

Supplemental “Transmit Simultaneously” Test Report

Report No.: RFBFBE-WTW-P21118016-5

FCC ID: YAW539848

Test Model: PVS6

Received Date: 2021/11/30

Test Date: 2021/12/17 ~ 2021/12/29

Issued Date: 2022/6/15

Applicant: SunPower Corporation

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**FCC Registration /
Designation Number:** 723255 / TW2022



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Release Control Record

Issue No.	Description	Date Issued
RFBFBE-WTW-P21118016-5	Original release.	2022/6/15

1 Certificate of Conformity

Product: SunPower Monitoring System with PVS6

Brand: SUNPOWER

Test Model: PVS6

Sample Status: Engineering sample

Applicant: SunPower Corporation

Test Date: 2021/12/17 ~ 2021/12/29

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)

47 CFR FCC Part 15, Subpart E (Section 15.407)

FCC Part 27 Subpart H

FCC Part 2

ANSI C63.10: 2013

ANSI 63.26: 2015

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 : Cherry Chuo , **Date:** 2022/6/15
Cherry Chuo / Specialist

Approved by : May Chen , **Date:** 2022/6/15
May Chen / Manager

2 Summary of Test Results

FCC Part 15, Subpart C, E (SECTION 15.247, 15.407)			
FCC Part 27, Subpart H			
FCC Clause	Test Item	Result	Remarks
15.207 15.407(b)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -5.22 dB at 4.76172 MHz.
15.205 / 15.209 / 15.247(d) 15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions and Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.9 dB at 135.34 MHz, 392.08 MHz and 418.76 MHz.
2.1053 27.53(g)	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -49.58 dB at 2099.10 MHz.

Note:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

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	1.9 dB
Conducted emissions	-	2.5 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.1 dB
	30MHz ~ 1GHz	5.4 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.0 dB
	18GHz ~ 40GHz	5.3 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	SunPower Monitoring System with PVS6
Brand	SUNPOWER
Test Model	PVS6
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	AC100-240V, 0.75A , 50/60Hz
Modulation Type	WLAN: CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only BT-EDR: GFSK, $\pi/4$ -DQPSK, 8DPSK BT-LE: GFSK ZigBee: O-QPSK
Modulation Technology	WLAN: DSSS, OFDM BT-EDR: FHSS BT-LE: DTS ZigBee: DSSS
Transfer Rate	WLAN: 802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.7Mbps BT-EDR: Up to 3Mbps BT-LE: Up to 2Mbps ZigBee: 250kbps
Operating Frequency	WLAN: 2.4GHz: 2.412 ~ 2.462GHz 5GHz: 5.18~ 5.24GHz, 5.745 ~ 5.825GHz BT-EDR: 2402MHz ~ 2480MHz BT-LE: 2402MHz ~ 2480MHz ZigBee: 2.405 ~ 2.480GHz
Number of Channel	WLAN: 2.4GHz: 802.11b, 802.11g, 802.11n (HT20): 11 5GHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 9 802.11n (HT40), 802.11ac (VHT40): 4 802.11ac (VHT80): 2 BT-EDR: 79 BT-LE: 40 ZigBee: 16
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	-Hole Plugs x2 -Ethernet Cable x1: non-shielded, 1.5m -Bracket x1

Note:

1. The EUT contains certified WWAN module which FCC ID: XMR2020BG95M1 (Brand: Quectel; Model: BG95-M1)
2. There are WLAN, Bluetooth, ZigBee and WWAN technology used for the EUT.
3. The EUT has three radios as following table:

Radio 1	Radio 2	Radio 3
WLAN (2.4GHz+5GHz)+ BT	ZigBee	WWAN (LTE)

4. Simultaneously transmission condition.

Condition	Technology			
1	WLAN(2.4GHz)	BT	ZigBee	WWAN
2	WLAN(5GHz)	BT	ZigBee	WWAN

Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.

5. The EUT needs to be supplied from an Internal power supply, the information is as below table:

Brand	Model No.	Spec.
WLAN WELL	IRM-30-12	AC Input: 100-240V, 0.75A , 50/60Hz DC Output: 12V, 2.5A

6. The antennas provided to the EUT, please refer to the following table:

WLAN / Bluetooth							
Ant No.	Chain No.	Brand	Model	Antenna Net Gain (dBi)	Frequency rang (GHz)	Antenna type	Connector type
1	Chain 0 (Including BT)	airgain	65-031-212002B	2.2	2.4~2.4835	PCB	I-PEX
				3.8	5.15~5.25		
				4.2	5.725~5.85		
2	Chain 1 (WLAN use only)	airgain	65-031-212003B	4.2	2.4~2.4835	PCB	I-PEX
				4.1	5.15~5.25		
				4.8	5.725~5.85		
ZigBee							
Ant No.	Brand	Model	Antenna Gain (dBi)	Frequency rang (GHz)	Antenna type	Connector type	
3	airgain	65-031-212004B	4.8	2.4~2.4835	PCB	I-PEX	
LTE							
Ant No.	Brand	Model	Antenna Gain (dBi)	Frequency rang (MHz)	Antenna type	Connector type	
4	airgain	65-031-212001B	2.7	1850~1910	PCB	I-PEX	
				1710~1755			
				698~716			

7. The EUT incorporates a MIMO function.

2.4GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11b	2TX	2RX
802.11g	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11ax (HE20)	2TX	2RX
5GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11a	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
802.11ac (VHT20)	2TX	2RX
802.11ac (VHT40)	2TX	2RX
802.11ac (VHT80)	2TX	2RX
802.11ax (HE20)	2TX	2RX
802.11ax (HE40)	2TX	2RX
802.11ax (HE80)	2TX	2RX

8. This device can support different category application which switched by access point mode and client mode by software.
9. The EUT will install at outdoor area, for U-NII-1 the highest antenna gain is 1.49dBi from the horizon above 30 degrees, for more detail information please refer to antenna specification and user manual.
10. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.
11. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3.1.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE \geq 1G	RE $<$ 1G	PLC	OB	
1	√	√	√	√	Condition 1
2	√	√	√	√	Condition 2

Where **RE \geq 1G**: Radiated Emission above 1GHz & Bandedge Measurement

RE $<$ 1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

OB: Conducted Out-Band Emission Measurement

Radiated Emission Test (Above 1GHz):

The tested configurations represent the worst-case mode from all possible combinations by the maximum power.

Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE
1	802.11b + BT-LE + ZigBee + LTE	1 to 11	6	OFDM	BPSK
		0 to 39	39	DTS	GFSK
		11 to 26	11	DSSS	O-QPSK
		23010 to 23179	23010	QPSK	-
2	802.11a + BT-LE + ZigBee + LTE	36 to 48 149 to 165	157	OFDM	BPSK
		0 to 39	39	DTS	GFSK
		11 to 26	11	DSSS	O-QPSK
		23010 to 23179	23010	QPSK	-

Radiated Emission Test (Below 1GHz):

- The tested configurations represent the worst-case mode from all possible combinations by the maximum power.
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE
1	802.11b + BT-LE + ZigBee + LTE	1 to 11	6	OFDM	BPSK
		0 to 39	39	DTS	GFSK
		11 to 26	11	DSSS	O-QPSK
		23010 to 23179	23010	QPSK	-
2	802.11a + BT-LE + ZigBee + LTE	36 to 48 149 to 165	157	OFDM	BPSK
		0 to 39	39	DTS	GFSK
		11 to 26	11	DSSS	O-QPSK
		23010 to 23179	23010	QPSK	-

Power Line Conducted Emission Test:

- The tested configurations represent the worst-case mode from all possible combinations by the maximum power.
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE
1	802.11b + BT-LE + ZigBee + LTE	1 to 11	6	OFDM	BPSK
		0 to 39	39	DTS	GFSK
		11 to 26	11	DSSS	O-QPSK
		23010 to 23179	23010	QPSK	-
2	802.11a + BT-LE + ZigBee + LTE	36 to 48 149 to 165	157	OFDM	BPSK
		0 to 39	39	DTS	GFSK
		11 to 26	11	DSSS	O-QPSK
		23010 to 23179	23010	QPSK	-

Conducted Out-Band Emission Measurement:

- The tested configurations represent the worst-case mode from all possible combinations by the maximum power.
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE
1	802.11b + BT-LE	1 to 11	6	OFDM	BPSK
		0 to 39	39	DTS	GFSK
2	802.11a + BT-LE	36 to 48 149 to 165	157	OFDM	BPSK
		0 to 39	39	DTS	GFSK

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested By
RE \geq 1G	22deg. C, 70%RH	120Vac, 60Hz	Sampson Chen
RE $<$ 1G	22deg. C, 70%RH	120Vac, 60Hz	Ryan Du
PLC	25deg. C, 68%RH	120Vac, 60Hz	Sampson Chen
OB	25deg. C, 60%RH	120Vac, 60Hz	Leon Dai

3.2 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.

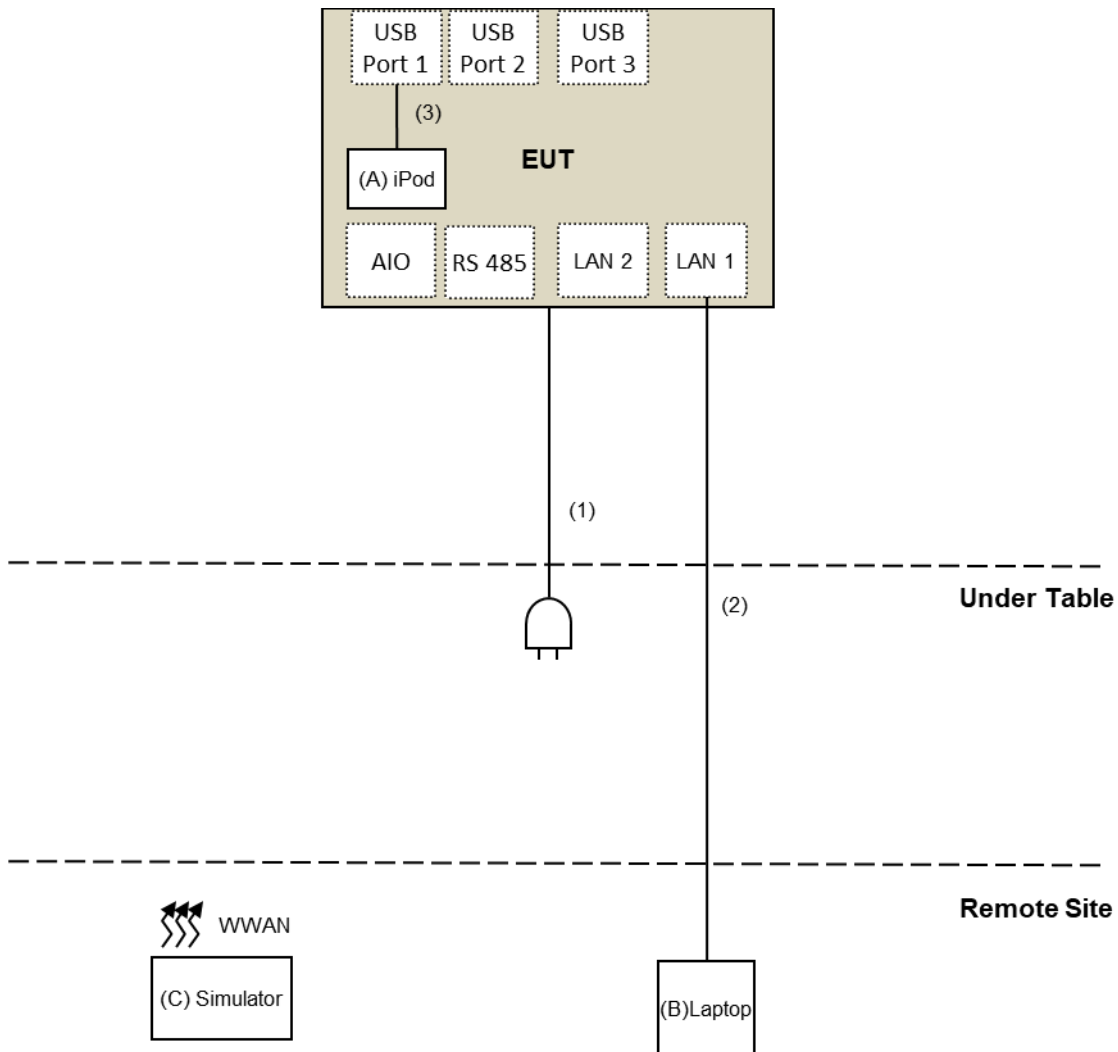
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	iPod	Apple	MC749TA/A	CC4DMFJUDFDM	NA	Provided by Lab
B.	Laptop	Lenovo	20U5S01X00 L14	PF-28LKK7	NA	Provided by Lab
C.	Simulator	Keysight	E7515A	MY55340229	NA	Provided by Lab

