TEST REPORT

Report Number: 14938215-E9V3

Applicant	:	SAMSUNG ELECTRONICS CO., LTD. 129, SAMSUNG-RO, YEONGTONG-GU SUWON-SI, GYEONGGI-DO, 16677, KOREA
Model	:	SM-A256E/DSN
FCC ID	:	A3LSMA256E
EUT Description	:	GSM/WCDMA/LTE/5G Phone with BT/BLE, DTS/UNII a/b/g/n/ac and NFC
Test Standard(s)	:	FCC 47 CFR PART 22 SUBPART H FCC 47 CFR PART 27 SUBPART L, M, O, Q FCC 47 CFR PART 90 SUBPART S

Date Of Issue:
2023-11-09

Prepared by:
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CERT #0751.05

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2023-11-03	Initial Issue	
V2	2023-11-08	Updated Selection 1,2,3,6,8,9,10	Eric Ting
V3	2023-11-08	Updated Selection 6	Eric Ting

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1. ATTESTATION OF TEST RESULTS

Applicant Name and Address	SAMSUNG ELECTRONICS CO., LTD. 129, SAMSUNG-RO, YEONGTONG-GU SUWON-SI, GYEONGGI-DO, 16677, KOREA
Model	SM-A256E/DSN
FCC ID	A3LSMA256E
EUT Description	GSM/WCDMA/LTE/5G PHONE WITH BT/BLE, DTS/UNII A/B/G/N/AC AND NFC
Serial Number	Conducted: R3CW50B7JLN Radiated: R3CW70X5MRF, R3CW70X5MQD
Date Tested	9/13/2023 – 11/02/2023
Applicable Standards	FCC 47 CFR PART 22H, 27L, M, O, Q and PART 90S
Test Results	COMPLIES

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc.will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, any agency of the Federal Government, or any agency of the U.S. government.

Approved & Released By:	Reviewed By:	Prepared By:
		
Dan Coronia Operations Leader UL Verification Services Inc.	Kiya Kedida Senior Project Engineer UL Verification Services Inc.	Eric Ting Senior Test Engineer UL Verification Services Inc.

2. SUMMARY OF TEST RESULTS

This report contains data provided by the customer which can impact the validity of results. UL Verification Services Inc. is only responsible for the validity of results after the integration of the data provided by the customer.

Requirement Description	Requirement Clause Number (FCC)	Result	Remarks
RF Conducted Output Power	2.1046 , 90.635 (b)	Complies	
Effective Radiated Power	22.913 (a)(5)	Complies	
Equivalent Isotropic Radiated Power	27.50 (d) (4)	Complies	
	27.50 (h) (2)	Complies	
	27.50 (j) (3), (k) (3)	Complies	
Occupied Bandwidth	2.1049	Complies	
Band Edge and Emission Mask	22.917 (a), 27.53 (h), 27.53 (m)(4), 27.53(a), 27.53(n), 27.53(l), 90.691 (a)	Complies	
Out of Band Emissions	22.917 (a), 27.53 (h), 27.53 (m)(4), 27.53(a), 27.53(n), 27.53(l), 90.691 (a)	Complies	
Frequency Stability	22.355, 27.54, 90.213	Complies	
Peak-to-Average Ratio	22.917 (a), 27.53 (h), 27.53 (m)(4) & (m) (6), 27.53(l), 90.691 (a)	Complies	
Field Strength of Spurious Radiation	22.917 (a), 27.53 (h), 27.53 (m)(4) & (m) (6), 27.53(l), 27.53(n), 27.53(o), 90.691 (a)	Complies	

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with the following:

- ANSI C63.26:2015
- TIA-603-E
- FCC 47 CFR Part 2, Part 22, Part 27 and Part 90S
- FCC KDB 971168 D01 v03r01: Power Meas License Digital Systems
- FCC KDB 971168 D02 v02r02: Misc Rev Approv License Devices
- FCC KDB 412172 D01 v01r01. Determining ERP and EIRP

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, Certificate Number 0751.05, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☐	Building 1: 47173 Benicia Street, Fremont, CA 94538 USA	US0104	2324A	550739
☒	Building 2: 47266 Benicia Street, Fremont, CA 94538 USA			
☒	Building 3: 843 Auburn Court, Fremont, CA 94538 USA			
☒	Building 4: 47658 Kato Rd, Fremont, CA 94538 USA			
☐	Building 5: 47670 Kato Rd, Fremont, CA 94538 USA			

5. CALIBRATION AND UNCERTAINTY

5.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

5.2. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:
a) E (dBµV/m) = Measured amplitude level (dBµV) + Cable Loss (dB) + Antenna Factor (dB/m).
b) E (dBµV/m) = Measured amplitude level (dBm) + 107 + Cable Loss (dB) + Antenna Factor (dB/m).
c) E (dBµV/m) = EIRP (dBm) − 20log(D) + 104.8; where D is the measurement distance (in the far field region) in m.
d) EIRP (dBm) = E (dBµV/m) + 20log(D) − 104.8; where D is the measurement distance (in the far field region) in m.

So, from d), The measuring distance is usually at 3m, then 20*Log(3)=9.5424
Then, EIRP (dBm) = E (dBµV/m) + 9.5424 − 104.8 = E (dBµV/m) – 95.2576

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	U_{LAB}
Conducted Antenna Port Emission Measurement	1.94 dB
Power Spectral Density	2.466 dB
Time Domain Measurements Using SA	3.39 dB
RF Power Measurement Direct Method Using Power Meter	0.450 dB (Peak) 1.3 dB (Average)
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.2%
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.78 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.87 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.29 dB
Temperature	±0.57 %
Relative Humidity	3.39 %

Uncertainty figures are valid to a confidence level of 95%.

6. EQUIPMENT UNDER TEST

6.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE/5G Phone with BT/BLE, DTS/UNII a/b/g/n/ac and NFC.

The model SM-A256E/DSN was used for final testing and is representative of the test results in this report.

6.2. MAXIMUM OUTPUT POWER

ERP/EIRP LIMIT

FCC: §2.1046, §22.913, §24.232, §27.50, §90.635, §90.541

EIRP/ERP TEST PROCEDURE

ANSI C63.26:2015
KDB 971168 D01 Section 5.8
KDB 412172 D01

ERP/EIRP = PMeas + GT − LC
where: ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm);
PMeas = measured transmitter output power or PSD, in dBm or dBW;
GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);
LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

For devices utilizing multiple antennas, KDB 662911 provides guidance for determining the effective array transmit antenna gain term to be used in the above equation.

The transmitter has a maximum average radiated ERP / EIRP output powers as follows:

5G NR n5 (FCC Part 22)

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	ERP Average (dBm)	ERP Average (W)	99% BW (kHz)	Emission Designator
5.0	QPSK	826.5	846.5	19.46	0.088	4502	4M50G7W
	16QAM			18.23	0.067	4497	4M50D7W
10.0	QPSK	829.0	844.0	19.98	0.100	8971	8M97G7W
	16QAM			18.89	0.077	8960	8M96D7W
15.0	QPSK	831.5	841.5	19.50	0.089	13466	13M5G7W
	16QAM			18.40	0.069	13487	13M5D7W
20.0	QPSK	834.0	839.0	19.83	0.096	17952	18M0G7W
	16QAM			18.67	0.074	18016	18M0D7W

5G NR n26 (FCC Part 90S)

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	Conducted Average (W)	99% BW (kHz)	Emission Designator
5.0	QPSK	816.5	821.5	23.60	0.229	4512	4M51G7W
	16QAM			23.10	0.204	4503	4M50D7W
10.0	QPSK	819.0	819.0	23.60	0.229	9004	9M00G7W
	16QAM			23.00	0.200	8993	8M99D7W
15.0	QPSK	821.5	824.0	22.90	0.195	13517	13M5G7W
	16QAM			22.30	0.170	13458	13M5D7W
20.0	QPSK	824.0	824.0	22.90	0.195	17884	17M9G7W
	16QAM			21.90	0.155	17877	17M9D7W

5G NR n26 (FCC Part 22)

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	ERP Average (dBm)	ERP Average (W)	99% BW (kHz)	Emission Designator
5.0	QPSK	826.5	846.5	20.97	0.125	4498	4M50G7W
	16QAM			19.77	0.095	4503	4M50D7W
10.0	QPSK	829.0	844.0	20.71	0.118	8994	8M99G7W
	16QAM			19.44	0.088	8968	8M97D7W
15.0	QPSK	831.5	841.5	20.90	0.123	13485	13M5G7W
	16QAM			19.71	0.094	13517	13M5D7W
20.0	QPSK	834.0	839.0	20.67	0.117	17917	17M9G7W
	16QAM			19.43	0.088	17920	17M9D7W

5G NR n41 (FCC Part 27)

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	EIRP Average (dBm)	EIRP Average (W)	99% BW (kHz)	Emission Designator
10.0	QPSK	2501.0	2685.0	21.22	0.132	8654	8M65G7W
	16QAM			19.92	0.098	8603	8M60D7W
15.0	QPSK	2503.5	2682.5	21.28	0.134	12874	12M9G7W
	16QAM			20.20	0.105	12928	12M9D7W
20.0	QPSK	2506.5	2680.0	19.70	0.093	17831	17M8G7W
	16QAM			19.08	0.081	17960	18M0D7W
30.0	QPSK	2511.0	2675.0	21.48	0.141	26954	27M0G7W
	16QAM			20.48	0.112	26952	27M0D7W
40.0	QPSK	2516.0	2670.0	20.59	0.115	35894	35M9G7W
	16QAM			19.66	0.092	35837	35M8D7W
50.0	QPSK	2521.0	2665.0	21.38	0.137	45778	45M8G7W
	16QAM			20.80	0.120	45808	45M8D7W
60.0	QPSK	2526.0	2660.0	22.58	0.181	58001	58M0G7W
	16QAM			20.56	0.114	58248	58M2D7W
70.0	QPSK	2531.0	2655.0	21.90	0.155	64531	64M5G7W
	16QAM			20.73	0.118	64717	64M7D7W
80.0	QPSK	2536.0	2650.0	21.92	0.156	77398	77M4G7W
	16QAM			20.42	0.110	77274	77M3D7W
90.0	QPSK	2541.0	2645.0	23.35	0.216	87236	87M2G7W
	16QAM			21.92	0.156	86996	87M0D7W
100.0	QPSK	2546.0	2640.0	22.94	0.197	96581	96M6G7W
	16QAM			21.19	0.132	96722	96M7D7W

5G NR n66 (FCC Part 27)

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	EIRP Average (dBm)	EIRP Average (W)	99% BW (kHz)	Emission Designator
5.0	QPSK	1712.5	1777.5	17.86	0.061	4518	4M52G7W
	16QAM			16.72	0.047	4508	4M51D7W
10.0	QPSK	1715.0	1775.0	17.29	0.054	8982	8M98G7W
	16QAM			16.28	0.042	8972	8M97D7W
15.0	QPSK	1717.5	1772.5	17.74	0.059	13438	13M4G7W
	16QAM			16.65	0.046	13402	13M4D7W
20.0	QPSK	1720.0	1770.0	17.84	0.061	17875	17M9G7W
	16QAM			15.57	0.036	17879	17M9D7W

5G NR n77 (FCC Part 27 3450-3550MHz)

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	EIRP Average (dBm)	EIRP Average (W)	99% BW (kHz)	Emission Designator
10.0	QPSK	3455.0	3545.0	21.89	0.155	8662	8M66G7W
	16QAM			20.90	0.123	8607	8M61D7W
15.0	QPSK	3457.5	3542.5	23.45	0.221	12882	12M9G7W
	16QAM			21.90	0.155	12930	12M9D7W
20.0	QPSK	3460.0	3540.0	22.04	0.160	17841	17M8G7W
	16QAM			21.80	0.151	17973	18M0D7W
25.0	QPSK	3463.0	3537.0	23.40	0.219	22988	23M0G7W
	16QAM			22.65	0.184	22978	23M0D7W
30.0	QPSK	3465.0	3535.0	23.48	0.223	26944	26M9G7W
	16QAM			22.38	0.173	26914	26M9D7W
40.0	QPSK	3470.0	3530.0	23.65	0.232	35875	35M9G7W
	16QAM			22.76	0.189	35828	35M8D7W
50.0	QPSK	3475.0	3525.0	21.11	0.129	45767	45M8G7W
	16QAM			20.15	0.104	45800	45M8D7W
60.0	QPSK	3480.0	3520.0	23.32	0.215	57950	58M0G7W
	16QAM			22.15	0.164	58210	58M2D7W
70.0	QPSK	3485.0	3515.0	23.13	0.206	64425	64M4G7W
	16QAM			21.72	0.149	64616	64M6D7W
80.0	QPSK	3490.0	3510.0	22.90	0.195	77278	77M3G7W
	16QAM			21.92	0.156	77132	77M1D7W
90.0	QPSK	3495.0	3505.0	23.24	0.211	86947	86M9G7W
	16QAM			22.20	0.166	86827	86M8D7W
100.0	QPSK	3500.0	3500.0	23.94	0.248	96360	96M4G7W
	16QAM			22.15	0.164	96511	96M5D7W

5G NR n77 (FCC Part 27 3700-3980MHz)

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	EIRP Average (dBm)	EIRP Average (W)	99% BW (kHz)	Emission Designator
10.0	QPSK	3705.0	3975.0	22.90	0.195	8659	8M66G7W
	16QAM			21.00	0.126	8597	8M60D7W
15.0	QPSK	3707.5	3972.5	22.90	0.195	12868	12M9G7W
	16QAM			21.68	0.147	12839	12M8D7W
20.0	QPSK	3710.0	3970.0	22.68	0.185	17858	17M9G7W
	16QAM			20.91	0.123	17936	17M9D7W
25.0	QPSK	3713.0	3968.0	23.00	0.200	22887	22M9G7W
	16QAM			21.91	0.155	22968	23M0D7W
30.0	QPSK	3715.0	3965.0	23.23	0.210	26907	26M9G7W
	16QAM			21.90	0.155	26868	26M9D7W
40.0	QPSK	3720.0	3960.0	23.72	0.236	35866	35M9G7W
	16QAM			21.70	0.148	35844	35M8D7W
50.0	QPSK	3725.0	3955.0	22.98	0.199	45797	45M8G7W
	16QAM			20.27	0.106	45700	45M7D7W
60.0	QPSK	3730.0	3950.0	22.88	0.194	57837	57M8G7W
	16QAM			20.51	0.112	58020	58M0D7W
70.0	QPSK	3735.0	3945.0	22.81	0.191	64229	64M2G7W
	16QAM			20.91	0.123	64297	64M3D7W
80.0	QPSK	3740.0	3940.0	22.50	0.178	77125	77M1G7W
	16QAM			21.60	0.145	77078	77M1D7W
90.0	QPSK	3745.0	3935.0	22.76	0.189	85620	85M6G7W
	16QAM			20.97	0.125	85690	85M7D7W
100.0	QPSK	3750.0	3930.0	22.94	0.197	96354	96M4G7W
	16QAM			21.83	0.152	96520	96M5D7W

6.3. SOFTWARE AND FIRMWARE

The test utility software used during testing was A145M.001.

6.4. MAXIMUM ANTENNA GAIN

The antenna(s) gain and type, as provided by the manufacturer' are as follows:

The radio utilizes a MFA antenna, with a maximum gain as follows:

Bands	Antenna	Antenna Gain (dBi)
5G NR n5, 824 – 849 MHz	A	-4.42
5G NR n26 PT90, 814 – 824 MHz	A	-4.36
5G NR n26 PT22 , 824 – 849 MHz	A	-4.36
5G NR n41, 2496 – 2690 MHz	B	1.31
5G NR n66, 1710 – 1780 MHz	B	-0.58
5G NR n77, 3450-3550 & 3700-3980 MHz	F	2.73

6.5. WORST-CASE CONFIGURATION AND MODE

The EUT supports 5G NRs Bands:
5G NR n5, 5G NR n26, 5G NR n41, 5G NR n66, and 5G NR n77.

For NR Bands the worst-case scenario for all measurements is based on the average conducted output power measurement investigation results. Output power measurements were measured on $\pi/2$ QPSK, QPSK, 16QAM, 64QAM and 256QAM modulations. It was found that QPSK and 16QAM results were worst case as below.

The fundamental of the EUT was investigated in three orthogonal orientations X, Y, & Z. It was determined that X-Axis for 2500 MHz And X-Axis for 700, 850, and Y-Axis for 1700 and 3450MHz with AC/DC Adapter was worst-case orientation.

All radios that can be transmitted simultaneously have been evaluated for radiated for all possible combinations of transmission and found to be in compliance.

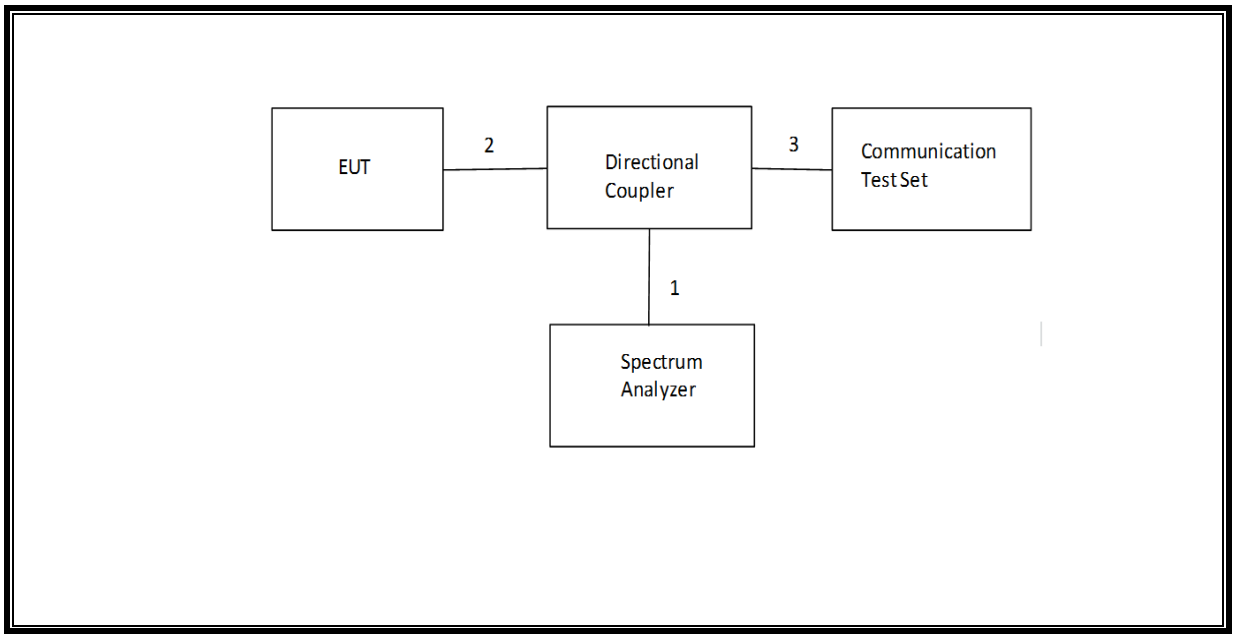
Radiated spurious emissions were investigated below 30MHz, 30MHz-1GHz, and above 1GHz. There were no emissions found below 30MHz and 30MHz-1GHz.

