

Supplemental “Transmit Simultaneously” Test Report

Report No.: RFBHQC-WTW-P21090134-5

FCC ID: AK8J20H103

Test Model: J20H103

Received Date: 2021/9/3

Test Date: 2021/10/1 ~ 2021/11/1

Issued Date: 2021/12/1

Applicant: Sony Corporation

Address: 1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan

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,
Taiwa.

Test Location: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
Taiwan.

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



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Release Control Record

Issue No.	Description	Date Issued
RFBHQC-WTW-P21090134-5	Original release.	2021/12/1

1 Certificate of Conformity

Product: 2TX 11ax (WiFi6E) + BT/BLE Combo Card

Brand: FOXCONN

Test Model: J20H103

Sample Status: Engineering sample

Applicant: Sony Corporation

Test Date: 2021/10/1 ~ 2021/11/1

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
47 CFR FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10: 2013

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

Prepared by : Cherry Chuo, **Date:** 2021/12/1
Cherry Chuo / Specialist

Approved by : Clark Lin, **Date:** 2021/12/1
Clark Lin / Technical Manager

2 Summary of Test Results

FCC Part 15, Subpart C, E (SECTION 15.247, 15.407)			
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 -17.81 dB at 0.57931 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 -3.7 dB at 797.08 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
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	2TX 11ax (WiFi6E) + BT/BLE Combo Card
Brand	FOXCONN
Test Model	J20H103
Status of EUT	Engineering sample
Power Supply Rating	3.3 Vdc from host equipment
Modulation Type	WLAN: CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode 1024QAM for OFDMA in 11ax HE mode Bluetooth: BT-EDR: GFSK, $\pi/4$ -DQPSK, 8DPSK BT-LE: GFSK
Modulation Technology	WLAN: DSSS, OFDM, OFDMA Bluetooth: BT-EDR: FHSS BT-LE: DTS
Transfer Rate	WLAN: 802.11b: up to 11 Mbps 802.11a/g: up to 54 Mbps 802.11n: up to 300 Mbps 802.11ac: up to 3466.7 Mbps 802.11ax: up to 4803.9Mbps Bluetooth: BT-EDR: Up to 3 Mbps BT-LE: Up to 2 Mbps
Operating Frequency	WLAN: 2.4GHz: 2.412 ~ 2.462 GHz 5GHz: 5.18 ~ 5.24 GHz, 5.26 ~ 5.32 GHz, 5.50 ~ 5.72 GHz, 5.745 ~ 5.825 GHz 6GHz: 5.955 ~ 6.415GHz, 6.435 ~ 6.525GHz, 6.525 ~ 6.875GHz, 6.875 ~ 7.115GHz Bluetooth: BT-EDR: 2.402 ~ 2.480 GHz BT-LE: 2.402 ~ 2.480 GHz
Number of Channel	WLAN: 2.4GHz: 802.11b, 802.11g, 802.11n (HT20, 802.11ax (HE20)): 11 5GHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 25 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 12 802.11ac (VHT80), 802.11ax (HE80): 6 6GHz: 802.11ax (HE20): 59 802.11ax (HE40): 29 802.11ax (HE80): 14

	Bluetooth: BT-EDR: 79 BT-LE: 40
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. Simultaneously transmission condition.

Condition	Technology	
1	WLAN (2.4GHz)	WLAN (6GHz)
2	WLAN (2.4GHz)	WLAN (5GHz)
3	WLAN (6GHz)	Bluetooth
4	WLAN (5GHz)	Bluetooth
5	WLAN(2.4G)	Bluetooth

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

2. The EUT has below radios as following table:

Radio 1	Radio 2
WLAN (2.4GHz+5GHz+6GHz)	Bluetooth

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

For WLAN						
Antenna NO.	RF Chain NO.		Antenna Net Gain(dBi)	Frequency range (GHz)	Antenna Type	Connector Type
0	0		-0.33	2.4~2.4835	Monopole	none
			1.45	5.15~5.25		
			1.52	5.25~5.35		
			1.58	5.47~5.725		
			1.22	5.725~5.85		
			1.72	5.955~6.415		
			0.29	6.435~6.515		
			0.2	6.535~6.855		
			2.08	6.875~7.115		
1	1		-0.2	2.4~2.4835	Monopole	none
			1.97	5.15~5.25		
			2.16	5.25~5.35		
			1.12	5.47~5.725		
			0.89	5.725~5.85		
			1.81	5.955~6.415		
			-0.06	6.435~6.515		
			-0.05	6.535~6.855		
			1.29	6.875~7.115		
For Bluetooth						
Antenna NO.	Antenna Net Gain(dBi)	Frequency range (GHz)		Antenna Type	Connector Type	
0	-3.1	2.4~2.4835		PIFA	none	
1	-3.13	2.4~2.4835		PIFA	none	

Note: Max. gain was selected for the final test.

Note: Max. gain was selected for the final test.

4. 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
6GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11ax (HE20)	2TX	2RX
802.11ax (HE40)	2TX	2RX
802.11ax (HE80)	2TX	2RX

5. 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.

3.1.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To				Description
	RE≥1G	RE<1G	PLC	OB	
-	√	√	√	√	-

Where **RE≥1G**: Radiated Emission above 1GHz **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission **OB**: Conducted Out-Band Emission Measurement

Note: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

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	2.4GHz: 802.11b + 6GHz: 802.11ax (HE80)	1 to 11	6	DSSS	DBPSK
		7 to 87 103 119 to 183 183 to 215	103	OFDMA	BPSK
		1 to 11	6	DSSS	DBPSK
		36 to 64, 100 to 144, 149 to 165	157	OFDM	BPSK
2	2.4GHz: 802.11b + 5GHz: 802.11a	1 to 11	6	DSSS	DBPSK
		36 to 64, 100 to 144, 149 to 165	157	OFDM	BPSK
		7 to 87 103 119 to 183 183 to 215	103	OFDMA	BPSK
		0 to 39	19	DTS	GFSK
3	6GHz: 802.11ax (HE80) + Bluetooth	7 to 87 103 119 to 183 183 to 215	103	OFDMA	BPSK
		0 to 39	19	DTS	GFSK
		36 to 64, 100 to 144, 149 to 165	157	OFDM	BPSK
		0 to 39	19	DTS	GFSK
4	5GHz: 802.11a + Bluetooth	36 to 64, 100 to 144, 149 to 165	157	OFDM	BPSK
		0 to 39	19	DTS	GFSK
		1 to 11	6	DSSS	DBPSK
		0 to 39	19	DTS	GFSK
5	2.4GHz: 802.11b + Bluetooth	1 to 11	6	DSSS	DBPSK
		0 to 39	19	DTS	GFSK
		1 to 11	6	DSSS	DBPSK
		0 to 39	19	DTS	GFSK

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	2.4GHz: 802.11b + 6GHz: 802.11ax (HE80)	1 to 11	6	DSSS	DBPSK
		7 to 87 103 119 to 183 183 to 215	103	OFDMA	BPSK
2	2.4GHz: 802.11b + 5GHz: 802.11a	1 to 11	6	DSSS	DBPSK
		36 to 64, 100 to 144, 149 to 165	157	OFDM	BPSK
3	6GHz: 802.11ax (HE80) + Bluetooth	7 to 87 103 119 to 183 183 to 215	103	OFDMA	BPSK
		0 to 39	19	DTS	GFSK
4	5GHz: 802.11a + Bluetooth	36 to 64, 100 to 144, 149 to 165	157	OFDM	BPSK
		0 to 39	19	DTS	GFSK
5	2.4GHz: 802.11b + Bluetooth	1 to 11	6	DSSS	DBPSK
		0 to 39	19	DTS	GFSK

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	2.4GHz: 802.11b + 6GHz: 802.11ax (HE80)	1 to 11	6	DSSS	DBPSK
		7 to 87 103 119 to 183 183 to 215	103	OFDMA	BPSK
2	2.4GHz: 802.11b + 5GHz: 802.11a	1 to 11	6	DSSS	DBPSK
		36 to 64, 100 to 144, 149 to 165	157	OFDM	BPSK
3	6GHz: 802.11ax (HE80) + Bluetooth	7 to 87 103 119 to 183 183 to 215	103	OFDMA	BPSK
		0 to 39	19	DTS	GFSK
4	5GHz: 802.11a + Bluetooth	36 to 64, 100 to 144, 149 to 165	157	OFDM	BPSK
		0 to 39	19	DTS	GFSK
5	2.4GHz: 802.11b + Bluetooth	1 to 11	6	DSSS	DBPSK
		0 to 39	19	DTS	GFSK

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	2.4GHz: 802.11b + 6GHz: 802.11ax (HE80)	1 to 11	6	DSSS	DBPSK
		7 to 87 103 119 to 183 183 to 215	103	OFDMA	BPSK
2	2.4GHz: 802.11b + 5GHz: 802.11a	1 to 11	6	DSSS	DBPSK
		36 to 64, 100 to 144, 149 to 165	157	OFDM	BPSK

Test Condition:

Applicable To	Environmental Conditions	Input Power (System)	Tested By
RE $\geq$ 1G	25deg. C, 66%RH	120Vac, 60Hz	Tom Yang
RE<1G	25deg. C, 66%RH	120Vac, 60Hz	Tom Yang
PLC	25deg. C, 66%RH	120Vac, 60Hz	Tom Yang
OB	25deg. C, 60%RH	120Vac, 60Hz	Jim Hung

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.

