

WH Technology Corp.

Date of Issue: January 23, 2019 Report No. : WH-FCC-R18112104 FCC ID. : 2AROV-GPMB10

# FCC 47 CFR PART 15 SUBPART C TEST REPORT

## FOR

# **GRENOPLUS IMATE ALL IN ONE DOCKING STATION (60W)**

Model : GP-MB10

Issued to

GRENO TECHNOLOGY (HK) CO., LTD ROOM 603, 6/F,HANG PONT COMMERCIAL BUILDING, 31 TONKIN STREET,CHEUNG SHA WAN, KOWLOON HONGKONG Issued by WH Technology Corp.



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1. GENERAL INFORMATION	3
2. REPORT OF MEASUREMENTS AND EXAMINATIONS	
2.1 LIST OF MEASUREMENTS AND EXAMINATIONS	4
3. TEST CONFIGURATION OF EQUIPMENT UNDER TEST	5
3.1 DESCRIPTION OF THE TESTED SAMPLES 3.3 TEST MODE AND TEST SOFTWARE 3.4 TEST METHODOLOGY & GENERAL TEST PROCEDURES	5
4. TEST AND MEASUREMENT EQUIPMENT	8
4.1 CALIBRATION 4.2 EQUIPMENT	
5. ANTENNA REQUIREMENTS	
5.1 STANDARD APPLICABLE 5.2 ANTENNA CONSTRUCTION AND DIRECTIONAL GAIN	
6. TEST OF CONDUCTED EMISSION	11
6.1 TEST LIMIT 6.2 TEST PROCEDURES	
6.3 TYPICAL TEST SETUP 6.4 TEST RESULT AND DATA	
7. TEST OF RADIATED EMISSION	
<ul> <li>7.1 Test Limit</li> <li>7.2 Test Procedures</li> <li>7.3 Typical Test Setup</li> <li>7.4 Test Result and Data (9kHz ~ 30MHz)</li> </ul>	
7.5 TEST RESULT AND DATA (30MHz ~ 1GHz, WORST EMISSIONS FOUND) 8. RESTRICTED BANDS OF OPERATION	
8.1 Labeling Requirement	
0.1 LABELING REQUIREMENT	



#### 1. GENERAL INFORMATION

Applicant	:	GRENO TECHNOLOGY (HK) CO., LTD
Address	:	ROOM 603, 6/F,HANG PONT COMMERCIAL BUILDING, 31 TONKIN STREET,CHEUNG SHA WAN, KOWLOON HONGKONG
Manufacturer	:	GRENO TECHNOLOGY (HK) CO., LTD
Address	:	ROOM 603, 6/F,HANG PONT COMMERCIAL BUILDING, 31 TONKIN STREET,CHEUNG SHA WAN, KOWLOON HONGKONG
Factory	:	Stiger International Trade Investment Co.,Ltd
Address	:	2 Building, Standard Garden, Taishi Industrial Zone, Dongyong Town, Nansha District Guangzhou, Guangdong, P.R.China
EUT	:	Grenoplus iMate All in One Docking Station (60w)
Model Name	:	GP-MB10
FCC ID	:	2AROV-GPMB10
Trade Name	:	iMate
Model Differences	:	N/A

Is here with confirmed to comply with the requirements set out in the FCC Rules and Regulations Part 15 Subpart C and the measurement procedures were according to ANSI C63.10-2013. The said equipment in the configuration described in this report shows the maximum emission levels emanating

#### FCC part 15 Subpart C

Receipt Date : 11/01/2018

Final Test Date :12/30/2018

**Tested By:** 

Dec. 30, 2018

**Reviewed by:** 

Nov. 01, 2018 (Date)

**Bing Chang/ Engineer** 

(Date)

Bell Wei / Manager Designation Number: TW2954



## 2. REPORT OF MEASUREMENTS AND EXAMINATIONS

### 2.1 LIST OF MEASUREMENTS AND EXAMINATIONS

FCC Rule	ltem	Result
15.207	Conducted Emission	PASS
15.205 15.209	Radiated Emission	PASS
15.203	Antenna Requirement	PASS



### 3. TEST CONFIGURATION OF EQUIPMENT UNDER TEST

#### 3.1 DESCRIPTION OF THE TESTED SAMPLES

Test Model	:	GP-MB10
Input	:	AC 100-240V 1.8A (Max)
Output C1	:	DC 20V/2A,15V/2A,9V/2A & 5.2V/2A(Max)(PD)
Output C2	:	DC 9V/1A & 5.2V/2.4A(Max)(PD)
USB 2.0 & 3.0	:	5.2V/2.4A (Max)
Wireless Dongles	:	500mA
Output C1 & 2	:	ThunderBolt 10Gb/s
USB 2.0	:	480Mbps
USB 3.0	:	5Gb/s
High Definition MI	:	4K 30Hz
SD Card	:	104Mbp/s
Operate	:	110KHz-200KHz
Frequency		
Antenna Type	:	Coil Antenna
Antenna gain	:	0dBi

#### 3.2 TEST MODE AND TEST SOFTWARE

a. During testing, the interface cables and equipment positions were varied according to ANSI C63.10-2013.

