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MEASUREMENT REPORT GSM / GPRS / EDGE / CDMA / WCDMA

Applicant Name:

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

Date of Testing: 4/17 - 6/12/2020 Test Site/Location: PCTEST Lab. Columbia, MD, USA Test Report Serial No.: 1M2004170066-02.A3L

FCC ID:

IC:

A3LSMN986W

649E-SMN986W

Samsung Electronics Co., Ltd.

APPLICANT:

Application Type: Model/HVIN:

FCC Classification:

ISED Specification:

Test Procedure(s):

FCC Rule Part(s):

EUT Type:

Certification SM-N986W Portable Handset PCS Licensed Transmitter Held to Ear (PCE) 22, 24, & 27 RSS-132, RSS-133, RSS-139 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.

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 President



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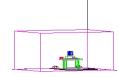


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				ERP		RP	
Mode	FCC Rule Part	Tx Frequency (MHz)	Max. Power	Max. Power	Max. Power	Max. Power	Emission Designator
			(W)	(dBm)	(W)	(dBm)	
GPRS850	22H	824.2 - 848.8	0.544	27.36	0.892	29.51	244KGXW
EDGE850	22H	824.2 - 848.8	0.213	23.28	0.349	25.43	244KG7W
CDMA850	22H	824.70 - 848.31	0.097	19.87	0.159	22.02	1M27F9W
WCDMA850	22H	826.4 - 846.6	0.083	19.18	0.136	21.33	4M17F9W
WCDMA1700	27	1712.4 - 1752.6			0.317	25.01	4M16F9W
GPRS1900	24E	1850.2 - 1909.8			0.951	29.78	242KGXW
EDGE1900	24E	1850.2 - 1909.8			0.194	22.87	245KG7W
WCDMA1900	24E	1852.4 - 1907.6			0.275	24.39	4M17F9W

EUT Overview

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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 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 located in Columbia, MD 21046, U.S.A.

- PCTEST is an ISO 17025-2005 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: A3LSMN986W**. The test data contained in this report pertains only to the emissions due to the EUT's 2G/3G licensed transmitters.

Test Device Serial No.: 0392M, 0365M, 0380M

2.2 Device Capabilities

This device contains the following capabilities:

850 CDMA/EvDO Rev0/A, 1x Advanced (BC0), 850/1900 GSM/GPRS/EDGE, 850/1700/1900, WCDMA/HSPA, Multi-band LTE, 5G NR (n71, n41, n66), 802.11b/g/n/ax WLAN, 802.11a/n/ac/ax UNII, Bluetooth (1x, EDR, LE), NFC, Wireless Power Transfer, UWB

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.

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 "Land Mobile FM or PM – Communications Equipment – Measurements and Performance Standards" (ANSI/TIA-603-E-2016) and "Measurement Guidance for Certification of Licensed Digital Transmitters" (KDB 971168 D01 v03r01) were used in the measurement of the EUT.

Deviation from Measurement Procedure.....None

3.2 Radiated Measurements

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 turntable 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.

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].

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 474788 D01.

Radiated power and radiated spurious emission levels are investigated with the receive antenna horizontally and vertically polarized per ANSI/TIA-603-E-2016.

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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). Measurements 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
-	LTx2	Licensed Transmitter Cable Set	4/9/2020	Annual	4/9/2021	LTx2
-	LTx1	Licensed Transmitter Cable Set	6/4/2019	Annual	6/4/2020	LTx1
Agilent	N9038A	MXE EMI Receiver	7/17/2019	Annual	7/17/2020	MY51210133
Anritsu	MT8821C	Radio Communication Analyzer	3/10/2020	Annual	3/10/2021	6200901190
Com-Power	AL-130	9kHz - 30MHz Loop Antenna	10/10/2019	Biennial	10/10/2021	121034
EMCO	3160-09	Small Horn (18 - 26.5GHz)	8/9/2018	Biennial	8/9/2020	135427
ETS Lindgren	3117	1-18 GHz DRG Horn (Medium)	2/14/2019	Biennial	2/14/2021	125518
ETS Lindgren	3164-08	Quad Ridge Horn Antenna	3/12/2020	Biennial	3/12/2022	128337
ETS-Lindgren	3115	Double Ridged Guide Horn 750MHz - 18GHz	3/12/2020	Biennial	3/12/2022	150693
Mini Circuits	TVA-11-422	RF Power Amp		N/A		QA1317001
Mini-Circuits	SSG-4000HP	Synthesized Signal Generator		N/A		11208010032
Mini-Circuits	SSG-4000HP	Synthesized Signal Generator		N/A		11403100002
Rohde & Schwarz	CMU200	Base Station Simulator		N/A		107826
Rohde & Schwarz	CMW500	Radio Communication Tester	6/26/2019	Annual	6/26/2020	112347
Rohde & Schwarz	TS-PR26	18-26.5 GHz Pre-Amplifier	11/1/2019	Annual	11/1/2020	100040
Rohde & Schwarz	ESU40	EMI Test Receiver (40GHz)	9/23/2019	Annual	9/23/2020	100348
Rohde & Schwarz	SFUNIT-Rx	Shielded Filter Unit	7/11/2019	Annual	7/11/2020	102134
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	5/19/2018	Biennial	5/19/2020	A051107
Sunol	DRH-118	Horn Antenna (1-18GHz)	10/3/2019	Biennial	10/3/2021	A050307

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

GSM Emission Designator

Emission Designator = 250KGXW

GSM BW = 250 kHz G = Phase Modulation X = Cases not otherwise covered W = Combination (Audio/Data)

EDGE Emission Designator

Emission Designator = 250KG7W

EDGE BW = 250 kHz G = Phase Modulation 7 = Quantized/Digital Info W = Combination (Audio/Data)

CDMA Emission Designator

Emission Designator = 1M25F9W

CDMA BW = 1.25 MHz F = Frequency Modulation 9 = Composite Digital Info W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 4M16F9W

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

Spurious Radiated Emission

Example: Spurious emission at 3700.40 MHz

The receive 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 3700.40 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:	A3LSMN986W
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
Mode(s):	<u>GSM / GPRS / EDGE / CDMA / WCDMA</u>

FCC Part Section(s)	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
2.1049	RSS-Gen (4.6.1) RSS-133(2.3) RSS-139(2.3)	Occupied Bandwidth	N/A		PASS	Section 7.2
2.1051 22.917(a) 24.238(a) 27.53(h)	RSS-132(5.5) RSS-133(6.5) RSS-139(6.6)	Conducted Band Edge / Spurious Emissions	> 43 + 10 log ₁₀ (P[Watts]) at Band Edge and for all out-of- band emissions		PASS	Sections 7.3, 7.4
24.232(d)	RSS-132(5.4) RSS-133(6.4) RSS-139(6.5)	Peak-Average Ratio	< 13 dB	CONDUCTED	PASS	Section 7.5
2.1046	RSS-132(5.4) RSS-133(4.1) RSS-139(4.1)	Transmitter Conducted Output Power	N/A		PASS	RF Exposure Report
2.1055 22.355 24.235 27.54	RSS-132(5.3) RSS-133(6.3) RSS-139(6.4)	Frequency Stability	< 2.5 ppm (Part 22) Emission must remain in band (Part 24, 27)		PASS	Section 7.8
22.913(a)(5)	RSS-132(5.4)	Effective Radiated Power	< 7 Watts max. ERP		PASS	Section 7.6
24.232(c)	RSS-133(6.4)	Equivalent Isotropic Radiated Power	< 2 Watts max. EIRP		PASS	Section 7.6
27.50(d)(4)	RSS-139(6.5)	Equivalent Isotropic Radiated Power	< 1 Watts max. EIRP	RADIATED	PASS	Section 7.6
2.1053 22.917(a) 24.238(a) 27.53(h)	RSS-132(5.5) RSS-133(6.5) RSS-139(6.6)	Radiated Spurious Emissions	> 43 + 10 log ₁₀ (P[Watts]) for all out-of-band emissions		PASS	Section 7.7

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 were all 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 "2G/3G Automation," Version 4.2.

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7.2 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 7-1. Test Instrument & Measurement Setup

Test Notes

None.

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μα RF 50 Ω AC CORREC SENSE:INT ALIGN AUTO 11:36:28 PM Apr 23, 2020 Center Freq: 836.600000 MHz Radio Std: None	Trace/Detector
Trig: Free Run Avg Hold: 100/100 #IEGain:Low #Atten: 32 dB Radio Device: BTS	
15 dB/div Ref 35.00 dBm	
20.0 mm	Clear Write
5.00	
-10.0 monorman	
	Average
-40.0	Average
-5.0	
85.0	
-100	Max Hold
Center 836.6000 MHz Span 625.0 kHz	
Res BW 6.2 kHz #VBW 39 kHz Sweep 15.13 ms	Min Hold
Occupied Bandwidth Total Power 38.9 dBm	
244.44 kHz	Detector
	Peak►
Transmit Freq Error 1.282 kHz % of OBW Power 99.00 %	Auto <u>Man</u>
x dB Bandwidth 315.0 kHz x dB -26.00 dB	
MSG STATUS	

Plot 7-1. Occupied Bandwidth Plot (Cellular GSM Mode)



Plot 7-2. Occupied Bandwidth Plot (EDGE850 Mode)

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Plot 7-3. Occupied Bandwidth Plot (PCS GSM Mode)



Plot 7-4. Occupied Bandwidth Plot (EDGE1900 Mode)

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Plot 7-5. Occupied Bandwidth Plot (Cellular CDMA Mode)



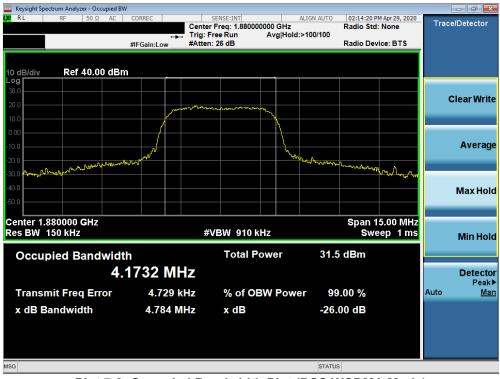
Plot 7-6. Occupied Bandwidth Plot (Cellular WCDMA Mode)

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Center Freq: 1.732600000 GHz Trig: Free Run AvglHold: 100/100 Radio Device: BTS Radio Device: BTS Radio Device: BTS Center Free 1.732600000 GHZ Center Free 1.732600000 GHZ Center Free 1.732600000 GHZ Center 1.732600 GHZ Res BW 150 KHZ #VBW 910 KHZ Sweep 1 ms	Keysight Spectrum Analyzer - Occupied					
#FGain:Low #Atten: 26 dB Radio Device: BTS 10 dB/div Ref 40.00 dBm Image: Context Free 00 Image: Context Free Image: Context Free 10 dB/div Ref 40.00 dBm Image: Context Free 00 Image: Context Free Image: Context Free 10 dB/div Image: Context Free Image: Context Free	LX RL RF 50 Ω AC				02:05:11 PM Apr 29, 2020 Radio Std: None	Frequency
10 dB/div Ref 40.00 dBm Center Free 1.73260000 GH 1.73260000 GH 1.7326000 GH 1.7326000 GH 1.7326000 GH 1.7326000 GH 1.7326000 GH 1.732600 GH 1.5000 GH 1.5000 GH 1.5000 GH 1.5000 GH 1.5000 GH 1.500 GH				Avg Hold: 100/100	Radio Device: BTS	
Image: constraint of the second se		#I Galil.Low				ī
Image: constraint of the second se	10 dB(div Ref 40 00 dB	Rm				
200 200 200 200 200 200 200 200	Log					
10.0 10.0						Center Freq
000 0	20.0	م سر ر	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	^		1.732600000 GHz
10.0 20.0						
20.0		/				
400 4		nor l				
400 4	-20.0	and the second s		~ Month ~ Joo - Mart	why what have	
Center 1.732600 GHz Res BW 150 kHz #VBW 910 kHz Span 15.00 MHz Occupied Bandwidth Total Power 32.3 dBm 4.1628 MHz Transmit Freq Error 4.645 kHz % of OBW Power 99.00 %					antippopular	
Center 1.732600 GHz Res BW 150 kHz #VBW 910 kHz Span 15.00 MHz Occupied Bandwidth Total Power 32.3 dBm 4.1628 MHz Transmit Freq Error 4.645 kHz % of OBW Power 99.00 %						
Res BW 150 kHz #VBW 910 kHz Sweep 1 ms Occupied Bandwidth Total Power 32.3 dBm 4.1628 MHz Freq Offsee Transmit Freq Error 4.645 kHz % of OBW Power 99.00 %	-5U.U					
Res BW 150 kHz #VBW 910 kHz Sweep 1 ms Occupied Bandwidth Total Power 32.3 dBm 4.1628 MHz Freq Offsee Transmit Freq Error 4.645 kHz % of OBW Power 99.00 %	Center 1.732600 GHz					
Occupied Bandwidth Total Power 32.3 dBm 4.1628 MHz Freq Offse Transmit Freq Error 4.645 kHz % of OBW Power 99.00 %	Res BW 150 kHz		#VBW 910 kH	Z	Sweep 1 ms	1.500000 MHz
4.1628 MHz Transmit Freq Error 4.645 kHz % of OBW Power 99.00 %	Occupied Bandwig	dth	Total Po	wer 32.	3 dBm	<u>Auto</u> Man
Transmit Freq Error 4.645 kHz % of OBW Power 99.00 %						
Transmit Freq Error 4.645 KHZ % of OBW Power 99.00 %	9		Z			•
x dB Bandwidth 4.783 MHz x dB -26.00 dB	Transmit Freq Error	4.645 kH	z % of OB	V Power 99	9.00 %	0 Hz
	x dB Bandwidth	4.783 MF	z xdB	-26	.00 dB	
ISG STATUS	MSG			STATU	JS	

Plot 7-7. Occupied Bandwidth Plot (AWS WCDMA Mode)



Plot 7-8. Occupied Bandwidth Plot (PCS WCDMA Mode)

FCC ID: A3LSMN986W	Proud to be part of @ element		SAMSUNG	Approved by: Quality Manager
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7.3 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 10GHz for Cell, 20GHz for AWS, 20GHz for PCS (separated into at least two plots per channel)
- 2. Detector = RMS
- 3. Trace mode = trace average for continuous emissions, max hold for pulse emissions
- 4. Sweep time = auto couple
- 5. The trace was allowed to stabilize
- 6. Please see test notes below for RBW and VBW settings

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

Per 24.238(b), 27.53(h)(3), and RSS-133(6.5), RSS-139(6.5), compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 1MHz, and 100 kHz or greater for Part 22 and RSS-132 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.