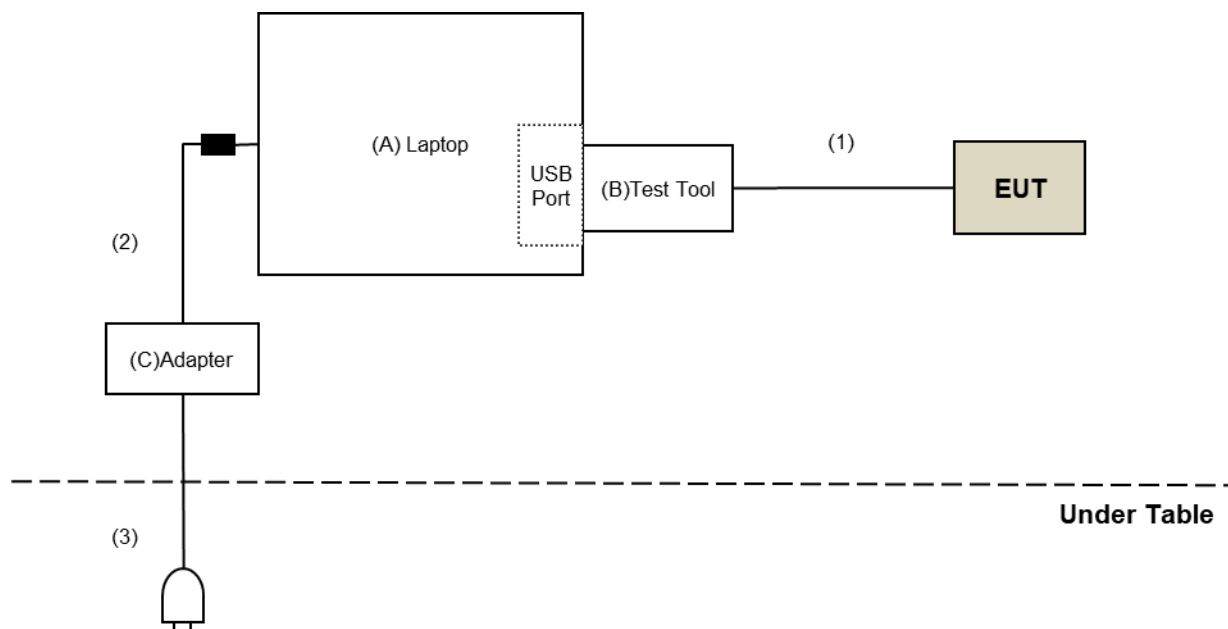
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab
B.	Test Tool	Foxconn	NA	NA	NA	Supplied by client
C.	Adapter	Dell	FA65NE0-00	NA	NA	Provided by Lab

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	Console Cable	1	1.6	No	0	Supplied by client
2.	DC Cable	1	1.8	No	1	Provided by Lab
3.	AC Cable	1	1	No	0	Provided by Lab

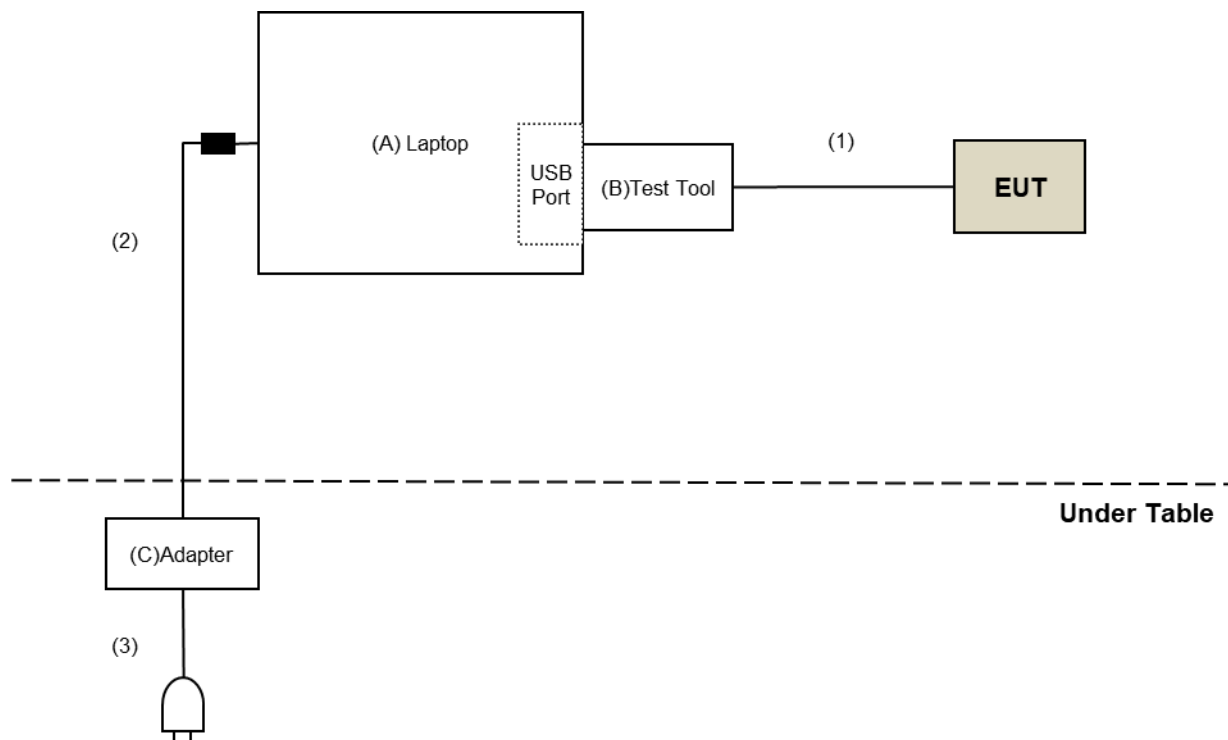
Note: The core is originally attached to the cable.

3.2.1 Configuration of System under Test

For AC Power Conducted Emission test:



For Radiated Emission test:



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.

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)	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.		^{*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.	

Note:

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

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

4.1.2 Test Instruments

For Radiated emission test:

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	2020/11/5	2021/11/4
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	2020/11/22	2021/11/21
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	2020/11/22	2021/11/21
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: 2021/11/1

For other test

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	101516	2021/3/8	2022/3/7
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2021/4/13	2022/4/12

- NOTE:**
1. The test was performed in Oven room 2.
 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 3. Tested Date: 2021/10/1

4.1.3 Test Procedures

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) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average 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.

Note:

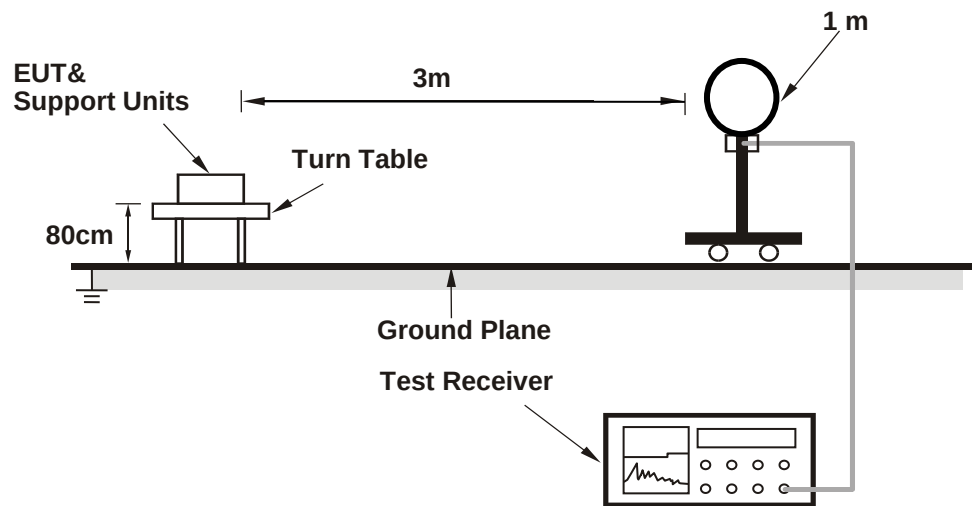
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
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.

