

# FCC NFC REPORT

## FCC Certification

**Applicant Name:**  
SAMSUNG Electronics Co.,Ltd.**Address:**  
129, Samsung-ro, Yeongtong-gu, Suwon-si,  
Gyeonggi-do, 16677, Rep. of Korea**Date of Issue:**  
February 29, 2016  
**Test Site/Location:**  
HCT CO., LTD., 74,Seoicheon-ro 578beon-gil,Majang-  
myeo,Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA  
**Report No.:** HCT-R-1602-F052  
**HCT FRN:** 0005866421  
**IC Recognition No.:** 5944A-5**FCC ID : A3LSMJ120ZN****APPLICANT : SAMSUNG Electronics Co.,Ltd.****FCC Model(s):** SM-J120ZN**EUT Type:** Mobile Phone**RF Output Field Strength:** 7.50 dBuV/m @30 m**Frequency of Operation:** 13.56 MHz**Modulation type:** ASK**FCC Classification:** Low Power Communication Device – Transmitter**FCC Rule Part(s):** FCC Part 15.225 Subpart C

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998,21 U.S. C.853(a)



**Report prepared by**  
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**Approved by**  
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# Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-R-1602-F052	February 29, 2016	- First Approval Report

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## 1. GENERAL INFORMATION

**Applicant:** SAMSUNG Electronics Co.,Ltd.  
**Address:** 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea  
**FCC ID:** A3LSMJ120ZN  
**EUT Type:** Mobile Phone  
**Model name(s):** SM-J120ZN  
**Date(s) of Tests:** February 15 ~ February 26, 2016  
**Place of Tests:** HCT Co., Ltd.  
74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Korea  
(IC Recognition No. : 5944A-5)

## 2. EUT DESCRIPTION

<b>Model Name</b>	SM-J120ZN
<b>EUT Type</b>	Mobile Phone
<b>Power Supply</b>	DC 3.8 V
<b>Battery Information</b>	Model: EB-BJ120CBE Type: Li-ion Battery
<b>Frequency of Operation</b>	13.5600 MHz
<b>Transmit Power</b>	7.50 dBuV/m @30 m
<b>Modulation Type</b>	ASK
<b>Antenna Specification</b>	Manufacturer: AQ Corporation Antenna type: FPCB Antenna

### **3. TEST METHODOLOGY**

The measurement procedure described in the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices (ANSI C63.10:2013).

#### **3.1 EUT CONFIGURATION**

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

#### **3.2 EUT EXERCISE**

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.225 under the FCC Rules Part 15 Subpart C.

#### **3.3 GENERAL TEST PROCEDURES**

##### **Conducted Emissions**

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 6.2 of ANSI C63.10. (Version :2013) Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

##### **Radiated Emissions**

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3 m away from the receiving antenna, which varied from 1 m to 4 m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes according to the requirements in Section 6.3 of ANSI C63.10. (Version: 2013).

#### **3.4 DESCRIPTION OF TEST MODES**

The EUT has been tested under operating condition. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

### 3.5 STANDARDS

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance With  
FCC Part 15.Subpart C

Regulation	Measurement standard	Range
Title 47 of the CFR: Part 15 Subpart (c), Clause 15.225(a)	ANSI C63.10:2013	13.553MHz to 13.567MHz
Title 47 of the CFR: Part 15 Subpart (c), Clause 15.225(d)	ANSI C63.10:2013	outside of the 13.110-14.010 MHz band
Title 47 of the CFR: Part 15 Subpart (c), Clause 15.209	ANSI C63.10:2013	9kHz to 30MHz
Title 47 of the CFR: Part 15 Subpart (c), Clause 15.209	ANSI C63.10:2013	30MHz to 1GHz
Title 47 of the CFR: Part 15 Subpart (c), Clause 15.207	ANSI C63.10:2013	150kHz to 30MHz
Title 47 of the CFR: Part 15 Subpart (c), Clause 15.225(e)	ANSI C63.10:2013	0.01% of nominal
Title 47 of the CFR: Part 15 Subpart (c), Clause 15.215(c)	ANSI C63.10:2013	-

## 4. INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipments, which is traceable to recognized national standards.

All equipment(spectrum, antenna, accessory, etc.) for measurement is calibrated in accordance with the requirements of ANSI C63.5 (Version: 2006).

## 5. FACILITIES AND ACCREDITATIONS

### 5.1 FACILITIES

The 10 m semi anechoic chamber used to collect the Conducted and Radiated data is located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Korea. Those measurement facilities are constructed in conformance with the requirements of ANSI C63.4 (Version: 2014). Detailed description of test facilities was submitted to the Commission and accepted dated July 07, 2015 (Registration Number: 90661)

### 5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned loop, dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers. Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

## 6. ANTENNA REQUIREMENTS

### According to FCC 47 CFR §15.203:

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section."

\* The antennas of this E.U.T are permanently attached.

\*The E.U.T Complies with the requirement of §15.203

## 7. TEST SUMMARY

The results in this report apply only to sample tested

Regulation	Test Type	Range	Result
Title 47 of the CFR: Part 15 Subpart (c), Clause 15.225(a)	Radiated Electric Field Emissions	13.553MHz to 13.567MHz	Pass
Title 47 of the CFR: Part 15 Subpart (c), Clause 15.225(b)	Radiated Electric Field Emissions	13.410MHz to 13.553MHz and 13.567MHz to 13.710MHz	Pass
Title 47 of the CFR: Part 15 Subpart (c), Clause 15.225(c)	Radiated Electric Field Emission	13.110 MHz to 13.410 MHz and 13.710 MHz to 14.010 MHz	Pass
Title 47 of the CFR: Part 15 Subpart (c), Clause 15.209 (d)	Radiated Electric Field Emissions	9kHz to 30MHz	Pass
Title 47 of the CFR: Part 15 Subpart (c), Clause 15.209	Radiated Electric Field Emissions	30MHz to 1GHz	Pass
Title 47 of the CFR: Part 15 Subpart (c), Clause 15.207	AC power conducted emissions	150kHz to 30MHz	Pass
Title 47 of the CFR: Part 15 Subpart (c), Clause 15.225(e)	Frequency Stability	0.01% of nominal	Pass
Title 47 of the CFR: Part 15 Subpart (c), Clause 15.215(c)	20 dB Bandwidth	-	Pass

