

## FCC Test Report

**Report No.:** RF170629C07

**FCC ID:** K7SF2CU053

**Test Model:** F2CU053

**Received Date:** Jun. 29, 2017

**Test Date:** Jun. 30, 2017

**Issued Date:** Jul. 05, 2017

**Applicant:** Belkin Electronics (Changzhou) Co.,Ltd.

**Address:** Building 6C, No. 8 Xi-Hu Road, Jinton International Industrial Park, Wujin  
Hi-Tech Industrial Zone, Changzhou City, Jiangsu, China

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan,  
R.O.C.

**Test Location:** No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City  
33383, TAIWAN (R.O.C.)



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

## Table of Contents

<b>Release Control Record</b>	<b>3</b>
<b>1 Certificate of Conformity</b>	<b>4</b>
<b>2 Summary of Test Results</b>	<b>5</b>
2.1 Measurement Uncertainty	5
2.2 Modification Record	5
<b>3 General Information</b>	<b>6</b>
3.1 General Description of EUT	6
3.2 Description of Test Modes	6
3.2.1 Test Mode Applicability and Tested Channel Detail	7
3.3 Description of Support Units	8
3.3.1 Configuration of System under Test	8
3.4 General Description of Applied Standards	8
<b>4 Test Types and Results</b>	<b>9</b>
4.1 Radiated Emission and Bandedge Measurement	9
4.1.1 Limits of Radiated Emission and Bandedge Measurement	9
4.1.2 Test Instruments	10
4.1.3 Test Procedures	11
4.1.4 Deviation from Test Standard	11
4.1.5 Test Set Up	12
4.1.6 EUT Operating Conditions	12
4.1.7 Test Results	13
4.2 Conducted Emission Measurement	17
4.2.1 Limits of Conducted Emission Measurement	17
4.2.2 Test Instruments	17
4.2.3 Test Procedures	18
4.2.4 Deviation from Test Standard	18
4.2.5 Test Setup	18
4.2.6 EUT Operating Conditions	18
4.2.7 Test Results	19
<b>5 Pictures of Test Arrangements</b>	<b>23</b>
<b>Appendix – Information on the Testing Laboratories</b>	<b>24</b>

### Release Control Record

Issue No.	Description	Date Issued
RF170629C07	Original release	Jul. 05, 2017

## 1 Certificate of Conformity

**Product:** 4 feet Apple watch charging cable

**Brand:** belkin

**Model No.:** F2CU053

**Sample Status:** Engineering sample

**Applicant:** Belkin Electronics (Changzhou) Co.,Ltd.

**Test Date:** Jun. 30, 2017

**Standards:** 47 CFR FCC Part 15, Subpart C (Section 15.209)  
ANSI C63.10: 2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**Prepared by :** Celine Chou , **Date:** Jul. 05, 2017  
Celine Chou / Specialist

**Approved by :** Ken Liu , **Date:** Jul. 05, 2017  
Ken Liu / Senior Manager

## 2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.209)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	Pass	Meet the requirement of limit. Minimum passing margin is -12.59dB at 0.66200MHz.
15.209	Radiated Emission Test	Pass	Meet the requirement of limit. Minimum passing margin is -9.3dB at 31.77MHz.

### 2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) ( $\pm$ )
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.94 dB
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	3.86 dB
	200MHz ~ 1000MHz	3.87 dB

### 2.2 Modification Record

There were no modifications required for compliance.

### 3 General Information

#### 3.1 General Description of EUT

Product	4 feet Apple watch charging cable
Test Model	F2CU053
Sample Status	Engineering sample
Power Supply Rating	5Vdc from host equipment or adapter
Modulation Type	FSK
Operating Frequency	326.5 kHz
Antenna Type	Coil antenna
Accessory Device	N/A
Data Cable Supplied	1.2m shielded cable attach on EUT

Note: The EUT has WPC (Wireless Power Consortium) technology.

