

### CFR 47 FCC PART 15 SUBPART C ISED RSS-210 ISSUE 10

**TEST REPORT** 

For

### **TOY Transmitter**

### **MODEL NUMBER: GFH6F**

FCC ID: G6DGFH6F

### IC: 9650A-GFH6F

#### REPORT NUMBER: 4789455105.1-1

**ISSUE DATE: May 07, 2020** 

Prepared for

### NEW BRIGHT INDUSTRIAL CO., LTD 9/F., NEW BRIGHT BUILDING, 11 SHEUNG YUET ROAD, KOWLOON BAY, KOWLOON, HONG KONG.

Prepared by

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### **Revision History**

Rev.	Issue Date	Revisions	Revised By	
V0	05/07/2020	Initial Issue		



Summary of Test Results					
Clause	ause Test Items FCC/ISED Rules				
1	20dB Bandwidth and 99% Occupied Bandwidth	CFR 47 FCC §15.215 (c) ISED RSS-Gen Clause 6.7	Pass		
2	Radiated Emission	CFR 47 FCC §15.249 (a)(d)(e) ISED RSS-210 Annex B B.10 CFR 47 FCC §15.205 and §15.209 RSS-GEN Clause 8.9 RSS-GEN Clause 8.10	Pass		
3	Antenna Requirement	CFR 47 FCC §15.203 ISED RSS-Gen Clause 6.3	Pass		
Note 1: This test report is only published to and used by the applicant, and it is not for evidence purpose in China. Note 2: The measurement result for the sample received is <pass> according to &lt;</pass>					

CFR 47 FCC PART 15 SUBPART C, ISED RSS-210 Issue 10 and ISED RSS-GEN Issue 5 > when <Accuracy Method> decision rule is applied.



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# **1. ATTESTATION OF TEST RESULTS**

#### **Applicant Information**

Company Name:	NEW BRIGHT INDUSTRIAL CO., LTD
Address:	9/F., NEW BRIGHT BUILDING, 11 SHEUNG YUET ROAD,
	KOWLOON BAY, KOWLOON, HONG KONG.

#### Manufacturer Information

Company Name:	NEW BRIGHT INDUSTRIAL CO., LTD
Address:	9/F., NEW BRIGHT BUILDING, 11 SHEUNG YUET ROAD,
	KOWLOON BAY, KOWLOON, HONG KONG.

#### **EUT Information**

EUT Name:	TOY Transmitter
Model:	GFH6F
Sample Received Date:	April 13, 2020
Sample Status:	Normal
Sample ID:	3032090
Date of Tested:	April 17, 2020~ April 30, 2020

APPLICABLE STANDARDS				
STANDARD TEST RESULTS				
CFR 47 FCC PART 15 SUBPART C	PASS			
ISED RSS-210 Issue 10	PASS			
ISED RSS-GEN Issue 5	PASS			

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# 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 414788 D01 Radiated Test Site v01r01, FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2013, ISED RSS-210 Issue 10 and RSS-GEN Issue 5.

# 3. FACILITIES AND ACCREDITATION

	A2LA (Certificate No : 4102 01)
Accreditation Certificate	<ul> <li>A2LA (Certificate No.: 4102.01)</li> <li>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA.</li> <li>FCC (FCC Designation No.: CN1187)</li> <li>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules.</li> <li>ISED (Company No.: 21320)</li> <li>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320.</li> <li>VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)</li> <li>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793.</li> <li>Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B , the VCCI registration No. is C-20012 and T-20011</li> </ul>

Note:

- All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China
- 2. The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.
- 3. For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30MHz had been correlated to measurements performed on an OFS.



# 4. CALIBRATION AND UNCERTAINTY

## 4.1. MEASURING INSTRUMENT CALIBRATION

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

# 4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty		
Conduction emission	3.62dB		
Radiation Emission test (include Fundamental emission) (9KHz-30MHz)	2.2dB		
Radiation Emission test (include Fundamental emission) (30MHz-1GHz)	4.00dB		
Radiation Emission test	5.78dB (1GHz-18Gz)		
(1GHz to 26GHz) (include Fundamental emission)	5.23dB (18GHz-26Gz)		
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.			

# 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

EUT Name	TOY Transmitter			
EUT Description	The EUT is a wireless remote controller.			
Model	GFH6F			
Dreduct Deceription	Operation Frequency	2410 MHz ~ 2473 MHz		
Product Description	Modulation Type GFSK			
Battery	DC 3.0V			

### 5.2. MAXIMUM FIELD STRENGTH

Frequency (MHz)	Channel Number	Max Peak field strength (dBµV/m)		
2473	32[32]	90.78		

### 5.3. CHANNEL LIST

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2410	11	2429	21	2450	31	2469
2	2414	12	2430	22	2452	32	2473
3	2415	13	2431	23	2454		
4	2416	14	2433	24	2456		
5	2417	15	2434	25	2458		
6	2418	16	2439	26	2462		
7	2419	17	2441	27	2464		
8	2421	18	2442	28	2465		
9	2426	19	2444	29	2466		
10	2428	20	2446	30	2467		

# 5.4. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
1	2410~ 2473	Wire Antenna	1

Test Mode	Transmit and Receive Mode	Description
GFSK	⊠1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.

### 5.5. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency
GFSK	CH 1(Low Channel), CH 18(MID Channel), CH 32(High Channel)	2410MHz, 2442MHz, 2473MHz



### 5.6. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2410 MHz ~ 2470 MHz Band						
Test Software Version /						
Modulation Type Transmit Antenna		Test Channel				
	Number	CH 1	CH 18	CH 32		
GFSK	1 Default Default Defa					

## 5.7. TEST ENVIRONMENT

Environment Parameter	Selected Values During Tests				
Relative Humidity	55 ~ 65%				
Atmospheric Pressure:	1025Pa				
Temperature	TN	22 ~ 28°C			
	VL	/			
Voltage:	VN	DC 3.0V			
	VH	/			

Note: VL= Lower Extreme Test Voltage VN= Nominal Voltage VH= Upper Extreme Test Voltage TN= Normal Temperature



### 5.8. DESCRIPTION OF TEST SETUP

#### SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	P/N
/	/	/	/	/

#### I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
/	/	/	/	/	/

#### ACCESSORY

lten	n Equipm	nent Mfr/Brand	Model/Type N	lo. Specification	Series No.
/	/	/	/	/	/

#### TEST SETUP

The EUT have the engineer mode inside.

#### SETUP DIAGRAM FOR TEST



Note: New battery was used during all tests.