5G NR 41 SRS1 (Antenna C), SRS2 (Antenna G), SRS3 (Antenna H) (2496 – 2690 MHz) is covered by 5G NR 41(Antenna B) because 5G NR 41 SRS1, SRS2, and SRS3 have same or lower output power, and lower peak antenna gain than that of 5G NR 41 (Antenna B)

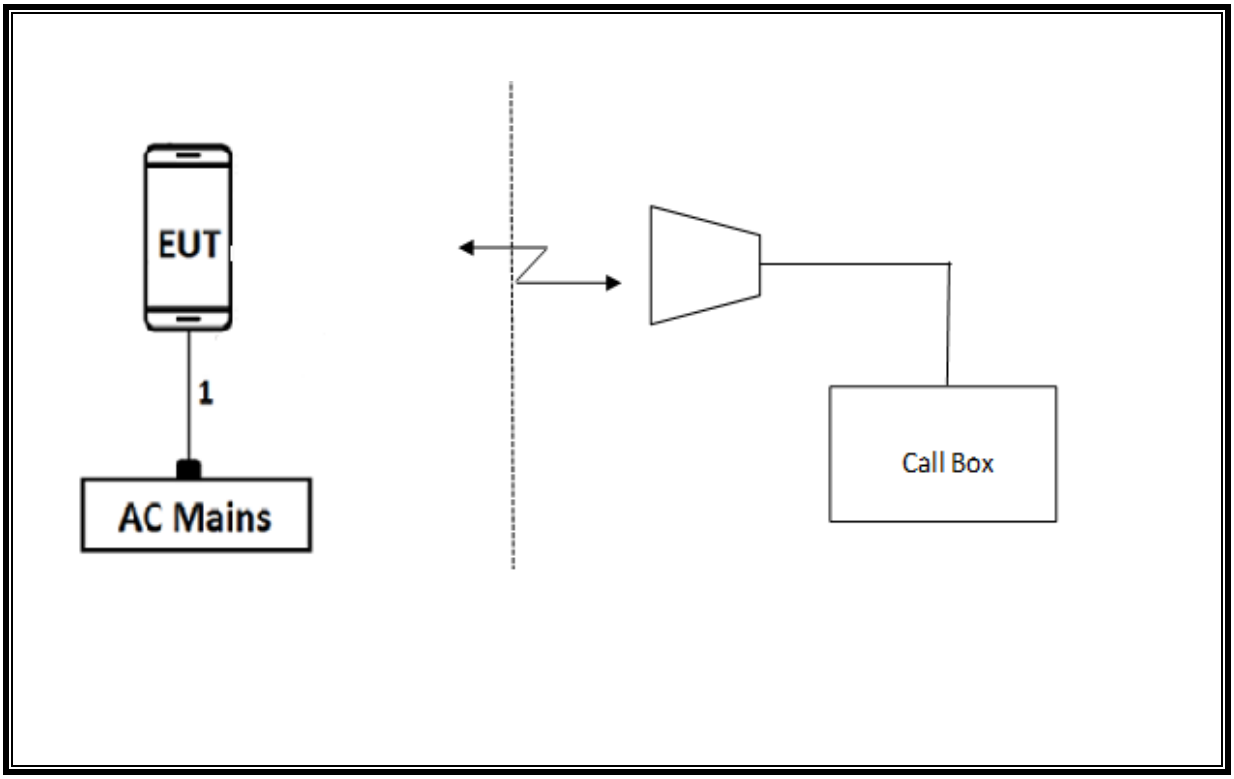
6.6. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT					
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**	
AC Adapter	Samsung	EP-TA800	R37MAMT21J2SE3	N/A	
I/O CABLES (RF CONDUCTED TEST)					
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	RF Out	1	Spectrum Analyzer	Shielded	None	N/A
2	Antenna Port	1	EUT	Shielded	0.1m	N/A
3	RF In/Out	1	Communication Test Set	Shielded	1m	N/A
I/O CABLES (RF RADIATED TEST)					
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	USB	1	USB	Shielded	1	N/A

CONDUCTED SETUP



RADIATED SETUP



7. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST					
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**	**Last Cal**
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A	85313	7/31/2024	7/31/2023
Wideband Communication Test Set, Call Box	Rohde & Schwarz	CMW500	222797	5/31/2024	5/9/2023
Antenna, Horn 1-18GHz	ETS-Lindgren (Cedar Park, Texas)	3117	200897	3/31/2024	3/7/2023
RF Filter Box, 1-18GHz, 12 Port.	UL-FR1	Frankenstein	231874	8/30/2024	8/23/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	PRE0179372	2/29/2024	2/17/2023
Antenna, Horn 1-18GHz	ETS-Lindgren (Cedar Park, Texas)	3117	230300	1/12/2024	1/12/2023
RF Filter Box, 1-18GHz, 12 Port.	UL-FR1	Frankenstein	231875	9/30/2024	9/18/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	170063	2/29/2024	2/27/2023
Antenna, Horn 1-18GHz	ETS-Lindgren (Cedar Park, Texas)	3117	226672	1/9/2024	1/9/2023
RF Filter Box, 1-18GHz, 17 Ports	UL-FR1	RATS 2	225079	4/30/2024	4/21/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	235670	4/30/2024	4/6/2023
Wideband Communication Test Set, Call Box	Rohde & Schwarz (Koeln) GmbH & Co. KG	CMW500	80105	2/29/2024	2/17/2023
Wideband Communication Test Set, Call Box	Rohde & Schwarz (Koeln) GmbH & Co. KG	CMW500	80581	2/29/2024	2/16/2023
ANTENNA, DIPOLE	ETS-Lindgren (Cedar Park, Texas)	3121C DB4	80805	5/31/2024	5/4/2023
ANTENNA, DIPOLE	ETS-Lindgren	3121C DB4	89477	4/30/2024	4/10/2023
Signal Generator, 8KHz-40GHz	Rohde & Schwarz	SMA100B	195765	2/29/2024	2/21/2023
Directional Coupler	KRYTAR	152610	231742	02/29/2024	2/24/2023
Rf coaxial cable, DC to 40GHz, 2.92mm	Pasternack Enterprises	PE360-36	231381	11/01/2023	11/01/2022
Rf coaxial cable, DC to 40GHz, 2.92mm	Pasternack Enterprises	PE360-36	231379	11/01/2023	11/01/2022
UXM 5G Wireless Test Set	Keysight	E7515B	207269	10/31/2024	10/16/2023
UXM 5G Wireless Test Set	Keysight	E7515B	MY60102066	1/12/2024	1/12/2023
5G Radio Communication Test Set	Anritsu Corporation	MT8000A	207617	10/31/2024	10/20/2023
UL AUTOMATION SOFTWARE					
Radiated Software	UL	UL EMC	Ver 9.5, May 1 , 2023		
Conducted Software	UL	Antenna Port	Ver 2020.8.16		
Conducted Software	UL	PV	Ver 2023.08.14		
Conducted Software	UL	CLT	Ver 2023.06.21		

NOTES:

*Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.

8. RF OUTPUT POWER VERIFICATION

EUT includes different power levels for head use configuration and body use configuration and the below tables contain the highest of all configurations average conducted output powers as follows:

8.1. CONDUCTED OUTPUT POWER MEASUREMENT PROCEDURE

All LTE bands conducted average power is obtained from the CMW500 telecommunication test set.

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3

Modulation	Channel bandwidth / Transmission bandwidth (N_{RB})						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3
256 QAM	≥ 1						≤ 5

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of “NS_01”.

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (subclause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	N/A

RESULTS

EUT includes different power levels for head use configuration and body use configuration and the below tables contain the highest of all configurations average conducted output powers as follows:

8.2. 5G NR n5 (FCC Part 22)

5G NR n5

Test Engineer ID:	27342	Test Date:	10/12/2023

OUTPUT POWER FOR 5G NR n5 (5.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT A		
				165300	167300	169300
				826.5 MHz	836.5 MHz	846.5 MHz
5.0	BPSK	1	0	23.50	23.50	23.30
		1	1	**24.00**	23.90	23.90
		1	23	**24.00**	23.90	23.90
		1	24	23.50	23.40	23.30
		12	6	23.90	23.90	23.80
		25	0	23.50	23.40	23.30
	QPSK	1	0	23.00	23.00	22.80
		1	1	**24.00**	**24.00**	23.90
		1	23	**24.00**	23.90	23.80
		1	24	23.00	22.90	22.80
		12	6	**24.00**	23.90	23.80
		25	0	23.00	22.90	22.80
	16QAM	1	0	22.50	22.40	22.30
		1	1	**23.50**	23.30	23.30
		1	23	23.40	23.20	23.30
		1	24	22.40	22.30	22.30
		12	6	23.20	23.10	22.90
		25	0	22.10	22.00	21.80
	64QAM	1	0	22.50	22.00	21.90
		1	1	**23.60**	22.00	22.00
		1	23	23.50	21.90	22.00
		1	24	22.50	22.00	22.00
		12	6	23.10	21.40	21.30
		25	0	22.00	21.40	21.30
	256QAM	1	0	**19.70**	19.60	19.50
		1	1	**19.70**	**19.70**	19.50
		1	23	19.60	19.60	19.40
		1	24	**19.70**	19.60	19.50
		12	6	19.50	19.50	19.30
		25	0	19.50	19.40	19.30

OUTPUT POWER FOR 5G NR n5 (10.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm) ANT A		
				165800	167300	168800
				829.0 MHz	836.5 MHz	844.0 MHz
10.0	BPSK	1	0	23.50	23.50	23.20
		1	1	**24.00**	23.99	23.70
		1	50	23.90	23.80	23.80
		1	51	23.40	23.30	23.10
		25	12	23.90	23.90	23.70
		50	0	23.50	23.40	23.20
	QPSK	1	0	22.90	22.90	22.70
		1	1	**24.00**	23.90	23.70
		1	50	23.90	23.80	23.70
		1	51	22.90	22.80	22.70
		25	12	23.90	23.90	23.70
		50	0	22.90	22.80	22.70
	16QAM	1	0	22.40	22.30	22.10
		1	1	**23.40**	23.30	23.00
		1	50	23.30	23.10	22.90
		1	51	22.30	22.20	21.90
		25	12	23.00	22.90	22.80
		50	0	21.90	21.90	21.80
	64QAM	1	0	21.90	**22.00**	21.80
		1	1	21.90	**22.00**	21.80
		1	50	21.80	21.90	21.70
		1	51	21.90	21.90	21.70
		25	12	21.40	21.30	21.20
		50	0	21.40	21.40	21.20
	256QAM	1	0	19.70	19.60	19.50
		1	1	**19.80**	19.60	19.50
		1	50	19.70	19.50	19.40
		1	51	19.60	19.50	19.40
		25	12	19.40	19.40	19.20
		50	0	19.50	19.40	19.30

OUTPUT POWER FOR 5G NR n5 (15.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm) ANT A		
				166300	167300	168300
				831.5 MHz	836.5 MHz	841.5 MHz
15.0	BPSK	1	0	23.40	23.40	23.30
		1	1	**24.00**	**24.00**	23.80
		1	77	23.80	23.80	23.70
		1	78	23.30	23.20	23.20
		36	18	23.90	23.90	23.80
		75	0	23.40	23.40	23.30
	QPSK	1	0	22.90	23.00	22.80
		1	1	23.90	**24.00**	23.80
		1	77	23.80	23.70	23.70
		1	78	22.70	22.70	22.60
		36	18	23.90	23.90	23.80
		75	0	23.00	23.00	22.70
	16QAM	1	0	22.50	22.30	22.30
		1	1	**23.50**	23.40	23.20
		1	77	23.30	23.10	23.10
		1	78	22.40	22.20	22.10
		36	18	23.00	23.00	22.80
		75	0	21.90	21.90	21.80
	64QAM	1	0	22.10	21.90	21.80
		1	1	**22.20**	21.90	21.70
		1	77	22.10	21.80	21.60
		1	78	22.10	21.80	21.60
		36	18	21.40	21.40	21.30
		75	0	21.40	21.40	21.30
	256QAM	1	0	**19.60**	**19.60**	19.50
		1	1	**19.60**	**19.60**	19.50
		1	77	19.50	19.40	19.30
		1	78	19.40	19.40	19.30
		36	18	19.50	19.40	19.30
		75	0	19.40	19.40	19.30

OUTPUT POWER FOR 5G NR n5 (20.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT A		
				166800	167300	167800
				834.0 MHz	836.5 MHz	839.0 MHz
20.0	BPSK	1	0	23.40	23.50	23.50
		1	1	23.90	**24.00**	23.90
		1	104	23.70	23.70	23.70
		1	105	23.20	23.20	23.20
		50	25	23.90	23.90	23.90
		100	0	23.30	23.30	23.40
	QPSK	1	0	22.90	23.00	22.90
		1	1	23.90	**24.00**	23.90
		1	104	23.70	23.70	23.70
		1	105	22.70	22.70	22.70
		50	25	23.90	23.80	23.90
		100	0	22.80	22.90	22.80
	16QAM	1	0	22.30	22.30	22.20
		1	1	**23.30**	23.20	**23.30**
		1	104	23.10	22.90	23.10
		1	105	22.10	22.00	22.00
		50	25	22.90	23.00	22.80
		100	0	21.90	21.90	21.80
	64QAM	1	0	21.60	22.00	21.50
		1	1	21.70	**22.10**	21.60
		1	104	21.50	21.80	21.30
		1	105	21.40	21.80	21.30
		50	25	21.40	21.40	21.40
		100	0	21.40	21.40	21.30
	256QAM	1	0	**19.60**	19.50	19.50
		1	1	19.50	**19.60**	19.50
		1	104	19.30	19.30	19.30
		1	105	19.30	19.40	19.20
		50	25	19.40	19.40	19.40
		100	0	19.40	19.40	19.30

8.3. 5G NR n26 (FCC Part 90S)

5G NR n26

Test Engineer ID:	27342	Test Date:	10/13/2023

OUTPUT POWER FOR 5G NR n26 (5.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT A		
				163300	163800	164300
				816.5 MHz	819.0 MHz	821.5 MHz
5.0	BPSK	1	0	22.90	23.00	23.10
		1	1	23.50	23.50	**23.55**
		1	23	23.40	23.45	23.54
		1	24	23.00	23.10	23.10
		12	6	23.40	23.50	23.50
		25	0	23.00	23.10	23.00
	QPSK	1	0	22.40	22.50	22.60
		1	1	23.50	23.50	**23.60**
		1	23	23.50	23.50	23.50
		1	24	22.50	22.60	22.60
		12	6	23.40	23.50	23.50
		25	0	22.50	22.60	22.50
	16QAM	1	0	21.70	21.70	22.00
		1	1	22.90	22.80	**23.10**
		1	23	22.90	22.80	**23.10**
		1	24	21.90	21.80	21.90
		12	6	22.60	22.70	22.70
		25	0	21.50	21.70	21.60
	64QAM	1	0	21.20	21.80	21.90
		1	1	21.10	21.70	**22.00**
		1	23	21.20	21.80	21.90
		1	24	21.20	21.70	21.90
		12	6	21.00	21.10	21.10
		25	0	21.00	21.10	21.10
	256QAM	1	0	19.20	19.20	**19.40**
		1	1	19.20	19.20	**19.40**
		1	23	19.30	19.20	**19.40**
		1	24	19.30	19.30	19.30
		12	6	19.00	19.10	19.10
		25	0	19.00	19.00	19.00

OUTPUT POWER FOR 5G NR n26 (10.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT A		
					163800	
					819.0 MHz	
10.0	BPSK	1	0		23.00	
		1	1		**23.50**	
		1	50		**23.50**	
		1	51		23.00	
		25	12		**23.50**	
		50	0		23.10	
	QPSK	1	0		22.50	
		1	1		**23.60**	
		1	50		23.50	
		1	51		22.60	
		25	12		**23.60**	
		50	0		22.50	
	16QAM	1	0		21.90	
		1	1		22.90	
		1	50		**23.00**	
		1	51		21.90	
		25	12		22.60	
		50	0		21.80	
	64QAM	1	0		21.60	
		1	1		21.50	
		1	50		**21.70**	
		1	51		20.90	
		25	12		21.10	
		50	0		21.20	
	256QAM	1	0		19.10	
		1	1		**19.20**	
		1	50		**19.20**	
		1	51		19.10	
		25	12		19.10	
		50	0		19.10	

OUTPUT POWER FOR 5G NR n26 (15.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT A		
					164300	164800
					821.5 MHz	824 MHz
15.0	BPSK	1	0		22.10	22.30
		1	1		22.60	22.80
		1	77		22.80	**22.90**
		1	78		22.40	22.40
		36	18		22.70	**22.90**
		75	0		22.20	22.50
	QPSK	1	0		21.60	21.80
		1	1		22.50	22.80
		1	77		**22.90**	**22.90**
		1	78		21.80	21.90
		36	18		**22.90**	22.80
		75	0		22.00	21.90
	16QAM	1	0		21.10	20.80
		1	1		22.10	22.10
		1	77		**22.30**	22.20
		1	78		21.10	21.20
		36	18		21.80	21.80
		75	0		20.90	21.00
	64QAM	1	0		20.60	20.60
		1	1		20.60	20.80
		1	77		20.60	20.80
		1	78		20.60	20.80
		36	18		20.40	20.40
		75	0		20.40	**21.00**
	256QAM	1	0		18.70	**18.80**
		1	1		18.70	**18.80**
		1	77		18.70	18.40
		1	78		18.70	18.30
		36	18		18.40	18.30
		75	0		18.40	18.40

OUTPUT POWER FOR 5G NR n26 (20.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT A		
						164800
						824 MHz
20.0	BPSK	1	0			22.20
		1	1			22.70
		1	77			**22.90**
		1	78			22.40
		36	18			**22.90**
		75	0			22.40
	QPSK	1	0			21.80
		1	1			22.70
		1	77			**22.90**
		1	78			21.90
		36	18			**22.90**
		75	0			21.80
	16QAM	1	0			20.90
		1	1			**21.90**
		1	77			21.80
		1	78			20.90
		36	18			21.80
		75	0			20.90
	64QAM	1	0			20.60
		1	1			20.30
		1	77			**20.70**
		1	78			20.60
		36	18			20.40
		75	0			20.40
	256QAM	1	0			18.60
		1	1			18.60
		1	77			**18.80**
		1	78			18.70
		36	18			18.40
		75	0			18.30

8.4. 5G NR n26 (FCC Part 22)

5G NR n26

Test Engineer ID:	25780	Test Date:	10/12/2023

OUTPUT POWER FOR 5G NR n26 (5.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT A		
				165300	167300	169300
				826.5 MHz	836.5 MHz	846.5 MHz
5.0	BPSK	1	0	23.10	23.00	22.90
		1	1	**23.60**	23.50	23.40
		1	23	**23.60**	23.50	23.30
		1	24	23.10	22.90	22.80
		12	6	23.50	23.40	23.40
		25	0	23.00	23.00	22.90
	QPSK	1	0	22.60	22.50	22.40
		1	1	**23.60**	23.50	23.50
		1	23	23.50	23.40	23.40
		1	24	22.60	22.40	22.40
		12	6	23.50	23.40	23.40
		25	0	22.60	22.40	22.40
	16QAM	1	0	22.10	21.80	21.80
		1	1	**22.90**	22.80	**22.90**
		1	23	**22.90**	22.70	22.80
		1	24	22.10	21.70	21.80
		12	6	22.60	22.60	22.50
		25	0	21.60	21.50	21.50
	64QAM	1	0	**21.90**	21.50	21.40
		1	1	**21.90**	21.70	21.50
		1	23	21.80	21.60	21.40
		1	24	21.70	21.60	21.50
		12	6	21.10	21.10	20.90
		25	0	21.10	21.00	20.80
	256QAM	1	0	**19.60**	19.40	19.20
		1	1	**19.60**	19.40	19.30
		1	23	19.50	19.30	19.30
		1	24	19.40	19.40	19.20
		12	6	19.10	19.00	18.90
		25	0	19.10	19.00	18.90

OUTPUT POWER FOR 5G NR n26 (10.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT A		
				165800	167300	168800
				829.0 MHz	836.5 MHz	844.0 MHz
10.0	BPSK	1	0	23.10	22.90	22.80
		1	1	**23.60**	23.50	23.30
		1	50	23.50	23.30	23.20
		1	51	23.00	22.70	22.70
		25	12	**23.60**	23.30	23.30
		50	0	23.10	22.80	22.70
	QPSK	1	0	22.60	22.40	22.30
		1	1	**23.70**	23.40	23.30
		1	50	23.50	23.30	23.20
		1	51	22.50	22.30	22.20
		25	12	23.50	23.30	23.20
		50	0	22.50	22.30	22.30
	16QAM	1	0	22.00	21.90	21.90
		1	1	**23.20**	23.00	22.80
		1	50	23.10	22.90	22.60
		1	51	21.90	21.80	21.70
		25	12	22.60	22.40	22.30
		50	0	21.50	21.40	21.30
	64QAM	1	0	**21.40**	21.30	21.30
		1	1	**21.40**	**21.40**	21.30
		1	50	21.30	21.20	21.20
		1	51	21.30	21.30	21.20
		25	12	20.90	20.90	20.80
		50	0	20.90	20.90	20.80
	256QAM	1	0	19.40	19.40	19.10
		1	1	**19.50**	19.20	19.10
		1	50	19.40	19.00	18.90
		1	51	19.40	19.00	18.90
		25	12	18.90	18.90	18.80

OUTPUT POWER FOR 5G NR n26 (15.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT A		
				163300	167300	168300
				831.5 MHz	836.5 MHz	841.5 MHz
15.0	BPSK	1	0	22.60	22.80	22.80
		1	1	23.00	**23.30**	**23.30**
		1	77	22.90	23.20	23.10
		1	78	22.40	22.60	22.60
		36	18	23.10	**23.30**	23.20
		75	0	22.60	22.80	22.80
	QPSK	1	0	22.10	22.30	22.20
		1	1	23.10	**23.30**	23.20
		1	77	23.10	23.10	23.10
		1	78	22.10	22.10	22.10
		36	18	23.10	**23.30**	**23.30**
		75	0	22.10	22.30	22.30
	16QAM	1	0	21.80	21.80	21.60
		1	1	**22.80**	**22.80**	22.60
		1	77	22.70	22.50	22.40
		1	78	21.70	21.70	21.50
		36	18	22.20	22.30	22.30
		75	0	21.20	21.30	21.30
	64QAM	1	0	21.20	21.10	21.10
		1	1	**21.30**	21.10	21.20
		1	77	21.10	20.90	21.10
		1	78	21.10	20.90	21.10
		36	18	20.70	20.80	20.70
		75	0	20.70	20.80	20.80
	256QAM	1	0	19.00	**19.10**	19.00
		1	1	**19.10**	**19.10**	19.00
		1	77	18.90	18.90	18.90
		1	78	18.90	19.00	18.80
		36	18	18.70	18.80	18.80
		75	0	18.70	18.80	18.70

OUTPUT POWER FOR 5G NR n26 (20.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT A		
				162800	167300	167800
				834 MHz	836.5 MHz	839.0 MHz
20.0	BPSK	1	0	22.80	22.90	22.80
		1	1	**23.30**	23.25	**23.30**
		1	104	23.00	23.10	23.10
		1	105	22.50	22.70	22.70
		50	25	**23.30**	**23.30**	23.20
		100	0	22.70	22.80	22.70
	QPSK	1	0	22.40	22.30	22.30
		1	1	**23.30**	**23.30**	**23.30**
		1	104	23.10	23.20	23.10
		1	105	22.10	22.20	22.10
		50	25	23.20	**23.30**	23.20
		100	0	22.30	22.30	22.30
	16QAM	1	0	21.70	22.00	21.50
		1	1	**22.60**	**22.60**	22.50
		1	104	22.40	22.40	22.30
		1	105	21.50	21.70	21.30
		50	25	22.30	22.30	22.30
		100	0	21.20	21.30	21.30
	64QAM	1	0	21.10	21.10	21.10
		1	1	**21.20**	21.10	21.10
		1	104	20.90	20.80	20.80
		1	105	20.90	20.90	20.90
		50	25	20.80	20.90	20.80
		100	0	20.70	20.80	20.70
	256QAM	1	0	19.20	19.30	19.30
		1	1	19.20	**19.40**	19.30
		1	104	19.00	19.10	19.10
		1	105	19.00	19.10	19.10
		50	25	18.80	18.80	18.80
		100	0	18.80	18.80	18.70