## 8. RADIATED EMISSION MEASUREMENT

### Requirement(s): 15.209, 15.225

Except as provided elsewhere in this paragraph the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

**Minimum Standard: FCC Part 15.225 / 15.209**

Rule Part	Frequency (MHz)	Limit
Part 15.209	0.009 ~ 0.490	2400/F(kHz) uV/m@300 m
	0.490 ~1.705	24000/F(kHz) uV/m@30 m
	1.705 ~ 30	30 uV/m@30 m
	30 ~ 88	100 ** uV/m@3 m
	88 ~ 216	150 ** uV/m@3 m
	216 ~ 960	200 ** uV/m@3 m
	Above 960	500 uV/m@3 m

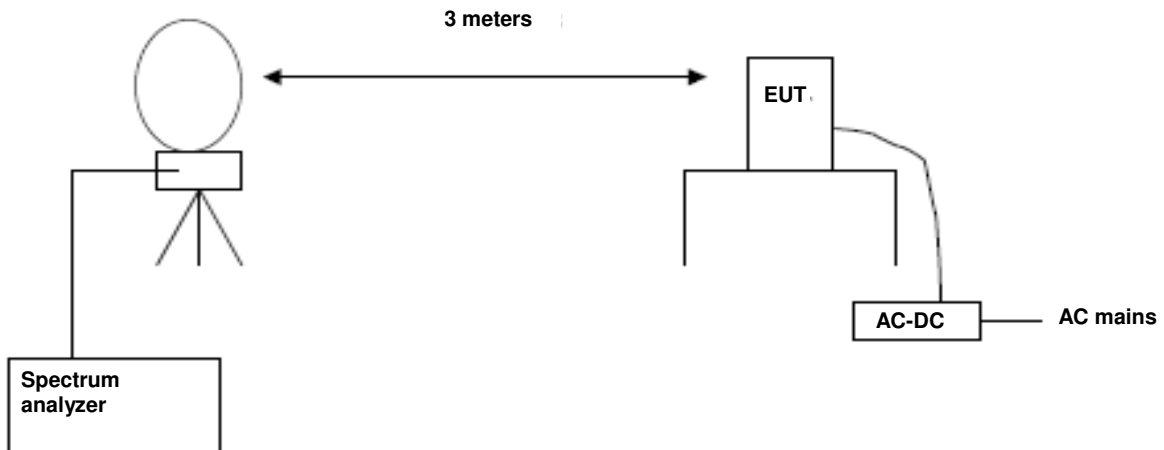
\*\* Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

### 15.225 Operation within the band 13.110 – 14.010 MHz.

- (a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter (= 84 dBuV/m) at 30 meters.
- (b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter (=50.5dBuV/m) at 30 meters.
- (c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter (=40.5 dBuV/m) at 30 meters.
- (d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.
- (e) The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.
- (f) In the case of radio frequency powered tags designed to operate with a device authorized under this section, the tag may be approved with the device or be considered as a separate device subject to its own authorization. Powered tags approved with a device under a single application shall be labeled with the same identification number as the device.

## 8.1. RADIATED EMISSION 9 kHz – 30 MHz

### Test Set-up



### Test Procedure

The EUT was placed on a non-conductive table located on a large open test site. The loop antenna was placed at a location 3m from the EUT. Radiated emissions were measured with the loop antenna both parallel and perpendicular to the plane of the EUT loop antenna and with x, y, z planes in EUT.

The limit is converted from microvolts/meter to decibel microvolts/meter. Sample Calculation:

$$\text{Corrected Amplitude} = \text{Raw Amplitude(dB}\mu\text{V/m)} + \text{ACF(dB)} + \text{Cable Loss(dB)} - \text{Distance Correction Factor}$$

The spectrum analyzer is set to:

Frequency Range = 9 kHz ~ 1 GHz

RBW = 9 kHz (9 kHz ~ 30 MHz)

= 120 kHz (30 MHz ~ 1 GHz)

Trace Mode = max hold

Detector Mode = peak / Quasi-peak

Sweep time = auto

■ Test Results

13.553 MHz-13.567 MHz

Frequency (MHz)	Read Level (dBuV/m)@3m	Ant.Factor+Cable Loss (dB/m)	Distance Correction (dB)	Result Level (dBuV/m)@30m	Limit (dBuV/m)@30m	Margin (dB)
13.5600(H)	28.55	18.95	-40.00	7.50	84.00	76.50
13.5603(V)	25.19	18.95	-40.00	4.14	84.00	79.86

13.410 MHz-13.553 MHz and 13.567 MHz-13.710 MHz

Frequency (MHz)	Read Level (dBuV/m)@3m	Ant.Factor+Cable Loss (dB/m)	Distance Correction (dB)	Result Level (dBuV/m)@30m	Limit (dBuV/m)@30m	Margin (dB)
13.5537	17.43	18.95	-40.00	-3.62	50.47	54.09
13.5674	17.02	18.95	-40.00	-4.03	50.47	54.50

13.110 MHz – 13.410 MHz and 13.710 MHz-14.010 MHz

Frequency (MHz)	Read Level (dBuV/m)@3m	Ant.Factor+Cable Loss (dB/m)	Distance Correction (dB)	Result Level (dBuV/m)@30m	Limit (dBuV/m)@30m	Margin (dB)
13.2132	11.25	18.95	-40.00	-9.80	40.51	50.31
13.7803	12.34	18.95	-40.00	-8.71	40.51	49.22

