



RF TEST REPORT

Report No.: SET2022-1425

Product Name: CPE

Model No.: RT2

FCC ID: 2AZYA-RT2

Applicant: Senwa Global International, S.A. de C.V.

Address: Carretera Mexico-Toluca No. 5324 PB, Colonia El Yaqui Del.
Cuajimalpa de Morelos, C.P. 05320 Ciudad de Mexico, Mexico

Dates of Testing: 10/11/2022 - 10/31/2022

Issued by: CCIC Southern Testing Co., Ltd.

Lab Location: Electronic Testing Building, No. 43 Shahe Road, Xili Street,
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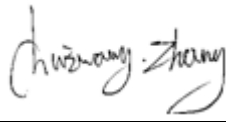
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Test Report

Product: CPE
Trade Name: SENWA
Applicant.....: Senwa Global International, S.A. de C.V.
Applicant Address: Carretera Mexico-Toluca No. 5324 PB, Colonia El Yaqui
Del. Cuajimalpa de Morelos, C.P. 05320 Ciudad de
Mexico, Mexico
Manufacturer: Senwa Global International, S.A. de C.V.
Manufacturer Address: Carretera Mexico-Toluca No. 5324 PB, Colonia El Yaqui
Del. Cuajimalpa de Morelos, C.P. 05320 Ciudad de
Mexico, Mexico
Test Standards: 47 CFR Part 2/22/27
Test Result.....: Pass

Tested by:  2022.10.31
Chuiwang Zhang, Test Engineer

Reviewed by:  2022.10.31
Chris You, Senior Engineer

Approved by:  2022.10.31
Tao Hou, Manager

Table of Contents

1. GENERAL INFORMATION.....	5
1.1. EUT Description	5
1.2. Maximum ERP/EIRP, Frequency Tolerance and Emission Designator.....	6
1.3. Test Standards and Results.....	7
1.4. Test Configuration of Equipment Under Test	9
1.5. Measurement Results Explanation Example.....	10
1.6. Laboratory Facilities	10
1.7. Test Environment Conditions.....	10
2. 47 CFR PART 2 REQUIREMENTS	11
2.1. Conducted Output Power and ERP/EIRP	11
2.2. Peak-to-average power ratio (PAPR)	13
2.3. 99% Occupied Bandwidth and 26dB Emission Bandwidth.....	15
2.4. Conducted Band Edge.....	18
2.5. Conducted Spurious Emission	21
2.6. Radiated Spurious Emission	23
2.7. Frequency Stability	28
3. LIST OF MEASURING EQUIPMENT.....	31
4. UNCERTAINTY OF EVALUATION.....	32
APPENDIX A	33
Conducted Output Power and ERP/EIRP	33
99% Occupied Bandwidth and 26dB Emission Bandwidth.....	47
Frequency Stability	56
Conducted Band Edge.....	58



Change History		
Issue	Date	Reason for change
1.0	2022.10.31	First edition

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	CPE
Model No.	RT2
Hardware Version	RT2_TELCEL_Ver 1.0
Software Version	RT2_TELCEL_Ver 1.0
EUT supports Radios application	LTE Band 4/5/7/66
Frequency Range(Tx)	LTE Band 4: 1710MHz~1755MHz LTE Band 5: 824MHz~849MHz LTE Band 7: 2500MHz~2570MHz LTE Band 66: 1710MHz~1780MHz
Channel Bandwidth	LTE Band 4: 1.4MHz/3MHz/5MHz/10MHz/15MHz/20MHz LTE Band 5: 1.4MHz/3MHz/5MHz/10MHz LTE Band 7: 5MHz/10MHz/15MHz/20MHz LTE Band 66: 1.4MHz/3MHz/5MHz/10MHz/15MHz/20MHz
Modulation Type	QPSK/16QAM/64QAM(downlink only)
Maximum ERP/EIRP	LTE Band 4: 26.59dBm LTE Band 5: 22.90dBm LTE Band 7: 25.98dBm LTE Band 66: 26.59dBm
Antenna Type	External Antenna
Antenna gain	LTE Band 4: 3.52 dBi LTE Band 5: 1.53 dBi LTE Band 7: 3.61 dBi, LTE Band 66: 3.55 dBi
Power supply	DC 12V from Adapter

1.2. Maximum ERP/EIRP, Frequency Tolerance and Emission Designator

Band	Type of Modulation	BW (MHz)	Emission Designator	Frequency Tolerance (ppm)	Maximum EIRP(W)
LTE Band 4	QPSK	1.4	1M85G7D	—	0.428
LTE Band 4	16QAM	1.4	1M85W7D	—	0.379
LTE Band 4	QPSK	3	2M72G7D	—	0.432
LTE Band 4	16QAM	3	2M72W7D	—	0.379
LTE Band 4	QPSK	5	4M49G7D	—	0.453
LTE Band 4	16QAM	5	4M49W7D	—	0.365
LTE Band 4	QPSK	10	8M91G7D	0.003	0.442
LTE Band 4	16QAM	10	8M91W7D	—	0.450
LTE Band 4	QPSK	15	13M4G7D	—	0.447
LTE Band 4	16QAM	15	13M5W7D	—	0.439
LTE Band 4	QPSK	20	17M8G7D	—	0.456
LTE Band 4	16QAM	20	17M8W7D	—	0.447
LTE Band 7	QPSK	5	4M54G7D	—	0.377
LTE Band 7	16QAM	5	4M57W7D	—	0.262
LTE Band 7	QPSK	10	9M00G7D	0.005	0.396
LTE Band 7	16QAM	10	9M02W7D	—	0.321
LTE Band 7	QPSK	15	13M6G7D	—	0.378
LTE Band 7	16QAM	15	13M7W7D	—	0.309
LTE Band 7	QPSK	20	18M0G7D	—	0.393
LTE Band 7	16QAM	20	18M1W7D	—	0.312
LTE Band 66	QPSK	1.4	1M09G7D	—	0.437
LTE Band 66	16QAM	1.4	1M09W7D	—	0.389
LTE Band 66	QPSK	3	2M72G7D	—	0.428
LTE Band 66	16QAM	3	2M72W7D	—	0.367
LTE Band 66	QPSK	5	4M49G7D	—	0.419
LTE Band 66	16QAM	5	4M49W7D	—	0.378
LTE Band 66	QPSK	10	8M91G7D	0.005	0.437
LTE Band 66	16QAM	10	8M90W7D	—	0.406
LTE Band 66	QPSK	15	13M4G7D	—	0.430

LTE Band 66	16QAM	15	13M4W7D	—	0.390
LTE Band 66	QPSK	20	17M8G7D	—	0.456
LTE Band 66	16QAM	20	17M8W7D	—	0.381

Band	Type of Modulation	BW (MHz)	Emission Designator	Frequency Tolerance (ppm)	Maximum ERP(W)
LTE Band 5	QPSK	1.4	1M09G7D	—	0.188
LTE Band 5	16QAM	1.4	1M09W7D	—	0.173
LTE Band 5	QPSK	3	2M72G7D	—	0.180
LTE Band 5	16QAM	3	2M72W7D	—	0.161
LTE Band 5	QPSK	5	4M49G7D	—	0.179
LTE Band 5	16QAM	5	4M49W7D	—	0.145
LTE Band 5	QPSK	10	8M93G7D	0.008	0.195
LTE Band 5	16QAM	10	8M92W7D	—	0.185

1.3. Test Standards and Results

The purpose of the report is to conduct testing according to the following FCC certification standards:

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22	Public Mobile Services
3	47 CFR Part 27	Miscellaneous Wireless Communications Services
4	KDB 971168 D01 Power Meas License Digital Systems v03r01	Measurement Guidance For Certification of Licensed Digital Transmitters
5	KDB 412172 D01 Determining ERP and EIRP v01r01	Guidelines for Determining the Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) of an RF Transmitting Systems
6	ANSI/TIA-603-E-2016	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards
7	ANSI C63.26-2015	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

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

No.	FCC Rule	Description	Limit	Result
1	2.1046	Conducted Output Power	Reporting Only	PASS
2	24.232 (d) 27.50 (d)(5)	Peak to Average Ratio	< 13dB	PASS
3	22.913 (a)(5)	Effective Radiated Power (Band 5)	ERP < 7W	PASS
	27.50 (d)(4)	Equivalent Isotropic Radiated Power (Band 4/66)	EIRP < 1W	PASS
	27.50 (h)(2)	Equivalent Isotropic Radiated Power (Band 7)	EIRP < 2W	PASS
4	2.1049	Occupied Bandwidth	Reporting Only	PASS
5	2.1051 22.917 (a)	Conducted Spurious Emission and Conducted Band Edge (Band 4/5/66)	< 43+10log ₁₀ (P[watt])	PASS
	27.53 (h) 27.53 (m)(4)	Conducted Spurious Emission and Conducted Band Edge (Band 7)	Refer to 27.53(m)(4)	PASS
6	2.1053 22.917 (a)	Radiated Spurious Emission (Band 4/5/66)	< 43+10log ₁₀ (P[Watts])	PASS
	27.53 (h) 27.53 (m)(4)	Radiated Spurious Emission (Band 7)	< 55+10log ₁₀ (P[watt])	PASS
7	2.1055 22.335	Frequency Stability (Band 5)	< ±2.5ppm	PASS
	27.54	Frequency Stability (Band 4/7/66)	Within the Authorized Band	PASS

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

1.4. Test Configuration of Equipment Under Test

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

Test Items	Band	Bandwidth(MHz)						Modulation		RB Configuration			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H
Conducted Output Power and ERP/EIRP	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	5	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓
	7			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	66	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Peak-to-Average Ratio	4						✓		✓	✓		✓	✓	✓	✓
	5				✓				✓	✓		✓	✓	✓	✓
	7						✓		✓	✓		✓	✓	✓	✓
	66						✓		✓	✓		✓	✓	✓	✓
99% OBW and 26dB EBW	4	✓	✓	✓	✓	✓	✓	✓	✓			✓		✓	
	5	✓	✓	✓	✓			✓	✓			✓		✓	
	7			✓	✓	✓	✓	✓	✓			✓		✓	
	66	✓	✓	✓	✓	✓	✓	✓	✓			✓		✓	
Conducted Band Edge	4	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓
	5	✓	✓	✓	✓			✓	✓	✓		✓	✓		✓
	7			✓	✓	✓	✓	✓	✓	✓		✓	✓		✓
	66	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓
Conducted Spurious Emission	4						✓	✓		✓			✓	✓	✓
	5				✓			✓		✓			✓	✓	✓
	7						✓	✓		✓			✓	✓	✓
	66						✓	✓		✓			✓	✓	✓
Frequency Stability	4				✓			✓				✓		✓	
	5				✓			✓				✓		✓	
	7				✓			✓				✓		✓	
	66				✓			✓				✓		✓	
Radiated Spurious Emission	4	Worst case												✓	
	5	Worst case												✓	
	7	Worst case												✓	
	66	Worst case												✓	

Note 1: The mark “✓” means that this configuration is chosen for testing.

Note 2: LTE Band 4/41 has two transmit antennas and reports peak-to-average ratio, occupied bandwidth, conducted band edge, conducted spurious emissions, and frequency stability for only the worst antenna data.

1.5. Measurement Results Explanation Example

For all conduction test items:

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

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

Offset = RF cable loss + Power Splitter + attenuator factor.

Following shows an offset computation example with cable loss 1dB, 3dB Power Splitter, 10dB attenuator.

Example: Offset (dB) = RF cable loss(dB) + Power Splitter(dB) + attenuator factor(dB).
$$= 1 + 3 + 10 = 14 \text{ (dB)}$$

1.6. Laboratory Facilities

FCC-Registration No.: 406086

CCIC Southern Testing Co., Ltd EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Designation Number: CN1283, valid time is until April 19th, 2023.

ISED Registration: 11185A-1

CCIC Southern Testing Co., Ltd. EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 11185A-1 on Aug. 04, 2016, valid time is until Jun. 30th, 2023.

A2LA Code: 5721.01

CCIC-SET is a third party testing organization accredited by A2LA according to ISO/IEC 17025. The accreditation certificate number is 5721.01.

1.7. Test Environment Conditions

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

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

2. 47 CFR Part 2 Requirements

2.1. Conducted Output Power and ERP/EIRP

2.1.1. Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

The EIRP of mobile transmitters must not exceed 1 Watts for LTE Band 4/66.

The ERP of mobile transmitters must not exceed 7 Watts for LTE Band 5.

The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 7.

According to KDB 412172 D01 Determining ERP and EIRP v01r01.

$EIRP = P_T + G_T - L_C$, $ERP = EIRP - 2.15$, where

P_T = transmitter output power in dBm;

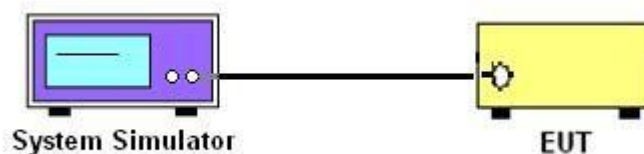
G_T = gain of the transmitting antenna in dBi;

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

2.1.2. Measuring Instruments

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

2.1.3. Test Setup



2.1.4. Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.



2.1.5. Test Results of Conducted Output Power and ERP/EIRP

Please refer to Appendix A for detail

2.2. Peak-to-average power ratio (PAPR)

2.2.1. Requirement

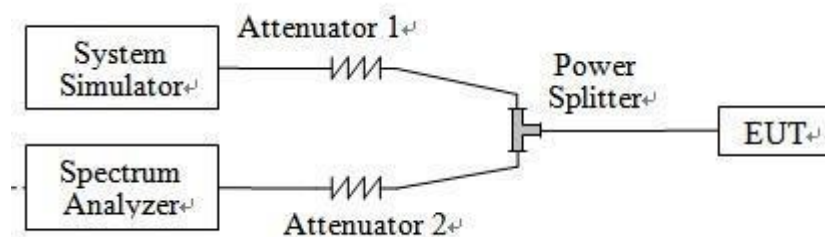
Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth.

In measuring transmissions in this band using an average power technique, the Peak-to-average power ratio (PAPR) of the transmission may not exceed 13 dB.

2.2.2. Measuring Instruments

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

2.2.3. Test Description



2.2.4. Test Procedures

1. The testing follows the of KDB 971168 D01 v03r01 Section 5.7.2 and ANSI C63.26-2015 Section 5.2.3.4.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider, Path loss compensation is then performed on the spectrum analyzer and the system simulator respectively.
3. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
4. Set resolution/measurement bandwidth $\geq$ OBW or specified reference bandwidth.
5. Set the number of counts to a value that stabilizes the measured CCDF curve.
6. Set the EUT working in highest power level, measured and recorded the 0.1% as PAPR level.
7. Repeat step 3~6 at other frequency and modulations.

