

EMI TEST REPORT

FCC CERTIFICATION

Applicant:

LG Electronics MobileComm U.S.A., Inc.
1000 Sylvan Avenue, Englewood Cliffs NJ 07632

Date of Receipt: February 23, 2017

Date of Issue: March 13, 2017

Test Report No. HCT-E-1703-F008

HCT FRN: 0005866421

FCC ID :

ZNFV530

Rule Part(s) / Standard(s): FCC CFR 47 PART 15 Subpart B Class B

FCC Classification: JBP (Part 15 B – Class B Computing Device Peripheral)

EUT Type: WCDMA/LTE device with WLAN and Bluetooth

Model Name: LG-V530KB

Additional Model Name: LGV530KB, V530KB, LG-V530, LGV530, V530, LG-V533, LGV533, V533

Date of Test: March 09, 2017 - March 12, 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



Yeong-Moo Kim
Test Engineer
EMC Team
Certification Division

Reviewed By



Gyeong-Seon Kim
Technical Manager
EMC Team
Certification Division

This report only responds to the tested sample and may not be reproduced, except in full, without written approval of the HCT Co., Ltd.



DOCUMENT HISTORY

The revision history for this document is shown in table.

Version	Date	Description
HCT-E-1703-F008	March 13, 2017	Initial Release



TABLE OF CONTENTS

	PAGE
1. GENERAL INFORMATION	4
1.1 Description of EUT	4
1.2 Related Submittal(s) / Grant(s).....	5
1.3 Test Facility	5
1.4 Calibration of Measuring Instrument	5
1.5 Tested System Details.....	6
1.6 Cable Description	7
1.7 Noise Suppression Parts on Cable. (I/O Cable)	7
2. MEASUREMENT UNCERTAINTY	8
3. DESCRIPTION OF TEST	9
3.1 Measurement of Conducted Emission.....	9
3.2 Measurement of Radiated Measurements	10
4. PRELIMINARY TEST	12
4.1 Conducted Emission Test	12
4. 2 Radiated Emission Test	12
5. CONDUCTED AND RADIATED EMISSION TEST SUMMARY	13
5.1 Conducted Emission Test	13
5.2 Radiated Emission Test	26
6. LIST OF TEST EQUIPMENT	30
7. CONCLUSION	31

ATTACHMENT: TEST SETUP PHOTOGRAPHS



1. GENERAL INFORMATION

1.1 Description of EUT

Its basic purpose is used for communications.

FCC ID	ZNFV530
Model	LG-V530KB
Additional Model	LGV530KB, V530KB, LG-V530, LGV530, V530, LG-V533, LGV533, V533
EUT Type	WCDMA/LTE device with WLAN and Bluetooth
TX Frequency	1 852.4 MHz to 1 907.6 MHz (WCDMA B2) 1712.4 MHz to 1752.6 MHz (WCDMA B4) 826.40 MHz to 846.60 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) 2 496 MHz to 2 570 MHz (LTE B7) 699 MHz to 716 MHz (LTE B12) 704 MHz to 716 MHz (LTE B17) 1 710 MHz to 1 780 MHz (LTE B66) 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)
RX Frequency	1 932.4 MHz to 1 987.6 MHz (WCDMA B2) 2 112.4 MHz to 2 152.6 MHz (WCDMA B4) 871.40 MHz to 891.60 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) 2 516 MHz to 2 690 MHz (LTE B7) 729 MHz to 746 MHz (LTE B12) 734 MHz to 746 MHz (LTE B17) 2 110 MHz to 2 200 MHz (LTE B66) 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)



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)	90661 (July 07, 2015)
Radiated Field strength measurement facility (10 m)	

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	LG-V530KB	LG	ZNFV530	Notebook PC, Earphone
USB Cable	EAD63769711	Ningbo broad	-	EUT, Notebook PC
USB Cable	EAD63769712	CRESYN	-	EUT, Notebook PC
USB Cable	EAD63769713	KSD	-	EUT, Notebook PC
Earphone	EAB62950102	CRESYN	-	EUT
Notebook PC	ProBook6560b	HP	DoC	Gateway , Notebook PC adaptor, RJ45 cable, Serial mouse
Notebook PC adaptor	Series PPP009L-E	LITE-On Technology	-	Notebook PC
Gateway	TL-WR747N	TP-LINK	-	RJ45 cable, Gateway adaptor
Gateway adaptor	T120150-2H1	TP-LINK	-	Gateway
Serial mouse	Serial 2 button mouse	Radio shack	FSUGMZE3	Notebook PC
RJ45 cable	-	-	-	Notebook PC, Gateway
Micro SD card	256 GB EVO+UHS-1 MicroSDXC U1	SAMSUNG	-	EUT
Sound pack	SDP-P100	EM-TECH	-	EUT



1.6 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (m)
EUT	Micro USB	Y	Y	(P,D)1.0
	Earphone	N/A	Y	(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.

