Prüfbericht-Nr.: *Test report no.:*	CN212BVU (P15C-BT) 001	**Auftrags-Nr.:** *Order no.:*	238494114	
Kunden-Referenz-Nr.: *Client reference no.:*	N/A	**Auftragsdatum:** *Order date:*	2020-11-12	
Auftraggeber: *Client:*	AURES TECHNOLOGIES S.A. 24 bis rue Léonard de Vinci 91090 Lisses FRANCE			
Prüfgegenstand: *Test item:*	7" Integrated Handy POS			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	TMC7200			
Auftrags-Inhalt: *Order content:*	FCC Part 15C Test report (BT)			
Prüfgrundlage: *Test specification:*	FCC 47CFR Part 15: Subpart C Section 15.247			
Wareneingangsdatum: *Date of sample receipt:*	2021-08-04			
Prüfmuster-Nr.: *Test sample no:*	A003104126-001			
Prüfzeitraum: *Testing period:*	2021-08-24 - 2021-09-01			
Ort der Prüfung: *Place of testing:*	EMC/RF Taipei Testing Site			
Prüflaboratorium: *Testing laboratory:*	Taipei Testing Laboratories			
Prüfergebnis*: *Test result*:*	Pass			

überprüft von: *compiled by:*	Ryan Chen	**genehmigt von:** authorized by:	Brenda Chen
Datum: *Date:* 2021-09-08		**Ausstellungsdatum:** *Issue date:* 2021-09-08	
Stellung / *Position:*	Senior Project Manager	**Stellung** / *Position:*	Senior Project Manager

Sonstiges / *Other:* This report only evaluated Output Power, RSE and Mains Conducted Emissions tests. The other test results are referred to the module report no.: CN210UH4 (P15C-BT) 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*

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
5.1.2	15.247(b)(1)	Peak Output Power	Pass
-	15.247(a)(1)	20 dB Bandwidth	N/A (Note 1)
-	2.1049	99% Occupied Bandwidth	N/A (Note 1)
-	15.247(d)	Conducted Spurious Emission and Band Edges	N/A (Note 1)
5.1.3	15.247(d) & 15.205 & 15.209	Radiated Spurious Emissions and Band Edges	Pass
-	15.247(a)(1)	Hopping Channel Separation	N/A (Note 1)
-	15.247(a)(1) (iii)	Number of Hopping Frequency Used	N/A (Note 1)
-	15.247(a)(1) (iii)	Dwell Time on Each Channel	N/A (Note 1)
5.2.1	15.207	Mains Conducted Emission	Pass

Note:

1. Refer to module report no.: CN210UH4 (P15C-BT) 001 for the details.
2. If the Frequency Hopping Systems operating in 2400-2483.5 MHz band and the output power less than 125 mW. The hopping channel carrier frequencies separated by a minimum of 25 kHz or two-thirds of the 20 dB bandwidth of hopping channel whichever is greater.
3. 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

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APPENDIX EP - PHOTOGRAPHS OF EUT

HISTORY OF THIS TEST REPORT

Report No.	Description	Date Issued
CN212BVU (P15C-BT) 001	Original Release	2021-09-08

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
Appendix SP - Photographs Test Setup
Appendix EP - Photographs of EUT

Applied Standard and Test Levels

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

1.2 Decision Rule of Conformity

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

2. Test Sites

2.1 Test Laboratory

Taipei Testing Laboratories

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

2.2 Test Facility

Taipei Testing Laboratories

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

2.3 Traceability

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

2.4 Calibration

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

2.5 Measurement Uncertainty

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

Emission Measurement Uncertainty

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

3. General Product Information

3.1 Product Function and Intended Use

The EUT is a 7" Integrated Handy POS. 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	7" Integrated Handy POS
Type Identification	TMC7200
FCC ID	2AMRAP-WFBT-AP6356

Technical Specification of EUT

Item	EUT information
Operating Frequency	2402 MHz ~ 2480 MHz
Channel Number	79
Operation Voltage	3.85 Vdc
Modulation	GFSK, π/4-DQPSK, 8DPSK
Maximum Output Power (mW)	1.132
Antenna Information	Refer to 5.1.1
Accessory Device	Refer to 4.4

3.3 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.4 Submitted Documents

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

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

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

Table for Parameters of Test Software Setting

Frequency (MHz)	Power Setting		
	GFSK	π/4-DQPSK	8DPSK
2402	Default	Default	Default
2441	Default	Default	Default
2480	Default	Default	Default