9 kHz -30 MHz

Frequency (MHz)	Read Level (dBuV/m)@3m	Ant.Factor+Cable Loss (dB/m)	Distance Correction (dB)	Result Level (dBuV/m)@30m	Limit (dBuV/m)@30m	Margin (dB)
8.5330	11.21	19.44	-40.00	-9.35	29.54	38.89
23.4232	11.67	18.56	-40.00	-9.77	29.54	39.31
27.1071	10.91	18.20	-40.00	-10.89	29.54	40.43
27.1205	10.55	18.20	-40.00	-11.25	29.54	40.79

■ Test Results (Open Site)

13.553 MHz-13.567 MHz						
Frequency (MHz)	Read Level (dBuV/m)@3m	Ant.Factor+Cable Loss (dB/m)	Distance Correction (dB)	Result Level (dBuV/m)@30m	Limit (dBuV/m)@30m	Margin (dB)
13.5600(H)	35.05	18.95	-40.00	14.00	84.00	70.00
13.5603(V)	31.69	18.95	-40.00	10.64	84.00	73.36

13.410 MHz-13.553 MHz and 13.567 MHz-13.710 MHz						
Frequency (MHz)	Read Level (dBuV/m)@3m	Ant.Factor+Cable Loss (dB/m)	Distance Correction (dB)	Result Level (dBuV/m)@30m	Limit (dBuV/m)@30m	Margin (dB)
13.5537	23.43	18.95	-40.00	2.38	50.47	48.09
13.5674	23.02	18.95	-40.00	1.97	50.47	48.50

13.110 MHz – 13.410 MHz and 13.710 MHz-14.010 MHz						
Frequency (MHz)	Read Level (dBuV/m)@3m	Ant.Factor+Cable Loss (dB/m)	Distance Correction (dB)	Result Level (dBuV/m)@30m	Limit (dBuV/m)@30m	Margin (dB)
13.2132	11.25	18.95	-40.00	-9.80	40.51	50.31
13.7803	12.34	18.95	-40.00	-8.71	40.51	49.22

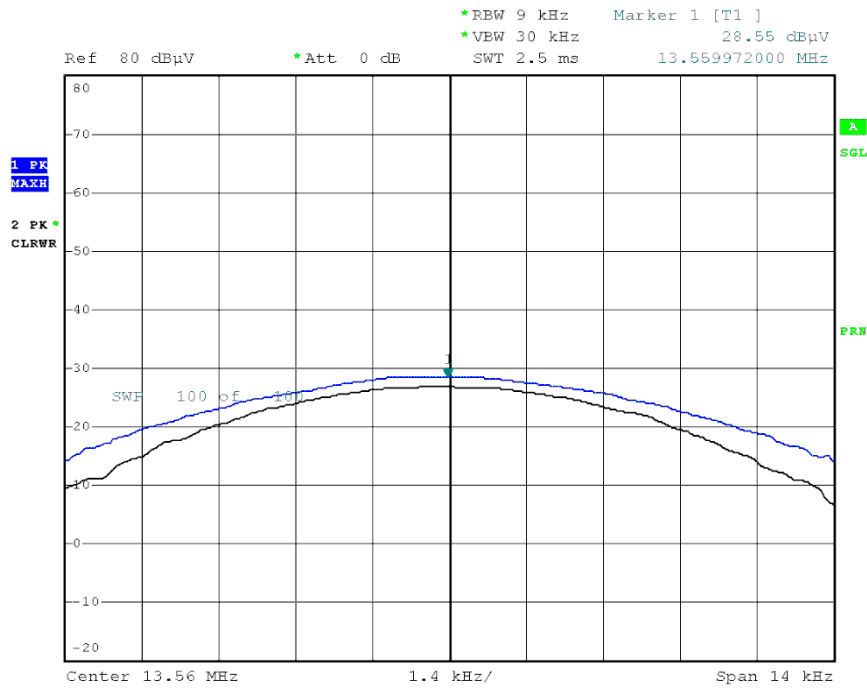
9 kHz -30 MHz						
Frequency (MHz)	Read Level (dBuV/m)@3m	Ant.Factor+Cable Loss (dB/m)	Distance Correction (dB)	Result Level (dBuV/m)@30m	Limit (dBuV/m)@30m	Margin (dB)
8.5330	11.21	19.44	-40.00	-9.35	29.54	38.89
23.4232	11.67	18.56	-40.00	-9.77	29.54	39.31
27.1071	10.91	18.20	-40.00	-10.89	29.54	40.43
27.1205	10.55	18.20	-40.00	-11.25	29.54	40.79

Note :

1. Distance Correction Below 30MHz =  $40\log(3m/30m) = -40$  dB  
Measurement Distance : 3 m (Below 30 MHz)
2. Factor = Antenna Factor + Cable Loss
3. Result Level = Read Level + Factor + Distance Correction
4. Margin = Limit – Result Level
5. We have done x, y, z planes in EUT
6. Antenna rotated about its vertical/horizontal axis for maximum response at each azimuth position around the EUT.
7. Worst case of operating mode is type A, analog mode and 106 kbps.

▣ RESULT PLOTS

**Radiated Emissions (9kHz~30MHz) plot**

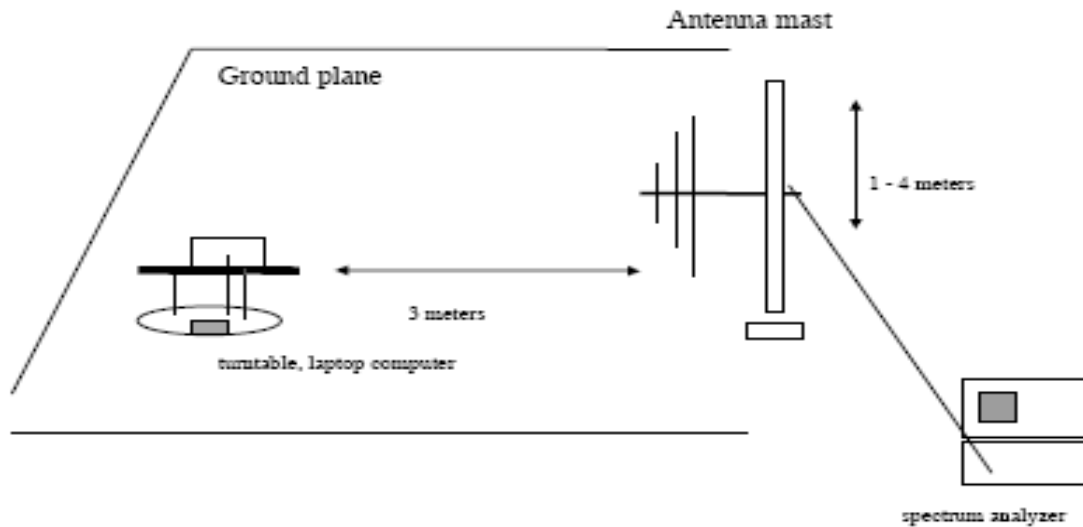


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**Note : Only the worst case plots for Radiated Emissions.**

