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TEL: +82-31-645-6300 FAX: +82-31-645-6401

EMI CERTIFICATION REPORT

Applicant: **LG Electronics MobileComm U.S.A., Inc.** **1000 Sylvan Avenue, Englewood Cliffs NJ 07632**	**Date of Issue: February 28, 2014** **Test Report No.: HCT-E-1402-F028** **Test Site: HCT CO., LTD.** **HCT FRN: 0005-8664-21**

FCC ID: **ZNFVN280**

Rule Part(s) / Standard(s)	: FCC PART 15 Subpart B Class B
Equipment Type	: CDMA Phone with Bluetooth3.0, BC0/BC1 supported
Model Name	: LG-VN280
Additional Model Name	: LG-AN280, LG-UN280, LG-VN280PP, LG-UN280PP, LG-AN280PP, LG280
Port / Connector(s)	: USB / Earphone Port
Date of Test	: February 20, 2014 – February 27, 2014

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

Tested By

Seul-Ki Lee
Test Engineer
EMC Team
Certification Division

Reviewed By

Sang-Jun Lee
Technical Manager
EMC Team
Certification Division

DOCUMENT HISTORY

The revision history for this document is shown in table.

Version	Date	Description
HCT-E-1402-F028	February 28, 2014	Initial Release

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PAGE

ATTACHMENT: TEST SETUP PHOTOGRAPHS

1. GENERAL INFORMATION

1.1 Product Description

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

Model Name	LG-VN280
FCC ID	ZNFVN280
Additional Model	LG-AN280, LG-UN280, LG-VN280PP, LG-UN280PP, LG-AN280PP, LG280
EUT Type	CDMA Phone with Bluetooth3.0, BC0/BC1 supported
TX Frequency	824.70 ㎒ to 848.31 ㎒ (CDMA 835) 1 851.25 ㎒ to 1 908.75 ㎒ (CDMA 1 900)
RX Frequency	869.70 ㎒ to 893.31 ㎒ (CDMA 835) 1 931.25 ㎒ to 1 988.75 ㎒ (CDMA 1 900)

1.2 Related Submittal(s) / Grant(s)

Original submittal only.

1.3 Tested System Details

All

Device Type	Model Name	Manufacturer	FCC ID / DoC	Connected To
EUT	LG-VN280	LG	ZNFVN280	Notebook PC Ear-phone
USB cable	EAD62432101	Ningbo Broad	-	E.U.T Notebook PC
Ear-phone	SGEY0003744	CRESYN	-	E.U.T
Notebook PC	ProBook6560b	H.P	DoC	EUT Notebook PC adaptor
Notebook PC adaptor	PPP009D	DELTA Electronics (JIANGSU)LTD	-	Notebook PC
Gateway	MV440	Axesstel	PH7MV440	Notebook PC, Adaptor
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	8 GB	SanDisk	-	EUT

1.4 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
	Ear-phone	N/A	N	(D)1.2
Notebook PC	RJ 45	N/A	N	(D)1.5
	Serial (Mouse)	N/A	N	(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.

1.5 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
	Ear-phone	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

1.6 Test Methodology

Both Conducted and Radiated testing was performed according to the procedures in ANSI C63.4/2003. Radiated testing was performed at an antenna to EUT distance of 3 m.

1.7 Test Facility

Chamber used to collect the test data is located at the 74, SEOICHEON-RO, 578BEON-GIL, MAJANG-MYEON, ICHEON-SI, GYEONGGI-DO, 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 (3m)	90661 (June 21, 2011)
Radiated Field strength measurement facility (10m)	90661 (June 21, 2011)

1.8 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 (㎒)	Upper frequency of measurement range (㎒)
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 ㎓, whichever is lower