	Radiated Emissions							
			1	nstrumen	ıt			
Used	Equipment	Manufacturer	Мо	del No.	Seria	al No.	Last Cal.	Next Cal.
V	MXE EMI Receiver	KESIGHT	N	N9038A		400036	Dec. 6, 2019	Dec. 6, 2020
$\checkmark$	Hybrid Log Periodic Antenna	TDK	HLF	P-3003C	130	959	Sept.17, 2018	Sept.17,2021
$\checkmark$	Preamplifier	HP	8	447D	2944A	09099	Dec. 5, 2019	Dec. 5, 2020
V	EMI Measurement Receiver	R&S	E	SR26	101	377	Dec. 05, 2019	Dec.05, 2020
$\mathbf{\overline{\mathbf{A}}}$	Horn Antenna	TDK	HR	N-0118	130	939	Sept. 17, 2018	Sept.17,2021
V	Preamplifier	TDK	PA-02-0118		TRS-305- 00067		Dec. 05, 2019	Dec.05, 2020
$\checkmark$	Loop antenna	Schwarzbeck	1519B		00	800	Jan.17, 2019	Jan.17, 2022
	Preamplifier	TDK	PA-02-001- 3000			-302- 050	Dec. 05, 2019	Dec.05, 2020
	High Gain Horn Antenna	Schwarzbeck	BBH	HA-9170	69	91	Aug.11,2018	Aug.11,2021
	Preamplifier	TDK	P/	4-02-2		-307- 003	Dec. 05, 2019	Dec.05, 2020
				Software				
Used	Descr	ription		Manufa	cturer		Name	Version
$\checkmark$	Test Software disturl			Fara	ad		EZ-EMC	Ver. UL-3A1
			Othe	r instrum	nents			
Used	Equipment	Manufacturer	Мо	del No.	Seria	al No.	Last Cal.	Next Cal.
	High Pass Filter	Wi	WHKX10- 2700-3000- 18000-40SS		2	23	Dec. 05, 2019	Dec.05, 2020
V	Band Reject Filter	Wainwright	235 24	RCJV8- 0-2400- 483.5- 3.5-40SS		4	Dec. 05, 2019	Dec.05, 2020

### 5.9. MEASURING INSTRUMENT AND SOFTWARE USED



# 6. ANTENNA PORT TEST RESULTS

### 6.1. ON TIME AND DUTY CYCLE

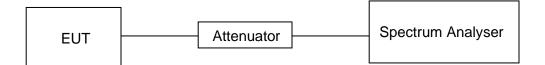
#### **LIMITS**

None; for reporting purposes only

#### PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method

#### TEST SETUP



#### TEST ENVIRONMENT

Temperature	23.2°C	Relative Humidity	55%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.0V

#### **RESULTS**

Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (db)
GFSK	5.58	100	0.0558	5.58	-25.07

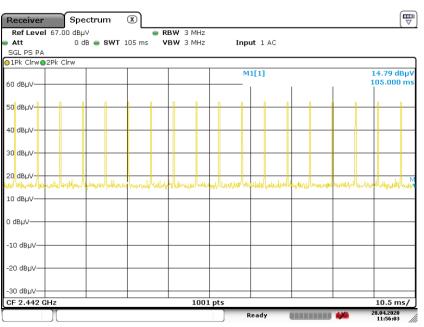
Note: Duty Cycle Correction Factor=20log(x). Where: x is Duty Cycle



#### Spectrum X Receiver Ref Level 67.00 dBµV RBW 1 MHz 0 dB 😑 SWT 10 ms 😑 VBW 3 MHz Input 1 AC Att SGL PS PA ∋1Pk Clrw⊜2Pk Clrw 0.05 dl 60 dBµ∖ 5.79000 m M1[1] 51.74 dBµ D2 50 dBµV 1.54000 m 40 dBµV 30 dBuV 20 dBµV 10 dBµN 0 dBµV -10 dBµV -20 dBµV--30 dBµV 1001 pts 1.0 ms/ CF 2.442 GHz Marker Type Ref Trc Function Function Result X-value Y-value ue 1.54 ms 310.0 μs M1 D1 51.74 dBμV 0.13 dB Μ1 D2 M1 5.79 ms -0.05 dB 8.04.2020 11:58:15 Ready -----

#### ON TIME AND DUTY CYCLE MID CH PLOT

Date: 28.APR.2020 11:58:15



#### ON TIME AND DUTY CYCLE MID CH PLOT-2

Date: 28.APR.2020 11:56:04

Note: All the modes had been tested, but only the worst duty cycle recorded in the report.



### 6.2. 20 dB BANDWIDTH AND 99% OCCUPIED BANDWIDTH

#### <u>LIMITS</u>

CFR 47 FCC Part15 (15.249) Subpart C RSS-Gen Issue 5						
Section Test Item Limit Frequency Range (MHz)						
CFR 47 FCC §15.215 (c)	20dB Bandwidth	for reporting purposes only	2400-2483.5			
ISED RSS-Gen Clause 6.7 Issue 5	2400-2483.5					

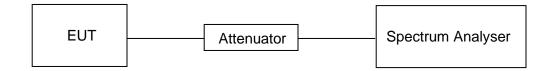
#### TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	1% to 5% of the occupied bandwidth
VBW	approximately 3×RBW
Trace	Max hold
Sweep	Auto couple

Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB/99% relative to the maximum level measured in the fundamental emission.

#### TEST SETUP



#### **TEST ENVIRONMENT**

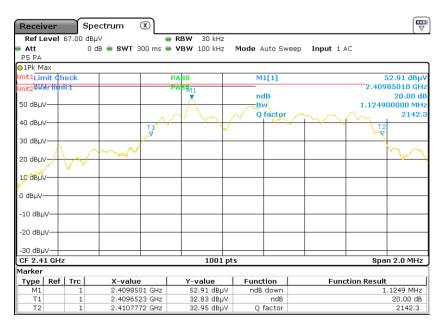
Temperature	23.2°C	Relative Humidity	53%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.0V

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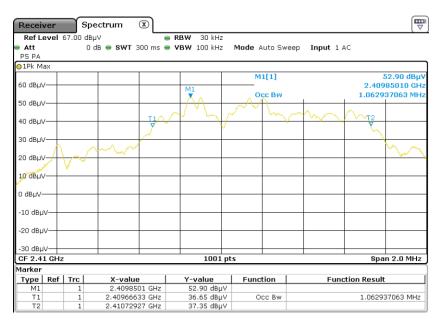


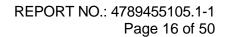
Frequency	20dB bandwidth	99% bandwidth	Result
(MHz)	(MHz)	(MHz)	
2410	1.1249	1.0629	PASS

### 20 dB BANDWIDTH LOW CH



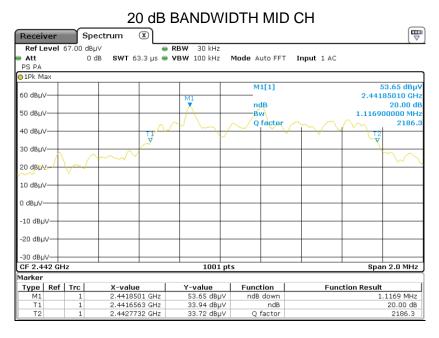
### 99% OCCUPIED BANDWIDTH LOW CH



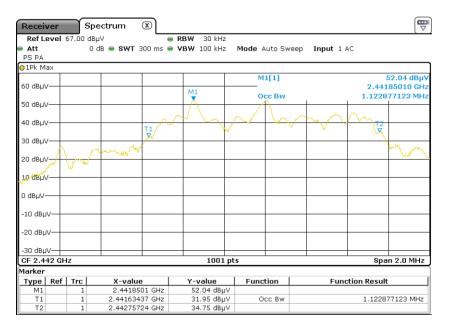


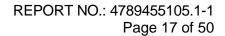


Frequency	20dB bandwidth	99% bandwidth	Result
(MHz)	(MHz)	(MHz)	
2442	1.1169	1.1229	PASS



