

EMI TEST REPORT FCC CERTIFICATION

Applicant:
SAMSUNG Electronics Co., Ltd.
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Date of Receipt: May 02, 2017
Date of Issue: June 20, 2017
Test Report No. HCT-E-1706-F002-2
HCT FRN: 0005866421

FCC ID :

A3LSMW728Y

Rule Part(s) / Standard(s): FCC CFR 47 PART 15 Subpart B Class B
FCC Classification: JBC (Part 15 B – Class B Computing Device Personal Computer)
EUT Type: Tablet
Model Name: SM-W728Y
Additional Model Name(s): SM-W727Y
Date of Test: May 16, 2017 - May 29, 2017

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 denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C 862

Tested By



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DOCUMENT HISTORY

The revision history for this document is shown in table.

Version	Date	Description
HCT-E-1706-F002	June 02, 2017	Initial Release
HCT-E-1706-F002-1	June 08, 2017	Revise the FCC Classification on page 1
HCT-E-1706-F002-2	June 20, 2017	Added the frequency range



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ATTACHMENT: TEST SETUP PHOTOGRAPHS



1. GENERAL INFORMATION

1.1 Description of EUT

Its basic purpose is used for communications.

FCC ID	A3LSMW728Y
Model	SM-W728Y
Additional model	SM-W727Y
EUT Type	Tablet
TX Frequency	826.40 MHz to 846.60 MHz (WCDMA 850) 1 852.4 MHz to 1 907.6 MHz (WCDMA 1 900) 824 MHz to 849 MHz (LTE B5) 2 496 MHz to 2 570 MHz (LTE B7) 2 402 MHz to 2 480 MHz (Bluetooth) 2 412 MHz to 2 472 MHz (WiFi 2.4 GHz) 5 180 MHz to 5 240 MHz (WiFi 5 GHz band_UNII 1) 5 260 MHz to 5 320 MHz (WiFi 5 GHz band_UNII 2A) 5 500 MHz to 5 720 MHz (WiFi 5 GHz band_UNII 2C) 5 745 MHz to 5 825 MHz (WiFi 5 GHz band_UNII 3(DTS))
RX Frequency	871.40 MHz to 891.60 MHz (WCDMA 850) 1 932.4 MHz to 1 987.6 MHz (WCDMA 1 900) 869 MHz to 894 MHz (LTE B5) 2 516 MHz to 2 690 MHz (LTE B7) 2 402 MHz to 2 480 MHz (Bluetooth) 2 412 MHz to 2 472 MHz (WiFi 2.4 GHz) 5 180 MHz to 5 240 MHz (WiFi 5 GHz band_UNII 1) 5 260 MHz to 5 320 MHz (WiFi 5 GHz band_UNII 2A) 5 500 MHz to 5 720 MHz (WiFi 5 GHz band_UNII 2C) 5 745 MHz to 5 825 MHz (WiFi 5 GHz band_UNII 3(DTS))



1.2 Related Submittal(s) / Grant(s)

Original submittal only.

1.3 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.

Measurement Facilities	Registration Number
Radiated Field strength measurement facility 3 m Semi Anechoic chamber	90661 (July 07, 2015)
Radiated Field strength measurement facility 10 m Semi Anechoic chamber	

1.4 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 equipments, which is traceable to recognized national standards. Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2006).



1.5 Tested System Details

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

Device Type	Model Name	Manufacturer	FCC ID / DoC	Connected To
EUT	SM-W728Y	SAMSUNG	A3LSMW728Y	Travel adapter, LED Monitor, Earphone, LAN Dongle
USB Cable	EP-DW720CWE	RFTECH	-	EUT, Travel adaptor
Earphone	EO-EG920BW	BUJEON	-	EUT
Gateway	TL-WR747N	TP-LINK	-	LAN Dongle, Gateway adaptor
Gateway adaptor	T120150-2H1	TP-LINK	-	Gateway
RJ45 cable	-	-	-	LAN Dongle, Gateway
Travel adaptor	EP-TA300	SOLU-M	-	EUT
Micro SD card	Micro SDXC Class 10 UHS-1 Pro plus U3 64GB	SAMSUNG	-	EUT
Keyboard Cover	EJ-CW720	SEC	-	EUT
LAN Dongle	NM-CF322P	GANGWON CO. Ltd	-	EUT, Gateway
S-Pen	EJ-PT820	Wacom	-	-
UHD LED Monitor	U32D970Q	SAMSUNG	-	EUT



1.6 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)1.5
	Earphone	N/A	Y	(D)1.2
Gateway	DC in	N	N/A	(P)1.8
	RJ 45	N/A	N	(D)1.6
Monitor	Display	N/A	Y	(D)2.0
	AC in	N	N/A	(P)1.8

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

1.7 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	Both End
Gateway	RJ 45	N	N/A	N	N/A
Monitor	Display	N	N/A	Y	Both End



2. 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 ($k = 2$)
Radiated Emissions (30 MHz to 1 GHz)	± 5.06 dB ($k = 2$)
Radiated Emissions (1 GHz to 6 GHz)	± 5.0 dB ($k = 2$)
Radiated Emissions (6 GHz to 18 GHz)	± 5.4 dB ($k = 2$)



3. DESCRIPTION OF TEST

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 ($\mu\text{V}/\text{m}$)	Quasi-Peak ($\text{dB}(\mu\text{V})/\text{m}$)
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 ($\text{dB}(\mu\text{V})/\text{m}$)	Average ($\text{dB}(\mu\text{V})/\text{m}$)
Above 1 000	3	74	54



