

TEST REPORT

Report Number: R15980274

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

Model : SM-S942U, SM-S942U1

FCC ID : A3LSMS942U

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

Test Standard(s) : FCC 47 CFR PART 2, PART 27

Date Of Issue:
2025-12-14

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Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2025-11-26	Initial Review	Noah Bennett
V2	2025-12-14	Various Typos Resolved. Added 16QAM EIRP Data	Noah Bennett

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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,
WPT and NFC

SERIAL NUMBERS: YHI0909M, YHK0046M, YHK0177M

SAMPLE RECEIVE DATE: 2025-09-11

DATE TESTED: 2025-09-11 to 2025-11-05

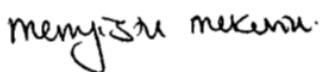
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC 47 CFR Part 2, Part 27	Complies

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
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UL LLC

2. SUMMARY OF TEST RESULTS

This report contains data provided by the customer which can impact on 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)	Result	Remarks
Equivalent Isotropic Radiated Power	27.50 (d) (4)	Complies	
Occupied Bandwidth	2.1049	Complies	
Band Edge and Emission Mask	2.1051, 27.53 (h)	Complies	
Out of Band Emissions	2.1051, 27.53 (h)	Complies	
Frequency Stability	2.1055, 27.54	Complies	
Peak-to-Average Ratio	27.50 (d) (5)	Complies	
Field Strength of Spurious Radiation	2.1053, 27.53 (h)	Complies	

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with the following.
FCC published lists of [measurement procedures](#) for compliance testing.

- 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
- [FCC KDB 971168 D02](#): Misc Rev Approv License Devices
- [FCC KDB 412172 D01](#): Determining ERP and EIRP

4. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, Certificate Number 0751.06, 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, U.S.A.	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 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

6. EQUIPMENT UNDER TEST

6.1. DESCRIPTION OF EUT

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

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

Mode and Bands	Config 0	Config 1
5G NR n70	A	F

6.2. MAXIMUM OUTPUT POWER.

EIRP/ERP TEST PROCEDURE

ANSI C63.26:2015
KDB 971168 D01 Section 5.6

$$\text{ERP/EIRP} = \text{PMeas} + \text{GT} - \text{LC}$$

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.

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

5G NR n70, CONFIG 0

Part 27								
EIRP Limit (W)		1.00						
Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	EIRP Average (dBm)	EIRP Average (W)	99% BW (MHz)	99% BW (kHz)	Emission Designator
15.0	QPSK	1702.5	1702.5	22.36	0.172	13.488	13488	13M5G7W
	16QAM			21.47	0.140	13.531	13531	13M5D7W

5G NR n70, CONFIG 1

Part 27								
EIRP Limit (W)		1.00						
Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	EIRP Average (dBm)	EIRP Average (W)	99% BW (MHz)	99% BW (kHz)	Emission Designator
15.0	QPSK	1702.5	1702.5	23.54	0.226	13.488	13488	13M5D7W
	16QAM			22.78	0.190	13.488	13488	13M5D7W

6.3. MAXIMUM ANTENNA GAIN

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

Frequency Band	ANT E Antenna Gain (dBi)	ANT A Antenna Gain (dBi)
5G NR n70 1695 – 1710 MHz	-1.4	-1.3

6.4. WORST-CASE CONFIGURATION AND MODE

This report covers the following technologies:

- 5G NR n70

For 5G NRs, conducted spurious emission tests were conducted on wider bandwidth with inner 1RB since this is the worst bandwidth and the highest output power.

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 on an engineering evaluation made on different modulations. Then, QPSK and BPSK were observed as the worst mode to LTE bands and 5G NR bands respectively and set for all conducted and radiated. Output power measurements were measured on BPSK, QPSK, 16QAM, 64QAM, and 256QAM modulations. For testing purposes emissions on Section 9 were measured while QPSK/BPSK was set at or above target power for all bands. Conducted tests were performed on the worst-case antenna port because it has the highest conducted power. The worst-case antenna port is shown in the table below.

5G NR Bands	Worst case Antenna Port
5G NR 70	Ant A

The EUT was investigated in three orthogonal orientations X/Y/Z on all available antennas to determine the worst-case orientation. The following table exhibits the worst-case orientation. The full tests of the EUT have made upon the orientations shown in the table below.

Frequency Range	ANT A	ANT F
1695 – 1710 MHz	Y	X

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 30MHz, 30MHz-1GHz.

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.

Representative Model	Difference	Derivative Model
		SM-S942U1
SM-S942U	Hardware	Same as SM-S942U
	Software	Different UI

6.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Power Adapter	Flextronics	G-1000-US	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 5G NR testing

SETUP DIAGRAM

Please see R15980274-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:

