



**Report No. : FC111402** 

# **FCC EMI TEST REPORT**

FCC ID : U8G-P1835

Equipment : PEPWAVE / peplink Wireless Product

Brand Name : PEPWAVE / peplink

Model Name : UBR Go

UBR Rugged UBR Go LTEA UBR Rugged LTEA

UBR-GO-LTEA-R-T-PRM
UBR-GO-LTEA-US-T-PRM
UBR-RUG-LTEA-US-T-PRM
UBR-RUG-LTEA-R-T-PRM
Pepwave UBR Go LTEA
Pepwave UBR Rugged LTEA

**MAX Transit** 

MAX Transit LTEA MAX Transit Pro E

Applicant : PISMO LABS TECHNOLOGY LIMITED

A8, 5/F, HK Spinners Industrial Building, Phase 6, 481 Castle Peak Road, Cheung Sha Wan, Hong Kong

Manufacturer : PISMO LABS TECHNOLOGY LIMITED

A8, 5/F, HK Spinners Industrial Building, Phase 6, 481 Castle Peak Road, Cheung Sha Wan, Hong Kong

Standard : FCC 47 CFR FCC Part 15 Subpart B Class A

The product was received on Feb. 01, 2021 and testing was started from Mar. 29, 2021 and completed on May 25, 2021. We, Sporton International Inc. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI C63.4-2014 and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Louis Wu

Lunis Wu

Sporton International Inc. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)

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# History of this test report

**Report No. : FC111402** 

Report No.	Version	Description	Issued Date
FC111402	01	Initial issue of report	Oct. 15, 2021

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## **Summary of Test Result**

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Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.107	AC Conducted Emission	Pass	Under limit 20.80 dB at 0.704 MHz
3.2	15.109	Radiated Emission	Pass	Under limit 1.94 dB at 440.000 MHz for Quasi-Peak

### **Declaration of Conformity:**

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

### **Comments and Explanations:**

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Lewis Ho Report Producer: Emma Lo

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## 1. General Description

## 1.1. Product Feature of Equipment Under Test

WCDMA/LTE, Wi-Fi 2.4GHz 802.11b/g/n, and Wi-Fi 5GHz 802.11a/n/ac

Product Specification subjective to this standard					
	Brand Name: AirPrime				
Integrated WWAN Module 1	Model Name: EM7511				
	FCC ID: N7NEM75S				
	Brand Name: AirPrime				
Integrated WWAN Module 2	Model Name: EM7411				
	FCC ID: N7NEM74B				
Sample 1	UBR GO with WWAN Module 1 (EM7511)				
Sample 2	UBR GO with WWAN Module 2 (EM7411)				
Sample 3	UBR Rugged with WWAN Module 1 (EM7511)				
Sample 4	UBR Rugged with WWAN Module 2 (EM7411)				
	WWAN				
Antonna Typo	<b><for em7511="">:</for></b> Omni-directional Antenna				
Antenna Type	<b>For EM7411&gt;:</b> Omni-directional Antenna				
	WLAN: Omni-directional Antenna				

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#### Remark:

- 1. The product will integrate the cellular module (EM7511, EM7411). Among the 2 options, at a time only 1 cellular module will be installed), therefore the cellular module is incorporated into the host for Part 15B. Equipment authorization to integrate the cellular module will follow the FCC modular approval policy and procedures.
- 2. The above EUT's information was declared by manufacturer. Please refer to Comments and Explanations in report summary.

### 1.2. Modification of EUT

No modifications are made to the EUT during all test items.

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## 1.3. Test Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
	No.52, Huaya 1st Rd., Guishan Dist.,
Took Cita Lagation	Taoyuan City 333, Taiwan (R.O.C.)
Test Site Location	TEL: +886-3-327-3456
	FAX: +886-3-328-4978
Test Site No.	Sporton Site No.
Test Site NO.	CO05-HY, 03CH06-HY

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Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
	No.30-2, Dingfu Vil., Linkou Dist.,
Test Site Location	New Taipei City 244, Taiwan (R.O.C.)
rest site Location	TEL: +886-3-327-3456
	FAX: +886-3-328-4978
Test Site No.	Sporton Site No.
rest site NO.	OS04-LK

FCC designation No.: TW1093 and TW1095

## 1.4. Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC 47 CFR FCC Part 15 Subpart B Class A
- + ANSI C63.4-2014

**Remark:** All test items were verified and recorded according to the standards and without any deviation during the test.

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# 2. Test Configuration of Equipment Under Test

### 2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

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Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

