

FCC Test Report

Report No.: RFBHBQ-WTW-P21080521-3

FCC ID: 2AH7L-UPSA

Test Model: PAS800, PAS800L, PAS800P (Refer to item 3.1 for more details)

Received Date: Aug. 12, 2021

Test Date: Aug. 31 ~ Sep. 15, 2021

Issued Date: Jan. 14, 2022

Applicant: Schneider Electric Industries SAS

Address: Electropole Site - 38EQ1, 31 rue Pierre Mendes France, Eybens - 38050 Grenoble cedex 9

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

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

Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City
33383, TAIWAN

**FCC Registration /
Designation Number:** 788550 / TW0003



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Release Control Record

Issue No.	Description	Date Issued
RFBHBQ-WTW-P21080521-3	Original release	Jan. 14, 2022

1 Certificate of Conformity

Product: EcoStruxure™ Panel Server Advanced

Brand: Schneider Electric

Test Model: PAS800, PAS800L, PAS800P (Refer to item 3.1 for more details)

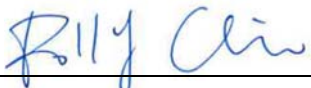
Sample Status: Engineering sample

Applicant: Schneider Electric Industries SAS

Test Date: Aug. 31 ~ Sep. 15, 2021

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
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 RF characteristics under the conditions specified in this report.

Prepared by : , **Date:** Jan. 14, 2022
Polly Chien / Specialist

Approved by : , **Date:** Jan. 14, 2022
Jeremy Lin / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	Pass	Meet the requirement of limit. Minimum passing margin is -14.04dB at 0.66200MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -3.7dB at 39.70MHz.
15.247(d)	Antenna Port Emission	Pass	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	Pass	Meet the requirement of limit.
15.247(b)	Conducted power	Pass	Meet the requirement of limit.
15.247(e)	Power Spectral Density	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	No antenna connector is used.

Note:

- For 2.4G band compliance with rule 15.247(d) of the band-edge items, the test plots were recorded in Annex A. Test Procedures refer to report 4.1.3.
- 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	2.79 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.59 dB
	200MHz ~ 1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	EcoStruxure™ Panel Server Advanced
Brand	Schneider Electric
Test Model	PAS800, PAS800L, PAS800P
Model Difference	Refer to note
Sample Status	Engineering sample
Power Supply rating	PAS800: 110 to 277Vac/dc +/-10%, 50-60Hz(+/-5Hz) < 3.5W/12VA , -25°C to 70°C PAS800L: 24Vdc +/-10% , 145 mA , < 3.5W, -25°C to 70°C PAS800P: POE(PD) - Class 0, 37Vdc to 57Vdc, < 3.5 W, 48Vdc (Typical), 72 mA, -25°C to 70°C
Modulation Type	O-QPSK
Modulation Technology	DSSS
Transfer Rate	250 kbps
Operating Frequency	2405 ~ 2480MHz
Number of Channel	16
Output Power	5.140mW
Antenna Type	Refer to note
Antenna Connector	Refer to note
Accessory Device	External Antenna (Brand: Schneider Electric, Model: PASA-ANT1)
Cable Supplied	NA

Note:

1. All models are listed as below.

Brand	Model	Difference
Schneider Electric	PAS800	All three models are similar in construction and functioning except the mode of powering. PAS800: powered by 110V-277Vac/dc PAS800L: powered by 24Vdc source PAS800P: Powered Over Ethernet.
	PAS800L	
	PAS800P	

2. The following antennas were provided to the EUT.

Item	Antenna Type	Connector	Gain(dBi)
Internal antenna 1	PCB	NA	4.4
Internal antenna 2	PCB	NA	5.1
External antenna	Dipole	RPSMA	2.54

* The internal antenna 2 mode was found to be the worst cases test mode and therefore had been chosen for final test. The internal antenna 2 mode was found to be the worst-case test mode and therefore had been chosen for final test for Mode A1.

*The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3. The WLAN 2.4GHz, 5GHz, Zigbee and BT of the device can transmit simultaneously but not WLAN 2.4GHz and 5GHz at the same time.

4. Spurious emission of the simultaneous operation (WLAN 2.4GHz, 5GHz, Zigbee and BT) has been evaluated and no non-compliance was found.

3.2 Description of Test Modes

16 channels are provided to this EUT:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
11	2405	15	2425	19	2445	23	2465
12	2410	16	2430	20	2450	24	2470
13	2415	17	2435	21	2455	25	2475
14	2420	18	2440	22	2460	26	2480

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to				Antenna	Description
	RE \geq 1G	RE<1G	PLC	APCM		
A1	√	√	√	√	Internal	EUT (PAS800) + AC power
A2	-	√	√	-		EUT (PAS800L) + DC power
A3	-	√	√	-		EUT (PAS800P) + PoE
B1	√	√	√	√	External	EUT (PAS800) + AC power
B2	-	√	√	-		EUT (PAS800L) + DC power
B3	-	√	√	-		EUT (PAS800P) + PoE

Where RE \geq 1G: Radiated Emission above 1GHz & Bandedge Measurement
 RE<1G: Radiated Emission below 1GHz
 PLC: Power Line Conducted Emission
 APCM: Antenna Port Conducted Measurement

Note:

- The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane** (for EUT) and **Z-plane** (for External antenna).
- Radiated emission (below 1GHz) and power line conducted emission test items chosen the worst maximum power.
- "-" means no effect.

Radiated Emission Test (Above 1GHz):

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

EUT Configure Mode	Available Channel	Tested Channel	Modulation Type
A1, B1	11 to 26	11, 18, 26	O-QPSK

Radiated Emission Test (Below 1GHz):

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

EUT Configure Mode	Available Channel	Tested Channel	Modulation Type
A1, A2, A3, B1, B2, B3	11 to 26	26	O-QPSK

Power Line Conducted Emission Test:

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

EUT Configure Mode	Available Channel	Tested Channel	Modulation Type
A1, A2, A3, B1, B2, B3	11 to 26	26	O-QPSK

Bandwidth, Power Spectral Density and Conducted Out of Band Emission Measurement:

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

EUT Configure Mode	Available Channel	Tested Channel	Modulation Type
B1	11 to 26	11, 18, 26	O-QPSK

Conducted Output Power Measurement:

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

EUT Configure Mode	Available Channel	Tested Channel	Modulation Type
A1, B1	11 to 26	11, 18, 26	O-QPSK

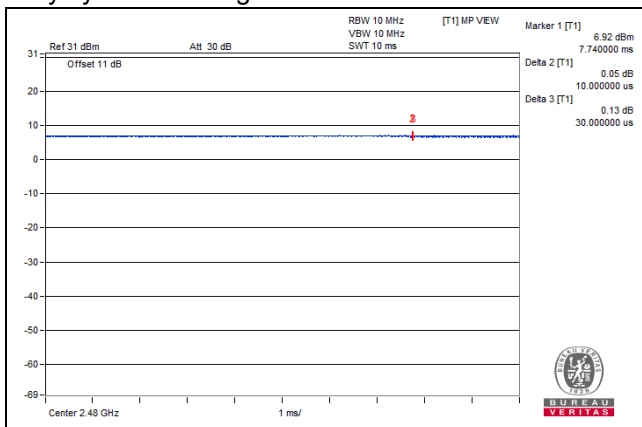
Conducted Output Power Measurement:

Test Condition:

Applicable to	Environmental Conditions	Input Power (System)	Tested by
RE \geq 1G	22 deg. C, 67% RH	120Vac, 60Hz	Edison Lee
RE<1G	20 deg. C, 67% RH	120Vac, 60Hz, 24Vdc, 56Vdc	Rex Wang
PLC	25 deg. C, 75% RH	120Vac, 60Hz, 277Vac, 24Vdc, 56Vdc	Rex Wang
APCM	25 deg. C, 60% RH	120Vac, 60Hz	Ivan Tseng

3.3 Duty Cycle of Test Signal

Duty cycle of test signal is 100%.



3.4 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.	Notebook	Lenovo	81A4	YD02TWF5	FCC DoC Approved	-
B.	DC Power Supply	JIN YIH	ODP3033	ODP30332027416	NA	-
C.	POE	Phihong	POE29U-1AT(PL)D-R	NA	NA	Provided by client
D.	Load	NA	NA	NA	NA	-

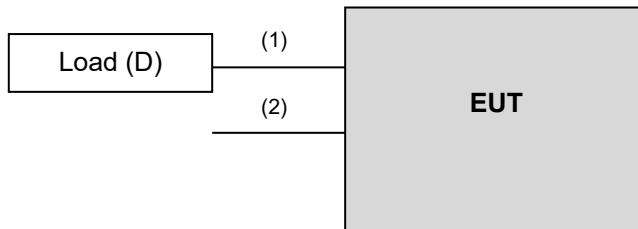
Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Items A acted as communication partners to transfer data.

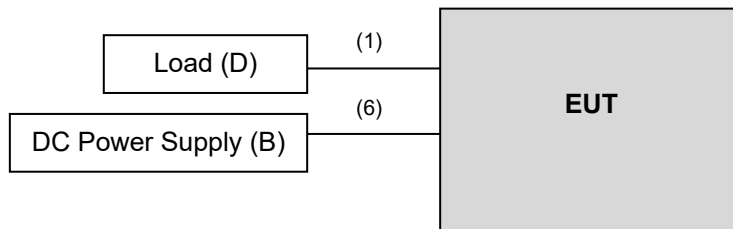
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	LAN	2	1.5	N	0	RJ45, Cat5e
2.	DC cable	1	30	Y	0	Provided by client
3.	LAN	1	1.5	N	0	RJ45, Cat5e
4.	LAN	1	1.5	N	0	RJ45, Cat5e
5.	LAN	1	10	N	0	RJ45, Cat5e
6.	DC cable	1	30	Y	0	Provided by client

3.4.1 Configuration of System under Test

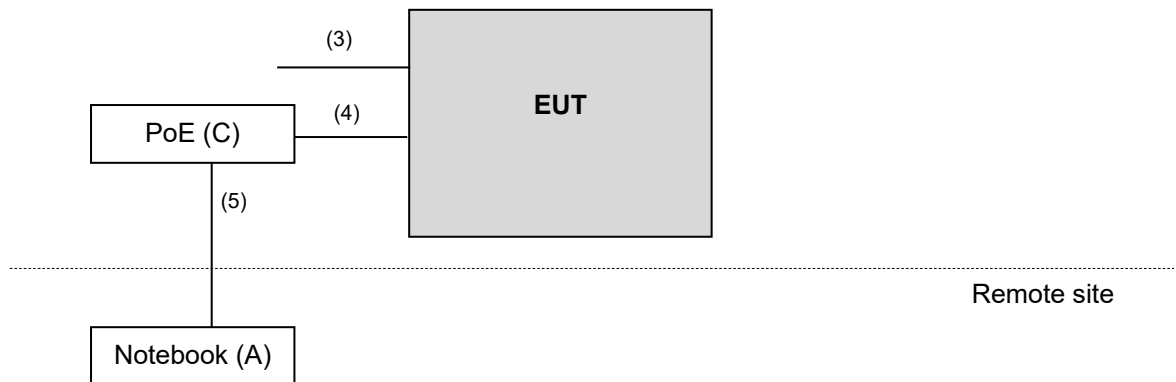
Mode A1, A4, B1



Mode A2, B2



Mode A3, B3



3.5 General Description of Applied Standards and References

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

Test standard:

FCC Part 15, Subpart C (15.247)

ANSI C63.10:2013

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

References Test Guidance:

KDB 558074 D01 15.247 Meas Guidance v05r02

All test items have been performed as a reference to the above KDB test guidance.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

Note:

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

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver KEYSIGHT	N9038A	MY55420137	Apr. 09, 2021	Apr. 08, 2022
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Jun. 10, 2021	Jun. 09, 2022
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Nov. 06, 2020	Nov. 05, 2021
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Nov. 22, 2020	Nov. 21, 2021
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 22, 2020	Nov. 21, 2021
Loop Antenna TESEQ	HLA 6121	45745	Jul. 21, 2021	Jul. 20, 2022
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Jun. 05, 2021	Jun. 04, 2022
Preamplifier Agilent (Above 1GHz)	8449B	3008A02367	Feb. 17, 2021	Feb. 16, 2022
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104 & EMC104-SM-SM800 0	CABLE-CH9-02 (248780+171006)	Jan. 16, 2021	Jan. 15, 2022
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/ 4)	Jan. 16, 2021	Jan. 15, 2022
RF signal cable Woken	8D-FB	Cable-CH9-01	Jun. 05, 2021	Jun. 04, 2022
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower & Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Peak Power Analyzer KEYSIGHT	8990B	MY51000485	Jan. 19, 2021	Jan. 18, 2022
Wideband Power Sensor KEYSIGHT	N1923A	MY58020002	Jan. 11, 2021	Jan. 10, 2022

- Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Chamber 9.

