



## MEASUREMENT REPORT

### FCC Part 15B Receiver Spurious Emissions

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

**Date of Testing:**  
06/10 - 06/14/2022  
**Test Report Issue Date:**  
06/30/2022  
**Test Site/Location:**  
PCTEST Lab. Yongin-Si, Gyeonggi-do, South Korea  
**Test Report Serial No.:**  
1M2204080051-17.A3L

**FCC ID:** A3LSMF721U  
**APPLICANT:** Samsung Electronics Co., Ltd.

**Application Type:** Certification  
**Model:** SM-F721U  
**Additional Model(s):** SM-F721U1  
**EUT Type:** Portable Handset  
**FCC Classification:** Communications Rcvr for use w/ licensed Tx and CBs (CXX)  
**FCC Rule Part(s):** FCC Part 15 Subpart B  
**Test Procedure(s):** ANSI C63.4-2014

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and has been tested in accordance with the measurement procedures specified in ANSI C63.4-2014 (See Test Report). These measurements were performed with no deviation from the standards. 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.




Prepared by



Reviewed by

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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 Innovation, Science and Economic Development Canada.

### 1.2 PCTEST Test Location

These measurement tests were conducted at the PCTEST Korea CO., LTD. facility located at 13, Heungdeok 1-ro, Giheung-gu, Yongin-si, Gyeonggi-do, 16954, South Korea. 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 Korea located in Yongin-si, Gyeonggi-do, 16954, South Korea.

- PCTEST is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation(A2LA) with Certificate number 2041.04 for Specific Absorption Rate (SAR), and Electromagnetic Compatibility (EMC) & Telecommunications 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 ISSED Standards (RSS).
- PCTEST Korea facility is accredited, designated, and recognized in accordance with the provision of Radio Wave Act and International Standard ISO/IEC 17025:2017 under the National Radio Research Agency.
  - Designation Number / CABID: KR0169
  - Test Firm Registration Number of FCC: 417945
  - Test Firm Registration Number of ISSED: 26168

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## 2.0 PRODUCT INFORMATION

### 2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID: A3LSMF721U**. The test data contained in this report pertains only to the emissions due to receiver circuitry of the licensed transmitter of the EUT.

**Test Device Serial No.:** 0915M, 0940M

### 2.2 Device Capabilities

This device contains the following capabilities:

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

The device contains receivers which tune and operate between 30MHz – 960MHz in following bands: GSM850, WCDMA850, LTE B12, LTE B13, LTE B14, LTE B26, LTE B5, LTE B71, n5, n12 and 71.

### 2.3 Test Configuration

The EUT was tested while operating in licensed band Rx mode. All licensed band receivers that tune in the range of 30MHz – 960MHz, as listed in Section 2.2, are investigated. Only the worst case emissions are reported.

All equipment is placed on the test table top and arranged in a typical configuration in accordance with ANSI C63.4-2014 and manipulated to obtain worst case emissions.

For more information please see Section 7.0 for test data and the test setup photos document for the test setup photographs.

This device supports two configurations: one is with screen open and one is with screen closed. Open, half opened and closed configurations are tested, and the worst case radiated emissions data is shown in this report.

### 2.4 Software and Firmware

The test was conducted with firmware version F721UOYN0AVCD installed on the EUT.

### 2.5 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 procedure described in the American National Standard for Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz (ANSI C63.4-2014) was used in the measurement of the EUT.

**Deviation from measurement procedure.....None**

### 3.2 AC Line Conducted Emissions

The line-conducted facility is located inside a 10'x16'x9' shielded enclosure. The shielded enclosure is manufactured by SY cooperation RF Enclosures. The line-conducted facility is located inside a 7m x 3.66m x 2.7m shielded enclosure. The shielding effectiveness of the shielded room is in accordance with MIL-Std-285 or NSA 65-5. A 1m x 1.5m wooden table 80cm high is placed 40cm away from the vertical wall and 80cm away from the sidewall of the shielded room. Two 10kHz-30MHz, 50Ω/50μH Line-Impedance Stabilization Networks (LISNs) are bonded to the shielded room floor. Power to the LISNs is filtered by external high-current high-insertion loss power line filters. The external power line filter is an ETS Lindgren Model LPRX-4X30 (100dB Attenuation, 14kHz-18GHz) and the two EMI/RFI filters are ETS Lindgren Model LRW-2030-S1 (100dB Minimum Insertion Loss, 14kHz – 10GHz). These filters attenuate ambient signal noise from entering the measurement lines. These filters are also bonded to the shielded enclosure.

The EUT is powered from one LISN and the support equipment is powered from the second LISN. If the EUT is a DC-powered device, power will be derived from the source power supply it normally will be powered from and this supply line(s) will be connected to the second LISN. All interconnecting cables more than 1 meter were shortened to a 1 meter length by non-inductive bundling (serpentine fashion) and draped over the back edge of the test table. All cables were at least 40cm above the horizontal reference ground plane. Power cables for support equipment were routed down to the second LISN while ensuring that that cables were not draped over the second LISN.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the spectrum analyzer and exploratory measurements were made to determine the frequencies producing the maximum emission from the EUT. The spectrum was scanned from 150kHz to 30MHz with a spectrum analyzer. The detector function was set to peak mode for exploratory measurements while the bandwidth of the analyzer was set to 10kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Once the worst case emissions have been identified, the one EUT cable configuration/arrangement and mode of operation that produced these emissions is used for final measurements on the same test site. The analyzer is set to CISPR quasi-peak and average detectors with a 9kHz resolution bandwidth for final measurements.