- b. The complete test system included Notebook and EUT for RF test.
- c. only the worst case was recorded in this report



#### 3.3 TEST METHODOLOGY & GENERAL TEST PROCEDURES

All testing as described bellowed were performed in accordance with ANSI C63.10:2013 and FCC CFR 47 Part 15 Subpart C .

#### **Conducted Emissions**

The EUT is placed on a wood table, which is at 0.8 m above ground plane acceding to clause 15.207 and requirements of ANSI C63.10:2013. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz are using CISPR Quasi-Peak / Average detectors.

#### **Radiated Emissions**

The EUT is a placed on a turn table, which is 0.8 m above ground plane. The turntable was rotated through 360 degrees to determine the position of maximum emission level. The EUT is placed at 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

1)Putting the EUT on the platform and turning on the EUT (on/off button on the bottom of the EUT).

2)Setting test channel described as "Channel setting and operating condition", and testing channel by channel.

3)For the maximum output power measurement, we followed the method of measurement ANSI C63.10.

4)For the spurious emission test based on ANSI C63.10, at the frequency where below 1GHz used quasi-peak detector mode; where above 1GHz used the peak and average detector mode. IF the peak value may be under average limit, the average mode will not be performed.

#### 3.4 MEASUREMENT UNCERTAINTY

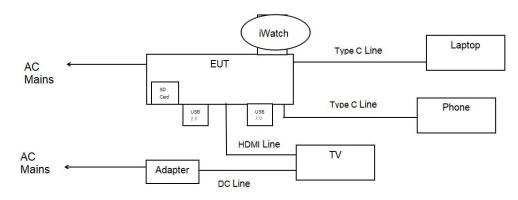
Measurement Item	Uncertainty
Radiated emission	±4.11dB
Peak Output Power(conducted)	±1.38dB
Peak Output Power(Radiated)	±1.70dB
Power Spectral Density	±1.39dB
Radiated emission(3m)	±4.11dB
Radiated emission(10m)	±3.89dB



### **3.5 DESCRIPTION OF THE SUPPORT EQUIPMENTS**

### Setup Diagram

See test photographs attached in appendix 1 for the actual connections between EUT and support equipment.



### Support Equipment

Peripherals Devices:

Description	Manufacturer	Model No.	Serial No.
Laptop	DELL	Latutude 3379	F3M13F2
iWatch	Apple	Watch 3	FH7W260JJ5X4
Phone	HUAWEI	Mate10	BLA-AL00
TV	SONY	KDL-32W600D	2047973
Adapter	SONY	ACDP-04S03	149345210157413
SD Card	Kingston	U1 C10	N/A
USB flash disk	Kingston	DTSE9EG2	N/A
USB flash disk	Kingston	DTSE9EG2	N/A

Type C Line	:	Unshielded ,Detachable, 0.2m
Type C Line	:	Unshielded ,Detachable, 1.5m
HDMI Line	:	Shielded ,Detachable, 1.8m

**Note:** All the above equipment /cable were placed in worse case position to maximize emission signals during emission test

**Grounding:** Grounding was in accordance with the manufacturer's requirement and conditions for the intended use.



### 4. TEST AND MEASUREMENT EQUIPMENT

#### 4.1 CALIBRATION

The measuring equipment utilized to perform the tests documented in the report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

#### 4.2 EQUIPMENT

The following list contains measurement equipment used for testing. The equipment conforms to the requirement of CISPR 16-1, ANSI C63.2 and. Other required standards. Calibration of all test and measurement, including any accessories that may effect such calibration, is checked frequently to ensure the accuracy. Adjustments are made and correction factors are applied in accordance with the instructions contained in the respective.



WH Technology Corp.