4.2 Carrier Frequency and Channel

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
0	2402	20	2422	40	2442	60	2462
1	2403	21	2423	41	2443	61	2463
2	2404	22	2424	42	2444	62	2464
3	2405	23	2425	43	2445	63	2465
4	2406	24	2426	44	2446	64	2466
5	2407	25	2427	45	2447	65	2467
6	2408	26	2428	46	2448	66	2468
7	2409	27	2429	47	2449	67	2469
8	2410	28	2430	48	2450	68	2470
9	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	78	2480
19	2421	39	2441	59	2461		

4.3 Test Operation and Test Software

Setup for testing: Test samples is a windows systems which makes it possible to control them through a test software installed on it.
It was used to enable the operation modes listed as below.

Test Software	Win8DUTApp.exe

The samples were used as follows:
A003104126-001

Full test was applied on all test modes, but only worst case was shown.

EUT Configure Mode	Applicable To				Description
	Output Power	Radiated Spurious Emissions above 1 GHz	Radiated Spurious Emissions below 1 GHz	Mains Conducted Emission	
-	√	√	√	√	-

Note:
1. For Radiated emission test, pre-tested GFSK, π/4-DQPSK, 8DPSK modulation type and found GFSK was the worse, therefore chosen for the final test and presented in the test report.
2. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when position on **Y-plane**.
3. "-" means no effect.
4. The NFC is enable.

Output Power

☒ 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)	Modulation Type	Packet Type
-	2402 to 2480	2402, 2441, 2480	GFSK	1DH5
-	2402 to 2480	2402, 2441, 2480	8DPSK	3DH5

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)	Modulation Type	Packet Type
-	2402 to 2480	2480	GFSK	1DH5

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)	Modulation Type	Packet Type
-	2402 to 2480	2480	GFSK	1DH5

Mains Conducted Emission Test

☒ 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)	Modulation Type	Packet Type
-	2402 to 2480	2480	GFSK	1DH5

Test Condition

Test Item	Ambient Temperature	Relative Humidity	Tested by
Output Power	25 °C	60 %	Chun Wu
Radiated Spurious Emissions above 1 GHz	20.5-23.3 °C	59.3-63.1 %	Simon Tsai
Radiated Spurious Emissions below 1 GHz	20.5-23.3 °C	59.3-63.1 %	Simon Tsai
Mains Conducted Emission	21.9 °C	59 %	Simon Tsai

4.4 Special Accessories and Auxiliary Equipment

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

Accessory of EUT

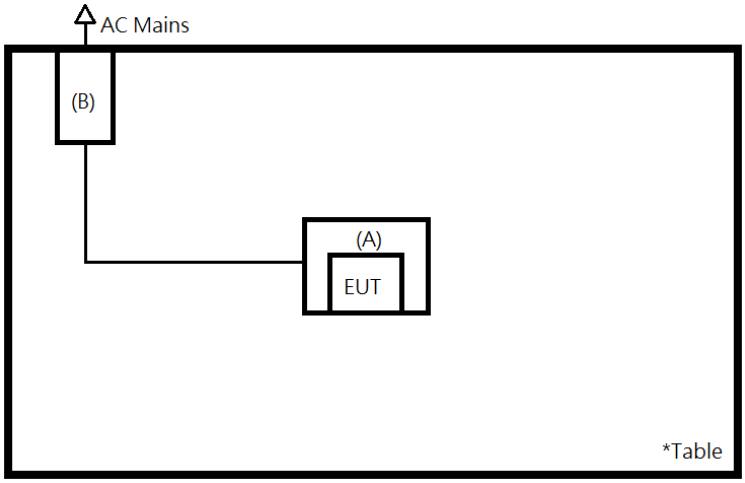
No.	Product	Brand	Model	Description
A	Adapter	TUE	GQ-24-120200-AX	I/P: 100-240 Vac, 1000 mA O/P: 12 Vdc, 2000 A 150cm non-shielded cable w/o core
B	Charger	AURES	TMC7000-Charger	--
-	Battery	APACK TECHNOLOGY CO., LTD.	APP00272	3.85 Vdc, 7400 mAh