4.1.4 Deviation from Test Standard

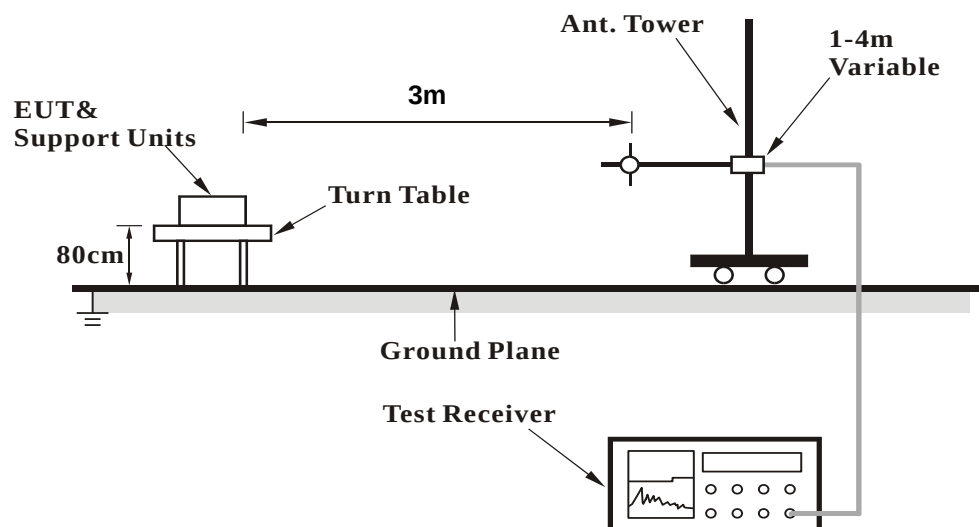
No deviation.

4.1.5 Test Setup

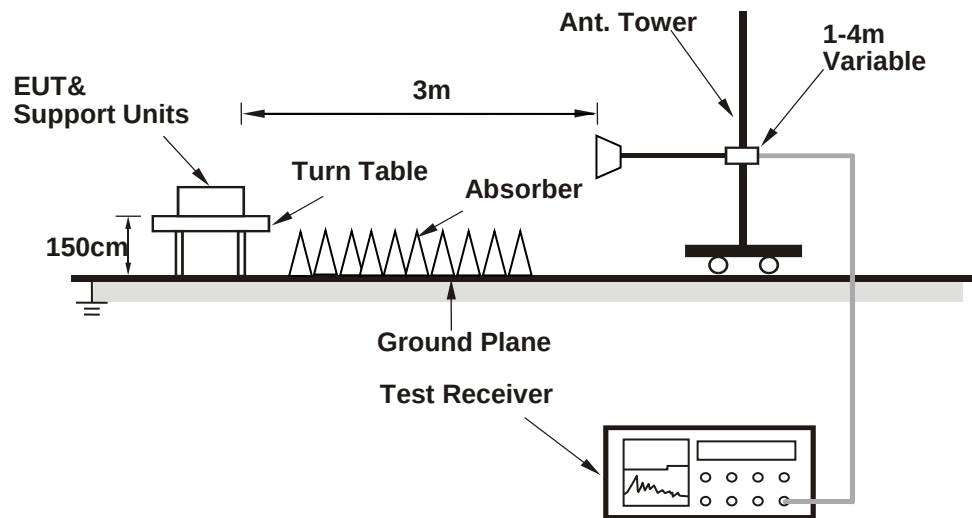
For Radiated emission below 30MHz



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

- Connected the EUT with the Laptop Computer which is placed on testing table.
- Controlling software (WLAN: QATool_Dbg; Bluetooth: WCN Combo Tool) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results (Mode 1)

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	4874.00	43.2 PK	74.0	-30.8	1.16 H	170	38.1	5.1
2	4874.00	30.9 AV	54.0	-23.1	1.16 H	170	25.8	5.1
3	7311.00	50.6 PK	74.0	-23.4	1.17 H	280	44.4	6.2
4	7311.00	40.5 AV	54.0	-13.5	1.17 H	280	34.3	6.2
5	#12930.00	47.2 PK	88.2	-41.0	1.20 H	180	38.8	8.4
6	#12930.00	36.0 AV	68.2	-32.2	1.20 H	180	27.6	8.4
7	19395.00	49.1 PK	74.0	-24.9	1.77 H	111	55.3	-6.2
8	19395.00	39.0 AV	54.0	-15.0	1.77 H	111	45.2	-6.2
9	#25860.00	49.5 PK	88.2	-38.7	1.48 H	276	50.8	-1.3
10	#25860.00	39.3 AV	68.2	-28.9	1.48 H	276	40.6	-1.3
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	4874.00	41.8 PK	74.0	-32.2	2.41 V	248	36.7	5.1
2	4874.00	28.6 AV	54.0	-25.4	2.41 V	248	23.5	5.1
3	7311.00	52.0 PK	74.0	-22.0	3.79 V	227	45.8	6.2
4	7311.00	38.2 AV	54.0	-15.8	3.79 V	227	32.0	6.2
5	#12930.00	48.0 PK	88.2	-40.2	1.02 V	267	39.6	8.4
6	#12930.00	35.9 AV	68.2	-32.3	1.02 V	267	27.5	8.4
7	19395.00	49.1 PK	74.0	-24.9	1.65 V	232	55.3	-6.2
8	19395.00	38.1 AV	54.0	-15.9	1.65 V	232	44.3	-6.2
9	#25860.00	49.4 PK	88.2	-38.8	1.16 V	301	50.7	-1.3
10	#25860.00	39.0 AV	68.2	-29.2	1.16 V	301	40.3	-1.3

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.

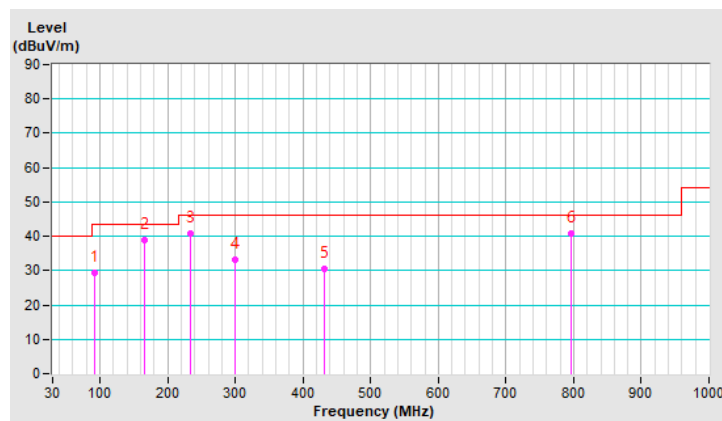
Below 1GHz Data:

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	91.86	29.3 QP	43.5	-14.2	2.00 H	262	42.9	-13.6
2	166.24	39.0 QP	43.5	-4.5	2.00 H	360	47.0	-8.0
3	232.78	40.9 QP	46.0	-5.1	1.00 H	233	50.6	-9.7
4	298.76	33.2 QP	46.0	-12.8	1.00 H	272	40.0	-6.8
5	431.99	30.4 QP	46.0	-15.6	2.00 H	208	33.0	-2.6
6	797.22	40.9 QP	46.0	-5.1	1.00 H	300	35.9	5.0

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.

