

74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Rep. of Korea TEL: +82-31-645-6300

FAX: +82-31-645-6401

EMI TEST REPORT FCC CERTIFICATION

Applicant:

Franklin Technology Inc.

906 JEI Platz, 186, Gasan digital 1-ro, Geumcheon-gu, Seoul, 08502 South Korea

Date of Issue: December 27, 2018

Test Report No. HCT-EM-1812-FC031

Test Site: HCT CO., LTD.

MODEL:

F800HPVL

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

ANSI C63.4-2014

FCC ID : XHG-F800HPVL

EUT Type : VoLTE Home Phone Connect

Manufacturer : Franklin Technology Inc.

: December 24, 2018 to December 25, 2018 Date of Test

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

Tested By

Kyoung-Hee Yoon Test Engineer EMC Team

Certification Division

Reviewed By

Jin-Pyo Hong **Technical Manager**

EMC Team

Certification Division

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REVISION HISTORY

The revision history for this document is shown in table.

Test Report No.	Report No. Issue Date Description	
HCT-EM-1812-FC031	December 27, 2018	Initial Release



TABLE OF CONTENTS

PAGE
1. GENERAL INFORMATION
1.1 Description of EUT4
1.2 Tested System Details
1.3 Cable Description4
1.4 Noise Suppression Parts on Cable. (I/O Cable)
1.5 Test Facility5
1.6 Instrument Calibration
1.7. Measurement Uncertainty5
2 LIST OF TEST EQUIPMENT 6
3. DESCRIPTION OF TEST
3.1 Measurement of Conducted Emission
3.2 Measurement of Radiated Emission
4. PRELIMINARY TEST
4.1 Conducted Emission
4.2 Radiated Emission10
5. CONDUCTED AND RADIATED EMISSION TEST SUMMARY 11
5.1 Conducted Emission
5.2 Radiated Emission
6. CONCLUSION
7. APPENDIX A. TEST SETUP PHOTOGRAPHS



1. GENERAL INFORMATION

1.1 Description of EUT

The EUT is VoLTE Home Phone Connect

Model	F800HPVL			
EUT type	VoLTE Home Phone Connect			
FCC ID	XHG-F800HPVL	XHG-F800HPVL		
TX Frequency		LTE B4: 1710.7 MHz to 1 754.3 MHz LTE B13: 779.5 MHz to 784.5 MHz		
Power voltage	Switching adapter	AC Input voltage: Minimum: 90 VAC, Nominal: 100 to 240 VAC Maximum: 264 VA DC Output voltage: +5 V		
	Battery	Rated capacity: 2 100 mAh, Rated voltage: 3.8 V		
Manufacturer	Franklin Technology Inc.			

1.2 Tested System Details

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

Equipment	Model No.	Serial Number	Manufacturer
EUT	F800HPVL	-	Franklin Technology
Switching adapter	DSA-10PFV-05 FUS 050200	-	DVE
Telephone	SP-F470	S2TB200938J	SAMSUNG

1.3 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (m)
	Micro USB	N	N/A	1.2
EUT	RJ 11	N/A	N	2.2
	RJ 11	N/A	N	2.2

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

Product Name	Port	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
	Micro USB	N/A	N/A	Y	Both end
EUT	RJ 11	N/A	N/A	Y	Both end
	RJ 11	N/A	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 1GHz) 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	90001	

1.6 Instrument Calibration

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturers recommendations for utilizing calibration equipment's, which is traceable to recognized national standards.

