TEST REPORT (SPOT CHECK)

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 15, Subpart E (Section 15.407)**
Report No.:	RFBFBE-WTW-P21118016A-1
FCC ID:	YAW539848-Z
Original FCC ID:	YAW539848
Model No.:	PVS6
Received Date:	2022/6/16
Test Date:	2022/6/28 ~ 2022/7/1
Issued Date:	2022/7/20
Applicant:	SunPower Corporation
Address:	1414 Harbour Way South Suite 1901, Richmond, CA 94804, USA
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

Approved by: _____ , **Date:** 2022/7/20

May Chen / Manager

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Prepared by : Vivian Huang / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBFBE-WTW-P21118016A-1	Original release.	2022/7/20

1 Certificate

Product:	SunPower Monitoring System with PVS6
Brand:	SUNPOWER
Test Model:	PVS6
Sample Status:	Engineering sample
Applicant:	SunPower Corporation
Test Date:	2022/6/28 ~ 2022/7/1
Standard:	47 CFR FCC Part 15, Subpart E (Section 15.407)
Measurement procedure:	ANSI C63.10-2013 KDB 789033 D02 General UNII Test Procedure New Rules v02r01 KDB 662911 D01 Multiple Transmitter Output v02r01

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 RF characteristics under the conditions specified in this report.

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
Clause	Test Item	Result	Remark
15.407(a)(1/2/3)	RF Output Power	Pass	Meet the requirement of limit.
15.407(a)(1/2/3)	Power Spectral Density	NA	Refer to Note 1 below
15.407(e)	6 dB Bandwidth	NA	Refer to Note 1 below
---	Occupied Bandwidth	NA	Refer to Note 1 below
15.407(g)	Frequency Stability	NA	Refer to Note 1 below
15.407(b)(9)	AC Power Conducted Emissions	Pass	Minimum passing margin is -5.29 dB at 4.73047 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -1.1 dB at 135.31 MHz
15.407(b) (1/2/3/4(i)/10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -1.0 dB at 5930.77 MHz
15.203	Antenna Requirement	Pass	Antenna connector is i-pex not a standard connector.

Notes:

1. RF Output Power & AC Power Conducted Emissions & Unwanted Emissions Measurement were performed for this addendum. The others testing data refer to original test report.
2. 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	Specification	Expanded Uncertainty (k=2) (±)
AC Power Conducted Emissions	150 kHz ~ 30 MHz	1.9 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3.1 dB
	30 MHz ~ 1 GHz	5.4 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	5.0 dB
	18 GHz ~ 40 GHz	5.3 dB

The other instruments specified are routine verified to remain within the calibrated levels, no measurement uncertainty is required to be calculated.

2.2 Supplementary Information

There is not any deviation from the test standards for the test method, and 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	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode 1024QAM for OFDMA in 11ax HE mode
Modulation Technology	OFDM, OFDMA
Transfer Rate	802.11a: up to 54 Mbps 802.11n: up to 300 Mbps 802.11ac: up to 866.7 Mbps 802.11ax: up to 1201.0 Mbps
Operating Frequency	5.18 GHz ~ 5.24 GHz 5.745 GHz ~ 5.825 GHz
Number of Channel	802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 9 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 4 802.11ac (VHT80), 802.11ax (HE80): 2
Output Power	5.18 GHz ~ 5.24 GHz : 90.375 mW (19.56 dBm) 5.745 GHz ~ 5.825 GHz: 166.276 mW (22.21 dBm)
EUT Category	Outdoor Access Point Client device
Accessory Device	-Hole Plugs x2 -Ethernet Cable x1: non-shielded, 1.5m -Bracket x1

Note:

1. Exhibit prepared and modification information is provided by the customer, the laboratory assists in evaluating the test conditions and Spot Check Verification report, for more details please refer to the declaration letter exhibit need to be performed. And all data was verified to meet the requirements. (Original FCC ID: YAW539848, Report No.: RFBFBE-WTW-P21118016-1)
2. The EUT contains certified WWAN module which FCC ID: XMR2020BG95M1 (Brand: Quectel; Model: BG95-M1)
3. There are WLAN, Bluetooth and WWAN technology used for the EUT.
4. The EUT has two radios as following table:

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

5. Simultaneously transmission condition.

Condition	Technology		
1	WLAN(2.4GHz)	BT	WWAN
2	WLAN(5GHz)	BT	WWAN
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.			

6. 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

7. 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 Antenna Description of EUT

1. The antenna information is listed as below.

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		

*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.

2. The EUT incorporates a MIMO function:

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

Note:
1. The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz), 802.11ac mode for 20MHz (40MHz, 80MHz) and 802.11ax mode for 20MHz (40MHz, 80MHz), therefore the manufacturer will control the power for 802.11n/ac mode is the same as the 802.11ax or more lower than it and investigated worst case to representative mode in test report.

3.3 Channel List

FOR 5180 ~ 5240 MHz

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20) and 802.11ax (HE20):

Channel	Frequency	Channel	Frequency
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40) and 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channels are provided for 802.11ac (VHT80) and 802.11ax (HE80):

Channel	Frequency
42	5210 MHz

FOR 5745 ~ 5825 MHz:

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20) and 802.11ax (HE20):

Channel	Frequency	Channel	Frequency
149	5745 MHz	161	5805 MHz
153	5765 MHz	165	5825 MHz
157	5785 MHz		

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40) and 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

1 channel is provided for 802.11ac (VHT80) and 802.11ax (HE80):

Channel	Frequency
155	5775 MHz

3.4 Power Setting

For U-NII-1 Band (Master mode) & U-NII-3 Band							
802.11a		802.11ac (VHT20)		802.11ac (VHT40)		802.11ac (VHT80)	
Frequency (MHz)	Power Setting	Frequency (MHz)	Power Setting	Frequency (MHz)	Power Setting	Frequency (MHz)	Power Setting
5180	57	5180	58	5190	45	5210	45
5200	62	5200	63	5230	61	5775	58
5240	60	5240	60	5755	67		
5745	72	5745	72	5795	73		
5785	80	5785	78				
5825	74	5825	74				

