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PART 27 MEASUREMENT REPORT

Applicant Name:

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

Date of Testing:

09/09/2021 - 11/10/2021 **Test Report Issue Date:** 12/2/2021 **Test Site/Location:** PCTEST Lab. Columbia, MD, USA **Test Report Serial No.:** 1M2109090103-04-R1.A3L

FCC ID: APPLICANT:

A3LSMS906U

Samsung Electronics Co., Ltd.

Application Type: Model: Additional Model(s): EUT Type: FCC Classification: FCC Rule Part: Test Procedure(s):

Certification SM-S906U SM-S906U1 Portable Handset PCS Licensed Transmitter Held to Ear (PCE) 27 ANSI C63.26-2015, ANSI/TIA-603-E-2016, KDB 971168 D01 v03r01, KDB 648474 D03 v01r04

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947. Test results reported herein relate only to the item(s) tested.

Note: This revised Test Report (S/N: 1M2109090103-04-R1.A3L) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Randy Ortanez

Randy Ortane President



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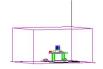


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MEASUREMENT REPORT FCC Part 27



				E	RP	EIRP		
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	Max. Power [W]	Max. Power [dBm]	Max. Power [W]	Max. Power [dBm]	Emission Designator
20	20 MHz	QPSK	673.0 - 688.0	0.060	17.78	0.098	19.93	18M0G7D
	20 10112	16QAM	673.0 - 688.0	0.050	17.01	0.082	19.16	17M9W7D
	15 MHz	QPSK	670.5 - 690.5	0.061	17.87	0.100	20.02	13M5G7D
LTE Band 71	10 10112	16QAM	670.5 - 690.5	0.049	16.89	0.080	19.04	9M00W7D
ETE Dana / T	10 MHz	QPSK	668.0 - 693.0	0.063	17.98	0.103	20.13	9M04G7D
	10 10112	16QAM	668.0 - 693.0	0.050	16.95	0.081	19.10	9M00W7D
	5 MHz	QPSK	665.5 - 695.5	0.065	18.13	0.107	20.28	4M54G7D
5 MHz	16QAM	665.5 - 695.5	0.052	17.12	0.085	19.27	4M53W7D	
10 MHz	QPSK	704.0 - 711.0	0.068	18.35	0.112	20.50	9M01G7D	
	10 10112	16QAM	704.0 - 711.0	0.057	17.56	0.093	19.71	9M02W7D
	5 MHz	QPSK	701.5 - 713.5	0.070	18.47	0.115	20.62	4M56G7D
LTE Band 12	011112	16QAM	701.5 - 713.5	0.060	17.78	0.098	19.93	4M54W7D
ETE Bana TE	3 MHz	QPSK	700.5 - 714.5	0.068	18.30	0.111	20.45	2M72G7D
		16QAM	700.5 - 714.5	0.059	17.72	0.097	19.87	2M72W7D
	1.4 MHz	QPSK	699.7 - 715.3	0.067	18.28	0.110	20.43	1M10G7D
		16QAM	699.7 - 715.3	0.060	17.75	0.098	19.90	1M10W7D
	10 MHz	QPSK	782.0	0.097	19.85	0.159	22.00	9M04G7D
LTE Band 13		16QAM	782.0	0.081	19.08	0.133	21.23	9M02W7D
	5 MHz	QPSK	779.5 - 784.5	0.098	19.93	0.161	22.08	4M54G7D
• • • •		16QAM	779.5 - 784.5	0.081	19.08	0.133	21.23	4M54W7D
		π/2 BPSK	673.0 - 688.0	0.051	17.10	0.084	19.25	17M9G7D
	20 MHz	QPSK	673.0 - 688.0	0.052	17.14	0.085	19.29	18M9G7D
		16QAM	673.0 - 688.0	0.043	16.30	0.070	18.45	19M0W7D
		π/2 BPSK	670.5 - 690.5	0.052	17.12	0.085	19.27	13M4G7D
	15 MHz	QPSK	670.5 - 690.5	0.055	17.43	0.091	19.58	14M1G7D
NR Band n71		16QAM	670.5 - 690.5	0.039	15.91	0.064	18.06	14M2W7D
	40 MU	π/2 BPSK	668.0 - 693.0	0.051	17.04	0.083	19.19	9M04G7D
	10 MHz	QPSK 16QAM	668.0 - 693.0 668.0 - 693.0	0.055	17.43 15.96	0.091	19.58 18.11	9M37G7D 9M32W7D
						0.065		
	5 MHz	π/2 BPSK QPSK	665.5 - 695.5 665.5 - 695.5	0.056	17.45 17.25	0.091	19.60 19.40	4M50G7D 4M51G7D
	5 IVIHZ	16QAM	665.5 - 695.5	0.033	17.25	0.087	19.40	4M51G7D
		π/2 BPSK	706.5 - 708.5	0.039	15.66	0.063	20.58	13M5G7D
		QPSK	706.5 - 708.5	0.070	18.33	0.114	20.56	14M1G7D
	15 MHz							
		16QAM	706.5 - 708.5	0.057	17.58	0.094	19.73	14M2W7D
		π/2 BPSK	704.0 - 711.0	0.071	18.54	0.117	20.69	9M00G7D
NR Band n12	10 MHz	QPSK	704.0 - 711.0	0.068	18.33	0.112	20.48	9M35G7D
		16QAM	704.0 - 711.0	0.063	17.97	0.103	20.12	9M34W7D
		π/2 BPSK	701.5 - 713.5	0.071	18.49	0.116	20.64	4M50G7D
	5 MHz	QPSK	701.5 - 713.5	0.070	18.44	0.115	20.59	4M51G7D
		16QAM	701.5 - 713.5	0.066	18.18	0.108	20.33	4M52W7D

Overview Table (<1GHz Bands)

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				EI	RP	
Mode Bandwidth Mod		Modulation	Tx Frequency Range [MHz]	Max. Power [W]	Max. Power [dBm]	Emission Designator
WCDMA1700	N/A	Spread Spectrum	1712.4 - 1752.6	0.321	25.06	4M15F9W
	20 MHz	QPSK	1720.0 - 1770.0	0.348	25.42	18M0G7D
		16QAM	1720.0 - 1770.0	0.305	24.84	18M0W7D
	15 MHz	QPSK	1717.5 - 1772.5	0.349	25.43	13M5G7D
		16QAM	1717.5 - 1772.5	0.273	24.36	13M5W7D
	10 MHz	QPSK	1715.0 - 1775.0	0.351	25.45	8M99G7D
LTE Band 66/4		16QAM	1715.0 - 1775.0	0.271	24.34	9M03W7D
LIE Danu 66/4	5 MHz	QPSK	1712.5 - 1777.5	0.362	25.59	4M53G7D
		16QAM	1712.5 - 1777.5	0.289	24.60	4M50W7D
	3 MHz	QPSK	1711.5 - 1778.5	0.356	25.51	2M72G7D
	3 MILZ	16QAM	1711.5 - 1778.5	0.294	24.68	2M72W7D
	1.4 MHz	QPSK	1710.7 - 1779.3	0.355	25.50	1M10G7D
		16QAM	1710.7 - 1779.3	0.275	24.39	1M10W7D
40		π/2 BPSK	1730.0 - 1760.0	0.265	24.24	38M8G7D
	40 MHz	QPSK	1730.0 - 1760.0	0.262	24.19	38M7G7D
		16QAM	1730.0 - 1760.0	0.222	23.47	38M9W7D
-		π/2 BPSK	1725.0 - 1765.0	0.268	24.29	28M7G7D
	30 MHz	QPSK	1725.0 - 1765.0	0.261	24.16	28M8G7D
		16QAM	1725.0 - 1765.0	0.229	23.60	28M7W7D
		π/2 BPSK	1720.0 - 1770.0	0.269	24.30	18M0G7D
	20 MHz	QPSK	1720.0 - 1770.0	0.268	24.28	19M1G7D
NR Band n66		16QAM	1720.0 - 1770.0	0.226	23.54	19M0W7D
Ant A		π/2 BPSK	1717.5 - 1772.5	0.269	24.30	13M6G7D
	15 MHz	QPSK	1717.5 - 1772.5	0.268	24.29	14M2G7D
		16QAM	1717.5 - 1772.5	0.228	23.58	14M1W7D
		π/2 BPSK	1715.0 - 1775.0	0.267	24.27	9M03G7D
	10 MHz	QPSK	1715.0 - 1775.0	0.261	24.17	9M37G7D
		16QAM	1715.0 - 1775.0	0.247	23.92	9M37W7D
		π/2 BPSK	1712.5 - 1777.5	0.269	24.29	4M54G7D
	5 MHz	QPSK	1712.5 - 1777.5	0.269	24.30	4M51G7D
		16QAM	1712.5 - 1777.5	0.252	24.01	4M51W7D

Overview Table (>1GHz Bands)

				EI	RP	
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	Max. Power [W]	Max. Power [dBm]	Emission Designator
		π/2 BPSK	1730.0 - 1760.0	0.169	22.27	38M9G7D
	40 MHz	QPSK	1730.0 - 1760.0	0.167	22.21	38M8G7D
		16QAM	1730.0 - 1760.0	0.129	21.10	38M9W7D
		π/2 BPSK	1725.0 - 1765.0	0.168	22.26	28M7G7D
	30 MHz	QPSK	1725.0 - 1765.0	0.170	22.30	28M7G7D
	20 MHz	16QAM	1725.0 - 1765.0	0.121	20.81	28M8W7D
		π/2 BPSK	1720.0 - 1770.0	0.169	22.28	17M9G7D
		QPSK	1720.0 - 1770.0	0.164	22.16	18M0G7D
NR Band n66		16QAM	1720.0 - 1770.0	0.112	20.50	18M0W7D
Ant I		π/2 BPSK	1717.5 - 1772.5	0.166	22.19	13M5G7D
	15 MHz	QPSK	1717.5 - 1772.5	0.169	22.27	13M5G7D
		16QAM	1717.5 - 1772.5	0.121	20.83	13M5W7D
		π/2 BPSK	1715.0 - 1775.0	0.165	22.17	8M99G7D
10 MHz	QPSK	1715.0 - 1775.0	0.161	22.06	9M00G7D	
		16QAM	1715.0 - 1775.0	0.111	20.46	8M97W7D
		π/2 BPSK	1712.5 - 1777.5	0.168	22.25	4M51G7D
	5 MHz	QPSK	1712.5 - 1777.5	0.167	22.22	4M50G7D
		16QAM	1712.5 - 1777.5	0.124	20.92	4M51W7D

Overview Table (>1GHz Bands)

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1.0 INTRODUCTION

1.1 Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Innovation, Science and Economic Development Canada.

1.2 PCTEST Test Location

These measurement tests were conducted at the PCTEST Engineering Laboratory facility located at 7185 Oakland Mills Road, Columbia, MD 21046. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014.

1.3 Test Facility / Accreditations

Measurements were performed at PCTEST Engineering Lab located in Columbia, MD 21046, U.S.A.

- PCTEST is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.01 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.
- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISED Standards (RSS).
- PCTEST facility is a registered (2451B) test laboratory with the site description on file with ISED.

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID: A3LSMS906U**. The test data contained in this report pertains only to the emissions due to the EUT's licensed transmitters that operate under the provisions of Part 27.

Test Device Serial No.: 0100M, 0061M, 0097M, 0045M, 0044M, 0080M, 1218M, 0359M, 0364M, 0379M, 0361M

2.2 Device Capabilities

This device contains the following capabilities:

850/1900 GSM/GPRS/EDGE, 850/1700/1900 WCDMA/HSPA, Multi-band LTE, 5G NR (FR1 and FR2), 802.11b/g/n/ax WLAN, 802.11a/n/ac/ax UNII (5,6GHz), Bluetooth (1x, EDR, LE), NFC, UWB, Wireless Power Transfer

This device uses a tuner circuit that dynamically updates the antenna impedance parameters to optimize antenna performance for certain bands and modes of operation. The tuner for this device was set to simulate a ""free space" condition where the transmit antenna is matched to the medium into which it is transmitting and, thus, the power is at its maximum level.

LTE Band 66 (1710 - 1780 MHz) overlaps the entire frequency range of LTE Band 4 (1710 - 1755 MHz). Therefore, test data provided in this report covers Band 4 as well as Band 66.

This EUT supports 2 antennas (Antenna A and Antenna I) for n66 operations. This report includes conducted and radiated data from both antennas to ensure compliance."

2.3 Test Configuration

The EUT was tested per the guidance of ANSI/TIA-603-E-2016 and KDB 971168 D01 v03r01. See Section 7.0 of this test report for a description of the radiated and antenna port conducted emissions tests.

This device supports wireless charging capability and, thus, is subject to the test requirements of KDB 648474 D03 v01r04. Additional radiated spurious emission measurements were performed with the EUT lying flat on an authorized wireless charging pad (WCP) Model: EP-N5100 while operating under normal conditions in a simulated call or data transmission configuration. The worst case radiated emissions data is shown in this report.

2.4 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and no modifications were made during testing.

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3.0 DESCRIPTION OF TESTS

3.1 Evaluation Procedure

The measurement procedures described in the document titled "Land Mobile FM or PM – Communications Equipment – Measurements and Performance Standards" (ANSI/TIA-603-E-2016) and "Procedures for Compliance Measurement of the Fundamental Emission Power of Licensed Wideband (> 1 MHz) Digital Transmission Systems" (KDB 971168 D01 v03r01) were used in the measurement of the EUT.

3.2 Radiated Power and Radiated Spurious Emissions

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. The test site inside the chamber is a 6m x 5.2m elliptical, obstruction-free area in accordance with Figure 5.7 of Clause 5 in ANSI C63.4-2014. Absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections for measurements above 1GHz. For measurements below 1GHz, the absorbers are removed. A raised turntable is used for radiated measurement. The turn table is a continuously rotatable, remote-controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm tall test table made of Styrodur is placed on top of the turn table. A Styrodur pedestal is placed on top of the test table to bring the total table height to 1.5m.

