Variant FCC Test Report

Report No.:	RF160517C23-2
FCC ID:	UK7-DW2
Test Model:	DW2d
Received Date:	May 17, 2016
Test Date:	May 26, 2016 ~ Jun. 01, 2016
Issued Date:	Jun. 08, 2016
Applicant:	Fossil Group, Inc.
Address:	901 S. Central Expwy., Richardson, TX 75080 USA
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 (1):	No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
RF160517C23-2	Original Release	Jun. 08, 2016

1 Certificate of Conformity

Product:	Smart Watch
Brand:	MICHAEL KORS
Test Model:	DW2d
Sample Status:	Identical Prototype
Applicant:	Fossil Group, Inc.
Test Date:	May 26, 2016 ~ Jun. 01, 2016
Standards:	47 CFR FCC Part 15, Subpart C (Section 15.247) ANSI C63.10:2013

This report is issued as a supplementary report to BV CPS report no.: RF160517C19-2. This report shall be used by combining with its original report.

Prepared by : _____ , **Date:** Jun. 08, 2016

Ivonne Wu / Supervisor

Approved by : _____ , **Date:** Jun. 08, 2016

Stanley Wu / Assistant Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
FCC Clause	**Test Item**	**Result**	**Remarks**
15.207	AC Power Conducted Emission	Pass	Meet the requirement of limit. Minimum passing margin is -1.19 dB at 0.77560 MHz.
15.205 & 209	Radiated Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -8.75 dB at 60.07 MHz.
15.247(d)	Band Edge Measurement	N/A	Refer to Note
15.247(d)	Antenna Port Emission	N/A	Refer to Note
15.247(a)(2)	6 dB Bandwidth	N/A	Refer to Note
15.247(b)	Conducted power	N/A	Refer to Note
15.247(e)	Power Spectral Density	N/A	Refer to Note
15.203	Antenna Requirement	Pass	No antenna connector is used.

Note: Only conducted emission and radiated emission tests were performed for this addendum. Refer to original report for other test data.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT:

The listed uncertainties are the worst case uncertainty for the entire range of measurement. Please note that the uncertainty values are provided for informational purposes only and are not used in determining the PASS/FAIL results.

Measurement	**Frequency**	**Expended Uncertainty (k=2) (±)**
Conducted Emissions at mains ports	150 kHz ~ 30 MHz	2.44 dB
Radiated Emissions up to 1 GHz	30 MHz ~ 200 MHz	2.93 dB
	200 MHz ~1000 MHz	2.95 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	2.26 dB
	18 GHz ~ 40 GHz	1.94 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Smart Watch
Brand	MICHAEL KORS
Test Model	DW2d
Status of EUT	Identical Prototype
Power Supply Rating	3.8 Vdc (from battery) 5 Vdc (from wireless charger)
Modulation Type	GFSK
Transfer Rate	1 Mbps
Operating Frequency	2402 ~ 2480 MHz
Number of Channel	40
Antenna Type	Loop antenna with -6.55 dBi gain
Antenna Connector	N/A
Accessory Device	N/A
Data Cable Supplied	N/A

Note:

1. This report is issued as a supplementary report to BV CPS report no.: RF160517C19-2. The difference compared with original report is changing the strap, material of EUT, and antenna gain. Therefore, only conducted emission and radiated emission tests were performed and presented in this report.
2. The WLAN/BT Module (Brand: FOSSIL, Model: DW2) was installed in the EUT.
3. The EUT contains following accessory devices.

Product	Brand	Model	Description
Battery	MICHAEL KORS	APP00169	3.8 Vdc, 400 mAh
Wireless Charger	MICHAEL KORS	FW1D25S2-00	O/P: 5 Vdc, 0.25 A I/P: 5 Vdc (from USB port)
LCD Panel	AUO	H140QVN01.1	1.4 inch

4. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 Description of Test Modes

40 channels are provided to this EUT:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To			Description
	RE≥1G	RE<1G	PLC	
A	√	√	-	Standalone
B	√	√	√	EUT with Wireless Charger

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

NOTE: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-plane**.
NOTE: "-"means no effect.

