

TEST REPORT

Report Number: R16238088-E7a

Applicant : Samsung Electronics Co Ltd
129, Samsung-ro, Yeongtong-gu, Suwon-si,
Gyeonggi-do, 16677, Rep. of Korea

Model(s) : SM-F976U, SM-F976U1

FCC ID : A3LSMF976U

EUT Description : GSM/WCDMA/LTE/NR/SCS/NTN Phone + BT/BLE, DTS/UNII
a/b/g/n/ac/ax/be, UWB, WPT and NFC

Test Standard(s) : FCC 47 CFR PART 2, PART 27
ISED RSS-GEN ISSUE 5 + A1 + A2, RSS-199 ISSUE 4

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Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2026-05-01	Initial Review	Manish Baral
V2	2026-05-05	Revised Emission Designator and Emission Masks	Charles Moody

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Samsung Electronics Co Ltd
129, Samsung-ro, Yeongtong-gu, Suwon-si,
Gyeonggi-do, 16677, Rep. of Korea

EUT DESCRIPTION: GSM/WCDMA/LTE/NR/SCS/NTN Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax/be,
UWB, WPT and NFC

SERIAL NUMBERS: ZBK0208M, ZBK0219M

SAMPLE RECEIVE DATE: 2026-02-24, 2026-03-09

DATE TESTED: 2026-03-05 to 2026-05-05

APPLICABLE STANDARDS STANDARD	TEST RESULTS
FCC 47 CFR PART 2, PART 27 ISED RSS-GEN ISSUE 5 + A1 + A2, RSS-199 ISSUE 4	Complies

UL LLC 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 LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document.

Approved & Released For
UL LLC By:



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2. SUMMARY OF TEST RESULTS

This report contains data provided by the customer which can impact the validity of results. UL LLC is only responsible for correctly integrating customer-provided data with measurements performed by UL LLC.

Requirement Description	Requirement Clause Number (FCC)	Requirement Clause Number (ISED)	Result	Remarks
Equivalent Isotropic Radiated Power	27.50 (h) (2)	RSS199§5.5	Complies	-
Occupied Bandwidth	2.1049	RSS-GEN§6.7 RSS199§5.4	Complies	-
Band Edge and Emission Mask	2.1051, 27.53 (m)(4) & (m) (6)	RSS199§5.6	Complies	-
Out of Band Emissions	2.1051, 27.53 (m)(4) & (m) (6)	RSS199§5.6	Complies	-
Frequency Stability	2.1055, 27.54	RSS199§5.4	Complies	-
Peak-to-Average Ratio	-	RSS199§5.5	Complies	-
Field Strength of Spurious Radiation	2.1053, 27.53 (m)(4) & (m) (6)	RSS199§5.6	Complies	-

3. TEST METHODOLOGY

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

ANSI C63.26:2015 The tests documented in this report were performed in accordance with the following.

FCC published lists of [measurement procedures](#) for compliance testing.

ISED published lists of [normative test standards and acceptable alternatives procedures](#).

- ANSI C63.26:2015
- ANSI/TIA-603-E (2016)
- FCC 47 CFR Part 2, Part 27
- [FCC KDB 971168 D01](#): Power Meas License Digital Systems (ISED acceptable alternative procedure)
- [FCC KDB 971168 D02](#): Misc Rev Approv License Devices
- [FCC KDB 412172 D01](#): Determining ERP and EIRP
- ISED RSS-Gen Issue 5 + A1 + A2, RSS-199 Issue 4.

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #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 2800 Suite Perimeter Park Dr. Suite B Morrisville, NC 27560, USA	US0067	27265	825374

5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

5.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	U _{Lab}
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.52 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	4.88 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.24 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.37 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.17 dB
Occupied Channel Bandwidth	±0.39 %
Temperature	±0.9 °C
Supply voltages	±0.45 %
Time	±0.02 %

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

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
 $36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$

6. EQUIPMENT UNDER TEST

6.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE/NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax/be UWB, WPT, and NFC.

Model differences:

Representative Model	Difference	Derivative Model
		SM-F976U1
SM-F976U	Hardware	Same as SM-F976U
	Software	Different UI

The EUT supports the following LTE and 5G NR Bands and their antenna configurations:

Mode and Bands	Config 0	Config 1	SRS
LTE Band7 & 5G NR n7	B	G	-
LTE Band41(38) FCC & 5G NR n41(38) FCC	B	G	D/H
LTE Band41(38)IC & 5G NR n41(38) IC	B	G	-

6.2. MAXIMUM OUTPUT POWER

EIRP/ERP TEST PROCEDURE

ANSI C63.26:2015
KDB 971168 D01 Section 5.2

$$\text{ERP/EIRP} = P_{\text{Meas}} + G_T - L_C$$

where: ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as P_{Meas} , typically dBW or dBm);

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 EUT has different power levels for head use configuration and body use configuration. The tables below contain the highest of all configurations average conducted and peak EIRP/ERP output powers as follows:

LTE BAND 7

Part 27 / RSS 199								
EIRP Limit (W)		2.00						
Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	EIRP Average (dBm)	EIRP Average (W)	99% BW (MHz)	99% BW (kHz)	Emission Designator
10.0	QPSK	2505.0	2565.0	21.99	0.158	8.988	8988.2	8M99G7W
	16QAM			21.28	0.134	9.006	9006	9M01D7W
20.0	QPSK	2510.0	2560.0	21.77	0.150	17.977	17977	18M0G7W
	16QAM			21.06	0.128	17.992	17992	18M0D7W

5G NR n7

Part 27 / RSS 199								
EIRP Limit (W)		2.00						
Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	EIRP Average (dBm)	EIRP Average (W)	99% BW (MHz)	99% BW (kHz)	Emission Designator
5.0	16QAM	2502.5	2565.0	21.21	0.132	4.516	4516.4	4M52G7W
25.0	BPSK	2512.5	2557.5	22.21	0.166	23.032	23032	23M0D7W
50.0	BPSK	2525.0	2545.0	22.20	0.166	48.482	48482	48M5G7W
	16QAM			21.05	0.127	48.438	48438	48M4D7W

LTE BAND 41

Part 27 / RSS 199								
EIRP Limit (W)		2.00						
Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	EIRP Average (dBm)	EIRP Average (W)	99% BW (MHz)	99% BW (kHz)	Emission Designator
5.0	QPSK	2498.5	2687.5	22.41	0.174	4.514	4513.5	4M51G7W
	16QAM			21.50	0.141	4.508	4508.1	4M51D7W
20.0	QPSK	2506.0	2680.0	22.32	0.171	17.998	17998	18M0G7W
	16QAM			21.30	0.135	17.918	17918	17M9D7W

5G NR n41

Part 27 / RSS 199								
EIRP Limit (W)		2.00						
Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	EIRP Average (dBm)	EIRP Average (W)	99% BW (MHz)	99% BW (kHz)	Emission Designator
90.0	BPSK	2541.0	2645.0	25.53	0.357	87.345	87345	87M3D7W
100.0	BPSK	2546.0	2640.0	24.80	0.302	96.737	96737	96M7G7W
	16QAM			23.48	0.223	96.835	96835	96M8D7W

6.3. WORST-CASE CONFIGURATION AND MODE

This report covers the following technologies:

- LTE Band 7, 5G NR n7
- LTE Band 38, 5G NR n38,
- LTE Band 41, 5G NR n41

LTE Band 38 and 5G NR n38 (2570-2620MHz) are covered by LTE Band 41 because it is a subset of LTE band 41. Also, they have the same or less output power and supported bandwidths.