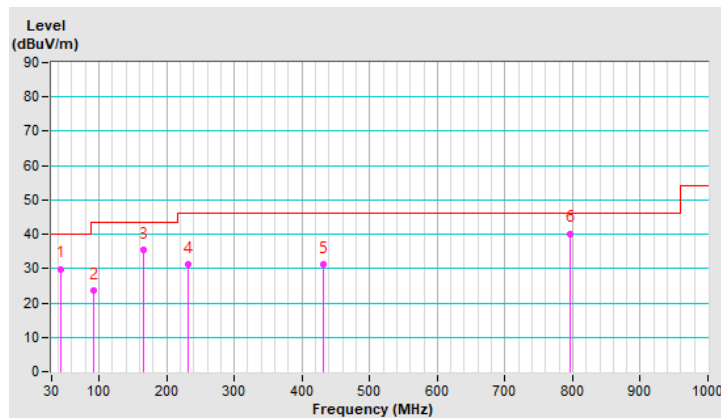


FREQUENCY RANGE	9kHz ~ 1GHz	DETECTOR FUNCTION	Quasi-Peak (QP)
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Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	43.12	29.9 QP	40.0	-10.1	1.00 V	309	38.3	-8.4
2	92.35	23.7 QP	43.5	-19.8	3.00 V	224	37.2	-13.5
3	166.26	35.6 QP	43.5	-7.9	1.00 V	116	43.6	-8.0
4	232.37	31.3 QP	46.0	-14.7	1.00 V	120	41.0	-9.7
5	431.99	31.1 QP	46.0	-14.9	1.50 V	360	33.7	-2.6
6	796.59	40.2 QP	46.0	-5.8	1.00 V	264	35.2	5.0

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	4874.00	43.1 PK	74.0	-30.9	1.17 H	160	39.3	3.8
2	4874.00	30.9 AV	54.0	-23.1	1.17 H	160	27.1	3.8
3	7311.00	50.5 PK	74.0	-23.5	1.14 H	300	40.8	9.7
4	7311.00	40.6 AV	54.0	-13.4	1.14 H	300	30.9	9.7
5	11570.00	48.0 PK	74.0	-26.0	1.02 H	330	33.4	14.6
6	11570.00	35.6 AV	54.0	-18.4	1.02 H	330	21.0	14.6
7	#17355.00	52.9 PK	68.2	-15.3	1.27 H	88	34.7	18.2
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	4874.00	42.1 PK	74.0	-31.9	2.38 V	245	38.3	3.8
2	4874.00	29.0 AV	54.0	-25.0	2.38 V	245	25.2	3.8
3	7311.00	51.6 PK	74.0	-22.4	3.77 V	213	41.9	9.7
4	7311.00	38.1 AV	54.0	-15.9	3.77 V	213	28.4	9.7
5	11570.00	52.9 PK	74.0	-21.1	1.04 V	313	38.3	14.6
6	11570.00	42.5 AV	54.0	-11.5	1.04 V	313	27.9	14.6
7	#17355.00	47.6 PK	68.2	-20.6	1.00 V	239	29.4	18.2

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.

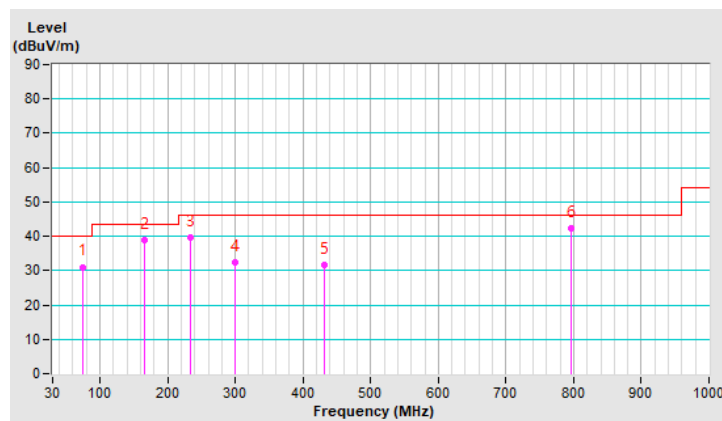
Below 1GHz Data:

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	73.92	31.1 QP	40.0	-8.9	1.50 H	360	42.6	-11.5
2	165.97	38.8 QP	43.5	-4.7	2.00 H	360	46.8	-8.0
3	232.78	39.5 QP	46.0	-6.5	1.00 H	244	49.2	-9.7
4	298.74	32.3 QP	46.0	-13.7	1.00 H	260	39.1	-6.8
5	431.99	31.6 QP	46.0	-14.4	2.00 H	213	34.2	-2.6
6	797.08	42.3 QP	46.0	-3.7	1.50 H	311	37.3	5.0

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.

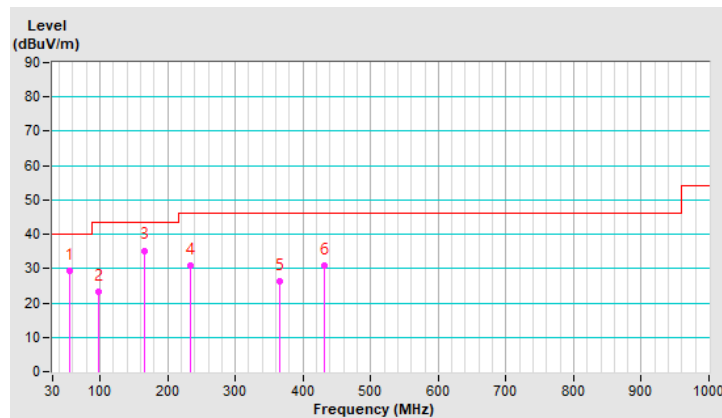


FREQUENCY RANGE	9kHz ~ 1GHz	DETECTOR FUNCTION	Quasi-Peak (QP)
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Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	56.02	29.4 QP	40.0	-10.6	1.00 V	256	37.7	-8.3
2	96.98	23.2 QP	43.5	-20.3	3.00 V	229	36.2	-13.0
3	165.97	35.3 QP	43.5	-8.2	1.00 V	95	43.3	-8.0
4	232.80	30.8 QP	46.0	-15.2	1.00 V	136	40.5	-9.7
5	365.11	26.2 QP	46.0	-19.8	1.50 V	208	30.9	-4.7
6	432.02	30.8 QP	46.0	-15.2	1.50 V	0	33.4	-2.6

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 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.



4.1.9 Test Results (Mode 3)

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	4880.00	37.4 PK	74.0	-36.6	1.59 H	243	32.3	5.1
2	4880.00	26.4 AV	54.0	-27.6	1.59 H	243	21.3	5.1
3	7320.00	43.6 PK	74.0	-30.4	1.13 H	341	37.4	6.2
4	7320.00	31.8 AV	54.0	-22.2	1.13 H	341	25.6	6.2
5	#12930.00	48.1 PK	88.2	-40.1	1.30 H	183	39.7	8.4
6	#12930.00	36.4 AV	68.2	-31.8	1.30 H	183	28.0	8.4
7	19395.00	49.2 PK	74.0	-24.8	1.80 H	118	55.4	-6.2
8	19395.00	39.0 AV	54.0	-15.0	1.80 H	118	45.2	-6.2
9	#25860.00	50.1 PK	88.2	-38.1	1.39 H	262	51.4	-1.3
10	#25860.00	40.0 AV	68.2	-28.2	1.39 H	262	41.3	-1.3
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	4880.00	37.7 PK	74.0	-36.3	2.63 V	40	32.6	5.1
2	4880.00	26.2 AV	54.0	-27.8	2.63 V	40	21.1	5.1
3	7320.00	43.1 PK	74.0	-30.9	1.23 V	277	36.9	6.2
4	7320.00	31.7 AV	54.0	-22.3	1.23 V	277	25.5	6.2
5	#12930.00	49.0 PK	88.2	-39.2	1.04 V	264	40.6	8.4
6	#12930.00	36.3 AV	68.2	-31.9	1.04 V	264	27.9	8.4
7	19395.00	50.2 PK	74.0	-23.8	1.68 V	213	56.4	-6.2
8	19395.00	38.7 AV	54.0	-15.3	1.68 V	213	44.9	-6.2
9	#25860.00	49.6 PK	88.2	-38.6	1.20 V	298	50.9	-1.3
10	#25860.00	38.7 AV	68.2	-29.5	1.20 V	298	40.0	-1.3

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.

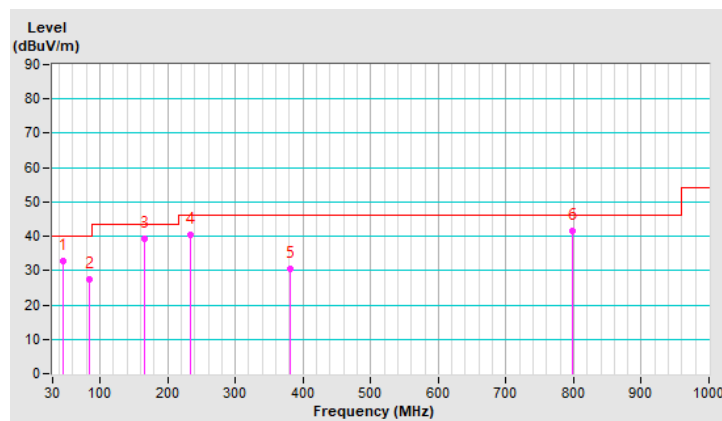
Below 1GHz Data:

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	46.20	32.8 QP	40.0	-7.2	3.00 H	3	40.9	-8.1
2	83.76	27.5 QP	40.0	-12.5	3.00 H	357	41.1	-13.6
3	166.31	39.1 QP	43.5	-4.4	1.50 H	35	47.1	-8.0
4	232.77	40.3 QP	46.0	-5.7	1.00 H	211	50.0	-9.7
5	380.48	30.5 QP	46.0	-15.5	2.00 H	316	34.8	-4.3
6	797.73	41.5 QP	46.0	-4.5	1.00 H	308	36.5	5.0

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.