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	AC Cable	1	1.8	No	0	Supplied by Applicant
2.	RJ-45 Cable	1	10	No	0	Provided by Lab
3.	USB Cable	1	0.1	Yes	0	Provided by Lab

3.2.1 Configuration of System under Test



Note: The test configuration was defined by the applicant requirement.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

For 47 CFR FCC Part 15:

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

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 1000MHz, 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 20dB under any condition of modulation.

Limits of unwanted emission out of the restricted bands

Applicable To		Limit	
789033 D02 General UNII Test Procedure New Rules v02r01		Field Strength at 3m	
		PK:74 (dBµV/m)	AV:54 (dBµV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2(dBµV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	15.407(b)(4)(i) 15.407(b)(4)(ii)	PK: -27 (dBm/MHz) ^{*1} PK: 10 (dBm/MHz) ^{*2} PK: 15.6 (dBm/MHz) ^{*3} PK: 27 (dBm/MHz) ^{*4}	PK: 68.2(dBµV/m) ^{*1} PK: 105.2 (dBµV/m) ^{*2} PK: 110.8(dBµV/m) ^{*3} PK: 122.2 (dBµV/m) ^{*4}
^{*1} beyond 75 MHz or more above of the band edge. ^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.		^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above. ^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	

Note:

The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts).}$$

FCC Part 27:

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10} (P)$ dB.

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY50010156	2021/7/22	2022/7/21
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Pre_Amplifier EMCI	EMC001340	980142	2021/5/24	2022/5/23
LOOP ANTENNA Electro-Metrics	EM-6879	264	2021/3/5	2022/3/4
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-001	2021/1/7	2022/1/6
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-002	2021/1/7	2022/1/6
Pre_Amplifier Mini-Circuits	ZFL-1000VH2	QA0838008	2021/10/19	2022/10/18
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	2021/10/26	2022/10/25
RF Coaxial Cable COMMATE/PEWC	8D	966-3-1	2021/3/16	2022/3/15
RF Coaxial Cable COMMATE/PEWC	8D	966-3-2	2021/3/16	2022/3/15
RF Coaxial Cable COMMATE/PEWC	8D	966-3-3	2021/3/16	2022/3/15
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	2021/9/23	2022/9/22
Horn Antenna Schwarzbeck	BBHA9120-D	9120D-406	2021/11/14	2022/11/13
Pre_Amplifier EMCI	EMC12630SE	980384	2021/1/11	2022/1/10
RF Coaxial Cable EMCI	EMC104-SM-SM-1500	180504	2021/4/26	2022/4/25
RF Coaxial Cable EMCI	EMC104-SM-SM-2000	180601	2021/6/8	2022/6/7
RF Coaxial Cable EMCI	EMC104-SM-SM-6000	210201	2021/5/13	2022/5/12
Fix tool for Boresight antenna tower LIOW GUU	FBA-01	FBA_SIP01	NA	NA
Spectrum Analyzer Keysight	N9030A	MY54490679	2021/7/9	2022/7/8
Pre_Amplifier EMCI	EMC184045SE	980387	2021/1/11	2022/1/10
Horn Antenna Schwarzbeck	BBHA 9170	BBHA9170519	2021/11/14	2022/11/13
RF Cable-Frequency range: 1-40GHz EMCI	EMC102-KM-KM-1200	160924	2021/1/11	2022/1/10
RF cable (40GHz) EMCI	EMC-KM-KM-4000	200214	2021/3/10	2022/3/9

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 966 Chamber No. 3.
3. Tested Date: 2021/12/24 ~ 2021/12/28

4.1.3 Test Procedures

For FCC Part 15:

For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. 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. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case 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.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 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. 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 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

FCC Part 27:

For Subpart H : LTE Band 12

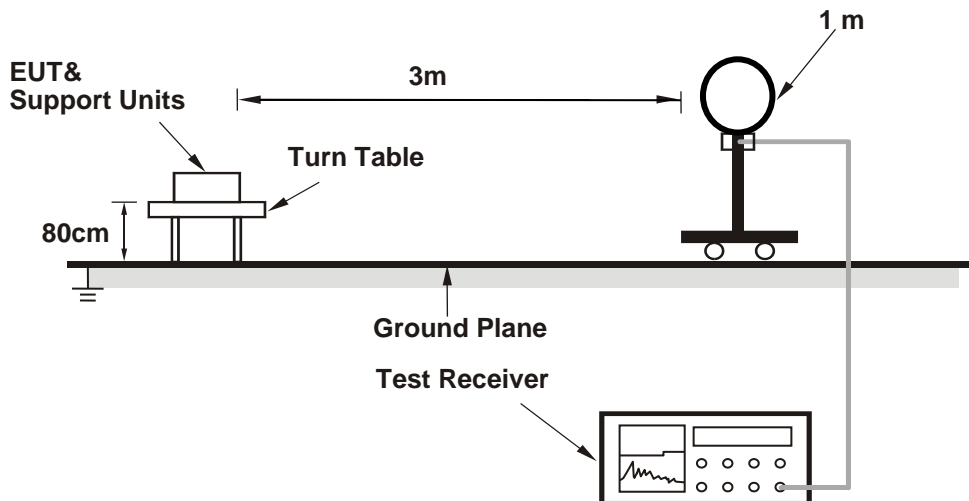
According to FCC 27.53(g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

