Prüfbericht-Nr.: *Test report no.:*	CN22CFQK(P15C-BLE) 001	**Auftrags-Nr.:** *Order no.*:	238541518	Seite 1 von 25 *Page 1 of 25*
Kunden-Referenz-Nr.: *Client reference no.:*	N/A	**Auftragsdatum:** *Order date:*	2022-03-29	
Auftraggeber: *Client:*	Microchip Technology Inc. 2355 West Chandler Blvd. Chandler, Arizona 85224-6199, United States			
Prüfgegenstand: *Test item:*	IEEE 802.11 b/g/n Network Controller Module with Integrated Bluetooth Low Energy			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	ATWINC3400-MR210UA			
Auftrags-Inhalt: *Order content*:	FCC Part 15C Test report (BLE)			
Prüfgrundlage: *Test specification:*	FCC 47CFR Part 15: Subpart C Section 15.247			
Wareneingangsdatum: *Date of sample receipt:*	2022-03-29			
Prüfmuster-Nr.: *Test sample no:*	A003264661-002 A003234841-006			
Prüfzeitraum: *Testing period:*	2022-05-27 - 2022-07-27			
Ort der Prüfung: *Place of testing:*	EMC/RF Taipei Testing Site			
Prüflaboratorium: *Testing laboratory:*	Taipei Testing Laboratories			
Prüfergebnis*: *Test result*:*	Pass			

zusammengestellt von: *compiled by:*		**genehmigt von:** authorized by:	
Datum: *Date:* 2022-07-27		**Ausstellungsdatum:** *Issue date:* 2022-07-27	
Stellung / *Position:*	Ryan Chen Senior Project Manager	**Stellung** / *Position:*	Brenda Chen Senior Project Manager

Sonstiges / *Other:* This is an updated report for 2nd source crystal change and 2nd inductors change. Hence, we only evaluate and test the output power and radiated spurious emissions. The other test results are all referred to the original report no. 50142288 001.

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
-	15.247(a)(2)	6 dB Bandwidth	Refer to report no. 50142288 001
-	2.1049	99% Occupied Bandwidth	
-	15.247(e)	Power Spectral Density	
-	15.247(d)	Conducted Spurious Emissions and Band Edges	
5.1.3	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.

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Appendix A - Test Result of Radiated Emissions & Mains Conducted Emission for Ant No. 4

Appendix B - Test Result of Radiated Emissions & Mains Conducted Emission for Ant No. 7

Appendix SP - Photographs of Test Setup

Appendix EP - Photographs of EUT

HISTORY OF THIS TEST REPORT

Report No.	Description	Date Issued
CN22CFQK(P15C-BLE) 001	Original Release	2022-07-27

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 Radiated Emissions & Mains Conducted Emission for Ant No. 4
Appendix B - Test Result of Radiated Emissions & Mains Conducted Emission for Ant No. 7
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)	± 1.30 dB
Radiated Emission (200 MHz ~ 1 GHz)	± 1.30 dB
Radiated Emission (1 GHz ~ 18 GHz)	± 1.54 dB
Radiated Emission (18 GHz ~ 40 GHz)	± 2.52 dB
Mains Conducted Emission	± 1.65 dB

3. General Product Information

3.1 Product Function and Intended Use

The EUT is an IEEE 802.11 b/g/n Network Controller Module with Integrated Bluetooth Low Energy.
It contains a Bluetooth 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	IEEE 802.11 b/g/n Network Controller Module with Integrated Bluetooth Low Energy
Type Identification	ATWINC3400-MR210UA
FCC ID	2ADHKWINC3400U

Technical Specification of EUT

Item	EUT information
Operating Frequency	2402 MHz ~ 2480 MHz
Channel Spacing	2 MHz
Channel Number	40
Data Rate	1Mbps
Operation Voltage	3.0 Vdc to 4.2Vdc (Typical = 3.3Vdc)
Modulation	GFSK
Maximum Output Power (mW)	4.72
Antenna Information	Refer to Note 1
Accessory Device	Refer to 4.4

Note:
1: External Antenna List:
Base on the worst case, Antenna no. 4 and 7 are selected for testing.

Antenna No.	P/N	Vendor	Antenna Gain @ 2.4GHz Band	Antenna type	Remarks
1	W3525B039	Pulse Electronics Corporation	2 dBi	PCB	Cable length 100mm
2	RN-SMA-4	Microchip	2.2 dBi	Dipole	--
3	RFDPA870920IMLB301	WALSIN	1.84 dBi	Dipole-DB	Dual Band
4	RFMTA331215IMAB701	WALSIN	3.8 dBi	Metal Stamp	Cable length 150mm
5	RFMTA331240IMAB701	WALSIN	3.0 dBi	Metal Stamp	Antenna same as SlNo.4, cable length 400 mm
6	RFA-02-3-C5H1	Aristotle	3 dBi	Dipole	--
7	RFA-02-5-C7H1	Aristotle	5 dBi	Dipole-Long	--
8	RFA-02-P33	Aristotle	2 dBi	PCB	Cable length 150mm
9	1461530100	Molex	3 dBi	PCB/Flexi	Cable length 100mm Dual Band
10	RN-SMA-S	Microchip	0.56 dBi	Dipole-short	--
11	RN-SMA-7	Microchip	5 dBi	Dipole-Long	--
12	RFA-02-5-F7H1	Aristotle	5 dBi	Dipole-Long	--
13	RFA-02-D3	Aristotle	2 dBi	Dipole-no encl.	--
14	RFA-02-L2H1	Aristotle	2 dBi	Dipole	--
15	RFA-02-P05	Aristotle	2 dBi	PCB	Cable length 150mm
16	RFA-02-C2M2	Aristotle	2 dBi	Dipole	--

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
2402	6,12,-10
2440	6,12,-10.5
2480	6,12,-9.5

4.2 Carrier Frequency and Channel

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

4.3 Test Operation and Test Software

Setup for testing: The test samples are provided with data interface which makes it possible to control them through a test software installed on a notebook computer.
This software was running on the laptop computer connected to the EUT. It was used to enable the operation modes listed as below.

Test Software	MCHPRT2.exe

The samples were used as follows:
A003264661-002
A003234841-006
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.
3. Base on the worst case, Antenna no. 4 and 7 are selected for testing.

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)	Date Rate (Mbps)
-	2402 to 2480	2402, 2440, 2480	1

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)	Date Rate (Mbps)
-	2402 to 2480	2402, 2440, 2480	1

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)	Date Rate (Mbps)
-	2402 to 2480	2480	1

Test Condition

Test Item	Ambient Temperature	Relative Humidity	Tested by
Conducted Measurement	18-23 °C	58-69 %	Nick Hsu
Radiated Spurious Emissions above 1 GHz	22.1-24.5 °C	54-57 %	Ivan Chiang
Radiated Spurious Emissions below 1 GHz	22.1-24.5 °C	54-57 %	Ivan Chiang
Mains Conducted Emission	20.1-20.9 °C	53-57 %	Ray Huang

4.4 Special Accessories and Auxiliary Equipment

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

Accessory of EUT

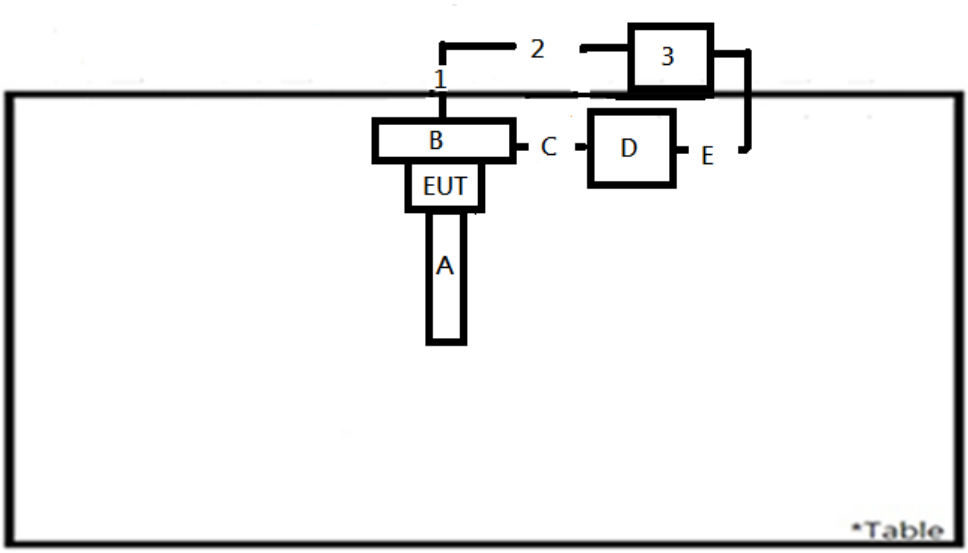
None.