LTE Band 41 and 5G NR n41 IC Band (2500-2680MHz) are covered by LTE Band 41 and 5G NR n41 FCC Band (2496-2680MHz) because it is a subset of FCC band. Also, they have the same or less output power and supported bandwidths. However, OBW, Emission Mask, and Out of Band emission tests have been done for Both IC and FCC Bands.

BPSK modulation applied only for 5G NR frequencies and has the same tune up power as QPSK modulations.

The DFT-s-OFDM and CP-OFDM waveforms were investigated, and DFT-s-OFDM was found to be the worst case.

The worst-case scenario for all measurements is based upon an engineering evaluation made on conducted average power taken during pre-testing. The modulations with the highest output power were selected as worst-case. Conducted tests were performed on the worst-case antenna port per band. Full radiated Emissions Testing on each antenna was performed and reported.

LTE and 5G NR Bands	Worst case Antenna Port
LTE Band 7 and 5G NR n7	Config 0
LTE Band 41	Config 1
5G NR n41	Config 0

The EUT was investigated in three orthogonal orientations X/Y/Z on all available SISO and MIMO antennas to determine the worst-case orientation. Additionally, the EUT was investigated between 3 folding positions, Fully Open, Fully Closed, and Half Open. The following table exhibits the worst-case orientation. The full tests of the EUT have made upon the orientations that are shown in the table below.

Frequency Range	ANT G	ANT B	SRS D	SRS H
2496 – 2690 MHz	X Open	X Open	Y Half	X Open

Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 1GHz. There were no emissions found with less than 20dB of margin from 9kHz to 1GHz and above 18GHz.

For simultaneous transmission of multiple channels in the 2.4GHz/5GHz WLAN, UWB, and Cellular bands, tests were conducted for various configurations having the highest power, least separation in frequencies and widest operation bandwidths. No noticeable new emission was found.

6.4. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Power Adapter	Sony	XQZ-UC11-010-236-21	NA	NA

I/O CABLES

I/O Cable List						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	USB-C	1	USB-C	Shielded	<3m	Phone to power adapter

TEST SETUP

The EUT was connected to a base station simulator and set to transmit at max power for GSM/WCDMA testing

SETUP DIAGRAM

Please see R16238088-EP1 for Setup Diagrams and Setup Photos.

7. TEST AND MEASUREMENT EQUIPMENT

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

NOTES:

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

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 2)

Equip. ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
	1-18 GHz				
86408	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2025-07-15	2027-07-15
	Gain-Loss Chains				
91977	Gain-loss string: 1-18GHz	Various	Various	2025-05-31	2026-05-31
	Receiver & Software				
197955	Spectrum Analyzer	Rohde & Schwarz	ESW44	2025-07-29	2026-07-29
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
	Additional Equipment used				
239540	Environmental Meter	Fisher Scientific	15-077-963	2025-08-05	2027-08-05
213025	Wideband Radio Communications Tester	Rohde and Schwarz	CMW500	NA	NA
*77414 (BRF003)	2.4GHz notch filter, 2W, Fhigh =18GHz	Micro-Tronics	BRM50702	2025-03-13	2026-03-31
*231408 (BRF011)	2.495-2.690GHz notch filter, 2W, Fhigh = 18GHz	Micro-Tronics	BRM50709-01	2025-03-13	2026-03-31

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 1)

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	1-18 GHz				
88761	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2025-11-19	2027-11-19
	Gain-Loss Chains				
91979	Gain-loss string: 1-18GHz	Various	Various	2025-05-31	2026-05-31
	Receiver & Software				
206496	Spectrum Analyzer	Rohde & Schwarz	ESW44	2025-07-29	2026-07-29
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
	Additional Equipment used				
241205	Environmental Meter	Fisher Scientific	15-077-963	2025-08-05	2027-08-05
*231408 (BRF011)	2.495-2.690GHz notch filter, 2W, Fhigh = 18GHz	Micro-Tronics	BRM50709-01	2025-03-13	2026-03-31
*169109 (BRF012)	3.4-3.8GHz notch filter, 2W, Fhigh = 18GHz	Micro-Tronics	BRM50711-01	2025-03-13	2026-03-31

NOTES:

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

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 4)

Equip. ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
	30-1000 MHz				
90628	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2026-02-09	2028-02-09
	1-18 GHz				
*206211	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2024-04-09	2026-04-30
	18-40 GHz				
204704	Horn Antenna, 18-26.5GHz	Com Power	AH-826	2025-07-15	2027-07-15
204705	Horn Antenna, 26-40GHz	Com Power	AH-640	2025-11-19	2027-11-19
	Gain-Loss Chains				
207639	Gain-loss string: 25-1000MHz	Various	Various	2025-06-13	2026-06-13
207640	Gain-loss string: 1-18GHz	Various	Various	2025-06-13	2026-06-13
225795	Gain-loss string: 18-40GHz	Various	Various	2025-06-13	2026-06-13
	Receiver & Software				
*197954	Spectrum Analyzer	Rohde & Schwarz	ESW44	2025-04-21	2026-04-30
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
	Additional Equipment used				
241204	Environmental Meter	Fisher Scientific	15-077-963	2025-08-05	2027-08-05
213025	Wideband Radio Communications Tester	Rohde and Schwarz	CMW500	NA	NA
208720	Wideband Radio Communications Tester	Rohde and Schwarz	CMW500	NA	NA
21725	Radio Communications Tester	Rohde and Schwarz	CMX500	NA	NA
212167	Wideband Radio Communications Tester	Anritsu	MT8821C	NA	NA
*77414 (BRF003)	2.4GHz notch filter, 2W, Fhigh =18GHz	Micro-Tronics	BRM50702	2025-03-31	2026-03-31
*231408 (BRF011)	2.495-2.690GHz notch filter, 2W, Fhigh = 18GHz	Micro-Tronics	BRM50709-01	2025-03-31	2026-03-31

NOTES:

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

Wireless Conducted Measurement Equipment.

