

EMI CERTIFICATION REPORT

Applicant:

LG Electronics MobileComm U.S.A., Inc.

1000 Sylvan Avenue, Englewood Cliffs NJ 07632

Date of Receipt: April 06, 2015**Date of Issue:** May 07, 2015**Test Report No.** HCT-E-1505-F001-1**HCT FRN:** 0005866421**FCC ID:****ZNFLS991**

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: Cellular/PCS CDMA/EVDO and LTE Phone with Bluetooth, WLAN and NFC
Model Name: LGLS991
Additional Model Name: LS991, LG-LS991, LGAS991, AS991, LG-AS991
Test Port: USB / Earphone Port
Date of Test: April 22, 2015- April 29, 2015

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 C63.4-2003. (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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EMC Team
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DOCUMENT HISTORY

The revision history for this document is shown in table.

Version	Date	Description
HCT-E-1505-F001	May 06, 2015	Initial Release
HCT-E-1505-F001-1	May 07, 2015	Added the model names: LGAS991, AS991, LG-AS991



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ATTACHMENT: TEST SETUP PHOTOGRAPHS



1. GENERAL INFORMATION

1.1 Description of EUT

Equipment Under Test is manufactured by **LG Electronics MobileComm U.S.A., Inc.**
Its basic purpose is used for communications.

Model	LGLS991
FCC ID	ZNFLS991
Additional Model	LS991, LG-LS991, LGAS991, AS991, LG-AS991
EUT Type	Cellular/PCS CDMA/EVDO and LTE Phone with Bluetooth, WLAN and NFC
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) 824.20 MHz to 848.80 MHz (GSM 850) 1 850.20 MHz to 1 909.80 MHz (GSM 1 900) 826.40 MHz to 846.60 MHz (WCDMA 850) 1 852.4 MHz to 1 907.6 MHz (WCDMA 1 900) 1 850.7 MHz to 1 909.3 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) 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)
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) 869.20 MHz to 893.80 MHz (GSM 850) 1 930.20 MHz to 1 989.80 MHz (GSM 1 900) 871.40 MHz to 891.60 MHz (WCDMA 850) 1 932.4 MHz to 1 987.6 MHz (WCDMA 1 900) 1 930.00 MHz to 1 990.00 MHz (LTE B2) 2 110 MHz to 2 155 MHz (LTE B4) 869 MHz to 894 MHz (LTE B5) 729 MHz to 746 MHz (LTE B12) 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)



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 C63.4-2003.

Measurement Facilities	Reg. No.
Radiated Field strength measurement facility (3 m)	90661 (February 28, 2014)
Radiated Field strength measurement facility (10 m)	90661 (February 28, 2014)



1.4 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	LGLS991	LG	ZNFLS991	Notebook PC, Earphone
USB cable	DLC-LGE51DC MUW-1	CRESYN	-	EUT, Notebook PC
Earphone	EAB62910501	I-SOUND	-	EUT
Standard cover	-	-	-	EUT
Quick cover	ACQ88174001	DKUIL	-	EUT
Notebook PC	ProBook6560b	HP	DoC	EUT, Notebook PC adaptor
Notebook PC adaptor	PPP009D	DELTA Electronics (Jiangsu) LTD	-	Notebook PC
Gateway	MV440	Axesstel	PH7MV440	Notebook PC, Adaptor
Serial mouse	Serial 2 button mouse	Radio shack	FSUGMZE3	Notebook PC
Adaptor	DA-60M12	Yang Ming Industrial	-	Gateway
RJ45 cable	-	-	-	Notebook PC, Gateway
Micro SD card	16 GB	Samsung	-	EUT



1.5 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)1.2
	Earphone	N/A	Y	(D)1.2
Notebook PC	RJ 45	N/A	N	(D)1.5
	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.