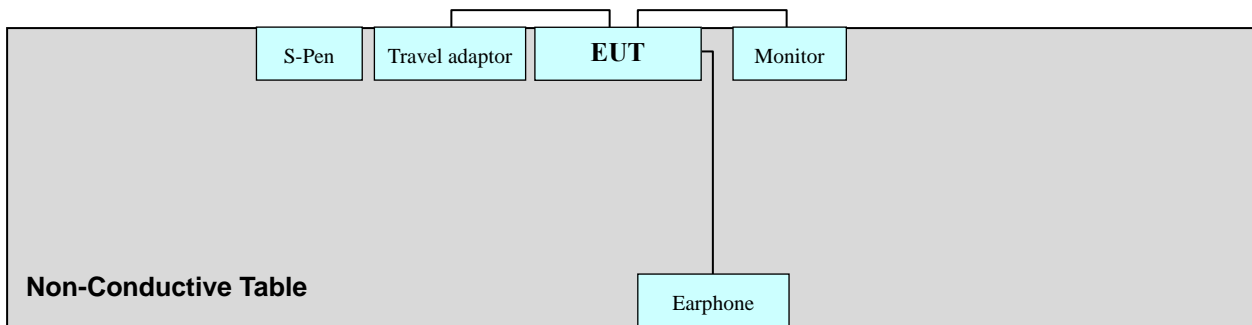
3.2.1 Frequency Range of Radiated Measurements

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	5 th harmonic of the highest frequency or 40 GHz, whichever is lower

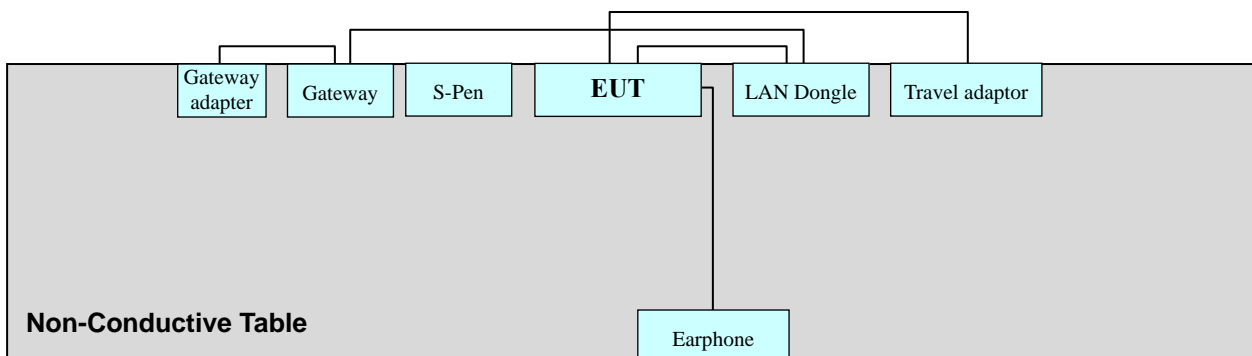
3.3 Configuration of Tested System

[Display Mode]



Power Line: 120 VAC, 60 Hz

[LAN Dongle Mode]



Power Line: 120 VAC, 60 Hz



4. PRELIMINARY TEST

4.1 Conducted Emission Test

It was tested Data Communication mode, after connecting all peripheral devices.

- Operation Mode:**
- DP Display & Charging & Memory Read and Write
(External SD Card to Internal), Camera on, H pattern on,
MP3 Play, WiFi, BT, GPS on mode
 - LAN & Charging & Memory Read and Write
(External SD Card to Internal), Camera on, H pattern on,
MP3 Play, WiFi, BT, GPS on mode

4. 2 Radiated Emission Test

It was tested Data Communication mode, after connecting all peripheral devices.

- Operation Mode:**
- DP Display & Charging & Memory Read and Write
(External SD Card to Internal), Camera on, H pattern on,
MP3 Play, WiFi, BT, GPS on mode
 - LAN & Charging & Memory Read and Write
(External SD Card to Internal), Camera on, H pattern on,
MP3 Play, WiFi, BT, GPS on mode



