Prüfbericht-Nr.: *Test report no.:*	CN211L0M (P15C-2.4G) 001	**Auftrags-Nr.:** *Order no.*:	238516955	Seite 1 von 26 *Page 1 of 26*
Kunden-Referenz-Nr.: *Client reference no.:*	N/A	**Auftragsdatum:** *Order date:*	2021-06-29	
Auftraggeber: *Client:*	HP Inc. 3390 East Harmony Road, Mailstop 66, Fort Collins, CO 80528, United States			
Prüfgegenstand: *Test item:*	Wireless Adapter			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	CP001WA			
Auftrags-Inhalt: *Order content*:	FCC Part 15C Test report (2.4GHz)			
Prüfgrundlage: *Test specification:*	FCC 47CFR Part 15: Subpart C Section 15.247			

Wareneingangsdatum: *Date of sample receipt:*	2021-07-02
Prüfmuster-Nr.: *Test sample no:*	A003084607-006 A003084607-009
Prüfzeitraum: *Testing period:*	2021-07-05 - 2021-07-14
Ort der Prüfung: *Place of testing:*	EMC/RF Taipei Testing Site
Prüflaboratorium: *Testing laboratory:*	Taipei Testing Laboratories
Prüfergebnis*: *Test result*:*	Pass

überprüft von: *compiled by:*		**genehmigt von:** authorized by:	
Datum: *Date:* 2021-08-16		**Ausstellungsdatum:** *Issue date:* 2021-08-16	
Stellung / *Position:*	Ryan Chen Senior Project Manager	**Stellung** / *Position:*	Brenda Chen Senior Project Manager

Sonstiges / *Other:*

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
** Legend:*	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

TEST SUMMARY

Report Section	FCC Clause	Test Item	Result
5.1.1	15.247(b) & 15.203	Antenna Requirement	Pass
5.1.2	15.247(b)(3)	Peak Output Power	Pass
5.1.3	15.247(a)(2)	6 dB Bandwidth	Pass
5.1.3	2.1049	99% Occupied Bandwidth	Pass
5.1.4	15.247(e)	Power Spectral Density	Pass
5.1.5	15.247(d)	Conducted Spurious Emissions and Band Edges	Pass
5.1.6	15.247(d) & 15.205 & 15.209	Radiated Spurious Emissions and Band Edges	Pass
5.2.1	15.207	Mains Conducted Emission	Pass

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

Contents

HISTORY OF THIS TEST REPORT

Report No.	Description	Date Issued
CN211L0M (P15C-2.4G) 001	Original Release	2021-08-16

1. General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:
Appendix A - Test Result of Conducted
Appendix B - Test Result of Radiated Emissions & Mains Conducted Emission
Appendix SP - Photographs of Test Setup
Appendix EP - Photographs of EUT

Applied Standard and Test Levels

Radio
FCC 47CFR Part 15: Subpart C Section 15.247
FCC 47CFR Part 2: Subpart J Section 2.1049
ANSI C63.10:2013
KDB 558074 D01 15.247 Meas Guidance v05r02

1.2 Decision Rule of Conformity

The decision rule of conformity of this test report is following the requirements of the requested standard in the quotation, and agreed among testing laboratory and manufacturer (applicant) to exclude the consideration of Measurement Uncertainty, unless it is required by the specific standard.

2. Test Sites

2.1 Test Laboratory

Taipei Testing Laboratories

11F. No.758, Sec. 4, Bade Rd., Songshan Dist.
Taipei City 105
Taiwan (R.O.C.)

2.2 Test Facility

Taipei Testing Laboratories

No.458-18, Sec. 2, Fenliao Rd., Linkou Dist.,
New Taipei City 244
Taiwan (R.O.C.)
FCC Registration No.: 226631
ISED Registration No.: 25563

2.3 Traceability

All measurement equipment calibrations are traceable to NML(Taiwan)/NIST(USA) or where calibration is performed outside Taiwan, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically in a suitably accredited Calibration Lab. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

2.5 Measurement Uncertainty

All measurement uncertainty values are shown with a coverage factor of k=2 to indicate a 95% level of confidence.

Emission Measurement Uncertainty

Parameter	Uncertainty
Radiated Emission (9 kHz ~ 30 MHz)	± 1.15 dB
Radiated Emission (30 MHz ~ 200 MHz)	± 1.32 dB
Radiated Emission (200 MHz ~ 1 GHz)	± 1.31 dB
Radiated Emission (1 GHz ~ 18 GHz)	± 1.53 dB
Radiated Emission (18 GHz ~ 40 GHz)	± 2.50 dB
Mains Conducted Emission	± 1.65 dB

3. General Product Information

3.1 Product Function and Intended Use

The EUT is a Wireless Adapter. It contains a 2.4GHz compatible module enabling the user to communicate data through a Wireless interface.
For details refer to the User Guide, Data Sheet and Circuit Diagram.

3.2 System Details and Ratings

Basic Information of EUT

Item	EUT information
Kind of Equipment/Test Item	Wireless Adapter
Type Identification	CP001WA
FCC ID	B94-CP001WA

Technical Specification of EUT

Item	EUT information
Operating Frequency	2404 MHz ~ 2478 MHz
Channel Number	16
Operation Voltage	5 Vdc
Modulation	GFSK
Maximum Output Power (mW)	2.05
Antenna Information	Refer to 5.1.1
Accessory Device	Refer to 4.4

3.3 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.4 Submitted Documents

- Circuit Diagram
- Instruction Manual
- Rating Label
- Technical Description

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

The test modes were adapted accordingly in reference to the instructions for use.
During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output expected by the customer and is going to be fixed on the firmware of the final end product.

Table for Parameters of Test Software Setting

Frequency (MHz)	Power Setting
2404	Default
2441	Default
2478	Default

4.2 Carrier Frequency and Channel

Frequency (MHz)			
2404	2422	2441	2461
2407	2427	2446	2466
2412	2432	2451	2471
2417	2436	2456	2478

4.3 Test Operation and Test Software

Setup for testing: Test samples are used to enable the operating modes through pressing button. It was used to enable the operation modes listed as below.

The samples were used as follows:
A003084607-006
A003084607-009
Full test was applied on all test modes, but only worst case was shown.

EUT Configure Mode	Applicable To				Description
	Antenna Port Conducted Measurement	Radiated Spurious Emissions above 1 GHz	Radiated Spurious Emissions below 1 GHz	Mains Conducted Emission	
-	√	√	√	√	-

Note:
1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when position on **Z-plane**.
2. "-" means no effect.

Antenna Port Conducted Measurement

☒ Pre-Scan full test was applied on all test modes, but only worst case was shown.
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Frequency (MHz)	Tested Frequency (MHz)
-	2404 to 2478	2404, 2441, 2478

Radiated Spurious Emissions (Above 1 GHz)

☒ Pre-Scan full test was applied on all test modes, but only worst case was shown.
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Frequency (MHz)	Tested Frequency (MHz)
-	2404 to 2478	2404, 2441, 2478

Radiated Spurious Emissions (Below 1 GHz)

☒ Pre-Scan full test was applied on all test modes, but only worst case was shown.
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Frequency (MHz)	Tested Frequency (MHz)
-	2404 to 2478	2478

Mains Conducted Emission

☒ Pre-Scan full test was applied on all test modes, but only worst case was shown.
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Frequency (MHz)	Tested Frequency (MHz)
-	2404 to 2478	2478

Test Condition

Test Item	Ambient Temperature	Relative Humidity	Tested by
Conducted Measurement	24.5-24.9 °C	46.5-57.5 %	Nick Hsu
Radiated Spurious Emissions above 1 GHz	21.3-23.3 °C	56-58 %	Temo Chen
Radiated Spurious Emissions below 1 GHz	21.3-23.3 °C	56-58 %	Temo Chen
Mains Conducted Emission	19.5 °C	61 %	Temo Chen