1.6 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	EUT End
Notebook PC	RJ 45	N	N/A	N	N/A
	Serial (Mouse)	N	N/A	Y	Notebook PC End



2. DESCRIPTION OF TEST

2.1 Measurement of Conducted Emission

The test procedure was in accordance with ANSI C63.4-2003, Clause 7

- 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.*



2.2 Measurement of Radiated Emission

The test procedure was in accordance with ANSI C63.4-2003, Clause 8

- a. The EUT was placed on the top of a turn table 0.8 meters above the ground at a 3 m 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. The antenna height scans apply for both horizontal and vertical polarizations, except that for vertical polarization, the minimum height of the center of the antenna shall be increased so that the lowest point of the bottom of the lowest antenna element clears the site reference ground plane by at least 25 cm. (below 1 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

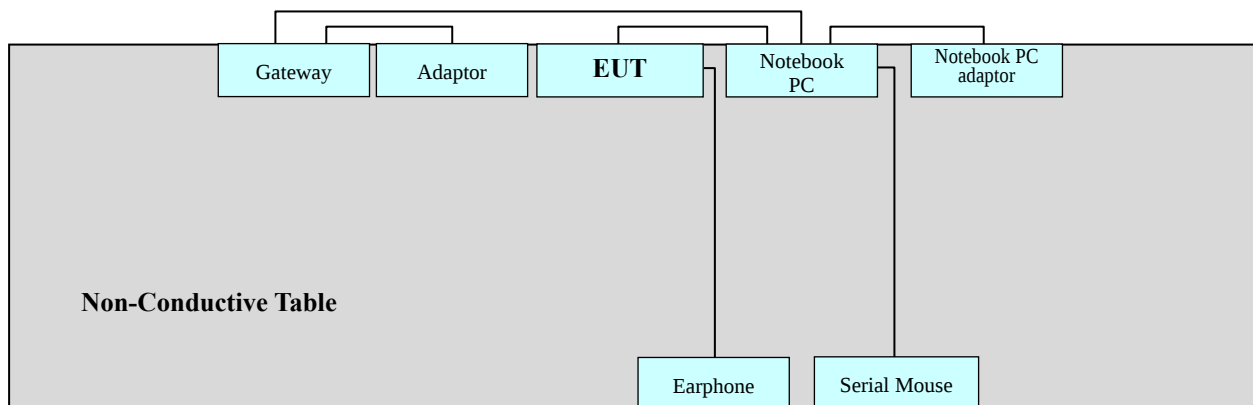


2.2.1 Frequency Range of Radiated Measurements

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

2.3 Configuration of Tested System



Power Line: 120 VAC, 60 Hz



3. PRELIMINARY TEST

3.1 Conducted Emission Test

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

Operation Mode: ☒ Data Communication mode

3. 2 Radiated Emission Test

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

Operation Mode: ☒ Data Communication mode



4. CONDUCTED AND RADIATED EMISSION TEST SUMMARY

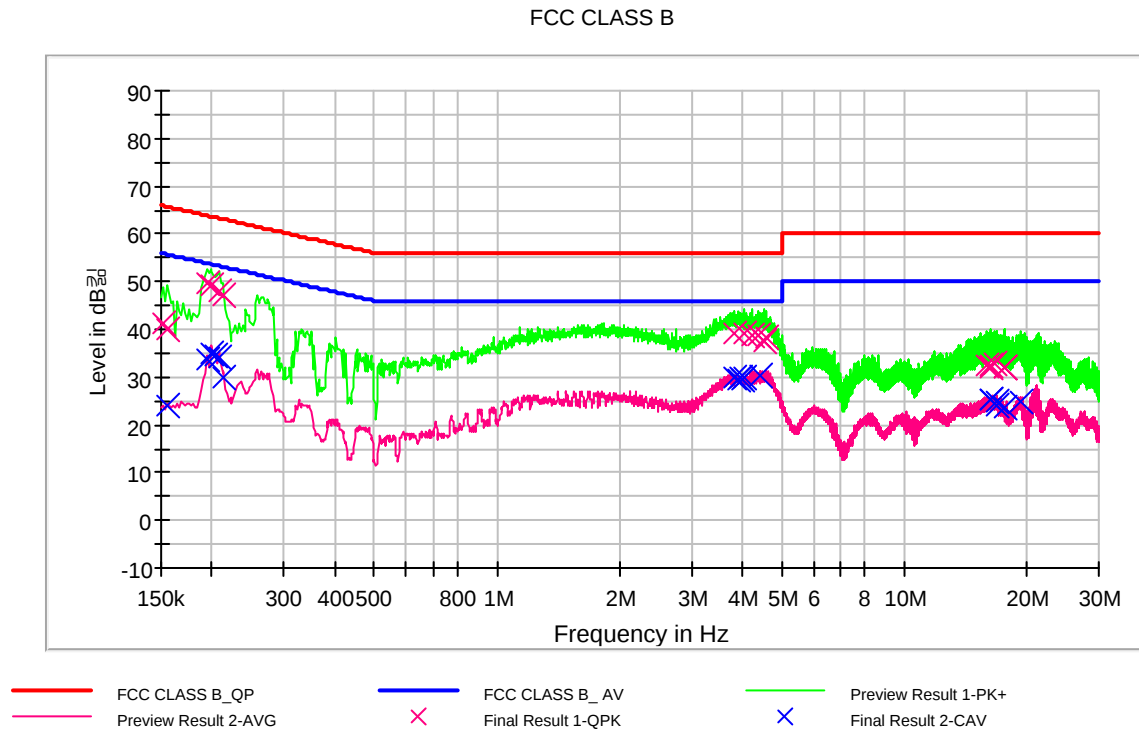
4.1 Conducted Emission Test

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
EUT Cover Type	Standard cover
Kind of Test Site	Shielded Room
Temperature	23.0 °C
Relative Humidity	25.2 %
Test Date	April 22, 2015

- 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, AC Main Port, Line (L1)**



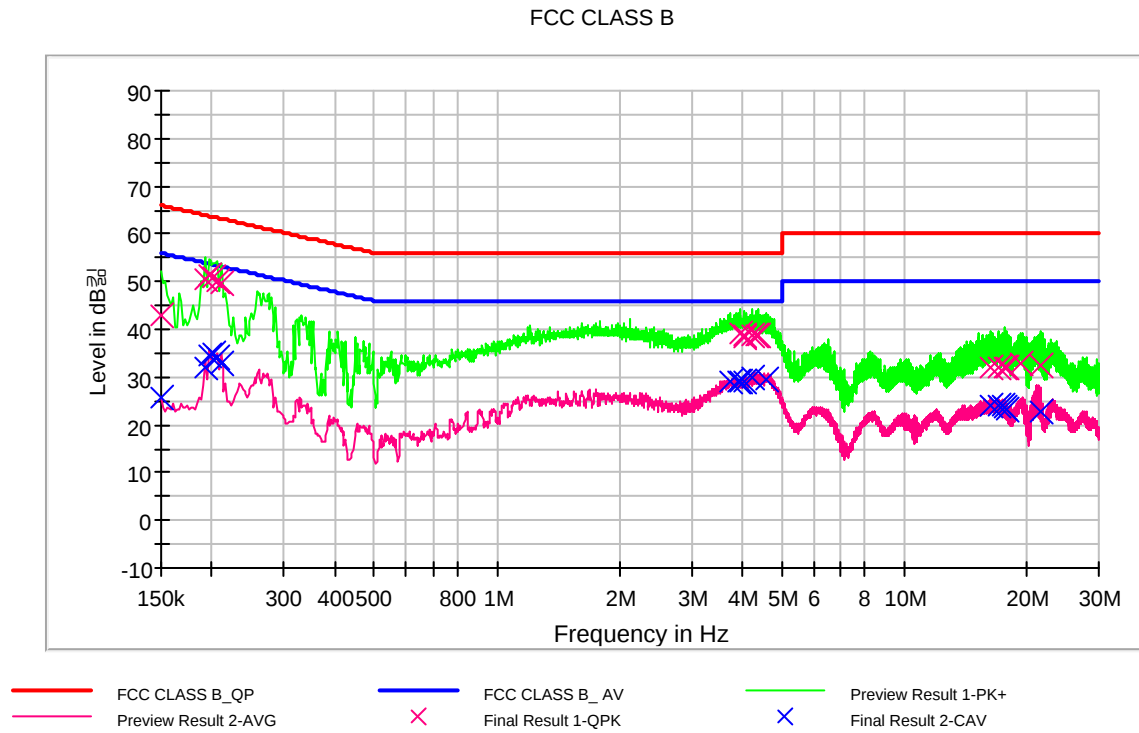
QuasiPeak Final Result, Line (L1)