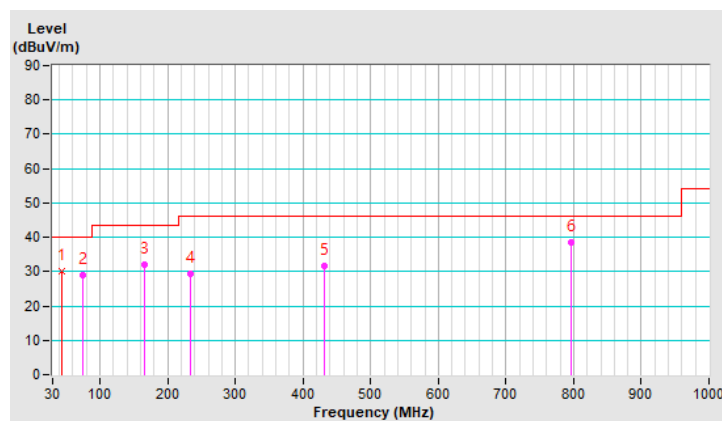


FREQUENCY RANGE	9kHz ~ 1GHz	DETECTOR FUNCTION	Quasi-Peak (QP)
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Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	42.82	30.0 QP	40.0	-10.0	3.00 V	326	38.4	-8.4
2	74.27	29.0 QP	40.0	-11.0	3.00 V	186	40.5	-11.5
3	166.00	31.9 QP	43.5	-11.6	1.00 V	46	39.9	-8.0
4	233.04	29.5 QP	46.0	-16.5	2.00 V	284	39.1	-9.6
5	432.00	31.5 QP	46.0	-14.5	1.50 V	354	34.1	-2.6
6	796.66	38.6 QP	46.0	-7.4	2.00 V	154	33.6	5.0

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.



4.1.10 Test Results (Mode 4)

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	4880.00	37.2 PK	74.0	-36.8	1.64 H	245	33.4	3.8
2	4880.00	26.4 AV	54.0	-27.6	1.64 H	245	22.6	3.8
3	7320.00	43.6 PK	74.0	-30.4	1.09 H	349	33.9	9.7
4	7320.00	31.9 AV	54.0	-22.1	1.09 H	349	22.2	9.7
5	11570.00	47.9 PK	74.0	-26.1	1.11 H	331	33.3	14.6
6	11570.00	35.8 AV	54.0	-18.2	1.11 H	331	21.2	14.6
7	#17355.00	53.2 PK	68.2	-15.0	1.26 H	70	35.0	18.2
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	4880.00	37.7 PK	74.0	-36.3	2.59 V	42	33.9	3.8
2	4880.00	26.4 AV	54.0	-27.6	2.59 V	42	22.6	3.8
3	7320.00	43.5 PK	74.0	-30.5	1.19 V	292	33.8	9.7
4	7320.00	31.9 AV	54.0	-22.1	1.19 V	292	22.2	9.7
5	11570.00	53.1 PK	74.0	-20.9	1.12 V	304	38.5	14.6
6	11570.00	42.7 AV	54.0	-11.3	1.12 V	304	28.1	14.6
7	#17355.00	48.3 PK	68.2	-19.9	1.06 V	237	30.1	18.2

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.

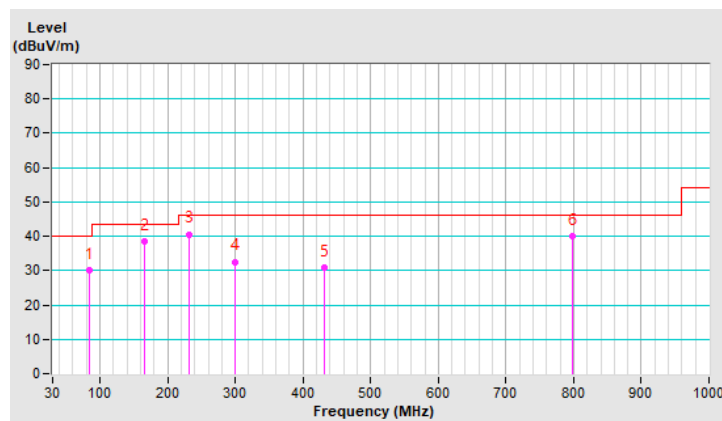
Below 1GHz Data:

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	84.02	30.2 QP	40.0	-9.8	2.00 H	1	43.8	-13.6
2	166.22	38.4 QP	43.5	-5.1	2.00 H	352	46.4	-8.0
3	232.46	40.6 QP	46.0	-5.4	1.50 H	227	50.3	-9.7
4	298.80	32.6 QP	46.0	-13.4	1.00 H	270	39.4	-6.8
5	432.01	30.7 QP	46.0	-15.3	1.00 H	203	33.3	-2.6
6	798.01	40.0 QP	46.0	-6.0	1.00 H	85	35.0	5.0

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.

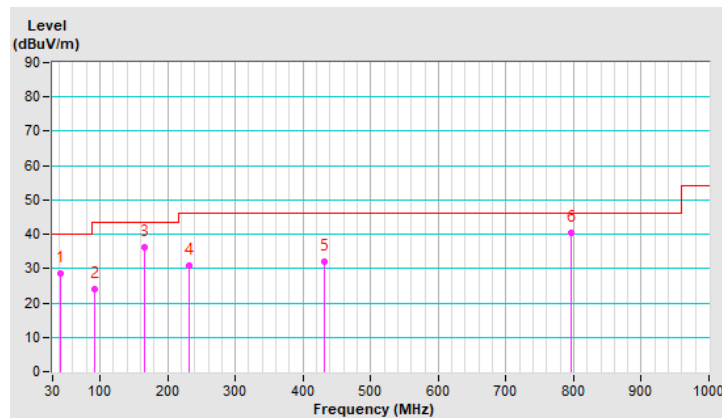


FREQUENCY RANGE	9kHz ~ 1GHz	DETECTOR FUNCTION	Quasi-Peak (QP)
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Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	42.01	28.7 QP	40.0	-11.3	1.00 V	313	37.0	-8.3
2	91.78	24.0 QP	43.5	-19.5	3.00 V	210	37.6	-13.6
3	166.30	36.3 QP	43.5	-7.2	1.50 V	125	44.3	-8.0
4	232.30	30.8 QP	46.0	-15.2	2.00 V	212	40.5	-9.7
5	432.01	32.1 QP	46.0	-13.9	2.00 V	48	34.7	-2.6
6	797.00	40.5 QP	46.0	-5.5	1.00 V	251	35.5	5.0

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.



4.1.11 Test Results (Mode 5)

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	4874.00	43.3 PK	74.0	-30.7	1.13 H	147	39.5	3.8
2	4874.00	31.1 AV	54.0	-22.9	1.13 H	147	27.3	3.8
3	4880.00	37.3 PK	74.0	-36.7	1.64 H	255	33.5	3.8
4	4880.00	26.3 AV	54.0	-27.7	1.64 H	255	22.5	3.8
5	7311.00	50.2 PK	74.0	-23.8	1.16 H	286	40.5	9.7
6	7311.00	40.4 AV	54.0	-13.6	1.16 H	286	30.7	9.7
7	7320.00	42.9 PK	74.0	-31.1	1.18 H	338	33.2	9.7
8	7320.00	31.4 AV	54.0	-22.6	1.18 H	338	21.7	9.7
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	4874.00	42.3 PK	74.0	-31.7	2.44 V	254	38.5	3.8
2	4874.00	29.5 AV	54.0	-24.5	2.44 V	254	25.7	3.8
3	4880.00	37.4 PK	74.0	-36.6	2.68 V	39	33.6	3.8
4	4880.00	25.7 AV	54.0	-28.3	2.68 V	39	21.9	3.8
5	7311.00	51.5 PK	74.0	-22.5	3.77 V	211	41.8	9.7
6	7311.00	38.1 AV	54.0	-15.9	3.77 V	211	28.4	9.7
7	7320.00	43.6 PK	74.0	-30.4	1.17 V	277	33.9	9.7
8	7320.00	31.9 AV	54.0	-22.1	1.17 V	277	22.2	9.7

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.