Test Items	Function Type
	Mode 1: WCDMA Band V Idle + WLAN (2.4GHz) Link + LAN 1 Link + WAN Link + GPS Rx + Adapter (Y001-1310) (USB-C Port 1) + LAN 2/3 Load + Cellular 1 + SIM A for Sample 1
	Mode 2: LTE Band 5 Idle + WLAN (5GHz) Link + LAN 1 Link + WAN Link + GPS Rx + Adapter (Y001-1310) (USB-C Port 2) + LAN 2/3 Load + Cellular 1 + SIM B for Sample 1
	Mode 3: LTE Band 12 Idle + WLAN (2.4GHz) Idle + LAN 1 Link + WAN Link + GPS Rx + Adapter (Y001-1310) (USB-C Port 1) + LAN 2/3 Load + Cellular 2 + SIM A for Sample 1
AC Conducted Emission	Mode 4: LTE Band 13 Idle + WLAN (5GHz) Idle + LAN 1 Link + WAN Link + GPS Rx + Adapter (Y001-1310) (USB-C Port 2) + LAN 2/3 Load + Cellular 2 + SIM B for Sample 1
	Mode 5: WCDMA Band V Idle + WLAN (2.4GHz) Link + LAN 1 Link + WAN Link + GPS Rx + Adapter (Y001-1310) (USB-C Port 1) + LAN 2/3 Load + Cellular 1 + SIM A for Sample 2
	Mode 6: WCDMA Band V Idle + WLAN (2.4GHz) Link + LAN 1 Link + WAN Link + GPS Rx + Adapter (DSA-24PFS-12 FUS 120200) + LAN 2/3 Load + Terminal Block (Floating) + Cellular 1 + SIM A for Sample 3
	Mode 7: WCDMA Band V Idle + WLAN (2.4GHz) Link + LAN 1 Link + WAN Link + GPS Rx + Adapter (DSA-24PFS-12 FUS 120200) + LAN 2/3 Load + Terminal Block (Floating) + Cellular 1 + SIM A for Sample 4

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Test Items		Function Type
	Mode 1:	WCDMA Band V Idle + WLAN (2.4GHz) Link + LAN 1 Link + WAN Link + GPS Rx + Adapter (Y001-1310) (USB-C Port 1) + LAN 2/3 Load + Terminal Block (Floating) + Cellular 1 + SIM A for Sample 1
	Mode 2:	LTE Band 5 Idle + WLAN (5GHz) Link + LAN 1 Link + WAN Link + GPS Rx + Adapter (Y001-1310) (USB-C Port 2) + LAN 2/3 Load + Terminal Block (Floating) + Cellular 1 + SIM B for Sample 1
	Mode 3:	LTE Band 12 Idle + WLAN (2.4GHz) Idle + LAN 1 Link + WAN Link + GPS Rx + Adapter (Y001-1310) (USB-C Port 1) + LAN 2/3 Load + Terminal Block (Floating) + Cellular 2 + SIM A for Sample 1
	Mode 4:	LTE Band 13 Idle + WLAN (5GHz) Idle + LAN 1 Link + WAN Link + GPS Rx + Adapter (Y001-1310) (USB-C Port 2) + LAN 2/3 Load + Terminal Block (Floating) Cellular 2 + SIM B for Sample 1
Radiated Emissions	Mode 5:	WCDMA Band V Idle + WLAN (2.4GHz) Link + LAN 1 Link + WAN Link + GPS Rx + Adapter (Y001-1310) (USB-C Port 1) + LAN 2/3 Load + Terminal Block (Floating) + Cellular 1 + SIM A for Sample 2
	Mode 6:	WCDMA Band V Idle + WLAN (2.4GHz) Link + LAN 1 Link + WAN Link + GPS Rx + Adapter (DSA-24PFS-12 FUS 120200) + LAN 2/3 Load + Terminal Block (Floating) + Cellular 1 + SIM A for Sample 3
	Mode 7:	WCDMA Band V Idle + WLAN (2.4GHz) Link + LAN 2 Link + WAN Link + GPS Rx + Terminal Block (DC 12V) + LAN1 PoE Out (Load) + LAN 3 Load + Terminal Block (Floating) + Cellular 1 + SIM A for Sample 3
	Mode 8:	WCDMA Band V Idle + WLAN (2.4GHz) Link + LAN 2 Link + WAN Link + GPS Rx + Terminal Block (DC 56V) + LAN1 PoE Out (Load) + LAN 3 Load + Terminal Block (Floating) + Cellular 1 + SIM A for Sample 3
	Mode 9:	WCDMA Band V Idle + WLAN (2.4GHz) Link + LAN 1 Link + WAN Link + GPS Rx + Adapter (DSA-24PFS-12 FUS 120200) + LAN 2/3 Load + Terminal Block (Floating) + Cellular 1 + SIM A for Sample 4

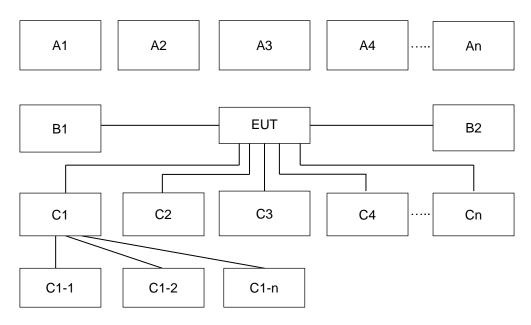
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#### Remark:

- 1. The worst case of AC is mode 1; only the test data of this mode was reported.
- 2. The worst case of RE is mode 1; only the test data of this mode was reported.
- 3. For radiation emission after pre-scanned the cellular band between 30MHz ~ 960MHz (WCDMA Band V/LTE Band 5/12/13/14/71/26); only the worst case for cellular band test data of this mode was reported.