8.5. 5G NR n41 (FCC Part 27)

5G NR n41

Test Engineer ID:	32061	Test Date:	10/27/2023

OUTPUT POWER FOR 5G NR n41 (10.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT B		
				500200	518600	537000
				2501.0 MHz	2593.0 MHz	2685.0 MHz
10.0	BPSK	1	0	22.42	23.48	23.19
		1	1	22.89	23.96	23.68
		1	22	23.22	**23.99**	23.78
		1	23	22.78	23.45	23.30
		12	6	23.18	23.94	23.69
		24	0	22.62	23.58	23.23
	QPSK	1	0	22.05	23.04	22.73
		1	1	23.06	23.98	23.68
		1	22	23.23	**24.00**	23.75
		1	23	22.20	23.09	22.78
		12	6	23.11	23.97	23.72
		24	0	22.09	23.06	22.68
	16QAM	1	0	21.03	22.07	21.76
		1	1	21.98	23.04	22.80
		1	22	22.20	**23.10**	22.82
		1	23	21.23	22.05	21.81
		12	6	22.09	23.08	22.72
		24	0	21.05	21.99	21.70
	64QAM	1	0	20.38	21.48	21.18
		1	1	20.33	21.43	21.16
		1	22	20.57	21.44	21.15
		1	23	20.60	21.46	21.22
		12	6	20.57	**21.51**	21.23
		24	0	20.51	21.48	21.20
	256QAM	1	0	18.44	**19.51**	19.12
		1	1	18.41	19.44	19.11
		1	22	18.59	19.49	19.17
		1	23	18.49	19.40	19.14
		12	6	18.51	19.43	19.20
		24	0	18.00	19.01	18.73

OUTPUT POWER FOR 5G NR n41 (15.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT B		
				500700	518600	536500
				2503.5 MHz	2593.0 MHz	2682.5 MHz
15.0	BPSK	1	0	22.46	23.45	23.11
		1	1	22.92	23.90	23.64
		1	36	23.30	23.84	23.81
		1	37	22.82	23.47	23.31
		18	9	23.16	**23.91**	23.70
		36	0	22.68	23.54	23.24
	QPSK	1	0	22.03	23.10	22.64
		1	1	22.80	23.69	23.68
		1	36	23.34	23.71	23.79
		1	37	22.29	23.10	22.81
		18	9	23.12	**23.93**	23.69
		36	0	22.19	23.06	22.72
	16QAM	1	0	20.99	22.09	21.67
		1	1	22.03	23.11	22.66
		1	36	22.25	**23.13**	22.78
		1	37	21.30	22.07	21.82
		18	9	22.16	23.10	22.71
		36	0	21.15	22.09	21.70
	64QAM	1	0	20.41	21.44	21.03
		1	1	20.46	21.54	21.10
		1	36	20.74	21.48	21.23
		1	37	20.62	21.53	21.21
		18	9	20.62	21.55	21.17
		36	0	20.60	**21.57**	21.16
	256QAM	1	0	18.41	19.39	19.23
		1	1	18.49	19.50	19.03
		1	36	18.62	19.48	19.12
		1	37	18.66	19.46	19.11
		18	9	18.58	**19.52**	19.15
		36	0	18.04	19.02	18.65

OUTPUT POWER FOR 5G NR n41 (20.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT B		
				501200	518600	536000
				2506.0 MHz	2593 MHz	2680.0 MHz
20.0	BPSK	1	0	22.36	22.85	22.92
		1	1	22.33	22.90	**24.03**
		1	49	22.21	23.19	23.90
		1	50	22.28	23.12	23.40
		25	12	22.31	23.11	23.97
		50	0	22.24	23.14	23.45
	QPSK	1	0	22.27	22.81	23.04
		1	1	22.32	22.84	**24.04**
		1	49	22.22	23.19	23.82
		1	50	22.23	23.22	22.89
		25	12	22.33	23.11	23.96
		50	0	22.37	23.10	22.92
	16QAM	1	0	22.53	22.65	22.18
		1	1	22.31	22.91	23.22
		1	49	22.36	23.38	22.86
		1	50	22.33	**23.40**	22.03
		25	12	22.24	23.23	22.97
		50	0	22.25	23.24	21.92
	64QAM	1	0	21.86	22.54	21.66
		1	1	22.28	22.60	21.82
		1	49	21.91	**23.07**	21.81
		1	50	21.87	22.94	21.52
		25	12	21.95	22.85	21.46
		50	0	22.00	22.71	21.47
	256QAM	1	0	19.81	20.21	19.36
		1	1	19.99	20.38	19.23
		1	49	20.18	**20.91**	18.96
		1	50	19.89	20.74	18.92
		25	12	19.92	20.83	19.07
		50	0	19.98	20.81	18.94

OUTPUT POWER FOR 5G NR n41 (30.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT B		
				502200	518600	525000
				2511.0 MHz	2593.0 MHz	2675.0 MHz
30.0	BPSK	1	0	22.50	23.30	23.42
		1	1	22.99	23.93	23.92
		1	76	23.34	**23.99**	23.82
		1	77	22.84	23.52	23.34
		36	18	23.28	23.97	23.71
		75	0	22.80	23.60	23.23
	QPSK	1	0	22.08	23.00	22.91
		1	1	22.88	24.00	23.92
		1	76	23.33	**24.02**	23.83
		1	77	22.32	23.06	22.82
		36	18	23.27	23.96	23.70
		75	0	22.29	23.09	22.72
	16QAM	1	0	21.05	21.96	21.96
		1	1	22.03	23.01	22.94
		1	76	22.26	23.02	22.87
		1	77	21.26	22.10	21.86
		36	18	22.23	**23.05**	22.65
		75	0	21.27	22.08	21.69
	64QAM	1	0	20.24	21.57	21.25
		1	1	20.40	21.47	21.39
		1	76	20.74	21.54	21.23
		1	77	20.77	**21.60**	21.09
		36	18	20.73	21.51	21.19
		75	0	20.72	21.53	21.15
	256QAM	1	0	18.45	19.38	19.31
		1	1	18.45	19.31	19.25
		1	76	18.75	19.33	19.20
		1	77	18.57	19.44	19.19
		36	18	18.70	**19.49**	19.12
		75	0	18.24	19.00	18.65

OUTPUT POWER FOR 5G NR n41 (40.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT B		
				503200	518600	534000
				2516.0 MHz	2593 MHz	2670.0 MHz
40.0	BPSK	1	0	22.38		23.55
		1	1	22.95		**24.02**
		1	104	23.15		23.68
		1	105	22.51		23.31
		50	25	23.28		23.77
		100	0	22.71		23.30
	QPSK	1	0	21.89		23.14
		1	1	22.95		**24.12**
		1	104	23.13		23.66
		1	105	22.16		22.71
		50	25	23.36		23.81
		100	0	22.27		22.79
	16QAM	1	0	21.04		22.10
		1	1	21.91		**23.04**
		1	104	22.27		22.82
		1	105	21.14		21.70
		50	25	22.29		22.75
		100	0	21.22		21.83
	64QAM	1	0	20.38		**21.53**
		1	1	20.20		21.51
		1	104	20.55		21.38
		1	105	20.62		21.12
		50	25	20.77		21.20
		100	0	20.68		21.27
	256QAM	1	0	18.52		19.42
		1	1	18.48		**19.58**
		1	104	18.63		19.04
		1	105	18.40		19.24
		50	25	18.71		19.17
		100	0	18.15		18.79

OUTPUT POWER FOR 5G NR n41 (50.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT B		
				504200	518600	533000
				2521.0 MHz	2593 MHz	2665.0 MHz
50.0	BPSK	1	0	22.40	23.10	23.61
		1	1	22.91	23.77	**24.13**
		1	131	23.19	24.02	23.80
		1	132	22.69	23.52	23.28
		64	32	23.25	24.09	23.89
		128	0	22.76	23.62	23.45
	QPSK	1	0	21.92	22.80	23.20
		1	1	22.90	23.80	**24.19**
		1	131	23.30	24.05	23.79
		1	132	22.23	23.01	22.71
		64	32	23.28	24.10	23.90
		128	0	22.23	23.12	22.99
	16QAM	1	0	21.01	21.61	22.18
		1	1	21.92	22.85	**23.15**
		1	131	22.14	23.06	22.91
		1	132	21.12	21.96	21.75
		64	32	22.31	23.03	22.86
		128	0	21.22	22.08	21.95
	64QAM	1	0	20.36	21.16	21.59
		1	1	20.18	21.11	**21.67**
		1	131	20.57	21.53	21.43
		1	132	20.68	21.61	21.19
		64	32	20.76	21.56	21.34
		128	0	20.70	21.59	21.40
	256QAM	1	0	18.50	19.20	19.80
		1	1	18.34	19.18	**19.94**
		1	131	18.58	19.45	19.35
		1	132	18.65	19.35	19.11
		64	32	18.74	19.52	19.37
		128	0	18.17	19.04	18.96

OUTPUT POWER FOR 5G NR n41 (60.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT B		
				505200	518600	532000
				2526.0 MHz	2593 MHz	2660.0
60.0	BPSK	1	0	22.44	23.10	23.60
		1	1	22.89	23.56	**24.20**
		1	160	23.46	24.07	23.91
		1	161	22.99	23.68	23.34
		81	40	23.24	24.03	23.99
		162	0	22.64	23.60	23.57
	QPSK	1	0	21.90	22.57	23.20
		1	1	22.97	23.69	24.08
		1	160	23.53	24.10	23.81
		1	161	22.52	23.17	22.84
		81	40	23.17	**24.13**	24.00
		162	0	22.20	23.14	23.06
	16QAM	1	0	20.96	21.81	22.21
		1	1	22.02	22.47	**23.07**
		1	160	22.39	22.94	22.85
		1	161	21.38	21.98	21.83
		81	40	22.25	23.05	22.96
		162	0	21.09	22.10	22.08
	64QAM	1	0	20.13	21.06	**21.64**
		1	1	20.30	21.14	21.51
		1	160	20.88	21.50	21.12
		1	161	20.80	**21.64**	21.15
		81	40	20.68	21.52	21.49
		162	0	20.55	21.53	21.58
	256QAM	1	0	18.21	19.11	19.51
		1	1	18.16	18.98	**19.63**
		1	160	18.85	19.42	19.39
		1	161	18.82	19.59	19.17
		81	40	18.63	19.56	19.45
		162	0	18.05	19.05	19.01

OUTPUT POWER FOR 5G NR n41 (70.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT B		
				526202	518600	531000
				2631.0 MHz	2593.0 MHz	2655.0 MHz
70.0	BPSK	1	0	22.36		23.44
		1	1	22.84		23.93
		1	187	23.65		23.94
		1	188	23.22		23.26
		90	45	23.27		**24.10**
		180	0	22.63		23.70
	QPSK	1	0	21.93		23.02
		1	1	22.97		23.97
		1	187	23.65		23.84
		1	188	22.61		22.81
		90	45	23.25		**24.13**
		180	0	22.14		23.19
	16QAM	1	0	20.77		21.98
		1	1	21.85		22.94
		1	187	22.59		22.89
		1	188	21.72		21.72
		90	45	22.24		**23.15**
		180	0	21.09		22.16
	64QAM	1	0	20.14		21.35
		1	1	20.50		21.54
		1	187	21.03		21.34
		1	188	21.15		21.31
		90	45	20.71		**21.67**
		180	0	20.56		21.64
	256QAM	1	0	18.29		19.45
		1	1	18.19		**19.58**
		1	187	18.98		19.22
		1	188	18.80		19.24
		90	45	18.65		19.54
		180	0	18.04		19.06

OUTPUT POWER FOR 5G NR n41 (80.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT B		
				507200	518600	530000
				2536.0 MHz	2593 MHz	2650.0 MHz
80.0	BPSK	1	0	21.81		23.28
		1	1	22.55		23.88
		1	215	23.64		23.92
		1	216	23.32		23.33
		108	54	23.27		**24.15**
		216	0	22.69		23.65
	QPSK	1	0	21.94		22.94
		1	1	22.89		23.87
		1	215	23.94		23.84
		1	216	23.01		22.87
		108	54	23.17		**24.19**
		216	0	22.18		23.17
	16QAM	1	0	20.81		22.06
		1	1	21.86		22.92
		1	215	22.89		22.93
		1	216	21.95		21.75
		108	54	22.20		**23.14**
		216	0	21.17		22.15
	64QAM	1	0	20.36		21.43
		1	1	19.92		21.25
		1	215	21.27		21.22
		1	216	21.43		21.23
		108	54	20.67		**21.64**
		216	0	20.60		21.63
	256QAM	1	0	18.20		19.39
		1	1	18.26		19.33
		1	215	19.26		19.13
		1	216	19.30		19.17
		108	54	18.74		**19.64**
		216	0	18.06		19.06

OUTPUT POWER FOR 5G NR n41 (90.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT B		
				508200	518600	529000
				2541.0 MHz	2593 MHz	2645.0 MHz
90.0	BPSK	1	0	22.30		23.40
		1	1	22.72		23.80
		1	243	23.69		23.91
		1	244	23.47		23.38
		120	60	23.29		**24.16**
		243	0	22.81		23.61
	QPSK	1	0	21.87		22.80
		1	1	22.86		23.86
		1	243	23.85		23.93
		1	244	23.14		22.79
		120	60	23.29		**24.18**
		243	0	22.30		23.10
	16QAM	1	0	20.77		21.90
		1	1	21.85		23.00
		1	243	22.98		22.95
		1	244	22.32		21.78
		120	60	22.30		**23.14**
		243	0	21.29		22.10
	64QAM	1	0	20.13		21.28
		1	1	20.28		21.37
		1	243	**21.65**		21.22
		1	244	21.55		20.98
		120	60	20.78		**21.65**
		243	0	20.77		21.54
	256QAM	1	0	18.35		19.53
		1	1	18.13		19.62
		1	243	19.62		19.22
		1	244	19.47		19.18
		120	60	18.71		**19.63**
		243	0	18.17		18.99

OUTPUT POWER FOR 5G NR n41 (100.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT B		
				509200	528600	528000
				2546.0 MHz	2593 MHz	2640.0 MHz
100.0	BPSK	1	0	22.33	22.50	21.05
		1	1	22.88	22.90	21.11
		1	271	**23.87**	22.21	22.36
		1	272	23.45	21.90	22.32
		135	67	23.43	21.52	21.85
		270	0	22.88	21.72	22.03
	QPSK	1	0	21.99	22.03	20.54
		1	1	22.97	23.01	21.21
		1	271	**23.73**	22.06	22.52
		1	272	23.04	21.58	21.62
		135	67	23.44	21.52	21.91
		270	0	22.42	21.38	21.72
	16QAM	1	0	20.98	20.97	20.37
		1	1	21.93	22.12	20.72
		1	271	**23.00**	21.45	21.93
		1	272	21.99	20.97	21.23
		135	67	22.42	21.36	21.42
		270	0	21.34	20.92	21.24
	64QAM	1	0	20.22	20.54	20.11
		1	1	20.42	20.91	20.07
		1	271	21.39	20.21	20.84
		1	272	**21.54**	20.54	20.52
		135	67	20.86	20.37	20.66
		270	0	20.87	20.42	20.72
	256QAM	1	0	18.27	18.33	19.31
		1	1	18.26	18.63	19.01
		1	271	**19.66**	19.42	18.98
		1	272	19.39	19.45	19.02
		135	67	18.84	19.21	19.32
		270	0	18.29	18.75	18.76

8.1. 5G NR n66 (FCC Part 27)

5G NR n66

Test Engineer ID:	25780	Test Date:	10/13/2023

OUTPUT POWER FOR 5G NR n66 (5.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT B		
				342500	349000	355500
				1712.5 MHz	1745 MHz	1777.5 MHz
5.0	BPSK	1	0	22.10	22.70	22.20
		1	1	23.10	**23.90**	23.80
		1	23	23.10	**23.90**	23.60
		1	24	21.55	22.80	22.20
		12	6	23.10	22.70	23.70
		25	0	22.60	22.70	23.20
	QPSK	1	0	23.94	24.07	24.19
		1	1	23.94	24.21	24.16
		1	23	23.98	**24.35**	**24.50**
		1	24	23.81	24.24	24.15
		12	6	24.34	24.26	24.29
		25	0	24.00	24.34	23.90
	16QAM	1	0	23.90	24.43	24.18
		1	1	23.71	24.17	24.03
		1	23	23.79	23.83	**24.46**
		1	24	24.05	24.35	23.88
		12	6	24.27	24.33	23.89
		25	0	23.92	24.41	24.23
	64QAM	1	0	23.96	**24.48**	24.19
		1	1	23.86	23.92	24.38
		1	23	23.98	24.23	24.27
		1	24	23.75	24.14	24.21
		12	6	24.08	24.21	24.18
		25	0	23.75	24.21	24.00
	256QAM	1	0	22.98	23.16	22.78
		1	1	22.46	22.95	22.69
		1	23	22.56	23.17	22.91
		1	24	22.82	22.87	**23.26**
		12	6	22.43	22.68	22.67
		25	0	22.53	22.82	22.74

OUTPUT POWER FOR 5G NR n66 (10.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT B		
				343000	349000	355000
				1715 MHz	1745 MHz	1775 MHz
10.0	BPSK	1	0	**23.99**	23.72	23.50
		1	1	23.60	23.80	23.36
		1	50	23.50	23.70	23.50
		1	51	23.92	23.75	22.86
		25	12	23.60	23.60	23.30
		50	0	23.00	23.00	22.80
	QPSK	1	0	24.16	24.03	23.20
		1	1	23.60	23.80	23.60
		1	50	20.44	23.90	23.50
		1	51	24.07	**24.23**	23.40
		25	12	22.90	24.00	22.40
		50	0	22.10	23.00	22.35
	16QAM	1	0	20.20	**24.19**	21.36
		1	1	22.40	23.30	22.90
		1	50	20.45	20.66	22.45
		1	51	20.53	24.15	21.61
		25	12	20.32	20.73	22.44
		50	0	20.31	20.76	21.53
	64QAM	1	0	20.32	23.88	20.83
		1	1	20.60	21.70	21.50
		1	50	20.42	20.61	21.19
		1	51	20.52	**24.14**	21.20
		25	12	20.32	20.77	21.05
		50	0	18.76	20.72	21.06
	256QAM	1	0	18.88	22.68	18.87
		1	1	18.71	19.80	18.80
		1	50	19.06	19.38	19.09
		1	51	18.89	**23.39**	19.03
		25	12	18.92	19.34	19.04
		50	0	18.90	19.35	19.04

OUTPUT POWER FOR 5G NR n66 (15.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT B		
				343500		354500
				1717.5 MHz	1745 MHz	1772.5 MHz
15.0	BPSK	1	0	22.79	22.81	22.67
		1	1	23.00	**23.80**	23.60
		1	77	23.30	**23.80**	23.50
		1	78	23.12	22.87	22.93
		36	18	23.20	**23.80**	23.50
		75	0	22.60	23.30	22.80
	QPSK	1	0	23.29	22.51	22.50
		1	1	23.00	23.80	23.60
		1	77	23.30	23.80	23.60
		1	78	22.66	22.65	22.40
		36	18	23.10	**23.90**	23.50
		75	0	22.20	22.80	22.60
	16QAM	1	0	21.45	21.36	21.37
		1	1	22.30	**23.10**	**23.10**
		1	77	22.73	22.62	22.69
		1	78	21.53	21.47	21.68
		36	18	22.57	22.76	22.51
		75	0	21.57	21.75	21.55
	64QAM	1	0	20.84	21.05	20.96
		1	1	21.30	**21.80**	21.40
		1	77	21.11	21.06	21.17
		1	78	21.05	21.04	20.99
		36	18	21.04	21.25	20.77
		75	0	21.02	21.23	20.87
	256QAM	1	0	18.81	19.08	18.87
		1	1	19.10	19.10	18.80
		1	77	19.07	19.10	19.03
		1	78	19.10	19.07	19.04
		36	18	18.99	**19.23**	19.01
		75	0	19.02	19.21	19.00

OUTPUT POWER FOR 5G NR n66 (20.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT B		
				344000	349000	354000
				1720 MHz	1745 MHz	1770 MHz
20.0	BPSK	1	0	22.81	22.89	22.98
		1	1	23.40	23.40	23.20
		1	104	23.40	23.30	23.20
		1	105	22.81	22.68	23.24
		50	25	**23.60**	23.50	23.20
		100	0	23.10	22.90	22.70
	QPSK	1	0	22.35	22.34	22.32
		1	1	23.40	23.30	23.20
		1	104	23.60	23.30	23.20
		1	105	22.41	22.83	22.58
		50	25	**23.70**	23.50	23.20
		100	0	22.60	22.50	22.20
	16QAM	1	0	21.19	21.75	21.36
		1	1	22.80	22.60	22.70
		1	104	22.46	**22.92**	22.63
		1	105	21.50	21.56	21.45
		50	25	22.72	22.75	22.49
		100	0	21.32	21.72	21.41
	64QAM	1	0	20.34	20.92	20.92
		1	1	**21.40**	21.10	21.30
		1	104	20.74	20.97	21.22
		1	105	20.87	21.12	21.02
		50	25	21.12	21.27	20.93
		100	0	21.16	21.23	20.96
	256QAM	1	0	18.89	19.01	18.82
		1	1	18.80	18.90	19.00
		1	104	18.45	18.92	19.10
		1	105	18.23	19.11	**19.21**
		50	25	18.78	19.18	18.88
		100	0	19.11	19.19	18.93