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 detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

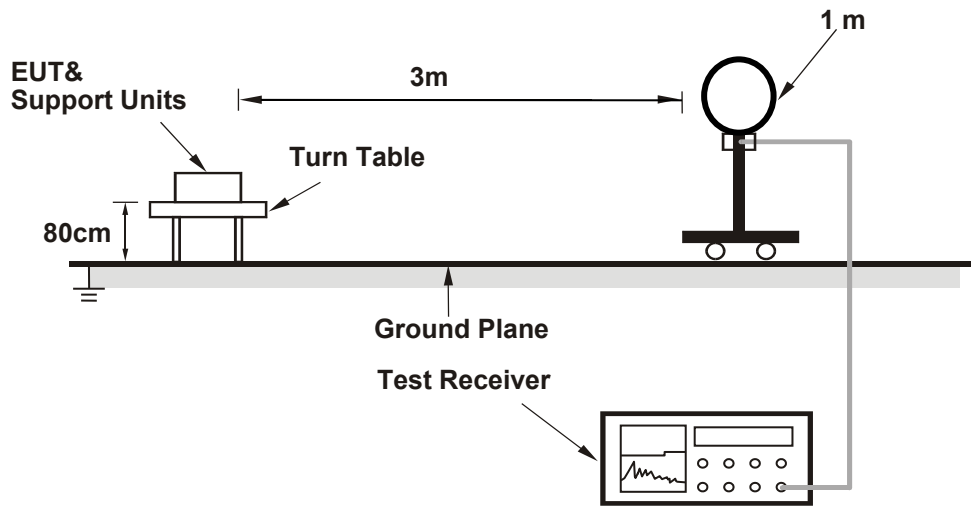
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz. (RBW = 1MHz, VBW = 10Hz)
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

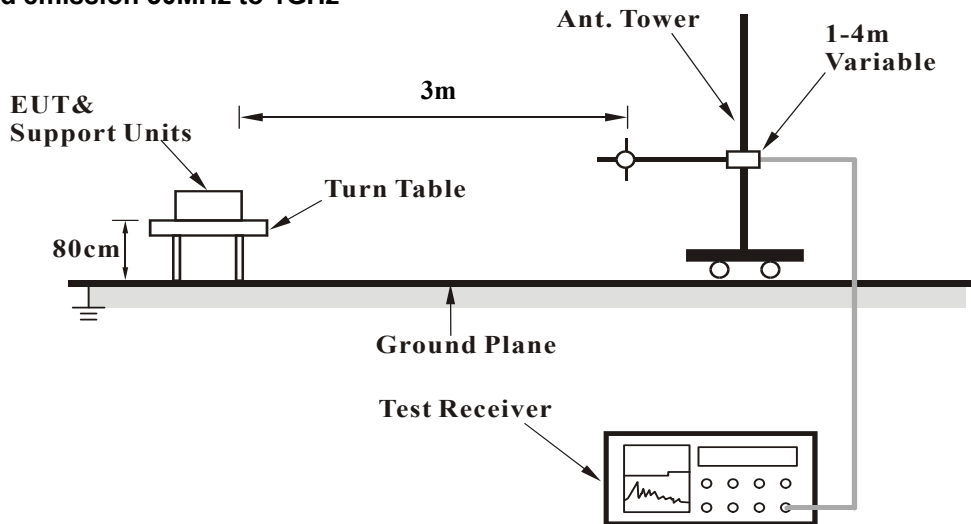
No deviation.

4.1.5 Test Setup

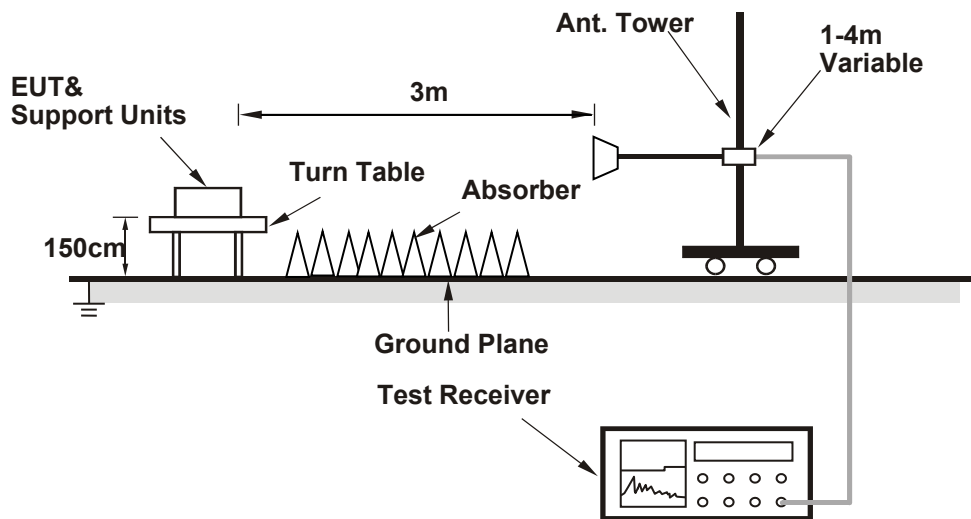
For Radiated emission below 30MHz



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

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

4.1.7 Test Results

Above 1 GHz Data:

Internal antenna 2: Mode A1

RF Mode	TX Zigbee	Channel	CH 11 : 2405 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	57.0 PK	74.0	-17.0	1.03 H	16	25.1	31.9
2	2390.00	44.3 AV	54.0	-9.7	1.03 H	16	12.4	31.9
3	*2405.00	93.3 PK			1.03 H	16	61.4	31.9
4	*2405.00	89.4 AV			1.03 H	16	57.5	31.9
5	4810.00	44.8 PK	74.0	-29.2	3.25 H	274	42.3	2.5
6	4810.00	33.9 AV	54.0	-20.1	3.25 H	274	31.4	2.5
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	2390.00	56.5 PK	74.0	-17.5	1.24 V	7	24.6	31.9
2	2390.00	44.4 AV	54.0	-9.6	1.24 V	7	12.5	31.9
3	*2405.00	103.4 PK			1.24 V	7	71.5	31.9
4	*2405.00	99.6 AV			1.24 V	7	67.7	31.9
5	4810.00	45.6 PK	74.0	-28.4	1.80 V	27	43.1	2.5
6	4810.00	35.7 AV	54.0	-18.3	1.80 V	27	33.2	2.5

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.

RF Mode	TX Zigbee	Channel	CH 18 : 2440 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2440.00	94.2 PK			1.79 H	272	62.2	32.0
2	*2440.00	90.4 AV			1.79 H	272	58.4	32.0
3	4880.00	45.8 PK	74.0	-28.2	3.80 H	271	43.2	2.6
4	4880.00	34.8 AV	54.0	-19.2	3.80 H	271	32.2	2.6
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	*2440.00	104.2 PK			1.29 V	356	72.2	32.0
2	*2440.00	100.3 AV			1.29 V	356	68.3	32.0
3	4880.00	45.9 PK	74.0	-28.1	2.00 V	7	43.3	2.6
4	4880.00	34.7 AV	54.0	-19.3	2.00 V	7	32.1	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.
5. " * " : Fundamental frequency.

RF Mode	TX Zigbee	Channel	CH 26 : 2480 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	92.7 PK			1.34 H	25	60.6	32.1
2	*2480.00	88.7 AV			1.34 H	25	56.6	32.1
3	2483.50	57.6 PK	74.0	-16.4	1.34 H	25	25.5	32.1
4	2483.50	44.9 AV	54.0	-9.1	1.34 H	25	12.8	32.1
5	4960.00	46.5 PK	74.0	-27.5	1.48 H	11	43.9	2.6
6	4960.00	35.1 AV	54.0	-18.9	1.48 H	11	32.5	2.6
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	*2480.00	104.1 PK			1.00 V	2	72.0	32.1
2	*2480.00	100.3 AV			1.00 V	2	68.2	32.1
3	2483.50	61.0 PK	74.0	-13.0	1.00 V	2	28.9	32.1
4	2483.50	49.5 AV	54.0	-4.5	1.00 V	2	17.4	32.1
5	4960.00	46.5 PK	74.0	-27.5	1.57 V	3	43.9	2.6
6	4960.00	35.1 AV	54.0	-18.9	1.57 V	3	32.5	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.
5. " * " : Fundamental frequency.

External antenna: Mode B1

RF Mode	TX Zigbee	Channel	CH 11 : 2405 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	57.2 PK	74.0	-16.8	2.71 H	62	25.3	31.9
2	2390.00	44.5 AV	54.0	-9.5	2.71 H	62	12.6	31.9
3	*2405.00	97.0 PK			2.71 H	62	65.1	31.9
4	*2405.00	93.3 AV			2.71 H	62	61.4	31.9
5	4810.00	49.0 PK	74.0	-25.0	1.58 H	174	46.5	2.5
6	4810.00	41.5 AV	54.0	-12.5	1.58 H	174	39.0	2.5

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	2390.00	56.6 PK	74.0	-17.4	1.87 V	335	24.7	31.9
2	2390.00	44.1 AV	54.0	-9.9	1.87 V	335	12.2	31.9
3	*2405.00	104.4 PK			1.87 V	335	72.5	31.9
4	*2405.00	100.6 AV			1.87 V	335	68.7	31.9
5	4810.00	49.1 PK	74.0	-24.9	1.76 V	39	46.6	2.5
6	4810.00	40.1 AV	54.0	-13.9	1.76 V	39	37.6	2.5

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.

RF Mode	TX Zigbee	Channel	CH 18 : 2440 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2440.00	99.0 PK			1.02 H	137	67.0	32.0
2	*2440.00	95.3 AV			1.02 H	137	63.3	32.0
3	4880.00	50.9 PK	74.0	-23.1	2.67 H	176	48.3	2.6
4	4880.00	42.2 AV	54.0	-11.8	2.67 H	176	39.6	2.6
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	*2440.00	104.5 PK			1.50 V	351	72.5	32.0
2	*2440.00	100.8 AV			1.50 V	351	68.8	32.0
3	4880.00	49.3 PK	74.0	-24.7	1.17 V	237	46.7	2.6
4	4880.00	40.2 AV	54.0	-13.8	1.17 V	237	37.6	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.
5. " * " : Fundamental frequency.

RF Mode	TX Zigbee	Channel	CH 26 : 2480 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	98.4 PK			2.27 H	102	66.3	32.1
2	*2480.00	94.6 AV			2.27 H	102	62.5	32.1
3	2483.50	58.0 PK	74.0	-16.0	2.27 H	102	25.9	32.1
4	2483.50	46.1 AV	54.0	-7.9	2.27 H	102	14.0	32.1
5	4960.00	50.4 PK	74.0	-23.6	1.50 H	150	47.8	2.6
6	4960.00	41.4 AV	54.0	-12.6	1.50 H	150	38.8	2.6

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	*2480.00	104.9 PK			1.51 V	197	72.8	32.1
2	*2480.00	101.1 AV			1.51 V	197	69.0	32.1
3	2483.50	61.1 PK	74.0	-12.9	1.51 V	197	29.0	32.1
4	2483.50	49.5 AV	54.0	-4.5	1.51 V	197	17.4	32.1
5	4960.00	49.7 PK	74.0	-24.3	1.47 V	327	47.1	2.6
6	4960.00	41.9 AV	54.0	-12.1	1.47 V	327	39.3	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.
5. " * " : Fundamental frequency.

