Prüfbericht-Nr.: *Test report no.:*	NN20WV07(P15C-WiFi 2.4GHz) 001	**Auftrags-Nr.:** *Order no.:*	238491626	Seite 1 von 19 *Page 1 of 19*
Kunden-Referenz-Nr.: *Client reference no.:*	N/A	**Auftragsdatum:** *Order date:*	2020-09-16	
Auftraggeber: *Client:*	LAYER ONE CO., LTD. No. 84, Sec. 2, Minsheng E. Rd., Zhongshan Dist., Taipei City, Taiwan (R.O.C.)			
Prüfgegenstand: *Test item:*	Delta 3D Printer			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	Atom3.5			
Auftrags-Inhalt: *Order content:*	FCC Part 15C Test report (WiFi 2.4GHz)			
Prüfgrundlage: *Test specification:*	FCC 47CFR Part 15: Subpart C Section 15.247			
Wareneingangsdatum: *Date of sample receipt:*	2020-09-17			
Prüfmuster-Nr.: *Test sample no:*	A002911161-001			
Prüfzeitraum: *Testing period:*	2020-09-21 ~ 2020-10-26			
Ort der Prüfung: *Place of testing:*	EMC/RF Taipei Testing Site			
Prüflaboratorium: *Testing laboratory:*	Taipei Testing Laboratories			
Prüfergebnis*: *Test result*:*	Pass			

überprüft von: *reviewed by:*	David Huang	**genehmigt von** *authorized by:*	Brenda Chen
Datum: 2020-12-17 *Date:*	David Huang	**Datum:** 2020-12-17 *Date:*	Brenda Chen
Stellung / *Position:*	Project Manager	**Stellung** / *Position:*	Senior Project Manager

Sonstiges / *Other:* This is a partial report that we only evaluated Radiated Spurious Emissions test item.

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

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.
This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.
V05

TEST SUMMARY

Report Section	FCC Clause	Test Item	Result
5.1.1	15.247(b) & 15.203	Antenna Requirement	Pass
-	15.247(b)(3)	Peak Output Power	Not Applicable
-	15.247(a)(2)	6 dB Bandwidth	Not Applicable
-	2.1049	99% Occupied Bandwidth	Not Applicable
-	15.247(e)	Power Spectral Density	Not Applicable
-	15.247(d)	Conducted Spurious Emissions and Band Edges	Not Applicable
5.1.2	15.247(d) & 15.205 & 15.209	Radiated Spurious Emissions and Band Edges	Pass
-	15.207	Mains Conducted Emission	Not Applicable
-	2.1091	RF Exposure Compliance	Not Applicable

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

Contents

HISTORY OF THIS TEST REPORT 4

1. GENERAL REMARKS 5
1.1 COMPLEMENTARY MATERIALS 5
1.2 DECISION RULE OF CONFORMITY 5

2. TEST SITES 6
2.1 TEST LABORATORY 6
2.2 TEST FACILITY 6
2.3 TRACEABILITY 7
2.4 CALIBRATION 7
2.5 MEASUREMENT UNCERTAINTY 7

3. GENERAL PRODUCT INFORMATION 8
3.1 PRODUCT FUNCTION AND INTENDED USE 8
3.2 SYSTEM DETAILS AND RATINGS 8
3.3 NOISE GENERATING AND NOISE SUPPRESSING PARTS 9
3.4 SUBMITTED DOCUMENTS 9

4. TEST SET-UP AND OPERATION MODES 10
4.1 PRINCIPLE OF CONFIGURATION SELECTION 10
4.2 CARRIER FREQUENCY AND CHANNEL 10
4.3 TEST OPERATION AND TEST SOFTWARE 11
4.4 SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT 12
4.5 TEST SETUP DIAGRAM 12
4.6 DUTY CYCLE OF TEST SIGNAL 13

5. TEST RESULTS 14
5.1.1 Antenna Requirement 14
5.1.2 Radiated Spurious Emissions and Band Edges 15

APPENDIX A - TEST RESULT OF RADIATED SPURIOUS EMISSIONS

APPENDIX SP - PHOTOGRAPHS OF TEST SETUP

HISTORY OF THIS TEST REPORT

Report No.	Description	Date Issued
NN20WV07(P15C-WiFi 2.4GHz) 001	Original Release	2020-12-17

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 Spurious Emissions
Appendix SP - Photographs of Test Setup

Applied Standard and Test Levels

Radio
FCC 47CFR Part 15: Subpart C Section 15.247
FCC 47CFR Part 2: Subpart J Section 2.1091
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 Delta 3D Printer. It contains a WLAN 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	Delta 3D Printer
Type Identification	Atom3.5
FCC ID	2AWWXATOM3-5

Technical Specification of EUT

Item	EUT information
Operating Frequency	2412 MHz ~ 2462 MHz
Channel Spacing	5 MHz
Channel number	802.11b/g/n HT20: 11
Data Rate	802.11b: 11.0 / 5.5 / 2.0 / 1.0 Mbps 802.11g: 54.0 / 48.0 / 36.0 / 24.0 / 18.0 / 12.0 / 9.0 / 6.0 Mbps 802.11n: up to MCS7
Operation Voltage	120Vac
Modulation	DSSS (DBPSK, DQPSK, CCK) OFDM (BPSK, QPSK, 16QAM, 64QAM)
Maximum Output Power (mW)	802.11b: 32.58 802.11g: 143.55 802.11n HT20: 141.58
Antenna Information	Dipole antenna with 2dBi
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

802.11b				802.11g				802.11n HT20			
Channel	Power Setting	AVG (dBm)	Peak (dBm)	Channel	Power Setting	AVG (dBm)	Peak (dBm)	Channel	Power Setting	AVG (dBm)	Peak (dBm)
1	20	11.12	14.59	1	3	14.43	21.57	1	3	14.15	21.51
6	15	11.66	15.13	6	0	14.56	21.34	6	0	14.34	21.41
11	24	9.3	12.7	11	0	14.3	21.04	11	1	13.79	20.91

*The above result is tested by Dekra Laboratory.

4.2 Carrier Frequency and Channel

802.11b, 802.11g and 802.11n HT20:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432		
6	2437		
7	2442		

4.3 Test Operation and Test Software

Setup for testing: Test samples are provided with a USB 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	ESP_RF_test_tool_v2.5

The samples were used as follows:
A002911161-001 for radiated
Full test was applied on all test modes, but only worst case was shown.
The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers.

Modulation Mode	Tx Function
802.11b	1TX (SISO)
802.11g	1TX (SISO)
802.11n HT20	1TX (SISO)

* The modulation and bandwidth are similar for 802.11n mode HT20, therefore investigated worse case as representative mode in test report.

EUT Configure Mode	Applicable To		Description
	Radiated Spurious Emissions above 1 GHz	Radiated Spurious Emissions below 1 GHz	
-	√	√	-

Note:
1. "-" means no effect.

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	Mode	Available Channel	Tested Channel	Date Rate (Mbps)
-	802.11b	1 to 11	1, 6, 11	1.0
-	802.11g	1 to 11	1, 6, 11	6.0
-	802.11n HT20	1 to 11	1, 6, 11	MCS0

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	Mode	Available Channel	Tested Channel	Date Rate (Mbps)
-	802.11g	1 to 11	11	6.0

Test Condition

Test Item	Ambient Temperature	Relative Humidity	Tested by
Radiated Spurious Emissions above 1 GHz	22-26 °C	50-65%	Eagle Tsai
Radiated Spurious Emissions below 1 GHz	22-26 °C	50-65%	Eagle Tsai

4.4 Special Accessories and Auxiliary Equipment

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

Accessory of EUT

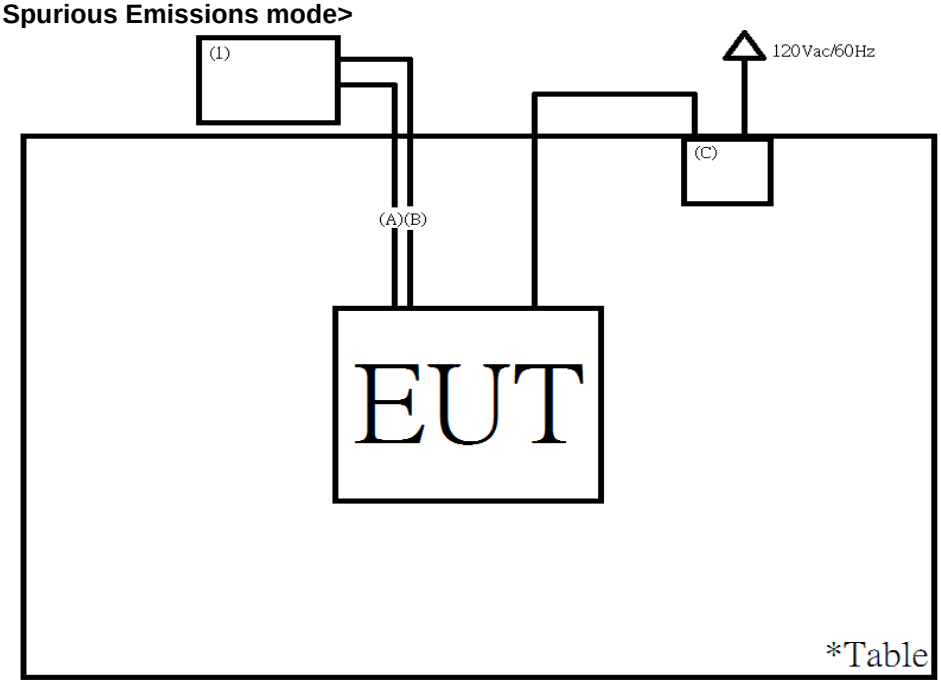
No.	Product	Brand	Model	Description
C	Adapter	MEAN WELL	GST220A24	I/P: 100-240 Vac, 50/60 Hz, 4000mA O/P: 24 Vdc, 9200 mA
				Radiated Test