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				
88761	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2023-10-05	2025-10-05
	Gain-Loss Chains				
91977	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				
239540	Environmental Meter	Fisher Scientific	15-077-963	2025-08-05	2027-08-05
213025	Wideband Radio Communications Tester	Rohde and Schwarz	CMW500	2025-01-14	2026-01-14
169106 (BRF008)	1710-1785MHz notch filter, 2W, Fhigh = 9GHz	Micro-Tronics	BRM50713-01	2025-03-13	2026-03-13
169108 (BRF010)	1.85-1.97GHz notch filter, 2W, Fhigh = 9GHz	Micro-Tronics	BRM50714-01	2025-03-13	2026-03-13
231408 (BRF011)	2.495-2.690GHz notch filter, 2W, Fhigh = 18GHz	Micro-Tronics	BRM50709-01	2025-03-13	2026-03-13
169109 (BRF012)	3.4-3.8GHz notch filter, 2W, Fhigh = 18GHz	Micro-Tronics	BRM50711-01	2025-03-13	2026-03-13
82635 (HPF009)	1GHz high-pass filter, 2W, Fhigh =10GHz	Micro-Tronics	HPM17672	2025-03-13	2026-03-13

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

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	1-18 GHz				
135143	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2024-02-07	2026-02-07
	Gain-Loss Chains				
91979	Gain-loss string: 1-18GHz	Various	Various	2025-05-31	2026-05-31
	Receiver & Software				
197955	Spectrum Analyzer	Rohde & Schwarz	ESW44	2025-05-12	2026-05-12
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
213025	Wideband Radio Communications Tester	Rohde and Schwarz	CMW500	2025-01-14	2026-01-14
169108 (BRF010)	1.85-1.97GHz notch filter, 2W, Fhigh = 9GHz	Micro-Tronics	BRM50714-01	2025-03-13	2026-03-13
82635 (HPF009)	1GHz high-pass filter, 2W, Fhigh =10GHz	Micro-Tronics	HPM17672	2025-03-13	2026-03-13

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	2024-01-02	2026-01-02
	1-18 GHz				
206211	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2024-04-09	2026-04-09
	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
	Receiver & Software				
197954	Spectrum Analyzer	Rohde & Schwarz	ESW44	2025-04-21	2026-04-21
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	2025-01-14	2026-01-14
212167	Wideband Radio Communications Tester	Anritsu	MT8821C	2023-06-05	2024-06-05
	Substitution Meas. Equip				
CBL252986-002	SMA cable	Huber+Suhner	Sucoflex 104A	2025-09-16	2026-09-16
8923	Dipole Antenna	EMCO	3121C-DB-4	N/A	
86408	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2025-07-15	2026-07-15
196940	6dB, DC-18GHz, 5W	Mini-Circuits	BW-N6W5	N/A	
92309	Signal Generator	Keysight	83640B	N/A	

Wireless Conducted Measurement Equipment.

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
Additional Equipment used					
90411	Spectrum Analyzer MY54490314	Keysight Technologies	N9030A	2025-07-30	2026-07-30
212967	Wideband Radio Communications Tester 170733	Rohde and Schwarz	CMW500	2025-02-07	2026-02-07
222797	Wideband Radio Communications Tester	Rohde and Schwarz	CMW500	2025-02-21	2026-02-28
262469	Humidity and Temperature Probe	Control Company	15-077-963	2024-04-28	2026-04-28

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

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
Attenuators					
226554	20dB Attenuator	CentricRF	C18S2-20	2025-03-19	2026-03-19
226552	20dB Attenuator	CentricRF	C18S2-20	2025-03-19	2026-03-19
Cables					
80865	SMA Cable	Huber + Suhner	104PEA	2025-09-05	2026-09-05
247384	SMA Cable	Huber + Suhner	104PEA	2025-09-05	2026-09-05
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	2026-04-28

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.

8. CONDUCTED TEST RESULTS

8.1. 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.

