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EMI TEST REPORT
FCC CERTIFICATION

Applicant: **SAMSUNG Electronics Co., Ltd.** **129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea**	**Date of Issue: December 06, 2018** **Test Report No. HCT-EM-1811-FC015-R1** **Test Site: HCT CO., LTD.**

FCC ID : **A3LSMA920N**

Applicable Standards	: FCC CFR 47 PART 15 Subpart B Class B ANSI C63.4-2014
EUT Type	: Smart Phone
Model Name	: SM-A920N
Date of Test	: November 20, 2018 to November 26, 2018

The device bearing the trade name and model specified above, has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-2014. (See Test Report if any modifications were made for compliance)
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.
HCT certifies that no party to application has been denial the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C 862

Tested By

Na-Eun Song
Test Engineer
EMC Team
Certification Division

Reviewed By

Jin-Pyo Hong
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REVISION HISTORY

The revision history for this document is shown in table.

Report No.	Issue Date	Information About Changes
HCT-EM-1811-FC015	November 27, 2018	Initial Release
HCT-EM-1811-FC015-R1	December 06, 2018	Revised operating mode (Clause 4.0)

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1. GENERAL INFORMATION

1.1 Description of EUT

Its basic purpose is used for communications.

FCC ID	A3LSMA920N
Model	SM-A920N
EUT Type	Smart Phone
Frequency Band	GSM 1900, WCDMA 850/1700/1900, LTE B4/5/17/26/41, WLAN 2.4 GHz/5 GHz, BT, NFC, ANT+

1.2 Equipment Units Tested

All equipment descriptions used in the tested system (including inserted cards) are:

Device Type	Model Name	Serial Number	Manufacturer	FCC ID / DoC
EUT	SM-A920N	-	SAMSUNG	A3LSMA920N
Notebook PC	ProBook6560b	5CB2053MXF	HP	-
Notebook PC Adaptor	Series PPP009L-E	-	LITE-ON TECHNOLOGY (CHANGZHOU)	-
Gateway	TL-WR747N	-	TP Link	-
Gateway Adaptor	T090060-2H1	-	TP Link	-
Serial Mouse	Serial 2 Button mouse	02031069	Radio Shack	-
RJ45 cable	-	-	-	-
TA	EP-TA20KWK	-	SOLUM	-
Data Cable	EP-DR140AWE	-	KSD	-
Earphone	EHS64AVFWE	-	ALMUS	-
Micro SD Card (64 GB)	-	-	SAMSUNG	-

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1.3 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (m)
EUT	USB Type C	Y	Y	(P,D) 1.0
	Earphone	N/A	N	(D) 1.2
Notebook PC	RJ 45	N/A	N	(D) 1.6
	Serial(Mouse)	N/A	Y	(D) 1.8
	DC IN	N	N/A	(P) 1.8
Gateway	DC IN	N	N/A	(P) 1.8

* The marked “(D)” means the data cable and “(P)” means the power cable.

1.4 Noise Suppression Parts on Cable (I/O Cable)

Product Name	Port	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
EUT	USB Type C	N	N/A	Y	Both End
	Earphone	N	N/A	Y	EUT End
Notebook PC	RJ 45	N	N/A	N	N/A
	Serial(Mouse)	N	N/A	Y	Notebook End

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1.5. Test Facility

Test site is located at 74, SEOICHEON-RO, 578BEON-GIL, MAJANG-MYEON, ICHEON-SI, GYEONGGI-DO, SOUTH KOREA. Those measurement facilities are constructed in conformance with the requirements of ANSI C63.4-2014. The Normalized site attenuations (30 MHz to 1 GHz) and Site validation (1 GHz to 18 GHz) were performed in accordance with the standard in ANSI C63.4-2014

Measurement Facilities	Registration Number
Radiated Field strength measurement facility 3 m Semi Anechoic chamber	90661
Radiated Field strength measurement facility 10 m Semi Anechoic chamber	

1.6 Calibration of Measuring Instrument

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturers recommendations for utilizing calibration equipment, which is traceable to recognized national standards.
Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2006).

1.7 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 data shown herein 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.

Parameter	Expanded Uncertainty (dB)
Conducted Emission (0.15 MHz to 30 MHz)	1.82 dB
Radiated Emissions (30 MHz to 1 GHz)	5.20 dB
Radiated Emissions (1 GHz to 18 GHz)	5.24 dB
Radiated Emissions (18 GHz to 40 GHz)	5.40 dB

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2. LIST OF TEST EQUIPMENT

Type	Manufacturer	Model Name	Serial Number	Calibration Cycle	CAL Date
Conducted Emission					
☒ EMI Test Receiver	Rohde & Schwarz	ESCI	100584	1 year	06.25.2018
☒ LISN	Rohde & Schwarz	ENV216	102245	1 year	12.20.2017
☒ LISN	Rohde & Schwarz	ENV216	100073	1 year	05.03.2018
☒ Radio communication analyzer	ANRITSU	MT8820C	6201138643	1 year	08.21.2018
☒ Antenna (for Communication)	Schwarzbeck	USLP9142	VSLP 9142-200	-	-
☒ Software	Rohde & Schwarz	EMC32 VER8.54.0	-	-	-
Radiated Emission					
-For measurement below 1 GHz					
☒ EMI Test Receiver	Rohde & Schwarz	ESU40	100524	1 year	07.27.2018
☒ Trilog Antenna	Schwarzbeck	VULB 9168	760	2 year	04.06.2017
☒ Antenna master	INNCO Systems	MA4640-XP-ET	-	N/A	-
☒ Antenna master controller	INNCO Systems	CO 3000	CO3000/870/ 35990515/L	N/A	-
☒ Turn Table	INNCO Systems	1060-2M	-	N/A	-
☒ Turn Table controller	INNCO Systems	CO2000	CO2000/095/ 7590304/L	N/A	-
☒ Radio communication analyzer	ANRITSU	MT8820C	6201138643	1 year	08.21.2018
☒ Antenna (for Communication)	Schwarzbeck	USLP9142	VSLP 9142-200	-	-
☒ Software	Rohde & Schwarz	EMC32 VER8.40.0	-	-	-
-For measurement above 1 GHz					
☒ EMI Test Receiver	Rohde & Schwarz	ESU40	100524	1 year	07.27.2018
☒ Antenna master	INNCO Systems	MA4640-XP-ET	-	N/A	-
☒ Antenna master controller	INNCO Systems	CO3000	CO3000/870/ 35990515/L	N/A	-
☒ Turn Table	INNCO Systems	1060-2M	-	N/A	-
☒ Turn Table controller	INNCO Systems	CO2000	CO2000/095/ 7590304/L	N/A	-
☒ Horn Antenna	Schwarzbeck	BBHA 9120D	01836	2 year	05.14.2018
☒ Low Noise Amplifier	TESTEK	TK-PA18H	170034-L	1 year	03.06.2018
☒ Power Amplifier	TESTEK	TK-PA1840H	170030-L	1 year	12.20.2017
☒ Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170#786	2 year	12.05.2017
☒ Radio communication analyzer	ANRITSU	MT8820C	6201138643	1 year	08.21.2018
☒ Antenna (for Communication)	Schwarzbeck	USLP9142	VSLP 9142-200	-	-
☒ Highpass Filter	Wainwright Instruments	WHKX1.0/15G-12SS	42	1 year	08.02.2018
☒ Software	Rohde & Schwarz	EMC32 VER8.40.0	-	-	-

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3. DESCRIPTION OF MEASUREMENTS

3.1 Measurement of Conducted Emission

The test procedure was in accordance with ANSI C63.4-2014, Clause 7.3

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN).
If the EUT is connected to the PC through USB, the AC power-line adapter of the PC is directly connected to a line impedance stabilization network (LISN).
Other support units were connected to the power mains through another LISN. The two LISNs provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Both conducted lines are measured in Quasi-Peak and Average mode, including the worst-case data points for each tested configuration.
c. The frequency range from 150 kHz to 30 MHz was searched.

[Conducted Emission Limits]

Frequency (MHz)	Resolution Bandwidth (kHz)	Quasi-Peak (dB(μV))	Average (dB(μV))
0.15 to 0.5	9	66 to 56*	56 to 46*
0.5 to 5	9	56	46
5 to 30	9	60	50

*Decreases with the logarithm of the frequency.

3.2 Measurement of Radiated Emission

The test procedure was in accordance with ANSI C63.4-2014, Clause 8.3

a. The EUT was placed on the top of a turn table 0.8 meters above the ground at a semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 m away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from 1 m to 4 m above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 m to 4 m and the turn table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Quasi-Peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
f. The test-receiver system was set to Peak and Average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.
g. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response.(1 GHz to 40 GHz)

[Radiated Emission Limits]

Frequency (MHz)	Antenna Distance (m)	Field Strength (μV/m)	Quasi-Peak (dB(μV)/m)
30 to 88	3	100	40.0
88 to 216	3	150	43.5
216 to 960	3	200	46.0
Above 960	3	500	54.0
Frequency (MHz)	Antenna Distance (m)	Peak (dB(μV)/m)	Average (dB(μV)/m)
Above 1 000	3	74	54