Support Unit

Radiated Test					
No.	Description	Brand	Model	S/N	Remark
1	Notebook	HP	TPN-C139	CND93662VF	-
A	USB Cable	FTDI	FT232BL	-	165 cm shielded cable with core
B	USB Cable	E-books	X29	-	195 cm shielded cable w/o core
-	Test fixture cable	SHIG YANG	1046A-10	-	-
-	Test fixture	FTDI	FT232BL	-	-

4.5 Test Setup Diagram

<Radiated Spurious Emissions mode>



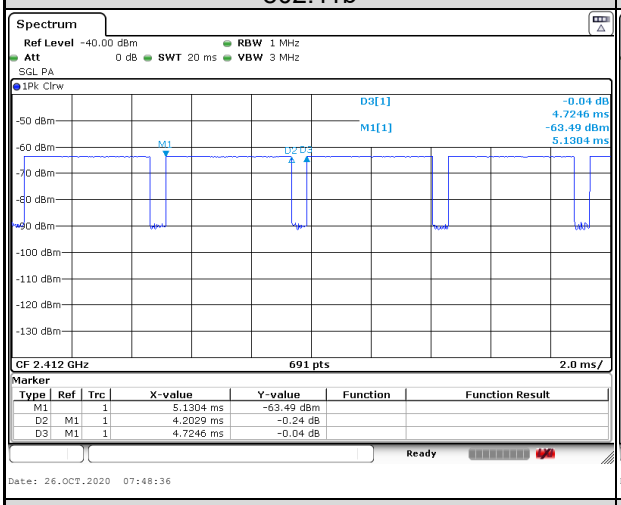
4.6 Duty Cycle of Test Signal

802.11b: Duty cycle(%) = 4.7246/4.2029 =88.96%

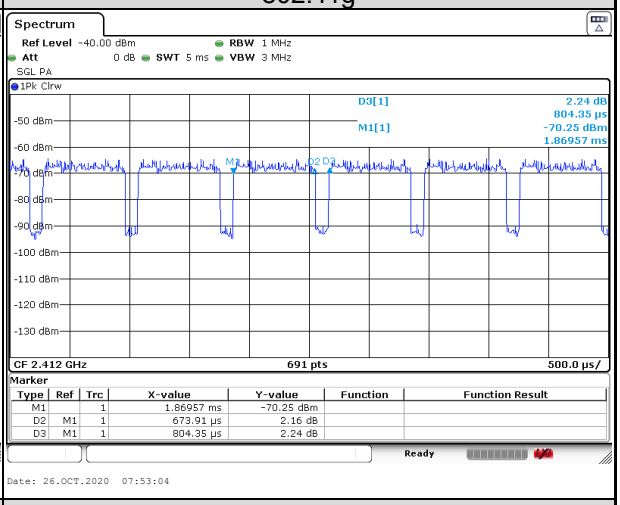
802.11g: Duty cycle(%) = 804.35/673.91 =83.78%

802.11n (HT20): Duty cycle =762.32/ 649.28=85.17%

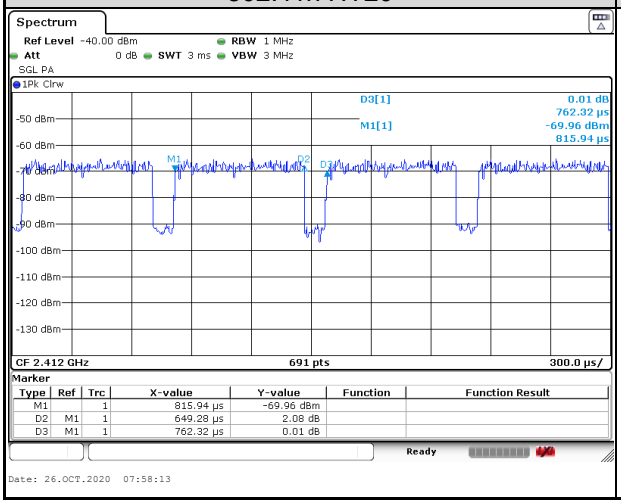
802.11b



802.11g



802.11n HT20



802.11n HT40

(11b: RBW = 1 MHz, VBW =1 KHz ; 11g: RBW = 1 MHz, VBW = 1 kHz ; 11n (HT20): RBW = 1 MHz, VBW = 1 kHz)

5. Test Results

5.1.1 Antenna Requirement

Requirement Use of approved antennas only

According to the manufacturer declaration, the antenna information is as listed below. The antenna is with no possibility of replacement with a non-approved antenna by the end-user. Therefore, the EUT is considered to comply with this provision.

Brand Name	Model No.	Antenna Type	Antenna Gain (dBi)
Aosiya	GX001Z.100006.Z01	Dipole Antenna	2

Refer to EUT photo for details.

5.1.2 Radiated Spurious Emissions and Band Edges

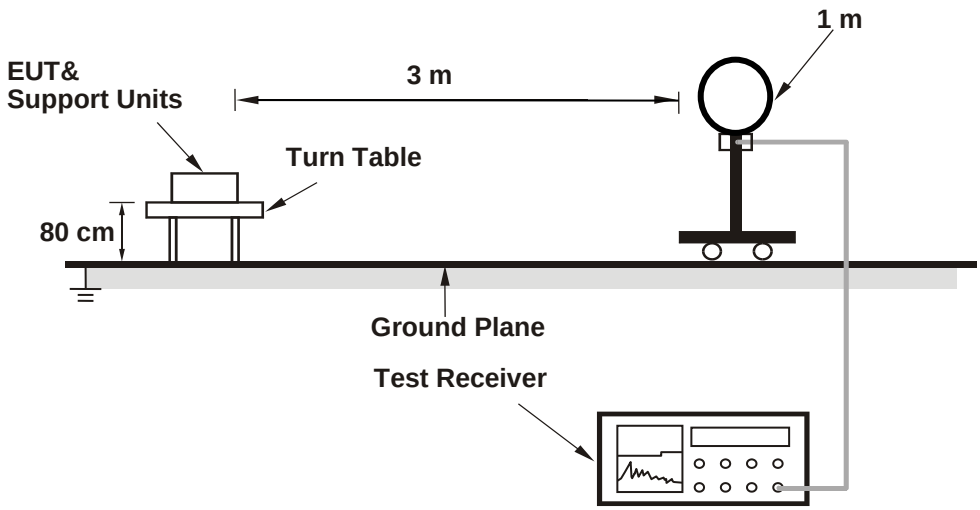
Limit

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).

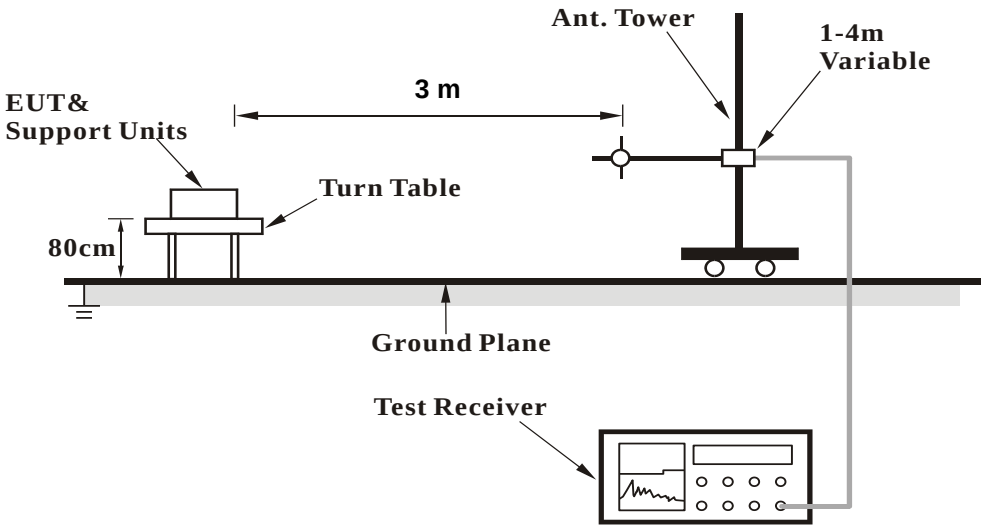
Kind of Test Site 3m Semi-Anechoic Chamber