1.7 Noise Suppression Parts on Cable. (I/O Cable)

Product Name	Port	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
EUT	Micro USB	N	N/A	Y	Both End
	Earphone	N	N/A	Y	Both End
Notebook PC	RJ 45	N	N/A	N	N/A
	Serial (Mouse)	N	N/A	Y	Notebook PC 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 (0.158 MHz to 30 MHz)	$\pm 1.82 \text{ dB } (k = 2)$
Radiated Emissions (30 MHz to 1 GHz)	$\pm 5.06 \text{ dB } (k = 2)$
Radiated Emissions (1 GHz to 6 GHz)	$\pm 5.0 \text{ dB } (k = 2)$
Radiated Emissions (6 GHz to 18 GHz)	$\pm 5.4 \text{ dB } (k = 2)$



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

- 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.
- The EUT was set 3 m away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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.
- 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.
- 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.
- 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

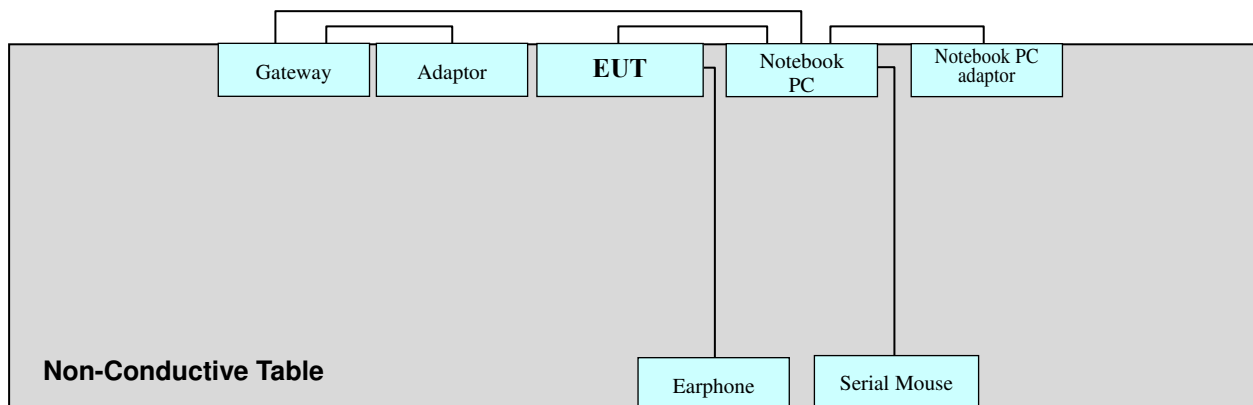


3.2.1 Frequency Range of Radiated Measurements

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



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: ☒ Data Communication mode (With Sound-pack)
 ☒ Data Communication mode (Without Sound-pack)

4. 2 Radiated Emission Test

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

Operation Mode: ☒ Data Communication mode (With Sound-pack)
 ☒ Data Communication mode (Without Sound-pack)