5. CONDUCTED AND RADIATED EMISSION TEST SUMMARY

5.1 Conducted Emission Test

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

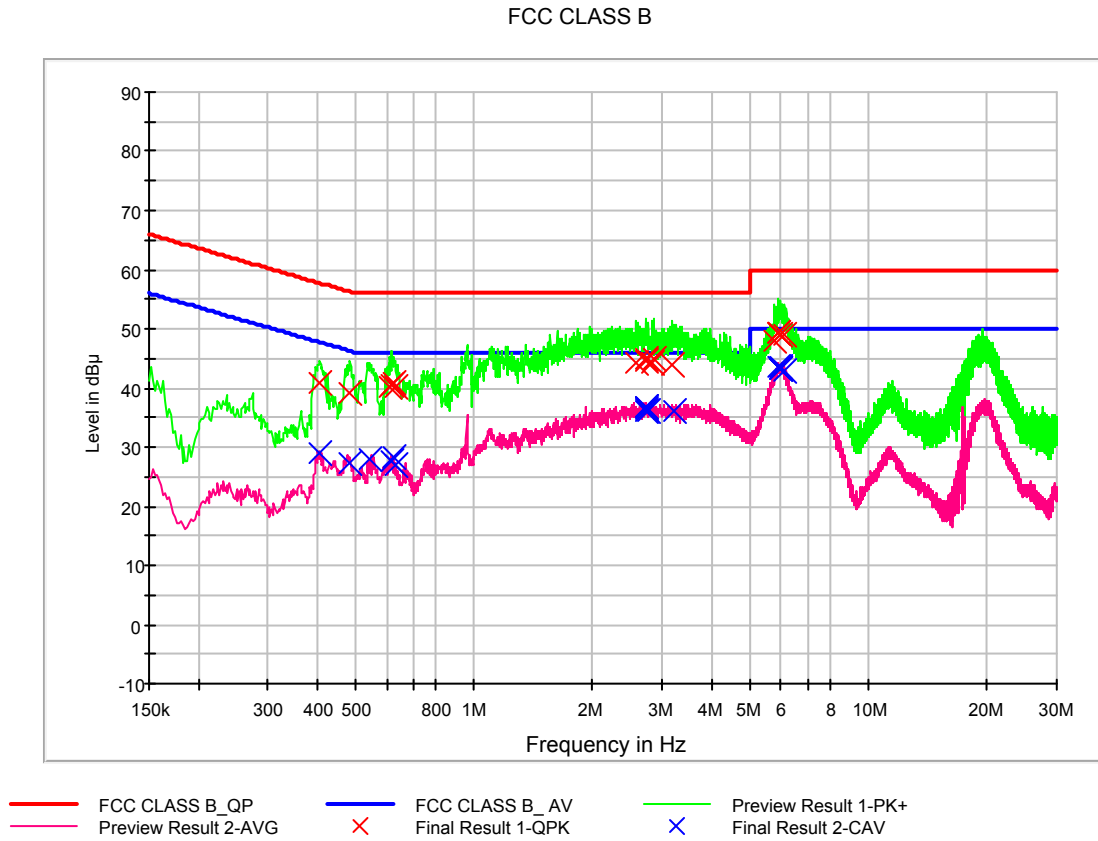
Rule Part / Standard	FCC PART 15 Subpart B Class B
Detector	Quasi-Peak, CISPR-Average
Bandwidth	9 kHz (6 dB)
Operation Mode	DP Display & Charging & Memory Read and Write (External SD Card to Internal), Camera on, H pattern on, MP3 Play, WiFi, BT, GPS on mode
Kind of Test Site	Shielded Room
Temperature	22.6/ 25.1 °C
Relative Humidity	33.1/ 38.6 %
Test Date	May 17, 2017 / May 25, 2017

- 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



Figure 1: Spectral Diagrams, Conducted Emission, DP Display & Charging & Memory Read and Write (External SD Card to Internal), Camera on, H pattern on, MP3 Play, WiFi, BT, GPS on mode, AC Main Port, Line (L1)





QuasiPeak Final Result, Line (L1)

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.406000	40.9	9.000	L1	9.7	16.9	57.7
0.484000	39.3	9.000	L1	9.7	17.0	56.3
0.614000	40.3	9.000	L1	9.7	15.7	56.0
0.618000	40.6	9.000	L1	9.7	15.4	56.0
0.626000	41.0	9.000	L1	9.7	15.0	56.0
0.632000	40.1	9.000	L1	9.7	15.9	56.0
2.580000	44.1	9.000	L1	9.8	11.9	56.0
2.718000	44.7	9.000	L1	9.8	11.3	56.0
2.740000	45.1	9.000	L1	9.8	10.9	56.0
2.828000	44.4	9.000	L1	9.8	11.6	56.0
2.844000	44.8	9.000	L1	9.8	11.2	56.0
3.182000	44.0	9.000	L1	9.8	12.0	56.0
5.788000	47.9	9.000	L1	9.9	12.1	60.0
5.920000	49.2	9.000	L1	9.9	10.8	60.0
5.924000	49.2	9.000	L1	9.9	10.8	60.0
5.928000	49.4	9.000	L1	9.9	10.6	60.0
5.988000	49.0	9.000	L1	9.9	11.0	60.0
6.102000	48.9	9.000	L1	10.0	11.1	60.0