#### 3.2 Description of Test Modes

1 channel is provided to this EUT

Channel	Freq. (kHz)
1	326.5

### 3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO		DESCRIPTION
	RE<1G	PLC	
A	√	√	Charging mode
B	√	√	Standby mode

Where **RE<1G**: Radiated Emission below 1GHz **PLC**: Power Line Conducted Emission

#### Radiated Emission Test (Below 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Channel	Tested Channel
A, B	1	1

#### Power Line Conducted Emission Test:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Channel	Tested Channel
A, B	1	1

#### Test Condition:

Applicable To	Environmental Conditions	Input Power (System)	Tested by
RE<1G	23 deg. C, 68% RH	120Vac, 60Hz	Jones Chang
PLC	27 deg. C, 67% RH	120Vac, 60Hz	Jones Chang

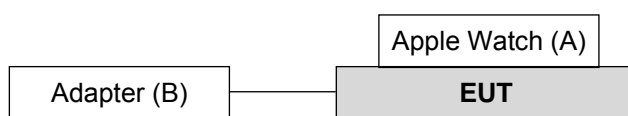
### 3.3 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Apple Watch	Apple	A1553	N/A	N/A	-
B.	Adapter	Apple	A1385	N/A	N/A	-

#### 3.3.1 Configuration of System under Test

Test Mode A



Test Mode B



### 3.4 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

#### FCC Part 15, Subpart C (15.209)

ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.



## 4 Test Types and Results

### 4.1 Radiated Emission and Bandedge Measurement

#### 4.1.1 Limits of Radiated Emission and Bandedge Measurement

##### FOR FREQUENCY BELOW 30MHz

Frequency (MHz)	Field Strength (dBuV/m)		Measurement Distance (meters)
	uV/m	dBuV/m	
0.009 – 0.490	2400 / F (kHz)	48.52-13.80	300
0.490 – 1.705	24000 / F (kHz)	33.80-22.97	30
1.705 – 30.0	30	29.54	30

##### FOR FREQUENCY BETWEEN 30-1000MHz

Frequency (MHz)	Class A (at 10m)		Class B (at 3m)	
	uV/m	dBuV/m	uV/m	dBuV/m
30-88	90	39.1	100	40.0
88-216	150	43.5	150	43.5
216-960	210	46.4	200	46.0
Above 960	300	49.5	500	54.0

#### 4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESIB7	100187	May 02, 2017	May 01, 2018
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Nov. 16, 2016	Nov. 15, 2017
BILOG Antenna SCHWARZBECK	VULB9168	9168-171	Dec. 28, 2016	Dec. 27, 2017
HORN Antenna SCHWARZBECK	9120D	209	Dec. 27, 2016	Dec. 26, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 14, 2016	Dec. 13, 2017
Loop Antenna	EM-6879	269	Aug. 11, 2016	Aug. 10, 2017
Preamplifier Agilent	8447D	2944A10738	Aug. 22, 2016	Aug. 21, 2017
Preamplifier Agilent	8449B	3008A01922	Sep. 18, 2016	Sep. 17, 2017
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (214378)	Aug. 22, 2016	Aug. 21, 2017
RF signal cable HUBER+SUHNER	SUCOFLEX 106	Cable-CH3-03 (309224+12738)	Aug. 22, 2016	Aug. 21, 2017
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA

- Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 3.
3. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 988962.
5. The IC Site Registration No. is IC 7450F-3.

#### 4.1.3 Test Procedures

##### For Frequency range 9kHz~30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter Semi-anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation. Then the Loop antenna was rotated 360 degrees to determine the position of the highest radiation.
- b. The antenna is a broadband loop antenna, which is fixed of a 1m height above the ground, and set away from 3m to the EUT to find the disturbance reading on each frequency.
- c. The test-receiver system was set to Quasi-peak detect function and specified bandwidth.

##### For Frequency range 30 ~ 1000MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters 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 meter to 4 meters and the rotatable 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. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