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	Additional Equipment used				
90411	Spectrum Analyzer MY54490314	Keysight Technologies	N9030A	2026-03-03	2027-03-03
90416	Spectrum Analyzer MY54490254	Keysight Technologies	N9030A	2025-07-31	2026-07-31
212967	Wideband Radio Communications Tester 170733	Rohde and Schwarz	CMW500	2026-02-13	2027-02-13
212166	Wideband Radio Communications Tester	Anritsu	MT8000A	2026-02-23	2027-02-23
*262469	Humidity and Temperature Probe	Control Company	15-077-963	2025-04-28	2026-04-30

Test Equipment Used - Wireless Conducted Attenuators, Cables, and Couplers

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	Attenuators				
226569	2.92mm Coaxial 10dB Attenuator 40GHz	Fairview Microwave	SA4014-10	2025-09-02	2026-09-02
226554	20dB Attenuator	CentricRF	C18S2-20	2025-03-31 2026-04-01	2026-03-31 2027-04-01
226552	20dB Attenuator	CentricRF	C18S2-20	2025-03-31 2026-04-01	2026-03-31 2027-04-01
	Cables				
246257	SMA Cable	Huber + Suhner	104PEA	2025-09-05	2026-09-05
	Couplers				
238018 (CPL003-SAR)	Ultra-Wideband Directional Coupler 0.5-18GHz	Mini-Circuits	ZUDC10-183+	2025-04-48	2026-04-30

NOTES:

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

8. CONDUCTED TEST RESULTS

8.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049
ISED: RSS-GEN§6.7, RSS199§5.4

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 were 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.

LTE BAND 7

Band	Mode	RB Allocation/RB Offset	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE BAND 7	5MHz, QPSK	25/0	2535.0	4.5141	5.203
	5MHz, 16QAM			4.5165	5.081
	10MHz, QPSK	50/0		8.9882	10.06
	10MHz, 16QAM			9.0060	10.05
	15MHz, QPSK	75/0		13.523	15.12
	15MHz, 16QAM			13.506	14.99
	20MHz, QPSK	100/0		17.977	19.76
	20MHz, 16QAM			17.992	19.84
	20MHz, QPSK	1/0		0.28354	0.44691

5G NR n7

Band	Mode	RB Allocation/RB Offset	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
5G NR n7	5MHz, BPSK	25/0	2535.0	4.4961	5.204
	5MHz, 16QAM			4.5164	5.085
	10MHz, BPSK	50/0		8.9813	10.15
	10MHz, 16QAM			9.0152	9.910
	15MHz, BPSK	75/0		13.460	14.54
	15MHz, 16QAM			13.545	15.64
	20MHz, BPSK	100/0		17.969	19.54
	20MHz, 16QAM			17.939	20.88
	25MHz, BPSK	128/0		23.032	26.25
	25MHz, 16QAM			23.042	25.40
	30MHz, BPSK	160/0		28.736	31.40
	30MHz, 16QAM			28.696	30.26
	35MHz, BPSK	180/0		32.342	36.51
	35MHz, 16QAM			32.272	34.41
	40MHz, BPSK	216/0		38.689	40.85
	40MHz, 16QAM			38.776	40.78
	50MHz, BPSK	270/0		48.482	51.66
	50MHz, 16QAM			48.438	51.31
	50MHz, BPSK	1/0		0.29819	0.5015

LTE BAND 41

Band	Mode	RB Allocation/RB Offset	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE BAND 41	5MHz, QPSK	25/0	2593.0	4.5135	5.385
	5MHz, 16QAM			4.5081	5.499
	10MHz, QPSK	50/0		9.0127	10.42
	10MHz, 16QAM			8.9944	9.965
	15MHz, QPSK	75/0		13.526	15.43
	15MHz, 16QAM			13.499	15.07
	20MHz, QPSK	100/0		17.998	20.03
	20MHz, 16QAM			17.918	20.35
	20MHz, QPSK	1/0		0.25345	0.4148