2.2.5. Test Results of Peak-to-average power ratio (PAPR)

Please refer to Appendix A for detail

2.3. 99% Occupied Bandwidth and 26dB Emission Bandwidth

2.3.1. Requirement

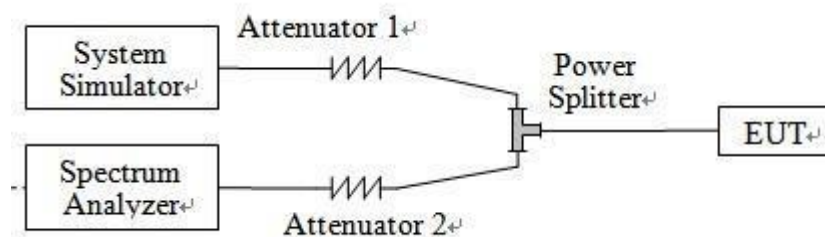
The Occupied Bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

2.3.2. Measuring Instruments

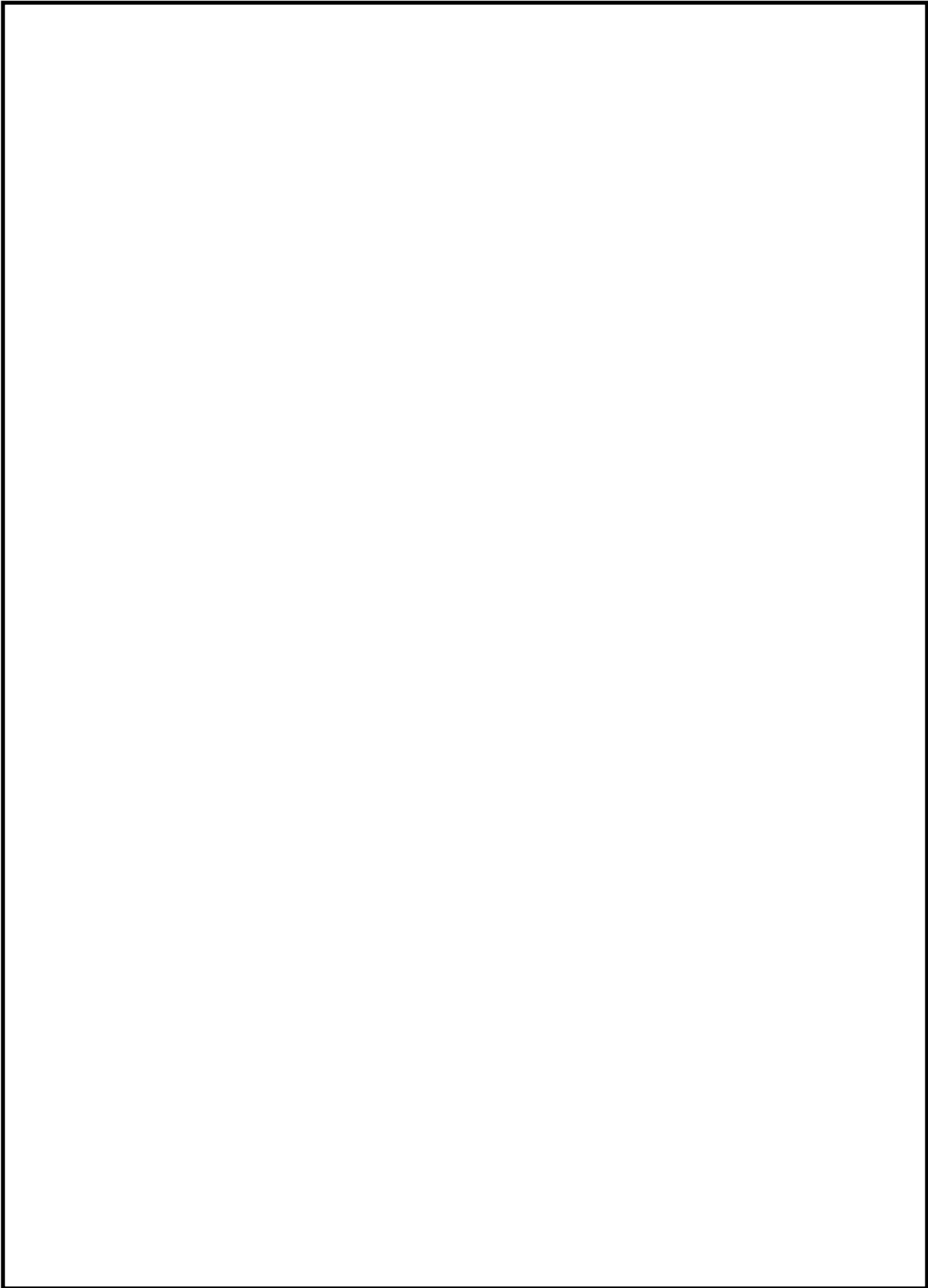
The measuring equipment is listed in the section 3 of this test report.

2.3.3. Test Setup



2.3.4. Test Procedures

1. The testing follows the of KDB 971168 D01 v03r01 Section 4 and ANSI C63.26-2015 Section 5.4.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider, Path loss compensation is then performed on the spectrum analyzer and the system simulator respectively.
3. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency.
4. Set span to be approximately 1.5 to 5 times the OBW.
5. The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW.
6. Set $VBW \geq 3 \times RBW$.
7. Set Detection mode = peak.
8. Set Trace mode = max hold.
9. Allow trace to stabilize.
10. Repeat step 3~9 at other frequency and modulations.



2.3.5. Test Result of 99% Occupied Bandwidth and 26dB Emission Bandwidth

Please refer to Appendix A for detail

2.4. Conducted Band Edge

2.4.1. Requirement

For Band 4/66 [Part 27.53 (h)]:

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.

For Band 5 [Part 22.917(a)]:

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.

In the spectrum below 1 GHz, instrumentation should employ a reference bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy, provided that the measured power is integrated over the full required reference bandwidth (i.e., 100 kHz or 1 percent of emission bandwidth, as specified).

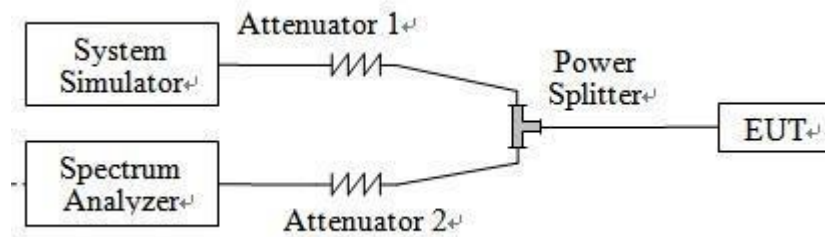
For Band 7 [Part 27.53 (m)(4)]:

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

2.4.2. Measuring Instruments

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

2.4.3. Test Setup



2.4.4. Test Procedures

1. The testing follows the of KDB 971168 D01 v03r01 Section 6 and ANSI C63.26-2015 Section 5.7.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider, Path loss compensation is then performed on the spectrum analyzer and the system simulator respectively.
3. Span was set large enough so as to capture all out of band emissions near the Channel Edge.
4. Use $RBW \geq 1\%$ EBW in the 1 megahertz bands immediately outside and adjacent to the licensee's authorized frequency channel, and use $RBW = 1$ MHz outside 1 MHz of the authorized frequency channel.
5. Set $VBW \geq 3 \times RBW$
6. Set Detector = power averaging (rms).
7. Set the number of points in sweep $\geq 2 \times \text{span} / RBW$.
8. Set sweep trigger to "free run."
9. Set the Sweep time $> (\text{number of points in sweep}) \times (\text{transmitter period})$ (i.e., the transmit on-time + the off-time).
10. Perform a trace average of at least 100 traces.
11. Repeat step 3~10 at other frequency and modulations.



2.4.5. Test Result of Conducted Band Edge

Please refer to Appendix A for detail

2.5. Conducted Spurious Emission

2.5.1. Requirement

For Band 4 & 5 & 66:

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.

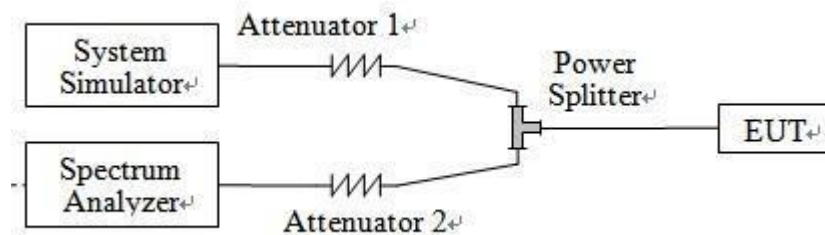
For Band 7:

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $55 + 10 \log (P)$ dB.

2.5.2. Measuring Instruments

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

2.5.3. Test Setup



2.5.4. Test Procedures

1. The testing follows the of KDB 971168 D01 v03r01 Section 6 and ANSI C63.26-2015 Section 5.7.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider, Path loss compensation is then performed on the spectrum analyzer and the system simulator respectively.
3. Set the spectrum analyzer start frequency to 9kHz and stop frequency to the tenth harmonic of the highest fundamental frequency.
4. Set RBW = 1MHz, VBW $\geq 3 \times$ RBW
5. Set Detector = peak.
6. Set Trace mode = max hold.
7. Set Sweep time = auto-couple.
8. Identify and measure the highest spurious emission levels in each frequency range.
9. Compare the results with the corresponding limit in the applicable regulation.
10. Repeat step 3~9 at other frequency and modulations.



2.5.5. Test Result of Conducted Spurious Emission

Please refer to Appendix A for detail

2.6. Radiated Spurious Emission

2.6.1. Requirement

The radiated spurious emission was measured by substitution method according to ANSI/TIA-603-E-2016.

For Band 4 & 5 & 66:

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.

For Band 7:

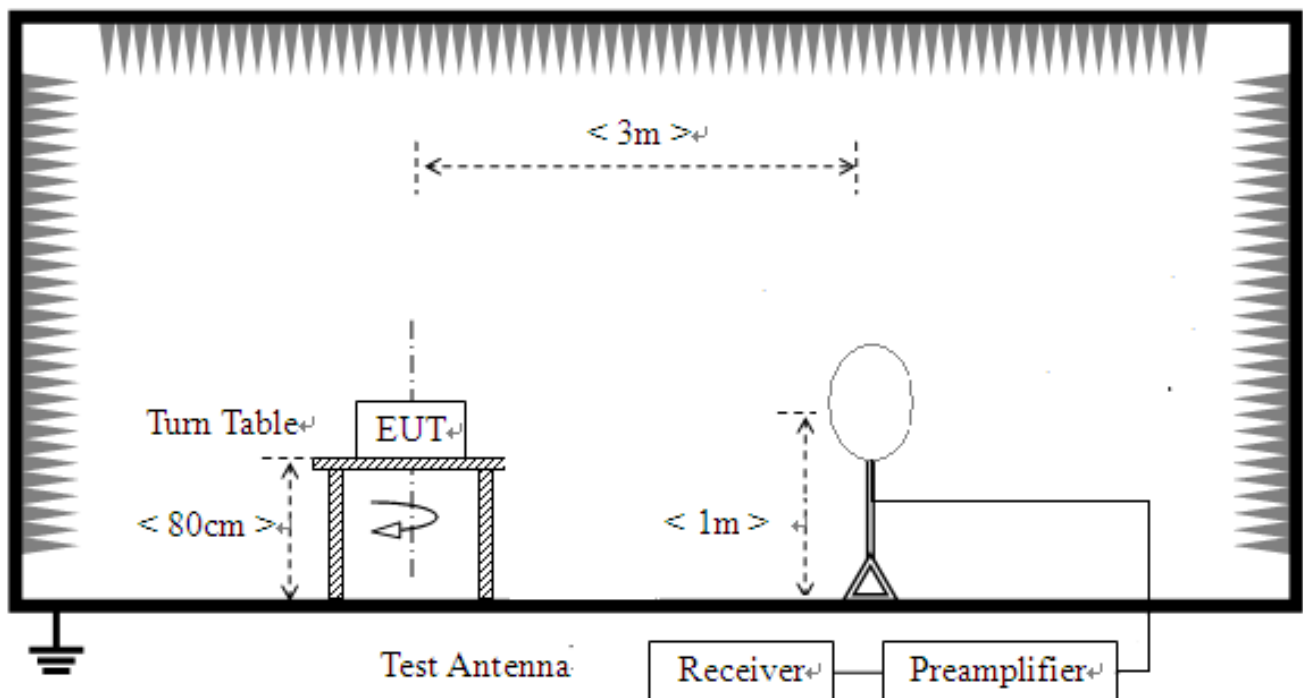
The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $55 + 10 \log (P)$ dB.

2.6.2. Measuring Instruments

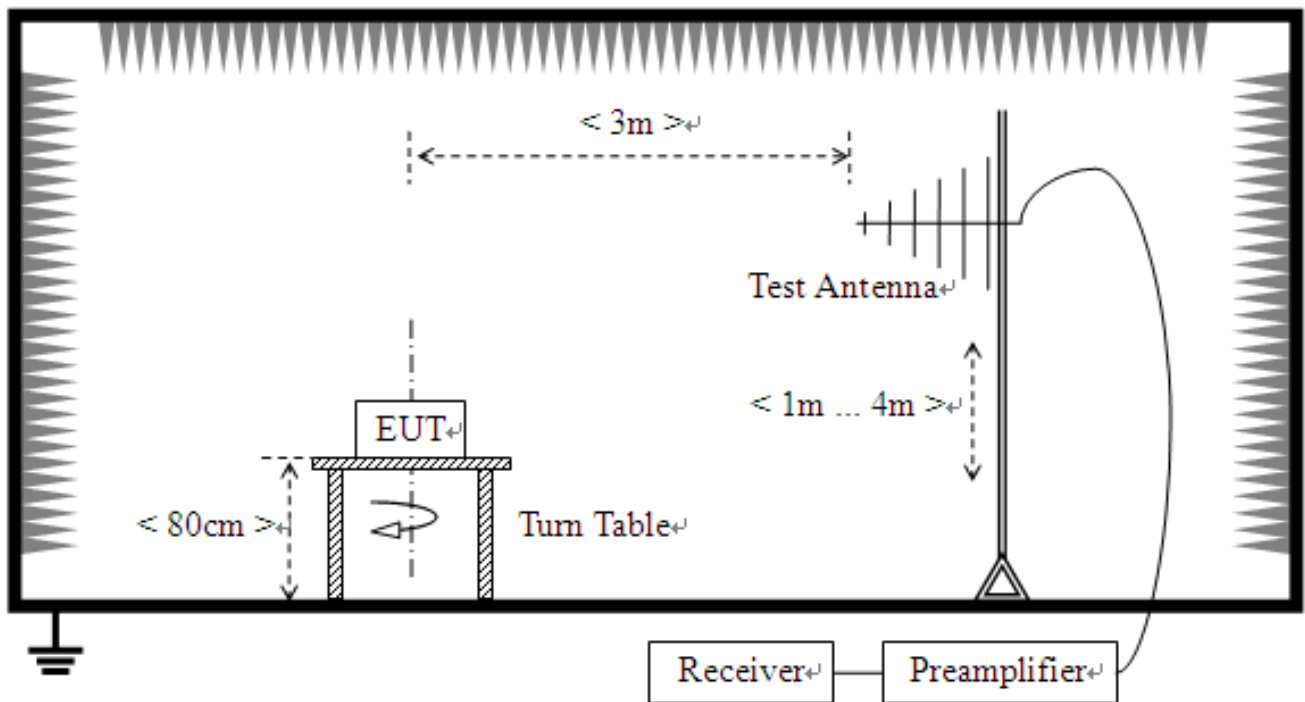
The measuring equipment is listed in the section 3 of this test report.