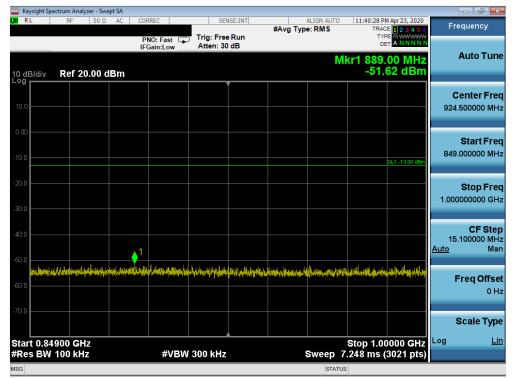
FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 16 of 07
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Cellular GPRS Mode

	Spectrum																
RL	RF	50	Ω (AC	CORF	O: Fas	t 🖵		SENSE:INT	#Av		ALIGN AUT e: RMS	FO 1	TRA	M Apr 23, 202 CE 1 2 3 4 5 PE M WWW ET A N N N N	6	Frequency
) dB/div	Rei	f 20.00	0 de	3m	IFGi	ain:Lo	w	Atter	1: 30 dB				Mkr1	822	.70 MH 05 dBr	z	Auto Tu
																	Center Fr 426.500000 M
.00															DL1 -13.00 dB	m	Start Fr 30.000000 M
D.O																1,	Stop Fr 823.000000 M
).0).0																<u>A</u> 1	CF St 79.300000 M <u>uto</u> M
).0 <mark>אינוגאין</mark> 0.0	aliter position material de cara da	inang Para Balan Ing Kabupatèn Balang Ing Kabupatèn Balang	pilopal po Madila de	and an an an	n na star Na star Na star	ina ang ta	Je _{len} andrea	alla (kongresion ngga destatan	a daga daga sha an ƙasar Anga daga sa an ƙasar Anga daga sa an ƙasar	a faftin fra sjene Marine og skanter	na lengern wood dat ha	n an Anna Anna Anna Anna Anna Anna Anna	n se histori universitet	(ng pinatan) ang inatan)	n in stand in the stand of the		Freq Off 0
	.0 MH2														23.0 MH		Scale Ty
les Bi	V 100	kHz				#\	/BW	' 300 k	Hz		S	weep	38.06	i ms (1	5861 pt	5)	

Plot 7-9. Conducted Spurious Plot (Cellular GPRS Mode - Low Channel)

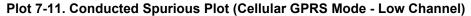


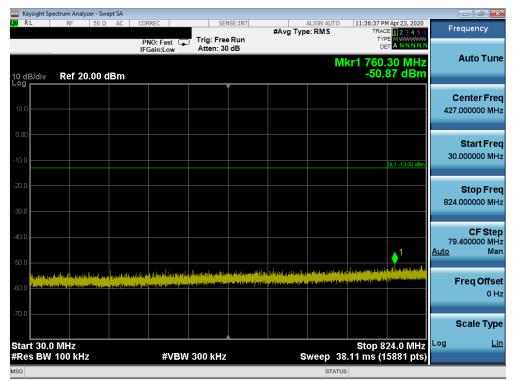
Plot 7-10. Conducted Spurious Plot (Cellular GPRS Mode - Low Channel)

FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 17 of 07
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	ectrum Analyze											
XI RL	RF	50 Ω	AC (CORREC		SEN	ISE:INT	#Avg Typ	ALIGN AUTO e: RMS		PM Apr 23, 2020 ACE 1 2 3 4 5 6	Frequency
				PNO: Fa IFGain:L	ast 🖵 .ow	Trig: Free #Atten: 36		•		T' [Auto Tun
10 dB/div Log	Ref 10.0	00 dB	m						N	/IKF1 6.41 -28	9 0 GHz .94 dBm	
						Ì						Center Free
0.00												5.500000000 GH
-10.0											DL1 -13.00 dBm	Start Free
-20.0												1.000000000 GH
								∳ 1				
-30.0	all the property of the	yalari ya aya Mani ya aya	un fann, Arteria				harap datai terda padatai terda	and a state of the second s	angengengen Militik	na kine yang beluk di kang pa		Stop Free 10.000000000 GH
-40.0												
-50.0												CF Step 900.000000 MH <u>Auto</u> Mar
.00.0												Freq Offse
-70.0												0 H
80.0												
												Scale Type
Start 1.00 ≉Res BW		_	_	ź	//RM	3.0 MHz		_	ween		0.000 GHz 18001 pts)	Log <u>Lir</u>
ISG	1.0 10112			"	VE VV	5.0 WII 12			STA		rooor pts)	



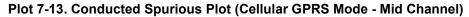


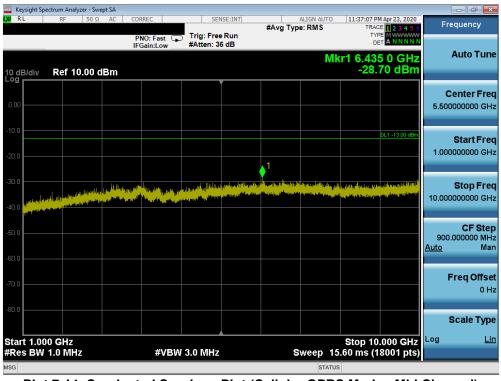
Plot 7-12. Conducted Spurious Plot (Cellular GPRS Mode - Mid Channel)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 19 of 07
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Keysight	Spectrum An	alyzer - Swej 50 Ω		RREC		ICE JUT		ALIGN AUTO	11-26-46 0	14		
CAU RL	KF	50 \				ISE:INT	#Avg Typ		TRAC	Apr 23, 2020 E 1 2 3 4 5 6 E M WWWW	Frequ	ency
				NO: Fast 🖵 Gain:Low	Trig: Free Atten: 30				DE	ANNNN		
10 dB/div	Ref	20.00 d	Bm					Μ	lkr1 903. -51.	80 MHz 28 dBm	Au	to Tune
											Cent	ter Freg
10.0												000 MHz
0.00											Sta	art Freq
-10.0										DL1 -13.00 dBm	849.000	000 MHz
-20.0											Sto 1.000000	op Freq
-30.0											1.000000	000 GHZ
												CF Step
-40.0												000 MHz Man
-50.0	المالية والمستعمل			<u> </u>								Widit
a a a a a a a a a a a a a a a a a a a	a state and the second	and the second second	al a start and the start of the s	demistik fisisi ju yi	englis etter start start start	en ilden son ander so	an franka and an	o is here i shere i sh	and the second secon		Free	qOffset
-60.0												0 Hz
-70.0												
											Sca	le Type
Start 0.8				40/D14	200 kU-				Stop 1.00	0000 GHz	Log	Lin
#Res B	N TUU KI			#VBM	300 kHz			Sweep	7.248 ms (3021 pts)		
								onaro	-			



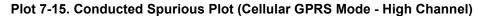


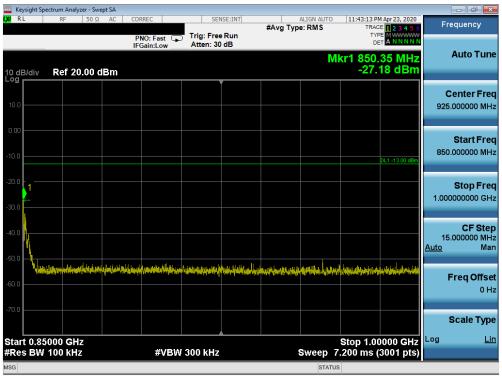
Plot 7-14. Conducted Spurious Plot (Cellular GPRS Mode - Mid Channel)

FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element		SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 10 of 07
1M2004170066-02.A3L	4/17 - 6/12/2020	Portable Handset		Page 19 of 97
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	ight Spec	trum Analyzer - S										
LXI RL		RF 50	Ω AC CC	ORREC	SEN	ISE:INT	#Avg Typ	ALIGN AUTO e: RMS	TRA	M Apr 23, 2020 CE 1 2 3 4 5 6	Fr	equency
				PNO: Fast 🖵 Gain:Low	Trig: Free Atten: 30				TΥ	PE M WWWWW ET A N N N N N		
				Gam.Low	/	45			Mkr1 771	30 MHz		Auto Tune
10 dB/	div	Ref 20.00	dBm						-50	68 dBm		
Log												Center Freq
10.0												.000000 MHz
0.00												Stort From
											30	Start Freq
-10.0										DL1 -13.00 dBm		
-20.0												Oton From
											824	Stop Freq .000000 MHz
-30.0											024	
												CF Step
-40.0												.400000 MHz
-50.0											<u>Auto</u>	Man
	ور المرام ال	يدلد في العلاقية الله دون	Antiones Halles	ندوسا أعاني مترويا	a <mark>da ang kang kang kang kang kang kang kang</mark>	ng la filmeran	- And and a state of the state	An Alexandra	nter anna tha anna tha	a the state of the		
-60.0	اللو فينتخبه و	and the set of the set of	والترجير التنابع محمد ومحال	فأدراه أنار والحارية فتلاصح والد	ويعدين أنصب	na jezątkosti literati	ini dalar sasiliyor, dati dala	in the second	nan an			Freq Offset 0 Hz
												0 112
-70.0												Scale Type
Start									Stop 8	24.0 MHz	Log	Lin
	BW 1	00 kHz		#VBW	/ 300 kHz		S		38.11 ms (′	15881 pts)		
MSG								STA	lus			





Plot 7-16. Conducted Spurious Plot (Cellular GPRS Mode - High Channel)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 20 of 07
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	ectrum Analyzer - Sv										
LXU RL	RF 50 S	AC (CORREC	SEI	NSE:INT	#Avg Typ	ALIGN AUTO e: RMS	TRA	M Apr 23, 2020 CE 1 2 3 4 5 6	Frequer	ncy
10 dB/div	Ref 10.00		PNO: Fast 🕞 IFGain:Low	Trig: Free #Atten: 3			MI	۲۲ ۵ د r1 6.16	7 0 GHz 02 dBm	Auto	Tune
Log										Cente 5.5000000	
-10.0						 			DL1 -13.00 dBm	Star 1.0000000	t Freq 00 GHz
-30.0	n hai ni ki ni				adara dina a	n - milion (byggionago		in an free the first second	a na an	Sto 10.0000000	p Freq 00 GHz
-50.0										00.0000 900.0000 <u>Auto</u>	Step 00 MHz Man
-70.0										Freq	Offset 0 Hz
-80.0											е Туре
Start 1.00 #Res BW			#VBW	/ 3.0 MHz		s	weep 15	Stop 10 6.60 ms (*).000 GHz 18001 pts)	Log	Lin
MSG							STATUS				

Plot 7-17. Conducted Spurious Plot (Cellular GPRS Mode - High Channel)

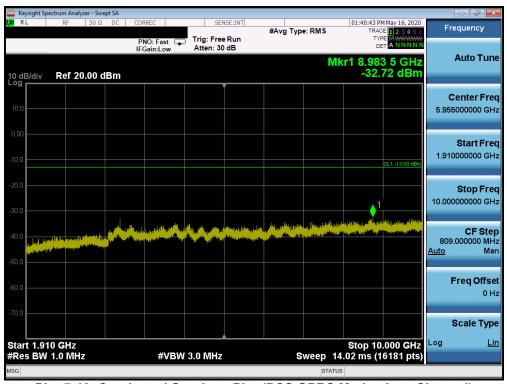
FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dego 21 of 07
1M2004170066-02.A3L	4/17 - 6/12/2020	Portable Handset		Page 21 of 97
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PCS GPRS Mode

Keysight Spectrum Ar						
K RL RF	50 Ω DC		SENSE:INT	#Avg Type: RMS	01:40:18 PM May 16, 2020 TRACE 1 2 3 4 5 6 TYPE M WWWWW	Frequency
		PNO: Fast G IFGain:Low	Atten: 30 dB	M	TYPE NWWW DET ANNUNN	Auto Tun
0 dB/div Ref	20.00 dBm				-40.90 dBm	
10.0						Center Fre 937.500000 M⊦
10.0					DL1 -13.00 dBm	Start Fre 30.000000 M⊦
20.0						Stop Fre 1.845000000 GF
	in an in the state of the second s		yadaadhabodoonoontartahaan	add the second or bird out a substrain show	a na state	CF Ste 181.500000 MH <u>Auto</u> Ma
50.0						Freq Offs 0 I
70.0						Scale Typ
tart 0.0300 GH Res BW 1.0 M		#VB\	V 3.0 MHz	Sweep	Stop 1.8450 GHz 2.420 ms (3631 pts)	Log <u>L</u>
SG				STAT	US	

Plot 7-18. Conducted Spurious Plot (PCS GPRS Mode - Low Channel)



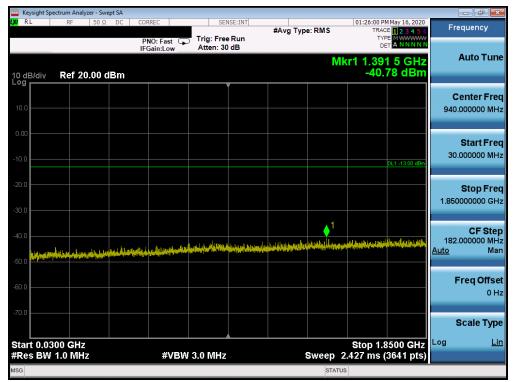
Plot 7-19. Conducted Spurious Plot (PCS GPRS Mode - Low Channel)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 22 of 97
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	ım Analyzer - Swep									
X/RL	RF 50 Ω		REC			#Avg Type	RMS	01:40:53 PM May 16, 20 TRACE 1 2 3 4 TYPE M MAANA	56 Fr	equency
		PI IFC	NO: Fast 📮 Gain:Low	Atten: 20						A
10 dB/div R	tef 10.00 dl	Bm					Mkı	1 19.676 5 GI -39.02 dB	12	Auto Tune
									c	enter Free
0.00									15.000	0000000 GH
-10.0								DL1 -13.00 (Bm	Start Free
-20.0									10.000	0000000 GH
-30.0										Stop Free
-40.0									20.000	0000000 GH
AL MARKED	an gharlaghaing an Agus	NAME AND A DESCRIPTION	A STREET OF THE		indi parti per	lan Prosternalishan ea na teantaire	landaran birtak Junia karangan birtak	a langa kana data kang bahar kang pana data kang Pana kana kang bahar pana kang pana data kang Pana kang bahar pana data kang bahar pana kana kana kana kana kang		CF Ste
			Addies and a second						1.000 <u>Auto</u>	0000000 GH Ma
-60.0										
-70.0										F req Offse 0 H
-80.0										Scale Typ
Start 10.000 #Res BW 1.0			#VBW	/ 3.0 MHz		S	weep 17	Stop 20.000 GI 7.33 ms (20001 p	lz ^{Log} (s)	Li
ISG							STATU	3		

Plot 7-20. Conducted Spurious Plot (PCS GPRS Mode - Low Channel)



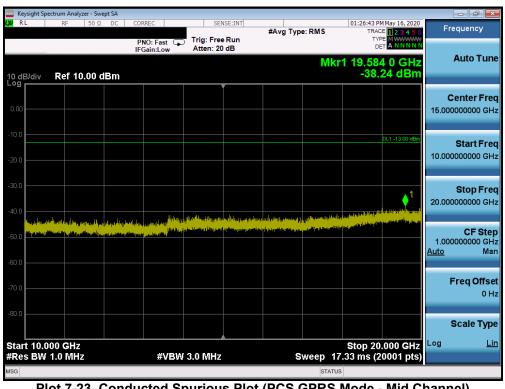
Plot 7-21. Conducted Spurious Plot (PCS GPRS Mode - Mid Channel)