#### 99% OCCUPIED BANDWIDTH MID CH





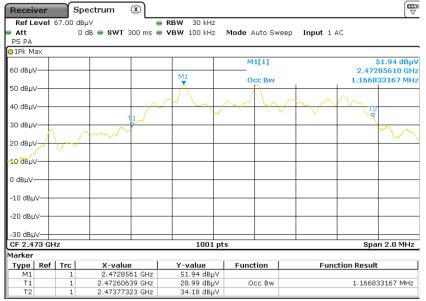


Frequency	20dB bandwidth	99% bandwidth	Result
(MHz)	(MHz)	(MHz)	
2473	1.1249	1.1668	PASS

#### 20 dB BANDWIDTH HIG CH

Receiver	Spe	ectrum	×						
Ref Level	67.00 dBµ	V	_	RBW 30 kHz					
Att PS PA	0 c	IB <b>SWT</b> 63	3.3 µs 🖷	<b>VBW</b> 100 kHz	Mode /	Auto FFT	Input 1 AC		
01Pk Max02	Pk Max								
					N	11[1]			53.38 dBµ\
60 dBµV				M1				2.472	85810 GH
						dB			20.00 dE
50 dBµV						w/w		1.1249	00000 MH2
40 40.44			$\wedge$	$\mathcal{N}$		factor	$\sim$	$\sim$	2198.3
40 dBµV			T1	· · · · · ·	J				
30 dBµV			~					× ×	
So appy		$\sim$							$\sim$
20 dBuV-4	1~								-
10 dBµV						+			
0 dBµV									
-10 dBµV									
-20 dBµV									
-20 UBHV									
-30 dBuV									
CF 2.473 G	z			1001	pts			Spa	n 2.0 MHz
Marker				1001					
Type   Ref	Trc	X-value	. 1	Y-value	Fun	ction	Fun	ction Result	
M1	1	2.472858		53.38 dBµ		3 down			.1249 MHz
T1	1	2.472656	53 GHz	33.11 dBj	IV	ndB			20.00 dB
T2	1	2.47378	12 GHz	33.52 dBµ	IV Q	factor			2198.3

#### 99% OCCUPIED BANDWIDTH HIG CH





# 7. RADIATED TEST RESULTS

### 7.1. LIMITS AND PROCEDURE

#### <u>LIMITS</u>

CFR 47 FCC §15.205 and §15.209

CFR 47 FCC §15.249 (a)(d)(c)(e)

ISED RSS-210 Issue 10 Annex B B.10

#### **RSS-GEN** Clause 8.9

The field strength of emissions from intentional radiators operated within these frequency bands				
Frequency (MHz)	Field strength of Fundamental	Field strength of Harmonics	Distance (m)	
902 - 928	50 mV/m (94dBuV/m)	500 uV/m (54dBuV/m)	3	
2400 - 2483.5	50 mV/m (94dBuV/m)	500 uV/m (54dBuV/m)	3	
5725 – 5875	50 mV/m (94dBuV/m)	500 uV/m (54dBuV/m)	3	

Emissions radiated outside of the specified frequency bands above 30MHz					
Frequency Range	Field Strength Limit	Field Strength Limit			
(MHz)	(uV/m) at 3 m	(dBuV/m) at 3 m			
(11112)		Quasi-Peak			
30 - 88	100	40			
88 - 216	150	43.5			
216 - 960	200	46			
Above 960	500	54			
Above 1000	500	Peak	Average		
	500	74	54		

FCC Emissions radiated outside of the specified frequency bands below 30MHz					
Frequency (MHz)	Field strength (microvolts/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			



#### ISED General field strength limits at frequencies below 30 MHz

Table 6 – General field strength limits at frequencies below 30 MHz				
Frequency	Magnetic field strength (H-Field) (μA/m)	Measurement distance (m)		
9 - 490 kHz <sup>Note 1</sup>	6.37/F (F in kHz)	300		
490 - 1705 kHz	63.7/F (F in kHz)	30		
1.705 - 30 MHz	0.08	30		

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

#### IC Restricted bands please refer to ISED RSS-GEN Clause 8.10

Hz	MHz	GHz
090 - 0.110	149.9 - 150.05	9.0 - 9.2
195 - 0.505	156.52475 - 156.52525	9.3 - 9.5
735 - 2.1905	156.7 - 156.9	10.6 - 12.7
120 - 3.026	162.0125 - 167.17	13.25 - 13.4
25 - 4.128	167.72 - 173.2	14.47 - 14.5
7725 - 4.17775	240 - 285	15.35 - 16.2
0725 - 4.20775	322 - 335.4	17.7 - 21.4
77 - 5.683	399.9 - 410	22.01 - 23.12
15 - 6.218	608 - 614	23.6 - 24.0
6775 - 6.26825	960 - 1427	31.2 - 31.8
1175 - 6.31225	1435 - 1626.5	36.43 - 36.5
1 - 8.294	1645.5 - 1646.5	Above 38.6
12 - 8.366	1660 - 1710	
N625 - 8.38675	1718.8 - 1722.2	
425 - 8.41475	2200 - 2300	
9 - 12.293	2310 - 2390	
1975 - 12.52025	2483.5 - 2500	
57675 - 12.57725	2655 - 2900	
36 - 13.41	3260 - 3267	
42 - 16.423	3332 - 3339	
89475 - 16.69525	3345.8 - 3358	
90425 - 16.80475	3500 - 4400	
- 25.67	4500 · 5150	
5 - 38.25	5350 - 5460	
74.6	7250 - 7750	
- 75.2	8025 - 8500	

Note 1: Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.



FCC Restricted bands of operation:

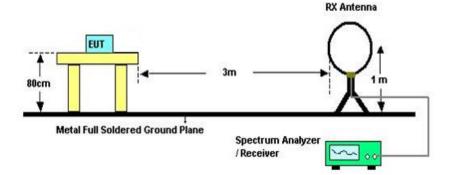
MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
<sup>1</sup> 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	( <sup>2</sup> )
13.36-13.41			

Note: <sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz. <sup>2</sup>Above 38.6c



#### TEST SETUP AND PROCEDURE

Below 30MHz



The setting of the spectrum analyser

RBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
VBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
Sweep	Auto
Detector	Peak/QP/ Average
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80cm meter above ground.

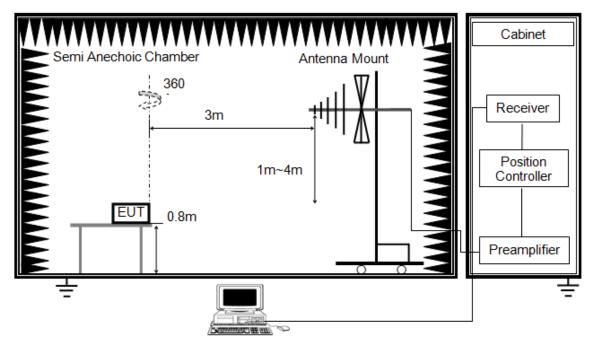
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1m height antenna tower.

5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

6. Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30m open field site. Therefore, the 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.



#### Below 1G



The setting of the spectrum analyser

RBW	120K
VBW	300K
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

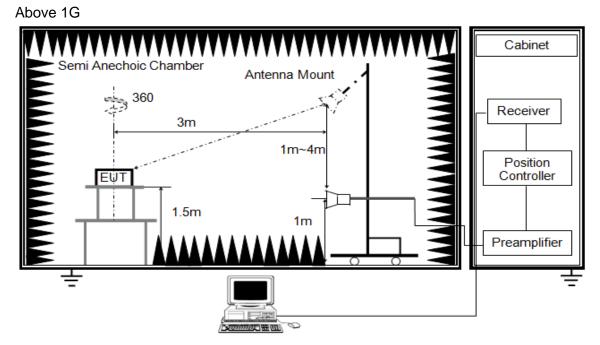
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured





The setting of the spectrum analyser

RBW	1M
IV B W	PEAK: 3M AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

2. The EUT was arranged to its worst case and then tune the antenna tower (1.5 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter or band reject filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 1.5 m above ground.