Espectially, 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
3 m Radiated Emissions (30 MHz to 1 GHz)	5.20 dB
3 m Radiated Emissions (1 GHz to 18 GHz)	5.24 dB
3 m Radiated Emissions (18 GHz to 40 GHz)	5.40 dB



2 LIST OF TEST EQUIPMENT

	Type	<u>Manufacturer</u>	Model Name	Serial Number	Calibration Cycle	CAL Date
Con	ducted Emission					
	EMI Test Receiver EMI Test Receiver LISN LISN Software	Rohde & Schwarz Rohde & Schwarz Rohde & Schwarz Rohde & Schwarz Rohde & Schwarz	ESCI ESCI ENV216 ENV216 EMC32 VER8.54.0	100584 100033 102245 100073	1 year 1 year 1 year 1 year	06.25.2018 06.27.2018 12.12.2018 05.03.2018
Radi	iated Emission					
-For	measurement below	1 GHz				
	EMI Test Receiver Trilog Antenna Antenna Master	Rohde & Schwarz Schwarzbeck INNCO Systems	ESU40 VULB 9168 MA4640-XP-ET	100524 760	1 year 2 year N/A	07.27.2018 04.06.2017
	Antenna master controller	INNCO Systems	CO 3000	CO3000/870/ 35990515/L	N/A	-
\boxtimes	Turn Table Turn Table controller	INNCO Systems INNCO Systems	1060-2M CO2000	- CO2000/095/ 5790304/L	N/A N/A	-
	Low Noise Amplifier EMI Test Receiver Antenna master Turn Table Software	TESTEK Rohde & Schwarz INNCO Systems INNCO Systems Rohde & Schwarz	TK-PA01S ESU26 MA4000-EP DT3000-3T EMC32 VER.9.20.00	160014-L 100241 MA4000/283 DT3000/69	1 year 1 year N/A N/A	01.24.2018 08.14.2018 - -
-For	measurement above	1 GHz				
	EMI Test Receiver Antenna master	Rohde & Schwarz INNCO Systems	ESU40 MA4640-XP-ET	100524 - CO 3000/870/	1 year N/A	07.27.2018
	Antenna master controller Turn Table	•	CO 3000 1060-2M	35990515/L	N/A N/A	-
	Turn Table controller	INNCO Systems INNCO Systems	CO2000	CO2000/095/ 5790304/L	N/A	-
	Horn Antenna Low Noise Amplifier Power Amplifier Antenna master EMI Test Receiver Turn Table Software	Schwarzbeck TESTEK TESTEK HD GmbH Rohde & Schwarz INNCO Systems Rohde & Schwarz	BBHA 9120D TK-PA18H TK-PA1840H MA240 ESU26 DT3000-3T EMC32 VER8.40.0	01836 170034-L 170030-L 240/520 100241 DT3000/69	2 year 1 year 1 year N/A 1 year N/A	05.14.2018 03.06.2018 12.17.2018 - 08.14.2018



3. DESCRIPTION OF TEST

3.1 Measurement of Conducted Emission

The test procedure was in accordance with ANSI C63.4-2014

- 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 Limit]

Eraguanov Resolution		Clas	s A	Class B	
Frequency (MHz)	Bandwidth (kHz)	Quasi-Peak (dBµV)	Average (dBμV)	Quasi-Peak (dBµV)	Average (dBµV)
0.15 to 0.5	9	79	66	66 to 56*	56 to 46*
0.5 to 5	9	73	60	56	46
5 to 30	9	73	60	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

- 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]

	Class A			Class B		
Frequency (MHz)	Antenna Distance (m)	Field Strength (µV/m)	Quasi-Peak (dBμV/m)	Antenna Distance (m)	Field Strength (µV/m)	Quasi-Peak (dBµV/m)
30 to 88	10	90	39.0	3	100	40.0
88 to 216	10	150	43.5	3	150	43.5
216 to 960	10	210	46.4	3	200	46.0
Above 960	10	300	49.5	3	500	54.0
Frequency	Antonno	Distance	Clas	ss A	Clas	ss B
(MHz)	1 1111011110	Antenna Distance (m)		Average (dBµV/m)	Peak (dBµV/m)	Average (dBµV/m)
Above 1 000	3	}	80	60	74	54

