

EMI TEST REPORT

FCC CERTIFICATION

Applicant:

LG Electronics USA, Inc.
1000 Sylvan Avenue, Englewood Cliffs NJ 07632
United Stats

Date of Issue: March 04, 2019**Test Report No. HCT-EM-1901-FC009-R2****Test Site: HCT CO., LTD.****FCC ID :****ZNFV450PM**

Rule Part(s) / Standard(s) : 47 CFR PART 15 Subpart B Class B
ANSI C63.4-2014

EUT Type : Multi-band CDMA/GSM/EDGE/WCDMA/LTE Phone with
WLAN, Bluetooth and RFID

Model Name : LM-V450PM

Additional Model Name : LMV450PM, V450PM, LM-V500XM, LMV500XM, V500XM


Travel Adaptor Information : Model Name: MCS-H06WP/ Manufacturer: PNTELECOM

Date of Test : January 14, 2019 to January 18, 2019

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

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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-1901-FC009	January 22, 2019	Initial Release
HCT-EM-1901-FC009-R1	February 28, 2019	Added Additional Model Name
HCT-EM-1901-FC009-R2	March 04, 2019	Changed Additional Model Name



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1. GENERAL INFORMATION

1.1 Description of EUT

Its basic purpose is used for communications.

FCC ID	ZNFV450PM
Model	LM-V450PM
Additional Model	LMV450PM, V450PM, LM-V500XM, LMV500XM, V500XM
EUT Type	Multi-band CDMA/GSM/EDGE/WCDMA/LTE Phone with WLAN, Bluetooth and RFID
TX Frequency	824.70 MHz to 848.31 MHz (CDMA BC0) 1 851.25 MHz to 1 908.75 MHz (CDMA BC1) 817.90 MHz to 823.10 MHz (CDMA BC10) 824.2 MHz to 848.8 MHz (GSM 850) 1 850.2 MHz to 1 909.8 MHz (GSM 1 900) 1 852.4 MHz to 1 907.6 MHz (WCDMA B2) 1712.4 MHz to 1752.6 MHz (WCDMA B4) 826.4 MHz to 846.6 MHz (WCDMA B5) 1 850 MHz to 1 910 MHz (LTE B2) 1 710 MHz to 1 755 MHz (LTE B4) 824 MHz to 849 MHz (LTE B5) 699 MHz to 716 MHz (LTE B12) 777 MHz to 787 MHz (LTE B13) 704 MHz to 716 MHz (LTE B17) 1 850 MHz to 1 915 MHz (LTE B25) 814 MHz to 849 MHz (LTE B26) 2 496 MHz to 2 690 MHz (LTE B41) 1 710 MHz to 1 780 MHz (LTE B66) 663 MHz to 698 MHz (LTE B71) 2 402 MHz to 2 480 MHz (Bluetooth) 2 412 MHz to 2 462 MHz (WiFi 2.4 GHz) 5 180 MHz to 5 240 MHz (WiFi 5 GHz_UNII 1) 5 260 MHz to 5 320 MHz (WiFi 5 GHz_UNII 2A) 5 500 MHz to 5 720 MHz (WiFi 5 GHz_UNII 2C) 5 745 MHz to 5 825 MHz (WiFi 5 GHz_UNII 3) 13.56 MHz (RFID)
RX Frequency	869.70 MHz to 893.31 MHz (CDMA BC0) 1 931.25 MHz to 1 988.75 MHz (CDMA BC1) 862.00 MHz to 894.00 MHz (CDMA BC10) 869.2 MHz to 893.8 MHz (GSM 850) 1 930.2 MHz to 1 989.8 MHz (GSM 1 900) 1 932.4 MHz to 1 987.6 MHz (WCDMA B2) 2 112.4 MHz to 2 152.6 MHz (WCDMA B4) 871.4 MHz to 891.6 MHz (WCDMA B5) 1 930 MHz to 1 990 MHz (LTE B2) 2 110 MHz to 2 155 MHz (LTE B4) 869 MHz to 894 MHz (LTE B5)