5. CONDUCTED AND RADIATED EMISSION TEST SUMMARY

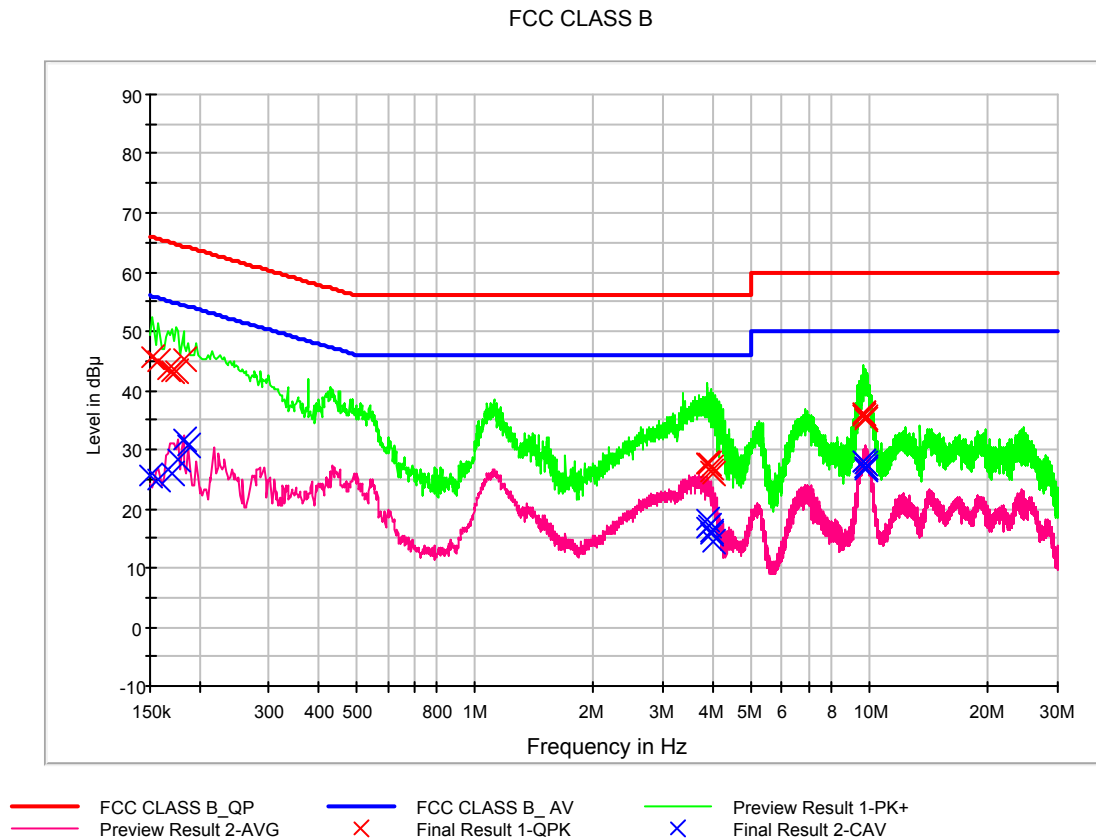
5.1 Conducted Emission Test

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	Data Communication mode
Worst Case of USB Cable Type	CRESYN (EAD63769712)
Kind of Test Site	Shielded Room
Temperature	21.3 °C
Relative Humidity	32.6 %
Test Date	March 09, 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: Conducted Emission, AC Main Port, Without Sound-Pack, Line (L1)**