Radiated Emission Test (Above 1 GHz):

☒ 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	Modulation Type	Data Rate (Mbps)
A, B	0 to 39	39	GFSK	1

Radiated Emission Test (Below 1 GHz):

☒ 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	Modulation Type	Data Rate (Mbps)
A, B	0 to 39	39	GFSK	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	Modulation Type	Data Rate (Mbps)
B	0 to 39	39	GFSK	1

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE≥1G	25 deg. C, 65 % RH	3.8 Vdc / 5 Vdc	Toby Tian
RE<1G	25 deg. C, 65 % RH	3.8 Vdc / 5 Vdc	Toby Tian
PLC	25 deg. C, 65 % RH	5 Vdc	Toby Tian

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.

No.	Product	Brand	Model No.	Serial No.	FCC ID
1.	Adapter	Salcomp	TC U250	N/A	N/A
2.	USB Cable	ASAP	LA05US014-1N	N/A	N/A

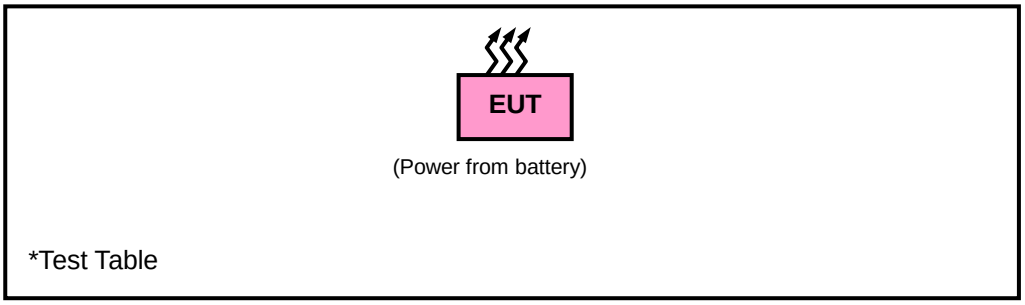
No.	Signal Cable Description Of The Above Support Units
1.	N/A
2.	N/A

Note:

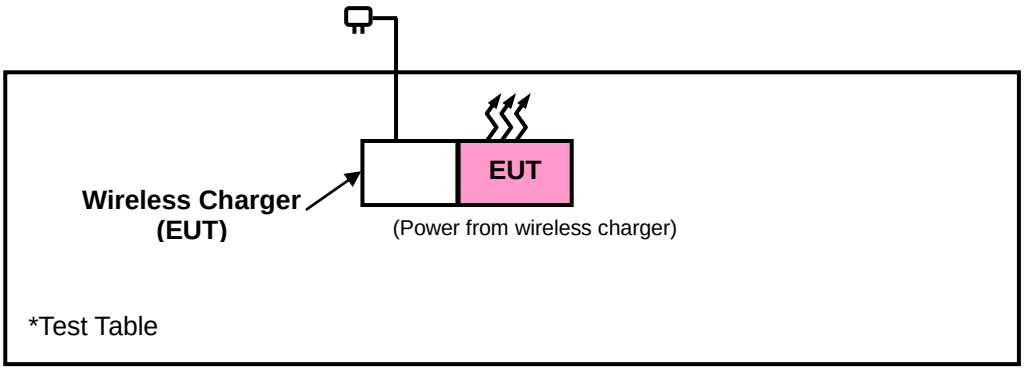
1. All power cords of the above support units are non-shielded (1.8m).