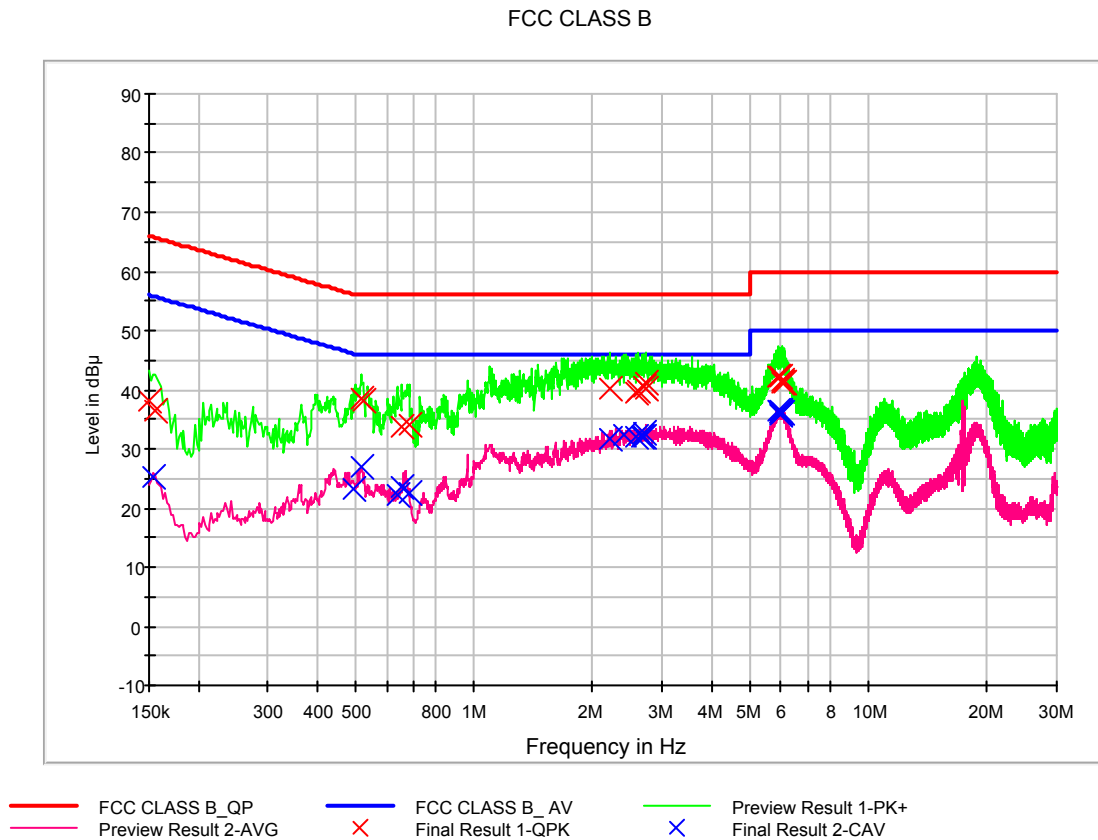


CAverage Final Result, Line (L1)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.406000	29.0	9.000	L1	9.7	18.7	47.7
0.484000	27.2	9.000	L1	9.7	19.0	46.3
0.544000	27.9	9.000	L1	9.7	18.1	46.0
0.620000	27.7	9.000	L1	9.7	18.3	46.0
0.624000	28.3	9.000	L1	9.7	17.7	46.0
0.630000	26.9	9.000	L1	9.7	19.1	46.0
2.718000	36.8	9.000	L1	9.8	9.2	46.0
2.726000	36.8	9.000	L1	9.8	9.2	46.0
2.736000	36.4	9.000	L1	9.8	9.6	46.0
2.740000	36.3	9.000	L1	9.8	9.7	46.0
2.762000	36.0	9.000	L1	9.8	10.0	46.0
3.206000	36.2	9.000	L1	9.8	9.8	46.0
5.928000	43.5	9.000	L1	9.9	6.5	50.0
5.944000	43.5	9.000	L1	9.9	6.5	50.0
5.988000	43.1	9.000	L1	9.9	6.9	50.0
5.996000	43.1	9.000	L1	9.9	6.9	50.0
6.000000	43.2	9.000	L1	10.0	6.8	50.0
6.102000	42.8	9.000	L1	10.0	7.2	50.0



Figure 2: Spectral Diagrams, Conducted Emission, DP Display & Charging & Memory Read and Write (External SD Card to Internal), Camera on, H pattern on, MP3 Play, WiFi, BT, GPS on mode, AC Main Port, Line (L1)





QuasiPeak Final Result, Line (N)

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	38.1	9.000	N	9.6	27.9	66.0
0.156000	36.4	9.000	N	9.6	29.3	65.7
0.518000	38.4	9.000	N	9.7	17.6	56.0
0.522000	38.0	9.000	N	9.7	18.0	56.0
0.656000	33.9	9.000	N	9.7	22.1	56.0
0.686000	34.1	9.000	N	9.7	21.9	56.0
2.216000	40.2	9.000	N	9.8	15.8	56.0
2.572000	39.5	9.000	N	9.8	16.5	56.0
2.618000	39.8	9.000	N	9.8	16.2	56.0
2.704000	40.6	9.000	N	9.8	15.4	56.0
2.720000	41.1	9.000	N	9.8	14.9	56.0
2.736000	40.2	9.000	N	9.8	15.8	56.0
5.932000	42.3	9.000	N	9.9	17.7	60.0
5.936000	42.2	9.000	N	9.9	17.8	60.0
5.962000	42.1	9.000	N	9.9	17.9	60.0
6.050000	41.4	9.000	N	9.9	18.6	60.0
6.060000	41.1	9.000	N	9.9	18.9	60.0
6.100000	41.3	9.000	N	9.9	18.7	60.0



CAverage Final Result, Line (N)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.154000	25.1	9.000	N	9.6	30.7	55.8
0.496000	23.2	9.000	N	9.7	22.9	46.1
0.518000	26.8	9.000	N	9.7	19.2	46.0
0.636000	22.3	9.000	N	9.7	23.7	46.0
0.656000	23.5	9.000	N	9.7	22.5	46.0
0.686000	22.5	9.000	N	9.7	23.5	46.0
2.216000	31.7	9.000	N	9.8	14.3	46.0
2.386000	32.3	9.000	N	9.8	13.8	46.0
2.572000	32.2	9.000	N	9.8	13.8	46.0
2.670000	32.0	9.000	N	9.8	14.0	46.0
2.688000	32.1	9.000	N	9.8	13.9	46.0
2.704000	32.9	9.000	N	9.8	13.1	46.0
5.932000	36.3	9.000	N	9.9	13.7	50.0
5.938000	36.3	9.000	N	9.9	13.7	50.0
5.964000	36.3	9.000	N	9.9	13.7	50.0
5.980000	35.9	9.000	N	9.9	14.1	50.0
6.006000	36.2	9.000	N	9.9	13.8	50.0
6.028000	36.1	9.000	N	9.9	13.9	50.0



