



# CFR 47 FCC PART 15 SUBPART C ISED RSS-247 ISSUE 2

## **CERTIFICATION TEST REPORT**

For

## Wifi Module

MODEL NUMBER: SI01B

FCC ID: 2AFG6-SI01B

IC: 22166-SI01B

**REPORT NUMBER: 4790081441-1** 

**ISSUE DATE: December 8, 2021** 

Prepared for

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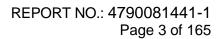
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## **Revision History**

Rev.	Issue Date	Revisions	Revised By
V0	12/08/2021	Initial Issue	





Summary of Test Results				
CI ause	Test Items	FCC/ISED Rules	Test Results	
1	6dB Bandwidth and 99% Occupied Bandwidth	FCC Part 15.247 (a) (2) RSS-247 Clause 5.2 (a) ISED RSS-Gen Clause 6.7	Pass	
2	Conducted Output PowerFCC Part 15.247 (b) (3) RSS-247 Clause 5.4 (d)Part		Pass	
3	Power Spectral Density FCC Part 15.247 (e) RSS-247 Clause 5.2 (b)		Pass	
4	Conducted Bandedge and Spurious Emission	FCC Part 15.247 (d) RSS-247 Clause 5.5	Pass	
5	Radiated Bandedge and Spurious Emission	FCC Part 15.247 (d) FCC Part 15.209 FCC Part 15.205 RSS-247 Clause 5.5 RSS-GEN Clause 8.9	Pass	
6	Conducted Emission Test for AC Power Port	FCC Part 15.207 RSS-GEN Clause 8.8	Pass	
7	Antenna Requirement	FCC Part 15.203 RSS-GEN Clause 6.8	Pass	

Note:

1. This test report is only published to and used by the applicant, and it is not for evidence purpose in China.

2. The measurement result for the sample received is <Pass> according to < CFR 47 FCC PART 15 SUBPART C >< ISED RSS-247 > when <Accuracy Method> decision rule is applied.



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# **1. ATTESTATION OF TEST RESULTS**

## Applicant Information

Company Name:	Guangzhou Shirui Electronics Co., Ltd.
Address:	192 Kezhu Road, Scientech Park, Guangzhou Economic $\&$
	Technology Development District, Guangzhou, Guangdong, China

### Manufacturer Information

Company Name:	Guangzhou Shirui Electronics Co., Ltd.
Address:	192 Kezhu Road, Scientech Park, Guangzhou Economic $\&$
	Technology Development District, Guangzhou, Guangdong, China

### **EUT Information**

EUT Name:	Wifi Module
Model:	SI01B
Sample Received Date:	August 31, 2021
Sample Status:	Normal
Sample ID:	4175727
Date of Tested:	September 1, 2021 ~ December 8, 2021

APPLICABLE STANDARDS				
STANDARD TEST RESULTS				
CFR 47 FCC PART 15 SUBPART C	PASS			
ISED RSS-247 Issue 2	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 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, CFR 47 FCC Part 2, CFR 47 FCC Part 15, ANSI C63.10-2013, ISED RSS-247 Issue 2 and ISED RSS-GEN Issue 5.

# 3. FACILITIES AND ACCREDITATION

	A2LA (Certificate No.: 4102.01)
	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch.
	has been assessed and proved to be in compliance with A2LA.
	FCC (FCC Designation No.: CN1187)
	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch.
	Has been recognized to perform compliance testing on equipment subject
	to the Commission's Delcaration of Conformity (DoC) and Certification
	rules
	ISED (Company No.: 21320)
Accreditation	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch.
Certificate	has been registered and fully described in a report filed with ISED.
	The Company Number is 21320 and the test lab Conformity Assessment
	Body Identifier (CABID) is CN0046.
	VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)
	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.
	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

Note 1: 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

Note 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.

Note 3: For below 30 MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30 MHz 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 recognize 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	3.62 dB		
Radiated Emission (Included Fundamental Emission) (9 kHz ~ 30 MHz)	2.2 dB		
Radiated Emission (Included Fundamental Emission) (30 MHz ~ 1 GHz)	4.00 dB		
Radiated Emission	5.78 dB (1 GHz ~ 18 GHz)		
(Included Fundamental Emission) (1 GHz to 26 GHz)	5.23 dB (18 GHz ~ 26 GHz)		
Duty Cycle	±0.028%		
DTS and 99% Occupied Bandwidth	±0.0196%		
Maximum Conducted Output Power	±0.686 dB		
Maximum Power Spectral Density Level	±0.743 dB		
Conducted Band-edge Compliance	±1.328 dB		
Conducted Unwanted Emissions In Non-restricted	±0.746 dB (9 kHz ~ 1 GHz)		
Frequency Bands	±1.328dB (1 GHz ~ 26 GHz)		
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	Wifi Module
Model Name	SI01B
Radio Technology	WLAN (IEEE 802.11b/g/n HT20/n HT40 ax HE20/ax HE40)
Operation frequency	IEEE 802.11b: 2412MHz ~ 2462MHz IEEE 802.11g: 2412MHz ~ 2462MHz IEEE 802.11n HT20: 2412MHz ~ 2462MHz IEEE 802.11n HT40: 2422MHz ~ 2452MHz IEEE 802.11ax HE20: 2412MHz ~ 2462MHz IEEE 802.11ax HE40: 2422MHz ~ 2452MHz
Modulation	IEEE 802.11b: DSSS(CCK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ax HE20: OFDMA (BPSK, QPSK,16QAM,64QAM, 256QAM, 1024QAM) IEEE 802.11ax HE40: OFDMA (BPSK, QPSK,16QAM,64QAM, 256QAM, 1024QAM)
Rated Input	DC 5 V

# 5.2. CHANNEL LIST

Channel List for 802.11b/g/n/ax (20 MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	4	2427	7	2442	10	2457
2	2417	5	2432	8	2447	11	2462
3	2422	6	2437	9	2452	/	/

	Channel List for 802.11n/ax (40 MHz)							
Channel I I Channel I I Channel I I Channel I I Channel I				Frequency (MHz)				
3	2422	5	2432	7	2442	9	2452	
4	2427	6	2437	8	2447	/	/	



# 5.3. MAXIMUM OUTPUT POWER

IEEE Std. 802.11	Frequency (MHz)	Channel Number	Maximum Conducted AVG Output Power (dBm)
b	2412 ~ 2462	1-11[11]	5.85
g	2412 ~ 2462	1-11[11]	6.64
n HT20	2412 ~ 2462	1-11[11]	6.53
n HT40	2422 ~ 2452	3-9[7]	6.52
ax HE20	2412 ~ 2462	1-11[11]	11.23
ax HE40	2422 ~ 2452	3-9[7]	18.83

# 5.4. TEST CHANNEL CONFIGURATION

IEEE Std. 802.11	Test Channel Number	Frequency
b	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz
g	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz
n HT20	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz
n HT40	CH 3(Low Channel), CH 6(MID Channel), CH 9(High Channel)	2422 MHz, 2437 MHz, 2452 MHz
ax HE20	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz
ax HE40	CH 3(Low Channel), CH 6(MID Channel), CH 9(High Channel)	2422 MHz, 2437 MHz, 2452 MHz

# 5.5. THE WORSE CASE POWER SETTING PARAMETER

The V	The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band							
Test Softv	vare		SecureCRT					
	Transmit		Test Channel					
IEEE Std. 802.11	Antenna	NCB: 20MHz			NCB: 40MHz			
002.11	Number	CH 1	CH 6	CH 11	CH 3	CH 6	CH 9	
b	1	2	2	3		/		
g	1	5	5	5				
n HT20	1	5	5	5				
n HT40	1		/		5	5	5	
ax HE20	1	11	11	11		/		
ax HE40	1		/		11	11	11	



# 5.6. THE WORSE CASE CONFIGURATIONS

The EUT was tested in the following configuration(s):

Controlled in test mode using a software application on the EUT supplied by customer. The application was used to enable a continuous transmission and to select the mode, test channels, bandwidth, data rates as required.

Test channels referring to section 5.4.

Maximum power setting referring to section 5.5.

Worst-case data rates as provided by the client were:

802.11b mode: 1 Mbps 802.11g mode: 6 Mbps 802.11n HT20 mode: MCS0 802.11n HT40 mode: MCS0 802.11ax HE20 mode: MCS0 802.11ax HE40 mode: MCS0

The measured additional path loss was included in any path loss calculations for all RF cable used during tested.



# 5.7. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
0	2412-2462	Dipole antenna	3.18

Test Mode	Transmit and Receive Mode	Description
IEEE 802.11b	⊠1TX, 1RX	ANT 0 can be used as transmitting/receiving antenna.
IEEE 802.11g	⊠1TX, 1RX	ANT 0 can be used as transmitting/receiving antenna.
IEEE 802.11n HT20	⊠1TX, 1RX	ANT 0 can be used as transmitting/receiving antenna.
IEEE 802.11n HT40	⊠1TX, 1RX	ANT 0 can be used as transmitting/receiving antenna.
IEEE 802.11ax HE20	⊠1TX, 1RX	ANT 0 can be used as transmitting/receiving antenna.
IEEE 802.11ax HE40	⊠1TX, 1RX	ANT 0 can be used as transmitting/receiving antenna.

Note: The value of the antenna gain was declared by customer.



# 5.8. DESCRIPTION OF TEST SETUP

#### SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Remarks
1	Laptop	Lenovo	XIAOXIN 5000	/
2	Main Board	/	/	/
3	Serial to USB Board	/	/	/
3	AC Power Adapter	/	/	

### I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	USB	/	Unshielded	1.0	/

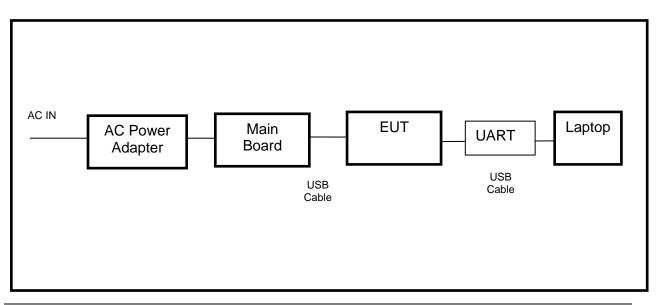
## ACCESSORIES

Item	Accessory	Brand Name	Model Name	Description
/	/	/	/	/

#### TEST SETUP

The EUT can work in engineering mode with a software through a Laptop.

## SETUP DIAGRAM FOR TESTS





# 6. MEASURING INSTRUMENT AND SOFTWARE USED

Last time calibration information:

Conducted Emissions						
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date	
EMI Test Receiver	R&S	ESR3	101961	Nov. 12, 2020	Nov. 11, 2021	
Two-Line V- Network	R&S	ENV216	101983	Nov. 12, 2020	Nov. 11, 2021	
Artificial Mains Networks	Schwarzbeck	NSLK 8126	8126465	Nov. 12, 2020	Nov. 11, 2021	
	Software					
Description			Manufacturer	Name	Version	
Test Software	for Conducted	Emissions	Farad	EZ-EMC	Ver. UL-3A1	

		Radiated	Emissions		
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Nov. 12, 2020	Nov. 11, 2021
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130959	Apr. 24, 2020	Apr. 23, 2023
Preamplifier	HP	8447D	2944A09099	Nov. 12, 2020	Nov. 11, 2021
EMI Measurement Receiver	R&S	ESR26	101377	Nov. 12, 2020	Nov. 11, 2021
Horn Antenna	TDK	HRN-0118	130940	Jul. 20, 2021	Jul. 19, 2024
Preamplifier	TDK	PA-02-0118	TRS-305- 00067	Nov. 20, 2020	Nov. 19, 2021
Horn Antenna	Schwarzbeck	BBHA9170	#697	July 20, 2021	July 19, 2024
Preamplifier	TDK	PA-02-2	TRS-307- 00003	Nov. 12, 2020	Nov. 11, 2021
Preamplifier	TDK	PA-02-3	TRS-308- 00002	Nov. 12, 2020	Nov. 11, 2021
Loop antenna	Schwarzbeck	1519B	00008	Jan.17, 2019	Jan.17,2022
Preamplifier	TDK	PA-02-001- 3000	TRS-302- 00050	Nov. 12, 2020	Nov. 11, 2021
Preamplifier	Mini-Circuits	ZX60-83LN- S+	SUP01201941	Nov. 20, 2020	Nov. 19, 2021
High Pass Filter	Wi	WHKX10- 2700-3000- 18000-40SS	23	Nov. 12, 2020	Nov. 11, 2021
Band Reject Filter	Wainwright	WRCJV8- 2350-2400- 2483.5- 2533.5-40SS	4	Nov. 12, 2020	Nov. 11, 2021



Software					
Description	Manufacturer	Name	Version		
Test Software for Radiated Emissions	Farad	EZ-EMC	Ver. UL-3A1		

Tonsend RF Test System							
Equipment	Manufacturer	Mo	odel No.	Serial No.	Last	Cal.	Due. Date
Wideband Radio Communication Tester	R&S	С	MW500	155523	Nov.2	0,2020	Nov.19,2021
PXA Signal Analyzer	Keysight	Ν	19030A	MY55410512	Nov.2	0,2020	Nov.19,2021
MXG Vector Signal Generator	Keysight	N	l5182B	MY56200284	Nov.2	0,2020	Nov.19,2021
MXG Vector Signal Generator	Keysight	N	l5172B	MY56200301	Nov.2	0,2020	Nov.19,2021
DC power supply	Keysight	nt E3642A		MY55159130	Nov.2	4,2020	Nov.23,2021
Software							
Description	Manufactu	rer Name		Name		``	Version
Tonsend SRD Test Syste	m Tonsend	ł	JS1120	-3 RF Test Sys	stem	2.6	6.77.0518

Other Instruments						
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.	
Dual Channel Power Meter	Keysight	N1912A	MY55416024	Nov. 20, 2020	Nov. 19, 2021	
Power Sensor	Keysight	USB Wideband Power Sensor	MY5100022	Nov. 20, 2020	Nov. 19, 2021	
Spectrum Analyzer	Keysight	N9020A	MY49100060	Nov. 20, 2020	Nov. 19, 2021	
Signal Analyzer	R&S	FSV40	101118	Nov.20,2020	Nov.19,2021	