2. SYSTEM TEST CONFIGURATION

2.1 Configuration of Test System

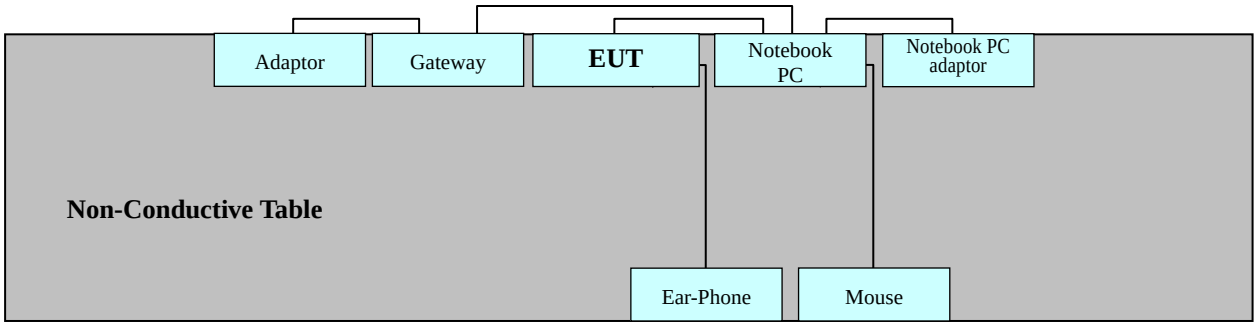
2.1.1 Conducted Emission Test

EUT was connected to LISN via Notebook PC adaptor and Base Station. Preliminary Power Line Conducted Emission tests were performed by using the procedure in ANSI C63.4/2003 7.2.3 to determine the worst operating conditions.

2.1.2 Radiated Emission Test

Preliminary Radiated Emission tests were performed by using the procedure in ANSI C63.4/2003 8.3.1.1 to determine the worst operating condition. Final Radiated Emission tests were performed at 3 m semi-anechoic chamber.

[Configuration of Tested System]



Power Line: 120 VAC

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 following table shows the highest levels of conducted emissions on both polarization of hot and neutral line.

Limit Apply to : FCC PART 15 Subpart B Class B

Detector : Quasi-Peak, Average (6 dB Bandwidth: 9 ㎑)
Operation Mode : Data Communication mode

Temperature : 19.0°C
Humidity Level : 24.5 %
Test Date : February 20, 2014

Frequency	Transd	Conductor	Quasi-Peak			Average		
			Limit	Measurement Level	Result Level	Limit	Measurement Level	Result Level
(㎒)	(dB)		(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dBuV]
0.1950	9.7	L1	63.8	45.7	55.4	53.8	-	-
0.2040	9.7	L1	63.4	44.7	54.4	53.4	29.0	38.7
0.2040	9.7	N	63.4	45.3	55.0	53.4	-	-
0.2535	9.7	N	61.6	41.5	51.2	51.6	26.3	36.0

※ **NOTE:** Refer to page 11 to page 14 for details.

1. Conductor L1 = Hot, Conductor N = Neutral
2. Transducer = LISN Factor + Cable Loss Factor
3. Result Level = Measurement Level + Transducer Factor

* 'Result Level' in above table is same as the 'Quasi-Peak' and 'CAverage' of the test data

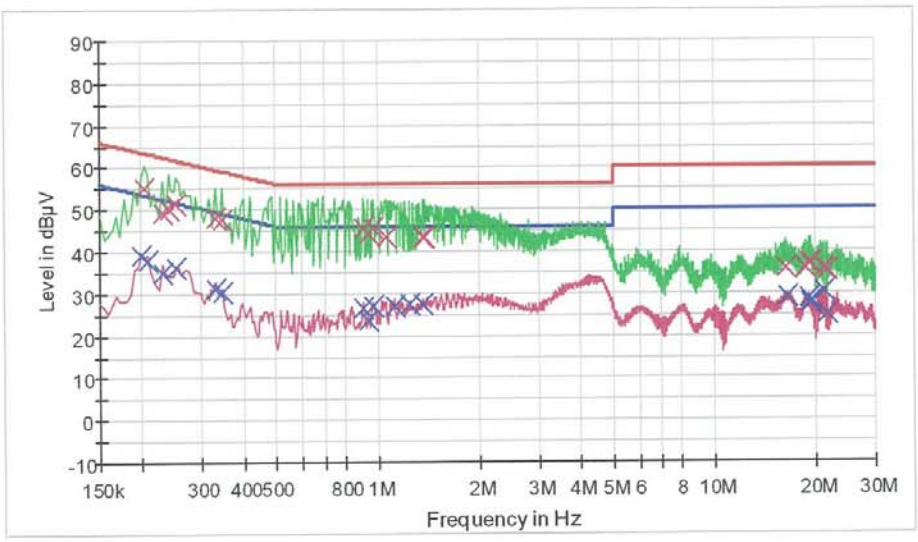
EMI Auto Test(1) 1 / 2

HCT TEST Report

Common Information

EUT:	LG-VN280
Manufacturer:	LG
Test Site:	SHIELD ROOM
Operating Conditions:	DATA MODE
Operator Name:	