RX Frequency	729 MHz to 746 MHz (LTE B12) 746 MHz to 756 MHz (LTE B13) 734 MHz to 746 MHz (LTE B17) 1 925 MHz to 1 990 MHz (LTE B25) 859 MHz to 894 MHz (LTE B26) 2 496 MHz to 2 690 MHz (LTE B41) 5 150 MHz to 5 925 MHz (LTE B46) 2 110 MHz to 2 200 MHz (LTE B66) 617 MHz to 652 MHz (LTE B71) 2 402 MHz to 2 480 MHz (Bluetooth) 2 412 MHz to 2 462 MHz (WiFi 2.4 GHz) 5 180 MHz to 5 240 MHz (WiFi 5 GHz_UNII 1) 5 260 MHz to 5 320 MHz (WiFi 5 GHz_UNII 2A) 5 500 MHz to 5 720 MHz (WiFi 5 GHz_UNII 2C) 5 745 MHz to 5 825 MHz (WiFi 5 GHz_UNII 3) 13.56 MHz (RFID)
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1.2 Tested System Details

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

Device Type	Model Name	Serial Number	Manufacturer	FCC ID / DoC
EUT	LM-V450PM	-	LG	ZNFV450PM
Data Cable	EAD64746101	-	Ningbo Broad	-
Earphone	EAB63728244	-	CRESYN	-
Micro SD card	SAMSUNG EVO +microSDXC CLASS10 UHS-1 (256 GB)	-	SAMSUNG	-
TA	MCS-H06WP	-	PNTELECOM	-
Wireless Charger	EP-PN920	-	SAMSUNG	A3LEPPN920
Micro USB Cable	ECB-DU4EWE	-	SAMSUNG	-
LED Monitor	27UD88	-	LG	-
Monitor Adapter	LCAP31	-	Genmao Electronics (Suzhou)	-
DP cable	NEXT-JCA141	-	EZ NET Ubiquitous	-



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	N/A	(P)1.0
	Earphone	N/A	N	(D)1.2
LED monitor	DC IN	Y	N/A	(P) 1.0
	DP port	N/A	Y	(D) 1.2
Wireless Charger	Micro USB	Y	Y	(P) 1.5

* 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
LED monitor	DP port	N	N/A	Y	Both End
Wireless Charger	Micro USB	N	N/A	Y	Both End



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 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).