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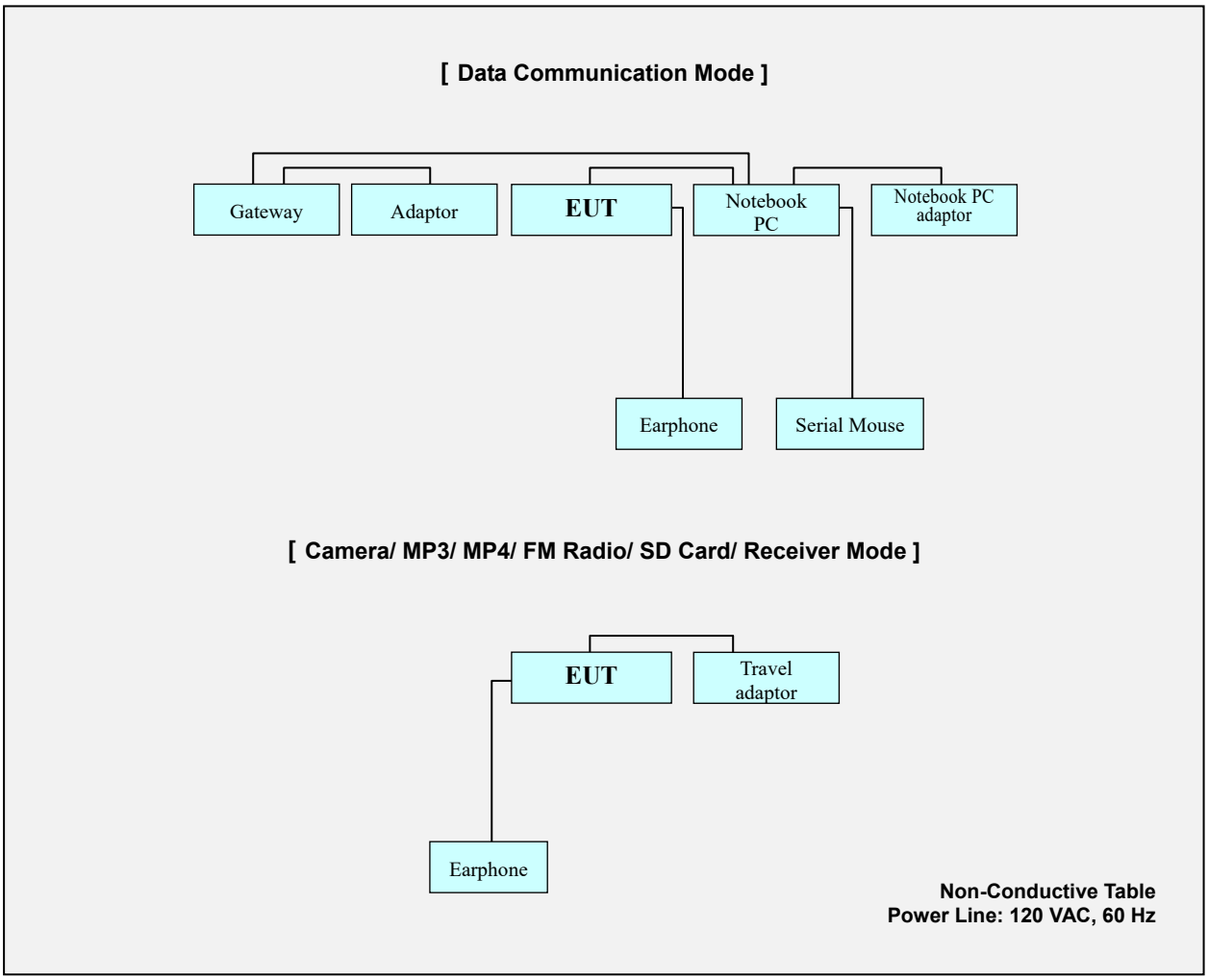
3.2.1 Frequency Range of Radiated Measurements

An unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a Radiated Emission limit is specified, up to the frequency shown in the following table

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705 to 108	1 000
108 to 500	2 000
500 to 1 000	5 000
Above 1 000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

3.3 Configuration of Tested System



4. PRELIMINARY TEST

During preliminary tests, the following operating mode was investigated.

- ☒ Data communication mode (Read, Write) mode
- ☒ Rear Camera (Preview, Recording) mode
- ☒ Front Camera (Preview, Recording) mode
- ☒ MP3 Play mode
- ☒ MP4 Play mode
- ☒ SD Card (Read, Write) mode
- ☒ FM Radio (Low CH, Middle CH, High CH) mode
- ☒ Receiver mode at LTE B17 (Low CH Idle/ Middle CH Idle/ High CH Idle)
- ☒ Receiver mode at WCDMA 850, LTE B5 and LTE B26 (Low CH Idle/ Middle CH Idle/ High CH Idle)

4.1 Operating Mode

It was tested the following operating mode, after connecting all peripheral devices.

- ☒ Data Communication Read
- ☒ Data Communication Write
- ☒ Rear Camera Preview & MP3 Play
- ☒ Rear Camera Recording
- ☒ Front Camera Preview & FM Radio (High CH)
- ☒ Front Camera Recording
- ☒ MP4 Play
- ☒ SD Card Read & FM Radio (Low CH)
- ☒ SD Card Write & FM Radio (Middle CH)
- ☒ Receiver mode at LTE B17 (Low CH Idle/ Middle CH Idle/ High CH Idle)
- ☒ Receiver mode at WCDMA 850, LTE B5 and LTE B26 (Low CH Idle/ Middle CH Idle/ High CH Idle)

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5. CONDUCTED AND RADIATED EMISSION TEST SUMMARY

5.1 Conducted Emission

The test results of conducted emission at mains ports provide the following information:

Applicable Standards	FCC PART 15 Subpart B Class B ANSI C63.4-2014
Detector	Quasi-Peak, CISPR-Average
Bandwidth	9 kHz (6 dB)
Worst Case of Operating Mode	Data communication Write Front Camera Preview & FM Radio (High CH) SD Card Write & FM Radio (Middle CH) Receiver mode at LTE B17 (Middle CH Idle) Receiver mode at WCDMA 850, LTE B5/B26 (Middle CH Idle) NOTE. The worst case of operating mode is reported.
Kind of Test Site	Shielded Room
Temperature	21.1 °C
Relative Humidity	43.7 %
Test Date	November 26, 2018

- Calculation Formula:

1. Conductor L1 = Hot, Conductor N = Neutral
2. Corr. = LISN Factor + Cable Loss
3. QuasiPeak or CAverage= Receiver Reading + Corr.
4. Margin = Limit – QuasiPeak or CAverage

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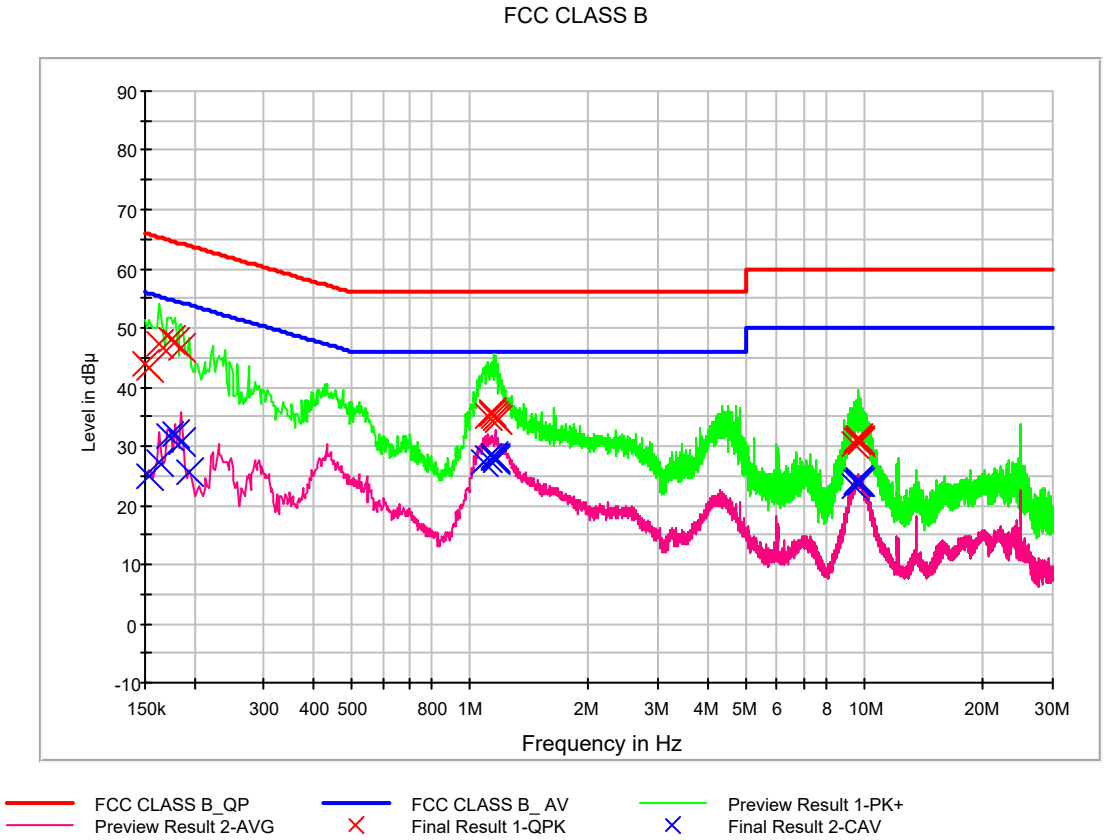
Figure 1: Conducted Emission, Data Communication (Write) Mode, Line (L1)



QuasiPeak Final Result, Line (L1)

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	44.0	9.000	L1	9.6	22.0	66.0
0.154000	43.4	9.000	L1	9.6	22.4	65.8
0.162000	47.2	9.000	L1	9.6	18.2	65.4
0.174000	48.1	9.000	L1	9.6	16.7	64.8
0.178000	47.6	9.000	L1	9.6	16.9	64.6
0.186000	46.5	9.000	L1	9.6	17.7	64.2
1.104000	35.1	9.000	L1	9.7	20.9	56.0
1.130000	35.3	9.000	L1	9.7	20.7	56.0
1.134000	35.6	9.000	L1	9.7	20.4	56.0
1.152000	35.2	9.000	L1	9.7	20.8	56.0
1.158000	34.7	9.000	L1	9.7	21.3	56.0
1.172000	34.5	9.000	L1	9.7	21.5	56.0
9.418000	30.3	9.000	L1	10.0	29.7	60.0
9.578000	30.9	9.000	L1	10.0	29.1	60.0
9.626000	31.3	9.000	L1	10.0	28.7	60.0
9.632000	30.9	9.000	L1	10.0	29.1	60.0
9.730000	30.9	9.000	L1	10.0	29.1	60.0
9.802000	30.7	9.000	L1	10.0	29.3	60.0

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CAverage Final Result, Line (L1)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.154000	25.0	9.000	L1	9.6	30.8	55.8
0.162000	27.4	9.000	L1	9.6	27.9	55.4
0.172000	31.8	9.000	L1	9.6	23.0	54.9
0.178000	32.1	9.000	L1	9.6	22.5	54.6
0.186000	30.6	9.000	L1	9.6	23.6	54.2
0.194000	25.5	9.000	L1	9.6	28.3	53.9
1.078000	27.1	9.000	L1	9.7	18.9	46.0
1.104000	28.0	9.000	L1	9.7	18.0	46.0
1.144000	27.9	9.000	L1	9.7	18.1	46.0
1.152000	28.2	9.000	L1	9.7	17.8	46.0
1.158000	27.5	9.000	L1	9.7	18.5	46.0
1.166000	27.8	9.000	L1	9.7	18.2	46.0
9.418000	23.3	9.000	L1	10.0	26.7	50.0
9.586000	24.0	9.000	L1	10.0	26.0	50.0
9.618000	23.9	9.000	L1	10.0	26.1	50.0
9.626000	24.2	9.000	L1	10.0	25.8	50.0
9.632000	24.1	9.000	L1	10.0	25.9	50.0
9.738000	23.8	9.000	L1	10.0	26.2	50.0