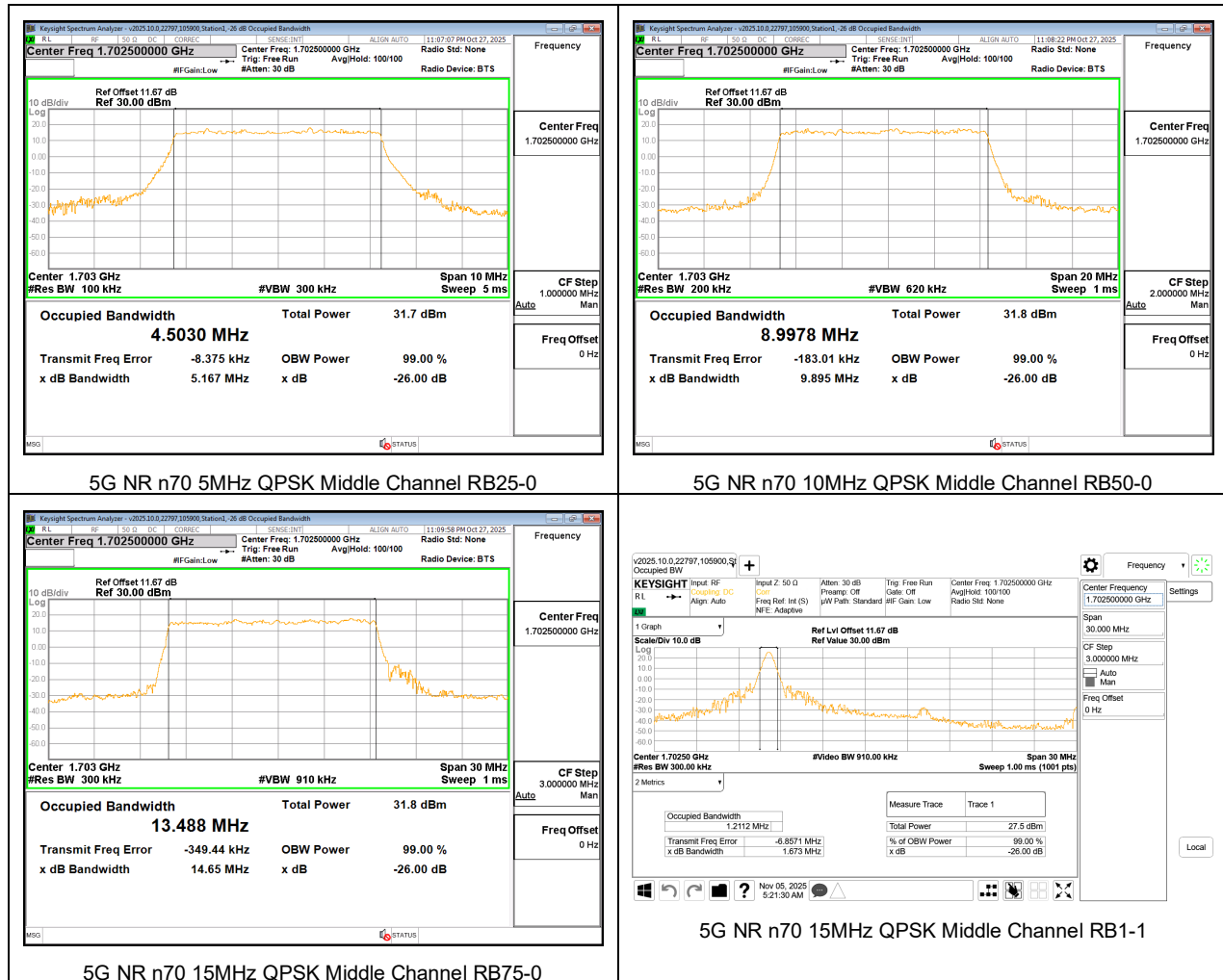
RESULTS

There is no limit required, and power is the same for low, middle and high channel; therefore, only middle channel was tested.

5G NR n70

Band	Mode	RB Allocation/RB Offset	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
5G NR n70	5MHz, QPSK	25/0	1702.5	4.5030	5.167
	5MHz, 16QAM			4.5216	5.239
	10MHz, QPSK	50/0		8.9978	9.895
	10MHz, 16QAM			8.9892	9.929
	15MHz, QPSK	75/0		13.488	14.65
	15MHz, 16QAM			13.531	14.54
	15MHz, QPSK	1/1		1.2112	1.673

8.1.1. 5G NR n70



8.2. EMISSION MASK AND ADJACENT CHANNEL POWER

LIMITS

FCC: §27.53(h)

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.

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.

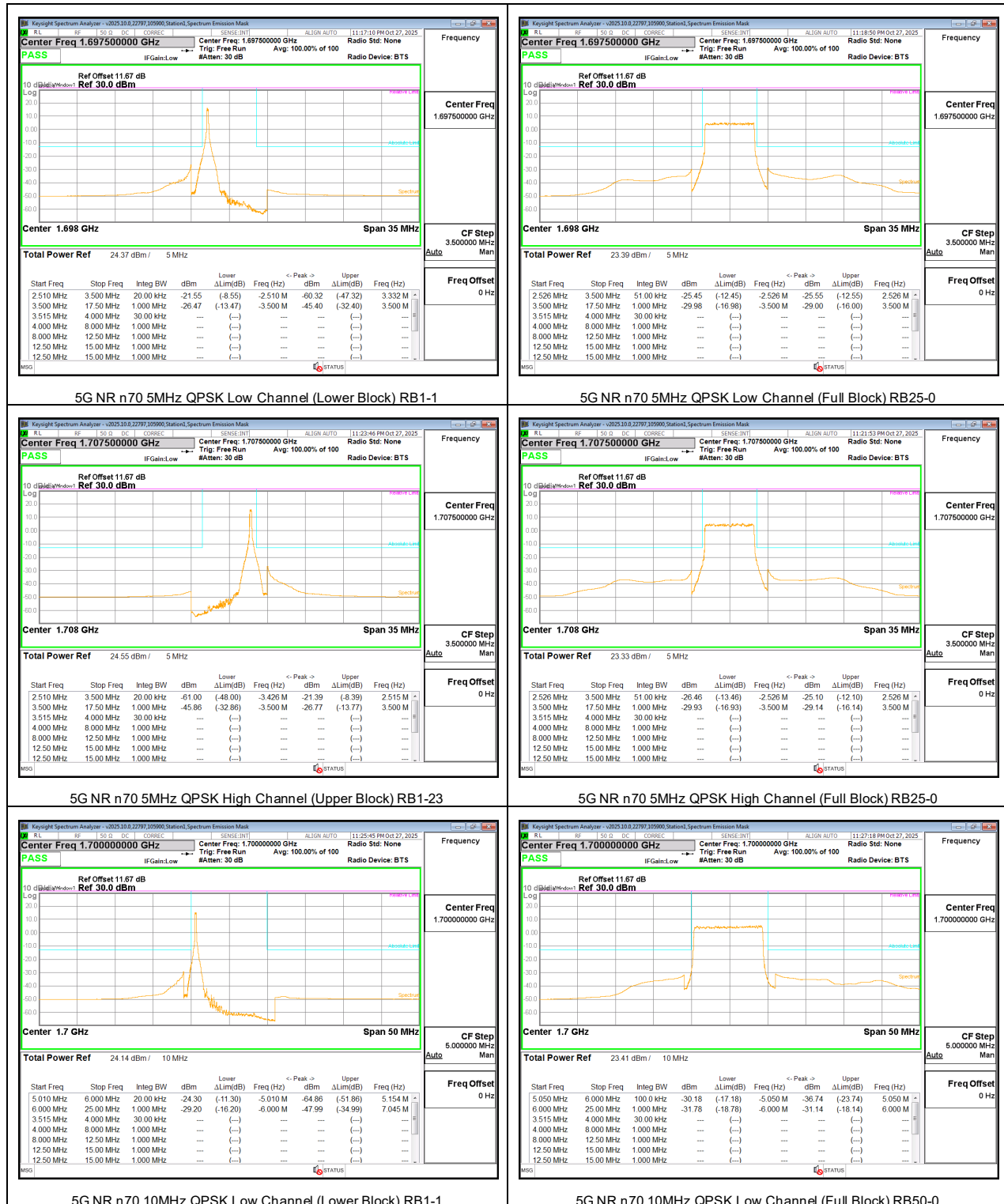
For each band edge measurement:

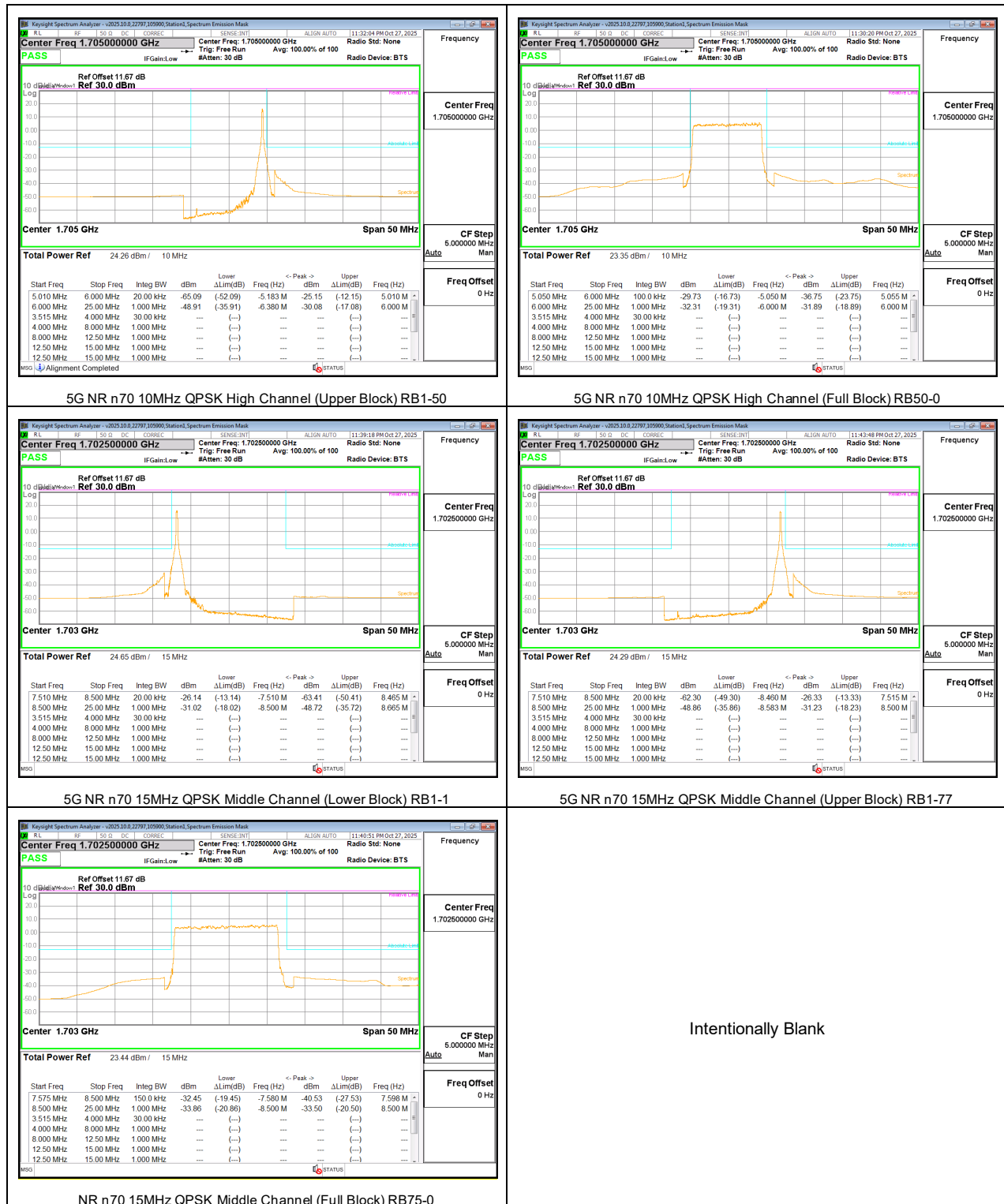
1. Set the spectrum analyzer span to include the block edge frequency.
2. Set a marker to point the corresponding band edge frequency in each test case.
3. Set display line at required limit.
4. Set resolution bandwidth to at least 1% of emission bandwidth.