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.152000	41.4	9.000	L1	9.6	24.5	65.9
0.156000	39.9	9.000	L1	9.6	25.8	65.7
0.194000	49.6	9.000	L1	9.6	14.3	63.9
0.198000	49.1	9.000	L1	9.6	14.6	63.7
0.208000	48.1	9.000	L1	9.7	15.2	63.3
0.212000	47.2	9.000	L1	9.7	15.9	63.1
3.818000	39.3	9.000	L1	9.9	16.7	56.0
4.032000	39.1	9.000	L1	9.9	16.9	56.0
4.244000	38.9	9.000	L1	9.9	17.1	56.0
4.386000	38.6	9.000	L1	9.9	17.4	56.0
4.530000	37.4	9.000	L1	9.9	18.6	56.0
4.598000	38.3	9.000	L1	9.9	17.7	56.0
15.982000	32.6	9.000	L1	10.2	27.4	60.0
16.194000	32.2	9.000	L1	10.2	27.8	60.0
16.332000	32.3	9.000	L1	10.2	27.7	60.0
16.618000	32.9	9.000	L1	10.2	27.1	60.0
17.610000	32.0	9.000	L1	10.3	28.0	60.0
17.682000	32.0	9.000	L1	10.3	28.0	60.0



CAverage Final Result, Line (L1)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.156000	24.1	9.000	L1	9.6	31.6	55.7
0.194000	33.6	9.000	L1	9.6	20.3	53.9
0.200000	34.9	9.000	L1	9.7	18.7	53.6
0.204000	34.5	9.000	L1	9.7	18.9	53.4
0.208000	34.0	9.000	L1	9.7	19.3	53.3
0.214000	30.0	9.000	L1	9.7	23.0	53.0
3.818000	29.8	9.000	L1	9.9	16.2	46.0
3.930000	29.6	9.000	L1	9.9	16.4	46.0
3.960000	29.8	9.000	L1	9.9	16.2	46.0
3.978000	29.6	9.000	L1	9.9	16.4	46.0
4.032000	30.1	9.000	L1	9.9	15.9	46.0
4.422000	30.3	9.000	L1	9.9	15.7	46.0
16.194000	25.1	9.000	L1	10.2	24.9	50.0
16.332000	25.1	9.000	L1	10.2	24.9	50.0
16.852000	24.9	9.000	L1	10.2	25.1	50.0
16.912000	24.1	9.000	L1	10.2	25.9	50.0
17.610000	23.4	9.000	L1	10.3	26.6	50.0
19.234000	24.7	9.000	L1	10.3	25.3	50.0

**Figure 2: Spectral Diagrams, 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	42.9	9.000	N	9.6	23.1	66.0
0.192000	50.4	9.000	N	9.6	13.5	63.9
0.196000	51.3	9.000	N	9.6	12.5	63.8
0.202000	51.0	9.000	N	9.6	12.5	63.5
0.206000	50.2	9.000	N	9.6	13.2	63.4
0.210000	49.6	9.000	N	9.6	13.6	63.2
3.962000	39.0	9.000	N	9.8	17.0	56.0
4.028000	38.5	9.000	N	9.8	17.5	56.0
4.032000	38.9	9.000	N	9.8	17.1	56.0
4.242000	38.8	9.000	N	9.8	17.2	56.0
4.316000	38.7	9.000	N	9.8	17.3	56.0
4.386000	38.6	9.000	N	9.9	17.4	56.0
16.344000	31.9	9.000	N	10.2	28.1	60.0
17.048000	32.2	9.000	N	10.2	27.8	60.0
17.686000	32.1	9.000	N	10.3	27.9	60.0
17.754000	31.9	9.000	N	10.3	28.1	60.0
19.382000	32.8	9.000	N	10.3	27.2	60.0
21.576000	32.3	9.000	N	10.3	27.7	60.0



