



Page: 1 / 46 Rev.: 01

RADIO TEST REPORT FCC 47 CFR PART 15 SUBPART C

Test Standard	FCC Part 15.247
Product name	Gpacers Poseidon Tracker
Brand Name	gpacers
Model No.	GPT-T1, GPT-T2
Test Result	Pass
Statements of Conformity	Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.

The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc. (Wugu Laboratory)

Approved by:

Komil Ison

Kevin Tsai Deputy Manager

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

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Page: 2 / 46 Rev.: 01

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	February 25, 2021	Initial Issue	ALL	Mita Wu
01	March 05, 2021	See the following note Rev.(01)	P.4-5, P.14	Mita Wu

Rev.(01)

1. Revised EUT information remark and Antenna information remark description.

2. Revised Occupied Bandwidth (99%).



Page: 3 / 46 Rev.: 01

Table of contents

1.	GENERAL INFORMATION	4
1.1	EUT INFORMATION	4
1.2	EUT CHANNEL INFORMATION	5
1.3	ANTENNA INFORMATION	5
1.4	MEASUREMENT UNCERTAINTY	6
1.5	FACILITIES AND TEST LOCATION	7
1.6	INSTRUMENT CALIBRATION	7
1.7	SUPPORT AND EUT ACCESSORIES EQUIPMENT	8
1.8	TEST METHODOLOGY AND APPLIED STANDARDS	8
2.	TEST SUMMERY	9
3.	DESCRIPTION OF TEST MODES 1	0
3.1	THE WORST MODE OF OPERATING CONDITION 1	0
3.2	THE WORST MODE OF MEASUREMENT 1	1
3.3	EUT DUTY CYCLE 1	
4.	TEST RESULT 1	3
4.1	AC POWER LINE CONDUCTED EMISSION 1	3
4.2	6dB BANDWIDTH AND OCCUPIED BANDWIDTH(99%) 1	4
4.3	OUTPUT POWER MEASUREMENT 1	6
4.4	POWER SPECTRAL DENSITY 1	8
4.5	CONDUCTED BAND EDGE AND SPURIOUS EMISSION 2	0
4.6	RADIATION BANDEDGE AND SPURIOUS EMISSION 2	3
APPE	NDIX 1 - PHOTOGRAPHS OF EUT	



1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	Gpacers Technology 4th Floor, No.168 Yongji Road, Xinyi District, Taipei 110, Taiwan				
Manufacturer	Gpacers Technology 4th Floor, No.168 Yongji Road, Xinyi District, Taipei 110, Taiwan				
Equipment	Gpacers Poseidon Tracker				
Model No.	GPT-T1, GPT-T2				
Model Discrepancy	The additional automatic water triggered function to send the distress signal designed in GPT-T2 is the major difference between the GPT-T1.				
Trade Name	gpacers				
Received Date	September 23, 2020				
Date of Test	October 05, 2020 ~ January 05, 2021				
Power Supply	Power from Battery. (DC 3V)				

Remark:

1. Disclaimer: The variant model numbers / trademarks are assessed as identical in hardware and software to each other, hence all variants are fully covered by the test results in this test report without further verification test.

2. Disclaimer: Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.



Page: 5 / 46 Rev.: 01

1.2 EUT CHANNEL INFORMATION

Frequency Range	920.5 MHz-924.5 MHz			
Modulation Type	CSS			
Number of channels	9 Channels			

Remark:

Refer as ANSI C63.10: 2013 clause 5.6.1 Table 4 for test channels

Number of frequencies to be tested					
Frequency range inNumber ofLocation in frequencywhich device operatesfrequenciesrange of operation					
1 MHz or less	1	Middle			
1 MHz to 10 MHz	2	1 near top and 1 near bottom			
More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom			

1.3 ANTENNA INFORMATION

Antenna Type	CHIP I PIFA PCB Dipole Coils				
Antenna Gain	Gain: 2.11 dBi				
Antenna Connector	N/A				

Remark:

1. The antenna(s) of the EUT are permanently attached and there are no provisions for connection to an external antenna. So the EUT complies with the requirements of §15.203.



Page: 6 / 46 Rev.: 01

1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	+/- 1.2575
Emission bandwidth, 20dB bandwidth	+/- 0.0014
RF output power, conducted	+/- 1.14
Power density, conducted	+/- 1.40
3M Semi Anechoic Chamber / 30M~200M	+/- 4.12
3M Semi Anechoic Chamber / 200M~1000M	+/- 4.68
3M Semi Anechoic Chamber / 1G~8G	+/- 5.18
3M Semi Anechoic Chamber / 8G~18G	+/- 5.47
3M Semi Anechoic Chamber / 18G~26G	+/- 3.81
3M Semi Anechoic Chamber / 26G~40G	+/- 3.87

Remark:

1. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2

2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.



Page: 7 / 46 Rev.: 01

Report No.: T200923W01-RP

1.5 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at No.11, Wugong 6th Rd., Wugu Dist., New Taipei City, Taiwan. (R.O.C.)