The equipment under test was transmitting while connected to its integral antenna and is placed on a wooden turntable 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height is adjusted between 1 and 4 meter height, the turntable is rotated through 360 degrees, and the EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer. Radiated power levels are also investigated with the receive antenna horizontally and vertically polarized. The maximized power level is recorded using the spectrum analyzer "Channel Power" function with the integration band set to the emissions' occupied bandwidth, a RMS detector, RBW = 100kHz, VBW = 300kHz, and a 1 second sweep time over a minimum of 10 sweeps, per the guidelines of KDB 971168 D01 v03r01.

Per the guidance of ANSI/TIA-603-E-2016, a half-wave dipole is then substituted in place of the EUT. For emissions above 1GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer level previously recorded from the spurious emission from the EUT. The power of the emission is calculated using the following formula:

 $P_{d [dBm]} = P_{g [dBm]} - cable loss [dB] + antenna gain [dBd/dBi]$

Where, P_d is the dipole equivalent power, P_g is the generator output into the substitution antenna, and the antenna gain is the gain of the substitute antenna used relative to either a half-wave dipole (dBd) or an isotropic source (dBi). The substitute level is equal to $P_{g [dBm]}$ – cable loss [dB].

For fundamental radiated power measurements, the guidance of KDB 971168 D01 v03r01 is used to record the EUT power level that is subsequently matched via the aforementioned substitution method given in ANSI/TIA-603-E-2016.

All radiated measurements are performed in a chamber that meets the site requirements per ANSI C63.4-2014. Additionally, radiated emissions below 30MHz are also validated on an Open Area Test Site to assert correlation with the chamber measurements per the requirements of KDB 414788 D01.

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4.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014. All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95% level of confidence. The measurement uncertainty shown below meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Contribution	Expanded Uncertainty (±dB)
Conducted Bench Top Measurements	1.13
Radiated Disturbance (<1GHz)	4.98
Radiated Disturbance (>1GHz)	5.07
Radiated Disturbance (>18GHz)	5.09

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5.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST). Measurement antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	AP2	EMC Cable and Switch System	3/4/2021	Annual	3/4/2022	AP2
-	AP1	EMC Cable and Switch System	3/9/2021	Annual	3/9/2022	AP1
-	ETS	EMC Cable and Switch System	3/4/2021	Annual	3/4/2022	ETS
-	LTx1	Licensed Transmitter Cable Set	3/12/2021	Annual	3/12/2022	LTx1
-	LTx2	Licensed Transmitter Cable Set	3/12/2021	Annual	3/12/2022	LTx2
Agilent	N9030A	50GHz PXA Signal Analyzer	1/20/2021	Annual	1/20/2022	US51350301
Anritsu	MT8821C	Radio Communication Analyzer		N/A		6201381794
Emco	3115	Horn Antenna (1-18GHz)	6/18/2020	Biennial	6/18/2022	9704-5182
Espec	ESX-2CA	Environmental Chamber	8/27/2020	Annual	8/27/2022	17620
ETS Lindgren	3117	1-18 GHz DRG Horn (Medium)	4/20/2021	Biennial	4/20/2023	00125518
ETS Lindgren	3164-08	Quad Ridge Horn Antenna	3/12/2020	Biennial	3/12/2022	128337
Keysight Technologies	N9020A	MXA Signal Analyzer	12/22/2020	Annual	12/22/2021	MY54500644
Keysight Technologies	N9030A	PXA Signal Analyzer (44GHz)	7/21/2021	Annual	7/21/2022	MY49430494
Mini-Circuits	SSG-4000HP	Synthesized Signal Generator		N/A		11208010032
Rohde & Schwarz	CMW500	Radio Communication Tester		N/A		100976
Rohde & Schwarz	ESU26	EMI Test Receiver (26.5GHz)	8/3/2021	Annual	8/3/2022	100342
Rohde & Schwarz	ESU40	EMI Test Receiver (40GHz)	4/30/2021	Annual	4/30/2022	100348
Rohde & Schwarz	ESW44	EMI Test Receiver 2Hz to 44 GHz	1/21/2021	Annual	1/21/2022	101716
Rohde & Schwarz	FSW26	2Hz-26.5GHz Signal and Spectrum Analyzer	2/10/2021	Annual	2/10/2022	103187
Sunol	JB6	LB6 Antenna	11/13/2020	Biennial	11/13/2022	A082816

Table 5-1. Test Equipment

Notes:

- 1. For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.
- 2. Equipment with a calibration date of "N/A" shown in this list was not used to make direct calibrated measurements.

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6.0 SAMPLE CALCULATIONS

Emission Designator

WCDMA Emission Designator

Emission Designator = 4M16F9W

WCDMA BW = 4.16 MHz F = Frequency Modulation 9 = Composite Digital Info W = Combination (Audio/Data)

QPSK Modulation

Emission Designator = 8M62G7D

LTE BW = 8.62 MHz G = Phase Modulation 7 = Quantized/Digital Info D = Data transmission, telemetry, telecommand

QAM Modulation

Emission Designator = 8M45W7D

LTE BW = 8.45 MHz W = Amplitude/Angle Modulated 7 = Quantized/Digital Info D = Data transmission, telemetry, telecommand

Spurious Radiated Emission – LTE Band

Example: Middle Channel LTE Mode 2nd Harmonic (1564 MHz)

The average spectrum analyzer reading at 3 meters with the EUT on the turntable was -81.0 dBm. The gain of the substituted antenna is 8.1 dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of -81.0 dBm on the spectrum analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 1564 MHz. So, 6.1 dB is added to the signal generator reading of -30.9 dBm yielding -24.80 dBm. The fundamental EIRP was 25.50 dBm so this harmonic was 25.50 dBm - (-24.80) = 50.3 dBc.

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7.0 TEST RESULTS

7.1 Summary

Company Name:	Samsung Electronics Co., Ltd.
FCC ID:	A3LSMS906U
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
Mode(s):	LTE/NR/WCDMA

Test Condition	Test Description	FCC Part Section(s)	Test Limit	Test Result	Reference
	Transmitter Conducted Output Power*	2.1046	N/A	PASS	Section 7.2
	Occupied Bandwidth	2.1049(h)	N/A	PASS	Section 7.3
Ē	Conducted Band Edge / Spurious Emissions (LTE Band 13)	2.1051, 27.53(c), 27.53(f)	Undesirable emissions must meet the limits detailed in sections 27.53(c) and 27.53(f)	PASS	Sections 7.4, 7.5
CONDUCTED	Conducted Band Edge / Spurious Emissions (LTE Band 12, 17, 71; NR Band n12, n71)	2.1051, 27.53(g)	≥43 + 10 log (P[Watts]) dB of attenuation below transmitter power	PASS	Sections 7.4, 7.5
00	Conducted Band Edge / Spurious Emissions (WCDMA AWS; LTE Band 4, 66; NR Band n66)	2.1051, 27.53(h)	≥43 + 10 log (P[Watts]) dB of attenuation below transmitter power	PASS	Sections 7.4, 7.5
	Peak-to-Average Ratio (WCDMA AWS; LTE Band 4, 66; NR Band n66)	27.50(d)(5)	≤13 dB	PASS	Section 7.5
	Frequency Stability	2.1055, 27.54	Fundamental emissions stay within authorized frequency block	PASS	Section 7.9
	Effective Radiated Power (LTE Band 13)	27.50(b)(10)	≤ 3 Watts max. ERP	PASS	Section 7.6
	Effective Radiated Power (LTE Band 12, 17, 71; NR Band n12, n71)	27.50(c)(10)	≤ 3 Watts max. ERP	PASS	Section 7.6
ATED	Equivalent Isotropic Radiated Power (WCDMA AWS; LTE Band 4, 66; NR Band n66)	27.50(d)(10)	≤ 1 Watt max. EIRP	PASS	Section 7.6
RADIATED	Radiated Spurious Emissions (LTE Band 13)	2.1053, 27.53(c), 27.53(f)	Undesirable emissions must meet the limits detailed in sections 27.53(c) and 27.53(f)	PASS	Section 7.8
	Radiated Spurious Emissions (LTE Band 12, 17, 71; NR Band n12, n71)	2.1053, 27.53(g)	≥ 43 + 10 log (P[Watts]) dB of attenuation below transmitter power	PASS	Section 7.8
	Radiated Spurious Emissions (WCDMA AWS; LTE Band 4, 66; NR Band n66)	2.1053, 27.53(h)	≥ 43 + 10 log (P[Watts]) dB of attenuation below transmitter power	PASS	Section 7.8

* The only transmitter output conducted powers included in this report are those where the Pmax value, per the tune-up document, is higher than any of the DSI power levels. For the remaining conducted power measurements, see the **RF Exposure Report**.

Table 7-1. Summary of Test Results

Notes:

- 1) All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
- 2) The analyzer plots shown in Section 7.0 were taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables, directional couplers, and attenuators used as part of the system to maintain a link between the call box and the EUT at all frequencies of interest.
- 3) All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables, attenuators, and couplers.
- 4) For conducted spurious emissions, automated test software was used to measure emissions and capture the corresponding plots necessary to show compliance. The measurement software utilized is PCTEST EMC Software Tool v1.0.

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7.2 Conducted Power Output Data

Test Overview

The EUT is set up to transmit two contiguous LTE channels. The power level of both carriers is measured by means of a calibrated spectrum analyzer. All emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

Test Procedure Used

KDB 971168 D01 v03r01 - Section 6.0

Test Settings

- 1. Span = $2 \times OBW$ to $3 \times OBW$
- 2. RBW = 1% to 5% of the OBW
- 3. Number of measurement points in sweep > 2 x span / RBW
- 4. Sweep = auto-couple (less than transmission burst duration)
- 5. Detector = RMS (power)
- 6. Trigger was set to enable power measurements only on full power bursts
- 7. Trace was allowed to stabilize
- 8. Spectrum analyzer's "Channel Power" function was used to compute the power by integrating the spectrum across the OBW of the signal

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



Figure 7-1. Test Instrument & Measurement Setup

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Test Notes:

- 1. Conducted power measurements were evaluated for the two contiguous channels using various combinations of RB size, RB offset, modulation, and channel bandwidth. Channel bandwidth data is shown in the tables below based only on the channel bandwidths that were supported in this device.
- 2. Conducted power measurements are also evaluated for simultaneous transmission of two NR FR1 carriers operating in different bands (interband NR FR1 ULCA). The powers were investigated while both bands are operating at their widest supported channel bandwidth.
- 3. All other conducted power measurements are contained in the RF exposure report for this filing.

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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
		346000	1730.0	1 / 108	24.43
	π/2 BPSK	349000	1745.0	1 / 161	24.38
40 MHz		352000	1760.0	1 / 161	24.42
N N		346000	1730.0	1 / 108	24.37
40	QPSK	349000	1745.0	1 / 161	24.31
		352000	1760.0	1 / 161	24.25
	16-QAM	346000	1730.0	1 / 108	23.23
		345000	1725.0	1 / 40	24.48
	π/2 BPSK	349000	1745.0	1 / 80	24.45
Hz		353000	1765.0	1 / 119	24.41
30 MHz		345000	1725.0	1 / 40	24.34
30	QPSK	349000	1745.0	1 / 80	24.47
		353000	1765.0	1 / 119	24.42
16	16-QAM	345000	1725.0	1 / 40	23.36
		344000	1720.0	1 / 79	24.49
	π/2 BPSK	349000	1745.0	1 / 53	24.44
Hz		354000	1770.0	1 / 79	24.40
20 MHz	QPSK	344000	1720.0	1 / 79	24.47
20		349000	1745.0	1 / 53	24.27
		354000	1770.0	1 / 79	24.25
	16-QAM	344000	1720.0	1 / 79	23.31
		343500	1717.5	1 / 20	24.49
	π/2 BPSK	349000	1745.0	1 / 20	24.48
HZ I		354500	1772.5	1 / 58	24.40
15 MHz		343500	1717.5	1 / 20	24.47
15	QPSK	349000	1745.0	1 / 20	24.42
		354500	1772.5	1 / 58	24.32
	16-QAM	343500	1717.5	1 / 20	23.34
		343000	1715.0	1 / 13	24.46
	π/2 BPSK	349000	1745.0	1 / 26	24.48
Hz		355000	1775.0	1 / 26	24.47
10 MHz		343000	1715.0	1 / 13	24.36
10	QPSK	349000	1745.0	1 / 26	24.34
		355000	1775.0	1 / 26	24.37
	16-QAM	343000	1715.0	1 / 13	23.68
		342500	1712.5	1 / 6	24.48
	π/2 BPSK	349000	1745.0	1 / 12	24.48
4		355500	1777.5	1 / 12	24.48
MHz		342500	1712.5	1 / 6	24.48
5	QPSK	349000	1745.0	1 / 12	24.39
		355500	1777.5	1 / 12	24.46
	16-QAM	342500	1712.5	1 / 6	23.77

Table 7-2. Conducted Max Powers (NR Band n66 - ANT A)

