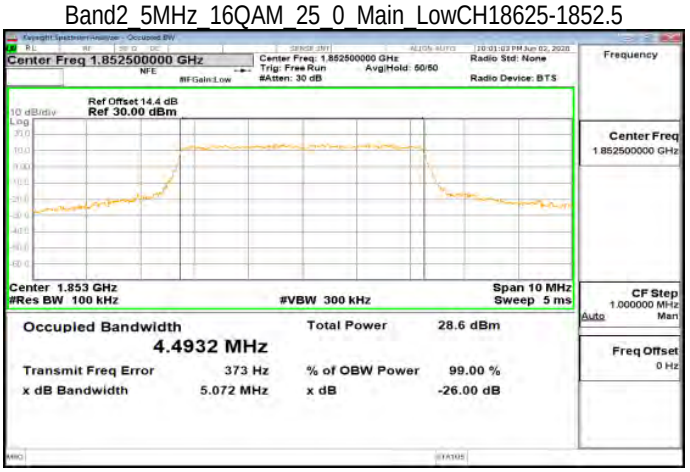
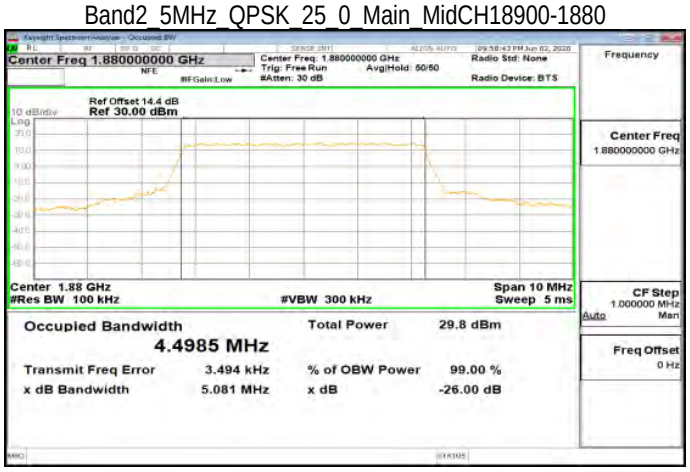


Band2_5MHz_QPSK_25_0_Main_MidCH18900-1880



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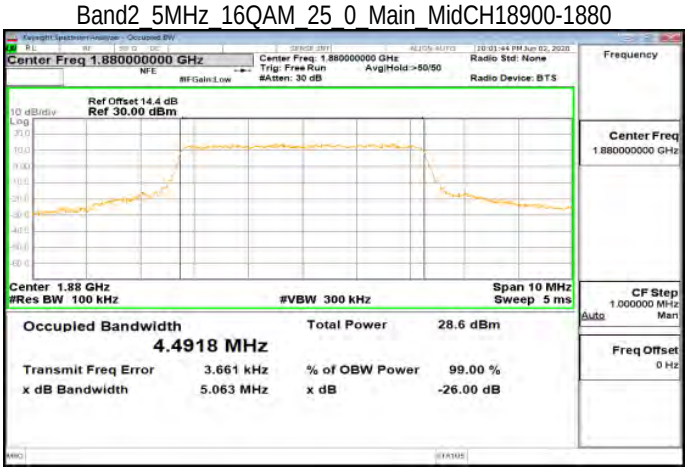

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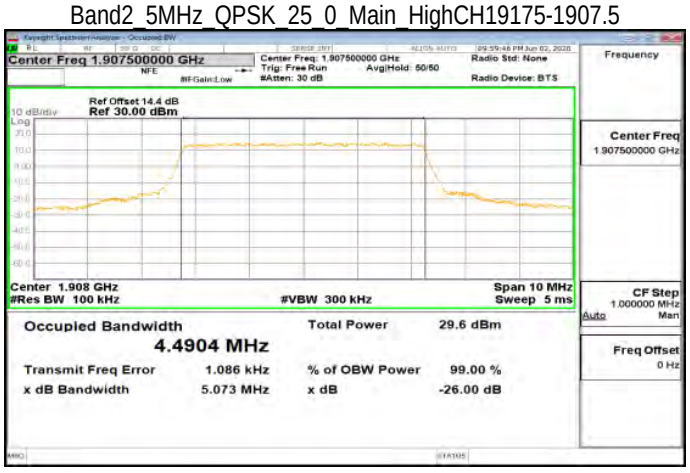

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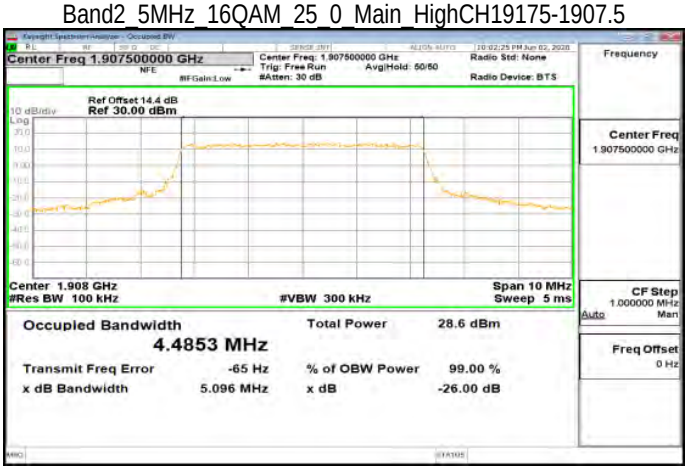
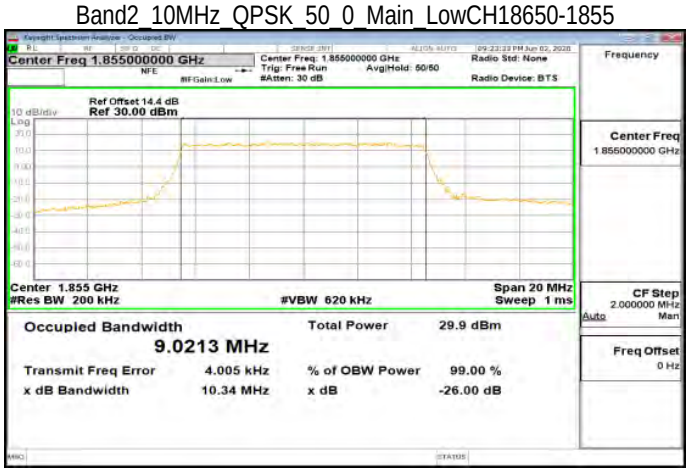


Band2_10MHz_QPSK_50_0_Main_LowCH18650-1855



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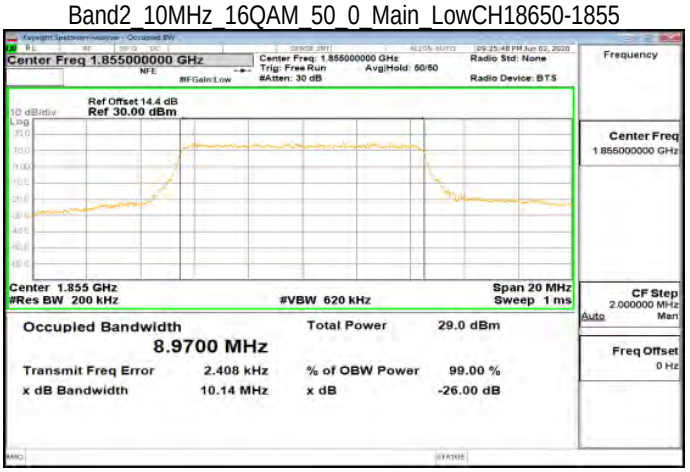
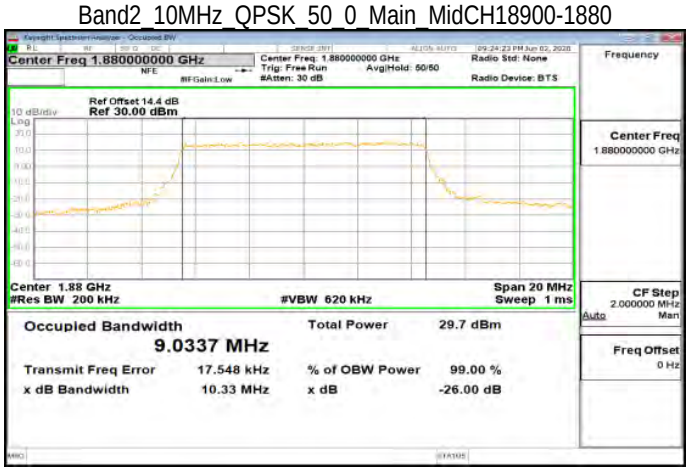
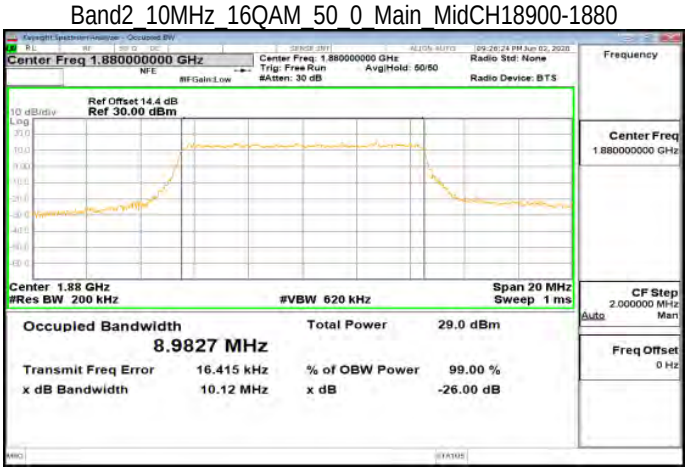


Band2_10MHz_QPSK_50_0_Main_MidCH18900-1880



Band2_10MHz_16QAM_50_0_Main_MidCH18900-1880



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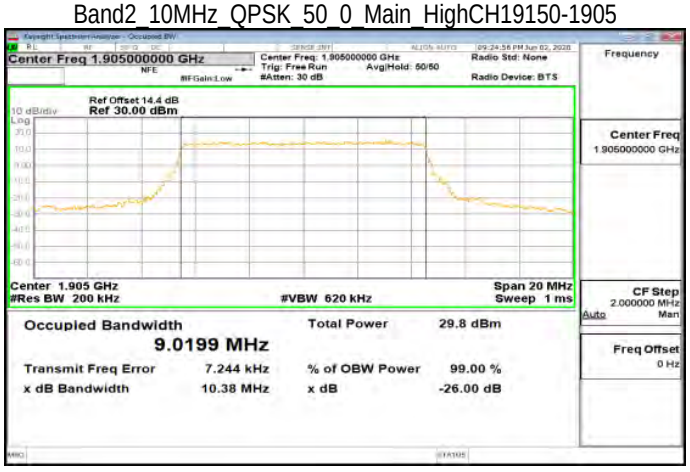

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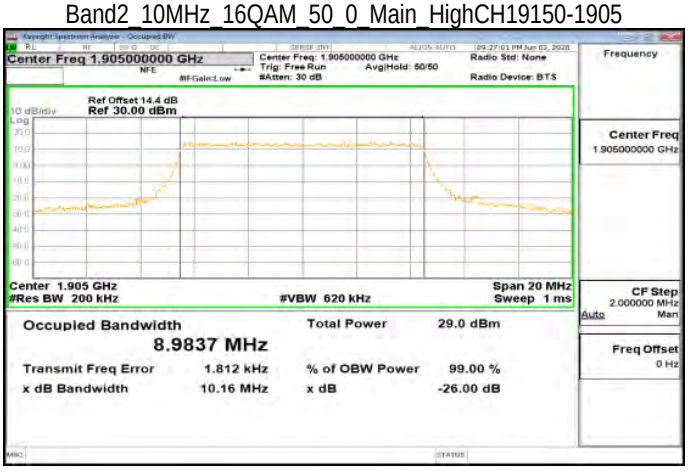
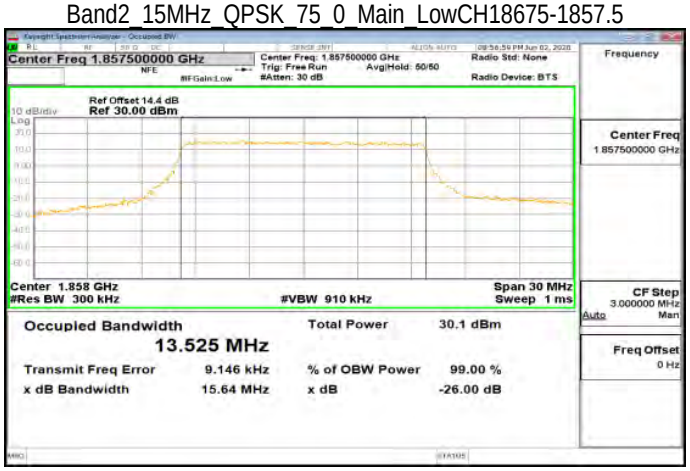
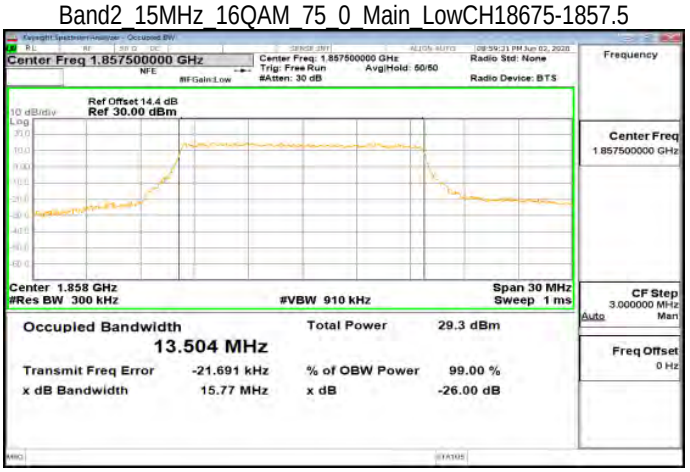


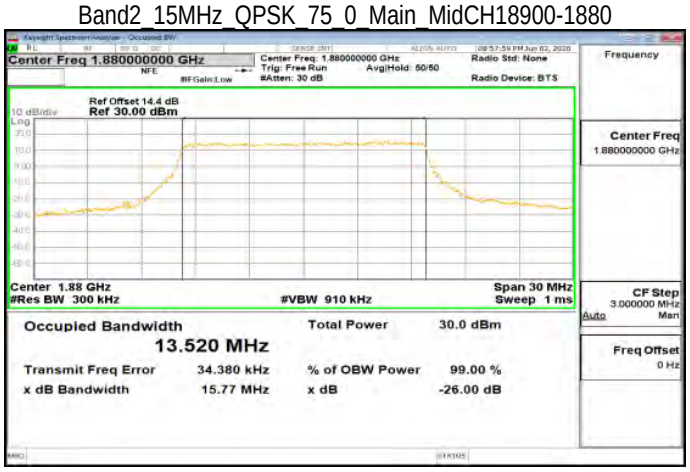
Band2_15MHz_QPSK_75_0_Main_LowCH18675-1857.5



Band2_15MHz_16QAM_75_0_Main_LowCH18675-1857.5



Band2_15MHz_QPSK_75_0_Main_MidCH18900-1880



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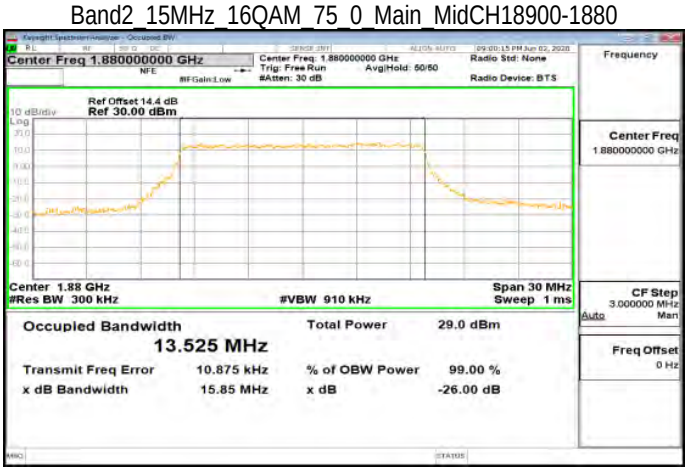
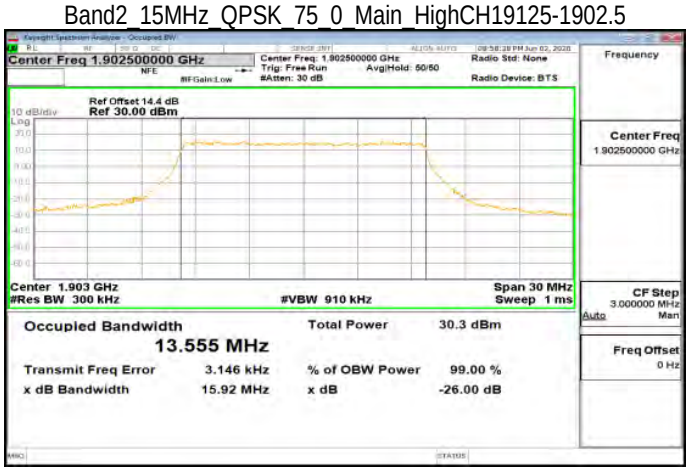
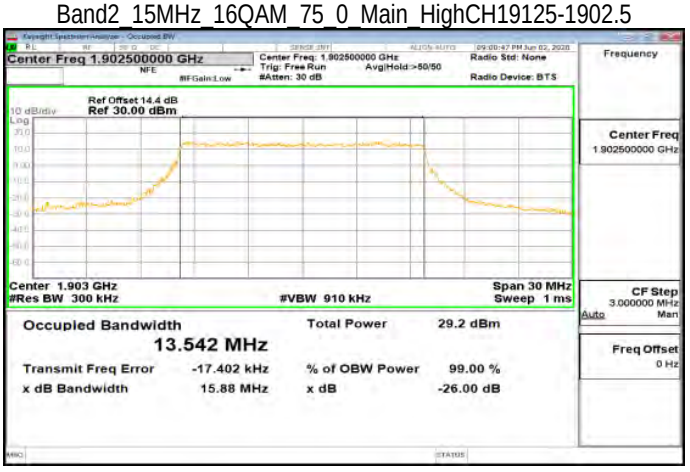


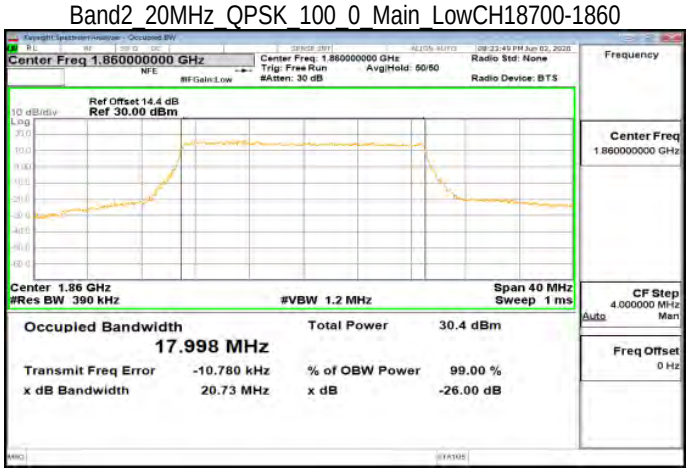
Band2_15MHz_QPSK_75_0_Main_HighCH19125-1902.5



Band2_15MHz_16QAM_75_0_Main_HighCH19125-1902.5



Band2_20MHz_QPSK_100_0_Main_LowCH18700-1860



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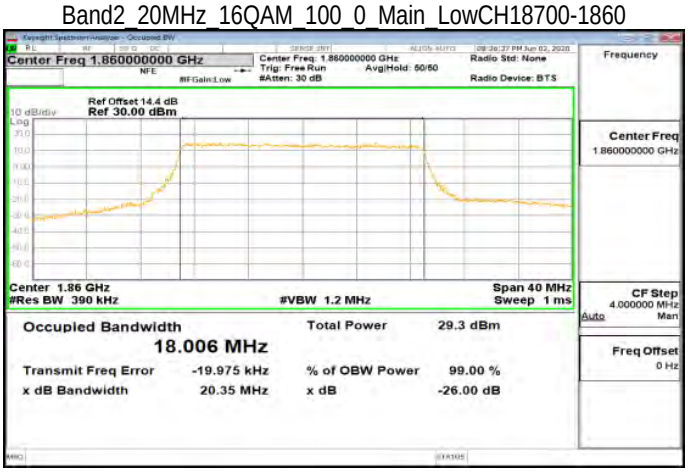
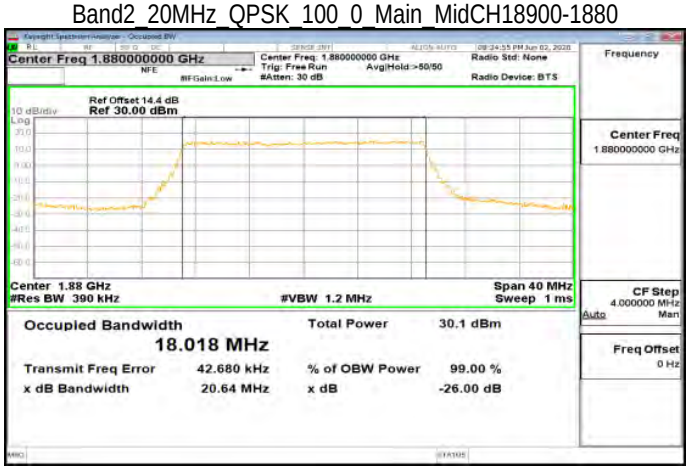
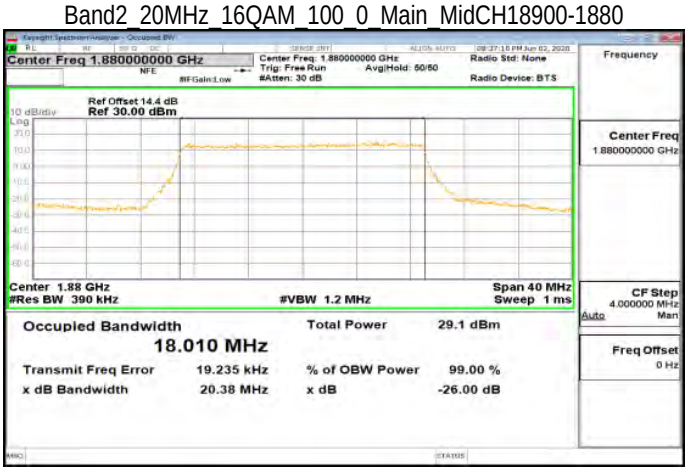


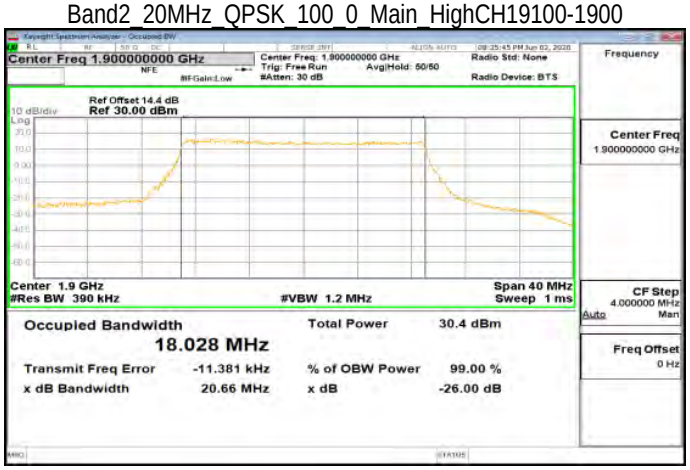
Band2_20MHz_QPSK_100_0_Main_MidCH18900-1880



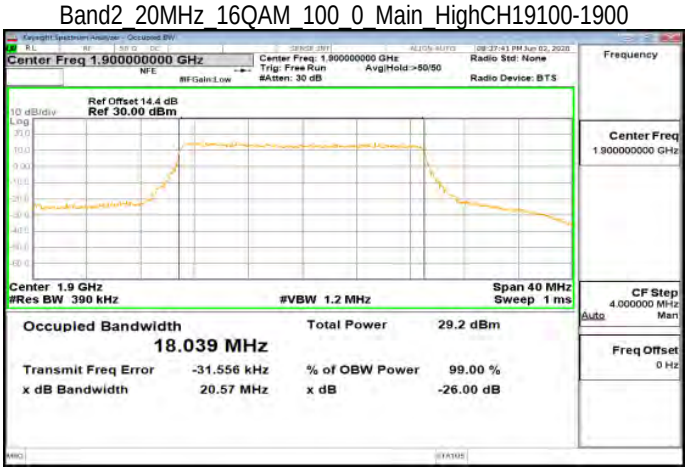
Band2_20MHz_16QAM_100_0_Main_MidCH18900-1880



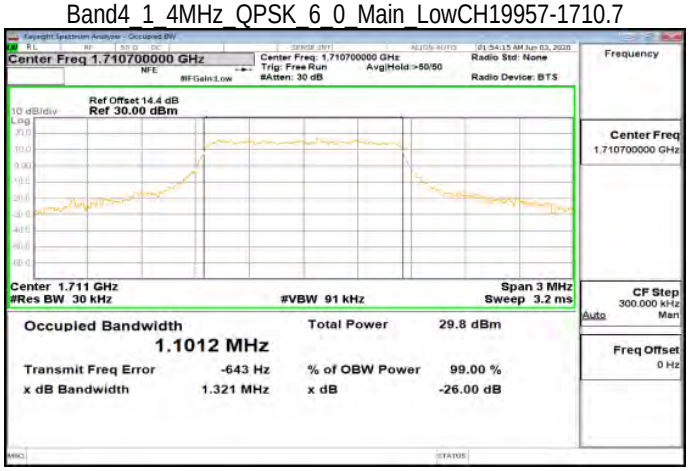
Band2_20MHz_QPSK_100_0_Main_HighCH19100-1900



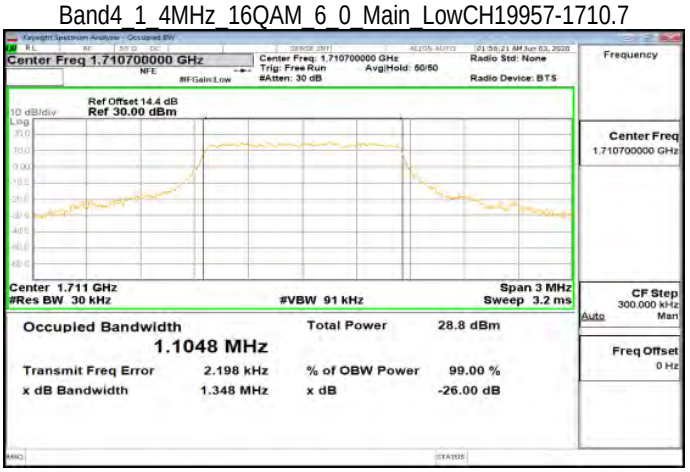
Band2_20MHz_16QAM_100_0_Main_HighCH19100-1900



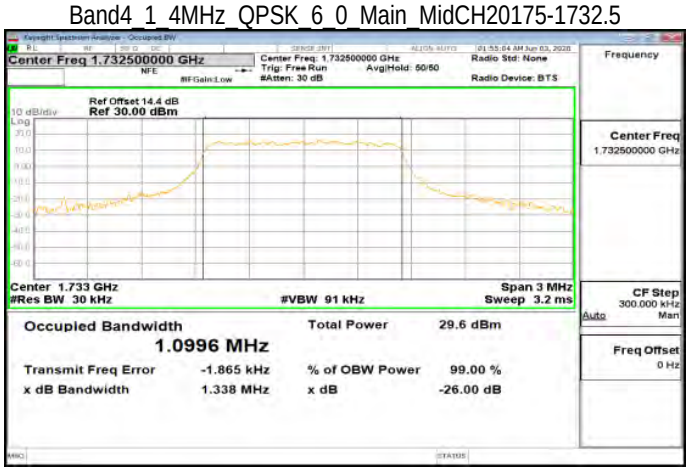
Band4_1_4MHz_QPSK_6_0_Main_LowCH19957-1710.7