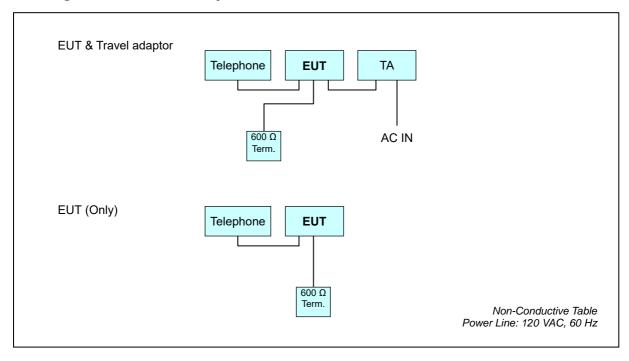


3.2.1 Frequency Range of Radiated Measurements

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

During preliminary tests, the following operating mode was investigated:

Operation Mode: Charging & LTE B4 RX Receive mode

Charging & LTE B13 RX Receive mode

4.2 Radiated Emission

During preliminary tests, the following operating mode was investigated:

Operation Mode: Charging & LTE B4 RX Receive mode

Charging & LTE B13 RX Receive mode

LTE B4 RX Receive mode LTE B13 RX Receive mode

NOTE.

The EUT is powered by an internal battery or a switching adapter and has only ports to connect the phone and can't be wired to the PC (IT equipment)



5. CONDUCTED AND RADIATED EMISSION TEST SUMMARY

5.1 Conducted Emission

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

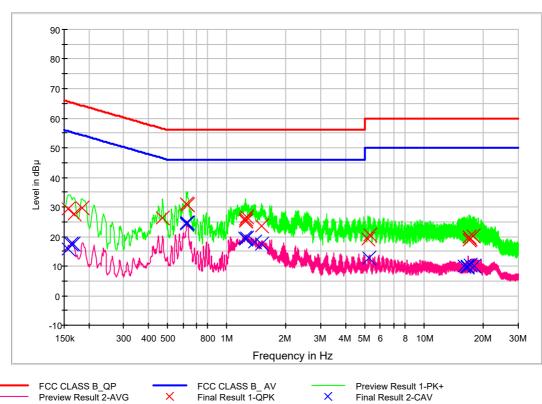
Rule Part / Standard	FCC PART 15 Subpart B Class B
Detector	Quasi-Peak, CISPR-Average
Bandwidth	9 kHz (6 dB)
Kind of Test Site	EMI Shielded Room
Temperature	21.1 °C
Relative Humidity	40.3 %
Test Date	December 25, 2018

- 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, Charging & LTE B4 RX Receive mode, Line (L1)





QuasiPeak Final Result, Line (L1)

Frequency (MHz)			Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.158000	29.2	9.000	L1	9.7	36.4	65.6
0.168000	27.7	9.000	L1	9.7	37.3	65.1
0.186000	29.6	9.000	L1	9.7	34.7	64.2
0.474000	26.2	9.000	L1	9.8	30.2	56.4
0.626000	30.9	9.000	L1	9.8	25.1	56.0
0.632000	30.6	9.000	L1	9.8	25.4	56.0
1.240000	25.8	9.000	L1	9.9	30.2	56.0
1.244000	25.2	9.000	L1	9.9	30.8	56.0
1.248000	25.3	9.000	L1	9.9	30.7	56.0
1.252000	25.4	9.000	L1	9.9	30.6	56.0
1.258000	26.6	9.000	L1	9.9	29.4	56.0
1.506000	23.6	9.000	L1	9.9	32.4	56.0
5.214000	19.0	9.000	L1	10.0	41.0	60.0
5.298000	20.6	9.000	L1	10.0	39.4	60.0
16.880000	18.7	9.000	L1	10.5	41.3	60.0
16.926000	20.0	9.000	L1	10.5	40.0	60.0
17.180000	19.0	9.000	L1	10.5	41.0	60.0
17.626000	20.1	9.000	L1	10.5	39.9	60.0