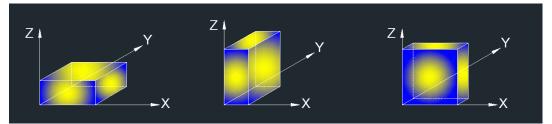
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements. Where necessary, average emission are determined by applying the Duty Cycle Correction Factor to the peak measurements. For the Duty Cycle and Correction Factor please refer to clause 6.1. ON TIME AND DUTY CYCLE.

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X axis, Y axis, Z axis positions:



Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

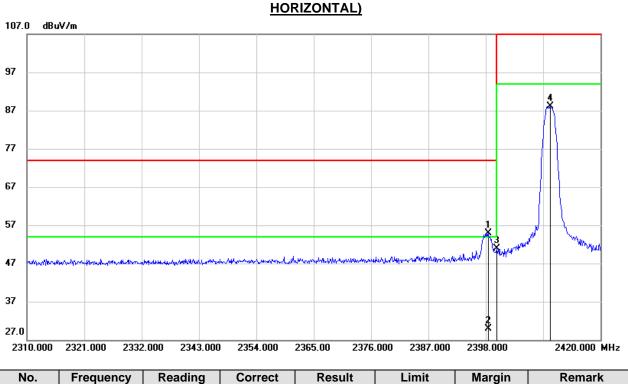
#### **TEST ENVIRONMENT**

Temperature	22.6°C	Relative Humidity	55%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.0V



### 7.2. RESTRICTED BANDEDGE AND FIELD STRENGTH OF INTENTIONAL EMISSIONS

**RESTRICTED BANDEDGE AND FIELD STRENGTH OF INTENTIONAL EMISSIONS (LOW CHANNEL,** 



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2398.440	22.02	32.98	55.00	74.00	-19.00	peak
2	2398.440	-3.05	32.98	29.93	54.00	-24.07	AVG
3	2400.000	17.99	32.98	50.97	74.00	-23.03	peak
4	2410.320	55.11	33.06	88.17	114.00	-25.83	peak

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

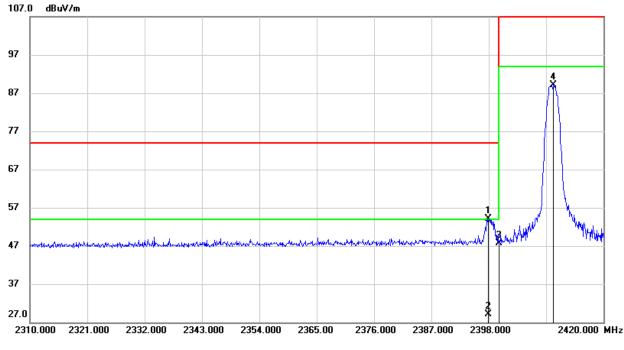
4. AVG Result=Peak Result + Duty Correction Factor.

5. For the Duty Cycle and Correction Factor, please refer to clause 6.1.

6. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



#### RESTRICTED BANDEDGE AND FIELD STRENGTH OF INTENTIONAL EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2397.890	21.09	32.98	54.07	74.00	-19.93	peak
2	2397.890	-3.98	32.98	29.00	54.00	-25.00	AVG
3	2400.000	14.73	32.98	47.71	74.00	-26.29	peak
4	2410.320	56.12	33.06	89.18	114.00	-24.82	peak

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

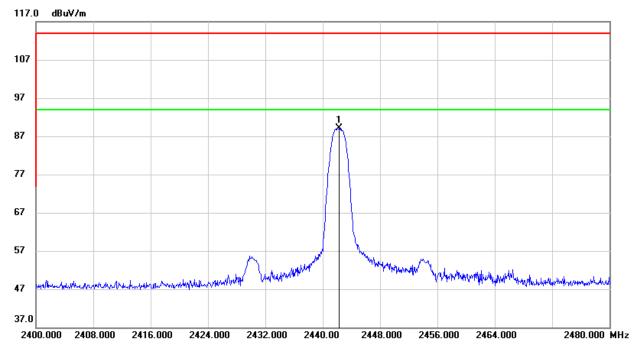
4. AVG Result=Peak Result + Duty Correction Factor.

5. For the Duty Cycle and Correction Factor, please refer to clause 6.1.

6. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



#### FIELD STRENGTH OF INTENTIONAL EMISSIONS (MIDDLE CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2442.240	55.87	33.29	89.16	114.00	-24.84	peak

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

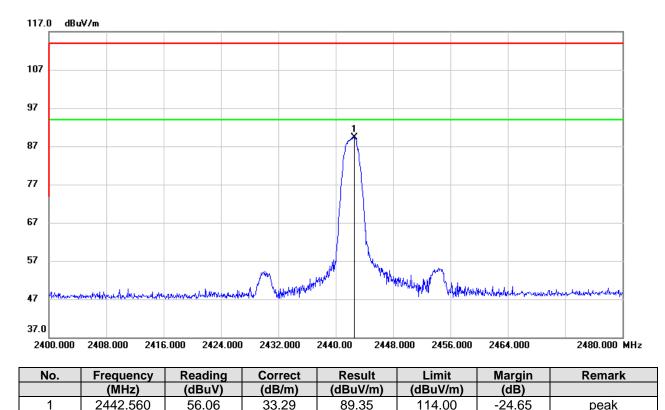
4. Only the worst emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



1

peak

#### FIELD STRENGTH OF INTENTIONAL EMISSIONS (MIDDLE CHANNEL, VERTICAL)



Note: 1. Measurement = Reading Level + Correct Factor.	
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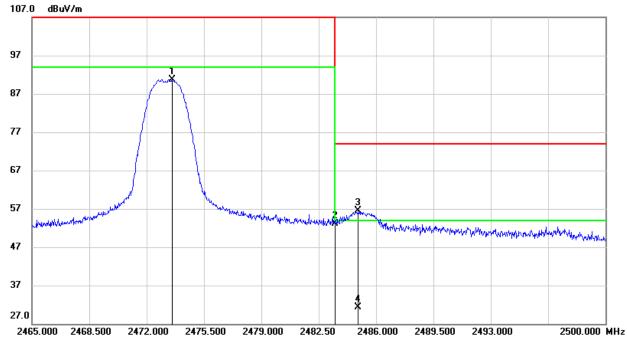
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Only the worst emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



#### RESTRICTED BANDEDGE AND FIELD STRENGTH OF INTENTIONAL EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2473.575	57.27	33.51	90.78	114.00	-23.22	peak
2	2483.500	19.51	33.58	53.09	74.00	-20.91	peak
3	2484.915	22.83	33.59	56.42	74.00	-17.58	peak
4	2484.915	-2.24	33.59	31.35	54.00	-22.65	AVG

Note: 1. Measurement = Reading Level + Correct Factor.