Test Setup

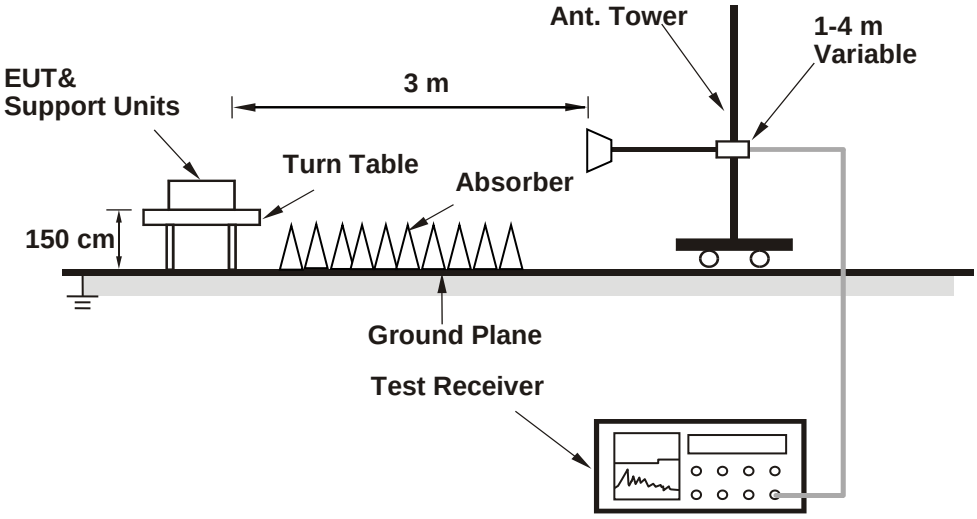
<Radiated Emissions below 30 MHz>



<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	2020/5/5	2021/5/4
Receiver	R&S	ESR7	102109	2020/3/30	2021/3/29
Bilog Antenna	SCHWARZBECK	VULB-9168	00950	2020/1/20	2021/1/18
Horn Antenna	ETS-Lindgren	3117	00218929	2019/11/27	2020/11/25
LF-AMP	Agilent	8447D	2727A05146	2020/2/17	2021/2/15
HF-AMP + AC source	EMCI	EMC051845SE	980635	2020/2/11	2021/2/9
HF-AMP + AC source	EMCI	EMC184045SE	980656	2020/2/11	2021/2/9
Horn Antenna	SCHWARZBECK	BBHA 9170	00890	2020/4/13	2021/4/12
Microwave Cable	HUBER+SUHNER	SUCOFLEX 104EA	800057/4EA	2020/4/22	2021/4/21
Microwave Cable	HUBER+SUHNER	SUCOFLEX 104	802244/4	2020/4/22	2021/4/21
Microwave Cable	HUBER+SUHNER	SUCOFLEX 104	MY37203/4	2020/4/22	2021/4/21
Microwave Cable	HUBER+SUHNER	SUCOFLEX 102EA	800897/2EA	2020/3/25	2021/3/24
Microwave Cable	HUBER+SUHNER	SUCOFLEX 102EA	800902/2EA	2020/3/25	2021/3/24
Microwave Cable	HUBER+SUHNER	SUCOFLEX 102EA	801026/2EA	2020/3/25	2021/3/24
Loop Antenna	Chance Most	EMCILPA600 +calibration	287	2020/1/9	2021/1/7

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, Y and Z 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)

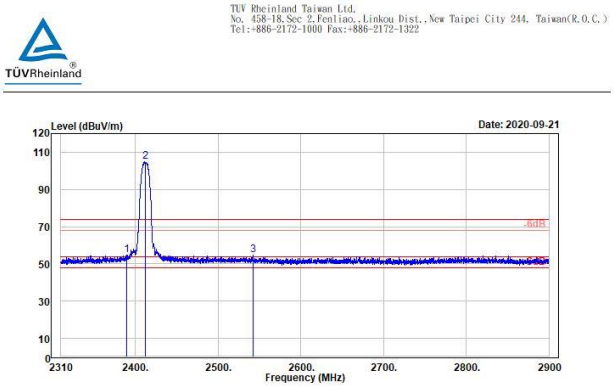
Please refer to Appendix A.

Appendix A: Test Results of Radiated Spurious Emissions

Band Edges, 2.31GHz ~ 2.9GHz

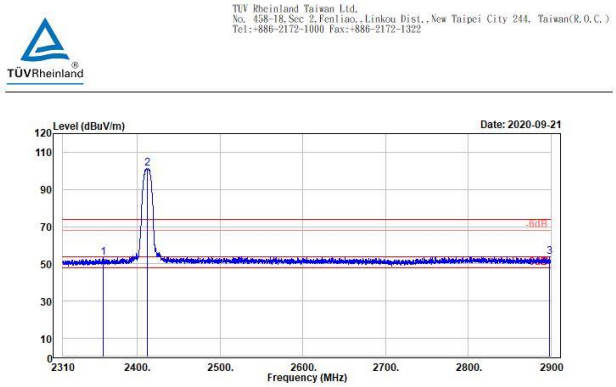
802.11b

Low Channel (Horizontal) 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	2389.41	54.79	17.65	37.14	74.00	-19.21	362	334	Peak	Horizontal	
2 *	2412.00	104.77	67.57	37.20	74.00	30.77	362	334	Peak	Horizontal	
3	2542.70	54.66	16.78	37.88	74.00	-19.34	362	334	Peak	Horizontal	

Low Channel (Vertical) Peak

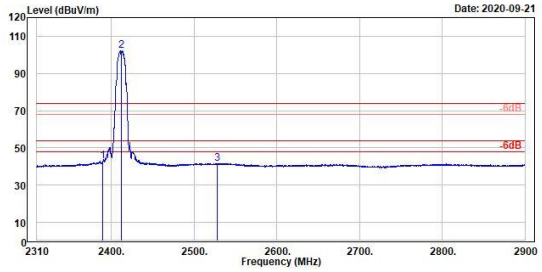


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2358.97	53.36	16.19	37.17	74.00	-20.64	100	327	Peak	Vertical	
2 *	2412.00	101.34	64.14	37.20	74.00	27.34	100	327	Peak	Vertical	
3	2898.82	53.97	15.92	38.05	74.00	-20.03	100	327	Peak	Vertical	

802.11b

Low Channel (Horizontal) Average

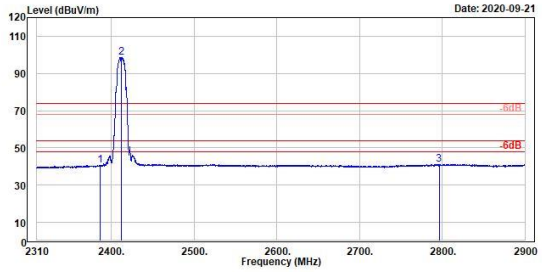
TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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	2390.00	42.84	5.70	37.14	54.00	-11.16	362	334	Average	Horizontal	
2 *	2412.00	102.21	65.01	37.20	54.00	48.21	362	334	Average	Horizontal	
3	2528.54	41.61	3.81	37.80	54.00	-12.39	362	334	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

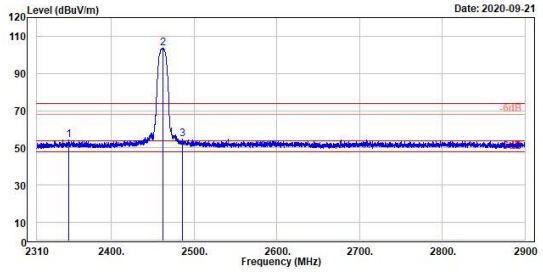


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2386.35	40.80	3.65	37.15	54.00	-13.20	100	327	Average	Vertical	
2 *	2412.00	98.70	61.50	37.20	54.00	44.70	100	327	Average	Vertical	
3	2796.40	41.11	2.99	38.12	54.00	-12.89	100	327	Average	Vertical	

802.11b

High Channel (Horizontal) Peak

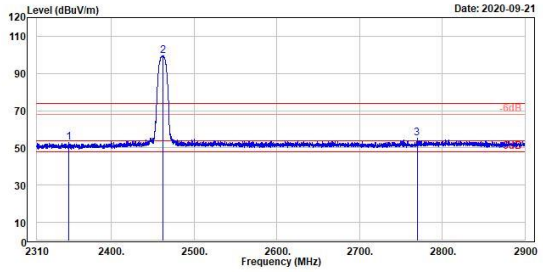
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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	2348.70	54.40	17.23	37.17	74.00	-19.60	346	340	Peak	Horizontal	
2 *	2462.00	103.65	66.19	37.46	74.00	29.65	346	340	Peak	Horizontal	
3	2486.17	54.98	17.40	37.58	74.00	-19.02	346	340	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