Line conducted emissions test results are shown in Section 7.3. The EMI Receiver mode of the R&S ESW was used to perform AC line conducted emissions testing. Automated test software was used to perform the AC line conducted emissions testing. Automated measurement software utilized is Rohde & Schwarz EMC32, Version 10.20.01.

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### 3.3 Radiated Emissions

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. The test site inside the chamber is a 6m x 5.2m elliptical, obstruction-free area in accordance with Clause 5, Figure 5.7 of ANSI C63.4-2014. A raised turntable is used for radiated measurement. It 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. 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. . An 80cm tall test table made of Styrodur is placed on top of the turn table.

For all measurements, the spectrum was scanned through all EUT azimuths and from 1 to 4 meter receive antenna height using a broadband antenna from 30MHz up to the upper frequency shown in 15.33(b)(1) depending on the highest frequency generated or used in the device or on which the device operates or tunes. For frequencies above 1GHz, linearly polarized double ridge horn antennas were used. For frequencies below 30MHz, a calibrated loop antenna was used. When exploratory measurements were necessary, they were performed at 1 meter test distance inside the semi-anechoic chamber using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequencies and modes producing the maximum emissions. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The test set-up was placed on top of the 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configuration, mode of operation, turntable azimuth, and receive antenna height was noted for each frequency found.

Final measurements were made in the semi-anechoic chamber using calibrated, linearly polarized broadband and horn antennas. The test setup was configured to the setup that produced the worst case emissions. The spectrum analyzer was set to investigate all frequencies required for testing to compare the highest radiated disturbances with respect to the specified limits. The turntable containing the EUT was rotated through 360 degrees and the height of the receive antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by changing the orientation of the EUT through three orthogonal planes and changing the polarity of the receive antenna, whichever produced the worst-case emissions.

All radiated measurements are performed in a chamber that meets the site requirements per ANSI C63.4-2014.

### 3.4 Environmental Conditions

The temperature is controlled within range of 15°C to 35°C. The relative humidity is controlled within range of 10% to 75%. The atmospheric pressure is monitored within the range 86-106kPa (860-1060mbar).

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## 4.0 SAMPLE CALCULATIONS

### 4.1 Radiated Emission Measurement Sample Calculation

@ 66.7 MHz

Class B limit		= 100 $\mu\text{V/m}$ = 40.0 dB $\mu\text{V/m}$
Reading		= - 76.0 dBm (calibrated level)
Convert to dB $\mu\text{V}$		= - 76.0 + 107 = 31.0 dB $\mu\text{V}$
Antenna Factor + Cable Loss		= 5.8 dB/m
	Total	= 36.8 dB $\mu\text{V/m}$
Margin		= 36.8 - 40.0 = - 3.2 dB
		= <b>3.2 dB below limit</b>

**Note:**

$$\text{Level [dB}\mu\text{V]} = 20 \log_{10} (\text{Level } [\mu\text{V/m}])$$

$$\text{Level [dB}\mu\text{V]} = \text{Level [dBm]} + 107$$

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## 5.0 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 ( $\pm$ dB)
Line Conducted Disturbance	1.60
Radiated Disturbance (<1GHz)	3.01
Radiated Disturbance (>1GHz)	3.58
Radiated Disturbance (>18GHz)	3.17

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## 6.0 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
COM-Power Corporation	AL-130R	Active Loop Antenna (9kHz-30MHz)	2020-10-29	Biennial	2022-10-28	10160045
Schwarzbeck	VULB9162	Broadband TRILOG Antenna (30MHz-1GHz)	2021-07-13	Biennial	2023-07-12	9162-217
Sunol Sciences	DRH-118	Horn Antenna (1-18GHz)	2021-01-12	Biennial	2023-01-11	A060215
NARDA	180-442A-KF	Horn Antenna (18-40GHz)	2020-11-20	Biennial	2022-11-19	T058701-03
Rohde & Schwarz	SFU	Shielded Filter Unit	2022-03-02	Annual	2023-03-01	102131
Rohde & Schwarz	TS-PR1840	Preamplifier (18-40GHz)	2021-07-07	Annual	2022-07-06	100049
Rohde & Schwarz	ENV216	Two-Line V-Network	2022-05-09	Annual	2023-05-08	101319
TESTEK	-	LISN Extension Cord	2022-05-09	Annual	2023-05-08	N/A
Rohde & Schwarz	ESW	EMI Test Receiver (2Hz-44GHz)	2021-07-06	Annual	2022-07-05	101761
Rohde & Schwarz	FSW	Signal and Spectrum Analyzer(2Hz-43.5GHz)	2022-01-18	Annual	2023-01-17	101955
Anritsu	S820E	Cable and Antenna Analyzer	2021-07-07	Annual	2022-07-06	1839097
Anritsu	TOSLKF50A-40	Calibration Kit	N/A	-	N/A	1825024

**Table 6-1. Annual Test Equipment Calibration Schedule**

**Note:**

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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## 7.0 TEST DATA

### 7.1 Summary

Test Date(s): 06/10 - 06/14/2022

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Test Engineer: David Jung

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FCC Part 15 Section	Description	Result
15.109	Radiated Emissions	PASS
15.107	AC Line Conducted Emissions	PASS

**Table 7-1. Summary of Test Results**

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## 7.2 Radiated Measurement Data

### §15.109

#### Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at maximum power and at the appropriate frequencies. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

*All out of band emissions must not exceed the limits shown in Table 7-2 per FCC Part 15.109.*