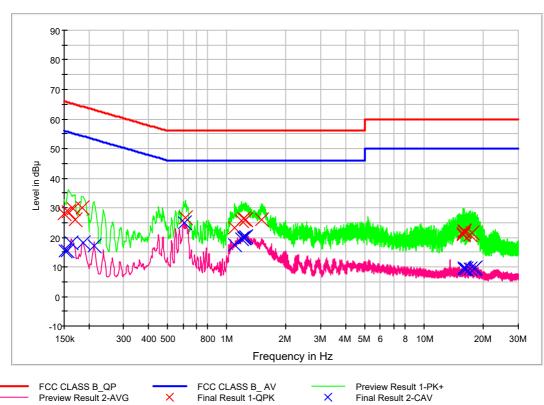


CAverage Final Result, Line (L1)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.158000	15.7	9.000	L1	9.7	39.9	55.6
0.162000	17.6	9.000	L1	9.7	37.7	55.4
0.166000	17.3	9.000	L1	9.7	37.9	55.2
0.624000	24.5	9.000	L1	9.8	21.5	46.0
0.628000	24.1	9.000	L1	9.8	21.9	46.0
0.632000	24.5	9.000	L1	9.8	21.5	46.0
1.236000	19.5	9.000	L1	9.9	26.5	46.0
1.240000	19.3	9.000	L1	9.9	26.7	46.0
1.244000	19.3	9.000	L1	9.9	26.7	46.0
1.258000	19.7	9.000	L1	9.9	26.3	46.0
1.390000	18.2	9.000	L1	9.9	27.8	46.0
1.506000	17.6	9.000	L1	9.9	28.4	46.0
5.230000	12.6	9.000	L1	10.0	37.4	50.0
15.960000	9.9	9.000	L1	10.4	40.1	50.0
16.598000	9.5	9.000	L1	10.5	40.5	50.0
16.610000	9.9	9.000	L1	10.5	40.1	50.0
17.180000	10.4	9.000	L1	10.5	39.6	50.0
17.842000	10.0	9.000	L1	10.5	40.0	50.0



Figure 2: Conducted Emission, Charging & LTE B4 RX Receive mode, Line (N)



FCC CLASS B_Exten Cable



QuasiPeak Final Result, Line (N)

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV
0.150000	27.9	9.000	N	9.8	38.1	66.0
0.158000	28.6	9.000	N	9.8	36.9	65.6
0.166000	29.7	9.000	N	9.8	35.5	65.2
0.170000	26.1	9.000	N	9.8	38.9	65.0
0.186000	29.9	9.000	N	9.8	34.4	64.2
0.618000	26.6	9.000	N	9.9	29.4	56.0
1.098000	23.2	9.000	N	10.0	32.8	56.0
1.190000	25.5	9.000	N	10.0	30.5	56.0
1.212000	26.4	9.000	N	10.0	29.6	56.0
1.244000	26.0	9.000	N	10.0	30.0	56.0
1.252000	25.9	9.000	N	10.0	30.1	56.0
1.500000	25.9	9.000	N	10.1	30.1	56.0
15.680000	21.3	9.000	N	10.7	38.7	60.0
15.696000	21.0	9.000	N	10.7	39.0	60.0
15.950000	21.9	9.000	N	10.7	38.1	60.0
15.970000	22.0	9.000	N	10.7	38.0	60.0
17.212000	21.0	9.000	N	10.8	39.0	60.0
17.498000	21.4	9.000	N	10.8	38.6	60.0