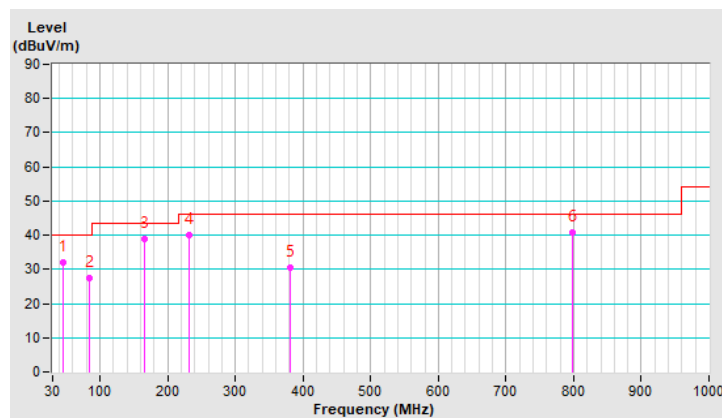
Below 1GHz Data:

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	45.80	31.9 QP	40.0	-8.1	2.50 H	0	40.0	-8.1
2	84.02	27.6 QP	40.0	-12.4	3.00 H	331	41.2	-13.6
3	166.07	38.8 QP	43.5	-4.7	2.00 H	46	46.8	-8.0
4	232.19	40.0 QP	46.0	-6.0	1.50 H	200	49.7	-9.7
5	381.59	30.6 QP	46.0	-15.4	2.00 H	315	34.9	-4.3
6	798.54	40.8 QP	46.0	-5.2	1.00 H	311	35.9	4.9

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.

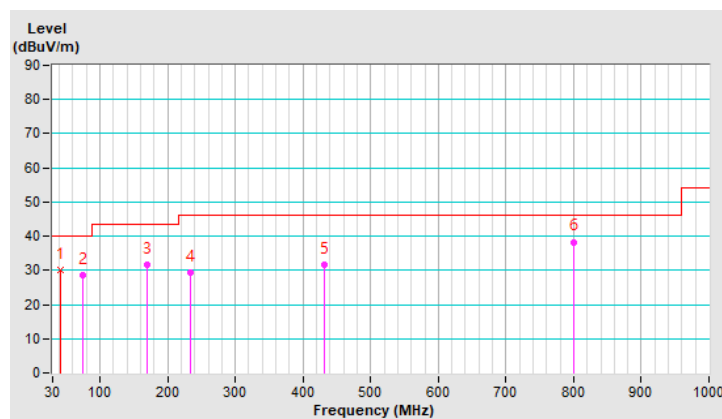


FREQUENCY RANGE	9kHz ~ 1GHz	DETECTOR FUNCTION	Quasi-Peak (QP)
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Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	41.76	30.2 QP	40.0	-9.8	2.50 V	360	38.6	-8.4
2	74.68	28.7 QP	40.0	-11.3	2.00 V	192	40.3	-11.6
3	168.71	31.8 QP	43.5	-11.7	1.00 V	40	39.9	-8.1
4	233.79	29.4 QP	46.0	-16.6	1.00 V	182	39.0	-9.6
5	431.51	31.6 QP	46.0	-14.4	1.50 V	300	34.2	-2.6
6	799.89	38.3 QP	46.0	-7.7	1.00 V	141	33.4	4.9

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.



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	2020/10/20	2021/10/19
LISN R&S	ESH3-Z5	848773/004	2020/10/27	2021/10/26
LISN R & S	ESH3-Z5	835239/001	2021/3/26	2022/3/25
50 ohms Terminator	50	3	2020/10/26	2021/10/25
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: 2021/10/1

4.2.3 Test Procedures

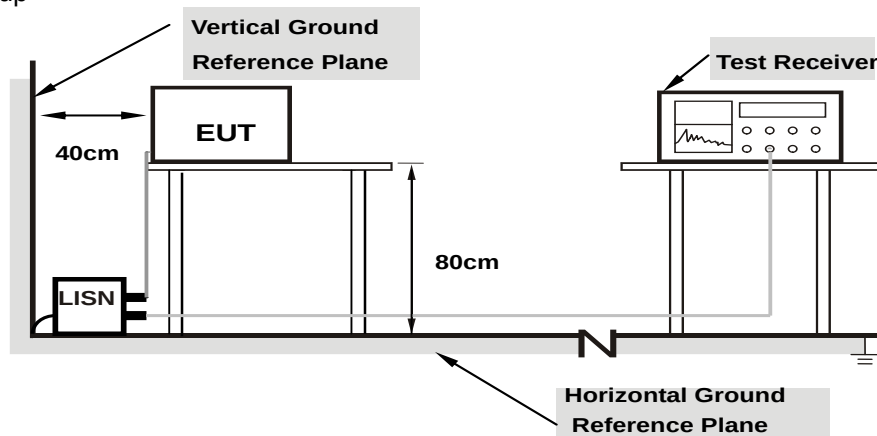
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

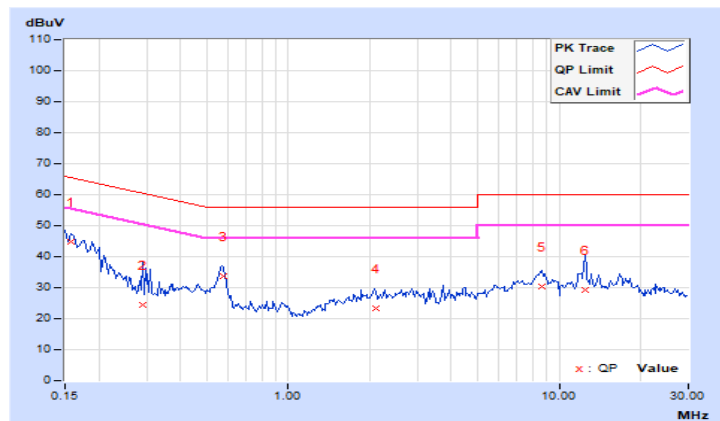
4.2.7 Test Results (Mode 1)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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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	0.15781	10.05	34.68	12.44	44.73	22.49	65.58	55.58	-20.85	-33.09
2	0.29063	10.06	14.23	0.17	24.29	10.23	60.51	50.51	-36.22	-40.28
3	0.57578	10.08	23.68	12.75	33.76	22.83	56.00	46.00	-22.24	-23.17
4	2.10156	10.17	13.28	5.26	23.45	15.43	56.00	46.00	-32.55	-30.57
5	8.61328	10.53	19.73	11.44	30.26	21.97	60.00	50.00	-29.74	-28.03
6	12.47266	10.76	18.66	11.14	29.42	21.90	60.00	50.00	-30.58	-28.10

Remarks:

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

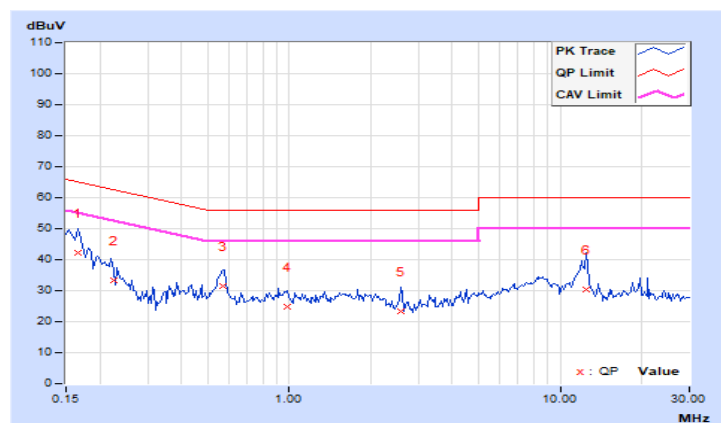


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16562	10.02	32.24	11.10	42.26	21.12	65.18	55.18	-22.92	-34.06
2	0.22422	10.03	23.29	2.78	33.32	12.81	62.66	52.66	-29.34	-39.85
3	0.56797	10.05	21.40	14.31	31.45	24.36	56.00	46.00	-24.55	-21.64
4	0.97813	10.08	14.57	6.75	24.65	16.83	56.00	46.00	-31.35	-29.17
5	2.57031	10.15	13.02	4.03	23.17	14.18	56.00	46.00	-32.83	-31.82
6	12.45313	10.61	19.88	12.11	30.49	22.72	60.00	50.00	-29.51	-27.28