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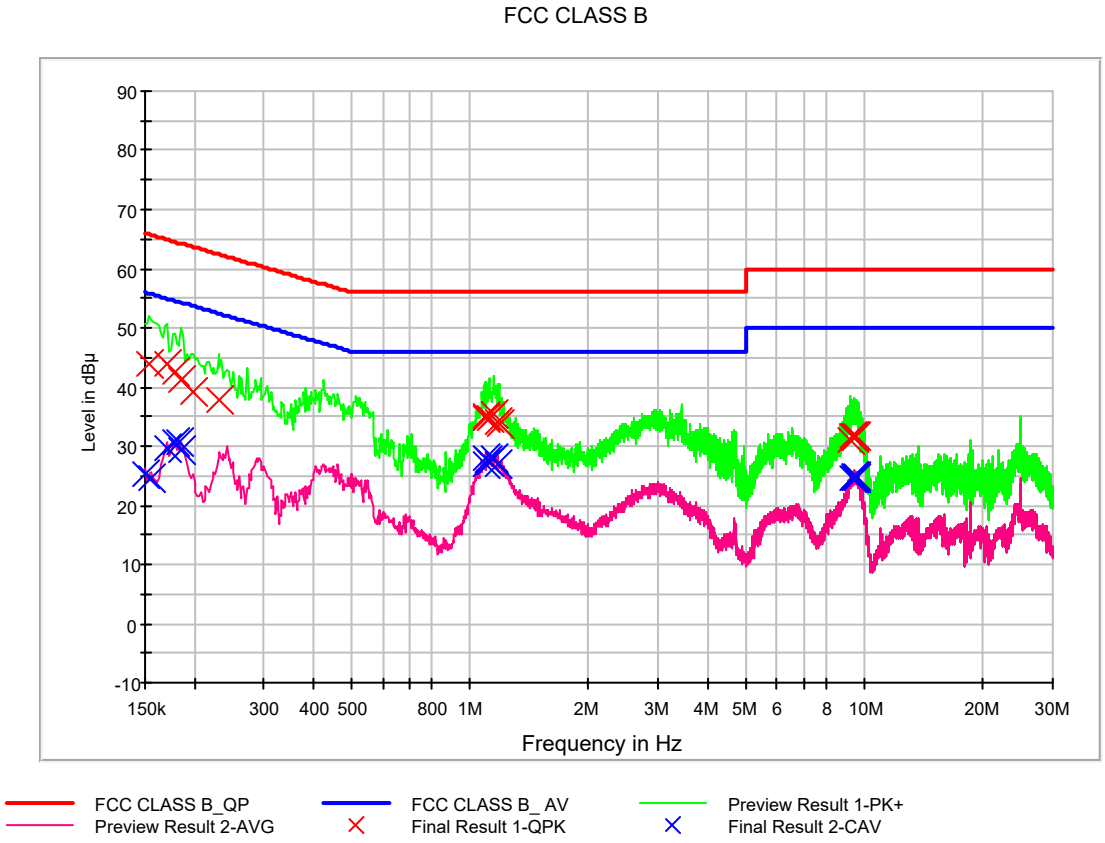
Figure 2: Conducted Emission, Data Communication (Write) Mode, Line (N)



QuasiPeak Final Result, Line (N)

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.154000	44.0	9.000	N	9.6	21.8	65.8
0.170000	44.0	9.000	N	9.6	21.0	65.0
0.178000	42.5	9.000	N	9.6	22.1	64.6
0.186000	41.3	9.000	N	9.7	22.9	64.2
0.198000	39.0	9.000	N	9.7	24.7	63.7
0.230000	37.8	9.000	N	9.7	24.6	62.4
1.090000	34.8	9.000	N	9.7	21.2	56.0
1.098000	35.0	9.000	N	9.7	21.0	56.0
1.116000	34.8	9.000	N	9.7	21.2	56.0
1.152000	35.3	9.000	N	9.8	20.7	56.0
1.178000	33.9	9.000	N	9.8	22.1	56.0
1.184000	33.7	9.000	N	9.8	22.3	56.0
9.254000	31.1	9.000	N	10.0	28.9	60.0
9.292000	31.6	9.000	N	10.0	28.4	60.0
9.390000	31.8	9.000	N	10.0	28.2	60.0
9.430000	31.6	9.000	N	10.0	28.4	60.0
9.468000	31.4	9.000	N	10.0	28.6	60.0
9.516000	31.6	9.000	N	10.0	28.4	60.0

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CAverage Final Result, Line (N)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	25.1	9.000	N	9.6	30.9	56.0
0.156000	24.7	9.000	N	9.6	31.0	55.7
0.170000	29.6	9.000	N	9.6	25.4	55.0
0.178000	30.8	9.000	N	9.6	23.8	54.6
0.182000	30.8	9.000	N	9.6	23.6	54.4
0.186000	29.3	9.000	N	9.7	24.9	54.2
1.090000	26.9	9.000	N	9.7	19.1	46.0
1.098000	27.9	9.000	N	9.7	18.1	46.0
1.102000	27.6	9.000	N	9.7	18.4	46.0
1.116000	27.3	9.000	N	9.7	18.7	46.0
1.152000	28.0	9.000	N	9.8	18.0	46.0
1.178000	27.1	9.000	N	9.8	18.9	46.0
9.292000	24.4	9.000	N	10.0	25.6	50.0
9.390000	24.7	9.000	N	10.0	25.3	50.0
9.436000	24.8	9.000	N	10.0	25.2	50.0
9.468000	24.8	9.000	N	10.0	25.2	50.0
9.510000	24.7	9.000	N	10.0	25.3	50.0
9.516000	24.8	9.000	N	10.0	25.2	50.0

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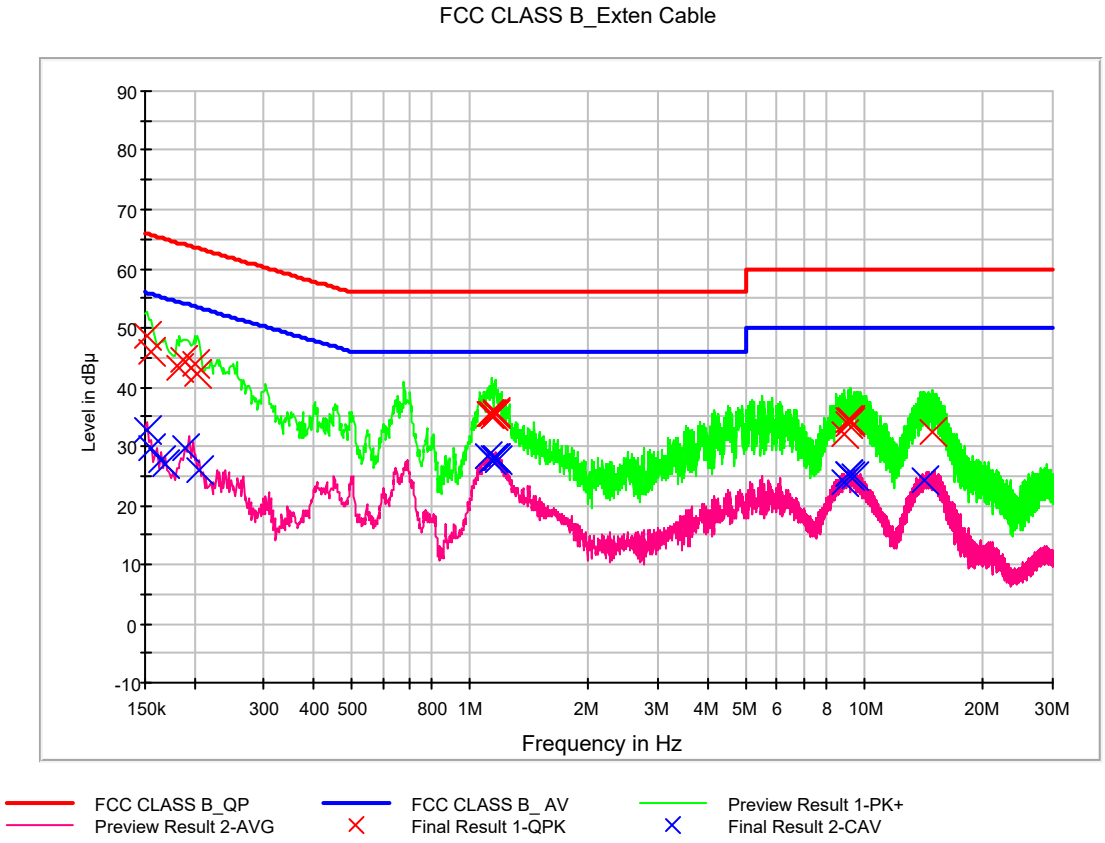
Figure 3: Conducted Emission, Front Camera Preview & FM Radio (High CH) Mode, Line (L1)



QuasiPeak Final Result, Line (L1)

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.152000	48.8	9.000	L1	9.7	17.1	65.9
0.156000	45.8	9.000	L1	9.7	19.9	65.7
0.184000	43.1	9.000	L1	9.7	21.2	64.3
0.188000	44.7	9.000	L1	9.7	19.4	64.1
0.200000	43.9	9.000	L1	9.7	19.8	63.6
0.204000	42.3	9.000	L1	9.7	21.1	63.4
1.116000	35.5	9.000	L1	9.8	20.5	56.0
1.126000	35.4	9.000	L1	9.8	20.6	56.0
1.132000	35.3	9.000	L1	9.8	20.7	56.0
1.142000	35.1	9.000	L1	9.8	20.9	56.0
1.156000	35.5	9.000	L1	9.8	20.5	56.0
1.162000	35.7	9.000	L1	9.8	20.3	56.0
8.882000	32.1	9.000	L1	10.1	27.9	60.0
9.110000	33.8	9.000	L1	10.1	26.2	60.0
9.118000	34.4	9.000	L1	10.1	25.6	60.0
9.170000	34.4	9.000	L1	10.1	25.6	60.0
9.174000	34.1	9.000	L1	10.1	25.9	60.0
14.844000	32.4	9.000	L1	10.3	27.6	60.0