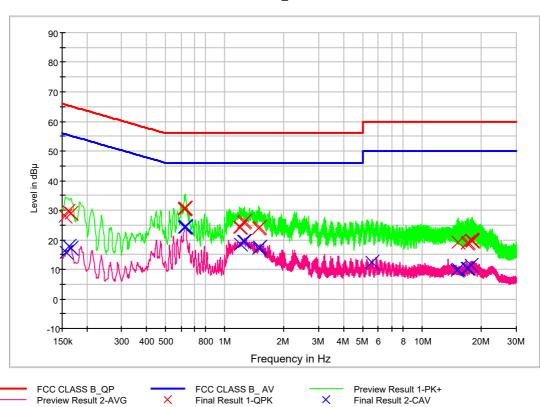


CAverage Final Result, Line (N)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.152000	15.5	9.000	N	9.8	40.4	55.9
0.156000	15.5	9.000	N	9.8	40.2	55.7
0.162000	18.3	9.000	N	9.8	37.1	55.4
0.188000	18.3	9.000	N	9.8	35.8	54.1
0.212000	17.0	9.000	N	9.9	36.1	53.1
0.612000	24.8	9.000	N	9.9	21.2	46.0
1.098000	17.5	17.5 9.000 N 10.0		10.0	28.5	46.0
1.190000	19.5	9.000	N	10.0	26.5	46.0
1.212000	19.8	9.000	N	10.0	26.2	46.0
1.226000	20.0	9.000	N	10.0	26.0	46.0
1.244000	20.2	9.000	N	10.0	25.8	46.0
1.252000	20.3	9.000	N	10.0	25.7	46.0
15.950000	9.3	9.000	N	10.7	40.7	50.0
15.970000	9.5	9.000	N	10.7	40.5	50.0
16.246000	9.2	9.000	N	10.7	40.8	50.0
17.212000	9.4	9.000	N	10.8	40.6	50.0
17.898000	9.2	9.000	N	10.8	40.8	50.0
18.064000	9.5	9.000	N	10.8	40.5	50.0



Figure 3: Conducted Emission, Charging & LTE B13 RX Receive mode, Line (L1)



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QuasiPeak Final Result, Line (L1)

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	
0.156000	27.9	9.000	L1	9.7	37.8	65.7	
0.160000	29.7	9.000	L1	9.7	35.7	65.5	
0.166000	28.9	9.000	L1	9.7	36.2	65.2	
0.624000	30.5	9.000	L1	9.8	25.5	56.0	
0.628000	30.5	9.000	L1	9.8	25.5	56.0	
0.632000	30.6	9.000	L1	9.8	25.4	56.0	
1.192000	24.3	9.000	L1	9.8	31.7	56.0	
1.196000	24.4	9.000	L1	9.8	31.6	56.0	
1.240000	26.0	9.000	L1	9.9	30.0	56.0	
1.264000	26.2	9.000	L1	9.9	29.8	56.0	
1.480000	23.8	9.000	L1	9.9	32.2	56.0	
1.498000	24.1	9.000	L1	9.9	31.9	56.0	
15.236000	19.1	9.000	L1	10.4	40.9	60.0	
16.902000	19.0	9.000	L1	10.5	41.0	60.0	
17.168000	19.0	9.000	L1	10.5	41.0	60.0	
17.736000	19.8	9.000	L1	10.5	40.2	60.0	
17.876000	19.6	9.000	L1	10.5	40.4	60.0	
17.882000	19.8	9.000	L1	10.5	40.2	60.0	

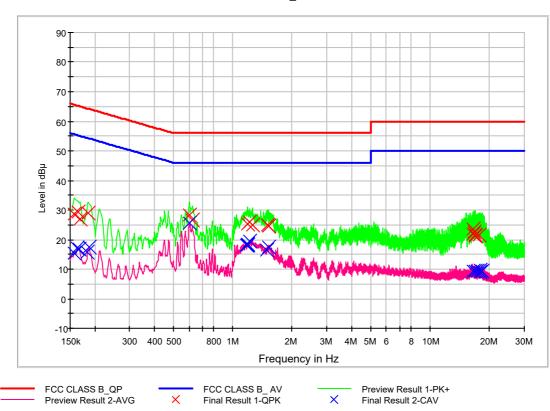


CAverage Final Result, Line (L1)