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# 2.2. Connection Diagram of Test System



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	Conduction Test Setup										
No.	Wireless Station	Connection Type			Te	est Mo	de				
NO.	wireless station	Connection Type	1	2	3	4	5	6	7		
A1	System Simulator	WCDMA/LTE	Х	Χ	Χ	Χ	Χ	Χ	Χ		
A2	GPS Station	GPS	Х	Χ	Χ	Χ	Χ	Χ	Χ		
А3	Notebook	WiFi	Х	Χ	-	-	Χ	Χ	Χ		
No.	Power Source	Connection Type	1	2	3	4	5	6	7		
B1	AC: 120V/60Hz	AC Power Cable	Х	Χ	Χ	Χ	Χ	Χ	Χ		
No.	Setup Peripherals	Connection Type	1	2	3	4	5	6	7		
C1	Notebook	RJ-45 Cable	Х	Χ	Χ	Χ	Χ	Χ	Χ		
C2	Notebook	RJ-45 Cable	Х	Χ	Χ	Χ	Χ	Χ	Χ		

	Radiation Test Setup									
No.	Wireless Station	Connection Type	Test Mode							
NO.	wireless station	Connection Type	1	2	3	4	5	6	7	
A1	System Simulator	WCDMA/LTE	X	Χ	Χ	Χ	Χ	Χ	Χ	
A2	GPS Station	GPS	X	Χ	Χ	Χ	Χ	Χ	Χ	
A3	Notebook	WiFi	X	Χ	-	-	Χ	Χ	Χ	
No.	Power Source	Connection Type	1	2	3	4	5	6	7	
B1	AC: 120V/60Hz	AC Power Cable	X	Χ	Χ	Χ	Χ	Χ	-	
B2	DC : 12V	DC Power Cable	-	-	-	-	-	-	Χ	
В3	DC : 56V	DC Power Cable	-	-	-	-	-	-	-	
No.	Setup Peripherals	Connection Type	1	2	3	4	5	6	7	
C1	Notebook	RJ-45 Cable	Х	Χ	Χ	Χ	Χ	Χ	Χ	
C2	Notebook	RJ-45 Cable	Х	Χ	Χ	Χ	Χ	Χ	Χ	

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	Radiation Test Setup									
			Test Mode							
No.	Wireless Station	Connection Type	8	9	-		-	-	-	
A1	System Simulator	WCDMA/LTE	Х	Χ						
A2	GPS Station	GPS	Х	Χ						
А3	Notebook	WiFi	Х	Χ						
No.	Power Source	Connection Type	8	9	-		-	-	-	
B1	AC: 120V/60Hz	AC Power Cable	-	Χ						
B2	DC : 12V	DC Power Cable	-	-						
B3	DC : 56V	DC Power Cable	Х	-						
No.	Setup Peripherals	Connection Type	8	9	-		-	-	-	
C1	Notebook	RJ-45 Cable	Х	Χ						
C2	Notebook	RJ-45 Cable	Х	Χ						

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2.3. Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded,1.8m
2.	GPS Station	Pendulum	GSG-54	N/A	N/A	Unshielded,1.8m
3.	DC Power Supply	GW Instek	GEU810960	FCC DoC	N/A	N/A
4.	Notebook	Dell	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2m DC O/P: Shielded, 1.8m

## 2.4. EUT Operation Test Setup

The EUT was in WCDMA or LTE idle mode during the test. The EUT was synchronized with the BCCH, and had been continuous receiving mode by setting paging reorganization of the system simulator.

At the same time, the EUT was attached to the Notebook and executes ping via WLAN function and the following programs installed in the EUT were programmed during the test:

- 1. EUT links with Notebook and executes ping via RJ-45
- 2. Execute "Putty" to make the EUT receive continuous signals from GPS station.

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### 3. Test Result

#### 3.1. Test of AC Conducted Emission Measurement

#### 3.1.1. Limits of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

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#### <Class A>

Frequency of emission	Conducted limit (dBuV)				
(MHz)	Quasi-peak	Average			
0.15-0.5	79	66			
0.5-30	73	60			

### 3.1.2. Measuring Instruments

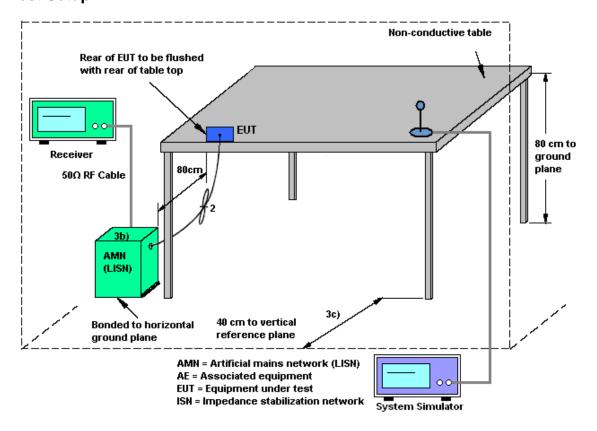
Refer a test equipment and calibration data table in this test report.

#### 3.1.3. Test Procedure

- 1. 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.
- 2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- 3. All the support units are connecting to the other LISN.
- 4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- 5. The FCC states that a 50 ohm, 50 microhenry LISN shall be used.
- 6. Both sides of AC line were checked for maximum conducted interference.
- 7. The frequency range from 150 kHz to 30 MHz was searched.
- 8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

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### 3.1.4. Test Setup



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### 3.1.5. Test Result of AC Conducted Emission

Please refer to Appendix A.