Frequency [MHz]	Field Strength Limit [ $\mu$ V/m]
30 – 88	100
88 – 216	150
216 – 960	200
> 960	500

**Table 7-2. 3-Meter Radiated Limits (Section 15.109)**

#### Test Procedures Used

ANSI C63.4-2014

#### Test Settings

##### Quasi-Peak Field Strength Measurements (<1GHz)

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 120kHz (for emissions from 30MHz – 1GHz)
3. Detector = quasi-peak
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

##### Average Field Strength Measurements (>1GHz)

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = power average (RMS)
5. Number of measurement points = 1001 (Number of points must be  $\geq 2 \times \text{span/RBW}$ )
6. Sweep time = auto
7. Trace (RMS) averaging was performed over at least 100 traces

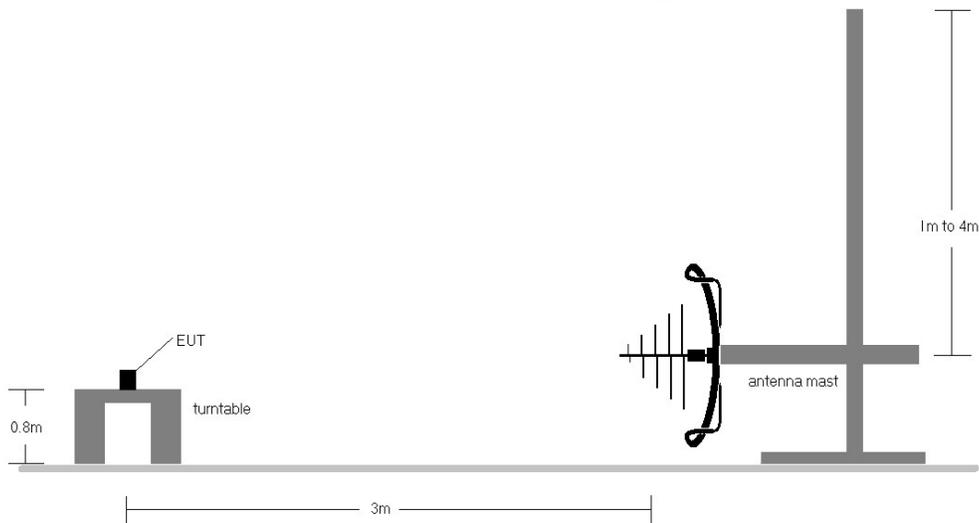
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### Peak Field Strength Measurements (>1GHz)

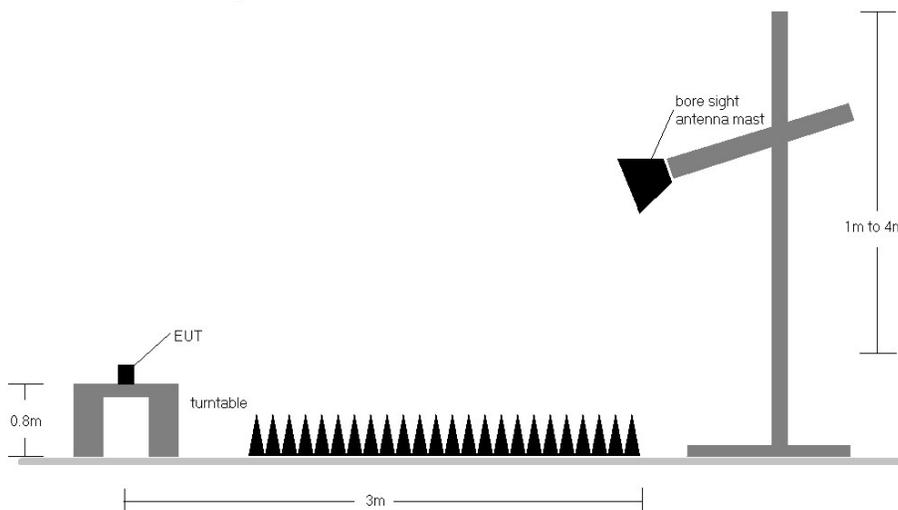
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

### Test Setup

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



**Figure 7-1. Radiated Test Setup <1GHz**



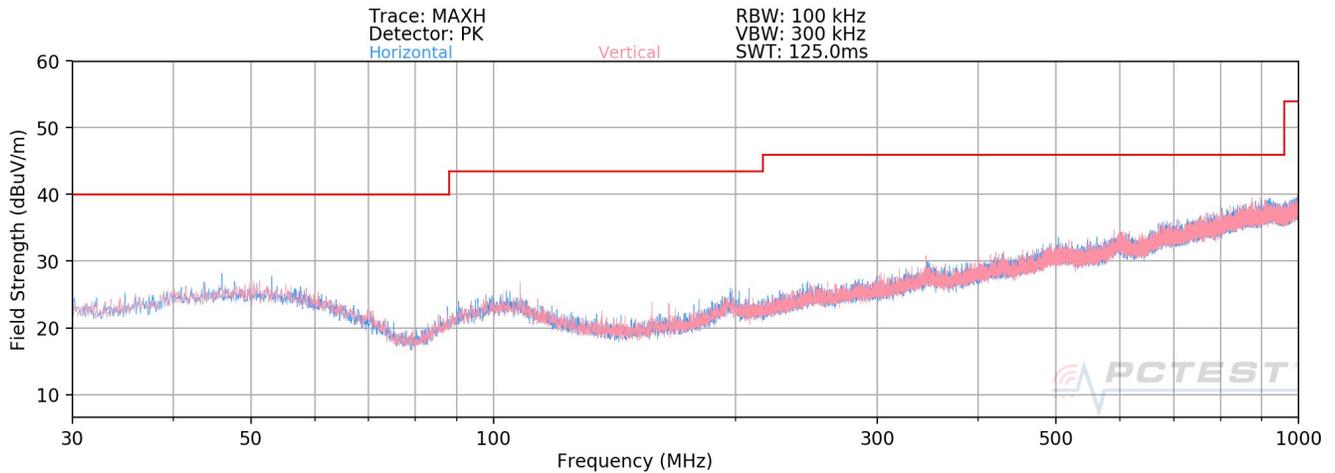
**Figure 7-2. Radiated Test Setup >1GHz**