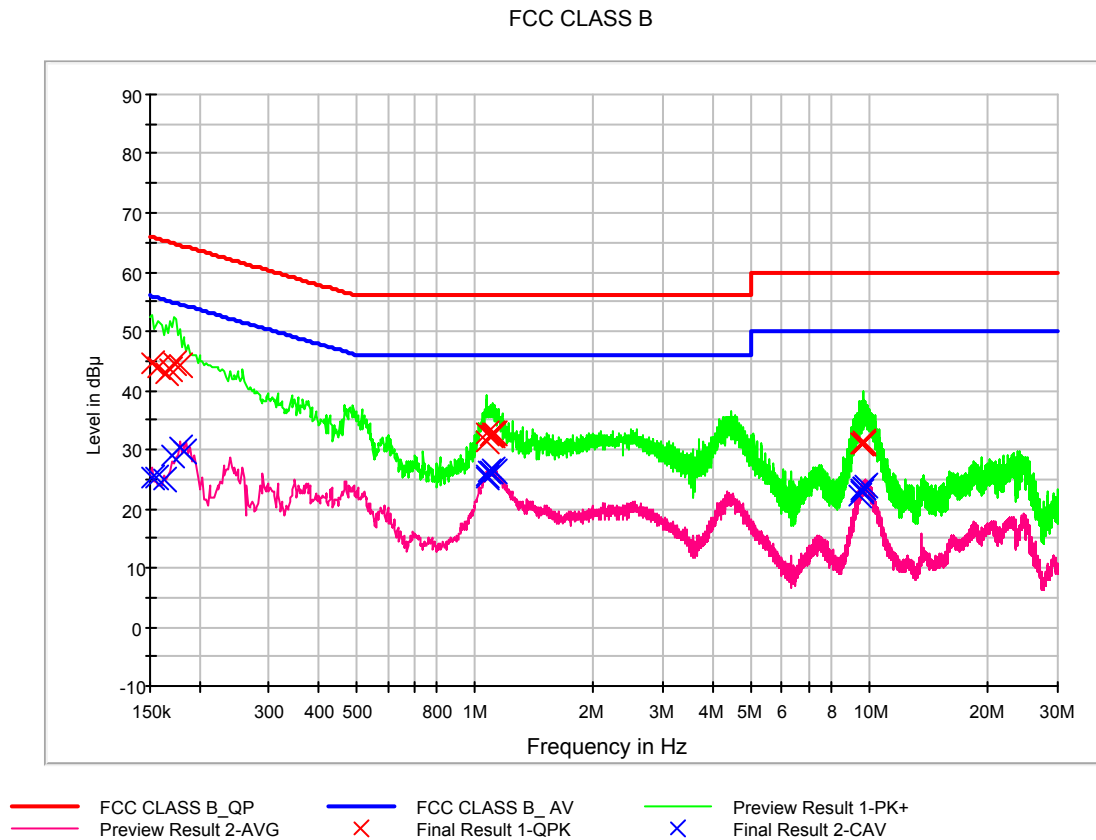
QuasiPeak Final Result

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.152000	45.8	9.000	L1	9.6	20.1	65.9
0.158000	45.0	9.000	L1	9.6	20.6	65.6
0.166000	43.6	9.000	L1	9.6	21.6	65.2
0.170000	43.3	9.000	L1	9.6	21.7	65.0
0.174000	43.3	9.000	L1	9.6	21.4	64.8
0.182000	45.2	9.000	L1	9.6	19.2	64.4
3.878000	27.5	9.000	L1	9.9	28.5	56.0
3.892000	27.6	9.000	L1	9.9	28.4	56.0
3.902000	27.7	9.000	L1	9.9	28.3	56.0
3.964000	26.3	9.000	L1	9.9	29.7	56.0
3.968000	26.8	9.000	L1	9.9	29.2	56.0
4.026000	25.9	9.000	L1	9.9	30.1	56.0
9.630000	36.0	9.000	L1	10.1	24.0	60.0
9.636000	36.1	9.000	L1	10.1	23.9	60.0
9.650000	35.7	9.000	L1	10.1	24.3	60.0
9.688000	35.6	9.000	L1	10.1	24.4	60.0
9.710000	35.4	9.000	L1	10.1	24.6	60.0
9.786000	35.0	9.000	L1	10.1	25.0	60.0



CAverage Final Result

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	25.5	9.000	L1	9.6	30.5	56.0
0.158000	24.9	9.000	L1	9.6	30.7	55.6
0.170000	26.1	9.000	L1	9.6	28.9	55.0
0.176000	28.5	9.000	L1	9.6	26.2	54.7
0.182000	31.6	9.000	L1	9.6	22.8	54.4
0.188000	30.8	9.000	L1	9.6	23.4	54.1
3.878000	16.9	9.000	L1	9.9	29.1	46.0
3.892000	18.0	9.000	L1	9.9	28.0	46.0
3.902000	17.3	9.000	L1	9.9	28.7	46.0
3.964000	16.2	9.000	L1	9.9	29.8	46.0
3.968000	15.7	9.000	L1	9.9	30.3	46.0
4.026000	14.3	9.000	L1	9.9	31.7	46.0
9.630000	27.9	9.000	L1	10.1	22.1	50.0
9.650000	27.8	9.000	L1	10.1	22.2	50.0
9.708000	27.5	9.000	L1	10.1	22.5	50.0
9.712000	26.9	9.000	L1	10.1	23.1	50.0
9.768000	27.0	9.000	L1	10.1	23.0	50.0
9.810000	26.6	9.000	L1	10.1	23.4	50.0