FCC CLASS B



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.204000	55.0	9.000	Off	N	9.7	8.4	63.4
0.231000	49.4	9.000	Off	N	9.7	13.0	62.4
0.240000	50.1	9.000	Off	N	9.7	12.0	62.1
0.253500	51.2	9.000	Off	N	9.7	10.4	61.6
0.330000	48.0	9.000	Off	N	9.7	11.5	59.5
0.348000	47.6	9.000	Off	N	9.7	11.4	59.0
0.909500	45.4	9.000	Off	N	9.8	10.6	56.0
0.936500	44.3	9.000	Off	N	9.8	11.7	56.0
0.972500	45.3	9.000	Off	N	9.8	10.7	56.0
1.062500	43.5	9.000	Off	N	9.8	12.5	56.0
1.364000	43.3	9.000	Off	N	9.8	12.7	56.0
1.377500	43.3	9.000	Off	N	9.8	12.7	56.0
16.254500	35.6	9.000	Off	N	10.7	24.4	60.0
18.684500	35.8	9.000	Off	N	10.8	24.2	60.0
19.130000	37.0	9.000	Off	N	10.8	23.0	60.0
19.274000	36.9	9.000	Off	N	10.8	23.1	60.0

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EMI Auto Test(1) 2 / 2

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
21.047000	35.9	9.000	Off	N	10.8	24.1	60.0
21.533000	35.2	9.000	Off	N	10.9	24.8	60.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.199500	39.2	9.000	Off	N	9.7	14.4	53.6
0.208500	38.1	9.000	Off	N	9.7	15.2	53.3
0.231000	34.9	9.000	Off	N	9.7	17.5	52.4
0.253500	36.0	9.000	Off	N	9.7	15.6	51.6
0.330000	31.2	9.000	Off	N	9.7	18.3	49.5
0.348000	30.1	9.000	Off	N	9.7	18.9	49.0
0.909500	26.7	9.000	Off	N	9.8	19.3	46.0
0.936500	23.6	9.000	Off	N	9.8	22.4	46.0
0.972500	26.9	9.000	Off	N	9.8	19.1	46.0
1.121000	27.1	9.000	Off	N	9.8	18.9	46.0
1.247000	27.4	9.000	Off	N	9.8	18.6	46.0
1.364000	27.2	9.000	Off	N	9.8	18.8	46.0
16.506500	29.0	9.000	Off	N	10.7	21.0	50.0
19.130000	28.6	9.000	Off	N	10.8	21.4	50.0
19.274000	27.6	9.000	Off	N	10.8	22.4	50.0
19.346000	27.5	9.000	Off	N	10.8	22.5	50.0
21.047000	30.5	9.000	Off	N	10.8	19.5	50.0
21.533000	24.9	9.000	Off	N	10.9	25.1	50.0

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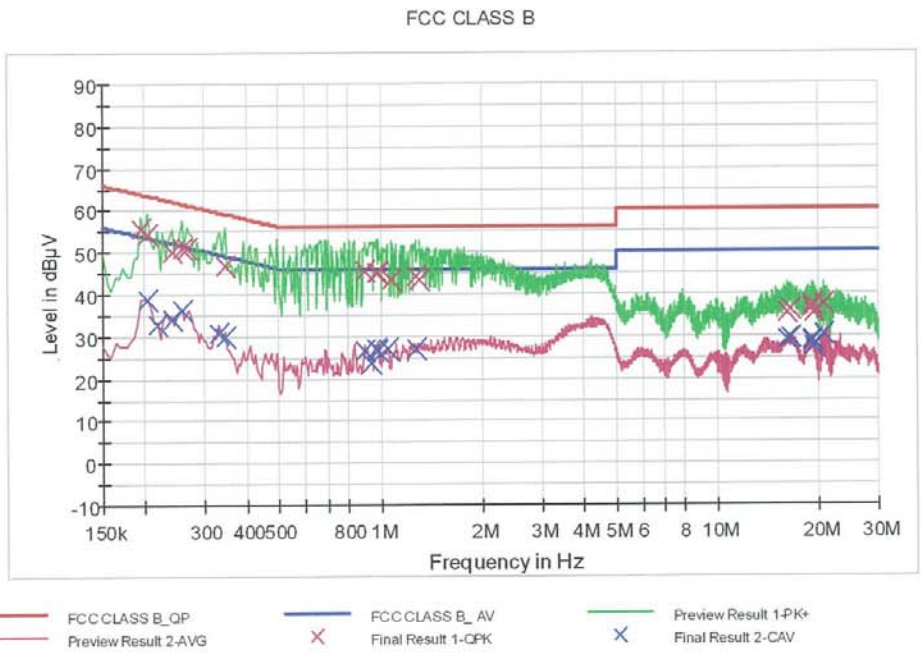
EMI Auto Test(1) 1 / 2