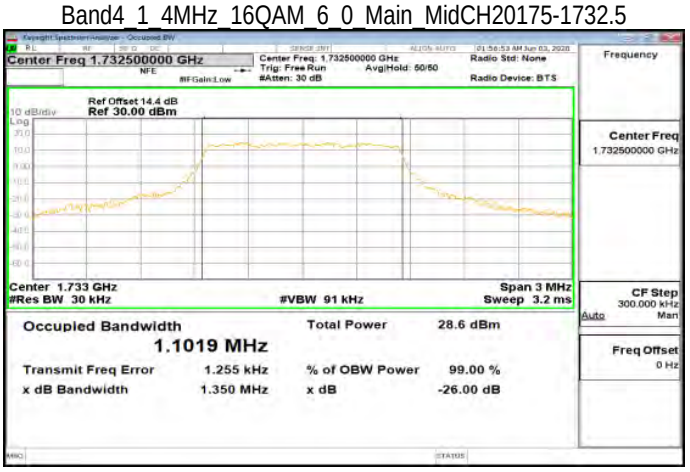
Band4_1_4MHz_16QAM_6_0_Main_LowCH19957-1710.7



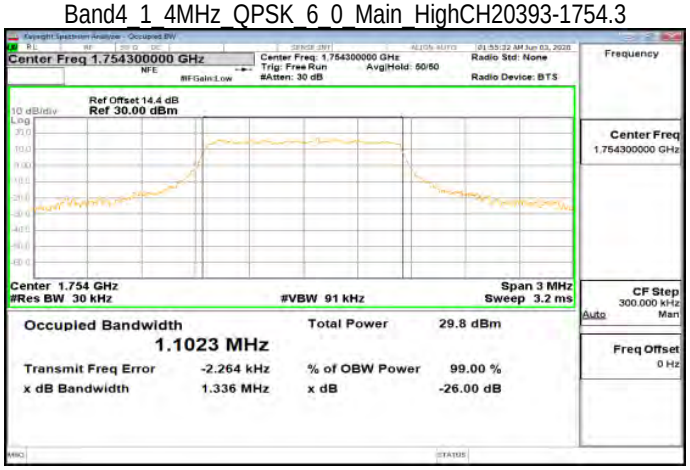
Band4_1_4MHz_QPSK_6_0_Main_MidCH20175-1732.5



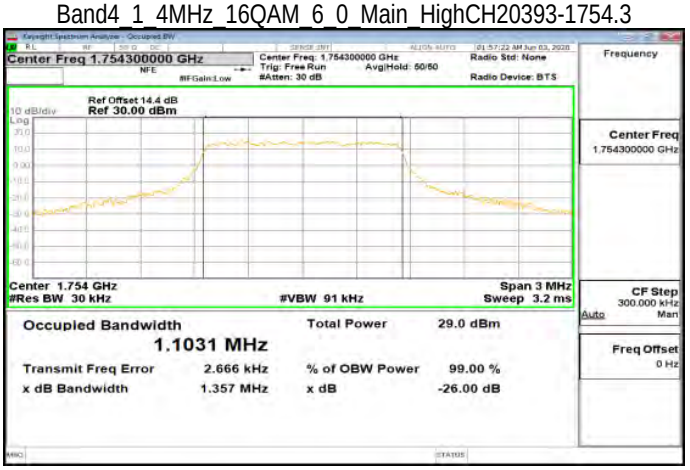
Band4_1_4MHz_16QAM_6_0_Main_MidCH20175-1732.5



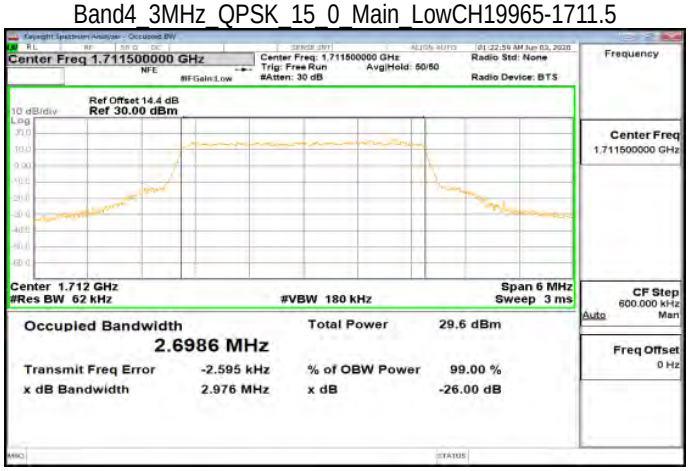
Band4_1_4MHz_QPSK_6_0_Main_HighCH20393-1754.3



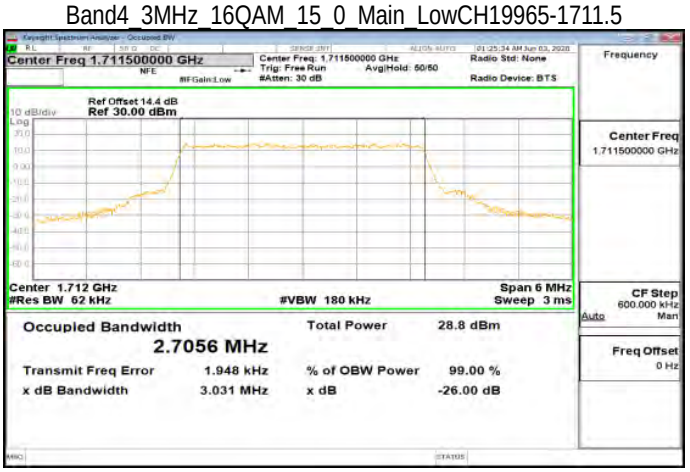
Band4_1_4MHz_16QAM_6_0_Main_HighCH20393-1754.3



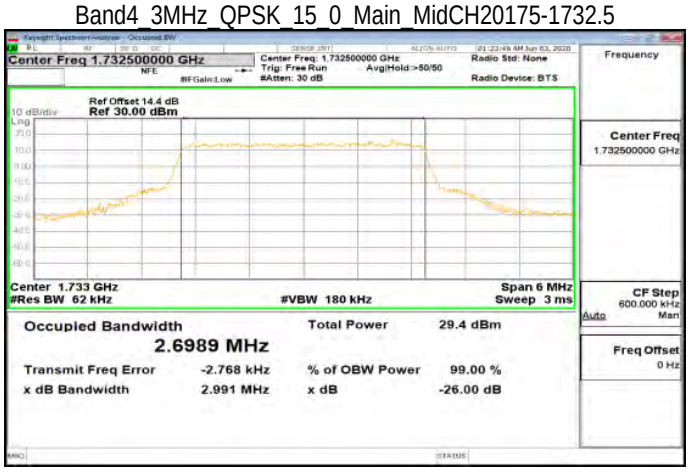
Band4_3MHz_QPSK_15_0_Main_LowCH19965-1711.5



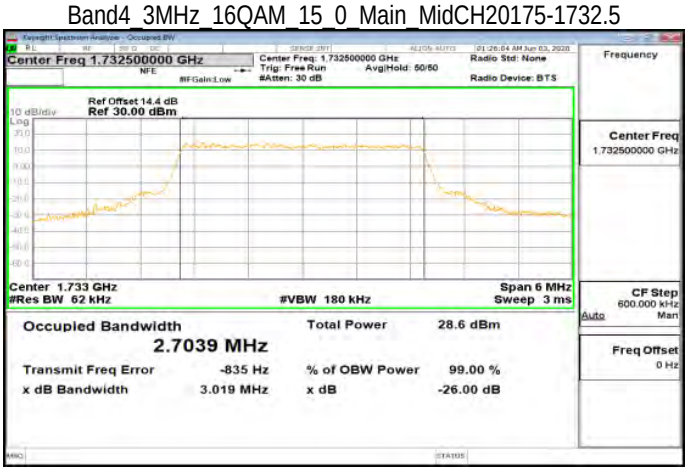
Band4_3MHz_16QAM_15_0_Main_LowCH19965-1711.5



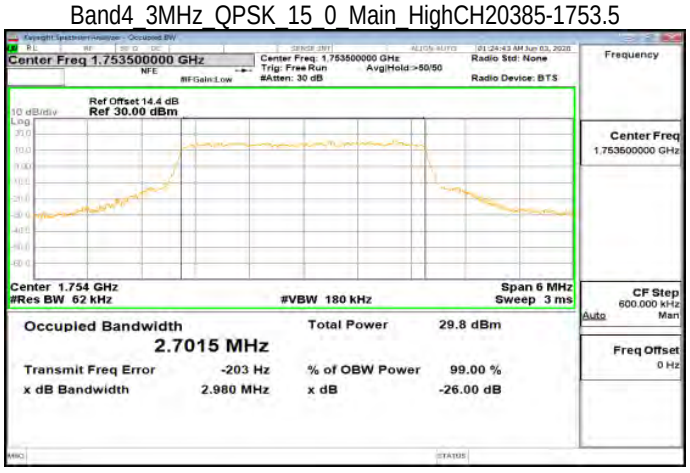
Band4_3MHz_QPSK_15_0_Main_MidCH20175-1732.5



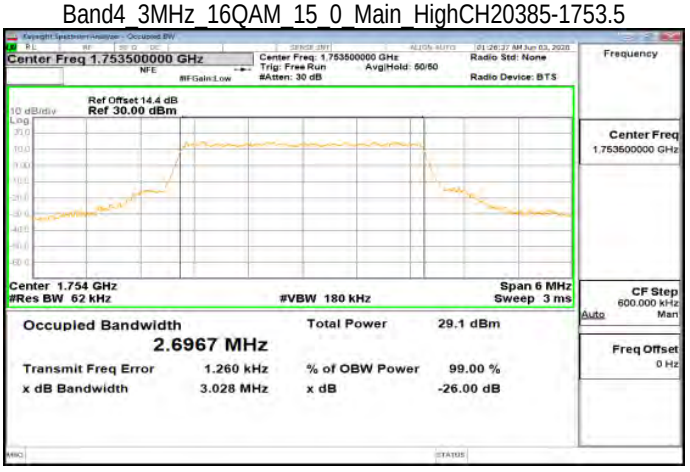
Band4_3MHz_16QAM_15_0_Main_MidCH20175-1732.5



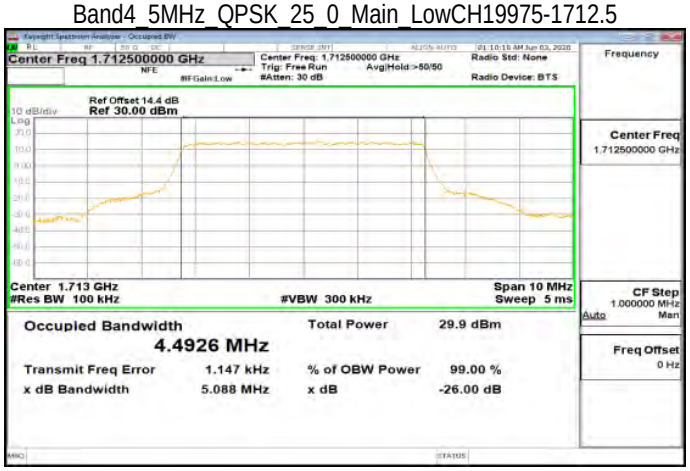
Band4_3MHz_QPSK_15_0_Main_HighCH20385-1753.5



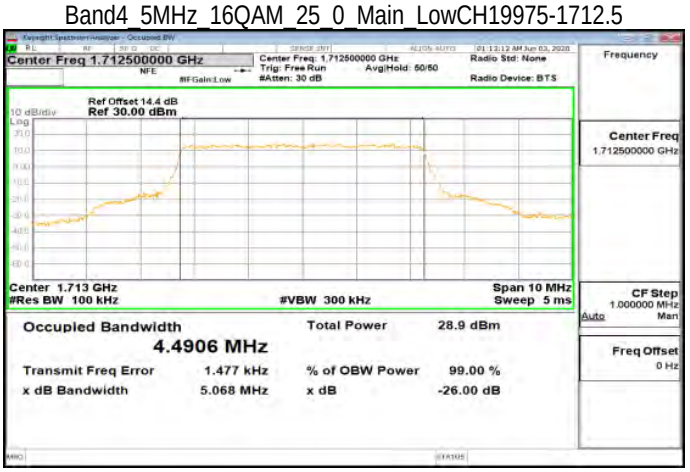
Band4_3MHz_16QAM_15_0_Main_HighCH20385-1753.5



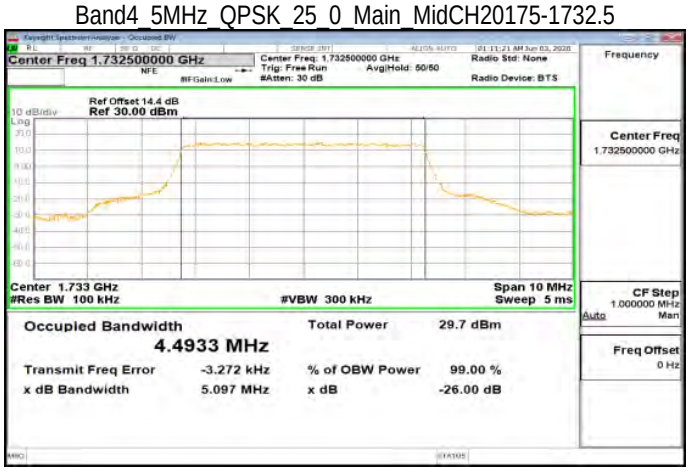
Band4_5MHz_QPSK_25_0_Main_LowCH19975-1712.5



Band4_5MHz_16QAM_25_0_Main_LowCH19975-1712.5



Band4_5MHz_QPSK_25_0_Main_MidCH20175-1732.5



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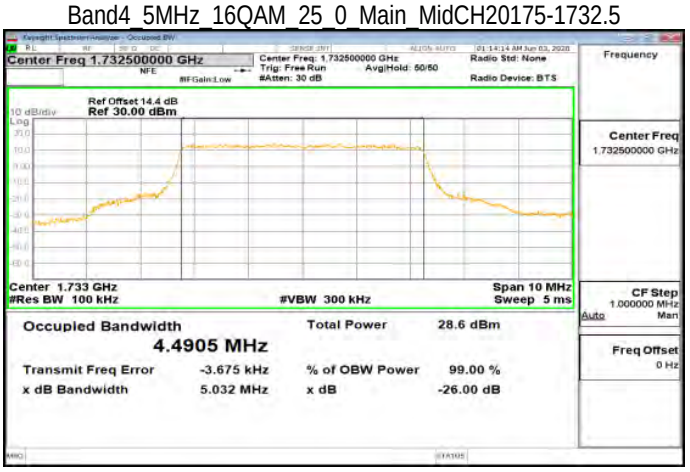
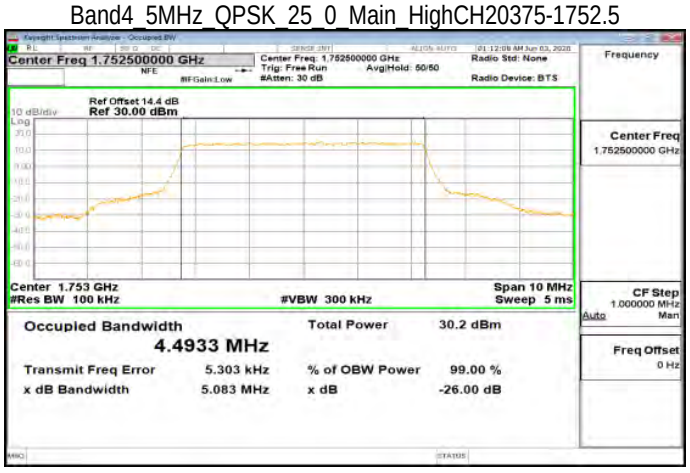
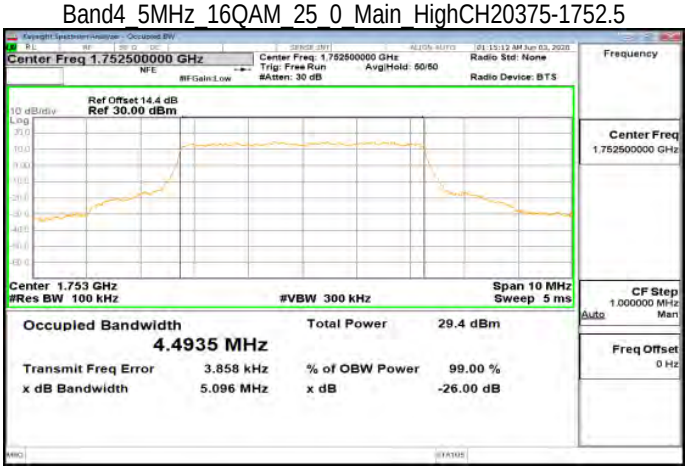


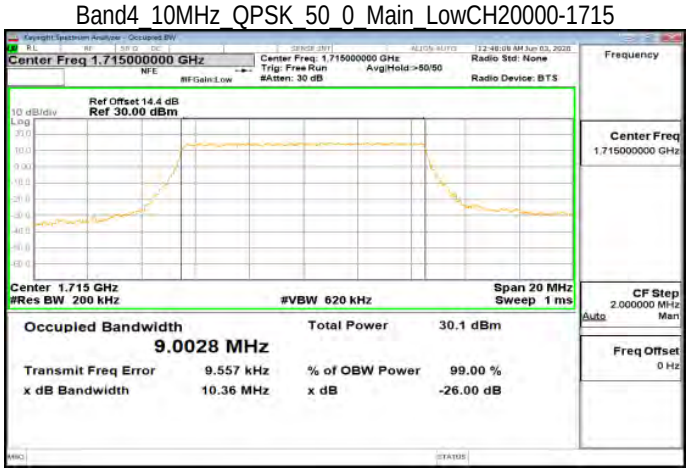
Band4_5MHz_QPSK_25_0_Main_HighCH20375-1752.5



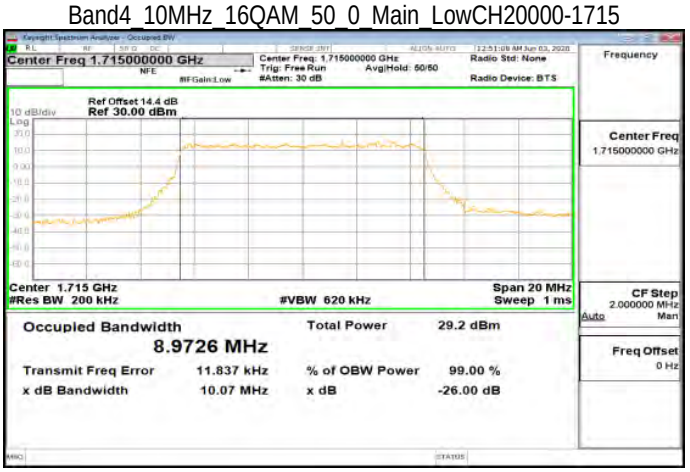
Band4_5MHz_16QAM_25_0_Main_HighCH20375-1752.5



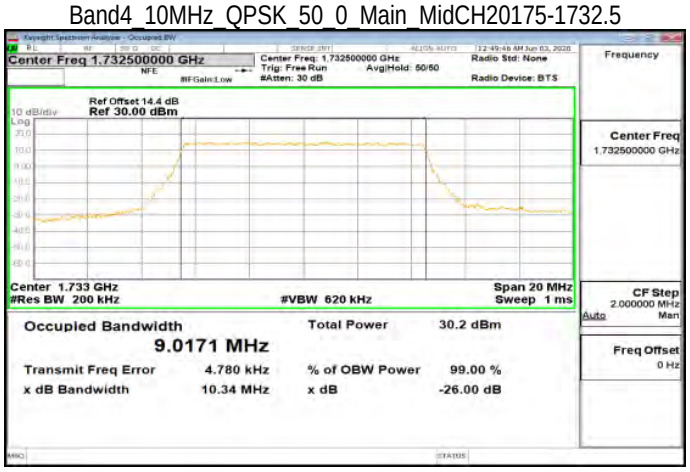
Band4_10MHz_QPSK_50_0_Main_LowCH20000-1715



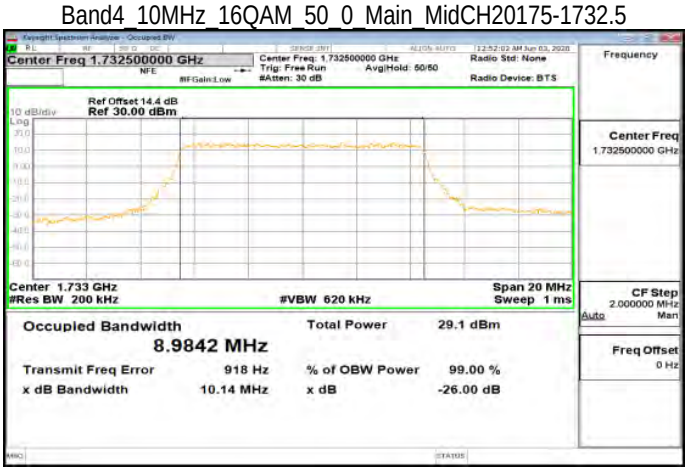
Band4_10MHz_16QAM_50_0_Main_LowCH20000-1715



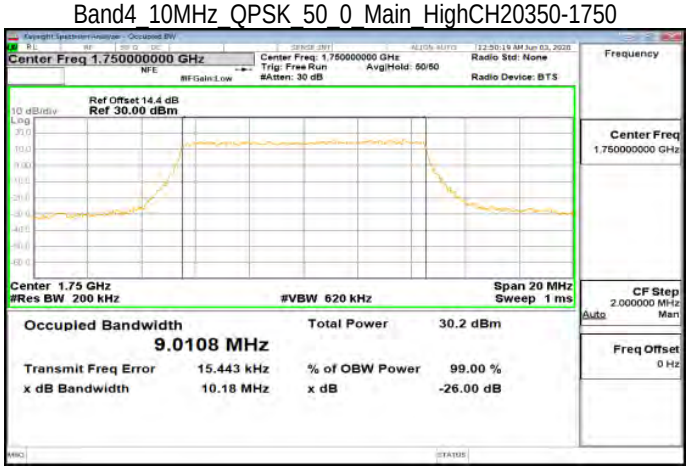
Band4_10MHz_QPSK_50_0_Main_MidCH20175-1732.5



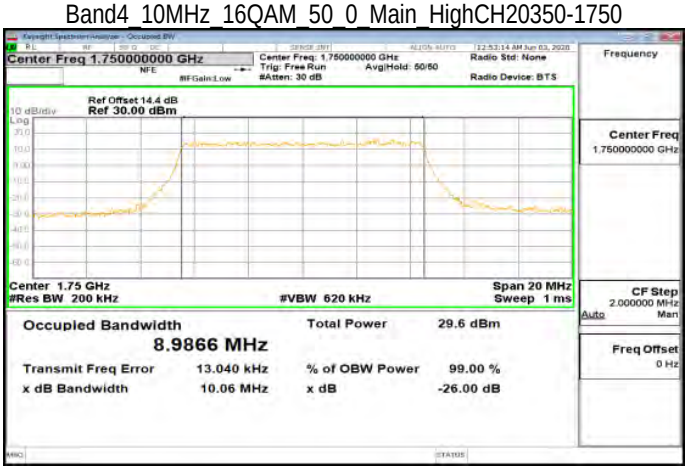
Band4_10MHz_16QAM_50_0_Main_MidCH20175-1732.5



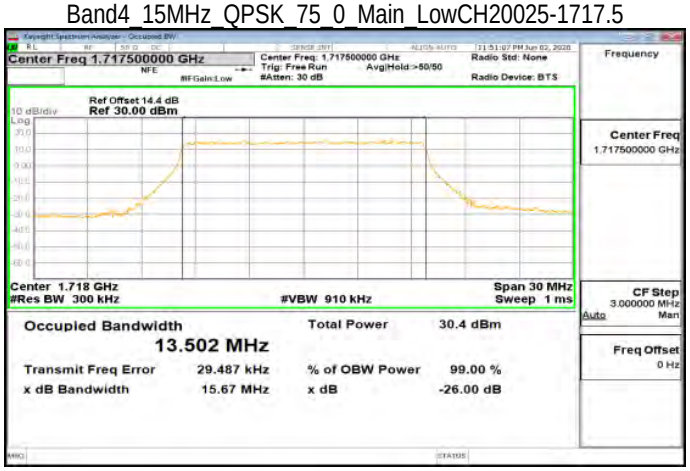
Band4_10MHz_QPSK_50_0_Main_HighCH20350-1750



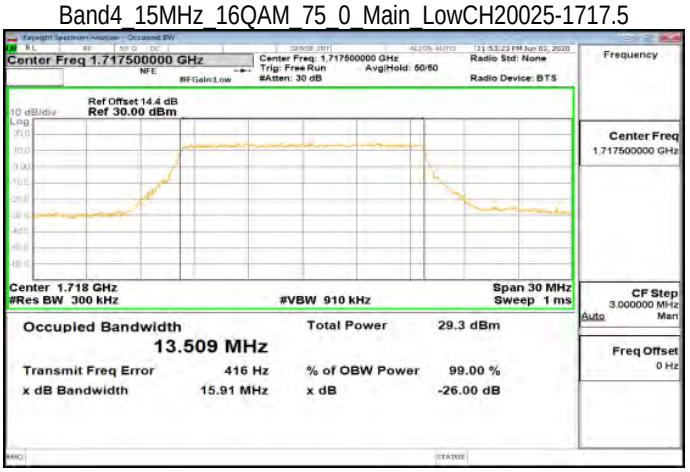
Band4_10MHz_16QAM_50_0_Main_HighCH20350-1750



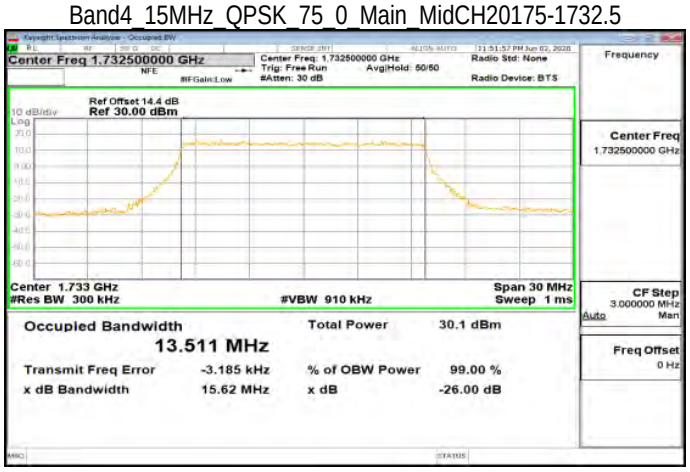
Band4_15MHz_QPSK_75_0_Main_LowCH20025-1717.5



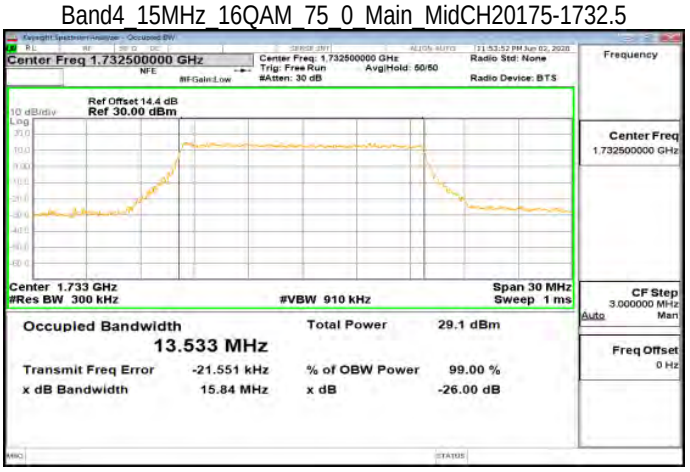
Band4_15MHz_16QAM_75_0_Main_LowCH20025-1717.5