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### TABLELIST OF TEST AND MEASUREMENT EQUIPMENT

Instrument	Manufacturer	Model No.	S/N	Next Cal. Date
EMI Receiver	R&S	ESHS10	830223/008	2019/06/05
LISN	Rolf Heine Hochfrequenztechnik	NNB-2/16z	98062	2019/06/10
ISN	Schwarzbeck	8-Wire ISN CAT5	CAT5-8158- 0094	2019/09/20
RF Cable	N/A	N/A	EMI-3	2019/10/18
Bilog antenna(30M-1G)	ETC	MCTD2786 B	BLB16M040 04/JB-5-004	2019/05/17
Double Ridged Guide Horn antenna(1G-18G)	ETC	MCTD 1209	DRH15N020 09	2019/11/10
Horn antenna (18G-26G)	com-power	AH-826	81000	2019/08/15
LOOP Antenna (Below 30M)	com-power	AL-130	17117	2019/10/03
Pre amplifier (30M-1G)	EMC INSTRUMENT	EMC9135	980334	2019/05/02
Microwave Preamplifier (1G-18G)	EMC INSTRUMENT	EMC05184 5	980108&AT -18001	2019/10/22
Pre amplifier (18G~26G)	MITEQ	JS4-180026 00-30-5A	808329	2019/08/08
EMI Test Receiver	R&S	ESVS30 (20M-1000 MHz)	826006/002	2019/11/10
RF Cable (open site)	EMCI	N male on end of both sides (EMI4)	30m	2019/10/18
RF CABLE (1~26G)	HARBOUT INDUSTRIES	LL142MI(4 M+4M)	NA	2019/04/16
RF CABLE (1~26G)	HARBOUT INDUSTRIES	LL142MI(7 M)	NA	2019/08/08
Spectrum (9K7GHz)	R&S	FSP7	830180/006	2019/04/13
Spectrum (9K40GHz)	AGILENT	8564EC	4046A0032	2019/03/01
e3	AUDIX	N/A	N/A	N/A
SINGAL GENTERATOR (100k-1GHz)	HP	8648A	3619U0042 6	N/A
Power Meter	ANRITSU	ML2487	6K00001574	2019/08/08

#### **\*CALIBRATION INTERVAL OF INSTRUMENTS LISTED ABOVE IS ONE YEAR**



### 5. ANTENNA REQUIREMENTS

#### 5.1 STANDARD APPLICABLE

According to the FCC Part 15 Paragraph 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

### 5.2 ANTENNA CONSTRUCTION AND DIRECTIONAL GAIN

		WPC
Antenna Type	:	Coil Antenna
Antenna Gain	:	0 dBi



### 6. TEST OF CONDUCTED EMISSION

#### 6.1 TEST LIMIT

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.10-2013 The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits

Frequency (MHz)	Quasi Peak (dB μ V)	Average (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 - 30.0	60	50

\*Decreases with the logarithm of the frequency.

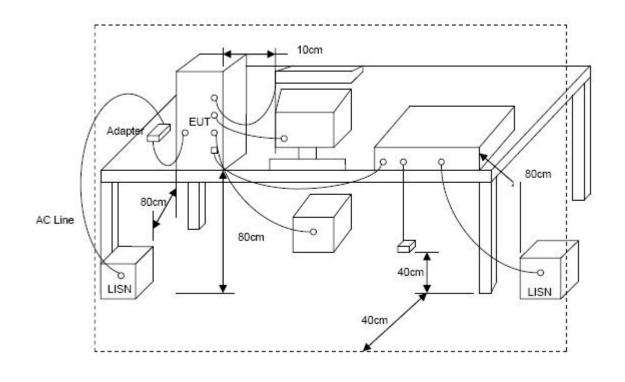
#### 6.2 TEST PROCEDURES

- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- c. All the support units are connecting to the other LISN.
- d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- e. The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 150 kHz to 30 MHz was searched.
- h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.