802.11ax (HE20)		802.11ax (HE40)		802.11ax (HE80)	
Frequency (MHz)	Power Setting	Frequency (MHz)	Power Setting	Frequency (MHz)	Power Setting
5180	58	5190	45	5210	45
5200	63	5230	61	5775	58
5240	60	5755	67		
5745	72	5795	73		
5785	78				
5825	74				

For U-NII-1 Band (Client mode)							
802.11a		802.11ac (VHT20)		802.11ac (VHT40)		802.11ac (VHT80)	
Frequency (MHz)	Power Setting	Frequency (MHz)	Power Setting	Frequency (MHz)	Power Setting	Frequency (MHz)	Power Setting
5180	57	5180	58	5190	45	5210	45
5200	63	5200	65	5230	61		
5240	60	5240	60				

802.11ax (HE20)		802.11ax (HE40)		802.11ax (HE80)	
Frequency (MHz)	Power Setting	Frequency (MHz)	Power Setting	Frequency (MHz)	Power Setting
5180	58	5190	45	5210	45
5200	65	5230	61		
5240	60				

3.5 Test Mode Applicability and Tested Channel Detail

Worst Case:	1. 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).

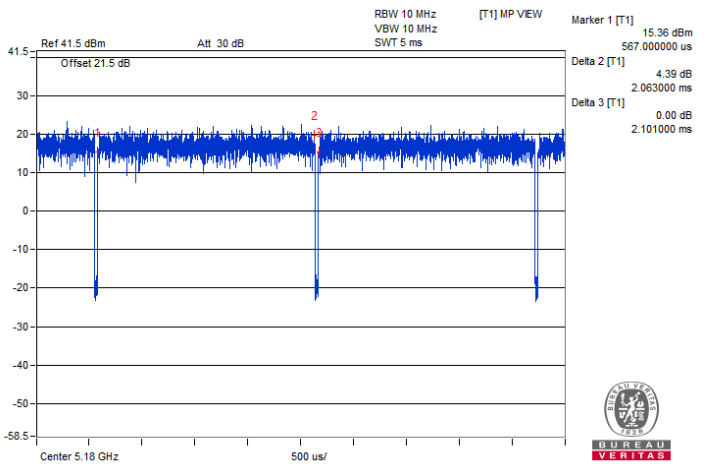
Following channel(s) was (were) selected for the final test as listed below:

Test Item	EUT Configure Mode	Mode	Tested Channel	Modulation	Data Rate Parameter
AC Power Conducted Emissions	-	802.11a	157	BPSK	6Mb/s
Unwanted Emissions below 1 GHz	-	802.11a	157	BPSK	6Mb/s
Unwanted Emissions above 1 GHz	-	802.11a	157	BPSK	6Mb/s
RF Output Power	A	802.11a	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
		802.11ac (VHT20)	36, 40, 48, 149, 157, 165	BPSK	MCS0
		802.11ac (VHT40)	38, 46, 151, 159	BPSK	MCS0
		802.11ac (VHT80)	42, 155	BPSK	MCS0
		802.11ax (HE20)	36, 40, 48, 149, 157, 165	BPSK	MCS0
		802.11ax (HE40)	38, 46, 151, 159	BPSK	MCS0
		802.11ax (HE80)	42, 155	BPSK	MCS0
	B	802.11a	36, 40, 48	BPSK	6Mb/s
		802.11ac (VHT20)	36, 40, 48	BPSK	MCS0
		802.11ac (VHT40)	38, 46	BPSK	MCS0
		802.11ac (VHT80)	42	BPSK	MCS0
		802.11ax (HE20)	36, 40, 48	BPSK	MCS0
		802.11ax (HE40)	38, 46	BPSK	MCS0
		802.11ax (HE80)	42	BPSK	MCS0
EUT Configure Mode	A	Master mode			
	B	Client mode (Only U-NII 1)			
Note:U-NII-1 Band (Master-Outdoor mode)					

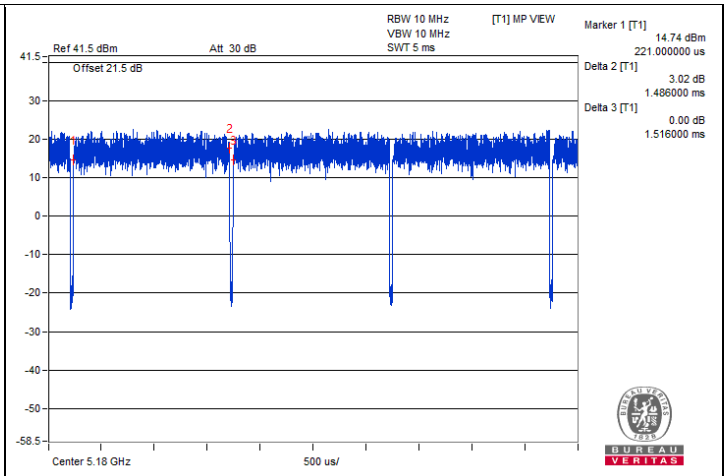
3.6 Duty Cycle of Test Signal

Duty cycle of test signal is >= 98 %, duty factor is not required.
Duty cycle of test signal is < 98 %, duty factor shall be considered.

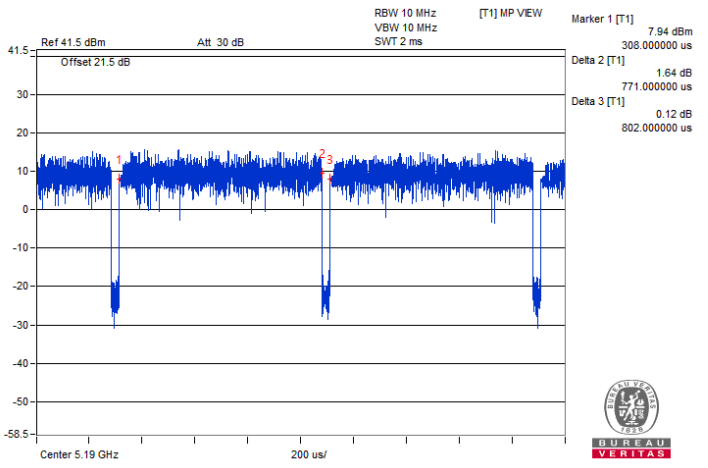
802.11a: Duty cycle = 2.063 ms / 2.101 ms x 100% = 98.2%
802.11ax (HE20): Duty cycle = 1.486 ms / 1.516 ms x 100% = 98.0%
802.11ax (HE40): Duty cycle = 0.771 ms / 0.802 ms x 100% = 96.1%, duty factor = 10 * log (1/Duty cycle) = 0.17 dB
802.11ax (HE80): Duty cycle = 0.401 ms / 0.43 ms x 100% = 93.3%, duty factor = 10 * log (1/Duty cycle) = 0.30 dB