1.7 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



2. 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	100584	1 year	06.25.2018
<input checked="" type="checkbox"/> LISN	Rohde & Schwarz	ENV216	102245	1 year	12.12.2018
<input checked="" type="checkbox"/> Software	Rohde & Schwarz	EMC32 VER8.54.0	-	-	-
<u>Radiated Emission</u>					
-For measurement below 1 GHz					
<input checked="" type="checkbox"/> EMI Test Receiver	Rohde & Schwarz	ESU40	100524	1 year	07.27.2018
<input checked="" type="checkbox"/> Trilog Antenna	Schwarzbeck	VULB 9168	760	2 year	04.06.2017
<input type="checkbox"/> Trilog Antenna	Schwarzbeck	VULB 9168	847	2 year	04.13.2018
<input checked="" type="checkbox"/> Antenna master	INNCO Systems	MA4640-XP-ET	-	N/A	-
<input checked="" type="checkbox"/> Antenna master controller	INNCO Systems	CO 3000	CO3000/870/ 35990515/L	N/A	-
<input checked="" type="checkbox"/> Turn Table	INNCO Systems	1060	-	N/A	-
<input checked="" type="checkbox"/> Turn Table controller	INNCO Systems	CO2000	CO2000/095/ 7590304/L	N/A	-
<input type="checkbox"/> EMI Test Receiver	Rohde & Schwarz	ESU26	100241	1 year	08.14.2018
<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 VER8.40.0	-	-	-
-For measurement above 1 GHz					
<input checked="" type="checkbox"/> EMI Test Receiver	Rohde & Schwarz	ESU40	100524	1 year	07.27.2018
<input checked="" type="checkbox"/> Antenna master	INNCO Systems	MA4640-XP-ET	-	N/A	-
<input checked="" type="checkbox"/> Antenna master controller	INNCO Systems	CO3000	CO3000/870/ 35990515/L	N/A	-
<input checked="" type="checkbox"/> Turn Table	INNCO Systems	1060	-	N/A	-
<input checked="" type="checkbox"/> Turn Table controller	INNCO Systems	CO2000	CO2000/095/ 7590304/L	N/A	-
<input checked="" type="checkbox"/> Horn Antenna	Schwarzbeck	BBHA 9120D	01836	2 year	05.14.2018
<input checked="" type="checkbox"/> Low Noise Amplifier	TESTEK	TK-PA18H	170034-L	1 year	03.06.2018
<input checked="" type="checkbox"/> Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170#786	2 year	12.05.2017
<input checked="" type="checkbox"/> Power Amplifier	TESTEK	TK-PA1840H	170030-L	1 year	12.17.2018
<input type="checkbox"/> Antenna master controller	HD GmbH	HD 100	100/637	N/A	-
<input type="checkbox"/> Power Amplifier	CERNEX	CBLU1183540	21691	1 year	06.25.2018
<input type="checkbox"/> Antenna master	HD GmbH	MA240	240/520	N/A	-
<input type="checkbox"/> EMI Test Receiver	Rohde & Schwarz	ESU26	100241	1 year	08.14.2018
<input type="checkbox"/> Turn Table	INNCO Systems	DT3000-3T	DT3000/69	N/A	-
<input checked="" type="checkbox"/> Software	Rohde & Schwarz	EMC32 VER8.40.0	-	-	-