Support Unit

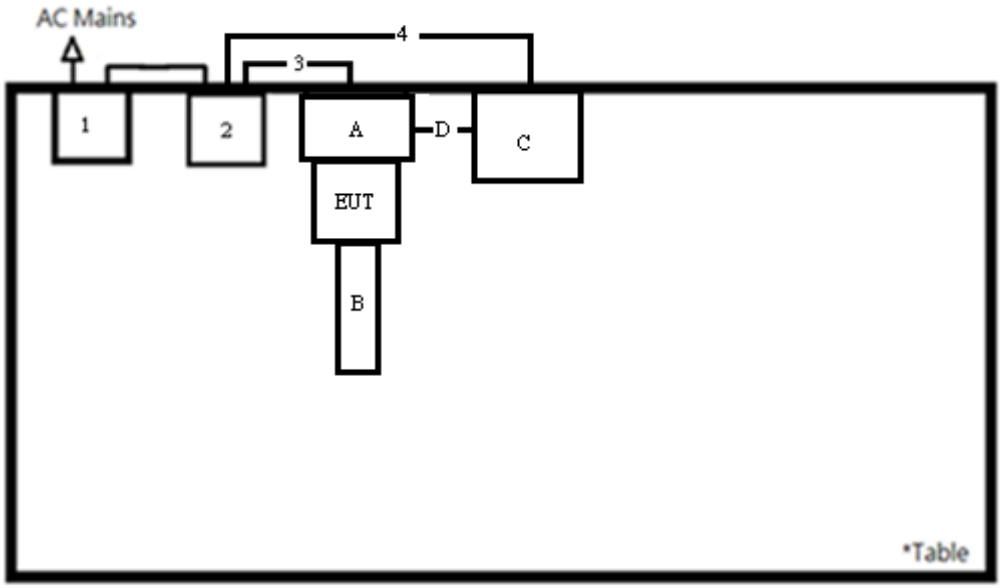
No.	Description	Brand	Model	S/N	Remark
Radiated Test					
A	Antenna	Microchip	-	-	-
B	Fixture 3400	Microchip	-	-	-
C	Cable	Microchip	-	-	10 cm non-shielded cable w/o core
D	Fixture	Microchip	-	-	-
E	Cable	Microchip	-	-	150 cm non-shielded cable w/o core
1	USB Cable	TUV	TUV-01	-	50 cm non-shielded cable w/o core
2	USB Cable	TUV	TUV-01	-	100 cm non-shielded cable w/o core
3	Notebook	Lenovo	81BL	MP1DCD6Y	-
Mains Conducted Test					
A	Fixture 3400	Microchip	-	-	-
B	antenna	Microchip	-	-	-
C	Fixture	Microchip	-	-	-
D	Cable	Microchip	-	-	150 cm non-shielded cable w/o core
1	Adapter	HP	PPP009D	-	179 cm shielded cable w/o core
2	Notebook	Lenovo	81BL	MP1DCD6Y	-
3	USB Cable	TUV	TUV-01	-	100 cm non-shielded cable w/o core
4	USB Cable	TUV	TUV-02	-	100 cm non-shielded cable w/o core
Conducted Test					
-	Notebook	HP	TPN-C139	CND93662VF	-

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 max directional gain of 5 dBi. (Refer to External Antenna List). The antenna is connected through a proprietary connector 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	2022/3/15	2023/3/14	2022/5/27	2022/5/27
Power Sensor	Anritsu	MA2411B	1725269	2022/3/15	2023/3/14	2022/5/27	2022/5/27

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

<1Mbps>

Channel	Channel Frequency	Peak Output Power		Limit (dBm)
	(MHz)	(dBm)	(mW)	
Low Channel	2402	6.23	4.20	30
Middle Channel	2440	5.72	3.73	30
High Channel	2480	6.74	4.72	30

Average Power

<1Mbps>

Channel	Channel Frequency	Average Power	
	(MHz)	(dBm)	(mW)
Low Channel	2402	5.79	3.79
Middle Channel	2440	5.27	3.37
High Channel	2480	6.28	4.25

5.1.3 Radiated Spurious Emissions and Band Edges

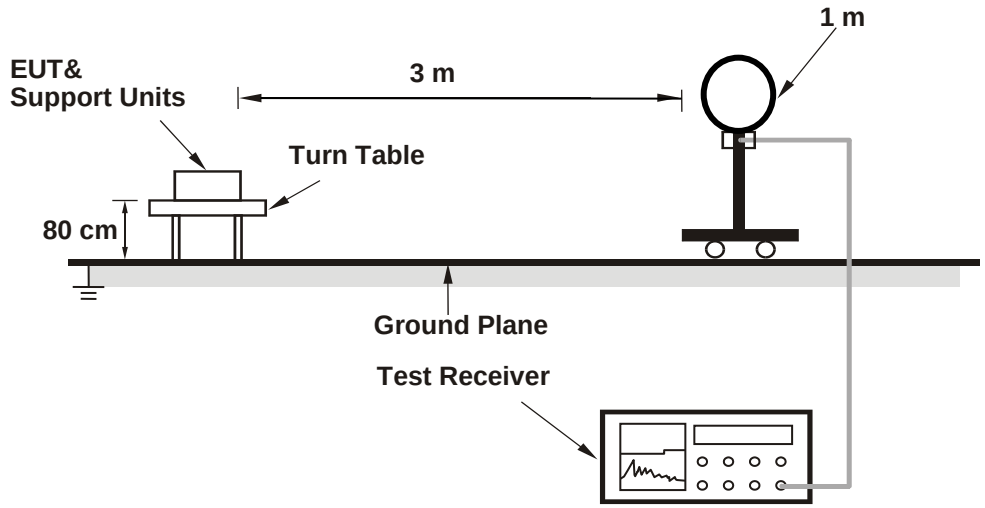
Limit

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).

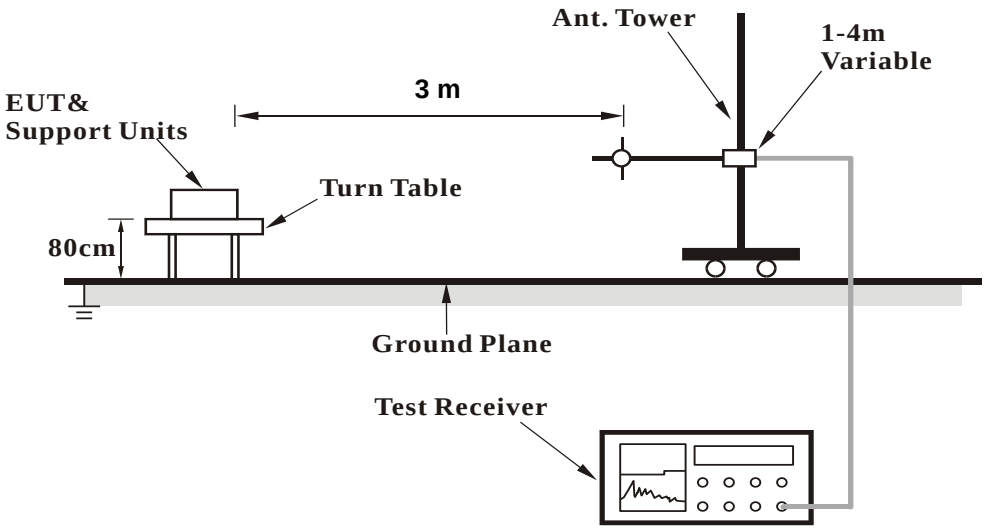
Kind of Test Site 3m Semi-Anechoic Chamber