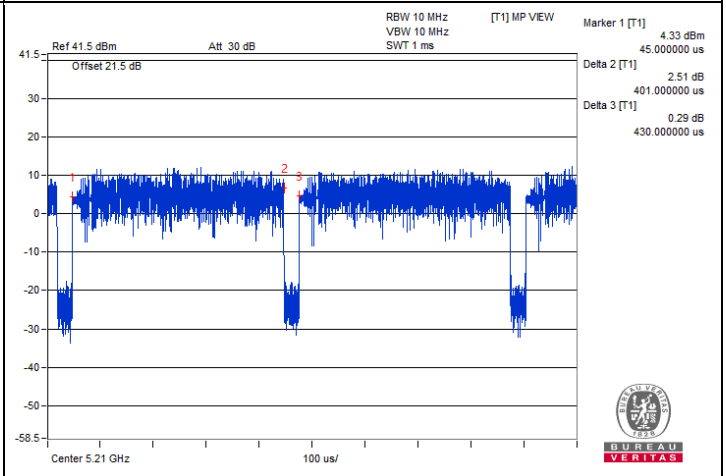
802.11a



802.11ax (HE20)



802.11ax (HE40)

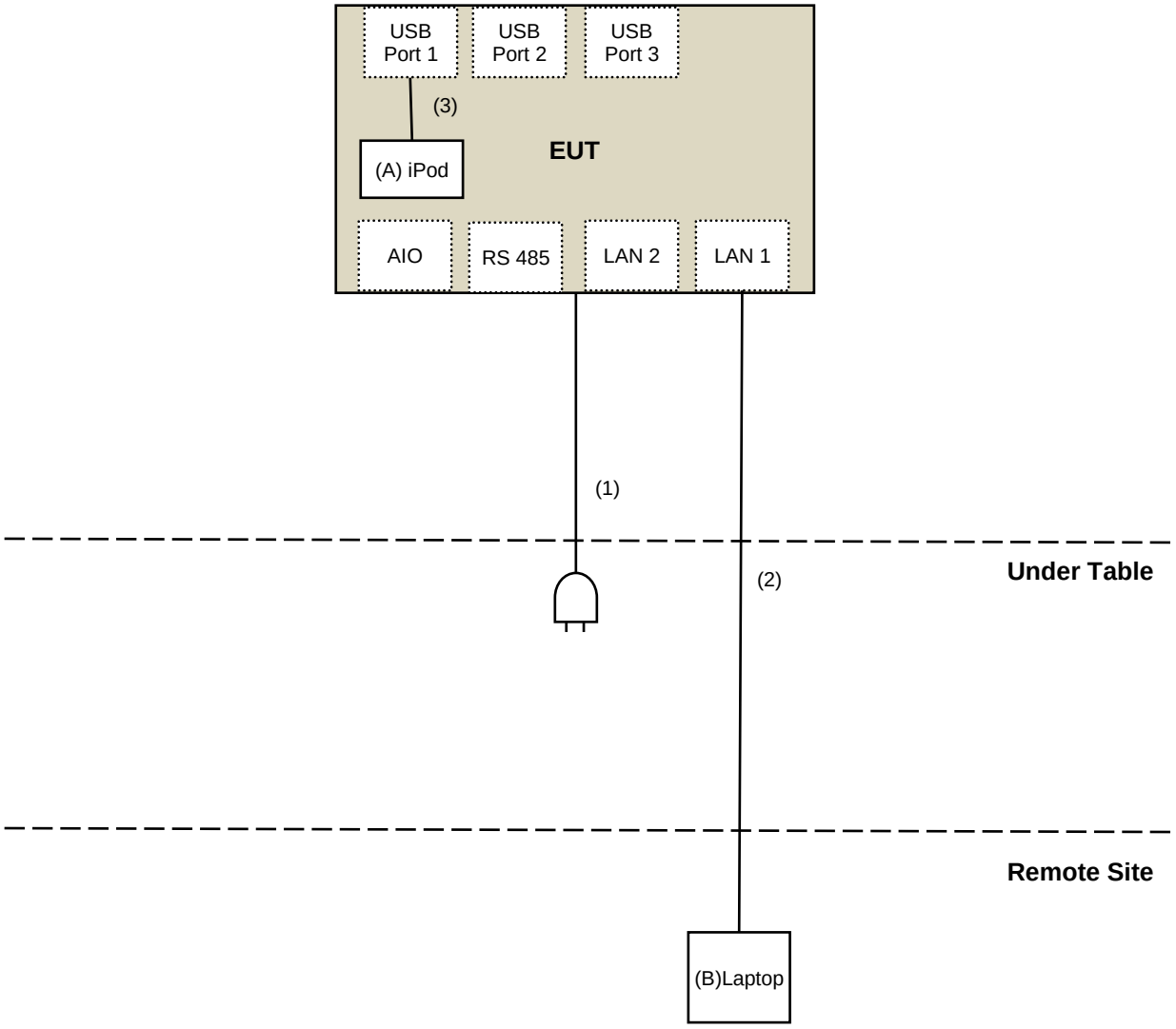


802.11ax (HE80)

3.7 Test Program Used and Operation Descriptions

Controlling software (Run Putty.exe paste PVS6_WiFi+BT+BLE SOP.docx command) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.8 Connection Diagram of EUT and Peripheral Devices