Frequency (MHz)			Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.158000	15.7	9.000	L1	9.7	39.9	55.6
0.162000	17.7	9.000	L1	9.7	37.6	55.4
0.166000	17.2	9.000	L1	9.7	38.0	55.2
0.626000	24.4	9.000	L1	9.8	21.6	46.0
0.630000	24.3	9.000	L1	9.8	21.7	46.0
0.634000	24.5	9.000	L1	9.8	21.5	46.0
1.196000	18.5	9.000	L1	9.8	27.5	46.0
1.240000	19.6	9.000	L1	9.9	26.4	46.0
1.264000	19.7	9.000	L1	9.9	26.3	46.0
1.480000	17.0	9.000	L1	9.9	29.0	46.0
1.498000	17.5	9.000	L1	9.9	28.5	46.0
1.502000	17.4	9.000	L1	9.9	28.6	46.0
5.578000	12.3	9.000	L1	10.1	37.7	50.0
15.030000	9.6	9.000	L1	10.4	40.4	50.0
15.236000	9.9	9.000	L1	10.4	40.1	50.0
16.902000	10.5	9.000	L1	10.5	39.5	50.0
17.168000	10.3	9.000	L1	10.5	39.7	50.0
17.736000	11.2	9.000	L1	10.5	38.8	50.0



Figure 4: Conducted Emission, Charging & LTE B13 RX Receive mode, Line (N)



FCC CLASS B_Exten Cable



QuasiPeak Final Result, Line (N)

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.158000	28.7	28.7 9.000		9.8	36.8	65.6
0.164000	29.3	9.000	N	9.8	36.0	65.3
0.168000	27.0	9.000	N	9.8	38.1	65.1
0.186000	29.1	9.000	N	9.8	35.1	64.2
0.604000	28.2	9.000	N	9.9	27.8	56.0
0.628000	26.7	9.000	N	9.9	29.3	56.0
1.188000	25.2	9.000	N	10.0	30.8	56.0
1.214000	25.8	9.000	9.000 N 10.0		30.2	56.0
1.258000	25.0	9.000	N	10.0	31.0	56.0
1.500000	25.0	9.000	N	10.1	31.0	56.0
1.516000	24.5	9.000	N	10.1	31.5	56.0
1.520000	24.4	9.000	N	10.1	31.6	56.0
16.500000	23.5	9.000	N	10.7	36.5	60.0
16.604000	21.9	9.000	N	10.7	38.1	60.0
16.792000	22.6	9.000	N	10.7	37.4	60.0
16.886000	21.2	9.000	N	10.7	38.8	60.0
16.900000	21.4	9.000	N	10.7	38.6	60.0
17.784000	21.6	9.000	N	10.8	38.4	60.0



CAverage Final Result, Line (N)

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.158000	15.3	9.000	N	9.8	40.2	55.6
0.162000	17.3	9.000	N	9.8	38.1	55.4
0.166000	16.9	9.000	N	9.8	38.3	55.2
0.184000	15.8	9.000	N	9.8	38.5	54.3
0.188000	17.5	9.000	N	9.8	36.7	54.1
0.600000	25.4	9.000	N	10.0	20.6	46.0
1.176000	18.1	9.000	N	10.0	27.9	46.0
1.188000	18.3	9.000	N 10.0		27.7	46.0
1.194000	18.6	9.000	N	10.0	27.4	46.0
1.214000	19.4	9.000	N	10.0	26.6	46.0
1.488000	16.5	9.000	N	10.1	29.5	46.0
1.516000	17.4	9.000	N	10.1	28.6	46.0
16.604000	9.4	9.000	N	10.7	40.6	50.0
16.900000	9.4	9.000	N	10.7	40.6	50.0
17.340000	9.4	9.000	N	10.8	40.6	50.0
17.894000	9.5	9.000	N	10.8	40.5	50.0
18.010000	8.9	9.000	N	10.8	41.1	50.0
18.454000	9.4	9.000	N	10.8	40.6	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)
Kind of Test Site	3 m semi anechoic chamber
Temperature	21.0 °C
Relative Humidity	41.1 %
Test Date	December 25, 2018