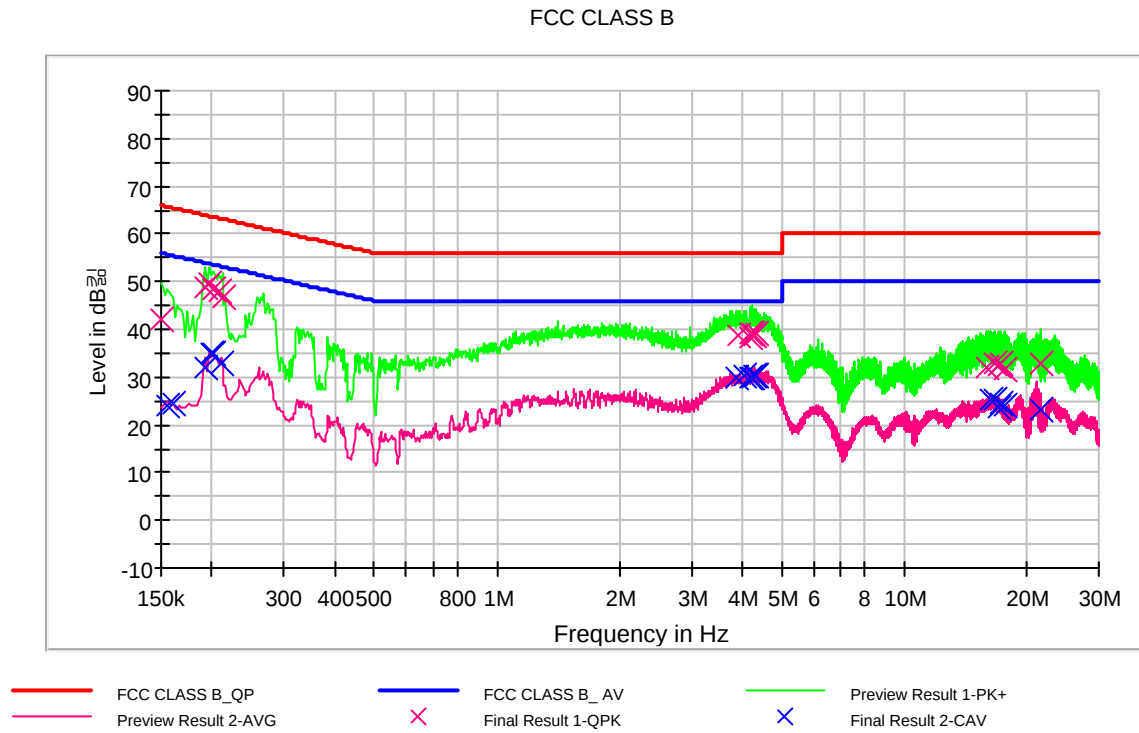
CAverage Final Result, Line (N)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	25.8	9.000	N	9.6	30.2	56.0
0.192000	32.0	9.000	N	9.6	21.9	53.9
0.196000	34.7	9.000	N	9.6	19.1	53.8
0.202000	34.9	9.000	N	9.6	18.6	53.5
0.206000	34.2	9.000	N	9.6	19.2	53.4
0.210000	32.9	9.000	N	9.6	20.3	53.2
3.752000	29.1	9.000	N	9.8	16.9	46.0
3.890000	29.1	9.000	N	9.8	16.9	46.0
3.960000	29.0	9.000	N	9.8	17.0	46.0
4.028000	29.1	9.000	N	9.8	16.9	46.0
4.242000	30.0	9.000	N	9.8	16.0	46.0
4.598000	29.6	9.000	N	9.9	16.4	46.0
16.344000	24.1	9.000	N	10.2	25.9	50.0
17.048000	24.2	9.000	N	10.2	25.8	50.0
17.334000	23.9	9.000	N	10.2	26.1	50.0
17.686000	23.4	9.000	N	10.3	26.6	50.0
17.754000	23.2	9.000	N	10.3	26.8	50.0
21.576000	22.9	9.000	N	10.3	27.1	50.0



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
EUT Cover Type	Quick cover
Kind of Test Site	Shielded Room
Temperature	23.0 °C
Relative Humidity	25.2 %
Test Date	April 22, 2015