Support Unit

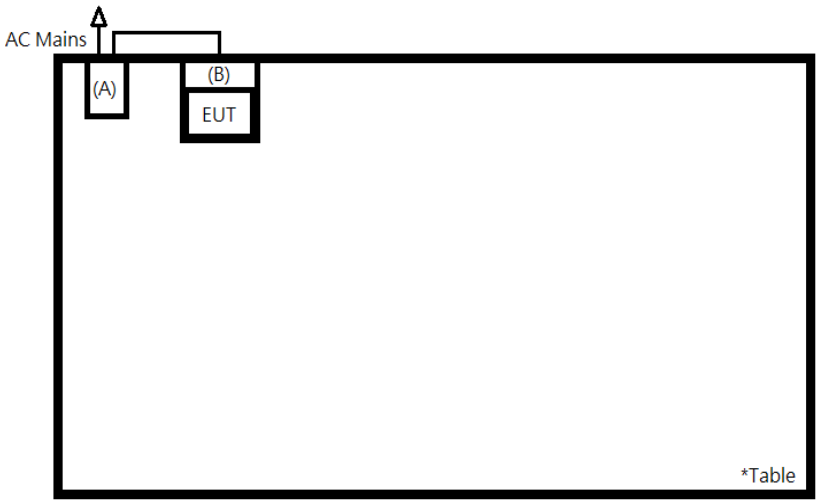
Support Unit					
No.	Description	Brand	Model	S/N	Remark
-	Wireless Tester	R&S	CBT	100866	--

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 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.

ANT	Brand	Product No.	Product Name	Antenna Gain (dBi)	Antenna Type	Antenna Position
ANT1	Radiation Technology, Inc.	C0486-ANG0016	MT-5750 2.4G/5G Antenna	2.5	PIFA	Main Antenna
ANT2	Joymax Electronics Co., Ltd.	TBF-RT03MPB-W70	MT-5751 WiFi/BT Antenna B	2.24	PIFA	Aux. Antenna

Refer to EUT photo for details.

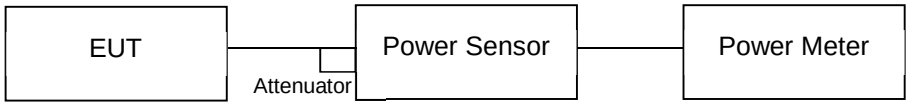
5.1.2 Peak Output Power

Limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

Kind of Test Site Shielded room

Test Setup



Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date	Test Date	
						From	Until
Power Meter	Anritsu	ML2495A	1901008	2021/3/24	2022/3/23	2021/9/1	2021/9/1
Power Sensor	Anritsu	MA2411B	1725269	2021/3/24	2022/3/23	2021/9/1	2021/9/1

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

<GFSK>

Channel	Channel Frequency	Peak Output Power		Limit
	(MHz)	(dBm)	(mW)	(mW)
Low Channel	2402	-0.66	0.859	125
Middle Channel	2441	0.25	1.059	125
High Channel	2480	0.54	1.132	125

<8DPSK>

Channel	Channel Frequency	Peak Output Power		Limit
	(MHz)	(dBm)	(mW)	(mW)
Low Channel	2402	-1.21	0.757	125
Middle Channel	2441	-0.09	0.979	125
High Channel	2480	0.22	1.052	125

Average Power

<GFSK>

Channel	Channel Frequency	Average Power	
	(MHz)	(dBm)	(mW)
Low Channel	2402	-1.75	0.668
Middle Channel	2441	-0.61	0.869
High Channel	2480	-0.20	0.955

<8DPSK>

Channel	Channel Frequency	Average Power	
	(MHz)	(dBm)	(mW)
Low Channel	2402	-4.52	0.353
Middle Channel	2441	-3.06	0.494
High Channel	2480	-2.85	0.519