Test Setup

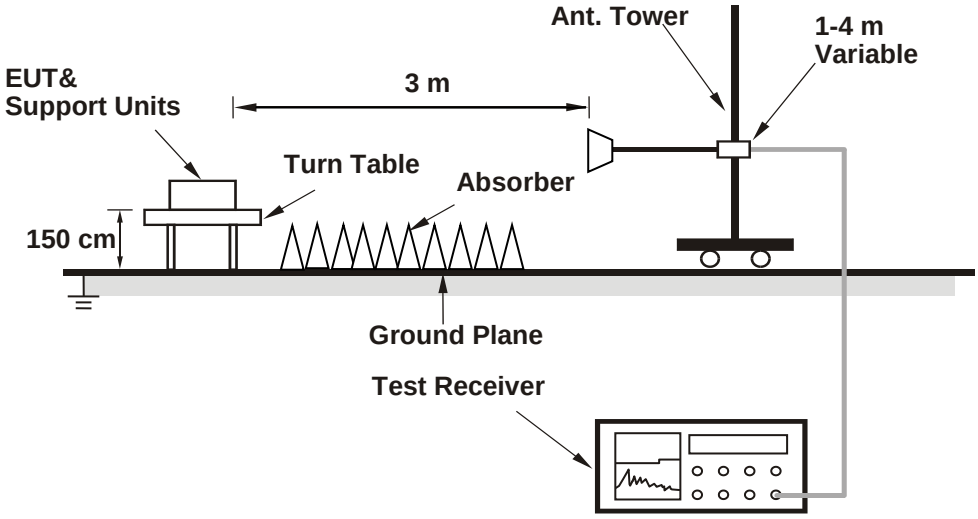
<Radiated Emissions below 30 MHz>



<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

Test Date: 2022/7/9 ~ 2022/7/10

Above 1GHz					
Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV40	101508	2022/4/13	2023/4/12
Horn Antenna	ETS-Lindgren	3117	00218930	2021/12/20	2022/12/19
HF-AMP + AC source	EMCI	EMC051845SE	980633	2022/2/16	2023/2/15
HF-AMP + AC source	EMCI	EMC184045SE	980657	2022/2/16	2023/2/15
Horn Antenna	SCHWARZBECK	BBHA 9170	00887	2022/3/29	2023/3/28
30MHz-1GHz					
Receiver	R&S	ESR7	102108	2022/4/28	2023/4/27
Bilog Antenna	SCHWARZBECK	VULB-9168	00951	2022/4/6	2023/4/5
LF-AMP	Agilent	8447D	2944A107722	2022/3/22	2023/3/21
Below 30MHz					
Receiver	R&S	ESR7	102108	2022/4/28	2023/4/27
Bilog Antenna	SCHWARZBECK	VULB-9168	00951	2022/4/6	2023/4/5
LF-AMP	Agilent	8447D	2944A107722	2022/3/22	2023/3/21

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 A for Ant 4 and Appendix B for Ant 7.

5.2 Mains Emission

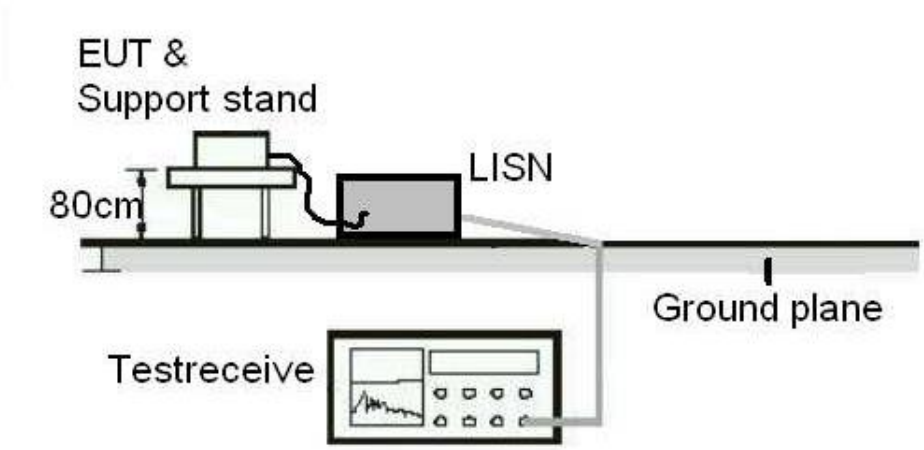
5.2.1 Mains Conducted Emission

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

Test Period: 2022/7/27

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date
Two-Line V-Network	Rohde & Schwarz	ENV216	101938	2021/9/23	2022/9/22
EMI Test Receiver	R&S	ESCI	1816063	2021/11/15	2022/11/14

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 A for Ant 4 and Appendix B for Ant 7.

Appendix A:

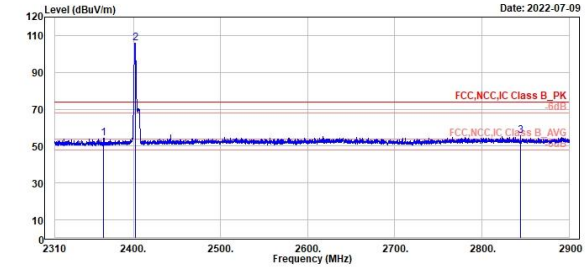
Test Results of Radiated Spurious Emissions & Mains Conducted Emission for Ant No. 4

Band Edges, 2.31GHz ~ 2.9GHz

BLE_1M

Low Channel (Horizontal) Peak

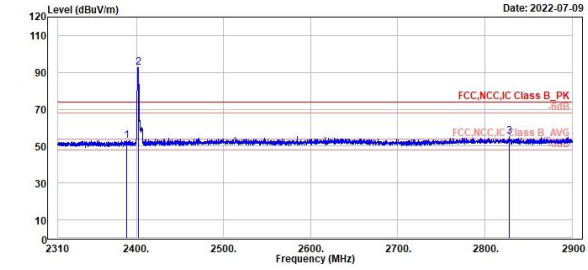
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao, Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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	2366.17	54.30	16.85	37.45	74.00	-19.70	162	29	Peak	Horizontal	
2 *	2402.00	105.73	68.10	37.63	74.00	31.73	162	29	Peak	Horizontal	
3	2844.07	55.44	17.27	38.17	74.00	-18.56	162	29	Peak	Horizontal	

Low 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

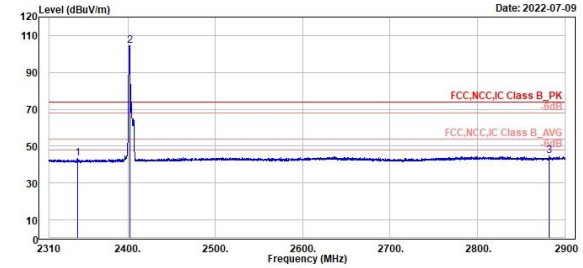


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2388.94	52.92	15.34	37.58	74.00	-21.08	336	114	Peak	Vertical	
2 *	2402.00	92.57	54.94	37.63	74.00	18.57	336	114	Peak	Vertical	
3	2827.90	55.11	16.93	38.18	74.00	-18.89	336	114	Peak	Vertical	

BLE_1M

Low Channel (Horizontal) Average

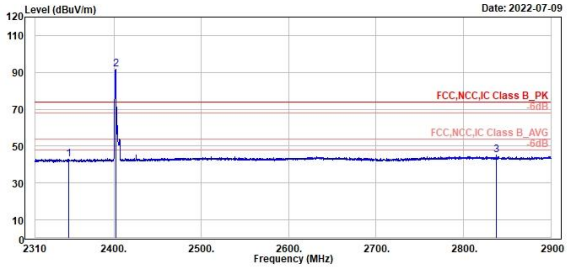
TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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	2342.80	43.32	5.97	37.35	54.00	-10.68	162	29	Average	Horizontal	
2 *	2402.00	104.65	67.02	37.63	54.00	50.65	162	29	Average	Horizontal	
3	2881.95	44.54	6.21	38.33	54.00	-9.46	162	29	Average	Horizontal	

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

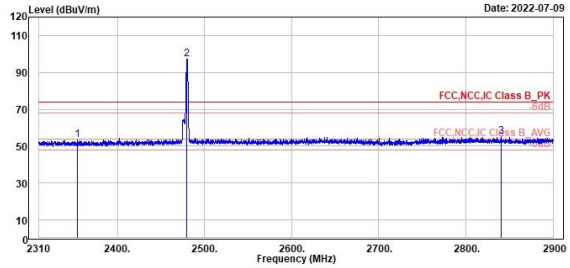


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2348.70	43.10	5.73	37.37	54.00	-10.90	336	114	Average	Vertical	
2 *	2402.00	91.52	53.89	37.63	54.00	37.52	336	114	Average	Vertical	
3	2837.34	44.97	6.79	38.18	54.00	-9.03	336	114	Average	Vertical	