FCC ID: A3LSMN986W	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 22 of 07
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	pectrum Analyzer - Swep										J X
LX/ RL	RF 50 Ω	DC COF	RREC		ISE:INT	#Avg Typ	e: RMS	TRAC	M May 16, 2020	Frequen	су
10 dB/div	Ref 20.00 dl	IFO	NO: Fast 🕞 Gain:Low	Trig: Free Atten: 30			M	⊳ (r1 8.58	8 5 GHz 08 dBm	Auto	Tune
10.0										Center 5.95500000	
-10.0									DL1 -13.00 dBm	Start 1.91000000	t Freq 00 GHz
-20.0								↓ 1	ardr terr	Stop 10.00000000) Freq 00 GHz
-40.0	and the second				^{d Dis} tant (₁₉₁₀ m) ^{dist} enç Distança (e				d this particular sources	CF 809.00000 <u>Auto</u>	Step 00 MHz Man
-60.0										Freq 0	Offset 0 Hz
-70.0 Start 1.9	10 GHz							Stop 10	.000 GHz	Scale	Type <u>Lin</u>
	1.0 MHz		#VBW	3.0 MHz		s	weep 14	.02 ms (1	6181 pts)		
MSG							STATUS	3			

Plot 7-22. Conducted Spurious Plot (PCS GPRS Mode - Mid Channel)



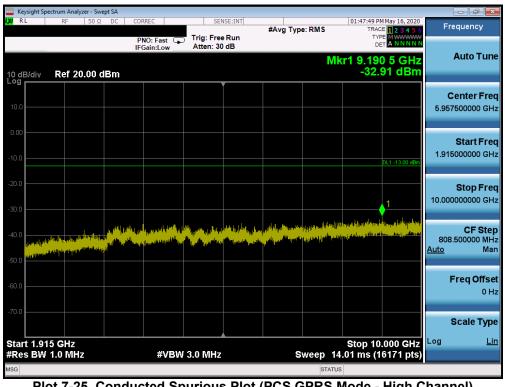
Plot 7-23. Conducted Spurious Plot (PCS GPRS Mode - Mid Channel)

FCC ID: A3LSMN986W	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 24 of 97
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Keysight Spectrum Analyzer - Swept SA				
LXX RL RF 50Ω DC		SE:INT #Avg Type		23456 Frequency
10 dB/div Ref 20.00 dBm	PNO: Fast Trig: Free IFGain:Low Atten: 30		Mkr1 1.772 5 -41.00	GHz Auto Tune
10.0				Center Freq 940.000000 MHz
-10.0			DL1 -	Start Freq 30.000000 MHz
-20.0				Stop Freq 1.85000000 GHz
-40.0	the second se	ng kang kang kang kang kang kang kang ka	iyk selangi itan pateki bali sunda ing panampa ni jah	CF Step 182.00000 MHz Auto Man
-60.0				Freq Offset 0 Hz
Start 0.0300 GHz #Res BW 1.0 MHz			Stop 1.850	0 GHz
	#VBW 3.0 MHz		Sweep 2.427 ms (364	

Plot 7-24. Conducted Spurious Plot (PCS GPRS Mode - High Channel)



Plot 7-25. Conducted Spurious Plot (PCS GPRS Mode - High Channel)

FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 25 of 07
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	pectrum Analyzer - Sw										
I <mark>XI</mark> RL	RF 50 Ω	DC CO	RREC	SEN	ISE:INT	#Avg Typ	e: RMS		MMay 16, 2020	Frequ	ency
10 dB/div	Ref 10.00 (IF	NO: Fast 🕞 Gain:Low	Trig: Free Atten: 20				TYF DE 1 19.56	■ A NNNNN 0 0 GHz 52 dBm	Au	ito Tune
0.00										Cen 15.00000	ter Freq 0000 GHz
-10.0									DL1 -13.00 dBm	St 10.000000	art Freq 0000 GHz
-30.0	ووالفرور ومنافد والمعالية	he strates	<u>144</u> 164		والمعرارين والمعروفات	hand han gebruch and a	Marina Marina Ing	Larin Malan	ישודיז איז דעשיארן	St 20.000000	o p Freq 0000 GHz
	in a stand and	and the second	niprojanjan oj Gondala de Mila Gondala de Mila	arth phillippe and a state	elastrassili ryetyska	padatki siin	and a disciplication of the state of the sta	a ka shi a ka shi k			CF Step 0000 GHz Man
-70.0										Fre	q Offset 0 Hz
-80.0 Start 10.	000 GHz							Stop 20	.000 GHz	Sca Log	ale Type <u>Lin</u>
#Res BW	/ 1.0 MHz		#VBW	3.0 MHz		s	status		0001 pts)		

Plot 7-26. Conducted Spurious Plot (PCS GPRS Mode - High Channel)

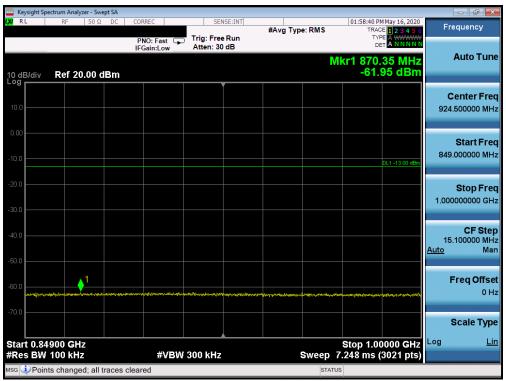
FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage 26 of 07	
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A 2020 DOTEST			V 0 0 00/04/0010	



Cellular CDMA Mode

	ectrum Analyzer - Swep								
X/RL	RF 50 Ω		ORREC		NSE:INT	#Avg Type: RMS	TRA	PM May 16, 2020 CE 1 2 3 4 5 6 (PE A WWWWW	Frequency
			PNO: Fast G	Atten: 3			, L	ANNNN	
10 dB/div	Ref 20.00 dl	Зm					Mkr1 786 -61	.95 MHz .38 dBm	Auto Tun
					Ĭ				Center Fre
10.0									426.500000 MH
0.00									Start Fre
									30.000000 MH
-10.0								DL1 -13.00 dBm	
-20.0									Stop Fre
									823.000000 MH
-30.0									
-40.0									CF Ste
-40.0									79.300000 MH Auto Ma
-50.0									<u>Adto</u> Ma
								1	Freq Offse
-60.0						steret en uit van en rekter en rettereten in bitelen.			0 H
-70.0				a substantia dala substantia dala dala dala dala dala dala dala da	a gana antana antana dia kari				
									Scale Type
Start 30.0	MHz						Ston	323.0 MHz	Log <u>Li</u>
#Res BW			#VBV	V 300 kHz		Sweep	38.06 ms (15861 pts)	
ISG							ATUS		

Plot 7-27. Conducted Spurious Plot (Cellular CDMA Mode - Low Channel)



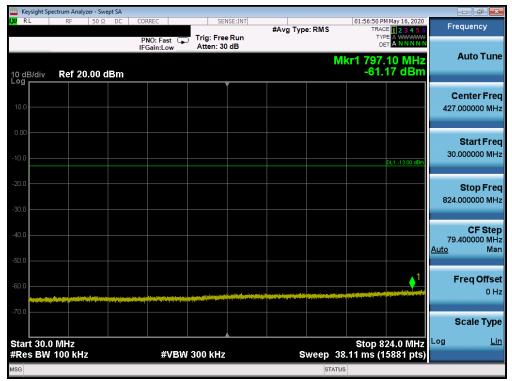
Plot 7-28. Conducted Spurious Plot (Cellular CDMA Mode - Low Channel)

FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dara 27 of 07
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🔤 Keysight Spectrum A	nalyzer - Swept SA					
LXI RL RF	50 Ω DC	CORREC	SENSE:INT	#Avg Type: RMS	01:58:50 PM May 16, 2020 TRACE 1 2 3 4 5 6	Frequency
		PNO: Fast 🕞	Trig: Free Run Atten: 20 dB		TYPE A WWWWW DET A NNNNN	
10 dB/div Ref	10.00 dBm			М	kr1 9.792 0 GHz -50.29 dBm	Auto Tune
0.00						Center Freq 5.50000000 GHz
-10.0					DL1 -13.00 dBm	Start Freq 1.000000000 GHz
-30.0						Stop Fred 10.000000000 GHz
-50.0			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			CF Step 900.000000 MH: Auto Mar
-70.0						Freq Offse 0 H:
-80.0						Scale Type
Start 1.000 GH #Res BW 1.0 M		#VBW	3.0 MHz	Sweep 1	Stop 10.000 GHz 5.60 ms (18001 pts)	Log <u>Lin</u>
wsg 連 Points char	nged; all traces	s cleared		STATU		

Plot 7-29. Conducted Spurious Plot (Cellular CDMA Mode - Low Channel)



Plot 7-30. Conducted Spurious Plot (Cellular CDMA Mode - Mid Channel)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 29 of 07
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	ectrum Analyzer										
LXI RL	RF 5	0Ω DC	CORREC	SEN	SE:INT	#Avg Typ	e: RMS		May 16, 2020	Freque	ncy
			PNO: Fast 🕞 IFGain:Low	Trig: Free Atten: 30				TYF DE kr1 901.	85 MHz	Auto	o Tune
10 dB/div	Ref 20.0	0 dBm						-62.	00 dBm		
10.0										Cente 924.5000	e r Freq 000 MHz
-10.0									DL1 -13.00 dBm	Sta 849.0000	rt Freq 100 MHz
-20.0										Sto 1.0000000	p Freq 000 GHz
-40.0										C 15.1000 <u>Auto</u>	F Step 000 MHz Man
-60.0	จะประเทศจารงารงารงา	ورور مردور المردور الم		ي و در علی و در علی و می و می و	مغوياريدوميدويليا المواهي <u>ا</u>	er-Manualtynamia.cyaba	legen og med er selve af	rpossessessionsbute	antan ana ana ana ana ana ana ana ana an	Freq	Offset 0 Hz
-70.0											е Туре
Start 0.84 #Res BW			#VBW	300 kHz			Sweep 7	Stop 1.00 .248 ms (0000 GHz 3021 pts)	Log	<u>Lin</u>
MSG							STATUS	5			

Plot 7-31. Conducted Spurious Plot (Cellular CDMA Mode - Mid Channel)



Plot 7-32. Conducted Spurious Plot (Cellular CDMA Mode - Mid Channel)

FCC ID: A3LSMN986W	Proud to be part of @ element		SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 20 of 07
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			alyzer - Swe												
LXI RL		RF	50 Ω	DC	CORR	EC		SEN	ISE:INT	#Avg Typ	e: RMS		M May 16, 2020	F	requency
10 dB	3/div	Ref 2	20.00 c	lBm	PNC IFGa):Fast ⊂ iin:Low		g: Free ten: 30			N	7 /kr1 823	.25 MHz .44 dBm		Auto Tune
Log 10.0															Center Freq 7.000000 MHz
0.00 - -10.0 -													DL1 -13.00 dBm	3	Start Freq 0.000000 MHz
-20.0 -30.0														82	Stop Freq 4.000000 MHz
-40.0 -														7 <u>Auto</u>	CF Step 9.400000 MHz Man
-60.0 -															Freq Offset 0 Hz
-70.0															Scale Type
		MHz 100 ki	Hz			#VB	W 300	kHz		ę	Sweep 3	Stop 8 8.11 ms (1	324.0 MHz 15881 pts)	Log	<u>Lin</u>
MSG											STAT	US			

Plot 7-33. Conducted Spurious Plot (Cellular CDMA Mode - High Channel)



Plot 7-34. Conducted Spurious Plot (Cellular CDMA Mode - High Channel)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 20 of 07
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	ectrum Analyzer - Swept S					- 5 🔀
L <mark>XI</mark> RL	RF 50 Ω D	C CORREC	SENSE:INT	#Avg Type: RMS	02:01:20 PM May 16, 2020 TRACE 1 2 3 4 5 6	Frequency
		PNO: Fast 🖵 IFGain:Low	Trig: Free Run #Atten: 30 dB		DET A NNNN	Auto Tune
10 dB/div Log	Ref 20.00 dBi	n			/kr1 9.966 5 GHz -40.19 dBm	
						Center Freq
0.00						5.500000000 GHz
0.00						Start Freq 1.00000000 GHz
-10.0					DL1 -13.00 dBm	1.00000000 GHZ
-20.0						Stop Freq
-30.0						10.000000000 GHz
-40.0					1	CF Step
50.0		and the state	-			900.000000 MHz <u>Auto</u> Man
-50.0						Freq Offset
-60.0						0 Hz
-70.0						
						Scale Type
Start 1.00 #Res BW		#VBW	3.0 MHz	Sweep	Stop 10.000 GHz 15.60 ms (18001 pts)	Log <u>Lin</u>
MSG				STA		

Plot 7-35. Conducted Spurious Plot (Cellular CDMA Mode - High Channel)

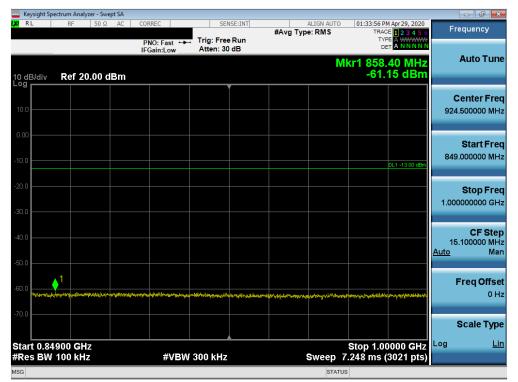
FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element		SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 31 of 07
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Cellular WCDMA Mode

	ectrum Analy											
RL	RF	50 Ω	AC	PNO: F	ast ↔→	Trig: Fre Atten: 3	#Avg Typ	ALIGN AUTO	TRAC	Apr 29, 2020 E 1 2 3 4 5 6 E A WWWWW T A N N N N N	F	requency
dB/div	Ref 2	0.00 di	Bm					Μ	kr1 822. -36.	90 MHz 78 dBm		Auto Tur
0.0												Center Fre
00										DL1 -13.00 dBm	30	Start Fr 0.000000 M
).0).0										1	823	Stop Fr 8.000000 M
).0											79 <u>Auto</u>	CF St 9.300000 M M
							nine of the till get to a the small					Freq Offs 0
tart 30.0									Stop 8	20.0 191112		Scale Ty
Res BW	100 kH	z			#VBW	300 kHz	2	statu	3.06 ms (1	5861 pts)		

Plot 7-36. Conducted Spurious Plot (Cellular WCDMA Mode - Low Channel)

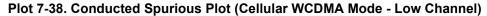


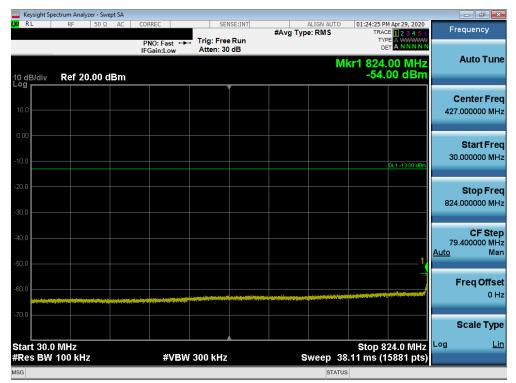
Plot 7-37. Conducted Spurious Plot (Cellular WCDMA Mode - Low Channel)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 22 of 07
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	pectrum Analy											
X/RL	RF	50 Ω	AC	CORREC		SEN	ISE:INT	#Avg Typ	ALIGN AUT		PM Apr 29, 2020 ACE 1 2 3 4 5 6	Frequency
				PNO: F IFGain:	ast ⊶⊷ Low	Trig: Free #Atten: 30				т		
10 dB/div Log	Ref 10	.00 dl	Bm						Ν	/kr1 9.7	58 5 GHz 2.57 dBm	Auto Tu
0.00												Center Fr 5.500000000 G
-10.0											DL1 -13.00 dBm	Otout Fu
-20.0												Start Fr 1.000000000 G
-30.0											.1	Stop Fr 10.000000000 G
-40.0				<u></u>		in the second						CF St
-50.0												900.000000 M <u>Auto</u> M
-70.0												Freq Offs 0
-80.0												Scale Ty
Start 1.0 #Res BW					#\/D\M	3.0 MHz			woon	Stop 1	0.000 GHz	Log <u>j</u>
					#VBVV	3.0 WHZ					(18001 pts)	
MSG									STA	IUS		