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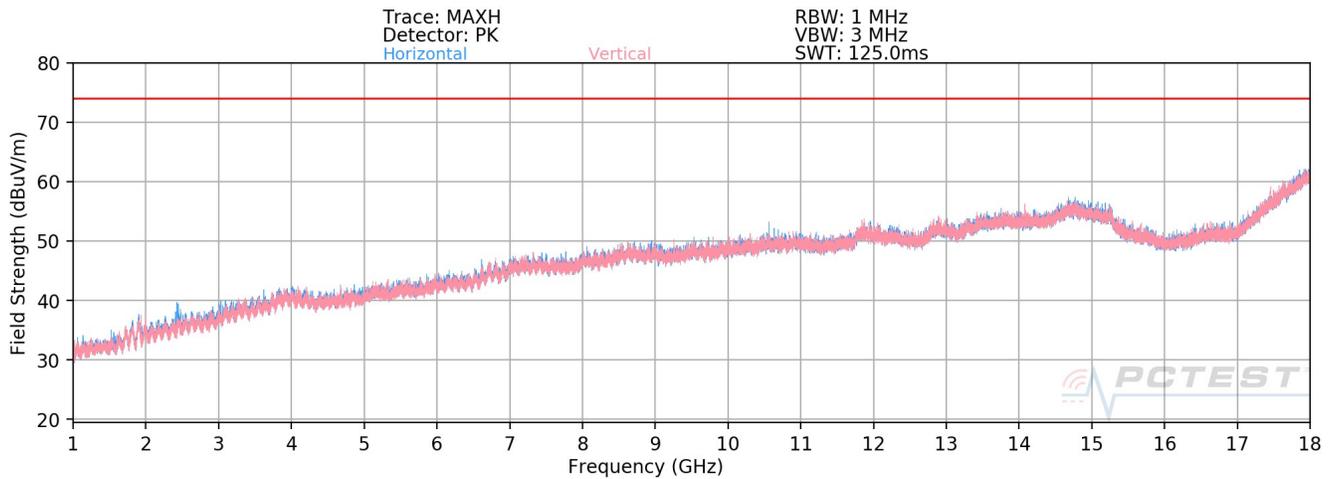
### Test Notes

1. All modes of operation were investigated and the worst-case emissions are reported.
2. Radiated emissions were measured from 30MHz – 35GHz to ensure that the provisions of 15.33(b)(1) are satisfied with respect to the upper frequency scanning range. No radiated emissions were found in the 18 - 35GHz.
3. The radiated limits for unintentional radiators at a distance of 3 meters are used in the table above, as specified in 15.109(a).
4. All readings are calibrated by a signal generator with accuracy traceable to the National Institute of Standards and Technology (NIST).
5. AFCL (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)
6. Level (dB $\mu$ V/m) = Analyzer Reading (dBm) + AFCL (dB/m) + 107
7. Margin (dB) = Field strength (dB $\mu$ V/m) – Limit (dB $\mu$ V/m)
8. Measurements are made using a CISPR quasi-peak detector with a 120kHz resolution bandwidth. Above 1GHz, peak measurements are made using a peak detector with a resolution bandwidth of 1MHz and a video bandwidth of 3MHz and average measurements are made with a RMS detector using a resolution bandwidth of 1MHz and a video bandwidth of 3MHz.
9. Calibrated linearly polarized broadband and horn antennas were used for measurements below and above 1GHz, respectively. For measurements made below 1GHz, the results recorded using the broadband antenna are known to correlate with the results obtained by using a tuned dipole with an acceptable degree of accuracy. The VSWR for the measurement antennas was found to be less than 2:1.
10. Calibrated low-loss microwaves cables and broadband amplifiers are used.

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**Plot 7-1. Radiated Spurious Plot below 1GHz**



**Plot 7-2. Radiated Spurious Plot above 1GHz**

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
47.67	Quasi-Peak	H	-	-	-100.05	14.58	21.53	40.00	-18.47
52.51	Quasi-Peak	H	-	-	-99.15	14.51	22.36	40.00	-17.64
116.76	Quasi-Peak	V	-	-	-99.47	11.08	18.61	43.52	-24.91
158.64	Quasi-Peak	V	-	-	-99.54	9.53	16.99	43.52	-26.53
356.54	Quasi-Peak	V	-	-	-100.22	15.98	22.76	46.02	-23.26
927.30	Quasi-Peak	V	-	-	-98.47	25.25	33.78	46.02	-12.24
12808.78	Peak	H	-	-	-74.22	17.13	49.91	54.00	-4.09

**Table 7-3. Radiated Measurements at 3-meters**

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### 7.3 Line-Conducted Test Data

#### §15.107

#### Test Overview and Limit

All AC line conducted spurious emissions are measured with a receiver connected to a grounded LISN while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for conducted spurious emissions. Only the conducted emissions of the configuration that produced the worst case emissions are reported in this section.