4.4 Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

Accessory of EUT

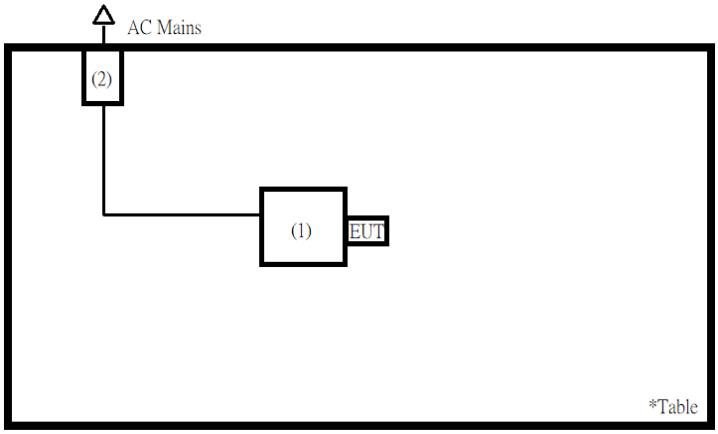
None

Support Unit

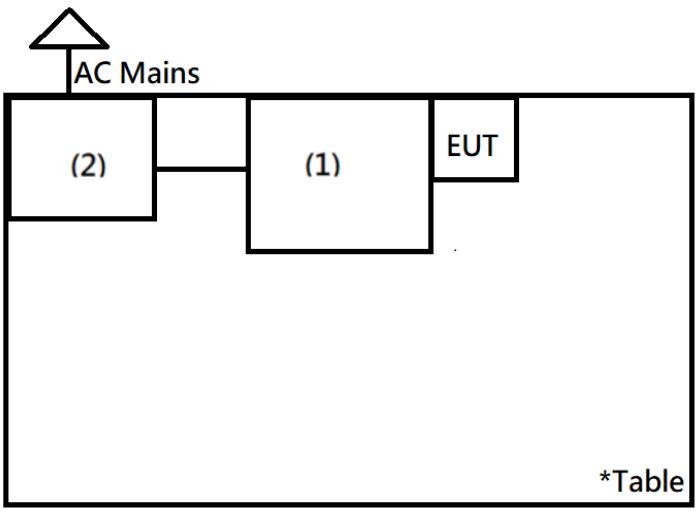
Support Unit								
No	Description	Brand	Model	S/N	Shielded	Ferrite Core (Qty)	Length (cm)	Remark
1	Notebook	HP	15-da1046TX	CND911MY2	-	-	-	--
2	Adaptor	HP	TPN-LA16	N/A	NO	NO	180	--

4.5 Test Setup Diagram

<Radiated Spurious Emissions mode>



<Mains Conducted Emission mode>



5. Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

Requirement Use of approved antennas only

According to the manufacturer declaration, the EUT has an antenna with a directional gain of 0.42 dBi. The antenna is a PCB antenna with no possibility of replacement with a non-approved antenna by the end-user. Therefore, the EUT is considered to comply with this provision.
Refer to EUT photo for details.

5.1.2 Peak Output Power

Limit 1 watt (30 dBm)

Kind of Test Site Shielded room

Test Setup

Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date	Test Date	
						From	Until
Power Meter	Anritsu	ML2495A	1901008	2021/3/24	2022/3/23	2021/7/5	2021/7/5
Power Sensor	Anritsu	MA2411B	1725269	2021/3/24	2022/3/23	2021/7/5	2021/7/5

Test Procedures

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.
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.

Test Result

Peak Output Power

Channel	Channel Frequency	Peak Output Power		Limit (dBm)
	(MHz)	(dBm)	(mW)	
Low Channel	2404	3.12	2.05	30
Middle Channel	2441	2.24	1.67	30
High Channel	2478	1.34	1.36	30

Average Power

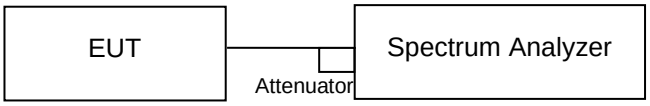
Channel	Channel Frequency	Average Power	
	(MHz)	(dBm)	(mW)
Low Channel	2404	3.05	2.02
Middle Channel	2441	2.16	1.64
High Channel	2478	1.26	1.34

5.1.3 6 dB Bandwidth and 99% Occupied Bandwidth

Limit The minimum 6 dB bandwidth shall be at least 500 kHz.

Kind of Test Site Shielded room

Test Setup



Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date	Test Date	
						From	Until
Spectrum Analyzer	R&S	FSV40	101512	2021/1/29	2022/1/28	2021/7/9	2021/7/14

Test Procedure

a. Set resolution bandwidth (RBW) = 100 kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. 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.
f. For 99% occupied bandwidth measurement, the transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to PEAK. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean power of a given emission.

Test Results

Please refer to Appendix A.

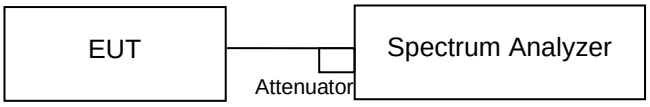
5.1.4 Power Spectral Density

Limit

The power spectral density shall not be greater than 8 dBm in any 3 kHz band.

Kind of Test Site Shielded room

Test Setup



Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date	Test Date	
						From	Until
Spectrum Analyzer	R&S	FSV40	101512	2021/1/29	2022/1/28	2021/7/9	2021/7/14

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 kHz ≤ RBW ≤ 100 kHz.
d. Set the VBW ≥ 3 × 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.

Test Results

Please refer to Appendix A.

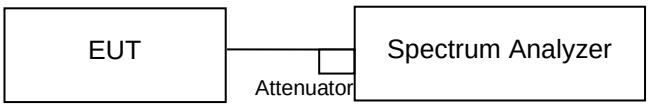
5.1.5 Conducted Spurious Emissions and Frequency Band Edges Measured in 100kHz Bandwidth

Limit

20dB (below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.)

Kind of Test Site Shielded room

Test Setup



Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date	Test Date	
						From	Until
Spectrum Analyzer	R&S	FSV40	101512	2021/1/29	2022/1/28	2021/7/9	2021/7/14

Test Procedure

Measurement procedure REF

1. Set the RBW = 100 kHz.
2. Set the VBW ≥ 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 OOBE

1. Set RBW = 100 kHz.
2. Set VBW ≥ 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.

Test Results

Please refer to Appendix A.

5.1.6 Radiated Spurious Emissions and Band Edges

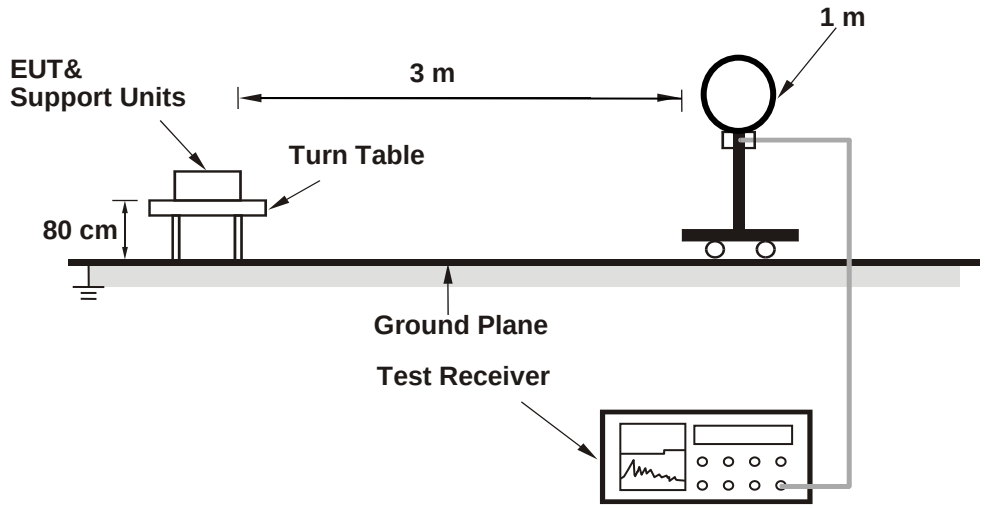
Limit

Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must comply with the radiated emission limits specified in §15.209(a).
Emissions radiated outside the restricted and authorized frequency bands must either comply with the radiated emission limits specified for the restricted bands or in §15.247(d).