5.1.3 Radiated Spurious Emissions and Band Edges

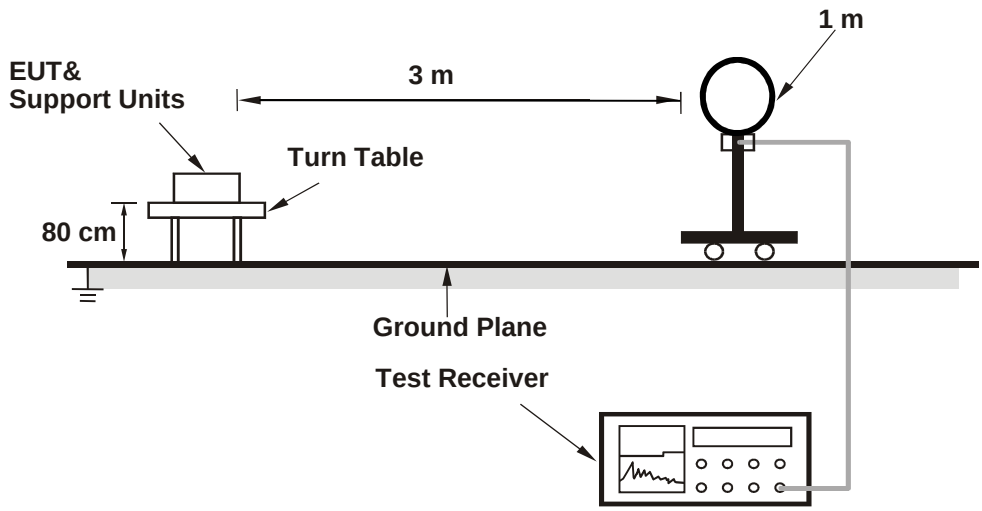
Limit

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).

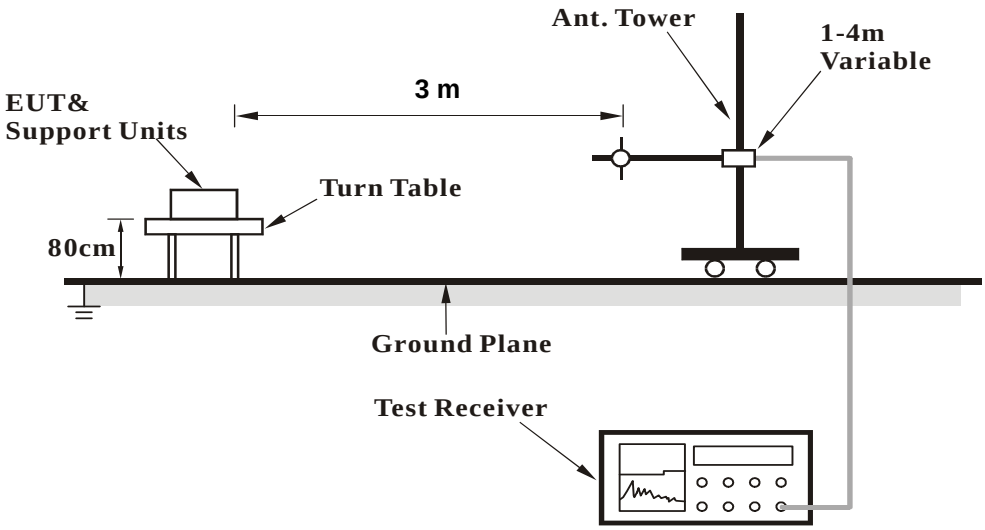
Kind of Test Site 3m Semi-Anechoic Chamber

Test Setup

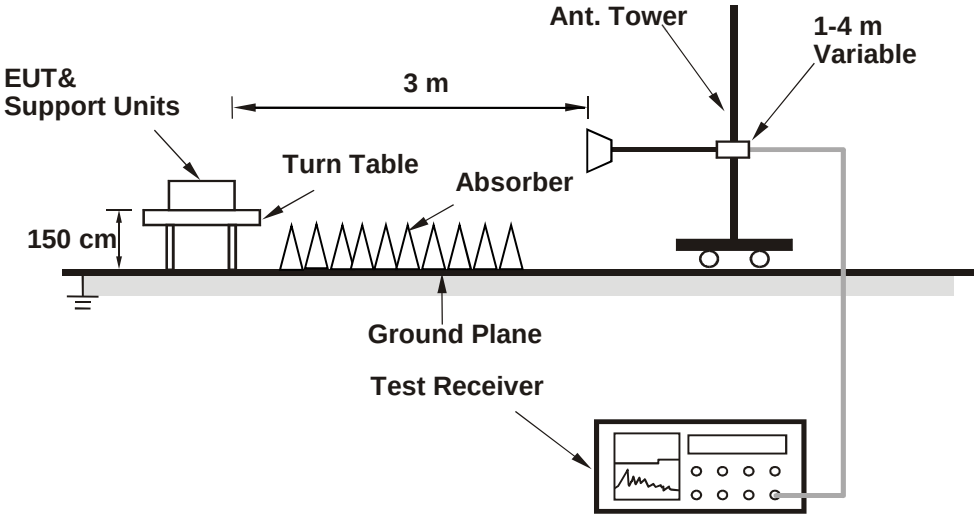
<Radiated Emissions below 30 MHz>



<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

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

Test Procedures

For Radiated Emissions below 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. Parallel (OPEN), perpendicular (CLOSE), and ground-parallel (GROUND) orientations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz at frequency below 30 MHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

For Radiated Emissions above 30 MHz

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

Note:

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

Test Results

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

Please refer to Appendix A.

