

Shenzhen Toby Technology Co., Ltd.



Report No.: TBR-C-202204-0388-43

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Radio Test Report

FCC ID: XMF-MID1105

Change II

Report No. : TBR-C-202204-0388-43

Applicant: Lightcomm Technology Co., Ltd.

Equipment Under Test (EUT)

EUT Name : 11.6"Tablet

Model No. : 100043279

Series Model No. : MID1105

Brand Name : onn

Sample ID : RW-C-202204-0388-3-1#&RW-C-202204-0388-3-2#

Receipt Date : 2022-05-11

Test Date : 2022-05-11 to 2022-05-12

Issue Date : 2022-05-19

Standards : FCC Part 15 Subpart E 15.407

Test Method : ANSI C63.10: 2013

KDB 789033 D02 General UNII Test Procedures New Rules v02r01

Conclusions : PASS

In the configuration tested, the EUT complied with the standards specified above.

Witness Engineer :

Engineer Supervisor : The SU

Engineer Manager :

Rebeca Ivan Sul By Ray Lai *

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

TB-RF-074-1.0



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Revision History

	Description	Issued Date
Rev.01	Initial issue of report	2022-05-19
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	Rev.01	Rev.01 Initial issue of report



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1. General Information about EUT

1.1 Client Information

Applicant		Lightcomm Technology Co., Ltd.
Address		UNIT 1306 13/F ARION COMMERCIAL CENTRE,2-12 QUEEN'S ROAD WEST, SHEUNG WAN HK
Manufacturer	1	Huizhou Hengdu Electronics Co., Ltd
Address		No.8 Huitai Road, Huinan High-tech Industrial Park, Huiao Avenue, Huizhou, Guangdong, China.

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	11.6"Tablet		
Models No.	9	100043279, MID110	5	
Model Different		All these models are identical in the same PCB, layout and electrical circuit, The only difference is model name.		
EL LONS	0	Operation Frequency: U-NII-1: 5180MHz~5240MHz, U-NII-2A: 5260MHz~5320MHz U-NII-2C: 5500MHz~5720MHz, U-NII-3: 5745MHz~5825MHz		
		Antenna Gain:	1.99dBi FPC Antenna	
Product Description		Modulation Type:	802.11a: OFDM (QPSK, BPSK, 16QAM) 802.11n: OFDM (QPSK, BPSK, 16QAM, 64QAM) 802.11ac: OFDM (QPSK, BPSK, 16QAM, 64QAM, 256QAM)	
TODA		Bit Rate of Transmitter:	802.11a: 6/9/12/18/24/36/48/54 Mbps 802.11n: up to 150Mbps 802.11ac: at most 433.3 Mbps	
Power Rating		Adapter(TEKA-UCA2 Input: 100-240V~, 50 Output: DC 5V2.0A DC 3.8V by 7300mA	20US)	
Software Version		RP1A.200720.011 mp1V889 release-keys		
Hardware Version	-	MID1105MP_MT8183_LPDDR4_MB-VER1.1		

Remark:

- (1) The antenna gain and adapter provided by the applicant, the verified for the RF conduction test provided by TOBY test lab.
- (2) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- (3) Antenna information provided by the applicant.





(4) Channel List:

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5400 50401411		5220 MHz		
5180~5240MHz (U-NII-1)	38	5190 MHz	46	5230 MHz
(0-1411-1)	40	5200 MHz	48	5240 MHz
	42	5210 MHz		

For 20 MHz Bandwidth, use channel 36, 40, 44, 48. For 40 MHz Bandwidth, use channel 38, 46.

For 80 MHz Bandwidth, use channel 42.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
	52	5260 MHz	60	5300 MHz
5260~5320 MHz	54	5270 MHz	62	5310MHz
(U-NII-2A)	56	5280MHz	64	5320 MHz
	58	5290MHz		

For 20 MHz Bandwidth, use channel 52, 56, 60, 64. For 40 MHz Bandwidth, use channel 54, 62.