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

3.9 Configuration of Peripheral Devices and Cable Connections

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

ID	Cable 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

4 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.1 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2022/4/5	2023/4/4
Power Meter Anritsu	ML2495A	1529002	2022/6/22	2023/6/21
Pulse Power Sensor Anritsu	MA2411B	1726434	2022/6/22	2023/6/21
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/7/1

4.2 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohms Terminator	50	3	2021/10/27	2022/10/26
Fixed attenuator STI	STI02-2200-10	005	2021/8/27	2022/8/26
LISN R&S	ESH3-Z5	848773/004	2021/10/29	2022/10/28
RF Coaxial Cable JYEBO	5D-FB	COCCAB-001	2021/9/25	2022/9/24
Software BVADT	BVADT_Cond_V7.3.7.4	N/A	N/A	N/A
TEST RECEIVER R&S	ESCS 30	847124/029	2021/10/13	2022/10/12

Notes:

1. The test was performed in Conduction 1
2. Tested Date: 2022/6/28

4.3 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	N/A	N/A
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	2021/9/23	2022/9/22
LOOP ANTENNA Electro-Metrics	EM-6879	264	2022/3/18	2023/3/17
MXE EMI Receiver(20 Hz to 44 GHz) Keysight	N9038A	MY54450088	2021/7/6	2022/7/5
Pre_Amplifier Agilent	8447D	2944A10636	2022/3/19	2023/3/18
Pre_Amplifier Mini-Circuits	ZFL-1000VH2	QA0838008	2021/10/19	2022/10/18
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-001	2022/1/6	2023/1/5
		LOOPCAB-002	2022/1/6	2023/1/5
RF Coaxial Cable COMMATE/PEWC	8D	966-4-1	2022/3/8	2023/3/7
		966-3-2	2022/2/26	2023/2/25
		966-3-3	2022/2/26	2023/2/25
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Trilog Broadband Antenna Schwarzbeck	VULB 9168	9168-361	2021/10/26	2022/10/25

Notes:

1. The test was performed in 966 Chamber No. 3.
2. Tested Date: 2022/6/28

4.4 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	N/A	N/A
Fix tool for Boresight antenna tower BV	FBA-01	FBA_SIP01	N/A	N/A
Horn Antenna Schwarzbeck	BBHA9120-D	9120D-406	2021/11/14	2022/11/13
	BBHA 9170	9170-739	2021/11/14	2022/11/13
MXE EMI Receiver(20 Hz to 44 GHz) Keysight	N9038A	MY54450088	2021/7/6	2022/7/5
Pre_Amplifier EMCI	EMC12630SE	980384	2022/1/10	2023/1/9
	EMC184045SE	980387	2022/1/10	2023/1/9
RF Cable EMCI	EMC104-SM-SM-6000	210201	2022/5/10	2023/5/9
RF Cable-Frequency range: 1-40GHz EMCI	EMC102-KM-KM-1200	160924	2022/1/10	2023/1/9
RF Coaxial Cable EMCI	EMC104-SM-SM-1500	180504	2022/4/25	2023/4/24
	EMC104-SM-SM-2000	180601	2022/6/6	2023/6/5
	EMC-KM-KM-4000	200214	2022/3/8	2023/3/7
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer Keysight	N9030A	MY54490679	2021/7/9	2022/7/8

Notes:

1. The test was performed in 966 Chamber No. 3.
2. Tested Date: 2022/6/30

5 Limits of Test Items

5.1 RF Output Power

Operation Band	EUT Category	Limit
U-NII-1	Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
	Fixed point-to-point Access Point	1 Watt (30 dBm)
	Indoor Access Point	1 Watt (30 dBm)
	Mobile and Portable client device	250 mW (24 dBm)

Operation Band	Limit
U-NII-3	1 Watt (30 dBm)

Per KDB 662911 D01 Multiple Transmitter Output Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

5.2 AC Power Conducted Emissions

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

Notes:

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 0.50 MHz.

5.3 Unwanted Emissions below 1 GHz

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

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).

5.4 Unwanted Emissions above 1 GHz

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)
Above 960	500	3

Notes:

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.

Limits of unwanted emission out of the restricted bands

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

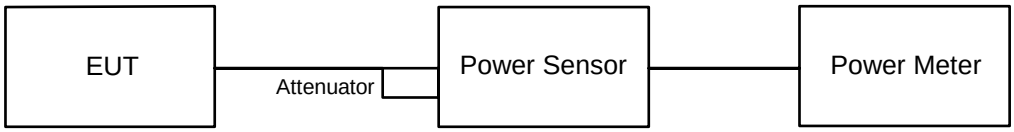
Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup

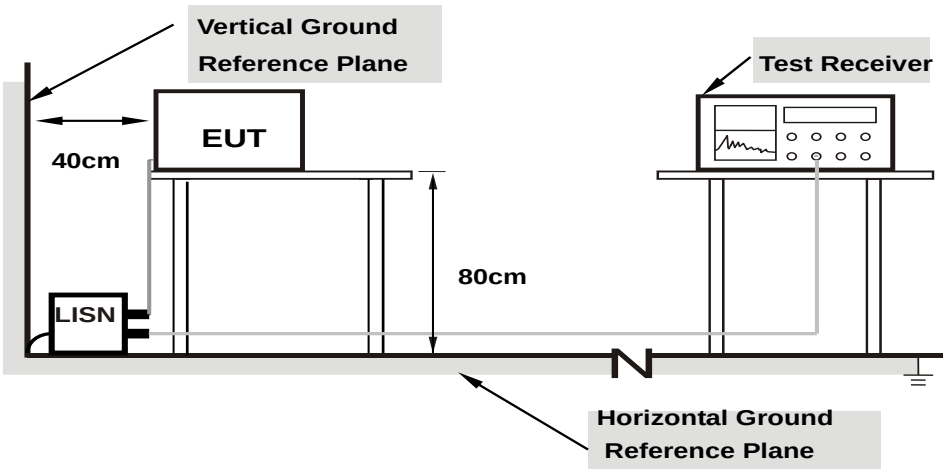


6.1.2 Test Procedure

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst and set the detector to average. Duty factor is not added to measured value.

6.2 AC Power Conducted Emissions

6.2.1 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).