8.2. 5G NR n77 (FCC Part 27 3450-3550MHz)

Test Engineer ID:	27342	Test Date:	10/27/2023

OUTPUT POWER FOR 5G NR n77 (10.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				630334	633334	636332
				3455.0 MHz	3500.0 MHz	3545.0 MHz
10.0	BPSK	1	0	22.52	22.62	22.89
		1	1	22.90	22.90	23.39
		1	22	23.10	23.12	**23.51**
		1	23	22.80	22.95	23.00
		12	6	22.90	22.92	23.39
		24	0	22.60	22.59	22.94
	QPSK	1	0	22.20	22.12	22.52
		1	1	23.00	22.86	23.35
		1	22	23.05	23.01	23.42
		1	23	22.34	23.31	**23.73**
		12	6	23.07	22.85	23.36
		24	0	22.20	23.29	22.53
	16QAM	1	0	21.30	21.40	21.83
		1	1	22.27	22.30	22.64
		1	22	22.45	22.35	**22.76**
		1	23	21.67	21.55	22.00
		12	6	22.23	21.85	22.45
		24	0	21.33	21.10	21.71
	64QAM	1	0	20.89	20.55	21.13
		1	1	21.21	20.70	21.11
		1	22	21.03	20.90	21.23
		1	23	21.02	20.93	**21.34**
		12	6	20.89	20.75	21.25
		24	0	20.90	20.70	21.32
	256QAM	1	0	19.62	19.47	**19.89**
		1	1	19.62	19.43	19.86
		1	22	19.77	19.51	19.75
		1	23	19.76	19.61	19.78
		12	6	19.49	19.32	19.71
		24	0	19.57	19.35	19.72

OUTPUT POWER FOR 5G NR n77 (15.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				630500	633334	636166
				3457.5 MHz	3500.0 MHz	3542.5 MHz
15.0	BPSK	1	0	22.22	21.80	22.68
		1	1	22.71	22.22	23.17
		1	36	23.07	22.43	23.47
		1	37	22.58	21.91	23.12
		18	9	23.13	22.45	**23.52**
		36	0	22.60	21.91	23.08
	QPSK	1	0	21.80	21.15	22.44
		1	1	22.64	22.09	23.23
		1	36	22.87	22.43	**23.45**
		1	37	22.11	21.56	22.55
		18	9	23.03	22.45	23.41
		36	0	22.17	21.60	22.71
	16QAM	1	0	21.03	20.40	21.65
		1	1	22.00	21.30	22.56
		1	36	22.40	21.58	22.72
		1	37	21.40	20.79	21.93
		18	9	22.18	21.63	**22.81**
		36	0	21.25	20.60	21.86
	64QAM	1	0	20.53	19.76	21.07
		1	1	20.53	19.74	21.28
		1	36	20.91	20.03	21.26
		1	37	20.93	20.01	21.24
		18	9	20.93	20.25	**21.57**
		36	0	21.03	20.18	21.42
	256QAM	1	0	19.23	18.50	19.83
		1	1	19.25	18.52	19.78
		1	36	19.56	18.79	19.75
		1	37	19.52	18.82	19.86
		18	9	19.57	18.79	**19.90**
		36	0	19.54	18.70	19.78

OUTPUT POWER FOR 5G NR n77 (20.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				630668	633334	636000
				3460.0 MHz	3500.0 MHz	3540.0 MHz
20.0	BPSK	1	0	22.08	21.20	22.44
		1	1	22.45	21.85	23.00
		1	49	22.84	22.05	23.30
		1	50	22.45	21.65	22.89
		25	12	23.17	22.34	23.47
		50	0	**23.90**	21.95	23.36
	QPSK	1	0	21.65	20.88	22.49
		1	1	22.52	21.88	22.93
		1	49	22.77	22.14	23.24
		1	50	22.11	21.21	22.84
		25	12	23.04	22.43	**23.42**
		50	0	22.17	21.40	22.91
	16QAM	1	0	20.83	20.21	21.33
		1	1	21.68	21.23	22.54
		1	49	22.10	21.31	22.61
		1	50	21.15	20.49	21.70
		25	12	22.21	21.45	**22.80**
		50	0	21.29	20.61	21.75
	64QAM	1	0	20.17	19.49	20.83
		1	1	20.11	19.67	20.88
		1	49	20.55	19.85	21.03
		1	50	20.52	19.67	21.02
		25	12	20.85	20.29	**21.56**
		50	0	20.79	20.23	21.32
	256QAM	1	0	18.76	18.25	19.52
		1	1	18.86	18.22	19.64
		1	49	19.21	18.60	19.72
		1	50	19.25	18.64	19.79
		25	12	19.40	18.79	19.89
		50	0	19.47	18.72	**19.90**

OUTPUT POWER FOR 5G NR n77 (25.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				630866	633334	635800
				3463 MHz	3500.0 MHz	3537 MHz
25.0	BPSK	1	0	21.76	21.81	22.79
		1	1	22.20	22.12	23.02
		1	63	22.55	22.47	**23.18**
		1	64	22.30	21.97	22.94
		32	16	22.32	21.93	22.86
		64	0	21.99	21.64	22.58
	QPSK	1	0	21.58	21.30	22.24
		1	1	22.27	22.19	23.06
		1	63	22.59	22.67	**23.23**
		1	64	21.81	21.91	22.51
		32	16	22.30	22.29	23.01
		64	0	21.55	21.63	22.26
	16QAM	1	0	20.73	20.84	21.56
		1	1	21.65	21.84	22.55
		1	63	22.06	22.12	**22.64**
		1	64	20.93	21.34	21.70
		32	16	21.50	21.57	22.13
		64	0	20.63	20.85	21.46
	64QAM	1	0	20.12	20.34	21.05
		1	1	20.02	20.40	20.96
		1	63	20.37	20.66	**21.16**
		1	64	20.16	20.58	21.15
		32	16	20.22	20.37	20.97
		64	0	20.26	20.46	21.04
	256QAM	1	0	18.78	19.11	**19.90**
		1	1	18.78	19.11	19.87
		1	63	19.04	19.29	19.59
		1	64	19.12	19.50	19.52
		32	16	18.73	18.96	19.58
		64	0	18.84	19.13	19.69

OUTPUT POWER FOR 5G NR n77 (30.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				631000	633334	635666
				3465.0 MHz	3500.0MHz	3535.0 MHz
30.0	BPSK	1	0	22.88	22.70	23.20
		1	1	23.18	23.03	23.57
		1	76	23.13	23.21	**23.65**
		1	77	22.91	22.91	23.28
		36	18	23.18	22.95	23.20
		75	0	22.87	22.65	23.03
	QPSK	1	0	22.55	22.31	22.84
		1	1	23.34	23.01	22.64
		1	76	23.34	23.15	**23.55**
		1	77	22.52	22.36	22.83
		36	18	23.19	22.74	23.15
		75	0	22.43	22.11	22.60
	16QAM	1	0	21.89	21.44	22.14
		1	1	22.76	22.52	**23.01**
		1	76	22.56	22.70	23.00
		1	77	21.75	21.86	22.22
		36	18	22.47	22.05	22.45
		75	0	21.98	21.20	21.70
	64QAM	1	0	21.02	20.86	21.43
		1	1	21.16	20.93	21.55
		1	76	21.21	21.05	**21.58**
		1	77	21.18	21.02	21.47
		36	18	21.10	20.77	**21.58**
		75	0	21.21	20.95	21.36
	256QAM	1	0	19.90	19.75	**20.11**
		1	1	19.97	19.70	20.04
		1	76	19.82	19.74	19.64
		1	77	19.85	19.72	19.72
		36	18	19.53	19.41	19.80
		75	0	19.81	19.36	19.97

OUTPUT POWER FOR 5G NR n77 (40.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				631332	633334	635332
				3470.0 MHz	3500.0 MHz	3530.0MHz
40.0	BPSK	1	0	23.12		23.70
		1	1	23.56		23.88
		1	104	23.40		**23.91**
		1	105	23.11		23.58
		50	25	23.13		23.24
		100	0	22.83		23.14
	QPSK	1	0	22.95		23.26
		1	1	23.53		**23.94**
		1	104	23.34		23.76
		1	105	22.63		23.24
		50	25	23.07		23.10
		100	0	22.41		22.61
	16QAM	1	0	21.78		21.77
		1	1	23.10		**23.34**
		1	104	22.71		23.09
		1	105	21.95		22.34
		50	25	22.43		22.37
		100	0	21.56		21.84
	64QAM	1	0	21.53		**21.74**
		1	1	21.55		21.70
		1	104	21.34		21.53
		1	105	21.21		21.53
		50	25	21.08		21.16
		100	0	21.24		21.47
	256QAM	1	0	20.00		19.70
		1	1	**20.02**		19.77
		1	104	19.78		19.72
		1	105	19.75		19.74
		50	25	19.64		19.79
		100	0	19.60		19.97

OUTPUT POWER FOR 5G NR n77 (50.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				631334	633334	635332
				3470.0 MHz	3500.0 MHz	3529.0 MHz
50.0	BPSK	1	0	22.25		22.74
		1	1	22.79		**23.35**
		1	131	22.54		23.23
		1	132	22.19		22.81
		64	32	22.94		23.33
		128	0	22.58		22.94
	QPSK	1	0	21.95		22.44
		1	1	22.72		23.20
		1	131	22.49		23.06
		1	132	21.81		22.51
		64	32	23.04		**23.31**
		128	0	22.17		22.43
	16QAM	1	0	20.94		21.63
		1	1	22.07		**22.64**
		1	131	21.95		22.52
		1	132	20.82		21.55
		64	32	22.17		22.56
		128	0	21.01		21.54
	64QAM	1	0	20.25		20.98
		1	1	20.42		21.07
		1	131	20.33		21.04
		1	132	20.24		20.92
		64	32	20.80		21.14
		128	0	20.67		**21.29**
	256QAM	1	0	19.27		19.24
		1	1	19.17		19.03
		1	131	18.97		19.67
		1	132	19.11		19.69
		64	32	19.27		**19.91**
		128	0	19.25		19.87

OUTPUT POWER FOR 5G NR n77 (60.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				632000	633334	634666
				3480.0 MHz	3500.0 MHz	3520.0 MHz
60.0	BPSK	1	0		22.82	
		1	1		**23.00**	
		1	160		22.59	
		1	161		22.12	
		81	40		22.90	
		162	0		22.47	
	QPSK	1	0		22.15	
		1	1		**23.01**	
		1	160		22.40	
		1	161		21.64	
		81	40		22.80	
		162	0		22.09	
	16QAM	1	0		21.23	
		1	1		**22.34**	
		1	160		21.85	
		1	161		20.76	
		81	40		22.11	
		162	0		21.00	
	64QAM	1	0		20.53	
		1	1		20.38	
		1	160		20.10	
		1	161		19.98	
		81	40		20.50	
		162	0		**20.61**	
	256QAM	1	0		19.18	
		1	1		**19.37**	
		1	160		18.90	
		1	161		18.75	
		81	40		19.18	
		162	0		19.10	

OUTPUT POWER FOR 5G NR n77 (70.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				632333	633334	634333
				3485.0 MHz	3500.0 MHz	3515.0 MHz
70.0	BPSK	1	0		22.84	
		1	1		**23.14**	
		1	187		22.55	
		1	188		22.17	
		90	45		22.95	
		180	0		22.48	
	QPSK	1	0		22.26	
		1	1		**23.16**	
		1	187		22.38	
		1	188		21.65	
		90	45		22.88	
		180	0		22.11	
	16QAM	1	0		21.16	
		1	1		**22.52**	
		1	187		21.79	
		1	188		20.80	
		90	45		22.01	
		180	0		20.87	
	64QAM	1	0		20.53	
		1	1		**20.60**	
		1	187		19.95	
		1	188		20.24	
		90	45		20.49	
		180	0		20.48	
	256QAM	1	0		19.20	
		1	1		**19.27**	
		1	187		18.97	
		1	188		18.88	
		90	45		19.06	
		180	0		19.19	

OUTPUT POWER FOR 5G NR n77 (80.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				632666	633334	633998
				3490.0 MHz	3500.0 MHz	3510.0 MHz
80.0	BPSK	1	0		22.72	
		1	1		**23.07**	
		1	215		22.74	
		1	216		22.18	
		108	54		22.90	
		216	0		22.50	
	QPSK	1	0		22.33	
		1	1		**23.08**	
		1	215		22.49	
		1	216		21.63	
		108	54		22.87	
		216	0		22.07	
	16QAM	1	0		21.20	
		1	1		**22.30**	
		1	215		21.80	
		1	216		20.84	
		108	54		22.05	
		216	0		20.89	
	64QAM	1	0		20.46	
		1	1		20.52	
		1	215		19.94	
		1	216		20.14	
		108	54		**20.56**	
		216	0		20.55	
	256QAM	1	0		19.11	
		1	1		**19.19**	
		1	215		18.97	
		1	216		18.84	
		108	54		19.03	
		216	0		19.06	

OUTPUT POWER FOR 5G NR n77 (90.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				633000	633334	633666
				3495.0 MHz	3500.0 MHz	3505.0 MHz
90.0	BPSK	1	0		22.41	
		1	1		**22.72**	
		1	243		22.37	
		1	244		22.10	
		120	60		22.57	
		243	0		22.22	
	QPSK	1	0		21.89	
		1	1		22.60	
		1	243		22.22	
		1	244		21.68	
		120	60		**22.75**	
		243	0		21.94	
	16QAM	1	0		20.78	
		1	1		**21.98**	
		1	243		21.85	
		1	244		20.45	
		120	60		21.86	
		243	0		20.78	
	64QAM	1	0		20.32	
		1	1		20.12	
		1	243		19.55	
		1	244		19.79	
		120	60		20.35	
		243	0		**20.40**	
	256QAM	1	0		**19.17**	
		1	1		18.80	
		1	243		18.70	
		1	244		18.85	
		120	60		18.98	
		243	0		19.00	

OUTPUT POWER FOR 5G NR n77 (100.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				N/A	633334	N/A
				N/A	3500.0 MHz	N/A
100.0	BPSK	1	0		22.55	
		1	1		**22.70**	
		1	271		22.51	
		1	272		21.90	
		135	67		**22.70**	
		270	0		22.38	
	QPSK	1	0		22.35	
		1	1		**22.73**	
		1	271		22.45	
		1	272		21.98	
		135	67		22.62	
		270	0		22.35	
	16QAM	1	0		20.70	
		1	1		**22.55**	
		1	271		21.55	
		1	272		20.61	
		135	67		21.95	
		270	0		20.82	
	64QAM	1	0		20.10	
		1	1		20.22	
		1	271		**20.45**	
		1	272		19.62	
		135	67		**20.45**	
		270	0		20.40	
	256QAM	1	0		18.85	
		1	1		**19.00**	
		1	271		18.70	
		1	272		18.75	
		135	67		18.99	
		270	0		18.98	

8.3. 5G NR n77 (FCC Part 27 3700-3980MHz)

Test Engineer ID:	27342	Test Date:	10/29/2023

OUTPUT POWER FOR 5G NR n77 (10.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				647000	657800	665000
				3705.0 MHz	3867 MHz	3975.0 MHz
10.0	BPSK	1	0	23.44	22.62	22.02
		1	1	**23.47**	22.81	22.22
		1	22	23.27	22.38	21.83
		1	23	23.11	22.01	21.42
		12	6	23.29	22.52	21.85
		24	0	23.15	22.29	21.61
	QPSK	1	0	23.29	22.15	21.53
		1	1	**24.03**	22.89	22.24
		1	22	23.31	22.32	21.92
		1	23	22.73	21.68	21.12
		12	6	23.57	22.53	21.97
		24	0	23.47	21.82	21.21
	16QAM	1	0	22.26	21.45	20.66
		1	1	**23.01**	21.97	21.28
		1	22	22.56	21.51	20.98
		1	23	21.72	20.78	20.22
		12	6	22.44	21.42	20.93
		24	0	21.86	20.78	20.15
	64QAM	1	0	**21.43**	20.83	19.83
		1	1	21.37	20.82	19.74
		1	22	21.19	20.34	19.45
		1	23	21.15	20.24	19.58
		12	6	21.35	20.50	19.70
		24	0	21.25	20.55	19.73
	256QAM	1	0	**19.88**	19.51	18.53
		1	1	19.80	19.47	18.41
		1	22	19.70	19.02	17.53
		1	23	19.73	18.95	17.47
		12	6	19.60	19.03	18.05
		24	0	19.65	19.23	18.09

OUTPUT POWER FOR 5G NR n77 (15.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				647166	657766	664833
				3707.5 MHz	3866.49 MHz	3972.5 MHz
15.0	BPSK	1	0	23.61	22.39	22.11
		1	1	23.76	22.59	22.36
		1	36	23.47	21.87	21.71
		1	37	23.13	21.47	21.37
		18	9	**23.79**	22.42	22.16
		36	0	23.31	22.10	21.93
	QPSK	1	0	22.85	22.02	21.64
		1	1	23.63	22.76	22.27
		1	36	23.41	22.02	21.74
		1	37	22.47	21.06	21.08
		18	9	**23.82**	22.84	22.19
		36	0	22.92	22.00	21.54
	16QAM	1	0	22.04	21.27	20.38
		1	1	22.75	21.77	21.11
		1	36	22.32	21.00	20.69
		1	37	21.63	20.21	19.65
		18	9	**22.79**	21.51	21.11
		36	0	21.91	20.66	20.08
	64QAM	1	0	21.25	20.60	19.86
		1	1	21.36	20.63	19.70
		1	36	20.83	19.89	19.09
		1	37	20.87	19.70	19.23
		18	9	**21.41**	20.48	19.81
		36	0	21.38	20.49	19.76
	256QAM	1	0	19.85	19.24	18.44
		1	1	**20.10**	19.27	18.73
		1	36	19.23	18.39	16.96
		1	37	19.28	18.61	17.30
		18	9	19.77	19.09	18.10
		36	0	19.86	18.98	18.11

OUTPUT POWER FOR 5G NR n77 (20.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				647333	657734	664666
				3710.0 MHz	3866.0	3970.0 MHz
20.0	BPSK	1	0	23.50	23.87	22.74
		1	1	23.98	**24.17**	23.02
		1	49	23.46	23.23	22.13
		1	50	23.16	22.78	21.62
		25	12	**24.17**	23.97	22.78
		50	0	23.72	23.47	22.45
	QPSK	1	0	23.28	23.25	22.13
		1	1	24.04	24.14	22.87
		1	49	23.49	23.18	22.07
		1	50	22.63	22.36	21.32
		25	12	**24.23**	24.15	22.73
		50	0	23.38	23.18	21.99
	16QAM	1	0	20.48	21.10	21.15
		1	1	21.32	**21.85**	20.94
		1	49	20.69	20.76	20.45
		1	50	19.85	19.99	19.50
		25	12	21.50	21.50	20.87
		50	0	20.61	20.67	19.89
	64QAM	1	0	19.85	**20.57**	19.83
		1	1	19.94	20.43	19.56
		1	49	19.21	19.47	18.59
		1	50	19.25	19.42	18.74
		25	12	20.24	20.53	19.55
		50	0	20.07	20.46	19.43
	256QAM	1	0	18.38	19.21	18.47
		1	1	18.50	19.33	18.83
		1	49	17.86	18.34	16.70
		1	50	17.59	18.15	16.46
		25	12	18.62	**19.47**	17.88
		50	0	18.54	19.00	17.83

OUTPUT POWER FOR 5G NR n77 (25.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				647500	657700	664500
				3712 MHz	3865 MHz	3967 MHz
25.0	BPSK	1	0	23.85	23.71	22.96
		1	1	23.85	**23.88**	23.25
		1	63	23.04	22.62	22.18
		1	64	22.81	22.32	21.88
		32	16	23.35	23.01	22.49
		64	0	23.20	22.89	22.18
	QPSK	1	0	23.39	23.33	22.47
		1	1	**23.96**	23.91	23.20
		1	63	23.14	22.67	22.12
		1	64	22.45	21.94	21.45
		32	16	23.50	23.11	22.45
		64	0	22.96	22.50	21.83
	16QAM	1	0	22.96	22.80	21.89
		1	1	**23.60**	23.41	22.42
		1	63	22.72	22.02	21.51
		1	64	22.02	21.60	20.72
		32	16	22.98	22.35	21.72
		64	0	22.31	21.92	21.00
	64QAM	1	0	22.21	**22.24**	21.10
		1	1	22.09	22.12	21.05
		1	63	21.42	20.91	20.27
		1	64	21.25	20.89	20.08
		32	16	21.84	21.40	20.56
		64	0	21.87	21.55	20.61
	256QAM	1	0	20.85	**21.01**	19.80
		1	1	20.94	20.87	19.71
		1	63	19.90	19.66	18.06
		1	64	20.01	19.75	18.34
		32	16	20.22	20.03	18.92
		64	0	20.31	20.21	18.97