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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
		346000	1730.0	1 / 161	24.36
	π/2 BPSK	349000	1745.0	1 / 54	24.39
Hz		352000	1760.0	1 / 108	24.27
40 MHz		346000	1730.0	1 / 161	24.23
40		349000	1745.0	1 / 54	24.19
		352000	1760.0	1 / 108	24.34
	16-QAM	346000	1730.0	1 / 161	23.68
		345000	1725.0	1 / 119	24.35
	π/2 BPSK	349000	1745.0	1 / 119	24.35
Hz		353000	1765.0	1 / 80	24.35
30 MHz		345000	1725.0	1 / 119	24.31
30	QPSK	349000	1745.0	1 / 80	24.36
		353000	1765.0	1 / 80	24.29
16-QAM	345000	1725.0	1 / 119	23.39	
		344000	1720.0	1 / 79	24.37
	π/2 BPSK	349000	1745.0	1 / 79	24.43
Hz		354000	1770.0	1 / 53	24.26
20 MHz	QPSK	344000	1720.0	1 / 79	24.17
20		349000	1745.0	1 / 79	24.21
		354000	1770.0	1 / 53	24.20
	16-QAM	344000	1720.0	1 / 79	23.08
		343500	1717.5	1 / 58	24.28
	π/2 BPSK	349000	1745.0	1 / 58	24.41
15 MHz		354500	1772.5	1 / 58	24.37
N		343500	1717.5	1 / 58	24.28
15	QPSK	349000	1745.0	1 / 58	24.33
		354500	1772.5	1 / 58	24.21
	16-QAM	343500	1717.5	1 / 58	23.41
		343000	1715.0	1 / 38	24.26
	π/2 BPSK	349000	1745.0	1 / 38	24.48
HZ		355000	1775.0	1 / 38	24.44
N		343000	1715.0	1 / 38	24.07
10	QPSK	349000	1745.0	1 / 38	24.42
		355000	1775.0	1 / 38	24.43
	16-QAM	343000	1715.0	1 / 38	23.04
		342500	1712.5	1 / 12	24.34
	π/2 BPSK	349000	1745.0	1 / 18	24.41
Ŧ		355500	1777.5	1 / 12	24.36
5 MHz		342500	1712.5	1 / 12	24.23
5	QPSK	349000	1745.0	1 / 18	24.32
		355500	1777.5	1 / 12	24.21
	16-QAM	342500	1712.5 Powers (NR	1 / 12	23.50

Table 7-3. Conducted Max Powers (NR Band n66 - ANT I)

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			PCC							SCC						
PCC Band	PCC Bandwidth [MHz]	PCC (UL) channel	PCC (UL) channel	PCC (UL) frequency	Mod.	PCC UL RB#/Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) channel	PCC (UL) channel	PCC (UL) frequency	Mod.	SCC UL RB#/Offset	PCC Conducted Power [dBm]	SCC Conducted Power [dBm]	Inter-Band ULCA Total Tx. Power (dBm)
					π/2 BPSK	1/108						π/2 BPSK	1/137	19.92	21.80	23.97
					QPSK	216/0						QPSK	270/0	19.42	21.17	23.39
		Low	346000	1730.0	QPSK	1/54			Low	633333	3500.0	QPSK	1/68	19.75	21.71	23.85
		LOW	340000	1750.0	QPSK	1/108				033333		QPSK	1/137	19.90	21.84	23.99
					QPSK	1/162						QPSK	1/205	19.73	21.95	23.99
		16Q	1/108						16Q	1/137	19.83	21.77	23.92			
					π/2 BPSK	1/162						π/2 BPSK	1/205	19.77	21.80	23.91
					QPSK	216/0	- n77 1(100 Mid	0 Mid 633333		QPSK	270/0	18.68	20.90	22.94	
n66	40	Mid	349000	1745.0	QPSK	1/54				633333	33333 3500.0	QPSK	1/68	19.69	21.35	23.61
1100	40	IVIIG	345000	1745.0	QPSK	1/108	,	100				QPSK	1/137	19.72	21.41	23.66
					QPSK	1/162						QPSK	1 / 205	19.75	21.60	23.78
					16Q	1/162						16Q	1 / 205	19.90	21.59	23.84
					π/2 BPSK	1/162						π/2 BPSK	1 / 205	19.64	21.60	23.74
	High 352000 1760.0	QPSK	216/0						QPSK	270/0	18.62	20.90	22.92			
		1760.0	QPSK	1/54			High	633333	3500.0	QPSK	1/68	19.58	21.27	23.52		
		QPSK 1/108 QPSK 1/162		11igii 055555	00000	QPSK	1/137	19.64	21.43	23.64						
					QPSK	1 / 205	19.71	21.57	23.75							
					16Q	1/162						16Q	1/205	19.80	21.46	23.72

Table 7-4. Conducted Max Powers (NR Bands n66 – n77)

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7.3 Occupied Bandwidth

Test Overview

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. All modes of operation were investigated and the worst case configuration results are reported in this section.

Test Procedure Used

KDB 971168 D01 v03r01 - Section 4.2

Test Settings

- 1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
- 2. RBW = 1 5% of the expected OBW
- 3. VBW \geq 3 x RBW
- 4. Detector = Peak
- 5. Trace mode = max hold
- 6. Sweep = auto couple
- 7. The trace was allowed to stabilize
- 8. If necessary, steps 2 7 were repeated after changing the RBW such that it would be within
 - 1-5% of the 99% occupied bandwidth observed in Step 7

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



Figure 7-2. Test Instrument & Measurement Setup

Test Notes

None.

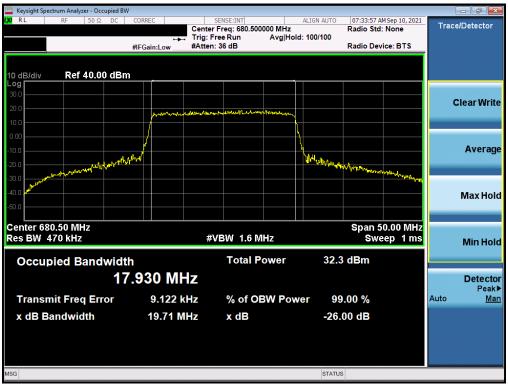
FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
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LTE Band 71



Plot 7-1. Occupied Bandwidth Plot (LTE Band 71 - 20MHz QPSK - Full RB)



Plot 7-2. Occupied Bandwidth Plot (LTE Band 71 - 20MHz 16-QAM - Full RB)

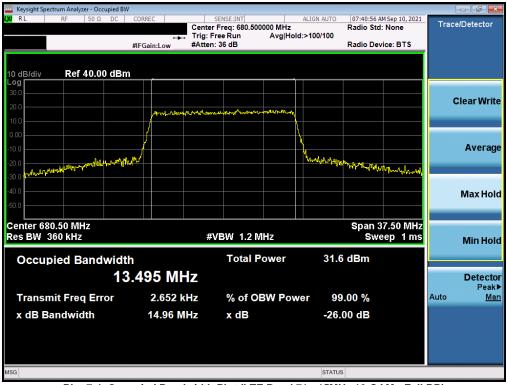
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Keysight Spectrum Analyzer - Occupied E							
RL RF 50Ω DC		SENSE:INT Center Freq: 680.500000 MHz Trig: Free Run Avg Ho #Atten: 36 dB	ALIGN AUTO	07:40:51 AM Radio Std: Radio Devi		Trace/D	etector
	WI GUILLOW	Arten: 30 dB		Radio Devi	Le. B13		
0 dB/div Ref 40.00 dB	m					Cle	ar Writ
0.0	porman	and the second	1			UIC	
00							Avera
D.O Margalintitudy maladation of the Alexandre			"~"\"\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	ant or the second	๖๓๗ๅ ๖๓๛		
0.0						N	lax Ho
enter 680.50 MHz es BW 360 kHz		#VBW 1.2 MHz			7.50 MHz ep 1 ms	Ν	/lin Ho
Occupied Bandwid		Total Power	32.8	dBm			
1	3.515 MHz	Ζ				[Detect Pea
Transmit Freq Error	-3.808 kH	z % of OBW Po	wer 99	.00 %		Auto	M
x dB Bandwidth	14.84 MH	z x dB	-26.	00 dB			
3			STATU	6			

Plot 7-3. Occupied Bandwidth Plot (LTE Band 71 - 15MHz QPSK - Full RB)



Plot 7-4. Occupied Bandwidth Plot (LTE Band 71 - 15MHz 16-QAM - Full RB)

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Keysight Spectrum Analyzer - Occupi	ied BW					
LXI RL RF 50ΩI	DC CORREC	SENSE:INT Center Freg: 680.500	ALIGN AUTO	07:43:47 AM Radio Std:	1Sep 10, 2021	Trace/Detector
		Trig: Free Run	Avg Hold: 100/100			
,	#IFGain:Low	#Atten: 36 dB		Radio Devi	ce: BTS	
10 dB/div Ref 40.00 (dBm					
Log 30.0						
20.0						Clear Write
10.0	man	month marken and the	u-munally (
0.00	/					
-10.0	4		h.			Average
	had any h		- markery			Average
-20.0 Mary margare how - Abolton				W	haun wayley	
-30.0						
-40.0						Max Hold
-50.0						
Center 680.50 MHz		I		Span 2	5.00 MHz	
Res BW 240 kHz		#VBW 750 k	(Hz		ep 1 ms	Min Hold
						Minifiord
Occupied Bandw	vidth	Total P	ower 32.6	i dBm		
	9.0383 MH	lz				Detector
	47.074.1					Peak▶
Transmit Freq Error	r 17.871 k	Hz % of O	BW Power 99	.00 %		Auto <u>Man</u>
x dB Bandwidth	10.05 M	Hz x dB	-26.	00 dB		
MSG			STATUS	6		

Plot 7-5. Occupied Bandwidth Plot (LTE Band 71 - 10MHz QPSK - Full RB)



Plot 7-6. Occupied Bandwidth Plot (LTE Band 71 - 10MHz 16-QAM - Full RB)