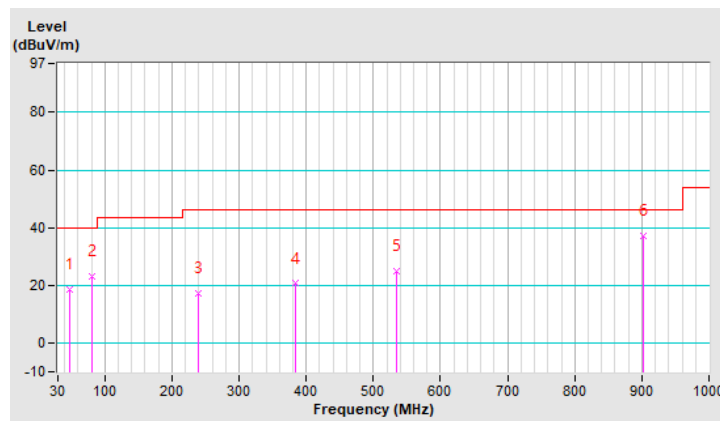
Below 1GHz worst-case data:

CHANNEL	TX Channel 26	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A1 (120Vac)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.43	18.6 QP	40.0	-21.4	1.00 H	15	32.5	-13.9
2	81.41	22.9 QP	40.0	-17.1	1.50 H	129	41.7	-18.8
3	238.55	17.3 QP	46.0	-28.7	1.50 H	118	31.8	-14.5
4	384.05	20.6 QP	46.0	-25.4	1.00 H	197	30.6	-10.0
5	534.40	24.9 QP	46.0	-21.1	2.00 H	115	31.7	-6.8
6	902.03	37.0 QP	46.0	-9.0	1.00 H	1	36.5	0.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
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.

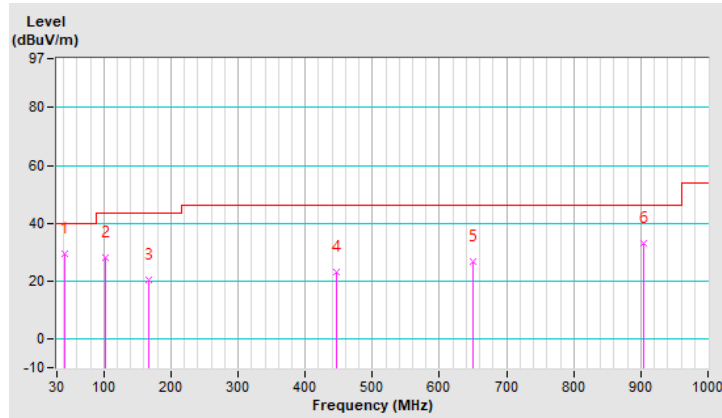


CHANNEL	TX Channel 26	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A1 (120Vac)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	42.61	29.3 QP	40.0	-10.7	1.25 V	51	43.6	-14.3
2	101.78	27.9 QP	43.5	-15.6	1.00 V	14	46.1	-18.2
3	167.74	20.2 QP	43.5	-23.3	1.50 V	295	34.0	-13.8
4	447.10	23.1 QP	46.0	-22.9	1.00 V	229	31.5	-8.4
5	650.80	26.6 QP	46.0	-19.4	1.25 V	283	31.1	-4.5
6	903.97	33.1 QP	46.0	-12.9	1.50 V	9	32.5	0.6

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. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
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.

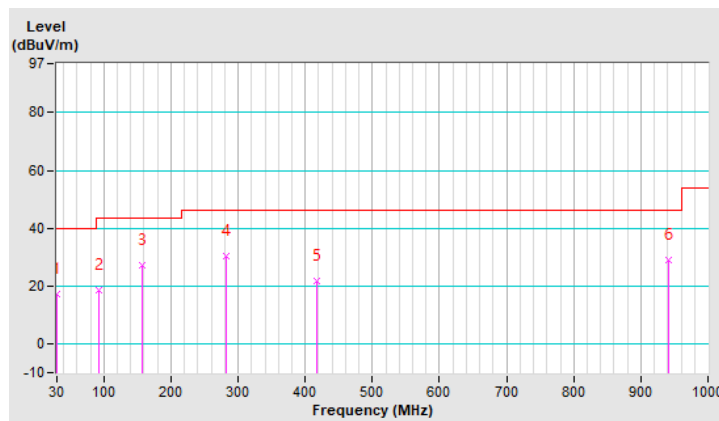


CHANNEL	TX Channel 26	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A2 (24Vdc)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.00	17.1 QP	40.0	-22.9	1.25 H	7	32.3	-15.2
2	92.08	18.7 QP	43.5	-24.8	1.00 H	22	38.1	-19.4
3	158.04	27.1 QP	43.5	-16.4	1.50 H	128	40.6	-13.5
4	283.17	30.4 QP	46.0	-15.6	2.00 H	128	42.7	-12.3
5	418.00	21.8 QP	46.0	-24.2	1.00 H	287	31.1	-9.3
6	941.80	28.9 QP	46.0	-17.1	1.25 H	18	27.7	1.2

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. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
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.

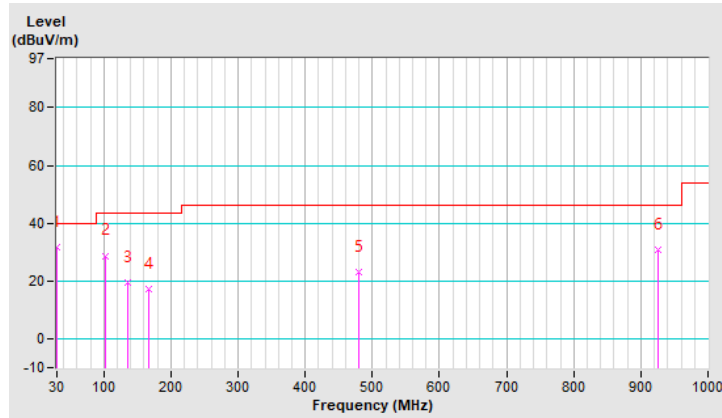


CHANNEL	TX Channel 26	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A2 (24Vdc)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.97	31.8 QP	40.0	-8.2	1.25 V	267	47.3	-15.5
2	101.78	28.8 QP	43.5	-14.7	1.00 V	349	47.0	-18.2
3	135.73	19.4 QP	43.5	-24.1	2.00 V	287	34.0	-14.6
4	167.74	17.3 QP	43.5	-26.2	2.00 V	49	31.1	-13.8
5	480.08	22.9 QP	46.0	-23.1	1.50 V	3	30.7	-7.8
6	925.31	31.0 QP	46.0	-15.0	1.00 V	193	29.9	1.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
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.

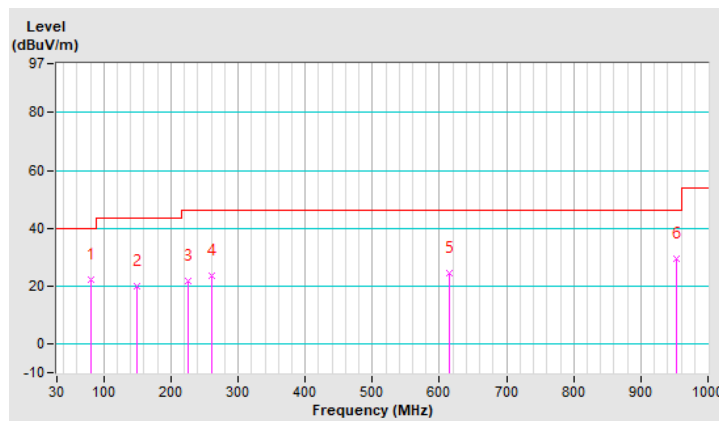


CHANNEL	TX Channel 26	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A3 (56Vdc)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	81.41	22.3 QP	40.0	-17.7	1.50 H	319	41.1	-18.8
2	149.31	19.7 QP	43.5	-23.8	1.25 H	26	33.4	-13.7
3	224.97	21.6 QP	46.0	-24.4	1.00 H	148	37.7	-16.1
4	260.86	23.5 QP	46.0	-22.5	1.50 H	233	36.9	-13.4
5	614.91	24.3 QP	46.0	-21.7	1.25 H	298	29.3	-5.0
6	952.47	29.5 QP	46.0	-16.5	1.00 H	238	28.1	1.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
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.

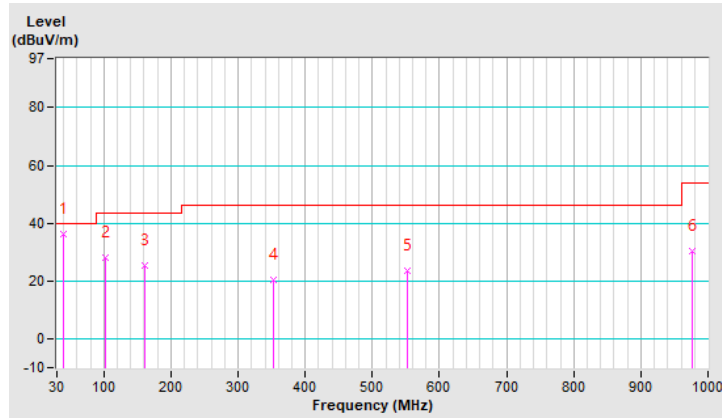


CHANNEL	TX Channel 26	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A3 (56Vdc)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	39.70	36.3 QP	40.0	-3.7	1.00 V	169	51.0	-14.7
2	101.78	28.1 QP	43.5	-15.4	1.25 V	136	46.3	-18.2
3	161.92	25.3 QP	43.5	-18.2	2.00 V	279	38.8	-13.5
4	352.04	20.3 QP	46.0	-25.7	1.50 V	244	31.1	-10.8
5	551.86	23.5 QP	46.0	-22.5	1.50 V	320	30.0	-6.5
6	975.75	30.5 QP	54.0	-23.5	1.25 V	164	29.0	1.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
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.

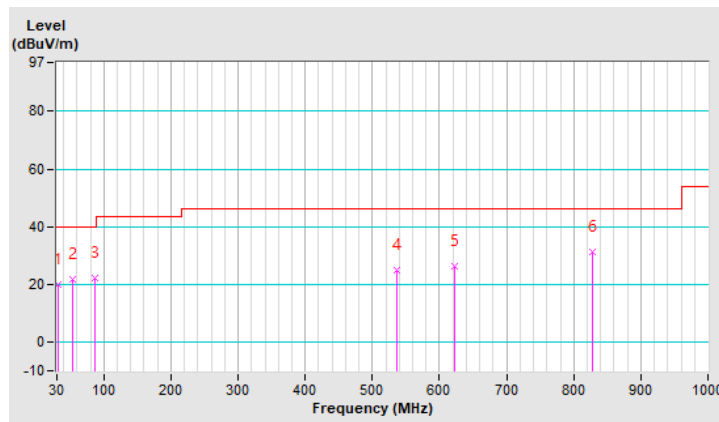


CHANNEL	TX Channel 26	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	B1 (120Vac)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	31.94	19.9 QP	40.0	-20.1	1.50 H	0	35.1	-15.2
2	53.28	21.9 QP	40.0	-18.1	1.00 H	244	35.9	-14.0
3	86.26	22.2 QP	40.0	-17.8	1.50 H	10	41.8	-19.6
4	536.34	25.0 QP	46.0	-21.0	1.25 H	69	31.9	-6.9
5	621.70	26.4 QP	46.0	-19.6	2.00 H	229	31.3	-4.9
6	827.34	31.1 QP	46.0	-14.9	1.00 H	337	32.3	-1.2

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. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
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.

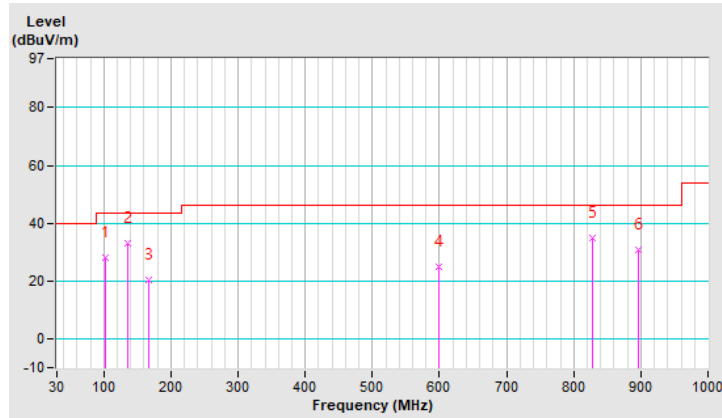


CHANNEL	TX Channel 26	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	B1 (120Vac)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	101.78	28.2 QP	43.5	-15.3	1.25 V	13	46.4	-18.2
2	135.73	33.2 QP	43.5	-10.3	1.00 V	179	47.8	-14.6
3	167.74	20.5 QP	43.5	-23.0	1.25 V	297	34.3	-13.8
4	598.42	25.1 QP	46.0	-20.9	1.25 V	232	30.5	-5.4
5	827.34	34.8 QP	46.0	-11.2	1.00 V	204	36.0	-1.2
6	896.21	30.8 QP	46.0	-15.2	2.00 V	252	30.6	0.2

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. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
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.