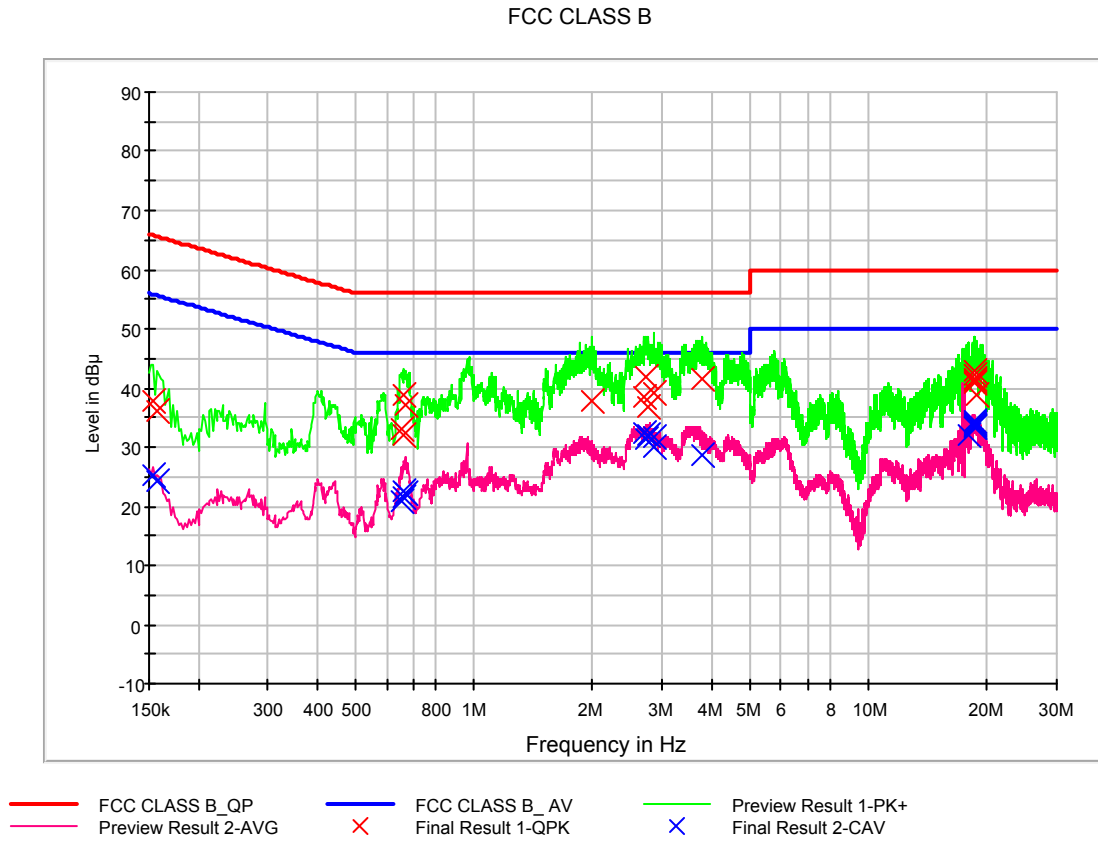
Rule Part / Standard	FCC PART 15 Subpart B Class B
Detector	Quasi-Peak, CISPR-Average
Bandwidth	9 kHz (6 dB)
Operation Mode	LAN & Charging & Memory Read and Write (External SD Card to Internal), Camera on, H pattern on, MP3 Play, WiFi, BT, GPS on mode
Kind of Test Site	Shielded Room
Temperature	22.6 / 25.1 °C
Relative Humidity	33.1 / 38.6 %
Test Date	May 17, 2017 / May 25, 2017

- 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



Figure 3: Spectral Diagrams, Conducted Emission, LAN & Charging & Memory Read and Write (External SD Card to Internal), Camera on, H pattern on, MP3 Play, WiFi, BT, GPS on mode, AC Main Port, Line (L1)





QuasiPeak Final Result, Line (L1)

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.154000	37.9	9.000	L1	9.6	27.8	65.8
0.158000	36.2	9.000	L1	9.6	29.4	65.6
0.656000	33.2	9.000	L1	9.7	22.8	56.0
0.662000	38.9	9.000	L1	9.7	17.1	56.0
0.666000	32.0	9.000	L1	9.7	24.0	56.0
0.670000	37.1	9.000	L1	9.7	18.9	56.0
1.984000	37.7	9.000	L1	9.8	18.3	56.0
2.706000	38.4	9.000	L1	9.8	17.6	56.0
2.720000	42.0	9.000	L1	9.8	14.0	56.0
2.748000	36.7	9.000	L1	9.8	19.3	56.0
2.848000	39.3	9.000	L1	9.8	16.7	56.0
3.772000	41.6	9.000	L1	9.8	14.4	56.0
18.482000	43.0	9.000	L1	10.3	17.0	60.0
18.550000	42.2	9.000	L1	10.3	17.8	60.0
18.556000	41.3	9.000	L1	10.3	18.7	60.0
18.590000	40.9	9.000	L1	10.3	19.1	60.0
18.596000	41.6	9.000	L1	10.3	18.4	60.0
18.728000	38.8	9.000	L1	10.3	21.2	60.0