2.6.3. Test Setup

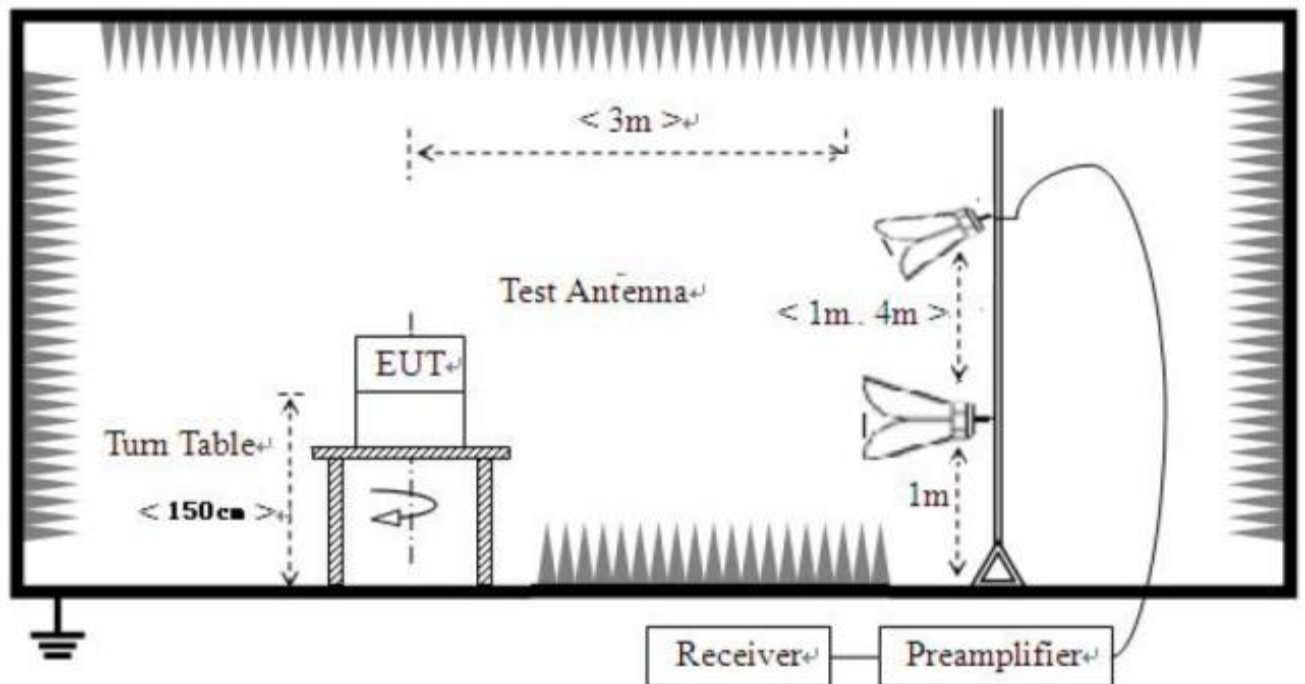
For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



2.6.4. Test Procedures

1. The EUT was placed on a rotatable wooden table with 0.8 meter (for below 1GHz) / 1.5 meters (for above 1GHz) above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
11. All Spurious Emission tests were performed in X, Y, Z axis direction and low, middle, high channel. And only the worst axis test condition was recorded in this test report.
12. The spectrum is measured from 9 kHz to the 10th harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHz. The worst case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
13. The maximum RB configurations of the Radiated Spurious Emissions as RB Size full, RB Offset 0.

2.6.5. Test Result of Radiated Spurious Emission

Note: 1. The emission levels of above 18GHz are lower than the limit 20dB and not show in test report.

Note: 2. Absolute Level = Reading Level + Factor

LTE Band 4 QPSK 20MHz BW Middle Channel							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	68.8	-87.23	-67.87	-13.00	54.87	19.36	Horizontal
2	104.205	-87.04	-67.69	-13.00	54.69	19.35	Horizontal
3	365.62	-84.46	-56.04	-13.00	43.04	28.42	Horizontal
4	1189.3	-53.52	-55.77	-13.00	42.77	-2.25	Horizontal
5	3050.4	-52.82	-45.55	-13.00	32.55	7.27	Horizontal
6	5048.2	-54.32	-39.93	-13.00	26.93	14.39	Horizontal
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	69.285	-87.58	-66.45	-13.00	53.45	21.13	Vertical
2	104.205	-87.80	-63.75	-13.00	50.75	24.05	Vertical
3	365.62	-84.54	-57.60	-13.00	44.60	26.94	Vertical
4	3068.4	-52.51	-45.27	-13.00	32.27	7.24	Vertical
5	5121	-54.12	-39.56	-13.00	26.56	14.56	Vertical
6	7752.1	-53.39	-34.84	-13.00	21.84	18.55	Vertical

LTE Band 5 QPSK 10MHz BW Middle Channel							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	42.125	-94.21	-73.13	-13.00	60.13	21.08	Horizontal
2	69.285	-86.28	-66.92	-13.00	53.92	19.36	Horizontal
3	104.205	-86.94	-67.59	-13.00	54.59	19.35	Horizontal
4	365.62	-83.69	-55.27	-13.00	42.27	28.42	Horizontal
5	949.075	-83.69	-46.25	-13.00	33.25	37.44	Horizontal
6	1874.1	-42.27	-41.72	-13.00	28.72	0.55	Horizontal
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	68.315	-84.77	-63.75	-13.00	50.75	21.02	Vertical
2	90.625	-92.22	-68.84	-13.00	55.84	23.38	Vertical
3	104.205	-86.80	-62.75	-13.00	49.75	24.05	Vertical
4	365.62	-83.18	-56.24	-13.00	43.24	26.94	Vertical
5	1001.2	-54.26	-55.44	-13.00	42.44	-1.18	Vertical
6	1874.5	-44.92	-44.37	-13.00	31.37	0.55	Vertical

LTE Band 7 QPSK 20MHz BW Middle Channel							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	41.64	-93.20	-72.01	-25.00	47.01	21.19	Horizontal
2	104.205	-87.15	-67.80	-25.00	42.80	19.35	Horizontal
3	365.62	-83.37	-54.95	-25.00	29.95	28.42	Horizontal
4	945.195	-87.39	-50.00	-25.00	25.00	37.39	Horizontal
5	5167.4	-54.53	-40.10	-25.00	15.10	14.43	Horizontal
6	7053.47	-53.63	-36.52	-25.00	11.52	17.11	Horizontal
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	68.8	-86.06	-64.98	-25.00	39.98	21.08	Vertical
2	104.205	-86.76	-62.71	-25.00	37.71	24.05	Vertical
3	365.62	-85.70	-58.76	-25.00	33.76	26.94	Vertical
4	1818.9	-47.02	-46.81	-25.00	21.81	0.21	Vertical
5	3007.6	-53.41	-46.06	-25.00	21.06	7.35	Vertical
6	7859.33	-53.15	-34.85	-25.00	9.85	18.30	Vertical

LTE Band 66 QPSK 20MHz BW Middle Channel							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	68.315	-95.80	-76.45	-13.00	63.45	19.35	Horizontal
2	182.775	-100.00	-77.34	-13.00	64.34	22.66	Horizontal
3	319.06	-100.32	-73.22	-13.00	60.22	27.10	Horizontal
4	659.53	-98.99	-64.17	-13.00	51.17	34.82	Horizontal
5	4718.4	-52.62	-39.03	-13.00	26.03	13.59	Horizontal
6	7499.1	-53.54	-34.27	-13.00	21.27	19.27	Horizontal
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	56.19	-90.70	-71.11	-13.00	58.11	19.59	Vertical
2	99.355	-97.89	-73.53	-13.00	60.53	24.36	Vertical
3	649.83	-97.28	-64.32	-13.00	51.32	32.96	Vertical
4	1073.6	-53.82	-55.68	-13.00	42.68	-1.86	Vertical
5	3894.4	-53.23	-44.67	-13.00	31.67	8.56	Vertical
6	7279.73	-53.05	-34.70	-13.00	21.70	18.35	Vertical

2.7. Frequency Stability

2.7.1. Requirement

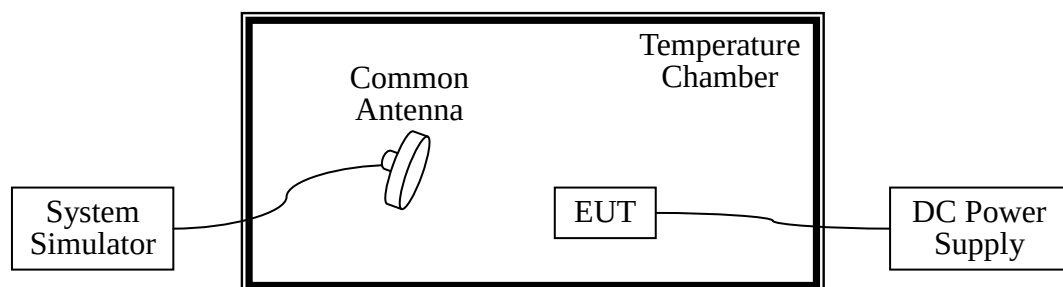
According to FCC requirement, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ ($\pm 2.5\text{ppm}$) of the center frequency. According to FCC section 2.1055, the test conditions are:

- (1) The temperature is varied from -30°C to $+50^{\circ}\text{C}$ at intervals of not more than 10°C .
- (2) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

2.7.2. Measuring Instruments

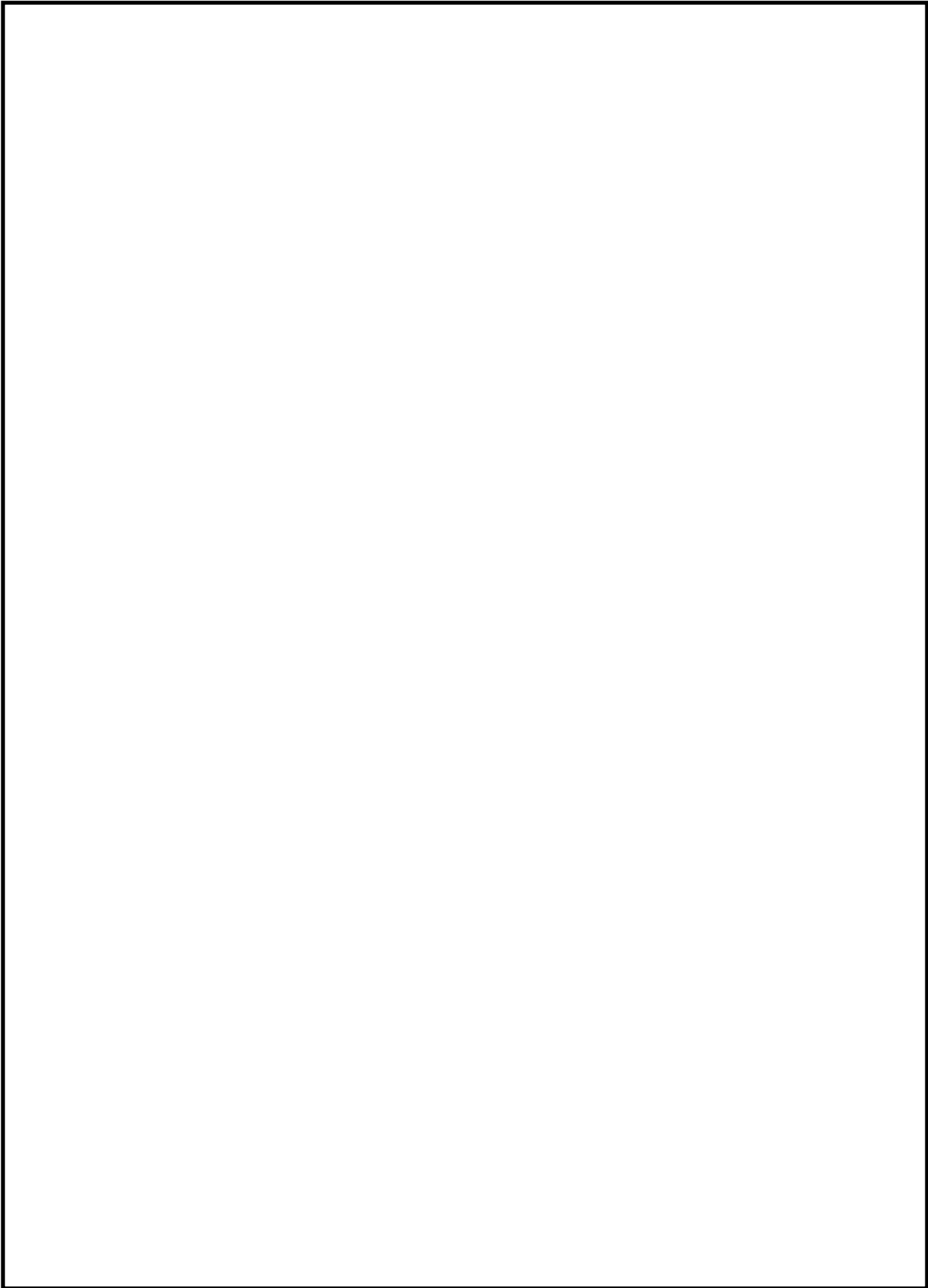
The measuring equipment is listed in the section 3 of this test report.

2.7.3. Test Setup



2.7.4. Test Procedures

1. The EUT was set up in the thermal chamber and connected with the system simulator.
2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in 10°C step up to 50°C . The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.
4. The nominal, highest and lowest extreme voltages were tested, which are specified by the applicant; the normal temperature here used is 20°C .
5. The variation in frequency was measured for the worst case.





2.7.5. Test Result of Frequency Stability

Please refer to Appendix A for detail

3. List of measuring equipment

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	EMI Test Receiver	ROHDE&SCHWARZ	ESW26	A180502935	2022.07.21	2023.07.20
2	5M Anechoic Chamber	Albatross	SAC-5MAC 12.8x6.8x6.4m	A0304210	2019.03.25	2023.03.24
3	Loop Antenna	Schwarz beck	HFH2-Z2	A0304220	2022.05.02	2025.05.01
4	Broadband antenna (30MHz~1GHz)	R&S	HL562	A0304224	2020.06.19	2023.06.18
5	EMI Horn Ant. (1-18G)	ETC	1209	A150402241	2021.01.02	2024.01.01
6	Horn antenna (18GHz~26.5GHz)	AR	AT4510	A0804450	2020.06.19	2023.06.18
7	Amplifier 30M~1GHz	MILMEGA	80RF1000-10004	A140101634	2020.09.22	2023.09.21
8	Amplifier 1G~18GHz	MILMEGA	AS0104R-800/400	A160302517	2021.12.23	2022.12.22
9	Spectrum Analyzer	KEYSIGHT	N9030A	A160702554	2022.03.25	2023.03.24
10	Test Receiver	R&S	ESIB7	A0501375	2022.04.18	2023.04.17
11	Broadband Ant.	2786	ETC	A150402240	2021.09.16	2024.03.03
12	3M Anechoic Chamber	Albatross	SAC-3MAC 9*6*6m	A0412375	2019.03.26	2023.03.25
13	Temperature chamber	TABAI	PS-232	A8708054	2022.08.18	2023.08.17
14	Wideband Radio Communication tester	R&S	CMW500	A130101034	2022.06.23	2023.06.22
15	Wideband Radio Communication tester	R&S	CMW500	A150802214	2022.06.17	2023.06.16
16	Test Receiver	KEYSIGHT	N9038A	A141202036	2022.07.21	2023.07.20
17	LISN	ROHDE&SCHWARZ	ENV216	A140701847	2022.07.21	2023.07.20
18	Cable	MATCHING PAD	W7	/	2022.07.21	2023.07.20

4. Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2013. All the measurement uncertainty value were shown with a coverage $K=2$ to indicate 95% level of confidence . The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Conducted Emission Measurement (150kHz~30MHz)

Measuring Uncertainty for a level of confidence of 95%($U=2U_c(y)$)	2.8dB
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Uncertainty of Radiated Emission Measurement (9kHz~30MHz)

Measuring Uncertainty for a level of confidence of 95%($U=2U_c(y)$)	3.5dB
--	-------

Uncertainty of Radiated Emission Measurement (30MHz~1GHz)

Measuring Uncertainty for a level of confidence of 95%($U=2U_c(y)$)	3.91dB
--	--------