**All conducted emissions must not exceed the limits shown in the table below per FCC Part 15.107.**

Frequency of emission (MHz)	Conducted Limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50

**Table 7-4. Conducted Limits**

\*Decreases with the logarithm of the frequency.

#### Test Procedures Used

ANSI C63.4-2014

#### Test Settings

##### Quasi-Peak Measurements

1. Analyzer center frequency was set to the frequency of the spurious emission of interest
2. RBW = 9kHz (for emissions from 150kHz – 30MHz)
3. Detector = quasi-peak
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

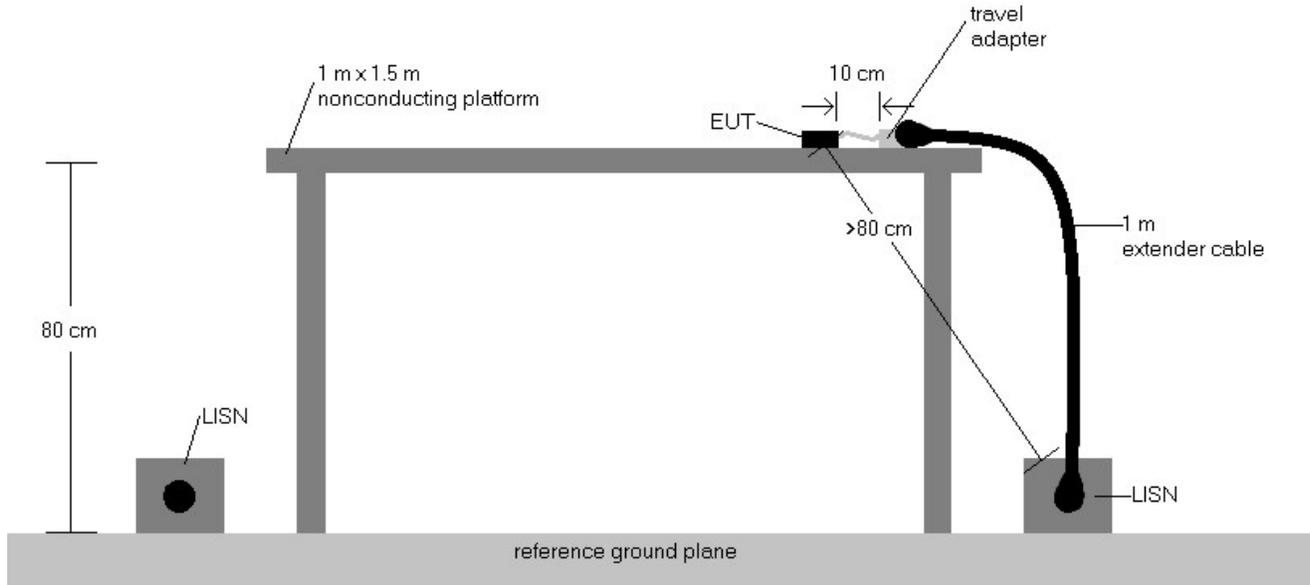
##### Average Measurements

1. Analyzer center frequency was set to the frequency of the spurious emission of interest
2. RBW = 9kHz (for emissions from 150kHz – 30MHz)
3. Detector = RMS
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