##### Note:

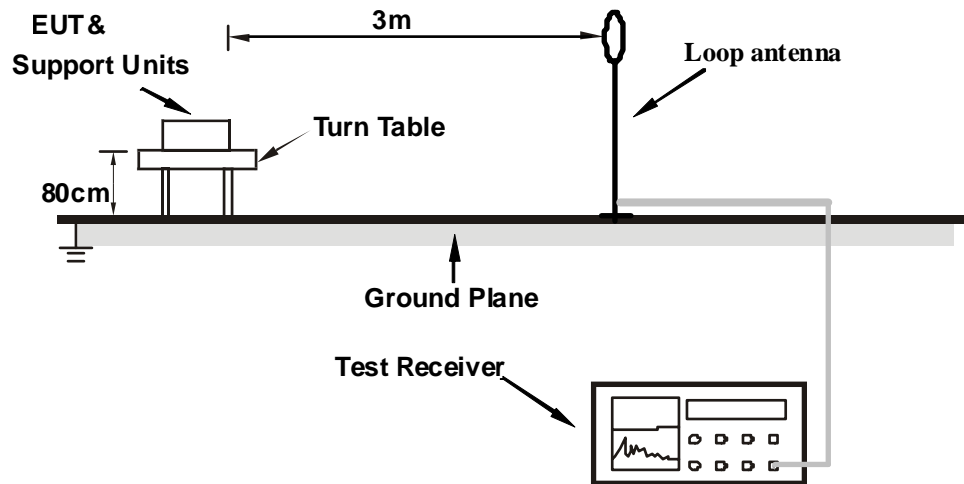
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

#### 4.1.4 Deviation from Test Standard

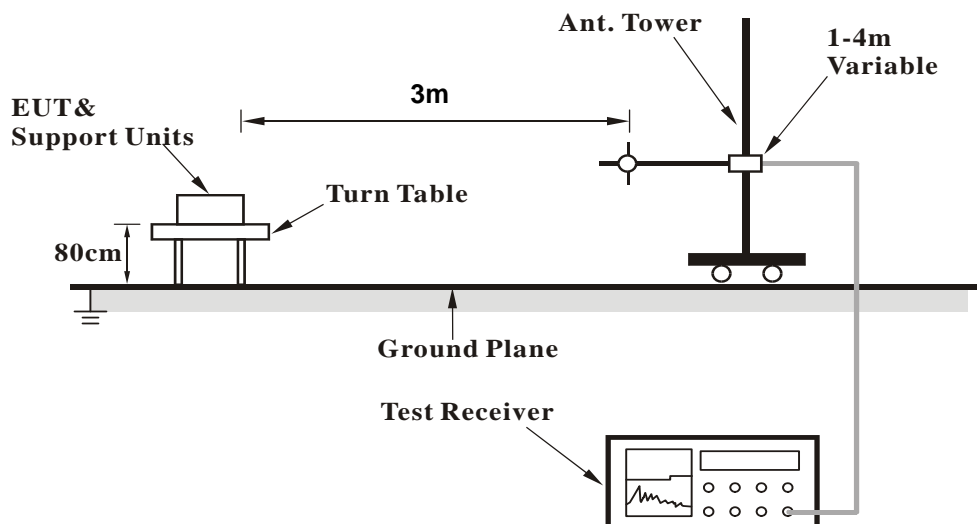
No deviation.

#### 4.1.5 Test Set Up

For Frequency range 9kHz~30MHz



For Frequency range 30 ~ 1000MHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

#### 4.1.6 EUT Operating Conditions

Test Mode A

- The EUT powered by adapter.
- Put the Apple watch on the EUT (wireless charging) during the test.

Test Mode B

- The EUT powered by adapter.

#### 4.1.7 Test Results

Below 30MHz Data:

Charging Mode

Channel	TX Channel 1	Detector Function	Quasi-Peak
Frequency Range	9 kHz ~ 30 MHz		
Test Mode	A		

ANTENNA POLARITY & TEST DISTANCE: LOOP ANTENNA OPEN AT 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*0.3265	45.07	97.30	-52.23	1.00	349	37.87	7.20
2	3.56	32.50	69.50	-37.00	1.00	210	35.20	-2.70
3	5.90	30.30	69.50	-39.20	1.00	168	33.40	-3.10
4	6.80	33.80	69.50	-35.70	1.00	355	37.00	-3.20
5	7.10	35.80	69.50	-33.70	1.00	20	39.00	-3.20
6	7.88	34.10	69.50	-35.40	1.00	346	37.30	-3.20
7	25.07	30.90	69.50	-38.60	1.00	204	35.10	-4.20
ANTENNA POLARITY & TEST DISTANCE: LOOP ANTENNA CLOSE AT 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*0.3265	34.34	97.30	-62.96	1.00	12	27.14	7.20
2	3.56	33.90	69.50	-35.60	1.00	151	36.60	-2.70
3	5.90	33.80	69.50	-35.70	1.00	56	36.90	-3.10
4	7.70	32.90	69.50	-36.60	1.00	137	36.20	-3.30
5	11.55	27.50	69.50	-42.00	1.00	187	31.30	-3.80
6	23.45	29.10	69.50	-40.40	1.00	100	33.70	-4.60
7	25.07	31.00	69.50	-38.50	1.00	199	35.20	-4.20