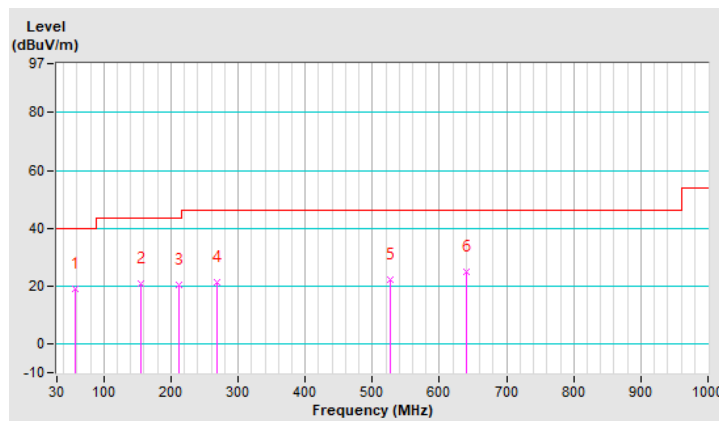


CHANNEL	TX Channel 26	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	B2 (24Vdc)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	57.16	19.1 QP	40.0	-20.9	1.25 H	121	33.6	-14.5
2	155.13	21.0 QP	43.5	-22.5	1.25 H	186	34.6	-13.6
3	212.36	20.5 QP	43.5	-23.0	1.00 H	5	36.6	-16.1
4	268.62	21.4 QP	46.0	-24.6	1.00 H	157	34.2	-12.8
5	527.61	22.0 QP	46.0	-24.0	1.50 H	214	28.8	-6.8
6	641.10	24.7 QP	46.0	-21.3	1.50 H	211	29.3	-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. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
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.

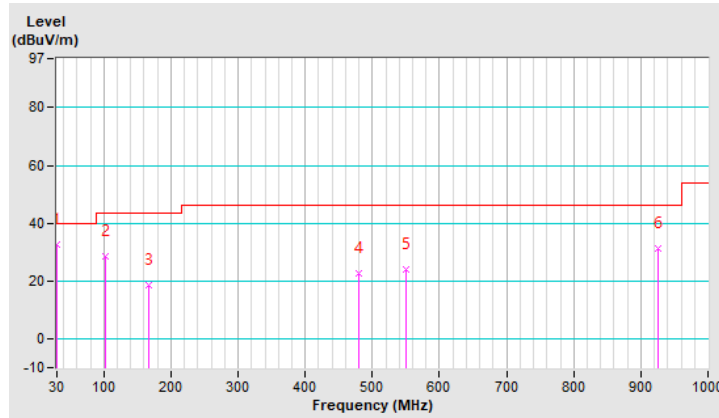


CHANNEL	TX Channel 26	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	B2 (24Vdc)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.97	32.8 QP	40.0	-7.2	1.25 V	180	48.3	-15.5
2	101.78	28.6 QP	43.5	-14.9	1.50 V	325	46.8	-18.2
3	167.74	18.4 QP	43.5	-25.1	1.00 V	337	32.2	-13.8
4	479.11	22.7 QP	46.0	-23.3	1.25 V	359	30.5	-7.8
5	549.92	23.9 QP	46.0	-22.1	1.00 V	220	30.5	-6.6
6	925.31	31.2 QP	46.0	-14.8	1.25 V	189	30.1	1.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
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.

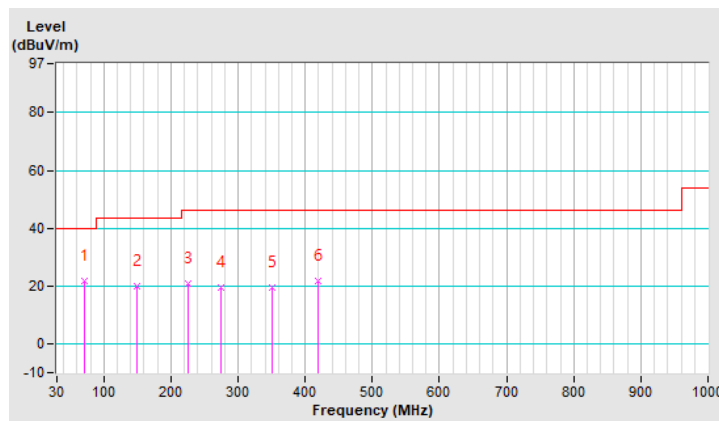


CHANNEL	TX Channel 26	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	B3 (56Vdc)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	70.74	21.8 QP	40.0	-18.2	1.00 H	18	37.9	-16.1
2	149.31	20.1 QP	43.5	-23.4	1.25 H	223	33.8	-13.7
3	224.97	21.0 QP	46.0	-25.0	1.50 H	76	37.1	-16.1
4	274.44	19.5 QP	46.0	-26.5	1.00 H	139	32.0	-12.5
5	350.10	19.4 QP	46.0	-26.6	2.00 H	7	30.3	-10.9
6	418.97	21.6 QP	46.0	-24.4	1.00 H	98	30.9	-9.3

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. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
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.

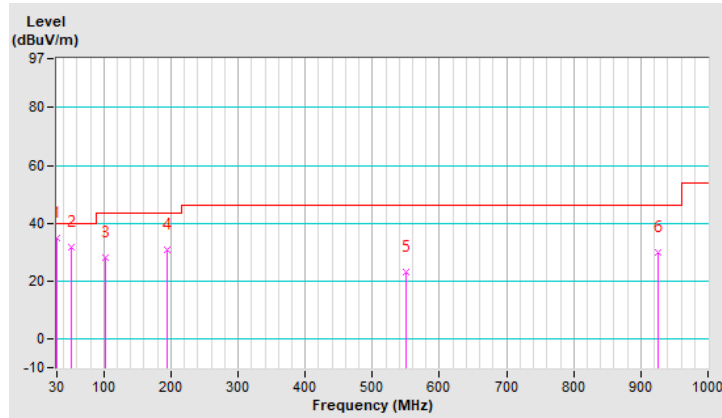


CHANNEL	TX Channel 26	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	B3 (56Vdc)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.97	35.1 QP	40.0	-4.9	1.25 V	333	50.6	-15.5
2	52.31	31.6 QP	40.0	-8.4	1.00 V	205	45.5	-13.9
3	101.78	28.2 QP	43.5	-15.3	1.50 V	15	46.4	-18.2
4	193.93	30.6 QP	43.5	-12.9	1.25 V	179	46.9	-16.3
5	550.89	22.9 QP	46.0	-23.1	1.50 V	179	29.5	-6.6
6	925.31	29.9 QP	46.0	-16.1	1.00 V	213	28.8	1.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
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.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESR3	102412	Jan. 29, 2021	Jan. 28, 2022
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond2-01	Sep. 04, 2021	Sep. 03, 2022
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Jan. 28, 2021	Jan. 27, 2022
LISN ROHDE & SCHWARZ (Peripheral)	ENV216	101196	Apr. 26, 2021	Apr. 25, 2022
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	NA	NA

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

2. The test was performed in HwaYa Shielded Room 2 (Conduction 2).

3. The VCCI Site Registration No. is C-12047.

4. Tested date: Sep. 07 ~ Sep 10, 2021

4.2.3 Test Procedures

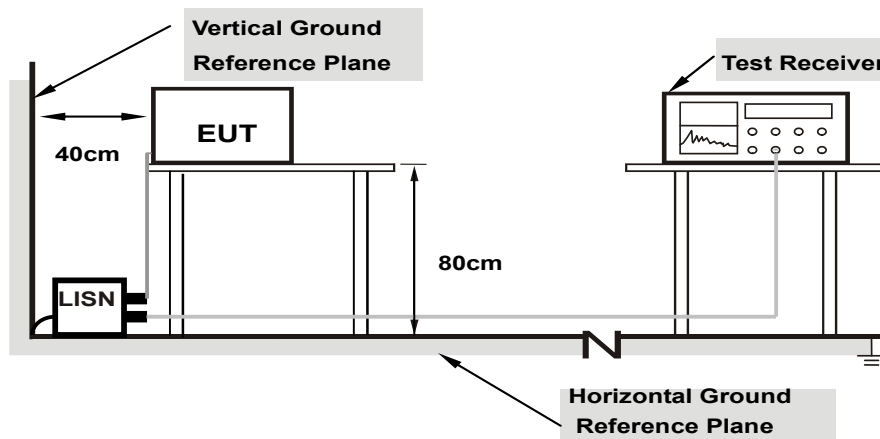
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

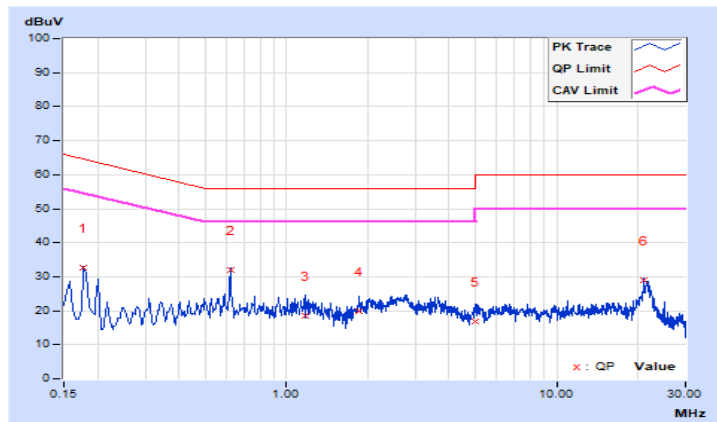
Worst-case data:

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A1 (120Vac)		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17800	10.12	22.67	0.56	32.79	10.68	64.58	54.58	-31.79	-43.90
2	0.62200	10.15	21.87	18.40	32.02	28.55	56.00	46.00	-23.98	-17.45
3	1.17000	10.18	8.50	3.93	18.68	14.11	56.00	46.00	-37.32	-31.89
4	1.86600	10.20	9.60	5.40	19.80	15.60	56.00	46.00	-36.20	-30.40
5	5.00200	10.26	6.65	1.75	16.91	12.01	60.00	50.00	-43.09	-37.99
6	21.08200	10.44	18.60	13.76	29.04	24.20	60.00	50.00	-30.96	-25.80

Remarks:

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

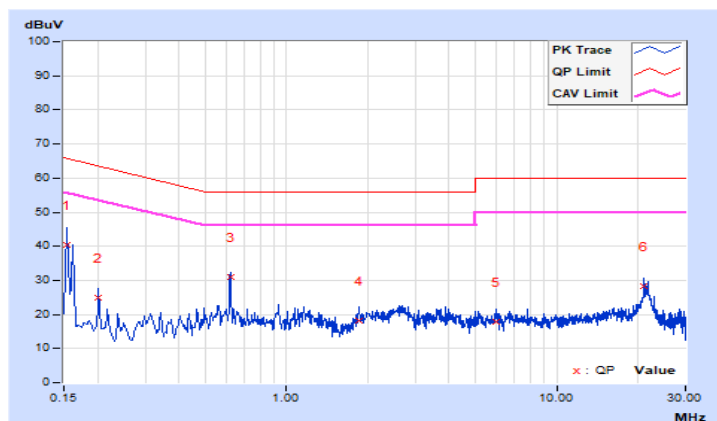


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A1 (120Vac)		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15400	10.12	30.16	10.09	40.28	20.21	65.78
2	0.20200	10.13	14.90	5.41	25.03	15.54	63.53	53.53	-38.50	-37.99
3	0.61894	10.16	20.69	18.97	30.85	29.13	56.00	46.00	-25.15	-16.87
4	1.85000	10.21	7.87	2.54	18.08	12.75	56.00	46.00	-37.92	-33.25
5	6.00200	10.33	7.55	1.47	17.88	11.80	60.00	50.00	-42.12	-38.20
6	21.07800	10.64	17.70	13.76	28.34	24.40	60.00	50.00	-31.66	-25.60

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.