BLE_1M

High Channel (Horizontal) Peak

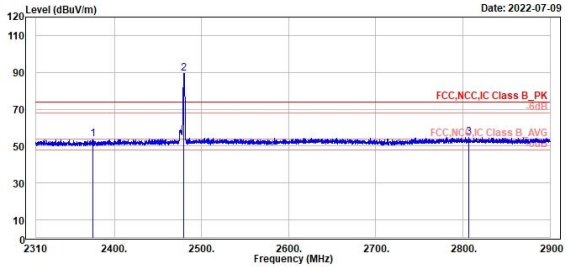
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao, , Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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	2354.13	53.53	16.13	37.40	74.00	-20.47	239	29	Peak	Horizontal	
2 *	2480.00	97.34	59.55	37.79	74.00	23.34	239	29	Peak	Horizontal	
3	2840.88	55.34	17.17	38.17	74.00	-18.66	239	29	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

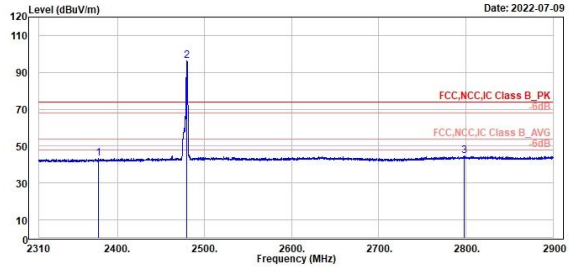


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2375.25	53.62	16.12	37.50	74.00	-20.38	322	112	Peak	Vertical	
2 *	2480.00	89.28	51.49	37.79	74.00	15.28	322	112	Peak	Vertical	
3	2806.90	54.72	16.52	38.20	74.00	-19.28	322	112	Peak	Vertical	

BLE_1M

High Channel (Horizontal) Average

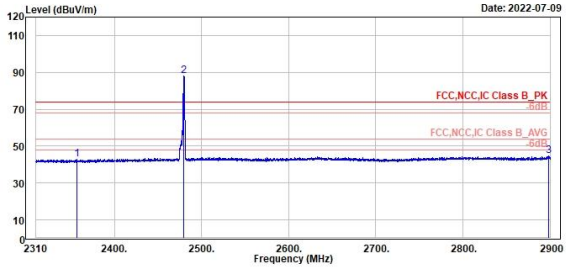
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao, , Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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	2378.32	43.14	5.62	37.52	54.00	-10.86	239	29	Average	Horizontal	
2 *	2480.00	96.38	58.59	37.79	54.00	42.38	239	29	Average	Horizontal	
3	2798.40	44.54	6.34	38.20	54.00	-9.46	239	29	Average	Horizontal	

High Channel (Vertical) Average

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	2356.85	42.92	5.51	37.41	54.00	-11.08	322	112	Average	Vertical	
2 *	2480.00	88.22	50.43	37.79	54.00	34.22	322	112	Average	Vertical	
3	2898.47	44.59	6.18	38.41	54.00	-9.41	322	112	Average	Vertical	

Spurious Emissions, Tx Mode, 9kHz ~ 30MHz

BLE_1M

High Channel (Open) 9kHz~150kHz

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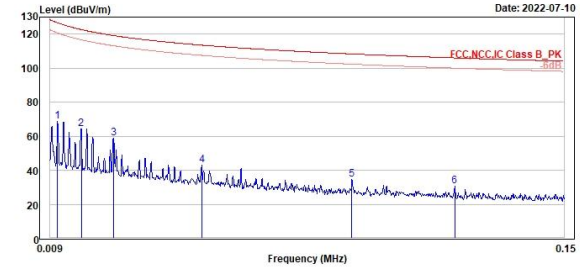
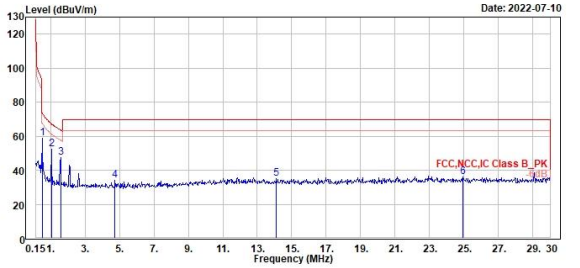


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	0.01	68.48	50.67	17.81	126.67	-58.19	100	194	QP	Open	
2	0.02	64.42	46.03	18.39	122.68	-58.26	100	190	QP	Open	
3	0.03	58.64	39.45	19.19	119.13	-60.49	100	13	QP	Open	
4	0.05	42.95	23.65	19.30	113.51	-70.56	100	197	QP	Open	
5	0.09	34.49	16.10	18.39	108.34	-73.85	100	147	QP	Open	
6	0.12	30.41	12.12	18.29	106.02	-75.61	100	48	QP	Open	

High Channel (Open) 150kHz~30MHz

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

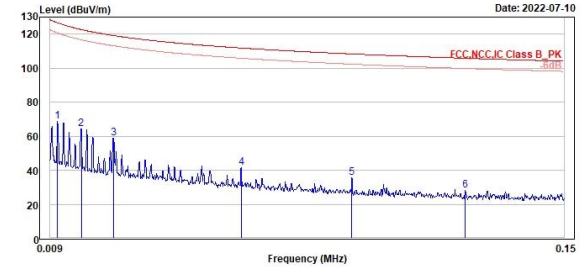


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	0.51	58.83	39.88	18.95	73.48	-14.65	100	172	QP	Open	
2	1.05	52.36	33.09	19.27	67.22	-14.86	100	172	QP	Open	
3	1.58	47.57	28.22	19.35	63.62	-16.05	100	89	QP	Open	
4	4.75	34.01	14.62	19.39	69.50	-35.49	100	143	QP	Open	
5	14.12	35.23	13.44	21.79	69.50	-34.27	100	173	QP	Open	
6	24.93	35.96	13.54	22.42	69.50	-33.54	100	360	QP	Open	

BLE_1M

High Channel (Close) 9kHz~150kHz

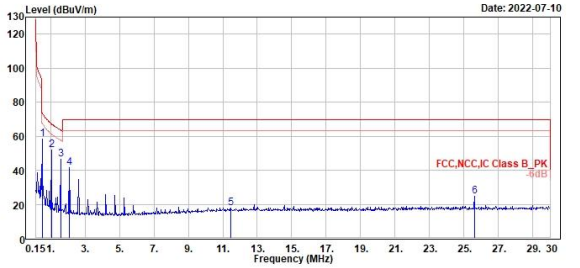
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao, Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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	0.01	68.49	50.68	17.81	126.67	-58.18	100	185	QP		Close
2	0.02	64.44	46.05	18.39	122.68	-58.24	100	186	QP		Close
3	0.03	58.76	39.57	19.19	119.13	-60.37	100	221	QP		Close
4	0.06	41.34	22.28	19.06	111.82	-70.48	100	279	QP		Close
5	0.09	35.49	17.10	18.39	108.34	-72.85	100	170	QP		Close
6	0.12	28.28	9.98	18.30	105.80	-77.52	100	45	QP		Close

High Channel (Close) 150kHz~30MHz

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



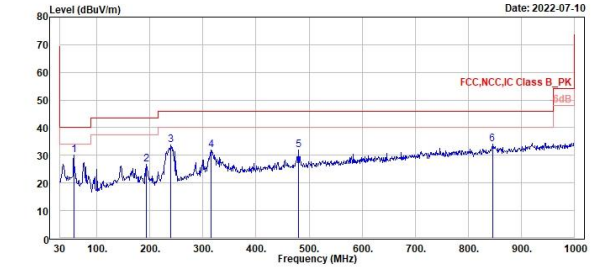
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	0.51	58.57	39.62	18.95	73.48	-14.91	100	167	QP		Close
2	1.05	51.94	32.67	19.27	67.22	-15.28	100	164	QP		Close
3	1.58	46.44	27.09	19.35	63.62	-17.18	100	164	QP		Close
4	2.09	41.33	21.91	19.42	69.50	-28.17	100	164	QP		Close
5	11.46	17.77	-3.83	21.60	69.50	-51.73	100	104	QP		Close
6	25.61	24.95	2.50	22.45	69.50	-44.55	100	205	QP		Close