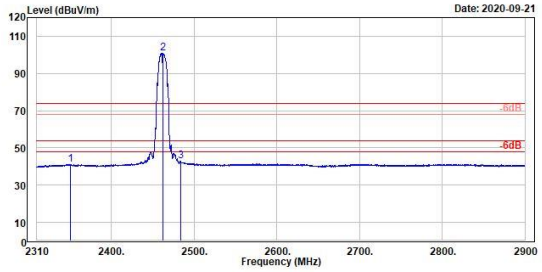


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2348.70	52.73	15.56	37.17	74.00	-21.27	100	320	Peak	Vertical	
2 *	2462.00	99.58	62.12	37.46	74.00	25.58	100	320	Peak	Vertical	
3	2769.73	55.07	16.98	38.09	74.00	-18.93	100	320	Peak	Vertical	

802.11b

High Channel (Horizontal) Average

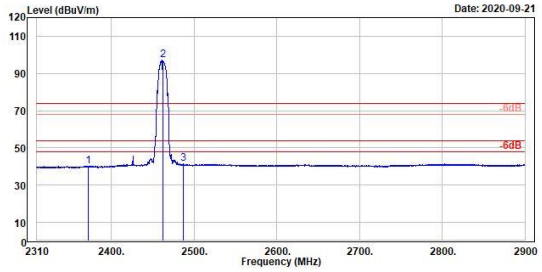
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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	2350.59	41.05	3.88	37.17	54.00	-12.95	346	340	Average	Horizontal	
2 *	2462.00	101.06	63.60	37.46	54.00	47.06	346	340	Average	Horizontal	
3	2483.50	42.92	5.35	37.57	54.00	-11.08	346	340	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

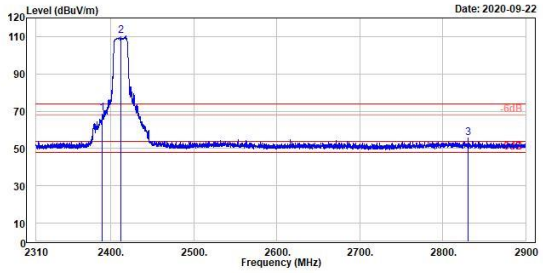


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2372.42	40.25	3.09	37.16	54.00	-13.75	100	320	Average	Vertical	
2 *	2462.00	96.97	59.51	37.46	54.00	42.97	100	320	Average	Vertical	
3	2486.88	41.46	3.87	37.59	54.00	-12.54	100	320	Average	Vertical	

802.11g

Low Channel (Horizontal) Peak

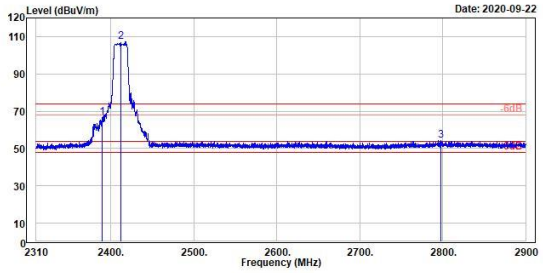
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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 !	2389.65	68.74	31.60	37.14	74.00	-5.26	400	351	Peak	Horizontal	
2 *	2412.00	110.33	73.13	37.20	74.00	36.33	400	351	Peak	Horizontal	
3	2830.62	55.65	17.55	38.10	74.00	-18.35	400	351	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

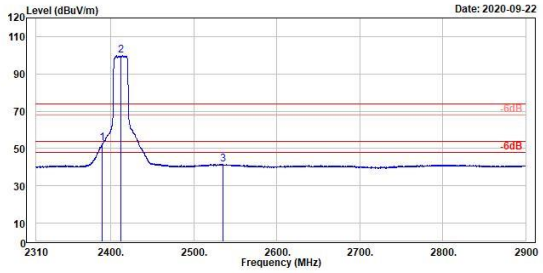


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2389.89	66.56	29.42	37.14	74.00	-7.44	156	338	Peak	Vertical	
2 *	2412.00	107.06	69.86	37.20	74.00	33.06	156	338	Peak	Vertical	
3	2798.28	54.25	16.13	38.12	74.00	-19.75	156	338	Peak	Vertical	

802.11g

Low Channel (Horizontal) Average

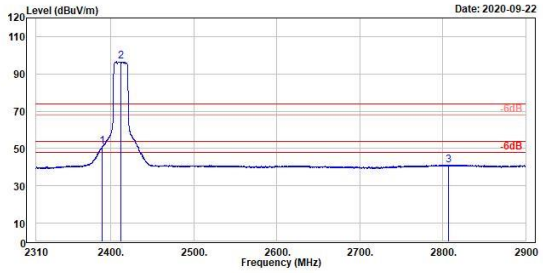
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



		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	!	2390.00	53.02	15.88	37.14	54.00	-0.98	400	351	Average	Horizontal	
2	*	2412.00	99.70	62.50	37.20	54.00	45.70	400	351	Average	Horizontal	
3		2534.79	41.48	3.64	37.84	54.00	-12.52	400	351	Average	Horizontal	

Low 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

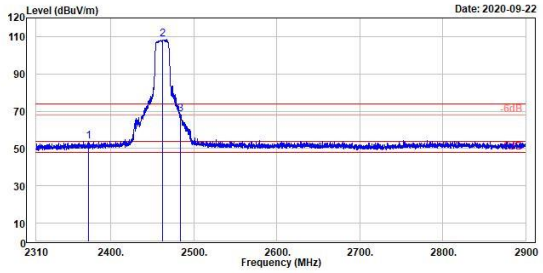


		Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
		MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	!	2390.00	50.94	13.80	37.14	54.00	-3.06	156	338	Average	Vertical	
2	*	2412.00	96.86	59.66	37.20	54.00	42.86	156	338	Average	Vertical	
3		2806.78	41.14	3.02	38.12	54.00	-12.86	156	338	Average	Vertical	

802.11g

High Channel (Horizontal) Peak

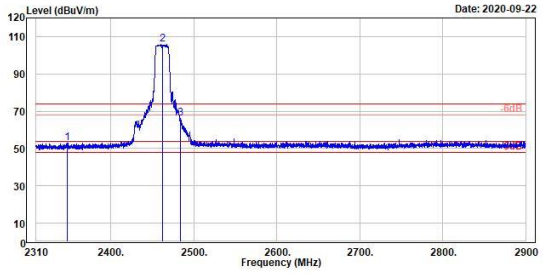
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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	2373.01	53.81	16.66	37.15	74.00	-20.19	221	352	Peak	Horizontal	
2 *	2462.00	108.63	71.17	37.46	74.00	34.63	221	352	Peak	Horizontal	
3 !	2483.70	68.25	30.68	37.57	74.00	-5.75	221	352	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

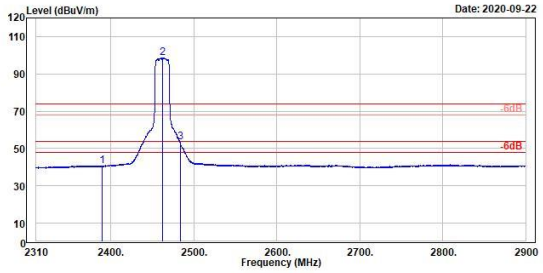


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2347.88	53.13	15.96	37.17	74.00	-20.87	114	334	Peak	Vertical	
2 *	2462.00	105.80	68.34	37.46	74.00	31.80	114	334	Peak	Vertical	
3	2483.58	66.32	28.75	37.57	74.00	-7.68	114	334	Peak	Vertical	

802.11g

High Channel (Horizontal) Average

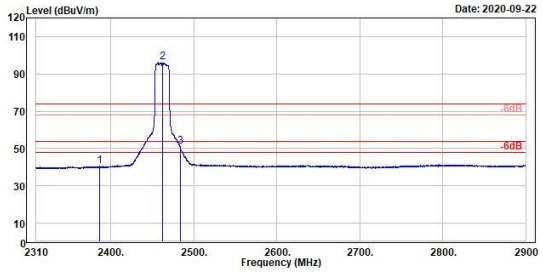
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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	2389.77	40.70	3.56	37.14	54.00	-13.30	221	352	Average	Horizontal	
2 *	2462.00	98.66	61.20	37.46	54.00	44.66	221	352	Average	Horizontal	
3 !	2483.50	53.58	16.01	37.57	54.00	-0.42	221	352	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

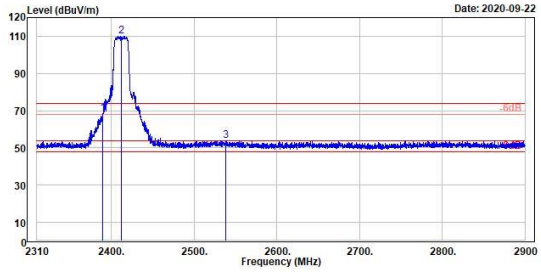


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2386.35	40.45	3.30	37.15	54.00	-13.55	114	334	Average	Vertical	
2 *	2462.00	96.12	58.66	37.46	54.00	42.12	114	334	Average	Vertical	
3 !	2483.50	51.29	13.72	37.57	54.00	-2.71	114	334	Average	Vertical	