Test site	Test Engineer	Remark
AC Conduction Room	N/A	Not applicable, because EUT doesn't connect to AC Main Source direct.
Radiation	Jerry Chang	-
RF Conducted	Rick Lee	-

Remark: The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

1.6 INSTRUMENT CALIBRATION

RF Conducted Test Site						
Equipment	Manufacturer Model Serial Number Calibration Date Calibration D					
Coaxial Cable	Woken	WC12	CC003	06/29/2020	06/28/2021	
Signal Analyzer	R&S	FSV 40	101073	09/17/2020	09/16/2021	
Power Meter	Anritsu	ML2487A	6K00003260	05/21/2020	05/20/2021	
Power Seneor	Anritsu	MA2490A	032910	05/21/2020	05/20/2021	
Software			N/A			

3M 966 Chamber Test Site						
Equipment	Manufacturer	Manufacturer Model Serial Number Calibration Date Calib				
Band Reject Filters	MICRO TRONICS	BRM 50702	120	02/25/2020	02/24/2021	
Bilog Antenna	Sunol Sciences	JB3	A030105	07/24/2020	07/23/2021	
Coaxial Cable	HUBER SUHNER	SUCOFLEX 104PEA	20995	02/25/2020	02/24/2021	
Coaxial Cable	EMCI	EMC105	190914+327109/4	09/19/2020	09/18/2021	
Digital Thermo-Hygro Meter	WISEWIND	1206	D07	01/15/2020	01/14/2021	
double Ridged Guide Horn Antenna	ETC	MCTD 1209	DRH13M02003	09/30/2020	09/29/2021	
Loop Ant	COM-POWER	AL-130	121051	03/27/2020	03/26/2021	
Pre-Amplifier	EMEC	EM330	060609	02/25/2020	02/24/2021	
Pre-Amplifier	EMEC	EM01G26G	060570	06/29/2020	06/28/2021	
PSA Series Spectrum Analyzer	Agilent	E4446A	MY46180323	07/24/2020	07/23/2021	
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R	
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R	
Turn Table	CCS	CC-T-1F N/A N.C.R N.C.R			N.C.R	
Software	e3 6.11-20180413					

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. N.C.R. = No Calibration Required.



Page: 8 / 46 Rev.: 01

Report No.: T200923W01-RP

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1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

EUT Accessories Equipment							
No.	No. Equipment Brand Model Series No. FCC ID						
	N/A						

	Support Equipment					
No. Equipment Brand Model Series No. FCC ID					FCC ID	
	N/A					

1.8 TEST METHODOLOGY AND APPLIED STANDARDS

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC Part 2, FCC Part 15.247.



Page: 9 / 46 Rev.: 01

2. TEST SUMMARY

FCC Standard Section	Report Section	Test Item	Result
15.203	1.3	Antenna Requirement	Pass
15.207(a)	4.1	AC Conducted Emission	N/A
15.247(a)(2)	4.2	6 dB Bandwidth	Pass
-	4.2	Occupied Bandwidth (99%)	Pass
15.247(b)(3)	4.3	Output Power Measurement	Pass
15.247(e)	4.4	Power Spectral Density	Pass
15.247(d)	4.5	Conducted Spurious Emission	Pass
15.247(d)	4.5	Conducted Emission	Pass
15.247(d)	4.6	Radiation Band Edge	Pass
15.247(d)	4.6	Radiation Spurious Emission	Pass



Page: 10 / 46 Rev.: 01

3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF OPERATING CONDITION

Operation mode	LoRa: 920.5 MHz ~ 924.5 MHz
Test Channel Frequencies	1.Lowest Channel : 920.5 MHz 2.Highest Channel : 924.5 MHz

Remark:

г

1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.



Page: 11 / 46 Rev.: 01

3.2 THE WORST MODE OF MEASUREMENT

Radiated Emission Measurement Above 1G				
Test Condition	Band edge, Emission for Unwanted and Fundamental			
Power supply Mode	Power supply Mode Mode 1: EUT power by Battery			
Worst Mode	Worst Mode Mode 1 Mode 2 Mode 3 Mode 4			
Worst Position Image: Placed in fixed position at X-Plane (E2-Plane) Image: Placed in fixed position at Y-Plane (E1-Plane) Image: Placed in fixed position at Y-Plane (E1-Plane) Image: Placed in fixed position at Y-Plane (H-Plane) Image: Placed in fixed position at Z-Plane (H-Plane)				

Radiated Emission Measurement Below 1G					
Test Condition	Test Condition Radiated Emission Below 1G				
Power supply Mode	Power supply Mode Mode 1: EUT power by Battery				
Worst Mode Mode 1 Mode 2 Mode 3 Mode 4					

Remark:

1. The worst mode was record in this test report.

2. EUT pre-scanned in three axis, X, Y, Z and two polarity, Horizontal and Vertical for radiated measurement. The worst case (Y-Plane) were recorded in this report



Page: 12 / 46 Rev.: 01

3.3 EUT DUTY CYCLE

Duty Cycle					
Configuration TX ON (ms) TX ALL (ms) Duty Cycle (%)					
LoRa	13.04	502.17	2.60%		

		LoRa	a		
Spectrum					E
Ref Level 20.00 dBn		RBW 1 MHz			
● Att 30 dB ● 1Pk View	3 👄 SWT 1.5 s 👄 🕅	BW 1 MHz			
DIPK VIEW			D2[1]		-0.73 dB
10 dBm					502.17 ms
Π		1	M1[1]		-44.33 dBm 628.26 ms
0 dBm					
-10 dBm					
-20 dBm					
-30 dBm					
-40 dBm	-	martin the month where	warman har and the standard har	www.comerco	Margan - William - Margan
-50 dBm	· · ·				
-60 dBm					
-70 dBm					
CF 920.5 MHz		691 pts			150.0 ms/
Marker		091 pt	>		130.0 ms/
Type Ref Trc	X-value	Y-value	Function	Function	Result
M1 1 D1 M1 1	628.26 ms 13.04 ms	-44.33 dBm 0.06 dB			
D2 M1 1	502.17 ms	-0.73 dB			
			Measuring		21.10.2020 15:21:06
Date: 21.0CT.2020 1	5:21:07				



Page: 13 / 46 Rev.: 01

4. TEST RESULT

4.1 AC POWER LINE CONDUCTED EMISSION

4.1.1 Test Limit

According to §15.207(a),

Frequency Range	Limits(dBµV)		
(MHz)	Quasi-peak	Average	
0.15 to 0.50	66 to 56*	56 to 46*	
0.50 to 5	56	46	
5 to 30	60	50	

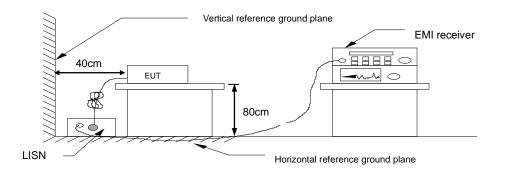
* Decreases with the logarithm of the frequency.