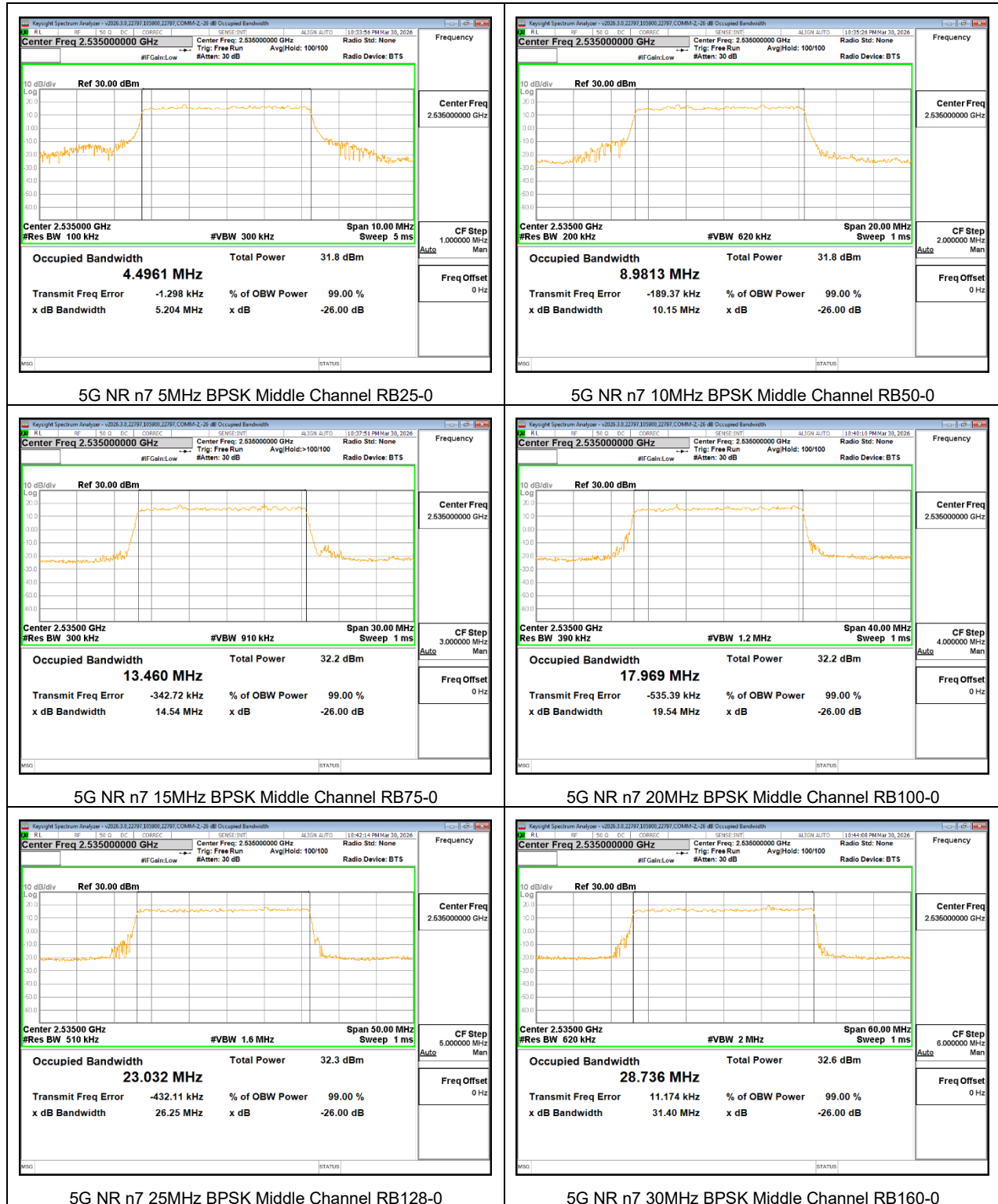
5G NR n41

Band	Mode	RB Allocation/RB Offset	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
5G NR n41 (FCC)	10MHz, BPSK	24/0	2593.0	8.6827	9.907
	10MHz, 16QAM			8.6874	10.10
	15MHz, BPSK	36/0		12.976	14.66
	15MHz, 16QAM			12.972	14.53
	20MHz, BPSK	50/0		18.038	19.79
	20MHz, 16QAM			17.990	19.80
	25MHz, BPSK	64/0		23.001	24.99
	25MHz, 16QAM			22.960	24.94
	30MHz, BPSK	75/0		26.963	29.05
	30MHz, 16QAM			26.976	29.33
	35MHz, BPSK	90/0		32.321	34.66
	35MHz, 16QAM			32.304	34.65
	40MHz, BPSK	100/0		35.974	38.17
	40MHz, 16QAM			35.972	38.25
	45MHz, BPSK	108/0		38.862	41.53
	45MHz, 16QAM			38.839	41.44
	50MHz, BPSK	128/0		45.995	49.06
	50MHz, 16QAM			46.019	48.90
	60MHz, BPSK	162/0		58.377	61.15
	60MHz, 16QAM			58.135	61.42
	70MHz, BPSK	180/0		64.928	68.35
	70MHz, 16QAM			64.910	68.36
	80MHz, BPSK	216/0		77.735	81.44
	80MHz, 16QAM			77.728	81.39
	90MHz, BPSK	243/0		87.345	91.61
	90MHz, 16QAM			87.223	91.52
	100MHz, BPSK	270/0		96.737	101.5
	100MHz, 16QAM			96.835	101.6
	100MHz, BPSK	1/0		.59896	1.110