4.1.4 Deviation from Test Standard

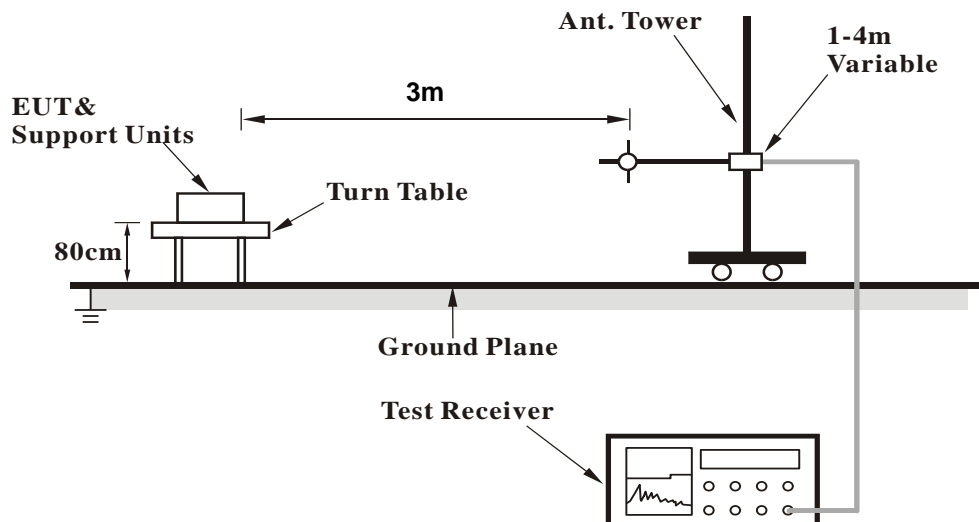
No deviation.

4.1.5 Test Setup

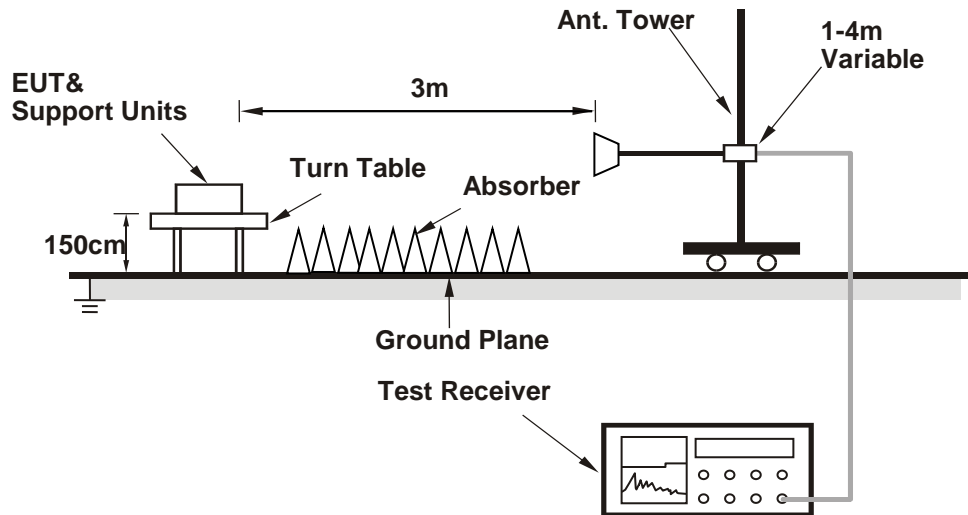
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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. Controlling software (WLAN / Bluetooth: ssh paste PVS6_WiFi+ZigBee+BT+BLE+RB SOP.docx command ; WWAN: link Simulator) has been activated to set the EUT on specific status.

4.1.7 Test Results (Mode 1)

Above 1GHz Data

Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)
------------------------	--------------	--------------------------	---------------------------

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4810.00	49.0 PK	74.0	-25.0	2.42 H	65	45.5	3.5
2	4810.00	37.7 AV	54.0	-16.3	2.42 H	65	34.2	3.5
3	4874.00	43.5 PK	74.0	-30.5	1.50 H	273	40.1	3.4
4	4874.00	40.5 AV	54.0	-13.5	1.50 H	273	37.1	3.4
5	4960.00	43.7 PK	74.0	-30.3	1.63 H	84	40.2	3.5
6	4960.00	32.0 AV	54.0	-22.0	1.63 H	84	28.5	3.5
7	7311.00	49.3 PK	74.0	-24.7	1.94 H	221	39.8	9.5
8	7311.00	44.4 AV	54.0	-9.6	1.94 H	221	34.9	9.5
9	7440.00	45.2 PK	74.0	-28.8	1.66 H	68	35.4	9.8
10	7440.00	34.4 AV	54.0	-19.6	1.66 H	68	24.6	9.8

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4810.00	53.1 PK	74.0	-20.9	1.02 V	30	49.6	3.5
2	4810.00	43.9 AV	54.0	-10.1	1.02 V	30	40.4	3.5
3	4874.00	47.5 PK	74.0	-26.5	1.45 V	184	44.1	3.4
4	4874.00	46.1 AV	54.0	-7.9	1.45 V	184	42.7	3.4
5	4960.00	40.4 PK	74.0	-33.6	1.57 V	348	36.9	3.5
6	4960.00	29.8 AV	54.0	-24.2	1.57 V	348	26.3	3.5
7	7311.00	46.0 PK	74.0	-28.0	1.42 V	324	36.5	9.5
8	7311.00	37.9 AV	54.0	-16.1	1.42 V	324	28.4	9.5
9	7440.00	45.2 PK	74.0	-28.8	1.62 V	273	35.4	9.8
10	7440.00	34.3 AV	54.0	-19.7	1.62 V	273	24.5	9.8

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

Mode	TX channel 23010	Frequency Range	Above 1000MHz
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Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBUV)	Correction Factor (dB/m)
1	1399.40	-63.80	-13.00	-50.80	1.50 H	214	44.72	-108.52
2	1749.25	-62.65	-13.00	-49.65	2.00 H	107	45.54	-108.19
3	2099.10	-63.57	-13.00	-50.57	1.50 H	58	44.35	-107.92
4	2448.95	-63.05	-13.00	-50.05	1.50 H	263	44.61	-107.66
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBUV)	Correction Factor (dB/m)
1	1399.40	-63.66	-13.00	-50.66	1.00 V	127	44.86	-108.52
2	1749.25	-62.67	-13.00	-49.67	1.50 V	86	45.52	-108.19
3	2099.10	-62.58	-13.00	-49.58	1.50 V	261	45.34	-107.92
4	2448.95	-62.86	-13.00	-49.86	1.50 V	308	44.80	-107.66