5.2 Mains Emission

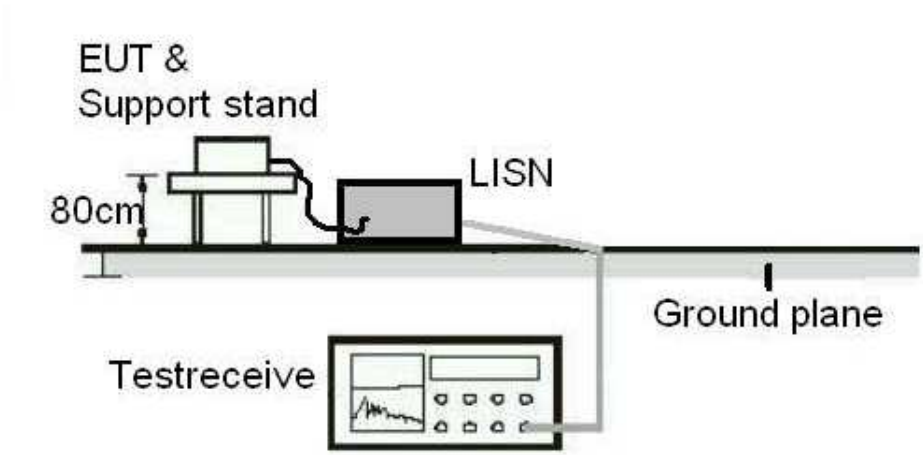
5.2.1 Mains Conducted Emission

Limit

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

Kind of Test Site Shielded room

Test Setup



Test Instruments

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

Test Procedures

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

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

Test Results

Please refer to Appendix A.

Appendix B: Test Results of Radiated Emissions & Mains Conducted Emission Test

Band Edges, 2.31GHz ~ 2.9GHz

GFSK

High Channel (Horizontal) Peak

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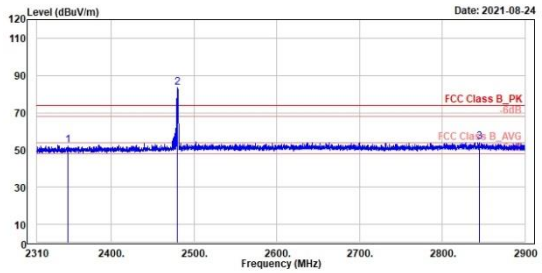
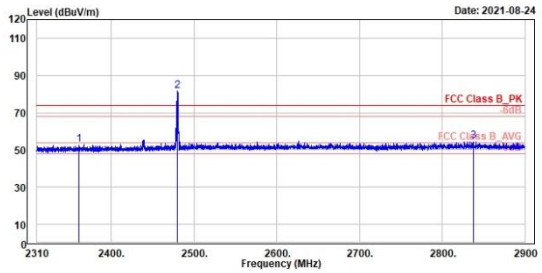
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2347.57	52.35	15.11	37.24	74.00	-21.65	141	29	Peak	Horizontal	
2 *	2480.00	83.44	45.75	37.69	74.00	9.44	141	29	Peak	Horizontal	
3	2844.88	54.46	16.23	38.23	74.00	-19.54	141	29	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	2360.77	52.87	15.60	37.27	74.00	-21.13	340	162	Peak	Vertical	
2 *	2480.00	81.69	44.00	37.69	74.00	7.69	340	162	Peak	Vertical	
3	2837.81	54.71	16.49	38.22	74.00	-19.29	340	162	Peak	Vertical	

GFSK

High Channel (Horizontal) Average

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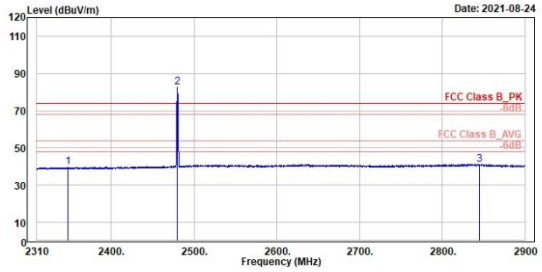