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Keysight Spectrum Analyzer - Occupi							
LXI RL RF 50Ω [DC CORREC	SENSE:INT Center Freg: 680.5000	ALIGN AUTO	07:52:39 AN Radio Std:	1Sep 10, 2021 None	Trace	/Detector
	·•••	Trig: Free Run	Avg Hold:>100/100				
	#IFGain:Low	#Atten: 36 dB		Radio Devi	ce: BTS		
10 dB/div Ref 40.00 c	dBm						
Log 30.0							
20.0						С	lear Write
10.0	have	have a second and the second s	ann			_	
0.00	1		la l				
-10.0	J.		λ,				Average
	~~~~		- when when when when when when when when				Average
-20.0 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				an de marken	Manan		
-40.0							Max Hold
-50.0						_	
Center 680.500 MHz				Span 1	2.50 MHz		
Res BW 120 kHz		VBW 1.2 MHz	2		ep 1 ms		Min Hold
		T-4-LD-		d D			
Occupied Bandw		Total Po	wer 32.8	dBm			
	4.5402 MH	Z					Detector
Transmit Freq Error	4.320 kł		W Power 99	.00 %		Auto	Peak▶ Man
						Auto	Intall
x dB Bandwidth	5.234 MI	lz xdB	-26.	00 dB			
MSG			STATUS	;			

Plot 7-7. Occupied Bandwidth Plot (LTE Band 71 - 5MHz QPSK - Full RB)



Plot 7-8. Occupied Bandwidth Plot (LTE Band 71 - 5MHz 16-QAM - Full RB)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
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## LTE Band 12



Plot 7-9. Occupied Bandwidth Plot (LTE Band 12 - 10MHz QPSK - Full RB)



Plot 7-10. Occupied Bandwidth Plot (LTE Band 12 - 10MHz 16-QAM - Full RB)

FCC ID: A3LSMS906U	PCTEST. Proud to be part of @eletered	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 22 of 253
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#### 2021 PCTEST



🔤 Keysight Spectrum Analyzer - Occupie					
LXIRL RF 50ΩD	C CORREC	SENSE:INT Center Freg: 707.500	ALIGN AUTO	08:05:08 AM Sep 10, 202 Radio Std: None	Trace/Detector
		Trig: Free Run	Avg Hold:>100/100		
	#IFGain:Low	#Atten: 36 dB		Radio Device: BTS	_
10 dB/div Ref 40.00 d	IBm				
Log 30.0					
20.0					Clear Write
10.0	mann	ᠰᡊᢍᢛ᠆ᠰ᠋ᡛᠬ᠊᠕ᢇᠵ᠋ᠽᠵᢛᠩᠬ	monson		
0.00	/		l N		
	1				Average
-10.0	~~~~		Manan Marian		Average
-20.0 mmmmml 100 mmmml				Ann Winner war	~
-30.0					
-40.0					Max Hold
-50.0					
Center 707.500 MHz				Span 12.50 MH	7
Res BW 120 kHz		#VBW 3901	Hz	Sweep 1 m	
					Min Hold
Occupied Bandwi	idth	Total P	ower 32.	5 dBm	
	4.5550 M⊦	7			Detector
	4.0000 Mil	12			Peak►
Transmit Freq Error	-7.234 k	Hz % of O	BW Power 99	9.00 %	Auto <u>Man</u>
x dB Bandwidth	5.234 M	Hz xdB	-26.	00 dB	
MSG			STATU	e	
MOG			STATU	3	

Plot 7-11. Occupied Bandwidth Plot (LTE Band 12 - 5MHz QPSK - Full RB)



Plot 7-12. Occupied Bandwidth Plot (LTE Band 12 - 5MHz 16-QAM - Full RB)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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Plot 7-13. Occupied Bandwidth Plot (LTE Band 12 - 3MHz QPSK - Full RB)



Plot 7-14. Occupied Bandwidth Plot (LTE Band 12 - 3MHz 16-QAM - Full RB)

FCC ID: A3LSMS906U	PCTEST Proud to be part of the element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 24 of 252
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Plot 7-15. Occupied Bandwidth Plot (LTE Band 12 – 1.4MHz QPSK - Full RB)



Plot 7-16. Occupied Bandwidth Plot (LTE Band 12 - 1.4MHz 16-QAM - Full RB)

FCC ID: A3LSMS906U	Point to be part of the element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dogo 25 of 252	
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## LTE Band 13



Plot 7-17. Occupied Bandwidth Plot (LTE Band 13 - 10MHz QPSK - Full RB)



Plot 7-18. Occupied Bandwidth Plot (LTE Band 13 - 10MHz 16-QAM - Full RB)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
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#### 2021 PCTEST



Keysight Spectrum Analyzer - Occupied BW							
LXI RL RF 50Ω DC C	CORREC	SENSE:INT Center Freg: 782.0			6 AM Sep 10, 2021	Trace	e/Detector
		Trig: Free Run	Avg Hold: 1	100/100			
#	IFGain:Low	#Atten: 36 dB		Radio I	Device: BTS		
10 dB/div Ref 40.00 dBm							
Log 30.0							
20.0						C	Clear Write
	man	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	monton				
10.0			l l				
0.00	1						
-10.0				bolwwww.hunhara			Average
-20.0 North Martine 10					* Contractor of a contractor		
-30.0							
-40.0							Max Hold
-50.0							
Center 782.000 MHz				Snar	ו 12.50 MHz		
Res BW 120 kHz		#VBW 39	0 kHz		weep 1 ms		Min Hold
							Min Hold
Occupied Bandwidth		Total	Power	33.0 dBm			
4.5	392 MH	7					Detector
							Peak►
Transmit Freq Error	1.062 kl	Hz % of	OBW Power	99.00 %		Auto	<u>Man</u>
x dB Bandwidth	5.200 MI	Hz xdB		-26.00 dB			
MSG				STATUS			

Plot 7-19. Occupied Bandwidth Plot (LTE Band 13 - 5MHz QPSK - Full RB)

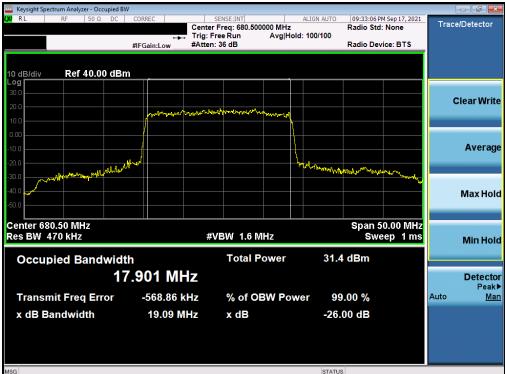


Plot 7-20. Occupied Bandwidth Plot (LTE Band 13 - 5MHz 16-QAM - Full RB)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Dago 27 of 252
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### NR Band n71



Plot 7-21. Occupied Bandwidth Plot (NR Band n71 - 20MHz DFT-s-BPSK - Full RB)



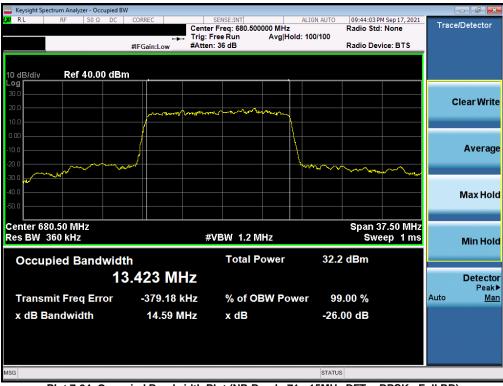
Plot 7-22. Occupied Bandwidth Plot (NR Band n71 - 20MHz CP-OFDM QPSK - Full RB)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dogo 29 of 252	
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Plot 7-23. Occupied Bandwidth Plot (NR Band n71 - 20MHz CP-OFDM 16-QAM - Full RB)



Plot 7-24. Occupied Bandwidth Plot (NR Band n71 - 15MHz DFT-s-BPSK - Full RB)

FCC ID: A3LSMS906U	Pottest	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
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Keysight Spectrum Analyzer - Occupied E							
LXI RL RF 50Ω DC	CORREC	SENSE:INT enter Freg: 680.500000 MHz	ALIGN AUTO	09:43:21 Pr Radio Std:	M Sep 17, 2021	Trac	e/Detector
	→ Tr	ig: Free Run Avg H	old:>100/100				
	#IFGain:Low #A	Atten: 36 dB		Radio Dev	ice: BTS		
10 dB/div Ref 30.00 dB	m		_				
20.0							
10.0	- hanger lager of the	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~ <u>_</u>			C	Clear Write
0.00	/						
-10.0							
-20.0	hand a second		Con marine				Average
-20.0				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	and all and		J
-40.0							
-50.0							
							Max Hold
Center 680.50 MHz					7.50 MHz		
Res BW 360 kHz		#VBW 1.2 MHz		Swe	ep 1 ms		Min Hold
Occupied Bandwid	th	Total Power	30.2	dBm			
			0012				
1	4.089 MHZ						
Transmit Freq Error	-21.135 kHz	% of OBW Po	wer 99.	.00 %		Auto	Man
x dB Bandwidth	15.23 MHz	x dB	-26.0	)0 dB			
	TOIL O INTIL		2010				
MSG			STATIS				
Center 680.50 MHz Res BW 360 kHz Occupied Bandwid	4.089 MHz	% of OBW Po	wer 99.	dBm .00 % 00 dB	eep 1 ms	Auto	Detector Peak▶

Plot 7-25. Occupied Bandwidth Plot (NR Band n71 - 15MHz QPSK - Full RB)



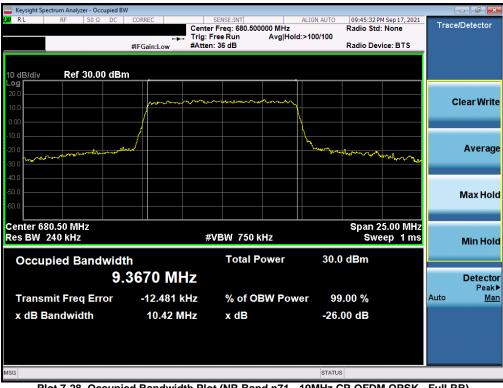
Plot 7-26. Occupied Bandwidth Plot (NR Band n71 - 15MHz CP-OFDM 16-QAM - Full RB)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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Keysight Spectrum Analyzer - Occupied E							
LXI RL RF 50Ω DC	CORREC	SENSE:INT Center Freg: 680.500	ALIGN AUT	09:44:53 P Radio Std	M Sep 17, 2021	Trac	e/Detector
		Trig: Free Run	Avg Hold: 100/100				
	#IFGain:Low	#Atten: 36 dB		Radio Dev	vice: BTS		
10 dB/div Ref 30.00 dB	m						
20.0							
10.0		Mar	mar			(	Clear Write
0.00							
-10.0	/		<u> </u>				
-20.0			<b>N</b> .				Average
-20.0 Antonio with	And the second s		and refer	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	man		Average
-40.0							
-50.0							Max Hold
-60.0						_	
Center 680.50 MHz				Span 2	5.00 MHz		
Res BW 240 kHz		#VBW 750 k	Hz	Swe	eep 1 ms		Min Hold
	4	Total P	Q4	.8 dBm			
Occupied Bandwid			ower 31	.8 aBm			
9	.0368 MH	Z					Detector
Transmit Freq Error	-163.20 k		3W Power	99.00 %		Auto	Peak▶ Man
						, lato	Intern
x dB Bandwidth	9.719 MI	Hz x dB	-2	6.00 dB			
MSG			STA	rus			

Plot 7-27. Occupied Bandwidth Plot (NR Band n71 - 10MHz DFT-s-BPSK - Full RB)



Plot 7-28. Occupied Bandwidth Plot (NR Band n71 - 10MHz CP-OFDM QPSK - Full RB)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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Plot 7-30. Occupied Bandwidth Plot (NR Band n71 - 5MHz DFT-s-BPSK - Full RB)

FCC ID: A3LSMS906U	Pottest	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
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🔤 Keysight Spectrum Analyzer - Occu						_	
<b>LXI</b> RL RF 50 Ω	DC CORREC	SENSE:INT Center Freg: 680.500	ALIGN AUTO	09:48:41 PM 9		Trace/	Detector
	• <b>•</b> -	Trig: Free Run	Avg Hold: 100/100				
	#IFGain:Low	#Atten: 36 dB		Radio Devic	e: BTS		
10 dB/div Ref 30.00	dBm						
20.0							
10.0	an and the second se	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	mm			CI	ear Write
0.00							
-10.0			l de la constante de la consta				
	کس ا		har a				Average
-20.0	John Markey			man when	www		Average
-40.0							
-50.0						1	Max Hold
-60.0							
Center 680.500 MHz		I		Span 12.	.50 MHz		
Res BW 120 kHz		VBW 1.2 M	lz		p 1 ms		Min Hold
		- /					
Occupied Bandy		Total P	ower 29.3	3 dBm			
	4.5136 MH	z					Detector
Tromonit From Free	2 564 4			00.0/		Auto	Peak▶ Man
Transmit Freq Erro				0.00 %		Auto	Ivian
x dB Bandwidth	5.276 M	Hz x dB	-26.	00 dB			
MSG			STATU	5			

Plot 7-31. Occupied Bandwidth Plot (NR Band n71 - 5MHz CP-OFDM QPSK - Full RB)

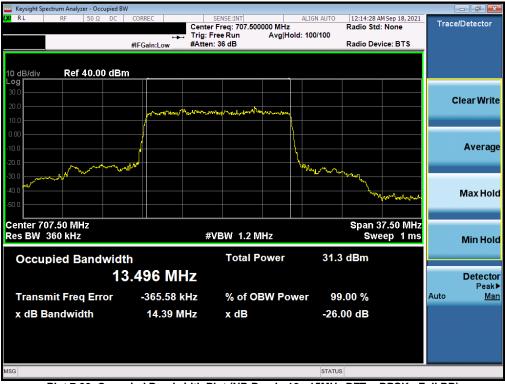


Plot 7-32. Occupied Bandwidth Plot (NR Band n71 - 5MHz CP-OFDM 16-QAM - Full RB)

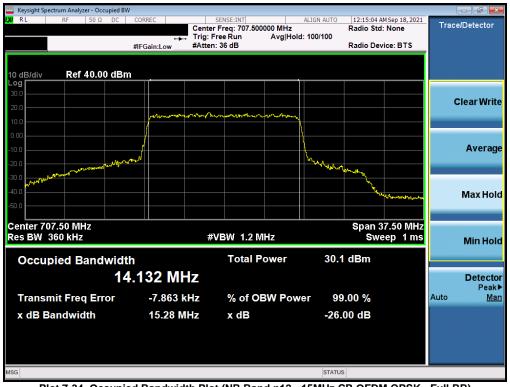
FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 33 of 253
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## NR Band n12



Plot 7-33. Occupied Bandwidth Plot (NR Band n12 - 15MHz DFT-s-BPSK - Full RB)



Plot 7-34. Occupied Bandwidth Plot (NR Band n12 - 15MHz CP-OFDM QPSK - Full RB)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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Keysight Spectrum Analyze										
XI RL RF	50 Ω DC	CORREC		NSE:INT rea: 707.500	000 MH-	ALIGN AUTO	12:14:48 A Radio Std	M Sep 18, 2021	Trac	e/Detector
		•	Trig: Fre			d: 100/100	Radio Stu	. None		
		#IFGain:Low	#Atten: 3	36 dB			Radio Dev	rice: BTS		
10 dB/div Ref 4	40.00 dBn	n								
og										
30.0										Clear Writ
20.0			montowhile	1	1111					orear min
10.0		and a start when the	An a fraction of the second	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	with man					
3.00		/								
10.0		<b>(</b>				\				Averag
20.0		Mar				har hall				
20.0 30.0	Manan					· ····································	~~~~			
40.0							کم س			
							^/	Hannyon		Max Ho
50.0									_	
Center 707.50 MH	z						Span 3	7.50 MHz		
les BW 360 kHz			#VI	BW 1.2 M	IHz			ep 1 ms		Min Ho
										Millino
Occupied Ba	andwidt	:h		Total P	ower	29.3	dBm			
	14	.160 M	Hz _							Detecto
										Peak
Transmit Freq	Error	-43.285	kHz	% of O	3W Pow	ver 99	.00 %		Auto	Ma
x dB Bandwid	th	15.20	MHz	x dB		-26.	00 dB			
G						STATUS				

Plot 7-35. Occupied Bandwidth Plot (NR Band n12 - 15MHz CP-OFDM 16-QAM - Full RB)



Plot 7-36. Occupied Bandwidth Plot (NR Band n12 - 10MHz DFT-s-BPSK - Full RB)

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Plot 7-37. Occupied Bandwidth Plot (NR Band n12 - 10MHz CP-OFDM QPSK - Full RB)



Plot 7-38. Occupied Bandwidth Plot (NR Band n12 - 10MHz CP-OFDM 16-QAM - Full RB)

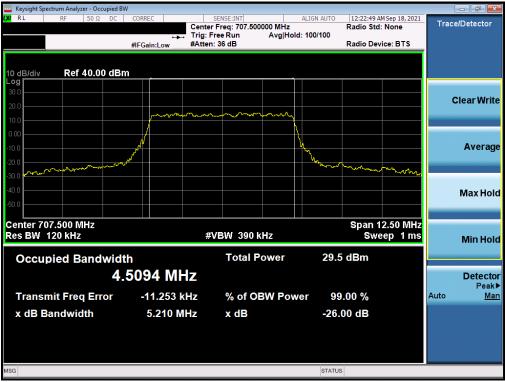
FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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Plot 7-39. Occupied Bandwidth Plot (NR Band n12 - 5MHz DFT-s-BPSK - Full RB)



Plot 7-40. Occupied Bandwidth Plot (NR Band n12 - 5MHz CP-OFDM QPSK - Full RB)

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🔤 Keysight Spectrum Analyzer - Occupied BW					
X RL RF 50Ω DC	CORREC	SENSE:INT enter Freg: 707.500000 MH	ALIGN AUTO	12:22:37 AM Sep 18, 2021 Radio Std: None	Trace/Detector
	ter Tr	ig: Free Run Avg	Hold: 100/100		
	#IFGain:Low #A	Atten: 36 dB		Radio Device: BTS	
10 dB/div Ref 40.00 dBm					
Log 30.0					
					Clear Write
20.0	10	mmmmmmmm			
10.0					
0.00					
-10.0	NY		<u> </u>		Average
-20.0	***		- WWW.	ᠬᡅᡃᠰᡁᢛᠬᢦᡵ᠁ᡁᢧᠬᢇ᠆᠆᠇ᢇᡧᡅ	
-20.0				and the second from the	
-40.0					Max Hold
-50.0					maxinoia
Center 707.500 MHz				Span 12.50 MHz	
Res BW 120 kHz		#VBW 390 kHz		Sweep 1 ms	Min Hold
Occupied Bandwidth	•	Total Power	28.	5 dBm	
4.:	5222 MHz				Detector Peak►
Transmit Freq Error	-15.396 kHz	% of OBW P	ower 99	9.00 %	Auto <u>Man</u>
x dB Bandwidth	5.355 MHz		26	00 dB	
	5.555 MITZ	X UD	-20.		
MSG			STATU	S	

Plot 7-41. Occupied Bandwidth Plot (NR Band n12 - 5MHz CP-OFDM 16-QAM - Full RB)

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## WCDMA AWS

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<b>LX RL RF 50 Ω AC</b>	CORREC	SENSE:INT AL	IGN AUTO 07:08:17 PM Sep 10 Radio Std: None	Trace/Detector
		Γrig:FreeRun Avg∣Hold:1 4Atten:36 dB	00/100 Radio Device: B	rs l
	#IFGall:Low •	Atten: 00 ub	Radio Device. D	
10 dB/div Ref 40.00 dBn	•			
Log				
30.0				Clear Write
20.0	and the second	Www.mar.harryMany		
10.0				
0.00				Average
-10.0	ل کر			Average
-20.0 -30.0 Darmulan Allandon	wand		moundation	
-40.0			W	
-40.0				Max Hold
-30.0				
Center 1.732600 GHz			Span 15.00	
Res BW 150 kHz		VBW 1.5 MHz	Sweep	ms Min Hold
Occupied Bandwidt	h	Total Power	31.5 dBm	
	1521 MHz			Detector
				Peak
Transmit Freq Error	3.386 kH	z % of OBW Power	99.00 %	Auto <u>Mar</u>
x dB Bandwidth	4.736 MH	z xdB	-26.00 dB	
MSG			STATUS	

Plot 7-42. Occupied Bandwidth Plot (WCDMA, Ch. 1413)

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## LTE Band 66/4

Keysight Spectrum Analyze		1				
XIRL RF	50 Ω AC	CORREC	SENSE:INT Center Freg: 1.7450	ALIGN AUTO	08:37:06 PM Sep 10, 20 Radio Std: None	Trace/Detector