This time calibration information:

Conducted Emissions							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date		
EMI Test Receiver	R&S	ESR3	101961	Oct.30, 2021	Oct.29, 2022		
Two-Line V- Network	R&S	ENV216	101983	Oct.30, 2021	Oct.29, 2022		
Artificial Mains Networks	Schwarzbeck	NSLK 8126	8126465	Oct.30, 2021	Oct.29, 2022		
	Software						
Description			Manufacturer	Name	Version		
Test Software	for Conducted	Emissions	Farad	EZ-EMC	Ver. UL-3A1		

	Radiated Emissions						
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date		
MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Oct.30, 2021	Oct.29, 2022		
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130959	Aug.02, 2021	Aug.01, 2024		
Preamplifier	HP	8447D	2944A09099	Oct.30, 2021	Oct.29, 2022		
EMI Measurement Receiver	R&S	ESR26	101377	Oct.30, 2021	Oct.29, 2022		
Horn Antenna	TDK	HRN-0118	130940	July 20, 2021	July 19, 2024		
Preamplifier	TDK	PA-02-0118	TRS-305- 00067	Oct.30, 2021	Oct.29, 2022		
Horn Antenna	Schwarzbeck	BBHA9170	697	July 20, 2021	July 19, 2024		
Preamplifier	TDK	PA-02-2	TRS-307- 00003	Oct.31, 2021	Oct.30, 2022		
Preamplifier	TDK	PA-02-3	TRS-308- 00002	Oct.31, 2021	Oct.30, 2022		
Loop antenna	Schwarzbeck	1519B	00008	Jan.17, 2019	Jan.17,2022		
Preamplifier	TDK	PA-02-001- 3000	TRS-302- 00050	Oct.31, 2021	Oct.30, 2022		
Preamplifier	Mini-Circuits	ZX60-83LN- S+	SUP01201941	Oct.31, 2021	Oct.30, 2022		
High Pass Filter	Wi	WHKX10- 2700-3000- 18000-40SS	23	Oct.31, 2021	Oct.30, 2022		
Band Reject Filter	Wainwright	WRCJV8- 2350-2400- 2483.5- 2533.5-40SS	4	Oct.31, 2021	Oct.30, 2022		
	Software						



Description	Manufacturer	Name	Version
Test Software for Radiated Emissions	Farad	EZ-EMC	Ver. UL-3A1

	Tonsend RF Test System							
Equipment	Manu	ıfacturer	Мос	del No.	Serial No.	Last C	al.	Due. Date
Wideband Radio Communication Tester	R	R&S	CM	W500	155523	Oct.30, 2	2021	Oct.29, 2022
Wireless Connectivity Tester	R	R&S	CM	W270	1201.0002N75- 102	Sep.29, 2	2021	Sep.28, 2022
PXA Signal Analyzer	Key	ysight	N9	030A	MY55410512	Oct.30, 2	2021	Oct.29, 2022
MXG Vector Signal Generator	Key	ysight	N5	182B	MY56200284	Oct.30, 2	2021	Oct.29, 2022
MXG Vector Signal Generator	Key	ysight	N5	172B	MY56200301	Oct.30, 2	2021	Oct.29, 2022
DC power supply	Key	ysight	E3	642A	MY55159130	Oct.30, 2	2021	Oct.29, 2022
Temperature & Humidity Chamber	SAN	MOOD	SG-8	30-CC-2	2088	Nov.20,2	2020	Nov.19,2022
	Software							
Description	Ν	/lanufact	turer		Name			Version
Tonsend SRD Test Sys	tem	Tonser	nd	JS11	120-3 RF Test S	ystem	2	.6.77.0518

Other Instruments						
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.	
Dual Channel Power Meter	Keysight	N1912A	MY55416024	Oct.30, 2021	Oct.29, 2022	
Power Sensor	Keysight	USB Wideband Power Sensor	MY5100022	Oct.30, 2021	Oct.29, 2022	
Spectrum Analyzer	Keysight	N9020A	MY49100060	Oct.30, 2021	Oct.29, 2022	
Signal Analyzer	R&S	FSV40	101118	Oct.30, 2021	Oct.29, 2022	



# 7. ANTENNA PORT TEST RESULTS 7.1. ON TIME AND DUTY CYCLE

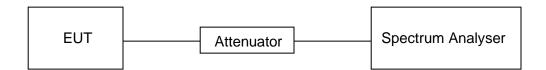
### LIMITS

None; for reporting purposes only

### PROCEDURE

Refer to ANSI C63.10-2013 clause 11.6 Zero – Span Spectrum Analyzer method.

#### TEST SETUP



#### **TEST ENVIRONMENT**

Temperature	26.1 °C	Relative Humidity	55.7 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

#### **RESULTS**

Please refer to appendix G.



# 7.2. 6 dB DTS BANDWIDTH AND 99 % OCCUPIED BANDWIDTH

### <u>LIMITS</u>

CFR 47 FCC Part15 (15.247) Subpart C						
Section Test Item Limit Frequency Range (MHz)						
CFR 47 FCC 15.247(a)(2) ISED RSS-247 5.2 (a)	6 dB Bandwidth	≥ 500 kHz	2400-2483.5			
ISED RSS-Gen Clause 6.7	99 % Occupied Bandwidth	For reporting purposes only.	2400-2483.5			

## TEST PROCEDURE

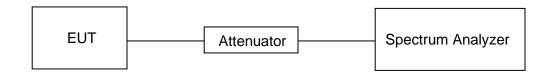
Center Frequency	The center frequency of the channel under test
Frequency Span	Between 1.5 times and 5.0 times the OBW
Detector	Peak
	For 6 dB Bandwidth: 100 kHz For 99 % Occupied Bandwidth: 1 % to 5 % of the occupied bandwidth
IVRW	For 6 dB Bandwidth: ≥3 × RBW For 99 % Occupied Bandwidth: ≥3 × RBW
Trace	Max hold
Sweep	Auto couple

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

a) Use the 99 % power bandwidth function of the instrument, allow the trace to stabilize and report the measured bandwidth.

b) 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 relative to the maximum level measured in the fundamental emission.

## TEST SETUP





## TEST ENVIRONMENT

Temperature	26.1 °C	Relative Humidity	55.7 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

#### **RESULTS**

Please refer to appendix A & B.



# 7.3. CONDUCTED OUTPUT POWER

### <u>LIMITS</u>

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2						
Section Test Item Limit Frequency Range (MHz)						
CFR 47 FCC 15.247(b)(3) ISED RSS-247 5.4 (d)	AVG Output Power	1 watt or 30 dBm	2400-2483.5			

### TEST PROCEDURE

For Peak Power:

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

a) Set the RBW = 1 MHz.

b) Set the VBW  $\geq$  [3 × RBW].

c) Set the span  $\geq$  [1.5 × DTS bandwidth].

d) Detector = peak.

e) Sweep time = auto couple.

f) Trace mode = max hold.

g) Allow trace to fully stabilize.

h) Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges (for some instruments, this may require a manual override to select the peak detector). If the instrument does not have a band power function, then sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the DTS channel bandwidth.

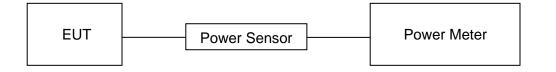
Measure peak emission level, the indicated level is the peak output power, after any corrections for external attenuators and cables.

For Average Power:

Connect the EUT to a low loss RF cable from the antenna port to the power sensor (video bandwidth is greater than the occupied bandwidth).

Measure peak emission level, the indicated level is the average output power, after any corrections for external attenuators and cables.

## TEST SETUP





## TEST ENVIRONMENT

Temperature	26.1 °C	Relative Humidity	55.7 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

## RESULTS

Please refer to appendix C.



# 7.4. POWER SPECTRAL DENSITY

### <u>LIMITS</u>

	CFR 47 FCC Part15 (15.2 ISED RSS-247 I		
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC §15.247 (e) ISED RSS-247 5.2 (b)	Power Spectral Density	8 dBm/3 kHz	2400-2483.5

#### TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.10.

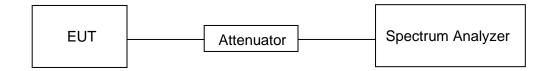
Connect the EUT to the spectrum analyser and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	PEAK
RBW	3 kHz ≤ RBW ≤ 100 kHz
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.

If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

#### TEST SETUP



#### **TEST ENVIRONMENT**

Temperature	26.1 °C	Relative Humidity	55.7 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V



Please refer to appendix D.



# 7.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

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

	CFR 47 FCC Part15 (1 ISED RSS-24		
Section	Test Item Limit		
CFR 47 FCC §15.247 (d) ISED RSS-247 5.5	Conducted Bandedge and Spurious Emissions	at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power	

## TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.11 and 11.13.

Connect the EUT to the spectrum analyser and use the following settings for reference level measurement:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	100 kHz
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level.

Change the settings for emission level measurement:

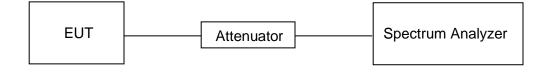
1.50/20	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100 kHz
VBW	≥3 × RBW
measurement points	≥span/RBW
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level. Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11.

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## **TEST SETUP**



### **TEST ENVIRONMENT**

Temperature	26.1 °C	Relative Humidity	55.7 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

### **RESULTS**

Please refer to appendix E & F.



# 8. RADIATED TEST RESULTS

Please refer to CFR 47 FCC §15.205 and §15.209.

Please refer to ISED RSS-GEN Clause 8.9 and Clause 8.10.

Radiation Disturbance Test Limit for FCC (Class B) (9 kHz ~ 1 GHz)

Emissions radia	ated outside of the specified frequent	cy bands above 30	MHz
Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Stren (dBuV/m)	-
		Quasi-I	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 Emissio	ons radiated outside of the specified fr	equency bands below 30 MHz
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 frequenci	es 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.



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

MHz	MHz	GHz
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 - 285	15.35 - 18.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.8 - 24.0
6.26775 - 6.26825	980 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3260 - 3267	
18.42 - 18.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
18.80425 - 18.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 - 8500	
108 - 138		

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 refer to FCC §15.205 (a):

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	(2)	
13.36-13.41				

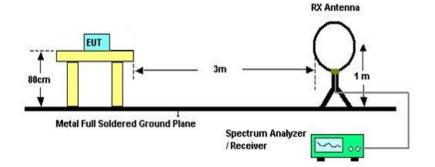
Note: <sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz. <sup>2</sup>Above 38.6c

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## TEST SETUP AND PROCEDURE

Below 30 MHz



## The setting of the spectrum analyser

RBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
VBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
Sweep	Auto
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 11.11 and 11.12.

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 80 cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1 m 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 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

6. For measurement below 1 GHz, 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 and average detector mode remeasured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak and average detector and reported.

7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field 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 site based on KDB 414788.

8. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377  $\Omega$ ; For example, the measurement frequency X kHz resulted in a level of Y dBuV/m, which is equivalent to Y-51.5 = Z dBuA/m, which has the same margin, W dB, to

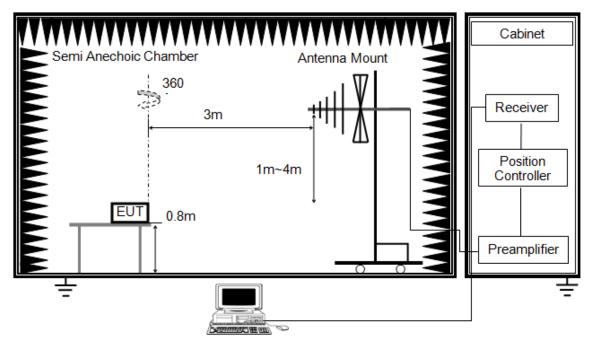
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the corresponding RSS-GEN Table 6 limit as it has to be 15.209(a) limit.



Below 1 GHz and above 30 MHz



The setting of the spectrum analyser

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

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.5.

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 80 cm above ground.

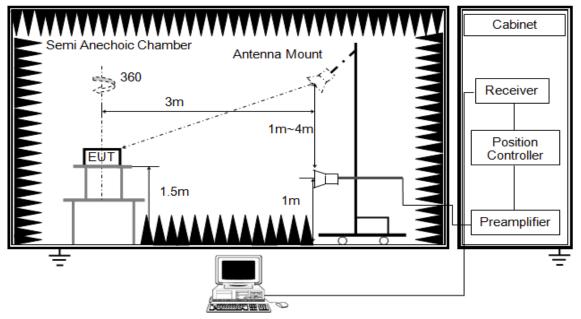
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

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### Above 1 GHz



The setting of the spectrum analyser

RBW	1 MHz
IVRW	PEAK: 3 MHz AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.6.

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 1.5 m above ground.

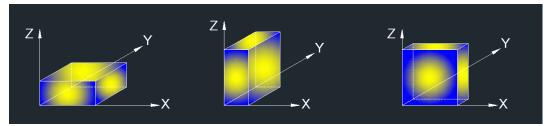
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement above 1 GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.

6. 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 and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 7.1.ON TIME AND DUTY CYCLE.



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.

Note 2: The EUT was fully exercised with external accessories during the test. In the case of multiple accessory external ports, an external accessory shall be connected to one of each type of port.

Note 3: Simultaneous transmission had been evaluated with the 2.4 GHz WLAN and BT / BLE transmitter and has no additional or worse emissions found. Only the worst data was recorded in the test report.

Note 4: For all radiated test, all the rotational position of the antenna had been tested, but only the worst case data was recorded in the report.