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



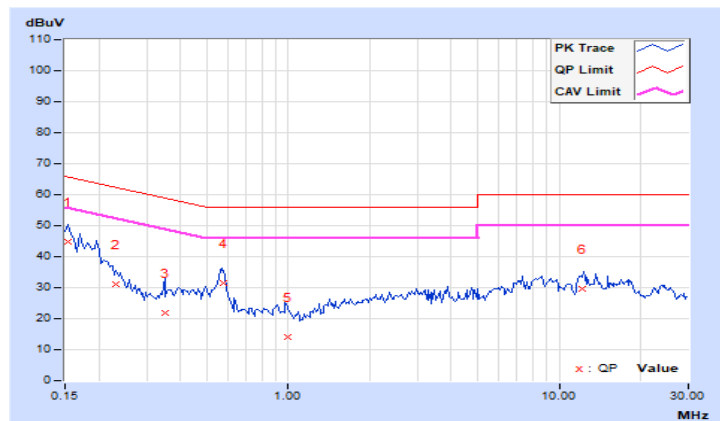
4.2.8 Test Results (Mode 2)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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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	0.15391	10.05	34.84	15.52	44.89	25.57	65.79	55.79	-20.90	-30.22
2	0.23203	10.05	21.21	5.69	31.26	15.74	62.38	52.38	-31.12	-36.64
3	0.34922	10.06	11.65	0.72	21.71	10.78	58.98	48.98	-37.27	-38.20
4	0.57969	10.08	21.40	14.07	31.48	24.15	56.00	46.00	-24.52	-21.85
5	0.98984	10.11	4.00	-6.33	14.11	3.78	56.00	46.00	-41.89	-42.22
6	12.11328	10.74	18.76	10.61	29.50	21.35	60.00	50.00	-30.50	-28.65

Remarks:

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

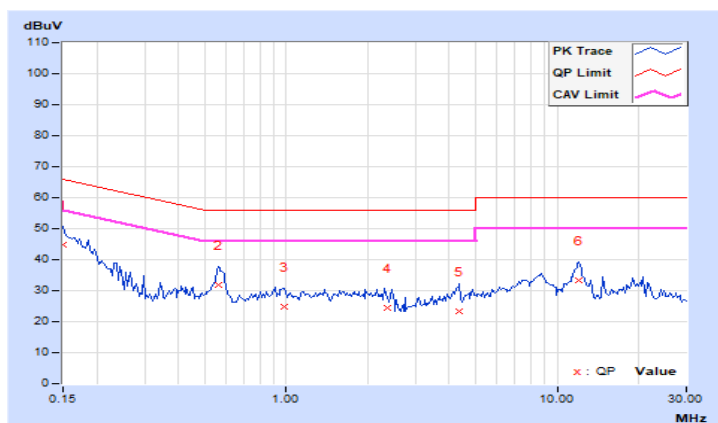


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.02	34.65	12.79	44.67	22.81	66.00	56.00	-21.33	-33.19
2	0.56406	10.05	21.96	11.75	32.01	21.80	56.00	46.00	-23.99	-24.20
3	0.97813	10.08	14.69	6.83	24.77	16.91	56.00	46.00	-31.23	-29.09
4	2.35547	10.14	14.14	3.27	24.28	13.41	56.00	46.00	-31.72	-32.59
5	4.32813	10.22	13.18	2.61	23.40	12.83	56.00	46.00	-32.60	-33.17
6	12.06250	10.59	22.74	14.99	33.33	25.58	60.00	50.00	-26.67	-24.42

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



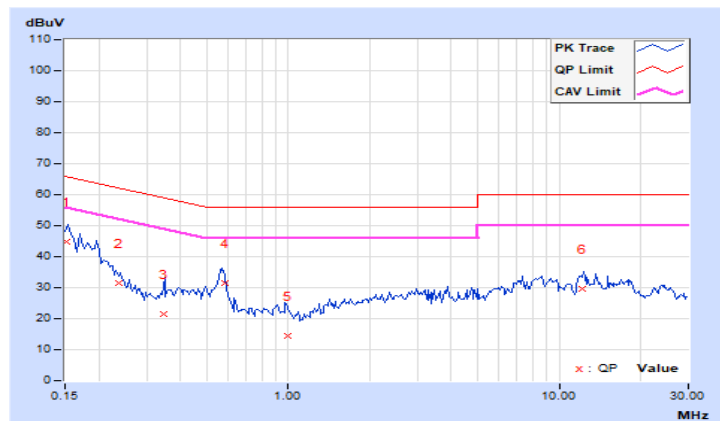
4.2.9 Test Results (Mode 3)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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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	0.15234	10.05	34.88	15.63	44.93	25.68	65.87	55.87	-20.94	-30.19
2	0.23762	10.05	21.30	5.61	31.35	15.66	62.18	52.18	-30.83	-36.52
3	0.34497	10.06	11.55	0.83	21.61	10.89	59.08	49.08	-37.47	-38.19
4	0.58371	10.08	21.56	14.13	31.64	24.21	56.00	46.00	-24.36	-21.79
5	0.99179	10.11	4.16	-6.25	14.27	3.86	56.00	46.00	-41.73	-42.14
6	12.11961	10.74	18.85	10.73	29.59	21.47	60.00	50.00	-30.41	-28.53

Remarks:

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

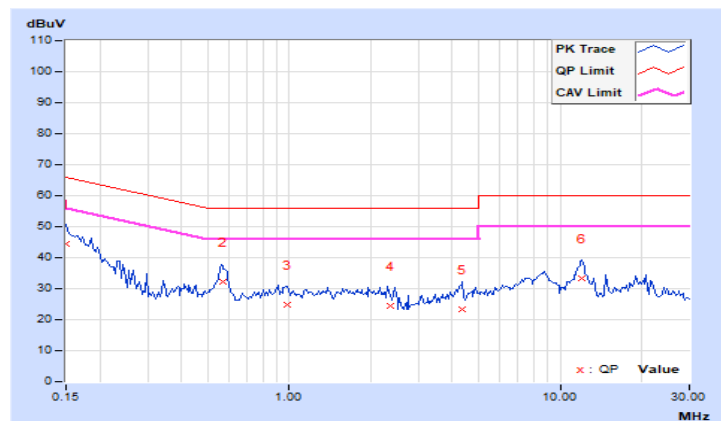


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15054	10.02	34.57	12.65	44.59	22.67	65.97	55.97	-21.38	-33.30
2	0.56908	10.05	22.01	11.79	32.06	21.84	56.00	46.00	-23.94	-24.16
3	0.98093	10.08	14.76	6.90	24.84	16.98	56.00	46.00	-31.16	-29.02
4	2.35947	10.14	14.26	3.33	24.40	13.47	56.00	46.00	-31.60	-32.53
5	4.32571	10.22	13.25	2.73	23.47	12.95	56.00	46.00	-32.53	-33.05
6	12.06300	10.59	22.77	14.91	33.36	25.50	60.00	50.00	-26.64	-24.50

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



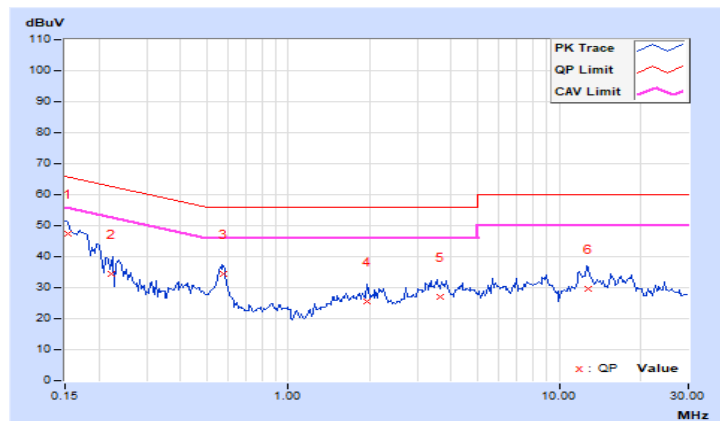
4.2.10 Test Results (Mode 4)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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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	0.15294	10.05	37.21	21.03	47.26	31.08	65.84	55.84	-18.58	-24.76
2	0.22197	10.05	24.33	8.49	34.38	18.54	62.74	52.74	-28.36	-34.20
3	0.57931	10.08	24.25	18.11	34.33	28.19	56.00	46.00	-21.67	-17.81
4	1.94208	10.16	15.35	9.19	25.51	19.35	56.00	46.00	-30.49	-26.65
5	3.63596	10.24	16.81	7.13	27.05	17.37	56.00	46.00	-28.95	-28.63
6	12.83096	10.79	18.84	13.43	29.63	24.22	60.00	50.00	-30.37	-25.78

Remarks:

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

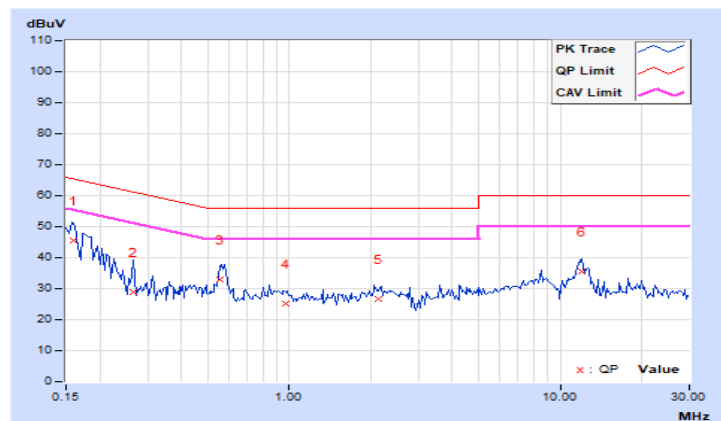


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15971	10.02	35.65	15.89	45.67	25.91	65.48	55.48	-19.81	-29.57
2	0.26637	10.03	18.88	3.43	28.91	13.46	61.23	51.23	-32.32	-37.77
3	0.55749	10.05	22.81	16.35	32.86	26.40	56.00	46.00	-23.14	-19.60
4	0.96737	10.08	15.19	8.93	25.27	19.01	56.00	46.00	-30.73	-26.99
5	2.13415	10.14	16.53	11.10	26.67	21.24	56.00	46.00	-29.33	-24.76
6	12.06193	10.59	25.10	18.02	35.69	28.61	60.00	50.00	-24.31	-21.39

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



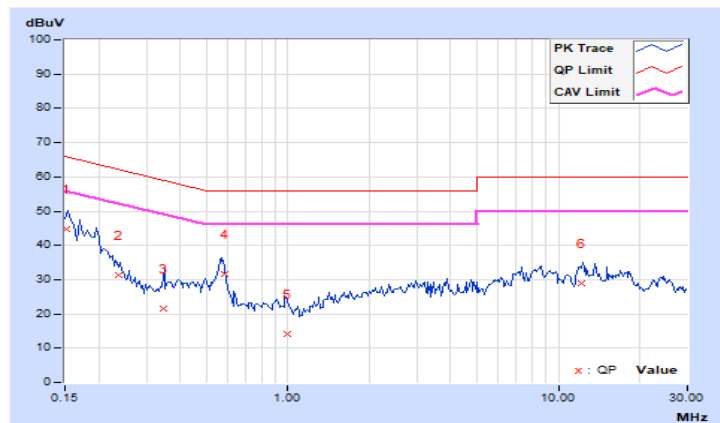
4.2.11 Test Results (Mode 5)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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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	0.15234	10.05	34.69	15.17	44.74	25.22	65.87	55.87	-21.13	-30.65
2	0.23762	10.05	21.27	5.53	31.32	15.58	62.18	52.18	-30.86	-36.60
3	0.34497	10.06	11.42	0.81	21.48	10.87	59.08	49.08	-37.60	-38.21
4	0.58371	10.08	21.45	14.27	31.53	24.35	56.00	46.00	-24.47	-21.65
5	0.99179	10.11	4.14	-6.58	14.25	3.53	56.00	46.00	-41.75	-42.47
6	12.11961	10.74	18.24	10.33	28.98	21.07	60.00	50.00	-31.02	-28.93

Remarks:

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

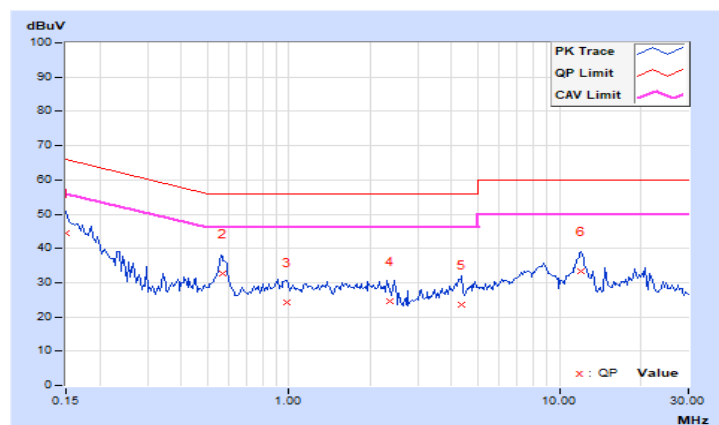


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15054	10.02	34.36	12.24	44.38	22.26	65.97	55.97	-21.59	-33.71
2	0.56908	10.05	22.74	11.85	32.79	21.90	56.00	46.00	-23.21	-24.10
3	0.98093	10.08	14.17	6.26	24.25	16.34	56.00	46.00	-31.75	-29.66
4	2.35947	10.14	14.53	3.08	24.67	13.22	56.00	46.00	-31.33	-32.78
5	4.32571	10.22	13.42	2.31	23.64	12.53	56.00	46.00	-32.36	-33.47
6	12.06300	10.59	22.68	14.57	33.27	25.16	60.00	50.00	-26.73	-24.84

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

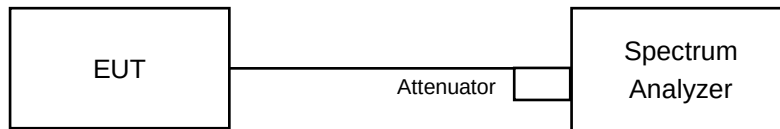


4.3 Conducted Out of Band Emission Measurement

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.

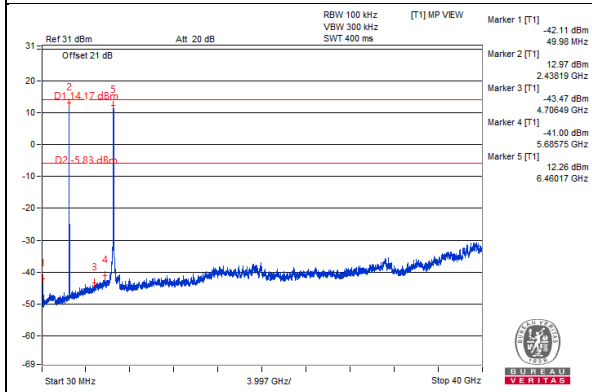
4.3.7 Test Results

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.

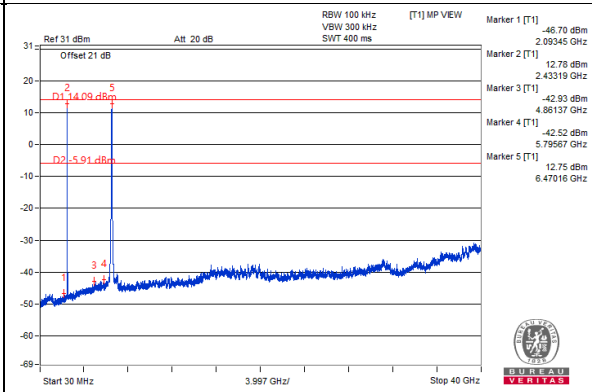
Mode 1

2.4GHz: 802.11b+6GHz: 802.11ax (HE80)

Chain 0



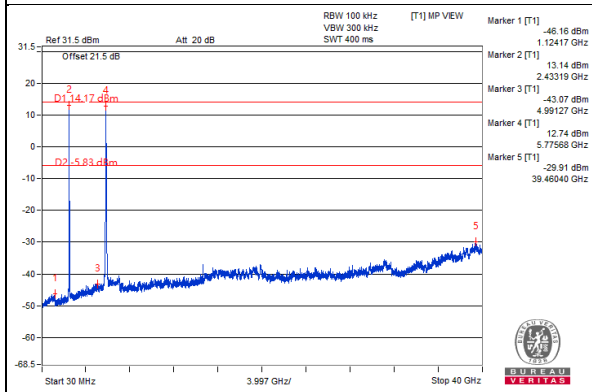
Chain 1



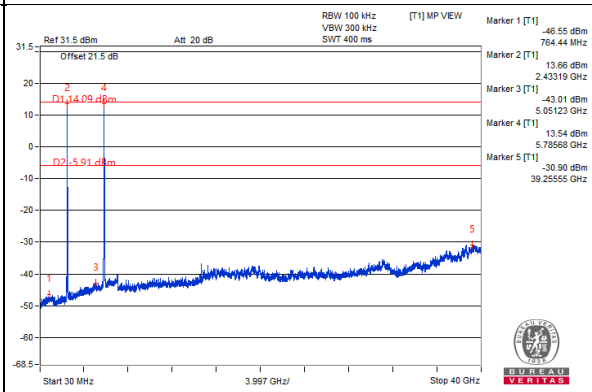
Mode 2

2.4GHz: 802.11b+5GHz: 802.11a

Chain 0



Chain 1



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:

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@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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