802.11n HT20

Low Channel (Horizontal) Peak

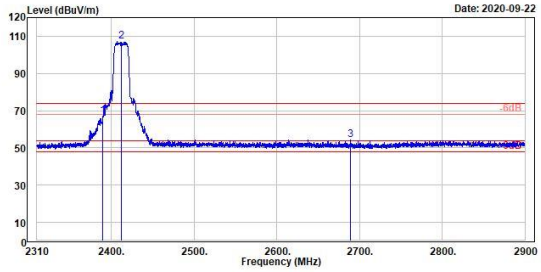
TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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 !	2389.89	68.36	31.22	37.14	74.00	-5.64	400	349	Peak	Horizontal	
2 *	2412.00	110.18	72.98	37.20	74.00	36.18	400	349	Peak	Horizontal	
3	2538.09	54.03	16.17	37.86	74.00	-19.97	400	349	Peak	Horizontal	

Low Channel (Vertical) Peak

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

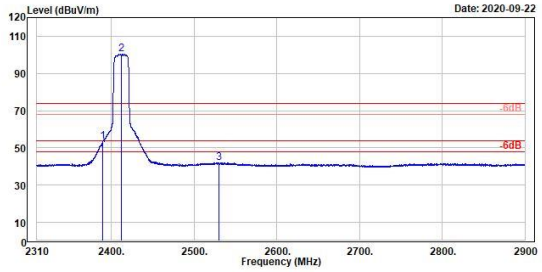


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2390.00	67.20	30.06	37.14	74.00	-6.80	155	340	Peak	Vertical	
2 *	2412.00	107.35	70.15	37.20	74.00	33.35	155	340	Peak	Vertical	
3	2689.13	54.49	16.82	37.67	74.00	-19.51	155	340	Peak	Vertical	

802.11n HT20

Low Channel (Horizontal) Average

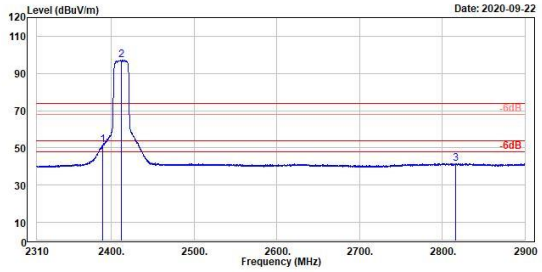
TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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 !	2390.00	53.27	16.13	37.14	54.00	-0.73	400	349	Average	Horizontal	
2 *	2412.00	100.42	63.22	37.20	54.00	46.42	400	349	Average	Horizontal	
3	2530.42	42.13	4.31	37.82	54.00	-11.87	400	349	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

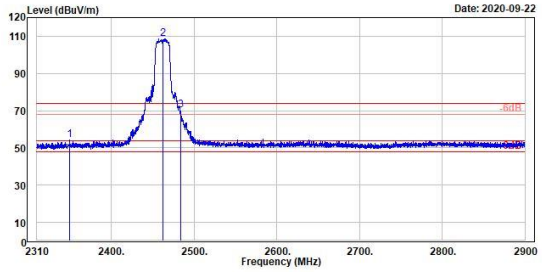


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1 !	2390.00	51.58	14.44	37.14	54.00	-2.42	155	340	Average	Vertical	
2 *	2412.00	97.18	59.98	37.20	54.00	43.18	155	340	Average	Vertical	
3	2816.81	41.73	3.61	38.12	54.00	-12.27	155	340	Average	Vertical	

802.11n HT20

High Channel (Horizontal) Peak

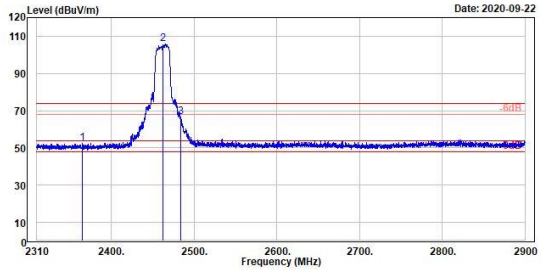
TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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	2349.65	54.42	17.25	37.17	74.00	-19.58	222	355	Peak	Horizontal	
2 *	2462.00	108.72	71.26	37.46	74.00	34.72	222	355	Peak	Horizontal	
3 !	2483.93	70.47	32.89	37.58	74.00	-3.53	222	355	Peak	Horizontal	

High Channel (Vertical) Peak

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

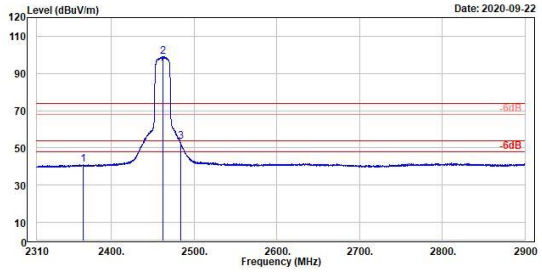


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2364.63	52.63	15.47	37.16	74.00	-21.37	212	360	Peak	Vertical	
2 *	2462.00	105.68	68.22	37.46	74.00	31.68	212	360	Peak	Vertical	
3	2483.50	66.49	28.92	37.57	74.00	-7.51	212	360	Peak	Vertical	

802.11n HT20

High Channel (Horizontal) Average

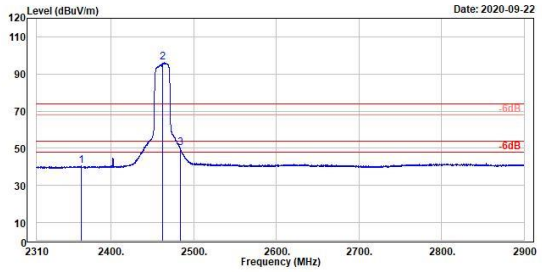
TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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	2365.58	41.04	3.88	37.16	54.00	-12.96	222	355	Average	Horizontal	
2 *	2462.00	99.03	61.57	37.46	54.00	45.03	222	355	Average	Horizontal	
3 !	2483.50	53.27	15.70	37.57	54.00	-0.73	222	355	Average	Horizontal	

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



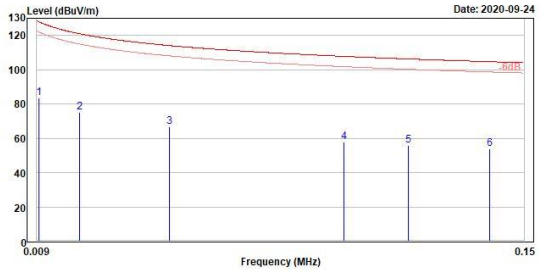
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2363.45	40.43	3.27	37.16	54.00	-13.57	212	360	Average	Vertical	
2 *	2462.00	96.14	58.68	37.46	54.00	42.14	212	360	Average	Vertical	
3 !	2483.50	50.36	12.79	37.57	54.00	-3.64	212	360	Average	Vertical	

Spurious Emissions, Tx Mode, 9kHz ~ 30MHz

802.11g

High Channel (Open) 9kHz~150kHz

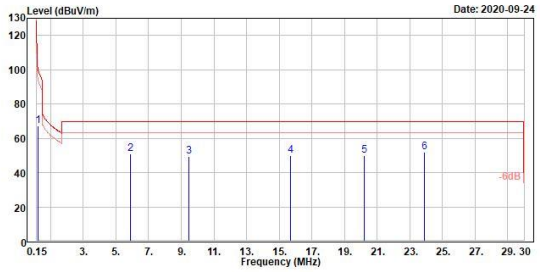
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao, Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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	83.43	4.27	79.16	127.85	-44.42	100	70	QP	Open	
2	0.02	74.90	2.60	72.30	121.00	-46.10	100	0	QP	Open	
3	0.05	66.67	0.96	65.71	114.09	-47.42	100	74	QP	Open	
4	0.10	57.93	-1.57	59.50	107.78	-49.85	100	18	QP	Open	
5	0.12	55.64	-2.66	58.30	106.27	-50.63	100	2	QP	Open	
6	0.14	53.88	-3.05	56.93	104.68	-50.80	100	34	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

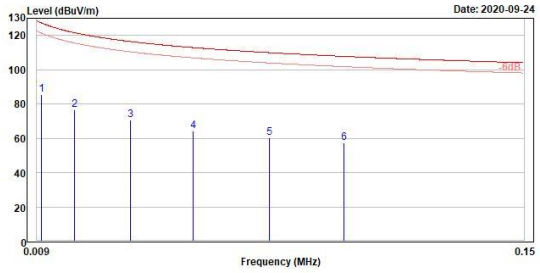


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	0.23	67.01	14.57	52.44	100.23	-33.22	100	160	QP	Open	
2	5.87	50.87	12.51	38.36	69.50	-18.63	100	259	QP	Open	
3	9.47	49.44	11.74	37.70	69.50	-20.06	100	99	QP	Open	
4	15.71	49.73	12.14	37.59	69.50	-19.77	100	49	QP	Open	
5	20.22	49.94	13.72	36.22	69.50	-19.56	100	165	QP	Open	
6	23.90	51.76	16.81	34.95	69.50	-17.74	100	236	QP	Open	