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

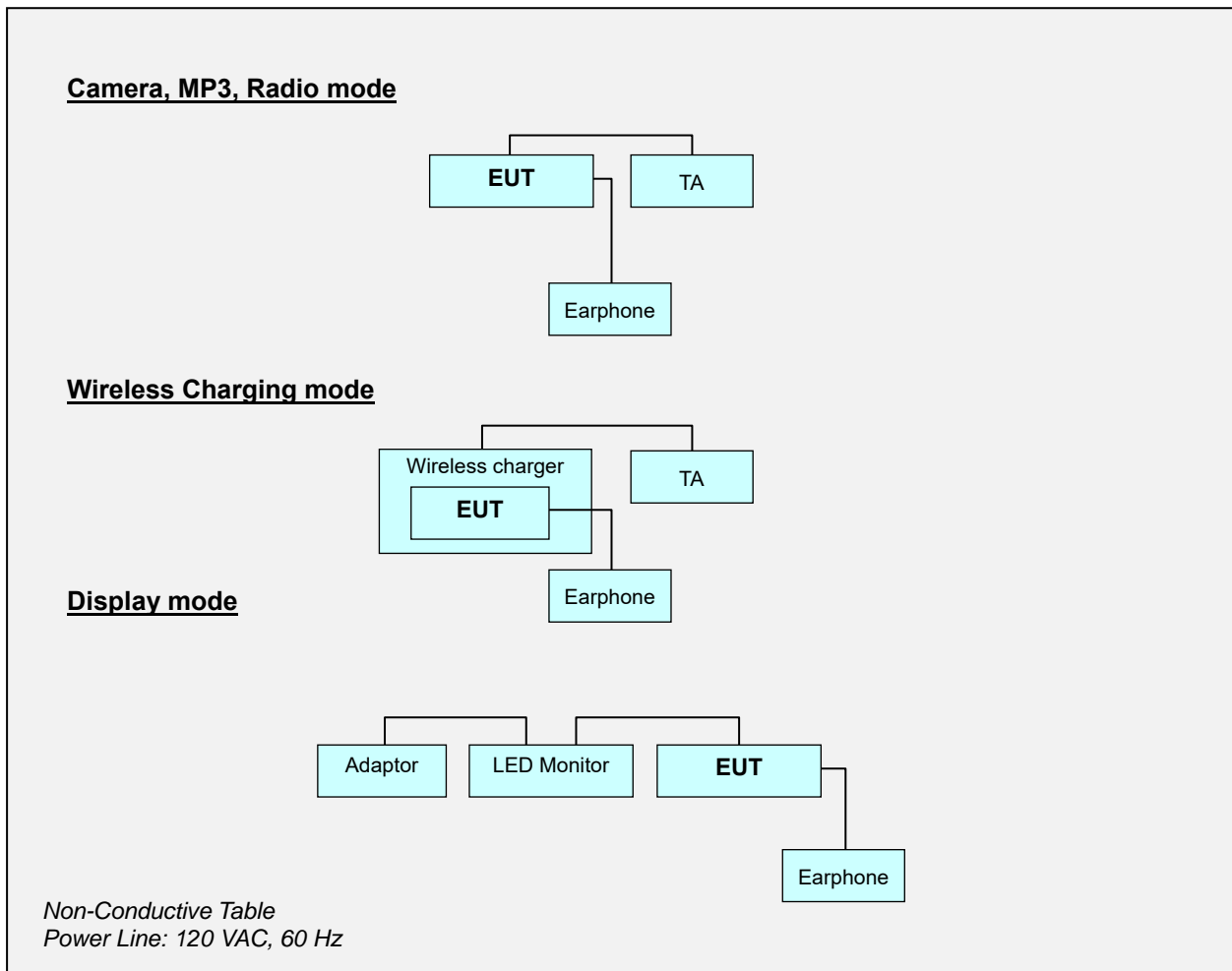


3.2.1 Frequency Range of Radiated Measurements

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





4. PRELIMINARY TEST

4.1 Conducted Emission

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

Operating Modes:

- FRONT CAMERA & MP3 mode
- REAR CAMERA & FM RADIO mode
- IDLE mode

NOTE. The worst-case emissions are reported.

4.2 Radiated Emission

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

Operating Modes:

- FRONT CAMERA & MP3 mode
- REAR CAMERA & FM RADIO mode
- IDLE mode
- Wireless charging mode
- Display mode

NOTE. The worst-case emissions are reported.