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CAverage Final Result, Line (L1)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.152000	32.6	9.000	L1	9.7	23.2	55.9
0.156000	29.6	9.000	L1	9.7	26.0	55.7
0.164000	27.6	9.000	L1	9.7	27.7	55.3
0.168000	27.0	9.000	L1	9.7	28.1	55.1
0.190000	29.6	9.000	L1	9.7	24.4	54.0
0.206000	25.8	9.000	L1	9.7	27.5	53.4
1.114000	28.2	9.000	L1	9.8	17.8	46.0
1.132000	27.5	9.000	L1	9.8	18.5	46.0
1.142000	27.9	9.000	L1	9.8	18.1	46.0
1.156000	28.0	9.000	L1	9.8	18.0	46.0
1.164000	28.0	9.000	L1	9.8	18.0	46.0
1.174000	27.7	9.000	L1	9.8	18.3	46.0
8.882000	23.9	9.000	L1	10.1	26.1	50.0
9.110000	25.2	9.000	L1	10.1	24.8	50.0
9.114000	25.2	9.000	L1	10.1	24.8	50.0
9.166000	24.8	9.000	L1	10.1	25.2	50.0
9.418000	24.8	9.000	L1	10.1	25.2	50.0
14.240000	24.2	9.000	L1	10.3	25.8	50.0

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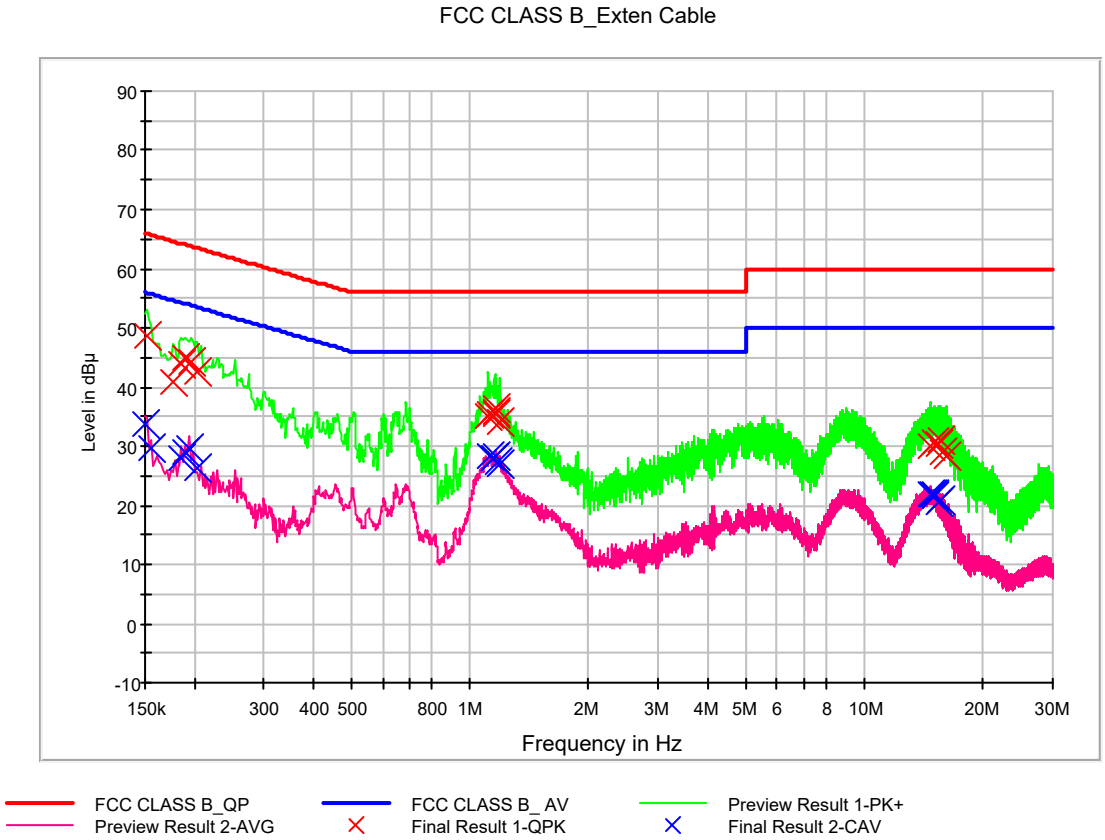
Figure 4: Conducted Emission, Front Camera Preview & FM Radio (High CH) mode, Line (N)



QuasiPeak Final Result, Line (N)

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.152000	48.7	9.000	N	9.7	17.2	65.9
0.176000	40.8	9.000	N	9.7	23.9	64.7
0.186000	44.0	9.000	N	9.7	20.2	64.2
0.190000	44.8	9.000	N	9.7	19.2	64.0
0.196000	44.3	9.000	N	9.7	19.4	63.8
0.204000	42.6	9.000	N	9.7	20.9	63.4
1.114000	35.2	9.000	N	9.8	20.8	56.0
1.118000	35.4	9.000	N	9.8	20.6	56.0
1.156000	35.3	9.000	N	9.8	20.7	56.0
1.162000	36.3	9.000	N	9.8	19.7	56.0
1.168000	35.6	9.000	N	9.8	20.4	56.0
1.192000	33.9	9.000	N	9.8	22.1	56.0
14.620000	30.1	9.000	N	10.5	29.9	60.0
14.994000	30.6	9.000	N	10.5	29.4	60.0
15.430000	30.4	9.000	N	10.5	29.6	60.0
15.506000	31.0	9.000	N	10.5	29.0	60.0
15.832000	29.0	9.000	N	10.5	31.0	60.0
16.088000	28.3	9.000	N	10.5	31.7	60.0

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CAverage Final Result, Line (N)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	33.9	9.000	N	9.7	22.1	56.0
0.156000	29.5	9.000	N	9.7	26.2	55.7
0.186000	27.8	9.000	N	9.7	26.4	54.2
0.190000	29.1	9.000	N	9.7	24.9	54.0
0.194000	29.6	9.000	N	9.7	24.2	53.9
0.204000	26.1	9.000	N	9.7	27.3	53.4
1.120000	28.2	9.000	N	9.8	17.8	46.0
1.144000	27.8	9.000	N	9.8	18.2	46.0
1.154000	28.1	9.000	N	9.8	17.9	46.0
1.162000	28.3	9.000	N	9.8	17.7	46.0
1.178000	27.4	9.000	N	9.8	18.6	46.0
1.192000	27.0	9.000	N	9.8	19.0	46.0
14.776000	21.9	9.000	N	10.5	28.1	50.0
14.824000	21.8	9.000	N	10.5	28.2	50.0
14.960000	21.6	9.000	N	10.5	28.4	50.0
14.994000	21.7	9.000	N	10.5	28.3	50.0
15.360000	20.6	9.000	N	10.5	29.4	50.0
15.634000	20.8	9.000	N	10.5	29.2	50.0

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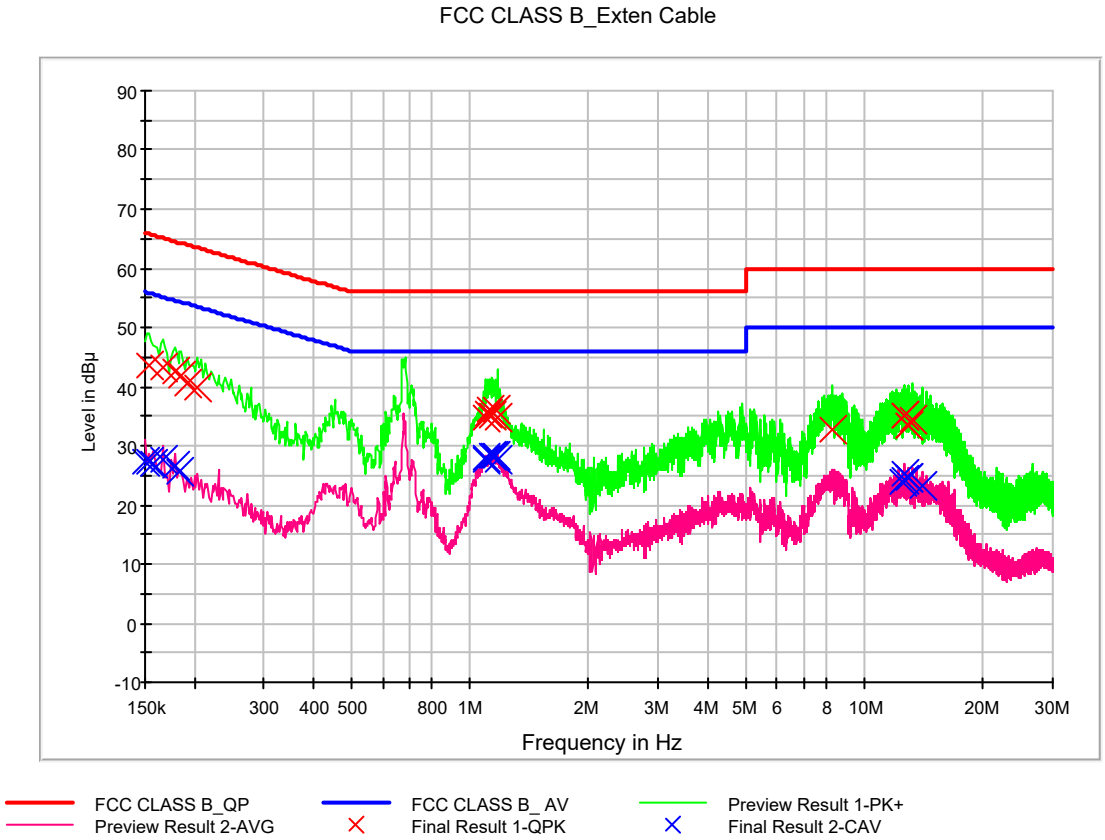
Figure 5: Conducted Emission, SD Card Write & FM Radio (Middle CH) Mode, Line (L1)



QuasiPeak Final Result, Line (L1)