6.2.2 Test Procedure

a. The EUT was placed on a 0.8 meter to the top of rotating table and 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.

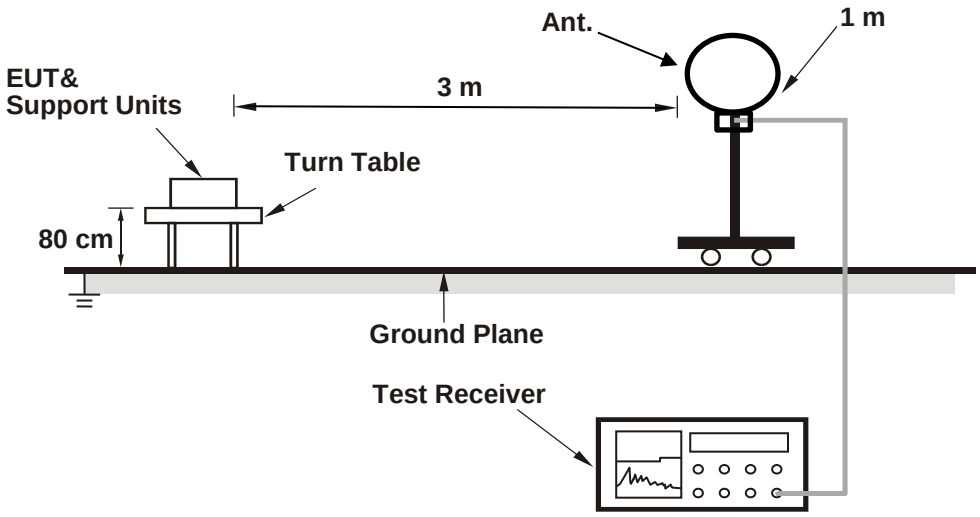
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

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

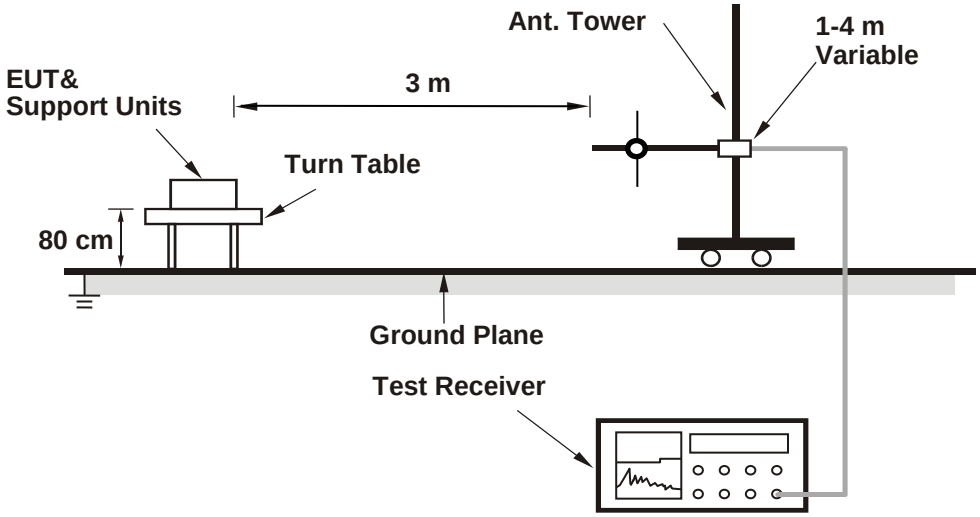
6.3 Unwanted Emissions below 1 GHz

6.3.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



6.3.2 Test Procedure

For Radiated emission below 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters 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. 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, except for the frequency band (9 kHz to 90 kHz and 110 kHz to 490 kHz) set to average detect function and peak detect function.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 200 Hz at frequency below 150 kHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz or 10 kHz at frequency (150 kHz to 30 MHz).
3. All modes of operation were investigated and the worst-case emissions are reported.

For Radiated emission above 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters 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.

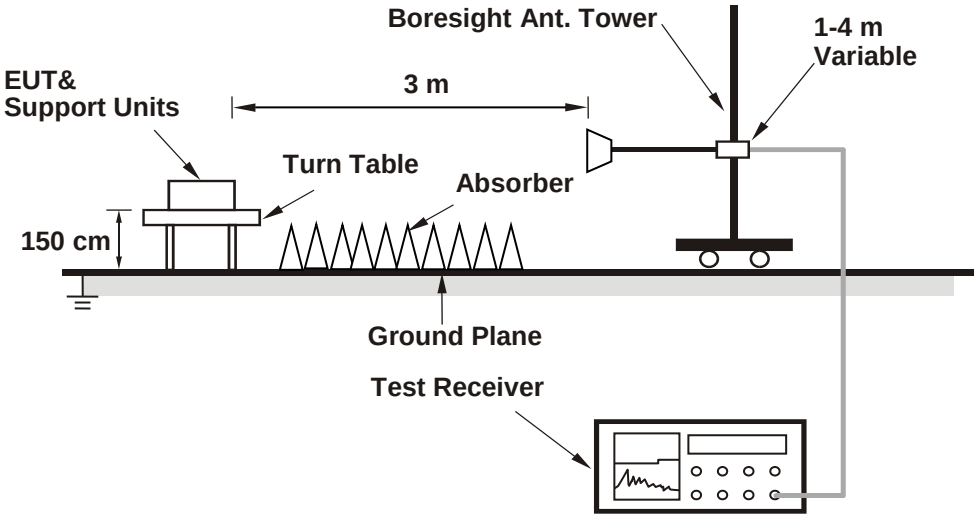
Notes:

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

6.4 Unwanted Emissions above 1 GHz

6.4.1 Test Setup

For Radiated emission above 1 GHz



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

6.4.2 Test Procedure

a. The EUT was placed on the top of a rotating table 1.5 meters 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 peak and average detects 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.

Notes:

1. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) and Average detection (AV) at frequency above 1 GHz.
2. For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10 Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1 GHz.
3. All modes of operation were investigated and the worst-case emissions are reported.