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#### 3.2. Test of Radiated Emission Measurement

#### 3.2.1. Limit of Radiated Emission

The emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

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#### <Class A>

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
Above 960	300	3

Frequency (MHz)	Field Strength (microvolts/meter)	Field strength (dBuV/m)	Measurement Distance (meters)
30-88	90	39.08	10
88-216	150	43.52	10
216-960	210	46.44	10
Above 960	300	49.54	10

### 3.2.2. Measuring Instruments

Refer a test equipment and calibration data table in this test report.

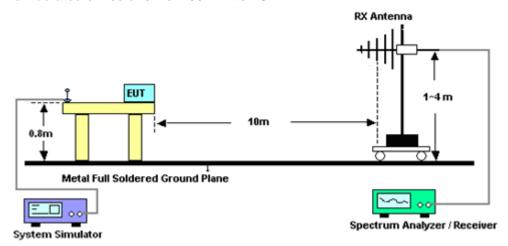
#### 3.2.3. Test Procedures

- 1. The EUT was placed on a turntable with 0.8 meter above ground.
- 2. The EUT was set 10 meters (30M~1G) and 3 meters (1G~ 13G) from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- 3. The table was rotated 360 degrees to determine the position of the highest radiation.
- 4. The antenna is a Bi-Log antenna and its height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
- 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 turntable (from 0 degree to 360 degrees) to find the maximum reading.
- Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode (RBW=120 kHz/VBW=300 kHz for frequency below 1 GHz; RBW=1 MHz VBW=3 MHz (Peak), RBW=1 MHz/VBW=10 Hz (Average) for frequency above 1 GHz).
- 7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.
- 8. Emission level (dB $\mu$ V/m) = 20 log Emission level ( $\mu$ V/m)
- 9. Corrected Reading: Antenna Factor + Cable Loss + Read Level Preamp Factor = Level

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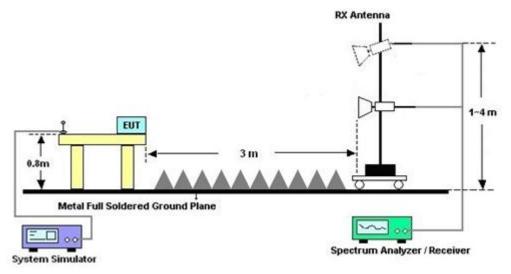
## 3.2.4. Test Setup of Radiated Emission

#### For radiated emissions from 30MHz to 1GHz



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#### For radiated emissions above 1GHz



### 3.2.5. Test Result of Radiated Emission

Please refer to Appendix B.

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# 4. List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	Rohde & Schwarz	ESU26	100472	20Hz~26.5GHz	Feb. 03, 2021	May 01, 2021~ May 07, 2021	Feb. 02, 2022	Radiation (03CH06-HY)
Horn Antenna	SCHWARZB ECK	BBHA 9120 D	9120D-1156	1GHz~18GHz	Sep. 15, 2020	May 01, 2021~ May 07, 2021	Sep. 14, 2021	Radiation (03CH06-HY)
Preamplifier	Jet-Power	JPA00101800-3 0-10P	1601180001	1GHz~18GHz	Jul. 21, 2020	May 01, 2021~ May 07, 2021	Jul. 20, 2021	Radiation (03CH06-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104 / STORM/LL142	MY24966/4 / 00100A1O2A1 78T	30MHz~18GHz	Nov. 20, 2020	May 01, 2021~ May 07, 2021	Nov. 19, 2021	Radiation (03CH06-HY)
RF Cable	HUBER + SUHNER	SF104	802433/4	30Mhz to 18Ghz	Aug. 20, 2020	May 01, 2021~ May 07, 2021	Aug. 19, 2021	Radiation (03CH06-HY)
Controller	INN-CO	EM1000	060782	Control Turn table & Ant Mast	N/A	May 01, 2021~ May 07, 2021	N/A	Radiation (03CH06-HY)
Antenna Mast	MF	MF-7802	MF780208212	1m~4m	N/A	May 01, 2021~ May 07, 2021	N/A	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/00	0-360 degree	N/A	May 01, 2021~ May 07, 2021	N/A	Radiation (03CH06-HY)
Software	Audix	E3 6.2009-8-24(k5)	N/A	N/A	N/A	May 01, 2021~ May 07, 2021	N/A	Radiation (03CH06-HY)
Amplifier	Agilent	8447D	2944A07468	10 kHz ~ 1.3GHz	Dec. 01, 2020	May 17, 2021~ May 25, 2021	Nov. 30, 2021	Radiation (OS04-LK)
Spectrum Analyzer	R&S	FSP 7	838858/037	9 kHz ~ 7 GHz	Jun. 04, 2020	May 17, 2021~ May 25, 2021	Jun. 03, 2021	Radiation (OS04-LK)
Test Receiver	R&S	ESCS 30	838251/003	9 kHz ~ 2.75 GHz	Aug. 12, 2020	May 17, 2021~ May 25, 2021	Aug. 11, 2021	Radiation (OS04-LK)
Bilog Antenna with 5dB Attenuator	TESEQ & EMCI	CBL6112D & N-6-05	35377 & AT-N0518	30 MHz ~ 2 GHz	Jul. 05, 2020	May 17, 2021~ May 25, 2021	Jul. 04, 2021	Radiation (OS04-LK)
Turn Table	EMCO	2080	9711-2021	0 ~ 360 degree	NCR	May 17, 2021~ May 25, 2021	NCR	Radiation (OS04-LK)
Antenna Mast	EMCO	2075	9711-2115	1 m ~ 4 m	NCR	May 17, 2021~ May 25, 2021	NCR	Radiation (OS04-LK)
RF Cable-R10m	Woken	CFD400NL-LW	CB011	30 MHz ~ 1 GHz	Dec. 10, 2020	May 17, 2021~ May 25, 2021	Dec. 09, 2021	Radiation (OS04-LK)
Software	Audix	E3	Version:4	-	NCR	May 17, 2021~ May 25, 2021	NCR	Radiation (OS04-LK)