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ \* “: Fundamental frequency.
6. Loop antenna was used for all radiated emission below 30MHz.
7. Limit @3m=Limit@300m+40log(300 / 3)=Limit@300m+80
8. Limit @3m=Limit@30m+40log(30 / 3)=Limit@30m+40

### Standby Mode

Channel	TX Channel 1	Detector Function	Quasi-Peak
Frequency Range	9 kHz ~ 30 MHz		
Test Mode	B		

ANTENNA POLARITY & TEST DISTANCE: LOOP ANTENNA OPEN AT 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	3.56	32.00	69.50	-37.50	1.00	113	34.70	-2.70
2	5.90	31.50	69.50	-38.00	1.00	163	34.60	-3.10
3	6.50	34.40	69.50	-35.10	1.00	236	37.50	-3.10
4	7.10	35.10	69.50	-34.40	1.00	97	38.30	-3.20
5	8.00	32.80	69.50	-36.70	1.00	203	36.00	-3.20
6	8.60	28.70	69.50	-40.80	1.00	171	32.00	-3.30
ANTENNA POLARITY & TEST DISTANCE: LOOP ANTENNA CLOSE AT 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	3.56	35.90	69.50	-33.60	1.00	37	38.60	-2.70
2	5.90	34.50	69.50	-35.00	1.00	12	37.60	-3.10
3	6.50	33.60	69.50	-35.90	1.00	134	36.70	-3.10
4	7.10	40.80	69.50	-28.70	1.00	76	44.00	-3.20
5	8.60	30.50	69.50	-39.00	1.00	274	33.80	-3.30
6	23.45	29.30	69.50	-40.20	1.00	205	33.90	-4.60

### Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ \* “: Fundamental frequency.
6. Loop antenna was used for all radiated emission below 30MHz.
7. Limit @3m=Limit@300m+40log(300 / 3)=Limit@300m+80
8. Limit @3m=Limit@30m+40log(30 / 3)=Limit@30m+40

Below 1GHz Data:

Charging Mode

Channel	TX Channel 1	Detector Function	Quasi-Peak
Frequency Range	30 MHz ~ 1GHz		
Test Mode	A		

Antenna Polarity & Test Distance: Horizontal At 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	30.90	21.6 QP	40.0	-18.4	1.01 H	324	38.0	-16.4
2	57.12	27.5 QP	40.0	-12.5	2.00 H	222	42.1	-14.6
3	70.73	24.1 QP	40.0	-15.9	2.00 H	308	40.5	-16.4
4	84.34	20.5 QP	40.0	-19.5	2.00 H	254	39.9	-19.4
5	173.78	27.9 QP	43.5	-15.6	2.00 H	93	42.0	-14.1
6	280.71	23.0 QP	46.0	-23.0	1.01 H	237	35.4	-12.4
Antenna Polarity & Test Distance: Vertical At 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	31.84	26.9 QP	40.0	-13.1	1.00 V	124	43.3	-16.4
2	53.23	28.9 QP	40.0	-11.1	1.00 V	352	43.2	-14.3
3	173.78	23.6 QP	43.5	-19.9	1.00 V	191	37.7	-14.1
4	337.10	21.1 QP	46.0	-24.9	1.49 V	6	32.3	-11.2
5	451.81	23.1 QP	46.0	-22.9	1.99 V	1	31.9	-8.8
6	935.94	32.7 QP	46.0	-13.3	1.99 V	203	31.8	0.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

### Standby Mode

Channel	TX Channel 1	Detector Function	Quasi-Peak
Frequency Range	30 MHz ~ 1GHz		
Test Mode	B		