3.3.1 Configuration of System under Test

<Mode A>



<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 (15.247)
558074 D01 DTS Meas Guidance v03r05
ANSI C63.10-2013

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

NOTE: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20 dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F (kHz)	300
0.490 ~ 1.705	24000/F (kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent	N9038A	MY51210203	Jan. 21, 2016	Jan. 20, 2017
Spectrum Analyzer Agilent	N9010A	MY52220314	Sep. 03, 2015	Sep. 02, 2016
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 17, 2015	Dec. 16, 2016
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Jan. 07, 2016	Jan. 06, 2017
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Jan. 04, 2016	Jan. 03, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Jan. 08, 2016	Jan. 07, 2017
Loop Antenna	EM-6879	269	Jul. 31, 2015	Jul. 30, 2016
Bluetooth Tester	CBT	100980	Apr. 27, 2015	Apr. 26, 2017
Agilent Communications Tester-Wireless	8960 Series 10	MY53201073	Jul. 03, 2015	Jul. 02, 2017
Preamplifier EMCI	EMC 012645	980115	Dec. 21, 2015	Dec. 20, 2016
Preamplifier EMCI	EMC 184045	980116	Dec. 21, 2015	Dec. 20, 2016
Preamplifier EMCI	EMC 330H	980112	Dec. 28, 2015	Dec. 27, 2016
Power Meter Anritsu	ML2495A	1232002	Sep. 21, 2015	Sep. 20, 2016
Power Sensor Anritsu	MA2411B	1207325	Sep. 21, 2015	Sep. 20, 2016
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4 2950114	Oct. 12, 2015	Oct. 11, 2016
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 12, 2015	Oct. 11, 2016
RF Coaxial Cable Worken	8D-FB	Cable-Ch10-01	Oct. 12, 2015	Oct. 11, 2016
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower &Turn Table Controller MF	MF-7802	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 Chamber 10.
3. The horn antenna and preamplifier (model: EMC 184045) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 690701.
5. The IC Site Registration No. is IC7450F-10.

4.1.3 Test Procedures

a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1 GHz) / 1.5 meters (for above 1 GHz) 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 detected 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:

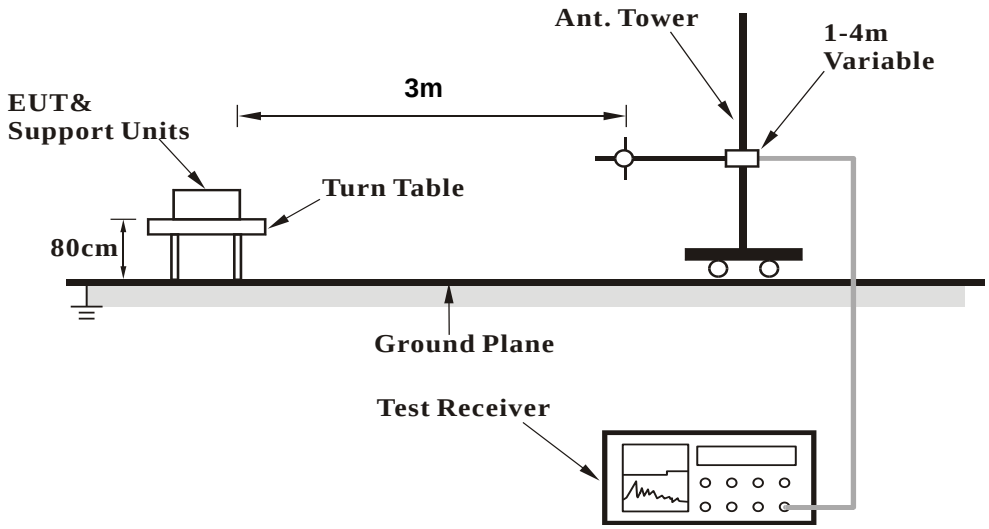
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for RMS Average (Duty cycle < 98 %) for Average detection (AV) at frequency above 1 GHz, then the measurement results was added to a correction factor (10 log(1/duty cycle)).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz (Duty cycle ≥ 98 %) for Average detection (AV) at frequency above 1 GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