### TEST ENVIRONMENT

Temperature	24.3 °C	Relative Humidity	61 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

#### **RESULTS**

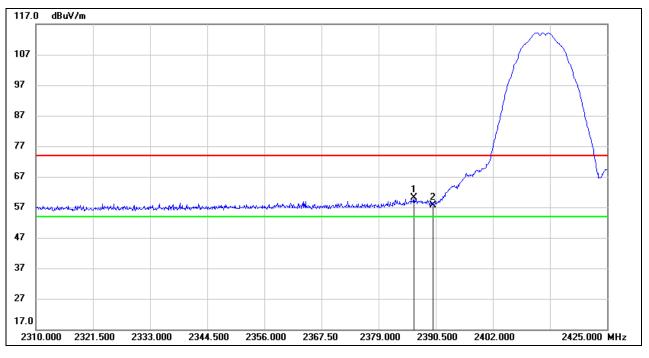


# 8.1. RESTRICTED BANDEDGE

## 8.1.1. 802.11b MODE

## **RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)**

<u>PEAK</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2386.130	26.71	33.32	60.03	74.00	-13.97	peak
2	2390.000	24.21	33.35	57.56	74.00	-16.44	peak

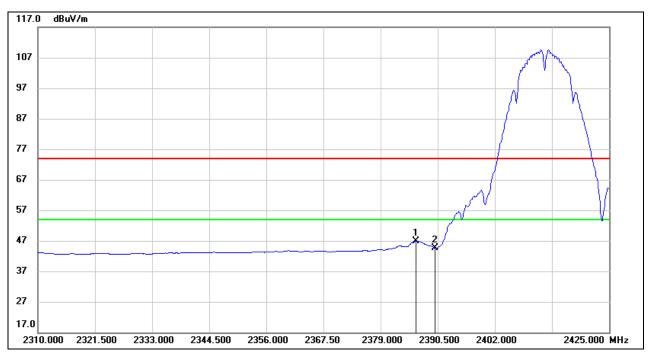
Note: 1. Measurement = Reading Level + Correct Factor.

2. Peak: Peak detector.

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



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2386.130	13.55	33.32	46.87	54.00	-7.13	AVG
2	2390.000	11.25	33.35	44.60	54.00	-9.40	AVG

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

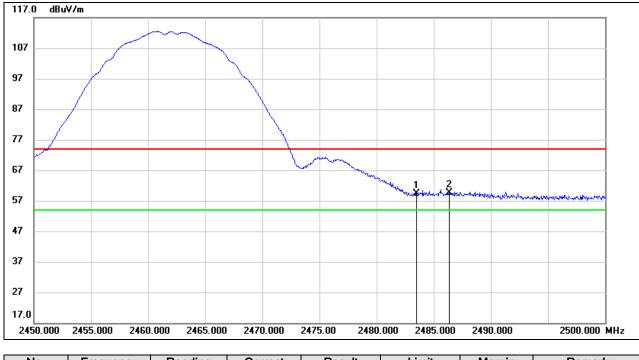
2. Peak: Peak detector.

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



## **RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)**

<u>PEAK</u>



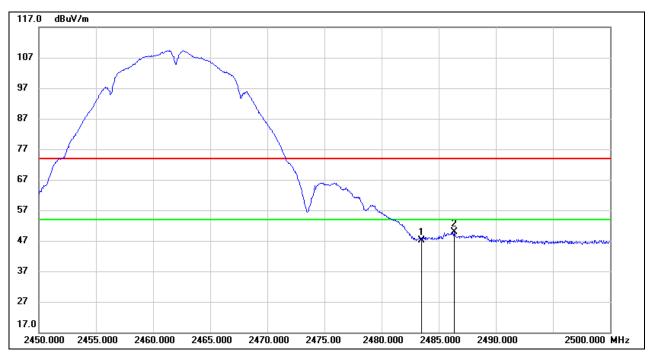
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	25.74	33.71	59.45	74.00	-14.55	peak
2	2486.350	25.98	33.72	59.70	74.00	-14.30	peak

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

2. Peak: Peak detector.

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





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	13.34	33.71	47.05	54.00	-6.95	AVG
2	2486.350	16.20	33.72	49.92	54.00	-4.08	AVG

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

2. Peak: Peak detector.

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

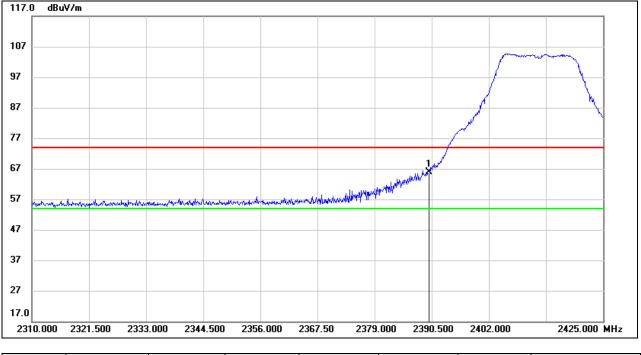
Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.



# 8.1.2. 802.11g MODE

#### **RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)**

<u>PEAK</u>

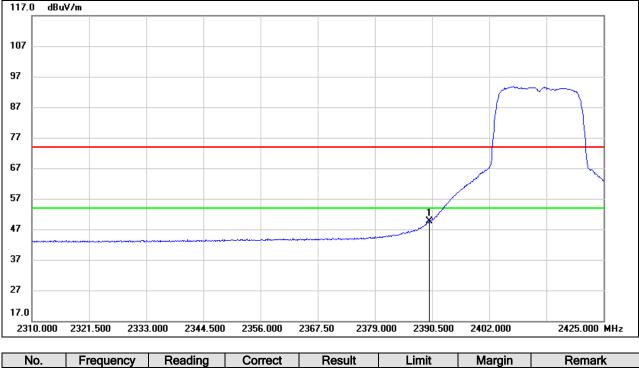


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	32.45	33.35	65.80	74.00	-8.20	peak

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

2. Peak: Peak detector.





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	16.19	33.35	49.54	54.00	-4.46	AVG

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

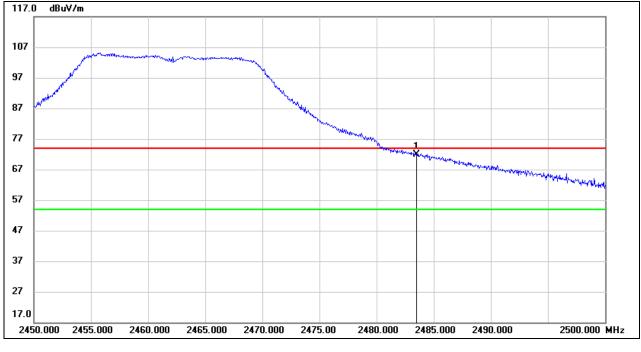
2. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

3. For the transmitting duration, please refer to clause 7.1.



# **RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)**

### <u>PEAK</u>

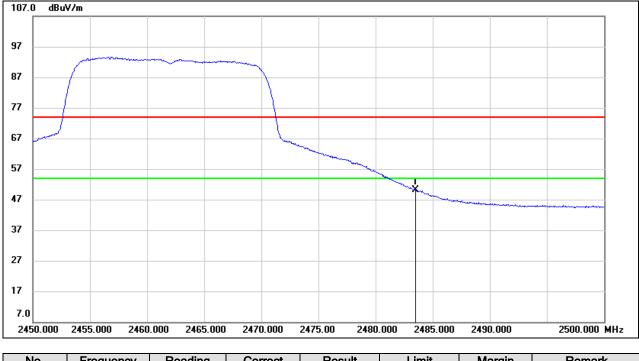


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	38.17	33.71	71.88	74.00	-2.12	peak

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

2. Peak: Peak detector.





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	16.54	33.71	50.25	54.00	-3.75	AVG

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

2. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

3. For the transmitting duration, please refer to clause 7.1.

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

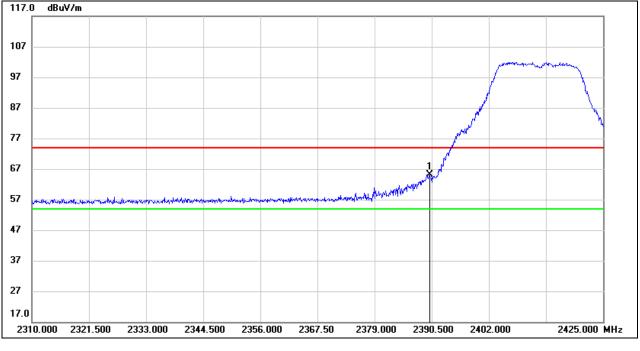
Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.



# 8.1.3. 802.11n HT20 MODE

### **RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)**

<u>PEAK</u>

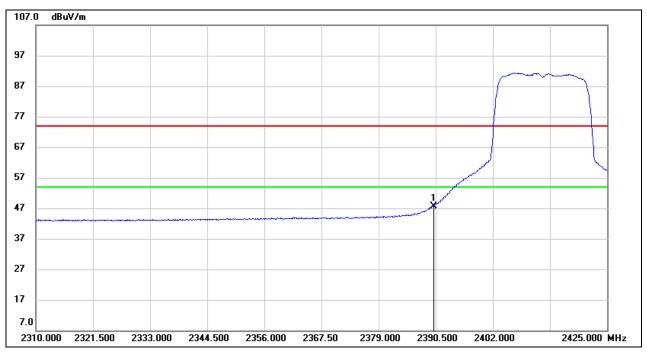


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	31.79	33.35	65.14	74.00	-8.86	peak

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

2. Peak: Peak detector.





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	14.27	33.35	47.62	54.00	-6.38	AVG

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

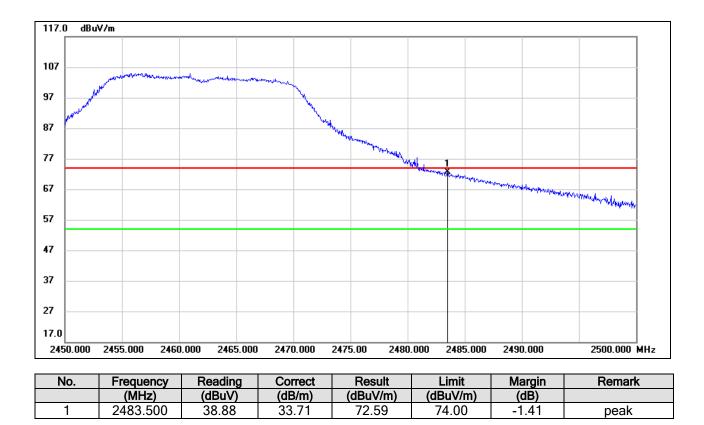
2. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

3. For the transmitting duration, please refer to clause 7.1.



# **RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)**

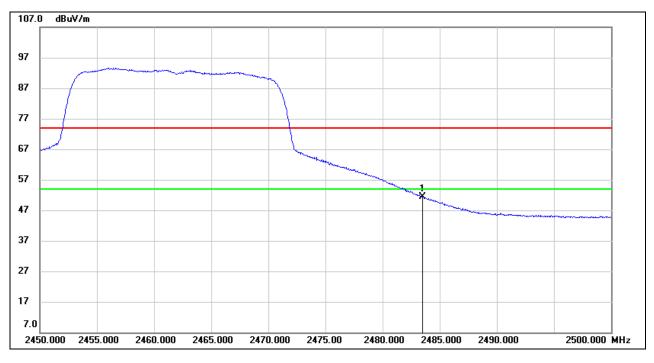
<u>PEAK</u>



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

2. Peak: Peak detector.





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	17.73	33.71	51.44	54.00	-2.56	AVG

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

2. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

3. For the transmitting duration, please refer to clause 7.1.

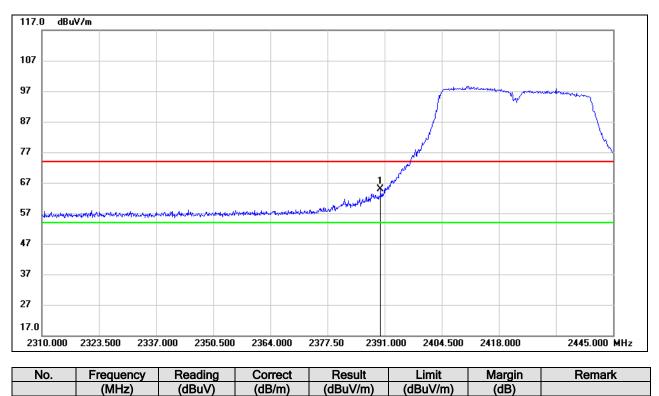
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.



# 8.1.4. 802.11n HT40 MODE

#### **RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)**



<u>PEAK</u>

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

31.52

2. Peak: Peak detector.

2390.000

1

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

64.87

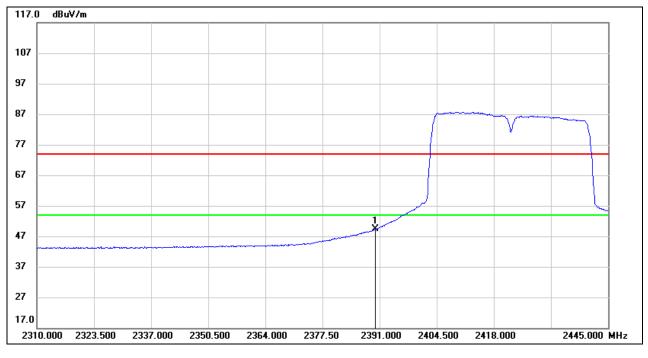
74.00

-9.13

peak

33.35





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	15.99	33.35	49.34	54.00	-4.66	AVG

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

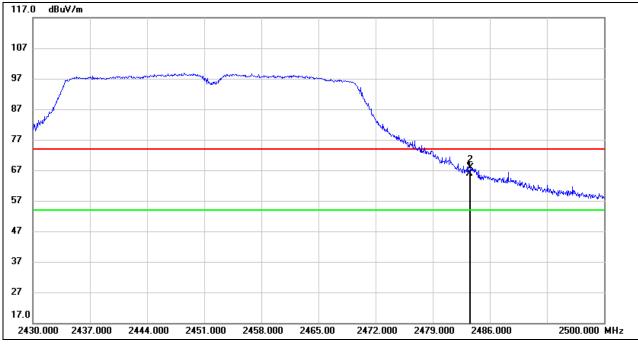
2. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

3. For the transmitting duration, please refer to clause 7.1.



# **RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)**

<u>PEAK</u>

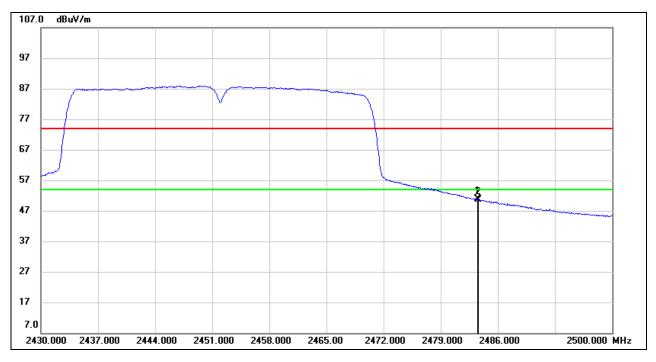


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	32.18	33.71	65.89	74.00	-8.11	peak
2	2483.620	34.21	33.71	67.92	74.00	-6.08	peak

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

2. Peak: Peak detector.





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	17.09	33.71	50.80	54.00	-3.20	AVG
2	2483.620	16.83	33.71	50.54	54.00	-3.46	AVG

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

2. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

3. For the transmitting duration, please refer to clause 7.1.

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

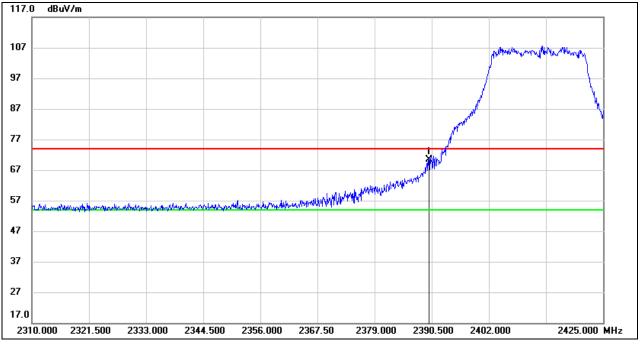
Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.