Uncertainty of Radiated Emission Measurement (1GHz~18GHz)

Measuring Uncertainty for a level of confidence of 95%($U=2U_c(y)$)	4.5dB
--	-------

Uncertainty of Radiated Emission Measurement (18GHz~40GHz)

Measuring Uncertainty for a level of confidence of 95%($U=2U_c(y)$)	4.9dB
--	-------

Uncertainty of RF Conducted Measurement (9kHz~40GHz)

Measuring Uncertainty for a level of confidence of 95%($U=2U_c(y)$)	1.2dB
--	-------

APPENDIX A

Conducted Output Power and ERP/EIRP

LTE Band 4 - 1.4MHz Bandwidth								
Modulation	RB Size	RB Offset	Average Power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
			19957	20175	20393			
			1710.7MHz	1732.5MHz	1754.3MHz			
QPSK	1	0	22.69	22.65	22.65	3.52	26.31	30.00
	1	2	22.76	22.63	22.70			
	1	5	22.66	22.60	22.63			
	3	0	22.76	22.75	22.79			
	3	1	22.74	22.74	22.78			
	3	2	22.70	22.69	22.71			
	6	0	21.79	21.76	21.65			
16QAM	1	0	21.98	21.56	21.67	3.52	25.79	30.00
	1	2	21.93	22.09	22.27			
	1	5	21.76	21.70	21.67			
	3	0	21.96	21.61	21.52			
	3	1	21.85	21.84	21.52			
	3	2	21.83	21.58	21.55			
	6	0	20.52	20.56	20.43			
LTE Band 4 - 3MHz Bandwidth								
Modulation	RB Size	RB Offset	Average Power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
			19965	20175	20385			
			1711.5MHz	1732.5MHz	1753.5MHz			
QPSK	1	0	22.83	22.45	22.48	3.52	26.35	30.00
	1	7	22.66	22.57	22.51			
	1	14	22.70	22.61	22.67			
	8	0	21.80	21.65	21.48			
	8	4	21.79	21.76	21.58			
	8	7	21.58	21.82	21.64			
	15	0	21.83	21.86	21.65			
16QAM	1	0	22.14	22.22	21.88	3.52	25.79	30.00
	1	7	21.74	22.27	21.96			
	1	14	21.69	22.25	21.89			
	8	0	20.71	20.74	20.32			
	8	4	20.80	20.42	20.23			
	8	7	20.72	20.49	20.33			
	15	0	20.80	20.59	20.15			

LTE Band 4 - 5MHz Bandwidth								
Modulation	RB Size	RB Offset	Average Power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
			19975	20175	20375			
			1712.5MHz	1732.5MHz	1752.5MHz			
QPSK	1	0	22.56	22.47	22.57	3.52	26.56	30.00
	1	12	22.83	22.53	22.94			
	1	24	22.44	22.46	23.04			
	12	0	21.84	21.70	21.84			
	12	6	21.90	21.69	21.85			
	12	11	21.79	21.68	21.90			
	25	0	21.86	21.73	21.88			
16QAM	1	0	21.18	21.93	21.41	3.52	25.62	30.00
	1	12	21.14	22.10	21.11			
	1	24	20.99	22.01	21.10			
	12	0	20.75	20.65	20.30			
	12	6	20.74	20.54	20.63			
	12	11	20.73	20.65	20.67			
	25	0	20.91	20.64	20.71			
LTE Band 4 - 10MHz Bandwidth								
Modulation	RB Size	RB Offset	Average Power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
			20000	20175	20350			
			1715.0MHz	1732.5MHz	1750.0MHz			
QPSK	1	0	22.68	22.65	22.59	3.52	26.45	30.00
	1	24	22.66	22.90	22.93			
	1	49	22.59	22.90	22.82			
	25	0	21.85	21.71	21.83			
	25	12	21.82	21.69	21.84			
	25	24	21.74	21.82	21.81			
	50	0	21.77	21.85	21.87			
16QAM	1	0	22.31	22.30	21.67	3.52	26.53	30.00
	1	24	22.86	23.01	22.23			
	1	49	22.36	22.12	21.71			
	25	0	20.84	20.67	21.00			
	25	12	20.83	20.67	20.90			
	25	24	20.84	20.80	20.87			
	50	0	20.71	20.66	20.66			

LTE Band 4 - 15MHz Bandwidth								
Modulation	RB Size	RB Offset	Average Power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
			20025	20175	20325			
			1717.5MHz	1732.5MHz	1747.5MHz			
QPSK	1	0	22.65	22.56	22.68	3.52	26.50	30.00
	1	37	22.65	22.63	22.83			
	1	74	22.51	22.82	22.98			
	36	0	21.75	21.62	21.66			
	36	16	21.73	21.61	21.77			
	36	35	21.86	21.80	21.67			
	75	0	21.86	21.71	21.84			
16QAM	1	0	22.07	22.20	22.06	3.52	26.42	30.00
	1	37	22.00	22.90	22.33			
	1	74	22.19	22.28	22.45			
	36	0	20.72	20.37	20.54			
	36	16	20.71	20.36	20.55			
	36	35	20.75	20.57	20.42			
	75	0	20.73	20.48	20.61			
LTE Band 4 - 20MHz Bandwidth								
Modulation	RB Size	RB Offset	Average Power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
			20050	20175	20300			
			1720.0MHz	1732.5MHz	1745.0MHz			
QPSK	1	0	22.61	22.96	22.76	3.52	26.59	30.00
	1	49	23.07	22.79	22.91			
	1	99	22.68	22.89	22.81			
	50	0	21.72	21.66	21.77			
	50	24	21.79	21.65	21.88			
	50	49	21.80	21.77	21.76			
	100	0	21.72	21.59	21.88			
16QAM	1	0	21.92	21.81	22.80	3.52	26.50	30.00
	1	49	22.41	21.78	22.98			
	1	99	22.23	21.80	22.77			
	50	0	20.79	20.44	20.60			
	50	24	20.78	20.44	20.60			
	50	49	20.66	20.58	20.50			
	100	0	20.58	20.58	20.59			

LTE Band 5 - 1.4MHz Bandwidth								
Modulation	RB Size	RB Offset	Average Power (dBm)			Ant. Gain (dBi)	Max. ERP (dBm)	ERP Limit (dBm)
			20407	20525	20643			
			824.7MHz	836.5MHz	848.3MHz			
QPSK	1	0	23.08	23.05	23.36	1.53	22.74	38.45
	1	2	23.10	23.20	23.12			
	1	5	23.01	23.11	22.95			
	3	0	23.20	23.14	23.19			
	3	1	23.27	23.12	23.18			
	3	2	23.17	23.14	23.16			
	6	0	22.21	22.25	22.27			
16QAM	1	0	22.99	22.16	22.30	1.53	22.37	38.45
	1	2	22.96	22.13	22.40			
	1	5	22.74	22.11	22.34			
	3	0	21.81	22.20	22.18			
	3	1	22.01	22.19	22.38			
	3	2	21.80	22.23	22.23			
	6	0	21.23	20.73	21.09			
LTE Band 5 - 3MHz Bandwidth								
Modulation	RB Size	RB Offset	Average Power (dBm)			Ant. Gain (dBi)	Max. ERP (dBm)	ERP Limit (dBm)
			20415	20525	20635			
			825.5MHz	836.5MHz	847.5MHz			
QPSK	1	0	23.09	23.10	23.01	1.53	22.55	38.45
	1	7	22.94	23.17	23.05			
	1	14	23.06	23.16	22.87			
	8	0	22.30	22.18	22.09			
	8	4	22.28	22.18	22.09			
	8	7	22.03	22.23	22.18			
	15	0	22.14	22.19	22.12			
16QAM	1	0	22.53	22.14	22.60	1.53	22.07	38.45
	1	7	22.44	22.31	22.69			
	1	14	22.39	22.14	22.66			
	8	0	21.17	21.32	21.40			
	8	4	21.16	21.32	21.50			
	8	7	20.91	21.28	21.63			
	15	0	21.05	21.36	20.92			

LTE Band 5 - 5MHz Bandwidth								
Modulation	RB Size	RB Offset	Average Power (dBm)			Ant. Gain (dBi)	Max. ERP (dBm)	ERP Limit (dBm)
			20425	20525	20625			
			826.5MHz	836.5MHz	846.5MHz			
QPSK	1	0	23.16	22.86	22.91	1.53	22.54	38.45
	1	12	23.11	23.15	22.96			
	1	24	22.88	23.02	22.90			
	12	0	22.20	22.19	22.06			
	12	6	22.18	22.17	22.06			
	12	11	22.08	22.15	22.18			
	25	0	22.06	22.19	22.07			
16QAM	1	0	22.24	21.35	21.64	1.53	21.62	38.45
	1	12	22.16	21.88	21.84			
	1	24	22.06	21.76	21.45			
	12	0	21.16	21.01	21.01			
	12	6	21.15	21.01	20.91			
	12	11	21.06	21.01	20.95			
	25	0	21.10	21.16	21.15			
LTE Band 5 - 10MHz Bandwidth								
Modulation	RB Size	RB Offset	Average Power (dBm)			Ant. Gain (dBi)	Max. ERP (dBm)	ERP Limit (dBm)
			20450	20525	20600			
			829.0MHz	836.5MHz	844.0MHz			
QPSK	1	0	23.07	22.93	22.86	1.53	22.90	38.45
	1	24	23.38	23.52	22.99			
	1	49	23.12	23.02	23.07			
	25	0	22.03	22.21	22.21			
	25	12	22.01	22.20	22.21			
	25	24	22.13	22.17	22.01			
	50	0	22.06	22.12	22.22			
16QAM	1	0	22.55	22.02	22.62	1.53	22.68	38.45
	1	24	23.30	22.64	22.99			
	1	49	22.73	22.07	22.65			
	25	0	21.29	21.24	21.25			
	25	12	21.18	21.23	21.25			
	25	24	21.29	21.22	21.06			
	50	0	21.24	21.21	21.09			

LTE Band 7 - 5MHz Bandwidth								
Modulation	RB Size	RB Offset	Average Power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
			20775	21100	21425			
			2502.5MHz	2535.0MHz	2567.5MHz			
QPSK	1	0	22.07	21.26	21.53	3.61	25.76	33.00
	1	12	22.15	21.48	21.66			
	1	24	21.68	21.31	21.64			
	12	0	20.80	20.47	20.38			
	12	6	20.90	20.46	20.38			
	12	11	20.75	20.33	20.44			
	25	0	20.85	20.44	20.48			
16QAM	1	0	20.35	19.90	20.57	3.61	24.18	33.00
	1	12	20.14	20.04	20.50			
	1	24	19.23	19.62	20.42			
	12	0	19.34	19.19	19.48			
	12	6	19.32	19.19	19.29			
	12	11	19.23	19.23	19.21			
	25	0	19.48	19.31	19.30			
LTE Band 7 - 10MHz Bandwidth								
Modulation	RB Size	RB Offset	Average Power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
			20800	21100	21400			
			2505.0MHz	2535.0MHz	2565.0MHz			
QPSK	1	0	22.04	21.68	21.02	3.61	25.98	33.00
	1	24	22.37	21.54	21.81			
	1	49	21.57	21.52	21.77			
	25	0	21.02	20.47	20.43			
	25	12	20.98	20.47	20.43			
	25	24	20.91	20.49	20.52			
	50	0	21.05	20.47	20.45			
16QAM	1	0	20.87	21.16	19.74	3.61	25.07	33.00
	1	24	21.01	21.46	21.38			
	1	49	20.37	20.90	20.41			
	25	0	20.08	19.22	19.41			
	25	12	19.92	19.21	19.42			
	25	24	19.76	19.42	19.79			
	50	0	19.67	19.30	19.32			

LTE Band 7 - 15MHz Bandwidth								
Modulation	RB Size	RB Offset	Average Power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
			20825	21100	21375			
			2507.5MHz	2535.0MHz	2562.5MHz			
QPSK	1	0	21.54	21.63	21.14	3.61	25.77	33.00
	1	37	21.82	21.47	22.16			
	1	74	21.41	21.53	21.96			
	36	0	20.94	20.52	20.53			
	36	16	20.91	20.50	20.64			
	36	35	20.73	20.50	20.63			
	75	0	20.83	20.51	20.40			
16QAM	1	0	20.87	21.29	19.94	3.61	24.90	33.00
	1	37	21.29	21.25	21.05			
	1	74	20.73	20.87	20.66			
	36	0	19.82	19.33	19.51			
	36	16	19.55	19.33	19.64			
	36	35	19.43	19.40	19.63			
	75	0	19.38	19.20	19.59			
LTE Band 7 - 20MHz Bandwidth								
Modulation	RB Size	RB Offset	Average Power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
			20850	21100	21350			
			2510.0MHz	2535.0MHz	2560.0MHz			
QPSK	1	0	21.92	21.84	21.10	3.61	25.94	33.00
	1	49	21.85	22.33	21.90			
	1	99	21.54	21.71	21.47			
	50	0	20.82	20.38	20.64			
	50	24	20.93	20.37	20.64			
	50	49	20.76	20.53	20.54			
	100	0	20.82	20.53	20.44			
16QAM	1	0	20.51	20.74	20.40	3.61	24.94	33.00
	1	49	21.12	20.80	21.33			
	1	99	20.54	20.20	20.77			
	50	0	19.76	19.36	19.53			
	50	24	19.74	19.21	19.42			
	50	49	19.63	19.30	19.52			
	100	0	19.59	19.19	19.42			