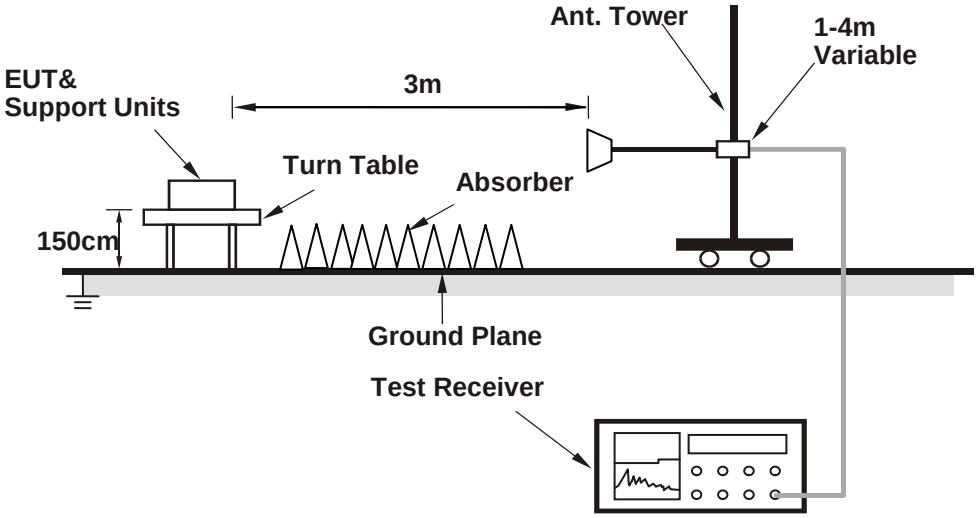
No deviation.

4.1.5 Test Set Up

<Frequency Range below 1 GHz>



<Frequency Range above 1 GHz>



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

4.1.6 EUT Operating Conditions

a. Placed the EUT on the testing table.
b. Set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

ABOVE 1 GHz DATA：

Mode A

EUT Test Condition		Measurement Detail	
Channel	Channel 39	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Toby Tian

Antennal Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2380	35.03	41.59	54	-18.97	26.86	4.08	37.5	104	347	Average
2380	56.35	62.91	74	-17.65	26.86	4.08	37.5	104	347	Peak
2480	86.63	92.65			27.15	4.15	37.32	104	347	Average
2480	87.51	93.53			27.15	4.15	37.32	104	347	Peak
2494	35.65	41.54	54	-18.35	27.2	4.16	37.25	104	347	Average
2494	56.49	62.38	74	-17.51	27.2	4.16	37.25	104	347	Peak
Antennal Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2330	34.71	41.42	54	-19.29	26.72	4.04	37.47	100	252	Average
2330	57.15	63.86	74	-16.85	26.72	4.04	37.47	100	252	Peak
2480	73.44	79.46			27.15	4.15	37.32	100	252	Average
2480	74.65	80.67			27.15	4.15	37.32	100	252	Peak
2498	35.48	41.37	54	-18.52	27.2	4.16	37.25	100	252	Average
2498	57.31	63.2	74	-16.69	27.2	4.16	37.25	100	252	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2480 MHz: Fundamental frequency.

Mode B

EUT Test Condition		Measurement Detail	
Channel	Channel 39	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Toby Tian

Antennal Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	34.76	41.29	54	-19.24	26.91	4.08	37.52	118	1	Average
2390	56.74	63.27	74	-17.26	26.91	4.08	37.52	118	1	Peak
2480	84.13	90.15			27.15	4.15	37.32	118	1	Average
2480	85.12	91.14			27.15	4.15	37.32	118	1	Peak
2494	35.55	41.44	54	-18.45	27.2	4.16	37.25	118	1	Average
2494	56.6	62.49	74	-17.4	27.2	4.16	37.25	118	1	Peak
Antennal Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2380	34.75	41.31	54	-19.25	26.86	4.08	37.5	127	7	Average
2380	56.69	63.25	74	-17.31	26.86	4.08	37.5	127	7	Peak
2480	81.59	87.61			27.15	4.15	37.32	127	7	Average
2480	82.83	88.85			27.15	4.15	37.32	127	7	Peak
2494	35.43	41.32	54	-18.57	27.2	4.16	37.25	127	7	Average
2494	56.26	62.15	74	-17.74	27.2	4.16	37.25	127	7	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2480 MHz: Fundamental frequency.