4.1.2 Test Procedure

Test method Refer as ANSI C63.10: 2013 clause 6.2,

- 1. The EUT was placed above horizontal ground plane and 0.4m above vertical ground plane
- 2. EUT connected to the line impedance stabilization network (LISN)
- 3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. Recorded Line for Neutral and Line.

4.1.3 Test Setup



4.1.4 Test Result

Not applicable, because EUT not connect to AC Main Source direct.



Page: 14 / 46 Rev.: 01

4.26dB BANDWIDTH AND OCCUPIED BANDWIDTH (99%)

4.2.1 Test Limit

According to §15.247(a)(2),

6 dB Bandwidth :

Limit

Shall be at least 500kHz

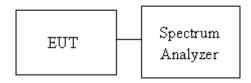
Occupied Bandwidth(99%) : For reporting purposes only.

4.2.2 Test Procedure

Test method Refer as ANSI C63.10: 2013 clause 6.9.2,

- 1. The EUT RF output connected to the spectrum analyzer by RF cable.
- 2. Setting maximum power transmit of EUT.
- 3. SA set RBW =100KHz, VBW = 300KHz and Detector = Peak, to measurement 6dB Bandwidth.
- 4. SA set RBW = 1% ~ 5% OBW, VBW = three times the RBW and Detector = Peak, to measurement 99% Bandwidth.
- 5. Measure and record the result of 6 dB Bandwidth and 99% Bandwidth. in the test report.

4.2.3 Test Setup



4.2.4 Test Result

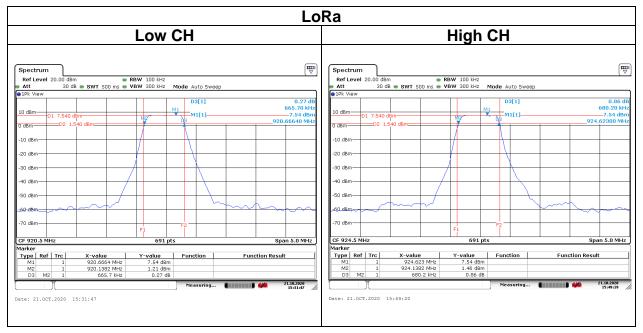
Temperature:	24°C	Test Date:	October 21, 2020
Humidity:	50% RH	Test by:	Rick Lee

Test mode: LoRa mode / 920-925 MHz					
Channel	Frequency (MHz)	OBW (99%) (MHz)	6dB BW (MHz)	6dB limit (kHz)	
Low	920.5	0.6005	0.6657	. 500	
High	924.5	0.6150	0.6802	>500	

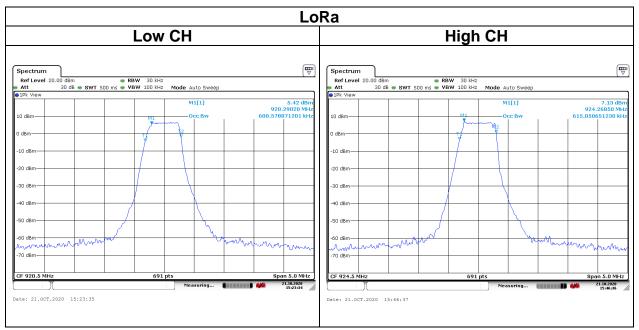


Page: 15 / 46 Rev.: 01

6dB BANDWIDTH Test Data



BANDWIDTH (99%) Test Data





Page: 16 / 46 Rev.: 01

4.3 OUTPUT POWER MEASUREMENT

4.3.1 Test Limit

According to §15.247(b)(3).

Peak output power :

For systems using digital modulation in the 902-928 MHz: 1 Watt(30 dBm), base on the use of antennas with directional gain not exceed 6 dBi If transmitting antennas of directional gain greater than 6dBi are used the peak output power the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

Limit \bigtriangleup Antenna not exceed 6 dBi : 30dBmLimit \square Antenna with DG greater than 6 dBi[Limit = 30 - (DG - 6)] \square Point-to-point operation	
---	--

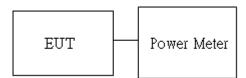
Average output power : For reporting purposes only.

4.3.2 Test Procedure

Test method Refer as ANSI C63.10:2013.

- 1. The EUT RF output connected to the power meter by RF cable.
- 2. Setting maximum power transmit of EUT.
- 3. The path loss was compensated to the results for each measurement.
- 4. Measure and record the result of Peak output power and Average output power. in the test report.

4.3.3 Test Setup





Page: 17 / 46 Rev.: 01

4.3.4 Test Result

Temperature:	24°C	Test Date:	October 21, 2020
Humidity:	50% RH	Test by:	Rick Lee

Peak output power :

LoRa Mode								
Config.	СН	Freq. (MHz)	Power Settin g	PK Power (dBm)	PK Power (W)	Limit (dBm)		
920~925M	Low	920.5	Default	19.38	0.0867	30		
920~925101	High	924.5	Default	19.33	0.0857			

Average output power :

LoRa Mode						
Config.	СН	Freq. (MHz)	AV Power (dBm)			
920~925M	Low	920.5	19.00			
920~925101	High	924.5	19.21			



Page: 18 / 46 Rev.: 01

4.4 POWER SPECTRAL DENSITY

4.4.1 Test Limit

According to §15.247(e),

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Limit

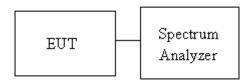
Antenna not exceed 6 dBi : 8dBm Antenna with DG greater than 6 dBi [Limit = 8 - (DG - 6)] Point-to-point operation :

4.4.2 Test Procedure

Test method Refer as ANSI C63.10:2013.