5. CONDUCTED AND RADIATED EMISSION TEST SUMMARY

5.1 Conducted Emission

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

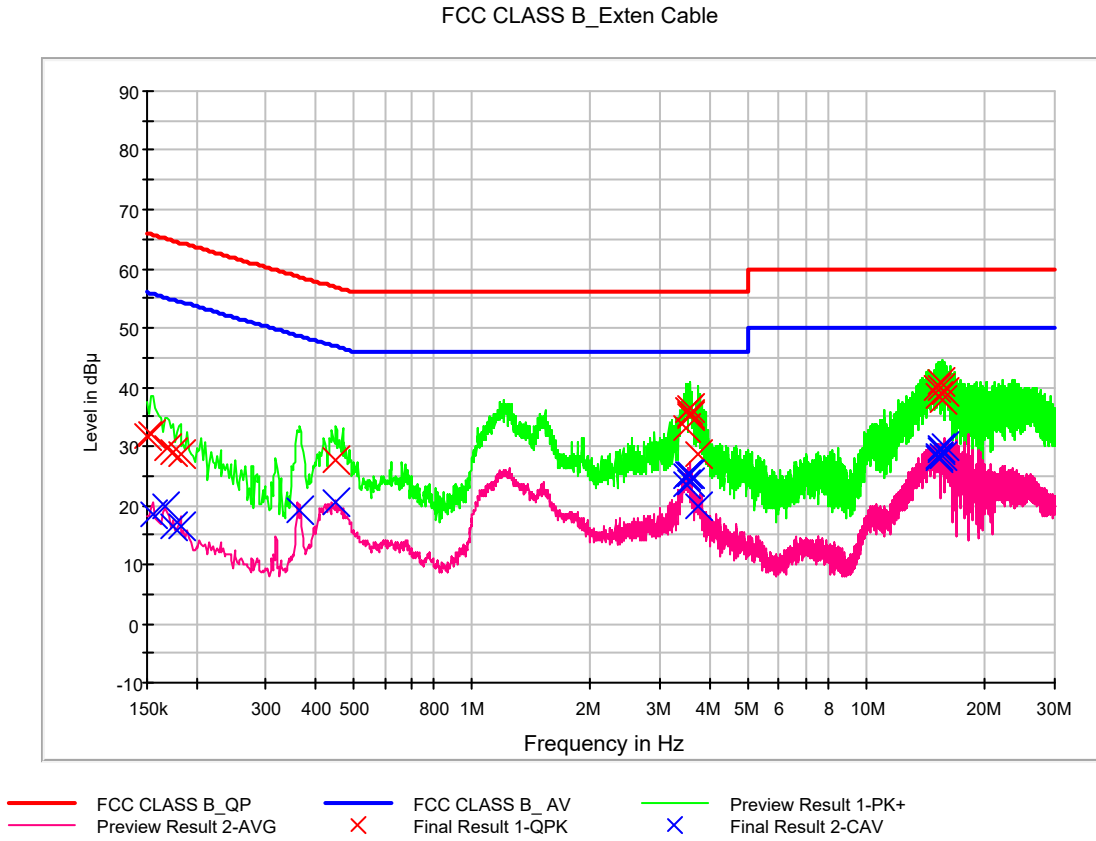
Rule Part / Standard	FCC PART 15 Subpart B Class B
Detector	Quasi-Peak, CISPR-Average
Bandwidth	9 kHz (6 dB)
Worst case of Operating Mode	REAR CAMERA & FM RADIO mode
Kind of Test Site	Shielded Room
Temperature	21.7 °C
Relative Humidity	41.6 %
Test Date	January 15, 2019

- 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: Conducted Emission, AC Main Port, Line (L1)





QuasiPeak Final Result, Line (L1)

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	31.7	9.000	L1	9.7	34.3	66.0
0.154000	31.9	9.000	L1	9.7	33.8	65.8
0.168000	29.6	9.000	L1	9.7	35.5	65.1
0.174000	29.0	9.000	L1	9.7	35.8	64.8
0.182000	28.5	9.000	L1	9.7	35.9	64.4
0.452000	27.7	9.000	L1	9.8	29.1	56.8
3.500000	33.2	9.000	L1	9.9	22.8	56.0
3.526000	36.3	9.000	L1	9.9	19.7	56.0
3.554000	35.5	9.000	L1	9.9	20.5	56.0
3.570000	36.3	9.000	L1	9.9	19.7	56.0
3.576000	35.2	9.000	L1	9.9	20.8	56.0
3.740000	28.7	9.000	L1	10.0	27.3	56.0
15.056000	39.9	9.000	L1	10.4	20.1	60.0
15.174000	38.4	9.000	L1	10.4	21.6	60.0
15.416000	40.7	9.000	L1	10.4	19.3	60.0
15.470000	39.9	9.000	L1	10.4	20.1	60.0
15.524000	37.7	9.000	L1	10.4	22.3	60.0
15.728000	39.2	9.000	L1	10.4	20.8	60.0