For 80 MHz Bandwidth, use channel 58.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
	100	5500 MHz	124	5620 MHz
	102	5510 MHz	126	5630 MHz
	104	5520 MHz	128	5640 MHz
	106	5530 MHz	132	5660 MHz
5500~5720 MHz	108	5540 MHz	134	5670 MHz
(U-NII-2C)	110	5550 MHz	136	5680 MHz
	112	5560 MHz	138	5690 MHz
	116	5580 MHz	140	5700 MHz
	118	5590 MHz	142	5710 MHz
	120	5600 MHz	144	5720 MHz
	122	5610 MHz		

For 20 MHz Bandwidth, use channel 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144

For 40 MHz Bandwidth, use channel 102, 110, 118, 126, 134, 142

For 80 MHz Bandwidth, use channel 106, 122, 138.

Note: For the protection of Environment, the 5600-5650 MHz band restricted in Canada. So the CH 188/120/122/124/126/128 was restricted use in Canada.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
6745 6005MH-	149	5745 MHz	157	5785 MHz
5745~5825MHz (U-NII-3)	151	5755 MHz	159	5795 MHz
(0-1411-3)	153	5765 MHz	161	5805 MHz
	155	5775 MHz	165	5825 MHz

For 20 MHz Bandwidth, use channel 149, 153, 157, 161, 165. For 40 MHz Bandwidth, use channel 151, 159.

For 80 MHz Bandwidth, use channel 155.

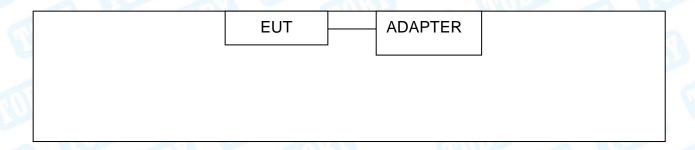




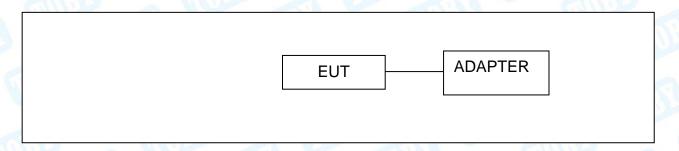
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1.3 Block Diagram Showing the Configuration of System Tested

Conducted Test



Radiated Test



1.4 Description of Support Units

		Equipment Inform	nation	
Name	Model	FCC ID/VOC	Manufacturer	Used "√"
	(3)	0000		
		Cable Information		
Number	Shielded Type	Ferrite Core	Length	Note
Cable 1	Yes	NO	1.0M	Accessory



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1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.

		For Conducted Test
Fina	al Test Mode	Description
	Mode 1	Charging + TX a Mode(5180MHz)
	Foi	r Radiated Test Below 1GHz
Fina	al Test Mode	Description
	Mode 2	Charging + TX a Mode(5180MHz)
	For Radiated	Above 1GHz and RF Conducted Test
Test Band	Final Test Mode	Description
MAD	Mode 3	TX Mode 802.11a Mode Channel 36/40/48
	Mode 4	TX Mode 802.11n(HT20) Mode Channel 36/40/48
LI NIII 4	Mode 5	TX Mode 802.11ac(VHT20) Mode Channel 36/40/48
U-NII-1	Mode 6	TX Mode 802.11n(HT40) Mode Channel 38/46
	Mode 7	TX Mode 802.11ac(VHT40) Mode Channel 38/46
	Mode 8	TX Mode 802.11ac(VHT80) Mode Channel 42
1323	Mode 9	TX Mode 802.11a Mode Channel 52/60/64
100	Mode 10	TX Mode 802.11n(HT20) Mode Channel 52/60/64
	Mode 11	TX Mode 802.11ac(VHT20) Mode Channel 52/60/64
U-NII-2A	Mode 12	TX Mode 802.11n(HT40) Mode Channel 54/62
	Mode 13	TX Mode 802.11ac(VHT40) Mode Channel 54/62
	Mode 14	TX Mode 802.11ac(VHT80) Mode Channel 58
	Mode 15	TX Mode 802.11a Mode Channel 100/116/144
	Mode 16	TX Mode 802.11n(HT20) Mode Channel 100/116/144
LI NII 2C	Mode 17	TX Mode 802.11ac(VHT20) Mode Channel 100/116/144
U-NII-2C	Mode 18	TX Mode 802.11n(HT40) Mode Channel 102/110/142
	Mode 19	TX Mode 802.11ac(VHT40) Mode Channel 102/110/142
	Mode 20	TX Mode 802.11ac(VHT80) Mode Channel 106/138
The same	Mode 21	TX Mode 802.11a Mode Channel 149/157/165
	Mode 22	TX Mode 802.11n(HT20) Mode Channel 149/157/165
U-NII-3	Mode 23	TX Mode 802.11ac(vHT20) Mode Channel 149/157/165
O-IIII-9	Mode 24	TX Mode 802.11n(HT40) Mode Channel 151/159
	Mode 25	TX Mode 802.11ac(VHT40) Mode Channel 151/159
HALL	Mode 26	TX Mode 802.11ac(VHT80) Mode Channel 155