# 8.1.5. 802.11ax HE20 MODE

#### **RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)**

<u>PEAK</u>

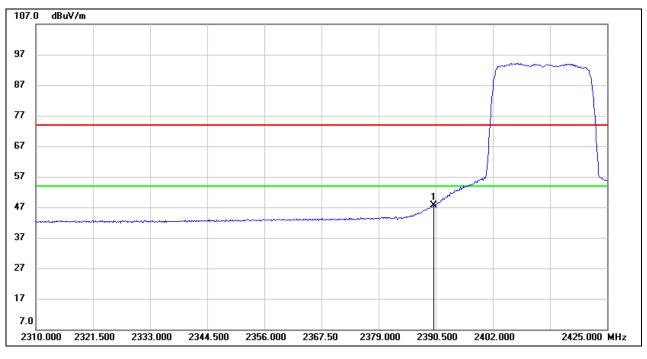


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	37.66	32.66	70.32	74.00	-3.68	peak

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

2. Peak: Peak detector.





No.	. Frequen	cy Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.00	0 15.00	32.66	47.66	54.00	-6.34	AVG

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

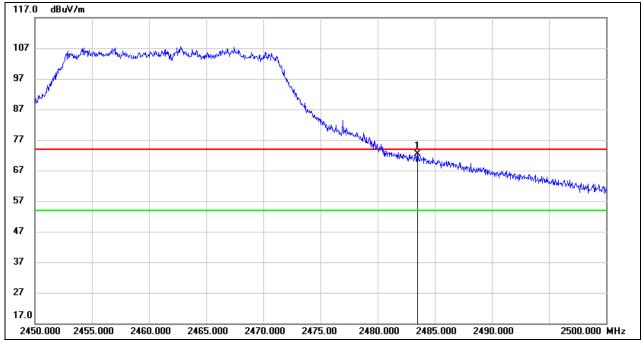
2. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

3. For the transmitting duration, please refer to clause 7.1.



### **RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)**

### <u>PEAK</u>

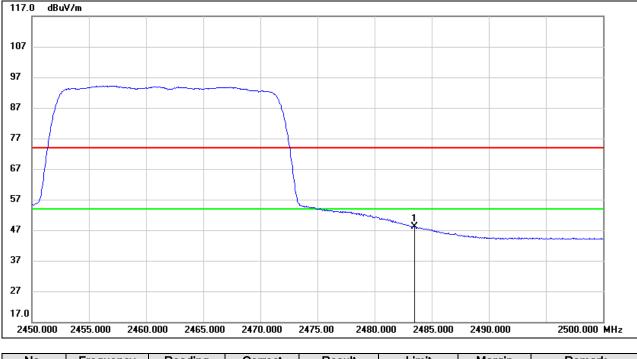


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	39.21	33.10	72.31	74.00	-1.69	peak

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

2. Peak: Peak detector.





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	14.94	33.10	48.04	54.00	-5.96	AVG

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

2. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

3. For the transmitting duration, please refer to clause 7.1.

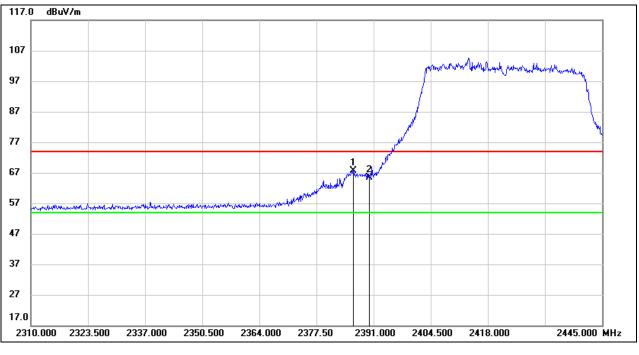
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.



# 8.1.6. 802.11ax HE40 MODE

### **RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)**



<u>PEAK</u>

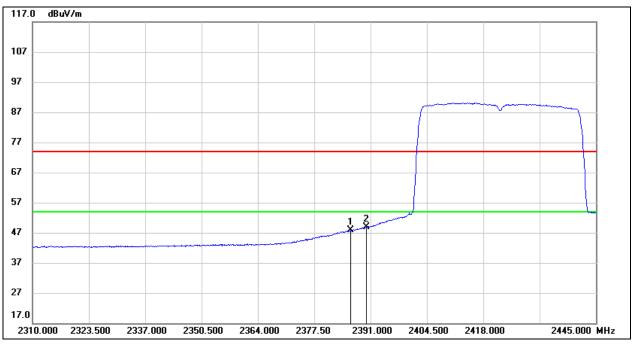
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2386.275	35.12	32.63	67.75	74.00	-6.25	peak
2	2390.000	32.69	32.66	65.35	74.00	-8.65	peak

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

2. Peak: Peak detector.



AVG



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2386.275	15.20	32.63	47.83	54.00	-6.17	AVG
2	2390.000	16.22	32.66	48.88	54.00	-5.12	AVG

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

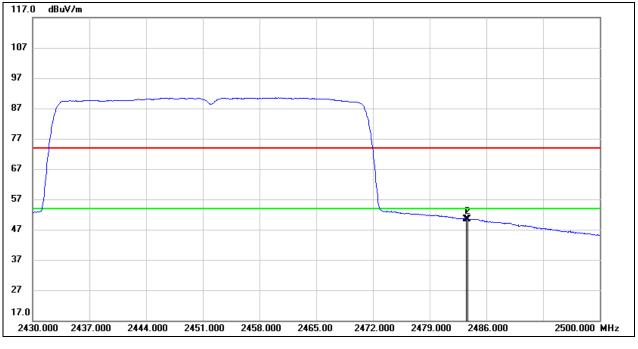
2. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

3. For the transmitting duration, please refer to clause 7.1.



# **RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)**

### <u>PEAK</u>

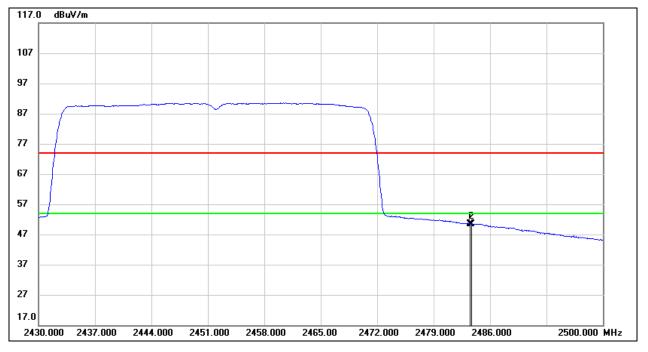


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	17.31	33.10	50.41	54.00	-3.59	AVG
2	2483.690	17.34	33.10	50.44	54.00	-3.56	AVG

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

2. Peak: Peak detector.





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	17.31	33.10	50.41	54.00	-3.59	AVG
2	2483.690	17.34	33.10	50.44	54.00	-3.56	AVG

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

2. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

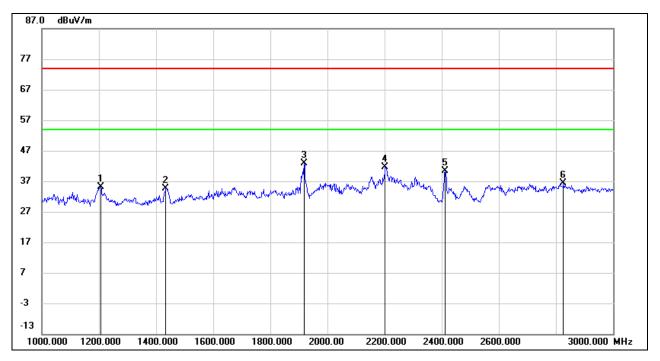
3. For the transmitting duration, please refer to clause 7.1.

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

Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.



# 8.2.1. 802.11ax HE 40 MODE



#### 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	1207.500	48.94	-13.74	35.20	74.00	-38.80	peak
2	1434.500	47.55	-12.94	34.61	74.00	-39.39	peak
3	1919.750	53.84	-11.01	42.83	74.00	-31.17	peak
4	2203.000	51.47	-9.88	41.59	74.00	-32.41	peak
5	2412.000	49.37	-9.03	40.34	/	/	Fundamental
6	2826.250	44.03	-7.61	36.42	74.00	-37.58	peak

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

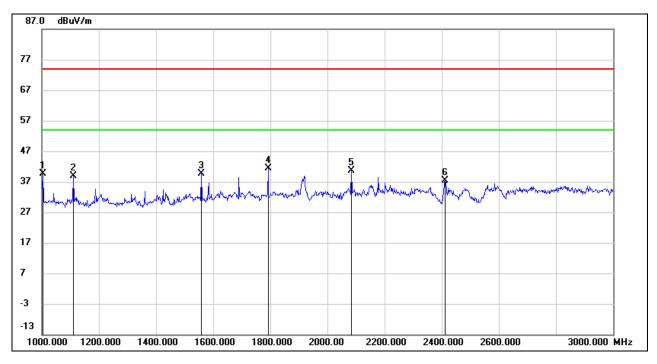
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1005.000	54.65	-15.04	39.61	74.00	-34.39	peak
2	1110.500	53.21	-14.35	38.86	74.00	-35.14	peak
3	1558.500	51.81	-12.22	39.59	74.00	-34.41	peak
4	1793.750	52.14	-10.81	41.33	74.00	-32.67	peak
5	2085.250	51.30	-10.64	40.66	74.00	-33.34	peak
6	2412.000	46.43	-9.04	37.39	1	/	Fundamental

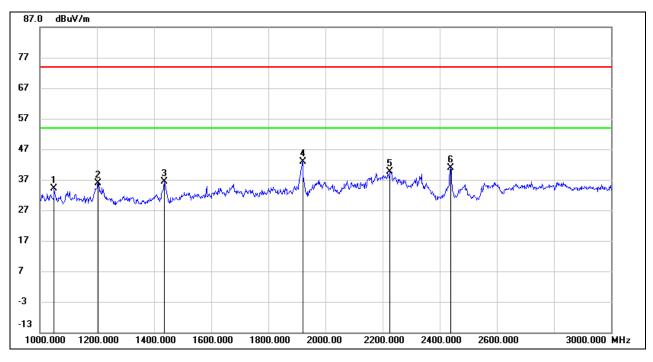
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1051.250	48.92	-14.75	34.17	74.00	-39.83	peak
2	1204.750	49.71	-13.75	35.96	74.00	-38.04	peak
3	1436.750	49.30	-12.93	36.37	74.00	-37.63	peak
4	1920.000	54.02	-11.02	43.00	74.00	-31.00	peak
5	2227.750	49.45	-9.78	39.67	74.00	-34.33	peak
6	2437.000	49.77	-8.98	40.79	/	/	Fundamental

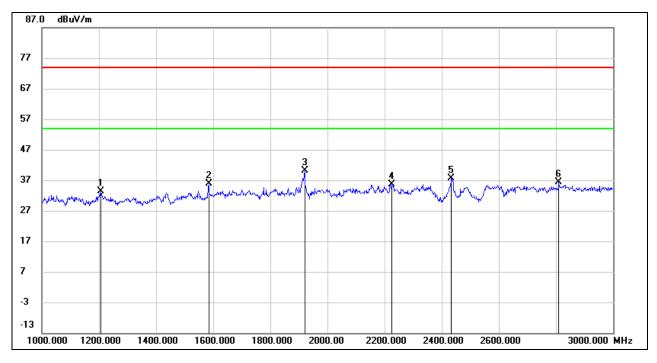
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1206.500	47.09	-13.75	33.34	74.00	-40.66	peak
2	1584.500	47.84	-12.08	35.76	74.00	-38.24	peak
3	1920.000	51.18	-11.02	40.16	74.00	-33.84	peak
4	2226.750	45.52	-9.78	35.74	74.00	-38.26	peak
5	2437.000	46.70	-8.99	37.71	/	/	Fundamental
6	2811.250	44.12	-7.66	36.46	74.00	-37.54	peak

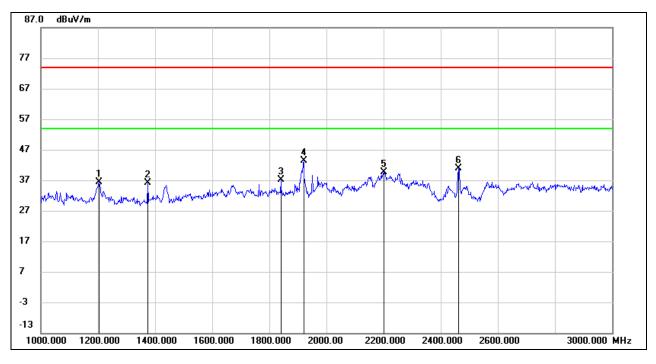
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter 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	1204.750	50.08	-13.75	36.33	74.00	-37.67	peak
2	1375.750	49.39	-13.24	36.15	74.00	-37.85	peak
3	1840.000	48.05	-10.85	37.20	74.00	-36.80	peak
4	1920.000	54.31	-11.02	43.29	74.00	-30.71	peak
5	2201.750	49.58	-9.89	39.69	74.00	-34.31	peak
6	2462.000	49.91	-8.92	40.99	/	/	Fundamental

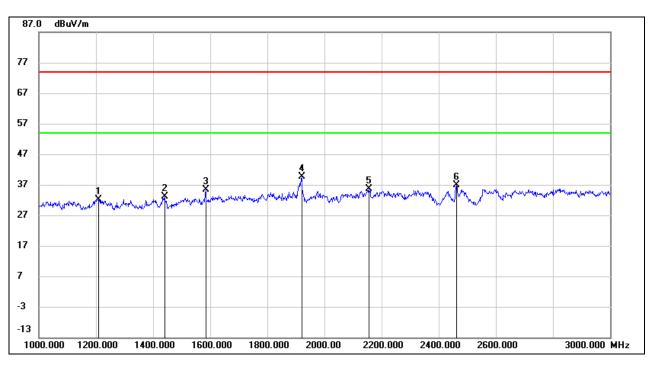
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.