			Talas Free Diver	Avg Hold: 100/100	Radio Std: None	
		#IFGain:Low	#Atten: 36 dB		Radio Device: BTS	
	0.00 dBm					
10 dB/div Ref 4	0.00 dBn	<u> </u>				-
30.0						
20.0						Clear Write
		montanterila	have been with the providence of	por mar when me		
10.0				l l		
0.00		<u> </u>				
-10.0		. N.L				Average
-20.0	and the shall	Nr.v		Level appropriate	Main I.	
-10.0 -20.0 -30.0	יזוי				mustally were hard how here	d.
-40.0						
						Max Hole
-50.0						
Center 1.74500 GH	17				Span 50.00 MH	17
Res BW 470 kHz			#VBW 1.6 N	/Hz	Sweep 1 m	
						S Min Hold
Occupied Ba	ndwidt	h	Total F	Power 30	.8 dBm	
			L <b>I</b>			Detecto
	10	8.007 M	ΠZ			Detecto Peak
Transmit Freq	Frror	-27.658	kHz % of O	BW Power 9	9.00 %	Auto Ma
x dB Bandwidt	h	19.62 M	/Hz xdB	-26	5.00 dB	
ISG				STAT	US	
				STAT		

Plot 7-43. Occupied Bandwidth Plot (LTE Band 66/4 - 20MHz QPSK - Full RB)



Plot 7-44. Occupied Bandwidth Plot (LTE Band 66/4 - 20MHz 16-QAM - Full RB)

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Plot 7-45. Occupied Bandwidth Plot (LTE Band 66/4 - 15MHz QPSK - Full RB)



Plot 7-46. Occupied Bandwidth Plot (LTE Band 66/4 - 15MHz 16-QAM - Full RB)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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Keysight Spectrum Analyzer - Occ	· · · · · · · · · · · · · · · · · · ·				
KI RF 50 Ω	AC CORREC	SENSE:INT Center Freq: 1.74500	ALIGN AUTO	08:53:19 PM Sep 10, 2021 Radio Std: None	Trace/Detector
		Trig: Free Run	Avg Hold: 100/100	Radio Stu. None	
	#IFGain:Low	#Atten: 36 dB		Radio Device: BTS	
10 dB/div Ref 40.0	0 dBm				
30.0					
20.0					Clear Writ
10.0	munu	hep-therasterly and the second second	antering		
0.00					
	l l l l l l l l l l l l l l l l l l l		4		A
10.0			h h		Averag
20.0 monter bloch have bloch	Man Sale Mary		երատուրել	and the property of the second	
30.0 Notes 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				I and the second of the second	
40.0					Max Hol
50.0					WidA TIO
Center 1.74500 GHz				Span 25.00 MHz	
Res BW 240 kHz		#VBW 7501	(Hz	Sweep 1 ms	Min Hol
Occupied Band	width	Total P	ower 30.	7 dBm	
	8.9936 M	H7			Detecto
					Peak
Transmit Freq Err	or 5.806	kHz % of O	BW Power 99	9.00 %	Auto <u>Ma</u>
x dB Bandwidth	9.910	MHz xdB	-26	.00 dB	
	0.010		20		
SG			STATU	s	

Plot 7-47. Occupied Bandwidth Plot (LTE Band 66/4 - 10MHz QPSK - Full RB)



Plot 7-48. Occupied Bandwidth Plot (LTE Band 66/4 - 10MHz 16-QAM - Full RB)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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🔤 Keysight Spectrum Analyzer - Occup	pied BW				
<mark>(X)</mark> RL RF 50 Ω	AC CORREC	SENSE:INT enter Freg: 1.745000000 GHz		M Sep 10, 2021	Trace/Detector
			Id: 100/100	. None	
		Atten: 36 dB	Radio De	vice: BTS	
10 dB/div Ref 40.00	dBm				
Log					
30.0					Clear Write
20.0		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			Glear Wille
10.0		the case of a star and an and a start and			
0.00	<mark>/</mark>				
-10.0	N		h.		Average
	Ome port		hop for		J
-20.0 -30.0 - Man Man Man	10 P. 010		handel harder from the series	A	
				AA AMA AWA	
-40.0					Max Hold
-50.0					
Center 1.745000 GHz				12.50 MHz	
Res BW 120 kHz		VBW 1.2 MHz		eep 1 ms	
RES DW 120 KHZ				eep mis	Min Hold
Occupied Bandy	vidth	Total Power	30.6 dBm		
o coupied Ballan					
	4.5277 MHz				Detector Peak▶
Transmit Freq Erro	or 4.244 kHz	% of OBW Pov	wer 99.00 %		Auto <u>Man</u>
x dB Bandwidth	5.198 MHz	x dB	-26.00 dB		
	0.100 11112		20.00 08		
MSG			STATUS		

Plot 7-49. Occupied Bandwidth Plot (LTE Band 66/4 - 5MHz QPSK - Full RB)



Plot 7-50. Occupied Bandwidth Plot (LTE Band 66/4 - 5MHz 16-QAM - Full RB)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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Plot 7-51. Occupied Bandwidth Plot (LTE Band 66/4 - 3MHz QPSK - Full RB)



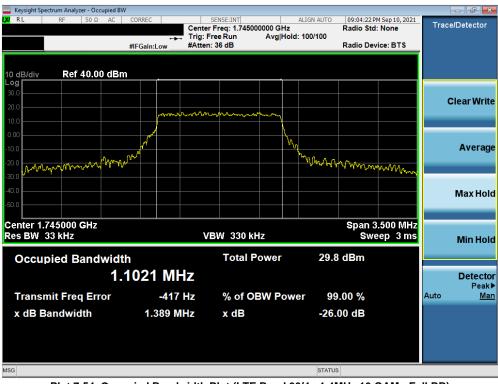
Plot 7-52. Occupied Bandwidth Plot (LTE Band 66/4 - 3MHz 16-QAM - Full RB)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
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Keysight Spectrum Analyzer - Occupied BW								
RL RF 50Ω AC	CORREC	SENSE:INT ter Freq: 1.74500		ALIGN AUTO	09:04:15 PM Radio Std:	1 Sep 10, 2021	Trace/D	etector
	🛶 Trig	iter Free Run i: Free Run ten: 36 dB	Avg Hold:	100/100	Radio Dev			
0 dB/div Ref 40.00 dBm								
20.0		man					Cle	ar Writ
0.0							_	
10.0 20.0 20.0	mm			mar and	halmalaan	www		Averag
0.0							N	lax Ho
enter 1.745000 GHz						.500 MHz	-	-
es BW 33 kHz		VBW 330 kH		20.9	Swe dBm	ep 3ms	N	/lin Hol
Occupied Bandwidt		TOLAT	ower	30.0	чыш			
1.1	1006 MHz						I	Detecto Peak
Transmit Freq Error	-435 Hz	% of O	<b>3W Powe</b>	r 99	.00 %		Auto	Ma
x dB Bandwidth	1.362 MHz	x dB		-26.	00 dB			
G				STATUS				

Plot 7-53. Occupied Bandwidth Plot (LTE Band 66/4 - 1.4MHz QPSK - Full RB)



Plot 7-54. Occupied Bandwidth Plot (LTE Band 66/4 - 1.4MHz 16-QAM - Full RB)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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## NR Band n66 – Ant A



Plot 7-55. Occupied Bandwidth Plot (NR Band n66 - 40MHz DFT-s-BPSK - Full RB - Ant A)



Plot 7-56. Occupied Bandwidth Plot (NR Band n66 - 40.0MHz CP-OFDM QPSK - Full RB - Ant A)

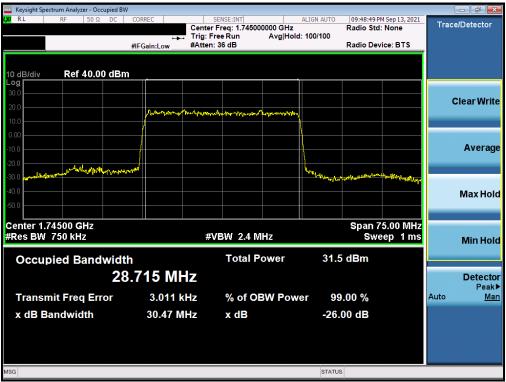
FCC ID: A3LSMS906U	PCTEST. Froud to be part of @element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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Keysight Spectrum Analyzer - Occupied I	BW				
LXI RL RF 50Ω DC	CORREC	SENSE:INT nter Freg: 1.745000000 GH	ALIGN AUTO	09:44:54 PM Sep 13, 2021 Radio Std: None	Trace/Detector
	Trig	g: Free Run Avg H	2 old: 100/100	Radio Std. None	
	#IFGain:Low #At	tten: 36 dB		Radio Device: BTS	
10 dB/div Ref 30.00 dB	im j				
Log					
20.0	Normanitessites	water and the state of the stat	1/11		Clear Write
10.0			Ň		
0.00					
-10.0					
-20.0	pratod		manufactures	with the second s	Average
-30.0 Wet month and a state of the state				mal way how way how and	
-40.0					
-50.0					Maxilald
-60.0					Max Hold
-30.0					
Center 1.74500 GHz				Span 100.0 MHz	
#Res BW 1 MHz		#VBW 3 MHz		Sweep 1 ms	Min Hold
	141-	Total Power	20.4	dBm	
Occupied Bandwid		Total Power	29.3		
3	8.908 MHz				Detector
Transmit Freq Error	-46.866 kHz	% of OBW Po	wer 99	0.00 %	Peak▶ Auto <u>Man</u>
-					
x dB Bandwidth	41.05 MHz	x dB	-26.	00 dB	
MSG			STATU	3	

Plot 7-57. Occupied Bandwidth Plot (NR Band n66 - 40.0MHz CP-OFDM 16QAM - Full RB - Ant A)



Plot 7-58. Occupied Bandwidth Plot (NR Band n66 - 30MHz DFT-s-BPSK - Full RB – Ant A)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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Keysight Spectrum Analyzer - Occupied BW								
K RL RF 50Ω DC	CORREC	SENSE:INT Senter Freg: 1.74500		ALIGN AUTO	09:48:27 PM	4 Sep 13, 2021	Trac	e/Detector
	T	rig: Free Run	Avg Hold:	100/100				
	#IFGain:Low #	Atten: 36 dB			Radio Dev	ice: BTS		
10 dB/div Ref 30.00 dBm	n							
20.0								
	alow water	were the Manager	-				(	Clear Write
10.0								
0.00								
-10.0								
-20.0	www.			When when the ste	u			Average
-30.0						Angle Collectory	_	
-40.0								
-50.0								Max Hold
-60.0								maxmona
Center 1.74500 GHz						5.00 MHz		
#Res BW 750 kHz		#VBW 2.4 N	INZ		Swe	ep 1 ms		Min Hold
Occupied Bandwidt	h	Total P	ower	30.1	dBm			
28	8.768 MHz							Detector Peak▶
Transmit Freq Error	-27.891 kHz	z % of Ol	BW Powe	er 99.	.00 %		Auto	Man
x dB Bandwidth	30.51 MHz	z x dB		-26.0	00 dB			
MCC				STATUS				
MSG				STATUS				

Plot 7-59. Occupied Bandwidth Plot (NR Band n66 - 30.0MHz CP-OFDM QPSK - Full RB - Ant A)



Plot 7-60. Occupied Bandwidth Plot (NR Band n66 - 30.0MHz CP-OFDM 16QAM - Full RB - Ant A)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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Keysight Spectrum Analyzer - Occupied BW							
LXIRL RF 50Ω DC	CORREC	SENSE:INT Center Freg: 1.74500			:44 PM Sep 13, 2021 Std: None	Trace	e/Detector
		Trig: Free Run	Avg Hold: 10	00/100			
	#IFGain:Low	#Atten: 36 dB		Radio	Device: BTS		
10 dB/div Ref 30.00 dBm Log							
20.0	A	manopunationalphiliph					
10.0	here been and a lot	and and the second state of the second	Sector 11 11 11 11 11 11			C	Clear Write
0.00							
-10.0							
-20.0							Average
-30.0 a torthurt may monthly have meet	~		like way	what all the bound the fact the	Mar in the A		
-40.0					- more provide		
-50.0							Max Hold
-60.0							Maxinola
Center 1.74500 GHz Res BW 470 kHz		#VBW 1.6 M	H7		n 50.00 MHz Sweep 1 ms		
Res DW 470 RHZ		#VDVV 1.0 IVI	112		sweep rins		Min Hold
Occupied Bandwidth	า	Total P	ower	31.3 dBm	n		
	.026 MHz	7					Detector
							Peak►
Transmit Freq Error	-549.48 kH	z % of OE	<b>3W Power</b>	99.00 %	, D	Auto	<u>Man</u>
x dB Bandwidth	19.04 MH	z xdB		-26.00 dE	3		
MSG				STATUS			

Plot 7-61. Occupied Bandwidth Plot (NR Band n66 - 20MHz DFT-s-BPSK - Full RB - Ant A)



Plot 7-62. Occupied Bandwidth Plot (NR Band n66 - 20.0MHz CP-OFDM QPSK - Full RB - Ant A)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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Plot 7-63. Occupied Bandwidth Plot (NR Band n66 - 20.0MHz CP-OFDM 16QAM - Full RB – Ant A)



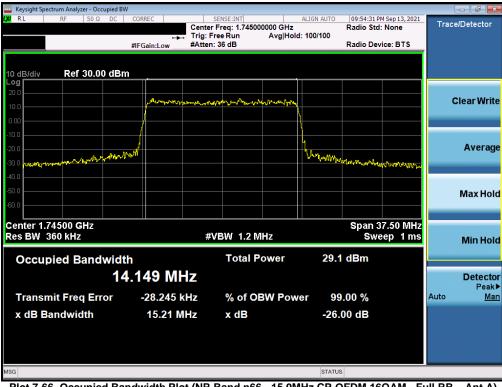
Plot 7-64. Occupied Bandwidth Plot (NR Band n66 - 15MHz DFT-s-BPSK - Full RB – Ant A)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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Keysight Spectrum Analyzer - Occupi	ied BW						
<b>LXI</b> RL RF 50Ω [	DC CORREC	SENSE:INT Center Freg: 1.74500	ALIGN AUT	0 09:54:53 Pr Radio Std:	4 Sep 13, 2021	Trace/D	etector
	• <b>•</b> •	Trig: Free Run	Avg Hold:>100/100	)			
	#IFGain:Low	#Atten: 36 dB		Radio Dev	ice: BTS		
10 dB/div Ref 30.00 d	dBm						
20.0							
10.0	mahanna	Amenghangen M	M. Hallman			Cle	ar Write
0.00							
-10.0	/						
	. /						Average
-20.0	wood		- When	www.www.	0h		Average
					Y lowerst with the second		
-40.0							
-50.0						N	lax Hold
-60.0							
Center 1.74500 GHz				Snan 3	7.50 MHz		
Res BW 360 kHz		#VBW 1.2 N	1Hz		ep 1 ms		Min Hold
						ľ	
Occupied Bandw	vidth	Total F	ower 29	).8 dBm			
	14.186 MH	7					Detector
							Peak►
Transmit Freq Error	r 342	Hz % of O	BW Power	99.00 %		Auto	Man
x dB Bandwidth	15.27 M	Hz xdB	-2	6.00 dB			
MSG			STA	TUS			
			STA				

Plot 7-65. Occupied Bandwidth Plot (NR Band n66 - 15.0MHz CP-OFDM QPSK - Full RB - Ant A)



Plot 7-66. Occupied Bandwidth Plot (NR Band n66 - 15.0MHz CP-OFDM 16QAM - Full RB - Ant A)

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Keysight Spectrum Analyzer - Occupied BW								- d ×
LX/RL RF 50Ω DC	CORREC	SENSE:INT		LIGN AUTO	09:56:13 PM Radio Std:	Sep 13, 2021	Trac	e/Detector
	T	rig: Free Run	Avg Hold: 1	100/100				
	#IFGain:Low #	Atten: 36 dB			Radio Devi	ce: BTS		
10 dB/div Ref 35.00 dBm								
25.0								
15.0	an aba a Ba d	and a second	bu ata				(	Clear Write
5.00								
	1		W					
-5.00								Average
-15.0	AN I							Average
-25.0	<u> </u>			what allow	man			
-35.0						www.waharaha		
-45.0								Max Hold
-55.0							_	
Center 1.74500 GHz					Snan 2	5.00 MHz		
Res BW 240 kHz		#VBW 7501	(Hz			ep 1 ms		Min Hold
								WIIII HUIU
Occupied Bandwidth	ו	Total P	ower	31.0	dBm			
9.0	)337 MHz							Detector
								Peak►
Transmit Freq Error	-152.76 kHz	z % of O	BW Power	r 99.	00 %		Auto	<u>Man</u>
x dB Bandwidth	9.797 MHz	z xdB		-26.0	0 dB			
MSG				STATUS				

Plot 7-67. Occupied Bandwidth Plot (NR Band n66 - 10MHz DFT-s-BPSK - Full RB - Ant A)



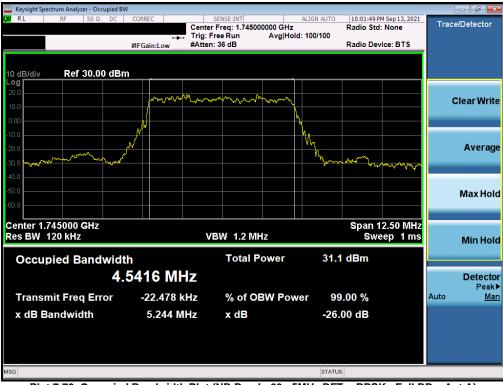
Plot 7-68. Occupied Bandwidth Plot (NR Band n66 - 10.0MHz CP-OFDM QPSK - Full RB - Ant A)

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Plot 7-69. Occupied Bandwidth Plot (NR Band n66 - 10.0MHz CP-OFDM 16QAM - Full RB – Ant A)



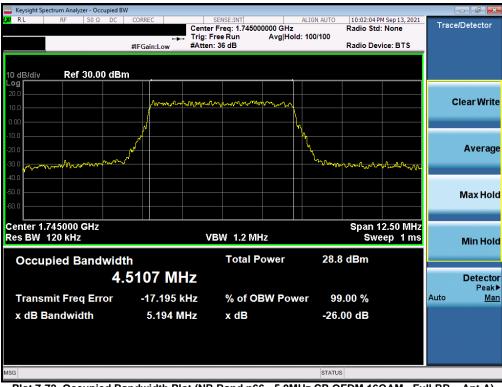
Plot 7-70. Occupied Bandwidth Plot (NR Band n66 - 5MHz DFT-s-BPSK - Full RB - Ant A)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
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Plot 7-71. Occupied Bandwidth Plot (NR Band n66 - 5.0MHz CP-OFDM QPSK - Full RB – Ant A)



Plot 7-72. Occupied Bandwidth Plot (NR Band n66 - 5.0MHz CP-OFDM 16QAM - Full RB - Ant A)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
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## NR Band n66 – Ant I



Plot 7-73. Occupied Bandwidth Plot (NR Band n66 - 40MHz DFT-s-BPSK - Full RB - Ant I)



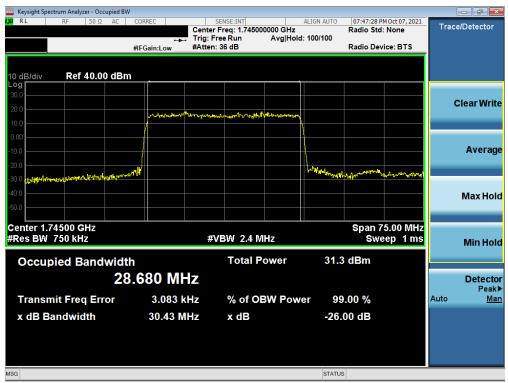
Plot 7-74. Occupied Bandwidth Plot (NR Band n66 - 40.0MHz CP-OFDM QPSK - Full RB - Ant I)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
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Keysight Spectrum Analyzer - Occupied					
LX RL RF 50Ω AC	CORREC	SENSE:INT Center Freg: 1.74500	0000 GHz	07:28:25 PM Oct 07, Radio Std: None	Trace/Detector
		Trig: Free Run #Atten: 36 dB	Avg Hold: 100/100	Radio Device: BT	e
	#IFGain:Low	#Atten: 36 dB		Radio Device. B I	3
10 dB/div Ref 30.00 dE	200				
Log	5111 				
20.0		Ob de la balation de la comp	and the set of		Clear Write
10.0	A Construction of the second second	hall all and the second of the			Clear write
0.00					
-10.0					
-20.0	wheel -		Whith here the	wanter	Average
-30.0 444 (VV) (Here & Control					· YA
-40.0					
-50.0					Max Hold
-60.0					
Center 1.74500 GHz				Span 100.0 N	1H7
#Res BW 1 MHz		#VBW 3 MH	z	Sweep 1	
			~~~		
Occupied Bandwic		Total P	ower 29.2	2 dBm	
3	8.920 MI	lz			Detector
Transmit Freq Error	-13.043		3W Power 99	9.00 %	Peak▶ Auto Man
					Auto <u>man</u>
x dB Bandwidth	41.13 N	lHz xdB	-26.	00 dB	
MSG			STATU	S	