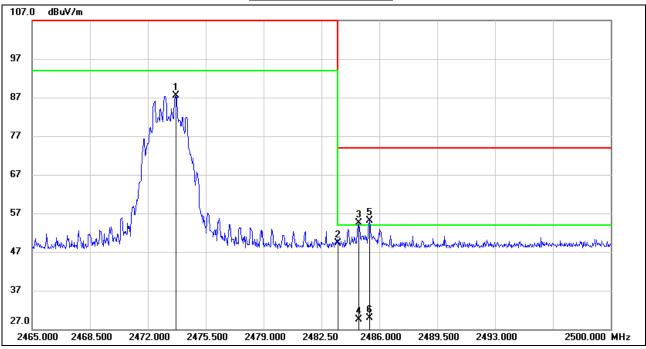
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Only the worst emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



#### RESTRICTED BANDEDGE AND FIELD STRENGTH OF INTENTIONAL EMISSIONS (HIGH CHANNEL, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2473.680	53.97	33.51	87.48	114.00	-26.52	peak
2	2483.500	15.76	33.58	49.34	74.00	-24.66	peak
3	2484.740	20.92	33.59	54.51	74.00	-19.49	peak
4	2484.740	-4.15	33.59	29.44	54.00	-24.56	AVG
5	2485.405	21.46	33.59	55.05	74.00	-18.95	peak
6	2485.405	-3.61	33.59	29.98	54.00	-24.02	AVG

Note: 1. Measurement = Reading Level + Correct Factor.

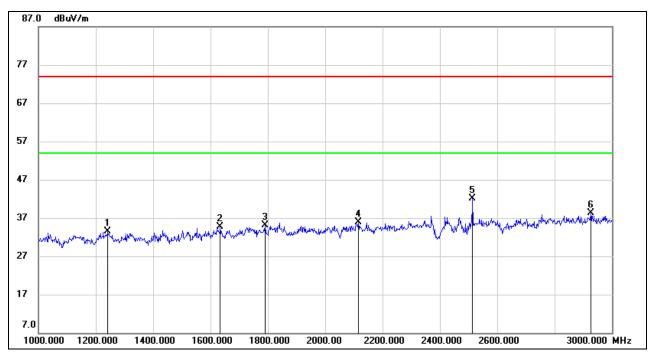
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Only the worst emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



# 7.3. SPURIOUS EMISSIONS (1~3GHz)



#### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1242.000	46.01	-12.53	33.48	74.00	-40.52	peak
2	1634.000	46.02	-11.23	34.79	74.00	-39.21	peak
3	1790.000	45.04	-10.01	35.03	74.00	-38.97	peak
4	2116.000	44.89	-9.08	35.81	74.00	-38.19	peak
5	2514.000	49.37	-7.24	42.13	74.00	-31.87	peak
6	2926.000	43.72	-5.47	38.25	74.00	-35.75	peak

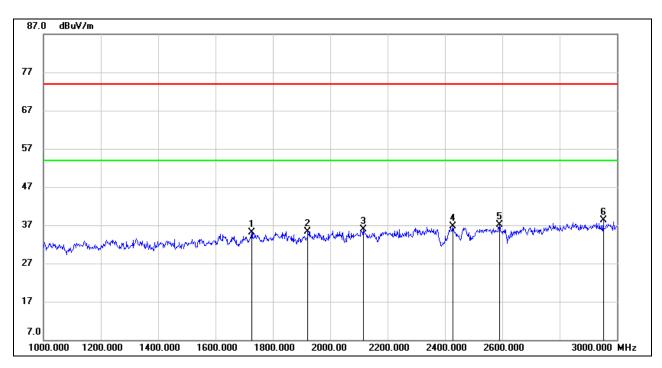
Note: 1. Peak Result = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.





#### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1726.000	45.85	-10.65	35.20	74.00	-38.80	peak
2	1922.000	45.30	-9.93	35.37	74.00	-38.63	peak
3	2116.000	44.96	-9.08	35.88	74.00	-38.12	peak
4	2428.000	44.34	-7.66	36.68	74.00	-37.32	peak
5	2590.000	44.80	-7.66	37.14	74.00	-36.86	peak
6	2952.000	43.79	-5.41	38.38	74.00	-35.62	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

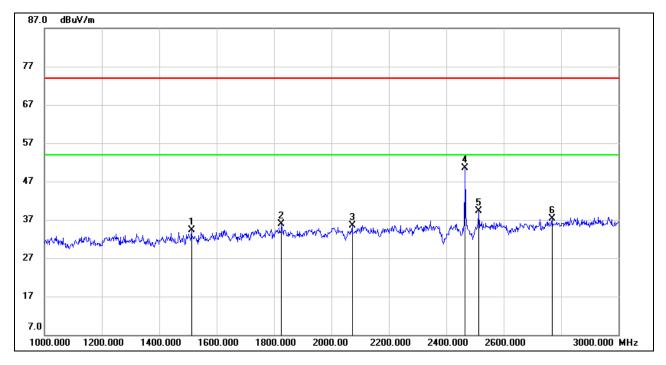
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.



#### HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1512.000	46.49	-12.11	34.38	74.00	-39.62	peak
2	1826.000	45.80	-9.92	35.88	74.00	-38.12	peak
3	2072.000	44.92	-9.34	35.58	74.00	-38.42	peak
4	2466.000	57.98	-7.40	50.58	74.00	-23.42	peak
5	2514.000	46.52	-7.24	39.28	74.00	-34.72	peak
6	2768.000	43.69	-6.40	37.29	74.00	-36.71	peak

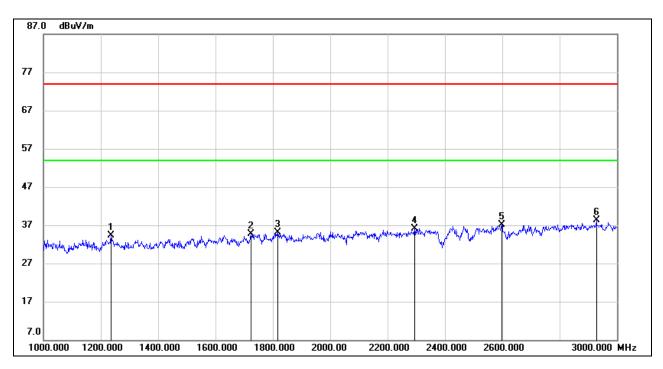
Note: 1. Peak Result = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.





#### HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1236.000	46.90	-12.56	34.34	74.00	-39.66	peak
2	1724.000	45.35	-10.67	34.68	74.00	-39.32	peak
3	1816.000	44.94	-9.92	35.02	74.00	-38.98	peak
4	2294.000	44.33	-8.21	36.12	74.00	-37.88	peak
5	2598.000	44.88	-7.69	37.19	74.00	-36.81	peak
6	2928.000	43.84	-5.46	38.38	74.00	-35.62	peak

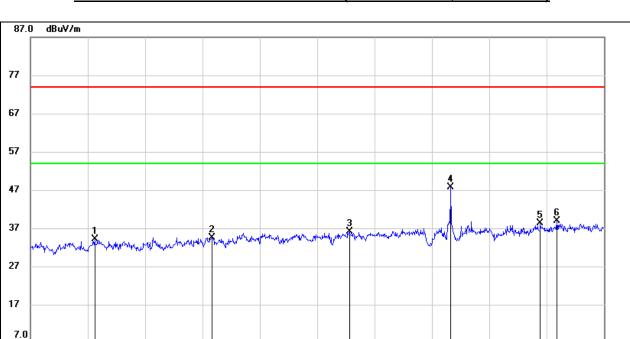
Note: 1. Peak Result = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.





#### HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1224.000	46.73	-12.60	34.13	74.00	-39.87	peak
2	1632.000	45.82	-11.24	34.58	74.00	-39.42	peak
3	2112.000	45.13	-9.10	36.03	74.00	-37.97	peak
4	2466.000	55.19	-7.40	47.79	74.00	-26.21	peak
5	2778.000	44.63	-6.30	38.33	74.00	-35.67	peak
6	2836.000	44.71	-5.87	38.84	74.00	-35.16	peak

2000.00

2200.000

2400.000

2600.000

3000.000 MHz

Note: 1. Peak Result = Reading Level + Correct Factor.

1600.000

1800.000

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

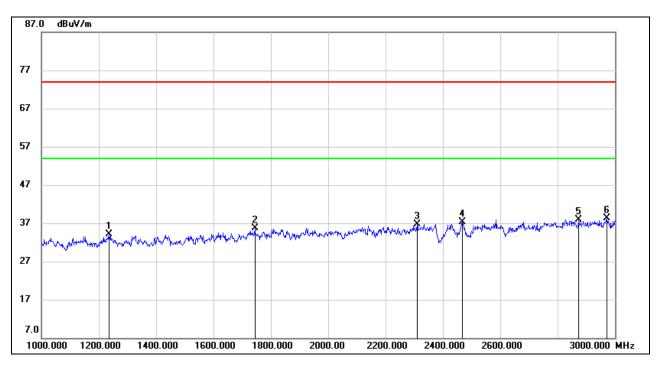
1200.000

1000.000

1400.000

4. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.





#### HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1236.000	46.60	-12.56	34.04	74.00	-39.96	peak
2	1744.000	46.10	-10.46	35.64	74.00	-38.36	peak
3	2310.000	44.87	-8.16	36.71	74.00	-37.29	peak
4	2468.000	44.76	-7.39	37.37	74.00	-36.63	peak
5	2874.000	43.60	-5.66	37.94	74.00	-36.06	peak
6	2972.000	43.58	-5.36	38.22	74.00	-35.78	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

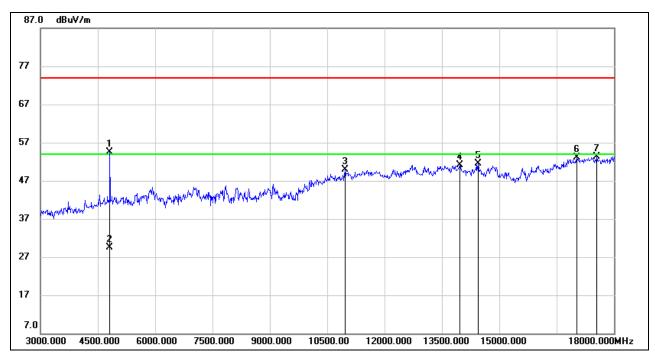
3. Peak: Peak detector.

4. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.



## 7.4. SPURIOUS EMISSIONS (3~18GHz)

## HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4820.000	54.03	0.54	54.57	74.00	-19.43	peak
2	4820.000	28.96	0.54	29.50	54.00	-24.50	AVG
3	10965.000	37.57	12.32	49.89	74.00	-24.11	peak
4	13965.000	35.01	16.09	51.10	74.00	-22.90	peak
5	14445.000	35.20	16.36	51.56	74.00	-22.44	peak
6	17025.000	32.56	20.46	53.02	74.00	-20.98	peak
7	17550.000	31.66	21.57	53.23	74.00	-20.77	peak

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

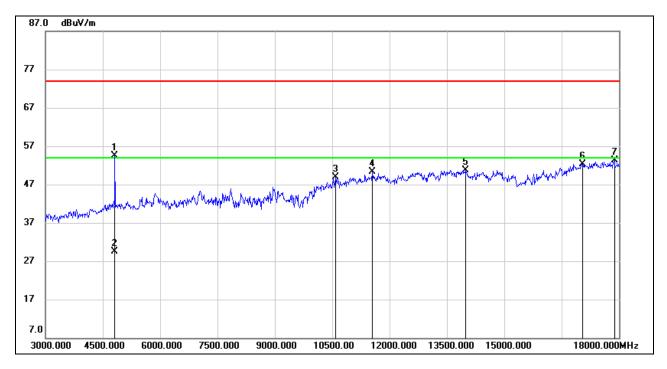
3. Peak: Peak detector.

4. The High Pass filter loss factor already add into the correct factor.

5. Proper operation of the transmitter prior to adding the filter to the measurement chain.



### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4820.000	53.98	0.54	54.52	74.00	-19.48	peak
2	4820.000	28.91	0.54	29.45	54.00	-24.55	AVG
3	10590.000	37.09	11.88	48.97	74.00	-25.03	peak
4	11550.000	37.01	13.30	50.31	74.00	-23.69	peak
5	13980.000	34.71	16.07	50.78	74.00	-23.22	peak
6	17040.000	31.84	20.49	52.33	74.00	-21.67	peak
7	17880.000	30.00	23.34	53.34	74.00	-20.66	peak

Note: 1. Measurement = Reading Level + Correct Factor.

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG Result=Peak Result + Duty Cycle Correction Factor.
- 5. For the Duty Cycle and Correction Factor, please refer to clause 6.1.
- 6. The High Pass filter loss factor already add into the correct factor.
- 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.



## 87.0 dBu¥/m 77 67 57 47 37 27 17 7.0 3000.000 4500.000 6000.000 7500.000 9000.000 10500.00 12000.000 13500.000 15000.000 18000.000MHz

### HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4884.000	53.54	0.79	54.33	74.00	-19.67	peak
2	4884.000	28.47	0.79	29.26	54.00	-24.74	AVG
3	11475.000	36.67	13.22	49.89	74.00	-24.11	peak
4	13590.000	35.84	16.00	51.84	74.00	-22.16	peak
5	14850.000	35.53	15.97	51.50	74.00	-22.50	peak
6	17070.000	32.34	20.57	52.91	74.00	-21.09	peak
7	17925.000	29.97	23.37	53.34	74.00	-20.66	peak

Note: 1. Measurement = Reading Level + Correct Factor.

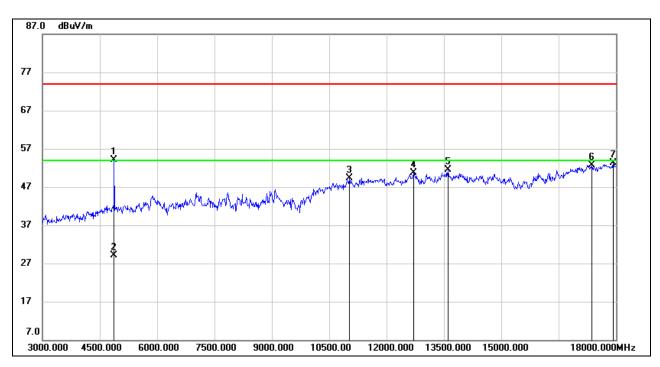
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. AVG Result=Peak Result + Duty Cycle Correction Factor.