Band4_15MHz_QPSK_75_0_Main_MidCH20175-1732.5



Band4_15MHz_16QAM_75_0_Main_MidCH20175-1732.5



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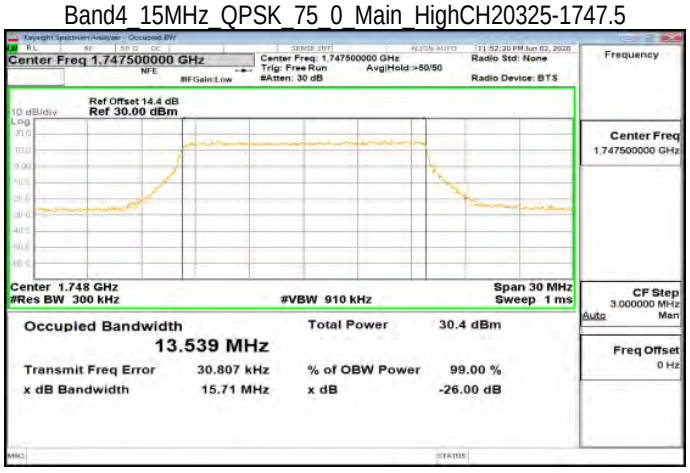

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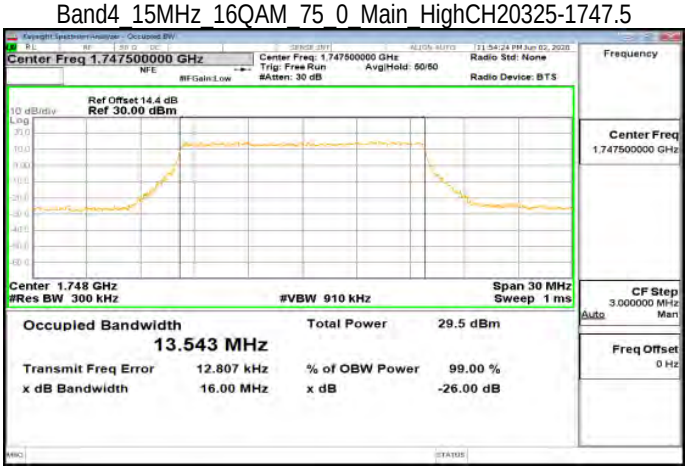

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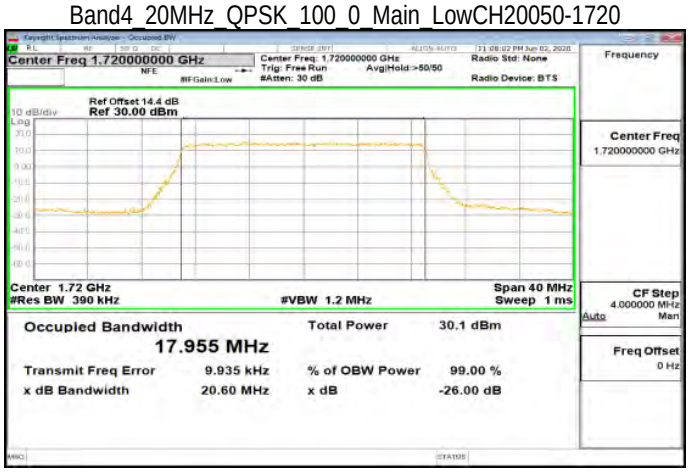

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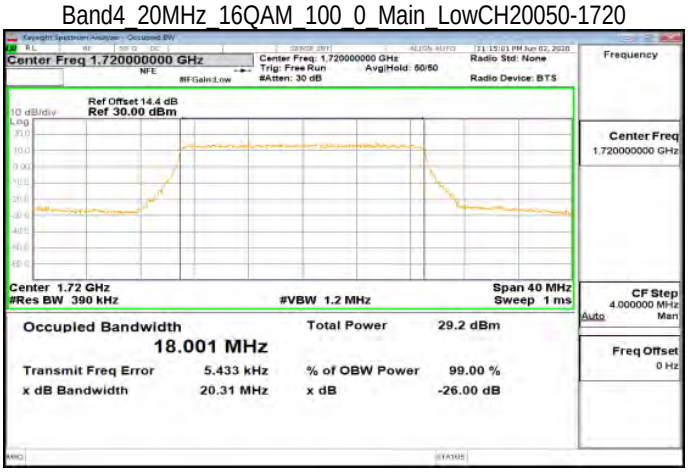

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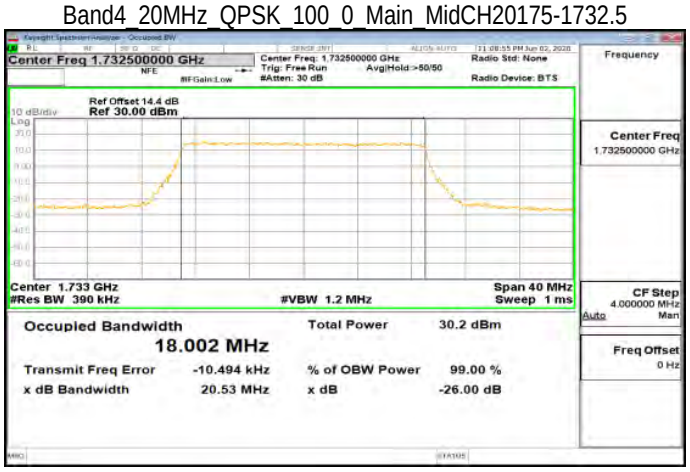

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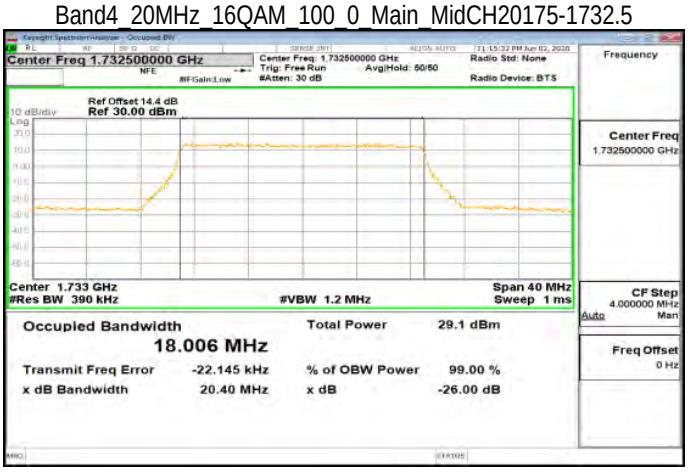

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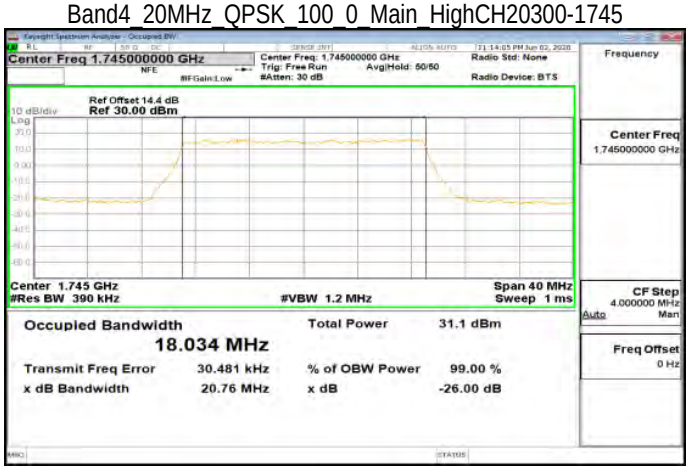

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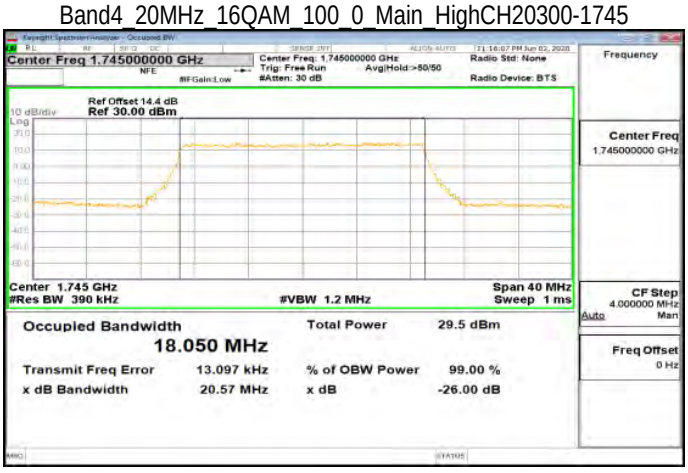
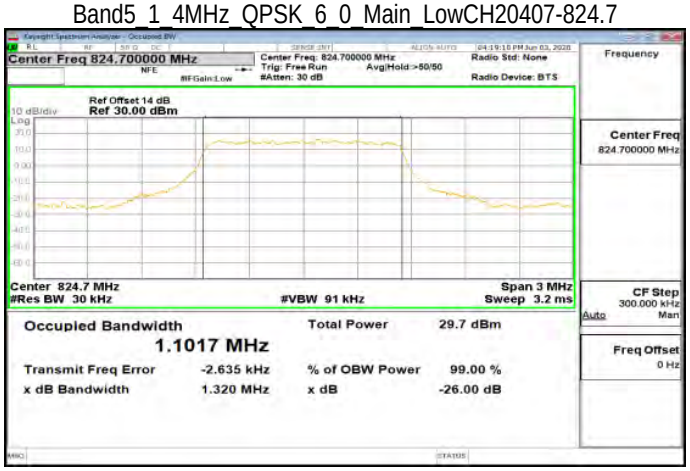


Band5_1_4MHz_QPSK_6_0_Main_LowCH20407-824.7



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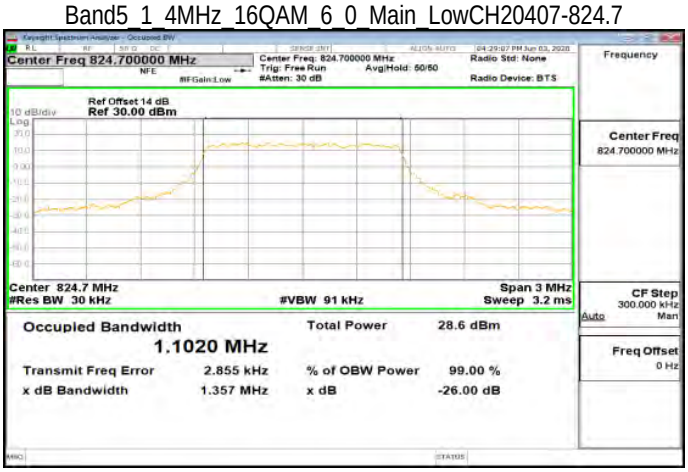
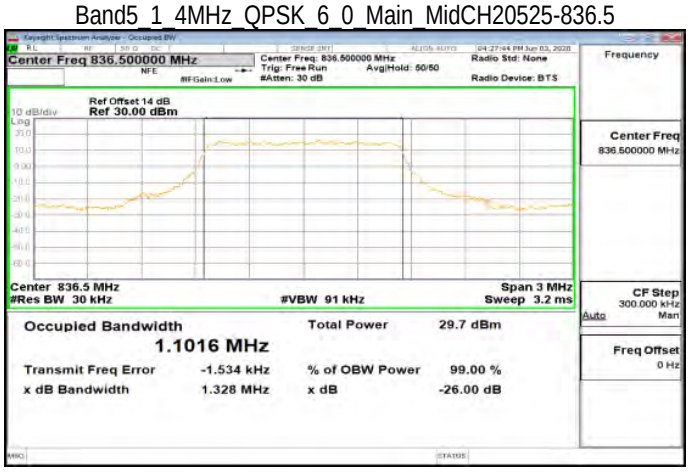


Band5_1_4MHz_QPSK_6_0_Main_MidCH20525-836.5



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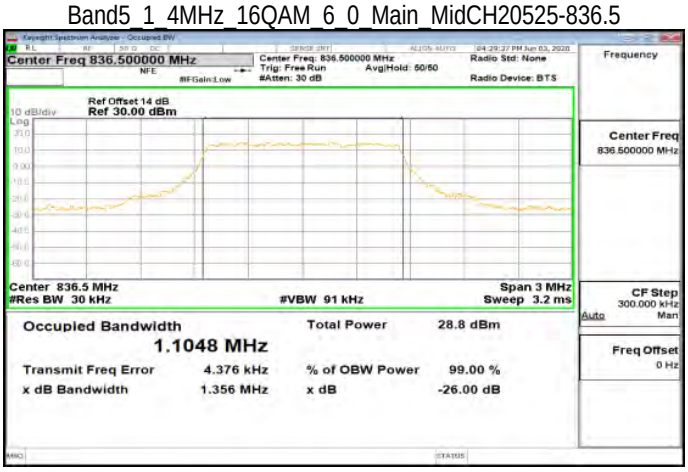
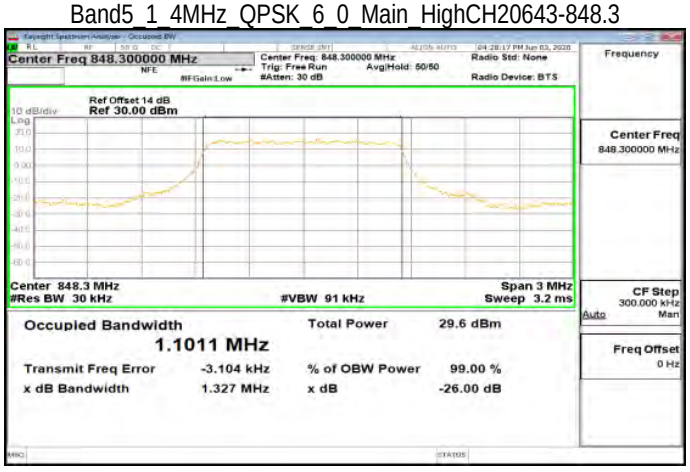


Band5_1_4MHz_QPSK_6_0_Main_HighCH20643-848.3



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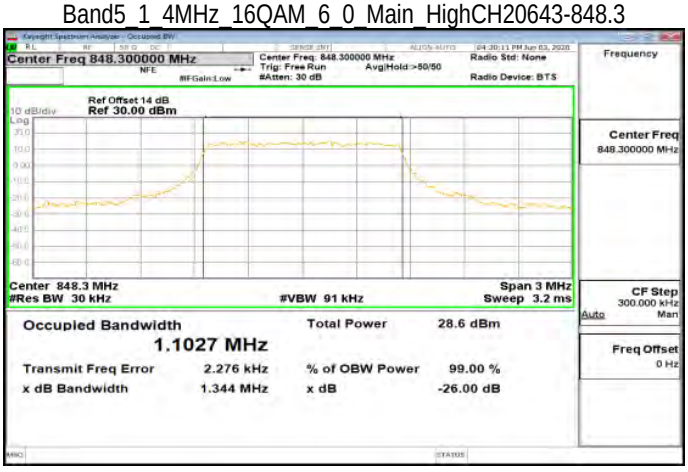
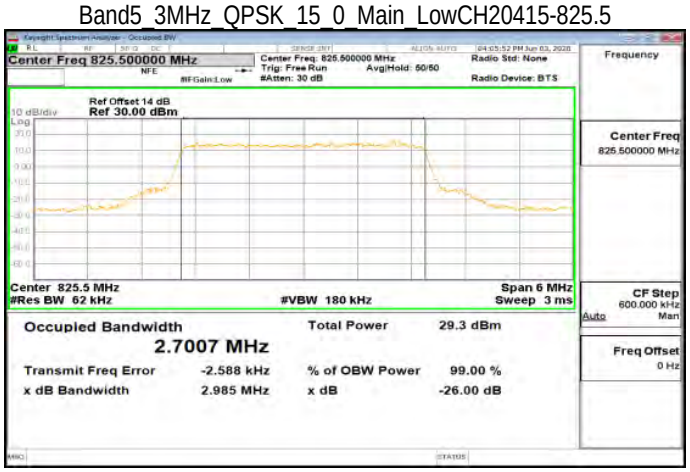
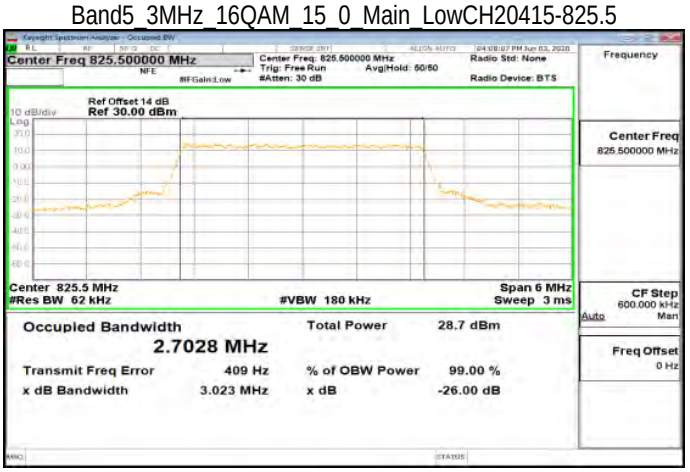


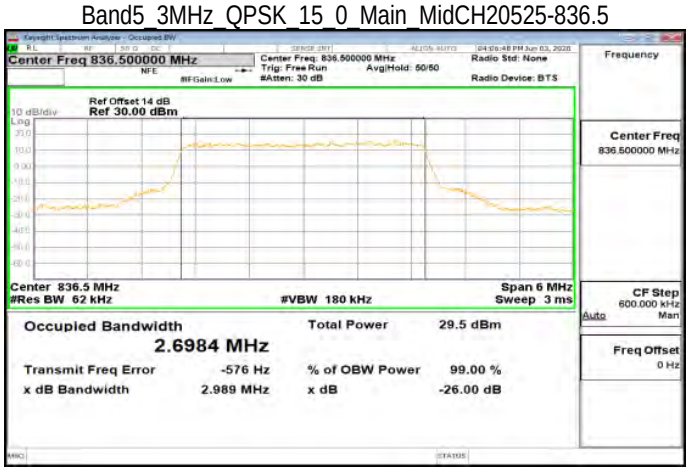
Band5_3MHz_QPSK_15_0_Main_LowCH20415-825.5



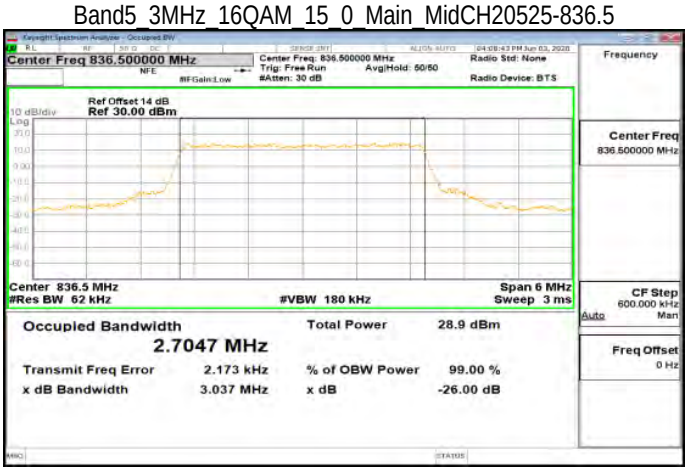
Band5_3MHz_16QAM_15_0_Main_LowCH20415-825.5



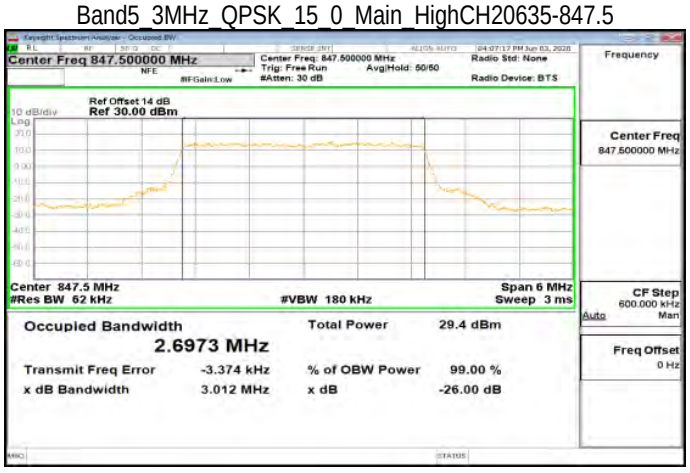
Band5_3MHz_QPSK_15_0_Main_MidCH20525-836.5



Band5_3MHz_16QAM_15_0_Main_MidCH20525-836.5



Band5_3MHz_QPSK_15_0_Main_HighCH20635-847.5



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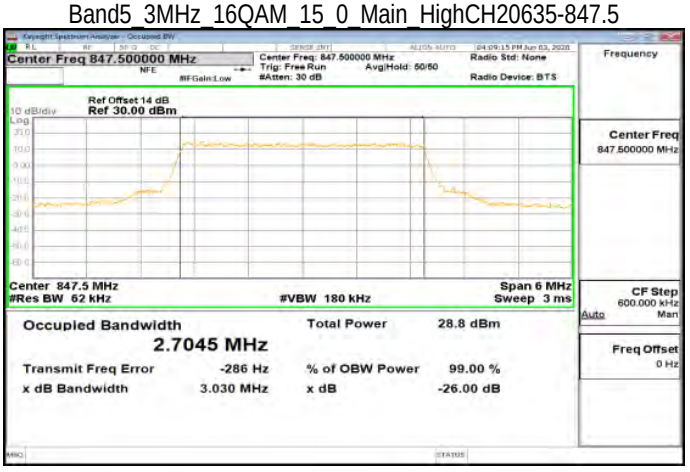
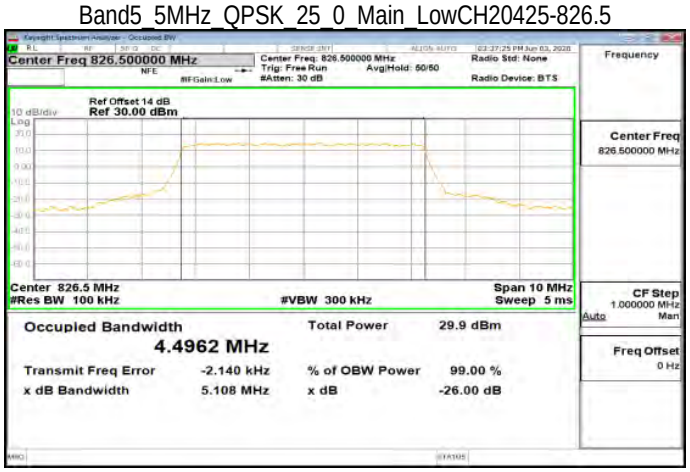


Band5_5MHz_QPSK_25_0_Main_LowCH20425-826.5



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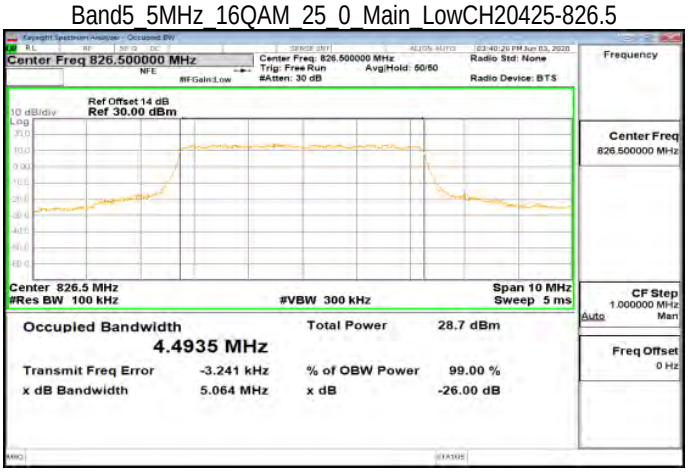
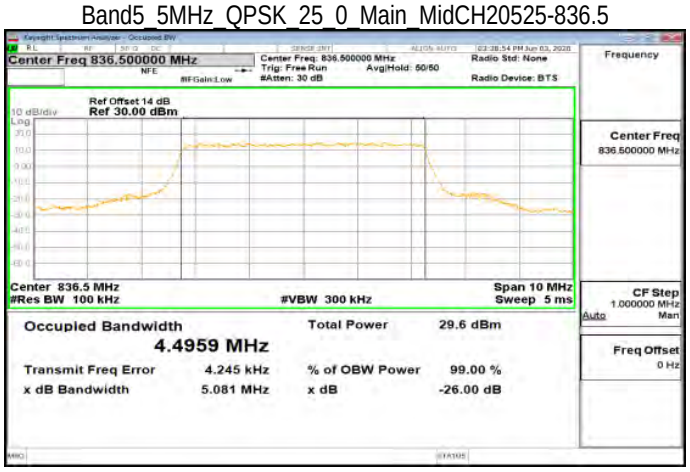


Band5_5MHz_QPSK_25_0_Main_MidCH20525-836.5



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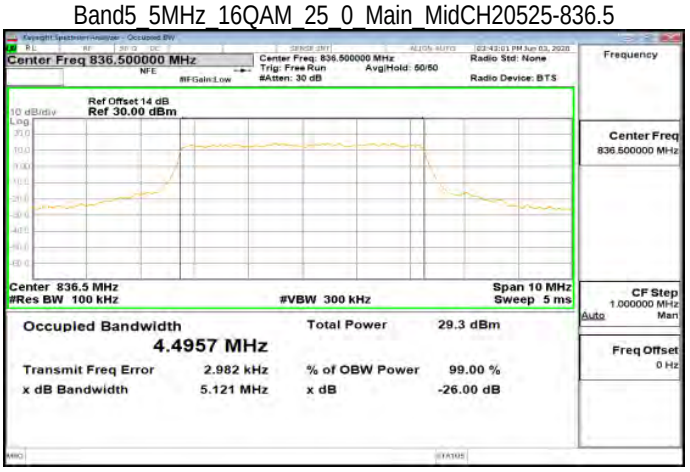
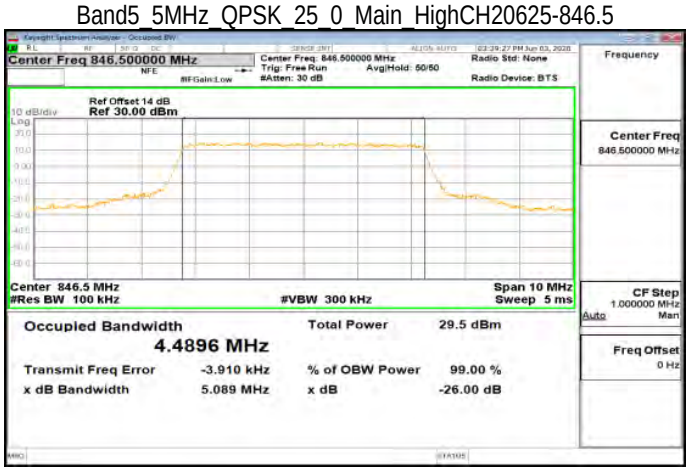
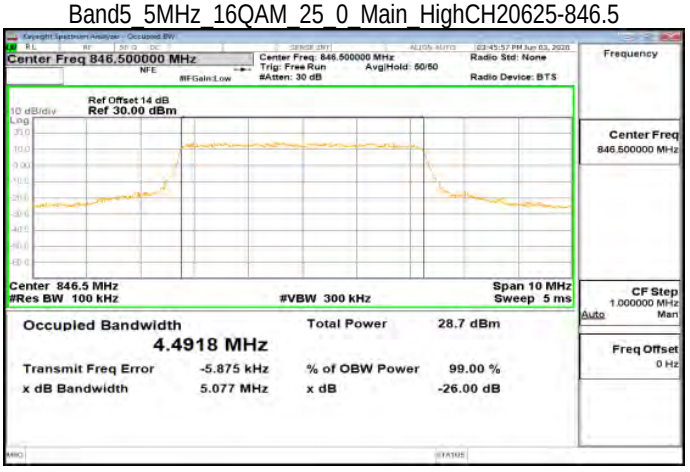