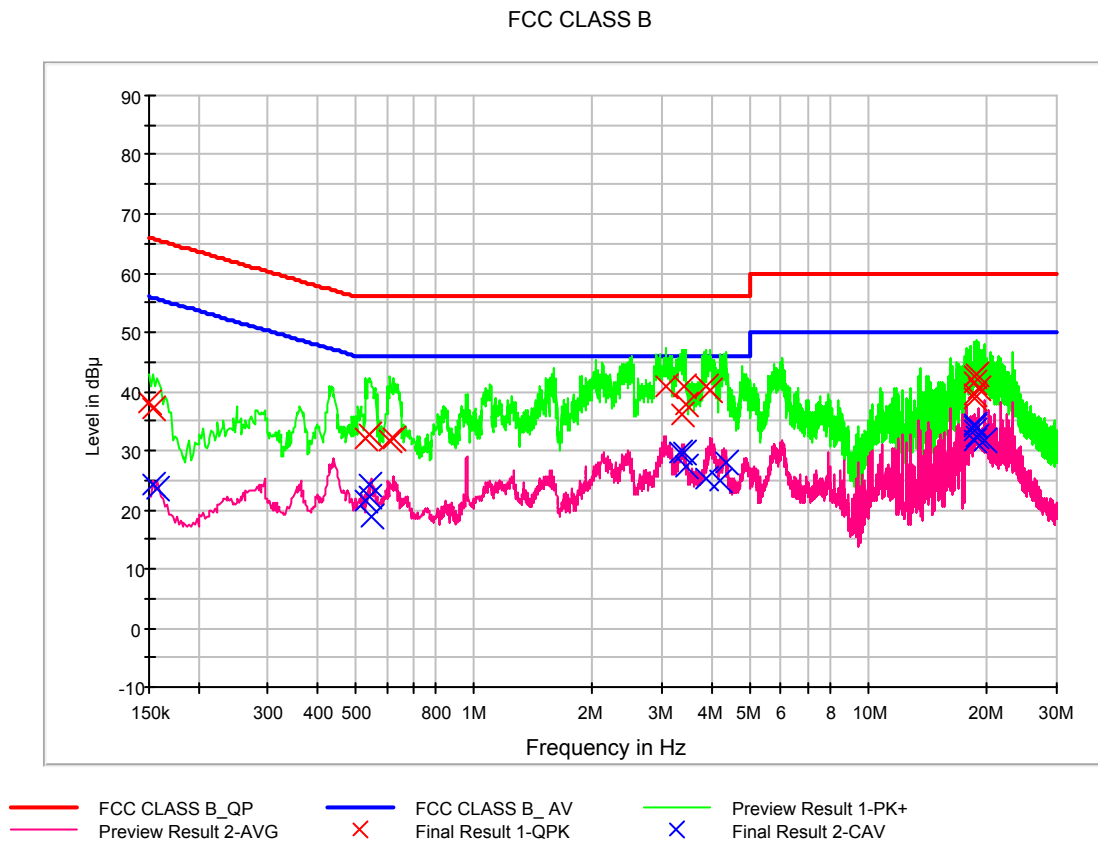


CAverage Final Result, Line (L1)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.154000	25.3	9.000	L1	9.6	30.5	55.8
0.158000	24.4	9.000	L1	9.6	31.2	55.6
0.656000	20.7	9.000	L1	9.7	25.3	46.0
0.662000	21.6	9.000	L1	9.7	24.4	46.0
0.666000	22.5	9.000	L1	9.7	23.5	46.0
0.670000	22.1	9.000	L1	9.7	23.9	46.0
2.706000	32.4	9.000	L1	9.8	13.6	46.0
2.740000	31.3	9.000	L1	9.8	14.7	46.0
2.754000	32.2	9.000	L1	9.8	13.8	46.0
2.848000	29.9	9.000	L1	9.8	16.1	46.0
2.866000	31.8	9.000	L1	9.8	14.2	46.0
3.772000	28.7	9.000	L1	9.8	17.3	46.0
17.944000	32.1	9.000	L1	10.3	17.9	50.0
18.482000	34.4	9.000	L1	10.3	15.6	50.0
18.546000	33.4	9.000	L1	10.3	16.6	50.0
18.556000	34.2	9.000	L1	10.3	15.8	50.0
18.584000	33.7	9.000	L1	10.3	16.3	50.0
18.596000	33.4	9.000	L1	10.3	16.6	50.0



Figure 4: Spectral Diagrams, Conducted Emission, LAN & Charging & Memory Read and Write (External SD Card to Internal), Camera on, H pattern on, MP3 Play, WiFi, BT, GPS on mode, AC Main Port, Line (N)





QuasiPeak Final Result, Line (N)

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	38.0	9.000	N	9.6	28.0	66.0
0.154000	37.1	9.000	N	9.6	28.7	65.8
0.530000	32.0	9.000	N	9.7	24.0	56.0
0.540000	32.6	9.000	N	9.7	23.4	56.0
0.614000	31.7	9.000	N	9.7	24.3	56.0
0.626000	32.1	9.000	N	9.7	23.9	56.0
3.052000	40.7	9.000	N	9.8	15.3	56.0
3.372000	36.0	9.000	N	9.8	20.0	56.0
3.396000	40.8	9.000	N	9.8	15.2	56.0
3.442000	37.9	9.000	N	9.8	18.1	56.0
3.882000	40.9	9.000	N	9.8	15.1	56.0
3.946000	40.1	9.000	N	9.8	15.9	56.0
18.578000	38.7	9.000	N	10.3	21.3	60.0
18.590000	42.4	9.000	N	10.3	17.6	60.0
18.624000	39.6	9.000	N	10.3	20.4	60.0
18.636000	41.5	9.000	N	10.3	18.5	60.0
18.718000	42.8	9.000	N	10.3	17.2	60.0
19.030000	40.5	9.000	N	10.3	19.5	60.0



CAverage Final Result, Line (N)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.154000	24.2	9.000	N	9.6	31.6	55.8
0.158000	23.7	9.000	N	9.6	31.9	55.6
0.530000	21.5	9.000	N	9.7	24.5	46.0
0.540000	22.2	9.000	N	9.7	23.8	46.0
0.544000	24.3	9.000	N	9.7	21.7	46.0
0.548000	19.0	9.000	N	9.7	27.0	46.0
3.314000	29.5	9.000	N	9.8	16.5	46.0
3.396000	29.8	9.000	N	9.8	16.2	46.0
3.442000	27.1	9.000	N	9.8	18.9	46.0
3.882000	25.4	9.000	N	9.8	20.6	46.0
4.220000	25.0	9.000	N	9.9	21.0	46.0
4.362000	27.9	9.000	N	9.9	18.1	46.0
18.606000	33.4	9.000	N	10.3	16.6	50.0
18.618000	31.6	9.000	N	10.3	18.4	50.0
18.624000	33.9	9.000	N	10.3	16.1	50.0
18.636000	34.4	9.000	N	10.3	15.6	50.0
18.716000	32.2	9.000	N	10.3	17.8	50.0
19.736000	31.5	9.000	N	10.3	18.5	50.0