- 1. The EUT RF output connected to the spectrum analyzer by RF cable.
- 2. Setting maximum power transmit of EUT
- 3. SA set RBW = 3kHz, VBW = 30kHz, Span = 1.5 times DTS Bandwidth (6 dB BW), Detector = Peak, Sweep Time = Auto and Trace = Max hold.
- 4. The path loss and Duty Factor were compensated to the results for each measurement by SA.
- 5. Mark the maximum level.
- 6. Measure and record the result of power spectral density. in the test report.

4.4.3 Test Setup



4.4.4 Test Result

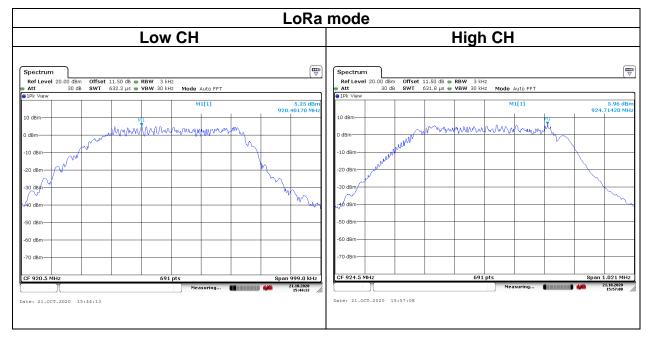
Temperature:	24°C	Test Date:	October 21, 2020
Humidity:	50% RH	Test by:	Rick Lee



Page: 19 / 46 Rev.: 01

Test mode: LoRa mode / 920-925 MHz					
Channel	Frequency (MHz)	PSD (dBm)	FCC limit (dBm)		
Low	920.5	5.25	0		
High	924.5	5.96	8		

Test Data





Page: 20 / 46 Rev.: 01

4.5 CONDUCTED BAND EDGE AND SPURIOUS EMISSION

4.5.1 Test Limit

According to §15.247(d),

In any 100 kHz bandwidth outside the authorized frequency band,

Non-restricted bands shall be attenuated at least 20 dB/30 dB relative to the maximum PSD level in 100 kHz by RF conducted or a radiated measurement which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

4.5.2 Test Procedure

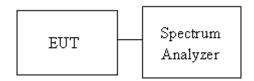
Test method Refer as ANSI C63.10:2013.

1. EUT RF output port connected to the SA by RF cable, and the path loss was compensated to result.

2. SA setting, RBW=100kHz, VBW=300kHz, Detector=Peak, Trace mode = max hold, SWT = Auto.

3. In any 100 kHz bandwidth outside the authorized frequency band, shall be attenuated at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when conducted power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

4.5.3 Test Setup



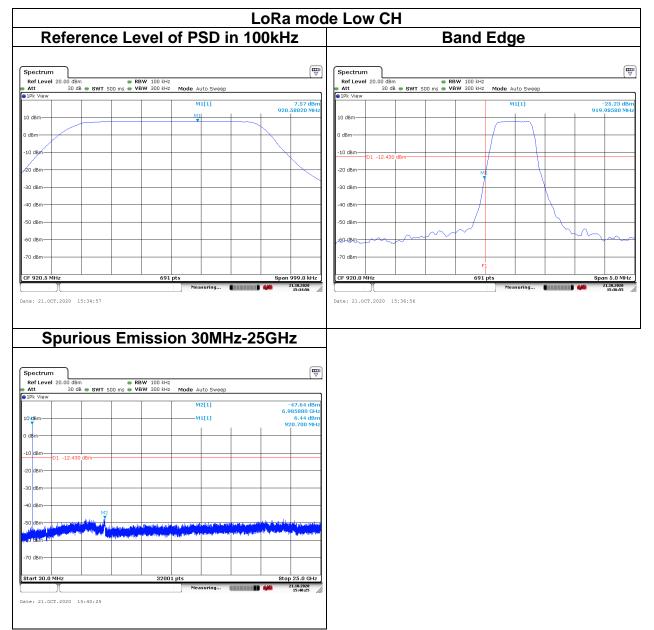


Page: 21 / 46 Rev.: 01

4.5.4 Test Result

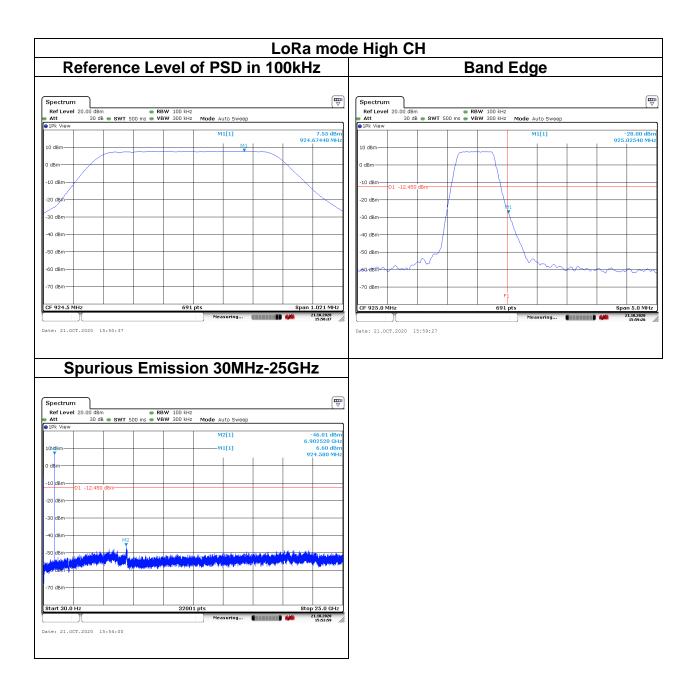
Temperature:	24°C	Test Date:	October 21, 2020
Humidity:	50% RH	Test by:	Rick Lee

Test Data





Page: 22 / 46 Rev.: 01





Page: 23 / 46 Rev.: 01

4.6 RADIATION BANDEDGE AND SPURIOUS EMISSION

4.6.1 Test Limit

FCC according to §15.247(d), §15.209 and §15.205,

In any 100 kHz bandwidth outside the authorized frequency band, all harmonic and spurious must be least 20 dB below the highest emission level with the authorized frequency band. Radiation emission which fall in the restricted bands must also follow the FCC section 15.209 as below limit in table.