8.1.1. LTE BAND 7

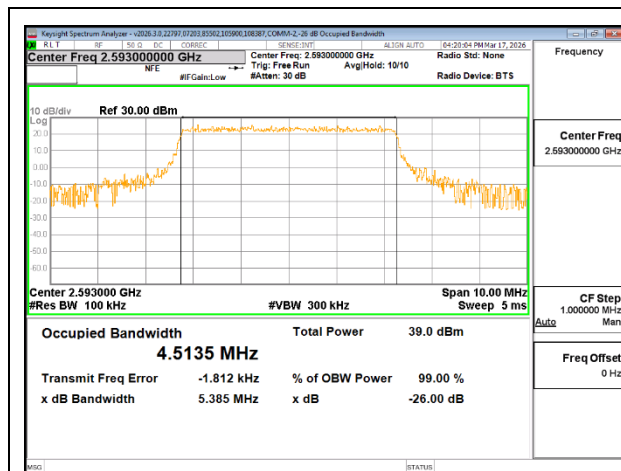


8.1.2. 5G NR n7

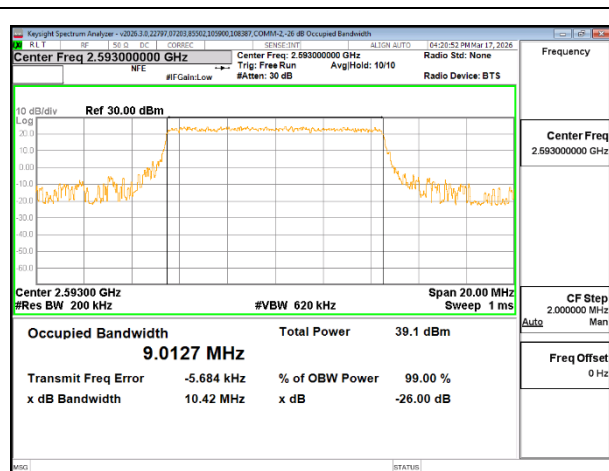




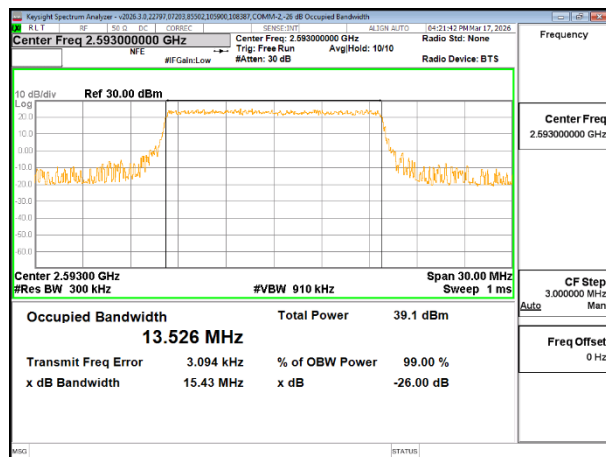
8.1.3. LTE BAND 41



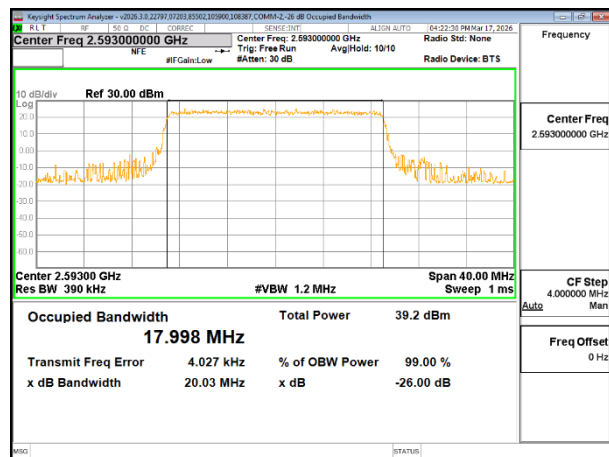
LTE B41 5MHz QPSK Middle Channel RB25-0



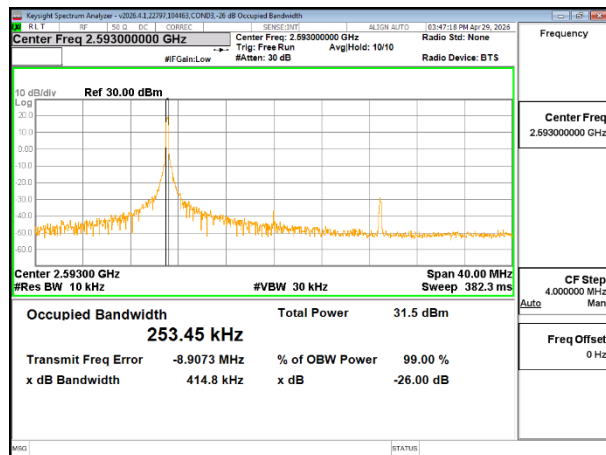
LTE B41 10MHz QPSK Middle Channel RB50-0



LTE B41 15MHz QPSK Middle Channel RB75-0



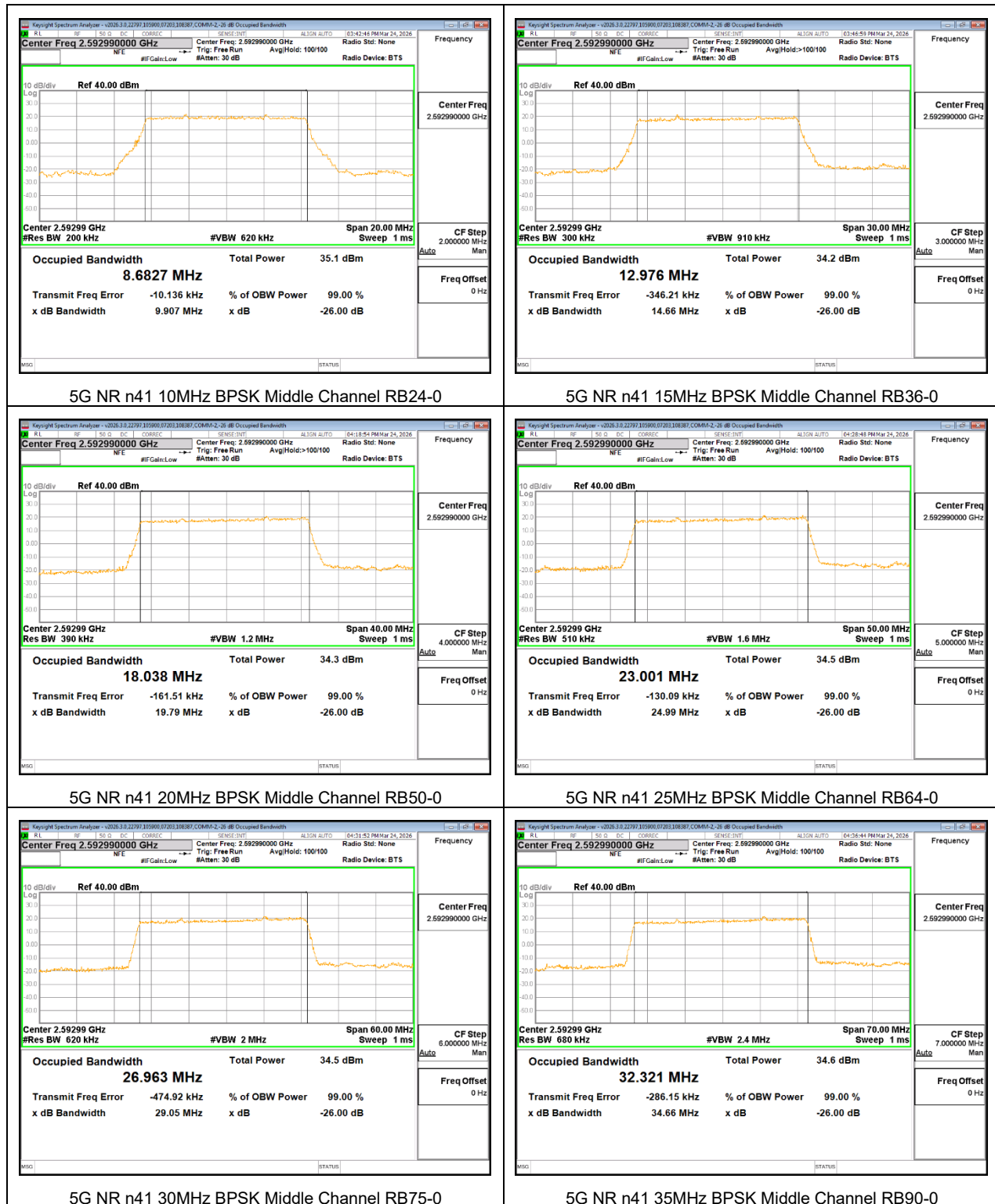
LTE B41 20MHz QPSK Middle Channel RB100-0

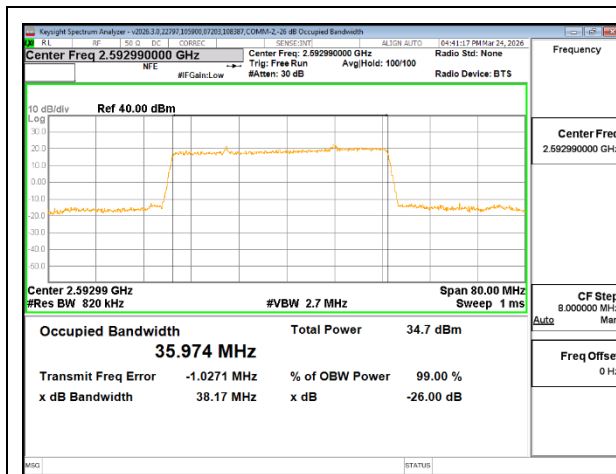


LTE B41 20MHz QPSK Middle Channel RB1-0

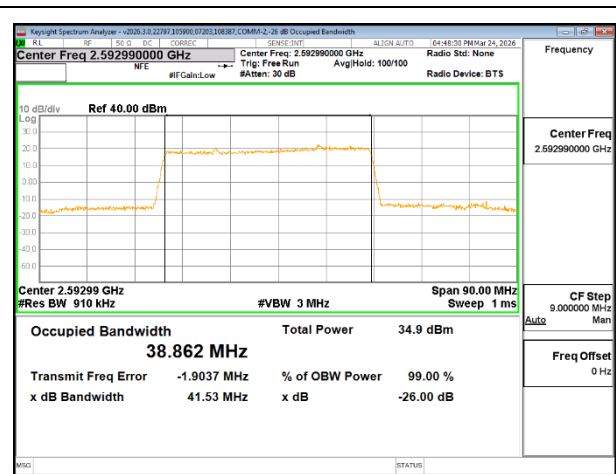
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8.1.4. 5G NR n41