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.154000	43.7	9.000	L1	9.7	22.1	65.8
0.166000	43.1	9.000	L1	9.7	22.1	65.2
0.178000	42.4	9.000	L1	9.7	22.2	64.6
0.186000	41.7	9.000	L1	9.7	22.5	64.2
0.192000	40.6	9.000	L1	9.7	23.3	63.9
0.204000	39.8	9.000	L1	9.7	23.6	63.4
1.092000	34.6	9.000	L1	9.8	21.4	56.0
1.102000	35.5	9.000	L1	9.8	20.5	56.0
1.124000	36.1	9.000	L1	9.8	19.9	56.0
1.140000	35.1	9.000	L1	9.8	20.9	56.0
1.156000	36.0	9.000	L1	9.8	20.0	56.0
1.172000	34.8	9.000	L1	9.8	21.2	56.0
8.290000	32.7	9.000	L1	10.1	27.3	60.0
12.576000	35.0	9.000	L1	10.2	25.0	60.0
12.634000	35.1	9.000	L1	10.2	24.9	60.0
12.906000	33.5	9.000	L1	10.2	26.5	60.0
12.962000	33.3	9.000	L1	10.2	26.7	60.0
13.216000	34.3	9.000	L1	10.2	25.7	60.0

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CAverage Final Result, Line (L1)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	27.3	9.000	L1	9.7	28.7	56.0
0.154000	27.3	9.000	L1	9.7	28.4	55.8
0.158000	26.8	9.000	L1	9.7	28.8	55.6
0.166000	27.5	9.000	L1	9.7	27.6	55.2
0.178000	26.5	9.000	L1	9.7	28.1	54.6
0.184000	25.7	9.000	L1	9.7	28.6	54.3
1.092000	27.5	9.000	L1	9.8	18.5	46.0
1.100000	27.9	9.000	L1	9.8	18.1	46.0
1.140000	28.4	9.000	L1	9.8	17.6	46.0
1.154000	28.2	9.000	L1	9.8	17.8	46.0
1.164000	28.2	9.000	L1	9.8	17.8	46.0
1.172000	27.7	9.000	L1	9.8	18.3	46.0
12.524000	24.1	9.000	L1	10.2	25.9	50.0
12.576000	25.2	9.000	L1	10.2	24.8	50.0
12.582000	24.1	9.000	L1	10.2	25.9	50.0
12.852000	24.5	9.000	L1	10.2	25.5	50.0
12.906000	24.6	9.000	L1	10.2	25.4	50.0
14.038000	23.4	9.000	L1	10.2	26.6	50.0

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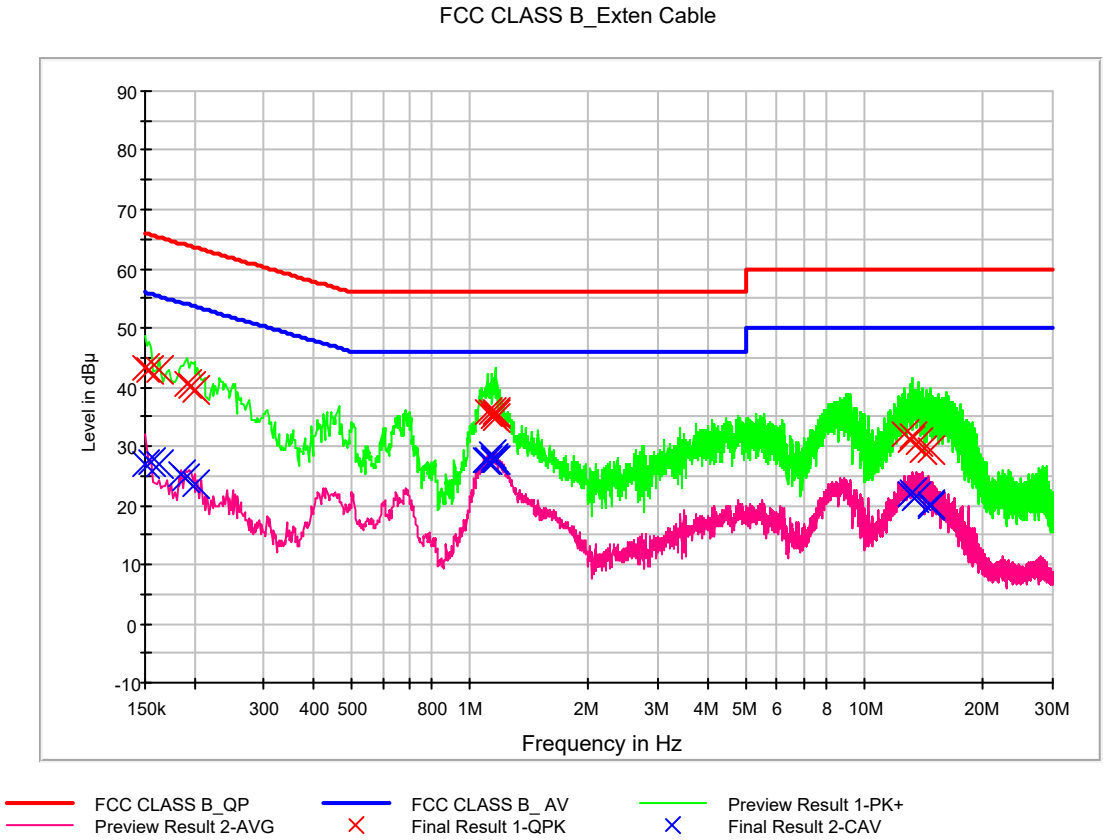
Figure 6: Conducted Emission, SD Card Write & FM Radio (Middle CH) Mode, Line (N)



QuasiPeak Final Result, Line (N)

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	43.3	9.000	N	9.7	22.7	66.0
0.154000	43.0	9.000	N	9.7	22.8	65.8
0.162000	42.9	9.000	N	9.7	22.4	65.4
0.192000	40.7	9.000	N	9.7	23.3	63.9
0.196000	40.3	9.000	N	9.7	23.5	63.8
0.200000	39.6	9.000	N	9.7	24.0	63.6
1.112000	35.9	9.000	N	9.8	20.1	56.0
1.138000	35.7	9.000	N	9.8	20.3	56.0
1.152000	35.1	9.000	N	9.8	20.9	56.0
1.158000	35.7	9.000	N	9.8	20.3	56.0
1.162000	35.3	9.000	N	9.8	20.7	56.0
1.168000	34.9	9.000	N	9.8	21.1	56.0
12.612000	31.9	9.000	N	10.4	28.1	60.0
13.018000	31.1	9.000	N	10.4	28.9	60.0
13.304000	31.5	9.000	N	10.4	28.5	60.0
13.646000	30.6	9.000	N	10.4	29.4	60.0
13.982000	29.2	9.000	N	10.4	30.8	60.0
14.684000	29.2	9.000	N	10.5	30.8	60.0

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CAverage Final Result, Line (N)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	27.0	9.000	N	9.7	29.0	56.0
0.156000	27.4	9.000	N	9.7	28.3	55.7
0.162000	26.9	9.000	N	9.7	28.5	55.4
0.186000	25.2	9.000	N	9.7	29.0	54.2
0.190000	24.7	9.000	N	9.7	29.4	54.0
0.200000	23.6	9.000	N	9.7	30.1	53.6
1.100000	27.6	9.000	N	9.8	18.4	46.0
1.114000	27.7	9.000	N	9.8	18.3	46.0
1.138000	28.5	9.000	N	9.8	17.5	46.0
1.142000	27.9	9.000	N	9.8	18.1	46.0
1.150000	27.6	9.000	N	9.8	18.4	46.0
1.168000	27.6	9.000	N	9.8	18.4	46.0
13.018000	21.7	9.000	N	10.4	28.3	50.0
13.302000	22.1	9.000	N	10.4	27.9	50.0
13.420000	21.2	9.000	N	10.4	28.8	50.0
13.474000	21.5	9.000	N	10.4	28.5	50.0
14.684000	19.9	9.000	N	10.5	30.1	50.0
14.740000	20.2	9.000	N	10.5	29.8	50.0

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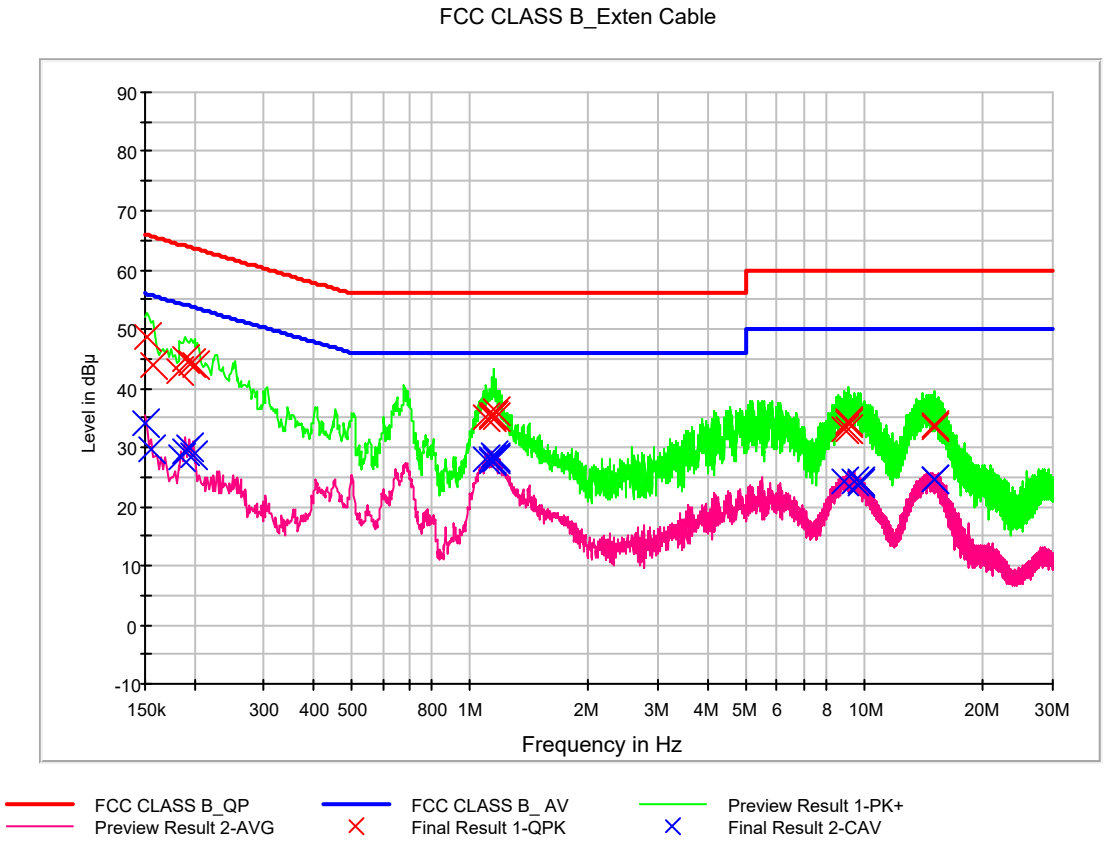
Figure 7: Conducted Emission, Receiver Mode at LTE B17 (Middle CH Idle), Line (L1)