Below 30 MHz

Frequency	Field Strength (microvolts/m)	Magnetic H-Field (microamperes/m)	Measurement Distance (metres)
9-490 kHz	2,400/F (F in kHz)	2,400/F (F in kHz)	300
490-1,705 kHz	24,000/F (F in kHz)	24,000/F (F in kHz)	30
1.705-30 MHz	30	N/A	30

Above 30 MHz

Frequency	Field Strength microvolts/m at 3 metres (watts, e.i.r.p.)				
(MHz)	Transmitters	Receivers			
30-88	100 (3 nW)	100 (3 nW)			
88-216	150 (6.8 nW)	150 (6.8 nW)			
216-960	200 (12 nW)	200 (12 nW)			
Above 960	500 (75 nW)	500 (75 nW)			

Remark:

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.



Page: 24 / 46 Rev.: 01

4.6.2 Test Procedure

Test method Refer as ANSI C63.10:2013.

1. The EUT is placed on a turntable, Above 1 GHz is 1.5m and below 1 GHz is 0.8m above ground plane. The EUT Configured un accordance with ANSI C63.10: 2013, and the EUT set in a continuous mode.

2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. And EUT is set 3m away from the receiving antenna, which is scanned from 1m to 4m above the ground plane to find out the highest emissions. Measurement are made polarized in both the vertical and the horizontal positions with antenna.

3. Span shall wide enough to full capture the emission measured. The SA from 9KHz to 26.5GHz set to the low, Mid and High channels with the EUT transmit.

Remark:

 Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.
No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).

- 4. The SA setting following :
 - (1) Below 1G : RBW = 100kHz, VBW ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.
 - (2) Above 1G:
 - (2.1) For Peak measurement : RBW = 1MHz, VBW ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.
 - (2.2) For Average measurement : RBW = 1MHz, VBW

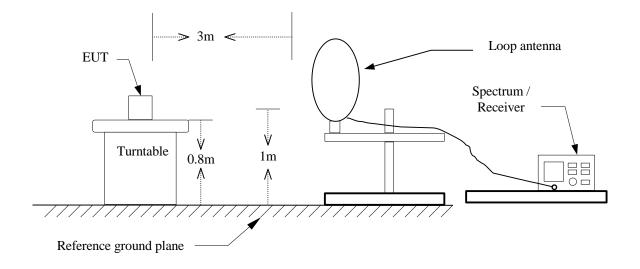
If Duty Cycle \geq 98%, VBW=10Hz.

'If Duty Cycle < 98%, VBW=1/T.

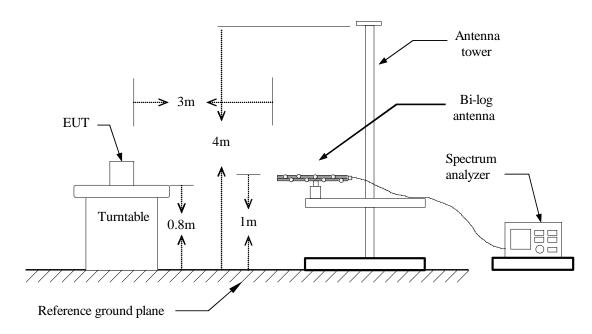


Page: 25 / 46 Rev.: 01

4.6.3 Test Setup <u>9kHz ~ 30MHz</u>



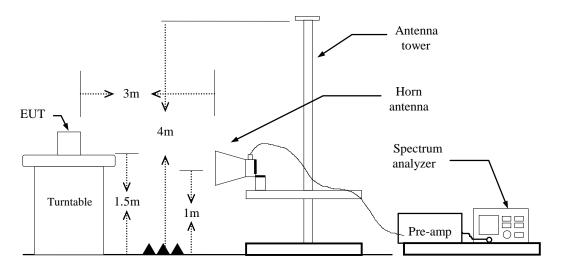
<u>30MHz ~ 1GHz</u>





Page: 26 / 46 Rev.: 01

Above 1 GHz





Page: 27 / 46 Rev.: 01

4.6.4 Test Result

Band Edge Test Data

Test Mod	le	Low CH 920.5 MHz		emp/Hum	21.4(°C) / 60%RH	
Test Iten	n	Band Edge	1	Fest Date	Novemb	er 6, 2020
Polarize	;	Vertical	Tes	st Engineer	Jerry	Chang
Detector	r P	eak / Average				
130 Level (dBuV/	m)					
120				T		
100						
80						
60						
40			1			
20			2			
0 907.5	910.5	913.5 Free	91 quency (MHz)	16.5	919.5	<mark>922.5</mark>
Frequency	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
(MHz)	(PK/QP/AV)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)
915.00	Peak	26.73	3.26	29.99	74.00	-44.01
915.00	Average	14.46	3.26	17.72	54.00	-36.28
	•	·		•		



Page: 28 / 46 Rev.: 01

Test Mode		Low CH 920.5 MHz		emp/Hum	21.4(°C) / 60%RI	
Test Item		Band Edge		Test Date	Novemb	er 6, 202
Polarize		Horizontal	Tes	st Engineer		Chang
Detector	P	eak / Average				
30 Level (dBuV/m)						
00						
80						
60						
40			1			
20			2			
0 <mark>907.5</mark>	910.5	913.5 Freq	9 [.] juency (MHz)	16.5	919.5	922.5
	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
· / ·					(dBµV/m)	(dB)
	Peak				74.00	-32.12
915.00	Average	15.00	3.26	18.26	54.00	-35.74
(MHz) (P 915.00	Mode K/QP/AV) Peak	-	(dB) 3.26	FS (dBµV/m) 41.88	@: (dBµ 74.	3m I V/m) .00