- 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



Charging & LTE B4 RX Receive mode

Frequency (MHz)	Quasi Peak (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
32.224000	19.6	174.9	V	308.0	18.9	20.4	40.0
54.613600	17.9	208.8	V	57.0	20.0	22.1	40.0
64.635200	17.6	117.9	V	53.0	18.9	22.4	40.0
276.972000	17.8	225.1	V	0.0	19.8	28.2	46.0
697.065600	28.4	292.9	V	64.0	28.7	17.6	46.0
959.064000	31.8	374.7	V	271.0	31.7	14.2	46.0

Charging & LTE B13 RX Receive mode

Frequency (MHz)	Quasi Peak (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
32.151200	19.5	175.0	V	37.0	18.9	20.5	40.0
58.149600	17.4	374.8	V	128.0	19.9	22.6	40.0
64.753600	17.5	125.2	V	158.0	18.9	22.5	40.0
250.005600	24.4	191.9	V	1.0	18.8	21.6	46.0
492.358400	23.9	99.7	V	200.0	25.0	22.1	46.0
653.059200	27.9	174.9	V	82.0	28.1	18.1	46.0



LTE B4 RX Receive mode

Frequency (MHz)	Quasi Peak (dBµV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
32.415200	19.0	174.9	V	348.0	18.9	21.0	40.0
52.328000	18.0	99.7	V	216.0	20.2	22.0	40.0
70.527200	15.2	374.8	V	318.0	17.9	24.8	40.0
155.742400	18.5	225.2	V	79.0	20.1	25.0	43.5
250.009600	24.4	174.8	V	1.0	18.8	21.6	46.0
630.552000	27.7	374.8	V	340.0	27.8	18.3	46.0

LTE B13 RX Receive mode

Frequency (MHz)	Quasi Peak (dBµV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
34.229600	17.9	174.9	V	223.0	19.1	22.1	40.0
48.140000	17.5	274.9	V	109.0	20.2	22.5	40.0
168.407200	18.0	116.8	V	334.0	19.6	25.5	43.5
249.987200	23.5	225.2	V	27.0	18.8	22.5	46.0
476.758400	23.6	116.8	V	45.0	24.7	22.4	46.0
697.177600	28.4	374.7	V	130.0	28.7	17.6	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	1 754.3 MHz
Tested Frequency Range	1 GHz to 18 GHz
Kind of Test Site	3 m semi anechoic chamber
Temperature	21.0 °C
Relative Humidity	41.1 %
Test Date	December 24, 2018

- 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



Charging & LTE B4 RX Receive mode

Frequency (MHz)	Peak (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
4265.035000	36.5	337.5	V	45.0	-20.2	37.5	74.0
6776.935000	33.7	99.7	V	198.0	-14.9	40.4	74.0
9723.095000	43.0	187.4	Н	46.0	-9.7	31.0	74.0
11232.790000	46.0	150.0	Н	0.0	-5.2	28.0	74.0
12794.775000	44.4	190.5	٧	63.0	-4.9	29.6	74.0
14756.000000	43.4	189.6	٧	71.0	-1.4	30.6	74.0

Frequency (MHz)	CAverage (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
4265.035000	28.8	337.5	V	45.0	-20.2	25.2	54.0
6776.935000	15.7	99.7	V	198.0	-14.9	38.3	54.0
9723.095000	30.0	187.4	Н	46.0	-9.7	24.0	54.0
11232.790000	32.7	150.0	Н	0.0	-5.2	21.3	54.0
12794.775000	31.8	190.5	V	63.0	-4.9	22.2	54.0
14756.000000	30.3	189.6	V	71.0	-1.4	23.7	54.0