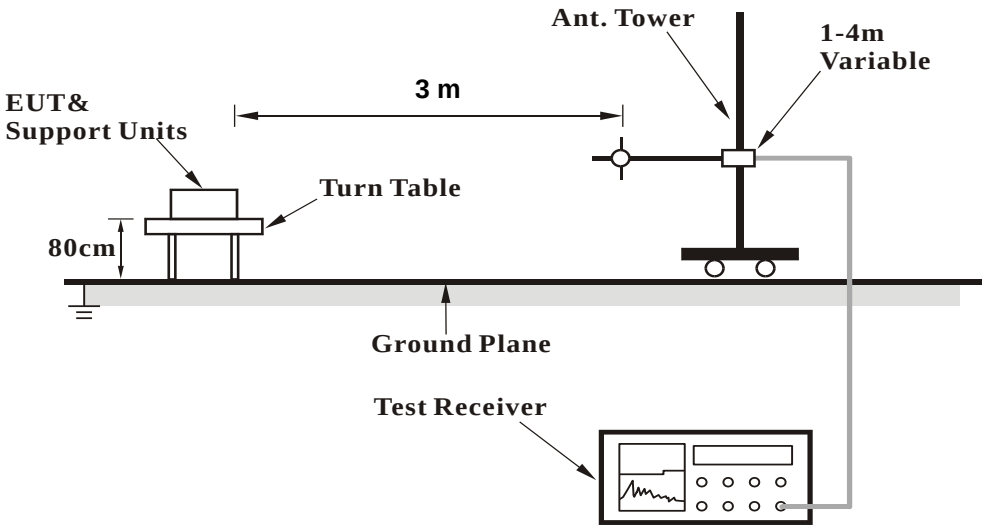
Kind of Test Site 3m Semi-Anechoic Chamber

Test Setup

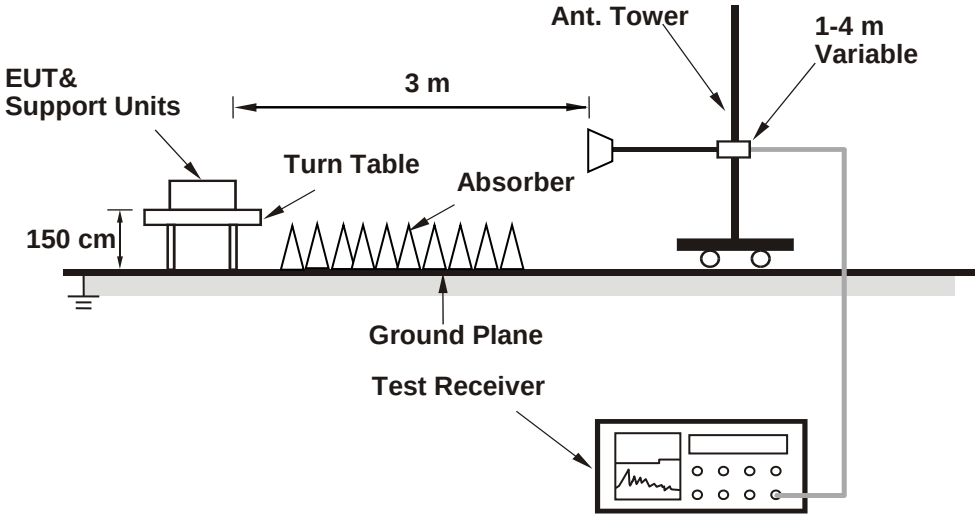
<Radiated Emissions below 30 MHz>



<Radiated Emissions 30 MHz to 1 GHz>



<Radiated Emissions above 1 GHz>



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

Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV40	101509	2021/3/24	2022/3/23
Receiver	R&S	ESR7	102108	2021/3/17	2022/3/16
Bilog Antenna	SCHWARZBECK	VULB-9168	00950	2021/1/25	2022/1/24
Horn Antenna	ETS-Lindgren	3117	00218929	2020/11/6	2021/11/5
LF-AMP	Agilent	8447D	2727A05146	2021/2/1	2022/1/31
HF-AMP + AC source	EMCI	EMC051845SE	980635	2021/2/1	2022/1/31
HF-AMP + AC source	EMCI	EMC184045SE	980656	2021/2/9	2022/2/8
Horn Antenna	SCHWARZBECK	BBHA 9170	00890	2021/4/14	2022/4/13
Microwave Cable	HUBER+SUHNER	SUCOFLEX 104EA	800057/4EA	2021/4/14	2022/4/13
Microwave Cable	HUBER+SUHNER	SUCOFLEX 104	802244/4	2021/4/14	2022/4/13
Microwave Cable	HUBER+SUHNER	SUCOFLEX 104	MY37203/4	2021/4/14	2022/4/13
Microwave Cable	HUBER+SUHNER	SUCOFLEX 102EA	800897/2EA	2021/3/11	2022/3/10
Microwave Cable	HUBER+SUHNER	SUCOFLEX 102EA	800902/2EA	2021/3/11	2022/3/10
Microwave Cable	HUBER+SUHNER	SUCOFLEX 102EA	801026/2EA	2021/3/11	2022/3/10
Loop Antenna	Chance Most	EMCILPA600 +calibration	287	2021/1/18	2022/1/17

Test Procedures

For Radiated Emissions below 30 MHz

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 (OPEN), perpendicular (CLOSE), and ground-parallel (GROUND) 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 9 kHz at frequency below 30 MHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

For Radiated Emissions above 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30 MHz ~ 1 GHz) / 1.5 meters (for above 1 GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
f. The test-receiver system was set to peak and average detected function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) or Peak detection (PK) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98 %) or 10 Hz (Duty cycle ≥ 98 %) for Average detection (AV) at frequency above 1 GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.
5. The Radiated Emissions testing was performed in the X(E1), Y(H) and Z(E2) axis orientation. The worst-case Axis orientation is recorded in this test report.

Test Results

Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)
Level (dBuV/m) = Reading (dBuV) + Factor (dB/m)

Please refer to Appendix B.

5.2 Mains Emission

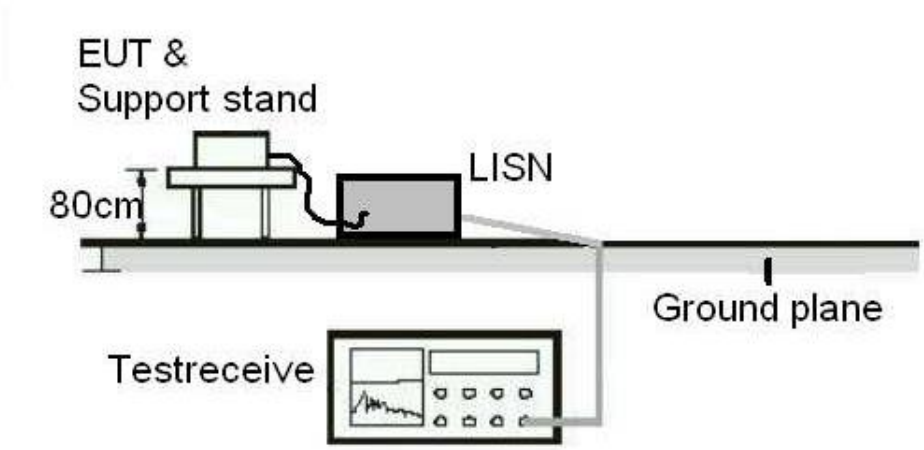
5.2.1 Mains Conducted Emission

Limit

Mains Conducted Emission as defined in §15.207 must comply with the mains conducted emission limits.

Kind of Test Site Shielded room

Test Setup



Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date
TWO-LINE V-NETWORK	R&S	ENV216	1816064	2020/9/10	2021/9/9
EMI Test Receiver	R&S	ESCI	1816063	2020/11/17	2021/11/16
RF Cable	N/A	N/A	EMC-003	2020/11/15	2021/11/14

Test Procedures

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

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

Test Results

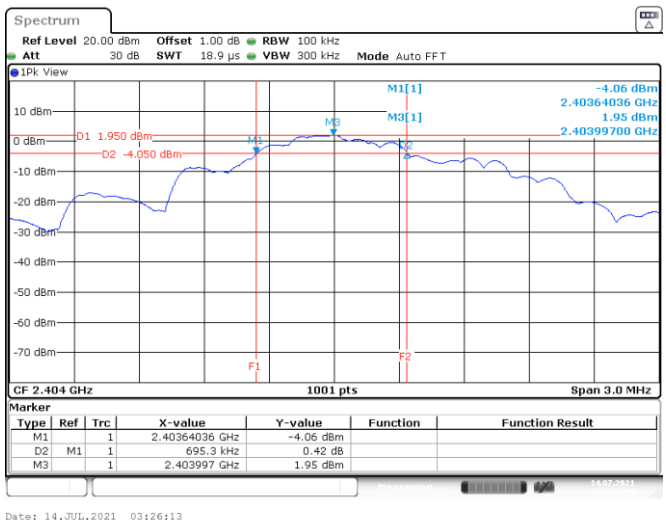
Please refer to Appendix B.