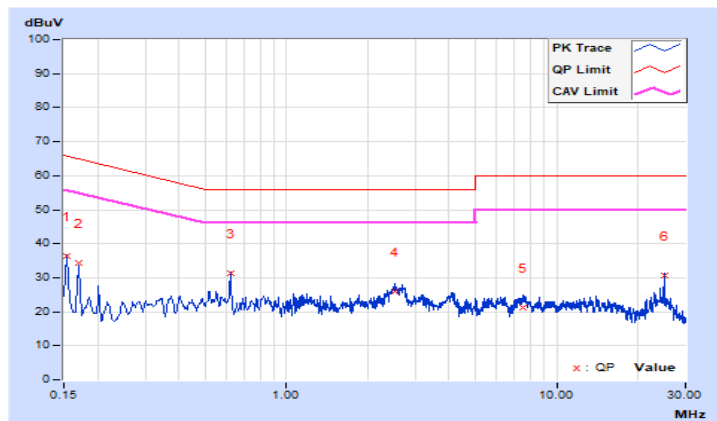


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A1 (277Vac)		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15400	10.11	26.21	10.49	36.32	20.60	65.78
2	0.17000	10.12	24.35	2.22	34.47	12.34	64.96	54.96	-30.49	-42.62
3	0.62200	10.15	21.05	18.66	31.20	28.81	56.00	46.00	-24.80	-17.19
4	2.53000	10.22	15.67	12.29	25.89	22.51	56.00	46.00	-30.11	-23.49
5	7.51800	10.29	11.02	6.37	21.31	16.66	60.00	50.00	-38.69	-33.34
6	24.99800	10.29	20.48	18.91	30.77	29.20	60.00	50.00	-29.23	-20.80

Remarks:

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

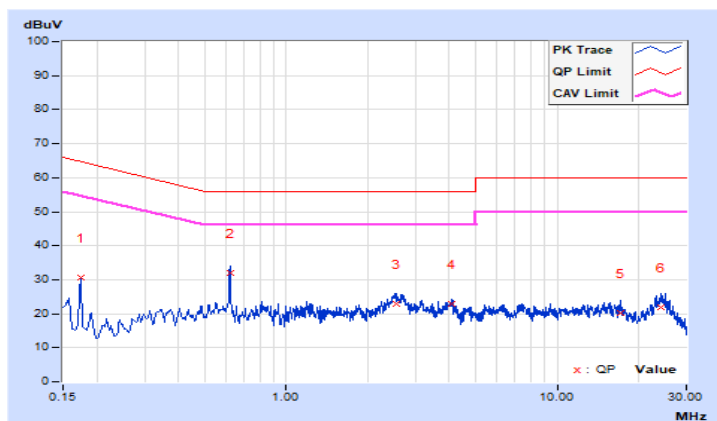


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A1 (277Vac)		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.17400	10.12	20.52	2.15	30.64	12.27	64.77
2	0.62200	10.16	21.69	18.30	31.85	28.46	56.00	46.00	-24.15	-17.54
3	2.56200	10.24	12.71	8.92	22.95	19.16	56.00	46.00	-33.05	-26.84
4	4.08200	10.28	12.55	5.34	22.83	15.62	56.00	46.00	-33.17	-30.38
5	17.14600	10.60	9.54	2.87	20.14	13.47	60.00	50.00	-39.86	-36.53
6	24.17400	10.51	11.34	5.78	21.85	16.29	60.00	50.00	-38.15	-33.71

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.

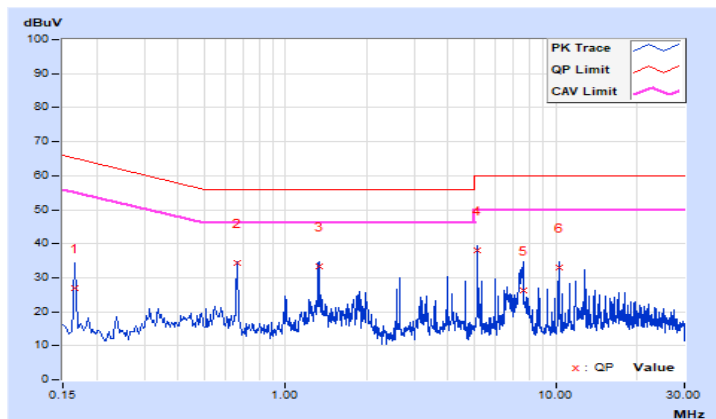


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A2 (24Vdc)		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.16600	10.12	16.67	5.94	26.79	16.06	65.16
2	0.66200	10.15	24.34	21.31	34.49	31.46	56.00	46.00	-21.51	-14.54
3	1.32600	10.18	23.27	19.09	33.45	29.27	56.00	46.00	-22.55	-16.73
4	5.13400	10.26	27.91	16.82	38.17	27.08	60.00	50.00	-21.83	-22.92
5	7.56600	10.29	15.96	4.72	26.25	15.01	60.00	50.00	-33.75	-34.99
6	10.30200	10.33	22.67	11.18	33.00	21.51	60.00	50.00	-27.00	-28.49

Remarks:

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

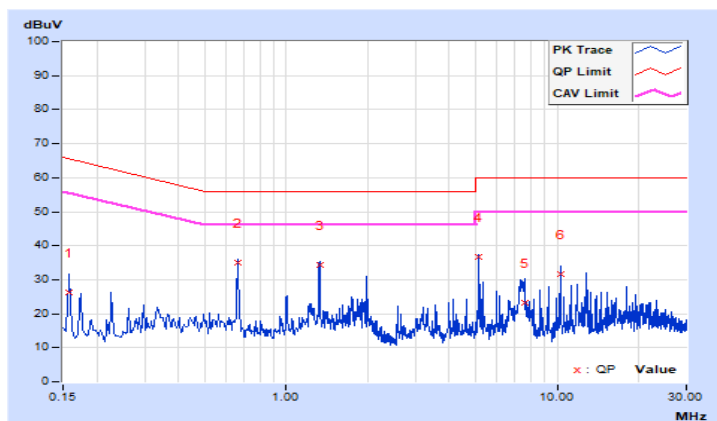


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A2 (24Vdc)		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15800	10.12	16.30	5.06	26.42	15.18	65.57
2	0.66200	10.16	24.74	21.78	34.90	31.94	56.00	46.00	-21.10	-14.06
3	1.32600	10.19	24.12	20.71	34.31	30.90	56.00	46.00	-21.69	-15.10
4	5.15000	10.31	26.37	18.12	36.68	28.43	60.00	50.00	-23.32	-21.57
5	7.59000	10.36	12.73	2.57	23.09	12.93	60.00	50.00	-36.91	-37.07
6	10.31400	10.43	21.29	8.12	31.72	18.55	60.00	50.00	-28.28	-31.45

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.

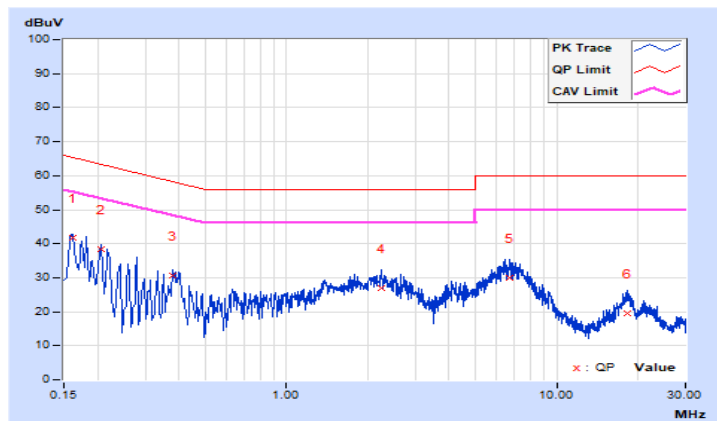


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A3 (56Vdc)		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.16105	10.11	31.64	10.68	41.75	20.79	65.41
2	0.20600	10.13	28.27	4.44	38.40	14.57	63.37	53.37	-24.97	-38.80
3	0.37800	10.14	20.38	6.38	30.52	16.52	58.32	48.32	-27.80	-31.80
4	2.23800	10.21	16.75	4.22	26.96	14.43	56.00	46.00	-29.04	-31.57
5	6.72200	10.28	19.82	6.65	30.10	16.93	60.00	50.00	-29.90	-33.07
6	18.32200	10.45	9.19	2.44	19.64	12.89	60.00	50.00	-40.36	-37.11

Remarks:

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

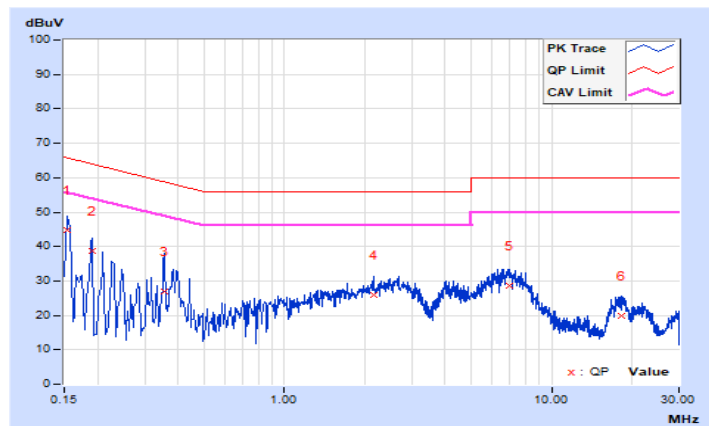


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A3 (56Vdc)		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15400	10.12	34.51	10.03	44.63	20.15	65.78
2	0.19000	10.13	28.75	7.27	38.88	17.40	64.04	54.04	-25.16	-36.64
3	0.35400	10.15	16.79	2.61	26.94	12.76	58.87	48.87	-31.93	-36.11
4	2.15800	10.22	15.76	3.12	25.98	13.34	56.00	46.00	-30.02	-32.66
5	7.00200	10.35	18.31	5.93	28.66	16.28	60.00	50.00	-31.34	-33.72
6	18.38200	10.63	9.20	2.46	19.83	13.09	60.00	50.00	-40.17	-36.91

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.

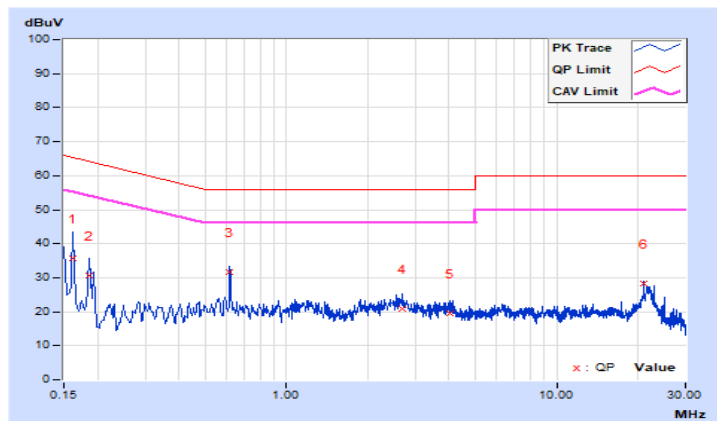


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B1 (120Vac)		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.16200	10.11	25.43	5.02	35.54	15.13	65.36
2	0.18600	10.12	20.54	7.28	30.66	17.40	64.21	54.21	-33.55	-36.81
3	0.61800	10.15	21.41	18.27	31.56	28.42	56.00	46.00	-24.44	-17.58
4	2.67400	10.22	10.49	5.85	20.71	16.07	56.00	46.00	-35.29	-29.93
5	4.04600	10.24	9.28	4.98	19.52	15.22	56.00	46.00	-36.48	-30.78
6	21.08200	10.44	17.97	13.54	28.41	23.98	60.00	50.00	-31.59	-26.02

Remarks:

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

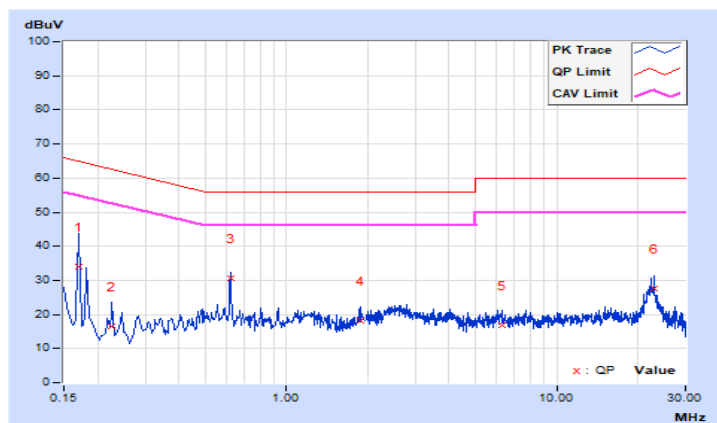


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B1 (120Vac)		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.17000	10.12	23.95	0.21	34.07	10.33	64.96
2	0.22600	10.13	6.52	4.98	16.65	15.11	62.60	52.60	-45.95	-37.49
3	0.62200	10.16	20.51	18.38	30.67	28.54	56.00	46.00	-25.33	-17.46
4	1.87000	10.21	7.98	1.15	18.19	11.36	56.00	46.00	-37.81	-34.64
5	6.25400	10.33	6.65	0.10	16.98	10.43	60.00	50.00	-43.02	-39.57
6	22.94200	10.56	16.90	12.65	27.46	23.21	60.00	50.00	-32.54	-26.79

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.