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No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1210.750	45.88	-13.73	32.15	74.00	-41.85	peak
2	1441.000	46.07	-12.90	33.17	74.00	-40.83	peak
3	1584.250	47.56	-12.08	35.48	74.00	-38.52	peak
4	1920.000	50.60	-11.02	39.58	74.00	-34.42	peak
5	2156.750	45.84	-10.17	35.67	74.00	-38.33	peak
6	2462.000	45.67	-8.90	36.77	/	/	Fundamental

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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.

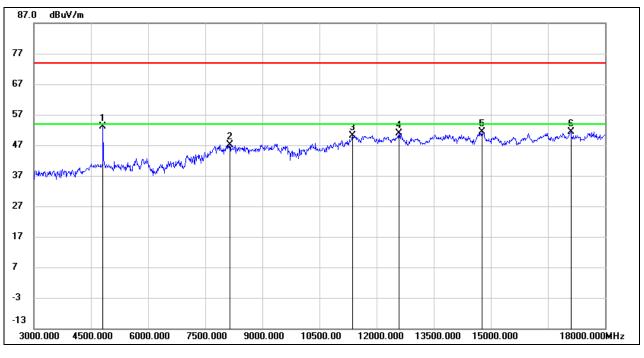
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

Note: All modes and channels have been tested, only the worst data was recorded in the report.



# 8.3.1. 802.11b MODE

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	4822.500	51.80	1.37	53.17	74.00	-20.83	peak
2	8145.000	37.21	10.01	47.22	74.00	-26.78	peak
3	11377.500	35.66	14.55	50.21	74.00	-23.79	peak
4	12592.500	35.18	15.76	50.94	74.00	-23.06	peak
5	14767.500	33.42	17.93	51.35	74.00	-22.65	peak
6	17107.500	29.40	21.91	51.31	74.00	-22.69	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.

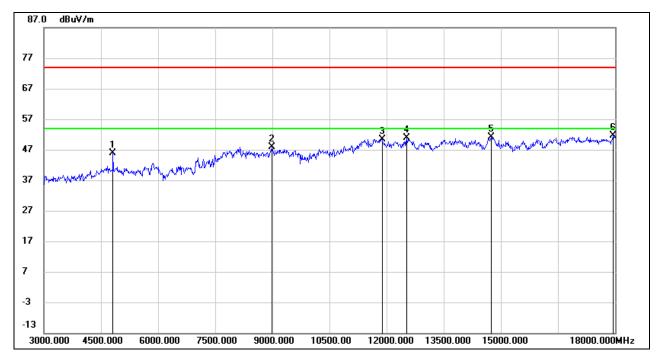
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

5. For the transmitting duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter 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	4822.500	44.60	1.37	45.97	74.00	-28.03	peak
2	8992.500	36.77	11.12	47.89	74.00	-26.11	peak
3	11887.500	34.95	15.49	50.44	74.00	-23.56	peak
4	12532.500	35.06	15.71	50.77	74.00	-23.23	peak
5	14752.500	33.36	17.88	51.24	74.00	-22.76	peak
6	17955.000	27.50	24.10	51.60	74.00	-22.40	peak

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

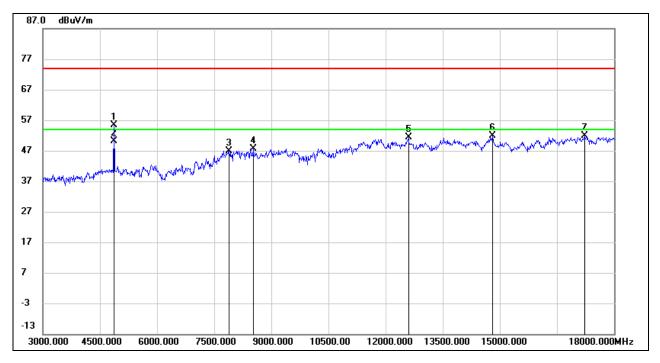
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter 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	4867.500	53.97	1.32	55.29	74.00	-18.71	peak
2	4867.500	48.82	1.32	50.14	54.00	-3.86	AVG
3	7890.000	37.91	8.91	46.82	74.00	-27.18	peak
4	8527.500	38.47	9.12	47.59	74.00	-26.41	peak
5	12600.000	35.48	15.78	51.26	74.00	-22.74	peak
6	14805.000	33.88	18.00	51.88	74.00	-22.12	peak
7	17227.500	29.65	22.16	51.81	74.00	-22.19	peak

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

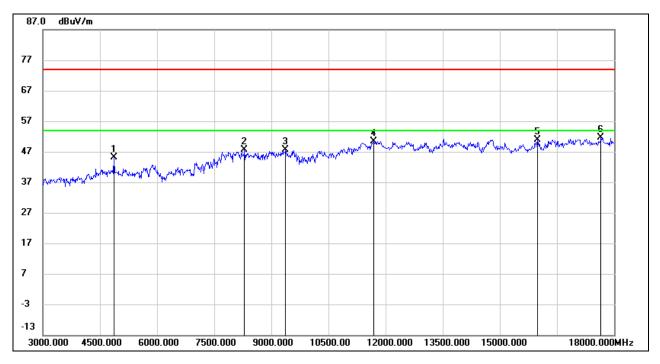
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4867.500	43.83	1.32	45.15	74.00	-28.85	peak
2	8295.000	37.87	9.69	47.56	74.00	-26.44	peak
3	9375.000	36.84	10.83	47.67	74.00	-26.33	peak
4	11685.000	35.11	15.26	50.37	74.00	-23.63	peak
5	15997.500	32.50	18.41	50.91	74.00	-23.09	peak
6	17655.000	28.54	23.14	51.68	74.00	-22.32	peak

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

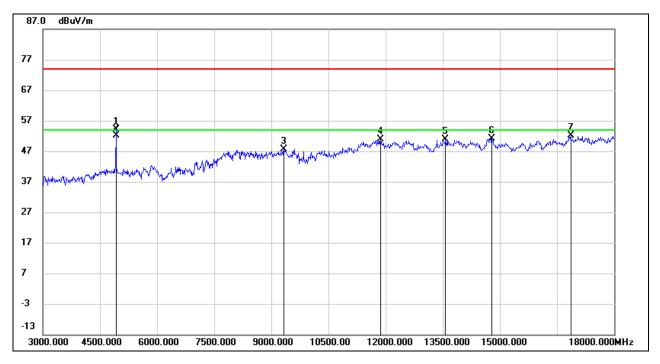
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter 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	4920.000	52.60	1.45	54.05	74.00	-19.95	peak
2	4920.000	50.57	1.45	52.02	54.00	-1.98	AVG
3	9337.500	36.95	10.61	47.56	74.00	-26.44	peak
4	11872.500	35.39	15.44	50.83	74.00	-23.17	peak
5	13582.500	33.79	17.12	50.91	74.00	-23.09	peak
6	14790.000	33.06	18.01	51.07	74.00	-22.93	peak
7	16860.000	30.89	21.22	52.11	74.00	-21.89	peak

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

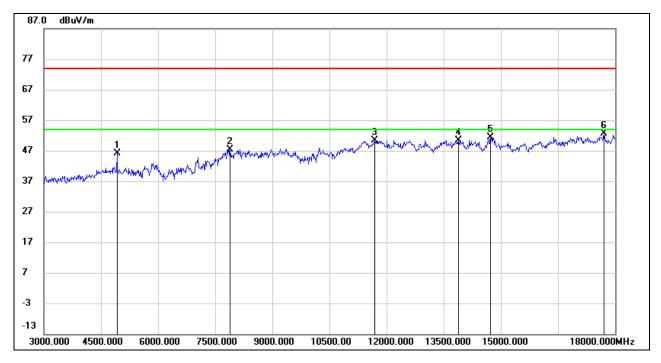
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4920.000	44.78	1.45	46.23	74.00	-27.77	peak
2	7897.500	38.56	8.88	47.44	74.00	-26.56	peak
3	11692.500	35.13	15.30	50.43	74.00	-23.57	peak
4	13890.000	32.91	17.53	50.44	74.00	-23.56	peak
5	14730.000	33.50	17.79	51.29	74.00	-22.71	peak
6	17707.500	29.06	23.51	52.57	74.00	-21.43	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 the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

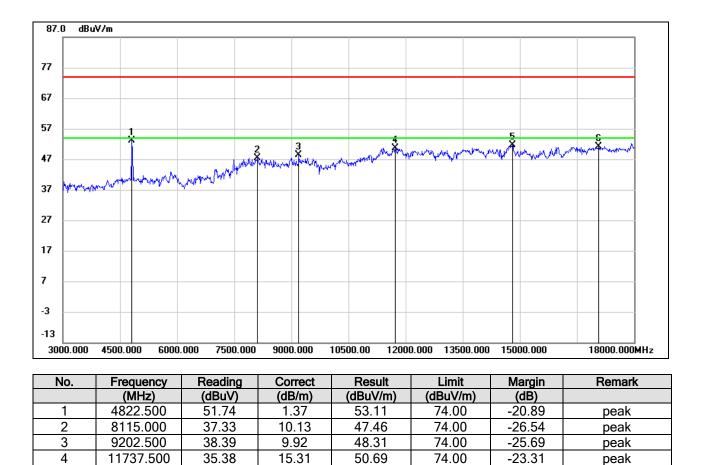


5

6

# 8.3.2. 802.11g MODE

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



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

33.75

29.39

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

51.71

51.14

74.00

74.00

-22.29

-22.86

peak

peak

3. Peak: Peak detector.

14812.500

17077.500

4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

17.96

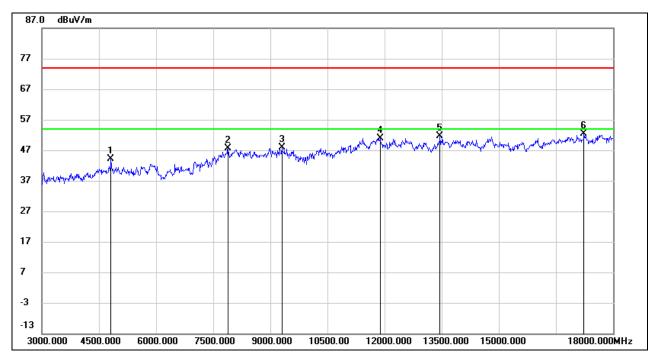
21.75

5. For the transmitting duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4822.500	42.71	1.37	44.08	74.00	-29.92	peak
2	7890.000	38.83	8.91	47.74	74.00	-26.26	peak
3	9300.000	37.40	10.40	47.80	74.00	-26.20	peak
4	11880.000	35.42	15.46	50.88	74.00	-23.12	peak
5	13462.500	34.41	17.14	51.55	74.00	-22.45	peak
6	17242.500	30.08	22.25	52.33	74.00	-21.67	peak

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

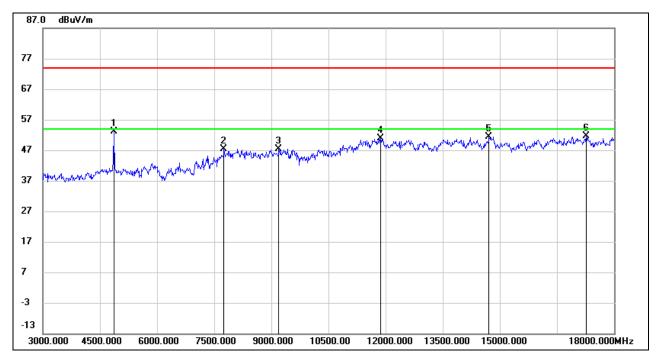
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter 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	4867.500	51.71	1.32	53.03	74.00	-20.97	peak
2	7755.000	38.55	8.94	47.49	74.00	-26.51	peak
3	9195.000	37.47	9.92	47.39	74.00	-26.61	peak
4	11872.500	35.35	15.44	50.79	74.00	-23.21	peak
5	14722.500	33.60	17.77	51.37	74.00	-22.63	peak
6	17265.000	29.26	22.39	51.65	74.00	-22.35	peak