- 5. For the Duty Cycle and Correction Factor, please refer to clause 6.1.
- 6. The High Pass filter loss factor already add into the correct factor.
- 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4884.000	53.36	0.79	54.15	74.00	-19.85	peak
2	4884.000	28.29	0.79	29.08	54.00	-24.92	AVG
3	11025.000	36.61	12.61	49.22	74.00	-24.78	peak
4	12705.000	36.31	14.35	50.66	74.00	-23.34	peak
5	13605.000	35.40	16.02	51.42	74.00	-22.58	peak
6	17370.000	31.17	21.52	52.69	74.00	-21.31	peak
7	17925.000	29.98	23.37	53.35	74.00	-20.65	peak

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. The High Pass filter loss factor already add into the correct factor.

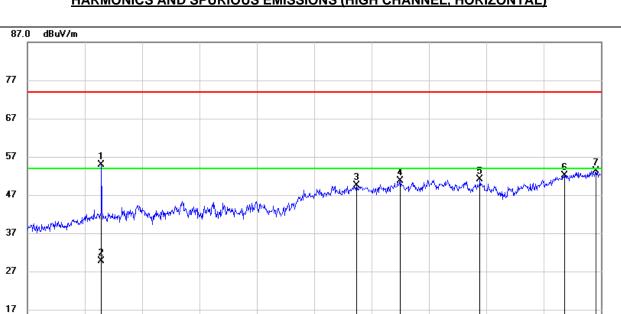
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.



7.0

3000.000

4500.000



#### HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)

No.	Frequency	Reading	Correct	Correct Result		Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4946.000	53.76	1.10	54.86	74.00	-19.14	peak
2	4946.000	28.69	1.10	29.79	54.00	-24.21	AVG
3	11610.000	36.27	13.15	49.42	74.00	-24.58	peak
4	12750.000	35.70	14.98	50.68	74.00	-23.32	peak
5	14835.000	35.17	15.95	51.12	74.00	-22.88	peak
6	17055.000	31.64	20.53	52.17	74.00	-21.83	peak
7	17865.000	29.94	23.33	53.27	74.00	-20.73	peak

10500.00

12000.000 13500.000

15000.000

18000.000MHz

Note: 1. Measurement = Reading Level + Correct Factor.

7500.000

9000.000

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.

6000.000

- 4. AVG Result=Peak Result + Duty Cycle Correction Factor.
- 5. For the Duty Cycle and Correction Factor, please refer to clause 6.1.
- 6. The High Pass filter loss factor already add into the correct factor.
- 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.



7.0

3000.000

4500.000

15000.000

18000.000MHz



#### HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4946.000	55.86	1.10	56.96	74.00	-17.04	peak
2	4946.000	30.79	1.10	31.89	54.00	-22.11	AVG
3	11505.000	36.45	13.42	49.87	74.00	-24.13	peak
4	12720.000	36.23	14.57	50.80	74.00	-23.20	peak
5	14805.000	35.16	15.92	51.08	74.00	-22.92	peak
6	17370.000	31.47	21.52	52.99	74.00	-21.01	peak
7	17775.000	30.04	23.09	53.13	74.00	-20.87	peak

10500.00

12000.000

13500.000

Note: 1. Measurement = Reading Level + Correct Factor.

7500.000

9000.000

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.

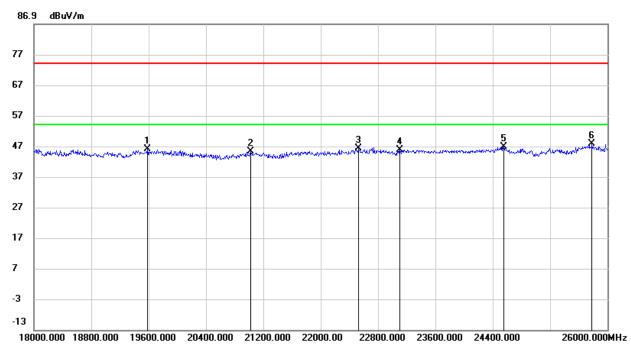
6000.000

- 4. AVG Result=Peak Result + Duty Cycle Correction Factor.
- 5. For the Duty Cycle and Correction Factor, please refer to clause 6.1.
- 6. The High Pass filter loss factor already add into the correct factor.
- 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.



# 7.5. SPURIOUS EMISSIONS (18~26GHz)

#### HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	19584.000	50.67	-4.64	46.03	74.00	-27.97	peak
2	21024.000	50.62	-5.30	45.32	74.00	-28.68	peak
3	22528.000	52.16	-5.79	46.37	74.00	-27.63	peak
4	23104.000	51.35	-5.47	45.88	74.00	-28.12	peak
5	24552.000	49.14	-2.46	46.68	74.00	-27.32	peak
6	25784.000	49.23	-1.49	47.74	74.00	-26.26	peak

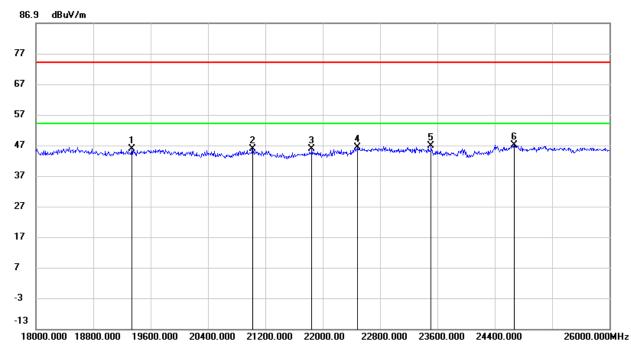
Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.



#### HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	19336.000	50.70	-4.97	45.73	74.00	-28.27	peak
2	21024.000	51.14	-5.30	45.84	74.00	-28.16	peak
3	21848.000	51.76	-5.95	45.81	74.00	-28.19	peak
4	22488.000	52.10	-5.81	46.29	74.00	-27.71	peak
5	23512.000	51.51	-4.76	46.75	74.00	-27.25	peak
6	24672.000	49.16	-2.15	47.01	74.00	-26.99	peak

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

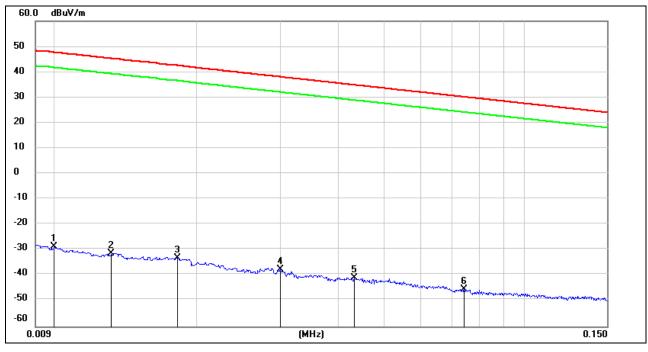
3. Peak: Peak detector.

Note: All test modes had been tested, only the worst data record in the report.