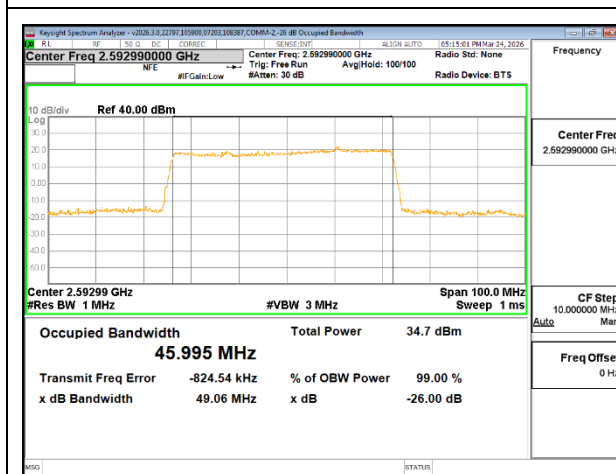




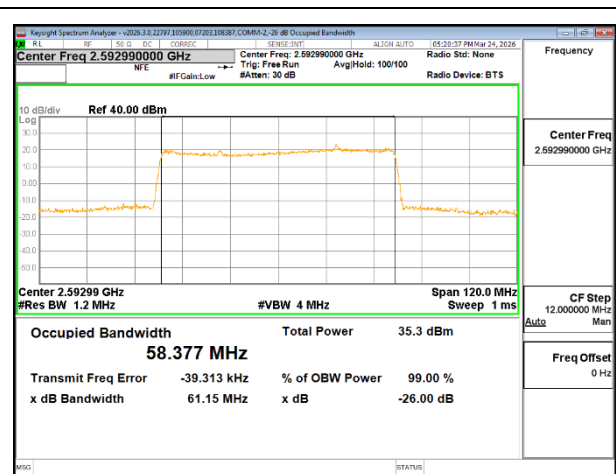
5G NR n41 40MHz BPSK Middle Channel RB100-0



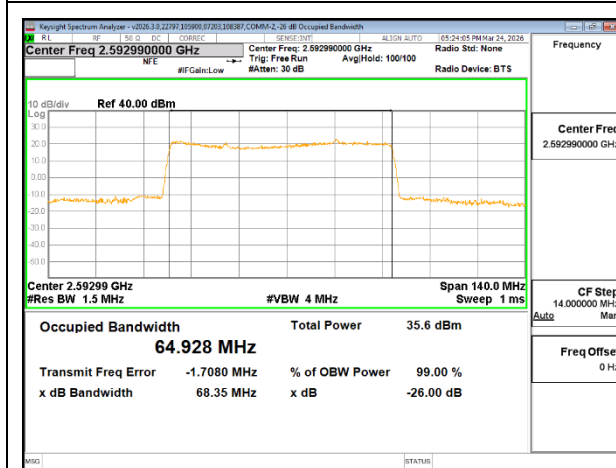
5G NR n41 45MHz BPSK Middle Channel RB108-0



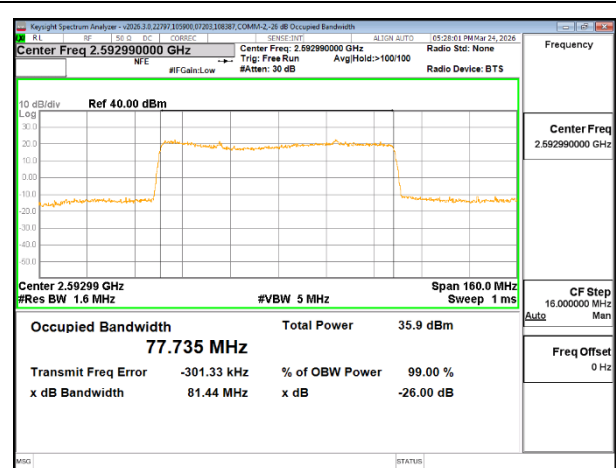
5G NR n41 50MHz BPSK Middle Channel RB128-0



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



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



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



8.2. EMISSION MASK AND ADJACENT CHANNEL POWER

LIMITS

FCC: §27.53

(m)(4) For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

ISED: RSS199§5.6

For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors), where applicable, of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in the tables below.

Table 5: Unwanted emission limits for subscriber equipment other than fixed subscriber equipment	
Offset from the edge of the frequency block or frequency block group (MHz)	Unwanted emission limits
0-1	-10 dBm/(2% of OB*)
1-5	-10 dBm/MHz
5-X**	-13 dBm/MHz
$\geq X$	-25 dBm/MHz

*OB is the occupied bandwidth

** X is 6 MHz or the equipment occupied bandwidth, whichever is greater.

In addition to complying with the limits in table 5, subscriber equipment other than fixed subscriber equipment shall not exceed -13 dBm/MHz on all frequencies between 2490.5 MHz and 2496 MHz, and -25 dBm/MHz at or below 2490.5 MHz

TEST PROCEDURE

For Spectrum Emission Mask plots, the spectrum analyzer 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.

The transmitter output was connected to a base station simulator 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 -X dBm
4. Set resolution bandwidth to at least 1% of emission bandwidth.

TEST PROCEDURE FOR FCC PART 27

(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.

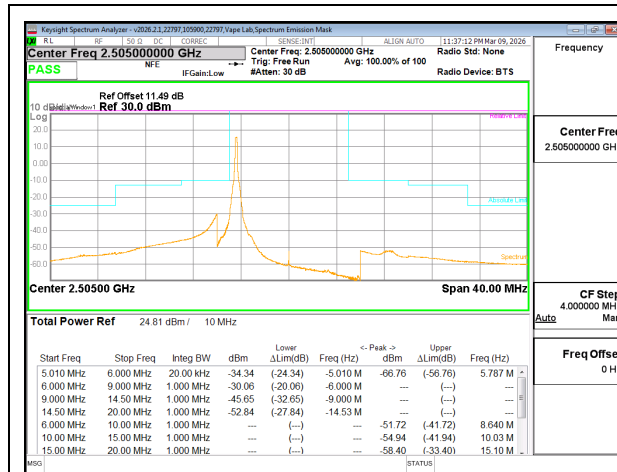
TEST PROCEDURE FOR RSS-199

In the 1 MHz band immediately outside and adjacent to the frequency block group, the power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth for fixed stations, base stations, and fixed subscriber equipment, and 2% for subscriber equipment other than fixed subscriber equipment. Beyond this 1 MHz band, a resolution bandwidth of 1 MHz shall be used. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz, or 1% or 2% of the occupied bandwidth, as applicable.