OUTPUT POWER FOR 5G NR n77 (30.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				647666	657600	664333
				3715.0	3864 MHz	3965.0 MHz
30.0	BPSK	1	0	23.53	24.02	23.23
		1	1	23.82	**24.10**	23.22
		1	76	22.93	22.87	22.42
		1	77	22.79	22.56	22.03
		36	18	23.44	23.29	22.78
		75	0	23.09	22.89	22.58
	QPSK	1	0	23.39	23.62	22.78
		1	1	23.85	**24.13**	23.35
		1	76	23.23	22.93	22.28
		1	77	22.42	22.29	21.72
		36	18	23.45	23.31	22.72
		75	0	22.72	22.59	22.01
	16QAM	1	0	22.14	**23.28**	23.23
		1	1	23.04	23.27	22.77
		1	76	21.97	21.89	21.63
		1	77	21.16	21.71	21.24
		36	18	21.72	22.03	21.63
		75	0	21.47	21.91	21.44
	64QAM	1	0	21.66	22.23	21.56
		1	1	21.60	**22.25**	21.74
		1	76	20.48	20.65	20.51
		1	77	20.34	20.88	20.40
		36	18	21.02	21.37	20.97
		75	0	21.10	21.60	20.99
	256QAM	1	0	20.00	20.84	20.05
		1	1	20.09	**20.96**	19.99
		1	76	19.15	19.83	18.36
		1	77	19.11	19.61	18.39
		36	18	19.33	20.04	19.23
		75	0	19.46	20.10	19.21

OUTPUT POWER FOR 5G NR n77 (40.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				648000	656000	664000
				3720.0	3840.0 MHz	3960.0MHz
40.0	BPSK	1	0	23.74	23.61	23.39
		1	1	**23.99**	23.82	23.66
		1	104	23.03	22.43	22.61
		1	105	22.65	22.12	22.42
		50	25	22.82	22.28	22.63
		100	0	22.75	22.24	22.52
	QPSK	1	0	23.28	23.09	22.95
		1	1	**24.02**	23.67	23.49
		1	104	22.92	22.16	22.46
		1	105	22.17	21.51	21.67
		50	25	22.94	22.70	22.72
		100	0	22.52	21.83	22.15
	16QAM	1	0	22.40	22.77	22.04
		1	1	22.90	**23.40**	22.92
		1	104	22.16	21.64	21.87
		1	105	21.90	20.91	20.91
		50	25	21.85	21.47	21.59
		100	0	21.81	21.14	21.04
	64QAM	1	0	21.84	21.70	21.52
		1	1	**22.07**	21.92	21.41
		1	104	21.10	20.11	20.09
		1	105	21.07	20.13	20.12
		50	25	21.08	20.50	20.32
		100	0	21.41	20.68	20.56
	256QAM	1	0	20.00	**20.55**	19.97
		1	1	19.94	20.47	19.87
		1	104	19.67	18.94	17.90
		1	105	19.96	19.01	17.88
		50	25	19.56	18.99	18.70
		100	0	19.80	19.10	18.83

OUTPUT POWER FOR 5G NR n77 (50.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				648333	656000	663666
				3725.0 MHz	3840.0 MHz	3955.0 MHz
50.0	BPSK	1	0	23.88	23.42	21.85
		1	1	**24.16**	23.82	21.98
		1	131	22.93	22.43	21.15
		1	132	22.45	21.85	20.83
		64	32	23.71	23.10	22.17
		128	0	23.42	22.88	21.69
	QPSK	1	0	23.32	22.96	21.74
		1	1	**24.01**	23.72	22.14
		1	131	22.84	22.32	21.07
		1	132	21.95	21.69	20.43
		64	32	23.62	22.97	22.18
		128	0	22.87	22.34	21.44
	16QAM	1	0	23.25	22.36	20.60
		1	1	**24.00**	23.24	21.56
		1	131	22.38	21.50	20.16
		1	132	21.79	20.92	19.27
		64	32	23.11	22.30	21.03
		128	0	22.38	21.69	20.05
	64QAM	1	0	**22.51**	21.98	19.96
		1	1	22.37	22.12	19.91
		1	131	20.90	19.98	18.41
		1	132	21.03	20.11	18.92
		64	32	21.96	20.96	19.75
		128	0	21.92	21.03	19.73
	256QAM	1	0	21.01	20.29	19.33
		1	1	**21.05**	20.21	19.27
		1	131	19.42	18.54	16.56
		1	132	19.26	18.84	16.70
		64	32	20.22	19.46	18.46
		128	0	20.23	19.49	18.39

OUTPUT POWER FOR 5G NR n77 (60.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				648666	656000	663333
				3730.0	3840.0 MHz	3950.0 MHz
60.0	BPSK	1	0	23.47		22.62
		1	1	**23.90**		22.76
		1	160	21.96		21.37
		1	161	21.72		20.89
		81	40	23.10		22.41
		162	0	22.91		22.01
	QPSK	1	0	23.11		22.45
		1	1	**23.93**		22.98
		1	160	21.85		21.44
		1	161	21.27		20.49
		81	40	23.15		22.54
		162	0	22.42		21.59
	16QAM	1	0	21.60		20.89
		1	1	**22.45**		21.46
		1	160	20.66		20.05
		1	161	19.75		19.44
		81	40	21.50		21.00
		162	0	20.81		20.15
	64QAM	1	0	20.72		20.77
		1	1	**20.95**		20.60
		1	160	19.29		18.97
		1	161	19.07		19.06
		81	40	20.22		20.15
		162	0	20.30		20.14
	256QAM	1	0	**19.48**		19.40
		1	1	19.38		19.45
		1	160	17.76		17.93
		1	161	17.80		17.71
		81	40	18.78		18.72
		162	0	18.75		18.65

OUTPUT POWER FOR 5G NR n77 (70.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				649000	656000	663000
				3735.0 MHz	3840.0 MHz	3945.0 MHz
70.0	BPSK	1	0	23.74		23.01
		1	1	**23.96**		23.19
		1	187	21.91		21.30
		1	188	21.53		20.97
		90	45	23.08		22.45
		180	0	22.83		22.15
	QPSK	1	0	23.13		22.74
		1	1	**24.03**		23.42
		1	187	21.67		21.50
		1	188	21.01		20.57
		90	45	23.07		22.44
		180	0	22.39		21.90
	16QAM	1	0	21.64		21.38
		1	1	**22.42**		21.97
		1	187	20.37		20.28
		1	188	19.67		19.56
		90	45	21.35		20.95
		180	0	20.66		20.25
	64QAM	1	0	20.79		21.11
		1	1	21.12		**21.20**
		1	187	18.83		19.04
		1	188	18.88		19.45
		90	45	20.18		20.17
		180	0	20.29		20.28
	256QAM	1	0	19.68		19.81
		1	1	19.66		**19.93**
		1	187	17.72		17.97
		1	188	17.40		17.66
		90	45	18.65		18.77
		180	0	18.71		18.82

OUTPUT POWER FOR 5G NR n77 (80.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				649333	656000	662666
				3740.0 MHz	3840.0 MHz	3940.0 MHz
80.0	BPSK	1	0	23.64	23.65	23.16
		1	1	**23.90**	23.84	23.72
		1	215	21.91	21.91	21.37
		1	216	21.69	21.41	21.09
		108	54	22.94	22.82	22.47
		216	0	22.64	22.53	22.20
	QPSK	1	0	23.13	23.03	22.97
		1	1	**23.99**	23.76	23.72
		1	215	21.92	21.66	21.48
		1	216	21.15	20.81	20.70
		108	54	22.93	22.78	22.48
		216	0	22.21	22.21	21.80
	16QAM	1	0	22.23	23.19	22.38
		1	1	**23.26**	23.13	22.68
		1	215	21.36	20.58	19.50
		1	216	20.47	20.56	19.94
		108	54	21.96	21.97	20.99
		216	0	21.21	21.57	20.92
	64QAM	1	0	21.64	**22.32**	21.84
		1	1	21.73	22.11	21.69
		1	215	19.55	19.91	19.46
		1	216	19.50	19.95	19.56
		108	54	20.66	21.13	20.80
		216	0	20.69	21.20	20.96
	256QAM	1	0	20.00	20.69	20.80
		1	1	19.91	20.51	**20.92**
		1	215	18.25	18.49	18.04
		1	216	17.82	18.00	18.09
		108	54	18.60	19.67	19.00
		216	0	18.62	19.70	19.02

OUTPUT POWER FOR 5G NR n77 (90.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				649666	656000	662333
				3745.0 MHz	3840.0 MHz	3935.0
90.0	BPSK	1	0	23.48	23.41	23.38
		1	1	23.79	**23.82**	23.79
		1	243	21.68	21.31	21.60
		1	244	21.38	20.83	21.05
		120	60	22.68	22.54	22.75
		243	0	22.39	22.25	22.36
	QPSK	1	0	22.94	23.06	23.00
		1	1	23.70	23.88	**23.92**
		1	243	21.41	21.19	21.55
		1	244	20.83	20.52	20.74
		120	60	22.67	22.59	22.70
		243	0	21.80	21.94	22.01
	16QAM	1	0	21.58	22.24	21.58
		1	1	22.26	**22.34**	21.63
		1	243	19.90	19.75	19.81
		1	244	19.34	19.44	19.18
		120	60	20.66	20.82	20.85
		243	0	20.52	20.68	20.74
	64QAM	1	0	20.81	21.23	**21.62**
		1	1	21.10	20.88	21.39
		1	243	18.63	18.89	18.84
		1	244	18.68	18.98	18.87
		120	60	19.97	20.22	20.52
		243	0	20.03	20.26	20.61
	256QAM	1	0	19.36	20.11	20.15
		1	1	19.66	19.60	**20.27**
		1	243	17.81	17.65	18.16
		1	244	16.95	17.11	17.65
		120	60	18.57	18.75	19.29
		243	0	18.91	18.84	19.35

OUTPUT POWER FOR 5G NR n77 (100.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)		
				ANT F		
				650000	656000	662000
				3750.0 MHz	3840.0 MHz	3930.0 MHz
100.0	BPSK	1	0	23.54		23.02
		1	1	**23.94**		23.49
		1	271	21.36		20.88
		1	272	21.01		20.66
		135	67	22.80		22.21
		270	0	22.52		21.98
	QPSK	1	0	23.18		22.72
		1	1	**24.00**		23.60
		1	271	21.38		21.11
		1	272	20.63		20.28
		135	67	22.82		22.25
		270	0	22.10		21.53
	16QAM	1	0	21.97		22.33
		1	1	22.06		**22.40**
		1	271	19.41		19.51
		1	272	19.60		19.21
		135	67	20.91		20.57
		270	0	20.78		20.49
	64QAM	1	0	21.19		**21.77**
		1	1	21.50		21.19
		1	271	18.88		19.11
		1	272	18.95		18.61
		135	67	20.21		20.21
		270	0	20.26		20.30
	256QAM	1	0	19.61		**21.83**
		1	1	19.23		21.43
		1	271	17.44		19.11
		1	272	16.87		18.82
		135	67	18.57		20.23
		270	0	18.62		20.32

9. CONDUCTED TEST RESULTS

9.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only.

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the middle channel in each band. The 99% and -26dB bandwidths was also measured and recorded.

RESULTS

There is no limit required and power is the same for low, middle and high channel; therefore, only middle channel was tested except 5G NR n70 where mix of middle/high channels are used. Worst-case plots (highest bandwidth) are reported only.

5G NR n5 (FCC Part 22)

Band	Mode	RB Allocation/RB Offset	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
5G NR n5	5MHz, QPSK	25/0	836.5	4.502	5.307
	5MHz, 16QAM			4.497	5.209
	10MHz, QPSK	50/0		8.971	9.904
	10MHz, 16QAM			8.960	9.655
	15MHz, QPSK	75/0		13.466	14.580
	15MHz, 16QAM			13.487	14.620
	20MHz, QPSK	100/0		17.952	18.990
	20MHz, 16QAM			18.016	18.800

5G NR n26 (FCC PART 90S)

Band	Mode	RB Allocation/RB Offset	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
5G NR n26 (FCC Part 90S)	5MHz, QPSK	25/0	819	4.512	5.234
	5MHz, 16QAM			4.503	5.278
	10MHz, QPSK	50/0		9.004	9.948
	10MHz, 16QAM			8.993	9.941
	15MHz, QPSK	75/0		13.517	14.910
	15MHz, 16QAM			13.458	14.560
	20MHz, QPSK	100/0		17.884	19.100
	20MHz, 16QAM			17.877	19.340

5G NR n26 (FCC PART 22)

Band	Mode	RB Allocation/RB Offset	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
5G NR n26 (FCC Part 22)	5MHz, QPSK	25/0	836.5	4.498	5.274
	5MHz, 16QAM			4.503	5.194
	10MHz, QPSK	50/0		8.994	9.973
	10MHz, 16QAM			8.968	9.765
	15MHz, QPSK	75/0		13.485	14.620
	15MHz, 16QAM			13.517	14.620
	20MHz, QPSK	100/0		17.917	19.070
	20MHz, 16QAM			17.920	19.150

5G NR n41 (FCC Part 27)

Band	Mode	RB Allocation/RB Offset	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
5G NR n41 (FCC)	10MHz, QPSK	24/0	2593	8.6545	10.140
	10MHz, 16QAM			8.603	9.915
	15MHz, QPSK	36/0		12.874	14.420
	15MHz, 16QAM			12.928	14.610
	20MHz, QPSK	50/0		17.831	19.430
	20MHz, 16QAM			17.960	20.070
	30MHz, QPSK	75/0		26.954	29.180
	30MHz, 16QAM			26.952	29.150
	40MHz, QPSK	100/0		35.894	38.510
	40MHz, 16QAM			35.837	38.440
	50MHz, QPSK	128/0		45.778	49.820
	50MHz, 16QAM			45.808	49.640
	60MHz, QPSK	162/0		58.001	63.390
	60MHz, 16QAM			58.248	64.590
	70MHz, QPSK	180/0		64.531	71.740
	70MHz, 16QAM			64.717	70.960
	80MHz, QPSK	216/0		77.398	84.390
	80MHz, 16QAM			77.274	84.190
	90MHz, QPSK	243/0		87.236	95.030
	90MHz, 16QAM			86.996	94.870
	100MHz, QPSK	270/0		96.581	104.700
	100MHz, 16QAM			96.722	104.500

5G NR n66 (FCC Part 27)

Band	Mode	RB Allocation/RB Offset	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
5G NR n66	5MHz, QPSK	25/0	1745.0	4.518	5.355
	5MHz, 16QAM			4.508	5.214
	10MHz, QPSK	50/0		8.982	9.946
	10MHz, 16QAM			8.972	9.973
	15MHz, QPSK	75/0		13.438	14.550
	15MHz, 16QAM			13.402	14.510
	20MHz, QPSK	100/0		17.875	19.180
	20MHz, 16QAM			17.879	19.180

5G NR n77(FCC Part 27 3450-3550MHz)

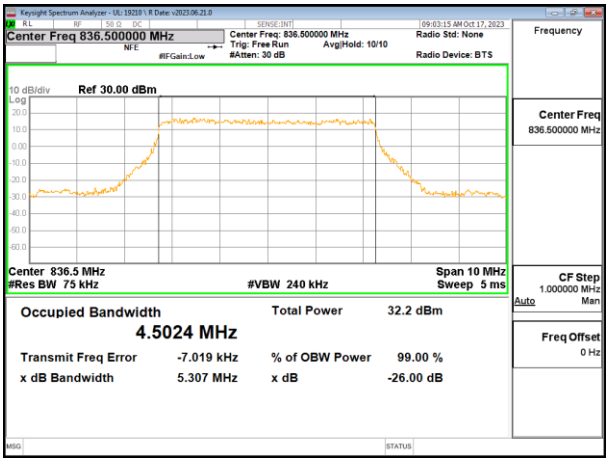
Band	Mode	RB Allocation/RB Offset	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
(FCC Part 27 3450-3550MHz)	10MHz, QPSK	24/0	3500	8.662	10.170
	10MHz, 16QAM			8.607	9.962
	15MHz, QPSK	36/0		12.882	14.490
	15MHz, 16QAM			12.93	14.640
	20MHz, QPSK	50/0		17.841	19.460
	20MHz, 16QAM			17.973	20.10
	25MHz, QPSK	64/0		22.988	25.06
	25MHz, 16QAM			22.978	25.16
	30MHz, QPSK	75/0		26.944	29.150
	30MHz, 16QAM			26.914	29.210
	40MHz, QPSK	100/0		35.875	38.440
	40MHz, 16QAM			35.828	38.460
	50MHz, QPSK	128/0		45.767	49.540
	50MHz, 16QAM			45.800	49.630
	60MHz, QPSK	162/0		57.950	63.360
	60MHz, 16QAM			58.210	64.57
	70MHz, QPSK	180/0		64.425	71.25
	70MHz, 16QAM			64.616	70.80
	80MHz, QPSK	216/0		77.278	84.31
	80MHz, 16QAM			77.132	84.06
	90MHz, QPSK	243/0		86.947	93.700
	90MHz, 16QAM			86.827	94.950
	100MHz, QPSK	270/0		96.360	104.600
	100MHz, 16QAM			96.511	103.400

5G NR n77(FCC Part 27 3700-3980MHz)

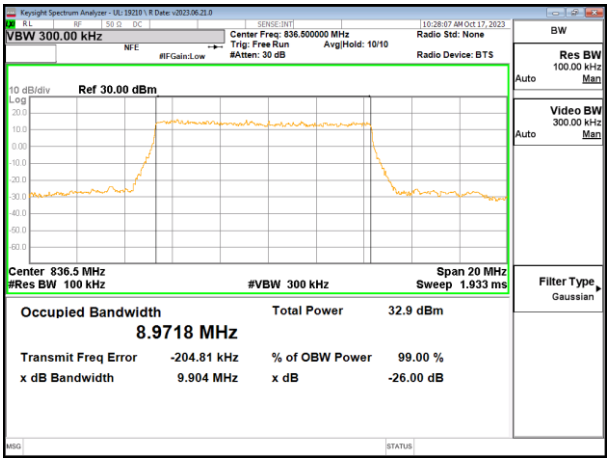
Band	Mode	RB Allocation/RB Offset	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
5G NR n77(FCC Part 27 3700-3980MHz)	10MHz, QPSK	24/0	3840	8.659	9.969
	10MHz, 16QAM			8.597	9.915
	15MHz, QPSK	36/0		12.868	14.230
	15MHz, 16QAM			12.839	14.14
	20MHz, QPSK	50/0		17.858	19.27
	20MHz, 16QAM			17.936	19.55
	25MHz, QPSK	64/0		22.887	24.51
	25MHz, 16QAM			22.968	24.85
	30MHz, QPSK	75/0		26.907	28.66
	30MHz, 16QAM			26.868	29.19
	40MHz, QPSK	100/0		35.866	38.09
	40MHz, 16QAM			35.844	37.96
	50MHz, QPSK	128/0		45.797	49.08
	50MHz, 16QAM			45.700	49.03
	60MHz, QPSK	162/0		57.837	62.62
	60MHz, 16QAM			58.020	63.79
	70MHz, QPSK	180/0		64.229	69.26
	70MHz, 16QAM			64.297	70.18
	80MHz, QPSK	216/0		77.125	82.06
	80MHz, 16QAM			77.078	83.29
	90MHz, QPSK	243/0		85.620	92.11
	90MHz, 16QAM			85.690	92.09
	100MHz, QPSK	270/0		96.354	101.90
	100MHz, 16QAM			96.520	102.80

9.1.1. 5G NR n5 (FCC Part 22)

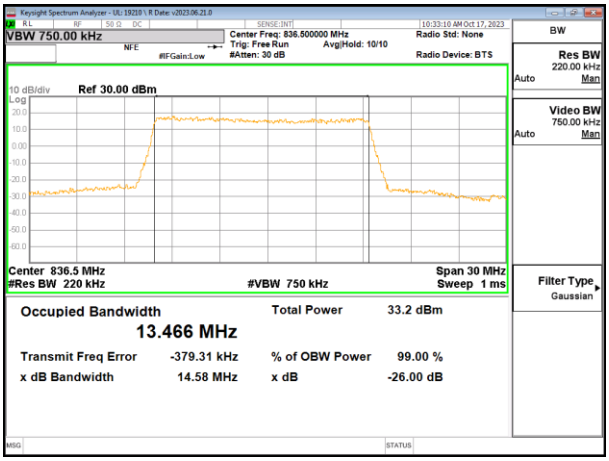
Test Engineer ID:	27342	Test Date:	10/17/2023



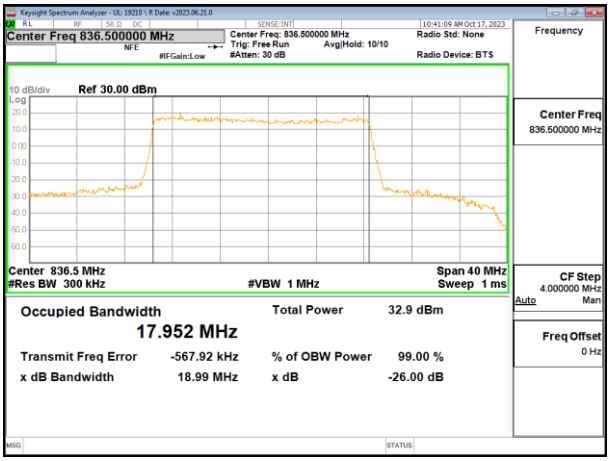
5G NR n5 5MHz QPSK Middle Channel RB25-0