7 Test Results of Test Item

7.1 RF Output Power

Mode A

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Eric Peng

802.11a

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1								
36	5180	14.47	14.39	55.469	17.44	30	1.49	78.163	18.93	21	Pass
40	5200	15.88	16.23	80.702	19.07	30	1.49	113.763	20.56	21	Pass
48	5240	15.07	15.26	65.71	18.18	30	1.49	92.683	19.67	21	Pass

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
149	5745	19.14	16.77	129.569	21.13	30	Pass
157	5785	20.08	18.09	166.276	22.21	30	Pass
165	5825	19.33	16.88	134.457	21.29	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.1 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.8 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-1, the gain of above 30 degrees from the horizon is 1.49 dBi, EIRP (dBm) = Average Power (dBm) + 1.49 dBi

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1								
36	5180	14.05	14.22	51.834	17.15	30	1.49	73.114	18.64	21	Pass
40	5200	15.83	15.97	77.819	18.91	30	1.49	109.648	20.4	21	Pass
48	5240	14.70	14.74	59.297	17.73	30	1.49	83.56	19.22	21	Pass

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
149	5745	18.68	16.67	120.242	20.80	30	Pass
157	5785	20.31	17.02	157.749	21.98	30	Pass
165	5825	18.98	16.59	124.672	20.96	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.1 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.8 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-1, the gain of above 30 degrees from the horizon is 1.49 dBi, EIRP (dBm) = Average Power (dBm) + 1.49 dBi

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1								
38	5190	10.94	10.75	24.302	13.86	30	1.49	34.277	15.35	21	Pass
46	5230	15.17	15.35	67.162	18.27	30	1.49	94.624	19.76	21	Pass

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
151	5755	17.13	15.87	90.278	19.56	30	Pass
159	5795	18.85	17.26	129.947	21.14	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.1 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.8 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-1, the gain of above 30 degrees from the horizon is 1.49 dBi, EIRP (dBm) = Average Power (dBm) + 1.49 dBi

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1								
42	5210	11.29	11.32	27.01	14.32	30	1.49	38.107	15.81	21	Pass

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
155	5775	12.09	10.98	28.712	14.58	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.1 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.8 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-1, the gain of above 30 degrees from the horizon is 1.49 dBi, EIRP (dBm) = Average Power (dBm) + 1.49 dBi

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1								
36	5180	14.35	14.41	54.833	17.39	30	1.49	77.268	18.88	21	Pass
40	5200	15.99	16.11	80.551	19.06	30	1.49	113.501	20.55	21	Pass
48	5240	14.91	14.95	62.235	17.94	30	1.49	87.7	19.43	21	Pass

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
149	5745	18.92	16.99	127.986	21.07	30	Pass
157	5785	20.51	17.21	165.062	22.18	30	Pass
165	5825	19.25	16.84	132.445	21.22	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.1 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.8 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-1, the gain of above 30 degrees from the horizon is 1.49 dBi, EIRP (dBm) = Average Power (dBm) + 1.49 dBi

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1								
38	5190	11.16	11.02	25.709	14.10	30	1.49	36.224	15.59	21	Pass
46	5230	15.38	15.59	70.739	18.50	30	1.49	99.77	19.99	21	Pass

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
151	5755	17.31	16.09	94.471	19.75	30	Pass
159	5795	19.09	17.56	138.113	21.40	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.1 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.8 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-1, the gain of above 30 degrees from the horizon is 1.49 dBi, EIRP (dBm) = Average Power (dBm) + 1.49 dBi

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1								
42	5210	11.45	11.52	28.154	14.50	30	1.49	39.719	15.99	21	Pass

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
155	5775	12.27	11.19	30.018	14.77	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.1 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.8 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-1, the gain of above 30 degrees from the horizon is 1.49 dBi, EIRP (dBm) = Average Power (dBm) + 1.49 dBi

Mode B

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Eric Peng

802.11a

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	14.47	14.39	55.469	17.44	24	Pass
40	5200	16.15	16.38	84.661	19.28	24	Pass
48	5240	15.07	15.26	65.71	18.18	24	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.1 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	14.05	14.22	51.834	17.15	24	Pass
40	5200	16.27	16.39	85.915	19.34	24	Pass
48	5240	14.70	14.74	59.297	17.73	24	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.1 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
38	5190	10.94	10.75	24.302	13.86	24	Pass
46	5230	15.17	15.35	67.162	18.27	24	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.1 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
42	5210	11.29	11.32	27.01	14.32	24	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.1 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	14.35	14.41	54.833	17.39	24	Pass
40	5200	16.51	16.59	90.375	19.56	24	Pass
48	5240	14.91	14.95	62.235	17.94	24	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.1 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
38	5190	11.16	11.02	25.709	14.10	24	Pass
46	5230	15.38	15.59	70.739	18.50	24	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.1 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
42	5210	11.45	11.52	28.154	14.50	24	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.1 dBi < 6 dBi, so the output power limit shall not be reduced.

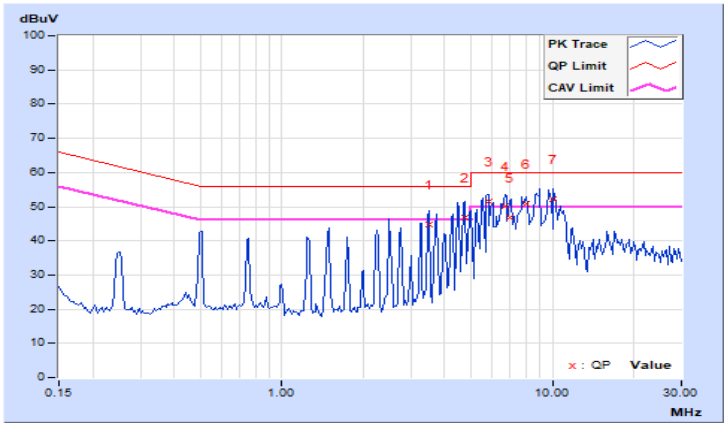
7.2 AC Power Conducted Emissions

RF Mode	TX 802.11a	**Channel**	CH 157：5785 MHz
Frequency Range	150 kHz ~ 30 MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Ryan Du		