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Note:

(1) For all test, we have verified the construction and function in typical operation. And all the test modes were carried out with the EUT in transmitting operation in maximum power with all kinds of data rate.

According to ANSI C63.10 standards, the measurements are performed at the highest, middle, lowest available channels, and the worst case data rate as follows:

802.11a Mode: OFDM (6 Mbps) 802.11n (HT20) Mode: MCS 0 802.11n (HT40) Mode: MCS 0

802.11ac(VHT20) Mode: MCS 0/ Nss1 802.11ac(VHT40) Mode: MCS 0/ Nss1 802.11ac(VHT80) Mode: MCS 0/ Nss1

- (2) During the testing procedure, the continuously transmitting with the maximum power mode was programmed by the customer.
- (3) The EUT is considered a portable unit; in normal use it was positioned on X-plane. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test.



TOBY

1.6 Description of Test Software Setting

During testing channel& 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 power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of RF setting.

	tware: 8788-LaunchEngMod U-NII-1	
Mode	Frequency (MHz)	Parameters
	5180	17
802.11a	5200	17
	5240	17
	5180	17
802.11n(HT20)	5200	17
	5240	17
	5180	17
802.11ac(VHT20)	5200	17
100	5240	17
000 44 (UT 40)	5190	17
802.11n(HT40)	5230	17
302.11ac(VHT40)	5190	17
	5230	17
802.11ac(VHT80)	5210	17
	U-NII-2A	
Mode	Frequency (MHz)	Parameters
	5260	17
802.11a	5300	17
	5320	17
	5260	17
802.11n(HT20)	5300	17
	5320	17
OF TO	5260	17
802.11ac(VHT20)	5300	17
	5320	17
000 44 (UT 40)	5270	17
802.11n(HT40)	5310	17
000 44 (VIIIT 40)	5270	17
802.11ac(VHT40)	5310	17
802.11ac(VHT80)	5290	17





	U-NII-2C	
Mode	Frequency (MHz)	Parameters
	5500	17
802.11a	5580	17
	5720	17
	5500	17
802.11n(HT20)	5580	17
	5720	17
	5500	17
802.11ac(VHT20)	5580	17
	5720	17
	5510	17
802.11n(HT40)	5550	17
	5710	17
THURSDAY	5510	17
802.11ac(VHT40)	5550	17
	5710	17
100 44 (\(\(\) \(\) \(\)	5530	17
802.11ac(VHT80)	5690	17
	U-NII-3	
Mode	Frequency (MHz)	Parameters
	5745	17
802.11a	5785	17
	5825	17
	5745	17
802.11n(HT20)	5785	17
	5825	17
COLUMN TO THE CO	5745	17
802.11ac(VHT20)	5785	17
	5825	17
000 44 = (UT40)	5755	17
802.11n(HT40)	5795	17
202.44.00(\(/UT40\)	5755	17
802.11ac(VHT40)	5795	17
802.11ac(VHT80)	5775	17



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1.7 Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

Test Item	Parameters	Expanded Uncertainty (U _{Lab})
Conducted Emission	Level Accuracy: 9kHz~150kHz 150kHz to 30MHz	±3.50 dB ±3.10 dB
Radiated Emission	Level Accuracy: 9kHz to 30 MHz	±4.60 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	±4.50 dB
Radiated Emission	Level Accuracy: Above 1000MHz	±4.20 dB

1.8 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1/F.,Building 6, Rundongsheng Industrial Zone, Longzhu, Xixiang, Bao'an District, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

A2LA Certificate No.: 4750.01

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01.FCC Accredited Test Site Number: 854351. Designation Number: CN1223.