Antenna Polarity & Test Distance: Horizontal At 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	57.12	27.1 QP	40.0	-12.9	2.00 H	168	41.7	-14.6
2	136.84	24.8 QP	43.5	-18.7	2.00 H	56	39.4	-14.6
3	183.50	27.2 QP	43.5	-16.3	1.49 H	79	42.5	-15.3
4	272.94	23.3 QP	46.0	-22.7	1.00 H	73	36.1	-12.8
5	397.37	27.1 QP	46.0	-18.9	1.00 H	106	37.3	-10.2
6	488.75	25.1 QP	46.0	-20.9	1.49 H	118	33.3	-8.2
Antenna Polarity & Test Distance: Vertical At 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
<b>1</b>	<b>31.77</b>	<b>30.7 QP</b>	<b>40.0</b>	<b>-9.3</b>	<b>1.00 V</b>	<b>243</b>	<b>47.1</b>	<b>-16.4</b>
2	51.29	26.1 QP	40.0	-13.9	1.01 V	14	40.5	-14.4
3	181.55	23.8 QP	43.5	-19.7	1.01 V	204	38.9	-15.1
4	296.27	21.8 QP	46.0	-24.2	1.99 V	7	33.9	-12.1
5	403.20	24.3 QP	46.0	-21.7	1.49 V	33	34.4	-10.1
6	482.92	24.1 QP	46.0	-21.9	1.49 V	85	32.4	-8.3

### Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value



## 4.2 Conducted Emission Measurement

### 4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

### 4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Nov. 21, 2016	Nov. 20, 2017
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Dec. 22, 2016	Dec. 21, 2017
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Mar. 10, 2017	Mar. 09, 2018
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 28, 2016	Jul. 27, 2017
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HwaYa Shielded Room 1.

3. The VCCI Site Registration No. is C-2040.

#### 4.2.3 Test Procedures

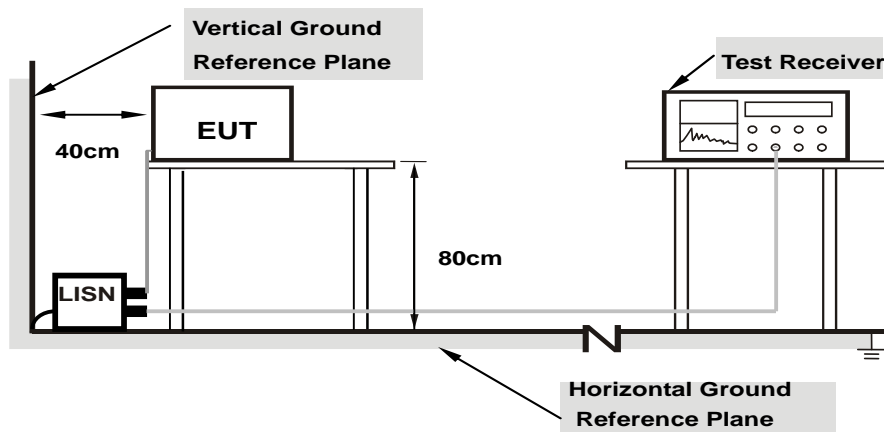
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) were not recorded.

**NOTE:** The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

#### 4.2.4 Deviation from Test Standard

No deviation.

#### 4.2.5 Test Setup



**Note:** 1.Support units were connected to second LISN.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

#### 4.2.6 EUT Operating Conditions

Same as 4.1.6.