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2347.57	39.72	2.48	37.24	54.00	-14.28	141	29	Average	Horizontal	
2 *	2480.00	82.72	45.03	37.69	54.00	28.72	141	29	Average	Horizontal	
3	2844.88	41.25	3.02	38.23	54.00	-12.75	141	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.)
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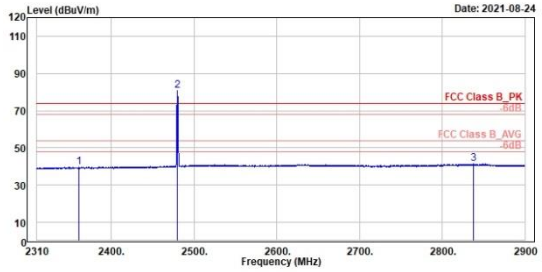

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2360.77	39.77	2.50	37.27	54.00	-14.23	340	162	Average	Vertical	
2 *	2480.00	80.97	43.28	37.69	54.00	26.97	340	162	Average	Vertical	
3	2837.81	41.35	3.13	38.22	54.00	-12.65	340	162	Average	Vertical	

Spurious Emissions, Tx Mode, 9kHz ~ 30MHz

GFSK

High Channel(Open) 9kHz~150kHz

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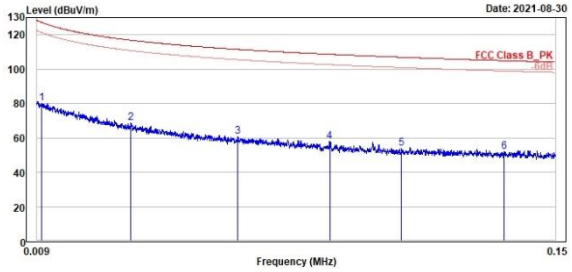

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	0.01	80.04	3.44	76.60	127.28	-47.24	100	212	QP	Open	
2	0.03	68.85	1.23	67.62	116.81	-47.96	100	318	QP	Open	
3	0.06	60.85	-1.20	62.05	111.52	-50.67	100	236	QP	Open	
4	0.09	57.62	-1.14	58.76	108.65	-51.03	100	226	QP	Open	
5	0.11	53.97	-2.94	56.91	106.92	-52.95	100	221	QP	Open	
6	0.14	52.03	-3.68	55.71	104.92	-52.89	100	168	QP	Open	

High Channel(Open) 150kHz~30MHz

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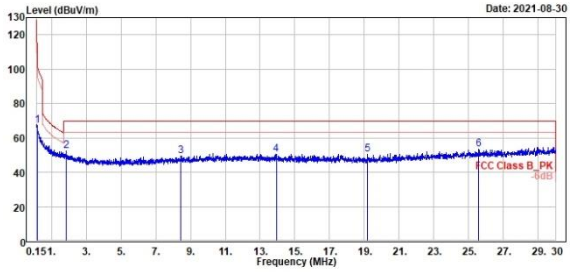
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	0.19	67.06	13.74	53.32	101.94	-34.88	100	206	QP	Open	
2	1.84	52.19	12.83	39.36	69.50	-17.31	100	47	QP	Open	
3	8.45	49.62	12.01	37.61	69.50	-19.88	100	255	QP	Open	
4	13.93	50.53	12.63	37.90	69.50	-18.97	100	180	QP	Open	
5	19.17	50.39	12.87	37.52	69.50	-19.11	100	83	QP	Open	
6	25.56	53.25	13.20	40.05	69.50	-16.25	100	131	QP	Open	

GFSK

High Channel(Close) 9kHz~150kHz

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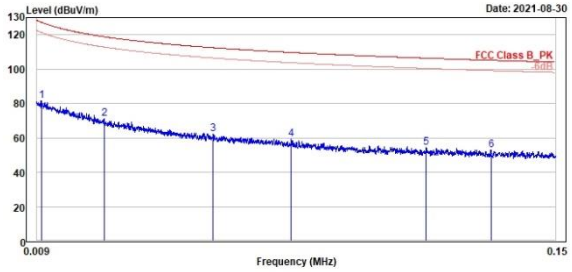