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### 6.3 TYPICAL TEST SETUP





### 6.4 TEST RESULT AND DATA

M/N :		GP-MB1	0		Test	t Voltag	re:	A	AC 120V/60Hz
Test D		Nov. 06,			Pha		,	L	
	erature:	20°C	2010				umidity:		4%
			-				innunty.		
Pressu	re:	101.0KP		C1		t by:			Bing
Test M	/lode:	transmis		2.0 data	transmiss				ng to TV+USB 3.0 data ransmission
	80.0 dBuV								
	40 40	www.w	XWWW WWW	M.M.		n. N		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Conduction(QP) Conduction(AVG)
									Ava
	0.0		0.5		(MHz)		5		30.000
No.	0.150 Frequency	Factor (dB)	Reading	Level (dBuV)	Limit	Margin (dB)		P/F	
No.	0.150	Factor (dB) 9.60		Level (dBuV) 51.70		Margin (dB) -14.30	Detector	P/F P	30.000
-	0.150 Frequency (MHz)	(dB)	Reading (dBuV)	(dBuV)	Limit (dBuV)	(dB)	Detector	. · · ·	30.000
1	0.150 Frequency (MHz) 0.1500	(dB) 9.60	Reading (dBuV) 42.10	(dBuV) 51.70	Limit (dBuV) 66.00	(dB) -14.30	Detector QP	Ρ	30.000
1 2	0.150 Frequency (MHz) 0.1500 0.1500	(dB) 9.60 9.60	Reading (dBuV) 42.10 18.36	(dBuV) 51.70 27.96	Limit (dBuV) 66.00 56.00	(dB) -14.30 -28.04	Detector QP AVG QP	P P	30.000
1 2 3	0.150 Frequency (MHz) 0.1500 0.1500 0.1872 0.1872	(dB) 9.60 9.60 9.60 9.60	Reading (dBuV) 42.10 18.36 45.30 33.74	(dBuV) 51.70 27.96 54.90 43.34	Limit (dBuV) 66.00 56.00 64.16 54.16	(dB) -14.30 -28.04 -9.26 -10.82	Detector QP AVG QP AVG	P P P	30.000
1 2 3 4	0.150 Frequency (MHz) 0.1500 0.1500 0.1872	(dB) 9.60 9.60 9.60	Reading (dBuV) 42.10 18.36 45.30	(dBuV) 51.70 27.96 54.90	Limit (dBuV) 66.00 56.00 64.16	(dB) -14.30 -28.04 -9.26	Detector QP AVG QP AVG	P P P	30.000
1 2 3 4 5	0.150 Frequency (MHz) 0.1500 0.1500 0.1872 0.1872 0.1872 0.4344	(dB) 9.60 9.60 9.60 9.60 9.61	Reading (dBuV) 42.10 18.36 45.30 33.74 37.39	(dBuV) 51.70 27.96 54.90 43.34 47.00	Limit (dBuV) 66.00 56.00 64.16 54.16 57.17	(dB) -14.30 -28.04 -9.26 -10.82 -10.17	Detector QP AVG QP AVG QP	P P P P	30.000
1 2 3 4 5 6	0.150 Frequency (MHz) 0.1500 0.1500 0.1872 0.1872 0.1872 0.4344 0.4344	(dB) 9.60 9.60 9.60 9.60 9.61 9.61	Reading (dBuV) 42.10 18.36 45.30 33.74 37.39 30.12	(dBuV) 51.70 27.96 54.90 43.34 47.00 39.73	Limit (dBuV) 66.00 56.00 64.16 54.16 57.17 47.17	(dB) -14.30 -28.04 -9.26 -10.82 -10.17 -7.44	Detector QP AVG QP AVG QP AVG	P P P P P	30.000
1 2 3 4 5 6 7	0.150 Frequency (MHz) 0.1500 0.1500 0.1872 0.1872 0.1872 0.4344 0.4344 0.4344	(dB) 9.60 9.60 9.60 9.60 9.61 9.61 9.61	Reading (dBuV) 42.10 18.36 45.30 33.74 37.39 30.12 38.49	(dBuV) 51.70 27.96 54.90 43.34 47.00 39.73 48.10	Limit (dBuV) 66.00 56.00 64.16 54.16 57.17 47.17 56.38	(dB) -14.30 -28.04 -9.26 -10.82 -10.17 -7.44 -8.28	Detector QP AVG QP AVG QP AVG QP	P P P P P P	30.000
1 2 3 4 5 6 7 8	0.150 Frequency (MHz) 0.1500 0.1500 0.1872 0.1872 0.1872 0.4344 0.4344 0.4344 0.4778 0.4778	(dB) 9.60 9.60 9.60 9.61 9.61 9.61 9.61	Reading (dBuV) 42.10 18.36 45.30 33.74 37.39 30.12 38.49 29.85	(dBuV) 51.70 27.96 54.90 43.34 47.00 39.73 48.10 39.46	Limit (dBuV) 66.00 56.00 64.16 54.16 57.17 47.17 56.38 46.38	(dB) -14.30 -28.04 -9.26 -10.82 -10.17 -7.44 -8.28 -6.92	Detector QP AVG QP AVG QP AVG AVG	P P P P P P P	30.000
1 2 3 4 5 6 7 8 9	0.150 Frequency (MHz) 0.1500 0.1500 0.1872 0.1872 0.1872 0.4344 0.4344 0.4344 0.4778 0.4778 0.4778	(dB) 9.60 9.60 9.60 9.61 9.61 9.61 9.61 9.61 9.62	Reading (dBuV) 42.10 18.36 45.30 33.74 37.39 30.12 38.49 29.85 36.88	(dBuV) 51.70 27.96 54.90 43.34 47.00 39.73 48.10 39.46 46.50	Limit (dBuV) 66.00 56.00 64.16 54.16 57.17 47.17 56.38 46.38 56.00	(dB) -14.30 -28.04 -9.26 -10.82 -10.17 -7.44 -8.28 -6.92 -9.50	Detector QP AVG QP AVG QP AVG QP AVG QP	P P P P P P P P	30.000