Page: 29 / 46 Rev.: 01

Test Mod	le	High CH 924.5 MHz		emp/Hum	25.3(°C) / 52%RI	
Test Iten	n	Band Edge		Fest Date	Novemb	er 6, 202
Polarize)	Vertical	Tes	st Engineer		Chang
Detecto	r F	Peak / Average				
130 Level (dBuV/	m)					
100						
80						
60						
40			1			
20			2			
0 922.5	925.5	928.5 Freq	9: Juency (MHz)	31.5	934.5	937.5
Frequency	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
(MHz)	(PK/QP/AV)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)
930.00	Peak	25.93	3.56	29.49	74.00	-44.51
930.00	Average	14.10	3.56	17.66	54.00	-36.34



Page: 30 / 46 Rev.: 01

Test Mod	le	High CH 924.5 MHz		emp/Hum	25.3(°C) / 52%RI	
Test Iten	n	Band Edge		Test Date	Novemb	er 6, 202
Polarize	e	Horizontal	Tes	st Engineer		Chang
Detecto	r F	eak / Average				
130 Level (dBuV/	/m)					
120						
100						
80						
60						
40			1			
20			2			
0 922.5	925.5	928.5 Free	9: quency (MHz)	31.5	934.5	937.5
Frequency	Detector	Spectrum	Factor	Actual	Limit	Margin
(ML)-)	Mode	Reading Level		FS (dBu)//m)	@3m (dBu)//m)	
(MHz) 930.00	(PK/QP/AV) Peak	(dBµV) 37.15	(dB) 3.56	(dBµV/m) 40.71	(dBµV/m) 74.00	(dB) -33.29
930.00	Average	14.65	3.56	18.21	54.00	-35.79



Page: 31 / 46 Rev.: 01

Noramal Link Test Data

Test Mode	:	Noramal Linl	ĸ	Temp/Hum	23.1(°C)	23.1(°C)/ 57%RH	
Test Item	3	30MHz-1GH	z	Test Date	October	October 27, 2020	
Polarize		Vertical		Test Engineer	Jerry	Chang	
Detector		Peak					
120 Level (dBuV/m)						
110					· · · · · · · · · · · · · · · · · · ·		
90	·						
70							
50							
30						6	
	2 3		4				
10							
0 <mark></mark>	224.	418.	Eserveney (MU)	612.	806.	1000	
			Frequency (MH)	L)			
Frequency	Remark	Reading	Correct Factor	Result	Limit	Margir (dB)	
(MHz)	Komark	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(UD)	
(MHz) 42.61	Peak	(dBuV) 34.62		(dBuV/m) 23.03	(dBuV/m) 40.00		
			(dB/m)			-16.97	
42.61	Peak	34.62	(dB/m) -11.59	23.03	40.00	-16.97	
42.61 159.01	Peak Peak	34.62 31.07	(dB/m) -11.59 -10.31	23.03 20.76	40.00 43.50	-16.97 -22.74 -24.73 -23.12	
42.61 159.01 240.49	Peak Peak Peak Peak	34.62 31.07 32.02	(dB/m) -11.59 -10.31 -10.75	23.03 20.76 21.27	40.00 43.50 46.00	-16.97 -22.74 -24.73	



Page: 32 / 46 Rev.: 01

Test Mode	: 1	Noramal Lin	k 🔤	Temp/Hum	23.1(°C)	23.1(°C)/ 57%RH	
Test Item	3	30MHz-1GH	z	Test Date	October	27, 202	
Polarize		Horizontal		Test Engineer	Jerry	Chang	
Detector		Peak					
120 Level (dBuV/m)						
110	 						
90							
70	 						
50	·						
30	 				5	6	
		3	4		Ĭ		
10	 						
0 <mark>1</mark>	224.	418.		612.	806.	1000	
			Frequency (MH)	2)			
			0				
Frequency (MHz)	Remark	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	
105.66	Peak	34.14	-11.23	22.91	43.50	-20.59	
128.94	Peak	27.77	-9.10	18.67	43.50	-24.83	
379.20	Peak	26.27	-6.55	19.72	46.00	-26.28	
476.20	Peak	26.28	-3.45	22.83	46.00	-23.17	
	Peak	24.48	2.30	26.78	46.00	-19.22	
839.95	. court						



Page: 33 / 46 Rev.: 01

Main Test Data

Test Mode:	ſ	Main CH Low		Temp/Hum	25.3(°C)/	52%RH
Test Item		920.5 MHz		Test Date	October (05, 2020
Polarize		Vertical	Te	est Engineer	Jerry C	Chang
Detector		Peak				
130 Level (dBuV/m)			1			
120						
100						
80						
60					· · · · · · · · · · · · · · · · · · ·	
40						
20						
0 <mark>920</mark>	920.2	920.4	Frequency (MHz)	920.6	920.8	921
Frequency	Remark	Reading	Correct Factor	Result	Limit	Margir
(MHz)	Reinark	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)
920.29	Peak	104.40	3.22	107.62	114.00	-6.38



Page: 34 / 46 Rev.: 01

Test Mode:	I	Main CH Low	/	Temp/Hum	25.3(°C)/ 52%R	
Test Item		920.5 MHz		Test Date	October (05, 2020
Polarize		Horizontal	Т	est Engineer	Jerry C	Chang
Detector		Peak				
130 Level (dBuV/m)]
120						
100			 			
80						
60						
40						
20						
0 920	920.2	920.4 I	Frequency (MHz)	920.6	920.8	921
Frequency (MHz)	Remark	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margiı (dB)
920.28	Peak	109.24	3.22	112.46	114.00	-1.54