**8.2. RADIATED EMISSION 30 MHz – 1000 MHz**

Test Set-up



Test Procedures: Radiated emissions were measured according to ANSI C63.10.

The EUT was set to transmit at the highest output power.

The EUT was set 3 meter away from the measuring antenna.

**■ Test Results**

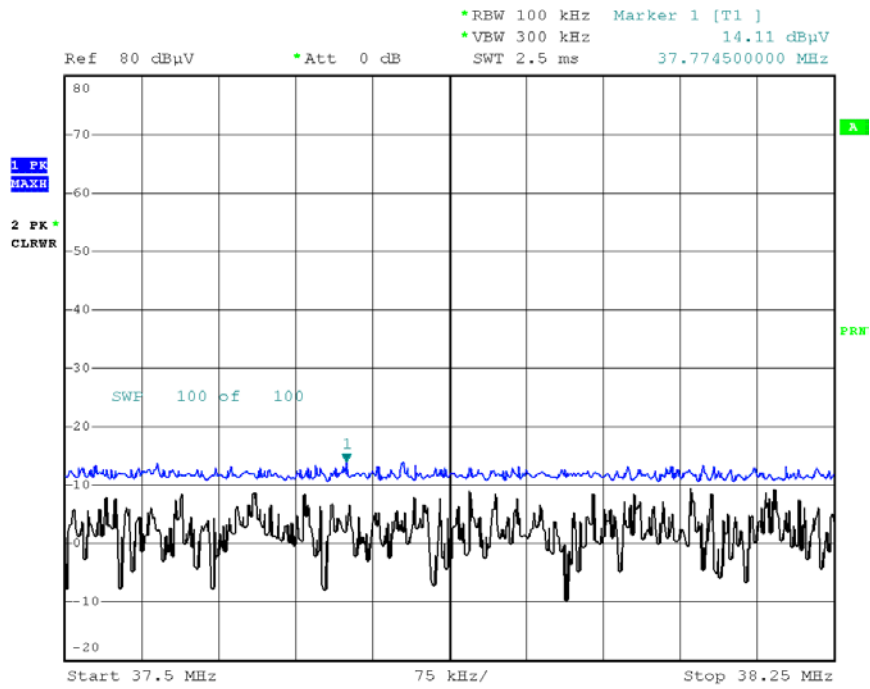
Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dB $\mu$ V	dB /m	dB	(H/V)	dB $\mu$ V/m	dB $\mu$ V/m	dB
*37.77	14.11	11.95	0.04	H	26.10	40.00	13.90
45.44	12.61	12.30	0.04	H	24.95	40.00	15.05
86.84	13.51	7.96	0.82	V	22.29	40.00	17.71
100.23	13.37	9.27	0.85	H	23.49	43.50	20.01
*129.55	13.66	12.24	1.10	H	27.00	43.50	16.50
*166.34	13.18	12.84	1.23	V	27.25	43.50	16.25

Remark

1. Result Level = Read Level + (Antenna Factor+ Cable Loss)
2. Margin = Limit – Result Level
3. '\*' is the result for restricted band.

■ **RESULT PLOTS**

**Radiated Emissions (30MHz~1000MHz) plot**



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**Note : Only the worst case plots for Radiated Emissions.**

## 9. EMISSION BANDWIDTH PLOT.

### Requirement(s):

Test Set-up: The EUT was connected to a spectrum analyzer.

Test Procedure: The 20 dB bandwidth was measured by using a spectrum analyzer.

RBW = Auto

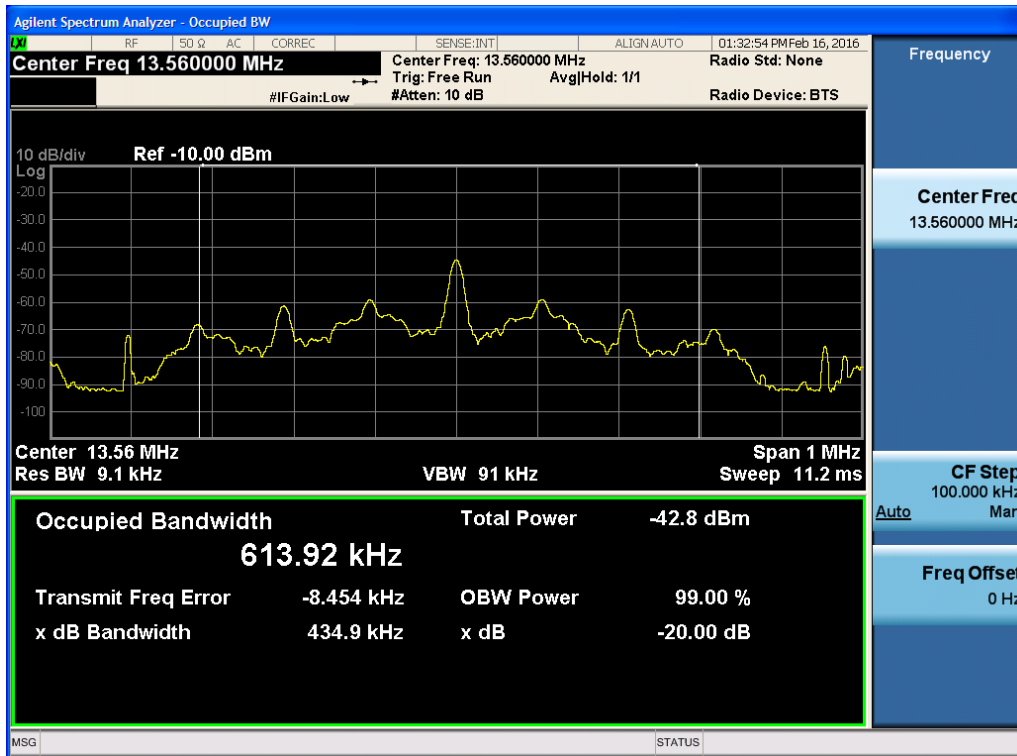
VBW = Auto

Span = Adequately in the operating Tx.