**Figure 3: Spectral Diagrams, Conducted Emission, AC Main Port, Line (L1)**



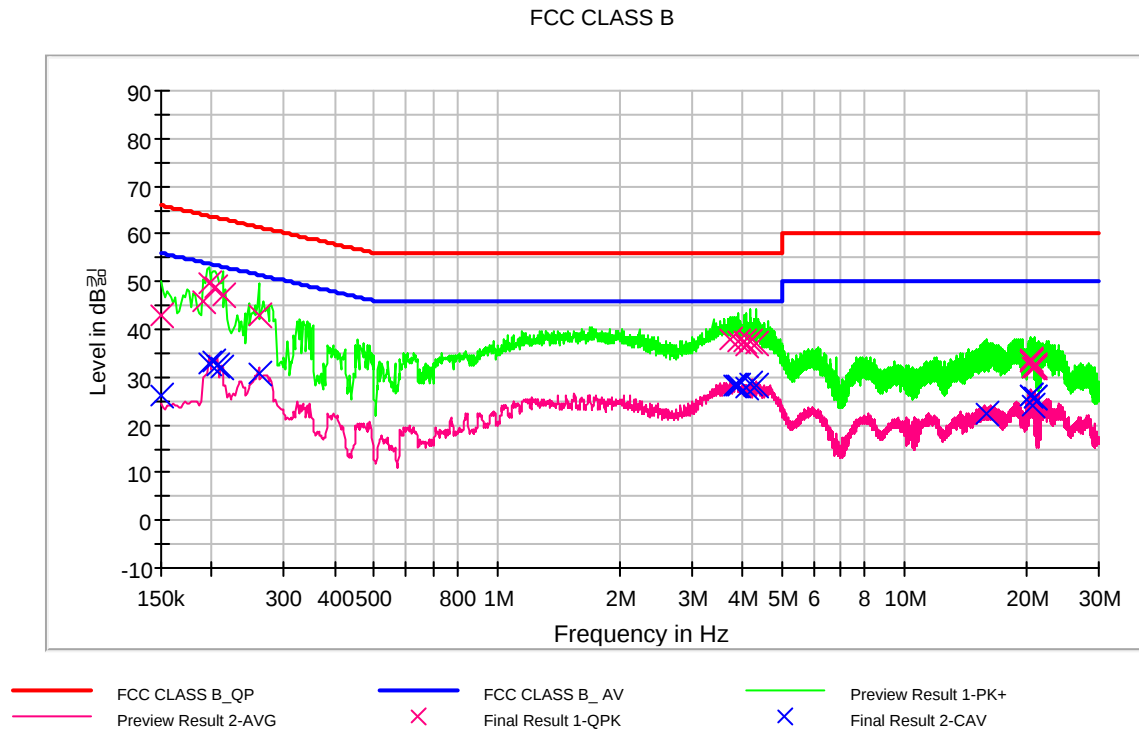
QuasiPeak Final Result, Line (L1)

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	42.1	9.000	L1	9.6	23.9	66.0
0.192000	48.7	9.000	L1	9.6	15.2	63.9
0.196000	49.5	9.000	L1	9.6	14.3	63.8
0.202000	48.5	9.000	L1	9.7	15.0	63.5
0.208000	48.0	9.000	L1	9.7	15.3	63.3
0.212000	46.7	9.000	L1	9.7	16.4	63.1
3.910000	38.9	9.000	L1	9.9	17.1	56.0
4.172000	39.2	9.000	L1	9.9	16.8	56.0
4.176000	38.3	9.000	L1	9.9	17.7	56.0
4.244000	39.0	9.000	L1	9.9	17.0	56.0
4.294000	38.7	9.000	L1	9.9	17.3	56.0
4.314000	39.0	9.000	L1	9.9	17.0	56.0
15.908000	32.0	9.000	L1	10.2	28.0	60.0
16.614000	32.8	9.000	L1	10.2	27.2	60.0
17.114000	32.6	9.000	L1	10.2	27.4	60.0
17.256000	32.8	9.000	L1	10.2	27.2	60.0
17.538000	31.5	9.000	L1	10.3	28.5	60.0
21.564000	32.8	9.000	L1	10.4	27.2	60.0