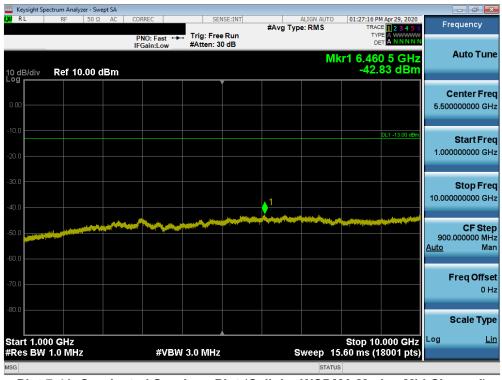
Plot 7-39. Conducted Spurious Plot (Cellular WCDMA Mode - Mid Channel)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 22 of 07
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🔤 Keysight Spectrum Analyzer - Swept SA 👘				
LXU RL RF 50Ω AC	CORREC SENSE:I PNO: Fast ↔ Trig: Free Ru	#Avg Type: RMS	TRACE 1 2 3 4 5 6 TYPE A WWWWW	Frequency
10 dB/div Ref 20.00 dBm	IFGain:Low Atten: 30 dB		DET A NNNNN Mkr1 849.05 MHz -52.59 dBm	Auto Tune
10.0				Center Freq 924.500000 MHz
-10.0			DL1 -13.00 dBm	Start Freq 849.000000 MHz
-20.0				Stop Freq 1.000000000 GHz
-40.0				CF Step 15.100000 MHz <u>Auto</u> Man
-60.0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	arinetikihingalajaaringi ^h titojiningi ⁿ atarinetikinan	เงละที่สุนาร์ทั่งเหมูลสามาร์ที่เรารับการ์ไปเป็นการ์ไม	Freq Offset 0 Hz
-70.0 Start 0.84900 GHz #Res BW 100 kHz	#VBW 300 kHz	Surce	Stop 1.00000 SHZ	Scale Type Log <u>Lin</u>
#Res BW 100 KHz	#VEW JUU KHZ	Sweep	7.248 ms (3021 pts)	

Plot 7-40. Conducted Spurious Plot (Cellular WCDMA Mode - Mid Channel)

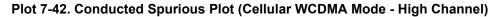


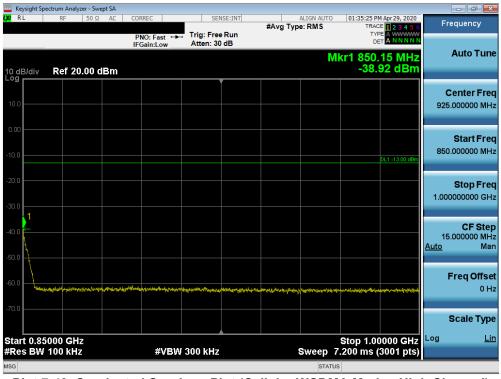
Plot 7-41. Conducted Spurious Plot (Cellular WCDMA Mode - Mid Channel)

FCC ID: A3LSMN986W	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 24 of 07
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Keysight Spe	ectrum Analyzer - Swept SA RF 50 Ω AC	CORREC	SENSE:INT	ALIGN AUTO	01:35:15 PM Apr 29, 2020	
	VL JU 37 AC	PNO: Fast ++ IFGain:Low		#Avg Type: RMS	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	Frequency
10 dB/div Log	Ref 20.00 dBm			Μ	kr1 819.20 MHz -59.42 dBm	Auto Tune
10.0						Center Freq 427.000000 MHz
-10.0					DL1 -13.00 dBm	Start Freq 30.000000 MHz
-20.0						Stop Freq 824.000000 MHz
-40.0						CF Step 79.400000 MHz <u>Auto</u> Man
-60.0		en he placetal se he fit esta de la				Freq Offset 0 Hz
Start 30.0 #Res BW		#VBN	/ 300 kHz	Sweep 3	Stop 824.0 MHz 8.11 ms (15881 pts)	Scale Type Log <u>Lin</u>
MSG				STATU		







FCC ID: A3LSMN986W	Proud to be part of @ element		SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 25 of 07
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	ctrum Analyzer - Swe								- đ	×
LXIRL	RF 50 Ω			SENSE:INT	#Avg Type	ALIGN AUTO e: RMS	TRAC	Apr 29, 2020 1 2 3 4 5 6	Frequency	
40 - 10 - 10 -	Ref 10.00 d	IFGain		g: Free Run ten: 30 dB		Mł	oe (r1 9.986	0 GHz	Auto Tu	ıne
10 dB/div Log	Rel 10.00 d	Bm							Center Fi 5.50000000 G	1
-10.0								DL1 -13.00 dBm	Start Fr 1.000000000 G	
-30.0								1	Stop Fr 10.00000000 G	_
-50.0									CF St 900.000000 M <u>Auto</u> M	
-70.0									Freq Off 0	set Hz
-80.0 Start 1.000 #Res BW 7			#VBW 3.0	MH ₇	8	ween 15	Stop 10. 5.60 ms (1	000 9112	Scale Ty	/pe Lin
MSG	1-9-191112-		700W 3.0			STATUS		sour proj		

Plot 7-44. Conducted Spurious Plot (Cellular WCDMA Mode - High Channel)

FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 26 of 07
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AWS WCDMA Mode

	ectrum Analy												
RL	RF	50 Ω	AC	PNO:	Fast ↔		SENSE:INT	#Avg Typ	ALIGN AUTO	02:08:10 PM A TRACE TYPE DET	Apr 29, 2020 1 2 3 4 5 6 A WWWWW A N N N N N	Frequenc	сy
) dB/div	Ref 2	0.00 d	Bm	IFGain	LOW	Atter	1. 30 0.0		Mk	r1 1.705		Auto	Tur
0.0												Center 867.500000	
0.0										DI	.1 -13.00 dBm	Start 30.000000	
0.0											1	Stop 1.70500000	
0.0										approximation of the standard standard		CF 167.500000 Auto	
).0	radystacie, or ensing	940)98,9692,96 ¹⁶⁴³⁹⁴	ite met fanar fris g		1949-1949-1949-1949-1949-1949-1949-1949							Freq C	Offs 0
tart 0.03										Stop 1.70	00 0112	Scale	Typ L
Res BW	1.0 WIH	Z			#VBW	3.U W	IAZ		Sweep 2	.233 ms (3	351 pts)		

Plot 7-45. Conducted Spurious Plot (AWS WCDMA Mode - Low Channel)

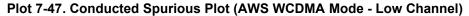


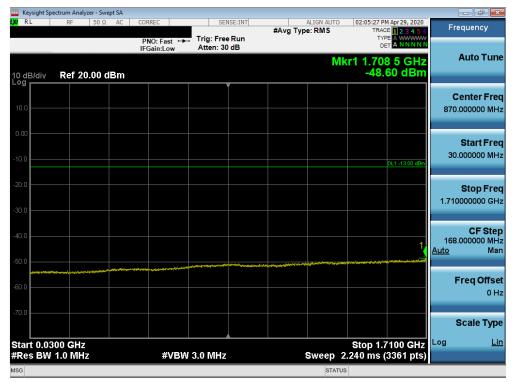
Plot 7-46. Conducted Spurious Plot (AWS WCDMA Mode - Low Channel)

FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dego 27 of 07
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	ctrum Analyz												- 6 -
(RL	RF	50Ω A	AC	CORREC			#Avg Ty	ALIGN AU pe: RMS	TO 02:0	8:32 PM Apr 2 TRACE	23456	Fre	quency
				PNO: Fa	ast ⊶⊷ .ow	Atten: 20							Auto Tun
0 dB/div	Ref 10	.00 dBi	m					N	lkr1 18	.297 5 44.11	GHz dBm		
												C	enter Fre
0.00												15.000	000000 GH
10.0										DL1 -	13.00 dBm		Start Fre
20.0													000000 GH
30.0													Stop Fre
40.0									1			20.000	000000 GH
50.0													CF Ste
		A., "										1.000 <u>Auto</u>	000000 GH Ma
.0.0												-	req Offs
70.0												F	01
30.0													
												S	cale Typ
tart 10.0 Res BW				4	#\/D\\/	3.0 MHz		woon	Sto	p 20.000) GHz	Log	L
				+	FVEVV	3.0 WHZ			25.33 m	15 (2000	n pisj		





Plot 7-48. Conducted Spurious Plot (AWS WCDMA Mode - Mid Channel)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 29 of 07
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	ectrum Analyzer - Swept					
LXVI RL	RF 50 Ω	AC CORREC	SENSE:INT	ALIGN AUTO #Avg Type: RMS	02:05:43 PM Apr 29, 2020 TRACE 1 2 3 4 5 6	Frequency
		PNO: Fast ← IFGain:Low	➡ Trig: Free Run Atten: 30 dB			
10 dB/div Log	Ref 20.00 dB	m		MI	(r1 6.894 5 GHz -43.07 dBm	Auto Tune
10.0						Center Freq 5.877500000 GHz
-10.0					DL1 -13.00 dBm	Start Freq 1.755000000 GHz
-20.0						Stop Freq 10.000000000 GHz
-40.0		~~~~~				CF Step 824.500000 MHz <u>Auto</u> Man
-50.0						Freq Offset 0 Hz
-70.0						Scale Type
Start 1.75 #Res BW		#VBI	V 3.0 MHz	Sweep 14	Stop 10.000 GHz .29 ms (16491 pts)	Log <u>Lin</u>
MSG				STATU		

Plot 7-49. Conducted Spurious Plot (AWS WCDMA Mode - Mid Channel)

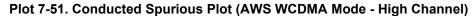


Plot 7-50. Conducted Spurious Plot (AWS WCDMA Mode - Mid Channel)

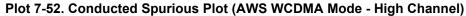
FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 20 of 07
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	ectrum Analyzer - Swept SA						
LXVI RL	RF 50 Ω AC	CORREC	SENSE:INT	#Avg Type: R	VIS TRAC	1 Apr 29, 2020 E 1 2 3 4 5 6	Frequency
		PNO: Fast +++ IFGain:Low	Trig: Free Run Atten: 30 dB		TYP DE		Auto Tune
10 dB/div Log	Ref 20.00 dBm				Mkr1 1.684 -49.1	4 0 GHz 12 dBm	Auto Tune
			Ĭ				Center Freq
10.0							870.000000 MHz
0.00							Start Freq
-10.0						DL1 -13.00 dBm	30.000000 MHz
-20.0							Stop Freq
-30.0							1.710000000 GHz
-40.0							CF Step
						4	168.000000 MHz <u>Auto</u> Man
-50.0	here and the set of the	****	******		nin spela pravjeta i pravla dan ^{na} provinsi dan V		Ereg Offeet
-60.0							Freq Offset 0 Hz
-70.0							Seele Turne
Otort 0.00					Otom 4.7	400.00	Scale Type
Start 0.03 #Res BW		#VBW	3.0 MHz	Swe	stop 1.7 eep 2.240 ms (100 9112	
MSG					STATUS		







FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 40 of 07
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	ectrum Analyzer - Swept	SA				
L <mark>XI</mark> RL	RF 50 Ω	AC CORREC	SENSE:INT	ALIGN AUTO #Avg Type: RMS	02:11:29 PM Apr 29, 2020 TRACE 1 2 3 4 5 6	Frequency
10 dB/div	Ref 10.00 dB	PNO: Fast ↔ IFGain:Low	Trig: Free Run Atten: 20 dB	Mkr	1 18.284 0 GHz -44.07 dBm	Auto Tune
Log						Center Freq 15.000000000 GHz
-10.0					DL1 -13.00 dBm	Start Freq 10.000000000 GHz
-30.0					1	Stop Freq 20.000000000 GHz
-50.0		en hag sit frage of distancy part of starting for the site of the				CF Step 1.000000000 GHz <u>Auto</u> Man
-70.0						Freq Offset 0 Hz
-80.0						Scale Type
Start 10.0 #Res BW		#VBW	3.0 MHz	Sweep 25	Stop 20.000 GHz 5.33 ms (20001 pts)	Log <u>Lin</u>
MSG				STATUS		

Plot 7-53. Conducted Spurious Plot (AWS WCDMA Mode - High Channel)

FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 41 of 07
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PCS WCDMA Mode

	um Analyzer - Swe	ept SA									
XI RL	RF 50 Ω	AC	CORREC PNO: Fa	ast 🛏	SET	#Avg Typ	ALIGN AUTO e: RMS	TRAC	Apr 29, 2020 E 1 2 3 4 5 6 E A WWWW T A N N N N N	Fr	requency
10 dB/div	Ref 20.00 d	iBm	IFGallit	.ow	Atten: or		M	(r1 1.84)	5 0 GHz 18 dBm		Auto Tune
10.0											Center Freq 7.500000 MHz
-10.0									DL1 -13.00 dBm	30	Start Fred 0.000000 MHz
-20.0									1	1.84	Stop Free 5000000 GH:
-40.0								يې د د د د د د د د د د د د د د د د د د د		181 <u>Auto</u>	CF Stej 1.500000 MH Mar
-60.0	and a second	*****									Freq Offse 0 H:
-70.0 Start 0.0300								Stop 1.8	3450 GHz	Log	Scale Type <u>Lir</u>
#Res BW 1.	UWIHZ		#	VEW	3.0 MHz		Sweep 2		3631 pts)		

Plot 7-54. Conducted Spurious Plot (PCS WCDMA Mode - Low Channel)

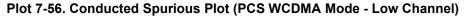


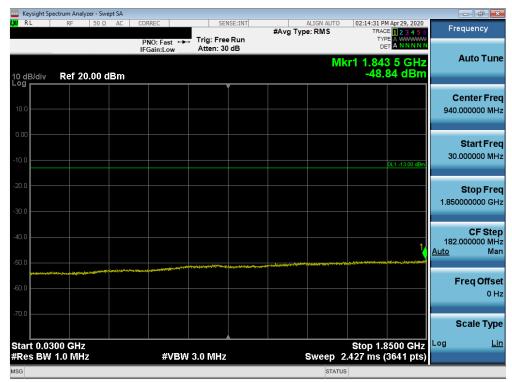
Plot 7-55. Conducted Spurious Plot (PCS WCDMA Mode - Low Channel)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 42 of 07
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	ectrum Analyze											-	
X RL	RF	50 Ω	AC	CORREC		SEN	ISE:INT	#Avg Typ	ALIGN AUT		19 PM Apr 29, 2020	Freq	uency
				PNO: Fa IFGain:L	ow	Trig: Free Atten: 20							
10 dB/div Log	Ref 10.	00 dB	m						Μ	kr1 17. -4	506 5 GHz 4.10 dBm	A	uto Tune
0.00													n ter Freq 00000 GHz
-10.0											DL1 -13.00 dBm		tort Erog
-20.0													tart Freq
-30.0													top Freq
-40.0												20.00000	00000 GHz
50.0													CF Step
-50.0												1.00000 <u>Auto</u>	00000 GHz Mar
-70.0												Fre	e q Offse 0 Ha
-80.0													ele Tress
													ale Type
Start 10.0 #Res BW		_	_	_4	AV/D14/	3.0 MHz			woon	Stop	20.000 GHz (20001 pts)	Log	<u>Lin</u>
	1.0 19162			#	ADM	3.0 WHZ					(20001 pts)		
ASG									ST/	TUS			