Spurious Emissions, Tx Mode, 30MHz ~ 1GHz

BLE_1M

High Channel (Horizontal)

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	56.19	29.99	36.67	-6.68	40.00	-10.01	178	360	QP	Horizontal	
2	192.96	26.79	35.38	-8.59	43.50	-16.71	300	243	QP	Horizontal	
3	239.52	33.62	40.36	-6.74	46.00	-12.38	200	42	QP	Horizontal	
4	315.18	31.95	36.54	-4.59	46.00	-14.05	100	42	QP	Horizontal	
5	480.08	31.98	34.04	-2.06	46.00	-14.02	200	154	QP	Horizontal	
6	845.77	34.01	30.28	3.73	46.00	-11.99	200	310	QP	Horizontal	

/High Channel (Vertical)

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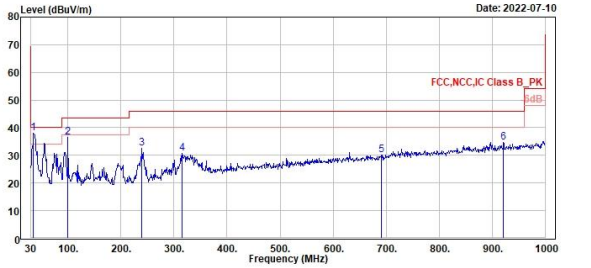

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1 !	34.85	38.05	45.09	-7.04	40.00	-1.95	100	222	QP	Vertical	
2	99.84	36.42	47.72	-11.30	43.50	-7.08	100	283	QP	Vertical	
3	239.52	32.67	39.41	-6.74	46.00	-13.33	200	175	QP	Vertical	
4	315.18	30.80	35.39	-4.59	46.00	-15.20	100	278	QP	Vertical	
5	691.54	30.22	28.61	1.61	46.00	-15.78	300	127	QP	Vertical	
6	921.43	34.73	29.68	5.05	46.00	-11.27	100	258	QP	Vertical	

Spurious Emissions, Tx Mode, 1GHz ~ 26.5GHz

BLE_1M

Low Channel (Horizontal)

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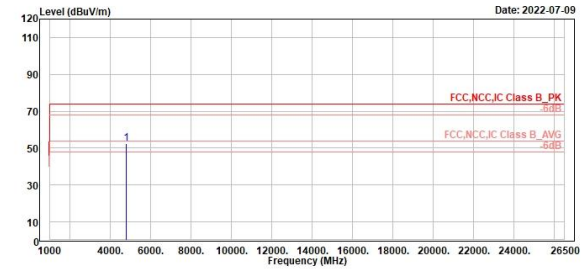
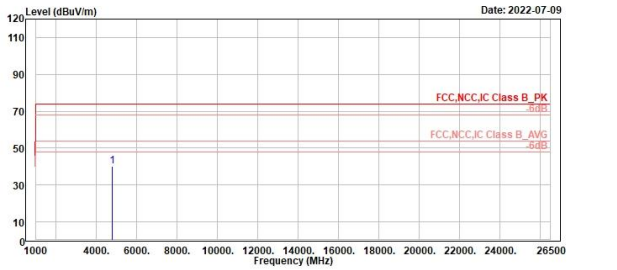


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4804.00	52.67	62.54	-9.87	74.00	-21.33	265	23	Peak	Horizontal	

Low Channel (Vertical)

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



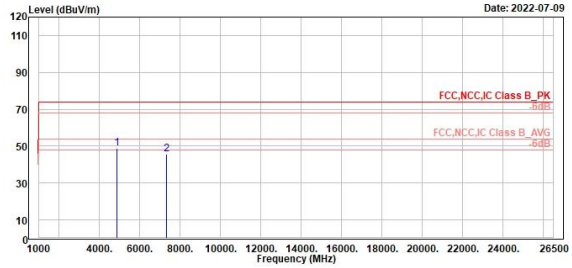
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4804.00	40.07	49.94	-9.87	74.00	-33.93	400	97	Peak	Vertical	

Prüfbericht - Nr.: CN22CFQK(P15C-BLE) 001
Test Report No.

BLE_1M

Middle Channel (Horizontal)

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	4880.00	48.91	58.70	-9.79	74.00	-25.09	100	16	Peak	Horizontal	
2	7320.00	45.57	53.06	-7.49	74.00	-28.43	100	61	Peak	Horizontal	

Middle Channel (Vertical)

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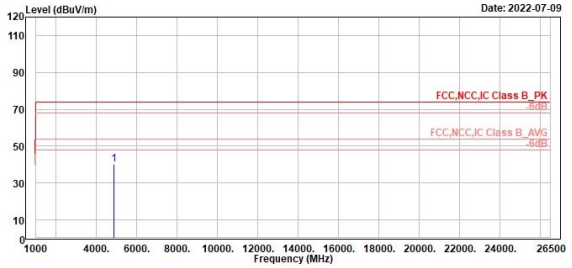

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4880.00	40.23	50.02	-9.79	74.00	-33.77	200	177	Peak	Vertical	

BLE_1M

High Channel (Horizontal)

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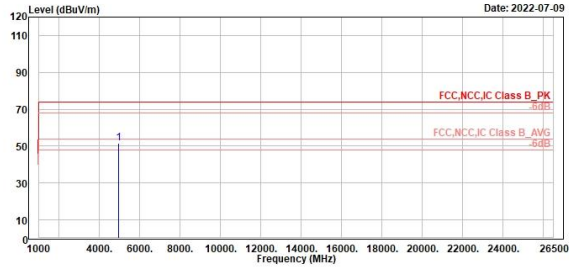
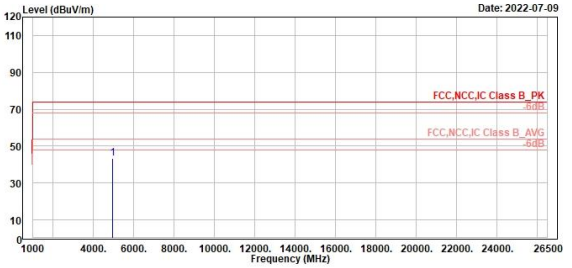


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4960.00	51.74	61.28	-9.54	74.00	-22.26	300	211	Peak	Horizontal	

High Channel (Vertical)

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	4960.00	43.25	52.79	-9.54	74.00	-30.75	200	184	Peak	Vertical	

Mains Conducted Emission, 150kHz ~ 30MHz

Worst Band

(Line)

TÜV Rheinland Taiwan Ltd.
No. 458-1 8, Sec. 2, Fenliao, Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
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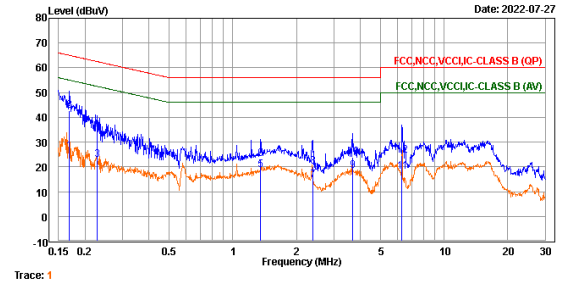

Trace: 1

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark	Pol/Phase	Note
	MHz	dBuV	dBuV	dB	dBuV	dB			
1	0.17	26.27	16.66	9.61	55.01	-28.74	Average	line1	
2	0.17	42.86	33.25	9.61	65.01	-22.15	QP	line1	
3	0.23	23.00	13.39	9.61	52.52	-29.52	Average	line1	
4	0.23	34.38	24.77	9.61	62.52	-28.14	QP	line1	
5	1.35	18.85	9.21	9.64	46.00	-27.15	Average	line1	
6	1.35	23.12	13.48	9.64	56.00	-32.88	QP	line1	
7	2.38	14.62	4.97	9.65	46.00	-31.38	Average	line1	
8	2.38	20.02	10.37	9.65	56.00	-35.98	QP	line1	
9	3.68	18.48	8.81	9.67	46.00	-27.52	Average	line1	
10	3.68	23.85	14.18	9.67	56.00	-32.15	QP	line1	
11	6.30	18.02	8.32	9.70	50.00	-31.98	Average	line1	
12	6.30	24.68	14.98	9.70	60.00	-35.32	QP	line1	