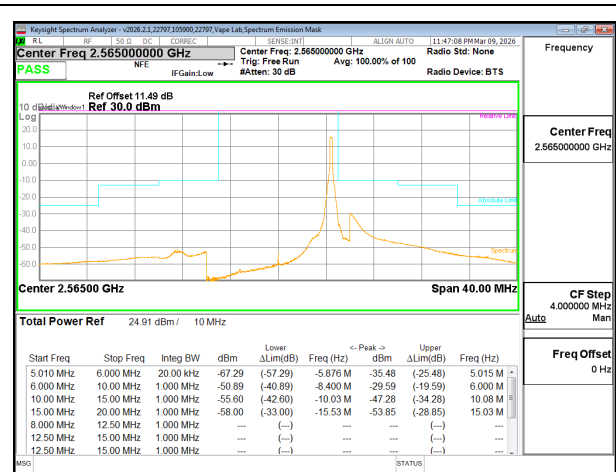
RESULTS

8.2.1. LTE BAND 7

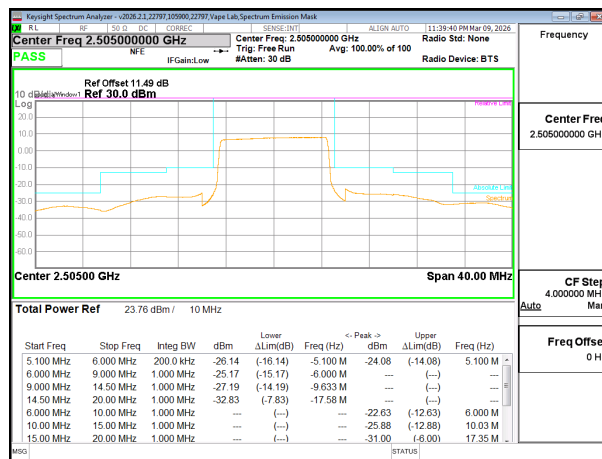




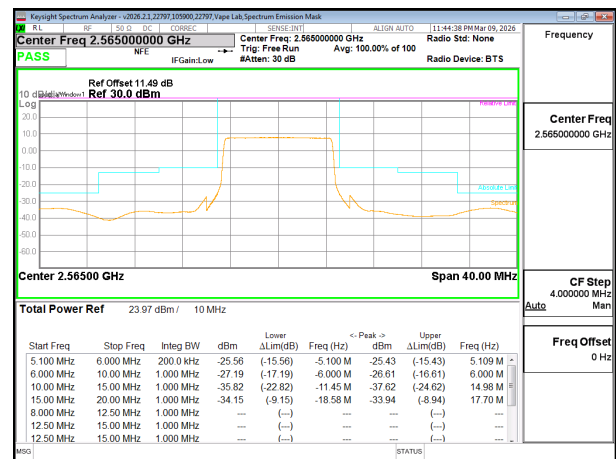
LTE B7 10MHz QPSK Low Channel RB1-0



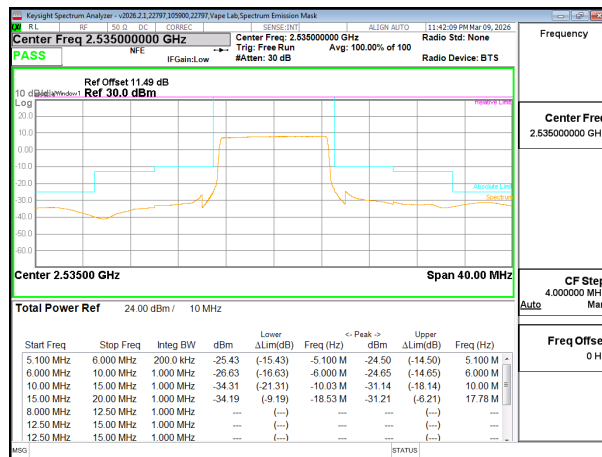
LTE B7 10MHz QPSK High Channel RB1-49



LTE B7 10MHz QPSK Low Channel RB50-0

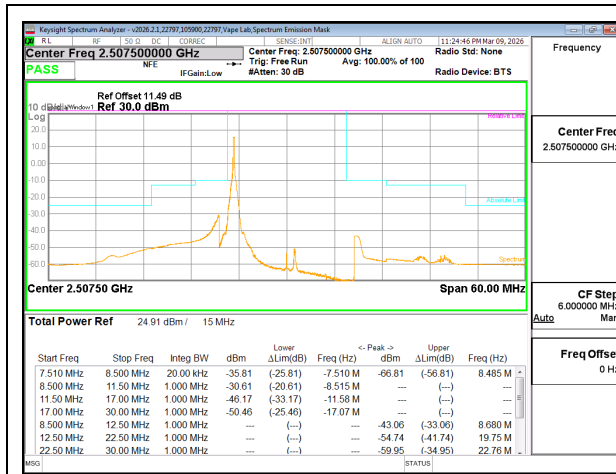


LTE B7 10MHz QPSK High Channel RB50-0

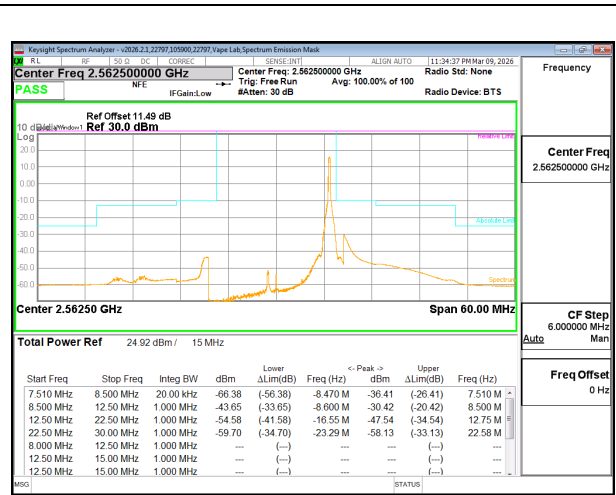


LTE B7 10MHz QPSK Middle Channel RB50-0