## 7.6. SPURIOUS EMISSIONS BELOW 30MHz

#### SPURIOUS EMISSIONS (HIGH CHANNEL, LOOP ANTENNA FACE ON TO THE EUT, WORST-CASE CONFIGURATION)



<u>9kHz~ 150kHz</u>

No.	Frequency	Reading	Correct	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.0100	72.22	-101.40	-29.18	47.60	-80.68	-3.90	-76.78	peak
2	0.0131	69.97	-101.38	-31.41	45.25	-82.91	-6.25	-76.66	peak
3	0.0206	67.42	-101.35	-33.93	41.32	-85.43	-10.18	-75.25	peak
4	0.0300	64.68	-101.39	-36.71	38.06	-88.21	-13.44	-74.77	peak
5	0.0437	60.41	-101.45	-41.04	34.79	-92.54	-16.71	-75.83	peak
6	0.0743	57.08	-101.59	-44.51	30.18	-96.01	-21.32	-74.69	peak

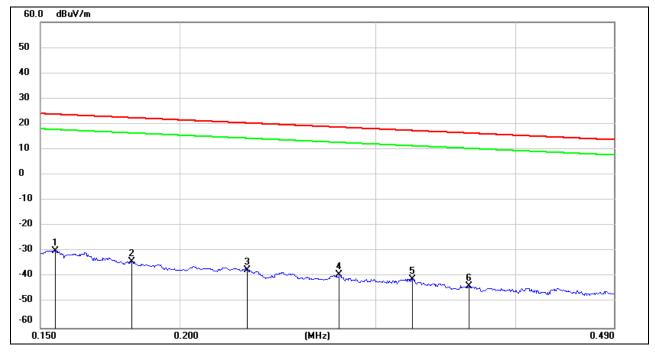
Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

4.  $dBuA/m = dBuV/m - 20log10(120\pi) = dBuV/m - 51.5$ .

### <u>150kHz ~ 490kHz</u>



No.	Frequency	Reading	Correct	FCC	FCC	ISED	ISED	Margin	Remark
				Result	Limit	Result	Limit		
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.1547	71.81	-101.65	-29.84	23.81	-81.34	-27.69	-53.65	peak
2	0.1811	67.55	-101.68	-34.13	22.45	-85.63	-29.05	-56.58	peak
3	0.2300	64.51	-101.77	-37.26	20.37	-88.76	-31.13	-57.63	peak
4	0.2782	62.79	-101.83	-39.04	18.71	-90.54	-32.79	-57.75	peak
5	0.3234	60.98	-101.88	-40.90	17.41	-92.40	-34.09	-58.31	peak
6	0.3634	58.32	-101.93	-43.61	16.39	-95.11	-35.11	-60.00	peak

Note: 1. Measurement = Reading Level + Correct Factor.

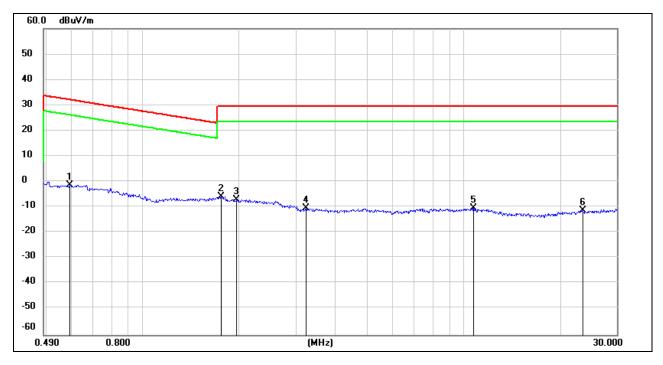
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

4.  $dBuA/m = dBuV/m - 20log10(120\pi) = dBuV/m - 51.5$ .



#### <u>490kHz ~ 30MHz</u>



No.	Frequency	Reading	Correct	FCC	FCC	ISED	ISED	Margin	Remark
				Result	Limit	Result	Limit		
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.5917	60.74	-62.08	-1.34	32.16	-52.84	-19.34	-33.50	peak
2	1.7580	56.08	-61.93	-5.85	29.54	-57.35	-21.96	-35.39	peak
3	1.9655	54.93	-61.83	-6.90	29.54	-58.40	-21.96	-36.44	peak
4	3.2343	51.29	-61.53	-10.24	29.54	-61.74	-21.96	-39.78	peak
5	10.7299	50.48	-60.83	-10.35	29.54	-61.85	-21.96	-39.89	peak
6	23.4783	49.24	-60.56	-11.32	29.54	-62.82	-21.96	-40.86	peak

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

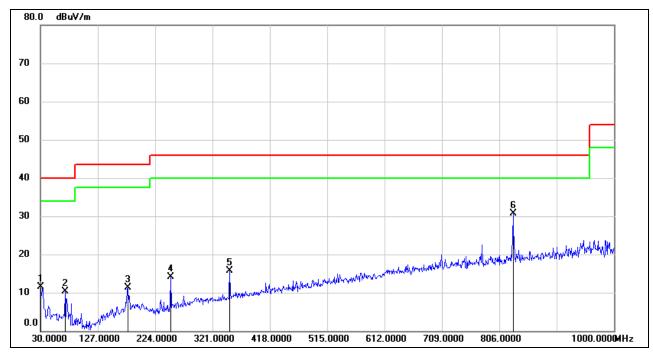
4.  $dBuA/m = dBuV/m - 20log10(120\pi) = dBuV/m - 51.5$ .

Note: All test modes had been tested, only the worst data record in the report.



## 7.7. SPURIOUS EMISSIONS BELOW 1GHz AND ABOVE 30MHz

### SPURIOUS EMISSIONS (HIGH CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



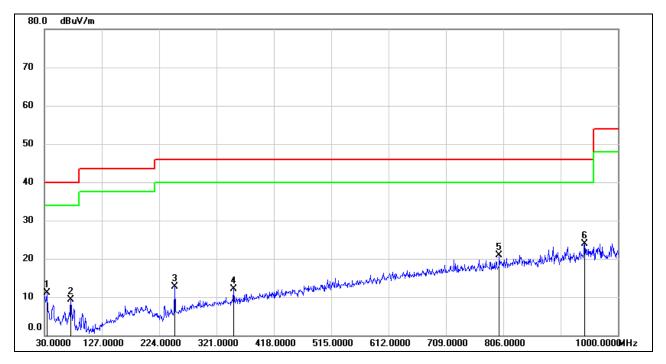
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	30.0000	28.69	-17.24	11.45	40.00	-28.55	QP
2	71.7100	30.22	-19.94	10.28	40.00	-29.72	QP
3	177.4400	27.97	-16.71	11.26	43.50	-32.24	QP
4	250.1900	30.38	-16.34	14.04	46.00	-31.96	QP
5	350.1000	29.19	-13.52	15.67	46.00	-30.33	QP
6	829.2800	35.73	-5.11	30.62	46.00	-15.38	QP

Note: 1. Result Level = Read Level + Correct Factor.

- 2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
- 3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.



## SPURIOUS EMISSIONS (HIGH CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	34.8500	28.61	-17.45	11.16	40.00	-28.84	QP
2	74.6200	29.51	-20.29	9.22	40.00	-30.78	QP
3	250.1900	29.14	-16.34	12.80	46.00	-33.20	QP
4	350.1000	25.71	-13.52	12.19	46.00	-33.81	QP
5	799.2100	26.45	-5.54	20.91	46.00	-25.09	QP
6	943.7400	27.47	-3.60	23.87	46.00	-22.13	QP

Note: 1. Result Level = Read Level + Correct Factor.

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto

Note: All test modes had been tested, only the worst data record in the report.



# 8. ANTENNA REQUIREMENTS

## APPLICABLE REQUIREMENTS

#### Please refer to FCC §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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

### Please refer to FCC §15.247(b)(4)

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

## <u>RESULTS</u>

Complies

# **END OF REPORT**