IC Registration No.: (11950A)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A. CAB identifier: CN0056.



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2. Test Summary

Standard Section	Tool Hom	To at Communication	In allows and	D
FCC	Test Item	Test Sample(s)	Judgment	Remar
FCC 15.207(a)	Conducted Emission	RW-C-202204-0388-3-1#	PASS	N/A
FCC 15.209 & 15.407(b)	Radiated Unwanted Emissions	RW-C-202204-0388-3-1#	PASS	N/A
FCC 15.203	Antenna Requirement		N/A	N/A
FCC 15.407(a)	-26dB Emission Bandwidth	1	N/A	N/A
FCC 15.407(a)	99% Occupied Bandwidth		N/A	N/A
FCC 15.407(e)	-6dB Min Emission Bandwidth		N/A	N/A
FCC 15.407(a)	Maximum Conducted Output Power	1	N/A	N/A
FCC 15.407(a)	Power Spectral Density		N/A	N/A
FCC 15.407(b)& 15.205	Emissions in Restricted Bands	(10)	N/A	N/A
FCC 15.407(b)&15.209	Conducted Unwanted Emissions	1	N/A	N/A
FCC 15.407(g)	Frequency Stability		N/A	N/A
	On Time and Duty Cycle			N/A

Note:

- (1) N/A is an abbreviation for Not Applicable.
- (2) This report is Class II change report for the original equipment have changed, the transmitter module itself has not changed. More information about the test data please refer to the original test report.
- (3) As there is no change regard RF transmitter portion and Antenna assembly, the change will not have effect on Radiated emission above 1GHz by judging for experience, thus testing is performed up to 1GHz only.

3. Test Software

Test Item	Test Software	Manufacturer	Version No.
Conducted Emission	EZ-EMC	EZ	CDI-03A2
Radiation Emission	EZ-EMC	EZ	FA-03A2RE
RF Conducted Measurement	MTS-8310	MWRFtest	V2.0.0.0
RF Test System	JS1120	Tonscend	V2.6.88.0336