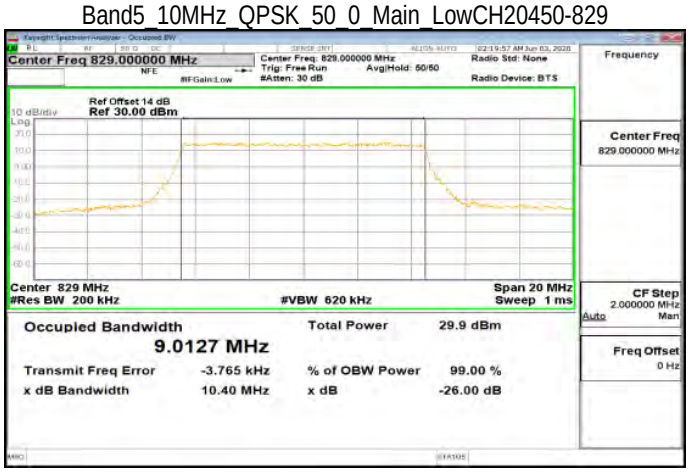
Band5_5MHz_QPSK_25_0_Main_HighCH20625-846.5



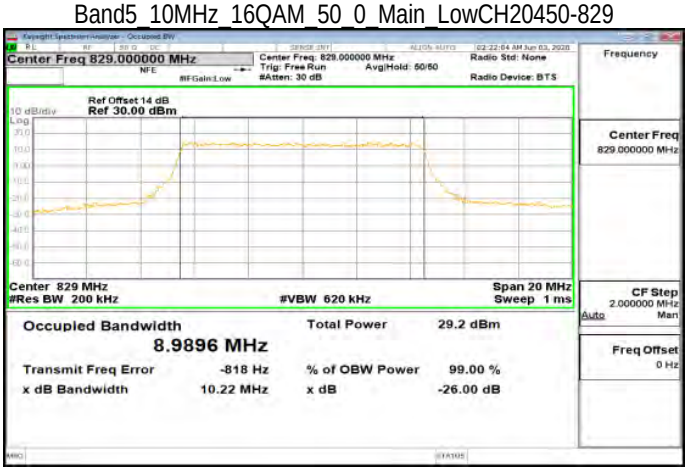
Band5_5MHz_16QAM_25_0_Main_HighCH20625-846.5



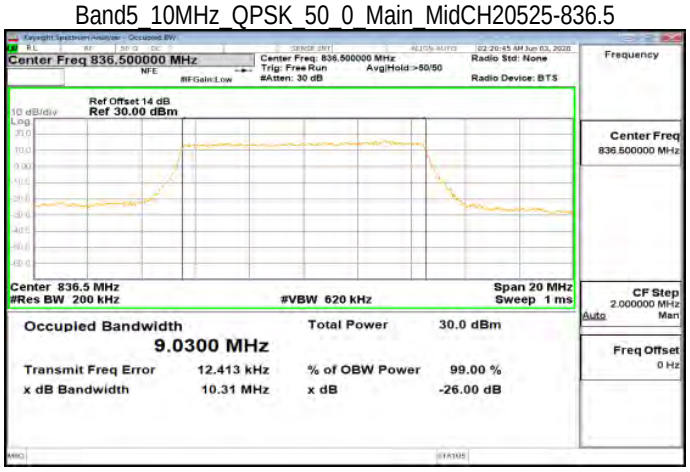
Band5_10MHz_QPSK_50_0_Main_LowCH20450-829



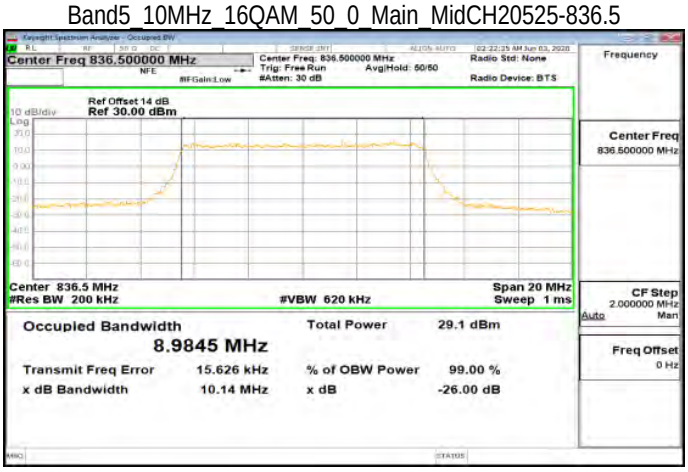
Band5_10MHz_16QAM_50_0_Main_LowCH20450-829



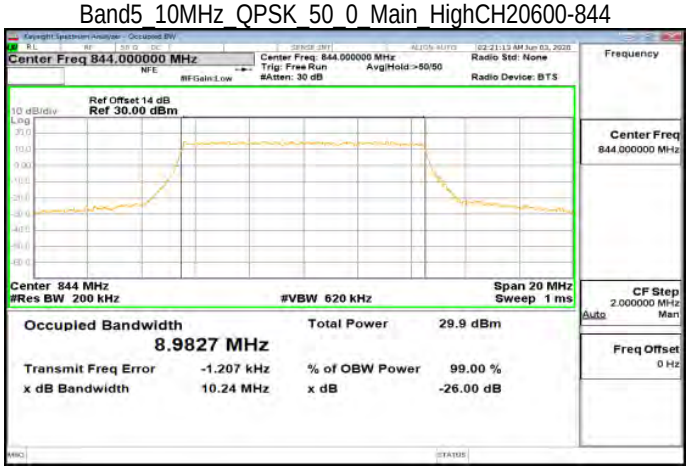
Band5_10MHz_QPSK_50_0_Main_MidCH20525-836.5



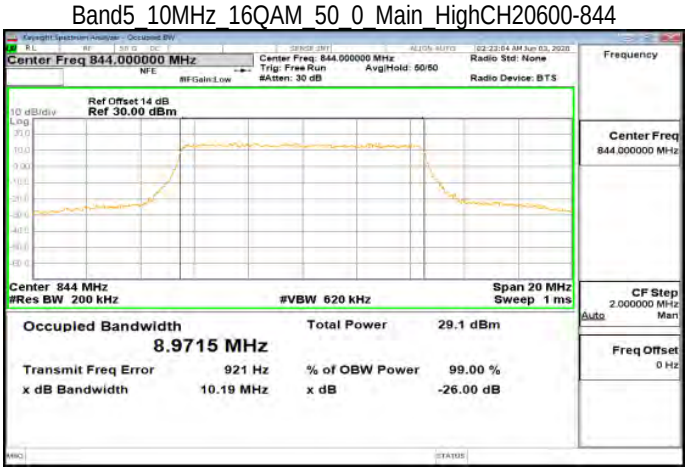
Band5_10MHz_16QAM_50_0_Main_MidCH20525-836.5



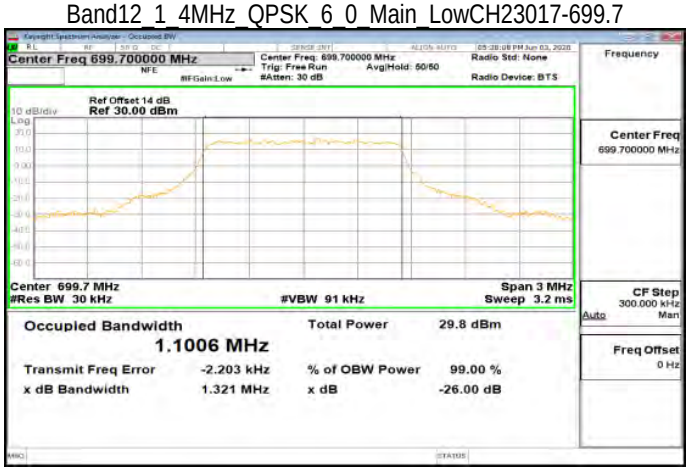
Band5_10MHz_QPSK_50_0_Main_HighCH20600-844



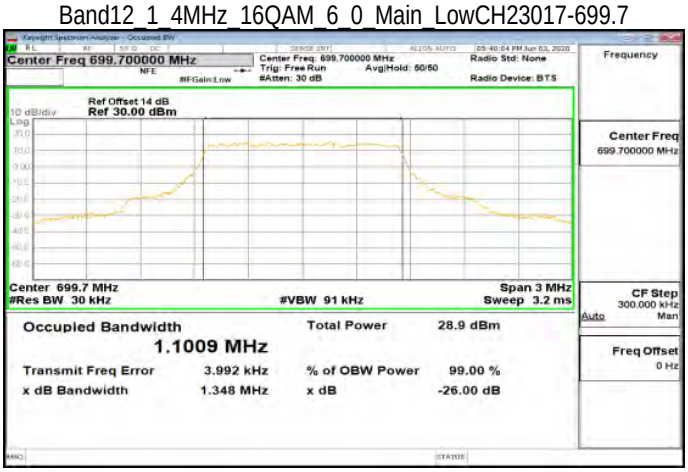
Band5_10MHz_16QAM_50_0_Main_HighCH20600-844



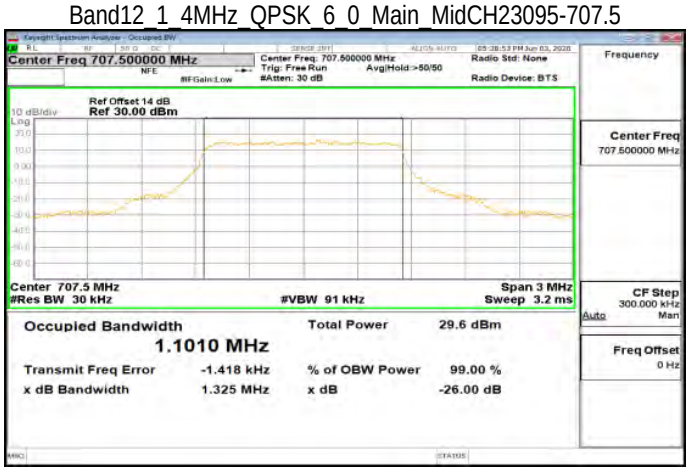
Band12_1_4MHz_QPSK_6_0_Main_LowCH23017-699.7



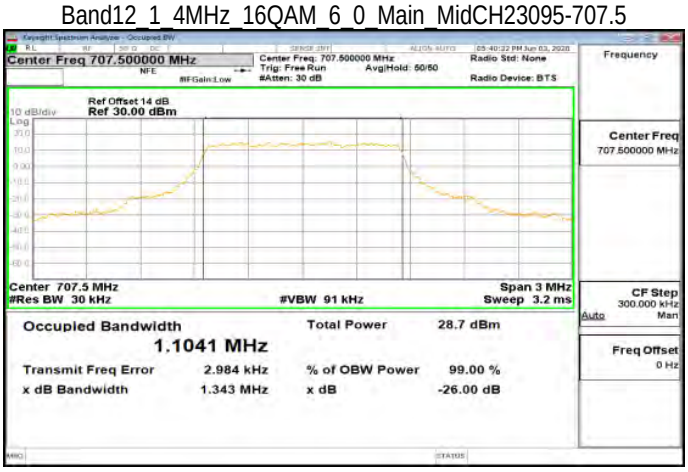
Band12_1_4MHz_16QAM_6_0_Main_LowCH23017-699.7



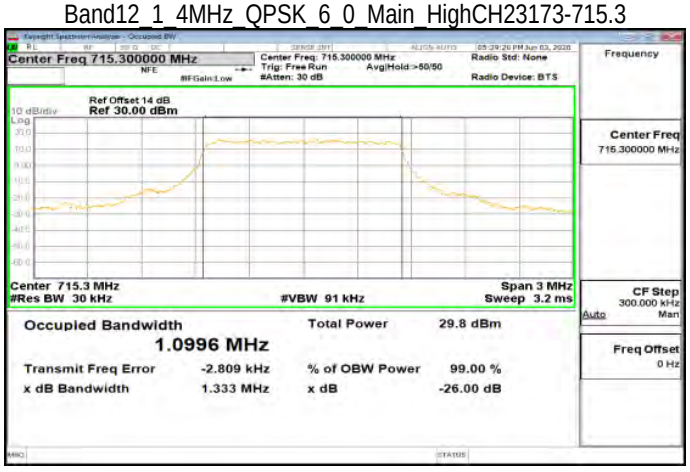
Band12_1_4MHz_QPSK_6_0_Main_MidCH23095-707.5



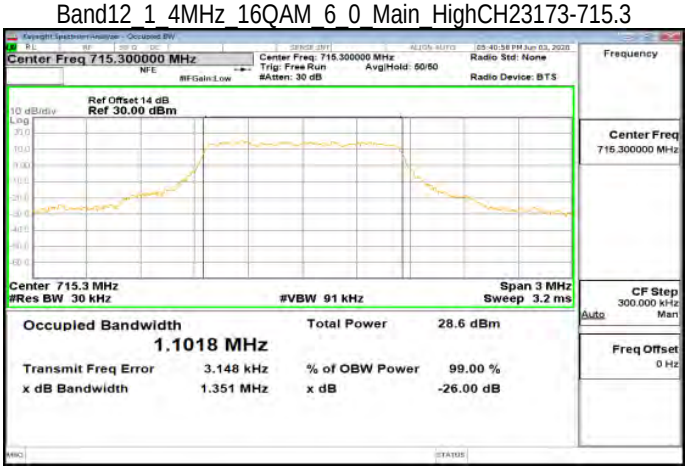
Band12_1_4MHz_16QAM_6_0_Main_MidCH23095-707.5



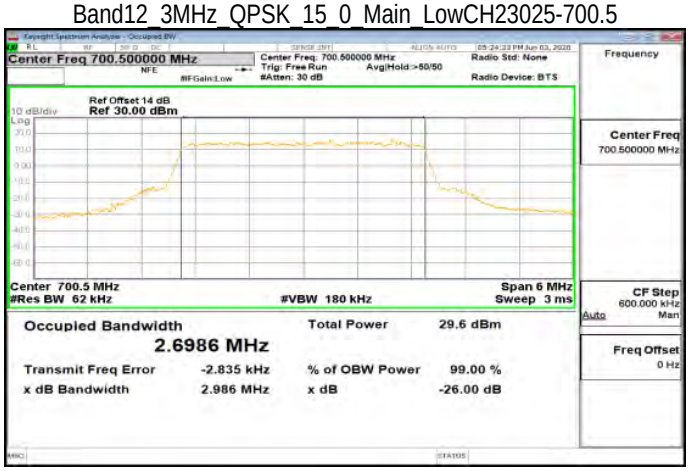
Band12_1_4MHz_QPSK_6_0_Main_HighCH23173-715.3



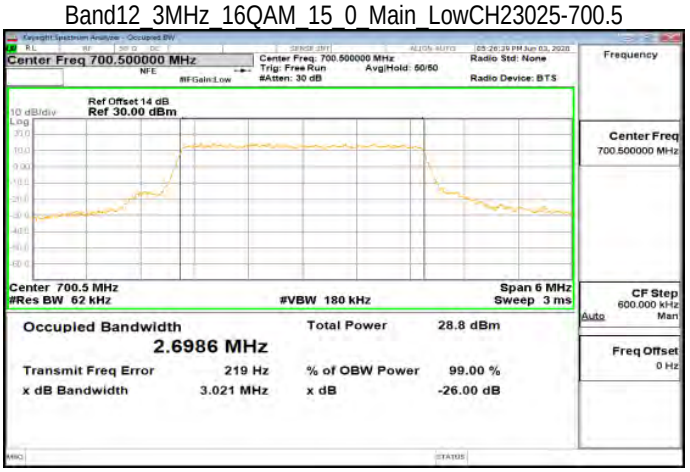
Band12_1_4MHz_16QAM_6_0_Main_HighCH23173-715.3



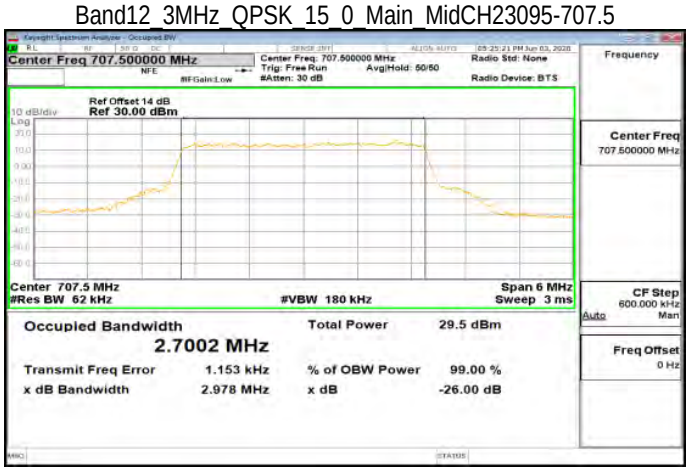
Band12_3MHz_QPSK_15_0_Main_LowCH23025-700.5



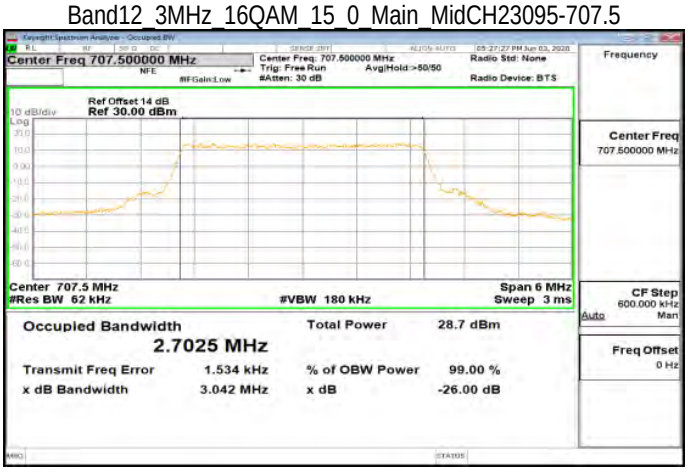
Band12_3MHz_16QAM_15_0_Main_LowCH23025-700.5



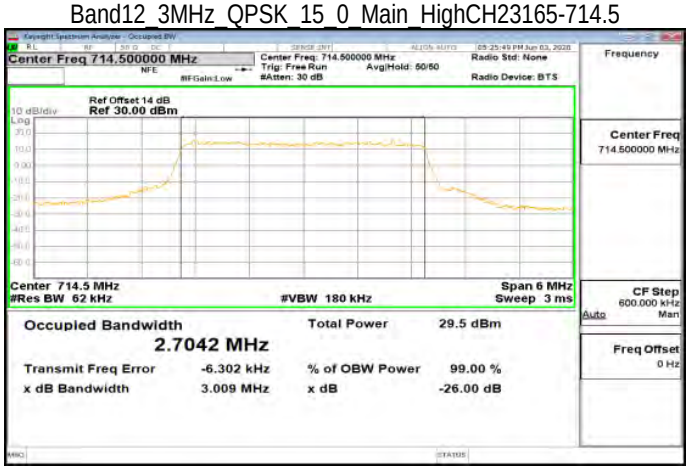
Band12_3MHz_QPSK_15_0_Main_MidCH23095-707.5



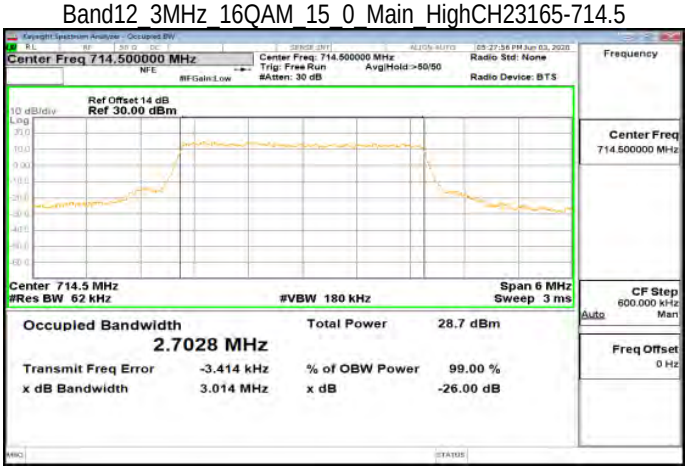
Band12_3MHz_16QAM_15_0_Main_MidCH23095-707.5



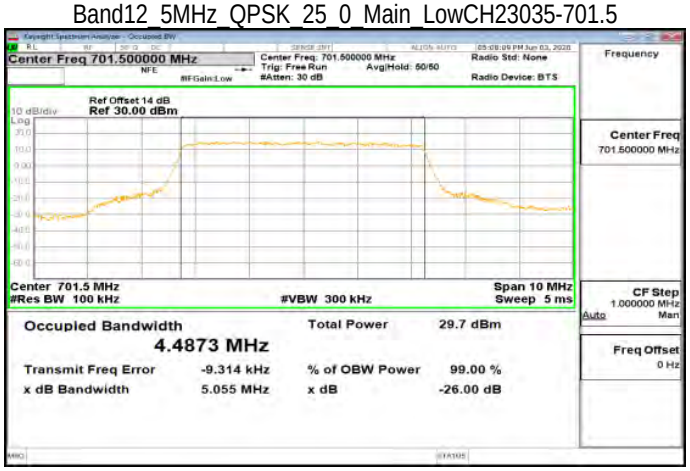
Band12_3MHz_QPSK_15_0_Main_HighCH23165-714.5



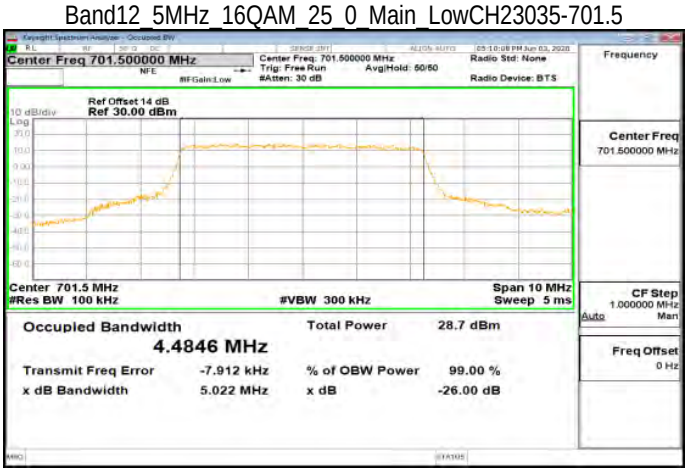
Band12_3MHz_16QAM_15_0_Main_HighCH23165-714.5



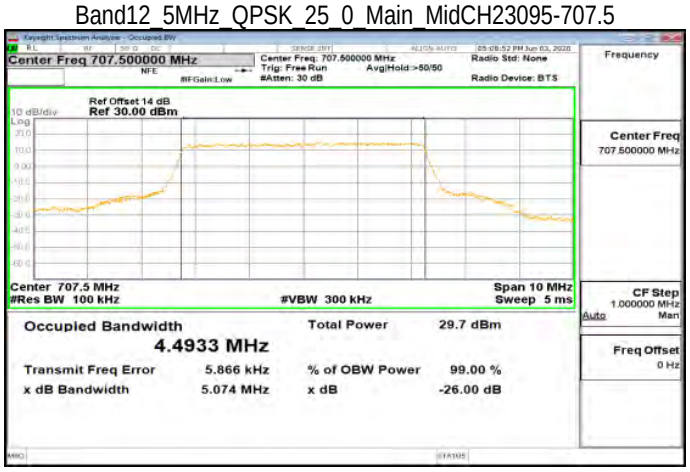
Band12_5MHz_QPSK_25_0_Main_LowCH23035-701.5



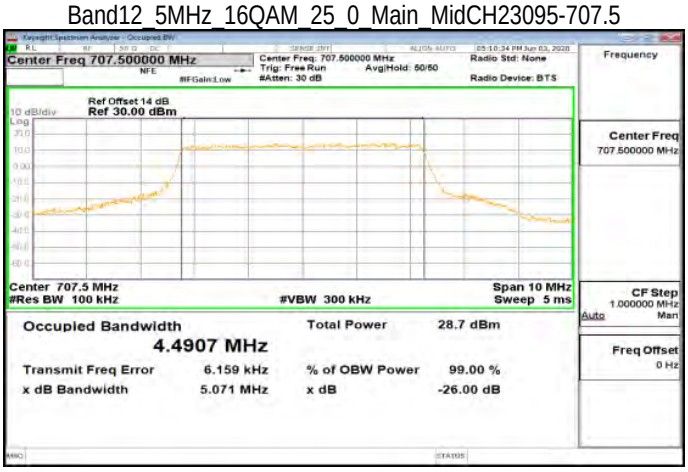
Band12_5MHz_16QAM_25_0_Main_LowCH23035-701.5



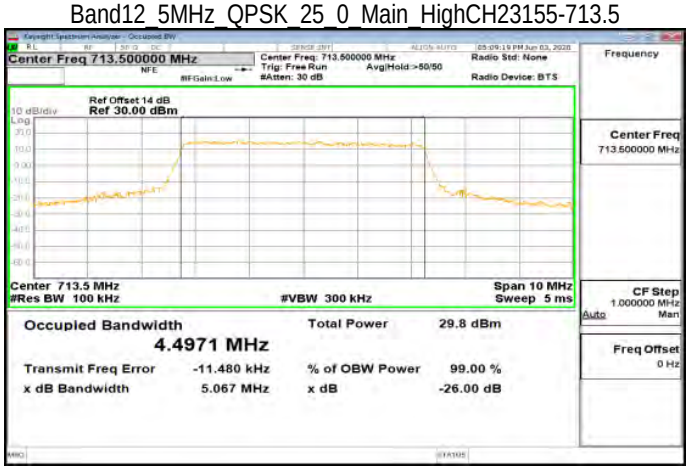
Band12_5MHz_QPSK_25_0_Main_MidCH23095-707.5



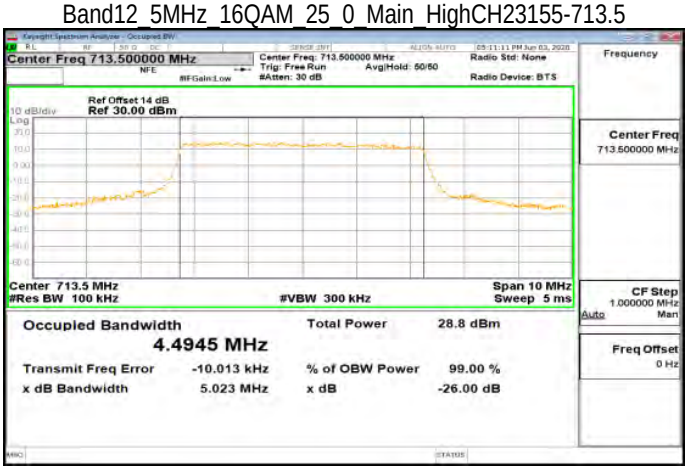
Band12_5MHz_16QAM_25_0_Main_MidCH23095-707.5



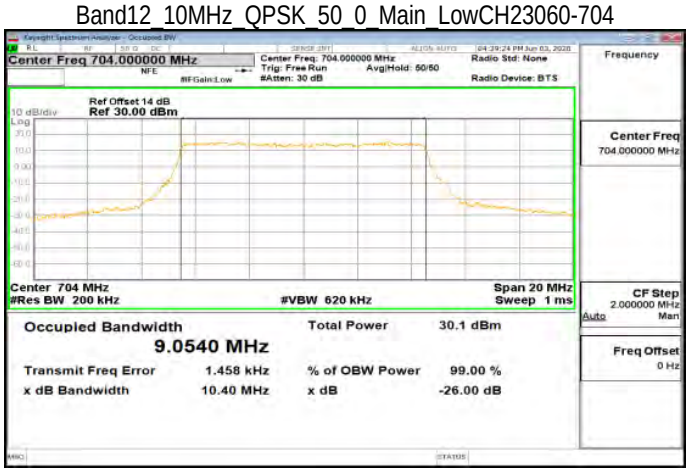
Band12_5MHz_QPSK_25_0_Main_HighCH23155-713.5