RESULTS

20MHz and 25MHz Bandwidth Upper Block Bandedge is covered by 5G NR n66 20MHz and 25MHz Bandwidth.

8.2.1. 5G NR n70





8.3. OUT OF BAND EMISSIONS

LIMITS

FCC: §27.53 (h)

The minimum permissible attenuation level of any spurious emissions is $43 + 10 \log (P)$ dB where transmitting power (P) in Watts.

TEST PROCEDURE

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

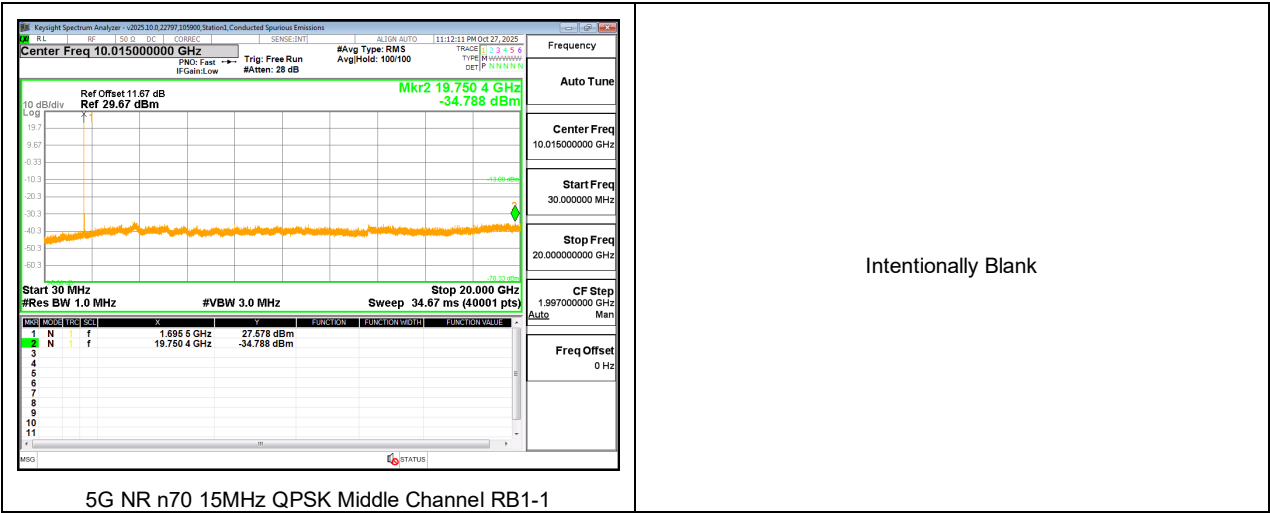
For each out of band emissions measurement:

- Set display line at -13 dBm, -25dBm and -40dBm according to the band Limit
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.
(NOTE: Worst case set RBW/VBW to 1MHz/3MHz)

RESULTS

BPSK with 1RB is the highest power and PSD to all bandwidth. 1RB has the same frequency and power to all bandwidth. Therefore, BPSK with 1RB and wider bandwidths results are reported as worst case for 5G NRs.

8.3.1. 5G NR n70



8.4. FREQUENCY STABILITY

LIMITS

FCC: §27.54

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

TEST PROCEDURE

Use base station simulator with Frequency Error measurement capability.

Use base station simulator with Frequency Error measurement capability.

- Temp. = -30°C to +50°C
- Voltage = (85% - 100%)

Normal, 3.89VDC

End Voltage, 3.69VDC.

Frequency Stability vs Temperature:

The EUT is placed inside a temperature chamber. The temperature is set to 20°C and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50°C is reached.

Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case).

RESULTS

See the following pages.

8.4.1. 5G NR n70 (BPSK 15MHz BANDWIDTH)

Test Engineer ID:	22797	Test Date:	2025-10-16
-------------------	-------	------------	------------

Band	70	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		1695	1710			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	1695.2500	1709.0200			
Extreme (50°C)		1695.2500	1709.0200	-0.7	0.000	Yes
Extreme (40°C)		1695.2500	1709.0200	-4.1	-0.002	Yes
Extreme (30°C)		1695.2500	1709.0200	-0.6	0.000	Yes
Extreme (10°C)		1695.2500	1709.0200	-7.3	-0.004	Yes
Extreme (0°C)		1695.2500	1709.0200	-3.0	-0.002	Yes
Extreme (-10°C)		1695.2500	1709.0200	-1.3	-0.001	Yes
Extreme (-20°C)		1695.2500	1709.0200	2.9	0.002	Yes
Extreme (-30°C)		1695.2500	1709.0200	-1.2	-0.001	Yes
20°C	End Point Voltage	1695.2500	1709.0200	-2.5	-0.001	Yes

8.5. PEAK-TO-AVERAGE POWER RATIO

LIMIT

FCC: §27.50 (d) (5)

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

RESULT

Config 0 to measure as the worst case; full resource block (FRB) for each bandwidth was used to measure as the worst case. The results from all CCDF measurements are passed with 13dB peak-to-average power ratio criteria.

Test Method

The EUT was connected to a wideband power sensor for peak and average power.