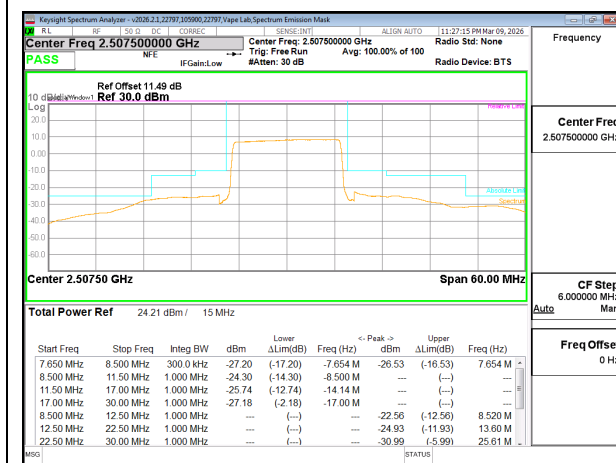
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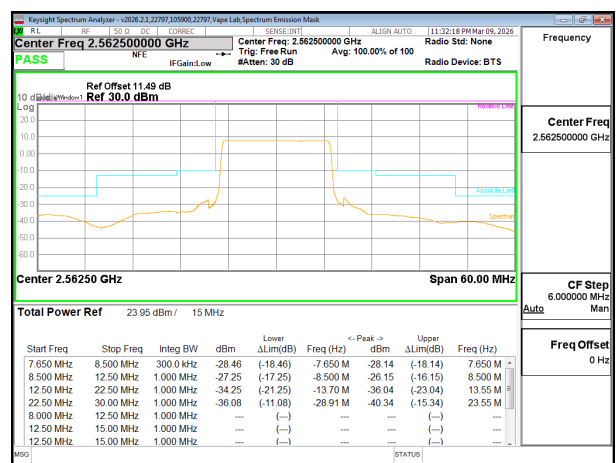
LTE B7 15MHz QPSK Low Channel RB1-0



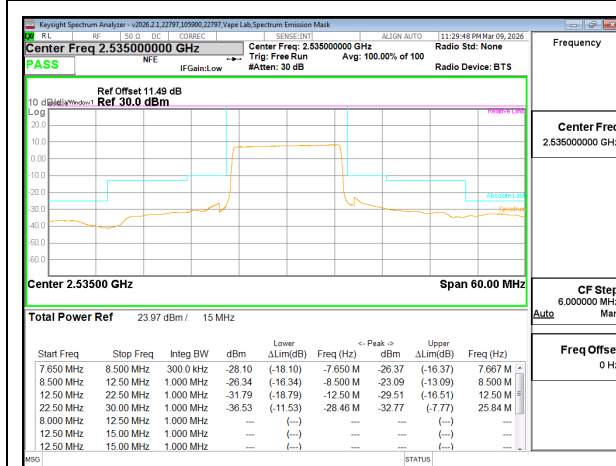
LTE B7 15MHz QPSK High Channel RB1-74



LTE B7 15MHz QPSK Low Channel RB75-0

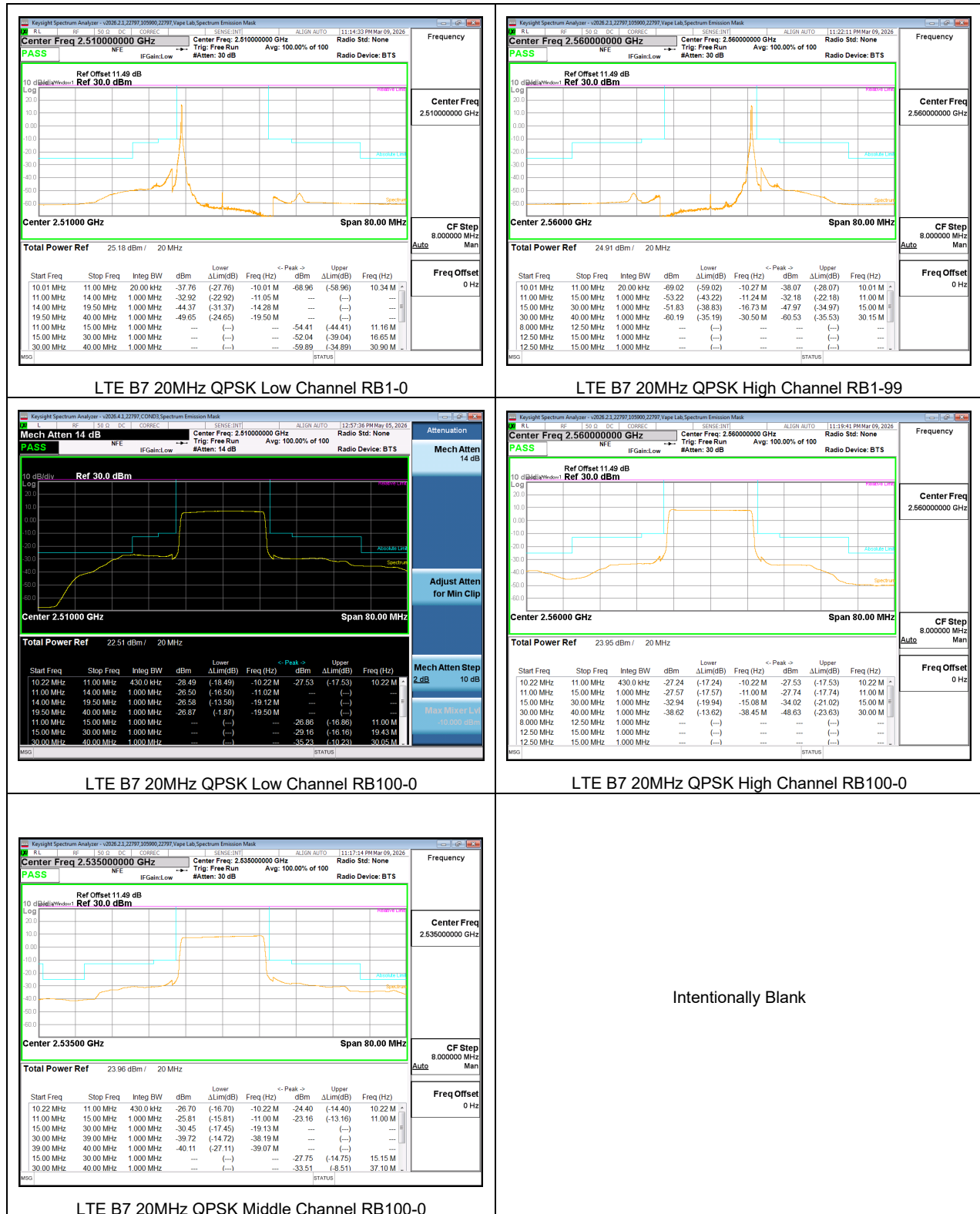


LTE B7 15MHz QPSK High Channel RB75-0



LTE B7 15MHz QPSK Middle Channel RB75-0

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8.2.2. 5G NR n7