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	0.01	81.79	5.16	76.63	127.35	-45.56	100	288	QP	Close	
2	0.03	71.16	1.37	69.79	118.84	-47.68	100	265	QP	Close	
3	0.06	62.04	-0.89	62.93	112.48	-50.44	100	105	QP	Close	
4	0.08	59.12	-1.02	60.14	109.73	-50.61	100	109	QP	Close	
5	0.11	54.30	-2.32	56.62	106.39	-52.09	100	236	QP	Close	
6	0.13	52.87	-3.00	55.87	105.16	-52.29	100	8	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.)
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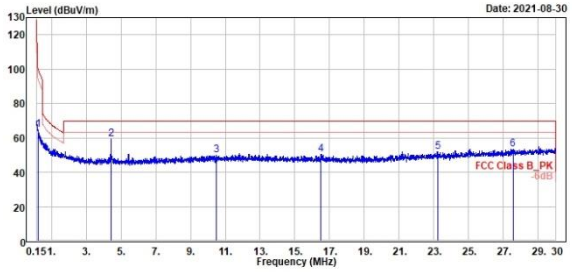

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	0.22	64.56	12.26	52.30	100.92	-36.36	100	238	QP	Close	
2	4.44	59.36	22.85	36.51	69.50	-10.14	100	199	QP	Close	
3	10.50	49.96	11.82	38.14	69.50	-19.54	100	231	QP	Close	
4	16.51	50.25	12.54	37.71	69.50	-19.25	100	27	QP	Close	
5	23.21	51.92	12.97	38.95	69.50	-17.58	100	111	QP	Close	
6	27.55	53.26	12.28	40.98	69.50	-16.24	100	313	QP	Close	

Spurious Emissions, Tx Mode, 30MHz ~ 1GHz

GFSK

High Channel (Horizontal)

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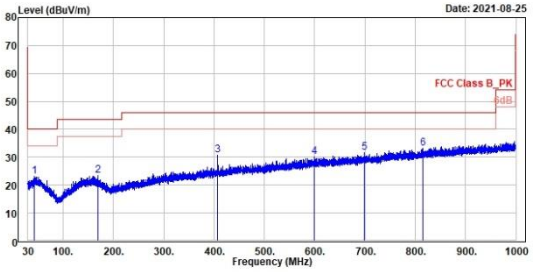

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	42.51	23.22	28.97	-5.75	40.00	-16.78	400	360	QP	Horizontal	
2	169.78	23.41	29.31	-5.90	43.50	-20.09	200	41	QP	Horizontal	
3	406.85	30.81	33.58	-2.77	46.00	-15.19	200	61	QP	Horizontal	
4	599.00	30.07	29.76	0.31	46.00	-15.93	278	0	QP	Horizontal	
5	698.52	31.51	29.73	1.78	46.00	-14.49	100	168	QP	Horizontal	
6	814.83	33.15	29.65	3.50	46.00	-12.85	100	164	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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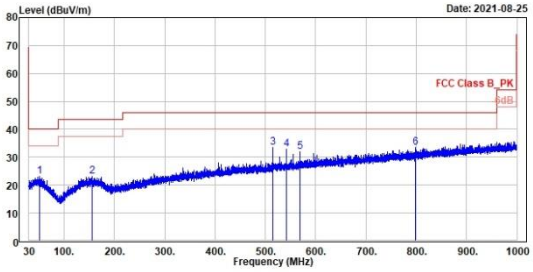

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	51.05	23.15	29.06	-5.91	40.00	-16.85	300	84	QP	Vertical	
2	156.00	23.15	28.86	-5.71	43.50	-20.35	200	360	QP	Vertical	
3	515.29	33.55	34.74	-1.19	46.00	-12.45	100	314	QP	Vertical	
4	542.45	32.86	33.63	-0.77	46.00	-13.14	100	314	QP	Vertical	
5	569.61	31.98	32.34	-0.36	46.00	-14.02	100	316	QP	Vertical	
6	798.34	33.33	30.15	3.18	46.00	-12.67	200	157	QP	Vertical	

Spurious Emissions, Tx Mode, 1GHz ~ 26.5GHz

GFSK

High Channel (Horizontal)

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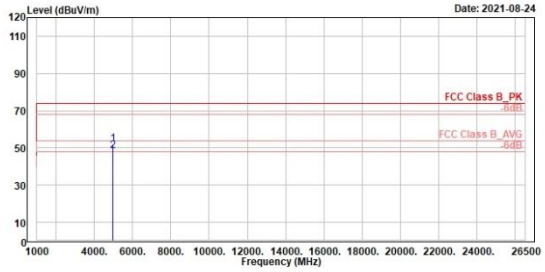