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**Test Setup**

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

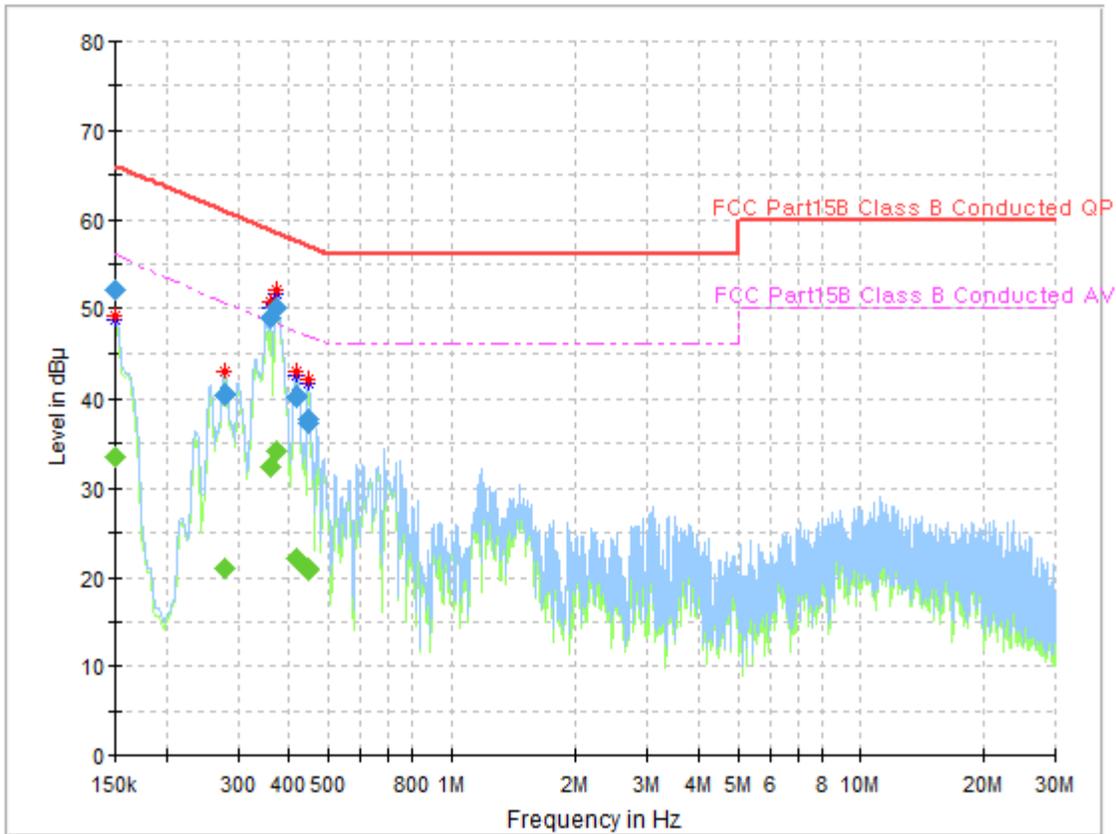


**Figure 7-3. Test Instrument & Measurement Setup**

**Test Notes**

1. All modes of operation were investigated and the worst-case emissions are reported using mid channel. The emissions found were not affected by the choice of channel used during testing.
2. The limit for an intentional radiator from 150kHz to 30MHz are specified in Part 15.107.
3.  $Corr. (dB) = Cable\ loss (dB) + LISN\ insertion\ factor (dB)$
4.  $QP/AV\ Level (dB\mu V) = QP/AV\ Analyzer/Receiver\ Level (dB\mu V) + Corr. (dB)$
5.  $Margin (dB) = QP/AV\ Limit (dB\mu V) - QP/AV\ Level (dB\mu V)$
6. Traces shown in plot are made using a peak detector.
7. Deviations to the Specifications: None.

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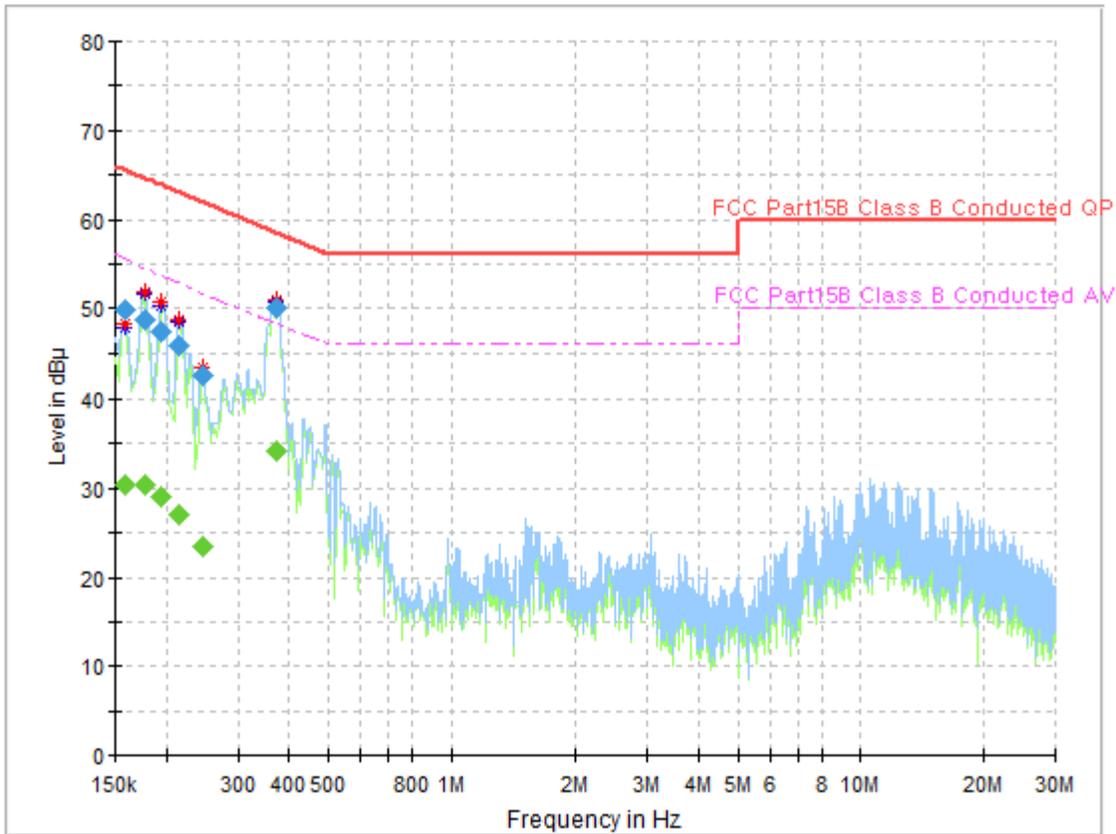


**Plot 7-3. Line Conducted Plot (L1)**

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	33.62	56.00	22.38	1000.0	9.000	L1	9.8
0.150000	52.07	---	66.00	13.93	1000.0	9.000	L1	9.8
0.278355	---	20.90	50.62	29.72	1000.0	9.000	L1	9.7
0.278355	40.36	---	60.87	20.51	1000.0	9.000	L1	9.7
0.358950	---	32.49	48.56	16.07	1000.0	9.000	L1	9.8
0.358950	49.00	---	58.75	9.76	1000.0	9.000	L1	9.8
0.373875	---	34.16	48.24	14.08	1000.0	9.000	L1	9.8
0.373875	50.11	---	58.41	8.31	1000.0	9.000	L1	9.8
0.418650	---	22.11	47.35	25.24	1000.0	9.000	L1	9.9
0.418650	40.27	---	57.48	17.21	1000.0	9.000	L1	9.9
0.445515	---	21.04	46.88	25.83	1000.0	9.000	L1	9.9
0.445515	37.86	---	56.96	19.10	1000.0	9.000	L1	9.9
0.448500	---	20.70	46.82	26.13	1000.0	9.000	L1	9.9
0.448500	37.35	---	56.90	19.56	1000.0	9.000	L1	9.9