Detector = Peak

Trace mode = Max hold

Allow the trace to stabilize



## 10. FREQUENCY TOLERANCE

Procedure: Part 15.225, ANSI 63.10

If required, the operating or transmitting frequency of an intentional radiator should be measured in accordance with the following procedure to ensure that the device operates outside certain precluded frequency bands and within the frequency range. No modulation needs to be supplied to the intentional radiator during these tests, unless modulation is required to produce an output, e.g., single-sideband suppressed carrier transmitters.

The frequency stability of the transmitter is measured by:

- a) Temperature: The temperature is varied from -20°C to + 50°C using an environmental chamber.
- b) For battery operated equipment, the equipment tests shall be performed using a new battery.

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency.

Measurement Result:

OPERATING FREQUENCY: 13.56 MHz  
 REFERENCE VOLTAGE: 3.8 VDC  
 DEVIATION LIMIT: 0.01% = 1356 Hz

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (MHz)	Frequency Dev. (Hz)	Frequency Dev (%)
100%	3.8	-20	13.559833	-167	-0.0012316
100%		-10	13.559844	-156	-0.0011504
100%		0	13.559849	-151	-0.0011136
100%		+10	13.559857	-143	-0.0010546
100%		+20(Ref.)	13.559866	-134	-0.0009882
100%		+30	13.559872	-128	-0.0009440
100%		+40	13.559879	-121	-0.0008923
100%		+50	13.559886	-114	-0.0008407
115%	4.37	+20	13.559869	-131	-0.0009661
85%	3.23	+20	13.559871	-129	-0.0009513

## 11. POWERLINE CONDUCTE EMISSIONS

### LIMIT

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolt (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency Range (MHz)	Limits (dBµV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

### Test Configuration

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

### TEST PROCEDURE

1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors – Quasi Peak and Average Detector.
5. The EUT is the device operating below 30 MHz.
  - For unterminated the Antenna, the AC line conducted tests are performed with the antenna connected
  - For terminated the Antenna, the AC line conducted tests are performed with a dummy load connected to the EUT antenna output terminal.

### Sample Calculation

Quasi-peak(Final Result) = Reading Value + Correction Factor

**Test Plots**

**Untermine the Antenna**

**Conducted Emissions (Line 1)**

EMI Auto Test(16)

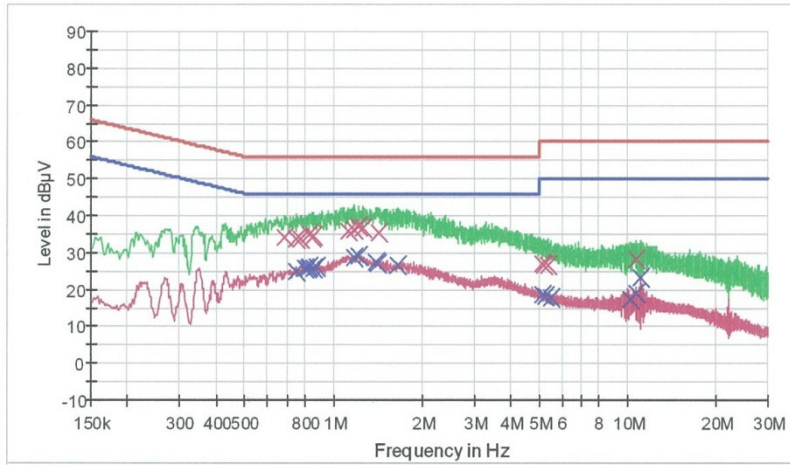
1 / 2

**HCT TEST Report**

**Common Information**

EUT: SM-J120ZN  
 Manufacturer: SAMSUNG  
 Test Site: SHIELD ROOM  
 Operating Conditions: NFC MODE (UNTERMINATION)

FCC CLASS B



— FCCCLASS B\_QP      — FCCCLASS B\_AV      — Preview Result 1-PK+  
 — Preview Result 2-AVG      × Final Result 1-CPK      × Final Result 2-CAV

**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.686000	34.3	9.000	Off	L1	9.7	21.7	56.0
0.752000	33.9	9.000	Off	L1	9.7	22.1	56.0
0.772000	33.5	9.000	Off	L1	9.7	22.5	56.0
0.832000	35.0	9.000	Off	L1	9.7	21.0	56.0
0.844000	33.9	9.000	Off	L1	9.7	22.1	56.0
0.856000	34.3	9.000	Off	L1	9.7	21.7	56.0
1.126000	35.8	9.000	Off	L1	9.7	20.2	56.0
1.184000	36.3	9.000	Off	L1	9.7	19.7	56.0
1.214000	37.2	9.000	Off	L1	9.7	18.8	56.0
1.260000	36.8	9.000	Off	L1	9.7	19.2	56.0
1.266000	36.7	9.000	Off	L1	9.7	19.3	56.0
1.430000	35.2	9.000	Off	L1	9.7	20.8	56.0
5.130000	26.9	9.000	Off	L1	9.9	33.1	60.0
5.148000	26.9	9.000	Off	L1	9.9	33.1	60.0
5.152000	27.1	9.000	Off	L1	9.9	32.9	60.0
5.176000	26.5	9.000	Off	L1	9.9	33.5	60.0
5.352000	26.5	9.000	Off	L1	9.9	33.5	60.0
10.714000	28.1	9.000	Off	L1	10.0	31.9	60.0