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	3.49609	10.23	34.64	26.06	44.87	36.29	56.00	46.00	-11.13	-9.71
2	4.77344	10.30	36.38	25.26	46.68	35.56	56.00	46.00	-9.32	-10.44
3	5.78906	10.36	41.12	28.78	51.48	39.14	60.00	50.00	-8.52	-10.86
4	6.70703	10.42	39.86	29.30	50.28	39.72	60.00	50.00	-9.72	-10.28
5	6.94141	10.43	36.52	24.54	46.95	34.97	60.00	50.00	-13.05	-15.03
6	7.96875	10.49	40.38	29.92	50.87	40.41	60.00	50.00	-9.13	-9.59
7	10.07031	10.61	41.53	29.32	52.14	39.93	60.00	50.00	-7.86	-10.07

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

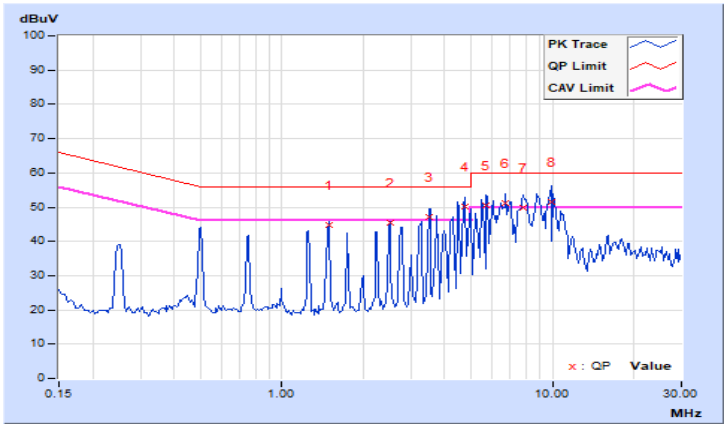


RF Mode	TX 802.11a	Channel	CH 157：5785 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Ryan Du		

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	1.49219	10.10	34.67	28.28	44.77	38.38	56.00	46.00	-11.23	-7.62
2	2.50391	10.15	35.28	27.54	45.43	37.69	56.00	46.00	-10.57	-8.31
3	3.50391	10.19	37.01	28.63	47.20	38.82	56.00	46.00	-8.80	-7.18
4	**4.73047**	**10.24**	**39.91**	**30.47**	**50.15**	**40.71**	**56.00**	**46.00**	**-5.85**	**-5.29**
5	5.71484	10.29	40.24	30.36	50.53	40.65	60.00	50.00	-9.47	-9.35
6	6.72656	10.34	41.00	31.35	51.34	41.69	60.00	50.00	-8.66	-8.31
7	7.80078	10.39	39.47	27.21	49.86	37.60	60.00	50.00	-10.14	-12.40
8	9.96875	10.49	41.19	31.00	51.68	41.49	60.00	50.00	-8.32	-8.51

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



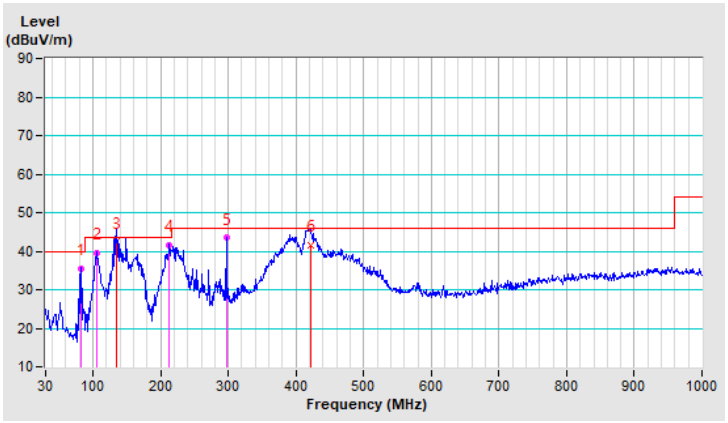
7.3 Unwanted Emissions below 1 GHz

RF Mode	TX 802.11a	**Channel**	CH 157：5785 MHz
Frequency Range	9 kHz ~ 1 GHz	**Detector Function & Bandwidth**	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 70% RH
Tested By	Ryan Du		

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	82.06	35.4 QP	40.0	-4.6	2.00 H	46	48.9	-13.5
2	105.13	39.5 QP	43.5	-4.0	1.50 H	127	51.1	-11.6
3	**135.31**	**42.4 QP**	**43.5**	**-1.1**	**1.50 H**	**96**	**51.2**	**-8.8**
4	213.23	41.6 QP	43.5	-1.9	2.00 H	287	52.8	-11.2
5	296.99	43.4 QP	46.0	-2.6	1.50 H	159	51.2	-7.8
6	421.53	41.5 QP	46.0	-4.5	1.50 H	155	46.1	-4.6

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 30 MHz ~ 1 GHz.
5. The emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

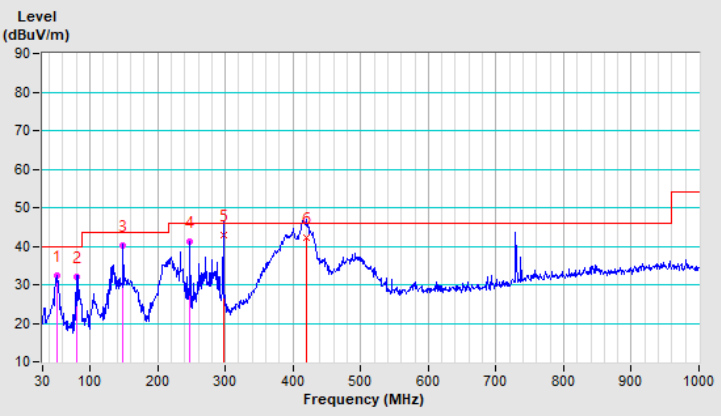


RF Mode	TX 802.11a	**Channel**	CH 157：5785 MHz
Frequency Range	9 kHz ~ 1 GHz	**Detector Function & Bandwidth**	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 70% RH
Tested By	Ryan Du		