Charging & LTE B13 RX Receive mode

Frequency (MHz)	Peak (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
5136.875000	35.6	124.6	V	50.0	-18.4	38.4	74.0
7425.370000	41.0	126.6	V	52.0	-13.0	33.0	74.0
9853.080000	44.0	99.9	V	120.0	-9.5	30.0	74.0
11501.760000	44.9	335.5	Н	50.0	-4.8	29.1	74.0
13414.080000	39.9	150.0	Н	149.0	-3.9	34.1	74.0
14749.585000	43.6	249.4	Н	162.0	-1.4	30.4	74.0

Frequency (MHz)	CAverage (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
5136.875000	22.5	124.6	V	50.0	-18.4	31.5	54.0
7425.370000	27.5	126.6	V	52.0	-13.0	26.5	54.0
9853.080000	31.6	99.9	V	120.0	-9.5	22.4	54.0
11501.760000	32.2	335.5	Н	50.0	-4.8	21.8	54.0
13414.080000	27.2	150.0	Н	149.0	-3.9	26.8	54.0
14749.585000	30.8	249.4	Н	162.0	-1.4	23.2	54.0



LTE B4 RX Receive mode

Frequency (MHz)	Peak (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
4253.765000	35.3	189.5	V	50.0	-20.2	38.7	74.0
7797.550000	41.7	291.5	V	182.0	-12.5	32.3	74.0
9513.810000	44.4	248.6	Н	199.0	-10.0	29.6	74.0
10757.100000	45.1	204.6	V	148.0	-6.4	28.9	74.0
12819.155000	43.3	249.8	V	29.0	-4.8	30.7	74.0
14850.050000	47.3	190.5	Н	313.0	-1.3	26.7	74.0

Frequency (MHz)	CAverage (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
4253.765000	22.3	189.5	V	50.0	-20.2	31.7	54.0
7797.550000	28.9	291.5	V	182.0	-12.5	25.1	54.0
9513.810000	31.5	248.6	Н	199.0	-10.0	22.5	54.0
10757.100000	32.4	204.6	V	148.0	-6.4	21.6	54.0
12819.155000	30.8	249.8	V	29.0	-4.8	23.2	54.0
14850.050000	33.7	190.5	Н	313.0	-1.3	20.3	54.0

LTE B13 RX Receive mode

Frequency (MHz)	Peak (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
3014.515000	33.4	337.5	V	29.0	-22.8	40.6	74.0
5684.000000	36.8	350.1	V	200.0	-17.6	37.2	74.0
7462.415000	41.1	150.0	Н	164.0	-12.8	32.9	74.0
10050.215000	43.7	244.4	Н	29.0	-9.1	30.3	74.0
11009.540000	45.3	124.6	Н	54.0	-5.6	28.7	74.0
14648.600000	46.8	199.4	Н	284.0	-1.5	27.2	74.0

Frequency (MHz)	CAverage (dBμV/m)	Antenna Height (cm)	POL. (H/V)	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
3014.515000	20.9	337.5	V	29.0	-22.8	33.1	54.0
5684.000000	23.9	350.1	V	200.0	-17.6	30.1	54.0
7462.415000	28.3	150.0	Н	164.0	-12.8	25.7	54.0
10050.215000	30.7	244.4	Н	29.0	-9.1	23.3	54.0
11009.540000	32.6	124.6	Н	54.0	-5.6	21.4	54.0
14648.600000	34.0	199.4	Н	284.0	-1.5	20.0	54.0



6. CONCLUSION

The data collected shows that the **EUT Type: VoLTE Home Phone Connect, Model: F800HPVL** complies with §15.107 and §15.109 of the FCC rules.



7. APPENDIX A. TEST SETUP PHOTOGRAPHS

Please refer to Appendix A