5.2 Radiated Emission Test

The test results of radiated emission provide the following information:

-For Measurement Below 1 GHz

Rule Part / Standard	FCC PART 15 Subpart B Class B
Detector	Quasi-Peak
Bandwidth	120 kHz (6 dB)
Operation Mode	DP Display & Charging & Memory Read and Write (External SD Card to Internal), Camera on, H pattern on, MP3 Play, WiFi, BT, GPS on mode
Kind of Test Site	3 m semi anechoic chamber
Temperature	22.3 / 23.3 °C
Relative Humidity	37.4 / 37.1 %
Test Date	May 17, 2017 / May 29, 2017

Frequency (MHz)	Quasi Peak (dB μ V/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)
32.699399	32.4	183.0	V	200.0	22.0	7.6	40.0
40.675351	26.8	150.0	V	350.0	22.7	13.2	40.0
64.783567	28.0	100.0	V	187.0	22.0	12.0	40.0
143.797595	32.7	100.0	V	7.0	23.0	10.8	43.5
176.198397	37.1	150.0	H	199.0	22.3	6.4	43.5
266.046092	32.1	221.0	H	288.0	22.8	13.9	46.0

- 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



Rule Part / Standard	FCC PART 15 Subpart B Class B
Detector	Quasi-Peak
Bandwidth	120 kHz (6 dB)
Operation Mode	LAN & Charging & Memory Read and Write (External SD Card to Internal), Camera on, H pattern on, MP3 Play, WiFi, BT, GPS on mode
Kind of Test Site	3 m semi anechoic chamber
Temperature	22.3 / 23.3 °C
Relative Humidity	37.4 / 37.1 %
Test Date	May 17, 2017 / May 29, 2017

Frequency (MHz)	Quasi Peak (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
38.218437	30.6	100.0	V	41.0	22.5	9.4	40.0
53.945891	32.2	100.0	V	286.0	23.2	7.8	40.0
64.767535	35.1	124.0	V	214.0	22.0	4.9	40.0
180.591183	33.6	100.0	V	182.0	22.0	9.9	43.5
264.402806	33.1	150.0	H	179.0	22.8	12.9	46.0
500.006012	38.8	100.0	H	333.0	28.9	7.2	46.0

- 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



-For Measurement Above 1 GHz

Rule Part / Standard	FCC PART 15 Subpart B Class B
Detector	Peak mode: Peak (RBW: 1 MHz, VBW: 3 MHz) CISPR-Average mode: Peak (RBW: 1 MHz, VBW: 10 Hz)
Highest Operating Frequency	5 825 MHz
Upper Frequency of Measurement Range	1 GHz to 29.125 GHz
Operation Mode	DP Display & Charging & Memory Read and Write (External SD Card to Internal), Camera on, H pattern on, MP3 Play, WiFi, BT, GPS on mode
Kind of Test Site	3 m semi anechoic chamber
Temperature	23.2 / 22.3 / 23.1 / 23.3 °C
Relative Humidity	37.2 / 37.4 / 39.1 / 37.1 %
Test Date	May 16, 2017 / May 17, 2017 / May 26, 2017 / May 29, 2017

Frequency (MHz)	Peak (dB μ V/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)
1024.098196	47.2	100.0	V	336.0	-13.9	26.8	74.0
1733.116233	49.4	100.0	V	347.0	-12.4	24.6	74.0
2700.150301	53.4	100.0	H	0.0	-9.0	20.6	74.0
4755.961924	49.5	100.0	V	322.0	-5.2	24.5	74.0
5399.949900	51.8	100.0	H	0.0	-3.4	22.2	74.0
5992.134268	48.1	100.0	V	298.0	-2.4	25.9	74.0

Frequency (MHz)	CAverage (dB μ V/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)
1024.098196	24.7	100.0	V	336.0	-13.9	29.3	54.0
1733.116233	37.3	100.0	V	347.0	-12.4	16.7	54.0
2700.150301	46.7	100.0	H	0.0	-9.0	7.3	54.0
4755.961924	45.0	100.0	V	322.0	-5.2	9.0	54.0
5399.949900	49.9	100.0	H	0.0	-3.4	4.1	54.0
5992.134268	30.7	100.0	V	298.0	-2.4	23.3	54.0

- 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



Rule Part / Standard	FCC PART 15 Subpart B Class B
Detector	Peak mode: Peak (RBW: 1 MHz, VBW: 3 MHz) CISPR-Average mode: Peak (RBW: 1 MHz, VBW: 10 Hz)
Highest Operating Frequency	5 825 MHz
Upper Frequency of Measurement Range	1 GHz to 29.125 GHz
Operation Mode	LAN & Charging & Memory Read and Write (External SD Card to Internal), Camera on, H pattern on, MP3 Play, WiFi, BT, GPS on mode
Kind of Test Site	3 m semi anechoic chamber
Temperature	23.2 / 22.3 / 23.1 / 23.3 °C
Relative Humidity	37.2 / 37.4 / 39.1 / 37.1 %
Test Date	May 16, 2017 / May 17, 2017 / May 26, 2017 / May 29, 2017