M/N :		GP-MB1	.0		Test	t Voltag	ge:	A	AC 120V/60Hz
Test D	Date :	May 29,	2018		Pha	se:		N	leutral
Tempe	erature:	20°C			Rela	ative Hu	umidity:	5	4%
Pressur	re:	101.0KPa				Test by:			ling
Test M	1ode:	transmis		2.0 data	transmiss				ng to TV+USB 3.0 data ransmission
	80.0 dBuV								
	40	www.		www.	vvv vvv	menn MM	and the	MM	Conduction(QP) Conduction(AVG)
	0.0	ł							AVG
	0.0	Ŷ	0.5		(MHz)		5		30.000
No.		Factor (dB)	0.5 Reading (dBuV)	Level (dBuV)	(MHz) Limit (dBuV)	Margin (dB)		P/F	
No. 1	0.150 Frequency		Reading		Limit		-	P/F P	30.000
Constant Sector	0.150 Frequency (MHz)	(dB)	Reading (dBuV)	(dBuV)	Limit (dBuV)	(dB)	Detector		30.000
1	0.150 Frequency (MHz) 0.1500	(dB) 9.62	Reading (dBuV) 42.98	(dBuV) 52.60	Limit (dBuV) 66.00	(dB) -13.40	Detector QP	Ρ	30.000
1 2	0.150 Frequency (MHz) 0.1500 0.1500	(dB) 9.62 9.62	Reading (dBuV) 42.98 18.41	(dBuV) 52.60 28.03	Limit (dBuV) 66.00 56.00	(dB) -13.40 -27.97	Detector QP AVG	P P	30.000
1 2 3	0.150 Frequency (MHz) 0.1500 0.1500 0.1844	(dB) 9.62 9.62 9.62	Reading (dBuV) 42.98 18.41 48.48	(dBuV) 52.60 28.03 58.10	Limit (dBuV) 66.00 56.00 64.29	(dB) -13.40 -27.97 -6.19	Detector QP AVG QP	P P P	30.000
1 2 3 4	0.150 Frequency (MHz) 0.1500 0.1500 0.1844 0.1844	(dB) 9.62 9.62 9.62 9.62	Reading (dBuV) 42.98 18.41 48.48 34.85	(dBuV) 52.60 28.03 58.10 44.47	Limit (dBuV) 66.00 56.00 64.29 54.29	(dB) -13.40 -27.97 -6.19 -9.82	Detector QP AVG QP AVG	P P P	30.000
1 2 3 4 5	0.150 Frequency (MHz) 0.1500 0.1500 0.1844 0.1844 0.4012	(dB) 9.62 9.62 9.62 9.62 9.62 9.62	Reading (dBuV) 42.98 18.41 48.48 34.85 40.08	(dBuV) 52.60 28.03 58.10 44.47 49.70	Limit (dBuV) 66.00 56.00 64.29 54.29 57.83	(dB) -13.40 -27.97 -6.19 -9.82 -8.13	Detector QP AVG QP AVG QP	P P P P	30.000
1 2 3 4 5 6	0.150 Frequency (MHz) 0.1500 0.1500 0.1844 0.1844 0.4012 0.4012	(dB) 9.62 9.62 9.62 9.62 9.62 9.62	Reading (dBuV) 42.98 18.41 48.48 34.85 40.08 29.22	(dBuV) 52.60 28.03 58.10 44.47 49.70 38.84	Limit (dBuV) 66.00 56.00 64.29 54.29 57.83 47.83	(dB) -13.40 -27.97 -6.19 -9.82 -8.13 -8.99	Detector QP AVG QP AVG QP AVG	P P P P	30.000
1 2 3 4 5 6 7	0.150 Frequency (MHz) 0.1500 0.1500 0.1844 0.1844 0.1844 0.4012 0.4012 0.4012 0.4778	(dB) 9.62 9.62 9.62 9.62 9.62 9.62 9.62	Reading (dBuV) 42.98 18.41 48.48 34.85 40.08 29.22 39.18	(dBuV) 52.60 28.03 58.10 44.47 49.70 38.84 48.80	Limit (dBuV) 66.00 56.00 64.29 54.29 57.83 47.83 56.38	(dB) -13.40 -27.97 -6.19 -9.82 -8.13 -8.99 -7.58	Detector QP AVG QP AVG QP AVG AVG	P P P P P P	30.000
1 2 3 4 5 6 7 8	0.150 Frequency (MHz) 0.1500 0.1500 0.1844 0.1844 0.4012 0.4012 0.4012 0.4778 0.4778	(dB) 9.62 9.62 9.62 9.62 9.62 9.62 9.62 9.62	Reading (dBuV) 42.98 18.41 48.48 34.85 40.08 29.22 39.18 30.45	(dBuV) 52.60 28.03 58.10 44.47 49.70 38.84 48.80 40.07	Limit (dBuV) 66.00 56.00 64.29 54.29 57.83 47.83 56.38 46.38	(dB) -13.40 -27.97 -6.19 -9.82 -8.13 -8.99 -7.58 -6.31	Detector QP AVG QP AVG QP AVG QP AVG QP	P P P P P P P P	30.000
1 2 3 4 5 6 7 8 9	0.150 Frequency (MHz) 0.1500 0.1500 0.1844 0.1844 0.4012 0.4012 0.4012 0.4778 0.4778 0.4778	(dB) 9.62 9.62 9.62 9.62 9.62 9.62 9.62 9.62	Reading (dBuV) 42.98 18.41 48.48 34.85 40.08 29.22 39.18 30.45 36.27	(dBuV) 52.60 28.03 58.10 44.47 49.70 38.84 48.80 40.07 45.90	Limit (dBuV) 66.00 56.00 64.29 54.29 57.83 47.83 56.38 46.38 56.00	(dB) -13.40 -27.97 -6.19 -9.82 -8.13 -8.99 -7.58 -6.31 -10.10	Detector QP AVG QP AVG QP AVG QP AVG QP	P P P P P P P P P	30.000



### 7. TEST OF RADIATED EMISSION

#### 7.1 TEST LIMIT

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter measurement is based on the maximum conducted output power, the attenuation required under this paragraph shall be 30dB instead of 20dB. In addition, radiated emissions which fall in section 15.205(a) the restricted bands must also comply with the radiated emission limit specified in section 15.209(a).