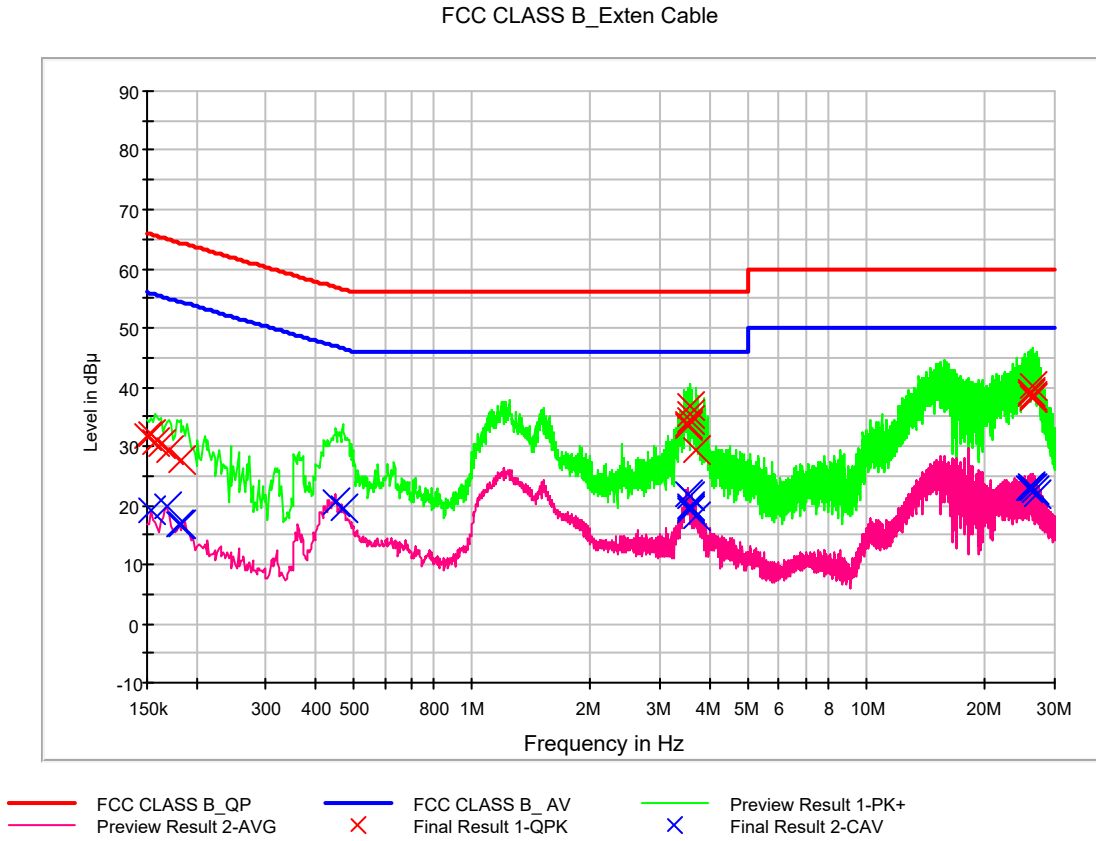


CAverage Final Result, Line (L1)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.156000	18.5	9.000	L1	9.7	37.2	55.7
0.166000	19.9	9.000	L1	9.7	35.2	55.2
0.174000	16.5	9.000	L1	9.7	38.2	54.8
0.182000	16.5	9.000	L1	9.7	37.9	54.4
0.366000	19.1	9.000	L1	9.7	29.5	48.6
0.452000	20.6	9.000	L1	9.8	26.2	46.8
3.470000	24.8	9.000	L1	9.9	21.2	46.0
3.500000	23.5	9.000	L1	9.9	22.5	46.0
3.512000	25.1	9.000	L1	9.9	20.9	46.0
3.554000	23.8	9.000	L1	9.9	22.2	46.0
3.570000	25.1	9.000	L1	9.9	20.9	46.0
3.740000	19.9	9.000	L1	10.0	26.1	46.0
15.152000	28.4	9.000	L1	10.4	21.6	50.0
15.174000	27.9	9.000	L1	10.4	22.1	50.0
15.416000	29.6	9.000	L1	10.4	20.4	50.0
15.468000	29.2	9.000	L1	10.4	20.8	50.0
15.570000	28.4	9.000	L1	10.4	21.6	50.0
15.780000	30.1	9.000	L1	10.4	19.9	50.0