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EMI Auto Test(16)

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**Final Result 2**

Frequency (MHz)	CAverage (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.752000	25.0	9.000	Off	L1	9.7	21.0	46.0
0.802000	25.8	9.000	Off	L1	9.7	20.2	46.0
0.816000	25.6	9.000	Off	L1	9.7	20.4	46.0
0.832000	26.0	9.000	Off	L1	9.7	20.0	46.0
0.856000	25.6	9.000	Off	L1	9.7	20.4	46.0
0.876000	26.0	9.000	Off	L1	9.7	20.0	46.0
1.184000	28.7	9.000	Off	L1	9.7	17.3	46.0
1.216000	29.1	9.000	Off	L1	9.7	16.9	46.0
1.220000	29.2	9.000	Off	L1	9.7	16.8	46.0
1.398000	27.6	9.000	Off	L1	9.7	18.4	46.0
1.416000	27.1	9.000	Off	L1	9.7	18.9	46.0
1.650000	26.5	9.000	Off	L1	9.7	19.5	46.0
5.130000	18.5	9.000	Off	L1	9.9	31.5	50.0
5.218000	18.2	9.000	Off	L1	9.9	31.8	50.0
5.512000	17.9	9.000	Off	L1	9.9	32.1	50.0
10.268000	17.4	9.000	Off	L1	10.0	32.6	50.0
10.714000	19.1	9.000	Off	L1	10.0	30.9	50.0
11.020000	23.0	9.000	Off	L1	10.1	27.0	50.0

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6:59:30

**Conducted Emissions (Line 2)**

EMI Auto Test(16)

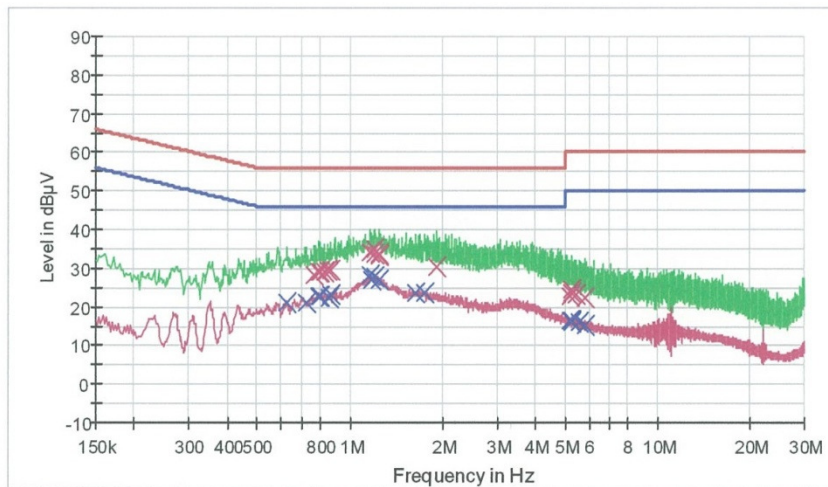
1 / 2

**HCT TEST Report**

**Common Information**

EUT: SM-J120ZN  
 Manufacturer: SAMSUNG  
 Test Site: SHIELD ROOM  
 Operating Conditions: NFC MODE (UNTERMINATION)

FCC CLASS B



— FCCCLASS\_B\_QP      — FCCCLASS\_B\_AV      — Preview Result 1-PK+  
 — Preview Result 2-AVG      × Final Result 1-QPK      × Final Result 2-CAV

**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.764000	28.0	9.000	Off	N	9.7	28.0	56.0
0.794000	29.1	9.000	Off	N	9.7	26.9	56.0
0.798000	28.9	9.000	Off	N	9.7	27.1	56.0
0.826000	29.1	9.000	Off	N	9.7	26.9	56.0
0.846000	29.4	9.000	Off	N	9.7	26.6	56.0
0.868000	29.4	9.000	Off	N	9.7	26.6	56.0
1.164000	33.9	9.000	Off	N	9.7	22.1	56.0
1.204000	33.6	9.000	Off	N	9.7	22.4	56.0
1.210000	34.8	9.000	Off	N	9.7	21.2	56.0
1.246000	33.7	9.000	Off	N	9.7	22.3	56.0
1.252000	33.1	9.000	Off	N	9.7	22.9	56.0
1.910000	30.2	9.000	Off	N	9.7	25.8	56.0
5.206000	22.9	9.000	Off	N	9.8	37.1	60.0
5.220000	24.6	9.000	Off	N	9.8	35.4	60.0
5.228000	23.8	9.000	Off	N	9.8	36.2	60.0
5.252000	23.4	9.000	Off	N	9.8	36.6	60.0
5.446000	23.0	9.000	Off	N	9.8	37.0	60.0
5.800000	22.4	9.000	Off	N	9.9	37.6	60.0

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EMI Auto Test(16)

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**Final Result 2**

Frequency (MHz)	CAverage (dBμV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.626000	21.1	9.000	Off	N	9.6	25.0	46.0
0.720000	21.2	9.000	Off	N	9.7	24.8	46.0
0.794000	22.9	9.000	Off	N	9.7	23.1	46.0
0.798000	22.9	9.000	Off	N	9.7	23.1	46.0
0.862000	22.5	9.000	Off	N	9.7	23.5	46.0
0.868000	23.0	9.000	Off	N	9.7	23.0	46.0
1.164000	28.2	9.000	Off	N	9.7	17.8	46.0
1.182000	27.1	9.000	Off	N	9.7	18.9	46.0
1.202000	27.8	9.000	Off	N	9.7	18.2	46.0
1.252000	27.0	9.000	Off	N	9.7	19.0	46.0
1.638000	23.7	9.000	Off	N	9.7	22.3	46.0
1.744000	23.8	9.000	Off	N	9.7	22.2	46.0
5.206000	16.3	9.000	Off	N	9.8	33.7	50.0
5.220000	16.5	9.000	Off	N	9.8	33.5	50.0
5.228000	16.3	9.000	Off	N	9.8	33.7	50.0
5.252000	16.1	9.000	Off	N	9.8	33.9	50.0
5.552000	16.1	9.000	Off	N	9.8	33.9	50.0
5.800000	15.3	9.000	Off	N	9.9	34.7	50.0