5G NR n5 10MHz QPSK Middle Channel RB50-0

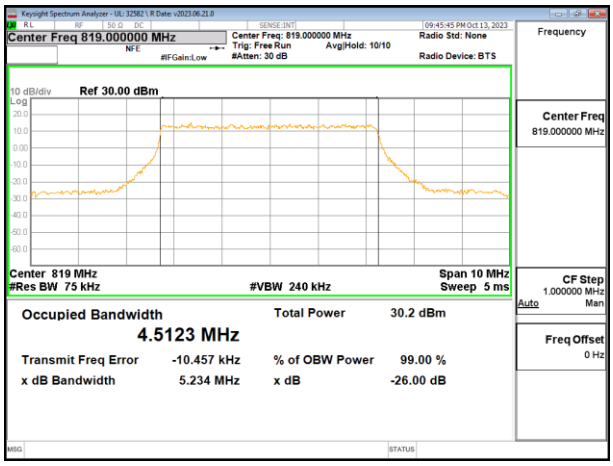


5G NR n5 15MHz QPSK Middle Channel RB75-0

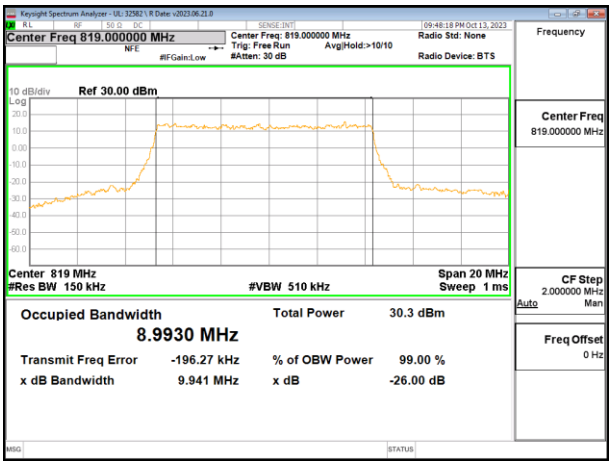


5G NR n5 20MHz QPSK Middle Channel RB100-0

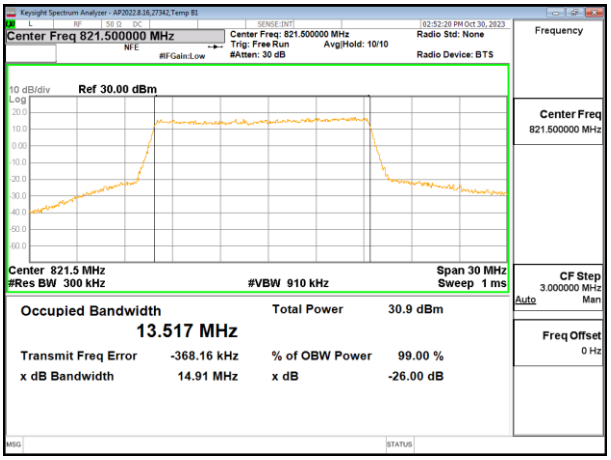
9.1.2. 5G NR n26 (FCC PART 90S)



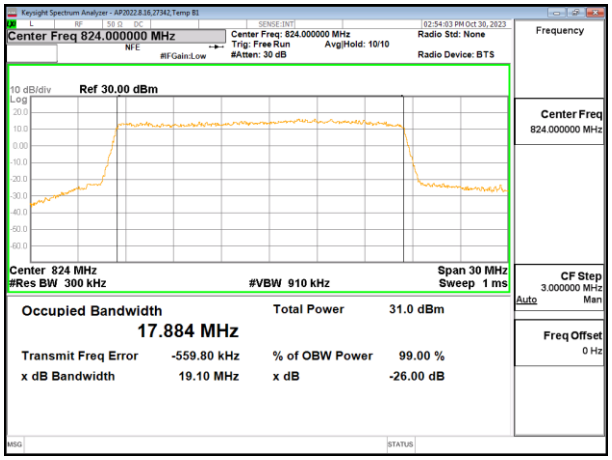
5G NR n26 5MHz QPSK Middle Channel RB25-0



5G NR n26 10MHz QPSK Middle Channel RB50-0



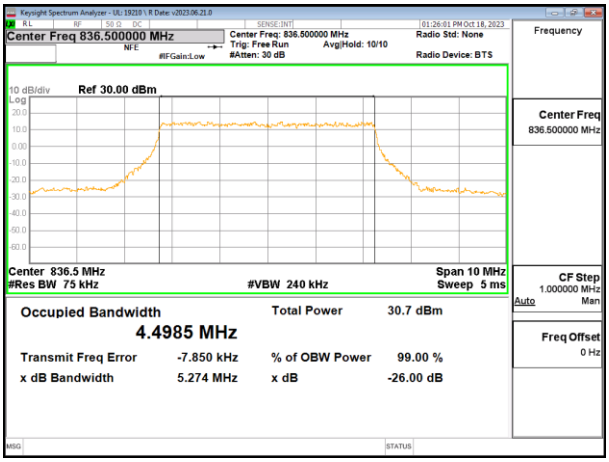
5G NR n26 15MHz QPSK Middle Channel RB75-0



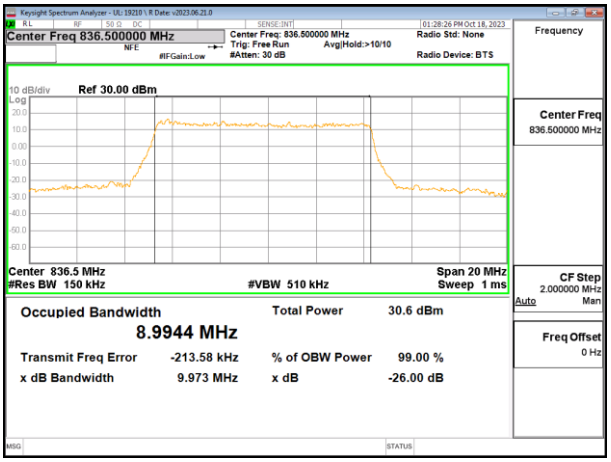
5G NR n26 20MHz QPSK Middle Channel RB100-0

9.1.3. 5G NR n26 (FCC PART 22)

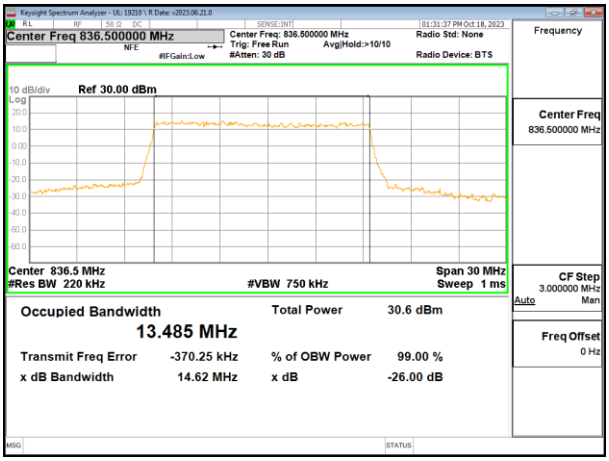
Test Engineer ID:	27342	Test Date:	10/18/2023



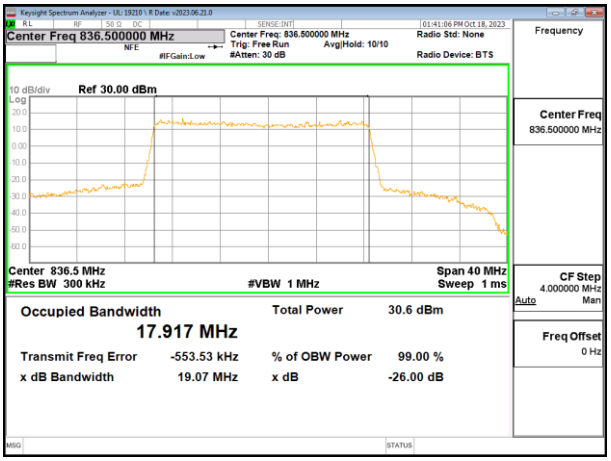
5G NR n26 5MHz QPSK Middle Channel RB25-0



5G NR n26 10MHz QPSK Middle Channel RB50-0

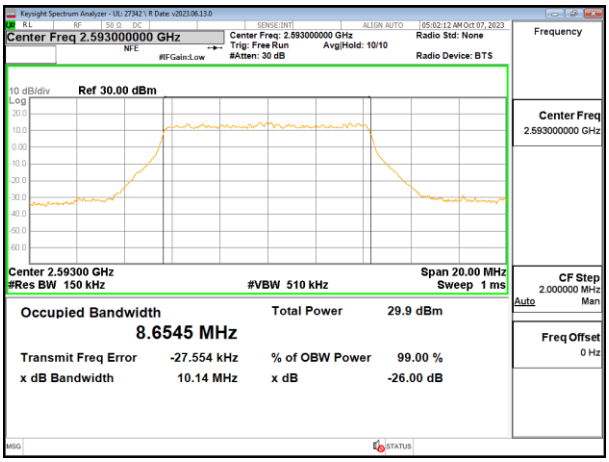


5G NR n26 15MHz QPSK Middle Channel RB75-0

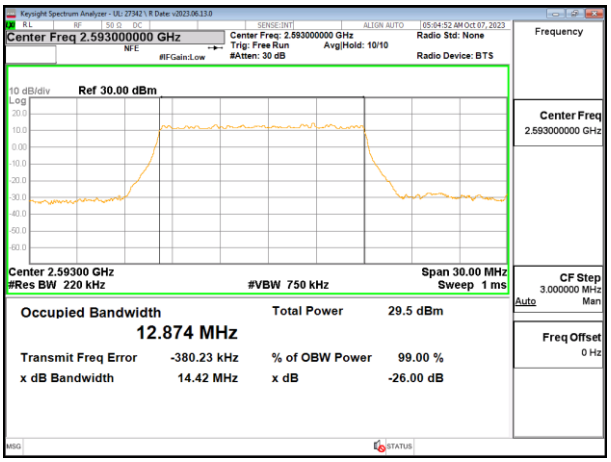


5G NR n26 20MHz QPSK Middle Channel RB100-0

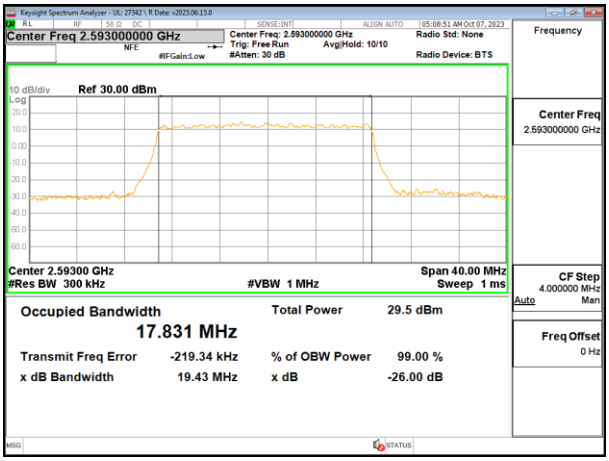
9.1.4. 5G NR n41 (FCC Part 27)



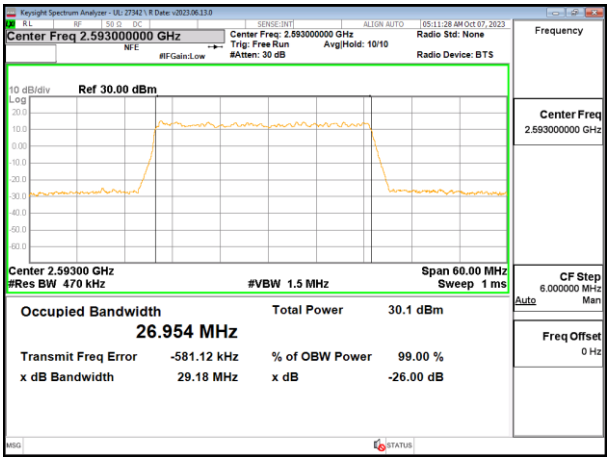
5G NR n41 10MHz QPSK Middle Channel RB24-0



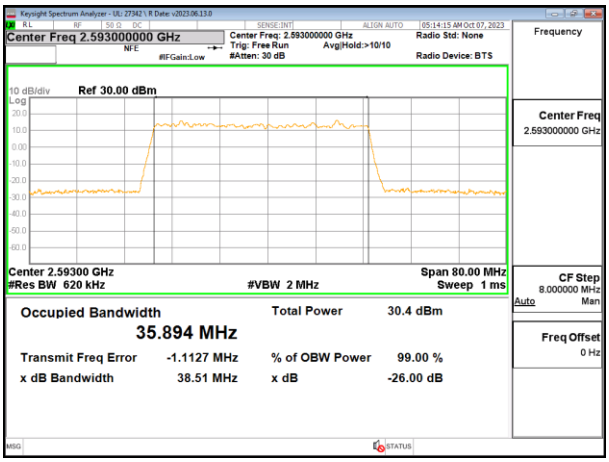
5G NR n41 15MHz QPSK Middle Channel RB36-0



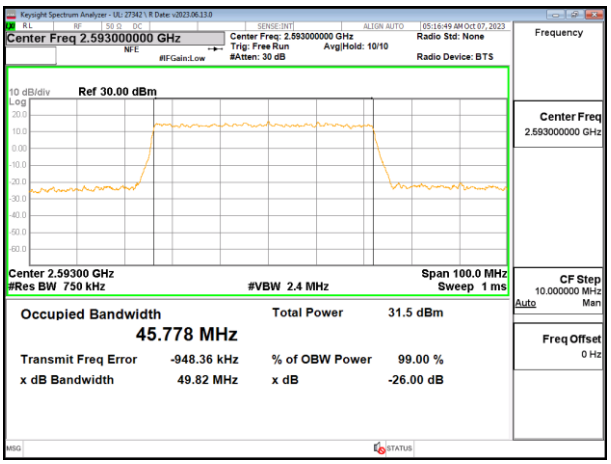
5G NR n41 20MHz QPSK Middle Channel RB50-0



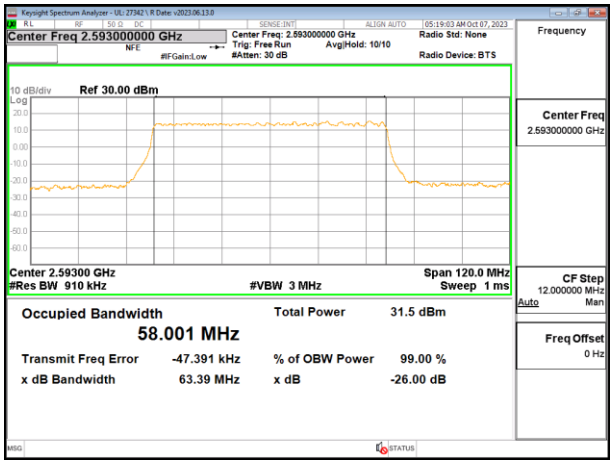
5G NR n41 30MHz QPSK Middle Channel RB75-0



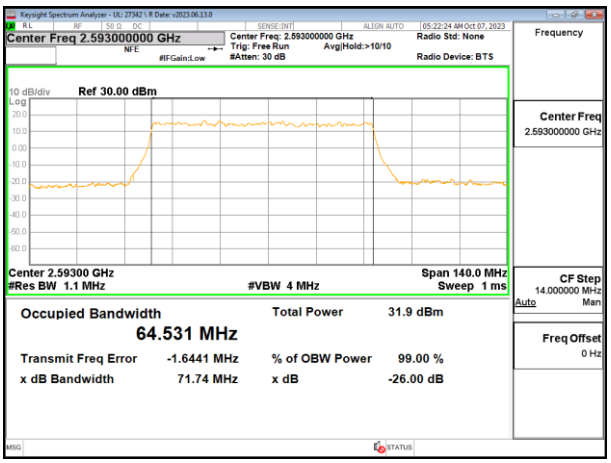
5G NR n41 40MHz QPSK Middle Channel RB100-0



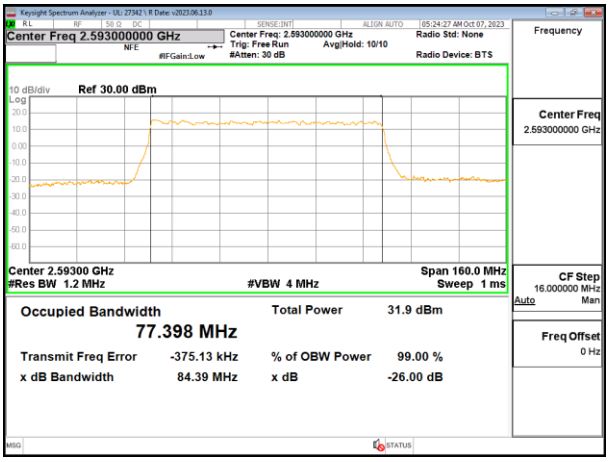
5G NR n41 50MHz QPSK Middle Channel RB128-0



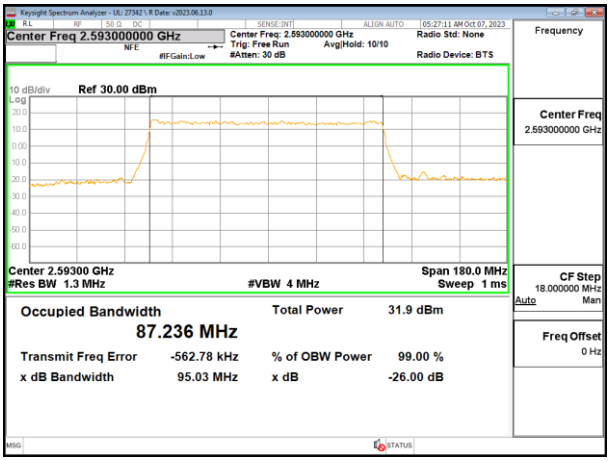
5G NR n41 60MHz QPSK Middle Channel RB162-0



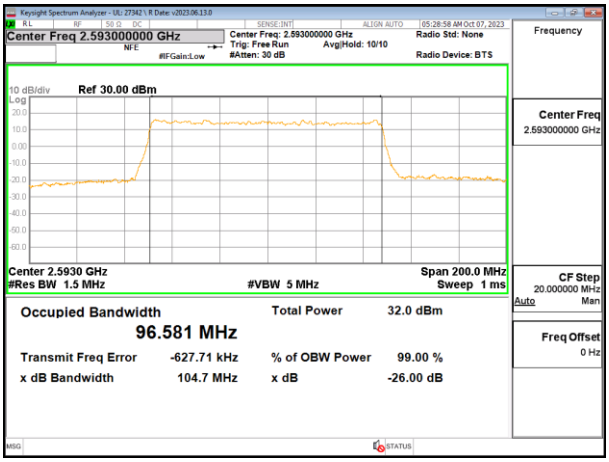
5G NR n41 70MHz QPSK Middle Channel RB180-0



5G NR n41 80MHz QPSK Middle Channel RB216-0



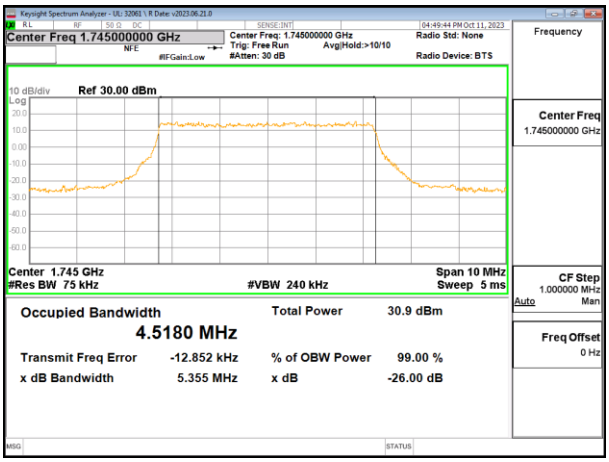
5G NR n41 90MHz QPSK Middle Channel RB243-0



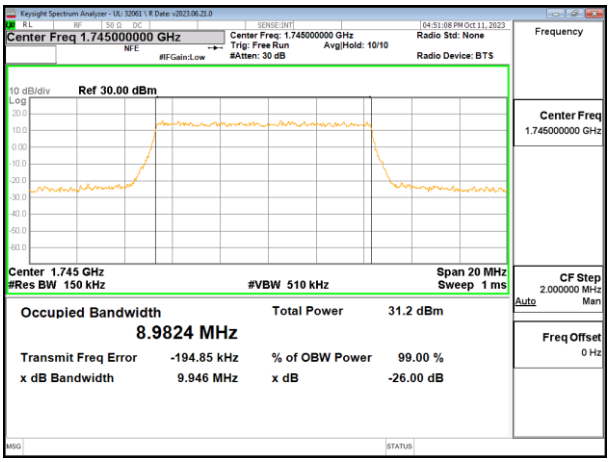
5G NR n41 100MHz QPSK Middle Channel RB270-0

Intentionally Blank

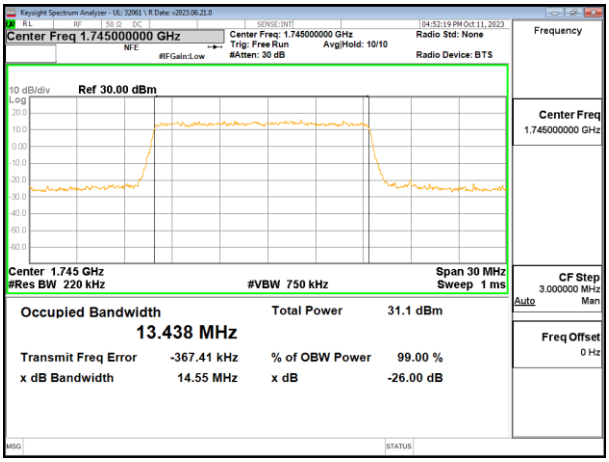
9.1.5. 5G NR n66 (FCC Part 27)