Figure 2: Conducted Emission, 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	31.8	9.000	N	9.8	34.2	66.0
0.154000	32.2	9.000	N	9.8	33.6	65.8
0.158000	30.6	9.000	N	9.8	35.0	65.6
0.162000	30.2	9.000	N	9.8	35.1	65.4
0.170000	29.3	9.000	N	9.8	35.6	65.0
0.182000	27.7	9.000	N	9.8	36.7	64.4
3.542000	33.4	9.000	N	10.1	22.6	56.0
3.546000	33.8	9.000	N	10.1	22.2	56.0
3.556000	34.3	9.000	N	10.1	21.7	56.0
3.562000	35.4	9.000	N	10.1	20.6	56.0
3.566000	36.6	9.000	N	10.1	19.4	56.0
3.692000	29.3	9.000	N	10.2	26.7	56.0
26.078000	39.0	9.000	N	11.1	21.0	60.0
26.198000	38.7	9.000	N	11.1	21.3	60.0
26.268000	38.1	9.000	N	11.1	21.9	60.0
26.346000	40.1	9.000	N	11.1	19.9	60.0
26.452000	38.5	9.000	N	11.1	21.5	60.0
26.492000	38.2	9.000	N	11.1	21.8	60.0



CAverage Final Result, Line (N)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.154000	19.3	9.000	N	9.8	36.5	55.8
0.168000	19.7	9.000	N	9.8	35.4	55.1
0.180000	16.8	9.000	N	9.8	37.7	54.5
0.184000	16.7	9.000	N	9.8	37.6	54.3
0.450000	20.3	9.000	N	9.9	26.5	46.9
0.472000	19.5	9.000	N	9.9	26.9	46.5
3.542000	21.9	9.000	N	10.1	24.1	46.0
3.550000	21.6	9.000	N	10.1	24.4	46.0
3.558000	19.5	9.000	N	10.1	26.5	46.0
3.562000	19.7	9.000	N	10.1	26.3	46.0
3.568000	19.2	9.000	N	10.1	26.8	46.0
3.692000	18.1	9.000	N	10.2	27.9	46.0
25.846000	23.0	9.000	N	11.0	27.0	50.0
25.940000	23.1	9.000	N	11.0	26.9	50.0
26.078000	22.9	9.000	N	11.1	27.1	50.0
26.268000	22.8	9.000	N	11.1	27.2	50.0
26.842000	22.5	9.000	N	11.1	27.5	50.0
26.978000	21.9	9.000	N	11.1	28.1	50.0



5.2 Radiated Emission

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)
Worst case of Operating Mode	REAR CAMERA & FM RADIO mode Wireless charging mode Display mode
Kind of Test Site	3 m semi anechoic chamber
Temperature	22.3 °C
Relative Humidity	43.3 %
Test Date	January 14, 2019

- 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



REAR CAMERA & FM RADIO mode

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)
34.265600	24.0	117.8	V	88.0	19.1	16.0	40.0
85.600000	20.4	374.7	H	285.0	14.9	19.6	40.0
133.377600	16.8	225.1	V	276.0	19.0	26.7	43.5
155.980800	26.7	100.0	V	209.0	20.1	16.8	43.5
697.871200	28.5	400.0	H	33.0	28.7	17.5	46.0
957.142400	31.9	225.1	V	0.0	31.7	14.1	46.0

Wireless charging mode

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)
33.918400	29.1	100.0	V	78.0	19.1	10.9	40.0
43.092000	26.7	100.0	V	67.0	19.9	13.3	40.0
78.241600	20.8	374.8	H	283.0	16.1	19.2	40.0
130.594400	25.9	100.0	V	187.0	18.8	17.6	43.5
704.774400	28.6	306.9	V	20.0	28.8	17.4	46.0
949.503200	31.8	374.8	V	107.0	31.6	14.2	46.0

Display mode

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)
37.293600	24.7	100.0	V	330.0	19.4	15.3	40.0
90.008000	29.3	191.7	H	303.0	14.4	14.2	43.5
156.248000	31.3	199.8	H	184.0	20.1	12.2	43.5
397.512000	38.9	100.0	H	105.0	23.0	7.1	46.0
512.320800	32.0	100.0	H	262.0	25.5	14.0	46.0
796.512800	34.5	117.8	H	72.0	30.2	11.5	46.0