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Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Mar. 29, 2021~ Mar. 31, 2021	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Nov. 30, 2020	Mar. 29, 2021~ Mar. 31, 2021	Nov. 29, 2021	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 18, 2020	Mar. 29, 2021~ Mar. 31, 2021	Nov. 17, 2021	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 16, 2020	Mar. 29, 2021~ Mar. 31, 2021	Nov. 15, 2021	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Mar. 29, 2021~ Mar. 31, 2021	N/A	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Feb. 25, 2021	Mar. 29, 2021~ Mar. 31, 2021	Feb. 24, 2022	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 31, 2020	Mar. 29, 2021~ Mar. 31, 2021	Dec. 30, 2021	Conduction (CO05-HY)

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# 5. Uncertainty of Evaluation

### **Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)**

Measuring Uncertainty for a Level of Confidence	22.40
of 95% (U = 2Uc(y))	2.3 dB

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### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence	4.04 dD
of 95% (U = 2Uc(y))	4.81dB

### Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence	5.5 dB
of 95% (U = 2Uc(y))	3.3 ub

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FAX: 886-3-328-4978 Issued Date : Oct. 15, 2021

# **Appendix A. AC Conducted Emission Test Results**

Test Engineer : Tom Lee and Howard Huang	Tom Loo and Howard Huang	Temperature :	23~26℃
	Tom Lee and noward nualig	Relative Humidity:	40~50%

Report No. : FC111402

TEL: 886-3-327-3456 Page Number : A1 of A1

## **EUT Information**

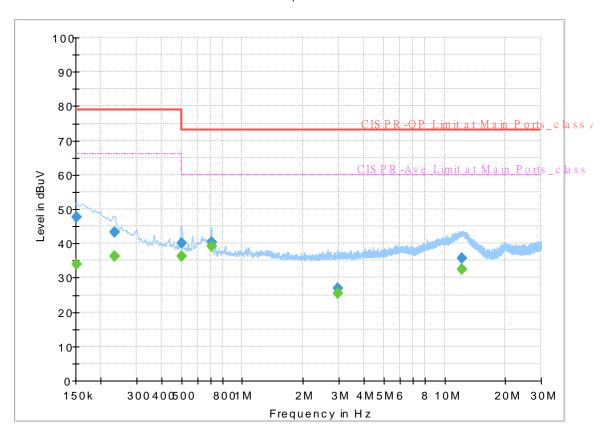
 Report NO :
 111402

 Test Mode :
 Mode 1

 Test Voltage :
 120Vac/60Hz

Phase: Line

### FullSpectrum



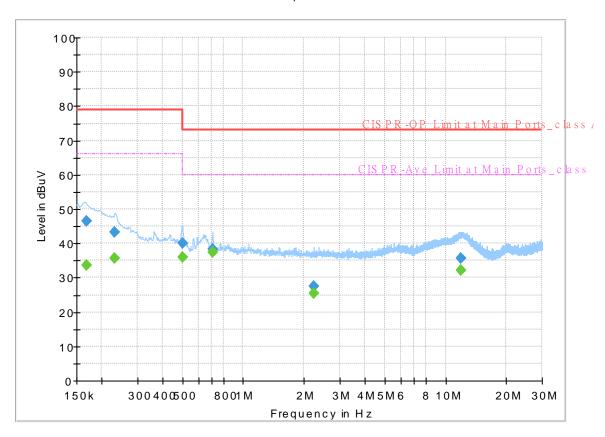
## Final\_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
` '	` ,	, ,	•	` '	1.4	OFF	
0.150878		34.02	66.00	31.98	L1		19.7
0.150878	47.71		79.00	31.29	L1	OFF	19.7
0.234150		36.32	66.00	29.68	L1	OFF	19.7
0.234150	43.16	-	79.00	35.84	L1	OFF	19.7
0.499560		36.27	66.00	29.73	L1	OFF	19.9
0.499560	40.13		79.00	38.87	L1	OFF	19.9
0.704490		39.20	60.00	20.80	L1	OFF	20.1
0.704490	40.25	-	73.00	32.75	L1	OFF	20.1
2.972580		25.31	60.00	34.69	L1	OFF	20.1
2.972580	27.03	-	73.00	45.97	L1	OFF	20.1
12.239250		32.33	60.00	27.67	L1	OFF	20.3
12.239250	35.78		73.00	37.22	L1	OFF	20.3