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

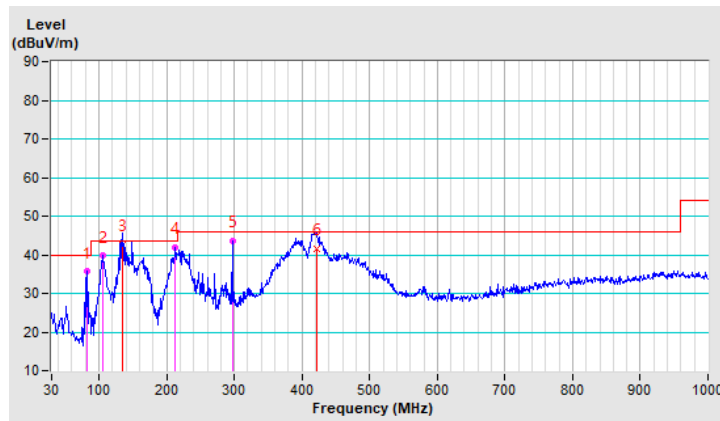
Below 1GHz Data:

Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	82.09	35.6 QP	40.0	-4.4	2.00 H	59	48.8	-13.2
2	105.17	39.7 QP	43.5	-3.8	1.50 H	106	50.9	-11.2
3	135.34	42.6 QP	43.5	-0.9	1.50 H	80	50.9	-8.3
4	213.26	41.8 QP	43.5	-1.7	2.00 H	303	52.3	-10.5
5	297.02	43.6 QP	46.0	-2.4	1.50 H	197	50.3	-6.7
6	421.56	41.6 QP	46.0	-4.4	1.50 H	188	44.5	-2.9

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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

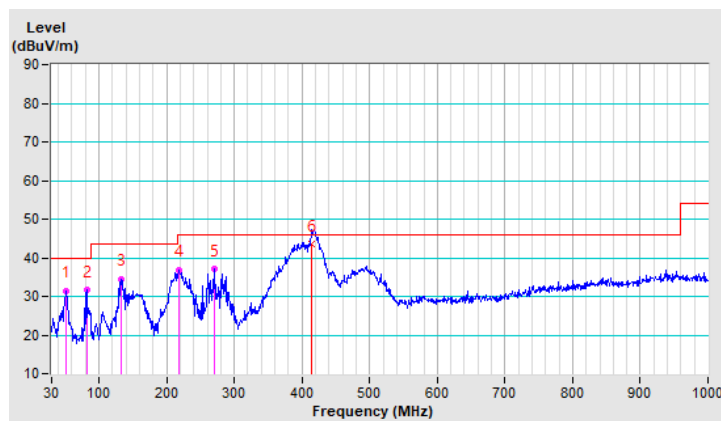


Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBUV)	Correction Factor (dB/m)
1	50.44	31.5 QP	40.0	-8.5	1.50 V	16	39.6	-8.1
2	82.16	31.6 QP	40.0	-8.4	1.50 V	331	44.8	-13.2
3	132.63	34.6 QP	43.5	-8.9	1.50 V	360	43.1	-8.5
4	217.60	36.7 QP	46.0	-9.3	1.50 V	52	47.2	-10.5
5	270.66	37.0 QP	46.0	-9.0	1.50 V	0	44.7	-7.7
6	414.94	43.4 QP	46.0	-2.6	2.00 V	264	46.8	-3.4

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



4.1.8 Test Results (Mode 2)

Above 1GHz Data

Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)
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Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4810.00	48.9 PK	74.0	-25.1	2.43 H	72	45.4	3.5
2	4810.00	37.8 AV	54.0	-16.2	2.43 H	72	34.3	3.5
3	4960.00	43.7 PK	74.0	-30.3	1.63 H	84	40.2	3.5
4	4960.00	32.0 AV	54.0	-22.0	1.63 H	84	28.5	3.5
5	7440.00	45.2 PK	74.0	-28.8	1.66 H	68	35.4	9.8
6	7440.00	34.4 AV	54.0	-19.6	1.66 H	68	24.6	9.8
7	11570.00	49.5 PK	74.0	-24.5	1.98 H	201	34.9	14.6
8	11570.00	37.6 AV	54.0	-16.4	1.98 H	201	23.0	14.6
9	#17355.00	51.6 PK	68.2	-16.6	1.72 H	89	33.3	18.3

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4810.00	52.9 PK	74.0	-21.1	1.04 V	18	49.4	3.5
2	4810.00	43.9 AV	54.0	-10.1	1.04 V	18	40.4	3.5
3	4960.00	40.4 PK	74.0	-33.6	1.57 V	348	36.9	3.5
4	4960.00	29.8 AV	54.0	-24.2	1.57 V	348	26.3	3.5
5	7440.00	45.2 PK	74.0	-28.8	1.62 V	273	35.4	9.8
6	7440.00	34.3 AV	54.0	-19.7	1.62 V	273	24.5	9.8
7	11570.00	49.8 PK	74.0	-24.2	1.64 V	200	35.2	14.6
8	11570.00	37.8 AV	54.0	-16.2	1.64 V	200	23.2	14.6
9	#17355.00	51.8 PK	68.2	-16.4	2.23 V	179	33.5	18.3

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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. "#": The radiated frequency is out of the restricted band.

Mode	TX channel 23010	Frequency Range	Above 1000MHz
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Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1399.40	-63.70	-13.00	-50.70	2.00 H	175	44.82	-108.52
2	1749.25	-63.08	-13.00	-50.08	1.50 H	163	45.11	-108.19
3	2099.10	-63.96	-13.00	-50.96	1.50 H	96	43.96	-107.92
4	2448.95	-63.14	-13.00	-50.14	1.50 H	297	44.52	-107.66
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1399.40	-63.60	-13.00	-50.60	1.50 V	142	44.92	-108.52
2	1749.25	-62.78	-13.00	-49.78	1.50 V	121	45.41	-108.19
3	2099.10	-62.62	-13.00	-49.62	1.00 V	227	45.30	-107.92
4	2448.95	-63.00	-13.00	-50.00	1.50 V	217	44.66	-107.66

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3. $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.