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**Terminate the Antenna  
Conducted Emissions (Line 1)**

EMI Auto Test(16)

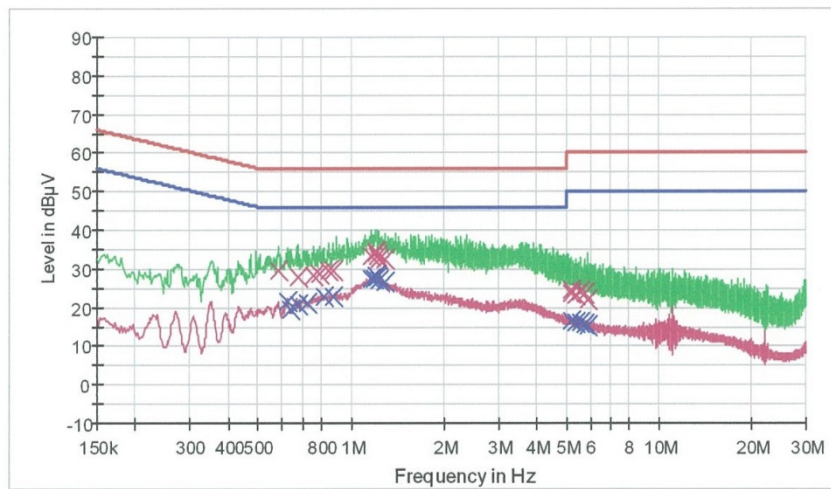
1 / 2

**HCT TEST Report**

**Common Information**

EUT: SM-J120ZN  
 Manufacturer: SAMSUNG  
 Test Site: SHIELD ROOM  
 Operating Conditions: NFC MODE (TERMINATION)

FCC CLASS B



— FCC CLASS B\_QP      — FCC CLASS B\_AV      — Preview Result 1-PK  
— Preview Result 2-AVG      x Final Result 1-GPK      x Final Result 2-CAV

**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.584000	29.3	9.000	Off	N	9.6	26.7	56.0
0.674000	28.0	9.000	Off	N	9.6	28.0	56.0
0.760000	28.3	9.000	Off	N	9.7	27.7	56.0
0.790000	28.8	9.000	Off	N	9.7	27.2	56.0
0.848000	29.6	9.000	Off	N	9.7	26.4	56.0
0.874000	29.4	9.000	Off	N	9.7	26.6	56.0
1.160000	33.1	9.000	Off	N	9.7	22.9	56.0
1.204000	34.7	9.000	Off	N	9.7	21.3	56.0
1.208000	33.9	9.000	Off	N	9.7	22.1	56.0
1.216000	33.4	9.000	Off	N	9.7	22.6	56.0
1.236000	32.6	9.000	Off	N	9.7	23.4	56.0
1.292000	32.3	9.000	Off	N	9.7	23.7	56.0
5.172000	23.5	9.000	Off	N	9.8	36.5	60.0
5.180000	24.3	9.000	Off	N	9.8	35.7	60.0
5.370000	23.2	9.000	Off	N	9.8	36.8	60.0
5.532000	24.1	9.000	Off	N	9.8	35.9	60.0
5.714000	23.7	9.000	Off	N	9.9	36.3	60.0
5.856000	22.0	9.000	Off	N	9.9	38.0	60.0

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EMI Auto Test(16)

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**Final Result 2**

Frequency (MHz)	CAverage (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.624000	21.5	9.000	Off	N	9.6	24.5	46.0
0.640000	19.3	9.000	Off	N	9.6	26.7	46.0
0.674000	20.8	9.000	Off	N	9.6	25.2	46.0
0.722000	21.0	9.000	Off	N	9.7	25.0	46.0
0.818000	22.9	9.000	Off	N	9.7	23.1	46.0
0.874000	22.6	9.000	Off	N	9.7	23.4	46.0
1.160000	27.4	9.000	Off	N	9.7	18.6	46.0
1.196000	27.3	9.000	Off	N	9.7	18.7	46.0
1.208000	28.0	9.000	Off	N	9.7	18.0	46.0
1.216000	27.7	9.000	Off	N	9.7	18.3	46.0
1.236000	26.8	9.000	Off	N	9.7	19.2	46.0
1.292000	26.4	9.000	Off	N	9.7	19.6	46.0
5.166000	16.4	9.000	Off	N	9.8	33.6	50.0
5.180000	16.5	9.000	Off	N	9.8	33.5	50.0
5.370000	16.1	9.000	Off	N	9.8	33.9	50.0
5.532000	15.9	9.000	Off	N	9.8	34.1	50.0
5.714000	15.6	9.000	Off	N	9.9	34.4	50.0
5.856000	15.1	9.000	Off	N	9.9	34.9	50.0

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**Conducted Emissions (Line 2)**

EMI Auto Test(16)

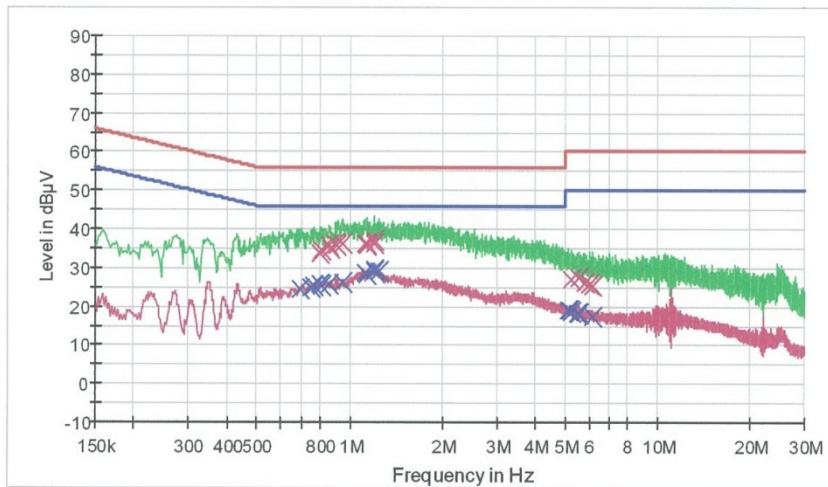
1 / 2

**HCT TEST Report**

**Common Information**

EUT: SM-J120ZN  
 Manufacturer: SAMSUNG  
 Test Site: SHIELD ROOM  
 Operating Conditions: NFC MODE (TERMINATION)