CAverage Final Result, Line (L1)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.156000	24.2	9.000	L1	9.6	31.5	55.7
0.160000	24.3	9.000	L1	9.6	31.2	55.5
0.192000	32.0	9.000	L1	9.6	21.9	53.9
0.198000	35.0	9.000	L1	9.6	18.7	53.7
0.202000	34.8	9.000	L1	9.7	18.7	53.5
0.210000	33.0	9.000	L1	9.7	20.2	53.2
3.860000	29.8	9.000	L1	9.9	16.2	46.0
4.032000	30.2	9.000	L1	9.9	15.8	46.0
4.176000	29.7	9.000	L1	9.9	16.3	46.0
4.244000	30.0	9.000	L1	9.9	16.0	46.0
4.294000	30.5	9.000	L1	9.9	15.5	46.0
4.314000	30.2	9.000	L1	9.9	15.8	46.0
16.192000	25.3	9.000	L1	10.2	24.7	50.0
16.614000	25.3	9.000	L1	10.2	24.7	50.0
17.114000	23.7	9.000	L1	10.2	26.3	50.0
17.256000	24.3	9.000	L1	10.2	25.7	50.0
17.538000	24.1	9.000	L1	10.3	25.9	50.0
21.564000	23.2	9.000	L1	10.4	26.8	50.0

**Figure 4: Spectral Diagrams, 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	43.0	9.000	N	9.6	23.0	66.0
0.190000	46.0	9.000	N	9.6	18.0	64.0
0.196000	49.7	9.000	N	9.6	14.1	63.8
0.204000	48.9	9.000	N	9.6	14.5	63.4
0.212000	47.0	9.000	N	9.6	16.1	63.1
0.260000	42.7	9.000	N	9.7	18.7	61.4
3.748000	37.7	9.000	N	9.8	18.3	56.0
3.890000	37.4	9.000	N	9.8	18.6	56.0
4.030000	37.3	9.000	N	9.8	18.7	56.0
4.106000	36.8	9.000	N	9.8	19.2	56.0
4.172000	37.3	9.000	N	9.8	18.7	56.0
4.314000	37.1	9.000	N	9.8	18.9	56.0
20.362000	33.4	9.000	N	10.3	26.6	60.0
20.436000	33.6	9.000	N	10.3	26.4	60.0
20.440000	33.5	9.000	N	10.3	26.5	60.0
20.642000	31.8	9.000	N	10.3	28.2	60.0
20.856000	31.8	9.000	N	10.3	28.2	60.0
20.932000	32.6	9.000	N	10.3	27.4	60.0



CAverage Final Result, Line (N)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	26.2	9.000	N	9.6	29.8	56.0
0.196000	33.0	9.000	N	9.6	20.8	53.8
0.202000	33.3	9.000	N	9.6	20.2	53.5
0.206000	32.6	9.000	N	9.6	20.8	53.4
0.210000	31.8	9.000	N	9.6	21.4	53.2
0.260000	30.9	9.000	N	9.7	20.5	51.4
3.816000	28.4	9.000	N	9.8	17.6	46.0
3.852000	28.3	9.000	N	9.8	17.7	46.0
3.890000	28.1	9.000	N	9.8	17.9	46.0
4.108000	28.0	9.000	N	9.8	18.0	46.0
4.166000	28.5	9.000	N	9.8	17.5	46.0
4.314000	28.3	9.000	N	9.8	17.7	46.0
15.846000	22.5	9.000	N	10.2	27.5	50.0
20.434000	26.2	9.000	N	10.3	23.8	50.0
20.440000	26.3	9.000	N	10.3	23.7	50.0
20.642000	24.1	9.000	N	10.3	25.9	50.0
20.862000	25.8	9.000	N	10.3	24.2	50.0
20.934000	25.7	9.000	N	10.3	24.3	50.0



4.2 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
EUT Cover Type	Standard cover
Kind of Test Site	3 m semi anechoic chamber
Temperature	23.5 °C
Relative Humidity	37.7 %
Test Date	April 29, 2015

Frequency (MHz)	Quasi Peak (dBuV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
60.118317	25.0	100.0	V	88.0	15.4	15.0	40.0
80.901082	31.9	350.0	H	257.0	11.8	8.1	40.0
266.554309	34.7	124.0	H	287.0	16.9	11.3	46.0
839.681202	27.1	312.0	H	189.0	28.9	18.9	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	Data Communication mode
EUT Cover Type	Quick cover
Kind of Test Site	3 m semi anechoic chamber
Temperature	23.5 °C
Relative Humidity	37.7 %
Test Date	April 29, 2015