Appendix A: Test Results of Conducted Test

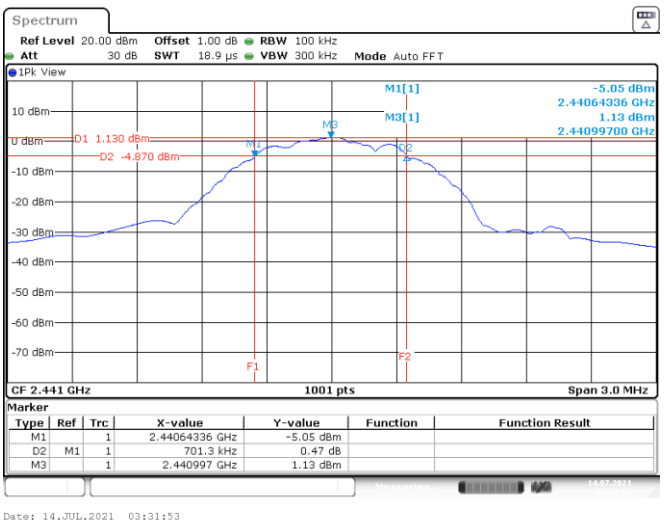
Test Result of 6 dB Bandwidth

Channel	Channel Frequency (MHz)	6 dB Bandwidth (kHz)	Limit (kHz)	Result
Low Channel	2404	695.30	> 500	Pass
Middle Channel	2441	701.30	> 500	Pass
High Channel	2478	1045.95	> 500	Pass

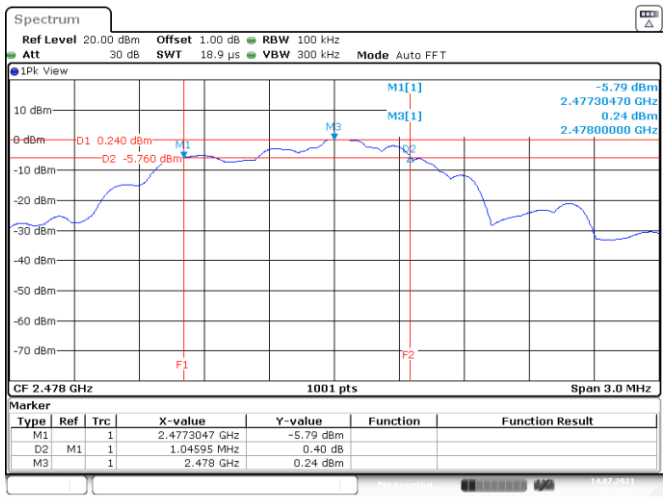
Low Channel



Middle Channel



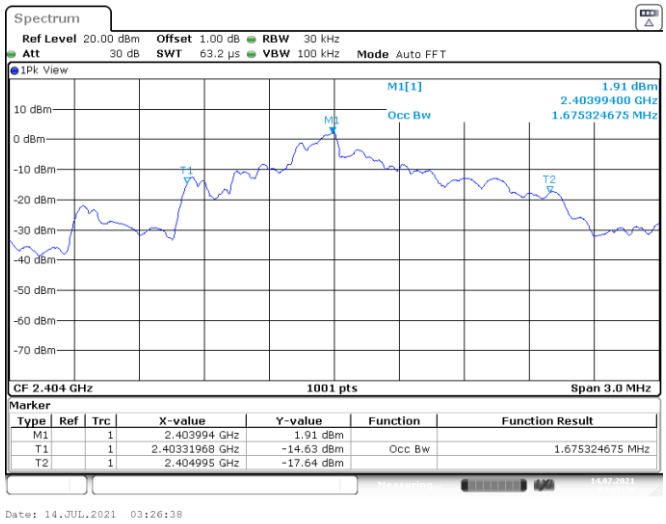
High Channel



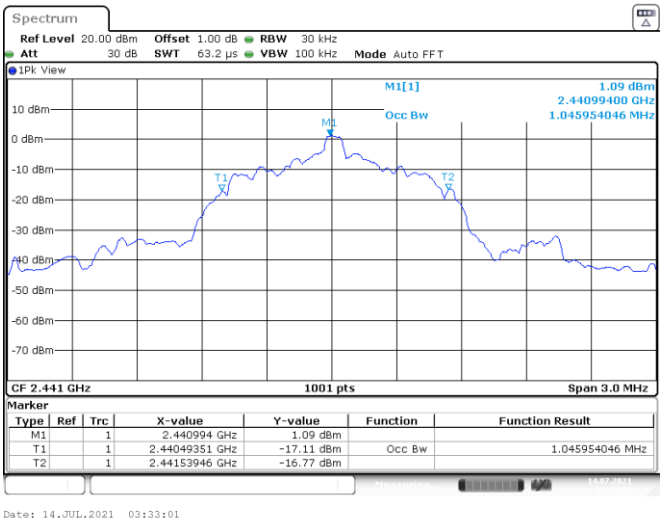
Test Result of 99% Occupied Bandwidth

Channel	Channel Frequency (MHz)	99% Bandwidth (MHz)
Low Channel	2404	1.675
Middle Channel	2441	1.046
High Channel	2478	1.418

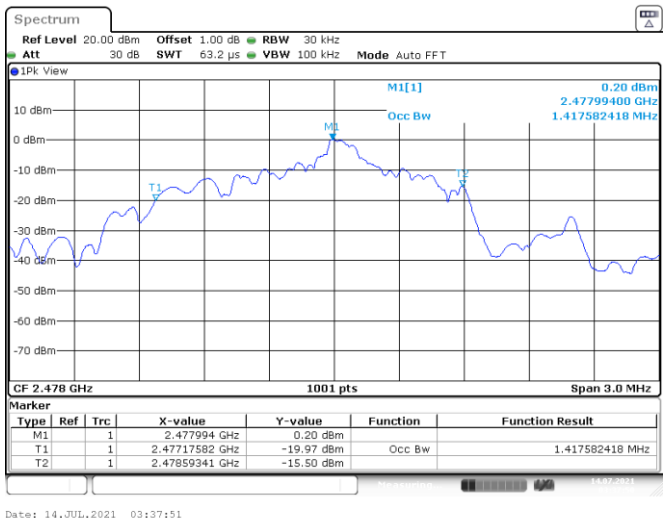
Low Channel



Middle Channel



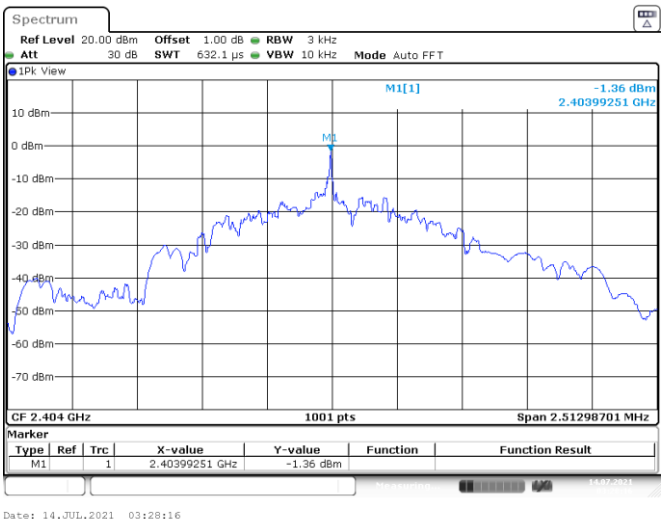
High Channel



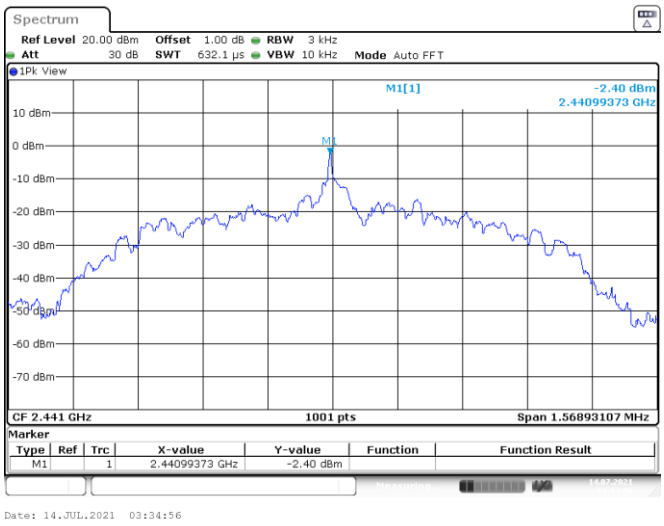
Test Result of Power Spectral Density

Channel	Channel Frequency (MHz)	Power Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low Channel	2404	-1.36	8	Pass
Middle Channel	2441	-2.40	8	Pass
High Channel	2478	-3.55	8	Pass