Plot 7-75. Occupied Bandwidth Plot (NR Band n66 - 40.0MHz CP-OFDM 16QAM - Full RB - Ant I)



Plot 7-76. Occupied Bandwidth Plot (NR Band n66 - 30MHz DFT-s-BPSK - Full RB - Ant I)

FCC ID: A3LSMS906U	Point to be part of the element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
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🔤 Keysight Spectrum Analyzer - Oc	cupied BW									
LXI RL RF 50 Ω	AC COR	REC	Center Fr	NSE:INT req: 1.74500		ALIGN AUTO	07:49:16 P Radio Std	M Oct 07, 2021	Trac	e/Detector
	#IFC	Gain:Low	Trig: Free #Atten: 3		Avg Hold	i: 100/100	Radio Dev	ice: BTS		
10 dB/div Ref 40.0	0 dBm									
Log 30.0										
20.0										Clear Write
10.0		per for an and the second	M. Charles M. Mary	mmarganler	-wany want					
0.00						l				
-10.0						l.				Average
-20.0	windowintal					1-4 1 Norther Mar	- AND WALLAND	When have	_	
-30.0								+ ₁		
-40.0										Max Hold
-50.0										
Center 1.74500 GHz							Span 7	5.00 MHz		
#Res BW 750 kHz			#VE	3W 2.4 M	Hz		Swe	ep 1ms		Min Hold
Occupied Band	width			Total P	ower	29.3	dBm			
		02 MI	7							Detector
										Peak►
Transmit Freq Er	ror	753	Hz	% of O	BW Pow	er 99	.00 %		Auto	<u>Man</u>
x dB Bandwidth		30.47 M	IHz	x dB		-26.	00 dB			
MSG						STATUS				

Plot 7-77. Occupied Bandwidth Plot (NR Band n66 - 30.0MHz CP-OFDM QPSK - Full RB - Ant I)



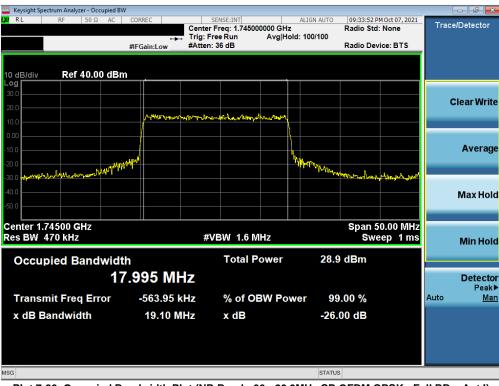
Plot 7-78. Occupied Bandwidth Plot (NR Band n66 - 30.0MHz CP-OFDM 16QAM - Full RB - Ant I)

FCC ID: A3LSMS906U	PCTEST Prod to be part of @ element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
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Keysight Spectrum Analyze												
XIRL RF	50 Ω A	C COF	REC	Cente	SENSE:INT er Frea: 1.7450	00000 GH		LIGN AUTO	09:33:25 PI Radio Std:	4 Oct 07, 2021	Trac	e/Detector
				+++ Trig:	Free Run n: 36 dB			100/100	Radio Dev			
		#IF(Gain:Low	#Atte	n. 30 uB				Radio Dev	ICE. DIS		
		_										
10 dB/div Ref 4	0.00 d	Bm										
30.0												
20.0											(Clear Write
10.0			- Marine	₽∽I₄^¶₩₩₩₩₽₽₽₽	water	ward was						
0.00												
10.0							\downarrow					Averag
20.0							<u> </u>					
30.0	Mar and	mprof					Wn	ԽՆուրդերեն	2 - Marellan	man		
40.0	An Alban											Max Hol
50.0												Max Hol
Center 1.74500 GH	z									0.00 MHz		
Res BW 470 kHz				7	¢VBW 1.6Γ	VIHZ			Swe	ep 1 ms		Min Hol
Occupied Ba	ndwi	dth			Total I	Power		31.1	dBm			
occupiou Ba		17.9	46									Detecto
		I/.J	40 I									Detecto Peak
Transmit Freq	Error		559.9	8 kHz	% of O	BW Po	we	r 99	.00 %		Auto	Ma
x dB Bandwidt	th		19 30	MHz	x dB			-26	00 dB			
			10100		A GD			20.				
SG								07.171.0				
30							_	STATUS				