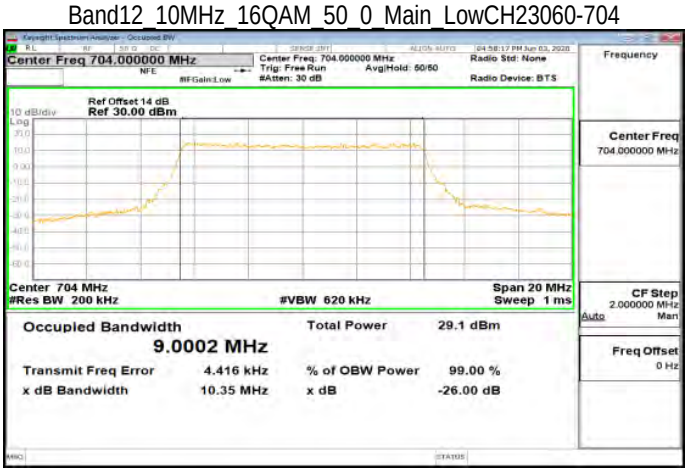
Band12_5MHz_16QAM_25_0_Main_HighCH23155-713.5



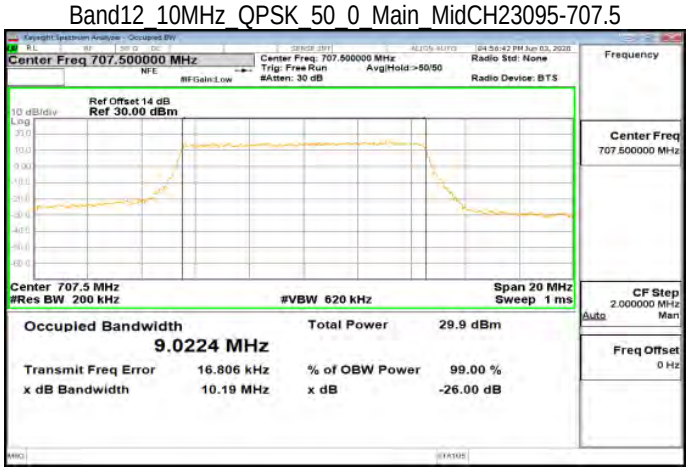
Band12_10MHz_QPSK_50_0_Main_LowCH23060-704



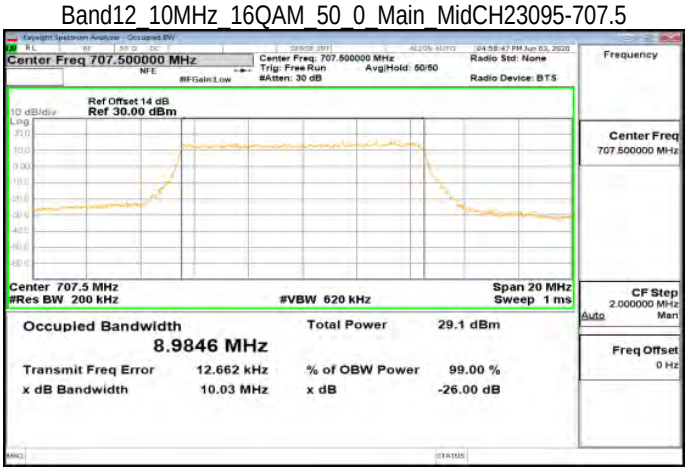
Band12_10MHz_16QAM_50_0_Main_LowCH23060-704



Band12_10MHz_QPSK_50_0_Main_MidCH23095-707.5



Band12_10MHz_16QAM_50_0_Main_MidCH23095-707.5



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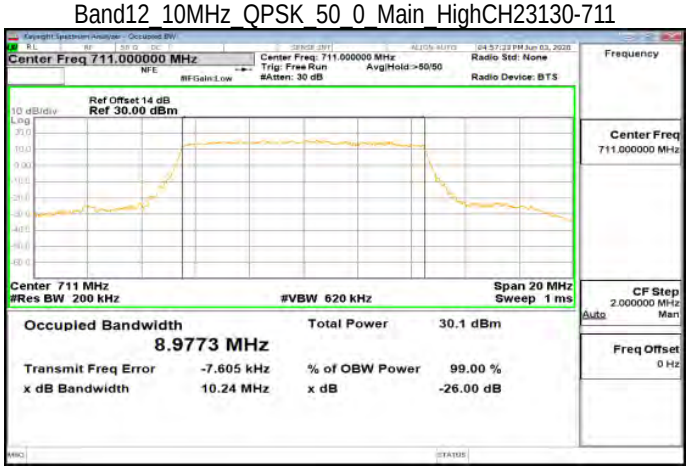

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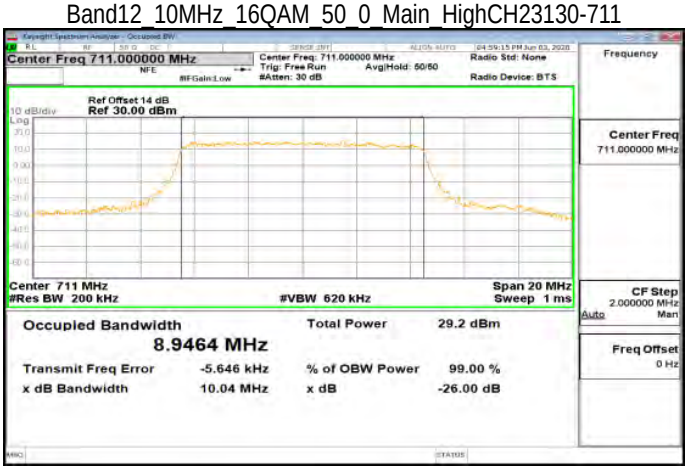


8 OUT OF BAND EMISSION AT ANTENNA TERMINALS

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(c) (5) & FCC §27.53(g) for LTE B12

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.

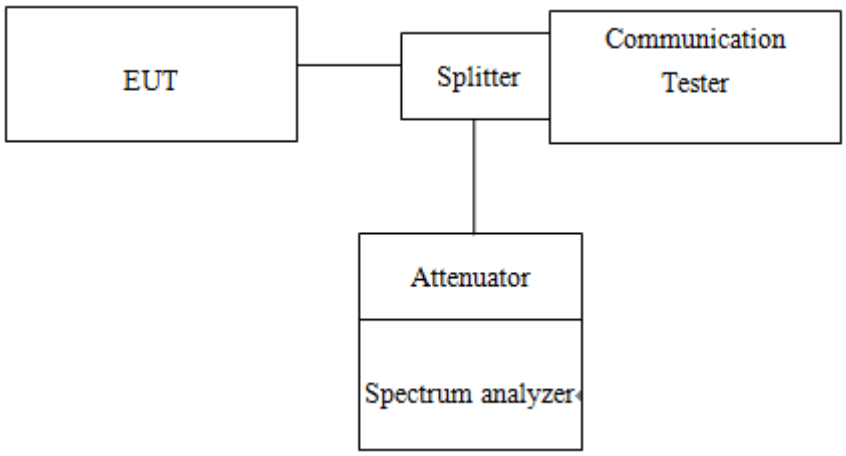
FCC §27.53(h)(3) for LTE B4

Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. 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.

FCC §90.691 Emission mask requirements for EA-based systems for LTE B26

(a) Out-of-band emission requirement shall apply only to the "outer" channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:
(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10 Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.
(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

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. Allow trace to fully stabilize
4. Repeat above procedures until all default test channel measured were complete.

8.4 Measurement Equipment Used

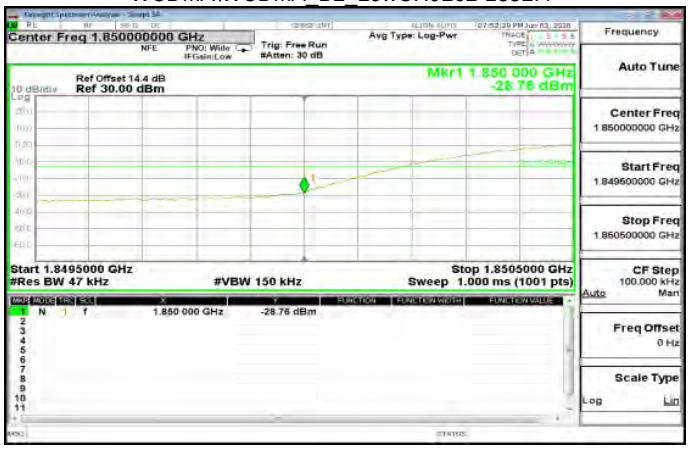
Conducted Emission (measured at antenna port) Test Site					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
PXA Spectrum Analyzer	Agilent	N9030A	MY53120760	04/21/2020	04/20/2021
DC Power Supply	Agilent	E3640A	MY40005907	10/22/2019	10/21/2020
Temperature Chamber	TERCHY	MHG-120LF	911009	05/20/2020	05/19/2021
Radio Communication Analyer	Anritsu	MT8815B	6200711454	04/01/2020	03/31/2021
Attenuator	Mini-Circuit	BW-S10W2+	2	01/02/2020	01/01/2021
DC Block	Mini-Circuits	BLK-18-S+	1	01/02/2020	01/01/2021
Splitter	RF-LAMBAD	RFLT2W1G18G	11-JSPF412-018	01/02/2020	01/01/2021

8.5 Measurement Result:

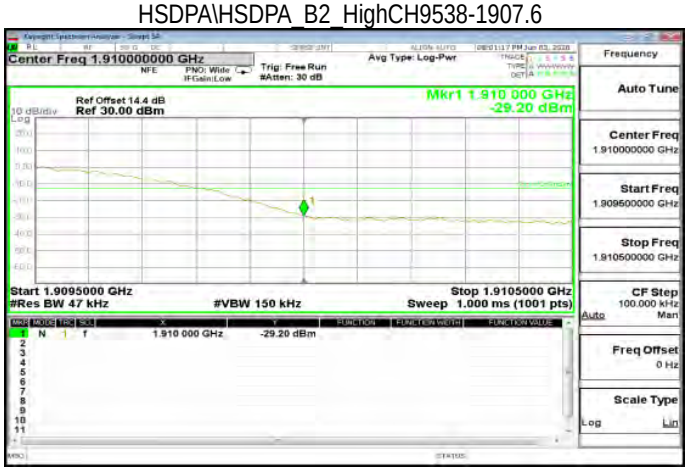
Refer to next pages.

Band Edge

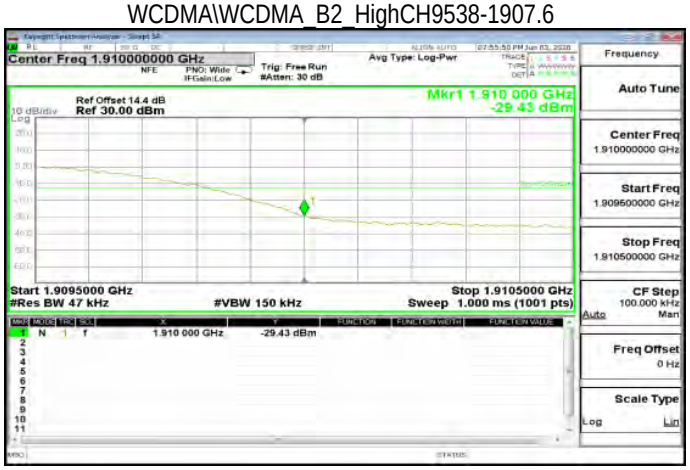
WCDMA\WCDMA_B2_LowCH9262-1852.4



HSDPA\HSDPA_B2_HighCH9538-1907.6



WCDMA\WCDMA_B2_HighCH9538-1907.6



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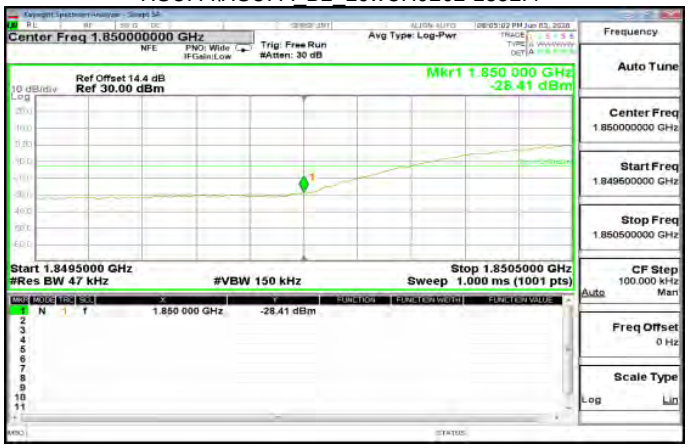

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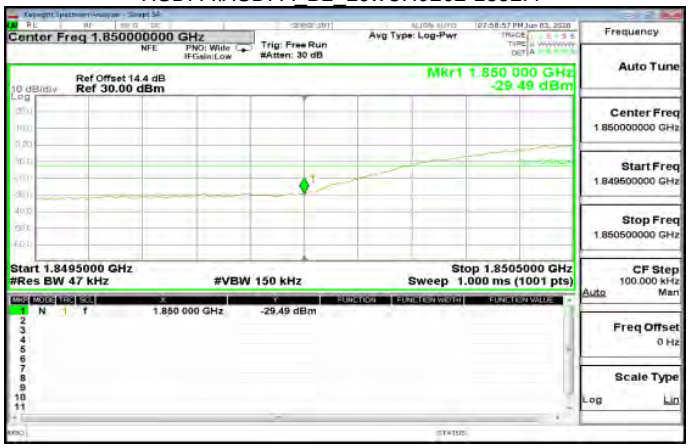

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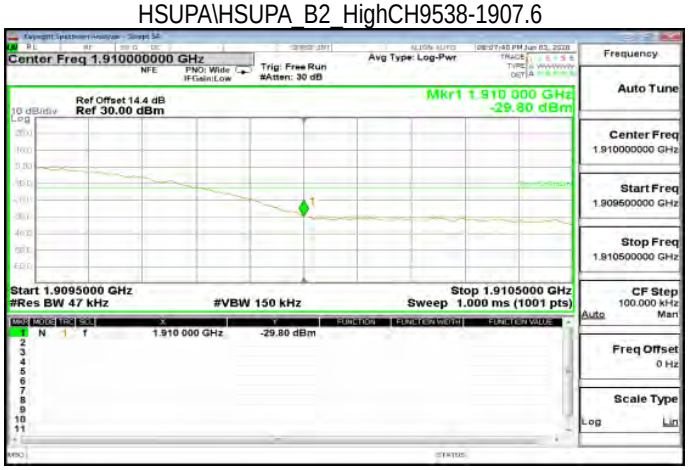
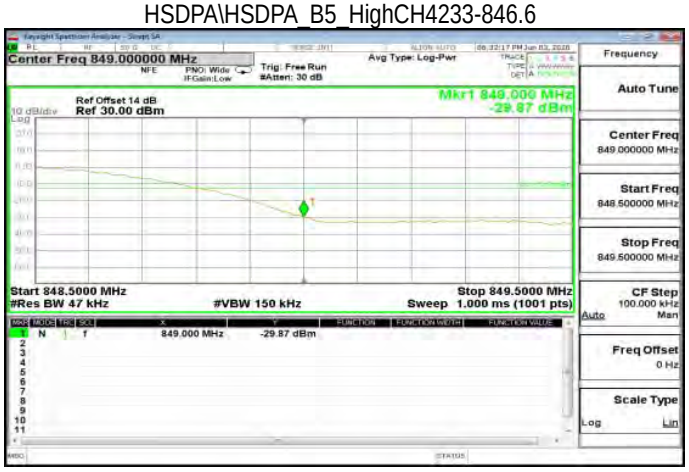


WCDMA\WCDMA_B5_LowCH4132-826.4

HSDPA\HSDPA_B5_HighCH4233-846.6



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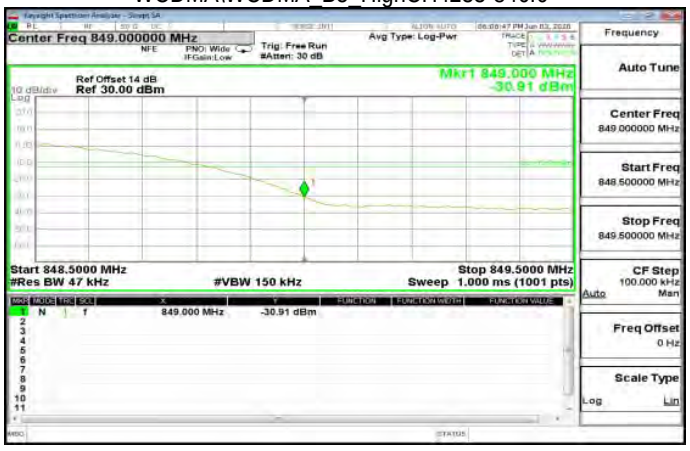

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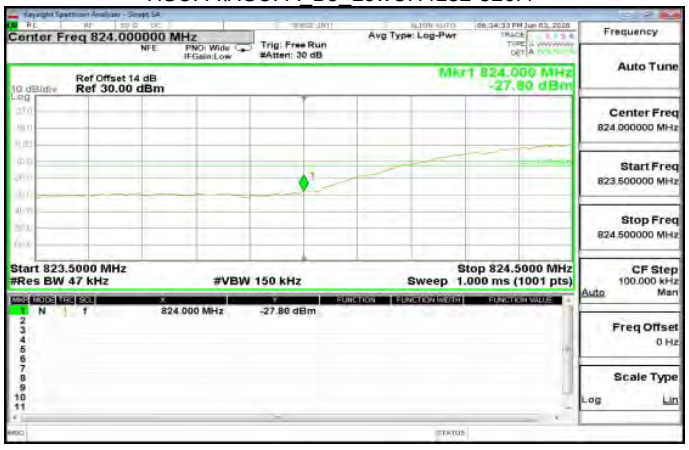

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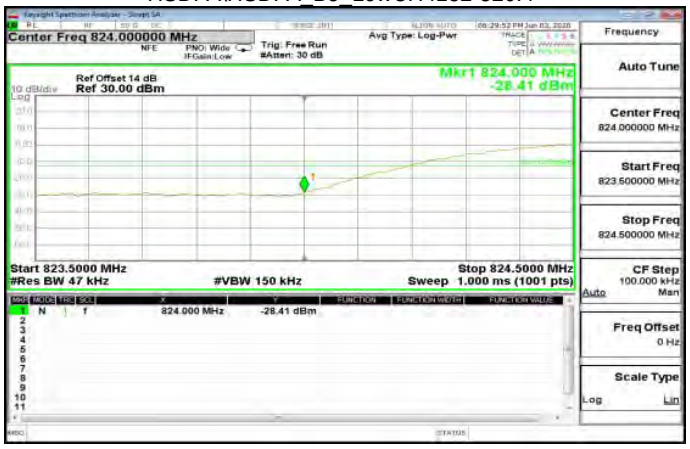

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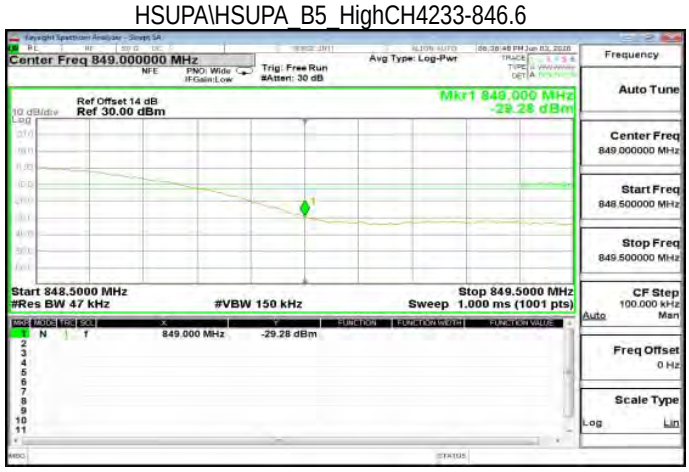
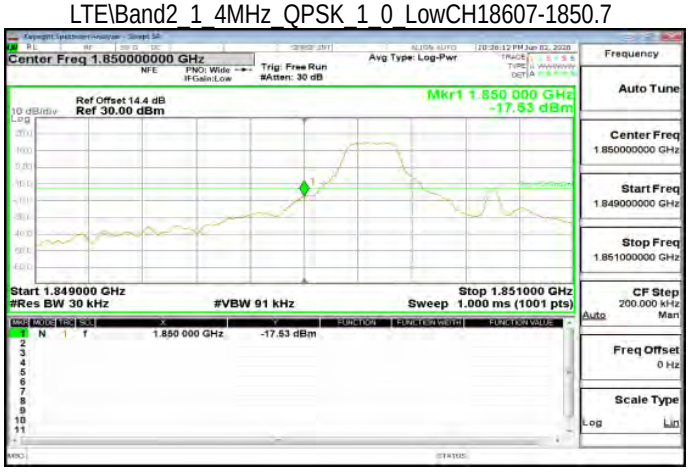


LTE\Band2_1_4MHz_QPSK_1_0_LowCH18607-1850.7



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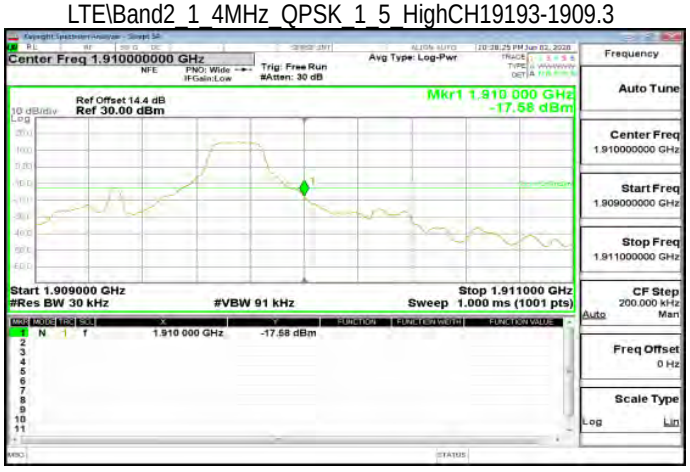
LTE\Band2_1_4MHz_QPSK_1_5_HighCH19193-1909.3



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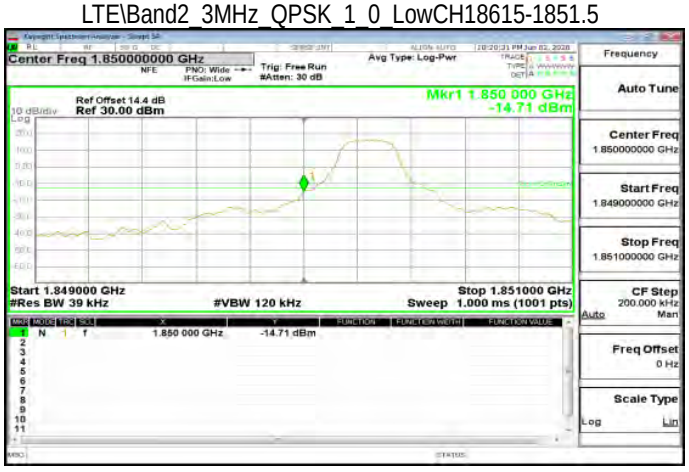

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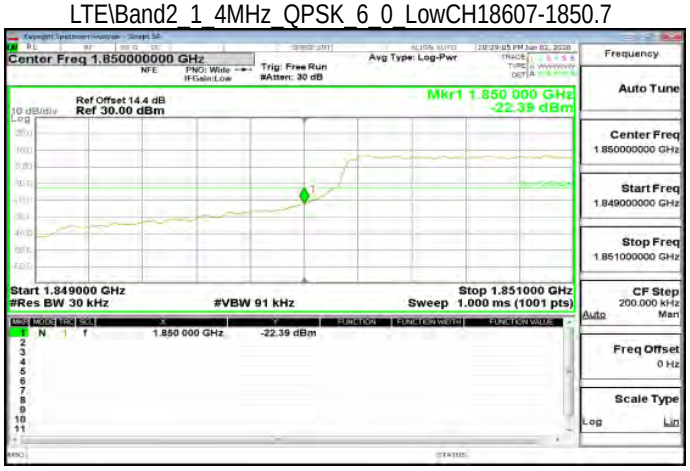

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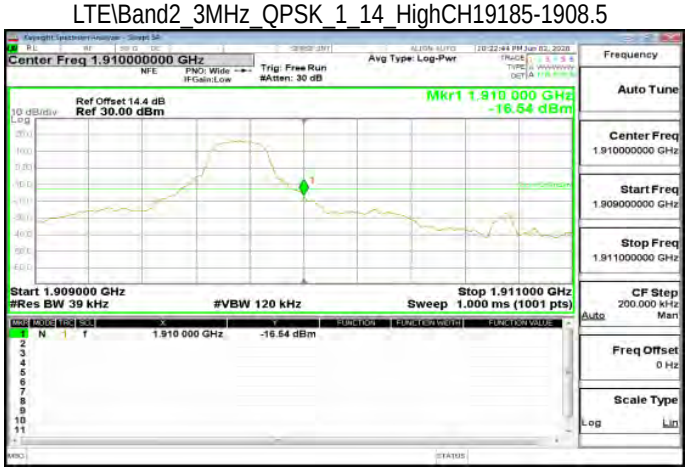

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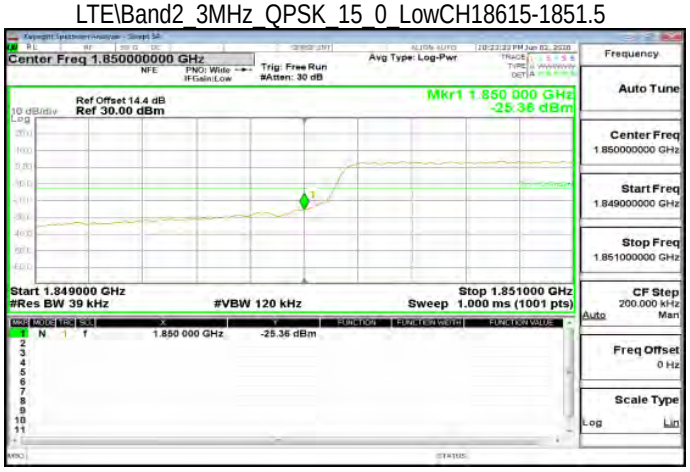

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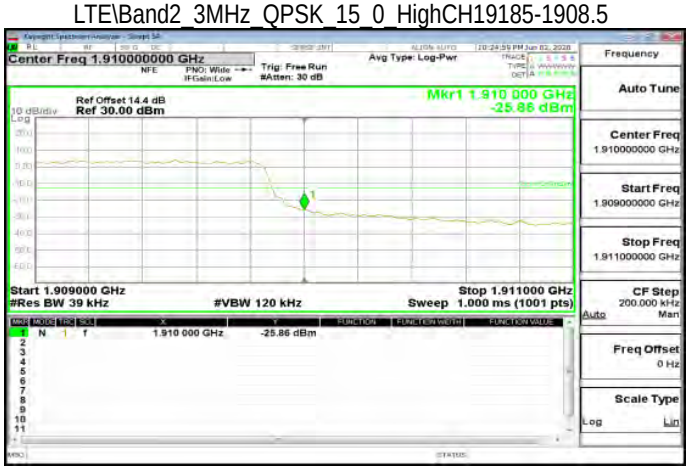

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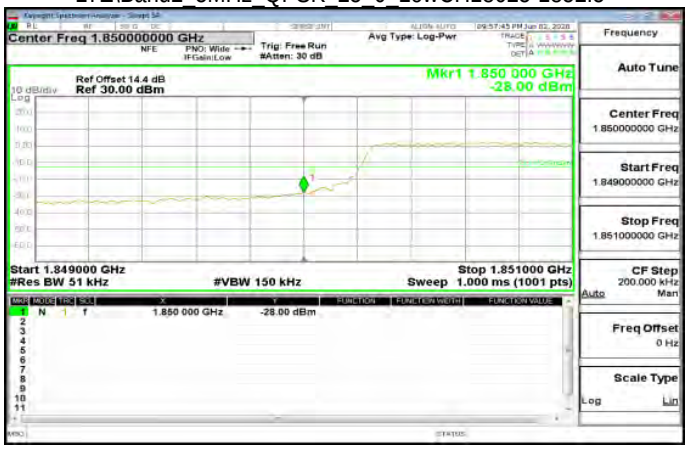