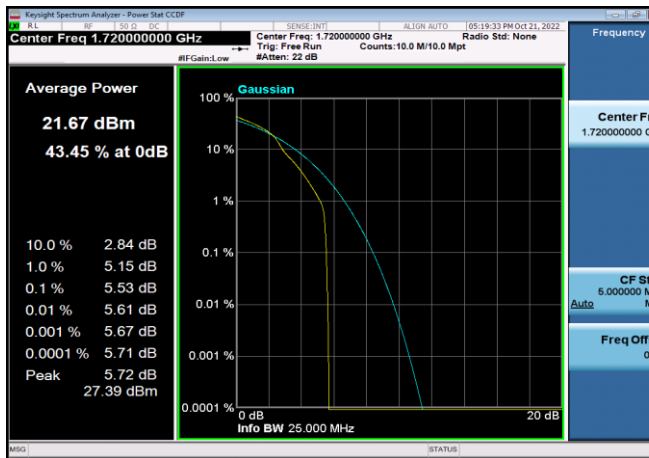
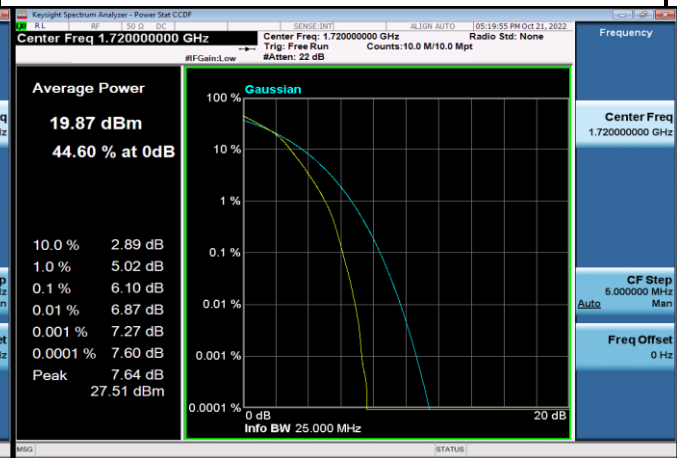
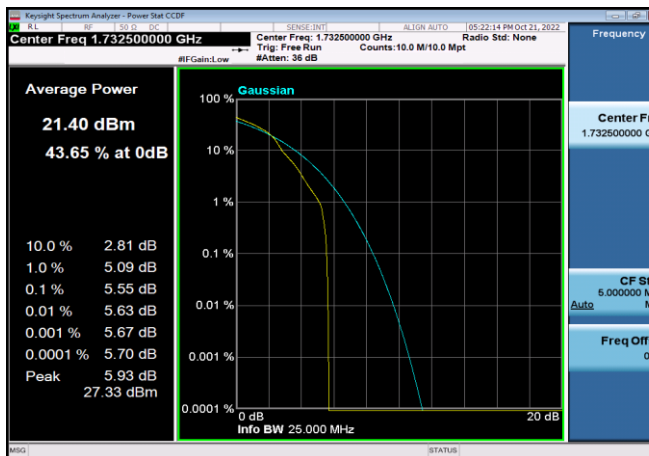
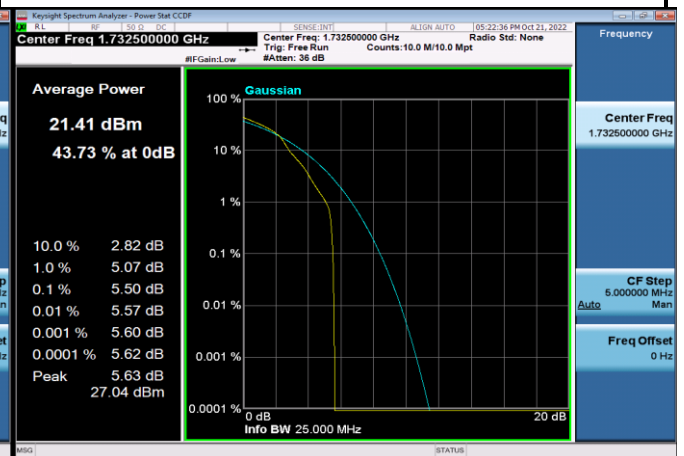
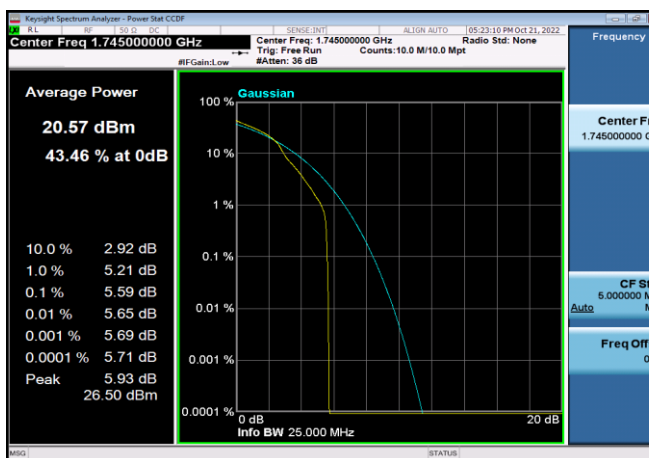
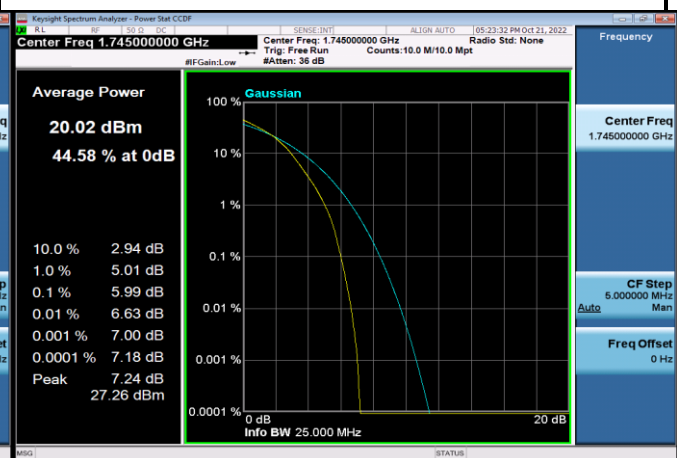
LTE Band 66 - 1.4MHz Bandwidth								
Modulation	RB Size	RB Offset	Average Power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
			131979	132322	132665			
			1710.7MHz	1745.0MHz	1779.3MHz			
QPSK	1	0	22.55	22.56	22.65	3.55	26.40	30.00
	1	2	22.85	22.40	22.62			
	1	5	22.70	22.61	22.82			
	3	0	22.77	22.54	22.75			
	3	1	22.60	22.71	22.76			
	3	2	22.65	22.54	22.78			
	6	0	21.68	22.60	21.64			
16QAM	1	0	21.72	21.47	21.86	3.55	25.90	30.00
	1	2	22.27	21.33	22.35			
	1	5	21.74	21.38	22.27			
	3	0	21.60	21.85	21.70			
	3	1	21.55	21.72	21.70			
	3	2	21.64	21.91	21.49			
	6	0	20.72	21.19	20.67			
LTE Band 66 - 3MHz Bandwidth								
Modulation	RB Size	RB Offset	Average Power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	IRP Limit (dBm)
			131987	132322	132657			
			1711.5MHz	1745.0MHz	1778.5MHz			
QPSK	1	0	22.76	22.65	22.64	3.55	26.31	30.00
	1	7	22.59	22.44	22.49			
	1	14	22.57	22.59	22.58			
	8	0	21.69	21.59	21.62			
	8	4	21.69	21.61	21.72			
	8	7	21.60	21.48	21.69			
	15	0	21.64	21.57	21.75			
16QAM	1	0	21.54	21.98	21.96	3.55	25.65	30.00
	1	7	21.67	22.10	21.99			
	1	14	21.59	22.02	21.93			
	8	0	20.54	20.76	20.55			
	8	4	20.54	20.80	20.65			
	8	7	20.45	20.94	20.62			
	15	0	20.31	20.59	20.72			

LTE Band 66 - 5MHz Bandwidth								
Modulation	RB Size	RB Offset	Average Power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
			131997	132322	132647			
			1712.5MHz	1745.0MHz	1777.5MHz			
QPSK	1	0	22.64	22.67	22.65	3.55	26.22	30.00
	1	12	22.47	22.60	22.62			
	1	24	22.48	22.41	22.50			
	12	0	21.51	21.54	21.70			
	12	6	21.60	21.55	21.82			
	12	11	21.59	21.54	21.64			
	25	0	21.58	21.66	21.71			
16QAM	1	0	21.28	21.01	21.84	3.55	25.77	30.00
	1	12	21.36	21.17	22.09			
	1	24	21.24	20.70	22.22			
	12	0	20.60	20.51	20.70			
	12	6	20.59	20.62	20.59			
	12	11	20.57	20.60	20.63			
	25	0	20.73	20.67	20.66			
LTE Band 4 - 10MHz Bandwidth								
Modulation	RB Size	RB Offset	Average Power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
			132022	132322	132622			
			1715.0MHz	1745.0MHz	1775.0MHz			
QPSK	1	0	22.68	22.66	22.80	3.55	26.40	30.00
	1	24	22.70	22.71	22.51			
	1	49	22.55	22.58	22.85			
	25	0	21.62	21.59	21.84			
	25	12	21.61	21.61	21.73			
	25	24	21.52	21.65	21.65			
	50	0	21.67	21.55	21.68			
16QAM	1	0	22.20	22.20	22.26	3.55	26.09	30.00
	1	24	22.16	22.07	22.54			
	1	49	22.13	22.10	22.35			
	25	0	20.65	20.73	20.68			
	25	12	20.63	20.51	20.79			
	25	24	20.57	20.56	20.57			
	50	0	20.74	20.69	20.73			

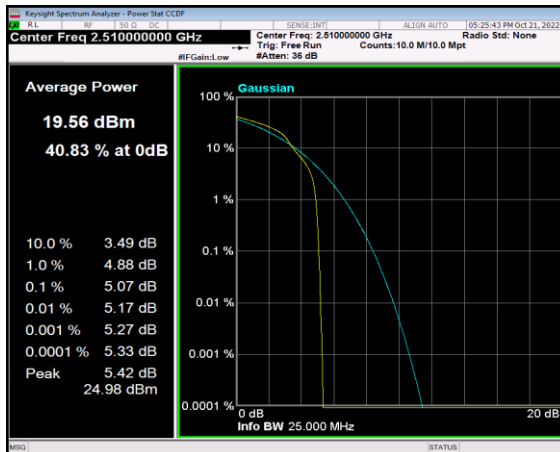
LTE Band 66 - 15MHz Bandwidth								
Modulation	RB Size	RB Offset	Average Power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
			132047	132322	132597			
			1717.5MHz	1745.0MHz	1772.5MHz			
QPSK	1	0	22.56	22.78	22.63	3.55	26.33	30.00
	1	37	22.72	22.58	22.75			
	1	74	22.50	22.61	22.59			
	36	0	22.04	22.28	22.07			
	36	16	22.00	22.28	22.11			
	36	35	21.92	22.15	22.08			
	75	0	21.50	21.73	21.72			
16QAM	1	0	22.03	22.21	22.14	3.55	25.91	30.00
	1	37	22.08	22.03	22.35			
	1	74	22.15	22.09	22.36			
	36	0	22.02	22.28	22.14			
	36	16	22.10	22.20	22.09			
	36	35	21.97	22.17	22.09			
	75	0	20.49	20.71	20.65			
LTE Band 66 - 20MHz Bandwidth								
Modulation	RB Size	RB Offset	Average Power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
			132072	132322	132572			
			1720.0MHz	1745.0MHz	1770.0MHz			
QPSK	1	0	22.46	22.80	22.79	3.55	26.59	30.00
	1	49	22.76	22.88	23.04			
	1	99	22.49	22.53	22.68			
	50	0	21.52	21.76	21.82			
	50	24	21.52	21.78	21.80			
	50	49	21.41	21.56	21.62			
	100	0	21.48	21.80	21.78			
16QAM	1	0	21.84	22.03	21.78	3.55	25.81	30.00
	1	49	22.26	22.12	21.88			
	1	99	21.72	22.07	21.82			
	50	0	20.48	20.73	20.74			
	50	24	20.56	20.73	20.72			
	50	49	20.41	20.62	20.69			
	100	0	20.57	20.77	20.72			

Peak To Average Ratio

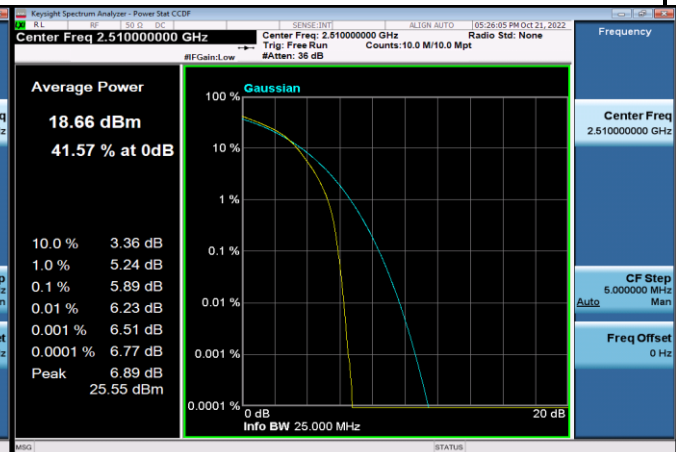
PeakToAveragePowerRatio NormalTC_NormalVol							
Band	Range	BandWidth	RbMode	Modulation	PAPR (dBm)	Limit (dBm)	Result
FDD04	LowRange	20	OneRB_high	Q16	5.53	13.00	Pass
FDD04	LowRange	20	fullRB	Q16	6.10	13.00	Pass
FDD04	MidRange	20	OneRB_high	Q16	5.55	13.00	Pass
FDD04	MidRange	20	fullRB	Q16	5.50	13.00	Pass
FDD04	HighRange	20	OneRB_high	Q16	5.59	13.00	Pass
FDD04	HighRange	20	fullRB	Q16	5.99	13.00	Pass
FDD07	LowRange	20	OneRB_high	Q16	5.07	13.00	Pass
FDD07	LowRange	20	fullRB	Q16	5.89	13.00	Pass
FDD07	MidRange	20	OneRB_high	Q16	5.48	13.00	Pass
FDD07	MidRange	20	fullRB	Q16	7.29	13.00	Pass
FDD07	HighRange	20	OneRB_high	Q16	7.01	13.00	Pass
FDD07	HighRange	20	fullRB	Q16	6.49	13.00	Pass
FDD66	LowRange	20	OneRB_high	Q16	5.54	13.00	Pass
FDD66	LowRange	20	fullRB	Q16	6.11	13.00	Pass
FDD66	MidRange	20	OneRB_high	Q16	5.55	13.00	Pass
FDD66	MidRange	20	fullRB	Q16	5.56	13.00	Pass
FDD66	HighRange	20	OneRB_high	Q16	5.64	13.00	Pass
FDD66	HighRange	20	fullRB	Q16	6.15	13.00	Pass

FDD04_LowRange_20MHz_1720_OneRB
_high_Q16

FDD04_LowRange_20MHz_1720_fullRB
_Q16

FDD04_MidRange_20MHz_1732.5_OneRB
_high_Q16

FDD04_MidRange_20MHz_1732.5_fullRB
_Q16

FDD04_HighRange_20MHz_1745_OneRB
_high_Q16

FDD04_HighRange_20MHz_1745_fullRB
_Q16


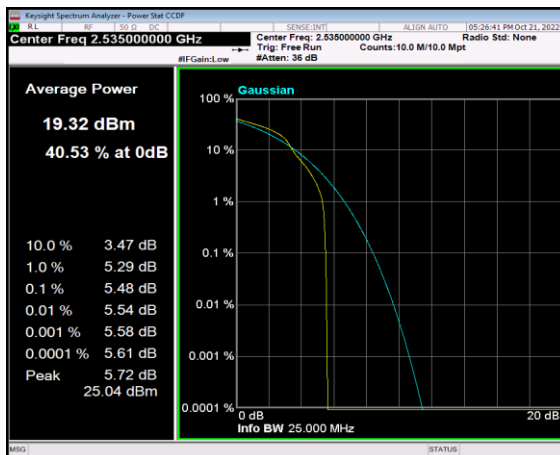
FDD07_LowRange_20MHz_2510_OneRB
_high_Q16