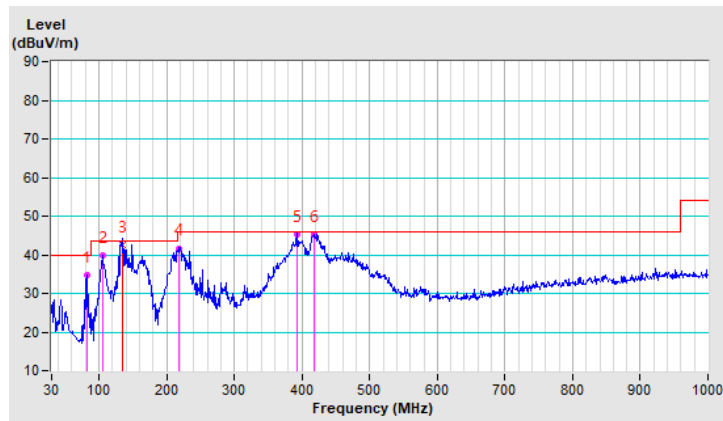
Below 1GHz Data:

Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	82.35	34.6 QP	40.0	-5.4	1.50 H	49	47.9	-13.3
2	106.01	39.7 QP	43.5	-3.8	1.50 H	102	50.9	-11.2
3	133.96	42.4 QP	43.5	-1.1	1.50 H	100	50.7	-8.3
4	217.22	41.6 QP	46.0	-4.4	2.00 H	303	52.1	-10.5
5	392.08	45.1 QP	46.0	-0.9	2.00 H	256	49.1	-4.0
6	418.76	45.1 QP	46.0	-0.9	1.50 H	196	48.2	-3.1

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

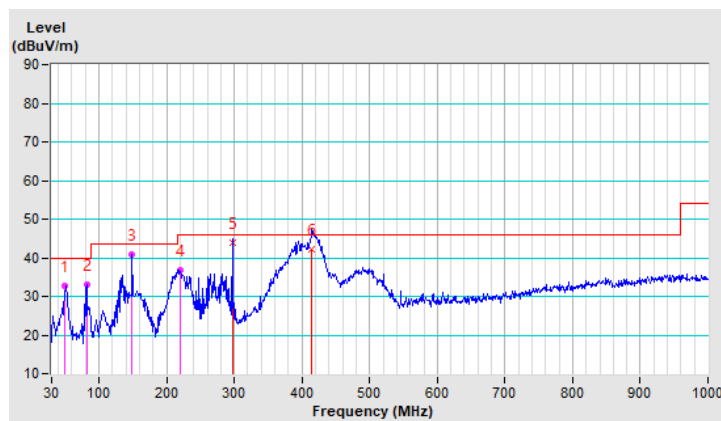


Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	49.83	32.7 QP	40.0	-7.3	1.50 V	357	40.7	-8.0
2	81.94	33.2 QP	40.0	-6.8	2.00 V	317	46.4	-13.2
3	148.96	40.8 QP	43.5	-2.7	1.00 V	360	48.4	-7.6
4	219.37	36.7 QP	46.0	-9.3	1.50 V	53	47.2	-10.5
5	296.89	44.0 QP	46.0	-2.0	1.50 V	353	50.7	-6.7
6	414.67	42.2 QP	46.0	-3.8	1.50 V	277	45.6	-3.4

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



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.	Calibrated Date	Calibrated Until
Test Receiver R&S	ESCS 30	847124/029	2021/10/13	2022/10/12
LISN R&S	ESH3-Z5	848773/004	2021/10/29	2022/10/28
LISN R & S	ESH3-Z5	835239/001	2021/3/26	2022/3/25
50 ohms Terminator	50	3	2021/10/27	2022/10/26
RF Coaxial Cable JYEBO	5D-FB	COCCAB-001	2021/9/25	2022/9/24
Fixed attenuator STI	STI02-2200-10	005	2021/8/27	2022/8/26
Software BVADT	BVADT_Cond_V7.3.7.4	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Conduction 1.
- 3 Tested Date: 2021/12/17 ~ 2021/12/29

4.2.3 Test Procedures

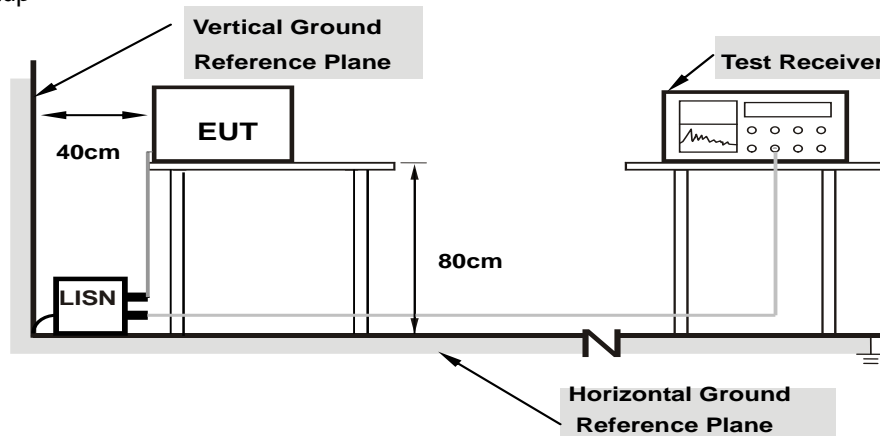
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance 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) was 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.