QuasiPeak Final Result, Line (L1)

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.152000	48.6	9.000	L1	9.7	17.3	65.9
0.158000	44.0	9.000	L1	9.7	21.6	65.6
0.184000	42.9	9.000	L1	9.7	21.4	64.3
0.190000	44.9	9.000	L1	9.7	19.1	64.0
0.196000	44.2	9.000	L1	9.7	19.5	63.8
0.200000	43.8	9.000	L1	9.7	19.8	63.6
1.100000	35.1	9.000	L1	9.8	20.9	56.0
1.132000	35.1	9.000	L1	9.8	20.9	56.0
1.140000	35.4	9.000	L1	9.8	20.6	56.0
1.148000	35.6	9.000	L1	9.8	20.4	56.0
1.158000	35.1	9.000	L1	9.8	20.9	56.0
1.164000	36.0	9.000	L1	9.8	20.0	56.0
8.908000	32.9	9.000	L1	10.1	27.1	60.0
9.120000	34.3	9.000	L1	10.1	25.7	60.0
9.124000	34.0	9.000	L1	10.1	26.0	60.0
9.134000	33.1	9.000	L1	10.1	26.9	60.0
14.996000	33.9	9.000	L1	10.3	26.1	60.0
15.046000	33.5	9.000	L1	10.3	26.5	60.0

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CAverage Final Result, Line (L1)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	34.2	9.000	L1	9.7	21.8	56.0
0.156000	29.5	9.000	L1	9.7	26.2	55.7
0.186000	28.4	9.000	L1	9.7	25.9	54.2
0.190000	29.5	9.000	L1	9.7	24.6	54.0
0.194000	29.9	9.000	L1	9.7	24.0	53.9
0.198000	28.8	9.000	L1	9.7	24.9	53.7
1.100000	28.1	9.000	L1	9.8	17.9	46.0
1.132000	27.7	9.000	L1	9.8	18.3	46.0
1.140000	27.8	9.000	L1	9.8	18.2	46.0
1.148000	28.5	9.000	L1	9.8	17.5	46.0
1.158000	28.3	9.000	L1	9.8	17.7	46.0
1.164000	28.1	9.000	L1	9.8	17.9	46.0
8.908000	24.3	9.000	L1	10.1	25.7	50.0
9.432000	24.4	9.000	L1	10.1	25.6	50.0
9.768000	24.4	9.000	L1	10.2	25.6	50.0
9.816000	24.0	9.000	L1	10.2	26.0	50.0
14.996000	24.7	9.000	L1	10.3	25.3	50.0
15.046000	24.6	9.000	L1	10.3	25.4	50.0

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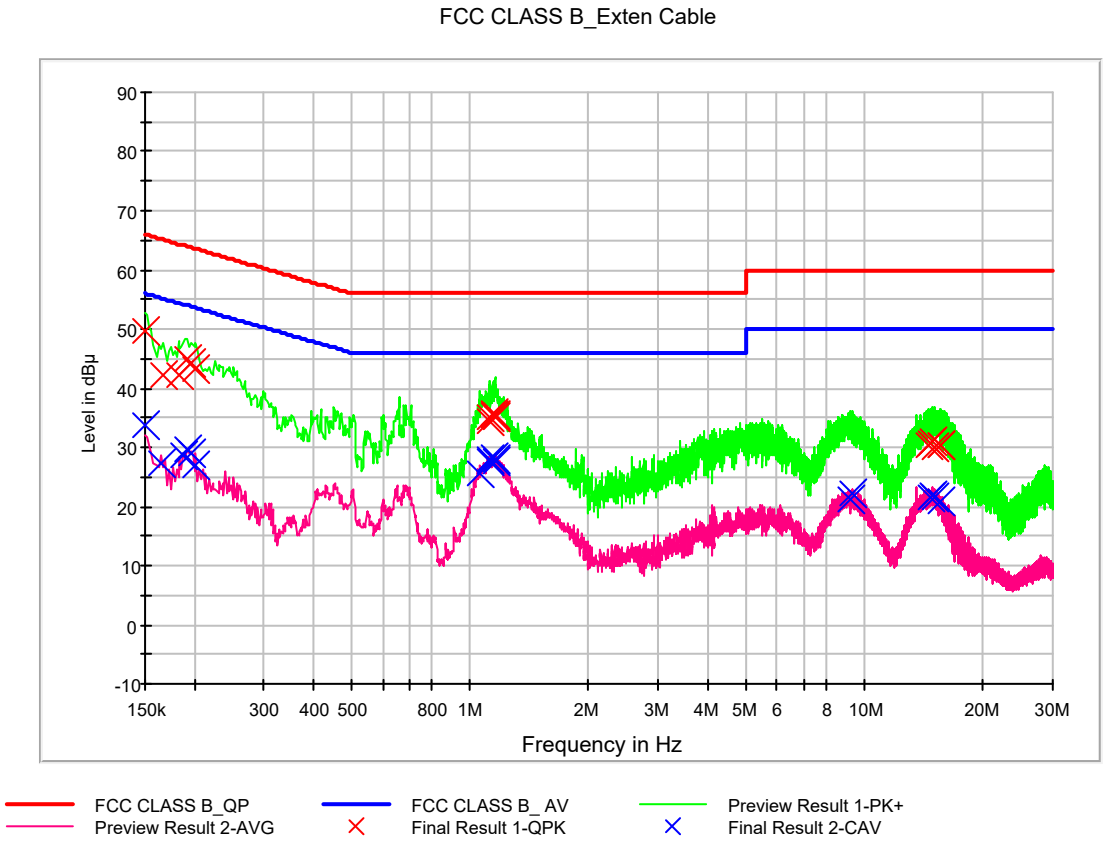
Figure 8: Conducted Emission, Receiver Mode at LTE B17 (Middle CH Idle), Line (L1)



QuasiPeak Final Result, Line (N)

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	49.6	9.000	N	9.7	16.4	66.0
0.166000	42.2	9.000	N	9.7	23.0	65.2
0.182000	42.1	9.000	N	9.7	22.2	64.4
0.192000	45.0	9.000	N	9.7	19.0	63.9
0.196000	44.3	9.000	N	9.7	19.4	63.8
0.202000	43.4	9.000	N	9.7	20.1	63.5
1.118000	34.5	9.000	N	9.8	21.5	56.0
1.122000	35.0	9.000	N	9.8	21.0	56.0
1.142000	35.5	9.000	N	9.8	20.5	56.0
1.150000	35.9	9.000	N	9.8	20.1	56.0
1.156000	35.5	9.000	N	9.8	20.5	56.0
1.166000	35.0	9.000	N	9.8	21.0	56.0
14.602000	30.2	9.000	N	10.5	29.8	60.0
14.718000	30.6	9.000	N	10.5	29.4	60.0
14.872000	31.0	9.000	N	10.5	29.0	60.0
15.024000	30.2	9.000	N	10.5	29.8	60.0
15.496000	30.2	9.000	N	10.5	29.8	60.0
15.650000	30.4	9.000	N	10.5	29.6	60.0

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CAverage Final Result, Line (N)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	33.8	9.000	N	9.7	22.2	56.0
0.164000	27.4	9.000	N	9.7	27.9	55.3
0.188000	28.5	9.000	N	9.7	25.6	54.1
0.192000	29.6	9.000	N	9.7	24.3	53.9
0.196000	29.0	9.000	N	9.7	24.8	53.8
0.202000	26.8	9.000	N	9.7	26.7	53.5
1.054000	25.5	9.000	N	9.8	20.5	46.0
1.116000	27.9	9.000	N	9.8	18.1	46.0
1.122000	27.7	9.000	N	9.8	18.3	46.0
1.142000	28.1	9.000	N	9.8	17.9	46.0
1.156000	27.6	9.000	N	9.8	18.4	46.0
1.162000	27.8	9.000	N	9.8	18.2	46.0
9.234000	21.2	9.000	N	10.2	28.8	50.0
9.290000	22.1	9.000	N	10.2	27.9	50.0
14.758000	21.7	9.000	N	10.5	28.3	50.0
14.872000	21.7	9.000	N	10.5	28.3	50.0
15.006000	21.7	9.000	N	10.5	28.3	50.0
15.650000	20.9	9.000	N	10.5	29.1	50.0

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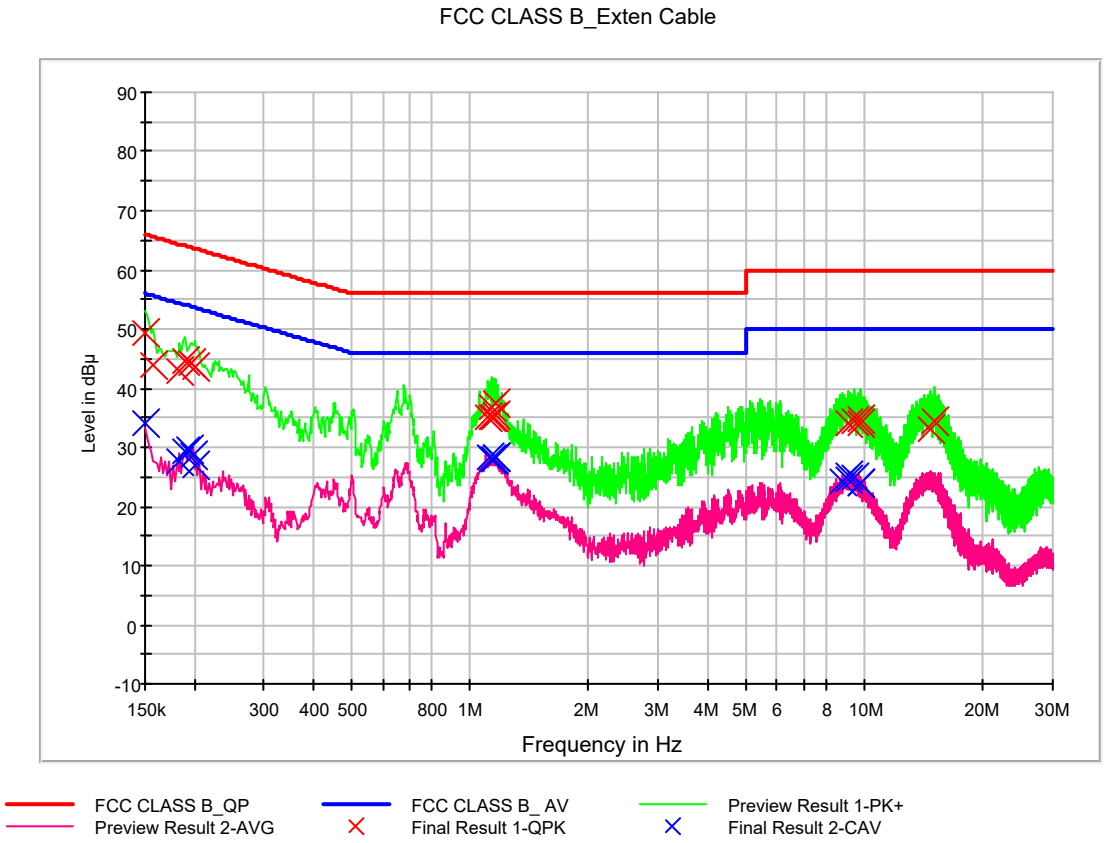
Figure 9: Conducted Emission, Receiver Mode at WCDMA 850, LTE B5/B26 (Middle CH Idle), Line (L1)