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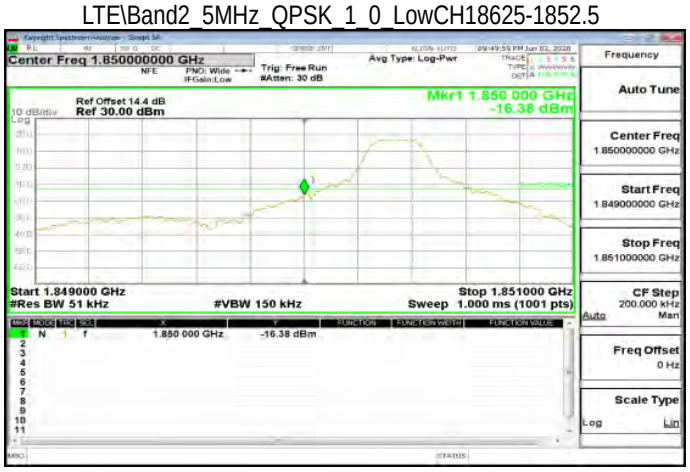

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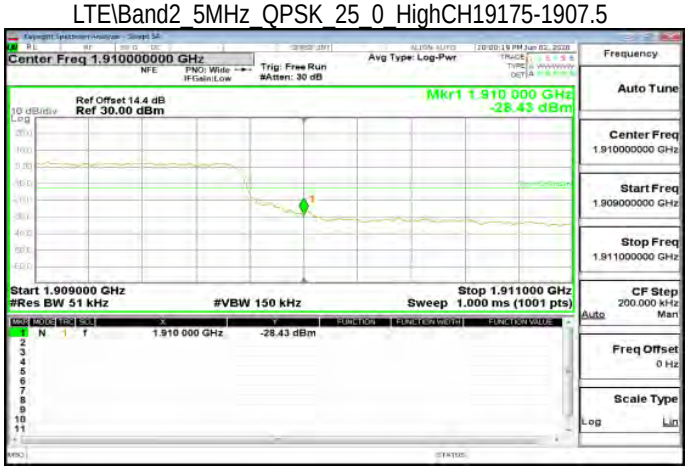
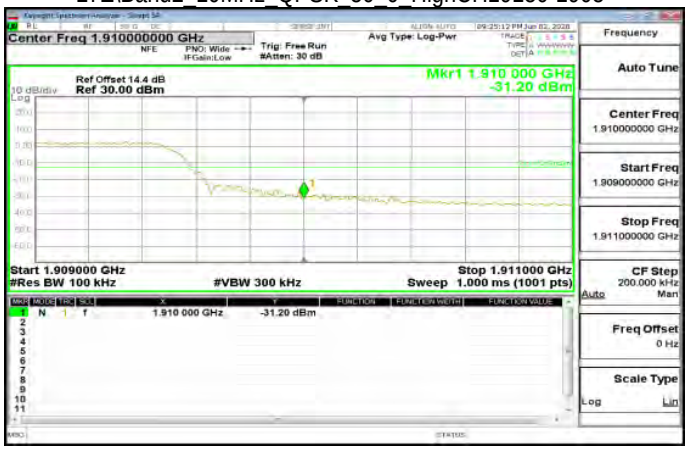


LTE\Band2_10MHz_QPSK_1_0_LowCH18650-1855

LTE\Band2_10MHz_QPSK_50_0_HighCH19150-1905



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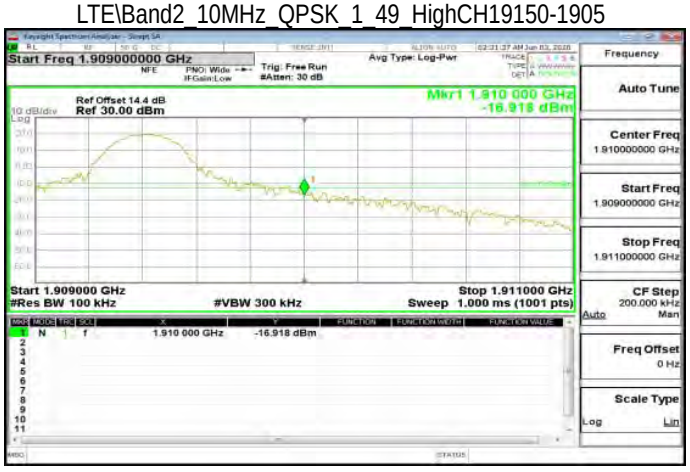

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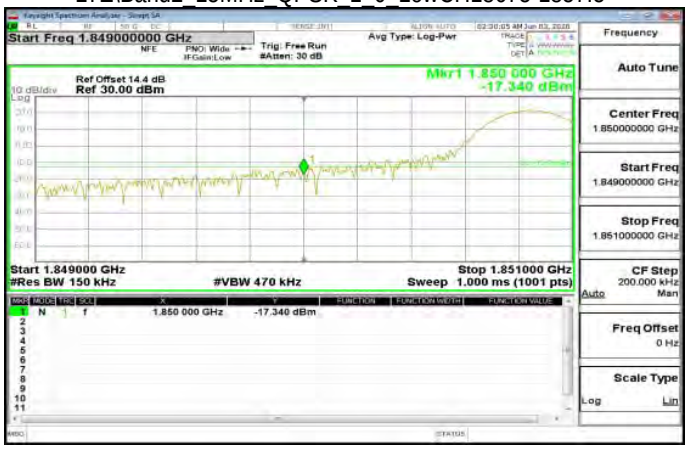

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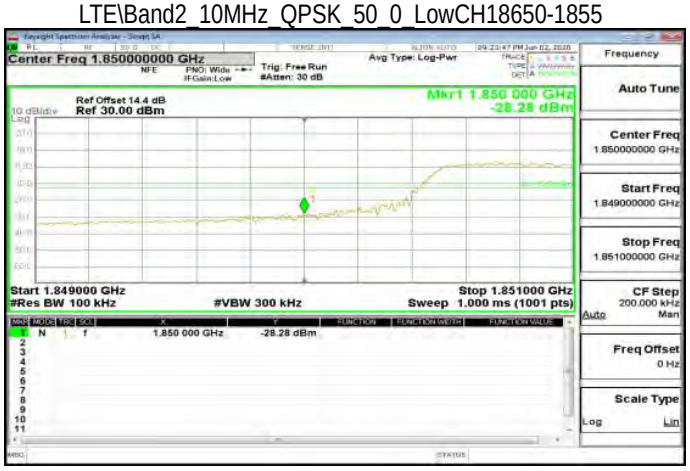

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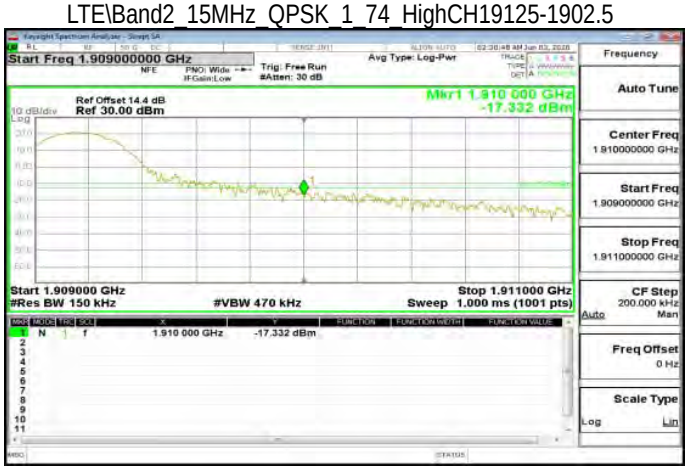

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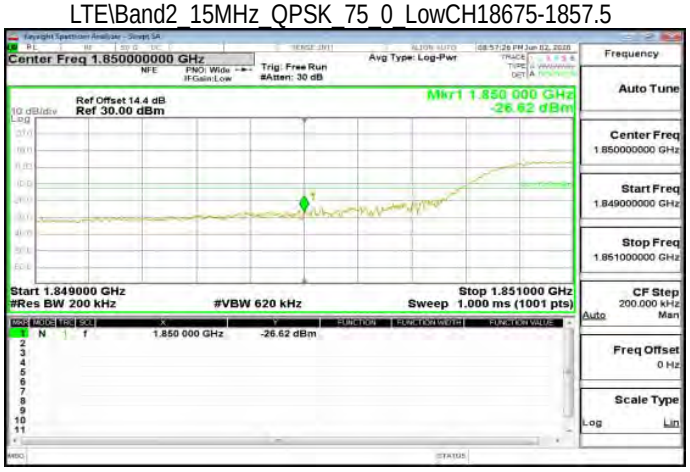

LTE\Band2_20MHz_QPSK_1_99_HighCH19100-1900

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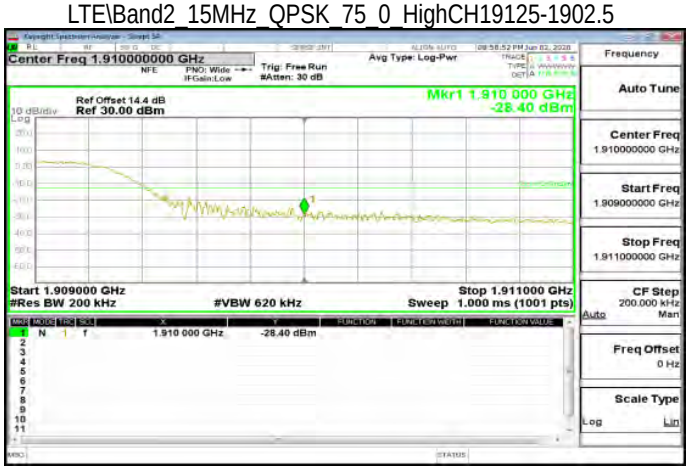
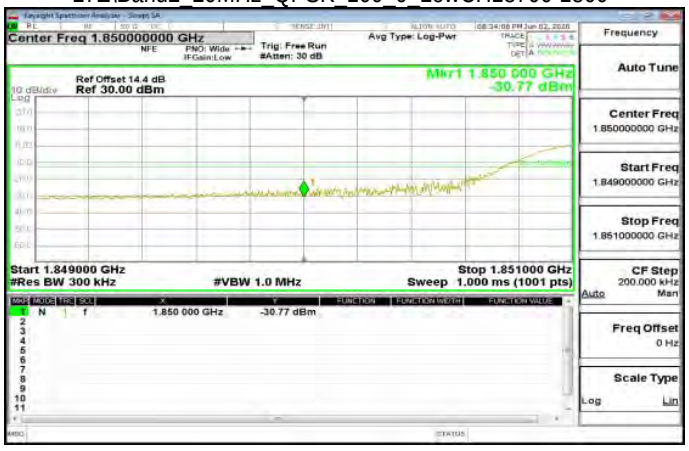


LTE\Band2_20MHz_QPSK_100_0_LowCH18700-1860



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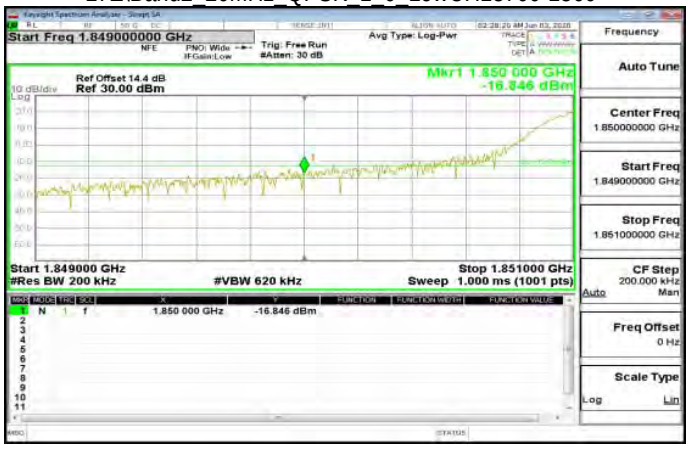

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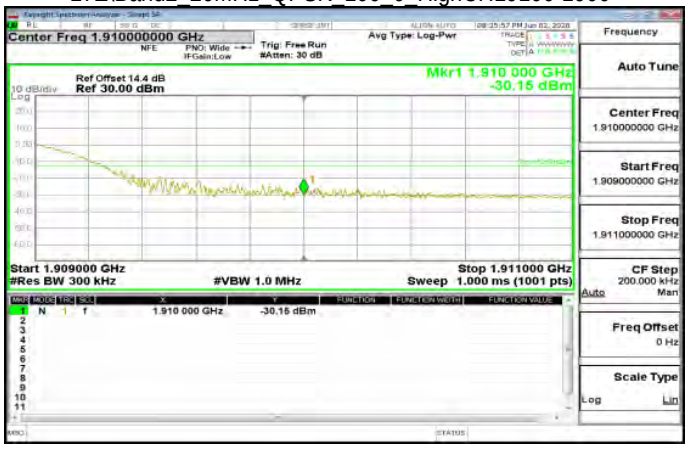

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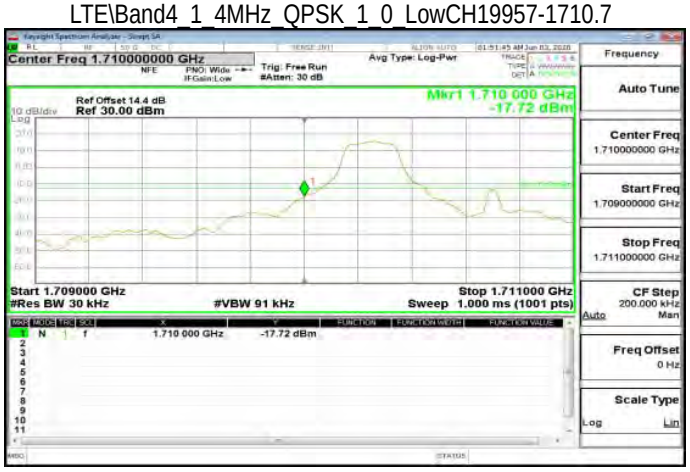

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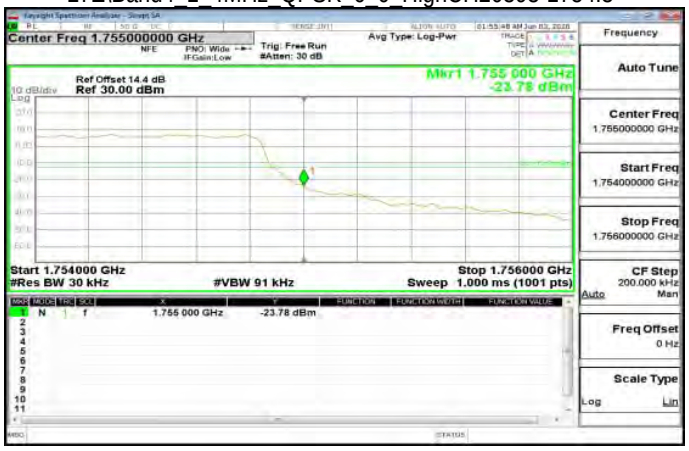

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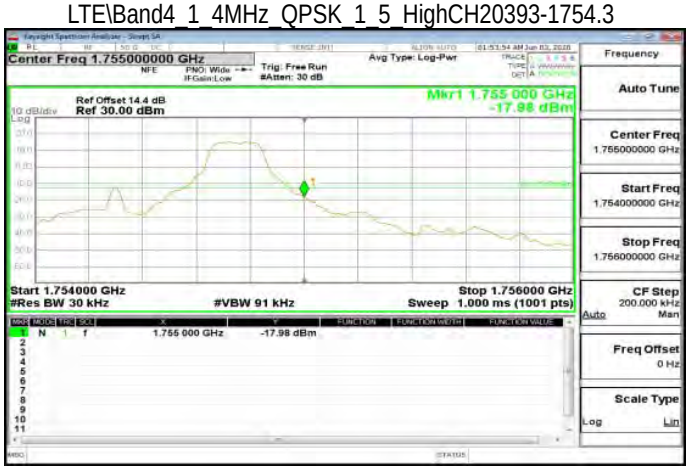
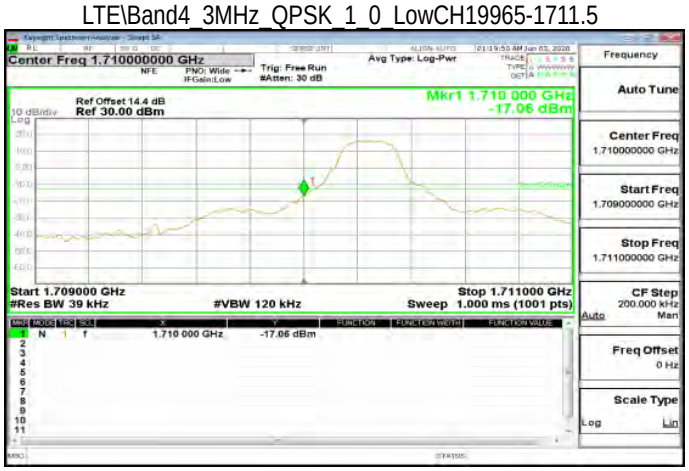


LTE\Band4_3MHz_QPSK_1_0_LowCH19965-1711.5



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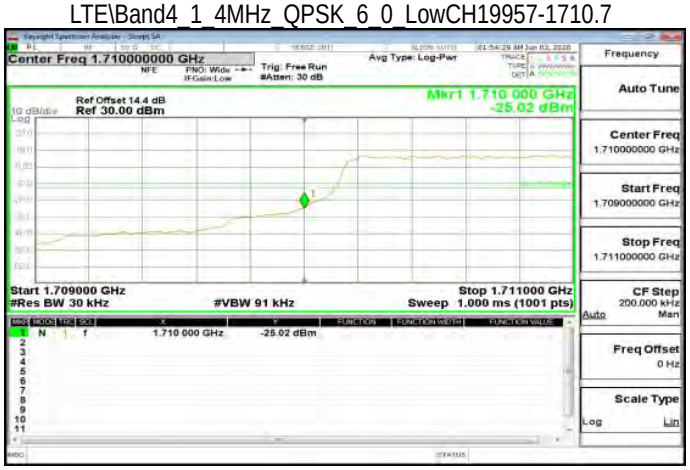


LTE\Band4_3MHz_QPSK_1_14_HighCH20385-1753.5

LTE\Band4_3MHz_QPSK_15_0_LowCH19965-1711.5

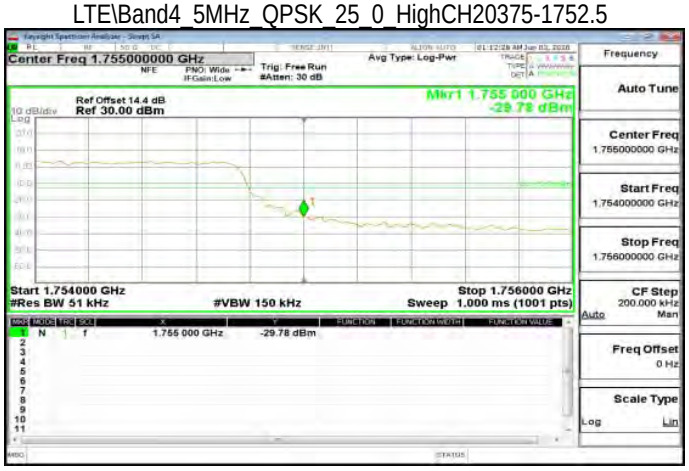
LTE\Band4_5MHz_QPSK_1_24_HighCH20375-1752.5

LTE\Band4_3MHz_QPSK_15_0_HighCH20385-1753.5

LTE\Band4_5MHz_QPSK_25_0_LowCH19975-1712.5

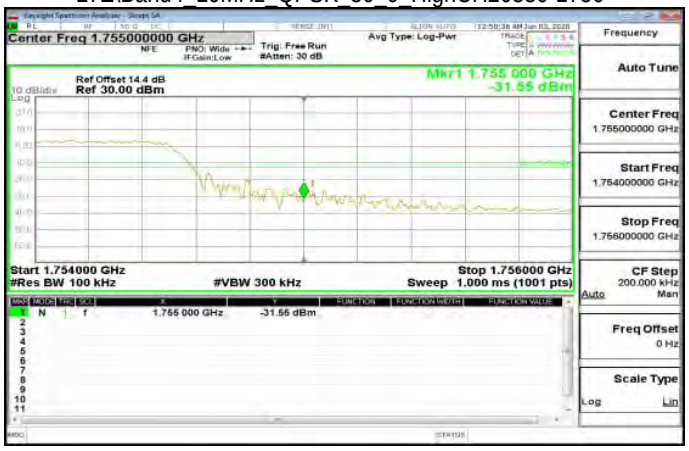
LTE\Band4_5MHz_QPSK_1_0_LowCH19975-1712.5

LTE\Band4_5MHz_QPSK_25_0_HighCH20375-1752.5

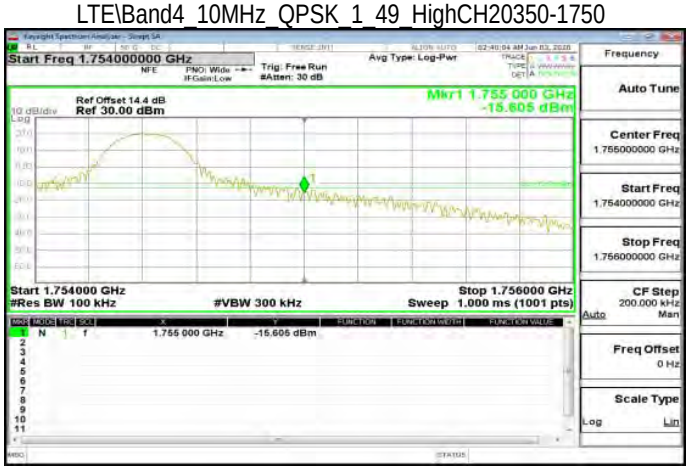


LTE\Band4_10MHz_QPSK_1_0_LowCH20000-1715

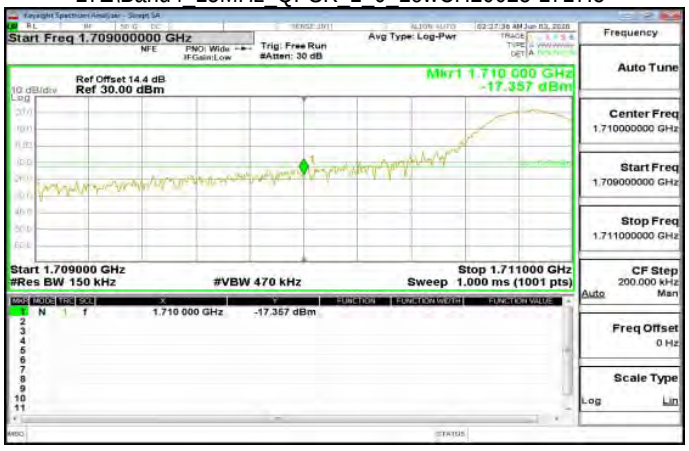
LTE\Band4_10MHz_QPSK_50_0_HighCH20350-1750



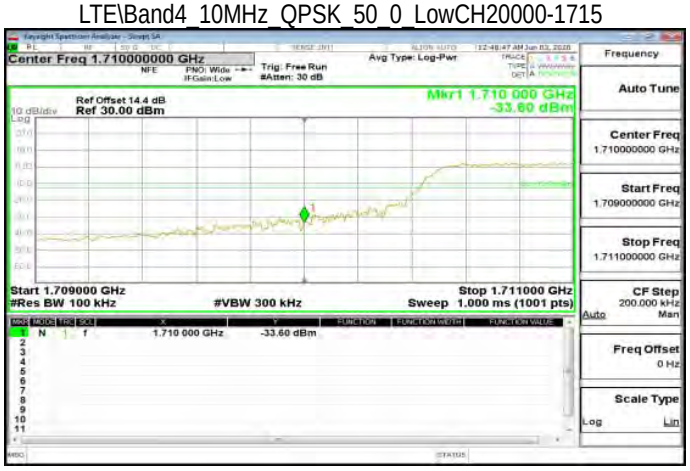
LTE\Band4_10MHz_QPSK_1_49_HighCH20350-1750



LTE\Band4_15MHz_QPSK_1_0_LowCH20025-1717.5



LTE\Band4_10MHz_QPSK_50_0_LowCH20000-1715



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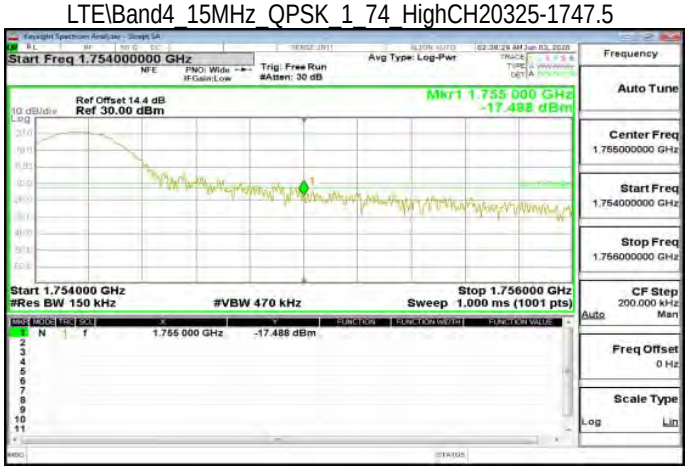
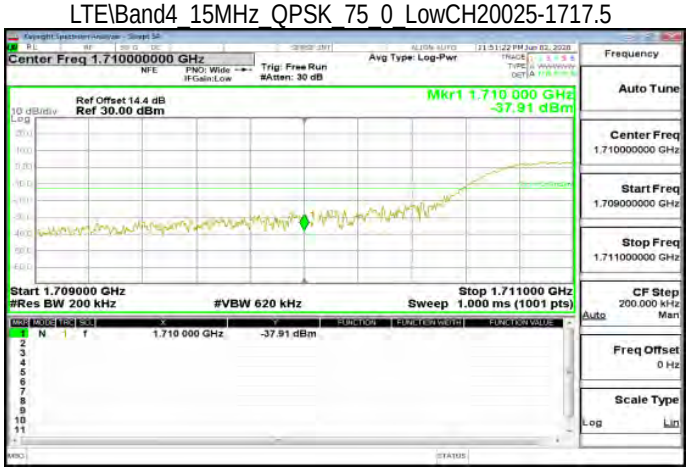


LTE\Band4_15MHz_QPSK_75_0_LowCH20025-1717.5



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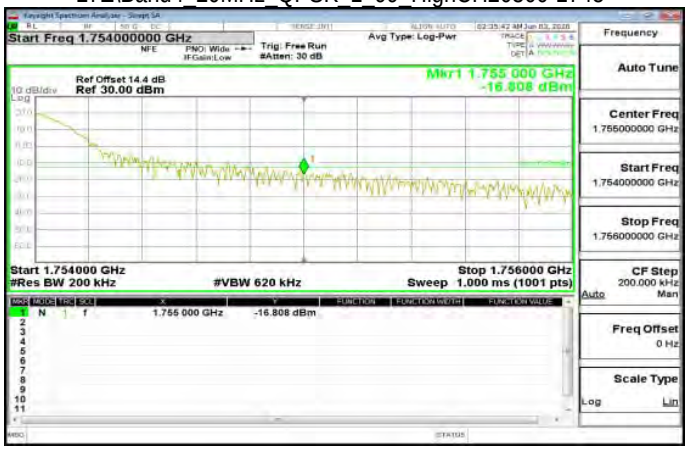
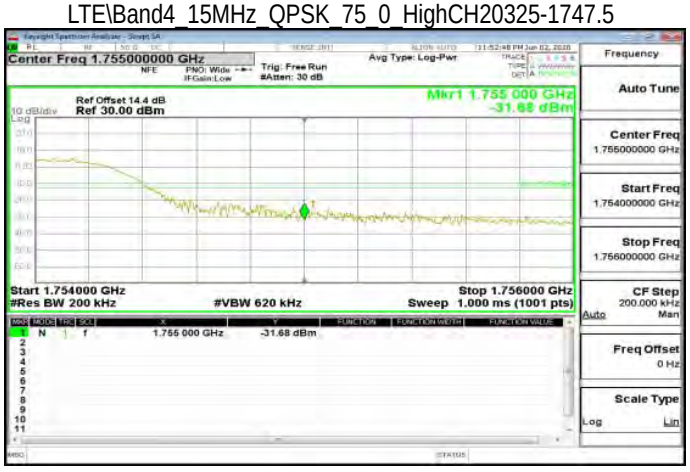