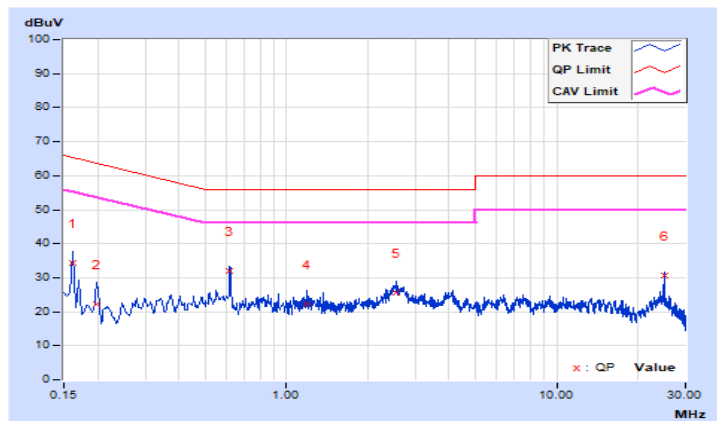


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B1 (277Vac)		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.16200	10.11	24.16	5.33	34.27	15.44	65.36
2	0.19800	10.13	12.09	1.91	22.22	12.04	63.69	53.69	-41.47	-41.65
3	0.61800	10.15	21.75	18.70	31.90	28.85	56.00	46.00	-24.10	-17.15
4	1.18600	10.18	12.06	8.68	22.24	18.86	56.00	46.00	-33.76	-27.14
5	2.56200	10.22	15.22	11.98	25.44	22.20	56.00	46.00	-30.56	-23.80
6	24.99800	10.29	20.44	18.92	30.73	29.21	60.00	50.00	-29.27	-20.79

Remarks:

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

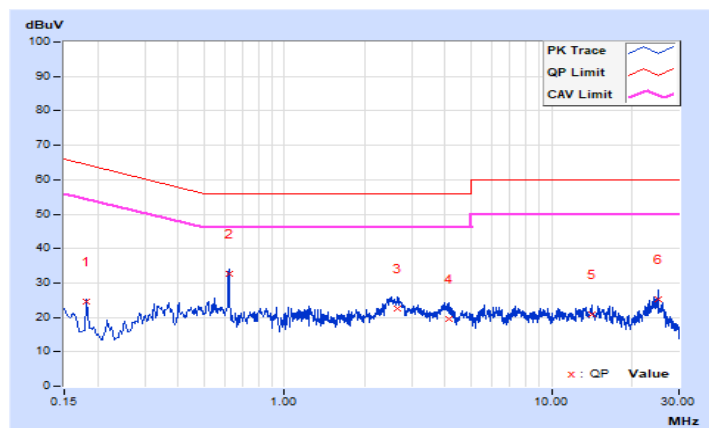


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B1 (277Vac)		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.18200	10.13	14.33	0.29	24.46	10.42	64.39
2	0.61894	10.16	22.45	19.30	32.61	29.46	56.00	46.00	-23.39	-16.54
3	2.64600	10.24	12.39	8.77	22.63	19.01	56.00	46.00	-33.37	-26.99
4	4.14600	10.28	9.30	5.01	19.58	15.29	56.00	46.00	-36.42	-30.71
5	14.09000	10.51	10.21	3.07	20.72	13.58	60.00	50.00	-39.28	-36.42
6	24.99800	10.48	14.70	11.58	25.18	22.06	60.00	50.00	-34.82	-27.94

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.

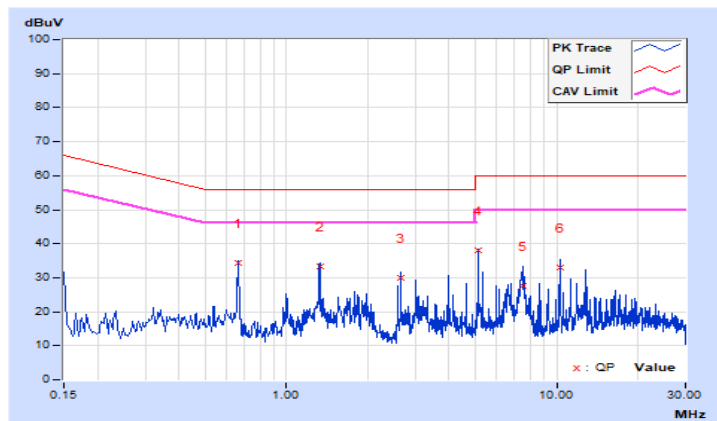


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B2 (24Vdc)		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.66200	10.15	24.33	21.28	34.48	31.43	56.00
2	1.32600	10.18	23.30	19.15	33.48	29.33	56.00	46.00	-22.52	-16.67
3	2.64997	10.22	19.83	14.25	30.05	24.47	56.00	46.00	-25.95	-21.53
4	5.14200	10.26	27.66	19.28	37.92	29.54	60.00	50.00	-22.08	-20.46
5	7.54200	10.29	17.30	5.94	27.59	16.23	60.00	50.00	-32.41	-33.77
6	10.28600	10.33	22.51	11.06	32.84	21.39	60.00	50.00	-27.16	-28.61

Remarks:

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

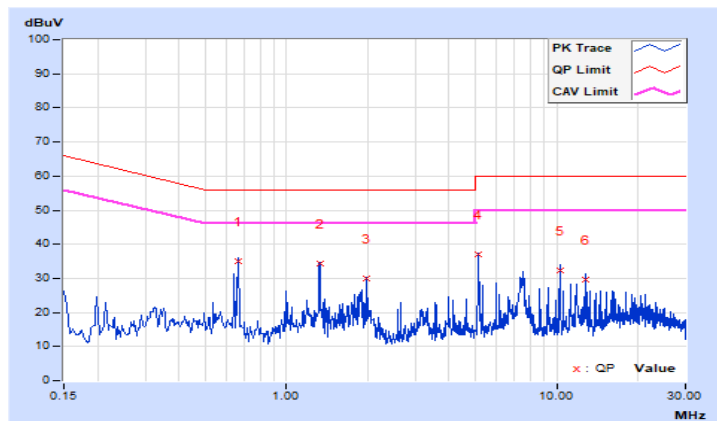


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B2 (24Vdc)		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.66200	10.16	24.76	21.80	34.92	31.96	56.00
2	1.32600	10.19	24.14	20.79	34.33	30.98	56.00	46.00	-21.67	-15.02
3	1.98600	10.22	19.88	14.31	30.10	24.53	56.00	46.00	-25.90	-21.47
4	5.14600	10.31	26.58	18.20	36.89	28.51	60.00	50.00	-23.11	-21.49
5	10.28200	10.43	21.81	10.27	32.24	20.70	60.00	50.00	-27.76	-29.30
6	12.83800	10.49	19.13	7.64	29.62	18.13	60.00	50.00	-30.38	-31.87

Remarks:

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

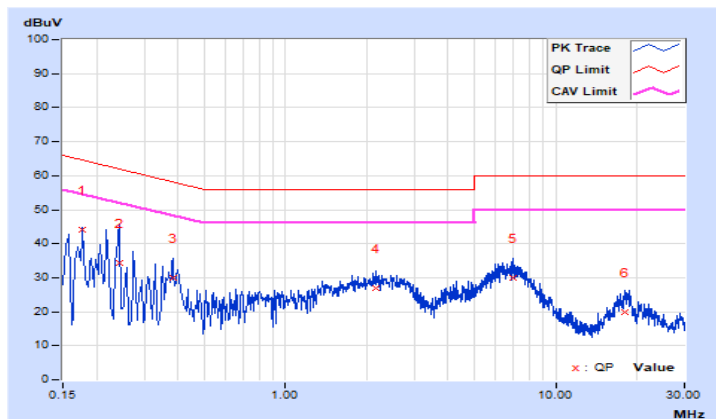


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B3 (56Vdc)		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.17800	10.12	34.09	9.17	44.21	19.29	64.58
2	0.24200	10.13	24.12	0.22	34.25	10.35	62.03	52.03	-27.78	-41.68
3	0.38200	10.14	19.76	3.66	29.90	13.80	58.24	48.24	-28.34	-34.44
4	2.17400	10.21	16.65	3.80	26.86	14.01	56.00	46.00	-29.14	-31.99
5	6.95800	10.28	19.54	6.55	29.82	16.83	60.00	50.00	-30.18	-33.17
6	18.15000	10.45	9.26	2.32	19.71	12.77	60.00	50.00	-40.29	-37.23

Remarks:

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

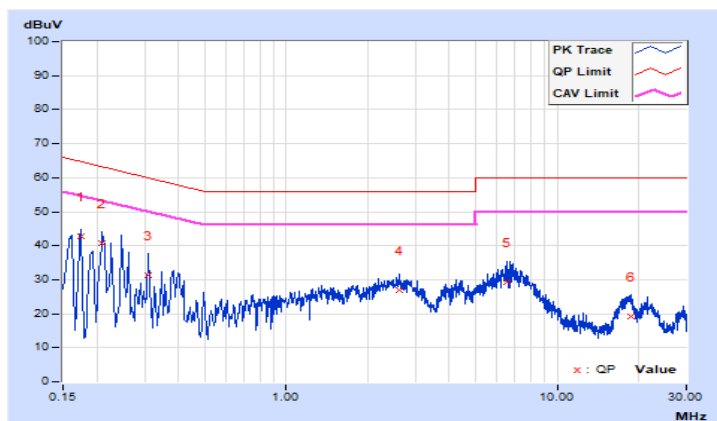


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B3 (56Vdc)		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.17400	10.12	32.68	9.69	42.80	19.81	64.77
2	0.21000	10.13	30.45	3.48	40.58	13.61	63.21	53.21	-22.63	-39.60
3	0.31000	10.14	21.33	0.34	31.47	10.48	59.97	49.97	-28.50	-39.49
4	2.61000	10.24	16.58	3.73	26.82	13.97	56.00	46.00	-29.18	-32.03
5	6.51800	10.34	19.04	6.39	29.38	16.73	60.00	50.00	-30.62	-33.27
6	18.72200	10.64	8.69	2.65	19.33	13.29	60.00	50.00	-40.67	-36.71

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.

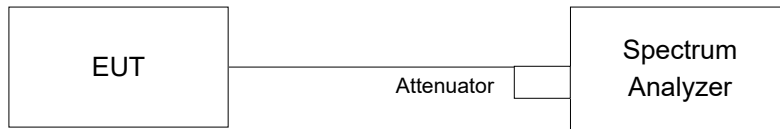


4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

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 Procedure

- Set resolution bandwidth (RBW) = 100kHz.
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

4.3.5 Deviation from Test Standard

No deviation.