#### 4.2.7 Test Results

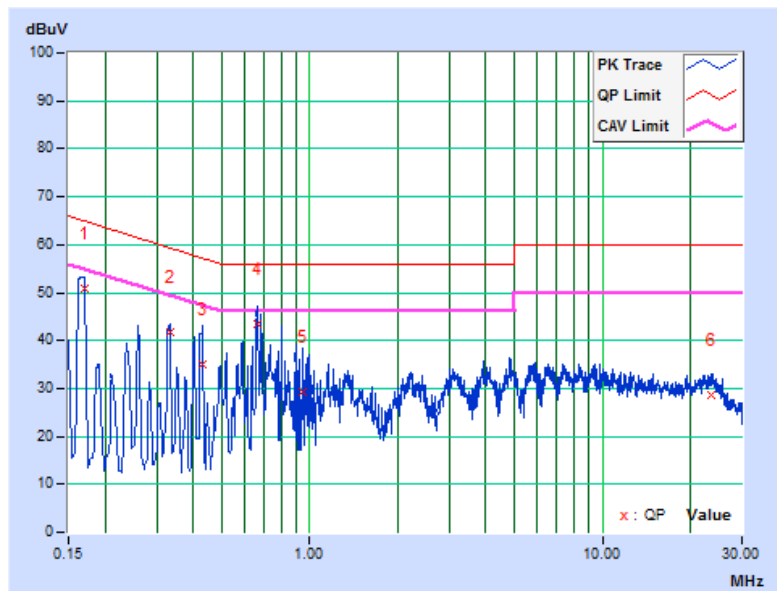
##### Charging Mode

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
	[MHz]		[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17000	10.35	40.54	24.45	50.89	34.80	64.96	54.96	-14.07	-20.16
2	0.33325	10.39	31.23	16.00	41.62	26.39	59.37	49.37	-17.75	-22.98
3	0.43000	10.40	24.46	5.50	34.86	15.90	57.25	47.25	-22.39	-31.35
4	<b>0.66200</b>	<b>10.40</b>	<b>33.01</b>	<b>18.89</b>	<b>43.41</b>	<b>29.29</b>	<b>56.00</b>	<b>46.00</b>	<b>-12.59</b>	<b>-16.71</b>
5	0.94200	10.40	18.82	1.14	29.22	11.54	56.00	46.00	-26.78	-34.46
6	23.49800	11.46	17.07	10.67	28.53	22.13	60.00	50.00	-31.47	-27.87

##### Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

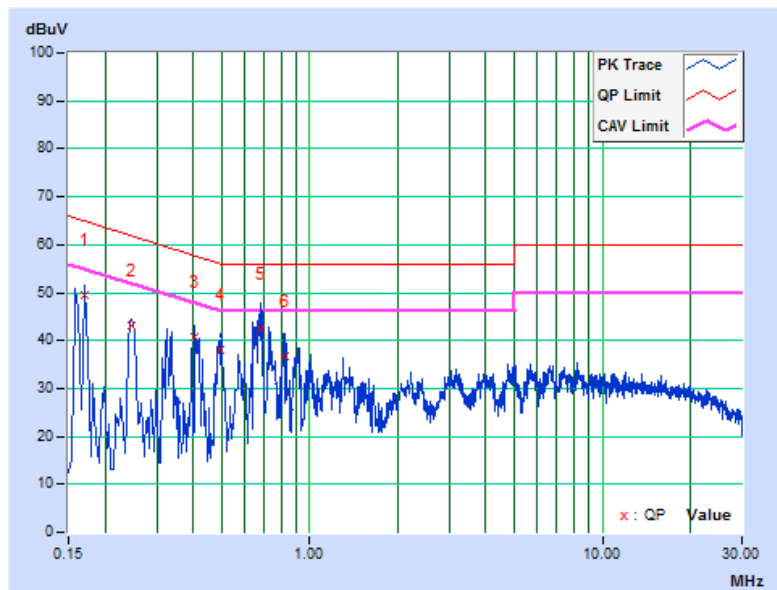


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17000	10.12	39.25	22.20	49.37	32.32	64.96	54.96	-15.59	-22.64
2	0.24485	10.14	33.03	20.29	43.17	30.43	61.93	51.93	-18.76	-21.50
3	0.40605	10.16	30.58	15.18	40.74	25.34	57.73	47.73	-16.99	-22.39
4	0.49800	10.16	27.79	14.74	37.95	24.90	56.03	46.03	-18.08	-21.13
5	0.67800	10.16	32.37	14.82	42.53	24.98	56.00	46.00	-13.47	-21.02
6	0.81800	10.17	26.56	13.02	36.73	23.19	56.00	46.00	-19.27	-22.81