Frequency (MHz)	Peak (dB μ V/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)
1000.100200	45.0	200.0	H	37.0	-13.9	29.0	74.0
1399.749499	47.0	299.8	V	25.0	-12.8	27.0	74.0
1751.653307	47.7	100.0	H	188.0	-12.3	26.3	74.0
1919.889779	50.0	200.0	H	23.0	-12.3	24.0	74.0
2747.044088	43.1	199.6	V	350.0	-8.9	30.9	74.0
4999.849700	48.3	299.8	H	312.0	-4.8	25.7	74.0

Frequency (MHz)	CAverage (dB μ V/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)
1000.100200	35.8	200.0	H	37.0	-13.9	18.2	54.0
1399.749499	44.4	299.8	V	25.0	-12.8	9.6	54.0
1751.653307	35.0	100.0	H	188.0	-12.3	19.0	54.0
1919.889779	46.4	200.0	H	23.0	-12.3	7.6	54.0
2747.044088	30.3	199.6	V	350.0	-8.9	23.7	54.0
4999.849700	38.3	299.8	H	312.0	-4.8	15.7	54.0

- 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



6. LIST OF TEST EQUIPMENT

<u>Type</u>	<u>Manufacturer</u>	<u>Model Name</u>	<u>Serial Number</u>	<u>Calibration Cycle</u>	<u>CAL Date</u>
<u>Conducted Emission</u>					
<input checked="" type="checkbox"/> EMI Test Receiver	Rohde & Schwarz	ESCI	100033	1 year	06.29.2016
<input checked="" type="checkbox"/> LISN	Rohde & Schwarz	ENV216	100073	1 year	12.23.2016
<input checked="" type="checkbox"/> LISN	Rohde & Schwarz	ESH3-Z5	100282	1 year	06.09.2016
<input checked="" type="checkbox"/> Software	Rohde & Schwarz	EMC32	-	-	-
<u>Radiated Emission</u>					
-For measurement below 1 GHz					
<input checked="" type="checkbox"/> EMI Test Receiver	Rohde & Schwarz	ESI40	831564103	1 year	11.04.2016
<input type="checkbox"/> EMI Test Receiver	Rohde & Schwarz	ESU40	100514	1 year	10.10.2016
<input checked="" type="checkbox"/> Trilog Antenna	Schwarzbeck	VULB9168	760	2 year	04.06.2017
<input checked="" type="checkbox"/> Antenna master	HD GmbH	MA240	240/520	N/A	-
<input checked="" type="checkbox"/> Antenna master controller	HD GmbH	HD 100	100/637	N/A	-
<input checked="" type="checkbox"/> Turn Table	EMCO	1060-2M	-	N/A	-
<input checked="" type="checkbox"/> Turn Table controller	EMCO	2090	9702-1224	N/A	-
<input type="checkbox"/> EMI Test Receiver	Rohde & Schwarz	ESU 26	100241	1 year	05.16.2017
<input type="checkbox"/> Antenna master	INNCO Systems	MA4000-EP	MA4000/283	N/A	-
<input type="checkbox"/> Turn Table	INNCO Systems	DT3000-3T	DT3000/69	N/A	-
<input checked="" type="checkbox"/> Software	Rohde & Schwarz	EMC32	-	-	-
-For measurement above 1 GHz					
<input checked="" type="checkbox"/> EMI Test Receiver	Rohde & Schwarz	ESI40	831564103	1 year	11.04.2016
<input type="checkbox"/> EMI Test Receiver	Rohde & Schwarz	ESU40	100514	1 year	10.10.2016
<input type="checkbox"/> Antenna master	HD GmbH	MA240	240/520	N/A	-
<input type="checkbox"/> Antenna master controller	HD GmbH	HD 100	100/637	N/A	-
<input checked="" type="checkbox"/> Antenna master	INNCO Systems	MA4000-XP-ET	48709515	N/A	-
<input checked="" type="checkbox"/> Antenna master controller	INNCO Systems	CO 3000	CO 3000/870/ 35990515	N/A	-
<input checked="" type="checkbox"/> Turn Table	EMCO	1060-2M	-	N/A	-
<input checked="" type="checkbox"/> Turn Table controller	EMCO	2090	9702-1224	N/A	-
<input type="checkbox"/> Power Amplifier	CERNEX	CBLU1183540	21691	1 year	07.04.2016
<input checked="" type="checkbox"/> Power Amplifier	CERNEX	CBLU5183530	24348	1 year	06.01.2017
<input checked="" type="checkbox"/> Horn Antenna	Schwarzbeck	BBHA 9120D	296	2 year	10.12.2016
<input checked="" type="checkbox"/> Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170541	2 year	09.03.2015
<input checked="" type="checkbox"/> Power Amplifier	CERNEX	CBL18265035	21873	1 year	01.19.2017
<input checked="" type="checkbox"/> Power Amplifier	CERNEX	CBL26405040	19660	1 year	07.15.2016
<input type="checkbox"/> Horn Antenna	Schwarzbeck	BBHA 9120D	1300	2 year	08.25.2016
<input type="checkbox"/> EMI Test Receiver	Rohde & Schwarz	ESU 26	100241	1 year	05.16.2017
<input type="checkbox"/> Turn Table	INNCO Systems	DT3000-3T	DT3000/69	N/A	-
<input checked="" type="checkbox"/> Software	Rohde & Schwarz	EMC32	-	-	-



7. CONCLUSION

The data collected shows that the **EUT Type: Tablet, Model: SM-W728Y, FCC ID: A3LSMW728Y** complies with §15.107 and §15.109 of the FCC rules.