## **EUT Information**

Report NO: 111402
Test Mode: Mode 1
Test Voltage: 120Vac/60Hz
Phase: Neutral

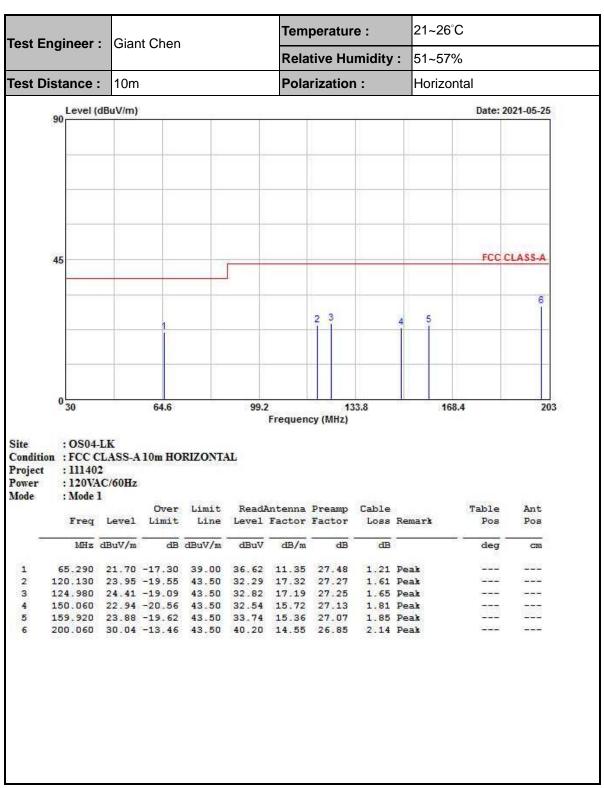
FullSpectrum



## **Final Result**

Frequency	QuasiPeak	CAverage	Limit	Margin	Line	Filter	Corr.
(MHz)	(dBuV)	(dBuV)	(dBuV)	(dB)			(dB)
0.167550		33.75	66.00	32.25	N	OFF	19.7
0.167550	46.42		79.00	32.58	N	OFF	19.7
0.231810		35.80	66.00	30.20	N	OFF	19.7
0.231810	43.21	-	79.00	35.79	N	OFF	19.7
0.499200		35.84	66.00	30.16	N	OFF	19.9
0.499200	40.15		79.00	38.85	N	OFF	19.9
0.706920		37.35	60.00	22.65	N	OFF	20.1
0.706920	38.41	-	73.00	34.59	N	OFF	20.1
2.237820		25.35	60.00	34.65	N	OFF	20.2
2.237820	27.54	-	73.00	45.46	N	OFF	20.2
11.892750		32.11	60.00	27.89	N	OFF	20.3
11.892750	35.70		73.00	37.30	N	OFF	20.3

## **Appendix B. Radiated Emission Test Result**



**Report No. : FC111402** 

TEL: 886-3-327-3456 Page Number : B1 of B6

Test Engineer : Giant Chen

Temperature : 21~26°C

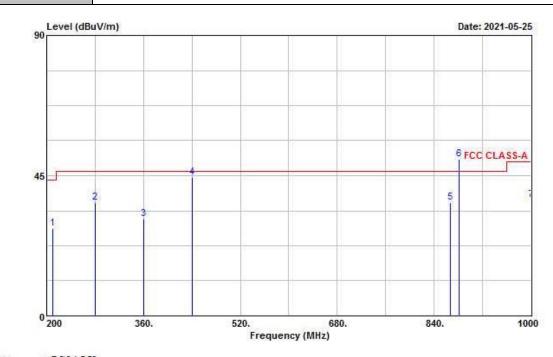
Relative Humidity : 51~57%

Test Distance : 10m

Polarization : Horizontal

Report No. : FC111402

**Remark:** #6 is system simulator signal which can be ignored.



Site : OS04-LK

Condition : FCC CLASS-A 10m HORIZONTAL

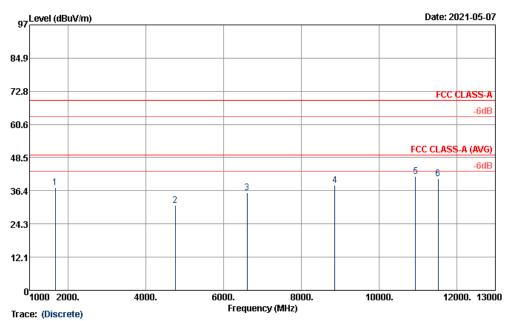
Project : 111402 Power : 120VAC/60Hz Mode : Mode 1