8.5.1. 5G NR n70

Test Engineer ID:	33499	Test Date:	2025-10-14
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Band	Bandwidth (MHz)	Frequency (MHz)	RB Allocation	RB OffSet	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
						Peak	Average	
5G NR n70	5MHz	1702.5	25	0	QPSK	26.54	21.88	4.66
					16QAM	26.43	20.95	5.48
	10MHz		50	0	QPSK	26.36	21.87	4.50
					16QAM	26.55	20.70	5.85
	15MHz		75	0	QPSK	26.52	21.82	4.70
					16QAM	26.42	20.80	5.62
Duty Cycle Correction Factor (dB) =			0.00					
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor								

9. RADIATED TEST RESULTS

Radiated measurement using the Field Strength Method

Using the test configuration shown in Figure 6 below, the radiated emissions is measured directly from the EUT and convert the measured field strength or received power to ERP or EIRP, as required, for comparison to the applicable limits. As stated in 5.5.1 of ANSI C63.26-2015, the field strength measurement method using a test site validated to the requirements of ANSI C63.4 is an alternative to the substitution measurement.

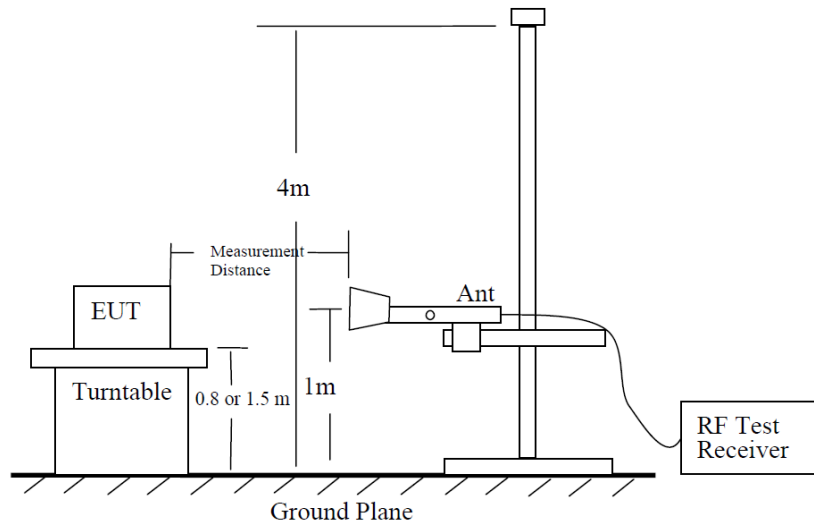


Figure 6—Test site-up for radiated ERP and/or EIRP measurements

Radiated Power Measurement Calculation According to ANSI C63.26-2015

- a) $E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dB}\mu\text{V)} + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$.
- b) $E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$.
- c) $E \text{ (dB}\mu\text{V/m)} = \text{EIRP (dBm)} - 20\log(D) + 104.8$; where D is the measurement distance (in the far field region) in m.
- d) $\text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 20\log(D) - 104.8$; where D is the measurement distance (in the far field region) in m.

So, from d)

The measuring distance is usually at 3m, then $20 \cdot \log(3) = 9.5424$

Then, $\text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 9.5424 - 104.8 = E \text{ (dB}\mu\text{V/m)} - 95.2576$

Note: Confidence check of each chamber is performed daily to see if any degradation from expected/normal reading reference data. Ambient check of each chamber is performed monthly.

9.1. EFFECTIVE RADIATED POWER EIRP

RULE PART(S)

FCC: §2.1046, §27.50

LIMITS

27.50(d) - (4) Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13dB.

TEST PROCEDURE

ANSI / TIA / EIA 603-E (2016), Clause 2.2.17; PSA setting reference to 971168 D01

For average power measurements:

- a) Set span to at least 1.5 times the OBW;
- b) Set RBW = 1-5% of the OBW, not to exceed 1 MHz;
- c) Set VBW $\geq 3 \times$ RBW;
- d) Set number of points in sweep $\geq 2 \times$ span / RBW;
- e) Sweep time = auto-couple;
- f) Detector = RMS (power averaging);
- i) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
- j) Compute the power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function.

TEST RESULTS

9.1.1. 5GNR n70 BPSK 15MHz BANDWIDTH

High Frequency Substitution Measurement UL Morrisville Chamber 4									
Company:		Samsung Electronics Co, Ltd.							
Project #:		15980274							
Date:		10/08/25							
Test Engineer:		84740/11993							
Configuration:		EUT Only							
Mode:		TX FR1 N70 15M QPSK							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	DCCF (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
1702.50	25.47	H	8.51	5.38		22.34	30.00	-7.66	RB1-1
1702.50	22.45	V	8.51	5.38		19.32	30.00	-10.68	RB1-1
1702.50	25.49	H	8.51	5.38		22.36	30.00	-7.64	RB1-40
1702.50	20.70	V	8.51	5.38		17.57	30.00	-12.43	RB1-40
1702.50	25.20	H	8.51	5.38		22.07	30.00	-7.93	RB1-77
1702.50	20.77	V	8.51	5.38		17.64	30.00	-12.36	RB1-77
Rev. 10.17.25									
High Frequency Substitution Measurement UL Morrisville Chamber 4									
Company:		Samsung Electronics Co, Ltd.							
Project #:		15980274							
Date:		10/08/25							
Test Engineer:		84740/11993							
Configuration:		EUT Only							
Mode:		TX FR1 N70 15M 16QAM							
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	DCCF (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
1702.50	24.60	H	8.51	5.38		21.47	30.00	-8.53	RB1-1
1702.50	21.48	V	8.51	5.38		18.35	30.00	-11.65	RB1-1
1702.50	24.51	H	8.51	5.38		21.38	30.00	-8.62	RB1-40
1702.50	19.73	V	8.51	5.38		16.60	30.00	-13.40	RB1-40
1702.50	23.98	H	8.51	5.38		20.85	30.00	-9.15	RB1-77
1702.50	19.56	V	8.51	5.38		16.43	30.00	-13.57	RB1-77
Rev. 10.17.25									
<u>CONFIG 0</u>									