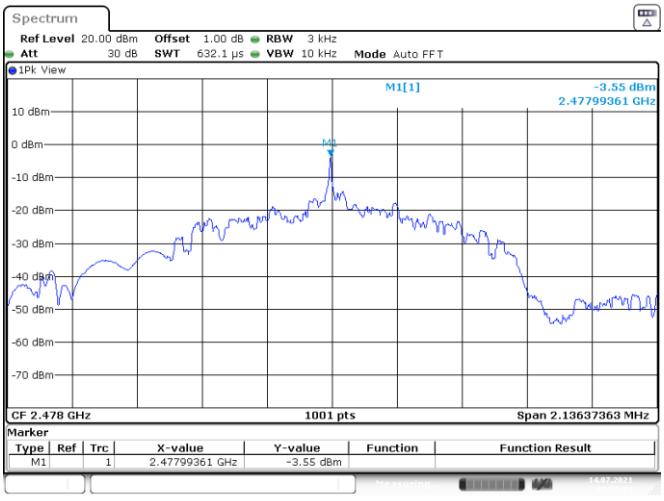
Low Channel



Middle Channel

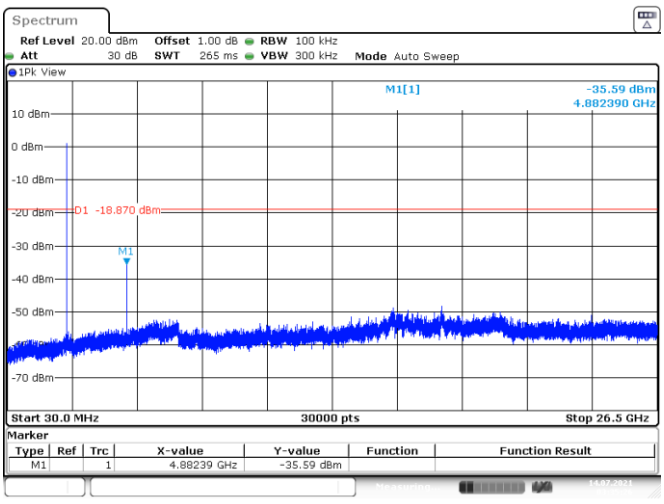


High Channel

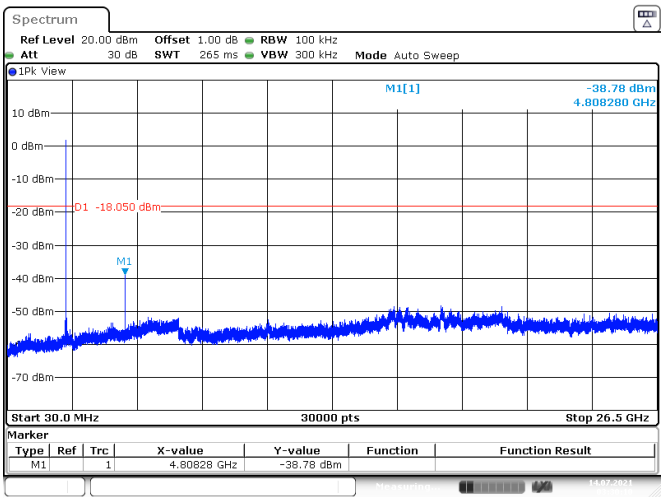


Test Result of Conducted Spurious Emissions, Tx Mode

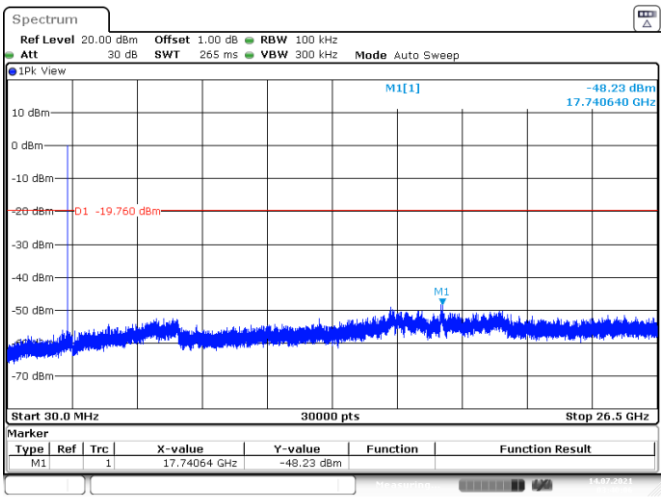
Low Channel



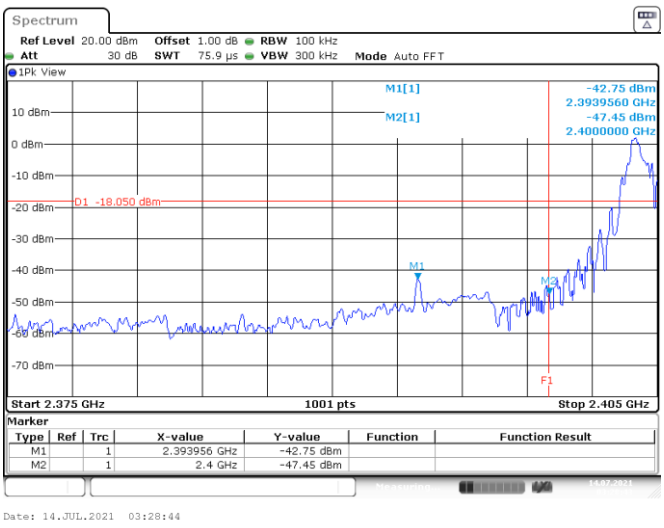
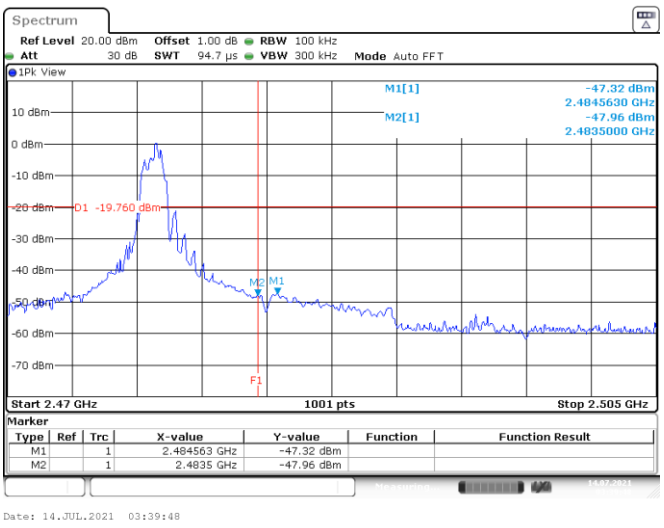
Middle Channel