802.11g

High Channel (Close) 9kHz~150kHz

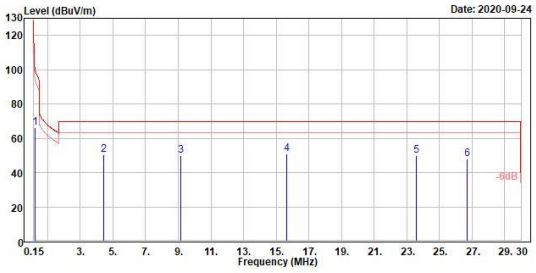
TÜV Rheinland Taiwan Ltd.
No. 458-18,Sec 2,Fenliao.,Linkou Dist.,New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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	0.01	85.38	6.74	78.64	127.31	-41.93	100	243	QP	Close	
2	0.02	76.52	3.93	72.59	121.61	-45.09	100	348	QP	Close	
3	0.04	70.77	1.96	68.81	116.45	-45.68	100	28	QP	Close	
4	0.05	64.41	-0.06	64.47	112.92	-48.51	100	217	QP	Close	
5	0.08	60.28	-1.38	61.66	109.95	-49.67	100	49	QP	Close	
6	0.10	57.55	-1.96	59.51	107.78	-50.23	100	311	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



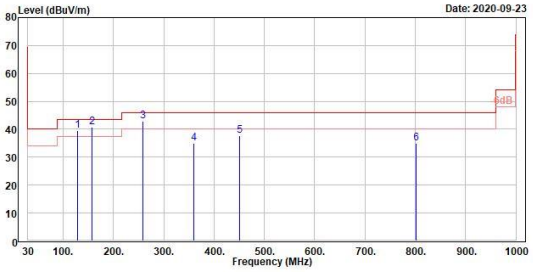
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	0.24	66.27	14.01	52.26	100.01	-33.74	100	0	QP	Close	
2	4.44	50.24	11.90	38.34	69.50	-19.26	100	343	QP	Close	
3	9.16	49.87	12.12	37.75	69.50	-19.63	100	162	QP	Close	
4	15.64	50.79	13.19	37.60	69.50	-18.71	100	250	QP	Close	
5	23.60	50.08	14.92	35.16	69.50	-19.42	100	8	QP	Close	
6	26.70	48.06	13.76	34.30	69.50	-21.44	100	289	QP	Close	

Spurious Emissions, Tx Mode, 30MHz ~ 1GHz

802.11g

High Channel (Horizontal)

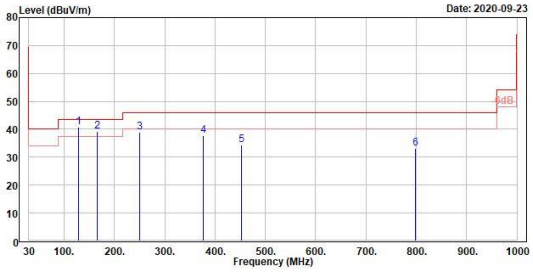
TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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 !	129.13	39.48	47.37	-7.89	43.50	-4.02	300	295	QP	horizontal	
2 !	156.78	40.88	47.01	-6.13	43.50	-2.62	100	88	QP	horizontal	
3 !	259.41	42.89	49.30	-6.41	46.00	-3.11	100	287	QP	horizontal	
4	359.51	34.83	38.77	-3.94	46.00	-11.17	100	17	QP	horizontal	
5	451.56	37.70	39.91	-2.21	46.00	-8.30	200	104	QP	horizontal	
6	802.02	35.08	32.23	2.85	46.00	-10.92	200	40	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



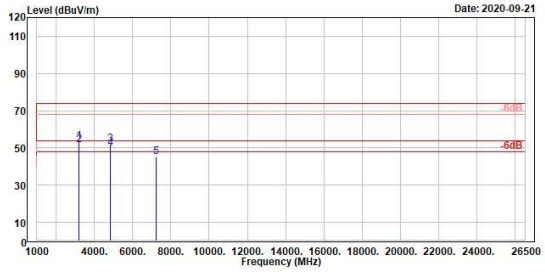
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1 !	129.13	40.71	48.60	-7.89	43.50	-2.79	100	220	QP	vertical	
2 !	165.99	39.17	45.09	-5.92	43.50	-4.33	100	323	QP	vertical	
3	250.77	38.97	45.59	-6.62	46.00	-7.03	300	111	QP	vertical	
4	377.36	37.73	41.26	-3.53	46.00	-8.27	138	360	QP	vertical	
5	452.53	34.32	36.53	-2.21	46.00	-11.68	200	133	QP	vertical	
6	797.85	33.23	30.41	2.82	46.00	-12.77	126	360	QP	vertical	

Spurious Emissions, Tx Mode, 1GHz ~ 26.5GHz

802.11b

Low Channel (Horizontal)

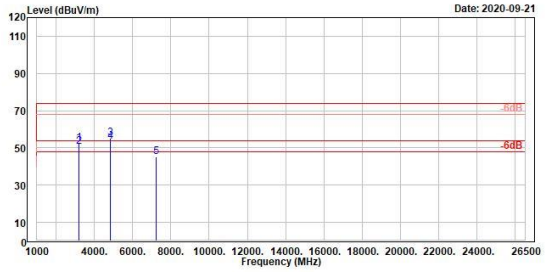
TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



		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		3215.67	53.41	65.30	-11.89	74.00	-20.59	321	327	Peak	horizontal	
2	!	3215.67	51.75	63.64	-11.89	54.00	-2.25	321	327	Average	horizontal	
3		4824.00	52.16	61.54	-9.38	74.00	-21.84	367	356	Peak	horizontal	
4	!	4824.00	49.65	59.03	-9.38	54.00	-4.35	367	356	Average	horizontal	
5		7236.00	45.02	51.77	-6.75	74.00	-28.98	100	318	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.)
Tel:+886-2172-1000 Fax:+886-2172-1322

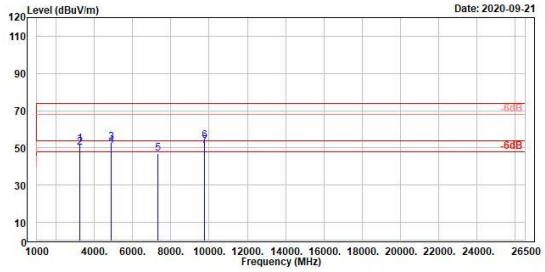


		Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
		MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1		3215.67	52.30	64.19	-11.89	74.00	-21.70	100	314	Peak	vertical	
2	!	3215.67	50.76	62.65	-11.89	54.00	-3.24	100	314	Average	vertical	
3		4824.00	55.43	64.81	-9.38	74.00	-18.57	108	352	Peak	vertical	
4	!	4824.00	53.51	62.89	-9.38	54.00	-0.49	108	352	Average	vertical	
5		7236.00	45.22	51.97	-6.75	74.00	-28.78	100	317	Peak	vertical	

802.11b

Middle Channel (Horizontal)

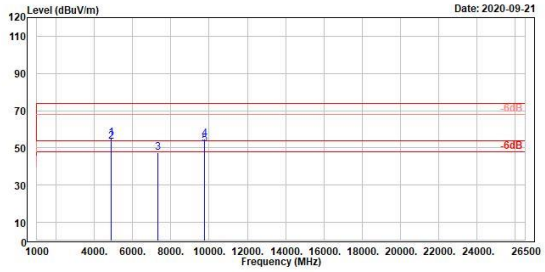
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



		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		3248.72	51.81	63.66	-11.85	74.00	-22.19	151	327	Peak	horizontal	
2	!	3248.72	50.15	62.00	-11.85	54.00	-3.85	151	327	Average	horizontal	
3		4874.00	53.09	62.39	-9.30	74.00	-20.91	197	356	Peak	horizontal	
4	!	4874.00	51.10	60.40	-9.30	54.00	-2.90	197	356	Average	horizontal	
5		7311.00	47.16	53.87	-6.71	74.00	-26.84	400	337	Peak	horizontal	
6		9748.00	53.72	57.60	-3.88	74.00	-20.28	100	13	Peak	horizontal	
7	!	9748.00	51.07	54.95	-3.88	54.00	-2.93	100	13	Average	horizontal	