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4. Test Equipment

E	Manuelantunan	Model No	Carlel Na	Last Oal	Cal Diva Data
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESCI	100321	Jul. 02, 2021	Jul. 01, 2022
RF Switching Unit	Compliance Direction Systems Inc	RSU-A4	34403	Jul. 02, 2021	Jul. 01, 2022
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Jul. 02, 2021	Jul. 01, 2022
LISN	Rohde & Schwarz	ENV216	101131	Jul. 02, 2021	Jul. 01, 2022
Radiation Emission	n Test (A Site)				
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jul. 02, 2021	Jul. 01, 2022
EMI Test Receiver	Rohde & Schwarz	ESPI	100010/007	Jul. 02, 2021	Jul. 01, 2022
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Feb. 27, 2022	Feb. 26, 2024
Horn Antenna	ETS-LINDGREN	3117	00143207	Feb. 26, 2022	Feb. 25, 2024
Horn Antenna	SCHWARZBECK	BBHA 9170	1118	Feb. 26, 2022	Feb. 25, 2024
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-059	Jul. 06, 2021	Jul. 05, 2022
Pre-amplifier	SONOMA	310N	185903	Feb. 26, 2022	Feb. 25, 2023
Pre-amplifier	HP (8449B	3008A00849	Feb. 26, 2022	Feb. 25, 2023
HF Amplifier	Tonscend	TAP0184050	AP21C806129	Sep. 03, 2021	Sep. 02, 2022
Radiation Emission	n Test (B Site)				
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jul. 02, 2021	Jul. 01, 2022
MXA Signal Analyzer	Agilent	N9020A	MY47380425	Sep. 03, 2021	Sep. 02, 2022
EMI Test Receiver	Rohde & Schwarz	ESU-8	100472	Feb. 26, 2022	Feb. 25, 2023
Bilog Antenna	SCHWARZBECK	VULB 9168	1225	Dec. 05, 2021	Dec. 04, 2023
Horn Antenna	SCHWARZBECK	BBHA 9120 D	2463	May 20, 2021	May 19, 2022
Horn Antenna	SCHWARZBECK	BBHA 9170	1118	Feb. 26, 2022	Feb. 25, 2024
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-059	Jul. 06, 2021	Jul. 05, 2022
HF Amplifier	Tonscend	TAP9E6343	AP21C806117	Sep. 03, 2021	Sep. 02, 2022
HF Amplifier	Tonscend	TAP051845	AP21C806141	Sep. 03, 2021	Sep. 02, 2022
HF Amplifier	Tonscend	TAP0184050	AP21C806129	Sep. 03, 2021	Sep. 02, 2022
Antenna Conducte	d Emission				
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 02, 2021	Jul. 01, 2022
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jul. 02, 2021	Jul. 01, 2022
MXA Signal Analyzer	Agilent	N9020A	MY49100060	Sep. 03, 2021	Sep. 02, 2022
Spectrum Analyzer	KEYSIGT	N9020B	MY60110172	Sep. 03, 2021	Sep. 02, 2022
TIME	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO26	Sep. 03, 2021	Sep. 02, 2022
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO29	Sep. 03, 2021	Sep. 02, 2022
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO31	Sep. 03, 2021	Sep. 02, 2022
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO33	Sep. 03, 2021	Sep. 02, 2022
RF Control Unit	Tonsced	JS0806-2	21F8060439	Sep. 03, 2021	Sep. 02, 2022



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5. Conducted Emission Test

5.1 Test Standard and Limit

5.1.1 Test Standard

FCC Part 15.207

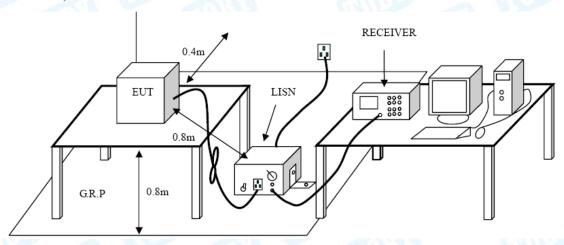
5.1.2 Test Limit

Francos	Maximum RF Line	Voltage (dBμV)
Frequency	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Notes:

- (1) *Decreasing linearly with logarithm of the frequency.
- (2) The lower limit shall apply at the transition frequencies.
- (3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

5.2 Test Setup



5.3 Test Procedure

- ●The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- ●I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- ●LISN at least 80 cm from nearest part of EUT chassis.
- The bandwidth of EMI test receiver is set at 9 kHz, and the test frequency band is from 0.15MHz to 30MHz.



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5.4 Deviation From Test Standard

No deviation

5.5 EUT Operating Mode

Please refer to the description of test mode.

5.6 Test Data

Please refer to the Attachment A inside test report.



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6. Radiated and Conducted Unwanted Emissions

6.1 Test Standard and Limit

6.1.1 Test Standard

FCC Part 15.209 & FCC Part 15.407(b)

6.1.2 Test Limit

Genera	al field strength limits	at frequencies Below	30MHz
Frequency	Field Strength	Field Strength	Measurement
(MHz)	(μA/m)*	(microvolt/meter)**	Distance (meters)
0.009~0.490	6.37/F (F in kHz)	2400/F(KHz)	300
0.490~1.705	63.7/F (F in kHz)	24000/F(KHz)	30
1.705~30.0	0.08	30	30

Note: 1, The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

2, *is for RSS Standard, **is for FCC Standard.