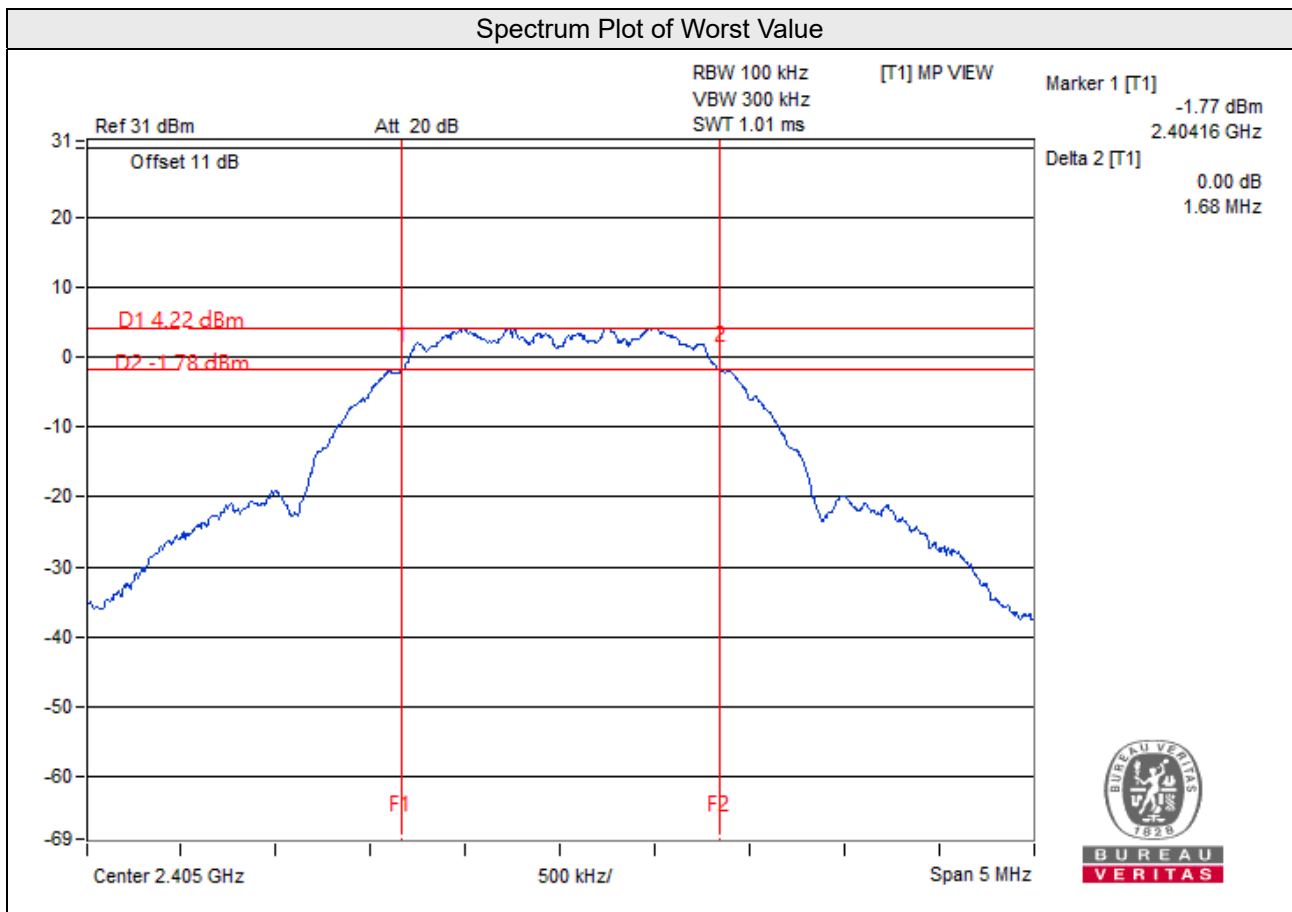
4.3.6 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 Test Result

External antenna: Mode B1

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
11	2405	1.68	0.5	Pass
18	2440	1.68	0.5	Pass
26	2480	1.68	0.5	Pass

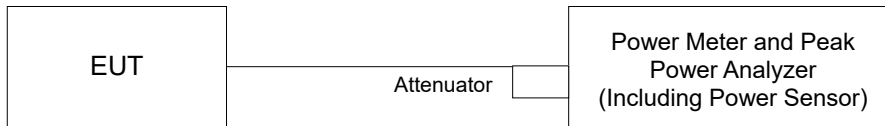


4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

For Peak Power

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

For Average Power

Average power sensor was 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. Duty factor is not added to measured value.

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

Same as item 4.3.6.

4.4.7 Test Results

Internal antenna: Mode A1

For Peak Power

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
11	2405	3.041	4.83	30.00	Pass
18	2440	3.112	4.93	30.00	Pass
26	2480	2.965	4.72	30.00	Pass

For Average Power

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
11	2405	2.512	4.00
18	2440	2.723	4.35
26	2480	2.612	4.17

External antenna: Mode B1

For Peak Power

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
11	2405	4.808	6.82	30.00	Pass
18	2440	5.047	7.03	30.00	Pass
26	2480	5.140	7.11	30.00	Pass

For Average Power

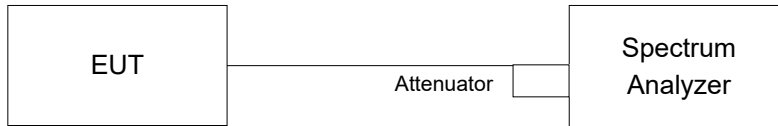
Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
11	2405	4.898	6.90
18	2440	3.981	6.00
26	2480	4.786	6.80

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm per 3kHz.

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

- a. Set analyzer center frequency to DTS channel center frequency.
- b. Set the span to 1.5 times the DTS bandwidth.
- c. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- d. Set the VBW $\geq 3 \times \text{RBW}$.
- e. Detector = peak.
- f. Sweep time = auto couple.
- g. Trace mode = max hold.
- h. Allow trace to fully stabilize.
- i. Use the peak marker function to determine the maximum amplitude level within the RBW.

4.5.5 Deviation from Test Standard

No deviation.

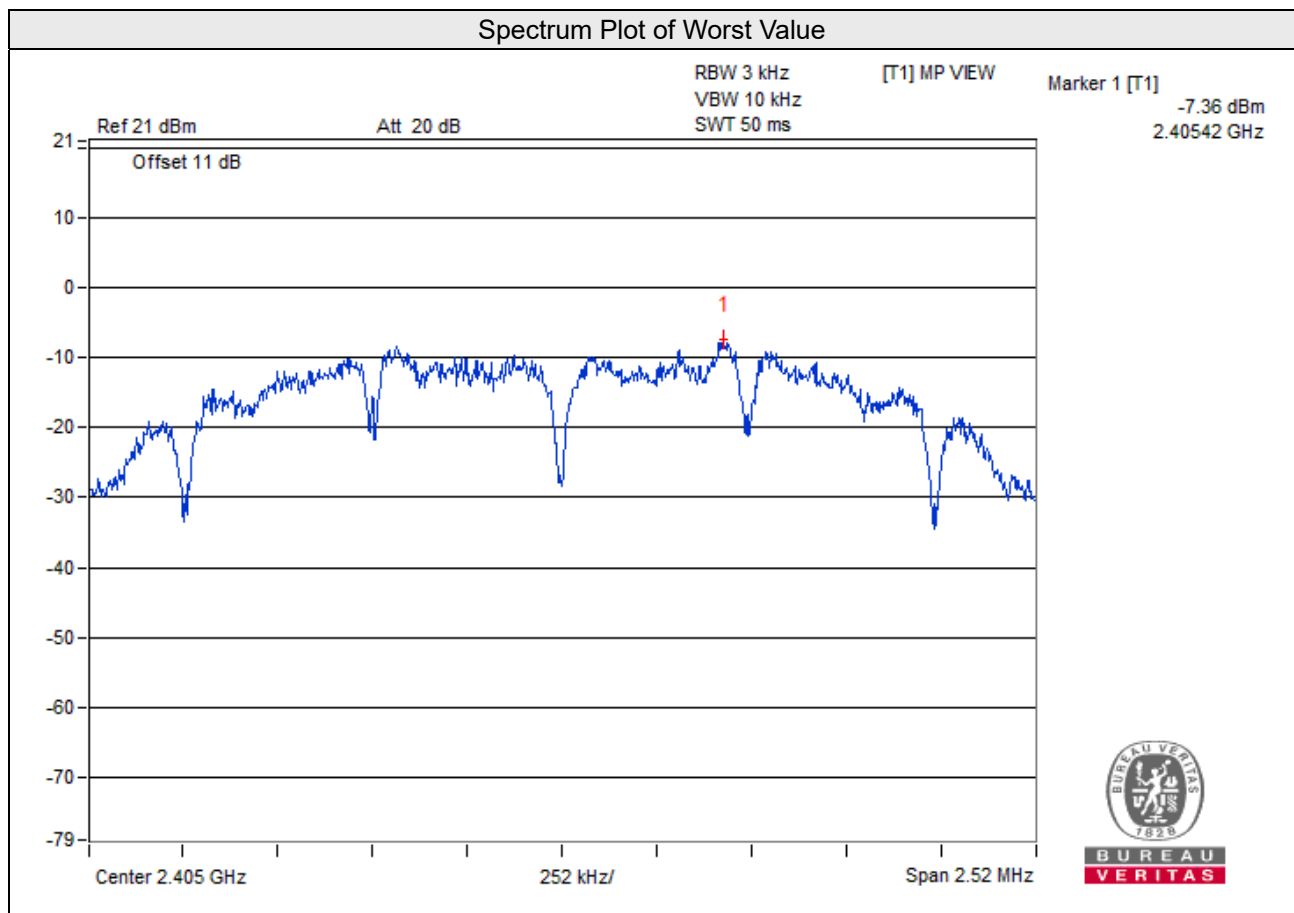
4.5.6 EUT Operating Condition

Same as item 4.3.6

4.5.7 Test Results

External antenna: Mode B1

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
11	2405	-7.36	8.00	Pass
18	2440	-7.76	8.00	Pass
26	2480	-9.04	8.00	Pass

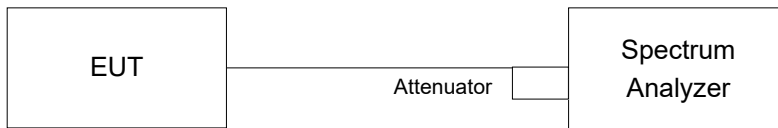


4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

MEASUREMENT PROCEDURE OOB

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

Same as item 4.3.6

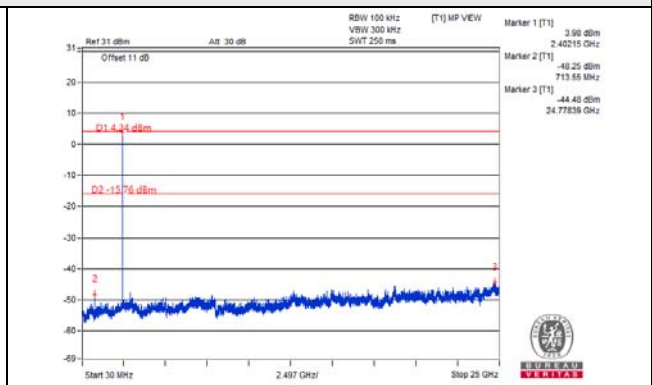
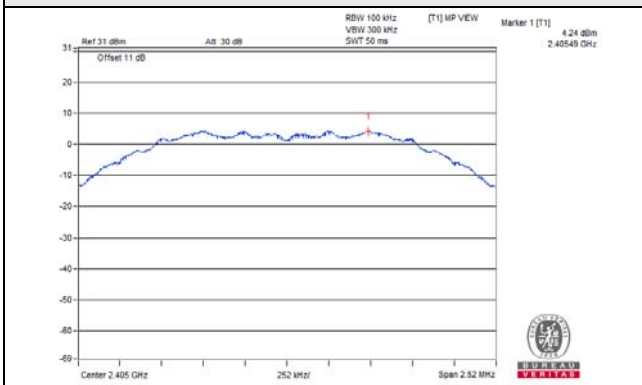
4.6.7 Test Results

The conducted emission test is performed on each TX port of operating mode without summing or adding $10\log(N)$ since the limit is relative emission limit.