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4960.00	51.96	61.23	-9.27	74.00	-22.04	200	194	Peak	Horizontal	
2 !	4960.00	48.46	57.73	-9.27	54.00	-5.54	200	194	Average	Horizontal	

High Channel (Vertical)

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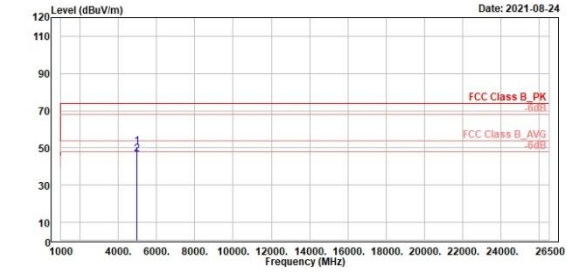

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4960.00	50.45	59.72	-9.27	74.00	-23.55	105	168	Peak	Vertical	
2	4960.00	46.46	55.73	-9.27	54.00	-7.54	105	168	Average	Vertical	

Mains Conducted Emission, 150kHz ~ 30MHz

Worst Band

(Line)

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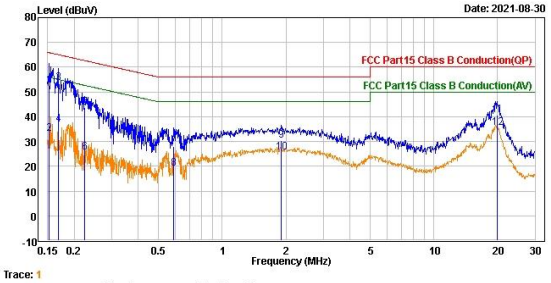

Trace: 1

	Freq	Read Level	Factor	Limit Line	Over Limit	Remark	Pol/Phase	Note
	MHz	dBuV	dB	dBuV	dB			
1	0.152	42.94	9.66	65.88	-13.28	QP	line1	
2	0.152	23.41	9.66	55.88	-22.81	Average	line1	
3	0.168	43.97	9.66	65.05	-11.42	QP	line1	
4	0.168	27.22	9.66	55.05	-18.17	Average	line1	
5	0.223	34.19	9.65	62.69	-18.85	QP	line1	
6	0.223	15.80	9.65	52.69	-27.24	Average	line1	
7	0.588	18.49	9.65	56.00	-27.86	QP	line1	
8	0.588	9.49	9.65	46.00	-26.86	Average	line1	
9	1.906	20.65	9.68	56.00	-25.67	QP	line1	
10	1.906	16.07	9.68	46.00	-20.25	Average	line1	
11	19.836	31.06	9.73	60.00	-19.21	QP	line1	
12	19.836	25.83	9.73	50.00	-14.44	Average	line1	

(Neutral)

TUV Rheinland Taiwan Ltd. (New Taipei Branch)
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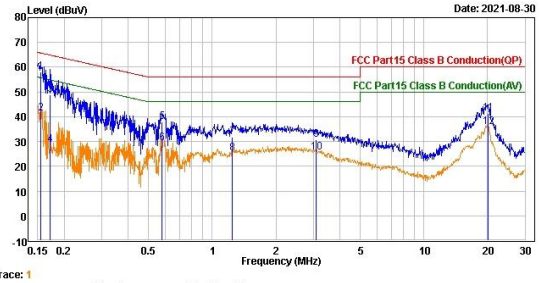

Trace: 1

	Freq	Read Level	Factor	Limit Line	Over Limit	Remark	Pol/Phase	Note
	MHz	dBuV	dB	dBuV	dB			
1	0.155	48.34	9.68	65.71	-7.69	QP	neutral	
2	0.155	31.49	9.68	55.71	-14.54	Average	neutral	
3	0.172	39.17	9.68	64.88	-16.03	QP	neutral	
4	0.172	19.06	9.68	54.88	-26.14	Average	neutral	
5	0.579	28.21	9.66	56.00	-18.13	QP	neutral	
6	0.579	19.73	9.66	46.00	-16.61	Average	neutral	
7	1.241	21.99	9.67	56.00	-24.34	QP	neutral	
8	1.241	15.67	9.67	46.00	-20.66	Average	neutral	
9	3.091	21.07	9.71	56.00	-25.22	QP	neutral	
10	3.091	16.04	9.71	46.00	-20.25	Average	neutral	
11	20.035	31.57	9.82	60.00	-18.61	QP	neutral	
12	20.035	25.93	9.82	50.00	-14.25	Average	neutral	