(Neutral)

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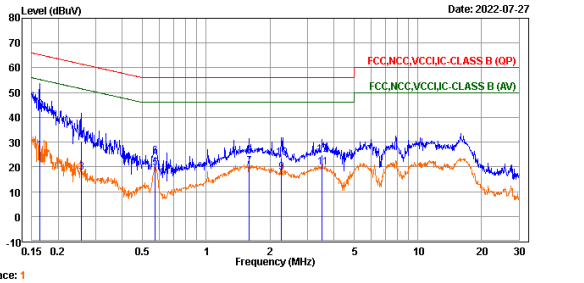


Trace: 1

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark	Pol/Phase	Note
	MHz	dBuV	dBuV	dB	dBuV	dB			
1	0.16	26.54	16.95	9.59	55.30	-28.76	Average	neutral	
2	0.16	43.18	33.59	9.59	65.30	-22.12	QP	neutral	
3	0.26	17.75	8.16	9.59	51.53	-33.78	Average	neutral	
4	0.26	30.30	20.71	9.59	61.53	-31.23	QP	neutral	
5	0.57	19.47	9.87	9.60	46.00	-26.53	Average	neutral	
6	0.57	24.13	14.53	9.60	56.00	-31.87	QP	neutral	
7	1.59	20.23	10.61	9.62	46.00	-25.77	Average	neutral	
8	1.59	24.09	14.47	9.62	56.00	-31.91	QP	neutral	
9	2.27	17.63	8.00	9.63	46.00	-28.37	Average	neutral	
10	2.27	23.46	13.83	9.63	56.00	-32.54	QP	neutral	
11	3.54	19.88	10.22	9.66	46.00	-26.12	Average	neutral	
12	3.54	24.88	15.22	9.66	56.00	-31.12	QP	neutral	

Appendix B:

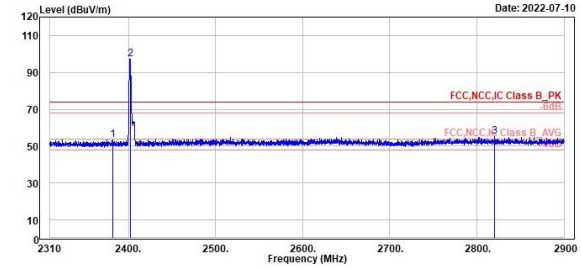
Test Results of Radiated Spurious Emissions & Mains Conducted Emission Test for Ant No. 7

Band Edges, 2.31GHz ~ 2.9GHz

BLE_1M

Low 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	2382.57	53.29	15.75	37.54	74.00	-20.71	279	265	Peak	Horizontal	
2 *	2402.00	97.22	59.59	37.63	74.00	23.22	279	265	Peak	Horizontal	
3	2819.88	55.40	17.21	38.19	74.00	-18.60	279	265	Peak	Horizontal	

Low Channel (Vertical) Peak

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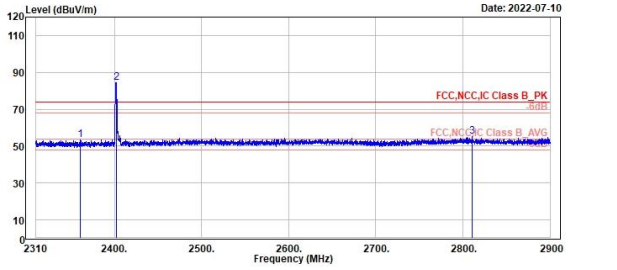

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2360.62	53.48	16.05	37.43	74.00	-20.52	315	11	Peak	Vertical	
2 *	2402.00	84.58	46.95	37.63	74.00	10.58	315	11	Peak	Vertical	
3	2810.44	55.05	16.85	38.20	74.00	-18.95	315	11	Peak	Vertical	

Prüfbericht - Nr.: CN22CFQK(P15C-BLE) 001
Test Report No.

BLE_1M

Low Channel (Horizontal) Average

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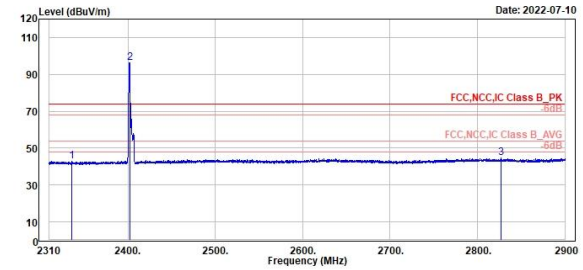

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2335.49	42.82	5.49	37.33	54.00	-11.18	279	265	Average	Horizontal	
2 *	2402.00	96.15	58.52	37.63	54.00	42.15	279	265	Average	Horizontal	
3	2827.08	44.74	6.55	38.19	54.00	-9.26	279	265	Average	Horizontal	

Low Channel (Vertical) Average

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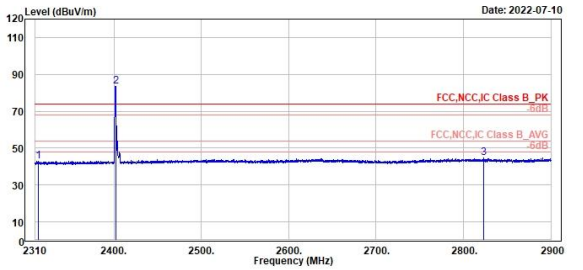

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2313.66	42.96	5.70	37.26	54.00	-11.04	315	11	Average	Vertical	
2 *	2402.00	83.52	45.89	37.63	54.00	29.52	315	11	Average	Vertical	
3	2823.42	44.91	6.73	38.18	54.00	-9.09	315	11	Average	Vertical	

BLE_1M

High Channel (Horizontal) Peak

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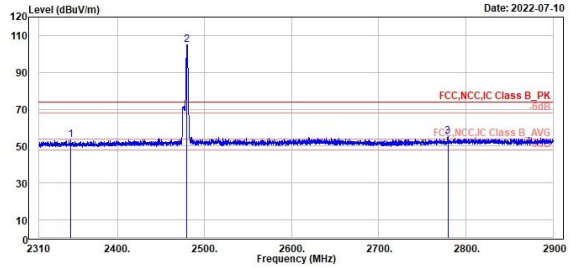

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2346.23	53.23	15.87	37.36	74.00	-20.77	134	98	Peak	Horizontal	
2 *	2480.00	104.87	67.08	37.79	74.00	30.87	134	98	Peak	Horizontal	
3	2779.17	55.28	17.10	38.18	74.00	-18.72	134	98	Peak	Horizontal	

High Channel (Vertical) Peak

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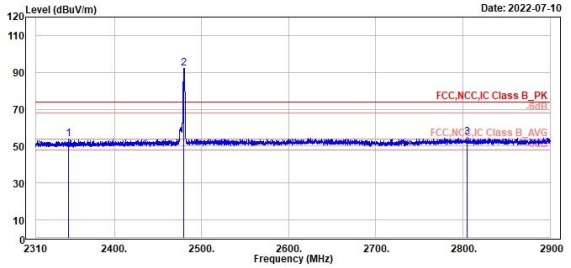

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2347.88	53.64	16.27	37.37	74.00	-20.36	331	176	Peak	Vertical	
2 *	2480.00	92.02	54.23	37.79	74.00	18.02	331	176	Peak	Vertical	
3	2805.13	54.66	16.46	38.20	74.00	-19.34	331	176	Peak	Vertical	

Prüfbericht - Nr.: CN22CFQK(P15C-BLE) 001
Test Report No.