		Over	Limit	Read	Antenna	Preamp	Cable		Table	Ant
Freq	Level	Limit	Line	Level	Factor	Factor	Loss	Remark	Pos	Pos
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		deg	cm
209.600	28.02	-15.48	43.50	38.05	14.58	26.81	2.20	Peak	2.22	200
280.000	36.31	-10.09	46.40	42.37	18.14	26.68	2.48	Peak	1000	
360.000	31.09	-15.31	46.40	35.41	19.91	27.14	2.91	Peak		
440.000	44.46	-1.94	46.40	46.90	21.98	27.71	3.29	QP	248	249
867.200	36.34	-10.06	46.40	33.26	25.67	27.67	5.08	Peak	222	
881.600	50.29			46.99	25.71	27.57	5.16	Peak	1000	
1000.000	37.19	-12.31	49.50	32.00	26.48	27.05	5.76	Peak		
	MHz 209.600 280.000 360.000 440.000 867.200 881.600	MHz dBuV/m 209.600 28.02 280.000 36.31 360.000 31.09 440.000 44.46 867.200 36.34 881.600 50.29	MHz dBuV/m dB  209.600 28.02 -15.48 280.000 36.31 -10.09 360.000 31.09 -15.31 440.000 44.46 -1.94 867.200 36.34 -10.06 881.600 50.29	### Treq Level Limit Line    MHz   dBuV/m   dB   dBuV/m	MHz         dBuV/m         dB         dBuV/m         dBuV         dBuV/m         dBuV         dBuV	Freq Level Limit Line Level Factor  MHz dBuV/m dB dBuV/m dBuV dB/m  209.600 28.02 -15.48 43.50 38.05 14.58 280.000 36.31 -10.09 46.40 42.37 18.14 360.000 31.09 -15.31 46.40 35.41 19.91 440.000 44.46 -1.94 46.40 46.90 21.98 867.200 36.34 -10.06 46.40 33.26 25.67 881.600 50.29 46.99 25.71	Freq Level Limit Line Level Factor Factor  MHz dBuV/m dB dBuV/m dBuV dB/m dB  209.600 28.02 -15.48 43.50 38.05 14.58 26.81 280.000 36.31 -10.09 46.40 42.37 18.14 26.68 360.000 31.09 -15.31 46.40 35.41 19.91 27.14 440.000 44.46 -1.94 46.40 46.90 21.98 27.71 867.200 36.34 -10.06 46.40 33.26 25.67 27.67 881.600 50.29 46.99 25.71 27.57	Freq Level Limit Line Level Factor Factor Loss  MHz dBuV/m dB dBuV/m dBuV dB/m dB dB  209.600 28.02 -15.48 43.50 38.05 14.58 26.81 2.20 280.000 36.31 -10.09 46.40 42.37 18.14 26.68 2.48 360.000 31.09 -15.31 46.40 35.41 19.91 27.14 2.91 440.000 44.46 -1.94 46.40 46.90 21.98 27.71 3.29 867.200 36.34 -10.06 46.40 33.26 25.67 27.67 5.08 881.600 50.29 46.99 25.71 27.57 5.16	Freq Level Limit Line Level Factor Factor Loss Remark  MHz dBuV/m dB dBuV/m dBuV dB/m dB dB  209.600 28.02 -15.48 43.50 38.05 14.58 26.81 2.20 Peak 280.000 36.31 -10.09 46.40 42.37 18.14 26.68 2.48 Peak 360.000 31.09 -15.31 46.40 35.41 19.91 27.14 2.91 Peak 440.000 44.46 -1.94 46.40 46.90 21.98 27.71 3.29 QP 867.200 36.34 -10.06 46.40 33.26 25.67 27.67 5.08 Peak 881.600 50.29 46.99 25.71 27.57 5.16 Peak	Freq Level Limit Line Level Factor Factor Loss Remark Pos  MHz dBuV/m dB dBuV/m dBuV dB/m dB dB deg  209.600 28.02 -15.48 43.50 38.05 14.58 26.81 2.20 Peak 280.000 36.31 -10.09 46.40 42.37 18.14 26.68 2.48 Peak 360.000 31.09 -15.31 46.40 35.41 19.91 27.14 2.91 Peak 440.000 44.46 -1.94 46.40 46.90 21.98 27.71 3.29 QP 248 867.200 36.34 -10.06 46.40 33.26 25.67 27.67 5.08 Peak 881.600 50.29 46.99 25.71 27.57 5.16 Peak

TEL: 886-3-327-3456 Page Number : B2 of B6

24~26°C Temperature : Test Engineer: Nick Yu **Relative Humidity:** 38~42% Polarization: Test Distance: 3m Horizontal

Report No. : FC111402



:03CH06-HY Site

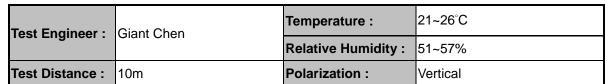
:FCC CLASS-A 3m 9120D\_1156\_200915 HORIZONTAL Condition

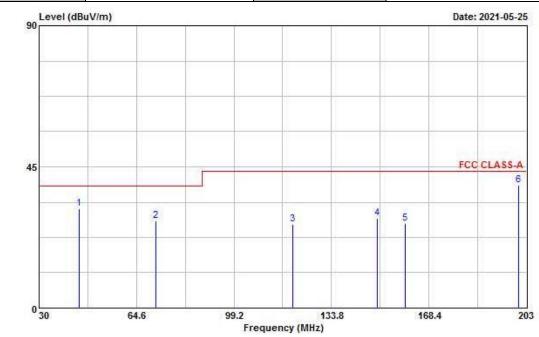
Project :111402 Power :120Vac/60Hz Memo :Mode 1

Frequency	Level	Distance extrapolation	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak
		Factor	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Average
(MHz)	( dBµV/m )	( dB )	(dB)	( dBµV/m )	(dBµV)	( dB/m )	(dB)	( dB )	( cm )	( deg )	(P/A)
1666	37.46	10.45	-32.08	69.54	80.47	25.07	6.11	63.74	-	-	Р
4754	31.03	10.45	-38.51	69.54	63.05	31.3	10.88	63.75	-	-	Р
6602	35.69	10.45	-33.85	69.54	62.7	34.3	13.13	63.99	1	1	Р
8862	38.45	10.45	-31.09	69.54	59.57	37.8	15.96	64.43	ı	1	Р
10942	41.56	10.45	-27.98	69.54	57.08	40.55	17.83	63.45	100	0	Р
11530	40.77	10.45	-28.77	69.54	56.17	40.07	18.38	63.4	-	-	Р