QuasiPeak Final Result, Line (L1)

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	49.4	9.000	L1	9.7	16.6	66.0
0.158000	44.0	9.000	L1	9.7	21.6	65.6
0.184000	42.9	9.000	L1	9.7	21.4	64.3
0.190000	44.7	9.000	L1	9.7	19.3	64.0
0.196000	44.2	9.000	L1	9.7	19.6	63.8
0.200000	43.6	9.000	L1	9.7	20.0	63.6
1.110000	35.1	9.000	L1	9.8	20.9	56.0
1.134000	35.1	9.000	L1	9.8	20.9	56.0
1.140000	36.7	9.000	L1	9.8	19.3	56.0
1.148000	35.0	9.000	L1	9.8	21.0	56.0
1.158000	35.4	9.000	L1	9.8	20.6	56.0
1.164000	37.5	9.000	L1	9.8	18.5	56.0
9.126000	34.0	9.000	L1	10.1	26.0	60.0
9.416000	34.3	9.000	L1	10.1	25.7	60.0
9.764000	34.0	9.000	L1	10.2	26.0	60.0
9.818000	34.8	9.000	L1	10.2	25.2	60.0
14.652000	32.9	9.000	L1	10.3	27.1	60.0
15.050000	34.3	9.000	L1	10.3	25.7	60.0

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CAverage Final Result, Line (L1)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	34.0	9.000	L1	9.7	22.0	56.0
0.184000	27.6	9.000	L1	9.7	26.7	54.3
0.190000	29.4	9.000	L1	9.7	24.6	54.0
0.194000	29.8	9.000	L1	9.7	24.1	53.9
0.198000	28.6	9.000	L1	9.7	25.1	53.7
0.202000	27.0	9.000	L1	9.7	26.5	53.5
1.122000	28.3	9.000	L1	9.8	17.7	46.0
1.134000	27.9	9.000	L1	9.8	18.1	46.0
1.142000	27.9	9.000	L1	9.8	18.1	46.0
1.148000	28.1	9.000	L1	9.8	17.9	46.0
1.156000	28.3	9.000	L1	9.8	17.7	46.0
1.164000	28.4	9.000	L1	9.8	17.6	46.0
8.798000	24.4	9.000	L1	10.1	25.6	50.0
9.114000	25.2	9.000	L1	10.1	24.8	50.0
9.126000	24.7	9.000	L1	10.1	25.3	50.0
9.416000	24.8	9.000	L1	10.1	25.2	50.0
9.764000	23.9	9.000	L1	10.2	26.1	50.0
9.816000	24.0	9.000	L1	10.2	26.0	50.0

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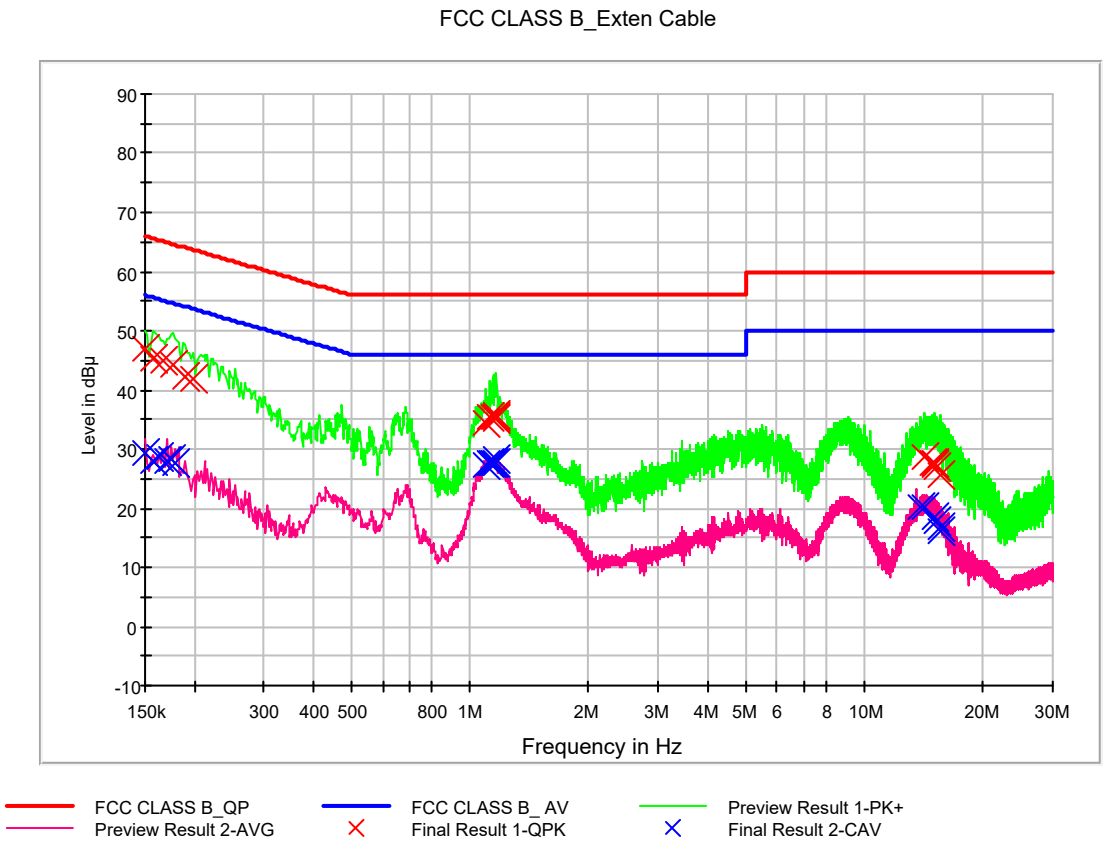
Figure 10: Conducted Emission, Receiver Mode at WCDMA 850, LTE B5/B26 (Middle CH Idle), Line (L1)



QuasiPeak Final Result, Line (N)

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	47.0	9.000	N	9.7	19.0	66.0
0.158000	45.2	9.000	N	9.7	20.4	65.6
0.166000	44.8	9.000	N	9.7	20.4	65.2
0.176000	44.3	9.000	N	9.7	20.4	64.7
0.190000	42.2	9.000	N	9.7	21.8	64.0
0.198000	41.9	9.000	N	9.7	21.8	63.7
1.096000	34.3	9.000	N	9.8	21.7	56.0
1.122000	35.6	9.000	N	9.8	20.4	56.0
1.142000	35.3	9.000	N	9.8	20.7	56.0
1.158000	35.2	9.000	N	9.8	20.8	56.0
1.162000	35.6	9.000	N	9.8	20.4	56.0
1.168000	35.5	9.000	N	9.8	20.5	56.0
14.212000	28.7	9.000	N	10.4	31.3	60.0
14.792000	27.8	9.000	N	10.5	32.2	60.0
15.000000	27.4	9.000	N	10.5	32.6	60.0
15.036000	27.6	9.000	N	10.5	32.4	60.0
15.206000	27.1	9.000	N	10.5	32.9	60.0
15.620000	25.7	9.000	N	10.5	34.4	60.0

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CAverage Final Result, Line (N)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	29.2	9.000	N	9.7	26.8	56.0
0.158000	27.9	9.000	N	9.7	27.7	55.6
0.162000	28.6	9.000	N	9.7	26.8	55.4
0.170000	28.1	9.000	N	9.7	26.9	55.0
0.174000	28.5	9.000	N	9.7	26.3	54.8
0.178000	27.6	9.000	N	9.7	27.0	54.6
1.096000	27.3	9.000	N	9.8	18.7	46.0
1.120000	27.8	9.000	N	9.8	18.2	46.0
1.132000	27.5	9.000	N	9.8	18.5	46.0
1.142000	27.8	9.000	N	9.8	18.2	46.0
1.158000	27.7	9.000	N	9.8	18.3	46.0
1.162000	28.2	9.000	N	9.8	17.8	46.0
13.814000	20.0	9.000	N	10.4	30.0	50.0
14.264000	20.2	9.000	N	10.4	29.8	50.0
15.000000	18.6	9.000	N	10.5	31.4	50.0
15.206000	17.8	9.000	N	10.5	32.2	50.0
15.620000	16.0	9.000	N	10.5	34.0	50.0
15.638000	16.9	9.000	N	10.5	33.1	50.0

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5.2 Radiated Emission

The test results of radiated emission provide the following information:

For Measurement Below 1 GHz

Applicable Standards	FCC PART 15 Subpart B Class B ANSI C63.4-2014
Detector	Quasi-Peak
Bandwidth	120 kHz (6 dB)
Worst Case of Operating Mode	Data communication Write Front Camera Preview & FM Radio (High CH) SD Card Write & FM Radio (Middle CH) Receiver mode at LTE B17 (Middle CH Idle) Receiver mode at WCDMA 850, LTE B5/B26 (Middle CH Idle) NOTE. 1. Three orientations have been investigated and the worst case orientation is reported. 2. The worst case of operating mode is reported.
Kind of Test Site	3 m semi anechoic chamber
Temperature	21.0-23.2 °C
Relative Humidity	41.1-42.8 %
Test Date	November 20, 2018 - November 23, 2018