Middle 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

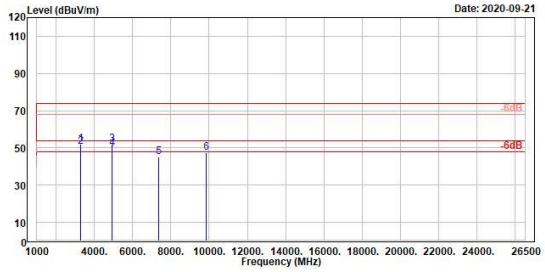


		Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
		MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1		4874.00	55.08	64.38	-9.30	74.00	-18.92	188	350	Peak	vertical	
2	!	4874.00	53.49	62.79	-9.30	54.00	-0.51	188	350	Average	vertical	
3		7311.00	47.40	54.11	-6.71	74.00	-26.60	100	274	Peak	vertical	
4		9748.00	54.72	58.60	-3.88	74.00	-19.28	100	298	Peak	vertical	
5	!	9748.00	52.09	55.97	-3.88	54.00	-1.91	100	298	Average	vertical	

802.11b

High Channel (Horizontal)

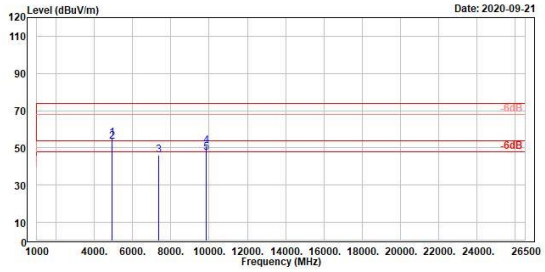
TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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	3282.72	52.14	64.01	-11.87	74.00	-21.86	310	325	Peak	horizontal	
2 !	3282.72	50.68	62.55	-11.87	54.00	-3.32	310	325	Average	horizontal	
3	4924.00	52.18	61.40	-9.22	74.00	-21.82	266	84	Peak	horizontal	
4 !	4924.00	49.85	59.07	-9.22	54.00	-4.15	266	84	Average	horizontal	
5	7386.00	45.16	51.92	-6.76	74.00	-28.84	300	159	Peak	horizontal	
6	9848.00	47.32	51.14	-3.82	74.00	-26.68	265	92	Peak	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

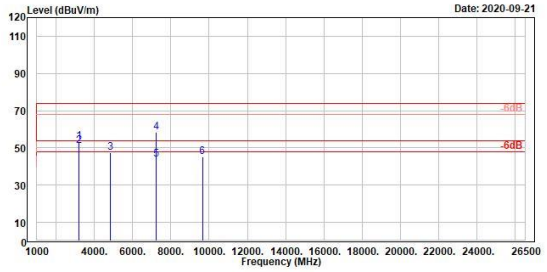


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4924.00	55.22	64.44	-9.22	74.00	-18.78	174	31	Peak	vertical	
2 !	4924.00	53.35	62.57	-9.22	54.00	-0.65	174	31	Average	vertical	
3	7386.00	46.01	52.77	-6.76	74.00	-27.99	100	265	Peak	vertical	
4	9848.00	51.16	54.98	-3.82	74.00	-22.84	103	296	Peak	vertical	
5	9848.00	47.27	51.09	-3.82	54.00	-6.73	103	296	Average	vertical	

802.11g

Low Channel (Horizontal)

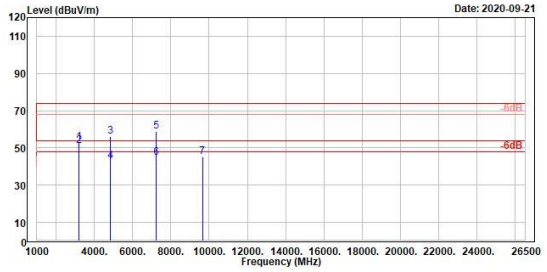
TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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	3215.67	53.23	65.12	-11.89	74.00	-20.77	388	4	Peak	horizontal	
2 !	3215.67	51.15	63.04	-11.89	54.00	-2.85	388	4	Average	horizontal	
3	4824.00	47.41	56.79	-9.38	74.00	-26.59	191	360	Peak	horizontal	
4	7236.00	58.48	65.23	-6.75	74.00	-15.52	100	321	Peak	horizontal	
5	7236.00	43.92	50.67	-6.75	54.00	-10.08	100	321	Average	horizontal	
6	9648.00	44.98	49.11	-4.13	74.00	-29.02	400	324	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.)
Tel:+886-2172-1000 Fax:+886-2172-1322

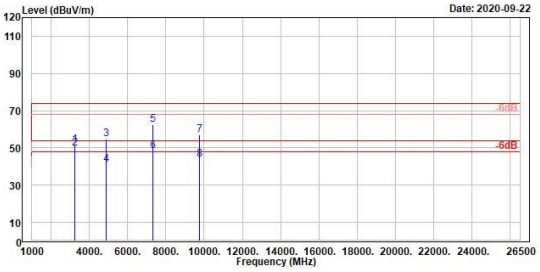


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	3215.67	53.12	65.01	-11.89	74.00	-20.88	113	323	Peak	vertical	
2 !	3215.67	51.07	62.96	-11.89	54.00	-2.93	113	323	Average	vertical	
3	4824.00	56.31	65.69	-9.38	74.00	-17.69	109	352	Peak	vertical	
4	4824.00	42.82	52.20	-9.38	54.00	-11.18	109	352	Average	vertical	
5	7236.00	58.85	65.60	-6.75	74.00	-15.15	102	320	Peak	vertical	
6	7236.00	44.56	51.31	-6.75	54.00	-9.44	102	320	Average	vertical	
7	9648.00	45.07	49.20	-4.13	74.00	-28.93	100	52	Peak	vertical	

802.11g

Middle Channel (Horizontal)

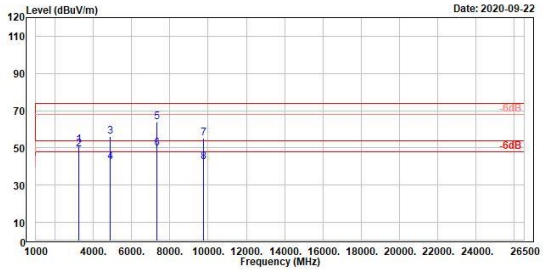
TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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	3248.72	51.77	63.62	-11.85	74.00	-22.23	343	9	Peak	horizontal	
2 !	3248.72	49.86	61.71	-11.85	54.00	-4.14	343	9	Average	horizontal	
3	4874.00	54.88	64.18	-9.30	74.00	-19.12	371	268	Peak	horizontal	
4	4874.00	41.25	50.55	-9.30	54.00	-12.75	371	268	Average	horizontal	
5	7311.00	62.55	69.26	-6.71	74.00	-11.45	390	41	Peak	horizontal	
6 !	7311.00	48.38	55.09	-6.71	54.00	-5.62	390	41	Average	horizontal	
7	9748.00	56.98	60.86	-3.88	74.00	-17.02	213	360	Peak	horizontal	
8	9748.00	43.80	47.68	-3.88	54.00	-10.20	213	360	Average	horizontal	

Middle 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

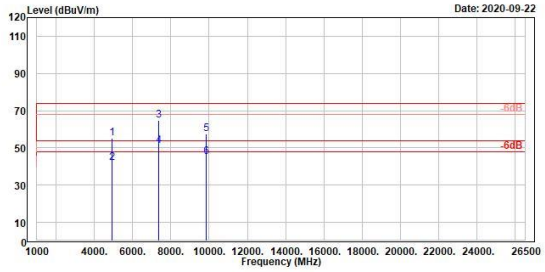


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	3248.72	51.48	63.33	-11.85	74.00	-22.52	121	325	Peak	vertical	
2 !	3248.72	49.36	61.21	-11.85	54.00	-4.64	121	325	Average	vertical	
3	4874.00	55.94	65.24	-9.30	74.00	-18.06	179	360	Peak	vertical	
4	4874.00	42.33	51.63	-9.30	54.00	-11.67	179	360	Average	vertical	
5	7311.00	63.65	70.36	-6.71	74.00	-10.35	203	315	Peak	vertical	
6 !	7311.00	49.61	56.32	-6.71	54.00	-4.39	203	315	Average	vertical	
7	9748.00	55.42	59.30	-3.88	74.00	-18.58	259	0	Peak	vertical	
8	9748.00	42.26	46.14	-3.88	54.00	-11.74	259	0	Average	vertical	

802.11g

High Channel (Horizontal)

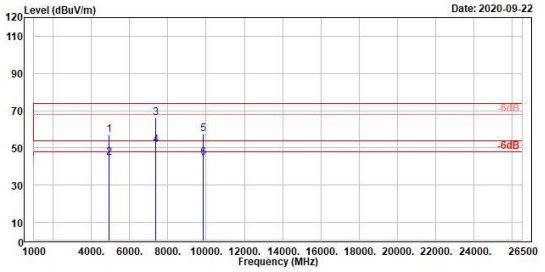
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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	4924.00	55.32	64.54	-9.22	74.00	-18.68	267	340	Peak	horizontal	
2	4924.00	41.89	51.11	-9.22	54.00	-12.11	267	340	Average	horizontal	
3	7386.00	64.71	71.47	-6.76	74.00	-9.29	381	41	Peak	horizontal	
4 !	7386.00	51.15	57.91	-6.76	54.00	-2.85	381	41	Average	horizontal	
5	9848.00	57.39	61.21	-3.82	74.00	-16.61	292	360	Peak	horizontal	
6	9848.00	45.08	48.90	-3.82	54.00	-8.92	292	360	Average	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