Plot 7-57. Conducted Spurious Plot (PCS WCDMA Mode - Mid Channel)

FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 42 of 07
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	pectrum Analyzer - Swep									- đ
L <mark>XU</mark> RL	RF 50 Ω	AC COF	REC	SEN	SE:INT	#Avg Typ	ALIGN AUTO e: RMS	TRAC	M Apr 29, 2020	Frequency
	-		NO: Fast 🔸 Gain:Low	. Trig: Free Atten: 30			MI	TYF DE	2 5 GHz	Auto Tun
10 dB/div	Ref 20.00 d	Bm						-42.	31 dBm	
										Center Fre
10.0										5.955000000 GH
0.00										Start Fre
-10.0									DL1 -13.00 dBm	1.91000000 GH
-20.0										Stop Fre 10.000000000 GH
-30.0										10.000000000000
-40.0									1	CF Ste
-50.0		~~~~								809.000000 MH <u>Auto</u> Ma
										Freq Offse
-60.0										0 H
-70.0										
										Scale Typ
Start 1.9			-40 (E) 14					Stop 10	.000 0112	Log <u>Li</u>
#Res BW	/ 1.0 MHz		#VBW	3.0 MHz		s	STATUS		6181 pts)	
Mod							STATUS			

Plot 7-58. Conducted Spurious Plot (PCS WCDMA Mode - Mid Channel)



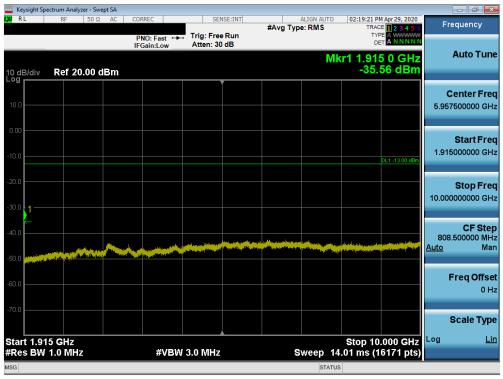
Plot 7-59. Conducted Spurious Plot (PCS WCDMA Mode - Mid Channel)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 44 of 07
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	ectrum Analyzer - Swept SA					
L <mark>XI</mark> RL	RF 50 Ω AC	CORREC	SENSE:INT	ALIGN AUTO #Avg Type: RMS	02:19:13 PM Apr 29, 2020 TRACE 1 2 3 4 5 6	Frequency
		PNO: Fast ++- IFGain:Low	Trig: Free Run Atten: 30 dB		DET A NNNN	
10 dB/div Log	Ref 20.00 dBm			Μ	kr1 1.838 5 GHz -48.93 dBm	Auto Tune
10.0						Center Freq 940.000000 MHz
0.00						Start Freq
-10.0					DL1 -13.00 dBm	30.000000 MHz
-20.0						Stop Freq 1.85000000 GHz
-40.0						CF Step 182.000000 MHz
-50.0	New construction of the second se		ny try water of the state of the	hand a second and the		<u>Auto</u> Man
-60.0						Freq Offset 0 Hz
-70.0						Scale Type
Start 0.03 #Res BW		#VBW	3.0 MHz	Sweep	Stop 1.8500 GHz 2.427 ms (3641 pts)	Log <u>Lin</u>
MSG				STATI	JS	

Plot 7-60. Conducted Spurious Plot (PCS WCDMA Mode - High Channel)



Plot 7-61. Conducted Spurious Plot (PCS WCDMA Mode - High Channel)

FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dego 45 of 07
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	ctrum Analyzer - Swept SA	4				
LXIRL	RF 50 Ω A	C CORREC	SENSE:INT	ALIGN AUTO #Avg Type: RMS	02:19:30 PM Apr 29, 2020 TRACE 1 2 3 4 5 6	Frequency
10 dB/div Log	Ref 10.00 dBr	PNO: Fast ↔ IFGain:Low	Trig: Free Run Atten: 20 dB	Mkr	1 18.280 0 GHz -43.34 dBm	Auto Tune
0.00						Center Freq 15.00000000 GHz
-10.0					DL1 -13.00 dBm	Start Freq 10.00000000 GHz
-30.0					1	Stop Freq 20.000000000 GHz
-50.0						CF Step 1.000000000 GHz <u>Auto</u> Man
-70.0						Freq Offset 0 Hz
-80.0 Start 10.00	00 GHz				Stop 20.000 GHz	Scale Type
#Res BW		#VBW	3.0 MHz	Sweep 25	.33 ms (20001 pts)	
MSG				STATUS	5	

Plot 7-62. Conducted Spurious Plot (PCS WCDMA Mode - High Channel)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 46 of 07
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7.4 Band Edge Emissions at Antenna Terminal

Test Overview

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 and stop frequency were set such that the band edge would be placed in the center of the plot
- 2. Span was set large enough so as to capture all out of band emissions near the band edge
- 3. RBW \geq 1% of the emission bandwidth
- 4. VBW <u>></u> 3 x RBW
- 5. Detector = RMS
- 6. Number of sweep points $\geq 2 \times \text{Span/RBW}$
- 7. Trace mode = trace average for continuous emissions, max hold for pulse emissions
- 8. Sweep time = auto couple
- 9. 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

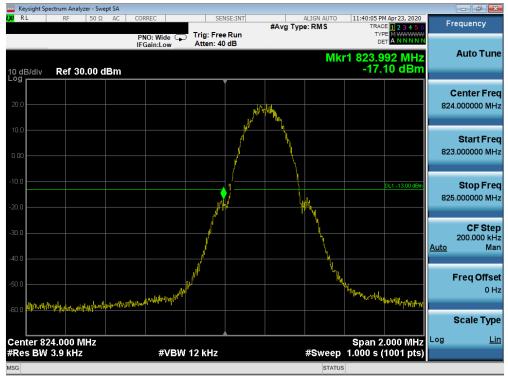
Test Notes

Per 22.917(b), 24.238(b), 27.53(h)(3), and RSS-132(5.5), RSS-133(6.5), RSS-139(6.5), 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 to demonstrate compliance with the out-of-band emissions limit. 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.

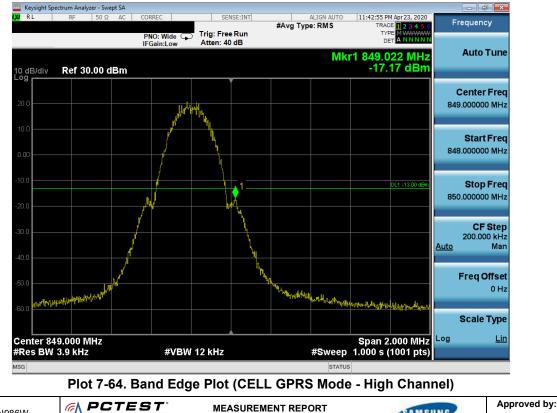
FCC ID: A3LSMN986W	Proud to be part of @ element		SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 47 of 07
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Cellular GPRS Mode



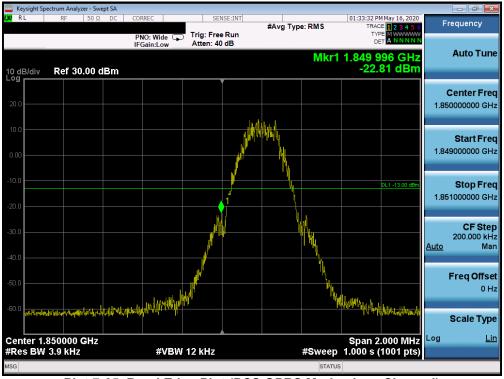
Plot 7-63. Band Edge Plot (CELL GPRS Mode - Low Channel)



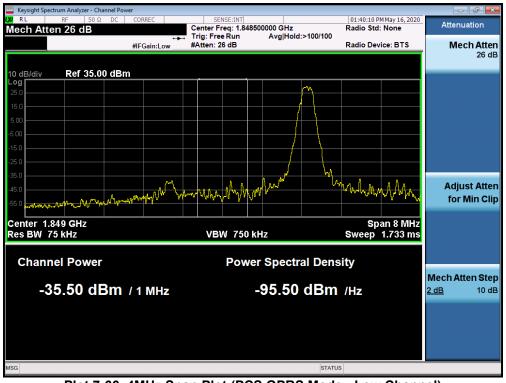
FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 49 of 07
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PCS GPRS Mode



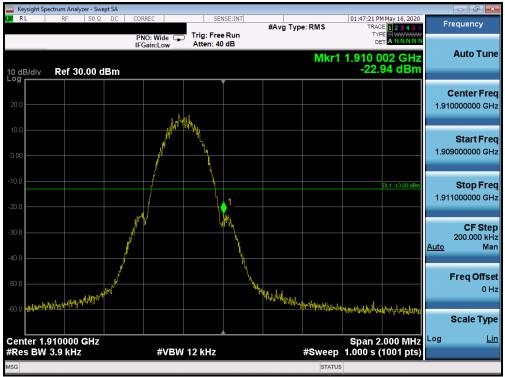
Plot 7-65. Band Edge Plot (PCS GPRS Mode - Low Channel)



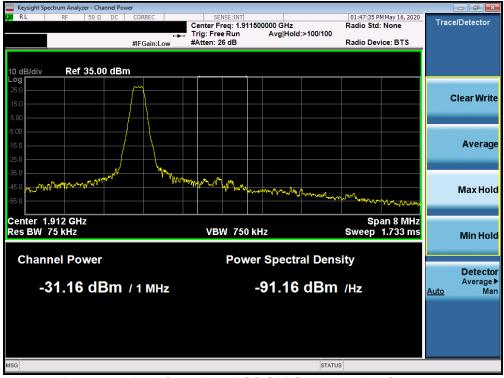
Plot 7-66. 4MHz Span Plot (PCS GPRS Mode - Low Channel)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 40 of 07
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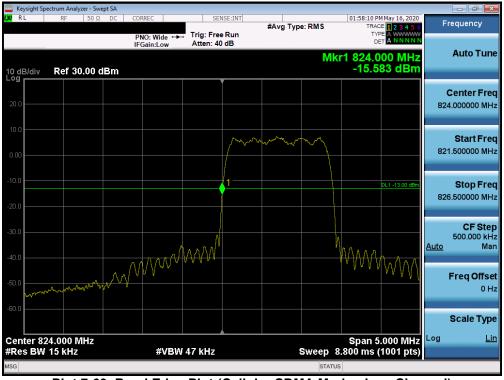


Plot 7-68. 4MHz Span Plot (PCS GPRS Mode - High Channel)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 50 of 07
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Cellular CDMA Mode



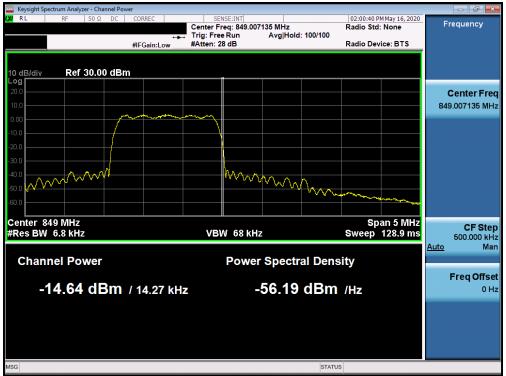
Plot 7-69. Band Edge Plot (Cellular CDMA Mode - Low Channel)



Plot 7-70. 4MHz Span Plot (Cellular CDMA Mode - Low Channel)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 51 of 97
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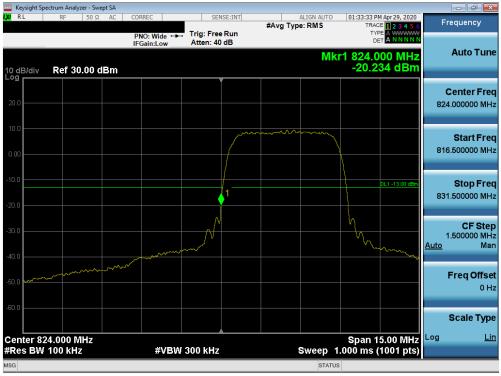


Plot 7-72. 4MHz Span Plot (Cellular CDMA Mode - High Channel)

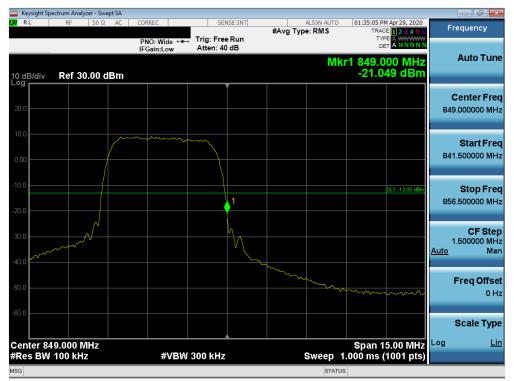
FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dogo 52 of 07	
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Cellular WCDMA Mode



Plot 7-73. Band Edge Plot (Cellular WCDMA Mode - Low Channel)



Plot 7-74. Band Edge Plot (Cellular WCDMA Mode - High Channel)

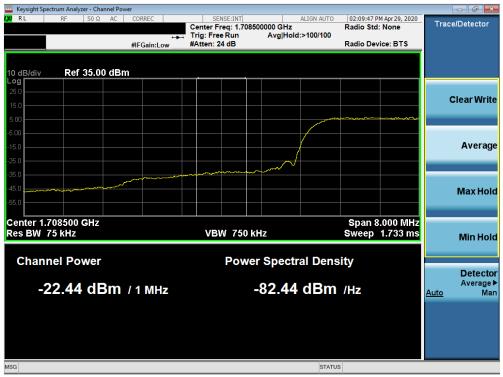
FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 53 of 97
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AWS WCDMA Mode



Plot 7-75. Band Edge Plot (AWS WCDMA Mode - Low Channel)



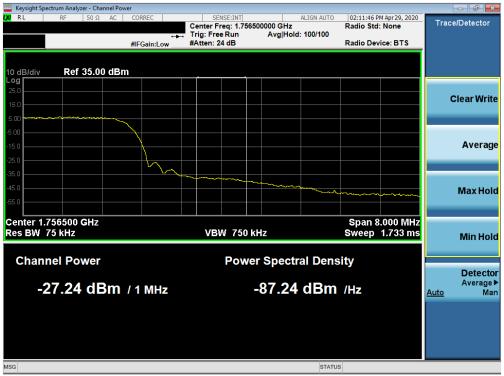
Plot 7-76. 4MHz Span Plot (AWS WCDMA Mode - Low Channel)

FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 54 of 07	
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R L	RF 50		CORREC	_	CE1	SE:INT		ALIGN AUTO	02:11:04 D	M Apr 29, 2020		
KL	KF 50	SZ AC		lide ↔ _ow		Run	#Avg Ty	pe: RMS	TRAC	M Apr 29, 2020 CE 1 2 3 4 5 6 PE A WWWW ET A N N N N N		quency
) dB/div	Ref 30.00	dBm						Mkr1	1.755 (-21.3	000 GHz 73 dBm		Auto Tur
0.0												enter Fre
0.0		\bigwedge		·	\sim							Start Fre
0.0						1				DL1 -13.00 dBm		Stop Fr 500000 G
0.0						h	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				1.8 <u>Auto</u>	CF Ste 500000 MI M
0.0										~~~~	F	r eq Offs 0
												cale Ty
	755000 GH 100 kHz	Z		#VBW	300 kHz			Sweep 1		5.00 MHz (1001 pts)	Log	L
G								STATUS				_



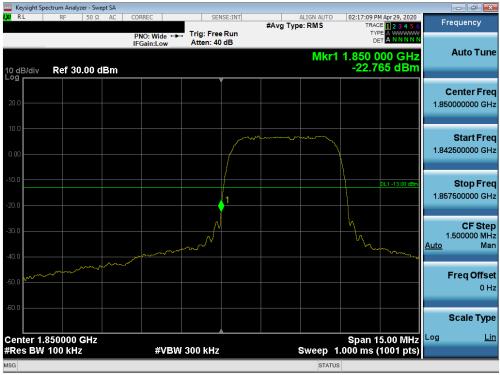


Plot 7-78. 4MHz Span Plot (AWS WCDMA Mode - High Channel)

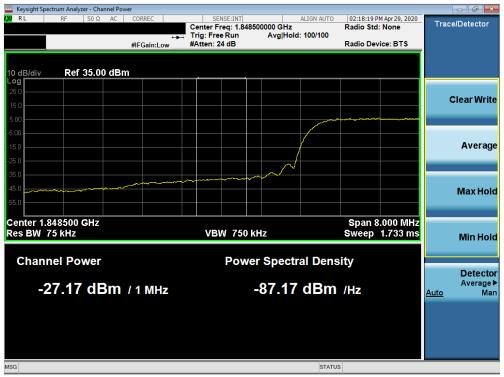
FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 55 of 07
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PCS WCDMA Mode



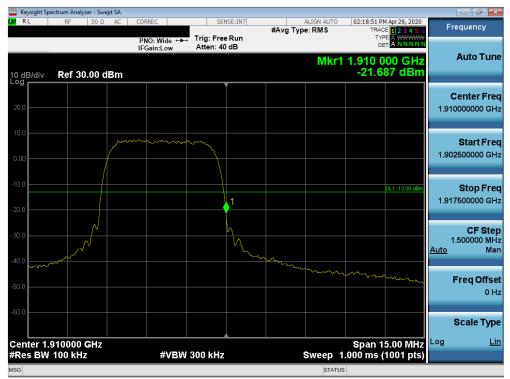
Plot 7-79. Band Edge Plot (PCS WCDMA Mode - Low Channel)



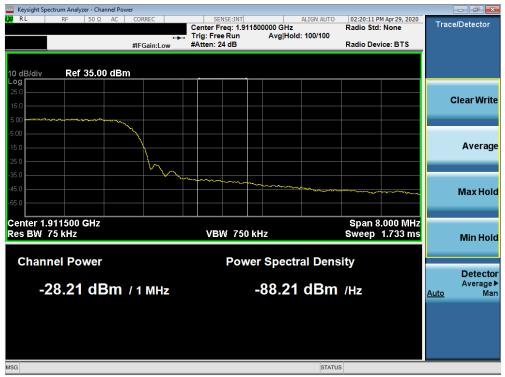
Plot 7-80. 4MHz Span Plot (PCS WCDMA Mode - Low Channel)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dege EC of 07	
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Plot 7-82. 4MHz Span Plot (PCS WCDMA Mode - High Channel)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 57 of 07
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7.5 Peak-Average Ratio

Test Overview

A peak to average ratio measurement is performed at the conducted port of the EUT. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

Test Procedure Used

KDB 971168 D01 v03r01 - Section 5.7.1

Test Settings

- 1. The signal analyzer's CCDF measurement profile is enabled
- 2. Frequency = carrier center frequency
- 3. Measurement BW > Emission bandwidth of signal
- 4. The signal analyzer was set to collect one million samples to generate the CCDF curve
- 5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power

Test Setup

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



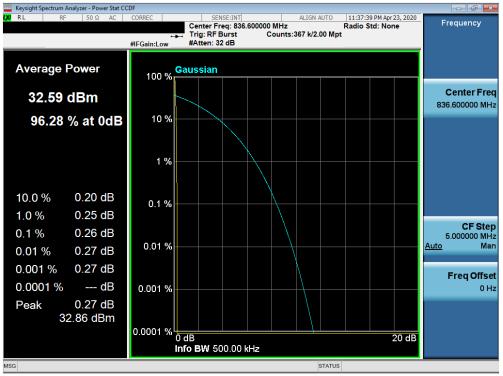
Figure 7-4. Test Instrument & Measurement Setup

Test Notes

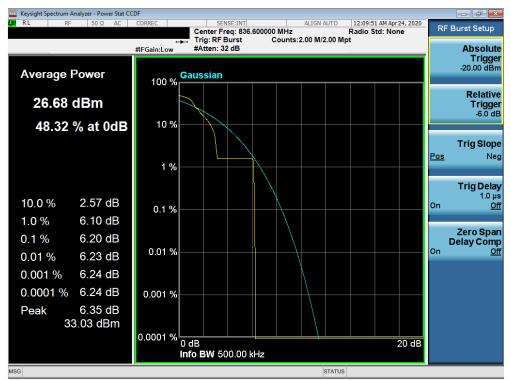
None

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 59 of 07
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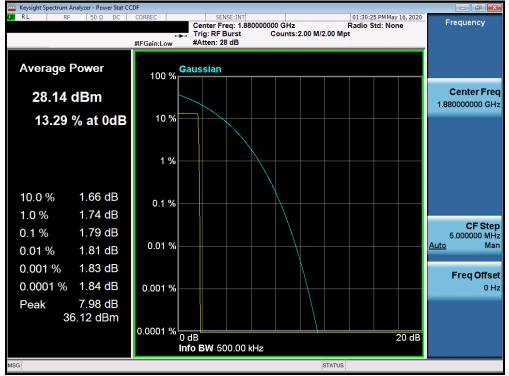
Plot 7-83. Peak-Average Ratio Plot (Cellular GPRS Mode)



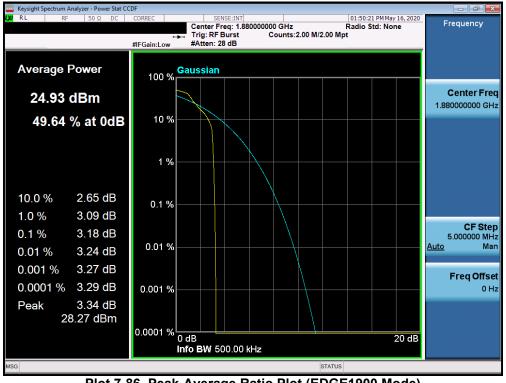
Plot 7-84. Peak-Average Ratio Plot (EDGE850 Mode)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 50 of 07
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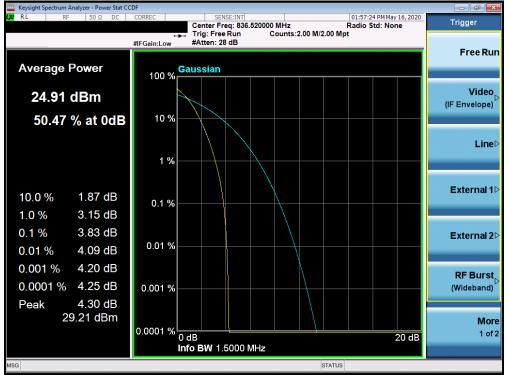




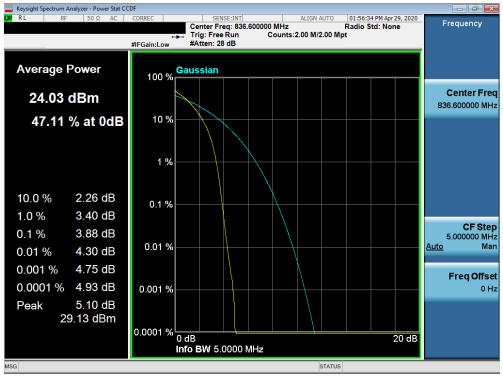
Plot 7-86. Peak-Average Ratio Plot (EDGE1900 Mode)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 60 af 07
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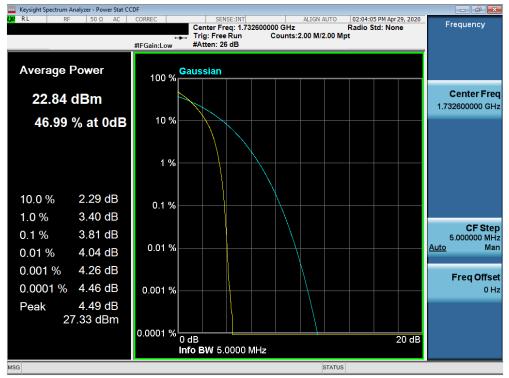




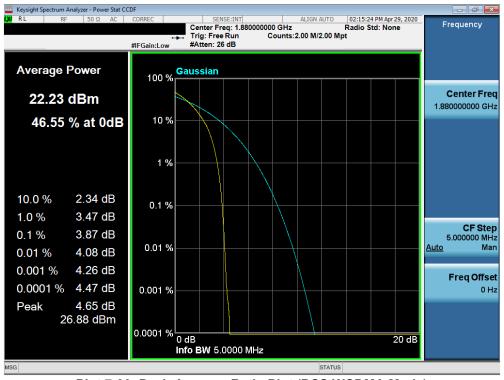
Plot 7-88. Peak-Average Ratio Plot (Cellular WCDMA Mode)

FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dava 04 af 07	
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Plot 7-90. Peak-Average Ratio Plot (PCS WCDMA Mode)

FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element		SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 62 of 07
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7.6 Radiated Power (ERP/EIRP)

Test Overview

Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized tuned broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v03r01 - Section 5.2.1

ANSI/TIA-603-E-2016 - Section 2.2.17

Test Settings

- Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation. For signals with burst transmission, the signal analyzer's "time domain power" measurement capability is used
- 2. RBW = 1 5% of the expected OBW, not to exceed 1MHz
- 3. VBW \geq 3 x RBW
- 4. Span = 1.5 times the OBW
- 5. No. of sweep points > 2 x span / RBW
- 6. Detector = RMS
- 7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto". Trigger is set to enable triggering only on full power bursts with the sweep time set less than or equal to the transmission burst duration
- 8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation. For signals with burst transmission, the "gating" function was enabled to ensure that measurements are performed during times in which the transmitter is operating at its maximum power
- 9. Trace mode = trace averaging (RMS) over 100 sweeps
- 10. The trace was allowed to stabilize

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
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Test Setup



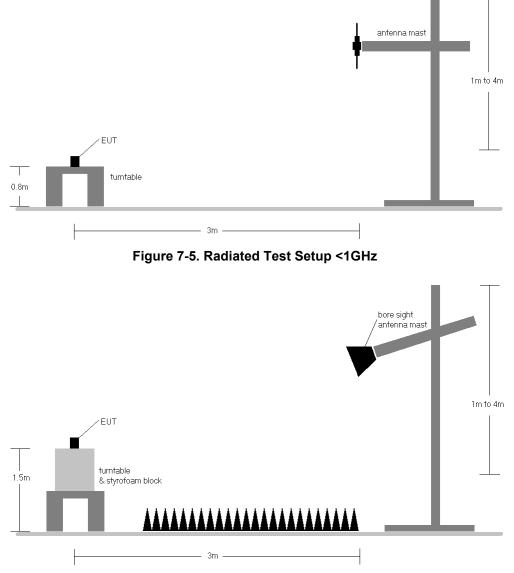


Figure 7-6. Radiated Test Setup >1GHz

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Test Notes

- 1) This device employs GSM, GPRS, and EDGE capabilities. The EUT was tested under all configurations and the highest power is reported in GPRS mode while transmitting with one slot active.
- 2) This device employs UMTS technology with WCDMA (AMR/RMC) and HSDPA capabilities. The EUT was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1."
- 3) For CDMA, this device was tested under all RC and SO combinations and the worst case is reported with RC3/SO55 with "All Up" power control bits.
- 4) This device was tested under all RC and SO combinations and the worst case is reported with RC3/SO55 with "All Up" power control bits.
- 5) This unit was tested with its standard battery.
- 6) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case setup is reported in the tables below.

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
824.20	GPRS850	V	158	117	21.96	6.75	26.56	0.453	38.45	-11.89	28.71	0.743	40.61	-11.90
836.60	GPRS850	V	102	75	19.73	6.68	24.26	0.267	38.45	-14.19	26.41	0.437	40.61	-14.20
848.80	GPRS850	V	151	119	22.80	6.71	27.36	0.544	38.45	-11.10	29.51	0.892	40.61	-11.10
848.80	GPRS850	н	277	169	20.91	6.71	25.47	0.352	38.45	-12.99	27.62	0.577	40.61	-12.99
848.80	EDGE850	V	151	119	18.72	6.71	23.28	0.213	38.45	-15.18	25.43	0.349	40.61	-15.18
848.80	GPRS850 (WCP)	V	111	149	19.52	6.71	24.08	0.256	38.45	-14.38	26.23	0.419	40.61	-14.38

Table 7-2. ERP/EIRP (Cellular GPRS)

FCC ID: A3LSMN986W	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
824.70	CDMA850	V	143	108	15.66	6.36	19.87	0.097	38.45	-18.59	22.02	0.159	40.61	-18.59
836.52	CDMA850	V	143	118	14.80	6.38	19.03	0.080	38.45	-19.42	21.18	0.131	40.61	-19.43
848.31	CDMA850	V	151	115	14.00	6.50	18.35	0.068	38.45	-20.10	20.50	0.112	40.61	-20.11
824.70	CDMA850	Н	101	65	12.06	6.36	16.27	0.042	38.45	-22.19	18.42	0.069	40.61	-22.19
824.70	CDMA850 (WCP)	V	151	129	14.54	6.36	18.75	0.075	38.45	-19.71	20.90	0.123	40.61	-19.71

Table 7-3. ERP/EIRP (Cellular CDMA)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
826.40	WCDMA850	V	154	116	14.40	6.37	18.62	0.073	38.45	-19.83	20.77	0.119	40.61	-19.83
836.60	WCDMA850	V	141	118	14.46	6.38	18.69	0.074	38.45	-19.76	20.84	0.121	40.61	-19.77
846.60	WCDMA850	V	147	119	14.85	6.48	19.18	0.083	38.45	-19.27	21.33	0.136	40.61	-19.27
846.60	WCDMA850	Н	210	88	11.90	6.48	16.23	0.042	38.45	-22.22	18.38	0.069	40.61	-22.22
846.60	WCDMA850 (WCP)	V	156	201	12.87	6.48	17.20	0.053	38.45	-21.25	19.35	0.086	40.61	-21.25