**Figure 2: Conducted Emission, AC Main Port, Without Sound-Pack, Line (N)**



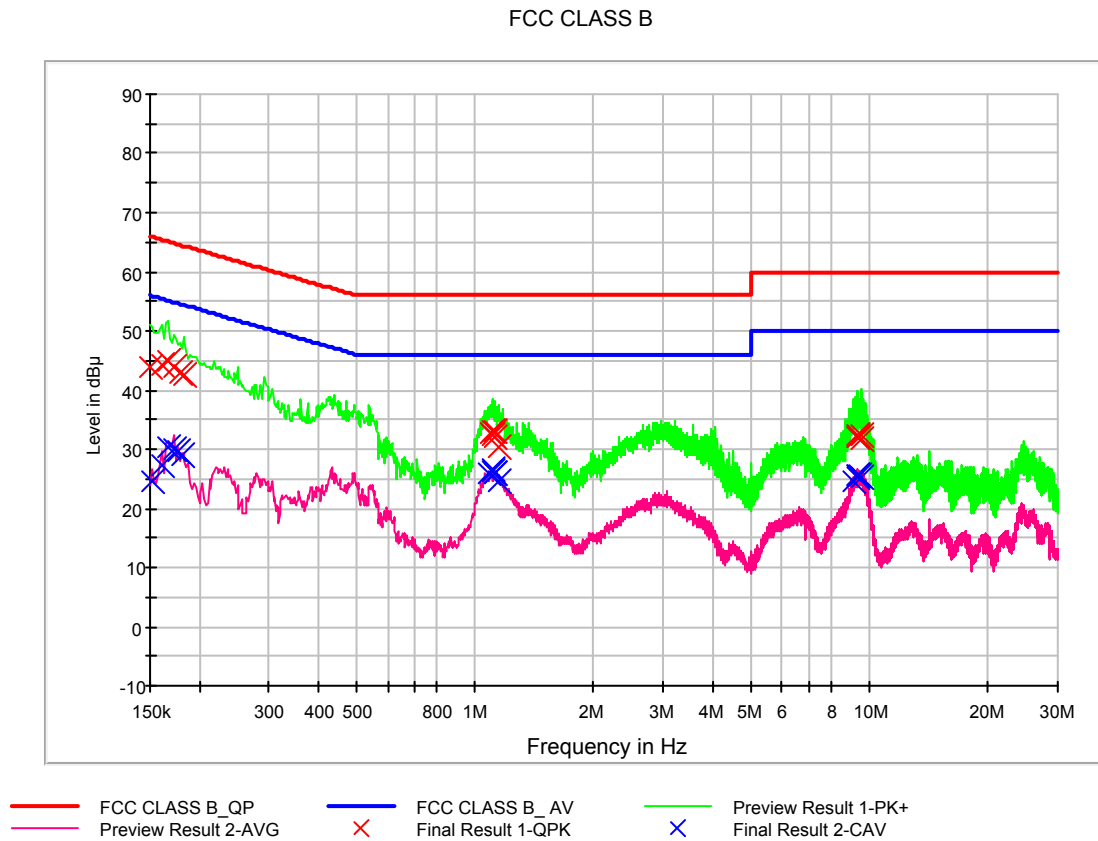
QuasiPeak Final Result

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.152000	44.6	9.000	N	9.6	21.3	65.9
0.158000	43.7	9.000	N	9.6	21.8	65.6
0.164000	42.9	9.000	N	9.6	22.3	65.3
0.168000	43.5	9.000	N	9.6	21.6	65.1
0.172000	44.6	9.000	N	9.6	20.3	64.9
0.178000	44.2	9.000	N	9.6	20.4	64.6
1.066000	31.2	9.000	N	9.7	24.8	56.0
1.072000	32.6	9.000	N	9.7	23.4	56.0
1.094000	32.3	9.000	N	9.7	23.7	56.0
1.104000	32.5	9.000	N	9.7	23.5	56.0
1.110000	32.8	9.000	N	9.7	23.2	56.0
1.118000	32.8	9.000	N	9.7	23.2	56.0
9.524000	30.9	9.000	N	10.1	29.1	60.0
9.586000	30.9	9.000	N	10.1	29.1	60.0
9.606000	31.0	9.000	N	10.1	29.0	60.0
9.610000	31.0	9.000	N	10.1	29.0	60.0
9.618000	31.2	9.000	N	10.1	28.8	60.0
9.624000	31.3	9.000	N	10.1	28.7	60.0



CAverage Final Result

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.152000	25.3	9.000	N	9.6	30.6	55.9
0.156000	25.3	9.000	N	9.6	30.4	55.7
0.162000	25.1	9.000	N	9.6	30.3	55.4
0.170000	28.9	9.000	N	9.6	26.0	55.0
0.178000	30.3	9.000	N	9.6	24.3	54.6
0.182000	29.6	9.000	N	9.6	24.8	54.4
1.064000	25.3	9.000	N	9.7	20.7	46.0
1.074000	25.7	9.000	N	9.7	20.3	46.0
1.082000	26.2	9.000	N	9.7	19.8	46.0
1.092000	26.3	9.000	N	9.7	19.7	46.0
1.106000	26.6	9.000	N	9.7	19.4	46.0
1.118000	26.4	9.000	N	9.7	19.6	46.0
9.418000	22.2	9.000	N	10.1	27.8	50.0
9.524000	23.0	9.000	N	10.1	27.0	50.0
9.586000	23.3	9.000	N	10.1	26.7	50.0
9.610000	23.4	9.000	N	10.1	26.6	50.0
9.618000	23.5	9.000	N	10.1	26.5	50.0
9.802000	23.8	9.000	N	10.1	26.2	50.0