High Channel



Test Result of Conducted Band Edge, Tx Mode

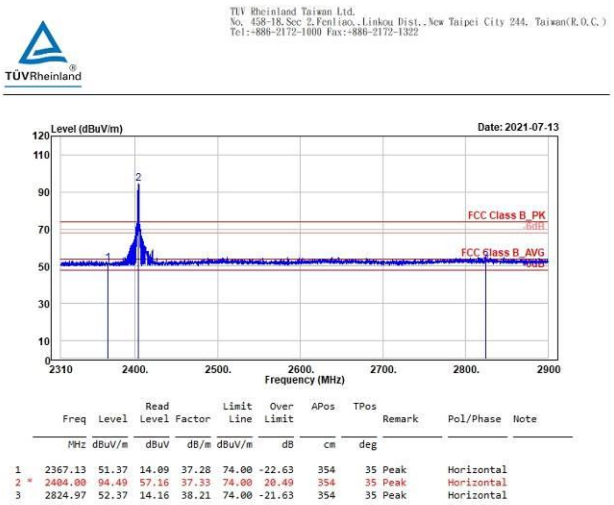
Low Channel	High Channel
	

Appendix B: Test Results of Radiated Spurious Emissions & Mains

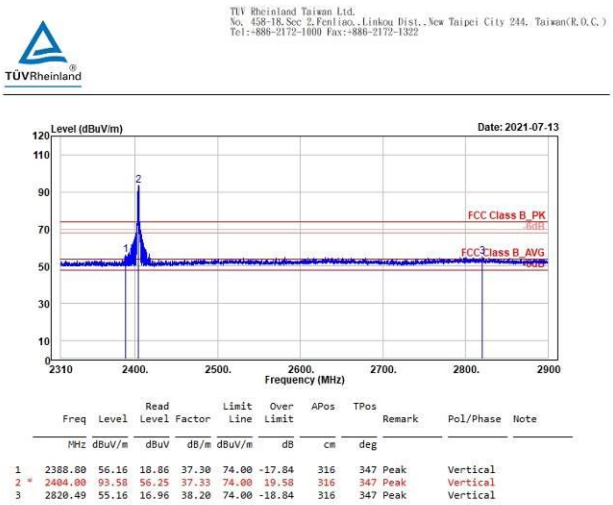
Conducted Emission Test

Band Edges, 2.31GHz ~ 2.9GHz

SRD	
Low Channel (Horizontal) Peak	**Low Channel (Vertical) Peak**



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2367.13	51.37	14.09	37.28	74.00	-22.63	354	35	Peak	Horizontal	
2 *	2404.00	94.49	57.16	37.33	74.00	20.49	354	35	Peak	Horizontal	
3	2824.97	52.37	14.16	38.21	74.00	-21.63	354	35	Peak	Horizontal	



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2388.80	56.16	18.86	37.30	74.00	-17.84	316	347	Peak	Vertical	
2 *	2404.00	93.58	56.25	37.33	74.00	19.58	316	347	Peak	Vertical	
3	2820.49	55.16	16.96	38.20	74.00	-18.84	316	347	Peak	Vertical	

SRD

Low Channel (Horizontal) Average

TÜV Rheinland Taiwan Ltd.
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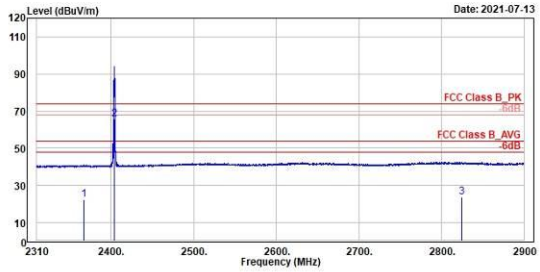
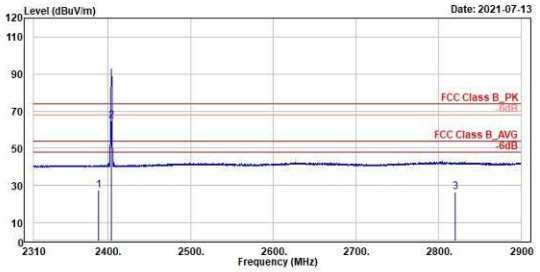
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2367.13	22.51	-14.77	37.28	54.00	-31.49	354	35	Average	Horizontal	CF
2 *	2404.00	65.63	28.30	37.33	54.00	11.63	354	35	Average	Horizontal	CF
3	2824.97	23.51	-14.70	38.21	54.00	-30.49	354	35	Average	Horizontal	CF

Low Channel (Vertical) Average

TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322

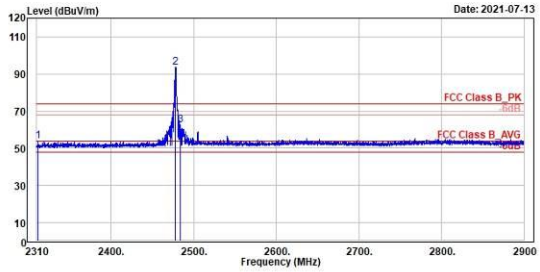


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2388.80	27.30	-10.00	37.30	54.00	-26.70	316	347	Average	Vertical	CF
2 *	2404.00	64.72	27.39	37.33	54.00	10.72	316	347	Average	Vertical	CF
3	2820.49	26.30	-11.90	38.20	54.00	-27.70	316	347	Average	Vertical	CF

SRD

High Channel (Horizontal) Peak

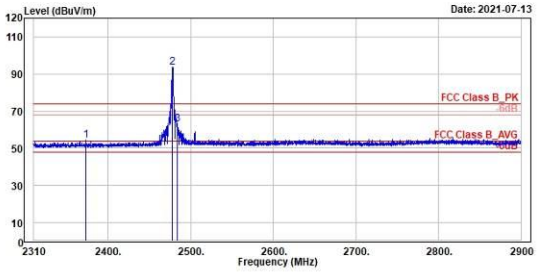
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2311.30	53.75	16.77	36.98	74.00	-20.25	298	26	Peak	Horizontal	
2 *	2478.00	93.58	55.91	37.67	74.00	19.58	298	26	Peak	Horizontal	
3	2483.62	62.64	24.93	37.71	74.00	-11.36	298	26	Peak	Horizontal	

High Channel (Vertical) Peak

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2373.02	54.14	16.86	37.28	74.00	-19.86	370	327	Peak	Vertical	
2 *	2478.00	93.45	55.78	37.67	74.00	19.45	370	327	Peak	Vertical	
3	2483.50	63.09	25.38	37.71	74.00	-10.91	370	327	Peak	Vertical	

SRD

High Channel (Horizontal) Average

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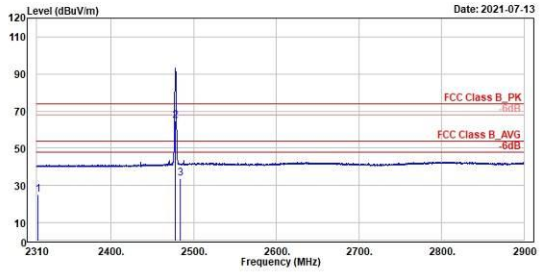
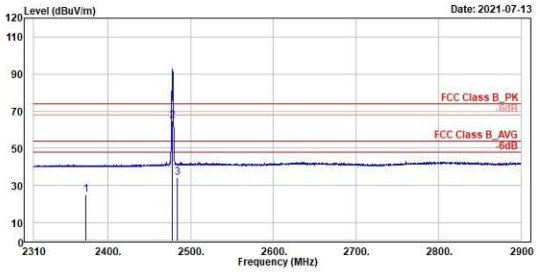
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2311.30	24.88	-12.10	36.98	54.00	-29.12	298	26	Average	Horizontal	CF
2 *	2478.00	64.71	27.04	37.67	54.00	10.71	298	26	Average	Horizontal	CF
3	2483.62	33.77	-3.94	37.71	54.00	-20.23	298	26	Average	Horizontal	CF

High Channel (Vertical) Average

TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2373.02	25.27	-12.01	37.28	54.00	-28.73	370	327	Average	Vertical	CF
2 *	2478.00	64.58	26.91	37.67	54.00	10.58	370	327	Average	Vertical	CF
3	2483.50	34.22	-3.49	37.71	54.00	-19.78	370	327	Average	Vertical	CF

Spurious Emissions, Tx Mode, 9kHz ~ 30MHz

SRD

High Channel (Open) 9kHz~150kHz

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No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
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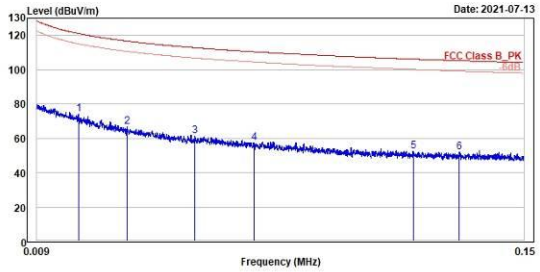
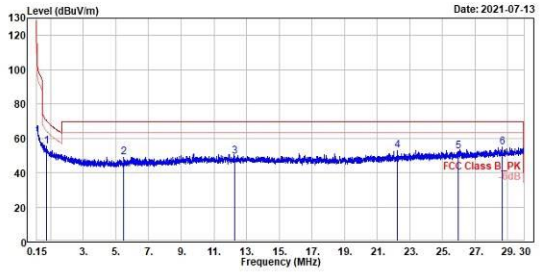