9 kHz ~ 30 MHz DATA:

The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

30 MHz ~ 1 GHz WORST-CASE DATA:

Mode A

EUT Test Condition		Measurement Detail	
Channel	Channel 39	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Toby Tian

Antennal Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
89.17	18.54	41.21	43.5	-24.96	8.28	0.96	31.91	104	140	Peak
167.74	27.96	46.61	43.5	-15.54	11.96	1.15	31.76	112	115	Peak
258.92	25.12	43.72	46	-20.88	11.74	1.52	31.86	140	66	Peak
381.14	19.69	34.9	46	-26.31	14.89	1.86	31.96	123	187	Peak
535.37	21.42	32.85	46	-24.58	18.13	2.15	31.71	138	151	Peak
635.28	23.24	32.99	46	-22.76	20.03	2.33	32.11	105	54	Peak
Antennal Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
31.94	28.82	47.04	40	-11.18	12.3	0.59	31.11	128	11	Peak
60.07	31.25	49.86	40	-8.75	11.94	0.81	31.36	110	116	Peak
159.98	22.15	40.15	43.5	-21.35	12.73	1.15	31.88	114	62	Peak
257.95	19.09	37.74	46	-26.91	11.71	1.51	31.87	130	195	Peak
407.33	18.97	33.6	46	-27.03	15.48	1.92	32.03	113	194	Peak
583.87	22.71	33.38	46	-23.29	19.23	2.23	32.13	121	318	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value

Mode B

EUT Test Condition		Measurement Detail	
Channel	Channel 39	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Toby Tian

Antennal Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
32.91	23.28	41.3	40	-16.72	12.47	0.6	31.09	110	323	Peak
108.57	23.22	44.07	43.5	-20.28	9.9	1.1	31.85	113	143	Peak
210.42	21.27	41.71	43.5	-22.23	9.81	1.34	31.59	134	40	Peak
332.64	21.39	37.75	46	-24.61	13.73	1.72	31.81	129	37	Peak
489.78	20.31	32.89	46	-25.69	17.12	2.07	31.77	137	125	Peak
581.93	22.69	33.39	46	-23.31	19.19	2.23	32.12	120	142	Peak
Antennal Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
31.94	29.84	48.06	40	-10.16	12.3	0.59	31.11	131	320	Peak
40.67	28.21	45.03	40	-11.79	13.55	0.65	31.02	126	359	Peak
63.95	27.2	46.43	40	-12.8	11.47	0.84	31.54	116	33	Peak
89.17	23.17	45.84	43.5	-20.33	8.28	0.96	31.91	125	192	Peak
490.75	20.77	33.31	46	-25.23	17.14	2.08	31.76	117	242	Peak
557.68	22.19	33.4	46	-23.81	18.64	2.19	32.04	131	230	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   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

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Nov. 16, 2015	Nov. 15, 2016
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Dec. 26, 2015	Dec. 25, 2016
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 26, 2016	Feb. 25, 2017
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 24, 2015	Jul. 23, 2016
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

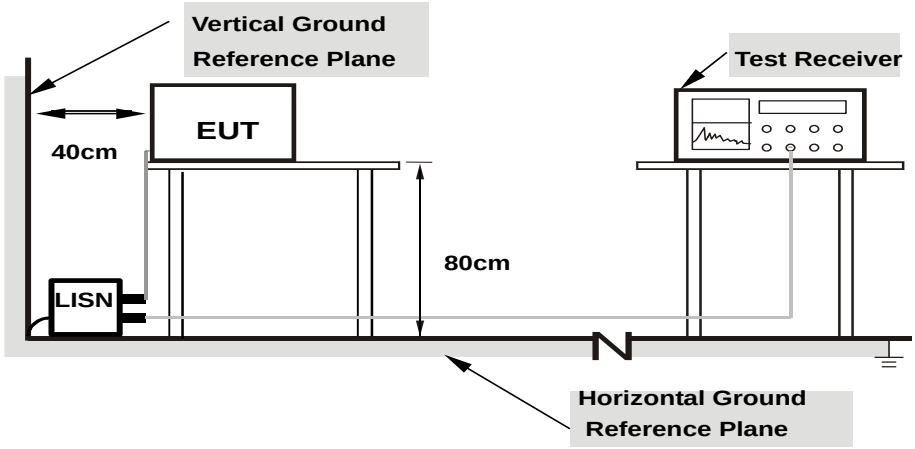
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/50 uH of coupling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

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

4.2.6 EUT Operating Conditions

a. Placed the EUT on the testing table.
b. Set the EUT under transmission condition continuously at specific channel frequency.