HCT TEST Report

Common Information

EUT:	LG-VN280
Manufacturer:	LG
Test Site:	SHIELD ROOM
Operating Conditions:	DATA MODE
Operator Name:	



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.195000	55.4	9.000	Off	L1	9.7	8.4	63.8
0.204000	54.4	9.000	Off	L1	9.7	9.0	63.4
0.240000	50.0	9.000	Off	L1	9.7	12.1	62.1
0.258000	50.7	9.000	Off	L1	9.7	10.8	61.5
0.267000	50.9	9.000	Off	L1	9.7	10.3	61.2
0.348000	46.9	9.000	Off	L1	9.7	12.1	59.0
0.900500	45.3	9.000	Off	L1	9.8	10.7	56.0
0.968000	45.2	9.000	Off	L1	9.8	10.8	56.0
0.986000	45.2	9.000	Off	L1	9.8	10.8	56.0
1.080500	43.3	9.000	Off	L1	9.8	12.7	56.0
1.269500	44.1	9.000	Off	L1	9.8	11.9	56.0
1.301000	43.5	9.000	Off	L1	9.8	12.5	56.0
16.124000	35.3	9.000	Off	L1	10.8	24.7	60.0
16.443500	36.2	9.000	Off	L1	10.8	23.8	60.0
18.990500	36.8	9.000	Off	L1	10.9	23.2	60.0
19.062500	37.3	9.000	Off	L1	10.9	22.7	60.0

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EMI Auto Test(1) 2 / 2

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.373000	35.3	9.000	Off	L1	10.9	24.7	60.0
20.759000	37.3	9.000	Off	L1	10.9	22.7	60.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.204000	38.7	9.000	Off	L1	9.7	14.7	53.4
0.217500	32.8	9.000	Off	L1	9.7	20.1	52.9
0.240000	34.1	9.000	Off	L1	9.7	18.0	52.1
0.258000	36.2	9.000	Off	L1	9.7	15.3	51.5
0.330000	30.8	9.000	Off	L1	9.7	18.7	49.5
0.348000	29.8	9.000	Off	L1	9.7	19.2	49.0
0.900500	26.6	9.000	Off	L1	9.8	19.4	46.0
0.936500	23.6	9.000	Off	L1	9.8	22.4	46.0
0.972500	27.0	9.000	Off	L1	9.8	19.0	46.0
0.986000	26.7	9.000	Off	L1	9.8	19.3	46.0
1.049000	27.1	9.000	Off	L1	9.8	18.9	46.0
1.269500	27.0	9.000	Off	L1	9.8	19.0	46.0
16.124000	29.0	9.000	Off	L1	10.8	21.0	50.0
16.443500	29.5	9.000	Off	L1	10.8	20.5	50.0
18.990500	29.0	9.000	Off	L1	10.9	21.0	50.0
19.067000	28.8	9.000	Off	L1	10.9	21.2	50.0
19.373000	27.2	9.000	Off	L1	10.9	22.8	50.0
20.759000	30.3	9.000	Off	L1	10.9	19.7	50.0

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4.2 Radiated Emission Test

The following table shows the highest levels of Radiated Emissions on both polarization of horizontal and vertical.

-For measurement below 1 ㎓

Limit Apply to : FCC PART 15 Subpart B Class B

Detector : Quasi-Peak (6 ㏈ Bandwidth: 120 ㎑)
Operation Mode : Data Communication mode

Temperature : 19.6°C
Humidity Level : 24.2 %
Test Date : February 27, 2014

Frequency (MHz)	Reading (dBuV)	Polarity (H/V)	Antenna Height (m)	Correction Factor		Limit (dBuV/m)	Level (dBuV/m)	Margin (dB)
				Antenna (dB/m)	Cable (dB)			
58.20	9.66	V	1.00	11.91	3.53	40.0	25.10	14.90
133.30	19.25	V	1.00	12.42	3.94	43.5	35.60	7.90
375.00	17.44	H	1.00	15.08	4.79	46.0	37.30	8.70