BLE_1M

High Channel (Horizontal) Average

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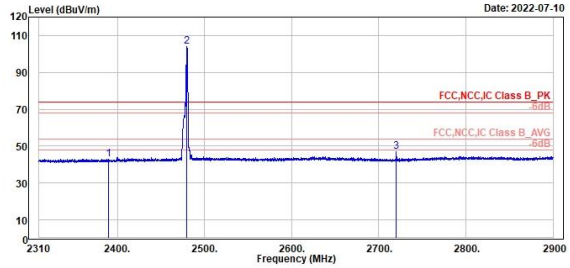

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2389.53	42.93	5.35	37.58	54.00	-11.07	134	98	Average	Horizontal	
2 *	2480.00	103.82	66.03	37.79	54.00	49.82	134	98	Average	Horizontal	
3	2719.58	46.82	8.83	37.99	54.00	-7.18	134	98	Average	Horizontal	

High Channel (Vertical) Average

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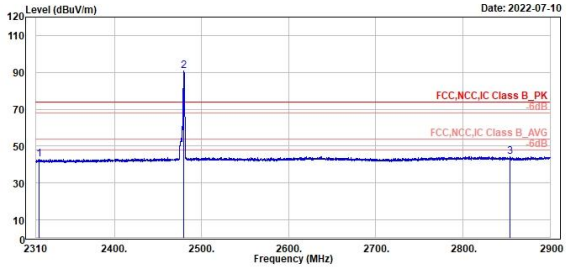

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2314.01	43.10	5.84	37.26	54.00	-10.90	331	176	Average	Vertical	
2 *	2480.00	90.98	53.19	37.79	54.00	36.98	331	176	Average	Vertical	
3	2854.22	44.48	6.29	38.19	54.00	-9.52	331	176	Average	Vertical	

Spurious Emissions, Tx Mode, 9kHz ~ 30MHz

BLE_1M

High Channel (Open) 9kHz~150kHz

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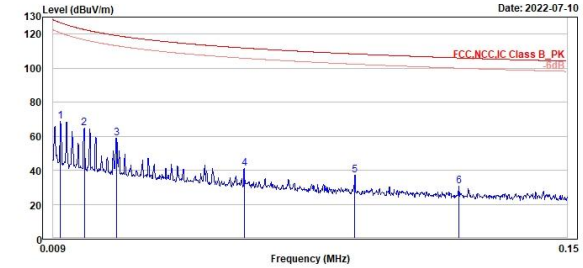

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	0.01	68.71	50.90	17.81	126.67	-57.96	100	196	QP	Open	
2	0.02	64.59	46.20	18.39	122.68	-58.09	100	191	QP	Open	
3	0.03	58.79	39.60	19.19	119.13	-60.34	100	73	QP	Open	
4	0.06	40.98	21.92	19.06	111.82	-70.84	100	57	QP	Open	
5	0.09	37.24	18.85	18.39	108.34	-71.10	100	163	QP	Open	
6	0.12	30.61	12.32	18.29	106.00	-75.39	100	160	QP	Open	

High Channel (Open) 150kHz~30MHz

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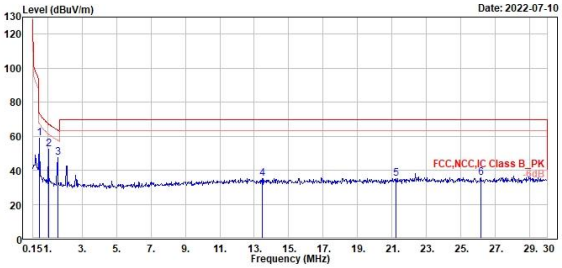

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	0.51	58.79	39.84	18.95	73.48	-14.69	100	158	QP	Open	
2	1.05	52.46	33.19	19.27	67.22	-14.76	100	166	QP	Open	
3	1.58	47.61	28.26	19.35	63.62	-16.01	100	156	QP	Open	
4	13.46	34.86	13.12	21.74	69.50	-34.64	100	163	QP	Open	
5	21.22	35.12	12.86	22.26	69.50	-34.38	100	62	QP	Open	
6	26.15	35.66	13.19	22.47	69.50	-33.84	100	68	QP	Open	

BLE_1M

High Channel (Close) 9kHz~150kHz

TUV Rheinland Taiwan Ltd.
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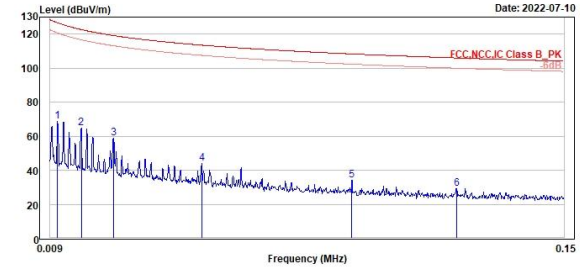

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	0.01	68.82	51.01	17.81	126.67	-57.85	100	188	QP		Close
2	0.02	64.55	46.16	18.39	122.68	-58.13	100	188	QP		Close
3	0.03	58.58	39.39	19.19	119.13	-60.55	100	59	QP		Close
4	0.05	43.93	24.63	19.30	113.51	-69.58	100	204	QP		Close
5	0.09	34.31	15.92	18.39	108.34	-74.03	100	190	QP		Close
6	0.12	29.36	11.07	18.29	105.98	-76.62	100	174	QP		Close

High Channel (Close) 150kHz~30MHz

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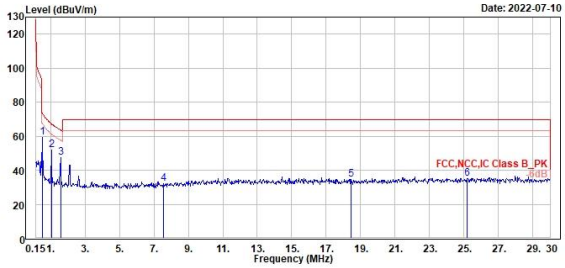


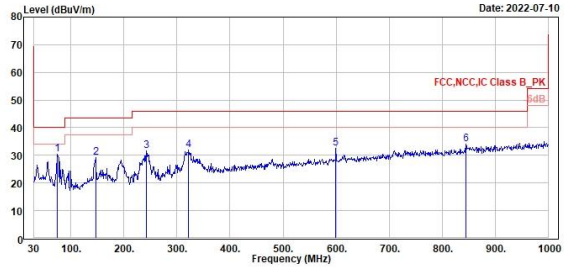
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	0.51	59.31	40.36	18.95	73.48	-14.17	100	88	QP		Close
2	1.05	52.05	32.78	19.27	67.22	-15.17	100	93	QP		Close
3	1.58	47.25	27.90	19.35	63.62	-16.37	100	45	QP		Close
4	7.55	32.37	11.95	20.42	69.50	-37.13	100	252	QP		Close
5	18.45	34.81	12.72	22.09	69.50	-34.69	100	203	QP		Close
6	25.16	35.18	12.75	22.43	69.50	-34.32	100	255	QP		Close

Spurious Emissions, Tx Mode, 30MHz ~ 1GHz

BLE_1M

High Channel (Horizontal)

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	74.62	30.32	39.82	-9.50	40.00	-9.68	200	27	QP	Horizontal	
2	146.40	29.26	35.43	-6.17	43.50	-14.24	200	126	QP	Horizontal	
3	241.46	31.55	38.27	-6.72	46.00	-14.45	100	196	QP	Horizontal	
4	321.97	31.91	36.23	-4.32	46.00	-14.09	200	322	QP	Horizontal	
5	599.39	32.42	32.23	0.19	46.00	-13.58	300	276	QP	Horizontal	
6	844.80	33.92	30.19	3.73	46.00	-12.08	200	258	QP	Horizontal	

High Channel (Vertical)

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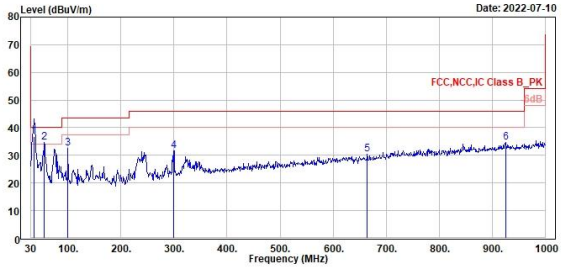

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1 !	35.82	36.94	43.70	-6.76	40.00	-3.06	100	13	QP	Vertical	
2 !	55.22	34.66	41.18	-6.52	40.00	-5.34	100	360	QP	Vertical	
3	99.84	32.45	43.75	-11.30	43.50	-11.05	100	208	QP	Vertical	
4	299.66	31.76	36.49	-4.73	46.00	-14.24	100	80	QP	Vertical	
5	664.38	30.37	29.26	1.11	46.00	-15.63	100	9	QP	Vertical	
6	925.31	34.63	29.42	5.21	46.00	-11.37	100	58	QP	Vertical	

Spurious Emissions, Tx Mode, 1GHz ~ 26.5GHz

BLE_1M

Low Channel (Horizontal)