High Frequency Substitution Measurement
UL Morrisville Chamber 4

Company: Samsung Electronics Co, Ltd.
Project #: 15980274
Date: 10/08/25
Test Engineer: 84740/11993
Configuration: EUT Only
Mode: TX, FR1 N70 15M QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	DCCF (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
1702.50	22.20	H	8.51	5.38		19.07	30.00	-10.93	RB1-1
1702.50	26.67	V	8.51	5.38		23.54	30.00	-6.46	RB1-1
1702.50	22.23	H	8.51	5.38		19.10	30.00	-10.90	RB1-40
1702.50	26.41	V	8.51	5.38		23.28	30.00	-6.72	RB1-40
1702.50	21.89	H	8.51	5.38		18.76	30.00	-11.24	RB1-77
1702.50	25.60	V	8.51	5.38		22.47	30.00	-7.53	RB1-77

Rev. 10.17.25

High Frequency Substitution Measurement
UL Morrisville Chamber 4

Company: Samsung Electronics Co, Ltd.
Project #: 15980274
Date: 10/08/25
Test Engineer: 84740/11993
Configuration: EUT Only
Mode: TX, FR1 N70 15M QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	DCCF (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
1702.50	21.28	H	8.51	5.38		18.15	30.00	-11.85	RB1-1
1702.50	25.91	V	8.51	5.38		22.78	30.00	-7.22	RB1-1
1702.50	21.39	H	8.51	5.38		18.26	30.00	-11.74	RB1-40
1702.50	25.59	V	8.51	5.38		22.46	30.00	-7.54	RB1-40
1702.50	20.83	H	8.51	5.38		17.70	30.00	-12.30	RB1-77
1702.50	24.54	V	8.51	5.38		21.41	30.00	-8.59	RB1-77

Rev. 10.17.25

CONFIG 1

9.2. FIELD STRENGTH OF SPURIOUS RADIATION

TEST PROCEDURE

KDB 971168 D01 /D02

All tests above 1GHz were done with a Resolution Bandwidth of 1MHz, and a Video Bandwidth of 3MHz