**Table 7-5. Line-Conducted Test Data (L1)**

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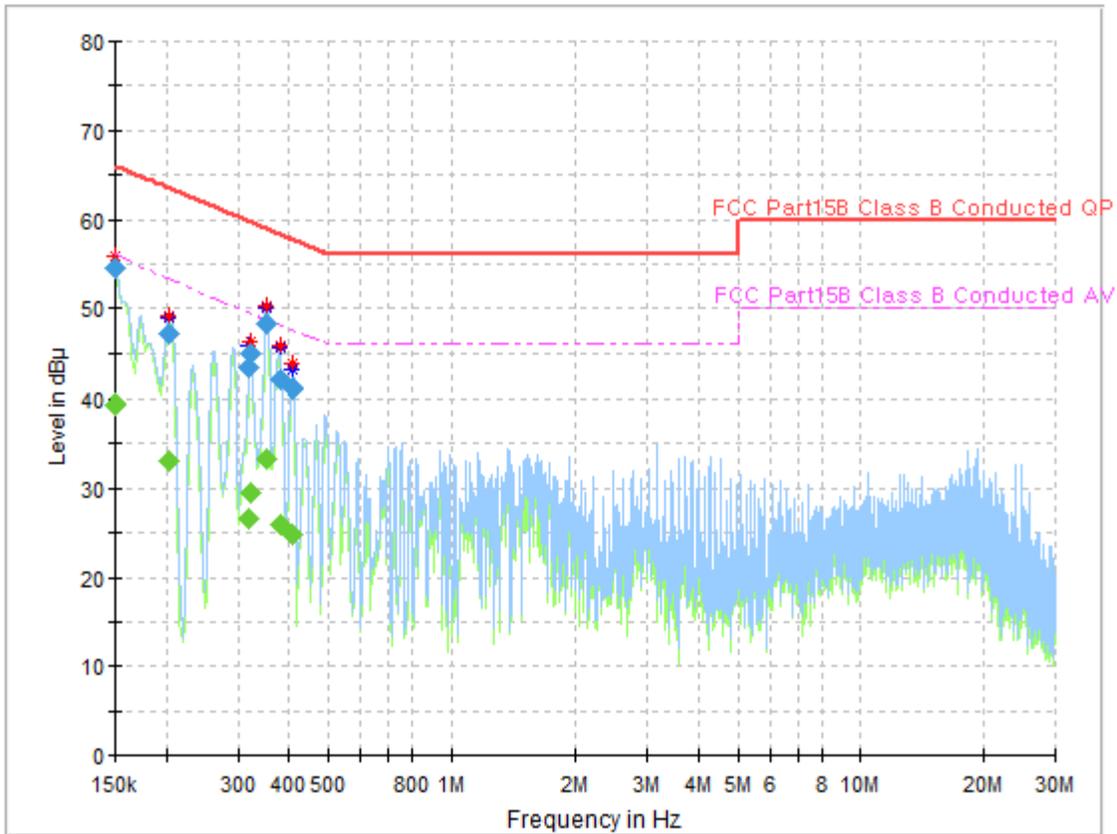


**Plot 7-4. Line Conducted Plot (N)**

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.158955	---	30.47	55.47	25.00	1000.0	9.000	N	9.9
0.158955	49.76	---	65.52	15.75	1000.0	9.000	N	9.9
0.176865	---	30.31	54.51	24.20	1000.0	9.000	N	10.0
0.176865	48.72	---	64.63	15.91	1000.0	9.000	N	10.0
0.194775	---	29.10	53.66	24.56	1000.0	9.000	N	9.9
0.194775	47.42	---	63.83	16.41	1000.0	9.000	N	9.9
0.215670	---	26.96	52.77	25.81	1000.0	9.000	N	9.8
0.215670	45.78	---	62.98	17.20	1000.0	9.000	N	9.8
0.245520	---	23.46	51.67	28.21	1000.0	9.000	N	9.7
0.245520	42.56	---	61.91	19.35	1000.0	9.000	N	9.7
0.373875	---	34.21	48.24	14.03	1000.0	9.000	N	9.8
0.373875	50.03	---	58.41	8.38	1000.0	9.000	N	9.8