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	0.02	73.98	1.69	72.29	121.13	-47.15	100	269	QP	Open	
2	0.04	66.80	-0.66	67.46	116.69	-49.89	100	65	QP	Open	
3	0.05	61.45	-1.73	63.18	112.82	-51.37	100	126	QP	Open	
4	0.07	57.54	-3.39	60.93	110.47	-52.93	100	329	QP	Open	
5	0.12	52.50	-3.95	56.45	106.16	-53.66	100	346	QP	Open	
6	0.13	52.01	-3.87	55.88	105.24	-53.23	100	26	QP	Open	

High Channel (Open) 150kHz~30MHz

TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322

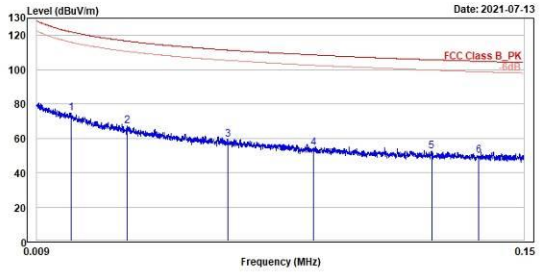


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	0.76	55.55	12.61	42.94	70.00	-14.45	100	27	QP	Open	
2	5.49	49.08	12.53	36.55	69.50	-20.42	100	181	QP	Open	
3	12.27	49.59	11.45	38.14	69.50	-19.91	100	53	QP	Open	
4	22.24	53.10	14.44	38.66	69.50	-16.40	100	303	QP	Open	
5	25.98	52.51	12.07	40.44	69.50	-16.99	100	64	QP	Open	
6	28.67	54.71	12.99	41.72	69.50	-14.79	100	64	QP	Open	

SRD

High Channel (Close) 9kHz~150kHz

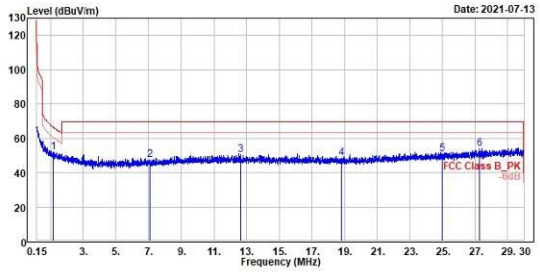
TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao, Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	0.02	74.40	1.23	73.17	122.08	-47.68	100	360	QP	Close	
2	0.04	67.13	-0.34	67.47	116.70	-49.57	100	97	QP	Close	
3	0.06	59.34	-2.60	61.94	111.45	-52.11	100	158	QP	Close	
4	0.09	54.32	-4.35	58.67	108.61	-54.29	100	75	QP	Close	
5	0.12	52.31	-3.91	56.22	105.78	-53.47	100	325	QP	Close	
6	0.14	50.15	-5.49	55.64	104.88	-54.73	100	24	QP	Close	

High Channel (Close) 150kHz~30MHz

TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao, Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



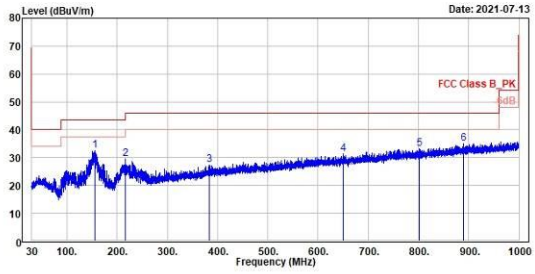
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	1.19	52.02	11.33	40.69	66.12	-14.10	100	152	QP	Close	
2	7.06	47.30	10.17	37.13	69.50	-22.20	100	356	QP	Close	
3	12.63	50.41	12.29	38.12	69.50	-19.09	100	80	QP	Close	
4	18.82	48.36	10.68	37.68	69.50	-21.14	100	167	QP	Close	
5	25.00	51.07	11.10	39.97	69.50	-18.43	100	354	QP	Close	
6	27.28	53.66	12.60	41.06	69.50	-15.84	100	159	QP	Close	

Spurious Emissions, Tx Mode, 30MHz ~ 1GHz

SRD

High Channel (Horizontal)

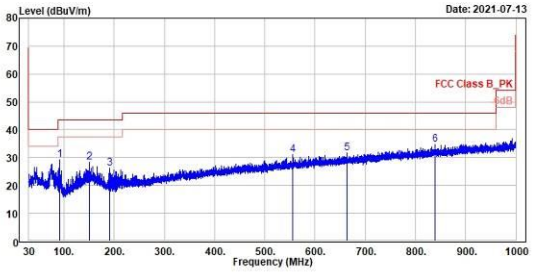
TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	155.91	32.64	38.35	-5.71	43.50	-10.86	200	265	QP	Horizontal	
2	216.05	29.45	37.41	-7.96	46.00	-16.55	200	152	QP	Horizontal	
3	384.05	27.32	30.39	-3.07	46.00	-18.68	280	0	QP	Horizontal	
4	650.80	31.34	30.41	0.93	46.00	-14.66	300	102	QP	Horizontal	
5	801.93	33.30	30.07	3.23	46.00	-12.70	300	0	QP	Horizontal	
6	890.20	34.84	30.17	4.67	46.00	-11.16	258	0	QP	Horizontal	

High Channel (Vertical)

TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



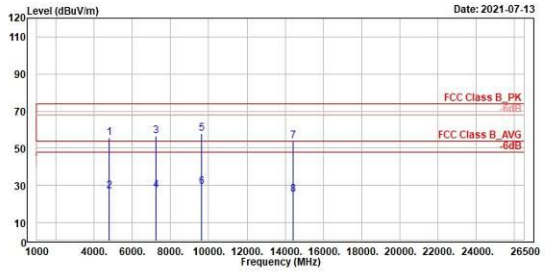
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	92.18	29.24	41.59	-12.35	43.50	-14.26	100	360	QP	Vertical	
2	150.38	28.22	34.07	-5.85	43.50	-15.28	100	360	QP	Vertical	
3	190.73	26.03	34.23	-8.20	43.50	-17.47	100	360	QP	Vertical	
4	555.06	30.94	31.47	-0.53	46.00	-15.06	400	238	QP	Vertical	
5	663.60	31.51	30.35	1.16	46.00	-14.49	211	0	QP	Vertical	
6	838.69	34.82	30.86	3.96	46.00	-11.18	100	0	QP	Vertical	

Spurious Emissions, Tx Mode, 1GHz ~ 26.5GHz

SRD

Low Channel (Horizontal)

TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4808.00	55.81	65.20	-9.39	74.00	-18.19	534	112	Peak	Horizontal	
2	4808.00	26.95	36.34	-9.39	54.00	-27.05	534	112	Average	Horizontal	CF
3	7212.00	56.46	63.09	-6.63	74.49	-18.03	100	69	Peak	Horizontal	
4	7212.00	27.60	34.23	-6.63	45.63	-18.03	100	69	Average	Horizontal	CF
5	9616.00	58.15	62.10	-3.95	74.49	-16.34	102	112	Peak	Horizontal	
6	9616.00	29.29	33.24	-3.95	45.63	-16.34	102	112	Average	Horizontal	CF
7	14424.00	53.82	50.56	3.26	74.49	-20.67	100	144	Peak	Horizontal	
8	14424.00	24.96	21.70	3.26	45.63	-20.67	100	144	Average	Horizontal	CF

Low Channel (Vertical)

TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
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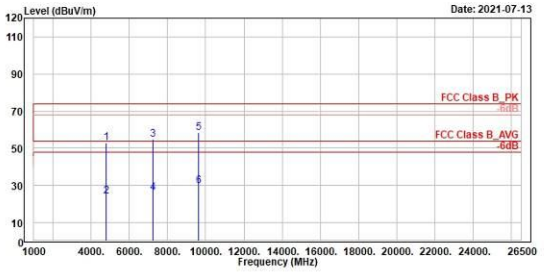