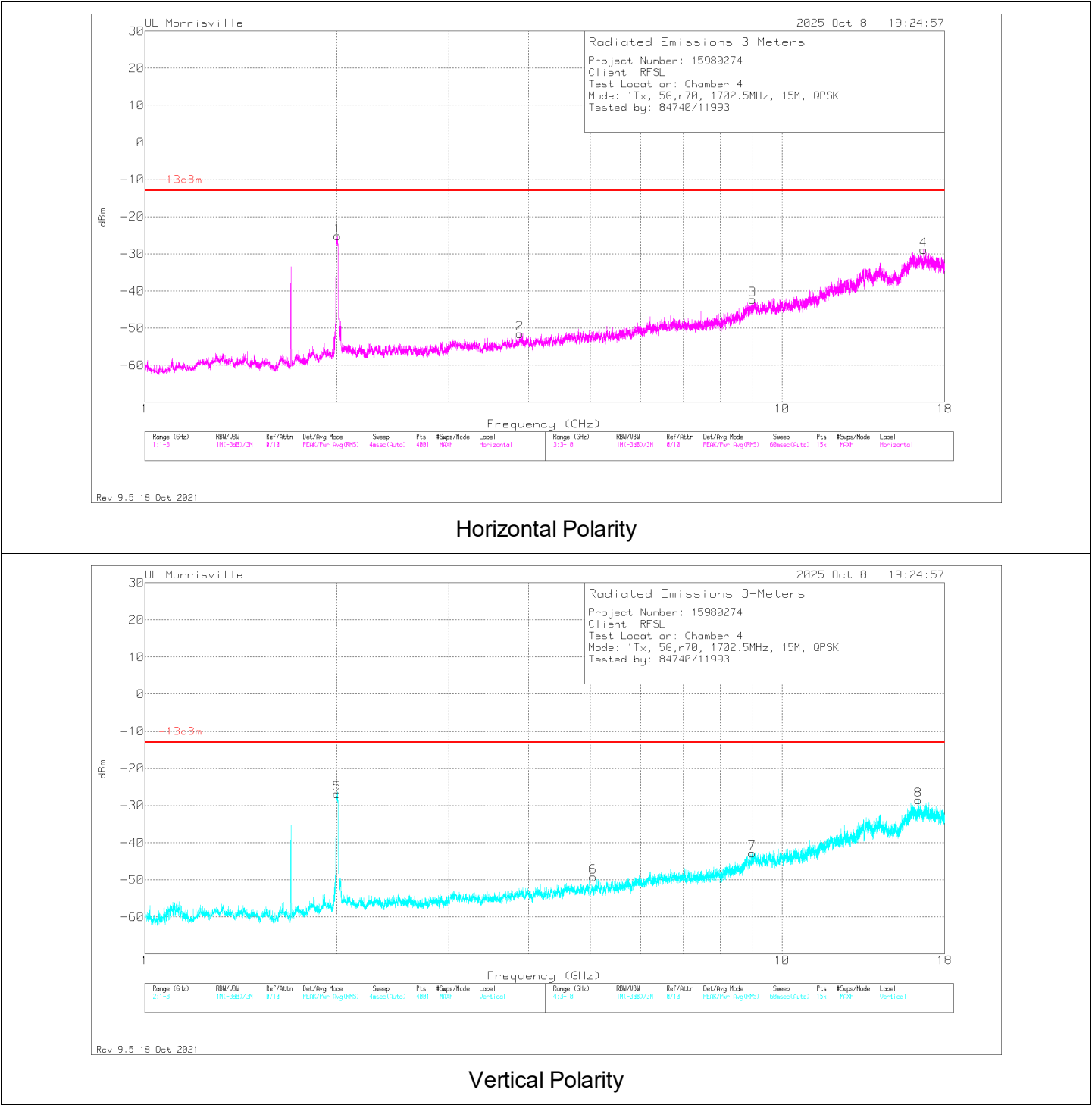
LIMITS

FCC: §27.53 (h)

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.

RESULTS

Example Plot



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	206211 AFC (dB/m)	Gain/Loss (dB)	CF (dB)	Filter (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)	Polarity
5	2.0025 (DL)	-35.02	Pk	31.4	-36.7	11.8	1.7	-26.82	-13	-13.82	V
1	2.0055 (DL)	-33.2	Pk	31.5	-36.9	11.8	1.7	-25.10	-13	-12.10	H
2	3.8810	-63.48	Pk	33.4	-33.2	11.8	0	-51.48	-13	-38.48	H
6	5.0530	-62.57	Pk	34.1	-32.5	11.8	0	-49.17	-13	-36.17	V
7	8.9840	-65.82	Pk	36.0	-24.8	11.8	0	-42.82	-13	-29.82	V
3	8.9990	-65.31	Pk	36.0	-24.8	11.8	0	-42.31	-13	-29.31	H
8	16.3720	-64.94	Pk	41.0	-16.4	11.8	0	-28.54	-13	-15.54	V
4	16.6990	-65.93	Pk	41.6	-16.4	11.8	0	-28.93	-13	-15.93	H

9.2.1. 5G NR n70

5G NR n70 (BPSK 15.0MHZ BANDWIDTH, ANT A (Config 0))

Project #:	15980274
Date:	2025-10-08
Test Engineer:	84740 / 11993
Configuration:	EUT Only
Mode	5G NR n70 BPSK 15MHz
Chamber #:	Chamber 4

Frequency (GHz)	Meter Reading (dBuV)	Det	206211 ACF (dB/m)	CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT (dBm)	Margin (dB)	Polarity
Mid Channel, 1702.5MHz									
3.881000	-63.48	Pk	33.4	11.8	-33.20	-51.48	-13	-38.48	H
5.053000	-62.57	Pk	34.1	11.8	-32.50	-49.17	-13	-36.17	V
8.999000	-65.31	Pk	36.0	11.8	-24.80	-42.31	-13	-29.31	H
8.984000	-65.82	Pk	36.0	11.8	-24.80	-42.82	-13	-29.82	V
16.699000	-65.93	Pk	41.6	11.8	-16.40	-28.93	-13	-15.93	H
16.372000	-64.94	Pk	41.0	11.8	-16.40	-28.54	-13	-15.54	V

5G NR n70 (BPSK 15.0MHZ BANDWIDTH, ANT F(Config 1))

Project #:	15980274
Date:	2025-10-27
Test Engineer:	19289
Configuration:	EUT Only
Mode	5G NR n70 BPSK 15MHz
Chamber #:	Chamber 4

Frequency (GHz)	Meter Reading (dBuV)	Det	223084 ACF (dB/m)	EIRP CF	Amp/Cbl (dB)	Corrected Reading (dBm)	LIMIT (dBm)	Margin (dB)	Polarity
Mid Channel, 1702.5MHz									
5.086000	-51.86	Pk	34.2	11.8	-32.40	-38.26	-13	-25.26	H
5.086000	-49.79	Pk	34.2	11.8	-32.40	-36.19	-13	-23.19	V
9.057000	-66.09	Pk	36.0	11.8	-23.60	-41.89	-13	-28.89	H
11.064000	-66.73	Pk	37.8	11.8	-21.80	-38.93	-13	-25.93	V
16.092000	-66.79	Pk	40.8	11.8	-15.70	-29.89	-13	-16.89	H
14.255000	-66.04	Pk	38.8	11.8	-15.50	-30.94	-13	-17.94	V

10. SETUP PHOTOS

Please see R15980274-EP1 for Setup Diagrams and Setup Photos.

END OF REPORT