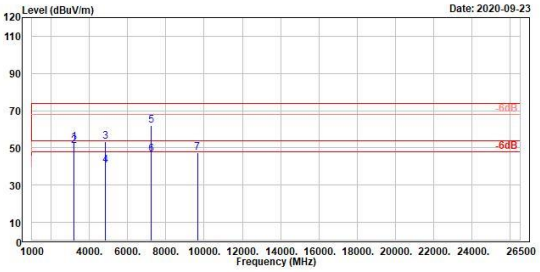


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4924.00	57.09	66.31	-9.22	74.00	-16.91	198	41	Peak	vertical	
2	4924.00	44.74	53.96	-9.22	54.00	-9.26	198	41	Average	vertical	
3	7386.00	66.07	72.83	-6.76	74.00	-7.93	207	315	Peak	vertical	
4 !	7386.00	51.51	58.27	-6.76	54.00	-2.49	207	315	Average	vertical	
5	9848.00	57.49	61.31	-3.82	74.00	-16.51	191	274	Peak	vertical	
6	9848.00	44.67	48.49	-3.82	54.00	-9.33	191	274	Average	vertical	

802.11n HT20

Low Channel (Horizontal)

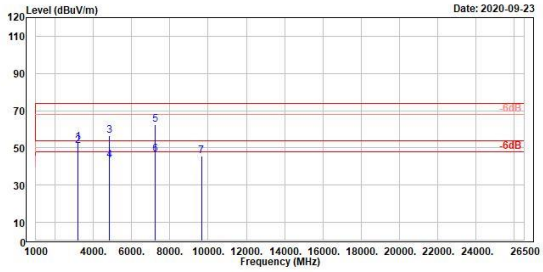
TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



		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		3215.67	53.09	64.98	-11.89	74.00	-20.91	388	3	Peak	horizontal	
2	!	3215.67	51.29	63.18	-11.89	54.00	-2.71	388	3	Average	horizontal	
3		4824.00	53.23	62.61	-9.38	74.00	-20.77	376	2	Peak	horizontal	
4		4824.00	40.49	49.87	-9.38	54.00	-13.51	376	2	Average	horizontal	
5		7236.00	62.22	68.97	-6.75	74.00	-11.78	382	40	Peak	horizontal	
6		7236.00	46.47	53.22	-6.75	54.00	-7.53	382	40	Average	horizontal	
7		9648.00	47.41	51.54	-4.13	74.00	-26.59	328	360	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.)
Tel:+886-2172-1000 Fax:+886-2172-1322

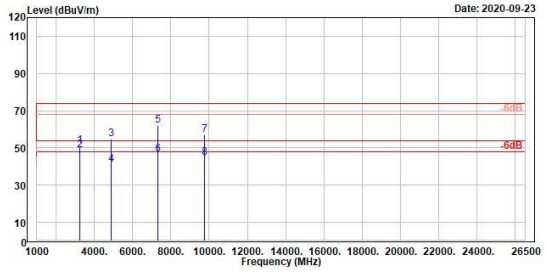


		Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
		MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1		3215.67	53.02	64.91	-11.89	74.00	-20.98	112	323	Peak	vertical	
2	!	3215.67	51.29	63.18	-11.89	54.00	-2.71	112	323	Average	vertical	
3		4824.00	56.73	66.11	-9.38	74.00	-17.27	184	1	Peak	vertical	
4		4824.00	43.45	52.83	-9.38	54.00	-10.55	184	1	Average	vertical	
5		7236.00	62.31	69.06	-6.75	74.00	-11.69	199	315	Peak	vertical	
6		7236.00	46.62	53.37	-6.75	54.00	-7.38	199	315	Average	vertical	
7		9648.00	45.69	49.82	-4.13	74.00	-28.31	250	0	Peak	vertical	

802.11n HT20

Middle Channel (Horizontal)

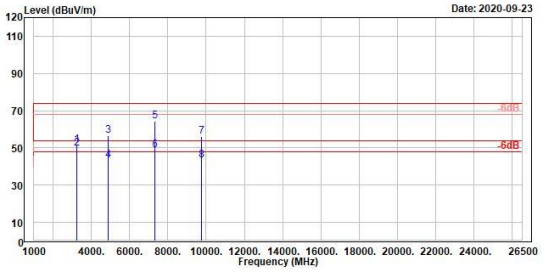
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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	3248.72	50.99	62.84	-11.85	74.00	-23.01	288	0	Peak	horizontal	
2 !	3248.72	49.03	60.88	-11.85	54.00	-4.97	288	0	Average	horizontal	
3	4872.22	54.77	64.07	-9.30	74.00	-19.23	394	0	Peak	horizontal	
4	4872.22	40.96	50.26	-9.30	54.00	-13.04	394	0	Average	horizontal	
5	7311.00	62.12	68.83	-6.71	74.00	-11.88	104	14	Peak	horizontal	
6	7311.00	46.48	53.19	-6.71	54.00	-7.52	104	14	Average	horizontal	
7	9748.00	56.98	60.86	-3.88	74.00	-17.02	255	0	Peak	horizontal	
8	9748.00	44.92	48.80	-3.88	54.00	-9.08	255	0	Average	horizontal	

Middle 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

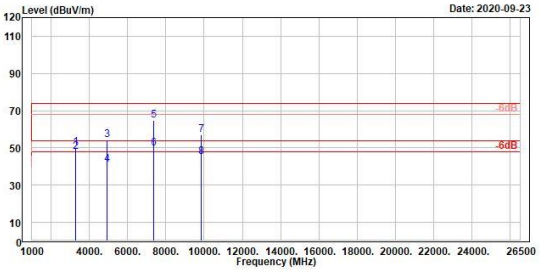


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	3248.72	51.40	63.25	-11.85	74.00	-22.60	120	322	Peak	vertical	
2 !	3248.72	49.59	61.44	-11.85	54.00	-4.41	120	322	Average	vertical	
3	4874.00	56.63	65.93	-9.30	74.00	-17.37	188	360	Peak	vertical	
4	4874.00	43.24	52.54	-9.30	54.00	-10.76	188	360	Average	vertical	
5	7311.00	64.46	71.17	-6.71	74.00	-9.54	224	320	Peak	vertical	
6 !	7311.00	48.92	55.63	-6.71	54.00	-5.08	224	320	Average	vertical	
7	9748.00	56.18	60.06	-3.88	74.00	-17.82	182	281	Peak	vertical	
8	9748.00	43.43	47.31	-3.88	54.00	-10.57	182	281	Average	vertical	

802.11n HT20

High Channel (Horizontal)

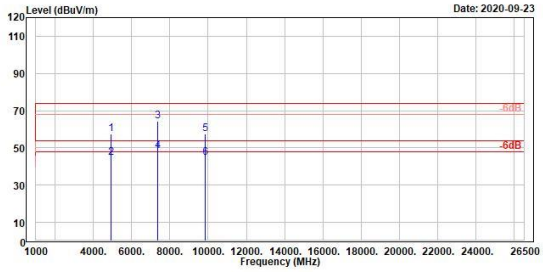
TÜV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	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	3282.72	50.19	62.06	-11.87	74.00	-23.81	400	6	Peak	horizontal	
2	3282.72	47.72	59.59	-11.87	54.00	-6.28	400	6	Average	horizontal	
3	4924.00	54.10	63.32	-9.22	74.00	-19.90	399	229	Peak	horizontal	
4	4924.00	40.86	50.08	-9.22	54.00	-13.14	399	229	Average	horizontal	
5	7386.00	65.02	71.78	-6.76	74.00	-8.98	336	327	Peak	horizontal	
6 !	7386.00	49.65	56.41	-6.76	54.00	-4.35	336	327	Average	horizontal	
7	9848.00	56.81	60.63	-3.82	74.00	-17.19	291	0	Peak	horizontal	
8	9848.00	45.08	48.90	-3.82	54.00	-8.92	291	0	Average	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	4924.00	57.32	66.54	-9.22	74.00	-16.68	177	41	Peak	Vertical	
2	4924.00	44.55	53.77	-9.22	54.00	-9.45	177	41	Average	vertical	
3	7386.00	64.18	70.94	-6.76	74.00	-9.82	111	66	Peak	vertical	
4 !	7386.00	48.48	55.24	-6.76	54.00	-5.52	111	66	Average	vertical	
5	9848.00	57.34	61.16	-3.82	74.00	-16.66	179	279	Peak	vertical	
6	9848.00	44.76	48.58	-3.82	54.00	-9.24	179	279	Average	vertical	