LTE\Band4_15MHz_QPSK_75_0_HighCH20325-1747.5



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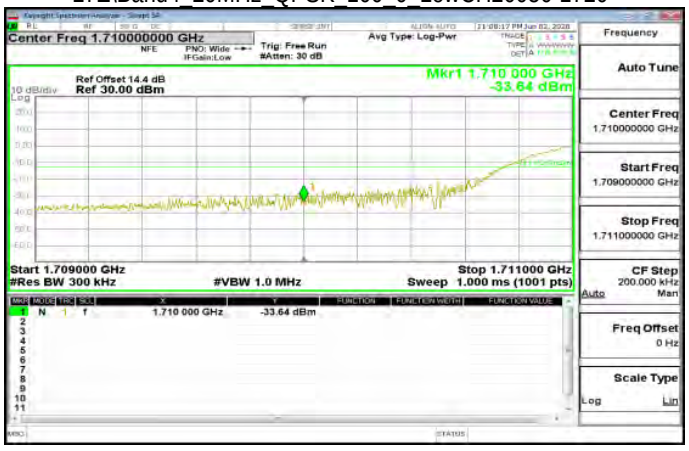
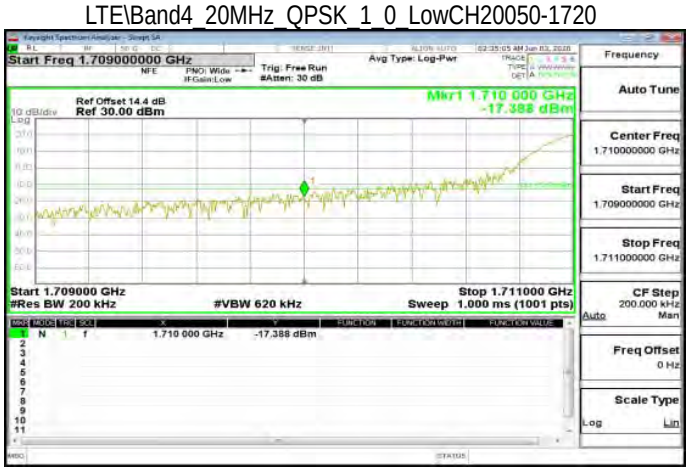
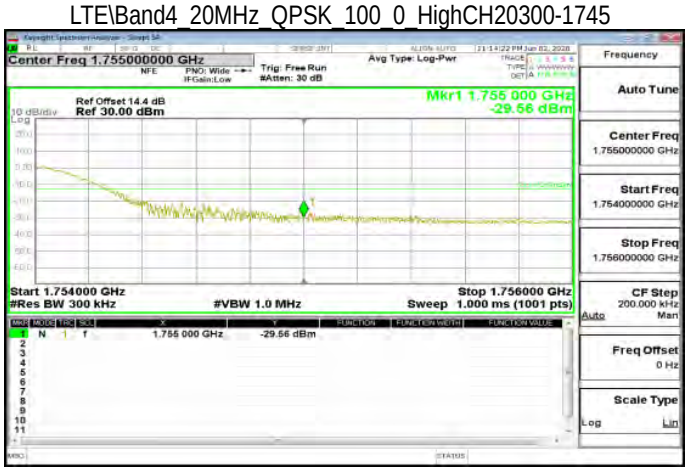


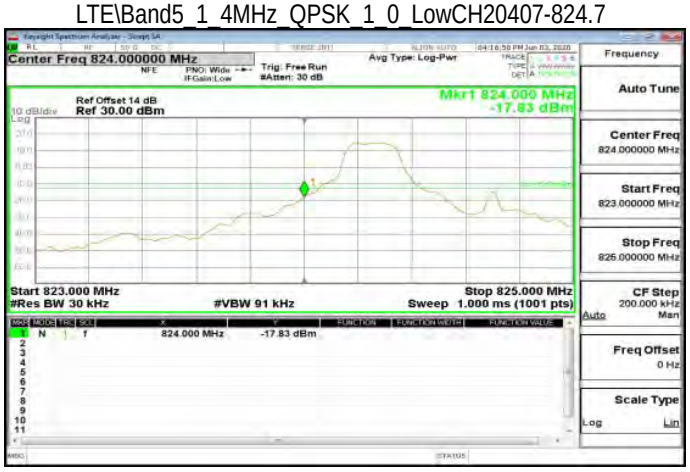
LTE\Band4_20MHz_QPSK_1_0_LowCH20050-1720



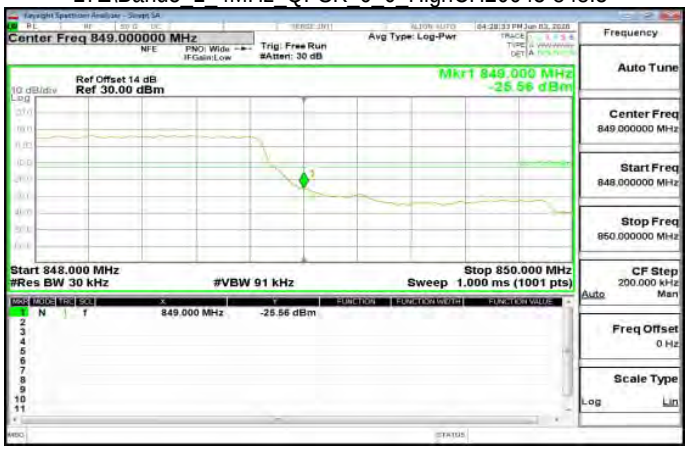
LTE\Band4_20MHz_QPSK_100_0_HighCH20300-1745



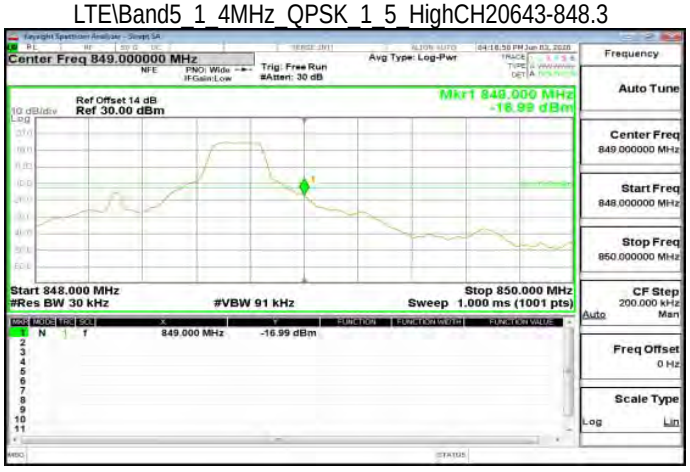
LTE\Band5_1_4MHz_QPSK_1_0_LowCH20407-824.7



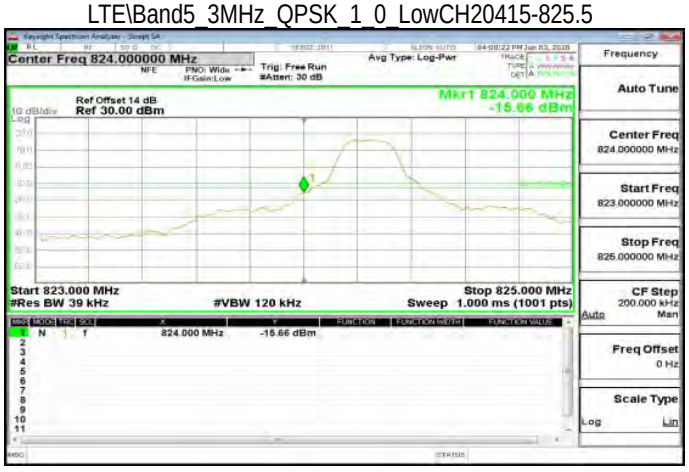
LTE\Band5_1_4MHz_QPSK_6_0_HighCH20643-848.3



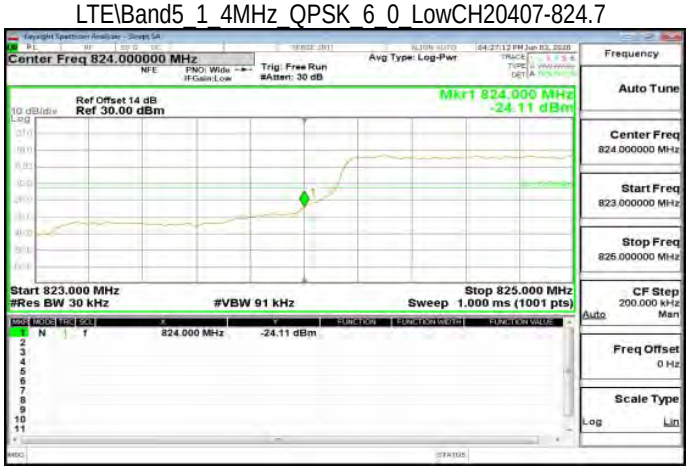
LTE\Band5_1_4MHz_QPSK_1_5_HighCH20643-848.3



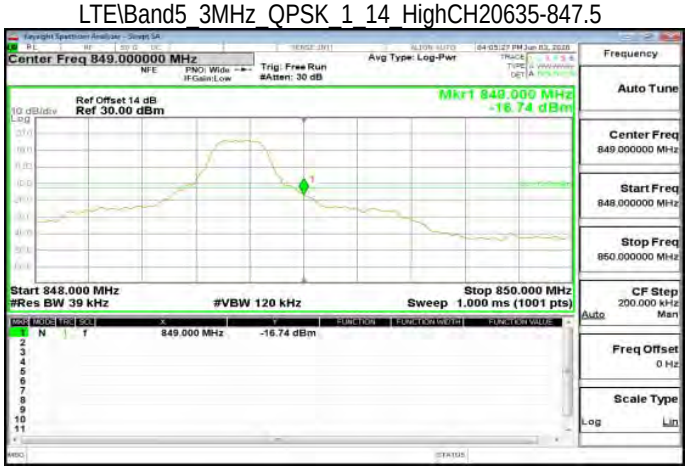
LTE\Band5_3MHz_QPSK_1_0_LowCH20415-825.5



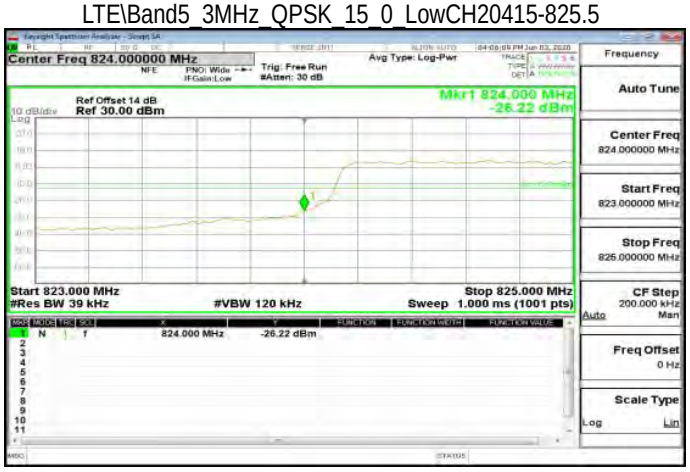
LTE\Band5_1_4MHz_QPSK_6_0_LowCH20407-824.7



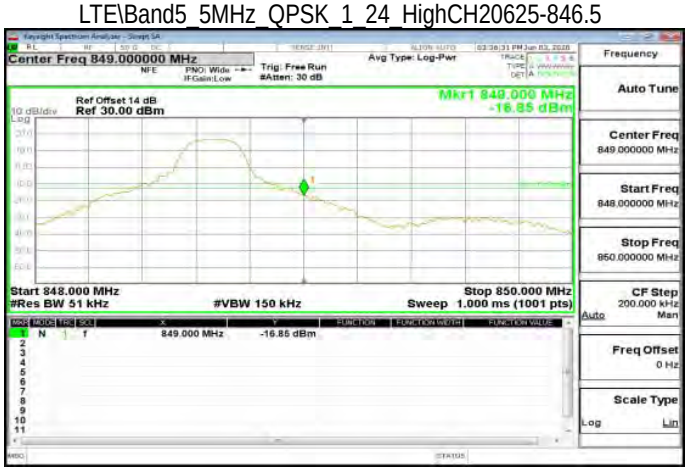
LTE\Band5_3MHz_QPSK_1_14_HighCH20635-847.5



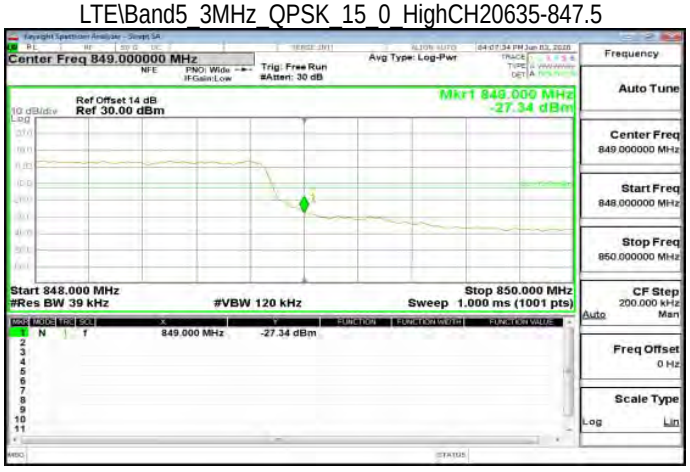
LTE\Band5_3MHz_QPSK_15_0_LowCH20415-825.5



LTE\Band5_5MHz_QPSK_1_24_HighCH20625-846.5

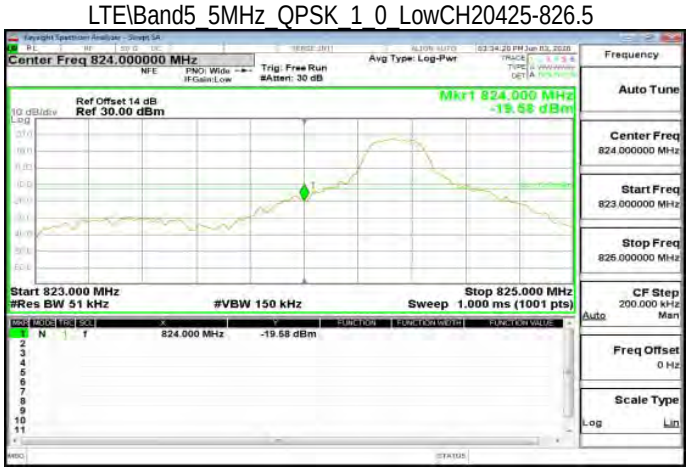


LTE\Band5_3MHz_QPSK_15_0_HighCH20635-847.5

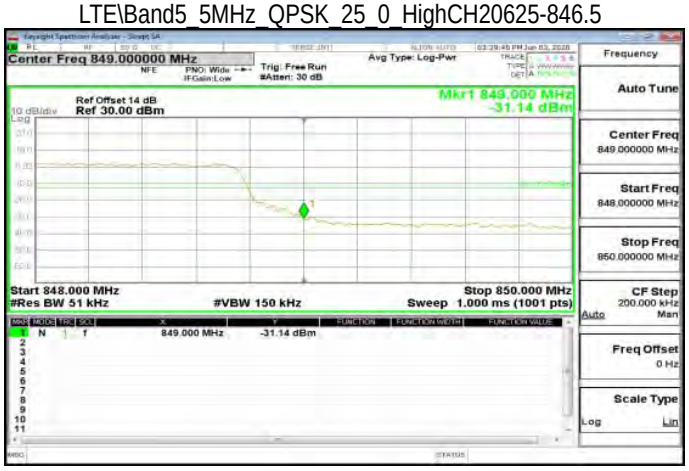


LTE\Band5_5MHz_QPSK_25_0_LowCH20425-826.5

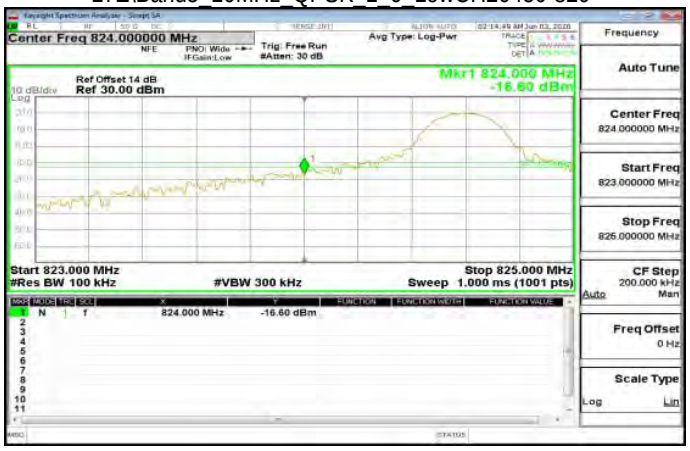
LTE\Band5_5MHz_QPSK_1_0_LowCH20425-826.5



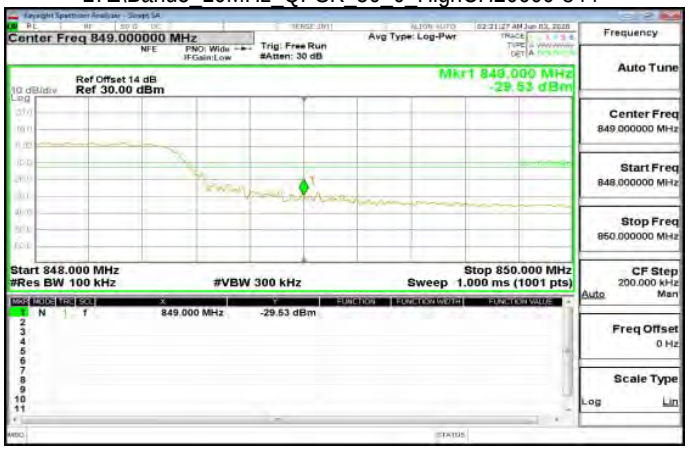
LTE\Band5_5MHz_QPSK_25_0_HighCH20625-846.5



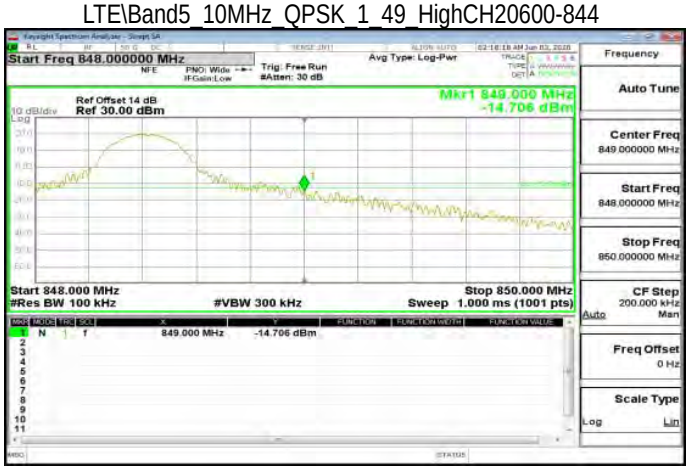
LTE\Band5_10MHz_QPSK_1_0_LowCH20450-829



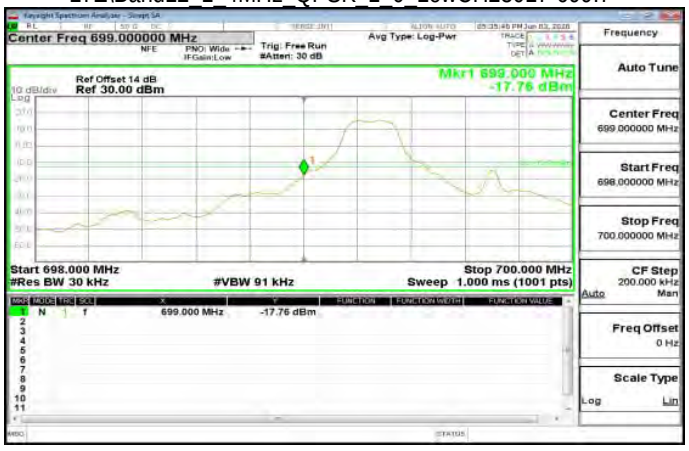
LTE\Band5_10MHz_QPSK_50_0_HighCH20600-844



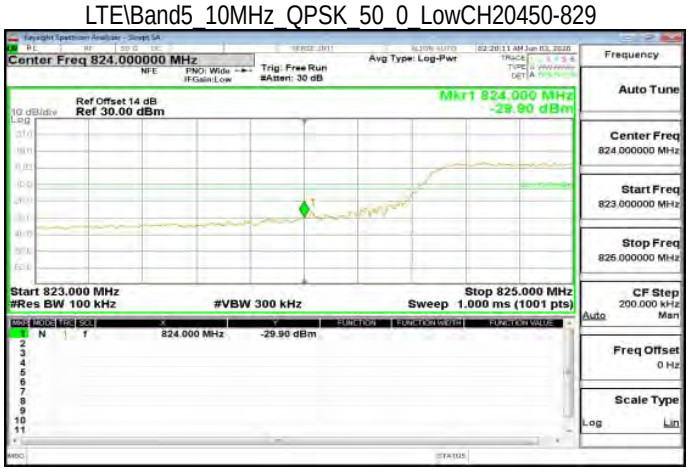
LTE\Band5_10MHz_QPSK_1_49_HighCH20600-844



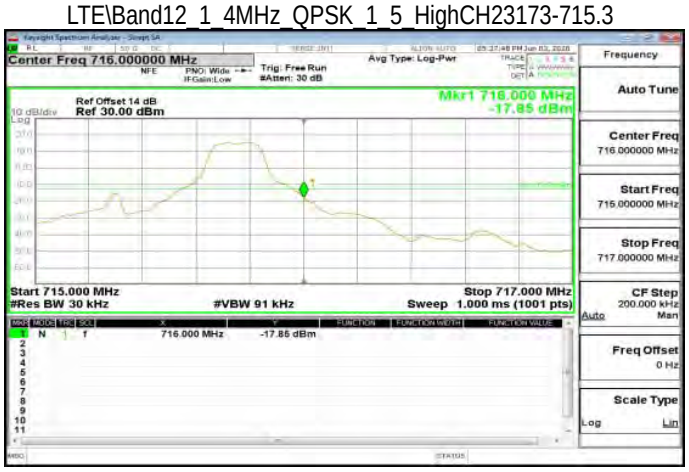
LTE\Band12_1_4MHz_QPSK_1_0_LowCH23017-699.7



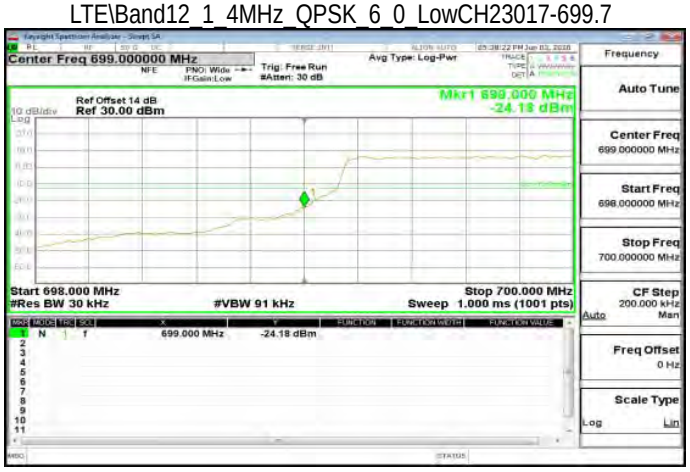
LTE\Band5_10MHz_QPSK_50_0_LowCH20450-829



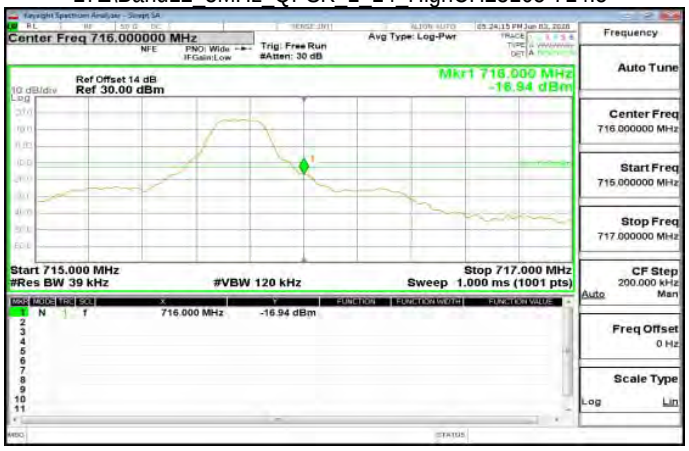
LTE\Band12_1_4MHz_QPSK_1_5_HighCH23173-715.3



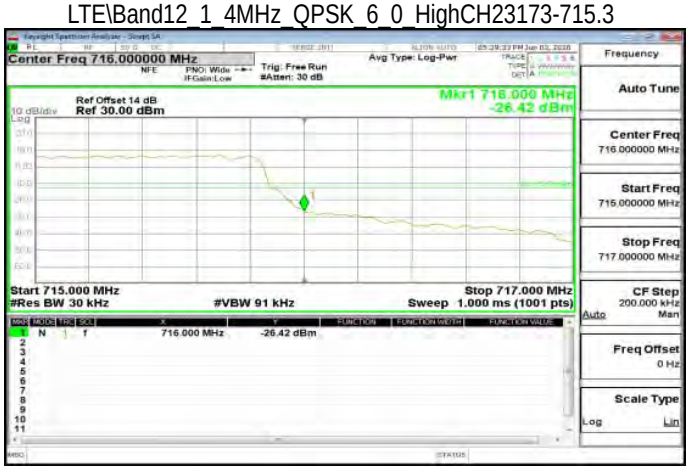
LTE\Band12_1_4MHz_QPSK_6_0_LowCH23017-699.7



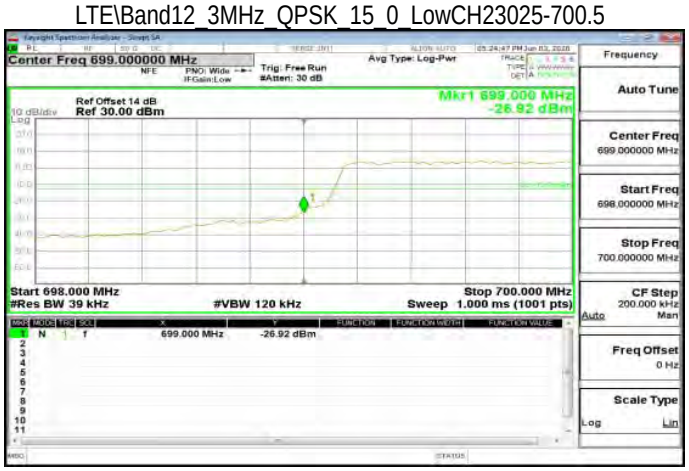
LTE\Band12_3MHz_QPSK_1_14_HighCH23165-714.5