Plot 7-79. Occupied Bandwidth Plot (NR Band n66 - 20MHz DFT-s-BPSK - Full RB - Ant I)



Plot 7-80. Occupied Bandwidth Plot (NR Band n66 - 20.0MHz CP-OFDM QPSK - Full RB - Ant I)

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🔤 Keysight Spectrum Analyzer - C											
LXIRL RF 50	Ω AC CO	RREC		ISE:INT eq: 1.74500	0000 GH		ALIGN AUTO	09:34:35 P	MOct 07, 2021	Trac	e/Detector
			. Trig: Free	Run			100/100				
,	#IF	Gain:Low	#Atten: 36	6 dB				Radio Dev	ice: BTS		
	00 dBm	_									
Log 30.0											
20.0											Clear Write
		mannon	and a start and a start and a start a s	مەمىلەر يەرمەس							
10.0						1					
0.00											A
-10.0						4/10	. m.				Average
-20.0 -30.0 ปีเฉลยุกระประการทำใหญ่ที่จะไ	AND A AND A					_	Mary Warnat	Mangellysbaue			
								1. NAINA ISANA	topolo la contraction de la contraction La contraction de la c		
-40.0											Max Hold
-50.0											
Center 1.74500 GHz								Snan 5	0.00 MHz		
Res BW 470 kHz			#VB	W 1.6 M	Hz				ep 1 ms		Min Hold
											MIT HOID
Occupied Ban	dwidth			Total P	ower		28.9	dBm			
	18_0	06 M⊦	7								Detector
											Peak►
Transmit Freq E	rror	-586.91 k	Hz	% of O	BW Po	we	er 99	.00 %		Auto	<u>Man</u>
x dB Bandwidth		19.17 M	Hz	x dB			-26.	00 dB			
MSG							STATUS	3			
							Sharot				

Plot 7-81. Occupied Bandwidth Plot (NR Band n66 - 20.0MHz CP-OFDM 16QAM - Full RB - Ant I)



Plot 7-82. Occupied Bandwidth Plot (NR Band n66 - 15MHz DFT-s-BPSK - Full RB - Ant I)

FCC ID: A3LSMS906U	PCTEST* Proud to be part of @ element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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www.www.www.www.www.www.www.www.www.ww	W				
L <mark>X/</mark> RL RF 50Ω AC	CORREC	SENSE:INT nter Freq: 1.745000	ALIGN AUTO	10:03:52 PM Oct 07, 2021 Radio Std: None	Trace/Detector
	😛 Tri	g: Free Run tten: 36 dB	Avg Hold: 100/100	Radio Device: BTS	
10 dB/div Ref 30.00 dBI	n				
20.0	Jonal Marian Mayor	whether the warment	[my4./~3/]		Clear Write
0.00					
-20.0			- Walking with	mounarylabarranation	Average
-40.0				A Ladrador de Al	
-60.0					Max Hold
Center 1.74500 GHz Res BW 360 kHz		#VBW 1.2 M	Hz	Span 37.50 MHz Sweep 1 ms	Min Hold
Occupied Bandwid	th	Total Po	ower 28.8	3 dBm	
1;	3.497 MHz				Detector Peak►
Transmit Freq Error	-382.19 kHz	% of OE	W Power 99	0.00 %	Auto <u>Man</u>
x dB Bandwidth	14.40 MHz	x dB	-26.	00 dB	
MSG			STATU	5	

Plot 7-83. Occupied Bandwidth Plot (NR Band n66 - 15.0MHz CP-OFDM QPSK - Full RB - Ant I)



Plot 7-84. Occupied Bandwidth Plot (NR Band n66 - 15.0MHz CP-OFDM 16QAM - Full RB - Ant I)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
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KAL RF 50Ω AC	CORREC	SENSE:INT Center Freq: 1.74500		ALIGN AUTO	10:52:10 PM Radio Std:	1 Oct 07, 2021	Trac	e/Detector
		Trig: Free Run	Avg Hold:		Radio Stu.	None		
	#IFGain:Low	#Atten: 36 dB		F	Radio Devi	ice: BTS		
10 dB/div Ref 40.00 dBm								
Log 30.0								
							(Clear Write
20.0	mont	month	maria					
0.00	1		l l					
			٦ I					Average
-10.0	٦,		l l					Average
	J			Maria .	. A. M.M			
-30.0 HIV Upratyrur para my water				White	an wining	ᡤ᠇ᡊᡃᡗᢂᢩᡁᠺᢦᡊᡀᡔᠯᢦ		
-40.0								Max Hold
-50.0								
Center 1.74500 GHz					Crop 1			
Res BW 240 kHz		#VBW 750 k	H7		Swe	5.00 MHz ep 1 ms		
		#4D44 100K	112		040	сртпа		Min Hold
Occupied Bandwidth	1	Total P	ower	30.9 c	dBm			
	877 MH	7						Detector
0.5		2						Peak▶
Transmit Freq Error	-182.00 kH	Iz % of OE	3W Powe	r 99.0	00 %		Auto	Man
x dB Bandwidth	9,684 MF	z xdB		-26.00	0 dB			
MSG				STATUS				
Mod				STATUS				

Plot 7-85. Occupied Bandwidth Plot (NR Band n66 - 10MHz DFT-s-BPSK - Full RB - Ant I)



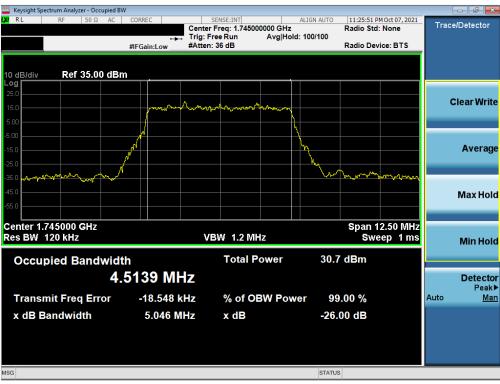
Plot 7-86. Occupied Bandwidth Plot (NR Band n66 - 10.0MHz CP-OFDM QPSK - Full RB - Ant I)

FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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Plot 7-87. Occupied Bandwidth Plot (NR Band n66 - 10.0MHz CP-OFDM 16QAM - Full RB – Ant I)



Plot 7-88. Occupied Bandwidth Plot (NR Band n66 - 5MHz DFT-s-BPSK - Full RB – Ant I)

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Plot 7-89. Occupied Bandwidth Plot (NR Band n66 - 5.0MHz CP-OFDM QPSK - Full RB - Ant I)



Plot 7-90. Occupied Bandwidth Plot (NR Band n66 - 5.0MHz CP-OFDM 16QAM - Full RB - Ant I)

FCC ID: A3LSMS906U	PCTEST* Prod to be part of @ element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager	
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7.4 Spurious and Harmonic Emissions at Antenna Terminal

Test Overview

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

The minimum permissible attenuation level of any spurious emission is $43 + 10 \log_{10}(P_{[Watts]})$, where P is the transmitter power in Watts.

Test Procedure Used

KDB 971168 D01 v03r01 - Section 6.0

Test Settings

- 1. Start frequency was set to 30MHz and stop frequency was set to 18GHz (separated into at least two plots per channel)
- 2. RBW ≥ 100kHz
- 3. VBW \ge 3 x RBW
- 4. Detector = RMS
- 5. Trace mode = max hold
- 6. Sweep time = auto couple
- 7. The trace was allowed to stabilize

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



Figure 7-3. Test Instrument & Measurement Setup

Test Notes

- 1. Per Part 27 and RSS-139, compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth 100 kHz or greater for measurements below 1GHz. 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. 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 emission are attenuated at least 26 dB below the transmitter power.
- 2. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

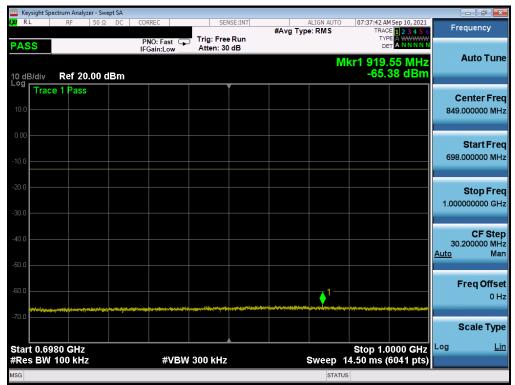
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LTE Band 71

🔤 Keysight Spectrum Analyzer - S	wept SA				
LX RL RF 50	Ω DC CORREC	SENSE:INT	ALIGN AUTO #Avg Type: RMS	07:37:36 AM Sep 10, 2021 TRACE 1 2 3 4 5 6	Frequency
PASS	PNO: Fast 🕞 IFGain:Low	Trig: Free Run Atten: 30 dB	- //	TYPE A WWWWW DET A NNNNN	- , <u>-</u>
10 dB/div Ref 20.00	dBm		М	kr1 661.55 MHz -63.632 dBm	Auto Tune
Log Trace 1 Pass					Center Freq 346.000000 MHz
-10.0					Start Freq 30.000000 MHz
-20.0					Stop Freq 662.000000 MHz
-40.0					CF Step 63.200000 MHz <u>Auto</u> Man
-60.0					Freq Offset 0 Hz
-70.0 - Hard and a set of the set	ne presidente men y very forse den 1999 per presidente se anna 1999 per presidente se anna 1999 per presidente Un selar des la la la consegui de se anna genera per				Scale Type
Start 30.0 MHz #Res BW 100 kHz	#VBW	300 kHz	Sweep 30	Stop 662.0 MHz 9.34 ms (12641 pts)	Log <u>Lin</u>
MSG			STATUS	3	

Plot 7-91. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - 1 RB - Low Channel)



Plot 7-92. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - 1 RB - Low Channel)

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LX RL RF 50 Ω DC	CORREC	SENSE:INT	ALIGN AUT #Avg Type: RMS	TRACE 1 2 3 4 5 6	Frequency
PASS		Trig: Free Run Atten: 36 dB		DET A WWWWW	Auto Turo
10 dB/div Ref 0.00 dBm			I	4 Mkr1 9.800 5 GHz -39.338 dBm	Auto Tune
-10.0					Center Freq 5.50000000 GHz
-20.0				1	Start Freq 1.000000000 GHz
-40.0		~~~~			Stop Fred 10.000000000 GHz
-60.0					CF Step 900.000000 MH: <u>Auto</u> Mar
-80.0					Freq Offse 0 H:
-90.0					Scale Type
Start 1.000 GHz #Res BW 1.0 MHz	#VBW 3.	0 MHz	Sweep	Stop 10.000 GHz 15.60 ms (18001 pts)	Log <u>Lin</u>
MSG				TUS	

Plot 7-93. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - 1 RB - Low Channel)

PASS PNO: Fast IFGain:Low Trig: Free Run Atten: 30 dB #Avg Type: RMS TRACE TYPE OF TALL 2.24.5 Stop 10 dB/div Ref 20.00 dBm -66.18 dBm -66.18 dBm -66.18 dBm 100 -66.18 dBm -66.18 dBm -66.18 dBm -66.18 dBm 100 -66.18 dBm -66.18 dBm -66.18 dBm -66.18 dBm 100 -66.18 dBm -66.18 dBm -66.18 dBm -66.18 dBm 100 -66.18 dBm -66.18 dBm -66.18 dBm -66.18 dBm 100 -66.18 dBm -66.18 dBm -66.18 dBm -66.18 dBm 100 -60.18 dBm -66.18 dBm -66.18 dBm -66.18 dBm 100 -60.18 dBm -66.18 dBm -66.18 dBm -66.18 dBm 100 -60.18 dBm -61.10 dBM -61.10 dBM -61.10 dBM 100 -61.10 dBM -61.10 dBM -61.10 dBM -61.10 dBM 100 -61.10 dBM -61.10 dBM -61.10 dBM -61.10 dBM 100 -61.10 dBM -61.10 dBM -61.10 dBM -61.10 dBM -200 -61.10 dBM -61.10 dBM -61.10 dBM		trum Analyzer - Sv								
Industry Mkr1 661.85 MHz -66.18 dBm Auto Tune 0 dB/div Ref 20.00 dBm -66.18 dBm Center Freq 346.500000 MHz 0 00 Image: Start Freq 30.000000 MHz Image: Start Freq 30.000000 MHz Image: Start Freq 30.00000 MHz 0 00 Image: Start Freq 30.00000 MHz Image: Start Freq 30.00000 MHz Image: Start Freq 30.00000 MHz 0 00 Image: Start Freq 30.00000 MHz Image: Start Freq 30.00000 MHz Image: Start Freq 30.00000 MHz 0 00 Image: Start Freq 30.00000 MHz Image: Start Freq 30.00000 MHz Image: Start Freq 30.0000 MHz 0 00 Image: Start Freq 30.0000 MHz Image: Start Freq 30.0000 MHz Image: Start Freq 30.0000 MHz 0 00 Image: Start Freq 30.0000 MHz Image: Start Freq 30.0000 MHz Image: Start Freq 30.0000 MHz 0 00 Image: Start Freq 30.0000 MHz Image: Start Freq 30.0000 MHz Image: Start Freq 30.0000 MHz 0 00 Image: Start Start Freq 30.0000 MHz Image: Start Start Freq 30.0000 MHz Image: Start Start Freq 30.0000 MHz 0 00 Image: Start Start Freq 30.0000 MHz Image: Start Start Freq 30.0000 MHz Image: Start Start Freq 30.0000 MHz 0 00 Image: Start Start Freq 30.0000 MHz Image: Start Start Freq 30.0000 MHz Image: Start Start Freq 30.0	LXI RL	RF 50 \$	2 DC	CORREC				TRAC	E 1 2 3 4 5 6	Frequency
Control Center Freq 346.500000 MHz 100	PASS	Pof 20.00	dBm	PNO: Fast IFGain:Low			М	kr1 661.	85 MHz	Auto Tune
100 Start Freq 30.00000 MHz 200 Start Freq 30.00000 MHz 200 Start Freq 30.00000 MHz 200 Start Freq 663.00000 MHz 200 Start Start Freq 663.00000 MHz 200 Start Freq 663.00000 MHz 200 Start S	Log Trace									
Stop Fred Stop Fred	-10.0									
4400 4400	-20.0									
4600 1 0 H2 700 500 1 800 1 1	-40.0									63.300000 MH
Start 30.0 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 30.38 ms (12661 pts)	-60.0	ang san da kanang kang dan kang lan kang		en sen an statut de set an seconde bard de	and broket provide page downers			enertine o specie a confectione has	1.	
	Start 30.0 I							Stop 6	63.0 MHz	Log <u>Lir</u>
		00 kHz		#VBW	300 kHz	S			2661 pts)	