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



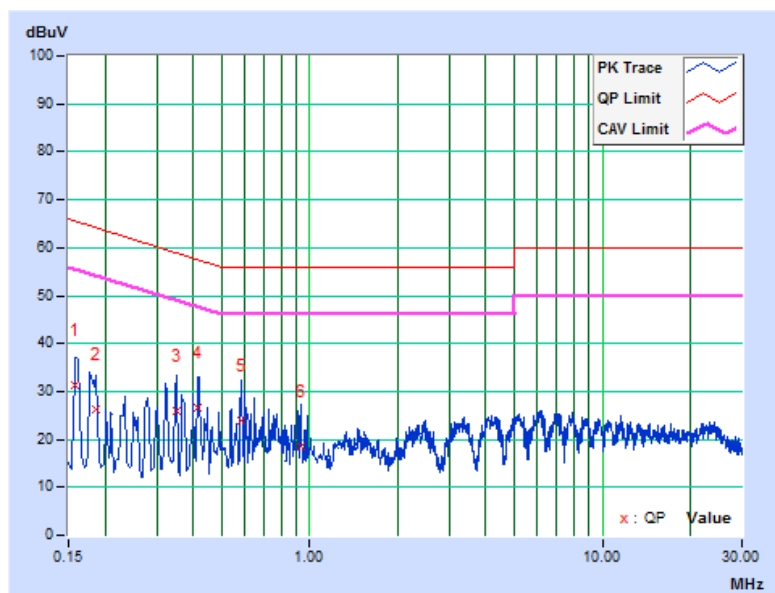
### Standby Mode

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15811	10.35	21.02	2.10	31.37	12.45	65.56	55.56	-34.19	-43.11
2	0.18600	10.36	15.90	0.01	26.26	10.37	64.21	54.21	-37.95	-43.84
3	0.35000	10.39	15.42	0.29	25.81	10.68	58.96	48.96	-33.15	-38.28
4	0.41470	10.40	16.34	0.62	26.74	11.02	57.55	47.55	-30.81	-36.53
5	0.58600	10.40	13.67	0.46	24.07	10.86	56.00	46.00	-31.93	-35.14
6	0.93000	10.40	8.17	0.72	18.57	11.12	56.00	46.00	-37.43	-34.88

### Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

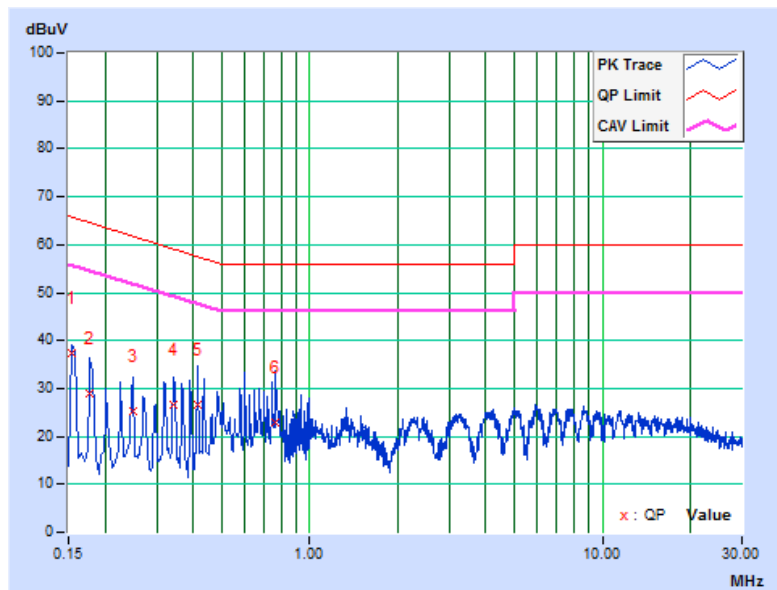


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15400	10.11	27.18	11.51	37.29	21.62	65.78	55.78	-28.49	-34.16
2	0.17801	10.12	18.81	1.52	28.93	11.64	64.58	54.58	-35.65	-42.94
3	0.25000	10.15	15.18	0.17	25.33	10.32	61.76	51.76	-36.43	-41.44
4	0.34214	10.15	16.33	0.21	26.48	10.36	59.15	49.15	-32.67	-38.79
5	0.41400	10.16	16.60	1.30	26.76	11.46	57.57	47.57	-30.81	-36.11
6	0.76600	10.17	12.85	2.82	23.02	12.99	56.00	46.00	-32.98	-33.01

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



## 5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

## Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

### Linko EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

### Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

### Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

**Email:** [service.adt@tw.bureauveritas.com](mailto:service.adt@tw.bureauveritas.com)

**Web Site:** [www.bureauveritas-adt.com](http://www.bureauveritas-adt.com)

The address and road map of all our labs can be found in our web site also.

--- END ---