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4808.00	53.13	62.52	-9.39	74.00	-20.87	100	202	Peak	Vertical	
2	4808.00	24.27	33.66	-9.39	54.00	-29.73	100	202	Average	Vertical	CF
3	7212.00	54.97	61.60	-6.63	73.58	-18.61	100	266	Peak	Vertical	
4	7212.00	26.11	32.74	-6.63	44.72	-18.61	100	266	Average	Vertical	CF
5	9616.00	58.50	62.45	-3.95	73.58	-15.08	105	78	Peak	Vertical	
6	9616.00	29.63	33.58	-3.95	44.72	-15.09	105	78	Average	Vertical	CF

SRD

Middle Channel (Horizontal)

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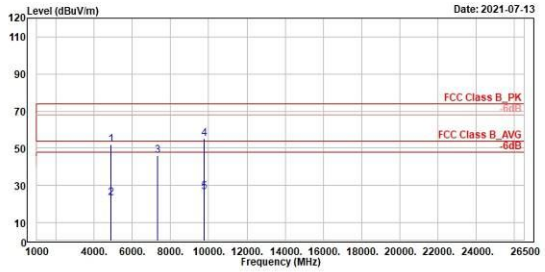

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4882.00	52.07	61.42	-9.35	74.00	-21.93	100	65	Peak	Horizontal	
2	4882.00	23.20	32.55	-9.35	54.00	-30.80	100	65	Average	Horizontal	CF
3	7323.00	45.89	52.51	-6.62	74.00	-28.11	300	70	Peak	Horizontal	
4	9764.00	55.16	58.71	-3.55	73.63	-18.47	103	66	Peak	Horizontal	
5	9764.00	26.30	29.85	-3.55	45.06	-18.76	103	66	Average	Horizontal	CF

Middle Channel (Vertical)

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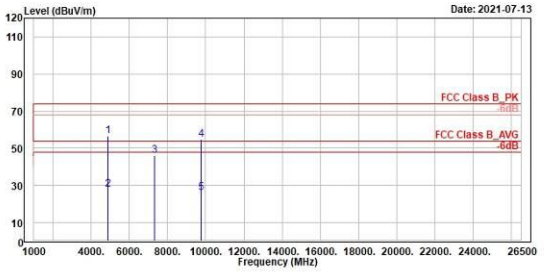

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4882.00	56.53	65.88	-9.35	74.00	-17.47	296	190	Peak	Vertical	
2	4882.00	27.67	37.02	-9.35	54.00	-26.33	296	190	Average	Vertical	CF
3	7323.00	45.99	52.61	-6.62	74.00	-28.01	100	151	Peak	Vertical	
4	9764.00	54.70	58.25	-3.55	73.61	-18.91	109	72	Peak	Vertical	
5	9764.00	25.84	29.39	-3.55	44.74	-18.90	109	72	Average	Vertical	CF

SRD

High Channel (Horizontal)

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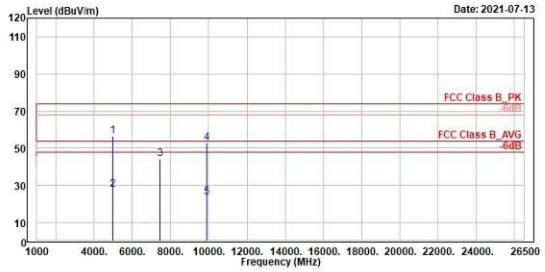

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4956.00	56.53	65.79	-9.26	74.00	-17.47	114	168	Peak	Horizontal	
2	4956.00	27.67	36.93	-9.26	54.00	-26.33	114	168	Average	Horizontal	CF
3	7434.00	44.29	50.87	-6.58	74.00	-29.71	400	66	Peak	Horizontal	
4	9912.00	52.71	55.96	-3.25	73.58	-20.87	100	64	Peak	Horizontal	
5	9912.00	23.85	27.10	-3.25	44.71	-20.86	100	64	Average	Horizontal	CF

High Channel (Vertical)

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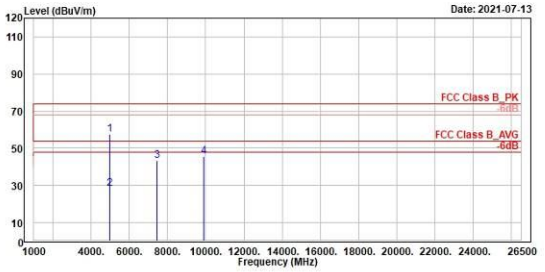

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4956.00	57.32	66.58	-9.26	74.00	-16.68	260	191	Peak	Vertical	
2	4956.00	28.46	37.72	-9.26	54.00	-25.54	260	191	Average	Vertical	CF
3	7434.00	43.40	49.98	-6.58	74.00	-30.60	100	278	Peak	Vertical	
4	9912.00	45.82	49.07	-3.25	73.45	-27.63	100	0	Peak	Vertical	

Mains Conducted Emission, 150kHz ~ 30MHz

Worst Band

(Line)

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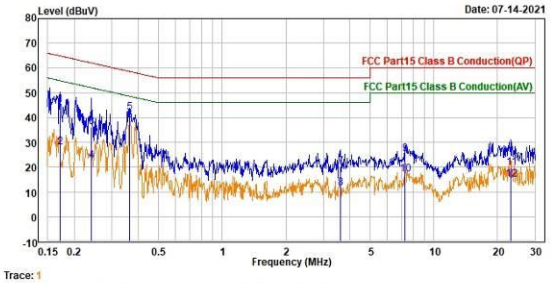

Trace: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase	Note
	MHz	dBuV	dB	dBuV	dBuV	dB			
1	0.171	35.43	9.66	45.09	64.92	-19.83	QP	line1	
2	0.171	18.31	9.66	27.97	54.92	-26.95	Average	line1	
3	0.242	26.71	9.65	36.36	62.03	-25.67	QP	line1	
4	0.242	13.03	9.65	22.68	52.03	-29.35	Average	line1	
5	0.366	32.36	9.65	42.01	58.59	-16.58	QP	line1	
6	0.366	29.19	9.65	38.84	48.59	-9.75	Average	line1	
7	3.607	10.29	9.70	19.99	56.00	-36.01	QP	line1	
8	3.607	1.89	9.70	11.59	46.00	-34.41	Average	line1	
9	7.284	15.39	9.74	25.13	60.00	-34.87	QP	line1	
10	7.284	7.44	9.74	17.18	50.00	-32.82	Average	line1	
11	23.150	9.99	9.71	19.70	60.00	-40.30	QP	line1	
12	23.150	5.10	9.71	14.81	50.00	-35.19	Average	line1	

(Neutral)

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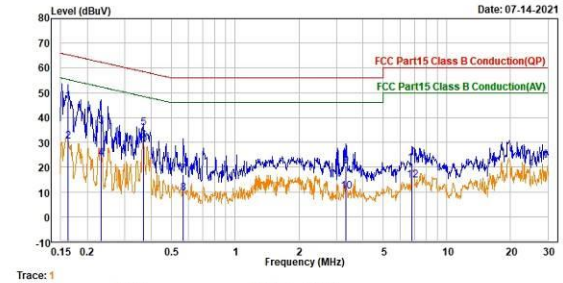

Trace: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase	Note
	MHz	dBuV	dB	dBuV	dBuV	dB			
1	0.162	36.93	9.68	46.61	65.34	-18.73	QP	neutral	
2	0.162	20.78	9.68	30.46	55.34	-24.88	Average	neutral	
3	0.231	26.72	9.67	36.39	62.40	-26.01	QP	neutral	
4	0.231	13.73	9.67	23.40	52.40	-29.00	Average	neutral	
5	0.368	26.04	9.66	35.70	58.55	-22.85	QP	neutral	
6	0.368	20.96	9.66	30.62	48.55	-17.93	Average	neutral	
7	0.570	7.50	9.66	17.16	56.00	-38.84	QP	neutral	
8	0.570	-0.11	9.66	9.55	46.00	-36.45	Average	neutral	
9	3.330	10.83	9.71	20.54	56.00	-35.46	QP	neutral	
10	3.330	0.34	9.71	10.05	46.00	-35.95	Average	neutral	
11	6.861	11.86	9.76	21.62	60.00	-38.38	QP	neutral	
12	6.861	4.81	9.76	14.57	50.00	-35.43	Average	neutral	