Plot 7-94. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - 1 RB - Mid Channel)

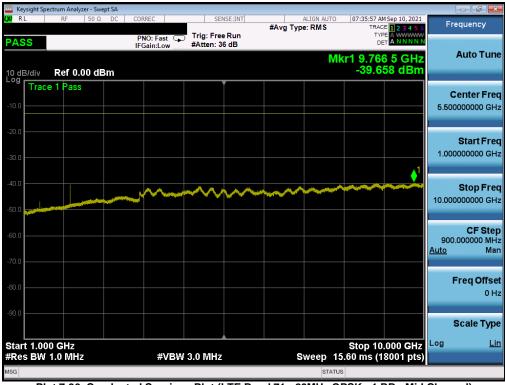
FCC ID: A3LSMS906U		PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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		ctrum Analy			00005-						07.05.45			
<mark>XI</mark> R	L	RF	50 Ω	DC	CORREC			SENSE:INT	#Avg Typ	ALIGN AUTO	TRA	M Sep 10, 2021	Frequ	uency
PAS	SS				PNO: I IFGain	Fast 🖵 :Low	Atten:	ree Run 30 dB			TY D	PE A WWWWW ET A N N N N N		
10 di	3/div	Ref 2	0.00 d	Bm						Μ	kr1 895 -65.	.35 MHz 59 dBm	Αι	uto Tune
Log	Trace	1 Pass	;					Ĭ					Cer	nter Fred
													849.00	0000 MH
													S	tart Free
														0000 MH
														top Fre
-30.0														0000 GH
														CF Ste
													30.20 <u>Auto</u>	0000 MH Ma
													_	
									1-				Fre	e q Offse 0 H
	*****	****	i.e	,	,746,797 Aug/10 9 71	en an	en filmen an an air fan en de	e Xanghaliya yingi yanghi shin din	,	and the second	Allinin di referintenen	بالبحاكة ومتها واحواء كالإب ال		
														ale Type
		80 GHz 100 kH				#VBW	300 kH	z		Sweep 1	Stop 1. 4.50 ms	0000 GHz (6041 pts)	Log	<u>Lir</u>
ISG										STATUS				

Plot 7-95. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - 1 RB - Mid Channel)



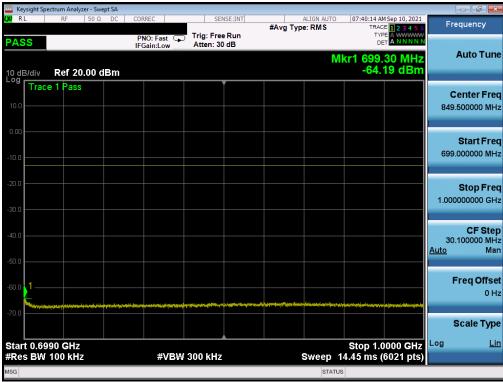
Plot 7-96. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - 1 RB - Mid Channel)

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	pectrum Analy												
LXI RL	RF	50 Ω	DC	CORREC		SE	NSE:INT	#Avg Typ	ALIGN AUTO		M Sep 10, 2021	Fre	quency
PASS				PNO: F IFGain:l	ast 🖵 Low	Trig: Fre Atten: 3		#/(18/1)P		TYF DE			
10 dB/div	Ref 20).00 dE	3m						M	kr1 659. -66.	60 MHz 30 dBm		Auto Tune
Log	ce 1 Pass											с	enter Freq
10.0												346.	500000 MHz
0.00													
-10.0												30.	Start Freq 000000 MHz
-10.0													
-20.0													Stop Freq
-30.0												663.	000000 MHz
(0.0													CF Step
-40.0												63. Auto	300000 MHz Man
-50.0													
-60.0											1 .	F	req Offset
		ور وراد الم				unter a la comune		and the state of the state of the state		ante dell'Angel Beller (en			0 Hz
-70.0												5	Scale Type
Start 30.	0 MHz						k			Stop 6	63.0 MHz	Log	Lin
#Res BW		2		3	#VBW	300 kHz	2	S	weep 30	.38 ms (1	2661 pts)		
MSG									STATUS				

Plot 7-97. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - 1 RB - High Channel)



Plot 7-98. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - 1 RB - High Channel)

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	trum Analyzer -						
LXU RL	RF 5	0Ω DC	CORREC	SENSE:INT	ALIGN AUTO #Avg Type: RMS	07:40:33 AM Sep 10, 2021 TRACE 1 2 3 4 5 6	Frequency
PASS			PNO: Fast 🕞) Trig: Free Run #Atten: 36 dB		TYPE A WWWWW DET A NNNNN	
10 dB/div Log r	Ref 0.00	dBm			M	kr1 9.994 0 GHz -39.385 dBm	Auto Tune
-10.0	1 Pass						Center Freq 5.500000000 GHz
-20.0							Start Freq 1.000000000 GHz
-40.0			~~~	~~~~~			Stop Freq 10.000000000 GHz
-60.0							CF Step 900.000000 MHz <u>Auto</u> Man
-80.0							Freq Offset 0 Hz
-90.0							Scale Type
Start 1.000 #Res BW 1			#VBW	3.0 MHz	Sweep 1	Stop 10.000 GHz 5.60 ms (18001 pts)	Log <u>Lin</u>
MSG					STATU	S	

Plot 7-99. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - 1 RB - High Channel)

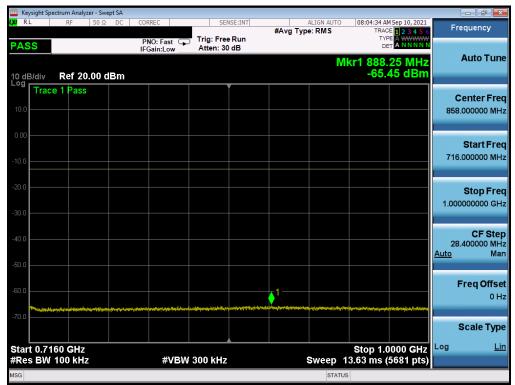
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LTE Band 12

Keysight Spe												
X/RL	RF	50 Ω DC	CORREC			NSE:INT	#Avg Typ	ALIGN AUTO	TRAC	M Sep 10, 2021	Fi	equency
PASS			PNO: IFGair	Fast G	Trig: Fre Atten: 3				DI			
10 dB/div Log	Ref 20.	.00 dBm						M	kr1 697. -62.	90 MHz 67 dBm		Auto Tune
Trace	e 1 Pass					Ĭ					(Center Freq
10.0											363	3.950000 MHz
0.00												
											30	Start Freq 0.000000 MHz
-10.0												
-20.0												Stop Freq
-30.0											697	.900000 MHz
												CF Step
-40.0											66 Auto	5.790000 MHz Mar
-50.0											Auto	Man
-60.0										1		Freq Offset
					and a second second second		والمراجع والمردور ومراجع	والمراجع المراجع والمراجع والمراجع	والمحادث والمحادث والمحادث وأحدا			0 Hz
-70.0				an int in a det								Scale Type
Start 30.0	MHz								Stop 6	97.9 MHz	Log	Lin
#Res BW				#VBV	/ 300 kHz		S	weep 32	.06 ms (1	3361 pts)		
MSG								STATUS				

Plot 7-100. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - 1 RB - Low Channel)



Plot 7-101. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - 1 RB - Low Channel)

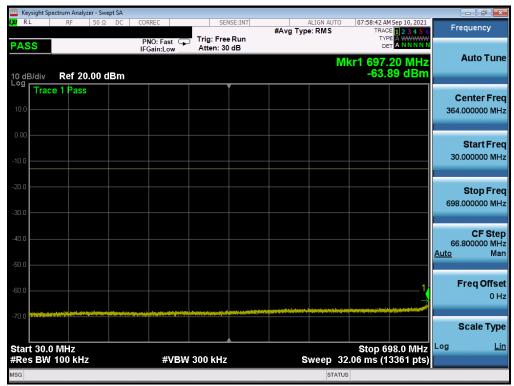
FCC ID: A3LSMS906U	POTEST* Proud to be part of @element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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PASS	RF 50 Ω		RREC	SEN	ISE:INT		ALIGN AUTO	00:04:55 4			
PASS						#Avg Typ			M Sep 10, 2021	Fr	equency
		PI IFC	NO: Fast 🖵 Gain:Low	Trig: Free #Atten: 3				TY D			Auto Tuno
10 dB/div	Ref 0.00 dB	Sm					N	lkr1 2.11 -39.0	2 0 GHz 70 dBm		Auto Tune
-10.0	l Pass										Center Freq
-20.0	▲ 1									1.000	Start Freq
-40.0			~~~~	~~~	~~~	~~~				10.000	Stop Freq
-60.0										900 <u>Auto</u>	CF Step .000000 MHz Man
-80.0										ľ	F req Offset 0 Hz
-90.0											Scale Type
Start 1.000 #Res BW 1.			#VBW	3.0 MHz		s	ween '	Stop 10 15.60 ms (1	.000 GHz 8001 nts)	Log	Lin
MSG	w WITH2		~ V D V V	0.0 191112			STAT		ooo r pisj		

Plot 7-102. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - 1 RB - Low Channel)



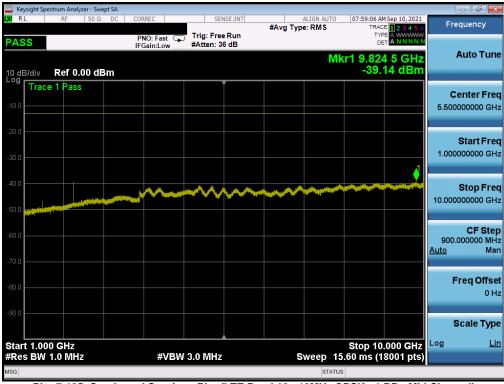
Plot 7-103. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - 1 RB - Mid Channel)

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		trum Analyz			050		une murel			07.50.45	10 00-	
K R	L	RF	50 Ω D	C COF	REC		SE:INT	#Avg Type	ALIGN AUTO e: RMS	TRAC	M Sep 10, 2021	Frequency
PAS	S			PI IF(NO: Fast G Gain:Low	Trig: Free Atten: 30						
10 di Log	3/div	Ref 20.	.00 dBr	n					M	kr1 716. -64.	15 MHz 45 dBm	Auto Tune
LUY	Trace	1 Pass										Center Free
												858.000000 MH
												Start Free
												716.000000 MH
												Stop Free 1.000000000 GH
												1.00000000 GH
												CF Ste
												28.400000 MH Auto Ma
												Auto
												Freq Offse
	2											О Н
	And States and	and the second	Maritan (M	And the second secon	n te literat ji der glasse	in the second	in a faith an a faith a		and a start of the second s	and an and the second secon	anti singi adalah si gi ingi ingi	
												Scale Type
							Log <u>Lir</u>					
_	s BW 1	00 kHz			#VBV	V 300 kHz				3.63 ms (5681 pts)	
//SG	SG STATUS											

Plot 7-104. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - 1 RB - Mid Channel)



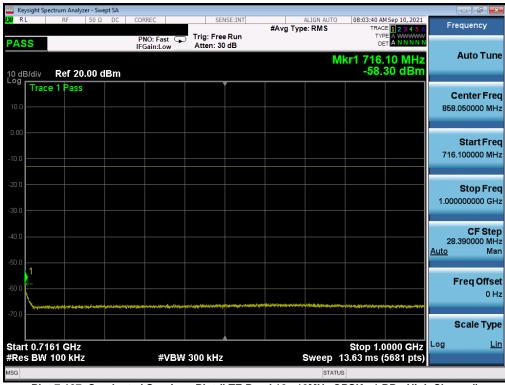
Plot 7-105. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - 1 RB - Mid Channel)

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	ectrum Analyze	r - Swept SA									X
L <mark>XI</mark> RL	RF	50 Ω DC	CORREC	SEN	ISE:INT	#Avg Typ	ALIGN AUTO		MSep 10, 2021	Frequency	y
PASS			PNO: Fast 🔾 IFGain:Low	Trig: Free Atten: 30				TYF DE			
10 dB/div	Ref 20.0	00 dBm					Μ	kr1 697. -60.	60 MHz 62 dBm	Auto T	une
Log Trac	e 1 Pass			Ì						Center F	Fred
10.0										364.000000	
0.00											
0.00										Start F	
-10.0										30.000000	MHz
-20.0											
-20.0										Stop F 698.000000	
-30.0										058.000000	IVII-12
-40.0										CFS	Step
-40.0										66.800000 Auto	MHz Mar
-50.0											mai
									1	Freq Of	ffset
-60.0											0 Hz
-70.0											
										Scale T	уре
Start 30.0								Stop 6	98.0 MHz 3361 pts)	Log	Lin
#Res BW	100 KHz		#VBV	/ 300 kHz		s	weep 32		3361 pts)		
									h Channal)	_	

Plot 7-106. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - 1 RB - High Channel)



Plot 7-107. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - 1 RB - High Channel)

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