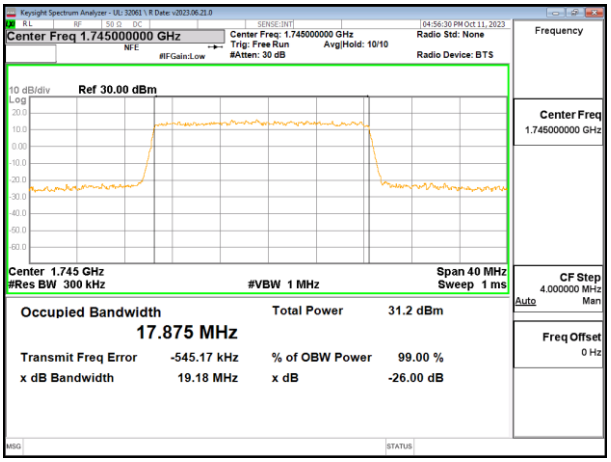
5G NR n66 5MHz QPSK Middle Channel RB25-0



5G NR n66 10MHz QPSK Middle Channel RB50-0

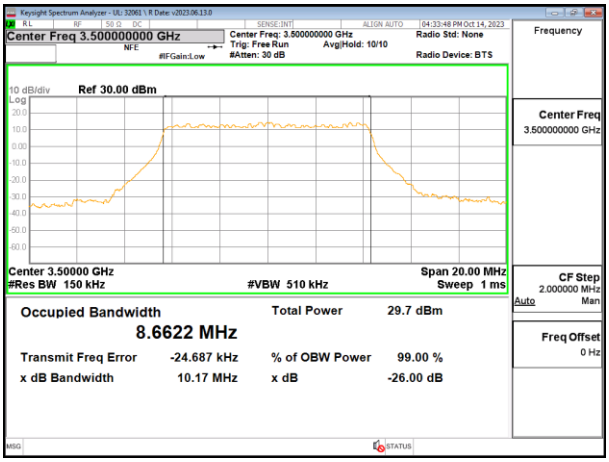


5G NR n66 15MHz QPSK Middle Channel RB75-0

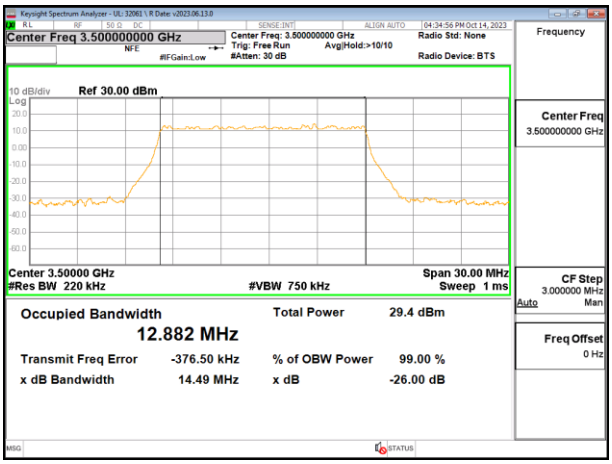


5G NR n66 20MHz QPSK Middle Channel RB100-0

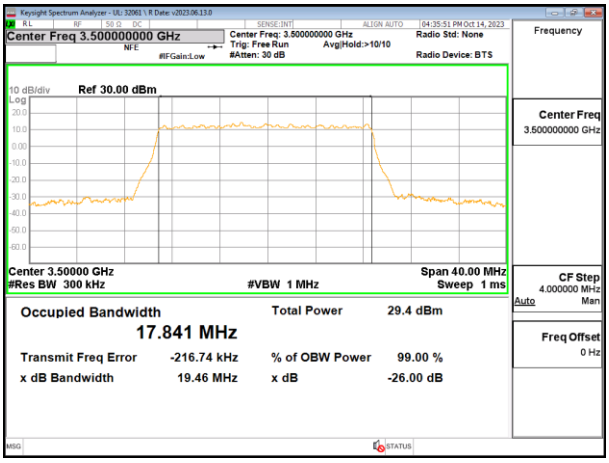
9.1.6. 5G NR n77 (FCC Part 27 3450-3550MHz



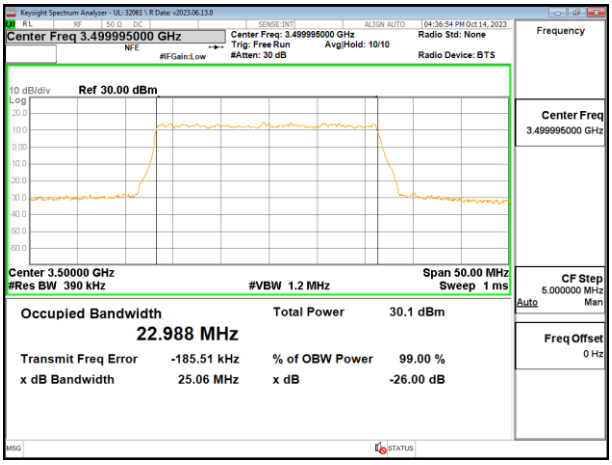
5G NR n77 10MHz QPSK Middle Channel RB24-0



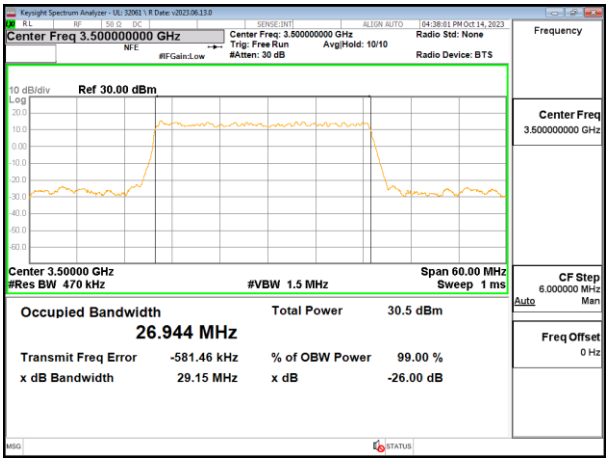
5G NR n77 15MHz QPSK Middle Channel RB36-0



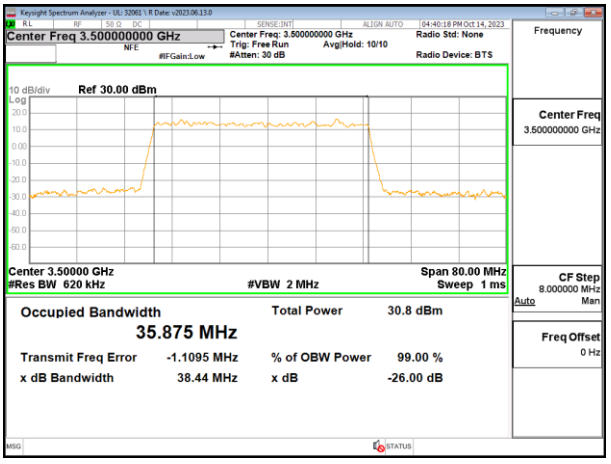
5G NR n77 20MHz QPSK Middle Channel RB50-0



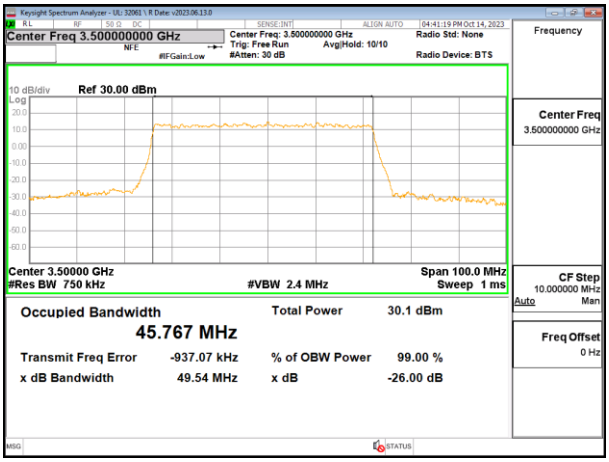
5G NR n77 25MHz QPSK Middle Channel RB64-0



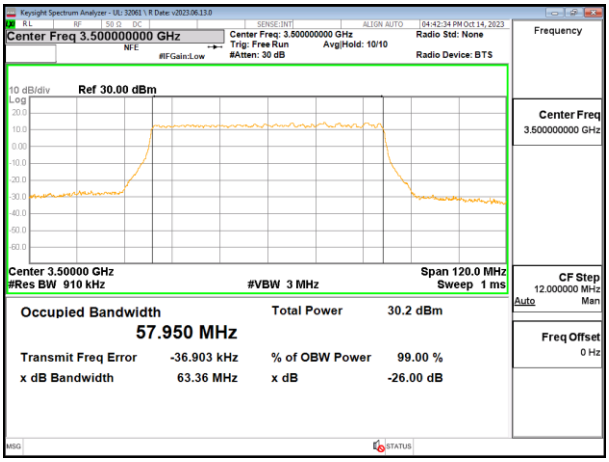
5G NR n77 30MHz QPSK Middle Channel RB75-0



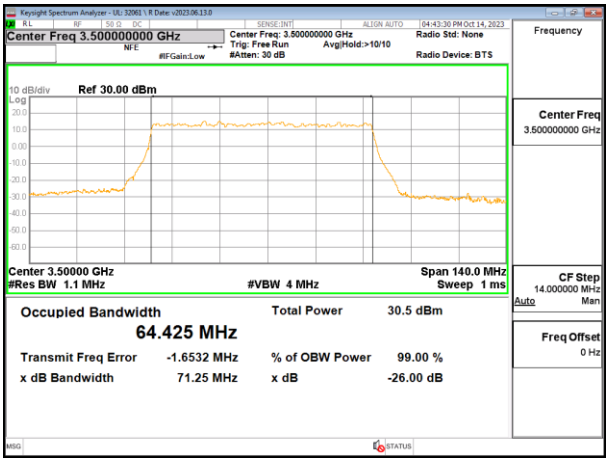
5G NR n77 40MHz QPSK Middle Channel RB100-0



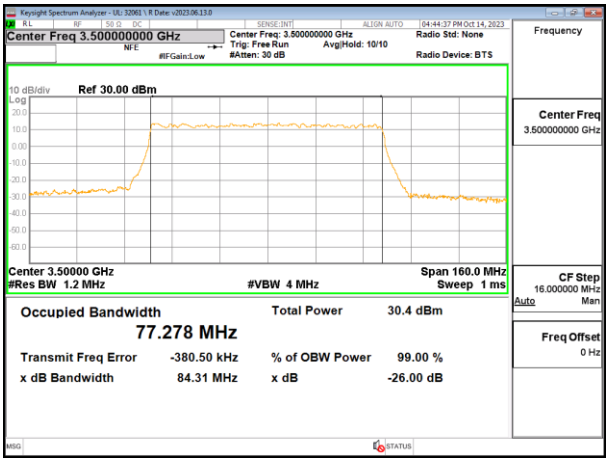
5G NR n77 50MHz QPSK Middle Channel RB128-0



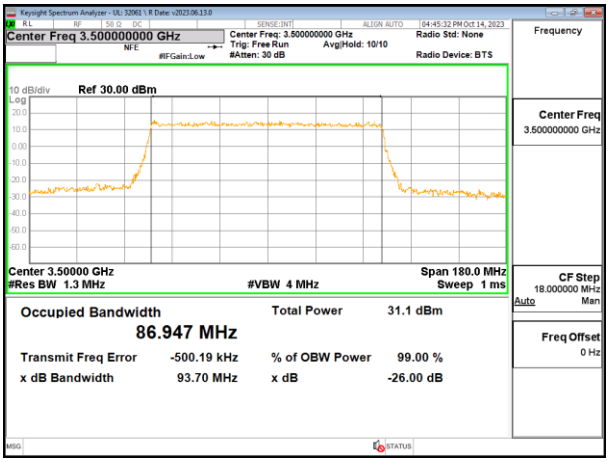
5G NR n77 60MHz QPSK Middle Channel RB162-0



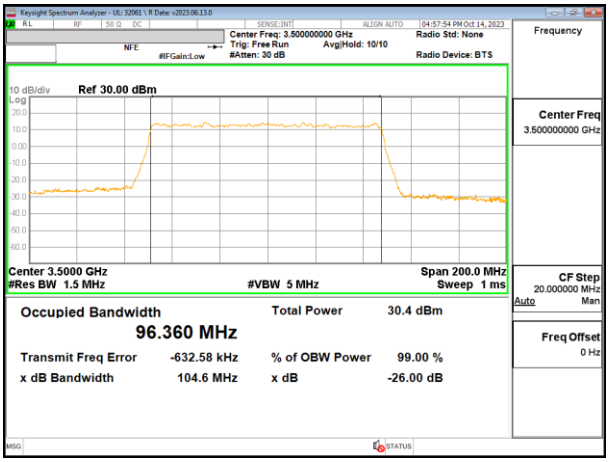
5G NR n77 70MHz QPSK Middle Channel RB180-0



5G NR n77 80MHz QPSK Middle Channel RB216-0

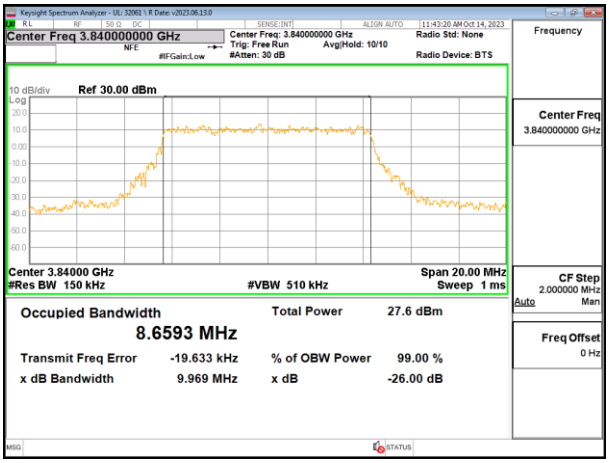


5G NR n77 90MHz QPSK Middle Channel RB243-0

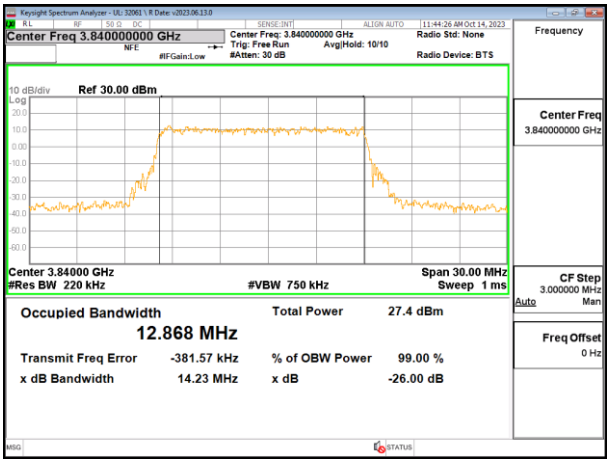


5G NR n77 100MHz QPSK Middle Channel RB270-0

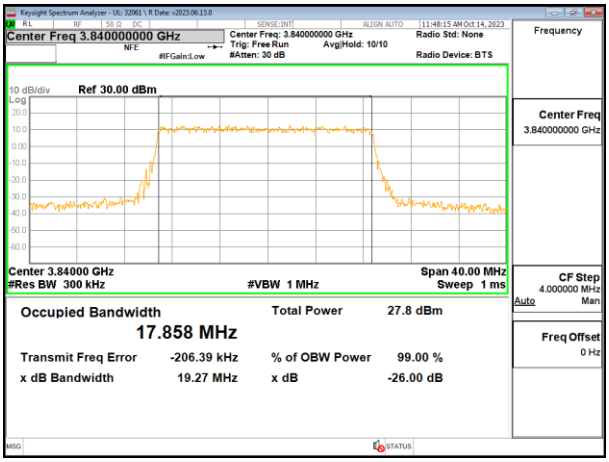
9.1.7. 5G NR n77 (FCC Part 27 3700-3980MHz)



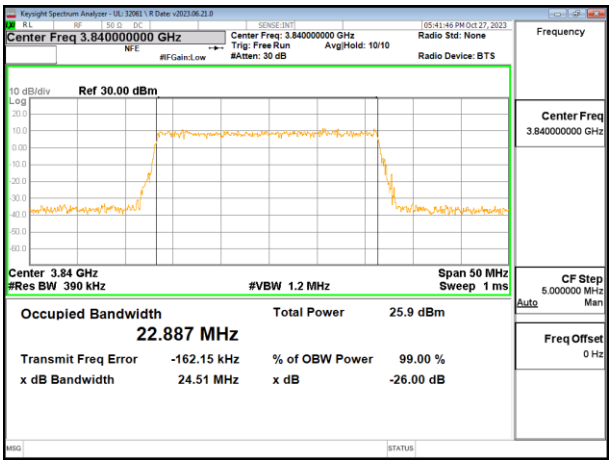
5G NR n77 10MHz QPSK Middle Channel RB24-0



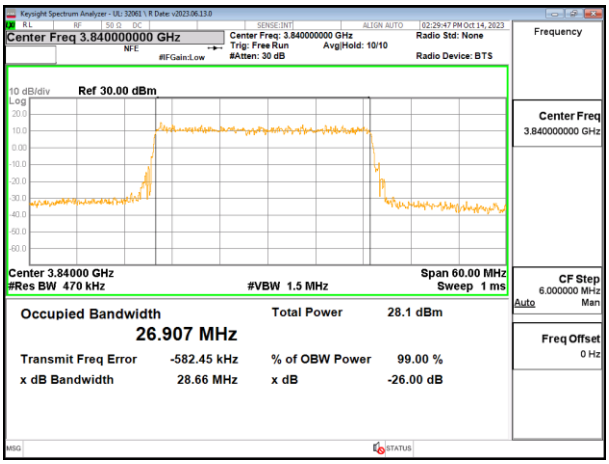
5G NR n77 15MHz QPSK Middle Channel RB36-0



5G NR n77 20MHz QPSK Middle Channel RB50-0

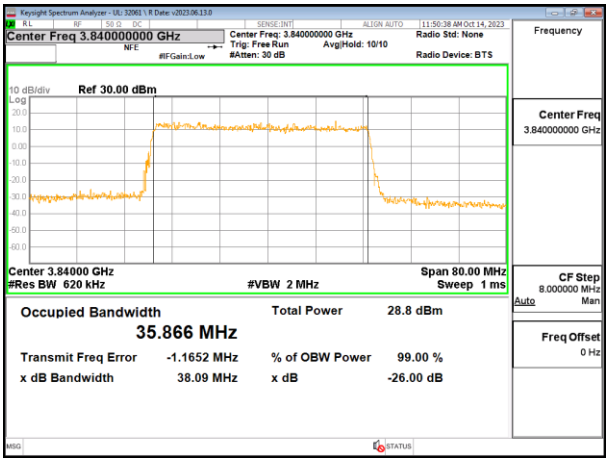


5G NR n77 25MHz QPSK Middle Channel RB64-0

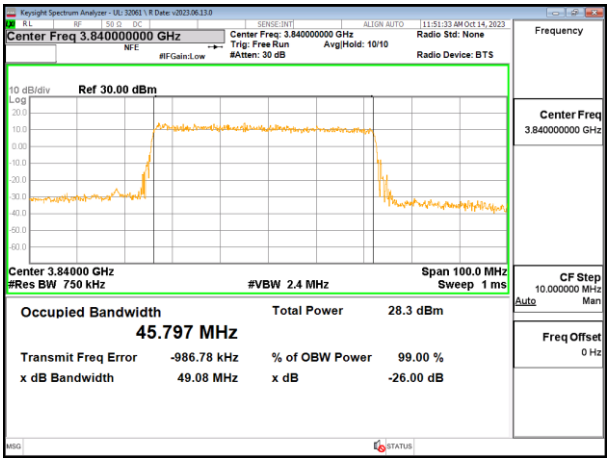


5G NR n77 30MHz QPSK Middle Channel RB75-0

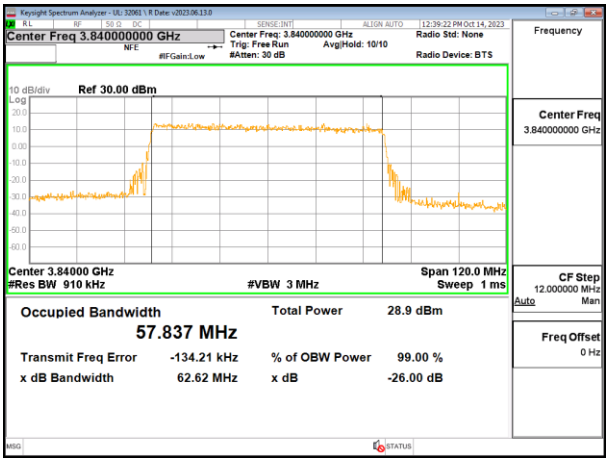
Intentionally Blank



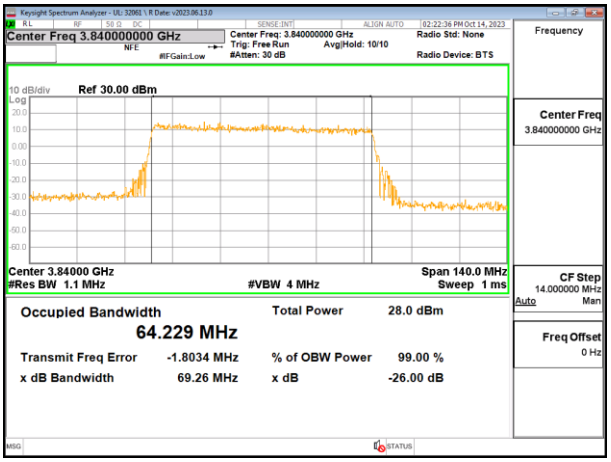
5G NR n77 40MHz QPSK Middle Channel RB100-0