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

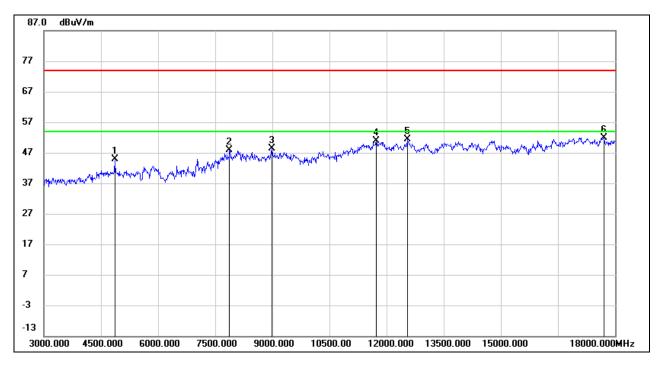
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4867.500	43.51	1.32	44.83	74.00	-29.17	peak
2	7882.500	38.82	8.95	47.77	74.00	-26.23	peak
3	8985.000	37.31	10.99	48.30	74.00	-25.70	peak
4	11737.500	35.50	15.31	50.81	74.00	-23.19	peak
5	12547.500	35.61	15.72	51.33	74.00	-22.67	peak
6	17707.500	28.48	23.51	51.99	74.00	-22.01	peak

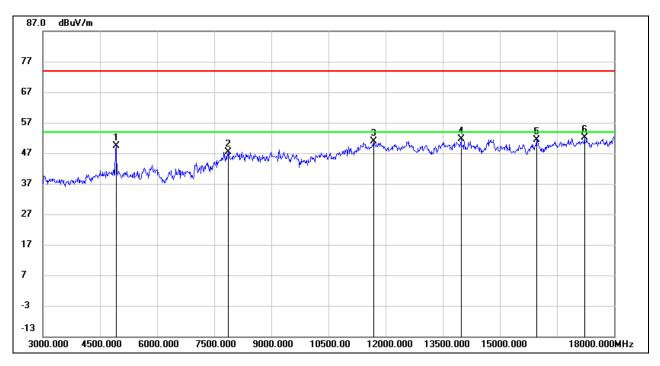
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4927.500	47.90	1.52	49.42	74.00	-24.58	peak
2	7875.000	38.52	8.98	47.50	74.00	-26.50	peak
3	11685.000	35.62	15.26	50.88	74.00	-23.12	peak
4	13987.500	33.95	17.66	51.61	74.00	-22.39	peak
5	15960.000	33.17	18.27	51.44	74.00	-22.56	peak
6	17227.500	29.89	22.16	52.05	74.00	-21.95	peak

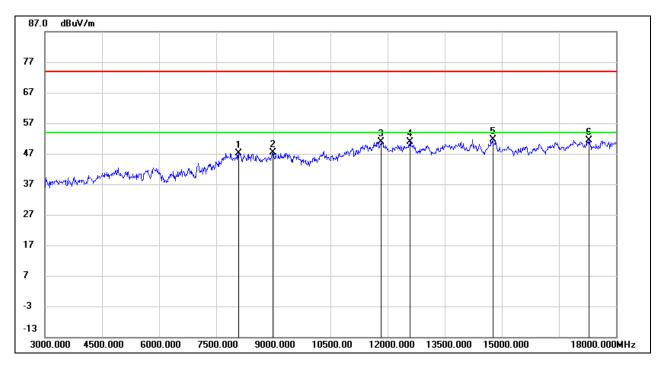
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter 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	8085.000	37.25	9.94	47.19	74.00	-26.81	peak
2	8985.000	36.31	10.99	47.30	74.00	-26.70	peak
3	11835.000	35.46	15.34	50.80	74.00	-23.20	peak
4	12592.500	35.20	15.76	50.96	74.00	-23.04	peak
5	14767.500	33.71	17.93	51.64	74.00	-22.36	peak
6	17280.000	29.00	22.48	51.48	74.00	-22.52	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. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

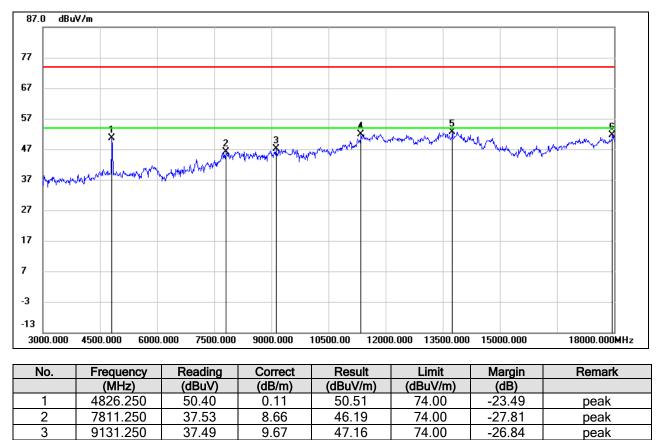
5. For the transmitting duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



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4	11358.750	36.07	15.92	51.99	74.00	-22.01	peak
5	13758.750	33.09	19.46	52.55	74.00	-21.45	peak
6	17960.625	27.02	24.71	51.73	74.00	-22.27	peak

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

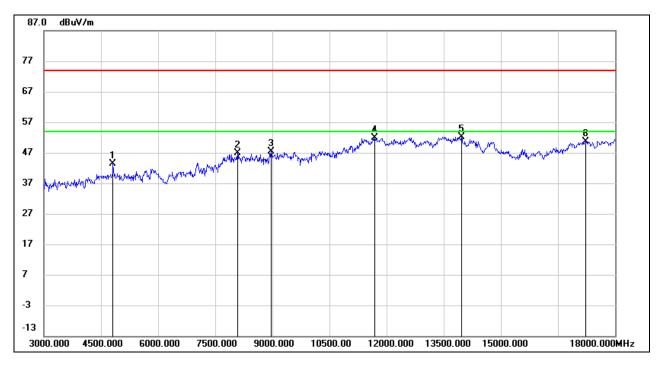
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter 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	4824.375	43.32	0.11	43.43	74.00	-30.57	peak
2	8086.875	37.51	9.36	46.87	74.00	-27.13	peak
3	8973.750	37.23	10.26	47.49	74.00	-26.51	peak
4	11688.750	34.86	17.04	51.90	74.00	-22.10	peak
5	13972.500	32.89	19.34	52.23	74.00	-21.77	peak
6	17233.125	29.77	20.96	50.73	74.00	-23.27	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.

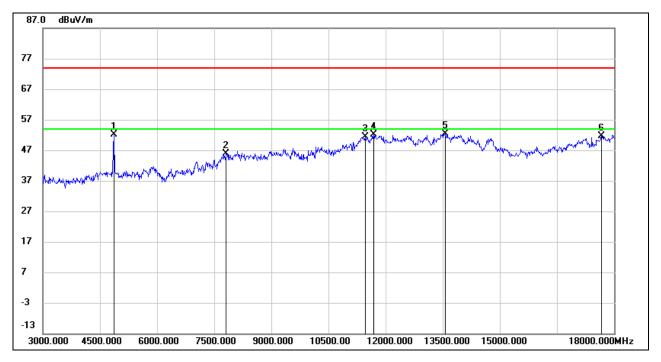
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

5. For the transmitting duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter 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	4869.375	52.17	0.02	52.19	74.00	-21.81	peak
2	7826.250	37.32	8.59	45.91	74.00	-28.09	peak
3	11473.125	35.02	16.43	51.45	74.00	-22.55	peak
4	11686.875	35.15	17.03	52.18	74.00	-21.82	peak
5	13565.625	33.20	19.10	52.30	74.00	-21.70	peak
6	17670.000	28.49	23.02	51.51	74.00	-22.49	peak

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

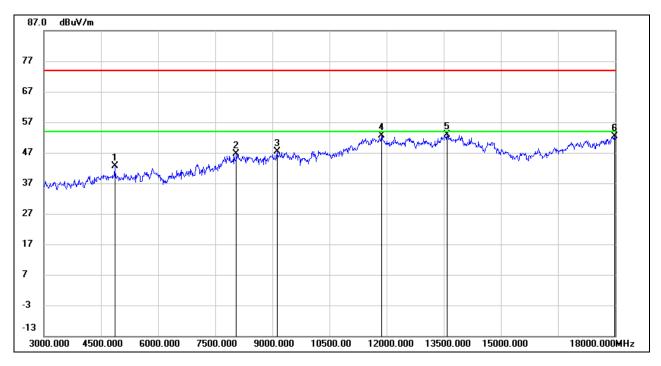
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4871.250	42.61	0.02	42.63	74.00	-31.37	peak
2	8056.875	37.69	8.90	46.59	74.00	-27.41	peak
3	9127.500	37.70	9.68	47.38	74.00	-26.62	peak
4	11868.750	35.51	17.16	52.67	74.00	-21.33	peak
5	13597.500	33.83	19.04	52.87	74.00	-21.13	peak
6	17990.625	27.36	24.90	52.26	74.00	-21.74	peak

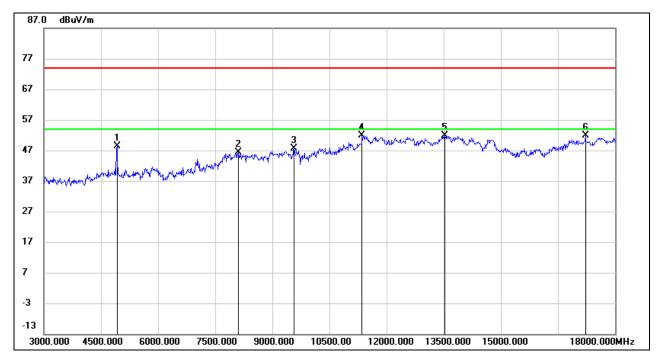
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter 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	4923.750	48.14	0.15	48.29	74.00	-25.71	peak
2	8118.750	36.80	9.48	46.28	74.00	-27.72	peak
3	9579.375	36.61	10.94	47.55	74.00	-26.45	peak
4	11356.875	35.89	15.91	51.80	74.00	-22.20	peak
5	13535.625	32.60	19.16	51.76	74.00	-22.24	peak
6	17223.750	30.94	20.89	51.83	74.00	-22.17	peak

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

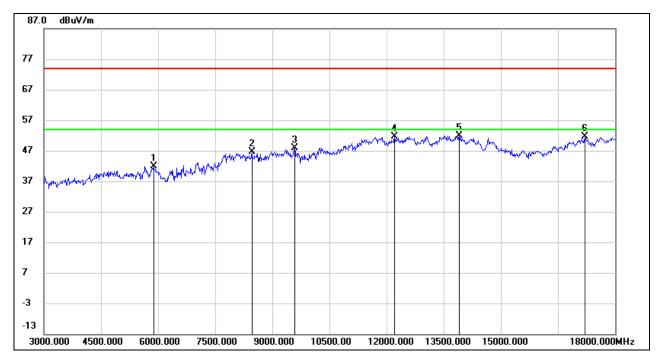
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter 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	5883.750	38.52	3.26	41.78	74.00	-32.22	peak
2	8473.125	38.11	8.48	46.59	74.00	-27.41	peak
3	9598.125	36.78	11.06	47.84	74.00	-26.16	peak
4	12210.000	34.25	17.50	51.75	74.00	-22.25	peak
5	13908.750	32.69	19.30	51.99	74.00	-22.01	peak
6	17212.500	30.93	20.80	51.73	74.00	-22.27	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.

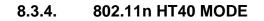
3. Peak: Peak detector.

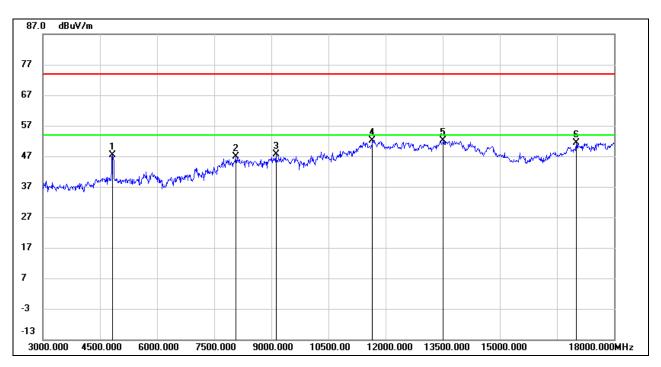
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

5. For the transmitting duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.







#### 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	4843.125	47.40	0.08	47.48	74.00	-26.52	peak
2	8081.250	37.63	9.28	46.91	74.00	-27.09	peak
3	9133.125	37.93	9.66	47.59	74.00	-26.41	peak
4	11662.500	35.27	16.88	52.15	74.00	-21.85	peak
5	13528.125	32.88	19.17	52.05	74.00	-21.95	peak
6	17017.500	31.73	19.69	51.42	74.00	-22.58	peak

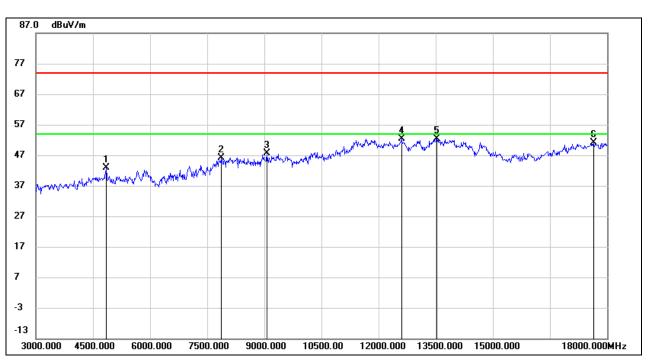
Note: 1. Peak Result = Reading Level + Correct Factor.