General field	strength limits at frequencies	s above 30 MHz
Frequency (MHz)	Field strength (µV/m at 3 m)	Measurement Distance (meters)
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

General field st	rength limits at frequencies A	Above 1000MHz
Frequency	Distance of 3	m (dBuV/m)
(MHz)	Peak	Average
Above 1000	74	54

Note:

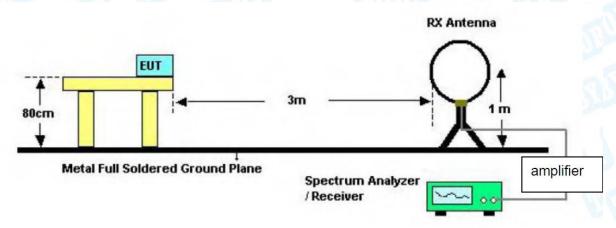
- (1) The tighter limit applies at the band edges.
- (2) Emission Level(dBuV/m)=20log Emission Level(uV/m)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

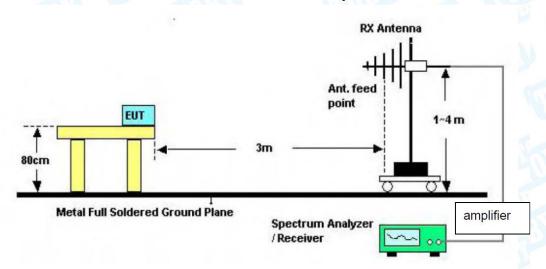


6.2 Test Setup

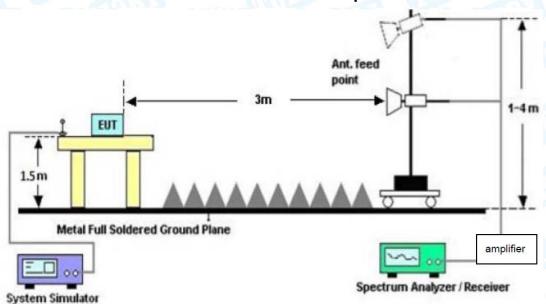
Radiated measurement



Below 30MHz Test Setup



Below 1000MHz Test Setup

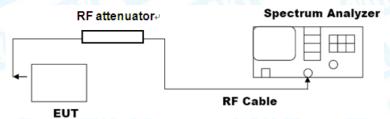


Above 1GHz Test Setup



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Conducted measurement



6.3 Test Procedure

---Radiated measurement

- The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Below 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- Testing frequency range 30MHz-1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection. Testing frequency range 9KHz-150Hz the measuring instrument use VBW=200Hz with Quasi-peak detection. Testing frequency range 9KHz-30MHz the measuring instrument use VBW=9kHz with Quasi-peak detection.
- Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- For the actual test configuration, please see the test setup photo.

6.4 Deviation From Test Standard

No deviation

6.5 EUT Operating Mode

Please refer to the description of test mode.

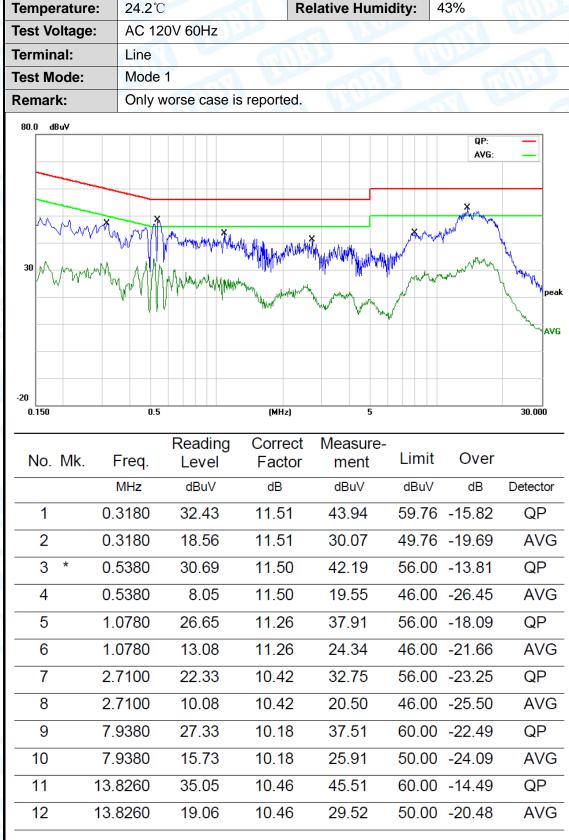
6.6 Test Data

Radiated measurement please refer to the Attachment B inside test report.