Page: 35 / 46 Rev.: 01

Below 1G Test Data

Model: GPT-T1

			Frequenc	·· / MILL->>			
0 30	224.	41	8.	612.	1	806.	1000
10							
	3			Ĭ			
301-	2	· · · · · · · · · · · · · · · · · · ·	4	5 6	 		7
50						1	
70							
90							
110							
120 Level (dBuV	//m)						
Detecto	or	Peak					
Polarize	е			Test Er	ngineer	Jerr	y Chang
Test Iter	n	30MHz-1GHz		Test	Date	Octobe	er 27, 202
Test Mod	ie.	Low CH		Temp/Hum		23.1(°C)/ 57%RI	

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
105.66	40.17	-11.23	28.94	43.50	-14.56	Peak
131.85	38.61	-9.17	29.44	43.50	-14.06	Peak
240.49	31.78	-10.75	21.03	46.00	-24.97	Peak
469.41	27.34	-3.72	23.62	46.00	-22.38	Peak
609.09	24.71	-1.56	23.15	46.00	-22.85	Peak
638.19	25.38	-0.53	24.85	46.00	-21.15	Peak
993.21	25.30	4.50	29.80	54.00	-24.20	Peak

Note: No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).



Page: 36 / 46 Rev.: 01

Test Mode	:	Low CH		Temp/Hum	23.1(°C)/ 57%RI
Test Item	4	30MHz-1GH	Ηz	Test Date	Octobe	r 27, 202
Polarize		Horizontal] –	Test Engineer	Jerry	Chang
Detector		Peak				
120 Level (dBuV/m))					
110	 		 			
90						
70						
50						
						6
30	2	3	4	5		
10		· · · · · · · · · · · · · · · · · · ·				
0 <mark></mark>	224.	418.		612.	806.	1000
			Frequency (MHz)	1		
						1
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
105.66	37.42	-11.23	26.19	43.50	-17.31	Peak
159.01	33.23	-10.31	22.92	43.50	-20.58	Peak
367.56	26.87	-6.61	20.26	46.00	-25.74	Peak
473.29	26.54	-3.55	22.99	46.00	-23.01	Peak
623.64	26.15	-1.07	25.08	46.00	-20.92	Peak
	24.57	4.60	29.17	54.00	-24.83	Peak



Page: 37 / 46 Rev.: 01

Test Mode:	Mode: High CH			Temp/Hum	23.1(°C)/ 57%RI
Test Item	3	80MHz-1GH	z	Test Date	Octobe	r 27, 202
Polarize		Vertical		Test Engineer	Jerry	Chang
Detector		Peak				
120 Level (dBuV/m))		1	i i	i]
110	 				 	
90					+	
70	 				 	
50						
30 1	2			5	 	6.
	3		4	Ĭ		
10					 	
0 <mark></mark> 30	224.	418.	Frequency (MH)	612.	806.	100
			Trequency (Min	-)		
		_				
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
105.66	36.89	-11.23	25.66	43.50	-17.84	Peak
159.01	35.78	-10.31	25.47	43.50	-18.03	Peak
240.49	31.68	-10.75	20.93	46.00	-25.07	Peak
500.45	26.44	-3.30	23.14	46.00	-22.86	Peak
634.31	25.20	-0.53	24.67	46.00	-21.33	Peak
990.30	24.49	4.29	28.78	54.00	-25.22	Peak



Page: 38 / 46 Rev.: 01

Test Mode	:	High CH		Temp/Hum	23.1(°C)/ 57%Rł
Test Item		30MHz-1GHz		Test Date	October 27, 2020	
Polarize	rize Horizontal		Т	est Engineer	Jerry	Chang
Detector		Peak				
120 Level (dBuV/m))					
110						
90						
70						
50						
30 2		3	4	5		
10						
0 <mark></mark>	224.	418.		612.	806.	1000
			Frequency (MHz)			
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
105.66	37.91	-11.23	26.68	43.50	-16.82	Peak
133.79	29.54	-9.36	20.18	43.50	-23.32	Peak
386.96	26.29	-6.36	19.93	46.00	-26.07	Peak
495.60	25.92	-3.29	22.63	46.00	-23.37	Peak
	25.25	1.12	26.37	46.00	-19.63	Peak
767.20	25.25					



Page: 39 / 46 Rev.: 01

Model: GPT-T2

Test Mode:		Low CH		Temp/Hum	23.1(°C)/ 57%R	
Test Item	3	30MHz-1GHz		Test Date	January 05, 202	
Polarize		Vertical	Te	est Engineer	Jerry	Chang
Detector		Peak				
120 Level (dBuV/m))					
110						
90						
70						
50						
30		3	4		5	6
12		Ĭ				
10						
0 <mark>1</mark> 30	224.	418.	Frequency (MHz)	612.	806.	1000
	1					
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
109.54	31.24	-10.52	20.72	43.50	-22.78	Peak
121.18	28.18	-9.22	18.96	43.50	-24.54	Peak
362.71	27.60	-6.68	20.92	46.00	-25.08	Peak
449.04	28.04	-4.31	23.73	46.00	-22.27	Peak
	23.99	2.45	26.44	46.00	-19.56	Peak
844.80						