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 the spurious frequency bands and the authorized band was not corrected for High Pass Filter 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	4845.000	42.92	0.07	42.99	74.00	-31.01	peak
2	7880.625	37.83	8.33	46.16	74.00	-27.84	peak
3	9069.375	37.54	10.04	47.58	74.00	-26.42	peak
4	12603.750	35.36	17.11	52.47	74.00	-21.53	peak
5	13535.625	33.24	19.16	52.40	74.00	-21.60	peak
6	17651.250	28.39	22.84	51.23	74.00	-22.77	peak

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

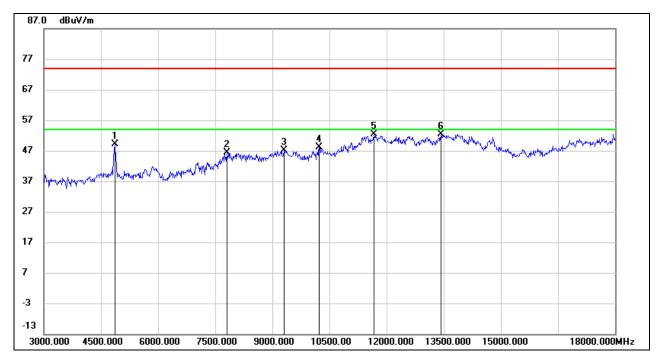
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter 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	4860.000	49.03	0.04	49.07	74.00	-24.93	peak
2	7813.125	37.63	8.65	46.28	74.00	-27.72	peak
3	9328.125	36.80	10.32	47.12	74.00	-26.88	peak
4	10231.875	36.05	12.14	48.19	74.00	-25.81	peak
5	11683.125	35.44	17.01	52.45	74.00	-21.55	peak
6	13430.625	33.48	19.02	52.50	74.00	-21.50	peak

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

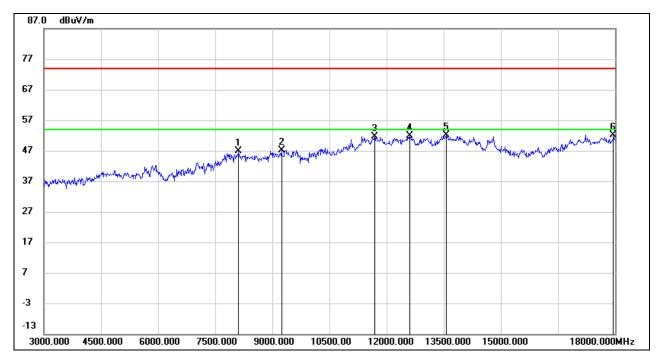
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8128.125	37.51	9.45	46.96	74.00	-27.04	peak
2	9249.375	37.23	9.85	47.08	74.00	-26.92	peak
3	11690.625	34.55	17.05	51.60	74.00	-22.40	peak
4	12609.375	34.71	17.10	51.81	74.00	-22.19	peak
5	13573.125	32.94	19.09	52.03	74.00	-21.97	peak
6	17966.250	27.49	24.75	52.24	74.00	-21.76	peak

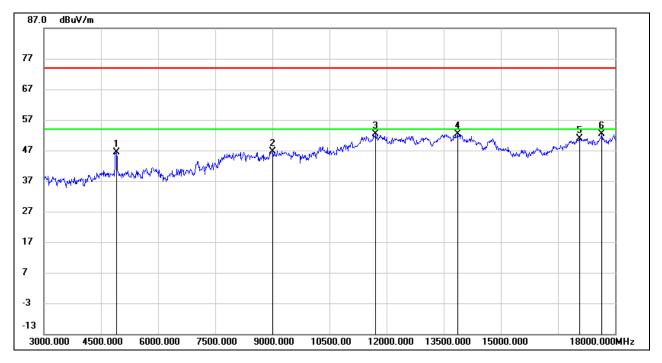
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter 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	4905.000	46.41	0.01	46.42	74.00	-27.58	peak
2	9022.500	36.07	10.53	46.60	74.00	-27.40	peak
3	11726.250	35.30	17.07	52.37	74.00	-21.63	peak
4	13871.250	32.94	19.33	52.27	74.00	-21.73	peak
5	17083.125	30.66	20.25	50.91	74.00	-23.09	peak
6	17664.375	29.52	22.97	52.49	74.00	-21.51	peak

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

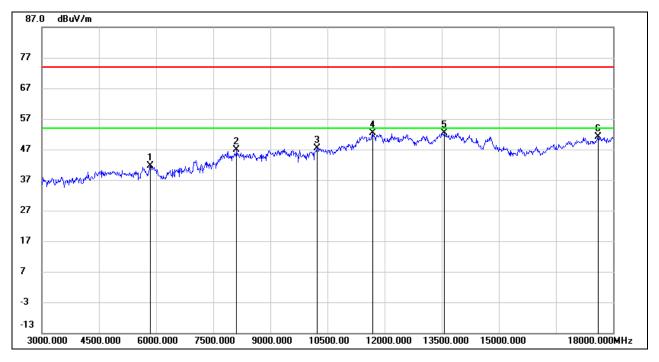
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5855.625	38.57	3.00	41.57	74.00	-32.43	peak
2	8115.000	37.44	9.50	46.94	74.00	-27.06	peak
3	10230.000	35.14	12.13	47.27	74.00	-26.73	peak
4	11688.750	35.35	17.04	52.39	74.00	-21.61	peak
5	13582.500	33.36	19.07	52.43	74.00	-21.57	peak
6	17621.250	28.56	22.53	51.09	74.00	-22.91	peak

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

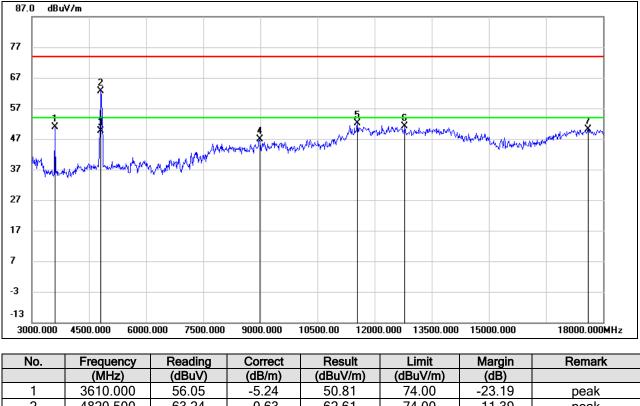
3. Peak: Peak detector.

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









	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3610.000	56.05	-5.24	50.81	74.00	-23.19	peak
2	4820.500	63.24	-0.63	62.61	74.00	-11.39	peak
3	4820.500	50.34	-0.63	49.71	54.00	-4.29	AVG
4	8986.500	36.81	9.98	46.79	74.00	-27.21	peak
5	11553.500	36.01	16.22	52.23	74.00	-21.77	peak
6	12800.500	34.18	17.07	51.25	74.00	-22.75	peak
7	17618.000	29.12	20.94	50.06	74.00	-23.94	peak

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

3. Peak: Peak detector.

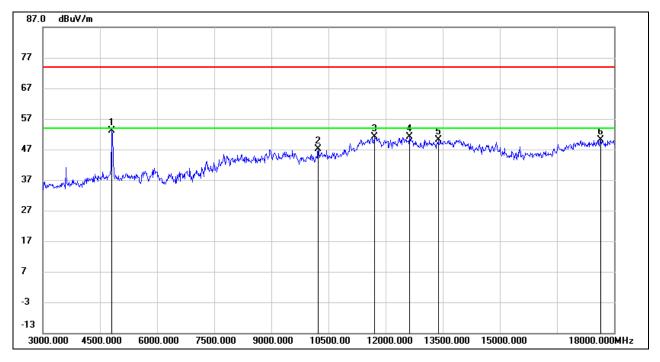
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

5. For the transmitting duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter 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	4822.500	53.85	-0.64	53.21	74.00	-20.79	peak
2	10242.500	35.79	11.44	47.23	74.00	-26.77	peak
3	11714.000	34.14	16.90	51.04	74.00	-22.96	peak
4	12643.500	34.37	16.73	51.10	74.00	-22.90	peak
5	13381.500	32.09	18.13	50.22	74.00	-23.78	peak
6	17661.000	28.86	21.39	50.25	74.00	-23.75	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.

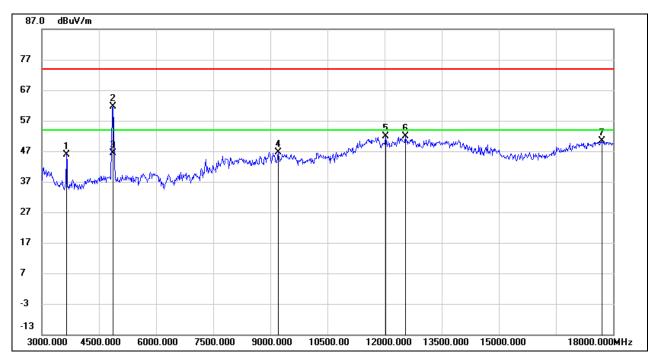
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

5. For the transmitting duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter 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	3648.500	50.87	-5.07	45.80	74.00	-28.20	peak
2	4871.000	62.29	-0.60	61.69	74.00	-12.31	peak
3	4871.000	47.02	-0.60	46.42	54.00	-7.58	AVG
4	9212.500	37.59	9.02	46.61	74.00	-27.39	peak
5	12030.500	34.79	16.97	51.76	74.00	-22.24	peak
6	12546.500	35.16	16.65	51.81	74.00	-22.19	peak
7	17704.500	28.54	21.85	50.39	74.00	-23.61	peak

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

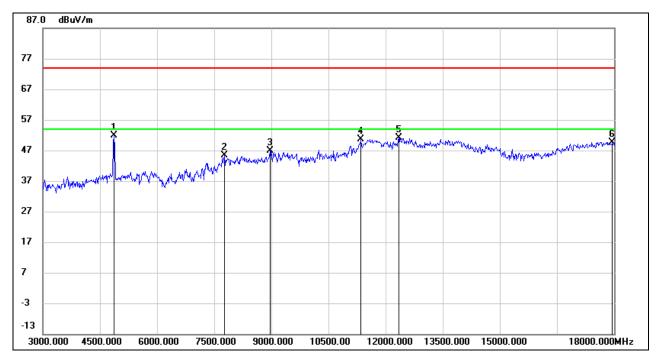
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter 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	4873.000	52.50	-0.60	51.90	74.00	-22.10	peak
2	7771.000	37.80	7.49	45.29	74.00	-28.71	peak
3	8980.000	37.06	9.91	46.97	74.00	-27.03	peak
4	11358.500	35.09	15.64	50.73	74.00	-23.27	peak
5	12349.500	34.32	16.83	51.15	74.00	-22.85	peak
6	17960.500	26.47	23.27	49.74	74.00	-24.26	peak

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

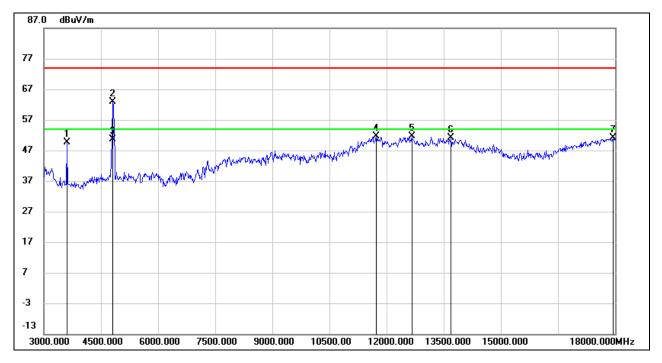
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter 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	3609.000	54.89	-5.25	49.64	74.00	-24.36	peak
2	4814.000	63.41	-0.64	62.77	74.00	-11.23	peak
3	4814.000	51.26	-0.64	50.62	54.00	-3.38	AVG
4	11738.500	34.49	17.02	51.51	74.00	-22.49	peak
5	12673.500	34.83	16.79	51.62	74.00	-22.38	peak
6	13701.000	32.48	18.57	51.05	74.00	-22.95	peak
7	17951.500	27.95	23.25	51.20	74.00	-22.80	peak

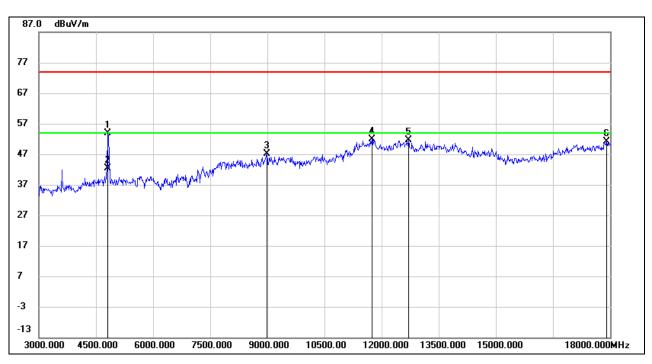
Note: 1. Peak Result = Reading Level + Correct Factor.

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 the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4825.500	54.41	-0.63	53.78	74.00	-20.22	peak
2	4825.500	43.04	-0.63	42.41	54.00	-11.59	AVG
3	8986.000	37.14	9.97	47.11	74.00	-26.89	peak
4	11752.500	34.82	17.10	51.92	74.00	-22.08	peak
5	12718.000	34.64	16.89	51.53	74.00	-22.47	peak
6	17923.500	28.07	23.17	51.24	74.00	-22.76	peak

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

3. Peak: Peak detector.

4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

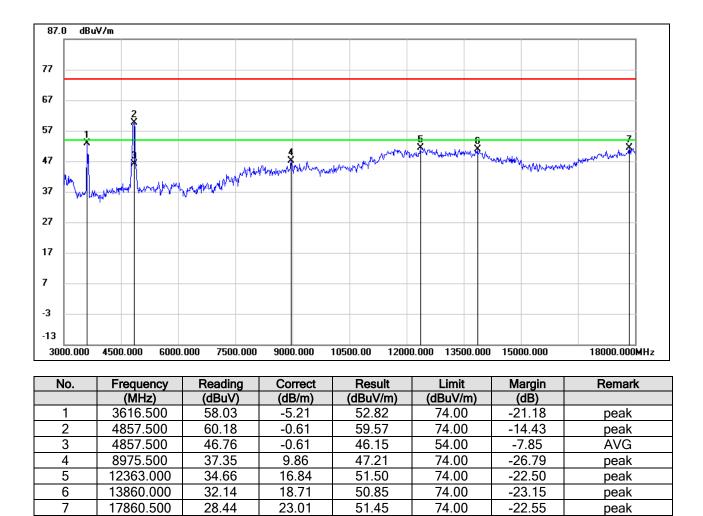
5. For the transmitting duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.