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	50.51	32.3 QP	40.0	-7.7	1.50 V	135	40.6	-8.3
2	80.74	32.1 QP	40.0	-7.9	1.50 V	285	45.4	-13.3
3	148.53	40.3 QP	43.5	-3.2	2.00 V	59	48.4	-8.1
4	247.56	41.2 QP	46.0	-4.8	2.00 V	87	50.8	-9.6
5	297.06	43.0 QP	46.0	-3.0	2.00 V	53	50.8	-7.8
6	419.56	42.2 QP	46.0	-3.8	2.00 V	244	46.9	-4.7

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 30 MHz ~ 1 GHz.
5. The emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



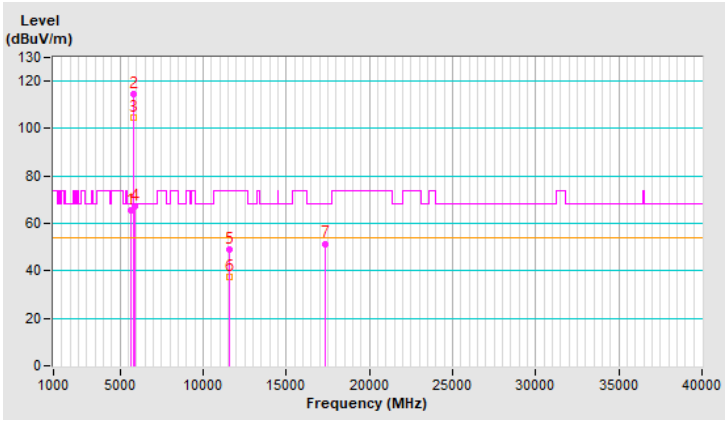
7.4 Unwanted Emissions above 1 GHz

RF Mode	TX 802.11a	**Channel**	CH 157：5785 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	20°C, 70% RH
Tested By	Ryan Du		

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	#5647.74	65.3 PK	68.2	-2.9	2.04 H	261	60.4	4.9
2	*5785.00	114.6 PK			2.04 H	261	109.4	5.2
3	*5785.00	104.4 AV			2.04 H	261	99.2	5.2
4	**#5930.77**	**67.2 PK**	**68.2**	**-1.0**	**2.04 H**	**261**	**61.7**	**5.5**
5	11570.00	48.8 PK	74.0	-25.2	1.95 H	206	33.7	15.1
6	11570.00	37.5 AV	54.0	-16.5	1.95 H	206	22.4	15.1
7	#17355.00	51.5 PK	68.2	-16.7	1.69 H	97	32.6	18.9

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

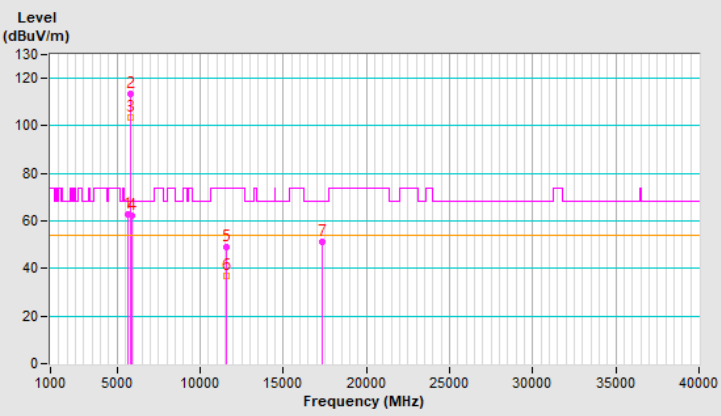


RF Mode	TX 802.11a	**Channel**	CH 157：5785 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	20°C, 70% RH
Tested By	Ryan Du		

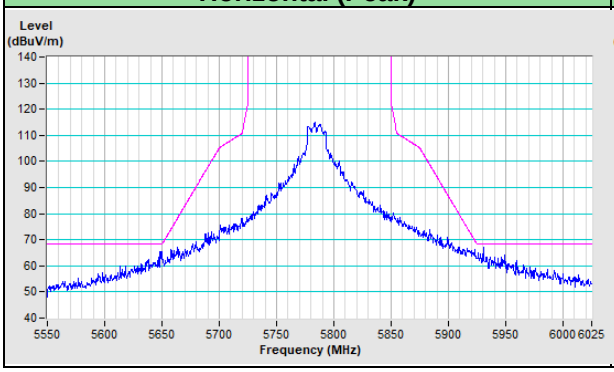
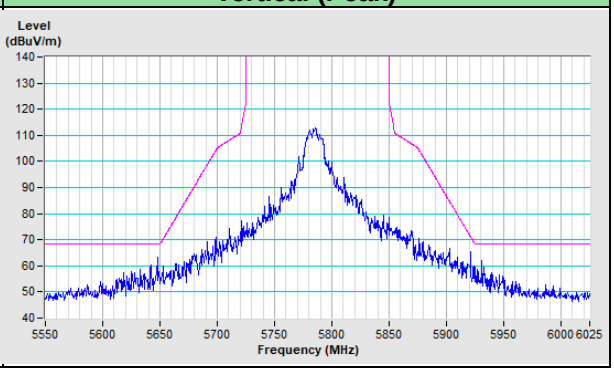
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	#5647.77	63.0 PK	68.2	-5.2	1.00 V	209	58.1	4.9
2	*5785.00	113.7 PK			1.00 V	209	108.5	5.2
3	*5785.00	103.5 AV			1.00 V	209	98.3	5.2
4	#5931.16	62.1 PK	68.2	-6.1	1.00 V	209	56.6	5.5
5	11570.00	49.2 PK	74.0	-24.8	1.67 V	240	34.1	15.1
6	11570.00	36.9 AV	54.0	-17.1	1.67 V	240	21.8	15.1
7	#17355.00	51.4 PK	68.2	-16.8	2.16 V	149	32.5	18.9

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.



Plot of Band Edge

802.11a Channel 157	
Horizontal (Peak)	**Vertical (Peak)**
	

8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

9 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:

Lin Kou 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@bureauveritas.com
Web Site: http://ee.bureauveritas.com.tw

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

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