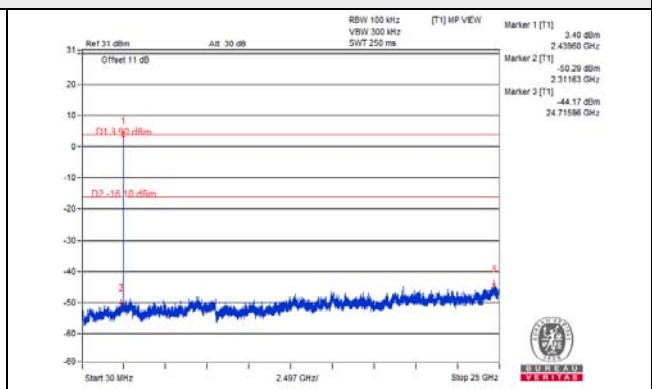
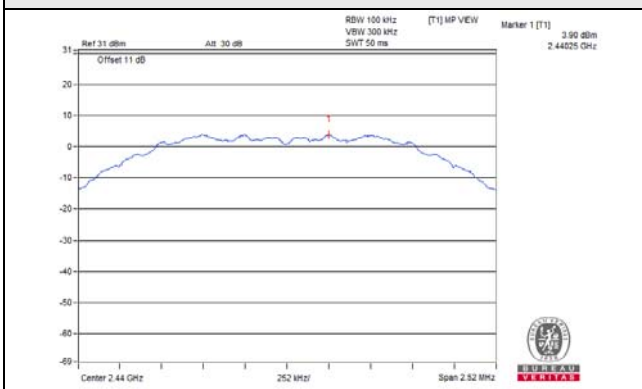
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

External antenna: Mode B1

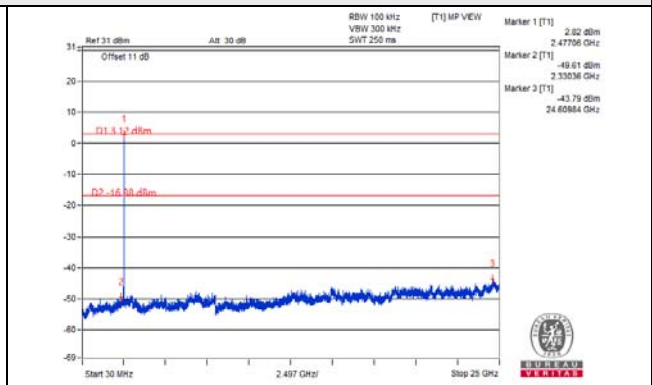
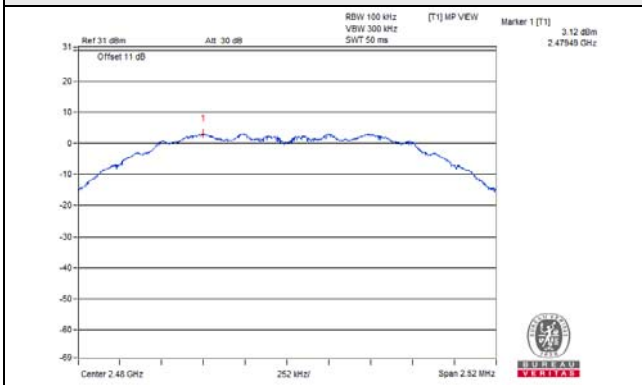
CH 11



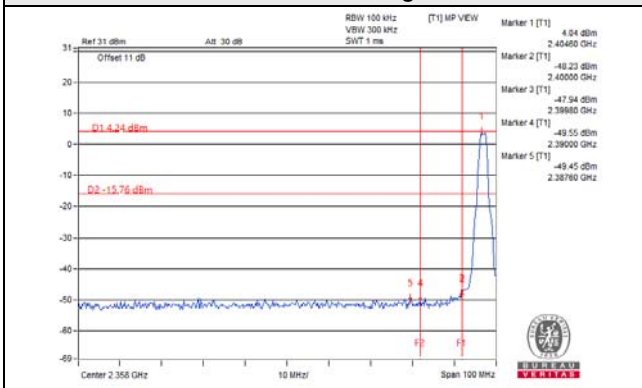
CH 18



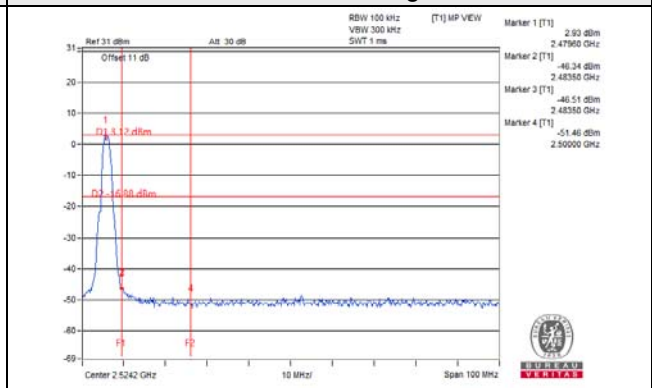
CH 26



CH 11 Band edge

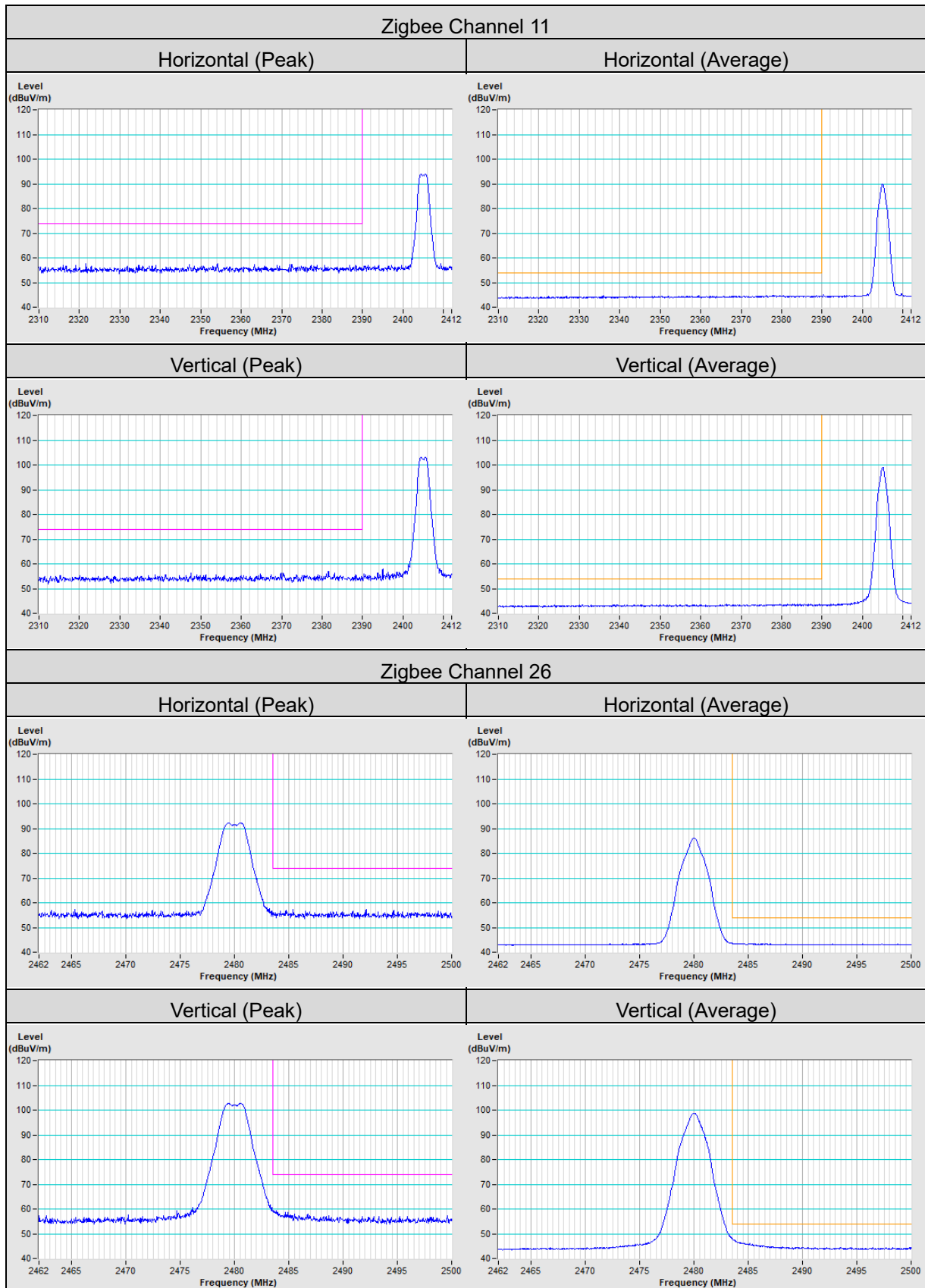


CH 26 Band edge

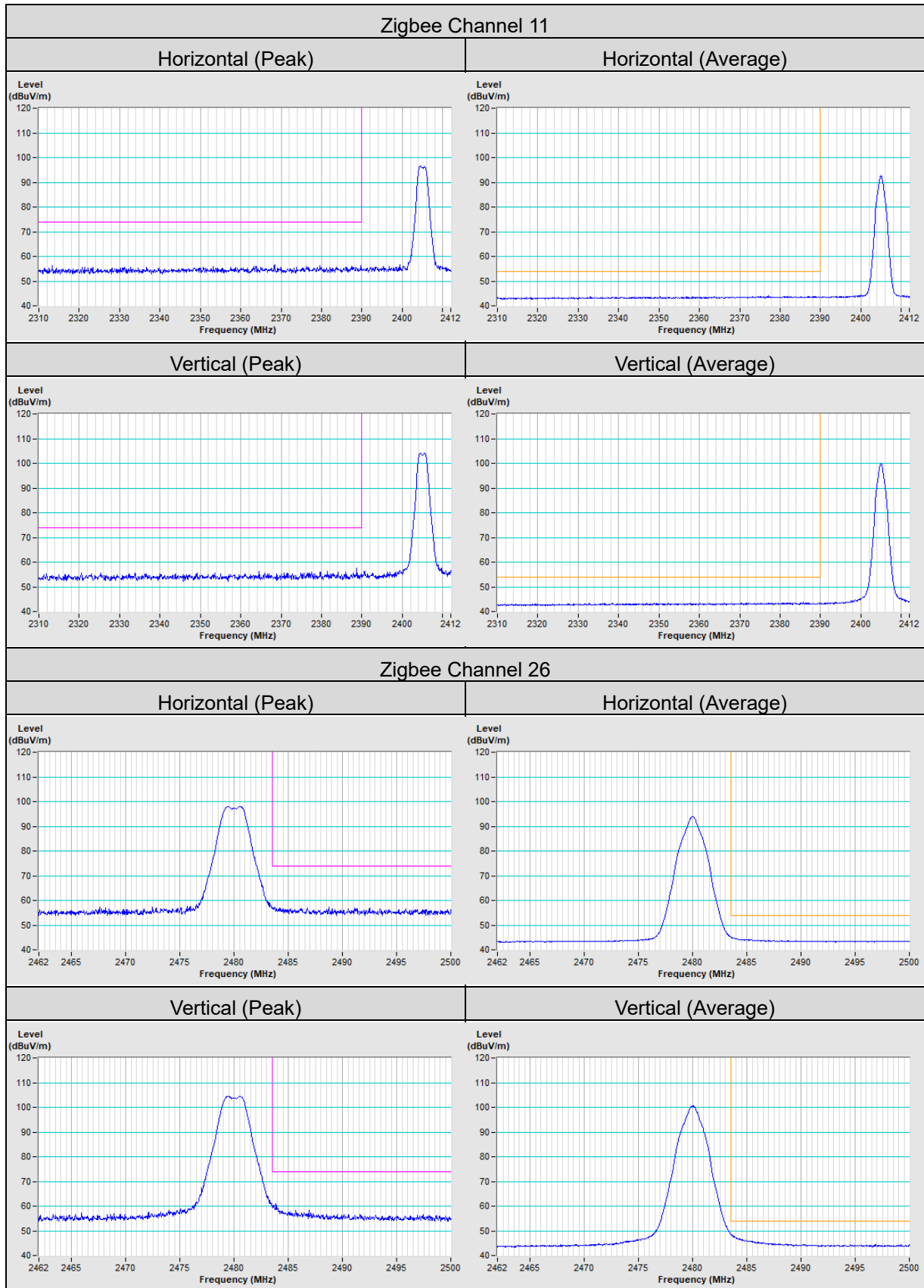


Annex A - Band Edge Measurement

Internal antenna: Mode A1



External antenna: Mode B1



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 and approved 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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