Frequency (MHz)	Quasi Peak (dBuV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
48.334990	24.0	150.0	V	6.0	15.9	16.0	40.0
80.621082	33.8	230.0	H	273.0	11.8	6.2	40.0
265.570421	34.2	178.0	V	175.0	16.8	11.8	46.0
750.182365	35.5	134.0	V	11.0	27.5	10.5	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 Operating Frequency	1.8 GHz
Testing Frequency Range	1 GHz to 9 GHz
Operation Mode	Data Communication mode
EUT Cover Type	Standard cover
Kind of Test Site	3 m semi anechoic chamber
Temperature	22.7 °C
Relative Humidity	34.2 %
Test Date	April 28, 2015

Frequency (MHz)	Peak (dBuV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1250.150301	49.6	100.0	V	350.0	-9.4	24.4	74.0
1333.016032	52.5	142.0	V	289.0	-9.3	21.5	74.0
1992.434870	53.9	100.0	V	41.0	-7.8	20.1	74.0
2663.877755	49.6	100.0	V	42.0	-4.8	24.4	74.0

Frequency (MHz)	CAverage (dBuV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1250.150301	44.2	100.0	V	350.0	-9.4	9.8	54.0
1333.016032	27.3	142.0	V	289.0	-9.3	26.7	54.0
1992.434870	29.9	100.0	V	41.0	-7.8	24.1	54.0
2663.877755	31.1	100.0	V	42.0	-4.8	22.9	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	1.8 GHz
Testing Frequency Range	1 GHz to 9 GHz
Operation Mode	Data Communication mode
EUT Cover Type	Quick cover
Kind of Test Site	3 m semi anechoic chamber
Temperature	22.7 °C
Relative Humidity	34.2 %
Test Date	April 28, 2015

Frequency (MHz)	Peak (dBuV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1333.116233	52.5	100.0	V	30.0	-9.3	21.5	74.0
1993.637275	50.1	100.0	V	30.0	-7.8	23.9	74.0
2057.264529	49.5	100.0	V	30.0	-7.5	24.5	74.0
2656.563126	49.9	100.0	V	189.0	-4.8	24.1	74.0

Frequency (MHz)	CAverage (dBuV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1333.116233	28.6	100.0	V	30.0	-9.3	25.4	54.0
1993.637275	29.8	100.0	V	30.0	-7.8	24.2	54.0
2057.264529	28.2	100.0	V	30.0	-7.5	25.8	54.0
2656.563126	31.2	100.0	V	189.0	-4.8	22.8	54.0



5. 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	100584	1 year	01.13.2015
☒ LISN	Rohde & Schwarz	ESH3-Z5	100282	1 year	06.10.2014
☒ LISN	Rohde & Schwarz	ENV216	100073	1 year	01.13.2015
☒ Software	Rohde & Schwarz	EMC32	-	-	-
<u>Radiated Emission</u>					
-For measurement below 1 GHz					
☒ EMI Test Receiver	Rohde & Schwarz	ESI40	831564103	1 year	04.01.2015
☒ Trilog Antenna	Schwarzbeck	VULB9160	3301	2 year	11.17.2014
☒ 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	06.18.2014
☐ 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	04.01.2015
☒ 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	-
☐ Power Amplifier	CERNEX	CBLU1183540	21691	1 year	07.11.2014
☒ Power Amplifier	CERNEX	CBLU5183530	24348	1 year	06.11.2014
☒ Horn Antenna	Schwarzbeck	BBHA 9120D	296	2 year	10.07.2014
☐ Horn Antenna	Schwarzbeck	BBHA 9120D	1151	2 year	07.05.2013
☐ EMI Test Receiver	Rohde & Schwarz	ESU 26	100241	1 year	06.18.2014
☐ Turn Table	INNCO Systems	DT3000-3T	DT3000/69	N/A	-
☐ Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170124	2 year	10.30.2013
☒ Software	Rohde & Schwarz	EMC32	-	-	-



6. CONCLUSION

The data collected shows that the **EUT Type: Cellular/PCS CDMA/EVDO and LTE Phone with Bluetooth, WLAN and NFC, FCC ID: ZNFLS991, Model: LGLS991** complies with §15.107 and §15.109 of the FCC rules.