LTE\Band12_1_4MHz_QPSK_6_0_HighCH23173-715.3



LTE\Band12_3MHz_QPSK_15_0_LowCH23025-700.5



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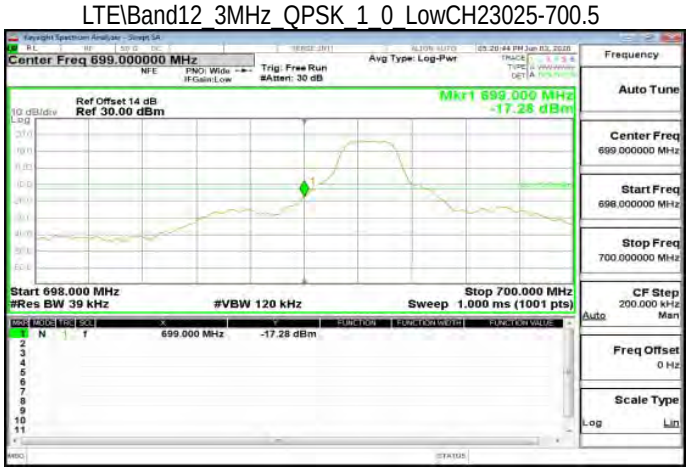
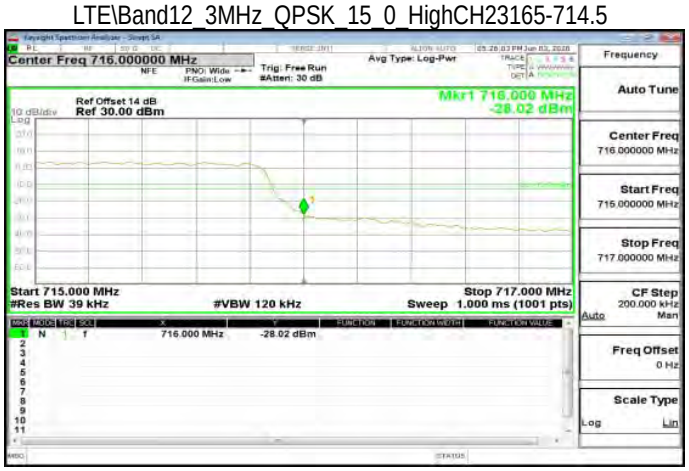


LTE\Band12_3MHz_QPSK_15_0_HighCH23165-714.5



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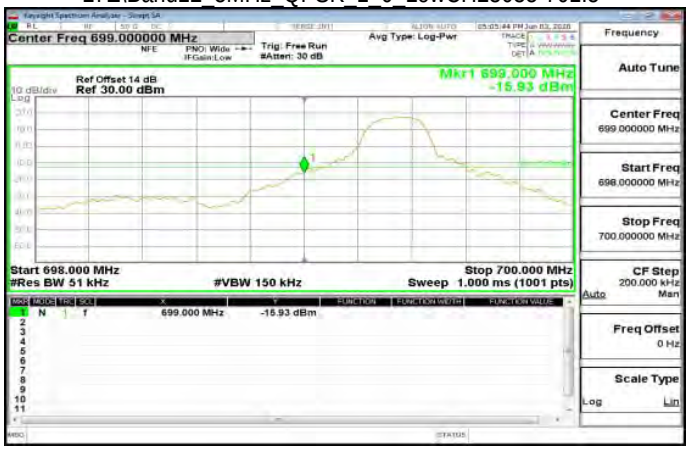

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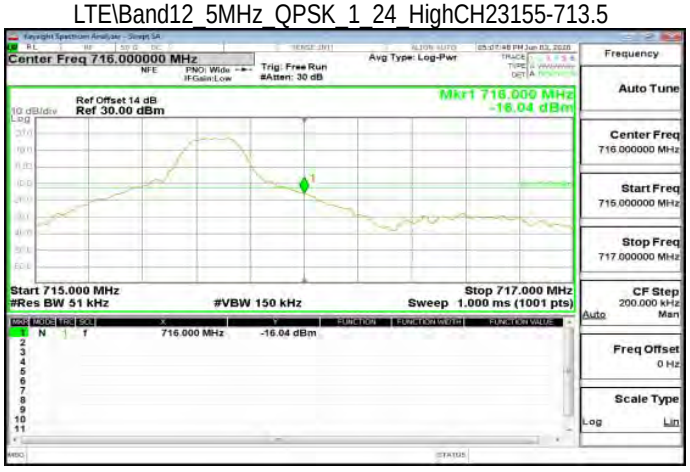
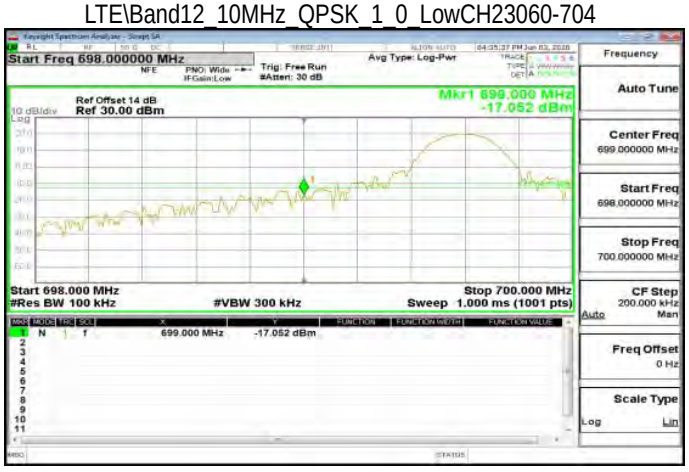
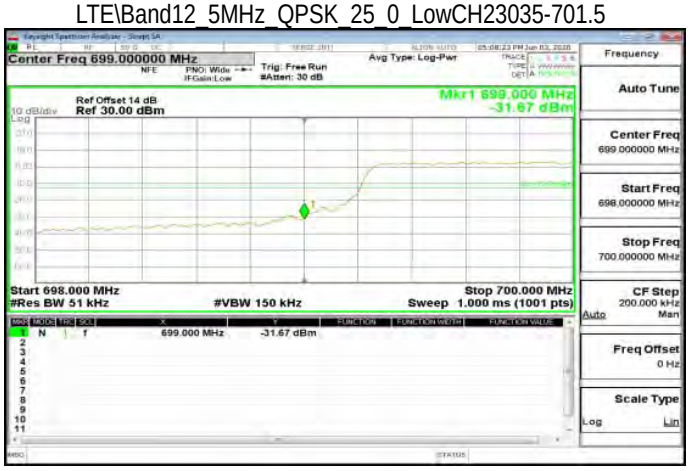
LTE\Band12_5MHz_QPSK_1_24_HighCH23155-713.5



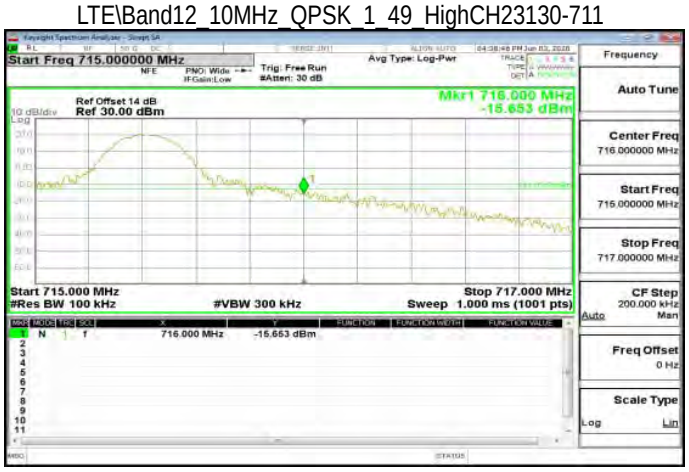
LTE\Band12_10MHz_QPSK_1_0_LowCH23060-704



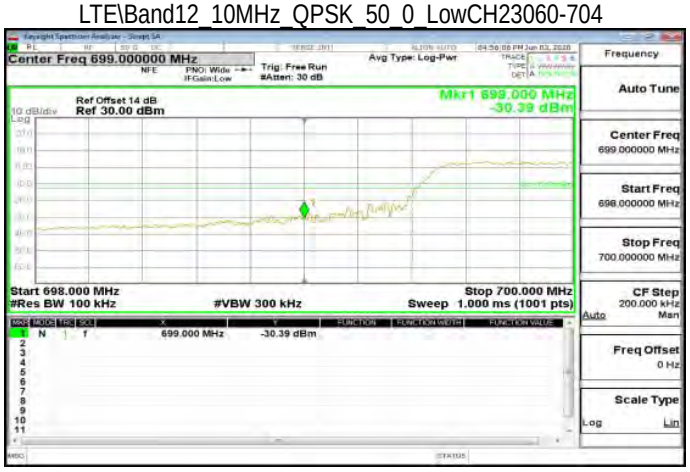
LTE\Band12_5MHz_QPSK_25_0_LowCH23035-701.5



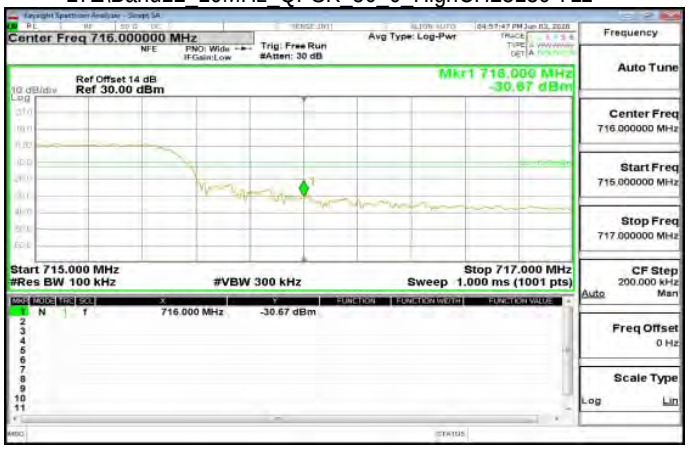
LTE\Band12_10MHz_QPSK_1_49_HighCH23130-711



LTE\Band12_10MHz_QPSK_50_0_LowCH23060-704



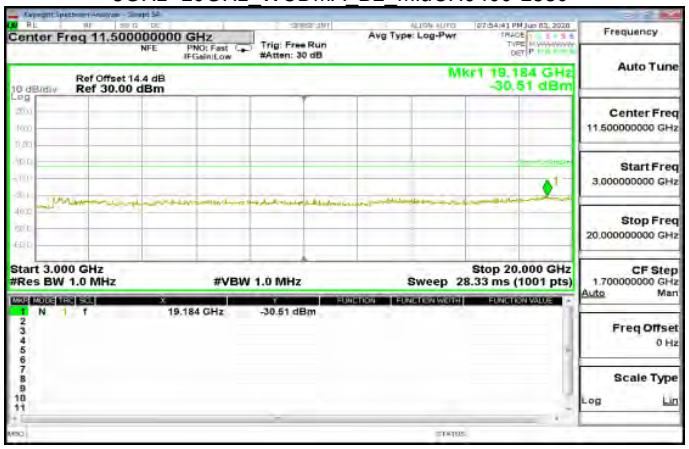
LTE\Band12_10MHz_QPSK_50_0_HighCH23130-711



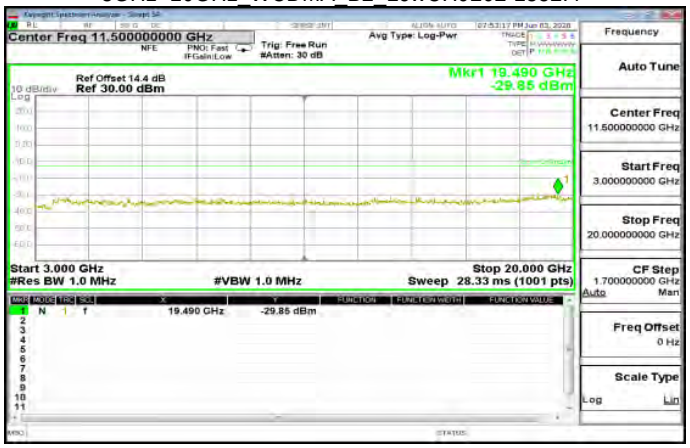
Spurious Emission

30MHz~3GHz_WCDMA_B2_LowCH9262-1852.4

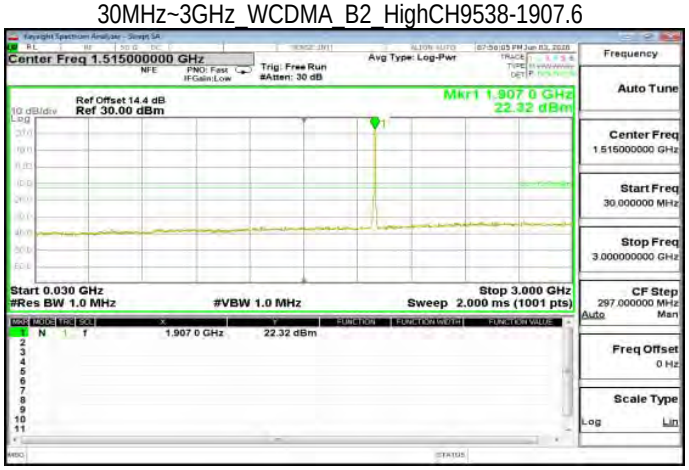
3GHz~10GHz_WCDMA_B2_MidCH9400-1880



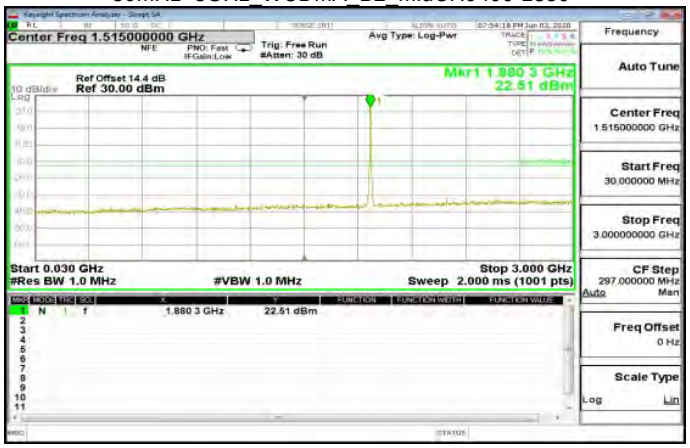
3GHz~10GHz_WCDMA_B2_LowCH9262-1852.4



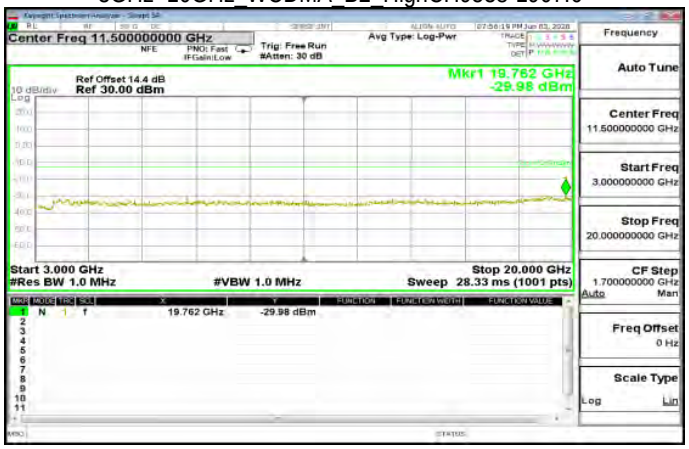
30MHz~3GHz_WCDMA_B2_HighCH9538-1907.6



30MHz~3GHz_WCDMA_B2_MidCH9400-1880



3GHz~10GHz_WCDMA_B2_HighCH9538-1907.6

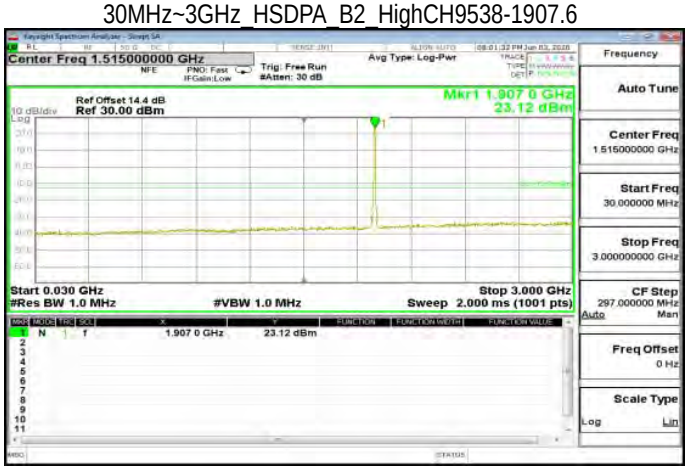


30MHz~3GHz_HSDPA_B2_LowCH9262-1852.4

3GHz~10GHz_HSDPA_B2_MidCH9400-1880

3GHz~10GHz_HSDPA_B2_LowCH9262-1852.4

30MHz~3GHz_HSDPA_B2_HighCH9538-1907.6

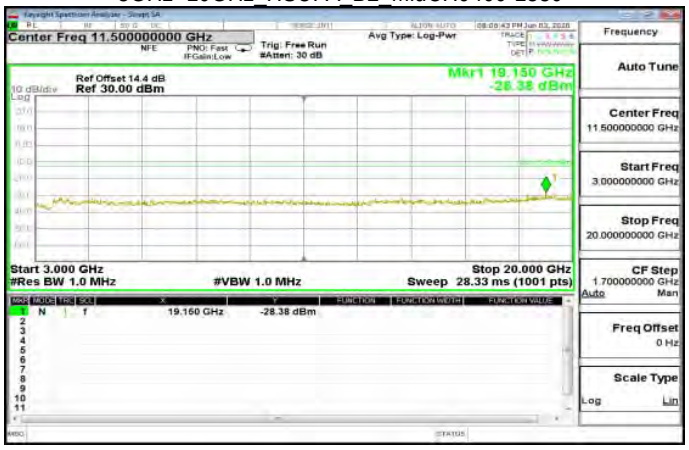


30MHz~3GHz_HSDPA_B2_MidCH9400-1880

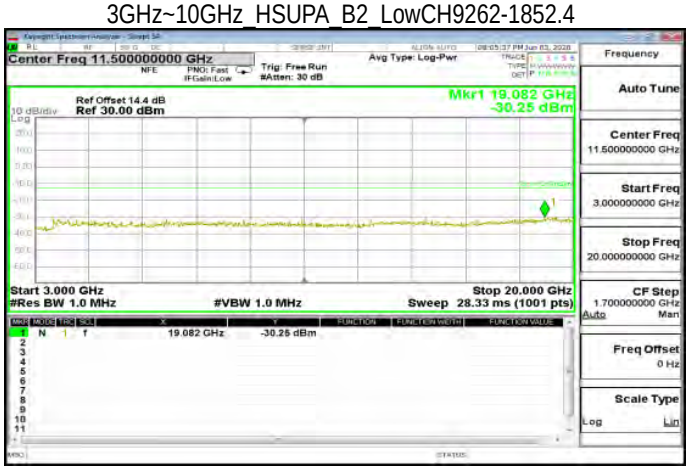
3GHz~10GHz_HSDPA_B2_HighCH9538-1907.6

30MHz~3GHz_HSUPA_B2_LowCH9262-1852.4

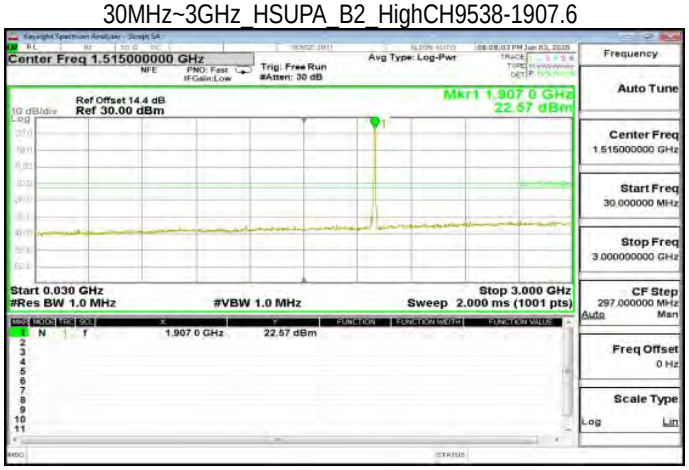
3GHz~10GHz_HSUPA_B2_MidCH9400-1880



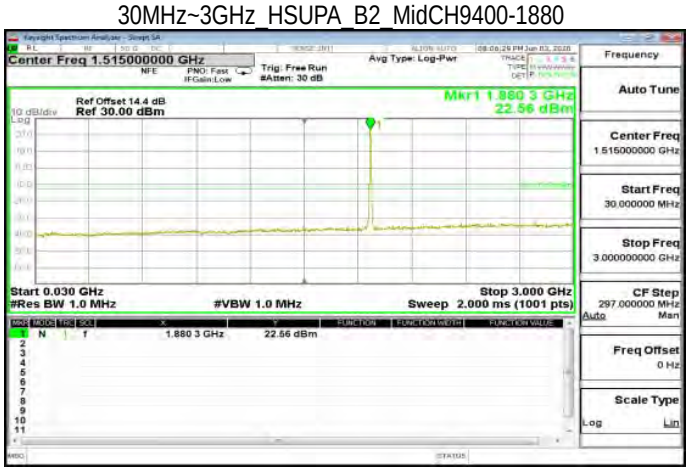
3GHz~10GHz_HSUPA_B2_LowCH9262-1852.4



30MHz~3GHz_HSUPA_B2_HighCH9538-1907.6



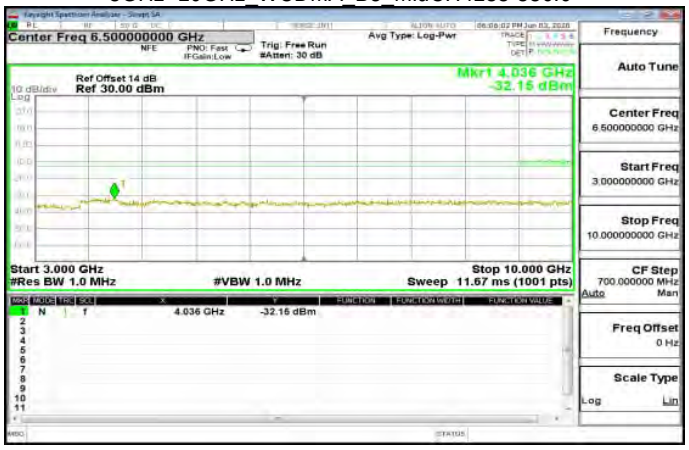
30MHz~3GHz_HSUPA_B2_MidCH9400-1880



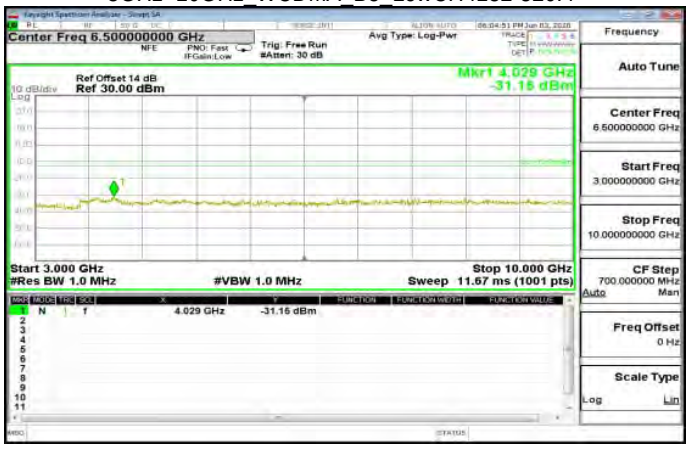
3GHz~10GHz_HSUPA_B2_HighCH9538-1907.6

30MHz~3GHz_WCDMA_B5_LowCH4132-826.4

3GHz~10GHz_WCDMA_B5_MidCH4183-836.6



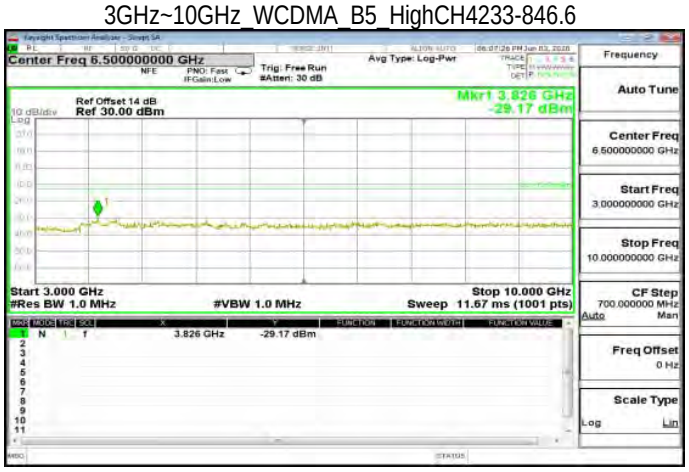
3GHz~10GHz_WCDMA_B5_LowCH4132-826.4



30MHz~3GHz_WCDMA_B5_HighCH4233-846.6

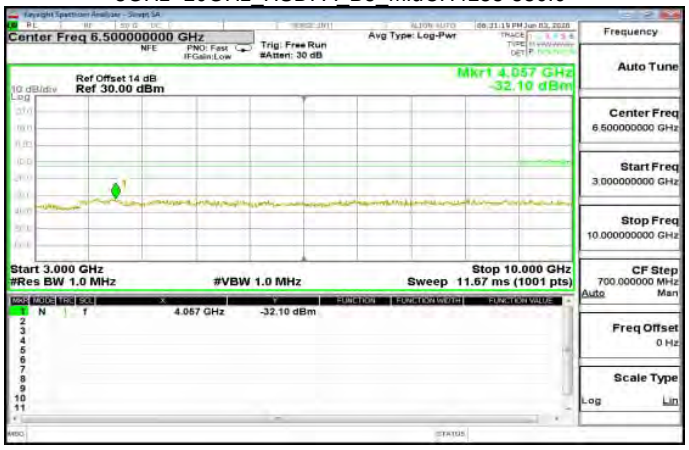
30MHz~3GHz_WCDMA_B5_MidCH4183-836.6

3GHz~10GHz_WCDMA_B5_HighCH4233-846.6

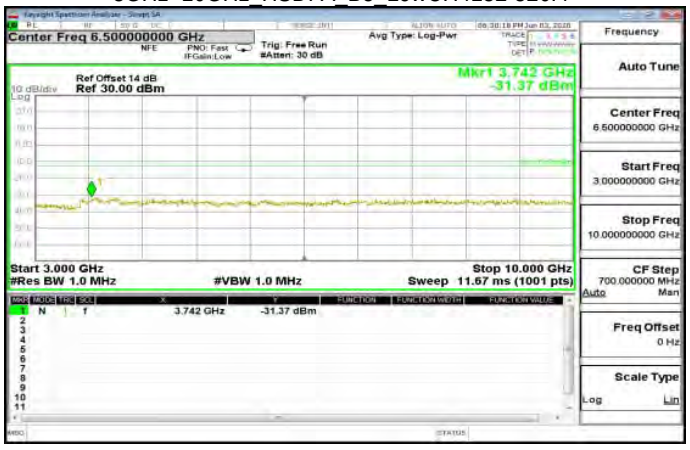


30MHz~3GHz_HSDPA_B5_LowCH4132-826.4

3GHz~10GHz_HSDPA_B5_MidCH4183-836.6

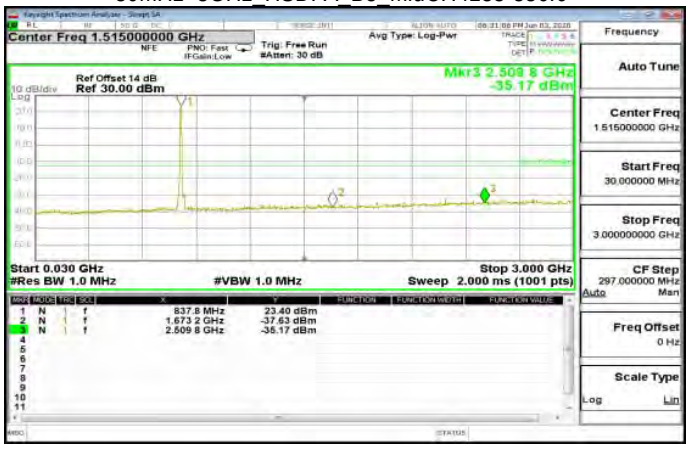


3GHz~10GHz_HSDPA_B5_LowCH4132-826.4



30MHz~3GHz_HSDPA_B5_HighCH4233-846.6

30MHz~3GHz_HSDPA_B5_MidCH4183-836.6



3GHz~10GHz_HSDPA_B5_HighCH4233-846.6