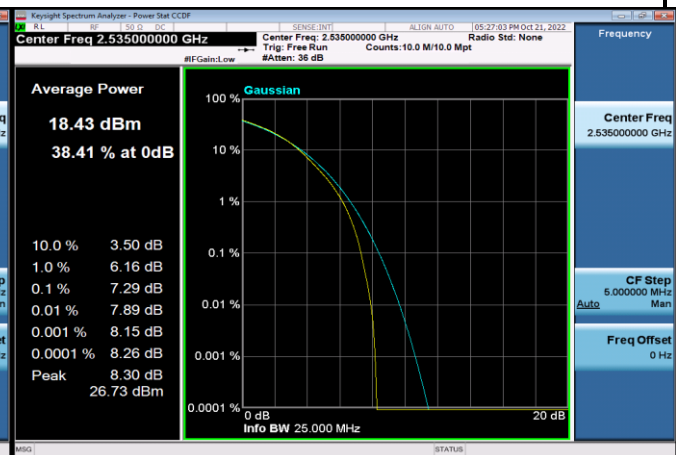
FDD07_LowRange_20MHz_2510_fullRB
_Q16



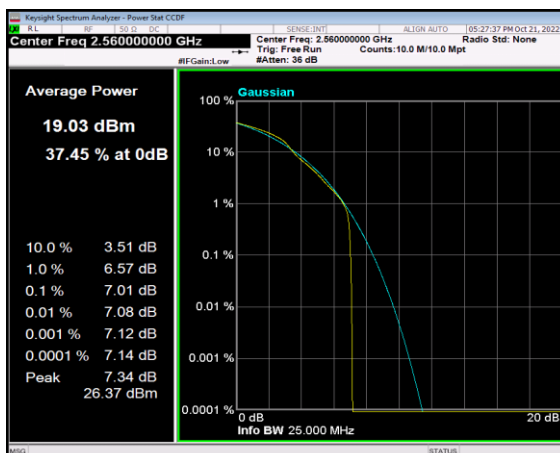
FDD07_MidRange_20MHz_2535_OneRB
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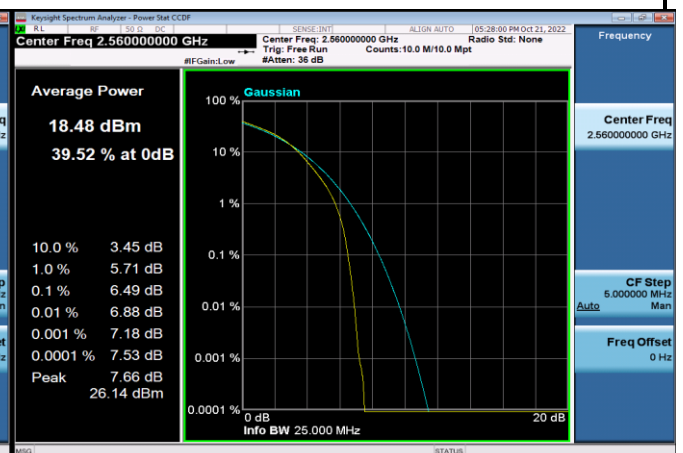
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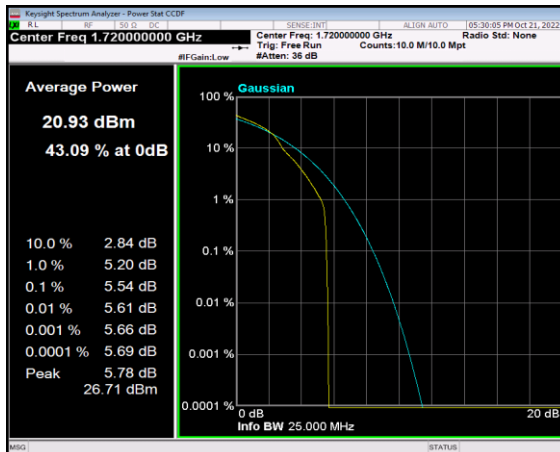
FDD07_HighRange_20MHz_2560_OneRB
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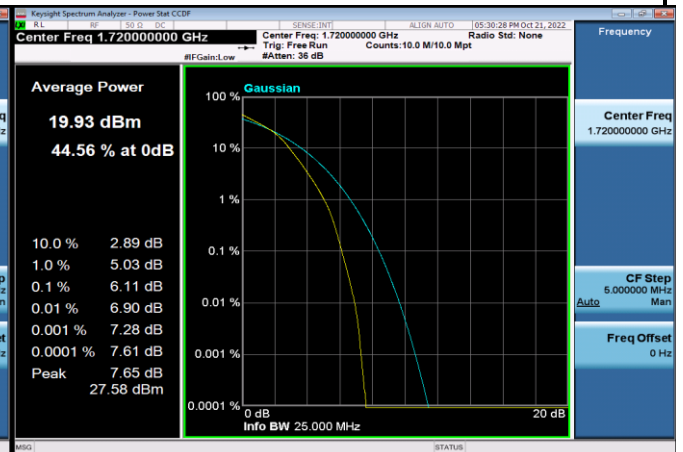
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_Q16



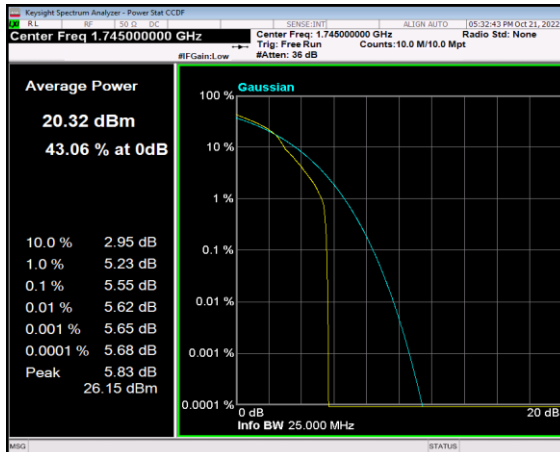
FDD66_LowRange_20MHz_1720_OneRB
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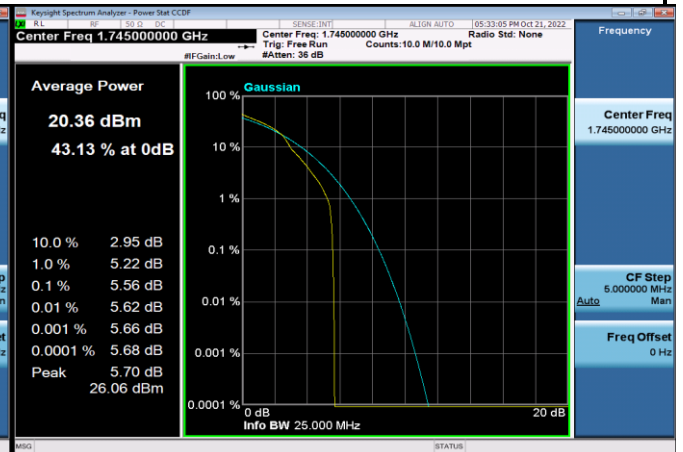
FDD66_LowRange_20MHz_1720_fullRB
_Q16



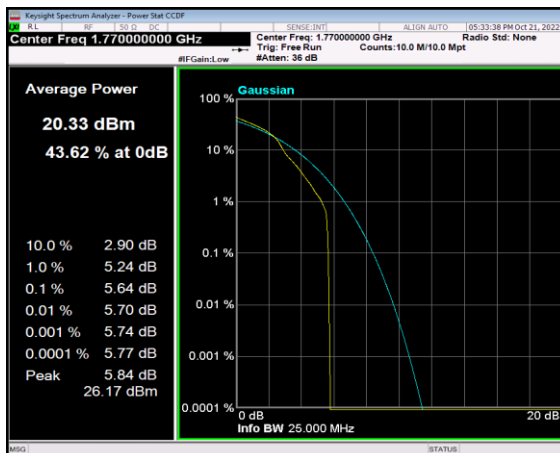
FDD66_MidRange_20MHz_1745_OneRB
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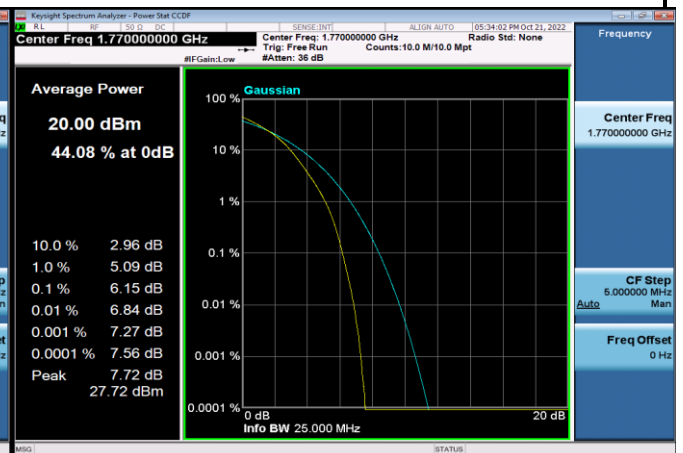
FDD66_MidRange_20MHz_1745_fullRB
_Q16



FDD66_HighRange_20MHz_1770_OneRB
_high_Q16



FDD66_HighRange_20MHz_1770_fullRB
_Q16



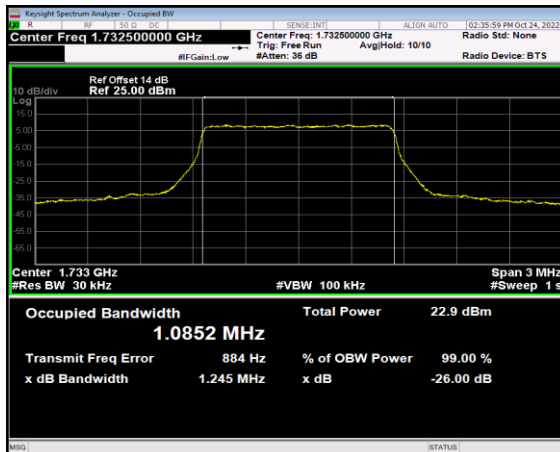
99% Occupied Bandwidth and 26dB Emission Bandwidth

Occupied Bandwidth NormalTC_NormalVol						
Band	Range	BandWidth	Frequency (MHz)	Modulation	OBW(99%) (MHz)	26dB EBW (MHz)
FDD04	MidRange	1.4	1732.5	QPSK	1.0852	1.25
FDD04	MidRange	1.4	1732.5	16QAM	1.0850	1.26
FDD04	MidRange	3	1732.5	QPSK	2.7200	2.96
FDD04	MidRange	3	1732.5	16QAM	2.7194	2.96
FDD04	MidRange	5	1732.5	QPSK	4.4901	4.85
FDD04	MidRange	5	1732.5	16QAM	4.4896	4.81
FDD04	MidRange	10	1732.5	QPSK	8.9117	9.36
FDD04	MidRange	10	1732.5	16QAM	8.9063	9.35
FDD04	MidRange	15	1732.5	QPSK	13.414	14.23
FDD04	MidRange	15	1732.5	16QAM	13.415	14.22
FDD04	MidRange	20	1732.5	QPSK	17.834	18.72
FDD04	MidRange	20	1732.5	16QAM	17.832	18.73
FDD05	MidRange	1.4	836.5	QPSK	1.0863	1.25
FDD05	MidRange	1.4	836.5	16QAM	1.0856	1.26
FDD05	MidRange	3	836.5	QPSK	2.7202	2.97
FDD05	MidRange	3	836.5	16QAM	2.7207	2.96
FDD05	MidRange	5	836.5	QPSK	4.4919	4.85
FDD05	MidRange	5	836.5	16QAM	4.4893	4.82
FDD05	MidRange	10	836.5	QPSK	8.9268	9.42
FDD05	MidRange	10	836.5	16QAM	8.9201	9.42
FDD07	MidRange	5	2535	QPSK	4.5437	9.31
FDD07	MidRange	5	2535	Q16	4.5716	9.9
FDD07	MidRange	10	2535	QPSK	9.0010	17.44
FDD07	MidRange	10	2535	Q16	9.0230	19.43
FDD07	MidRange	15	2535	QPSK	13.620	28.13
FDD07	MidRange	15	2535	Q16	13.701	29.21
FDD07	MidRange	20	2535	QPSK	18.023	32.01
FDD07	MidRange	20	2535	Q16	18.081	36.3
FDD066	MidRange	1.4	1745	QPSK	1.0855	1.25
FDD066	MidRange	1.4	1745	16QAM	1.0854	1.26

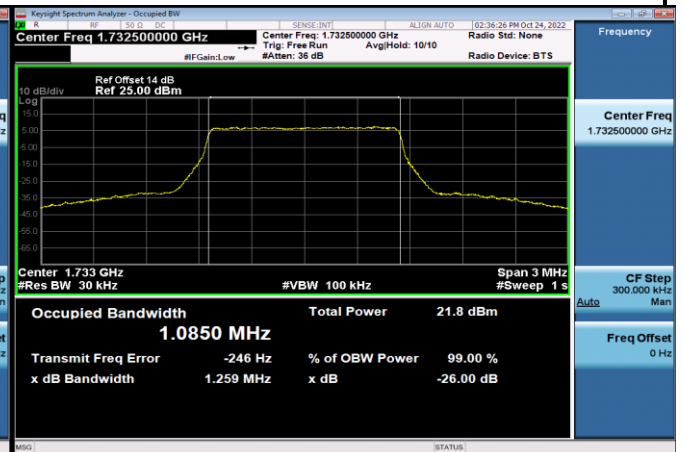


FDD066	MidRange	3	1745	QPSK	2.7188	2.97
FDD066	MidRange	3	1745	16QAM	2.7191	2.96
FDD066	MidRange	5	1745	QPSK	4.4922	4.83
FDD066	MidRange	5	1745	16QAM	4.4887	4.81
FDD066	MidRange	10	1745	QPSK	8.9118	9.38
FDD066	MidRange	10	1745	16QAM	8.9036	9.36
FDD066	MidRange	15	1745	QPSK	13.401	14.22
FDD066	MidRange	15	1745	16QAM	13.399	14.22
FDD066	MidRange	20	1745	QPSK	17.805	18.7
FDD066	MidRange	20	1745	16QAM	17.798	18.71