Frequency (MHz)	Field Strength (microvolt/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

#### 7.2 TEST PROCEDURES

- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported,

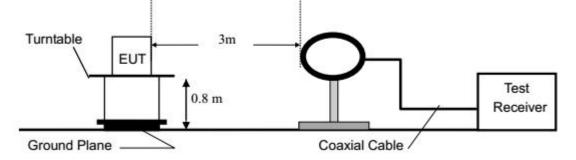


otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.

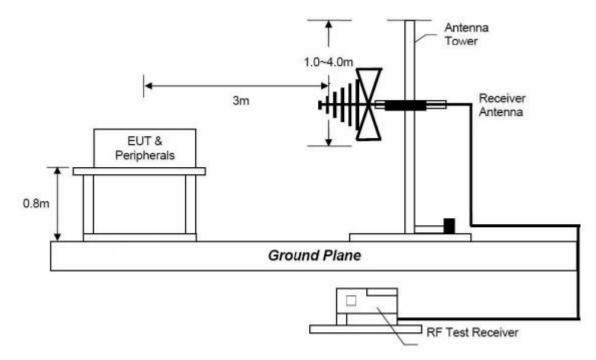
- h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower thanaverage limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- i. "Cone of radiation "has been considered to be 3dB bandwidth of the measurement antenna.

### 7.3 TYPICAL TEST SETUP

#### Radiated Emission Test Set-Up, Frequency Below 30MHz



#### Radiated Emission Test Set-Up, Frequency 30MHz-1000MHz





### 7.4 TEST RESULT AND DATA (9KHZ ~ 30MHZ)

M/N :		GP				Test V	Test Voltage:			AC 120V/60Hz				
Test Date :		No				Phase:	Phase:			Vertical				
Temperatu	perature:		20°C				Relative Humidity:			54%				
Pressure:		101	.0KPa			Test b	y:		Bing					
Test Mode	:	trai	Charging nsmission+ Vireless Ch	-USB 2.0	data trans							3.0 da	nta	
13	0.0 dB	uV/m												
							-		-		-		-	
				1000									_	
									FCC	Part15.2			-	
												in <u>-6 d</u> B	-	
									_		_			
	80													
	50													
									-		_		_	
				1										
	m			X	2×	3	4		5X			6		
	har	her also		up defaile	MAL 1	J.		LI. M	Inkill	A Lin nu	Anth	shippin ut	thank .	
		. William all	man have been and the second	Ned ALHORA	WHAT WALK	Arman my	rahurathin	Walder Manual In .	dh. Leed	the kourt Ha	advorte	INTEL OF 1	. FIN	
30	0.009					(MHz)					-	0	.150	
	0.009		Reading	Correct	Measure-				Anten		able	0	.150	
		Freq.	Level	Factor	ment	Limit	Over		Anten Heigh		able gree	0	.150	
No.	0.009 Mk.	MHz	Level dBuV	Factor dB	ment dBuV/m	Limit dB/m	dB	Detector		nt De		Commer		
	0.009 Mk.	· · ·	Level	Factor	ment	Limit dB/m 121.8	dB -63.62	Detector	Heigh	nt De	gree			
No.	0.009 Mk.	MHz	Level dBuV	Factor dB	ment dBuV/m	Limit dB/m	dB	NED CHERNER	Heigh	nt De	gree			
No.	0.009 Mk.	MHz 0.0194	Level dBuV 39.51	Factor dB 18.72	ment dBuV/m 58.23	Limit dB/m 121.8	dB -63.62	peak	Heigh	nt De	gree			
No.	0.009 Mk.	MHz 0.0194 0.0269	Level dBuV 39.51 37.61	Factor dB 18.72 18.86	ment dBuV/m 58.23 56.47	Limit dB/m 121.8 119.0	dB -63.62 -62.54	peak peak	Heigh	nt De	gree			
No.	0.009 Mk.	MHz 0.0194 0.0269 0.0376	Level dBuV 39.51 37.61 34.73	Factor dB 18.72 18.86 19.57	ment dBuV/m 58.23 56.47 54.30	Limit dB/m 121.8 119.0 116.1	dB -63.62 -62.54 -61.81	peak peak peak	Heigh	nt De	gree			