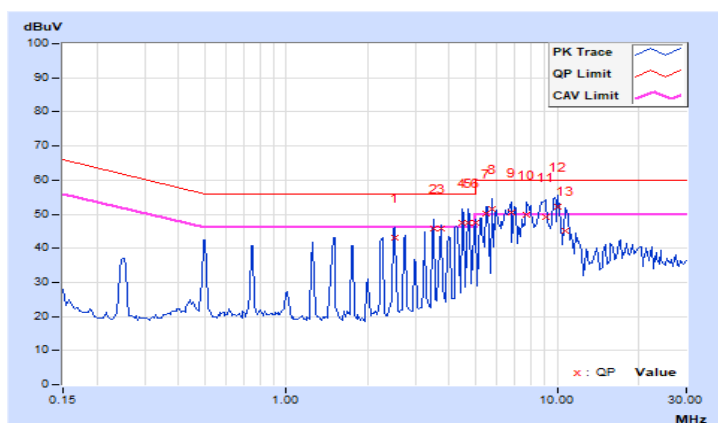
4.2.7 Test Results (Mode 1)

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
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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	2.51172	10.19	32.86	23.05	43.05	33.24	56.00	46.00	-12.95	-12.76
2	3.51953	10.24	35.57	24.31	45.81	34.55	56.00	46.00	-10.19	-11.45
3	3.73438	10.25	35.63	27.15	45.88	37.40	56.00	46.00	-10.12	-8.60
4	4.46875	10.29	37.16	27.03	47.45	37.32	56.00	46.00	-8.55	-8.68
5	4.71875	10.30	37.18	28.36	47.48	38.66	56.00	46.00	-8.52	-7.34
6	4.98047	10.32	37.08	27.43	47.40	37.75	56.00	46.00	-8.60	-8.25
7	5.47656	10.34	39.85	30.14	50.19	40.48	60.00	50.00	-9.81	-9.52
8	5.73047	10.36	41.01	30.32	51.37	40.68	60.00	50.00	-8.63	-9.32
9	6.76172	10.42	40.21	30.61	50.63	41.03	60.00	50.00	-9.37	-8.97
10	7.71094	10.48	39.44	29.11	49.92	39.59	60.00	50.00	-10.08	-10.41
11	9.05469	10.55	38.74	27.32	49.29	37.87	60.00	50.00	-10.71	-12.13
12	10.07031	10.61	41.53	29.16	52.14	39.77	60.00	50.00	-7.86	-10.23
13	10.73438	10.66	34.59	24.11	45.25	34.77	60.00	50.00	-14.75	-15.23

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

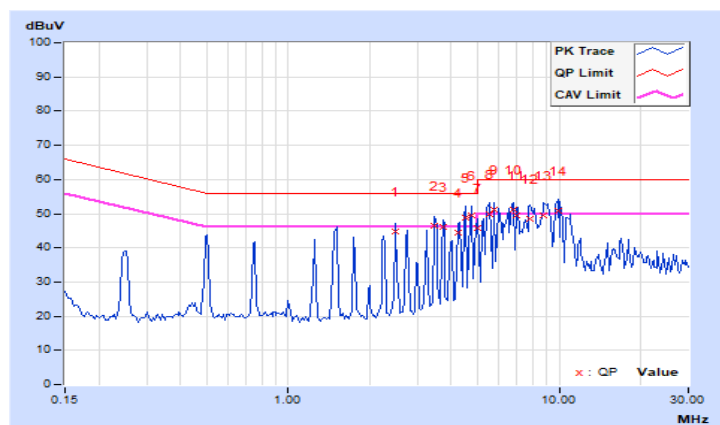


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
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Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	2.50000	10.15	34.65	27.09	44.80	37.24	56.00	46.00	-11.20	-8.76
2	3.47656	10.19	36.33	27.10	46.52	37.29	56.00	46.00	-9.48	-8.71
3	3.73047	10.20	36.01	26.44	46.21	36.64	56.00	46.00	-9.79	-9.36
4	4.23438	10.22	34.26	25.79	44.48	36.01	56.00	46.00	-11.52	-9.99
5	4.52734	10.23	38.55	27.19	48.78	37.42	56.00	46.00	-7.22	-8.58
6	4.76172	10.24	39.24	30.38	49.48	40.62	56.00	46.00	-6.52	-5.38
7	5.03125	10.26	35.67	24.43	45.93	34.69	60.00	50.00	-14.07	-15.31
8	5.50781	10.28	39.72	30.54	50.00	40.82	60.00	50.00	-10.00	-9.18
9	5.71875	10.29	40.78	31.01	51.07	41.30	60.00	50.00	-8.93	-8.70
10	6.79688	10.34	40.92	27.81	51.26	38.15	60.00	50.00	-8.74	-11.85
11	6.96875	10.35	39.03	27.86	49.38	38.21	60.00	50.00	-10.62	-11.79
12	7.76953	10.39	38.21	30.04	48.60	40.43	60.00	50.00	-11.40	-9.57
13	8.76953	10.43	39.11	30.16	49.54	40.59	60.00	50.00	-10.46	-9.41
14	9.96875	10.49	40.46	30.51	50.95	41.00	60.00	50.00	-9.05	-9.00

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



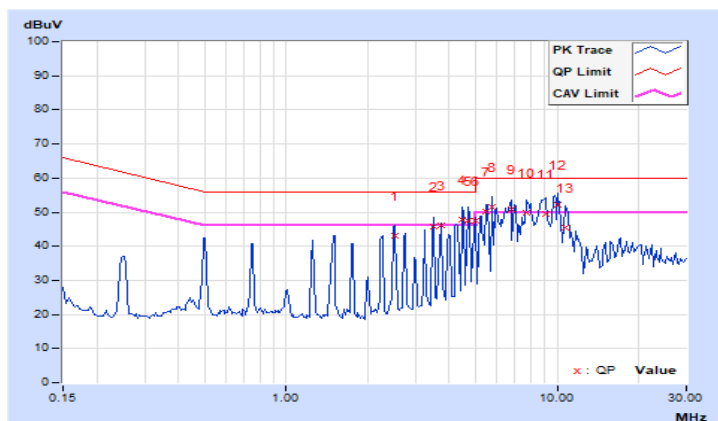
4.2.8 Test Results (Mode 2)