-For measurement above 1 ㎓

Limit Apply to : FCC PART 15 Subpart B Class B

Detector : Peak mode: Peak (RBW: 1 ㎒, VBW: 1 ㎒)
: Average mode: Peak (RBW: 1 ㎒, VBW: 10 ㎐)

Operation Mode : Data Communication mode

Temperature : 19.6°C
Humidity Level : 24.2 %
Test Date : February 27, 2014

Frequency (㎓)	Peak			POL	Average		
	Total (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)		Total (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
1.3286	49.0	74	25.0	V	32.7	54	21.3
1.9976	58.1	74	15.9	V	40.5	54	13.5
2.6591	48.8	74	25.2	V	32.8	54	21.2

※ **NOTE:**

1. Measurement above 1 ㎓ was performed from 1 ㎓ to the 5th harmonic of highest fundamental frequency. Test was measured by 12 ㎓.

5. FIELD STRENGTH CALCULATION

The field strength is calculated by adding the antenna factor and cable factor.
The basic equation with a sample calculation is as follows:

FS = RA + AF + CF

Where FS = Field Strength

RA = Receiver Amplitude

AF = Antenna Factor

CF = Cable Attenuation Factor

Assume a receiver reading of 21.5 dBμV is obtained. The antenna factor of 7.4 dB/m and a cable factor of 1.1 dB are added. The 30 dBμV/m value is mathematically converted to its corresponding level in μV/m.

FS = 21.5 + 7.4 + 1.1 = 30 dBμV/m

[Radiated Emission Limits]

Frequency of Emission (㎒)	Field Strength	
	μV/m	dBμV/m
30 to 88	100	40.0
88 to 216	150	43.5
216 to 960	200	46.0
Above 960	500	54.0

6. TEST EQUIPMENT

Type	Manufacturer	Model Name	Serial Number	Calibration Cycle	Next CAL Date
Conducted Emission					
☒ EMI Test Receiver	Rohde & Schwarz	ESCI	100584	1 year	2015.01.24
☒ LISN	EMCO	3816/2SH	9706-1070	1 year	2014.04.26
☒ LISN	Rohde & Schwarz	ENV216	100073	1 year	2015.01.29
☐ EMI Test Receiver	Rohde & Schwarz	ESCI	100033	1 year	2014.06.23
☐ LISN	Rohde & Schwarz	ESH3-Z5	100282	1 year	2014.07.03
☐ Attenuator	Rohde & Schwarz	ESH3-Z2	357.8810.352	1 year	2014.07.03
Radiated Emission					
-For measurement below 1 ㎓					
☒ EMI Test Receiver	Rohde & Schwarz	ESI40	831564103	1 year	2014.04.16
☒ Trilog Antenna	Schwarzbeck	VULB9160	3301	2 year	2014.12.17
☒ Antenna master	HD GmbH	MA240	240/520	N/A	-
☒ Turn Table	HD GmbH	2090	9702/1224	N/A	-
☐ EMI Test Receiver	Rohde & Schwarz	ESU 26	100241	1 year	2014.07.01
☐ Trilog Antenna	Schwarzbeck	VULB9168	185	2 year	2015.04.16
☐ Antenna master	INNCO Systems	MA4000-EP	MA4000/283	N/A	-
☐ Turn Table	INNCO Systems	DT3000-3T	DT3000/69	N/A	-
-For measurement above 1 ㎓					
☒ EMI Test Receiver	Rohde & Schwarz	ESI40	831564103	1 year	2014.04.16
☒ Antenna master	HD GmbH	MA240	240/520	N/A	-
☒ Turn Table	HD GmbH	2090	9702/1224	N/A	-
☒ Power Amplifier	CERNEX	CBLU1183540	21690	1 year	2014.07.12
☒ Horn Antenna	Schwarzbeck	BBHA 9120D	296	2 year	2014.12.13
☐ EMI Test Receiver	Rohde & Schwarz	ESU 26	100241	1 year	2014.07.01
☐ Antenna master	INNCO Systems	MA4000-EP	MA4000/283	N/A	-
☐ Turn Table	INNCO Systems	DT3000-3T	DT3000/69	N/A	-

7. CONCLUSION

The data collected shows that the **EUT type: CDMA Phone with Bluetooth3.0, BC0/BC1 supported, FCC ID: ZNFVN280, Model: LG-VN280** complies with §15.107 and §15.109 of the FCC rules.