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Attachment A-- Conducted Emission Test Data



Remark:

- 1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
- 2. Margin (dB) =QuasiPeak/Average (dBuV)-Limit (dBuV)





Page:

Temperatur	e: 24.2°	C		Relative Hu	midity:	43%	
Test Voltage	e: AC 12	20V 60Hz					CAMP
Terminal:	Neutr	al				15	
Test Mode:	Mode	1	MIL!		AN.	1) Charles	
Remark:	Only	worse case i	s reported.				
30 M		Marakayay hay	May Maria Ma		Mary Ary and	QP: AVG:	pea
0.150 No. Mk.	o.5 Freq.	Reading Level	(MHz) Correct Factor	Measure- ment	Limit	Over	30.000
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	0.3180	32.48	11.51	43.99	59.76	-15.77	QP
2	0.3180	18.57	11.51	30.08	49.76	-19.68	AVC
3 *	0.5500	33.74	11.52	45.26	56.00	-10.74	QP
4	0.5500	18.55	11.52	30.07	46.00	-15.93	AVC
5	1.2940	22.98	11.11	34.09	56.00	-21.91	QP
6	1.2940	12.52	11.11	23.63	46.00	-22.37	AVC
7	2.6740	22.45	10.36	32.81		-23.19	QP
8	2.6740	10.89	10.36	21.25		-24.75	AVO
9	7.9260	27.69	10.10	37.79		-22.21	QP
10	7.9260	15.89	10.10	25.99		-24.01	AVO
11	15.0380	35.18	10.40	45.58		-14.42	QP
12	15.0380	20.40	10.40	30.80		-14.42	AVO
11)	173 115811	711 411	111 411	טט טוב.	:)()()()	- 19 70	A 1/ (

- 1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
- 2. Margin (dB) =QuasiPeak/Average (dBuV)-Limit (dBuV)





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Attachment B--Unwanted Emissions Data

---Radiated Unwanted Emissions

9 KHz~30 MHz

From 9 KHz to 30 MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB

Below the permissible value has no need to be reported.