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
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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	2.51172	10.19	32.91	23.01	43.10	33.20	56.00	46.00	-12.90	-12.80
2	3.51953	10.24	35.46	24.60	45.70	34.84	56.00	46.00	-10.30	-11.16
3	3.73438	10.25	35.92	27.05	46.17	37.30	56.00	46.00	-9.83	-8.70
4	4.46875	10.29	37.47	27.11	47.76	37.40	56.00	46.00	-8.24	-8.60
5	4.71875	10.30	37.34	28.42	47.64	38.72	56.00	46.00	-8.36	-7.28
6	4.98047	10.32	37.01	27.61	47.33	37.93	56.00	46.00	-8.67	-8.07
7	5.47656	10.34	39.94	30.30	50.28	40.64	60.00	50.00	-9.72	-9.36
8	5.73047	10.36	41.05	30.46	51.41	40.82	60.00	50.00	-8.59	-9.18
9	6.76172	10.42	40.32	30.70	50.74	41.12	60.00	50.00	-9.26	-8.88
10	7.71094	10.48	39.52	29.25	50.00	39.73	60.00	50.00	-10.00	-10.27
11	9.05469	10.55	38.89	27.46	49.44	38.01	60.00	50.00	-10.56	-11.99
12	10.07031	10.61	41.67	29.32	52.28	39.93	60.00	50.00	-7.72	-10.07
13	10.73438	10.66	34.64	24.10	45.30	34.76	60.00	50.00	-14.70	-15.24

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

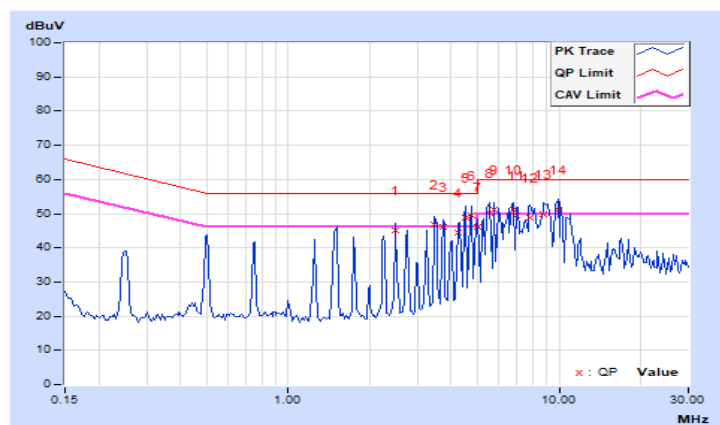


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
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Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	2.50000	10.15	34.82	27.22	44.97	37.37	56.00	46.00	-11.03	-8.63
2	3.47656	10.19	36.53	27.18	46.72	37.37	56.00	46.00	-9.28	-8.63
3	3.73047	10.20	36.05	26.57	46.25	36.77	56.00	46.00	-9.75	-9.23
4	4.23438	10.22	34.38	25.86	44.60	36.08	56.00	46.00	-11.40	-9.92
5	4.52734	10.23	38.64	27.33	48.87	37.56	56.00	46.00	-7.13	-8.44
6	4.76172	10.24	39.31	30.54	49.55	40.78	56.00	46.00	-6.45	-5.22
7	5.03125	10.26	35.79	24.53	46.05	34.79	60.00	50.00	-13.95	-15.21
8	5.50781	10.28	39.83	30.65	50.11	40.93	60.00	50.00	-9.89	-9.07
9	5.71875	10.29	40.87	31.08	51.16	41.37	60.00	50.00	-8.84	-8.63
10	6.79688	10.34	40.97	27.94	51.31	38.28	60.00	50.00	-8.69	-11.72
11	6.96875	10.35	39.07	27.95	49.42	38.30	60.00	50.00	-10.58	-11.70
12	7.76953	10.39	38.37	30.11	48.76	40.50	60.00	50.00	-11.24	-9.50
13	8.76953	10.43	39.34	30.23	49.77	40.66	60.00	50.00	-10.23	-9.34
14	9.96875	10.49	40.67	30.54	51.16	41.03	60.00	50.00	-8.84	-8.97

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

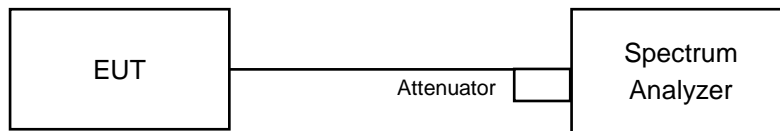


4.3 Conducted Out of Band Emission Measurement

4.3.1 Limits of Conducted Out of Band Emission Measurement

Below 20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedures

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW \geq 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOB

1. Set RBW = 100 kHz.
2. Set VBW \geq 300 kHz.
3. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum amplitude level.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

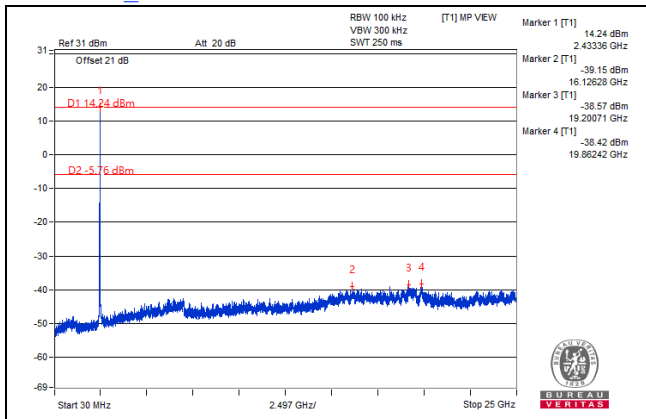
The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.3.7 Test Results

The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

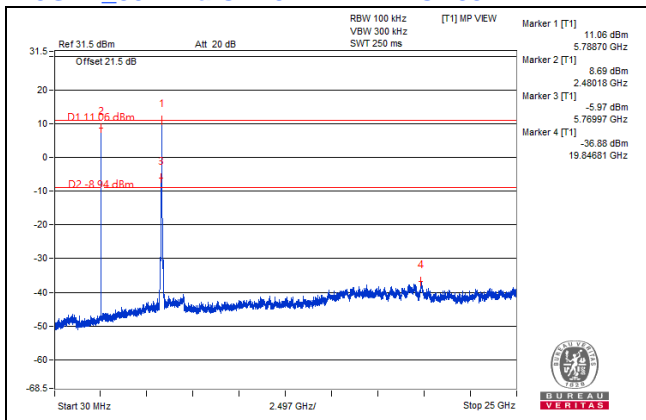
Mode 1:

2.4GHz_802.11b CH6 + BT-LE CH39



Mode 2:

5GHz_802.11a CH157 + BT-LE CH39



5 Pictures of Test Arrangements

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

Appendix – Information of 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 FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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

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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.

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