TÜV Rheinland Taiwan Ltd.
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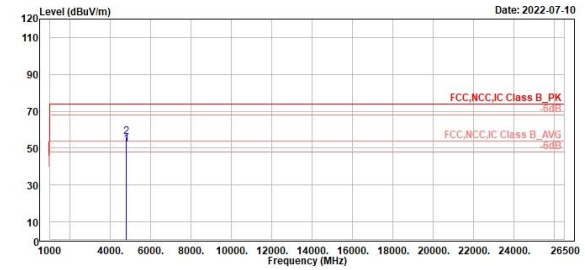

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1 !	4804.00	52.22	62.09	-9.87	54.00	-1.78	100	246	Average	Horizontal	
2	4804.00	56.20	66.07	-9.87	74.00	-17.80	100	246	Peak	Horizontal	

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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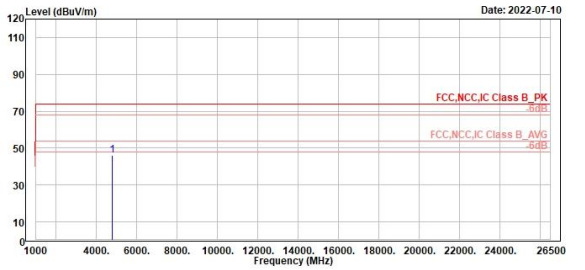

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4804.00	46.21	56.08	-9.87	74.00	-27.79	344	360	Peak	Vertical	

BLE_1M

Middle Channel (Horizontal)

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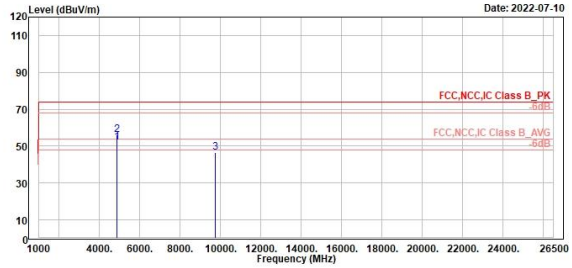
No. 458-18, Sec 2, Fenliao, ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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 !	4880.00	52.17	61.96	-9.79	54.00	-1.83	100	342	Average	Horizontal	
2	4880.00	56.33	66.12	-9.79	74.00	-17.67	100	342	Peak	Horizontal	
3	9760.00	46.68	51.38	-4.70	74.00	-27.32	400	185	Peak	Horizontal	

Middle Channel (Vertical)

TUV Rheinland Taiwan Ltd.
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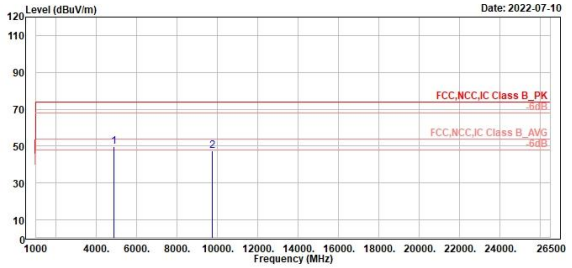

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4880.00	49.51	59.30	-9.79	74.00	-24.49	200	190	Peak	Vertical	
2	9760.00	47.47	52.17	-4.70	74.00	-26.53	300	285	Peak	Vertical	

BLE_1M

High Channel (Horizontal)

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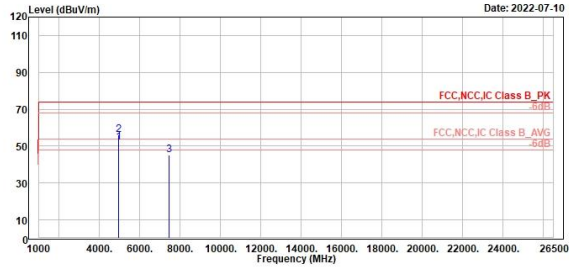

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1 !	4960.00	52.21	61.75	-9.54	54.00	-1.79	100	345	Average	Horizontal	
2	4960.00	56.16	65.70	-9.54	74.00	-17.84	100	345	Peak	Horizontal	
3	7440.00	45.33	52.68	-7.35	74.00	-28.67	100	342	Peak	Horizontal	

High Channel (Vertical)

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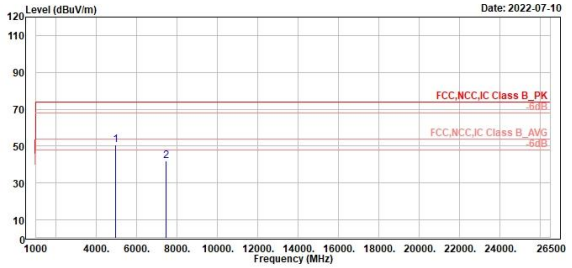

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4960.00	50.65	60.19	-9.54	74.00	-23.35	254	33	Peak	Vertical	
2	7440.00	41.78	49.13	-7.35	74.00	-32.22	318	360	Peak	Vertical	

Mains Conducted Emission, 150kHz ~ 30MHz

Worst Band

(Line)

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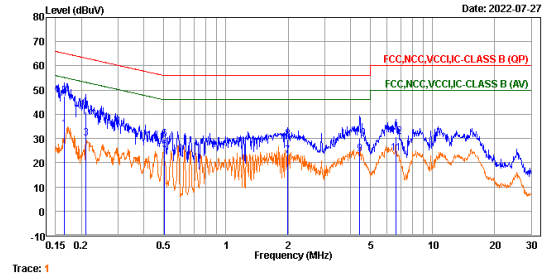

Trace: 1

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark	Pol/Phase	Note
	MHz	dBuV	dBuV	dB	dBuV	dB			
1	0.17	33.96	24.35	9.61	55.17	-21.21	Average	line1	
2	0.17	47.43	37.82	9.61	65.17	-17.74	QP	line1	
3	0.21	29.89	20.28	9.61	53.18	-23.29	Average	line1	
4	0.21	40.92	31.31	9.61	63.18	-22.26	QP	line1	
5	0.50	25.25	15.63	9.62	46.00	-20.75	Average	line1	
6	0.50	29.69	20.07	9.62	56.00	-26.31	QP	line1	
7	1.98	22.88	13.23	9.65	46.00	-23.12	Average	line1	
8	1.98	29.54	19.89	9.65	56.00	-26.46	QP	line1	
9	4.45	23.56	13.88	9.68	46.00	-22.44	Average	line1	
10	4.45	30.09	20.41	9.68	56.00	-25.91	QP	line1	
11	6.63	23.96	14.25	9.71	50.00	-26.04	Average	line1	
12	6.63	30.57	20.86	9.71	60.00	-29.43	QP	line1	

(Neutral)

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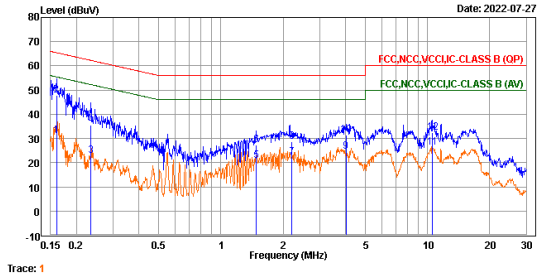

Trace: 1

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark	Pol/Phase	Note
	MHz	dBuV	dBuV	dB	dBuV	dB			
1	0.16	30.97	21.38	9.59	55.46	-24.49	Average	neutral	
2	0.16	47.78	38.19	9.59	65.46	-17.68	QP	neutral	
3	0.23	22.72	13.13	9.59	52.27	-29.55	Average	neutral	
4	0.23	35.61	26.02	9.59	62.27	-26.66	QP	neutral	
5	1.48	20.63	11.01	9.62	46.00	-25.37	Average	neutral	
6	1.48	27.14	17.52	9.62	56.00	-28.86	QP	neutral	
7	2.20	22.22	12.59	9.63	46.00	-23.78	Average	neutral	
8	2.20	28.70	19.07	9.63	56.00	-27.30	QP	neutral	
9	4.02	24.70	15.04	9.66	46.00	-21.30	Average	neutral	
10	4.02	31.48	21.82	9.66	56.00	-24.52	QP	neutral	
11	10.53	26.31	16.57	9.74	50.00	-23.69	Average	neutral	
12	10.53	32.42	22.68	9.74	60.00	-27.58	QP	neutral	