TEL: 886-3-327-3456 Page Number : B3 of B6

CC EMI TEST REPORT Report No. : FC111402





Site : OS04-LK

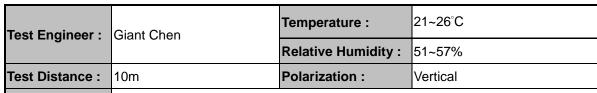
Condition : FCC CLASS-A 10m VERTICAL

Project : 111402 Power : 120VAC/60Hz Mode : Mode 1

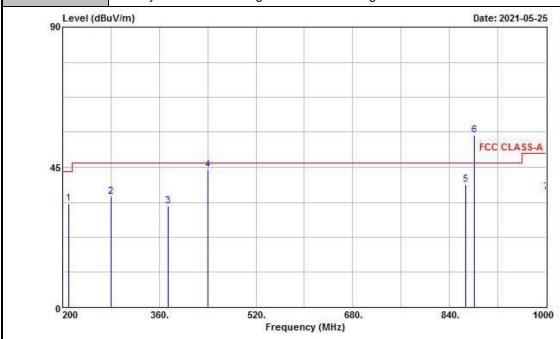
			Over	Limit	Read	Antenna	Preamp	Cable		Table	Ant
	Freq	Level	Limit	Line	Level	Factor	Factor	Loss	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	ş.	deg	cm
1	44.190	31.72	-7.28	39.00	42.46	15.73	27.54	1.07	Peak	222	
2	71.520	27.89	-11.11	39.00	42.66	11.38	27.46	1.31	Peak		
3	120.130	26.78	-16.72	43.50	35.12	17.32	27.27	1.61	Peak	1000	
4	150.060	28.52	-14.98	43.50	38.12	15.72	27.13	1.81	Peak	777	
5	159.920	26.93	-16.57	43.50	36.79	15.36	27.07	1.85	Peak		
6	200.060	39.05	-4.45	43.50	49.21	14.55	26.85	2.14	Peak		

TEL: 886-3-327-3456 Page Number: B4 of B6

CC EMI TEST REPORT Report No. : FC111402



**Remark:** #6 is system simulator signal which can be ignored.



Site : OS04-LK

Condition : FCC CLASS-A 10m VERTICAL

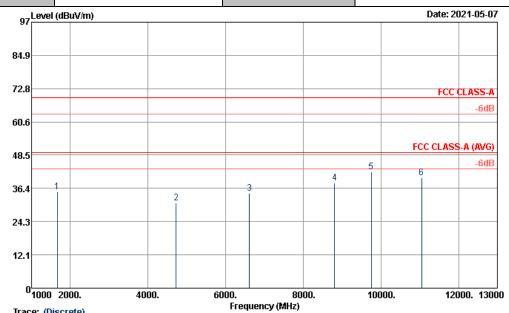
Project : 111402 Power : 120VAC/60Hz Mode : Mode 1

			Over	Limit	Read	Antenna	Preamp	Cable		Table	Ant
	Freq	Level	Limit	Line	Level	Factor	Factor	Loss	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	Š.	deg	cm
1	209.600	33.40	-10.10	43.50	43.43	14.58	26.81	2.20	Peak	0.00	
2	280.000	35.57	-10.83	46.40	41.63	18.14	26.68	2.48	Peak		
3	374.400	32.37	-14.03	46.40	36.50	20.15	27.24	2.96	Peak	:	-
4	440.000	44.06	-2.34	46.40	46.50	21.98	27.71	3.29	QP	22	100
5	867.200	39.33	-7.07	46.40	36.25	25.67	27.67	5.08	Peak		
6 8	881.600	55.37			52.07	25.71	27.57	5.16	Peak		
7	1000.000	36.83	-12.67	49.50	31.64	26.48	27.05	5.76	Peak		-

TEL: 886-3-327-3456 Page Number : B5 of B6

24~26°C Temperature : Test Engineer : Nick Yu **Relative Humidity:** 38~42% Test Distance: 3m Polarization: Vertical

Report No. : FC111402



Trace: (Discrete)

:03CH06-HY Site

Condition:FCC CLASS-A 3m 9120D\_1156\_200915 VERTICAL

Project :111402 Power :120Vac/60Hz : Mode 1 Memo

Frequency	Level	Distance extrapolation	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak
		Factor	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Average
(MHz)	( dBµV/ m )	( dB )	( dB )	( dBµV/m )	(dBµV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)
1666	35.22	10.45	-34.32	69.54	78.23	25.07	6.11	63.74	ı	-	Р
4728	31.17	10.45	-38.37	69.54	63.26	31.23	10.88	63.75	1	-	Р
6618	34.63	10.45	-34.91	69.54	61.66	34.3	13.11	63.99	-	-	Р
8806	38.4	10.45	-31.14	69.54	59.57	37.8	15.91	64.43	-	-	Р
9748	42.43	10.45	-27.11	69.54	61.61	39.1	16.5	64.33	100	0	Р
11054	40.17	10.45	-29.37	69.54	55.77	40.35	17.93	63.43	1	-	Р

TEL: 886-3-327-3456 Page Number : B6 of B6