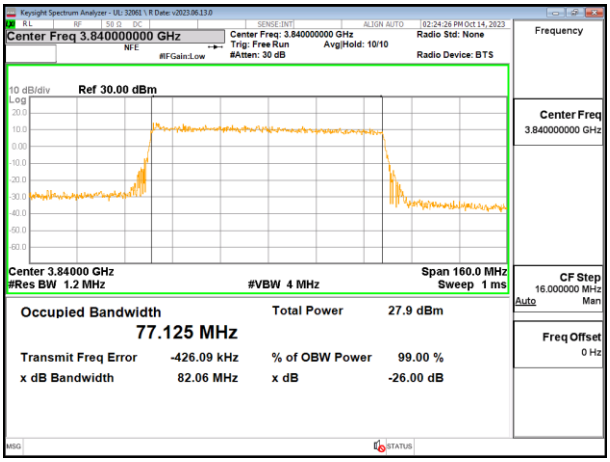
5G NR n77 50MHz QPSK Middle Channel RB128-0



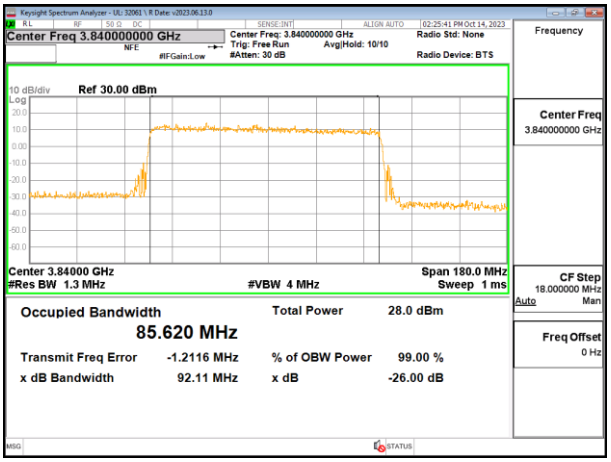
5G NR n77 60MHz QPSK Middle Channel RB162-0



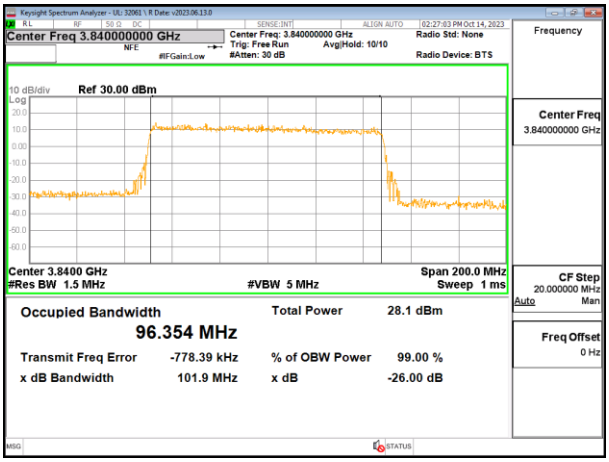
5G NR n77 70MHz QPSK Middle Channel RB180-0



5G NR n77 80MHz QPSK Middle Channel RB216-0



5G NR n77 90MHz QPSK Middle Channel RB243-0



5G NR n77 100MHz QPSK Middle Channel RB270-0

Intentionally Blank

9.2. BAND EDGE AND EMISSION MASK

For Spectrum Emission Mask plots, the Keysight PXA N9030A is configured to sweep with a moving integration window, the width of which can be adjusted to different sizes across the sweep. The window width is configured to be greater than or equal to the required reference bandwidth. The center frequencies of the integration window for the different integration windows was set such that the upper and lower edges of the windows are aligned with the transition points in the reference bandwidths. This is achieved by setting the start / stop frequencies of the window with an offset equal to the reference bandwidth / 2 from the transition point.

TEST PROCEDURE

The transmitter output was connected to a CMW500Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

For each band edge measurement:

1. Set the spectrum analyzer span to include the block edge frequency.
2. Set a marker to point the corresponding band edge frequency in each test case.
3. Set display line at -13 dBm
4. Set resolution bandwidth to at least 1% of emission bandwidth.

TEST PROCEDURE (5G NR n41)

(m)(6) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed; for mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 megahertz or 1 percent of emission bandwidth, as specified; or 1 megahertz or 2 percent for mobile digital stations, except in the band 2495-2496 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. With respect to television operations, measurements must be made of the separate visual and aural operating powers at sufficiently frequent intervals to ensure compliance with the rules.

RESULTS

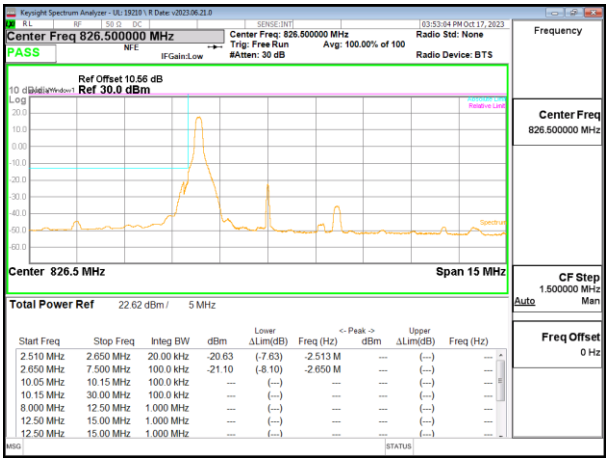
9.1. 5G NR n5 (FCC Part 22)

LIMITS

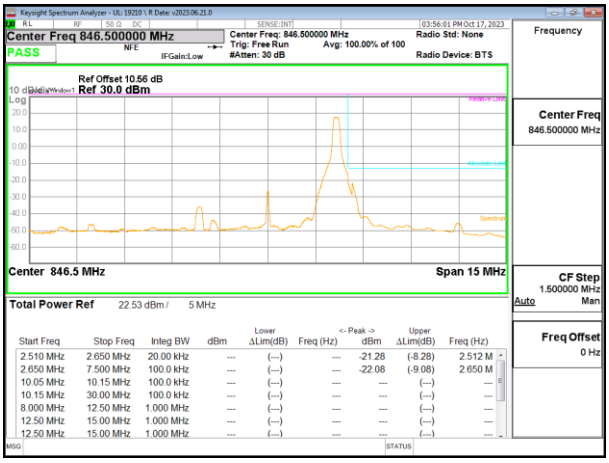
FCC: §22.917 (a)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

5G NR n5 EMISSION MASK

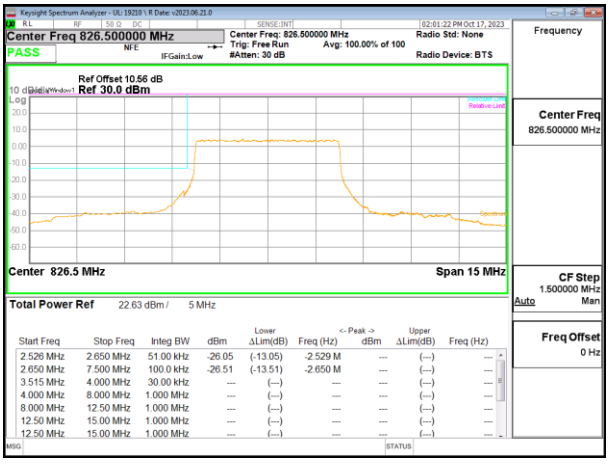
Test Engineer ID:	27342	Test Date:	10/17/2023



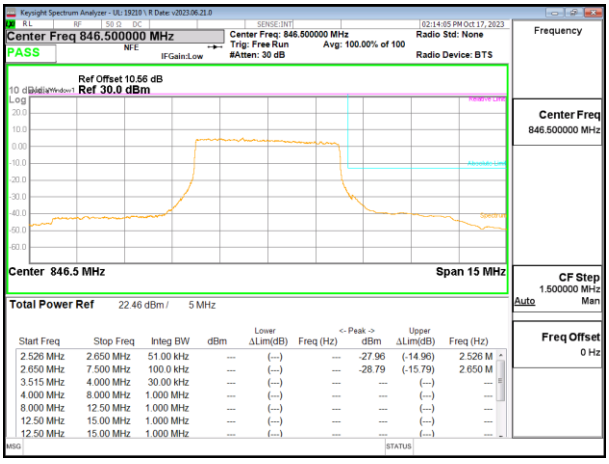
5G NR n5 5MHz QPSK Low Channel RB1-0



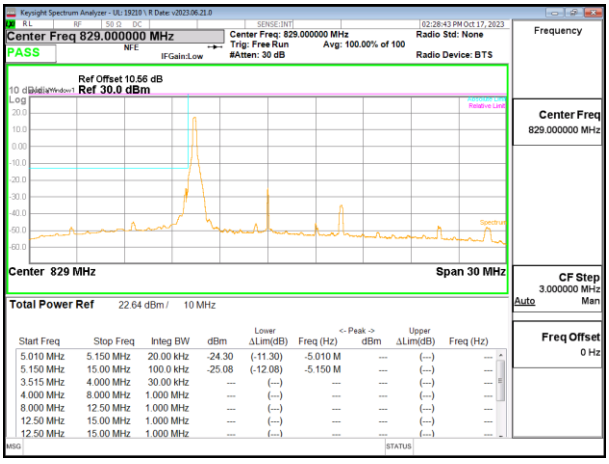
5G NR n5 5MHzz QPSK High Channel RB1-24



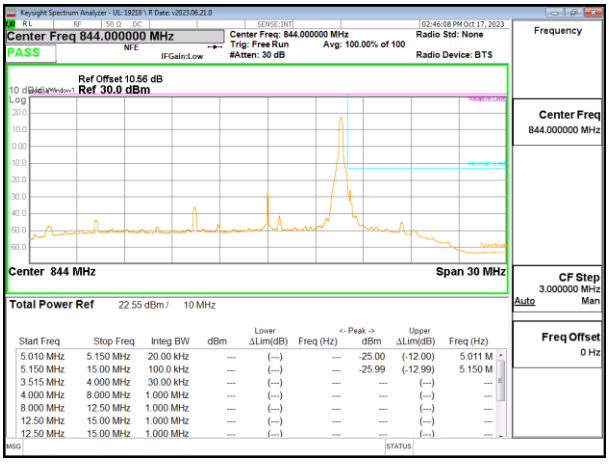
5G NR n5 5MHz QPSK Low Channel RB25-0



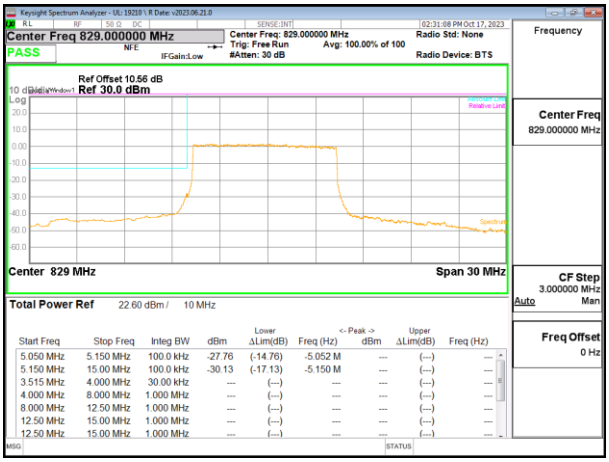
5G NR n5 5MHz QPSK High Channel RB25-0



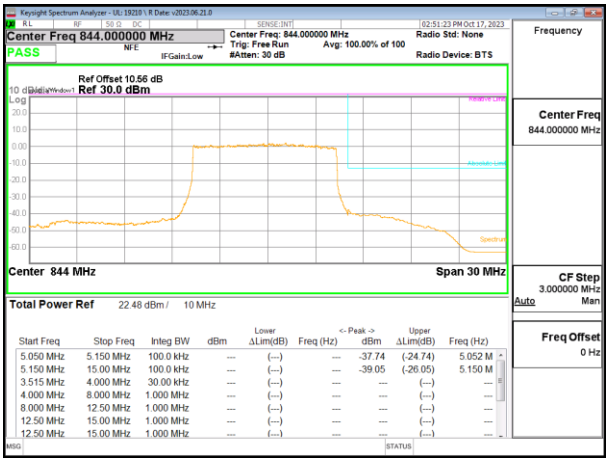
5G NR n5 10MHz QPSK Low Channel RB1-0



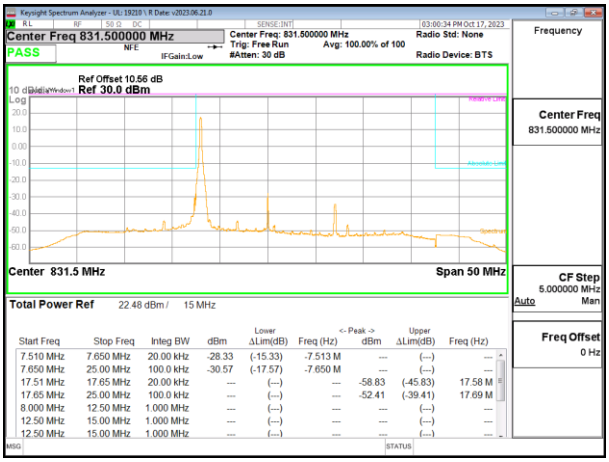
5G NR n5 10MHz QPSK High Channel RB1-51



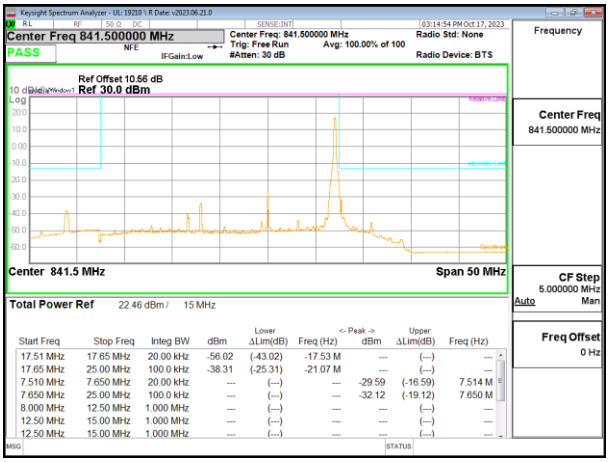
5G NR n5 10MHz QPSK Low Channel RB50-0



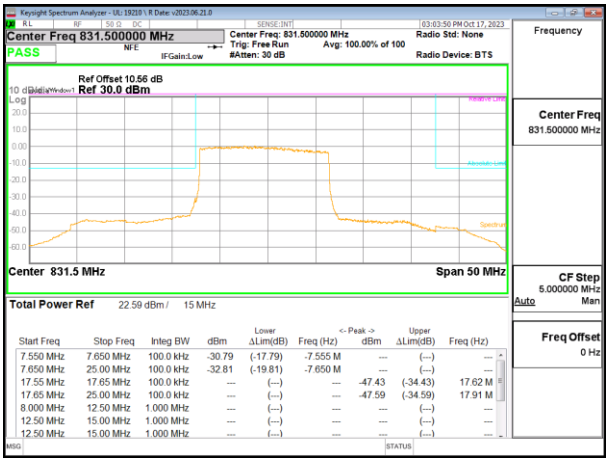
5G NR n5 10MHz QPSK High Channel RB50-0



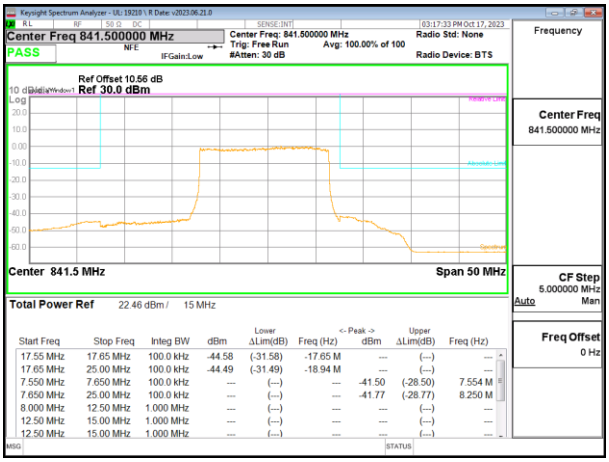
5G NR n5 15MHz QPSK Low Channel RB1-0



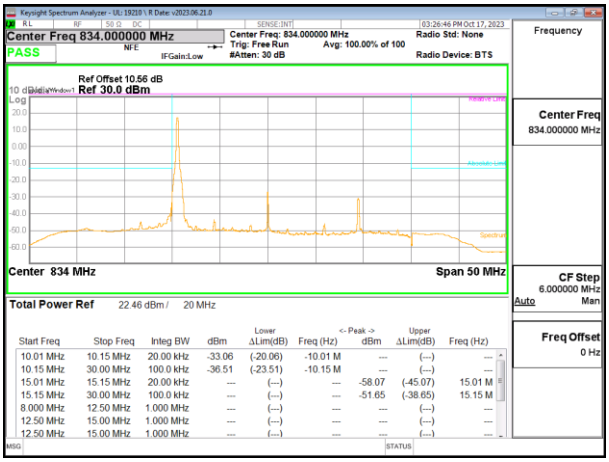
5G NR n5 15MHzz QPSK High Channel RB1-78



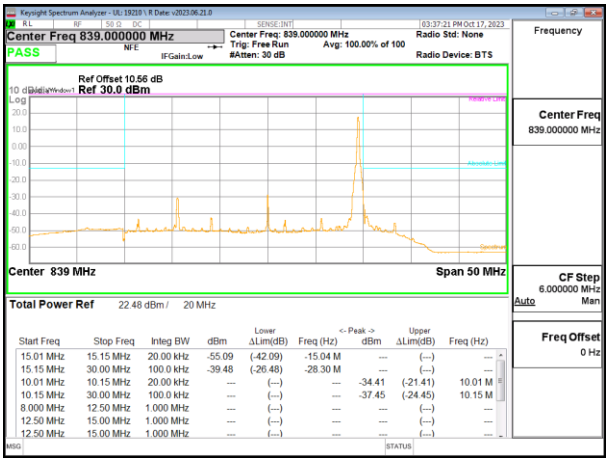
5G NR n5 15MHz QPSK Low Channel RB75-0



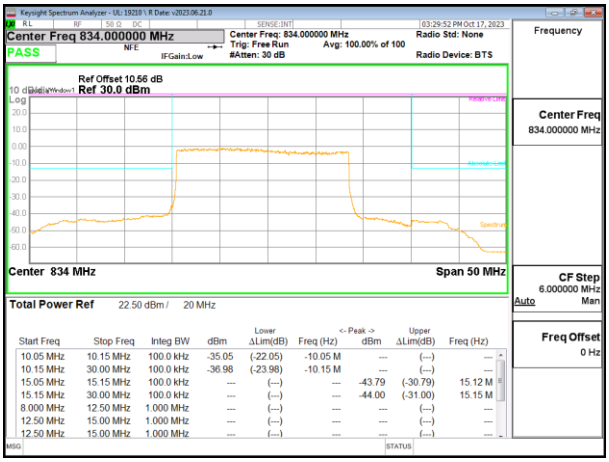
5G NR n5 15MHz QPSK High Channel RB75-0



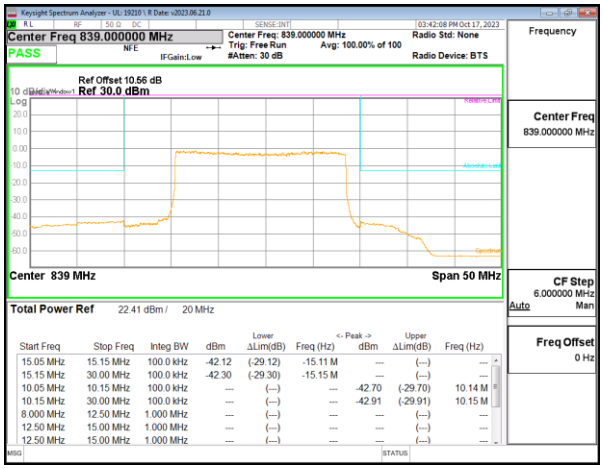
5G NR n5 20MHz QPSK Low Channel RB1-0



5G NR n5 20MHzz QPSK High Channel RB1-105



5G NR n5 20MHz QPSK Low Channel RB100-0



5G NR n5 20MHzz QPSK High Channel RB100-0

9.1.1. 5G NR n26 (FCC PART 90S)

LIMITS

FCC: §90.691 Emission mask requirements for EA-based systems.
(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.

NOTE: According to 971168 D02 Misc Rev Approv License Devices v02r02, Section VIII (c):
For Section 90.691(a) compliance testing, use RBW = 300 Hz for offsets less than 37.5 kHz from a channel edge; RBW = 100 kHz for offsets greater than 37.5 kHz is allowed.