**Table 7-6. Line-Conducted Test Data (N)**

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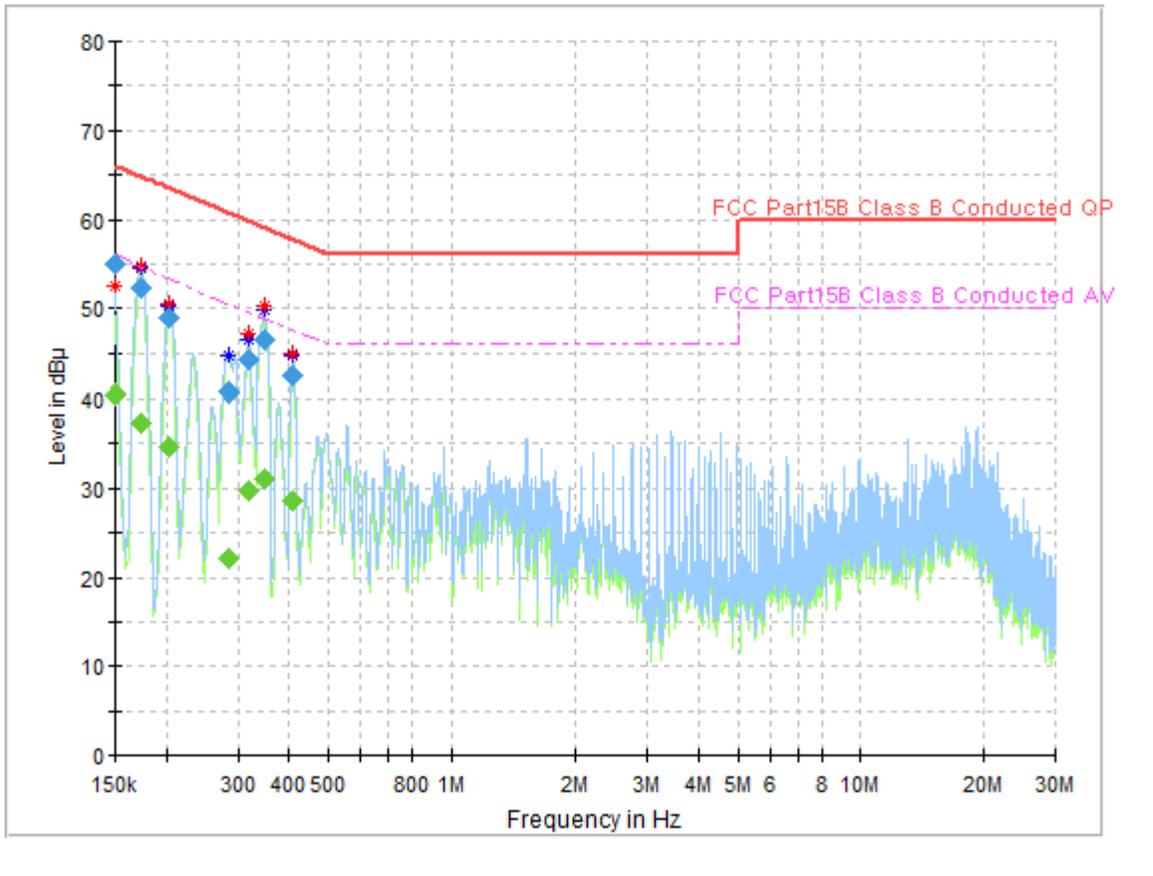


**Plot 7-5. Line Conducted Plot (L1) with WCP**

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	39.23	56.00	16.77	1000.0	9.000	L1	9.8
0.150000	54.53	---	66.00	11.47	1000.0	9.000	L1	9.8
0.203730	---	32.98	53.27	20.29	1000.0	9.000	L1	9.9
0.203730	47.05	---	63.46	16.41	1000.0	9.000	L1	9.9
0.320145	---	26.61	49.48	22.86	1000.0	9.000	L1	9.8
0.320145	43.27	---	59.70	16.43	1000.0	9.000	L1	9.8
0.323130	---	29.41	49.40	19.99	1000.0	9.000	L1	9.8
0.323130	44.94	---	59.63	14.68	1000.0	9.000	L1	9.8
0.352980	---	33.20	48.69	15.49	1000.0	9.000	L1	9.8
0.352980	48.20	---	58.89	10.69	1000.0	9.000	L1	9.8
0.379845	---	25.82	48.11	22.29	1000.0	9.000	L1	9.8
0.379845	42.03	---	58.28	16.25	1000.0	9.000	L1	9.8
0.409695	---	24.82	47.52	22.71	1000.0	9.000	L1	9.9
0.409695	41.13	---	57.65	16.52	1000.0	9.000	L1	9.9

**Table 7-6. Line-Conducted Test Data (L1) with WCP**

FCC ID: A3LSMF721U	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
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**Plot 7-6. Line Conducted Plot (N) with WCP**

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	40.46	56.00	15.54	1000.0	9.000	N	9.8
0.150000	54.95	---	66.00	11.05	1000.0	9.000	N	9.8
0.173880	---	37.27	54.67	17.40	1000.0	9.000	N	10.0
0.173880	52.19	---	64.77	12.59	1000.0	9.000	N	10.0
0.203730	---	34.74	53.27	18.53	1000.0	9.000	N	9.9
0.203730	49.01	---	63.46	14.45	1000.0	9.000	N	9.9
0.284325	---	22.01	50.44	28.43	1000.0	9.000	N	9.7
0.284325	40.74	---	60.69	19.95	1000.0	9.000	N	9.7
0.320145	---	29.62	49.48	19.85	1000.0	9.000	N	9.8
0.320145	44.13	---	59.70	15.57	1000.0	9.000	N	9.8
0.347010	---	31.10	48.83	17.72	1000.0	9.000	N	9.8
0.347010	46.42	---	59.03	12.62	1000.0	9.000	N	9.8
0.409695	---	28.53	47.52	18.99	1000.0	9.000	N	9.9
0.409695	42.53	---	57.65	15.12	1000.0	9.000	N	9.9

**Table 7-7. Line-Conducted Test Data (N) with WCP**

FCC ID: A3LSMF721U	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
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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: A3LSMF721U** has been tested to comply with the requirements specified in §15.107 and §15.109 of the FCC rules.

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