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 Frequency	5 925 MHz
Tested Frequency Range	1 GHz to 30 GHz
Worst case of Operating Mode	REAR CAMERA & FM RADIO mode Wireless charging mode Display mode
Kind of Test Site	3 m semi anechoic chamber
Temperature	21.9 / 21.3 °C
Relative Humidity	43.6 / 41.9 %
Test Date	January 16 / January 18, 2019

- 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



REAR CAMERA & FM RADIO mode

Frequency (MHz)	Peak (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1973.800000	30.5	249.9	V	253.0	-26.8	43.5	74.0
5097.055000	36.1	291.6	H	95.0	-18.4	37.9	74.0
7422.735000	42.4	335.5	V	281.0	-13.0	31.6	74.0
9934.350000	44.0	150.1	V	124.0	-9.4	30.0	74.0
11041.795000	45.0	100.0	H	336.0	-5.5	29.0	74.0
14773.435000	47.0	248.9	H	246.0	-1.4	27.0	74.0

Frequency (MHz)	CAverage (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1973.800000	17.8	249.9	V	253.0	-26.8	36.2	54.0
5097.055000	23.6	291.6	H	95.0	-18.4	30.4	54.0
7422.735000	28.5	335.5	V	281.0	-13.0	25.5	54.0
9934.350000	30.9	150.1	V	124.0	-9.4	23.1	54.0
11041.795000	32.6	100.0	H	336.0	-5.5	21.4	54.0
14773.435000	33.9	248.9	H	246.0	-1.4	20.1	54.0

Wireless charging mode

Frequency (MHz)	Peak (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1974.045000	30.2	249.9	V	38.0	-26.8	43.8	74.0
5606.100000	37.7	219.4	H	50.0	-17.7	36.3	74.0
7328.220000	41.0	150.0	V	208.0	-13.4	33.0	74.0
9418.355000	43.3	149.9	H	187.0	-10.3	30.7	74.0
11027.770000	45.0	140.6	H	45.0	-5.6	29.0	74.0
14703.990000	46.6	248.5	H	62.0	-1.4	27.4	74.0

Frequency (MHz)	CAverage (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1974.045000	17.7	249.9	V	38.0	-26.8	36.3	54.0
5606.100000	24.2	219.4	H	50.0	-17.7	29.8	54.0
7328.220000	27.9	150.0	V	208.0	-13.4	26.1	54.0
9418.355000	30.5	149.9	H	187.0	-10.3	23.5	54.0
11027.770000	32.8	140.6	H	45.0	-5.6	21.2	54.0
14703.990000	33.9	248.5	H	62.0	-1.4	20.1	54.0

**Display mode**

Frequency (MHz)	Peak (dB μ V/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)
1086.470000	48.1	217.4	H	285.0	-29.5	25.9	74.0
2984.235000	41.4	350.0	H	240.0	-22.9	32.6	74.0
4969.825000	42.5	100.0	H	230.0	-18.6	31.5	74.0
5400.050000	47.4	324.5	H	219.0	-18.0	26.6	74.0
15019.860000	46.8	350.0	H	329.0	-1.3	27.2	74.0
17859.600000	52.9	198.6	V	89.0	6.0	21.1	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)
1086.470000	34.9	217.4	H	285.0	-29.5	19.1	54.0
2984.235000	28.3	350.0	H	240.0	-22.9	25.7	54.0
4969.825000	29.9	100.0	H	230.0	-18.6	24.1	54.0
5400.050000	44.3	324.5	H	219.0	-18.0	9.7	54.0
15019.860000	34.3	350.0	H	329.0	-1.3	19.7	54.0
17859.600000	39.7	198.6	V	89.0	6.0	14.3	54.0



6. CONCLUSION

The data collected shows that the **EUT Type: Multi-band CDMA/GSM/EDGE/WCDMA/LTE Phone with WLAN, Bluetooth and RFID, FCC ID: ZNFV450PM, Model: LM-V450PM** complies with §15.107 and §15.109 of the FCC rules.



7. APPENDIX A. TEST SETUP PHOTOGRAPHS

Please refer to Appendix A