**Figure 3: Conducted Emission, AC Main Port, With Sound-Pack, Line (L1)**



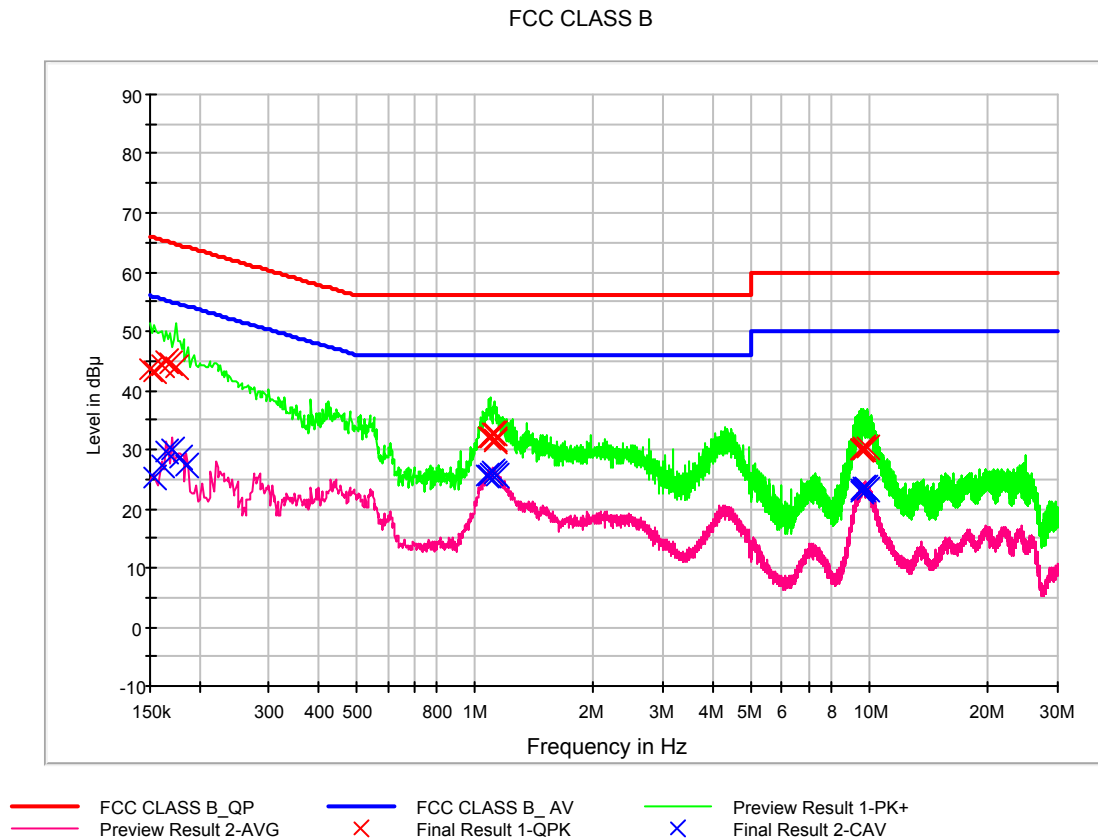
QuasiPeak Final Result

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
0.160000	44.2	9.000	L1	9.6	21.3	65.5
0.166000	44.9	9.000	L1	9.6	20.2	65.2
0.172000	43.8	9.000	L1	9.6	21.0	64.9
0.178000	43.0	9.000	L1	9.6	21.5	64.6
0.182000	42.6	9.000	L1	9.6	21.8	64.4
1.094000	32.6	9.000	L1	9.7	23.4	56.0
1.106000	32.2	9.000	L1	9.7	23.8	56.0
1.114000	33.2	9.000	L1	9.7	22.8	56.0
1.118000	32.9	9.000	L1	9.7	23.1	56.0
1.126000	32.1	9.000	L1	9.7	23.9	56.0
1.150000	30.4	9.000	L1	9.7	25.6	56.0
9.290000	32.1	9.000	L1	10.1	27.9	60.0
9.316000	32.4	9.000	L1	10.1	27.6	60.0
9.320000	32.3	9.000	L1	10.1	27.7	60.0
9.338000	32.2	9.000	L1	10.1	27.8	60.0
9.508000	32.2	9.000	L1	10.1	27.8	60.0
9.574000	31.7	9.000	L1	10.1	28.3	60.0



CAverage Final Result

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.152000	24.7	9.000	L1	9.6	31.2	55.9
0.160000	27.5	9.000	L1	9.6	28.0	55.5
0.166000	30.4	9.000	L1	9.6	24.8	55.2
0.172000	29.9	9.000	L1	9.6	24.9	54.9
0.176000	29.5	9.000	L1	9.6	25.1	54.7
0.180000	29.0	9.000	L1	9.6	25.5	54.5
1.080000	25.8	9.000	L1	9.7	20.2	46.0
1.106000	26.2	9.000	L1	9.7	19.8	46.0
1.112000	26.6	9.000	L1	9.7	19.4	46.0
1.120000	26.0	9.000	L1	9.7	20.0	46.0
1.126000	25.9	9.000	L1	9.7	20.1	46.0
1.150000	24.7	9.000	L1	9.7	21.3	46.0
9.142000	24.5	9.000	L1	10.1	25.5	50.0
9.290000	25.3	9.000	L1	10.1	24.7	50.0
9.338000	25.5	9.000	L1	10.1	24.5	50.0
9.352000	25.6	9.000	L1	10.1	24.4	50.0
9.404000	25.5	9.000	L1	10.1	24.5	50.0
9.538000	25.3	9.000	L1	10.1	24.7	50.0