Page: 40 / 46 Rev.: 01

Test Mode	:	Low CH		Temp/Hum	23.1(°C)/ 57%Rł
Test Item		30MHz-1GH	Ηz	Test Date	January 05, 202	
Polarize		Horizontal	l Te	est Engineer	Jerry	Chang
Detector		Peak				
120 Level (dBuV/m)					
110						
90						
70						
50	······		 			
					5	6
30 1 2		3	4		Ĭ	
10					· · · · · · · · · · · · · · · · · · ·	
0 <mark></mark>	224.	418.		612.	806.	1000
			Frequency (MHz)			
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
102.75	29.93	-12.09	17.84	43.50	-25.66	Peak
122.15	27.20	-8.97	18.23	43.50	-25.27	Peak
357.86	27.34	-6.88	20.46	46.00	-25.54	Peak
488.81	28.25	-3.35	24.90	46.00	-21.10	Peak
	24.60	2.47	27.07	46.00	-18.93	Peak
846.74					-25.13	Peak



Page: 41 / 46 Rev.: 01

Test Mode:		High CH	Т	emp/Hum	23.1(°C))/ 57%Rł
Test Item	3	30MHz-1GHz		Test Date	January	05, 202
Polarize		Vertical		st Engineer	Jerry	Chang
Detector		Peak				
120 Level (dBuV/m))					
110						
90						
70						
50						
						6
30		3	4		0	
10						
0 <mark></mark>	224.	418.		512.	806.	1000
			Frequency (MHz)			
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
109.54	30.12	-10.52	19.60	43.50	-23.90	Peak
121.18	28.20	-9.22	18.98	43.50	-24.52	Peak
361.74	27.07	-6.72	20.35	46.00	-25.65	Peak
	27.27	-3.36	23.91	46.00	-22.09	Peak
487.84	21.21					
487.84 801.15	25.31	1.60	26.91	46.00	-19.09	Peak



Page: 42 / 46 Rev.: 01

Test Mode:		High CH		Temp/Hum	23.1(°C)/ 57%RI
Test Item		30MHz-1GHz		Test Date	January	/ 05, 202
Polarize		Horizonta	-	Test Engineer	Jerry	^r Chang
Detector		Peak				
120 Level (dBuV/m)						
110						
90						
70	 					
50	 			· · · · · · · · · · · · · · · · · · ·		
						6
30		3	4			
10						
030	224.	418.		612.	806.	1000
50	224.	410.	Frequency (MHz)	012.	800.	1000
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
102.75	29.78	-12.09	17.69	43.50	-25.81	Peak
134.76	27.38	-9.36	18.02	43.50	-25.48	Peak
366.59	26.75	-6.60	20.15	46.00	-25.85	Peak
500.45	27.59	-3.30	24.29	46.00	-21.71	Peak
	26.09	0.40	26.49	46.00	-19.51	Peak
718.70				46.00	-17.08	Peak



Above 1G Test Data

			ency (MHz)				
0 ^L 1000	2800.	4600.	6400.		8200.	1000	
10							
20							
30				1	1		
20	i i i						
40							
50	<u>-</u>						
	2						
60							
70		· · · · · · · · · · · · · · · · · · ·					
80							
	1					1	
90							
100 Level (dBuV/n	n)					; 1	
Detector		Peak					
					Jen	y Unally	
Polarize		Vertical	Test Engi	neer		y Chang	
Test Item		Harmonic	Test Da	te	Octobe	er 27, 202	
Test Mode	7.	Low CH	remp/m	Temp/Hum		23.1(°C)/ 57%R	

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1841.00	40.48	-1.13	39.35	74.00	-34.65	Peak
2761.50	47.29	2.21	49.50	74.00	-24.50	Peak
3682.00	42.15	5.23	47.38	74.00	-26.62	Peak
4602.50	42.32	6.43	48.75	74.00	-25.25	Peak
N/A						

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit.



Page: 44 / 46 Rev.: 01

		Frequen	cv (MHz)			
01000	2800.	4600.	6400.	8200.	10000	
10						
20						
30						
40						
50	 					
60	2					
70						
80						
90						
100 Level (dBuV/m	1)					
Detector		Peak / Average				
Polarize		Horizontal	Test Engin	eer	Jerry Chang	
Test Item			Test Dat		ctober 27, 202	
Test Mode		Low CH Harmonic	Temp/Hu		23.1(°C)/ 57%R	

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1841.00	44.34	-1.13	43.21	74.00	-30.79	Peak
2761.50	52.99	2.21	55.20	74.00	-18.80	Peak
2761.50	34.35	2.21	36.56	54.00	-17.44	Average
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.



Page: 45 / 46 Rev.: 01

Test Mode:		High CH		emp/Hum	23.1(°C)/ 57%RH
Test Item		Harmonic		Test Date	October 27, 202	
Polarize		Vertical	Te	st Engineer	Jerry	Chang
Detector	P	eak / Avera	ge			
100 Level (dBuV/m))			; ;		
90						
80		· · · · · · · · · · · · · · · · · · ·				
70	 				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
60	 					
50		2				
40	 					
30						
20						
10						
0 <mark>1000</mark>	2800.	4600.		400.	8200.	10000
			Frequency (MHz)			
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1849.00	41.58	-0.12	41.46	74.00	-32.54	Peak
4622.50	44.00	6.95	50.95	74.00	-23.05	Peak

N/A			

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit.



Page: 46 / 46 Rev.: 01

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m		Limit BuV/m)	Margin (dB)	Remark
			Frequency (M	Hz)			
0 <mark></mark>	2800.	4600.	1	6400.	1	8200.	10000
10							
20							
30	·						
40							
50			 	1			
	4						
60							
70		 				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
80							
90		· · · · · · · · · · · · · · · · · · ·				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
100 Level (dBuV/m)		i i					
Detector	P	eak / Avera	ge				
Polarize		Horizontal		Test En	gineer	r Jerry Chan	
Test Item		Harmonic		Test Date			27, 202
Test Mode:		High CH		Temp/)/ 57%RI

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1849.00	40.73	-0.12	40.61	74.00	-33.39	Peak
2773.50	53.37	2.69	56.06	74.00	-17.94	Peak
2773.50	34.72	2.69	37.41	54.00	-16.59	Average
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

--End of Test Report--