FCC CLASS B



— FCCCLASS B\_QP      — FCCCLASS B\_AV      — Preview Result 1-PK+  
— Preview Result 2-AVG      x Final Result 1-QPK      x Final Result 2-CAV

**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.800000	33.6	9.000	Off	L1	9.7	22.4	56.0
0.810000	34.6	9.000	Off	L1	9.7	21.4	56.0
0.858000	35.8	9.000	Off	L1	9.7	20.2	56.0
0.864000	34.9	9.000	Off	L1	9.7	21.1	56.0
0.898000	36.0	9.000	Off	L1	9.7	20.0	56.0
0.904000	35.8	9.000	Off	L1	9.7	20.2	56.0
0.946000	36.4	9.000	Off	L1	9.7	19.6	56.0
1.126000	36.2	9.000	Off	L1	9.7	19.8	56.0
1.134000	36.0	9.000	Off	L1	9.7	20.0	56.0
1.140000	36.2	9.000	Off	L1	9.7	19.8	56.0
1.198000	36.2	9.000	Off	L1	9.7	19.8	56.0
1.206000	37.2	9.000	Off	L1	9.7	18.8	56.0
5.248000	27.0	9.000	Off	L1	9.9	33.0	60.0
5.266000	27.0	9.000	Off	L1	9.9	33.0	60.0
5.534000	27.4	9.000	Off	L1	9.9	32.6	60.0
5.792000	26.3	9.000	Off	L1	9.9	33.7	60.0
6.030000	25.8	9.000	Off	L1	9.9	34.2	60.0
6.124000	25.3	9.000	Off	L1	9.9	34.7	60.0

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EMI Auto Test(16)

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**Final Result 2**

Frequency (MHz)	CAverage (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.690000	24.5	9.000	Off	L1	9.7	21.5	46.0
0.752000	24.9	9.000	Off	L1	9.7	21.1	46.0
0.768000	25.2	9.000	Off	L1	9.7	20.8	46.0
0.800000	25.6	9.000	Off	L1	9.7	20.4	46.0
0.808000	25.5	9.000	Off	L1	9.7	20.5	46.0
0.858000	25.6	9.000	Off	L1	9.7	20.4	46.0
0.946000	26.1	9.000	Off	L1	9.7	19.9	46.0
1.126000	28.8	9.000	Off	L1	9.7	17.2	46.0
1.134000	28.4	9.000	Off	L1	9.7	17.6	46.0
1.198000	29.1	9.000	Off	L1	9.7	16.9	46.0
1.206000	29.4	9.000	Off	L1	9.7	16.6	46.0
1.242000	28.9	9.000	Off	L1	9.7	17.1	46.0
5.148000	18.8	9.000	Off	L1	9.9	31.2	50.0
5.196000	18.8	9.000	Off	L1	9.9	31.2	50.0
5.248000	18.5	9.000	Off	L1	9.9	31.5	50.0
5.488000	18.1	9.000	Off	L1	9.9	31.9	50.0
5.534000	18.3	9.000	Off	L1	9.9	31.7	50.0
6.124000	17.3	9.000	Off	L1	9.9	32.8	50.0

2/25/2016

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## 12. LIST OF TEST EQUIPMENT

### 12.1 LIST OF TEST EQUIPMENT(Conducted Test)

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Rohde & Schwarz	ENV216/ LISN	12/28/2015	Annual	100073
Rohde & Schwarz	ESCI / TEST RECEIVER	12/28/2015	Annual	100584
Agilent	E4440A/ Spectrum Analyzer	03/18/2015	Annual	US45303008
Agilent	N9020A / SIGNAL ANALYZER	06/30/2015	Annual	MY51110085
Agilent	N9020A / SIGNAL ANALYZER	07/02/2015	Annual	MY50510304
Agilent	N1911A/Power Meter	07/09/2015	Annual	MY45100523
Agilent	N1921A /POWER SENSOR	07/09/2015	Annual	MY45241059
Agilent	87300B/Directional Coupler	11/30/2015	Annual	3116A03621
Hewlett Packard	11667B / Power Splitter	06/15/2015	Annual	5001
Hewlett Packard	E3632A / DC POWER SUPPLY	03/11/2015	Annual	KR75303962
Agilent	8493C / Attenuator(10 dB)	07/21/2015	Annual	07560

## 12.2 LIST OF TEST EQUIPMENT(Radiated Test)

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Schwarzbeck	VULB 9160/ TRILOG Antenna	10/10/2014	Biennial	3368
HD	MA240/ Antenna Position Tower	N/A	N/A	556
EMCO	1050/ Turn Table	N/A	N/A	114
HD GmbH	HD 100/ Controller	N/A	N/A	13
HD GmbH	KMS 560/ SlideBar	N/A	N/A	12
Schwarzbeck	BBHA 9120D/ Horn Antenna	05/07/2015	Biennial	937
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	04/30/2015	Biennial	BBHA9170124
Rohde & Schwarz	FSP / Spectrum Analyzer	01/15/2016	Annual	839117/011
Rohde & Schwarz	LOOP ANTENNA	02/04/2016	Biennial	100179
CERNEX	CBL18265035 / POWER AMP	07/27/2015	Annual	22966
CERNEX	CBL06185030 / POWER AMP	07/21/2015	Annual	22965
CERNEX	CBLU1183540 / POWER AMP	07/21/2015	Annual	22964