30MHz~1GHz

Temperature: 24.3°C				Relative Hu	ımidity:	45%				
Test Vol	tage:	AC 12	20V 60Hz		CHILL		Also			
Ant. Pol		Horizo	ontal			any		1 84		
Test Mo	de:	Mode	2	N. Carrier						
Remark	:	Only	worse case	is reported.	M. C.		The same			
80.0 dB	uV/m									
70										
60										
						1 1	C 3M Radiation	, H		
50						Margin -6 d	is .			
40				3 2 X						
30		- X	1.1	Ž X	4 ★ \ 5	6		peal		
-		1.797	WA I I I		/ No	ALI.	1. 4. 3.	Market .		
	l l	- NW V	M	Marine A	Washington May	Mary Marie Carles Carle	Mark Market Market State S	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
	Municipality	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Mary Mary Mary Mary Mary Mary Mary Mary	W. W	The same of the sa	Markey Commencer	Andrew or the state of the Stat			
	and property and the	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Mary Mary Land Control	W.W.		Market and the safe was an	de la la companya de la			
20 10 0	and property of the second	~~~\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	MA MARINE MARINA WARRANT	W. W		Anger to show of the contract	A the state of the			
20 /www.	Maghapan sensedad	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	MA MANAGAMANA AMANA	W. WARREN		Market and Administration of the Control of the Con	de filos de desemble de la companya			
20 10 0 -10	and sure of the second	60.00	MA MARINA MARIA	(MHz)	300.		A She a transport of the Artificial State of the Artif			
20 10 0 -10 -20	Frequ (MF	60.00 ency	Reading (dBuV)		Level (dBuV/m)	00 Limit	Margin			
20 10 0 -10 -20 30.000	Frequ	ency Hz)	Reading	(MHz) Factor	Level	00 Limit	Margin	1000.00		
20 10 0 -10 -20 30.000 NO.	Frequ (MI	60.00 ency Hz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	1000.00 Detector		
20 10 0 -10 -20 30.000 No.	Frequ (MH	ency Hz) 342 3556	Reading (dBuV) 54.16	Factor (dB/m)	Level (dBuV/m) 30.14	Limit (dBuV/m) 40.00	Margin (dB)	Detector peak		
20 10 0 -10 -20 30.000 No.	Frequ (MF 66.0	ency Hz) 342 3556	Reading (dBuV) 54.16 52.04	Factor (dB/m) -24.02 -23.29	Level (dBuV/m) 30.14 28.75	Limit (dBuV/m) 40.00 43.50	Margin (dB) -9.86 -14.75	Detector peak peak		
20 10 0 -10 -20 30.000 No. 1 * 2	Frequ (MF 66.0 119.8 165.4	ency Hz) 342 3556 4866 2678	Reading (dBuV) 54.16 52.04 53.66	Factor (dB/m) -24.02 -23.29 -21.87	Level (dBuV/m) 30.14 28.75 31.79	Limit (dBuV/m) 40.00 43.50 43.50	Margin (dB) -9.86 -14.75 -11.71	Detector peak peak peak		

^{*:}Maximum data x:Over limit !:over margin

Remark:

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB) 2. QuasiPeak (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = QuasiPeak (dB μ V/m)-Limit QPK(dB μ V/m)





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īem	pera	ature:	24.3°	C)	R	elative Hu	midity:	45%	
Test	t Vol	tage:	AC 12	20V 6	0Hz			OBD.		CANT.
۱nt.	. Pol		Vertic	al	all)		aW		111	
Test	t Mo	de:	Mode	2	115	an'		a HA	111	
₹en	nark:		Only	worse	case i	s reported.		33		
80.0	dBu	ıV/m								
70										
60								(RF)FCC	15C 3M Radiatio	on _
50								Margin -6	dB	
40			4 ¥			4				
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-20	0.000		60.00			(MHz)	30	0.00		1000.00
-20	0.000						I			1
-20 30	0.000 lo.		eo.oo uency Hz)		ading BuV)	Factor (dB/m)	Level	Limit	Margin	
-20 30		(MI	uency	(dE	_	Factor	Level	Limit	_	
-20 30	lo. 1	(MI 35.8	uency Hz)	(dE	BuV)	Factor (dB/m)	Level (dBuV/m	Limit) (dBuV/m	n) (dB)	Detector
-20 30 N	lo. 1	(MI) 35.8 59.8	uency Hz) 3746	54 59	3uV) 1.82	Factor (dB/m) -23.06	Level (dBuV/m 31.76	Limit) (dBuV/n 40.00	n) (dB) -8.24	Detector peak
-20 30 N	lo. 1	35.8 59.8 65.5	uency Hz) 3746 3588	54 59 60	3uV) 1.82 9.81	Factor (dB/m) -23.06 -23.59	Level (dBuV/m 31.76 36.22	Limit (dBuV/m 40.00	-8.24 -3.78	Detector peak QP QP
-20 30 N	lo. 1 2 * 3 !	(MI 35.8 59.8 65.5 119.8	uency Hz) 3746 3588	54 59 60 56	3uV) 1.82 9.81 9.21	Factor (dB/m) -23.06 -23.59 -24.00	Level (dBuV/m 31.76 36.22 36.21	Limit (dBuV/m 40.00 40.00	-8.24 -3.78 -3.79	Detector peak QP QP peak

Remark:

*:Maximum data

- Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
 QuasiPeak (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)

x:Over limit !:over margin

3. Margin (dB) = QuasiPeak (dB μ V/m)-Limit QPK(dB μ V/m)

---END OF REPORT-----