M/N :	GP-M	GP-MB10			Test Voltage:			AC 120V/60Hz			
Test Date :	Nov. (	Nov. 08, 2018			Phase:			Vertical			
Temperature:	20°C	20°C			Relative Humidity:		ty: 54	54%			
Pressure:	101.0	101.0KPa			Test by:			Bing			
Test Mode:	transn	narging to nission+US cless Charg	SB 2.0 da	ta transmi	to Phone ission+S	e+HDM SD Card	I Playin data tra	ng to TV ansmissi	+USB 3 on	.0 data	
120.0	dBu¥/m										
70 1								CC Part15.2	09(150K-30)	M)	
70	handhan	www	water		A.	with	www	nund medinetalised	Margin -		
20.0		W/W/W	www.		Aurona (	week.	5	n strangt and save			
	0		Correct Factor	(M Measure- ment	Limit	Over		Antenna Height	kaine <mark>nsyn</mark> aan menen	30.000	
20.0	0	0.5 Reading	Correct	Measure-		Over dB		Antenna	Table	30.000	
20.0	0 1k. Freq.	0.5 Reading Level	Correct Factor	Measure- ment	Limit	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	5	Antenna Height	Table Degree	30.000	
20.0 0.15 No. M	0 1k. Freq. MHz	0.5 Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	dB	5 Detector	Antenna Height	Table Degree	30.000	
20.0 0.15 No. M	0 1k. Freq. MHz 0.1621	0.5 Reading Level dBuV 41.29	Correct Factor dB 26.10	Measure- ment dBuV/m 67.39	Limit dB/m 103.4	dB -36.03	5 Detector peak	Antenna Height	Table Degree	30.000	
20.0 0.15 No. M	0 1k. Freq. MHz 0.1621 0.2366 0.6075	0.5 Reading Level dBuV 41.29 30.70	Correct Factor dB 26.10 25.73	Measure- ment dBuV/m 67.39 56.43	Limit dB/m 103.4 100.1	dB -36.03 -43.70	5 Detector peak peak	Antenna Height	Table Degree	30.000	
20.0 0.15 No. M	0 1k. Freq. MHz 0.1621 0.2366 0.6075	0.5 Reading Level dBuV 41.29 30.70 26.99	Correct Factor dB 26.10 25.73 25.16	Measure- ment dBuV/m 67.39 56.43 52.15	Limit dB/m 103.4 100.1 71.94	dB -36.03 -43.70 -19.79	5 Detector peak peak peak	Antenna Height	Table Degree	30.000	



### 7.5 TEST RESULT AND DATA (30MHZ ~ 1GHZ, WORST EMISSIONS FOUND)

M/N :		GP-MB1	0		Test	Test Voltage:			AC 120V/60Hz				
Fest D	ate :	2018		Phas				Vertical					
Гетре	erature: 20°C			Rela	Relative Humidity: 5			54%					
Pressur	re:	101.0KP	a		Test	by:	: Bing						
Гest M	PD Charging to Laptop+Charging to Phone+HDMI Playing to TV+USB 3.0						3.0 data						
	80.0 dBu¥/m			-									
								FCC PART	Г 15В ЗМ Т	-			
			no no na serie de la composition de	418.00		612.0				Aargin Aargin		MHz	
No.	0.0	0 224.00 Factor (dB/m)			515.00 Limit	612.0 Margin			ante Arto Manho		ender valer	MHz	
No. 1	0.0 30.000 127.0 Frequency	Factor	0 321.00 Reading	418.00	515.00 Limit	612.0 Margin	0 709.	00 80 Height	Arth Authors		1000.00	MHz	
REAL CONTRACTOR	0.0 30.000 127.0 Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	418.00 Level (dBuV/m)	515.00 Limit (dBuV/m)	612.0 Margin (dB)	0 709. Detector	00 80 Height	Arth Authors	P/F	1000.00	MHz	
1	0.0 30.000 127.0 Frequency (MHz) 95.9600	Factor (dB/m) 18.73	321.00 Reading (dBuV) 12.07	418.00 Level (dBuV/m) 30.80	515.00 Limit (dBuV/m) 43.50	612.0 Margin (dB) -12.70	0 709. Detector QP	00 80 Height	Arth Authors	P/F P	1000.00	MHz	
1 2	0.0 30.000 127.0 Frequency (MHz) 95.9600 107.6000	Factor (dB/m) 18.73 19.15	321.00 Reading (dBuV) 12.07 12.05	418.00 Level (dBuV/m) 30.80 31.20	515.00 Limit (dBuV/m) 43.50 43.50	612.00 Margin (dB) -12.70 -12.30	0 709. Detector QP QP	00 80 Height	Arth Authors	P/F P	1000.00	MHz	
1 2 3	0.0 30.000 127.0 Frequency (MHz) 95.9600 107.6000 138.6400	Factor (dB/m) 18.73 19.15 16.59	321.00           Reading (dBuV)           12.07           12.81	418.00 Level (dBuV/m) 30.80 31.20 29.40	515.00 Limit (dBuV/m) 43.50 43.50 43.50	612.0 Margin (dB) -12.70 -12.30 -14.10	0 709. Detector QP QP QP	00 80 Height	Arth Authors	P/F P P	1000.00	MHz	