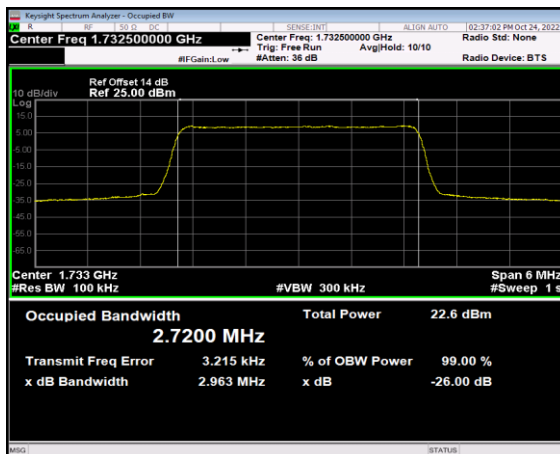
FDD04_MidRange_1.4MHz_1732.5MHz_QPSK



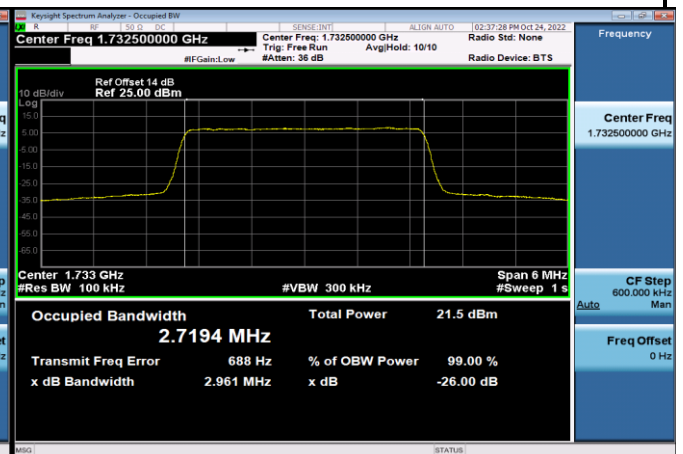
FDD04_MidRange_1.4MHz_1732.5MHz_Q16



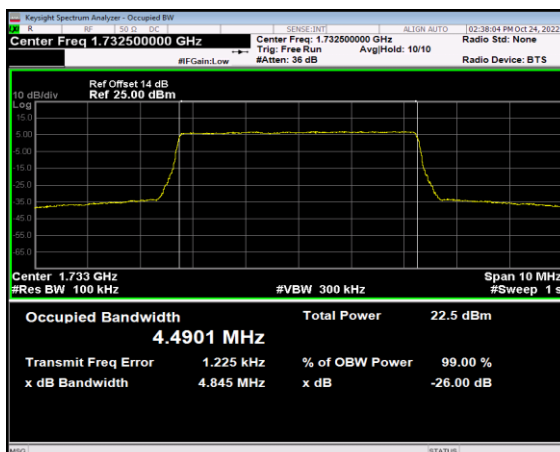
FDD04_MidRange_3MHz_1732.5MHz_QPSK



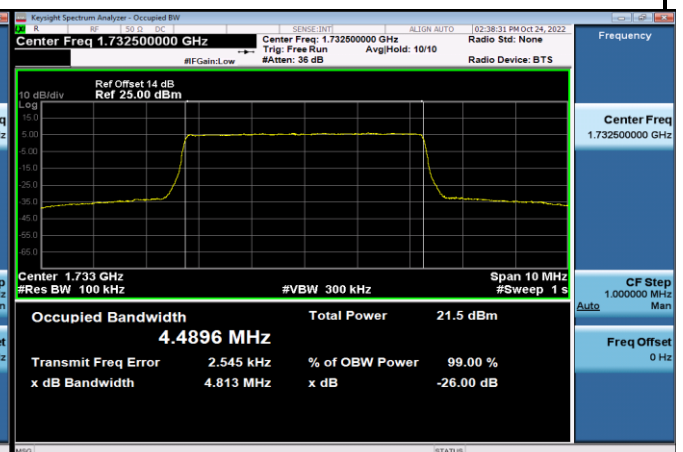
FDD04_MidRange_3MHz_1732.5MHz_Q16



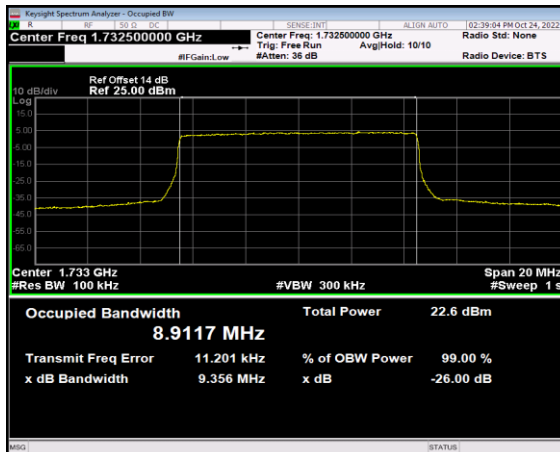
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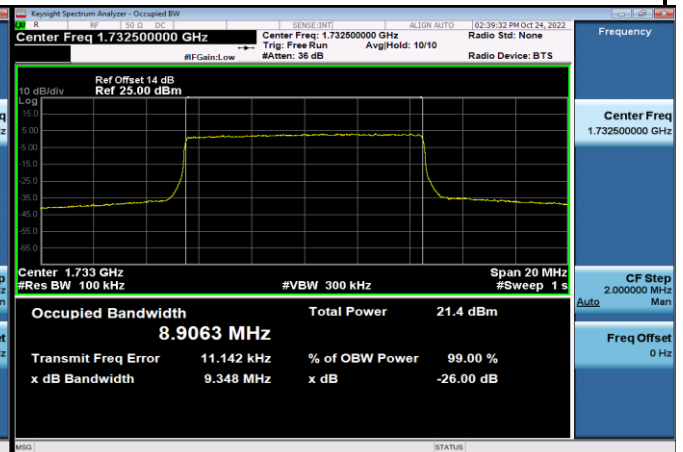
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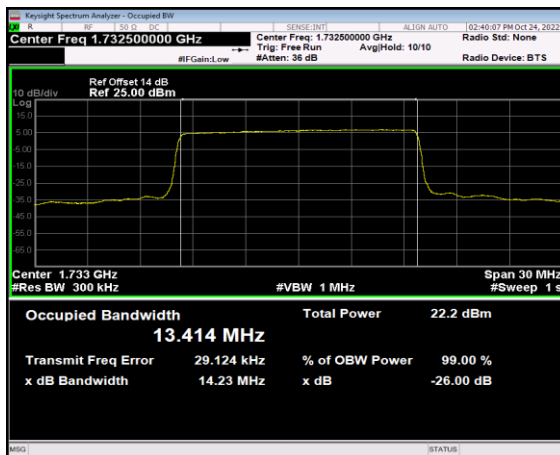
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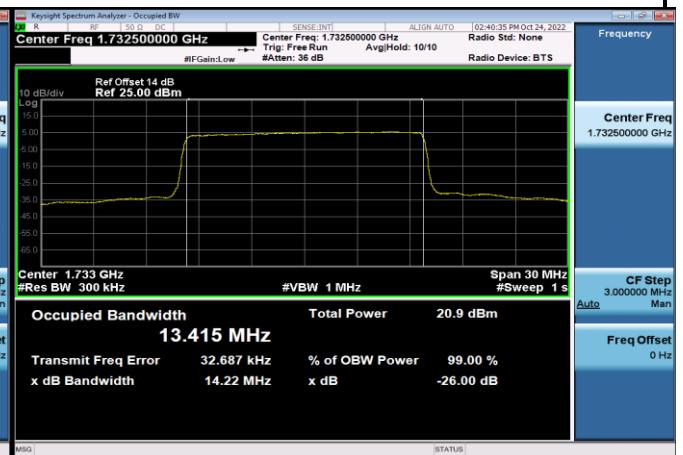
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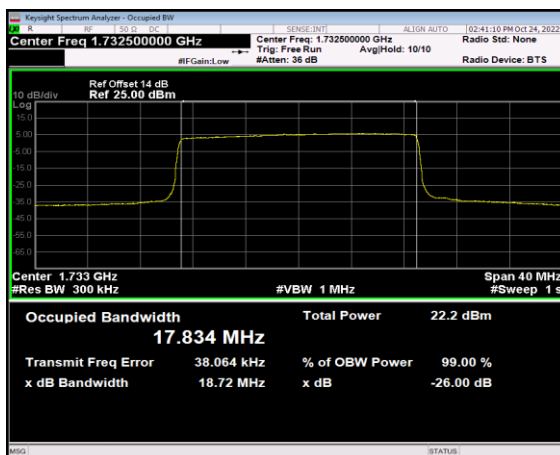
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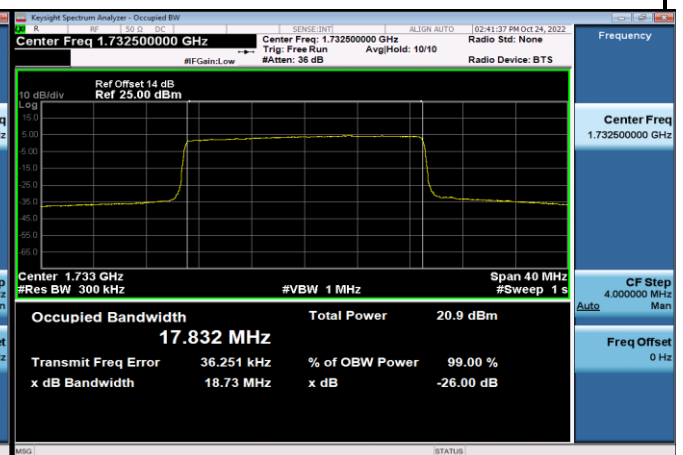
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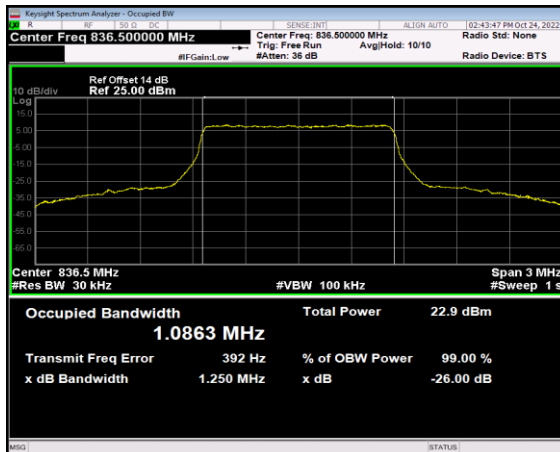
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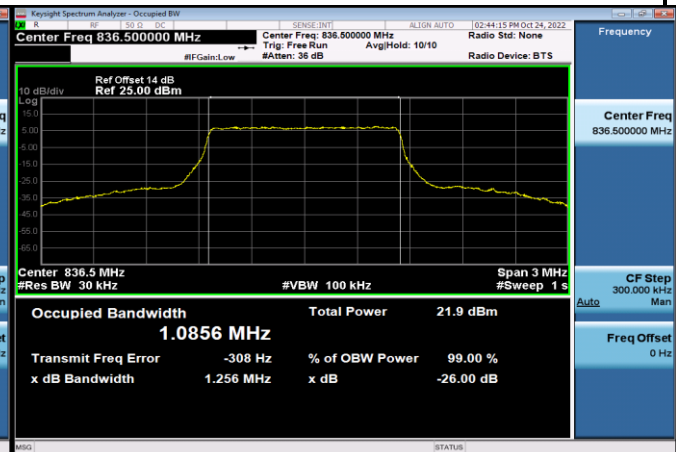
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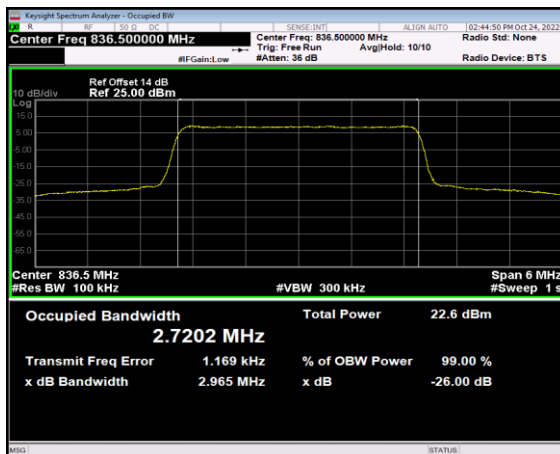
FDD05_MidRange_1.4MHz_836.5MHz _QPSK



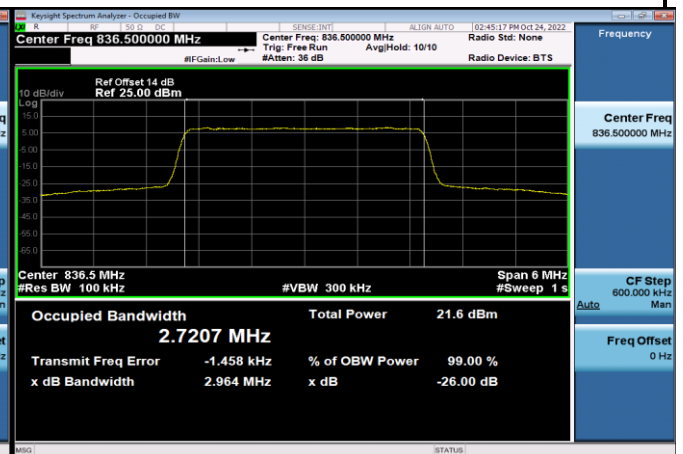
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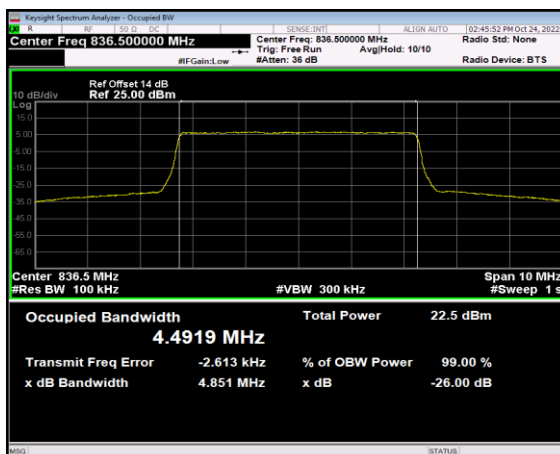
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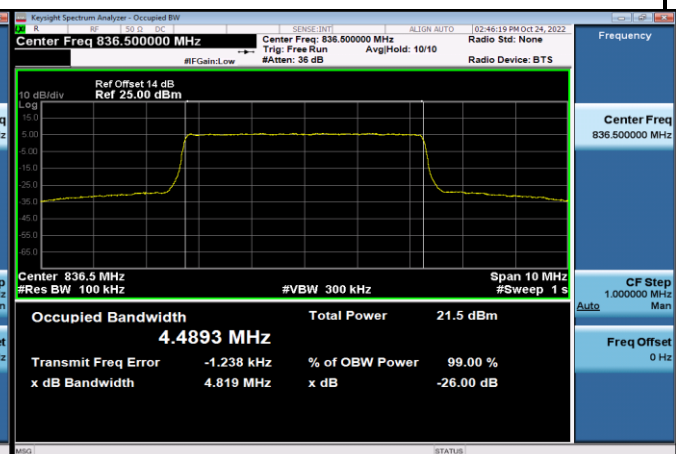
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FDD05_MidRange_5MHz_836.5MHz_QPSK

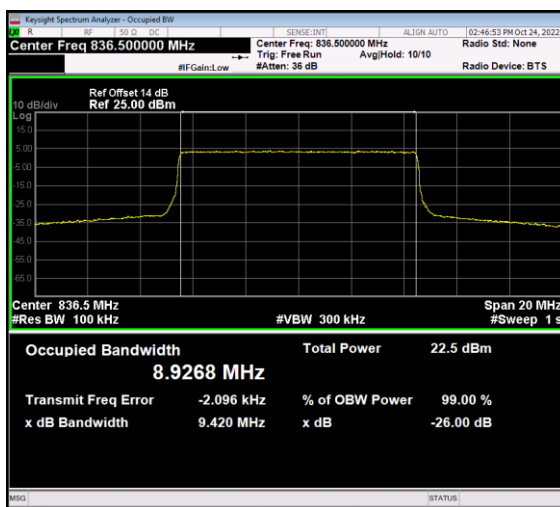


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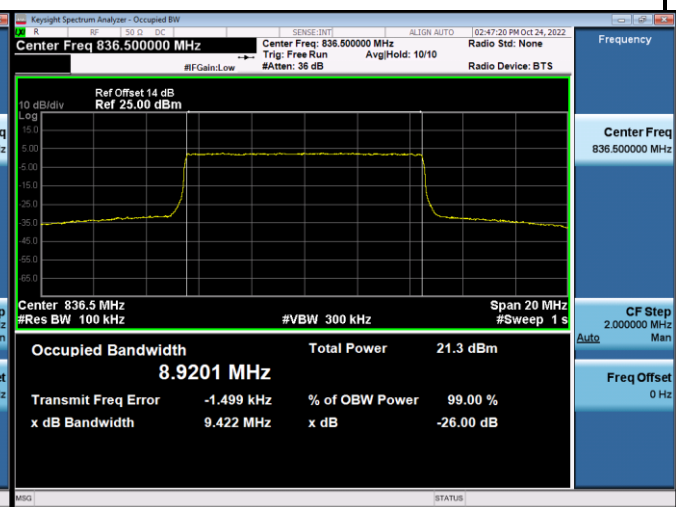