Table 7-4. ERP/EIRP (Cellular WCDMA)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1712.40	WCDMA1700	V	106	352	14.59	9.37	23.96	0.249	30.00	-6.04
1732.60	WCDMA1700	V	100	325	15.79	9.22	25.01	0.317	30.00	-4.99
1752.60	WCDMA1700	V	135	342	14.93	9.11	24.04	0.254	30.00	-5.96
1732.60	WCDMA1700	н	100	352	14.37	9.34	23.71	0.235	30.00	-6.29
1732.60	WCDMA1700 (WCP)	V	138	277	12.81	9.22	22.03	0.160	30.00	-7.97

Table 7-5. EIRP (AWS WCDMA)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1850.20	GPRS1900	V	152	300	18.90	9.90	28.80	0.759	33.01	-4.21
1880.00	GPRS1900	V	166	347	19.48	10.13	29.61	0.915	33.01	-3.40
1909.80	GPRS1900	V	137	264	19.44	10.34	29.78	0.951	33.01	-3.23
1909.80	GPRS1900	Н	254	36	16.67	9.90	26.57	0.454	33.01	-6.44
1909.80	EDGE1900	V	111	314	12.97	9.90	22.87	0.194	33.01	-10.14
1909.80	GPRS1900 (WCP)	V	114	316	18.27	9.90	28.17	0.656	33.01	-4.84

Table 7-6. EIRP (PCS GPRS)

FCC ID: A3LSMN986W	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1852.40	WCDMA1900	V	104	343	14.47	9.92	24.39	0.275	33.01	-8.62
1880.00	WCDMA1900	V	133	263	12.97	10.13	23.10	0.204	33.01	-9.91
1907.60	WCDMA1900	V	148	277	11.51	10.33	21.84	0.153	33.01	-11.17
1852.40	WCDMA1900	н	157	174	14.08	10.13	24.21	0.264	33.01	-8.80
1852.40	WCDMA1900 (WCP)	V	114	214	13.43	9.92	23.35	0.216	33.01	-9.66

Table 7-7. EIRP (PCS WCDMA)

FCC ID: A3LSMN986W	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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7.7 Radiated Spurious Emissions Measurements

Test Overview

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using horizontally and vertically polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as peak measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v03r01 - Section 5.8

ANSI/TIA-603-E-2016 - Section 2.2.12

Test Settings

- 1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
- 2. VBW \geq 3 x RBW
- 3. Span = 1.5 times the OBW
- 4. No. of sweep points > 2 x span / RBW
- 5. Detector = RMS
- 6. Trace mode = Average (Max Hold for pulsed emissions)
- 7. The trace was allowed to stabilize

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Test Setup

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

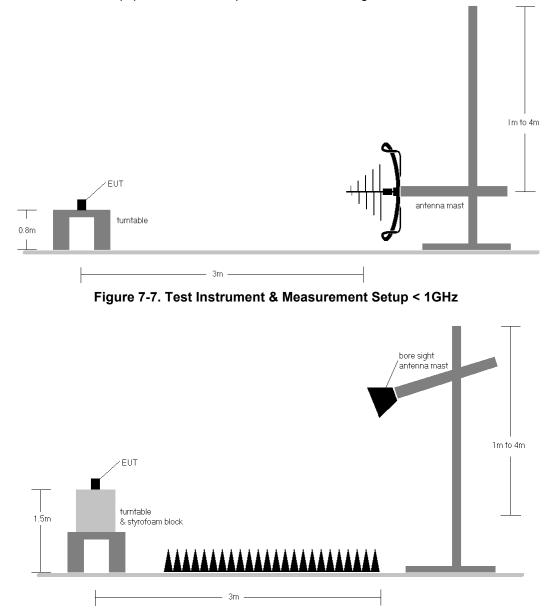


Figure 7-8. Test Instrument & Measurement Setup >1 GHz

Test Notes

- 1) This device employs GSM, GPRS, and EDGE capabilities. The EUT was tested under all configurations and the highest power is reported in GPRS mode while transmitting with one slot active.
- 2) This device employs UMTS technology with WCDMA (AMR/RMC) and HSDPA capabilities. The EUT was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1."

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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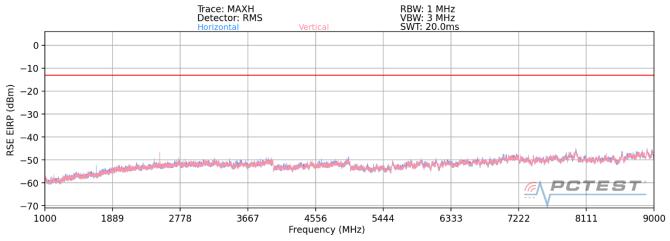


- 3) For CDMA, this device was tested under all RC and SO combinations and the worst case is reported with RC3/SO55 with "All Up" power control bits.
- 4) This unit was tested with its standard battery.
- 5) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case setup is reported in the tables below.
- 6) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 7) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- 8) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

FCC ID: A3LSMN986W	PCTEST [®] Proud to be part of [®] element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Cellular GPRS Mode



Plot 7-91. Radiated Spurious Plot above 1GHz (Cellular GPRS Mode)

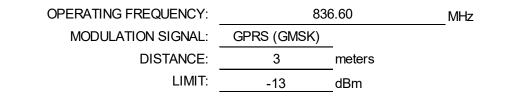
OPERATING FREQUENCY:	824.20		MHz
MODULATION SIGNAL:	GPRS (GMSK)	_	
DISTANCE:	3	meters	
LIMIT:	-13	dBm	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1648.40	V	231	280	-56.65	3.07	-53.58	-40.6
2472.60	V	149	158	-45.27	3.82	-41.45	-28.4
3296.80	V	-	-	-58.65	6.00	-52.65	-39.7
4121.00	V	-	-	-59.31	7.67	-51.64	-38.6

Table 7-8. Radiated Spurious Data (Cellular GPRS Mode – Ch. 128)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.20	V	130	258	-57.51	3.10	-54.41	-41.4
2509.80	V	124	148	-43.62	4.02	-39.60	-26.6
3346.40	V	-	-	-58.47	6.03	-52.44	-39.4
4183.00	V	-	-	-59.38	7.79	-51.59	-38.6

Table 7-9. Radiated Spurious Data (Cellular GPRS Mode – Ch. 190)

848.80

MHz

OPERATING FREQUENCY:

MODULATION SIGNAL

ON SIGNAL:	GPRS (GMSK)	_
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1697.60	V	297	40	-59.16	3.15	-56.01	-43.0
2546.40	V	115	123	-46.46	4.15	-42.31	-29.3
3395.20	V	-	-	-58.34	6.24	-52.10	-39.1
4244.00	V	-	-	-60.90	7.97	-52.92	-39.9

Table 7-10. Radiated Spurious Data (Cellular GPRS Mode – Ch. 251)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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OPERATING FREQUENCY:	84	MHz	
MODULATION SIGNAL:	GPRS (GMSK)		
DISTANCE:	3	meters	
LIMIT:	-13	dBm	

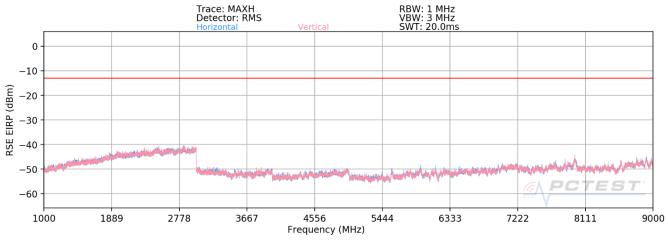
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1697.60	V	-	-	-60.55	3.15	-57.40	-44.4
2546.40	V	-	-	-47.61	4.15	-43.46	-30.5
3395.20	V	-	-	-58.48	6.24	-52.24	-39.2
4244.00	V	-	-	-61.03	7.97	-53.05	-40.1

Table 7-11. Radiated Spurious Data with WCP (Cellular GPRS Mode – Ch. 251)

FCC ID: A3LSMN986W	PCTEST [®] Proud to be part of [®] element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Cellular CDMA Mode



Plot 7-92. Radiated Spurious Plot above 1GHz (Cellular CDMA Mode)

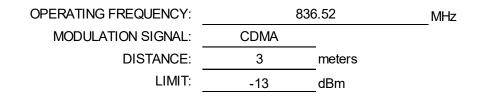
OPERATING FREQUENCY:		24.70	MHz
MODULATION SIGNAL:	CDMA		
DISTANCE:	3	meters	
LIMIT:	-13	dBm	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1649.40	V	-	-	-68.98	3.08	-65.90	-52.9
2474.10	V	116	154	-65.03	3.84	-61.19	-48.2
3298.80	V	-	-	-68.28	6.00	-62.28	-49.3
4123.50	V	-	-	-68.67	7.68	-60.99	-48.0

Table 7-12. Radiated Spurious Data (Cellular CDMA Mode – Ch. 1013)

FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
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Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.04	V	-	-	-68.74	3.10	-65.64	-52.6
2509.56	V	148	150	-64.74	4.02	-60.72	-47.7
3346.08	V	-	-	-67.86	6.03	-61.83	-48.8
4182.60	V	-	-	-68.77	7.79	-60.98	-48.0

Table 7-13. Radiated Spurious Data (Cellular CDMA Mode - Ch. 384)

OPERATING FREQUENCY:

MODULATION S

REQUENCY:	848.31		
ON SIGNAL:	CDMA		
DISTANCE:	3	meters	
LIMIT:	-13	dBm	

MHz

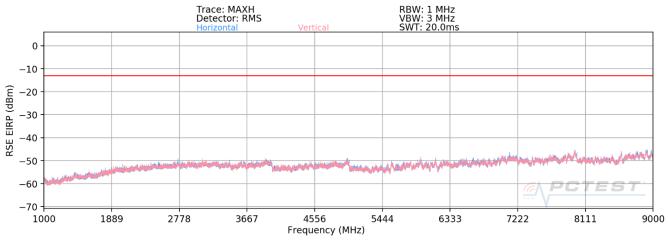
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1696.62	V	-	-	-68.80	3.15	-65.65	-52.6
2544.93	V	101	155	-65.51	4.14	-61.36	-48.4
3393.24	V	-	-	-67.68	6.23	-61.45	-48.5
4241.55	V	-	-	-69.92	7.96	-61.96	-49.0

Table 7-14. Radiated Spurious Data (Cellular CDMA Mode – Ch. 777)

FCC ID: A3LSMN986W	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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Cellular WCDMA Mode



Plot 7-93. Radiated Spurious Plot above 1GHz (Cellular WCDMA Mode)

826.40

MHz

OPERATING FREQUENCY:

MODULATION SIGNAL:	WCDMA	
DISTANCE:	3	meters

LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1652.80	V	-	-	-68.92	3.09	-65.82	-52.8
2479.20	V	-	-	-66.12	3.91	-62.22	-49.2

Table 7-15. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4132)

OPERATING FREQUENCY:836.60MHzMODULATION SIGNAL:WCDMADISTANCE:3LIMIT:-13dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.20	V	-	-	-68.68	3.10	-65.58	-52.6
2509.80	V	-	-	-66.18	4.02	-62.16	-49.2

Table 7-16. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4183)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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OPERATING FREQUENCY:	8	MHz	
MODULATION SIGNAL:	WCDMA		
DISTANCE:	3	meters	
LIMIT:	-13	dBm	

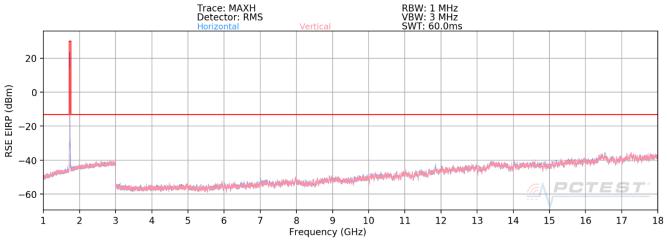
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1693.20	V	-	-	-68.83	3.17	-65.66	-52.7
2539.80	V	-	-	-66.67	4.13	-62.54	-49.5

Table 7-17. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4233)

FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dega 77 of 07	
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AWS WCDMA Mode



Plot 7-94. Radiated Spurious Plot above 1GHz (AWS WCDMA Mode)

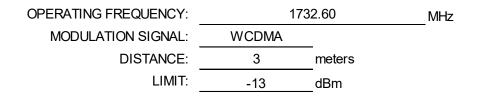
OPERATING FREQUENCY:	171	2.40	MHz
MODULATION SIGNAL:	WCDMA	_	
DISTANCE:	3	meters	
LIMIT:	-13	dBm	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3424.80	Н	-	-	-68.16	6.27	-61.89	-48.9
5137.20	Н	-	-	-70.56	8.94	-61.62	-48.6
6849.60	Н	-	-	-69.04	9.44	-59.59	-46.6

Table 7-18. Radiated Spurious Data (AWS WCDMA Mode – Ch. 1312)

FCC ID: A3LSMN986W	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 79 of 07
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Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3465.20	Н	100	133	-68.85	6.35	-62.49	-49.5
5197.80	Н	-	-	-70.95	9.05	-61.90	-48.9
6930.40	Н	-	-	-70.16	9.38	-60.78	-47.8

Table 7-19. Radiated Spurious Data (AWS WCDMA Mode – Ch. 1413)

OPERATING FREQUENCY:	175	2.60	MHz
MODULATION SIGNAL:	WCDMA		
DISTANCE:	3	meters	
LIMIT:	-13	dBm	

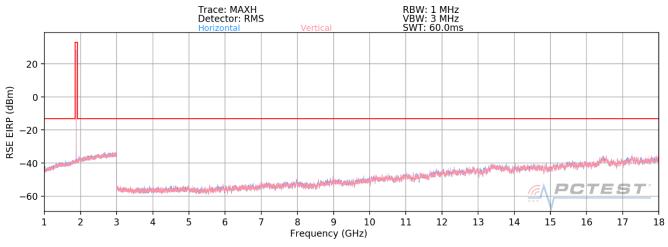
	equency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3	3505.20	Н	109	141	-67.70	6.50	-61.20	-48.2
5	5257.80	Н	-	-	-70.63	8.96	-61.67	-48.7
7	7010.40	Н	-	-	-67.97	9.14	-58.82	-45.8

Table 7-20. Radiated Spurious Data (AWS WCDMA Mode – Ch. 1513)

FCC ID: A3LSMN986W	PCTEST° Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Daga 70 of 07
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PCS GPRS Mode





1850.20

MHz

OPERATING FREQUENCY:

MODULATION SIGNAL:

D

N SIGNAL:	GPRS (GMSK)	_
ISTANCE:	3	meters

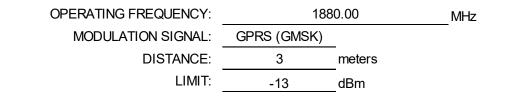
LIMIT: <u>-13</u>dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3700.40	Н	129	153	-55.85	6.89	-48.95	-36.0
5550.60	Н	101	137	-61.62	9.02	-52.60	-39.6
7400.80	Н	-	-	-60.51	9.21	-51.29	-38.3
9251.00	Н	-	-	-59.17	9.45	-49.72	-36.7

Table 7-21. Radiated Spurious Data (PCS GPRS Mode – Ch. 512)

FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 80 of 97
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Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3760.00	Н	114	151	-57.82	6.93	-50.89	-37.9
5640.00	Н	111	145	-60.99	9.15	-51.84	-38.8
7520.00	Н	-	-	-59.68	9.31	-50.37	-37.4
9400.00	Н	-	-	-58.02	9.49	-48.53	-35.5

Table 7-22. Radiated Spurious Data (PCS GPRS Mode - Ch. 661)

OPERATING FREQUENCY:

MODULATION SIGNAL

REQUENCY:	1909.80			
ON SIGNAL:	GPRS (GMSK)			
DISTANCE:	3	meters		
LIMIT:	-13	dBm		

MHz

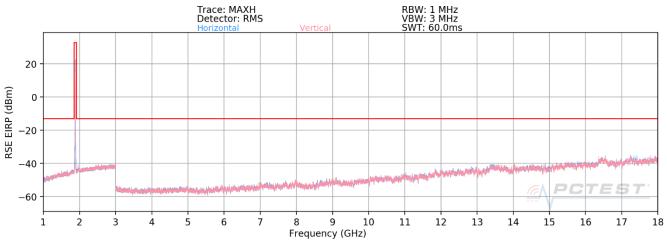
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3819.60	Н	135	163	-58.21	7.11	-51.10	-38.1
5729.40	Н	101	114	-60.54	9.03	-51.51	-38.5
7639.20	Н	-	-	-58.62	9.29	-49.33	-36.3
9549.00	Н	-	-	-57.84	9.43	-48.41	-35.4

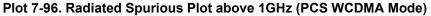
Table 7-23. Radiated Spurious Data (PCS GPRS Mode – Ch. 810)

FCC ID: A3LSMN986W	PCTEST [®] Proud to be part of [®] element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 91 of 07
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PCS WCDMA Mode





OPERATING FREQUENCY:	185	2.40	MHz
MODULATION SIGNAL:	WCDMA	_	
DISTANCE:	3	meters	
LIMIT:	-13	dBm	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3704.80	Н	-	-	-68.43	6.89	-61.54	-48.5
5557.20	Н	-	-	-69.99	9.03	-60.96	-48.0

Table 7-24. Radiated Spurious Data (PCS WCDMA Mode - Ch. 9262)

OPERATING FREQUENCY:1880.00MHzMODULATION SIGNAL:WCDMADISTANCE:3LIMIT:-13dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3760.00	Н	-	-	-69.23	6.93	-62.30	-49.3
5640.00	Н	-	-	-70.80	9.15	-61.65	-48.7

Table 7-25. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9400)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 82 of 97
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OPERATING FREQUENCY:	190	MHz	
MODULATION SIGNAL:	WCDMA		
DISTANCE:	3	meters	
LIMIT:	-13	_dBm	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3815.20	Н	-	-	-68.86	7.09	-61.77	-48.8
5722.80	Н	-	-	-70.01	9.04	-60.98	-48.0

Table 7-26. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9538)

FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Daga 92 of 07
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Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-E-2016. The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

For Part 22, RSS-132, and RSS-133, the frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ (± 2.5 ppm) of the center frequency. For Part 24, Part 27, and RSS-139, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Procedure Used

ANSI/TIA-603-E-2016

Test Settings

- 1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
- 2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
- 3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

<u>Test Setup</u>

The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber.

Test Notes

None

FCC ID: A3LSMN986W	PCTEST [®] Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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OPERATING FREQUENCY:	836,600,000	Hz
CHANNEL:	190	
REFERENCE VOLTAGE:	4.21	VDC
DEVIATION LIMIT:	± 0.00025 % or 2.5 ppm	_

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	- 30	836,600,043	43	0.0000051
100 %		- 20	836,599,692	-308	-0.0000368
100 %		- 10	836,599,979	-21	-0.0000025
100 %		0	836,600,157	157	0.0000188
100 %		+ 10	836,599,681	-319	-0.0000381
100 %		+ 20	836,600,033	33	0.0000039
100 %		+ 30	836,600,441	441	0.0000527
100 %		+ 40	836,600,119	119	0.0000142
100 %		+ 50	836,599,627	-373	-0.0000446
BATT. ENDPOINT	2.84	+ 20	836,599,976	-24	-0.0000029

Table 7-27. Frequency Stability Data (Cellular GPRS Mode – Ch. 190)

FCC ID: A3LSMN986W	PCTEST [®] Proud to be part of [®] element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Degre 95 of 07
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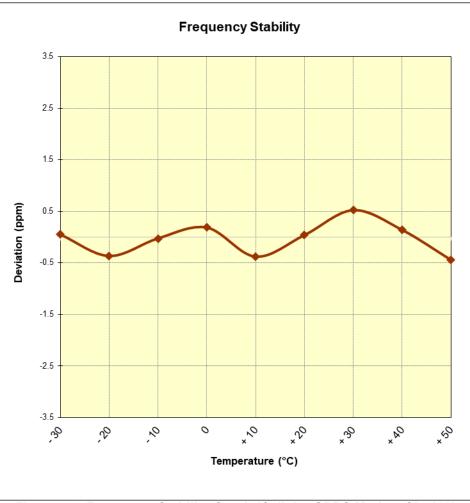


Figure 7-9. Frequency Stability Graph (Cellular GPRS Mode – Ch. 190)

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 96 of 07
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OPERATING FREQUENCY:	836,520,000	Hz
CHANNEL:	384	
REFERENCE VOLTAGE:	4.21	VDC
DEVIATION LIMIT:	± 0.00025 % or 2.5 ppm	-

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	- 30	836,519,883	-117	-0.0000140
100 %		- 20	836,519,964	-36	-0.0000043
100 %		- 10	836,519,921	-79	-0.0000094
100 %		0	836,520,150	150	0.0000179
100 %		+ 10	836,520,238	238	0.0000285
100 %		+ 20	836,519,711	-289	-0.0000345
100 %		+ 30	836,520,000	0	0.0000000
100 %		+ 40	836,519,841	-159	-0.0000190
100 %		+ 50	836,519,835	-165	-0.0000197
BATT. ENDPOINT	2.84	+ 20	836,520,084	84	0.0000100

Table 7-28. Frequency Stability Data (Cellular CDMA Mode – Ch. 384)

FCC ID: A3LSMN986W	PCTEST [®] Proud to be part of [®] element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dere 97 of 07
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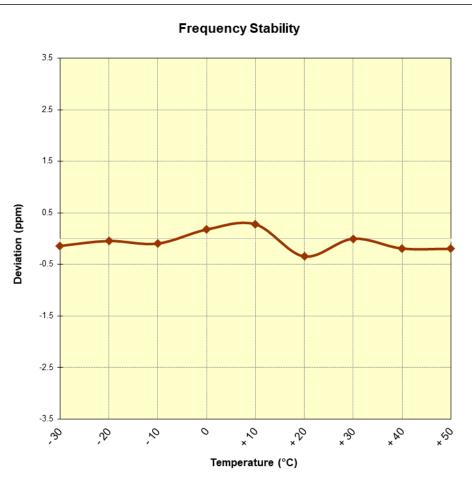


Figure 7-10. Frequency Stability Graph (Cellular CDMA Mode – Ch. 384)

FCC ID: A3LSMN986W	Proud to be part of @ element		SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 80 of 07
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OPERATING FREQUENCY:	836,600,000	Hz
CHANNEL:	4183	_
REFERENCE VOLTAGE:	4.21	VDC
DEVIATION LIMIT:	± 0.00025 % or 2.5 ppm	_

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	- 30	836,599,680	-320	-0.0000383
100 %		- 20	836,600,354	354	0.0000423
100 %		- 10	836,600,209	209	0.0000250
100 %		0	836,600,149	149	0.0000178
100 %		+ 10	836,599,755	-245	-0.0000293
100 %		+ 20	836,599,925	-75	-0.0000090
100 %		+ 30	836,600,070	70	0.0000084
100 %		+ 40	836,600,075	75	0.0000090
100 %		+ 50	836,599,859	-141	-0.0000169
BATT. ENDPOINT	2.84	+ 20	836,599,766	-234	-0.0000280

Table 7-29. Frequency Stability Data (Cellular WCDMA Mode – Ch. 4183)

FCC ID: A3LSMN986W	PCTEST [®] Proud to be part of [®] element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 90 of 07
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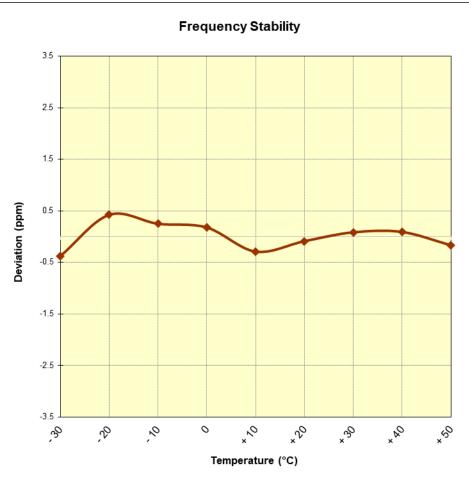


Figure 7-11. Frequency Stability Graph (Cellular WCDMA Mode – Ch. 4183)

FCC ID: A3LSMN986W	Proved to be part of reserver		SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 00 of 07
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OPERATING FREQUENCY:	1,732,600,000	Hz
CHANNEL:	1413	
REFERENCE VOLTAGE:	4.21	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	- 30	1,732,600,055	55	0.0000032
100 %		- 20	1,732,600,028	28	0.0000016
100 %		- 10	1,732,600,107	107	0.0000062
100 %		0	1,732,599,841	-159	-0.0000092
100 %		+ 10	1,732,600,193	193	0.0000111
100 %		+ 20	1,732,599,988	-12	-0.000007
100 %		+ 30	1,732,599,935	-65	-0.000038
100 %		+ 40	1,732,599,996	-4	-0.0000002
100 %		+ 50	1,732,599,791	-209	-0.0000121
BATT. ENDPOINT	2.84	+ 20	1,732,599,972	-28	-0.0000016

Table 7-30. Frequency Stability Data (AWS WCDMA Mode – Ch. 1413)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: A3LSMN986W	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dawa 04 af 07
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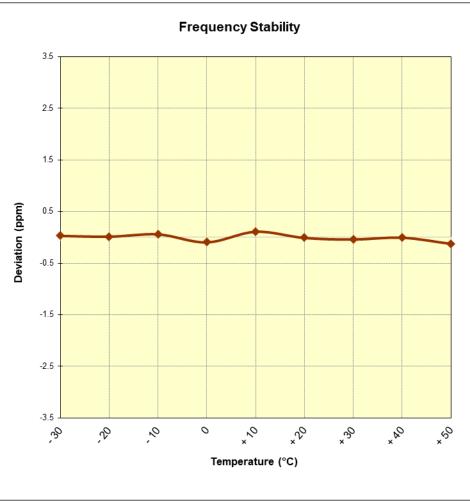


Figure 7-12. Frequency Stability Graph (AWS WCDMA Mode – Ch. 1413)

FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element		SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 02 of 07
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OPERATING FREQUENCY:	1,880,000,000	Hz
CHANNEL:	661	_
REFERENCE VOLTAGE:	4.21	VDC
DEVIATION LIMIT:	± 0.00025 % or 2.5 ppm	

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	- 30	1,880,000,193	193	0.0000103
100 %		- 20	1,880,000,246	246	0.0000131
100 %		- 10	1,879,999,571	-429	-0.0000228
100 %		0	1,879,999,825	-175	-0.0000093
100 %		+ 10	1,879,999,954	-46	-0.0000024
100 %		+ 20	1,880,000,063	63	0.0000034
100 %		+ 30	1,880,000,200	200	0.0000106
100 %		+ 40	1,879,999,605	-395	-0.0000210
100 %		+ 50	1,879,999,592	-408	-0.0000217
BATT. ENDPOINT	2.84	+ 20	1,880,000,192	192	0.0000102

Table 7-31. Frequency Stability Data (PCS GPRS Mode – Ch. 661)

FCC ID: A3LSMN986W	PCTEST [®] Proud to be part of [®] element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 02 of 07
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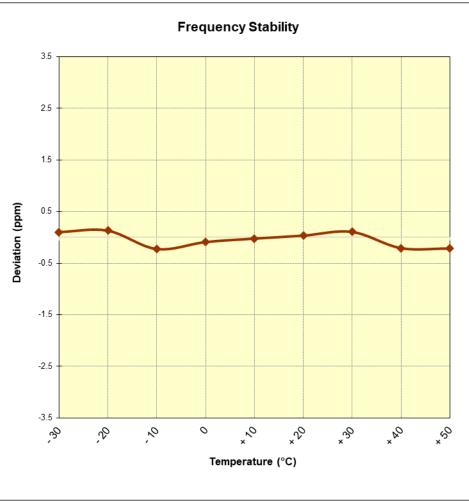


Figure 7-13. Frequency Stability Graph (PCS GPRS Mode – Ch. 661)

FCC ID: A3LSMN986W	PCTEST Proud to be part of @ element		SAMSUNG	Approved by: Quality Manager
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OPERATING FREQUENCY:	1,880,000,000	Hz
CHANNEL:	9400	-
REFERENCE VOLTAGE:	4.21	VDC
DEVIATION LIMIT:	± 0.00025 % or 2.5 ppm	-

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	- 30	1,879,999,938	-62	-0.0000033
100 %		- 20	1,880,000,382	382	0.0000203
100 %		- 10	1,879,999,837	-163	-0.0000087
100 %		0	1,879,999,968	-32	-0.0000017
100 %		+ 10	1,880,000,056	56	0.0000030
100 %		+ 20	1,880,000,122	122	0.0000065
100 %		+ 30	1,879,999,783	-217	-0.0000115
100 %		+ 40	1,880,000,123	123	0.0000065
100 %		+ 50	1,879,999,916	-84	-0.0000045
BATT. ENDPOINT	2.84	+ 20	1,879,999,936	-64	-0.0000034

Table 7-32. Frequency Stability Data (PCS WCDMA Mode – Ch. 9400)

FCC ID: A3LSMN986W	PCTEST [®] Proud to be part of [®] element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dere 05 of 07
1M2004170066-02.A3L	4/17 - 6/12/2020	Portable Handset	Page 95 of 97
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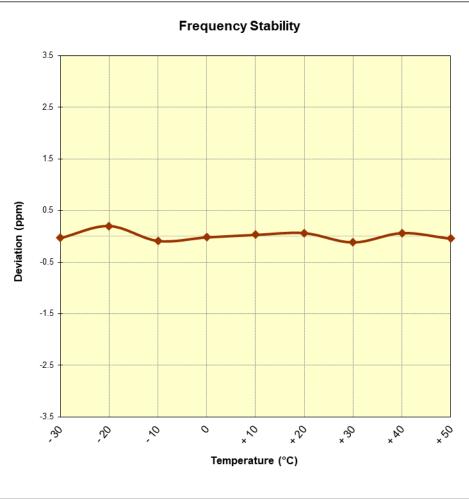


Figure 7-14. Frequency Stability Graph (PCS WCDMA Mode – Ch. 9400)

FCC ID: A3LSMN986W	PCTEST [°] Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dege 06 of 07	
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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMN986W** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules and RSS-132, RSS-133, RSS-139 of the Innovation, Science and Economic Development Canada Rules.

FCC ID: A3LSMN986W	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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