M/N :	:				Test	Test Voltage:			AC 120V/60Hz			
Гest D	Date :		Phas	se:		Hor	Horizontal					
ſempe	erature:	Relative Humidity:			54%	54%						
Pressu	ure: 101.0KPa				Test	by:		Bing	Bing			
ſest N	Aode:	transmiss	ging to La sion+USB s Chargin	2.0 data 1	transmissi						3.0 data	
	80.0 dBuV/m											
								FCC PAR	3T 15B 3M	Radial		
	40				515.00	phys.downwyd) 612.0				31.55		
No.	0.0 30.000 127.0 Frequency	0 224.00 Factor	0 321.00 Reading	418.00	515.00 Limit	612.0 Margin		.00 8 Height	باریمی 106.00 Azimuth	31.55	in short regulat	
	0.0 30.000 127.0 Frequency (MHz)	0 224.00 Factor (dB/m)	0 321.00 Reading (dBuV)	418.00 Level (dBuV/m)	515.00 Limit (dBuV/m)	612.0 Margin (dB)	0 709 Detector	.00 8	uksengljængster 106.00	p/F	1000.00	
1	0.0 30.000 127.0 Frequency (MHz) 62.0100	0 224.00 Factor (dB/m) 14.42	0 321.00 Reading (dBuV) 16.78	418.00 Level (dBuV/m) 31.20	515.00 Limit (dBuV/m) 40.00	612.0 Margin (dB) -8.80	0 709 Detector QP	.00 8 Height	باریمی 106.00 Azimuth	P/F P	1000.00	
	0.0 30.000 127.0 Frequency (MHz)	0 224.00 Factor (dB/m)	0 321.00 Reading (dBuV)	418.00 Level (dBuV/m)	515.00 Limit (dBuV/m)	612.0 Margin (dB)	0 709 Detector	.00 8 Height	باریمی 106.00 Azimuth	p/F	1000.00	
1 2	0.0 30.000 127.0 Frequency (MHz) 62.0100 94.9900	0 224.00 Factor (dB/m) 14.42 13.32	2 321.00 Reading (dBuV) 16.78 17.08	418.00 Level (dBuV/m) 31.20 30.40	515.00 Limit (dBuV/m) 40.00 43.50	612.0 Margin (dB) -8.80 -13.10	0 709 Detector QP QP	.00 8 Height	باریمی 106.00 Azimuth	P/F P	1000.00	
1 2 3	0.0 30.000 127.0 Frequency (MHz) 62.0100 94.9900 159.9800	0 224.00 Factor (dB/m) 14.42 13.32 11.09	0 321.00 Reading (dBuV) 16.78 17.08 17.61	418.00 Level (dBuV/m) 31.20 30.40 28.70	515.00 Limit (dBuV/m) 40.00 43.50 43.50	612.0 Margin (dB) -8.80 -13.10 -14.80	0 709 Detector QP QP QP	.00 8 Height	باریمی 106.00 Azimuth	P/F P P	1000.00	



### 8. RESTRICTED BANDS OF OPERATION

Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.09000 - 0.11000	16.42000 - 16.42300	399.9 - 410.0	4.500 - 5.150
0.49500 - 0.505**	16.69475 - 16.69525	608.0 - 614.0	5.350 - 5.460
2.17350 - 2.19050	16.80425 - 16.80475	960.0 - 1240.0	7.250 - 7.750
4.12500 - 4.12800	25.50000 - 25.67000	1300.0 - 1427.0	8.025 - 8.500
4.17725 - 4.17775	37.50000 - 38.25000	1435.0 - 1626.5	9.000 - 9.200
4.20725 - 4.20775	73.00000 - 74.60000	1645.5 - 1646.5	9.300 - 9.500
6.21500 - 6.21800	74.80000 - 75.20000	1660.0 - 1710.0	10.600 - 12.700
6.26775 - 6.26825	108.00000 - 121.94000	1718.8 - 1722.2	13.250 - 13.400
6.31175 - 6.31225	123.00000 - 138.00000	2200.0 - 2300.0	14.470 – 14.500
8.29100 - 8.29400	149.90000 - 150.05000	2310.0 - 2390.0	15.350 – 16.200
8.36200 - 8.36600	156.52475 - 156.52525	2483.5 - 2500.0	17.700 – 21.400
8.37625 - 8.38675	156.70000 - 156.90000	2655.0 - 2900.0	22.010 - 23.120
8.41425 - 8.41475	162.01250 - 167.17000	3260.0 - 3267.0	23.600 - 24.000
12.29000 - 12.29300	167.72000 - 173.20000	3332.0 - 3339.0	31.200 - 31.800
12.51975 - 12.52025	240.00000 - 285.00000	3345.8 - 3358.0	36.430 - 36.500
12.57675 - 12.57725	322.00000 - 335.40000	3600.0 - 4400.0	Above 38.6
13.36000 - 13.41000			

\*\*: Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

### 8.1 LABELING REQUIREMENT

The device shall bear the following statement in a conspicuous location on the device: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### --END----