**Figure 4: Conducted Emission, AC Main Port, With Sound-Pack, Line (N)**



QuasiPeak Final Result

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	43.6	9.000	N	9.6	22.4	66.0
0.154000	43.3	9.000	N	9.6	22.5	65.8
0.160000	44.2	9.000	N	9.6	21.2	65.5
0.164000	44.8	9.000	N	9.6	20.5	65.3
0.168000	44.6	9.000	N	9.6	20.4	65.1
0.174000	43.8	9.000	N	9.6	21.0	64.8
1.080000	32.0	9.000	N	9.7	24.0	56.0
1.090000	32.0	9.000	N	9.7	24.0	56.0
1.102000	32.6	9.000	N	9.7	23.4	56.0
1.116000	31.9	9.000	N	9.7	24.1	56.0
1.122000	32.7	9.000	N	9.7	23.3	56.0
1.128000	31.5	9.000	N	9.7	24.5	56.0
9.498000	29.9	9.000	N	10.1	30.1	60.0
9.526000	29.9	9.000	N	10.1	30.1	60.0
9.546000	30.0	9.000	N	10.1	30.0	60.0
9.648000	30.3	9.000	N	10.1	29.7	60.0
9.672000	30.1	9.000	N	10.1	29.9	60.0
9.854000	30.3	9.000	N	10.1	29.7	60.0



CAverage Final Result

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
0.160000	27.3	9.000	N	9.6	28.1	55.5
0.164000	29.8	9.000	N	9.6	25.5	55.3
0.170000	30.2	9.000	N	9.6	24.8	55.0
0.178000	28.7	9.000	N	9.6	25.9	54.6
0.186000	27.1	9.000	N	9.6	27.1	54.2
1.070000	25.6	9.000	N	9.7	20.4	46.0
1.080000	25.6	9.000	N	9.7	20.4	46.0
1.094000	26.1	9.000	N	9.7	19.9	46.0
1.114000	26.2	9.000	N	9.7	19.8	46.0
1.128000	25.9	9.000	N	9.7	20.1	46.0
1.138000	25.7	9.000	N	9.7	20.3	46.0
9.526000	22.9	9.000	N	10.1	27.1	50.0
9.546000	23.1	9.000	N	10.1	26.9	50.0
9.662000	23.4	9.000	N	10.1	26.6	50.0
9.672000	23.4	9.000	N	10.1	26.6	50.0
9.758000	23.4	9.000	N	10.1	26.6	50.0
9.826000	23.4	9.000	N	10.1	26.6	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	Data Communication mode
Worst Case of USB Cable Type	CRESYN (EAD63769712)
Kind of Test Site	3 m semi anechoic chamber
Temperature	23.0 °C
Relative Humidity	33.5 %
Test Date	March 11, 2017

- 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



Without Sound-Pack

Frequency (MHz)	Quasi Peak (dBuV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
46.531062	25.5	100.0	V	158.0	22.7	14.5	40.0
82.070140	27.0	250.0	H	92.0	18.6	13.0	40.0
87.136272	25.0	265.0	H	104.0	17.8	15.0	40.0
266.527054	31.9	136.0	H	221.0	22.6	14.1	46.0
276.975951	29.3	219.0	V	176.0	23.0	16.7	46.0
800.350702	41.2	100.0	H	197.0	34.0	4.8	46.0

With Sound-Pack

Frequency (MHz)	Quasi Peak (dBuV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
46.743487	27.1	100.0	V	75.0	22.8	12.9	40.0
79.468937	26.7	229.0	H	117.0	19.0	13.3	40.0
85.929859	25.1	274.0	H	115.0	18.0	14.9	40.0
266.583167	31.4	133.0	H	62.0	22.6	14.6	46.0
276.995991	34.6	105.0	H	150.0	23.0	11.4	46.0
801.969940	41.7	150.0	H	225.0	34.0	4.3	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 Operating Frequency	5 825 MHz
Upper Frequency of Measurement Range	1 GHz to 29.125 GHz
Operation Mode	Data Communication mode
Worst Case of USB Cable Type	CRESYN (EAD63769712)
Kind of Test Site	3 m semi anechoic chamber
Temperature	23.2 °C
Relative Humidity	34.0 %
Test Date	March 12, 2017

- 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



Without Sound-Pack

Frequency (MHz)	Peak (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1146.643286	32.9	149.9	V	204.0	-13.5	41.1	74.0
1399.749499	48.3	361.8	V	35.0	-12.8	25.7	74.0
2079.609218	50.7	100.0	V	212.0	-11.8	23.3	74.0
2655.861723	49.3	367.7	V	151.0	-9.1	24.7	74.0
2987.925852	42.1	345.7	V	151.0	-8.2	31.9	74.0
4495.741483	42.8	344.7	V	262.0	-5.6	31.2	74.0

Frequency (MHz)	CAverage (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1146.643286	18.9	149.9	V	204.0	-13.5	35.1	54.0
1399.749499	45.7	361.8	V	35.0	-12.8	8.3	54.0
2079.609218	25.6	100.0	V	212.0	-11.8	28.4	54.0
2655.861723	24.1	367.7	V	151.0	-9.1	29.9	54.0
2987.925852	25.8	345.7	V	151.0	-8.2	28.2	54.0
4495.741483	27.2	344.7	V	262.0	-5.6	26.8	54.0