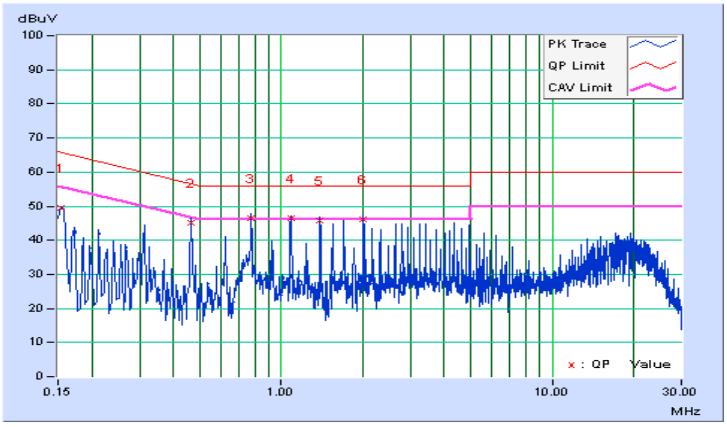
4.2.7 Test Results

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 65%RH
Tested by	Toby Tian	Test Date	2016/6/2

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	10.02	39.53	34.23	49.55	44.25	65.79	55.79	-16.24	-11.54
2	0.46669	10.13	34.88	31.11	45.01	41.24	56.57	46.57	-11.56	-5.33
3	0.77560	10.17	36.28	32.23	46.45	42.40	56.00	46.00	-9.55	-3.60
4	1.08444	10.21	36.28	32.39	46.49	42.60	56.00	46.00	-9.51	-3.40
5	1.39338	10.23	35.59	31.90	45.82	42.13	56.00	46.00	-10.18	-3.87
6	2.01507	10.27	35.80	32.05	46.07	42.32	56.00	46.00	-9.93	-3.68

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

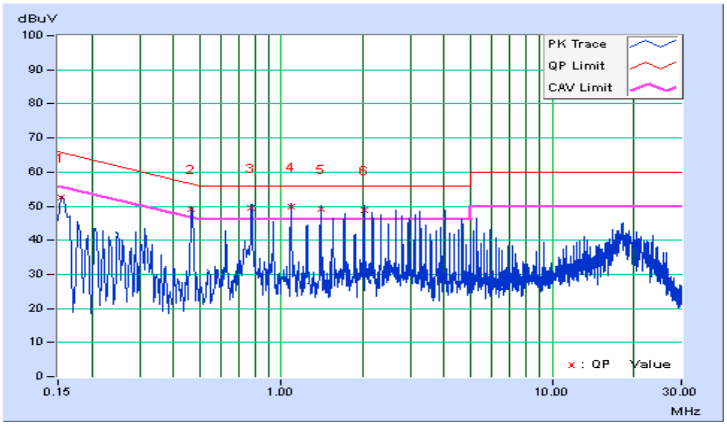


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 65%RH
Tested by	Toby Tian	Test Date	2016/6/2

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	10.03	42.50	38.48	52.53	48.51	65.79	55.79	-13.26	-7.28
2	0.46669	10.14	39.05	33.80	49.19	43.94	56.57	46.57	-7.38	-2.63
3	0.77560	10.18	39.41	34.63	49.59	44.81	56.00	46.00	-6.41	-1.19
4	1.08731	10.22	39.58	34.03	49.80	44.25	56.00	46.00	-6.20	-1.75
5	1.39729	10.24	38.76	34.22	49.00	44.46	56.00	46.00	-7.00	-1.54
6	2.02289	10.28	38.64	33.76	48.92	44.04	56.00	46.00	-7.08	-1.96

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
Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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

--- END ---