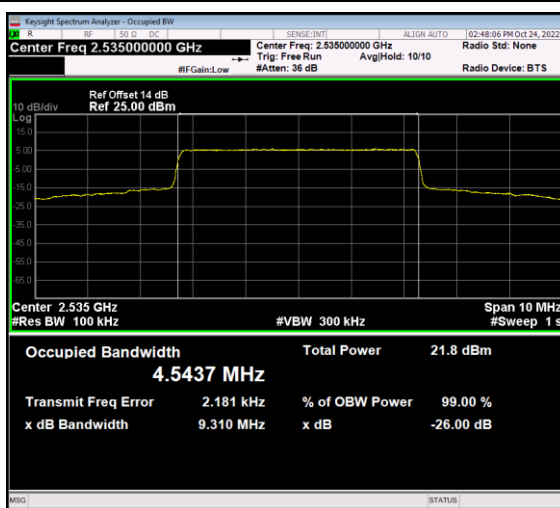
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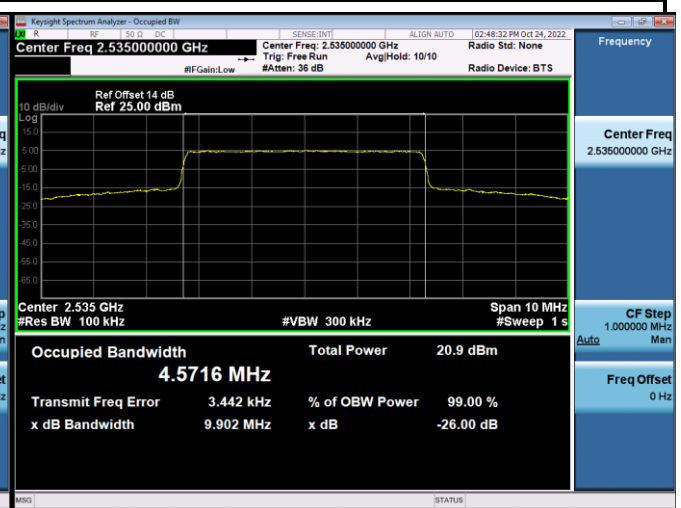
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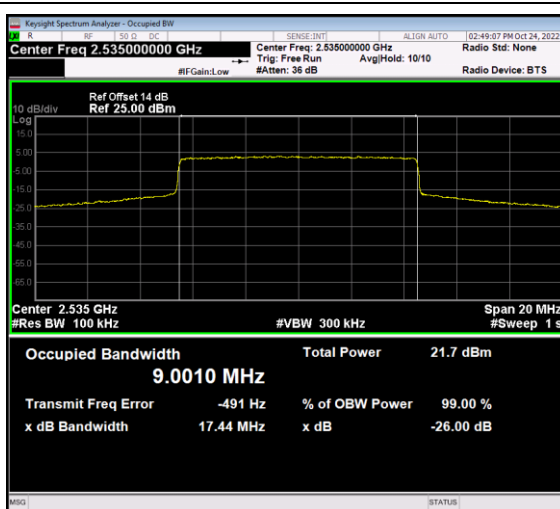
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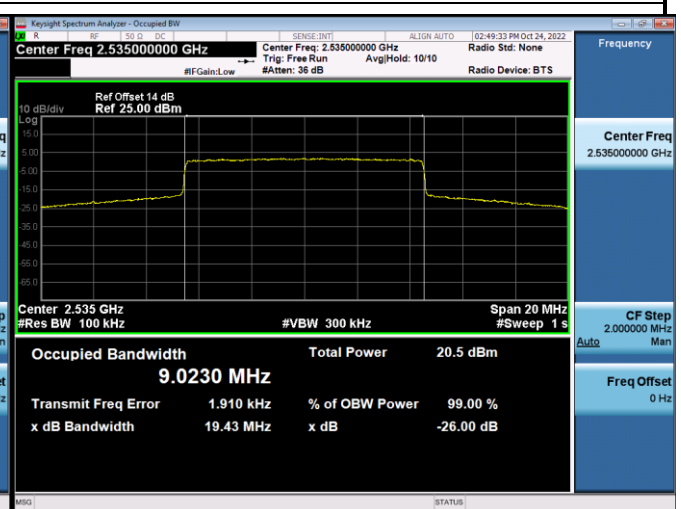
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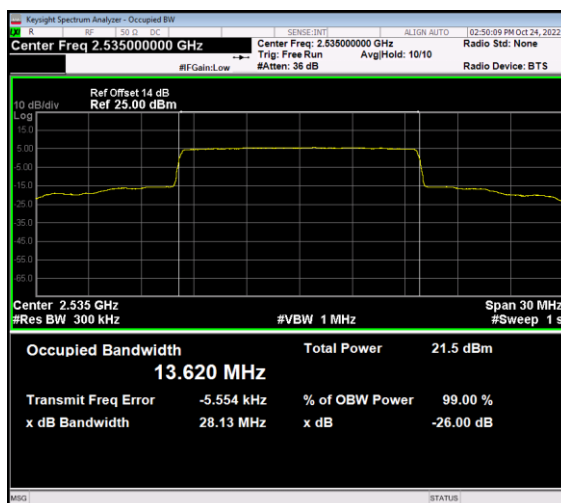
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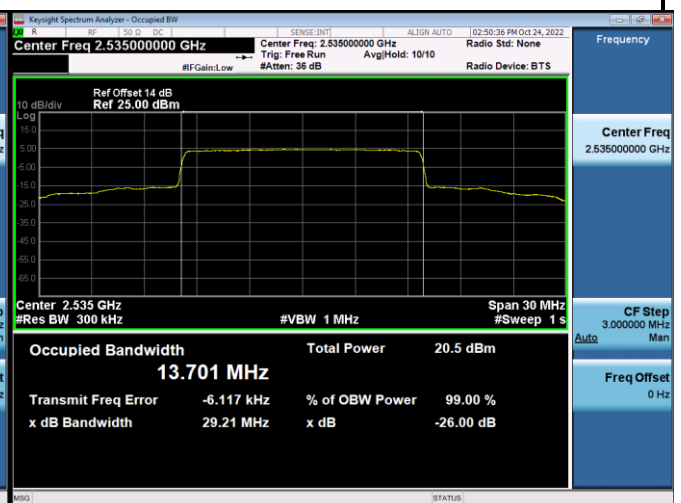
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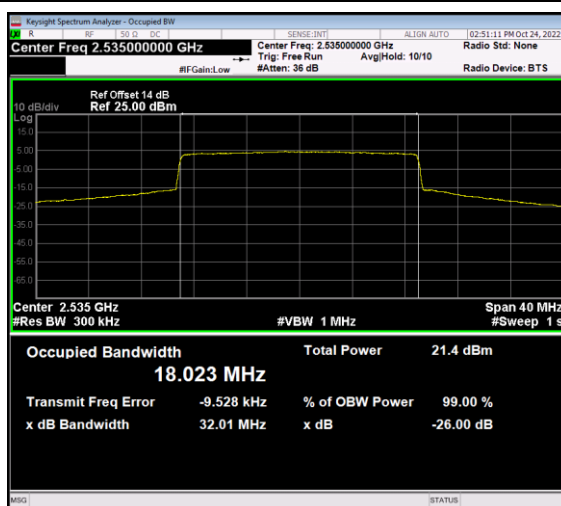
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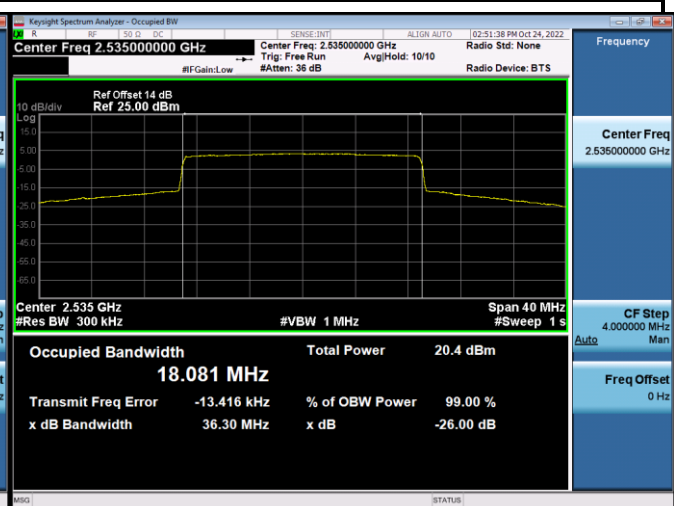
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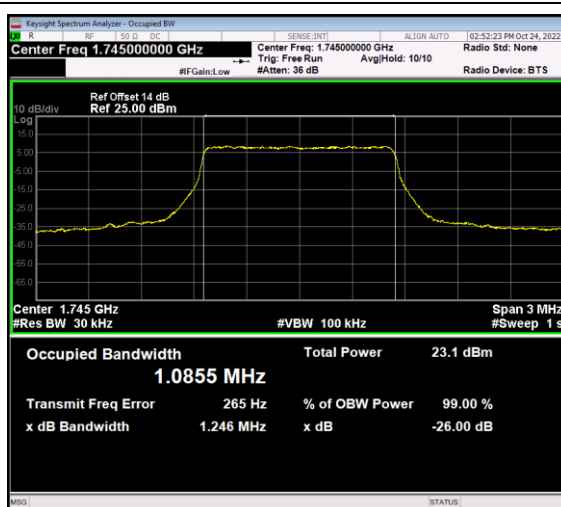
FDD07_MidRange_20MHz_2535MHz_QPSK



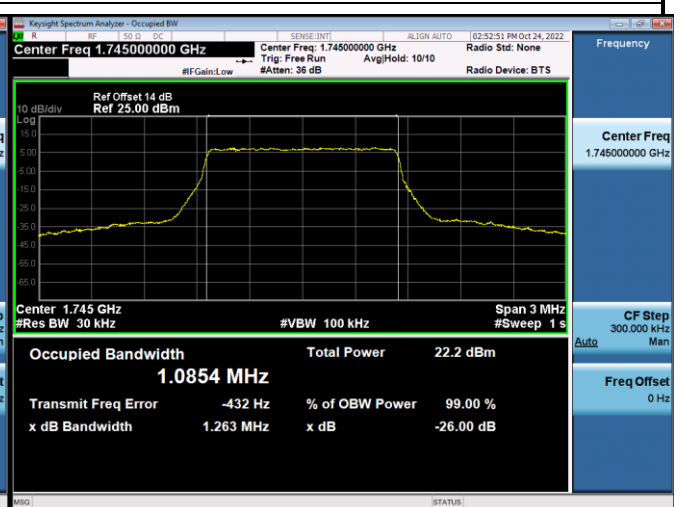
FDD07_MidRange_20MHz_2535MHz_Q16



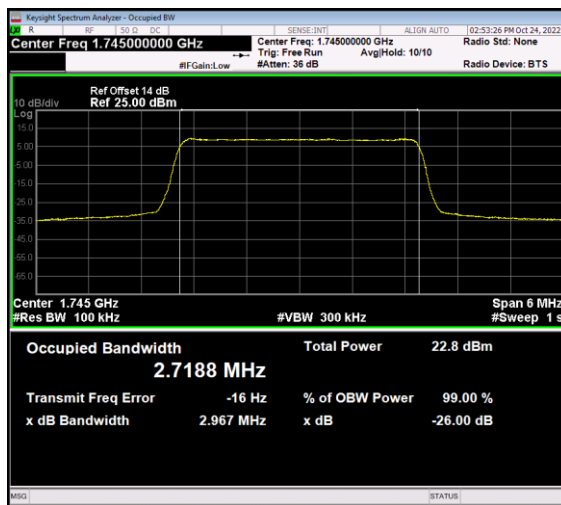
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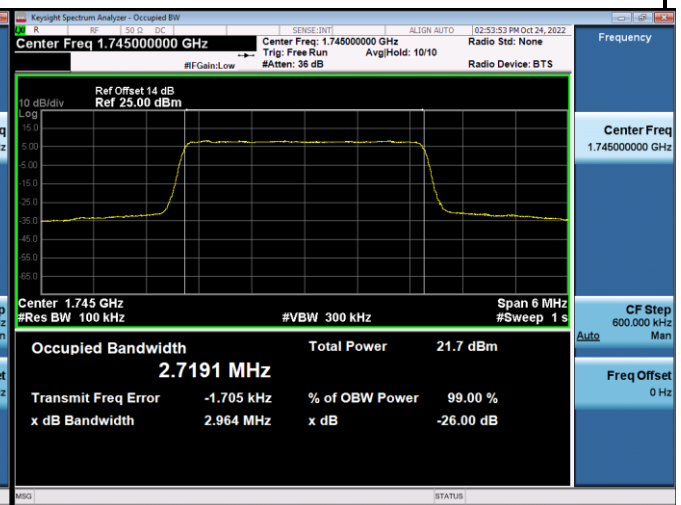
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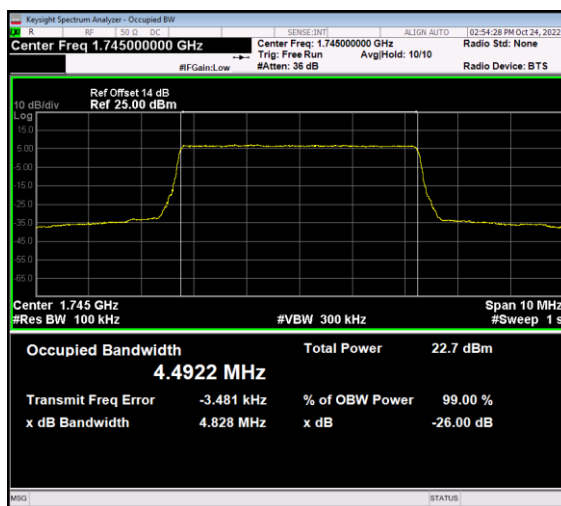
FDD66_MidRange_3MHz_1745MHz_QPSK



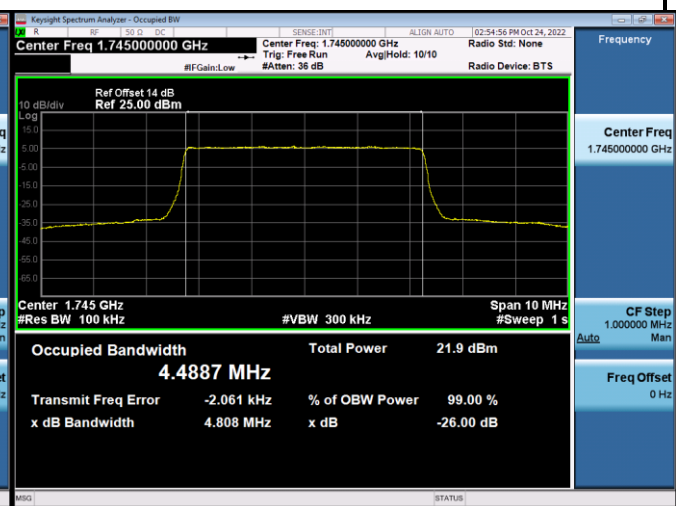
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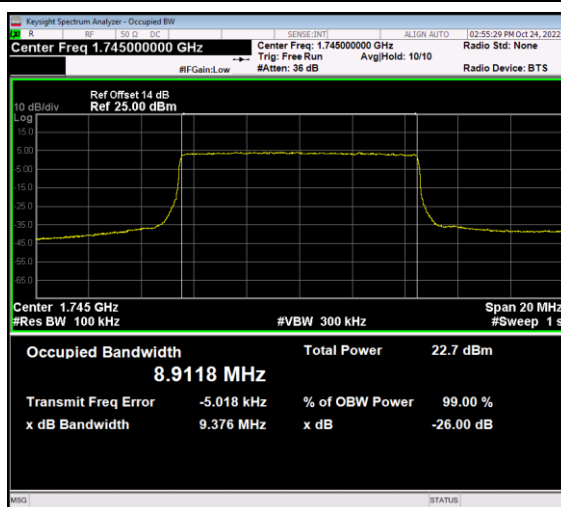
FDD66_MidRange_5MHz_1745MHz_QPSK



FDD66_MidRange_5MHz_1745MHz_Q16



FDD66_MidRange_10MHz_1745MHz_QPSK



FDD66_MidRange_10MHz_1745MHz_Q16