- Calculation Formula:

1. POL. H = Horizontal, POL. V = Vertical
2. QuasiPeak = Reading (Receiver Reading) + Corr.
3. Corr. (Correction Factor) = Antenna Factor + Cable Loss
4. Margin = Limit - QuasiPeak

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Data communication (Write) mode

Frequency (MHz)	Quasi Peak (dBµV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
30.808435	27.5	100.0	V	141.0	18.8	12.5	40.0
74.392000	21.3	116.8	V	345.0	17.0	18.7	40.0
133.242400	31.6	225.2	H	286.0	19.0	11.9	43.5
265.584000	33.4	125.0	H	153.0	19.4	12.6	46.0
593.533600	42.8	100.0	H	7.0	27.3	3.2	46.0
800.005600	38.7	100.0	H	60.0	30.2	7.3	46.0

Front Camera Preview & FM Radio (High CH) mode

Frequency (MHz)	Quasi Peak (dBµV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
41.198400	20.4	174.7	V	31.0	19.7	19.6	40.0
58.856000	26.1	100.0	V	25.0	19.8	13.9	40.0
91.190400	28.6	191.8	H	342.0	14.5	14.9	43.5
106.503200	21.2	117.8	V	34.0	16.3	22.3	43.5
499.480800	40.2	225.3	H	48.0	25.2	5.8	46.0
802.360000	30.3	100.0	V	332.0	30.3	15.7	46.0

SD Card Write & FM Radio (Middle CH) mode

Frequency (MHz)	Quasi Peak (dBµV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
56.531200	23.4	100.0	V	38.0	19.9	16.6	40.0
86.524000	25.8	225.0	H	349.0	14.8	14.2	40.0
94.276000	27.0	191.9	H	344.0	14.9	16.5	43.5
160.583200	21.9	100.0	H	16.0	20.2	21.6	43.5
257.717600	24.5	116.9	H	44.0	19.1	28.3	46.0
796.744800	30.3	100.0	V	105.0	30.2	15.7	46.0

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Receiver mode at LTE B17 (Middle CH Idle)

Frequency (MHz)	Quasi Peak (dBµV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
33.492000	21.3	152.8	V	6.0	18.8	18.7	40.0
59.488000	23.5	100.0	V	57.0	19.6	16.5	40.0
92.856000	27.6	192.8	H	354.0	14.6	15.9	43.5
156.488000	20.7	174.8	V	178.0	19.9	22.8	43.5
502.584000	32.3	100.0	H	33.0	25.2	13.7	46.0
804.836000	30.1	100.0	H	116.0	30.3	15.9	46.0

Receiver mode at WCDMA 850, LTE B5/B26 (Middle CH Idle)

Frequency (MHz)	Quasi Peak (dBµV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
38.536000	23.7	100.0	V	83.0	19.7	16.4	40.0
58.712000	25.3	100.0	V	30.0	19.7	14.7	40.0
91.692000	27.5	200.8	H	335.0	14.5	16.0	43.5
104.496000	23.7	100.0	V	52.0	16.2	19.8	43.5
242.236000	21.7	100.0	V	200.0	19.5	24.3	46.0
497.152000	27.9	165.8	H	110.0	25.2	18.1	46.0

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For Measurement Above 1 GHz

Applicable Standards	FCC PART 15 Subpart B Class B ANSI C63.4-2014
Detector	Peak mode: Peak (RBW: 1 MHz, VBW: 3 MHz) CISPR-Average mode: Peak (RBW: 1 MHz, VBW: 10 Hz)
Highest Frequency	5 825 MHz
Tested Frequency Range	1 GHz to 30 GHz
Worst Case of Operating Mode	Data communication Write Front Camera Preview & FM Radio (High CH) SD Card Write & FM Radio (Middle CH) Receiver mode at LTE B17 (Middle CH Idle) Receiver mode at WCDMA 850, LTE B5/B26 (Middle CH Idle) NOTE. 1. Three orientations have been investigated and the worst case orientation is reported. 2. The worst case of operating mode is reported.
Kind of Test Site	3 m semi anechoic chamber
Temperature	21.0-23.2 °C
Relative Humidity	41.1-42.8 %
Test Date	November 21, 2018 - November 23, 2018

- Calculation Formula:

1. POL. H = Horizontal, POL. V = Vertical
2. Peak or CAverage = Reading (Receiver Reading) + Corr.
3. Corr. (Correction Factor) = Antenna Factor+ Cable Loss –Amplifier Gain
4. Margin = Limit - Peak or CAverage

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Data communication (Write) mode

Frequency (MHz)	Peak (dBµV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1400.025000	48.3	307.5	H	183.0	-28.2	25.7	74.0
1996.710000	50.2	100.0	V	51.0	-26.7	23.8	74.0
2399.595000	44.9	290.5	V	45.0	-25.3	29.1	74.0
4481.590000	45.0	189.6	V	0.0	-19.6	29.0	74.0
5986.270000	44.7	100.0	V	106.0	-17.1	29.3	74.0
9160.310000	43.3	307.4	V	269.0	-10.9	30.7	74.0

Frequency (MHz)	CAverage (dBµV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1400.025000	47.1	307.5	H	183.0	-28.2	6.9	54.0
1996.710000	20.6	100.0	V	51.0	-26.7	33.4	54.0
2399.595000	22.2	290.5	V	45.0	-25.3	32.8	54.0
4481.590000	27.7	189.6	V	0.0	-19.6	26.3	54.0
5986.270000	27.7	100.0	V	106.0	-17.1	26.3	54.0
9160.310000	30.7	307.4	V	269.0	-10.9	23.3	54.0

Front Camera Preview & FM Radio (High CH) mode

Frequency (MHz)	Peak (dBµV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1292.110000	33.6	299.5	V	167.0	-28.6	40.4	74.0
3020.570000	34.0	199.6	V	142.0	-22.8	40.0	74.0
6532.180000	39.1	393.6	V	264.0	-15.0	34.9	74.0
7751.755000	41.7	150.0	V	230.0	-12.5	32.3	74.0
8835.755000	42.7	150.0	V	227.0	-11.8	31.3	74.0
9904.735000	43.4	395.6	V	134.0	-9.5	30.6	74.0

Frequency (MHz)	CAverage (dBµV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1292.110000	17.8	299.5	V	167.0	-28.6	36.2	54.0
3020.570000	21.0	199.6	V	142.0	-22.8	33.0	54.0
6532.180000	26.2	393.6	V	264.0	-15.0	27.8	54.0
7751.755000	28.7	150.0	V	230.0	-12.5	25.3	54.0
8835.755000	29.5	150.0	V	227.0	-11.8	24.5	54.0
9904.735000	30.9	395.6	V	134.0	-9.5	23.1	54.0

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SD Card Write & FM Radio (Middle CH) mode

Frequency (MHz)	Peak (dBµV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1372.245000	36.7	335.5	V	355.0	-28.3	37.3	74.0
1543.005000	44.3	291.6	H	240.0	-27.7	29.7	74.0
2399.380000	35.5	308.5	V	259.0	-25.3	38.5	74.0
4113.490000	38.9	299.4	V	233.0	-20.6	35.1	74.0
8007.275000	42.3	190.4	V	95.0	-12.4	31.7	74.0
9590.715000	44.0	232.5	V	50.0	-9.9	30.0	74.0

Frequency (MHz)	CAverage (dBµV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1372.245000	23.5	335.5	V	355.0	-28.3	30.5	54.0
1543.005000	38.7	291.6	H	240.0	-27.7	15.3	54.0
2399.380000	25.5	308.5	V	259.0	-25.3	28.5	54.0
4113.490000	26.5	299.4	V	233.0	-20.6	27.5	54.0
8007.275000	29.1	190.4	V	95.0	-12.4	24.9	54.0
9590.715000	31.5	232.5	V	50.0	-9.9	22.5	54.0

Receiver mode at LTE B17 (Middle CH Idle)

Frequency (MHz)	Peak (dBµV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1201.275000	31.6	188.6	V	101.0	-28.6	42.4	74.0
3729.494000	33.8	261.4	V	163.0	-22.7	40.2	74.0
5684.415000	36.5	160.5	H	201.0	-17.8	37.5	74.0
6733.545000	37.8	349.7	H	0.0	-14.9	36.2	74.0
7791.875000	42.1	249.9	H	33.0	-12.4	31.9	74.0
9627.015000	42.9	361.5	H	42.0	-11.4	31.1	74.0

Frequency (MHz)	CAverage (dBµV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1201.275000	16.8	188.6	V	101.0	-28.6	37.2	54.0
3729.494000	21.3	261.4	V	163.0	-22.7	32.7	54.0
5684.415000	23.9	160.5	H	201.0	-17.8	30.1	54.0
6733.545000	26.5	349.7	H	0.0	-14.9	27.5	54.0
7791.875000	29.5	249.9	H	33.0	-12.4	24.5	54.0
9627.015000	30.3	361.5	H	42.0	-11.4	23.7	54.0

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Receiver mode at WCDMA 850, LTE B5/B26 (Middle CH Idle)

Frequency (MHz)	Peak (dBµV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1783.030000	32.7	159.4	V	131.0	-28.7	41.3	74.0
3150.630000	33.5	133.5	V	180.0	-22.5	40.5	74.0
5133.915000	36.9	100.0	V	185.0	-18.3	37.1	74.0
6716.175000	38.9	100.0	V	291.0	-14.9	35.1	74.0
8821.540000	41.7	111.6	H	131.0	-12.4	32.3	74.0
9205.970000	43.9	100.0	H	0.0	-10.1	30.1	74.0

Frequency (MHz)	CAverage (dBµV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1783.030000	17.2	159.4	V	131.0	-28.7	36.8	54.0
3150.630000	20.9	133.5	V	180.0	-22.5	33.1	54.0
5133.915000	24.0	100.0	V	185.0	-18.3	30.0	54.0
6716.175000	26.1	100.0	V	291.0	-14.9	27.9	54.0
8821.540000	30.0	111.6	H	131.0	-12.4	24.0	54.0
9205.970000	31.3	100.0	H	0.0	-10.1	22.7	54.0

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6. CONCLUSION

The data collected shows that the **EUT Type: Smart Phone, FCC ID: A3LSMA920N, Model: SM-A920N** complies with §15.107 and §15.109 of the FCC rules.

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7. APPENDIX A. TEST SETUP PHOTOGRAPHS

Please refer to Appendix A

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