With Sound-Pack

Frequency (MHz)	Peak (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1399.749499	48.2	360.6	V	37.0	-12.8	25.8	74.0
1800.150300	43.5	367.6	V	0.0	-12.3	30.5	74.0
1996.643287	48.6	111.6	V	214.0	-12.2	25.4	74.0
2659.869739	48.9	367.7	V	150.0	-9.1	25.1	74.0
4490.230461	40.5	346.7	V	262.0	-5.7	33.5	74.0
5979.108217	43.3	367.6	V	277.0	-2.4	30.7	74.0

Frequency (MHz)	CAverage (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1399.749499	45.6	360.6	V	37.0	-12.8	8.4	54.0
1800.150300	38.9	367.6	V	0.0	-12.3	15.1	54.0
1996.643287	24.8	111.6	V	214.0	-12.2	29.2	54.0
2659.869739	24.4	367.7	V	150.0	-9.1	29.6	54.0
4490.230461	26.1	346.7	V	262.0	-5.7	27.9	54.0
5979.108217	30.7	367.6	V	277.0	-2.4	23.3	54.0



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>					
☒ EMI Test Receiver	Rohde & Schwarz	ESCI	100033	1 year	06.29.2016
☒ LISN	Rohde & Schwarz	ESH3-Z5	100282	1 year	06.09.2016
☒ LISN	Rohde & Schwarz	ENV216	100073	1 year	12.23.2016
☒ Software	Rohde & Schwarz	EMC32	-	-	-
<u>Radiated Emission</u>					
-For measurement below 1 GHz					
☒ EMI Test Receiver	Rohde & Schwarz	ESI40	831564103	1 year	11.04.2016
☐ EMI Test Receiver	Rohde & Schwarz	ESU40	100514	1 year	10.10.2016
☒ Trilog Antenna	Schwarzbeck	VULB9168	255	2 year	04.15.2015
☒ 6dB Attenuator	HP	8491A	24257	2 year	04.15.2015
☒ Antenna master	HD GmbH	MA240	240/520	N/A	-
☒ Antenna master controller	HD GmbH	HD 100	100/637	N/A	-
☒ Turn Table	EMCO	1060-2M	-	N/A	-
☒ Turn Table controller	EMCO	2090	9702-1224	N/A	-
☐ EMI Test Receiver	Rohde & Schwarz	ESU 26	100241	1 year	05.27.2016
☐ Antenna master	INNCO Systems	MA4000-EP	MA4000/283	N/A	-
☐ Turn Table	INNCO Systems	DT3000-3T	DT3000/69	N/A	-
☒ Software	Rohde & Schwarz	EMC32	-	-	-
-For measurement above 1 GHz					
☒ EMI Test Receiver	Rohde & Schwarz	ESI40	831564103	1 year	11.04.2016
☐ EMI Test Receiver	Rohde & Schwarz	ESU40	100514	1 year	10.10.2016
☐ Antenna master	HD GmbH	MA240	240/520	N/A	-
☐ Antenna master controller	HD GmbH	HD 100	100/637	N/A	-
☒ Antenna master	INNCO Systems	MA4000-XP-ET	48709515	N/A	-
☒ Antenna master controller	INNCO Systems	CO 3000	CO 3000/870/ 35990515	N/A	-
☒ Turn Table	EMCO	1060-2M	-	N/A	-
☒ Turn Table controller	EMCO	2090	9702-1224	N/A	-
☐ Power Amplifier	CERNEX	CBLU1183540	21691	1 year	07.04.2016
☒ Power Amplifier	CERNEX	CBLU5183530	24348	1 year	06.07.2016
☒ Horn Antenna	Schwarzbeck	BBHA 9120D	296	2 year	10.12.2016
☒ Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170541	2 year	09.03.2015
☒ Power Amplifier	CERNEX	CBL18265035	21873	1 year	01.19.2017
☒ Power Amplifier	CERNEX	CBL26405040	19660	1 year	07.15.2016
☐ Horn Antenna	Schwarzbeck	BBHA 9120D	1300	2 year	08.25.2016
☐ EMI Test Receiver	Rohde & Schwarz	ESU 26	100241	1 year	05.27.2016
☐ Turn Table	INNCO Systems	DT3000-3T	DT3000/69	N/A	-
☒ Software	Rohde & Schwarz	EMC32	-	-	-



7. CONCLUSION

The data collected shows that the **EUT Type: WCDMA/LTE device with WLAN and Bluetooth, Model: LG-V530KB, FCC ID: ZNFV530** complies with §15.107 and §15.109 of the FCC rules.