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



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

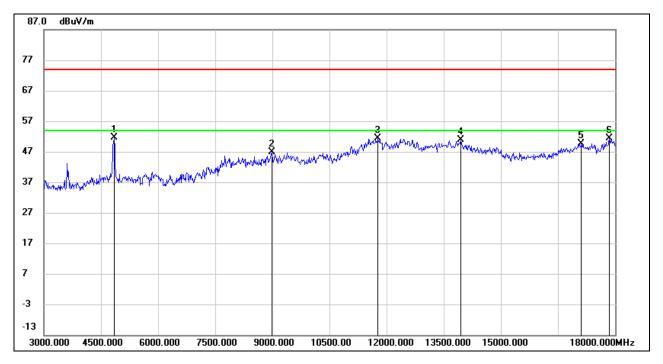
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter 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	4849.000	52.20	-0.62	51.58	74.00	-22.42	peak
2	8986.500	36.95	9.98	46.93	74.00	-27.07	peak
3	11775.000	34.04	17.22	51.26	74.00	-22.74	peak
4	13954.500	32.24	18.61	50.85	74.00	-23.15	peak
5	17127.500	30.32	19.30	49.62	74.00	-24.38	peak
6	17860.500	28.41	23.01	51.42	74.00	-22.58	peak

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

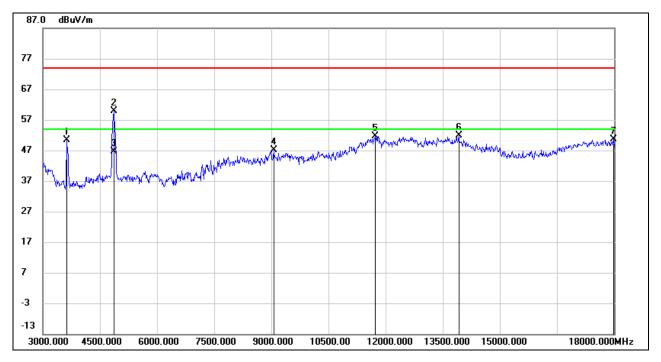
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter 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	3637.000	55.55	-5.12	50.43	74.00	-23.57	peak
2	4874.500	60.59	-0.60	59.99	74.00	-14.01	peak
3	4874.500	47.12	-0.60	46.52	54.00	-7.48	AVG
4	9068.500	37.49	9.72	47.21	74.00	-26.79	peak
5	11743.000	34.56	17.05	51.61	74.00	-22.39	peak
6	13927.000	33.20	18.63	51.83	74.00	-22.17	peak
7	17990.000	27.27	23.34	50.61	74.00	-23.39	peak

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

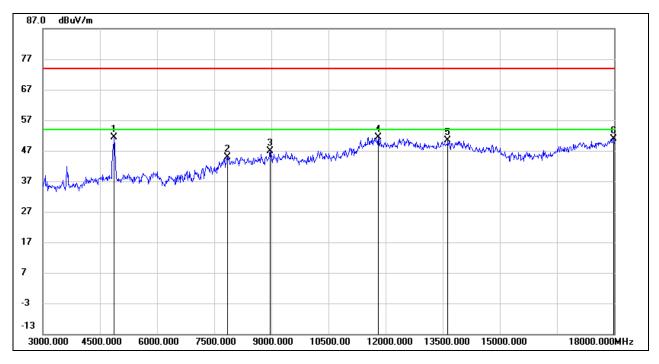
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4875.000	52.07	-0.59	51.48	74.00	-22.52	peak
2	7855.500	37.55	7.45	45.00	74.00	-29.00	peak
3	8979.000	36.88	9.90	46.78	74.00	-27.22	peak
4	11818.500	33.96	17.31	51.27	74.00	-22.73	peak
5	13648.500	31.86	18.47	50.33	74.00	-23.67	peak
6	17998.500	27.52	23.37	50.89	74.00	-23.11	peak

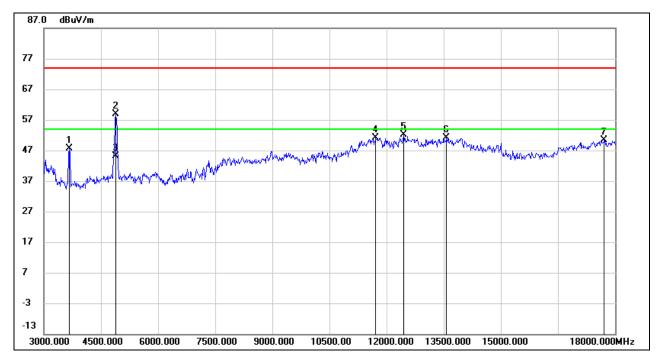
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter 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	3661.000	52.67	-5.01	47.66	74.00	-26.34	peak
2	4904.500	59.57	-0.57	59.00	74.00	-15.00	peak
3	4904.500	45.70	-0.57	45.13	54.00	-8.87	AVG
4	11721.500	34.30	16.94	51.24	74.00	-22.76	peak
5	12463.000	35.40	16.75	52.15	74.00	-21.85	peak
6	13589.500	32.76	18.36	51.12	74.00	-22.88	peak
7	17719.500	28.32	22.01	50.33	74.00	-23.67	peak

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

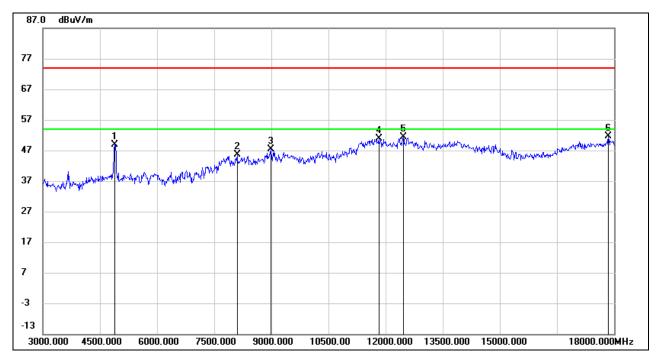
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter 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	4904.500	49.35	-0.57	48.78	74.00	-25.22	peak
2	8113.500	37.54	8.00	45.54	74.00	-28.46	peak
3	8988.000	37.27	10.00	47.27	74.00	-26.73	peak
4	11832.000	33.54	17.30	50.84	74.00	-23.16	peak
5	12470.500	34.56	16.74	51.30	74.00	-22.70	peak
6	17851.000	28.54	22.99	51.53	74.00	-22.47	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.

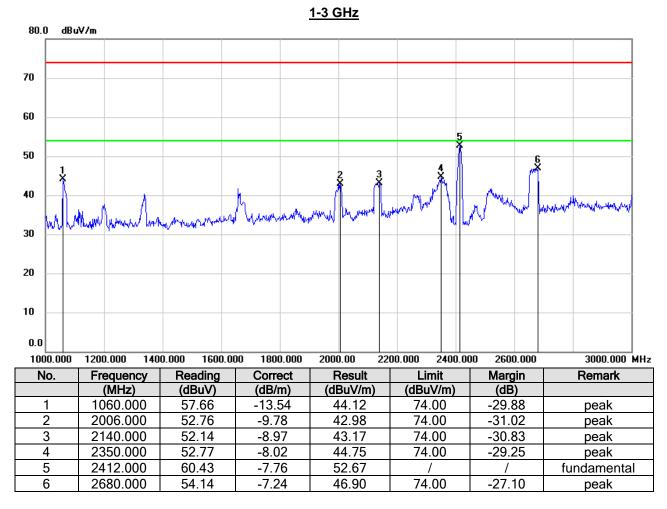
3. Peak: Peak detector.

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

# 8.4. SPURIOUS EMISSIONS FOR SIMULTANEOUS TRANSMISSION

# 8.4.1. BT GFSK MODE AND 802.11ax HE40 MODE

#### SPURIOUS EMISSIONS (BT GFSK LOW CHANNEL, 802.11ax HE40 LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



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

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

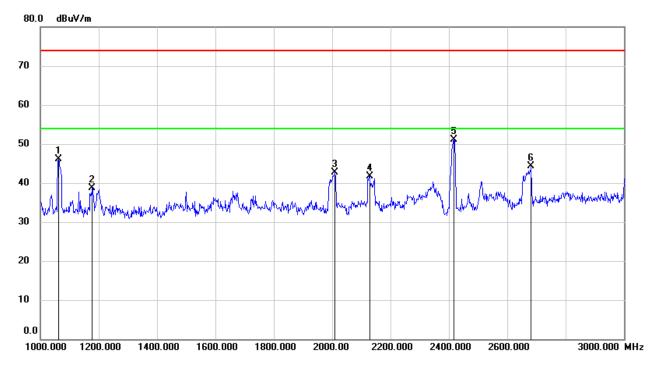
3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.



#### SPURIOUS EMISSIONS (BT GFSK LOW CHANNEL, 802.11ax HE40 LOW CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)

<u>1-3 GHz</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1062.000	59.66	-13.55	46.11	74.00	-27.89	peak
2	1178.000	51.59	-12.86	38.73	74.00	-35.27	peak
3	2010.000	52.40	-9.75	42.65	74.00	-31.35	peak
4	2128.000	50.82	-9.02	41.80	74.00	-32.20	peak
5	2412.000	58.77	-7.75	51.02	/	/	fundamental
6	2682.000	51.58	-7.23	44.35	74.00	-29.65	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.

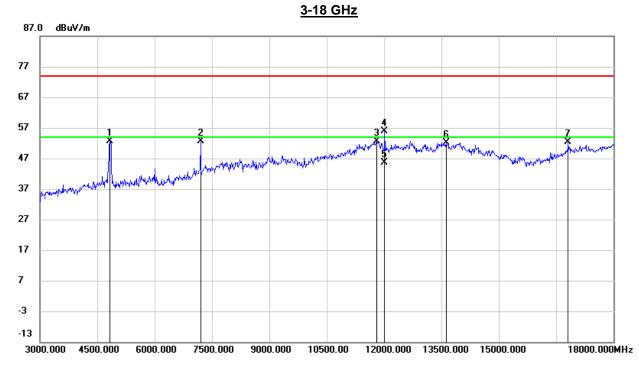
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

5. For the transmitting duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



#### SPURIOUS EMISSIONS (BT GFSK LOW CHANNEL, 802.11ax HE40 LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4830.000	53.30	-0.63	52.67	74.00	-21.33	peak
2	7200.000	46.64	6.09	52.73	74.00	-21.27	peak
3	11805.000	35.22	17.34	52.56	74.00	-21.44	peak
4	12015.000	38.98	16.99	55.97	74.00	-18.03	peak
5	12015.000	28.66	16.99	45.65	54.00	-8.35	AVG
6	13620.000	33.76	18.40	52.16	74.00	-21.84	peak
7	16815.000	34.47	17.82	52.29	74.00	-21.71	peak

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

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

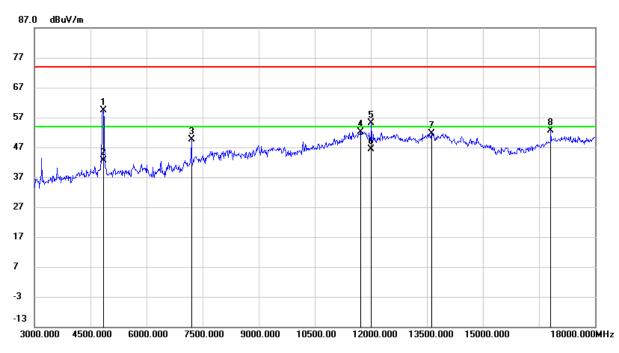
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

5. For the transmitting duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



#### SPURIOUS EMISSIONS (BT GFSK LOW CHANNEL, 802.11ax HE40 LOW CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)



<u>3-18 GHz</u>

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4845.000	59.88	-0.62	59.26	74.00	-14.74	peak
2	4845.000	43.33	-0.62	42.71	54.00	-11.29	AVG
3	7200.000	43.46	6.09	49.55	74.00	-24.45	peak
4	11730.000	35.22	16.98	52.20	74.00	-21.80	peak
5	12015.000	38.04	16.99	55.03	74.00	-18.97	peak
6	12015.000	29.36	16.99	46.35	54.00	-7.65	AVG
7	13620.000	33.17	18.40	51.57	74.00	-22.43	peak
8	16815.000	34.91	17.82	52.73	74.00	-21.27	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.

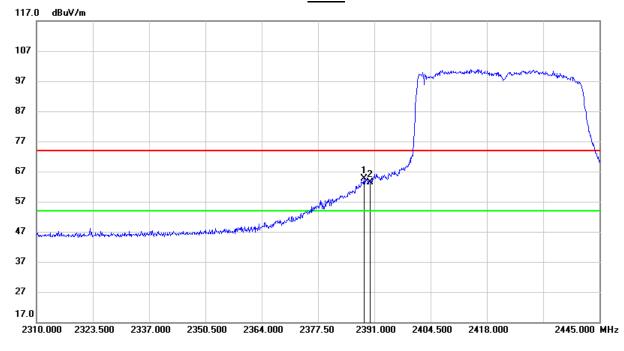
3. Peak: Peak detector.

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



#### SPURIOUS EMISSIONS (BT GFSK LOW CHANNEL, 802.11ax HE40 LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)

PEAK



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2388.570	31.97	32.65	64.62	74.00	-9.38	peak
2	2390.000	30.80	32.66	63.46	74.00	-10.54	peak

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

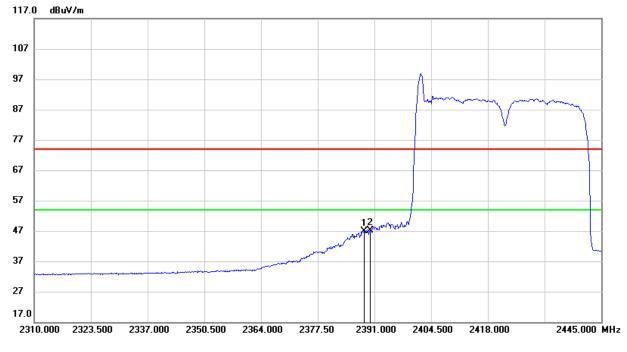
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



AVG



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2388.570	14.21	32.65	46.86	54.00	-7.14	AVG
2	2390.000	14.43	32.66	47.09	54.00	-6.91	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. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

4. For the transmitting duration, please refer to clause 7.1.

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

Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.

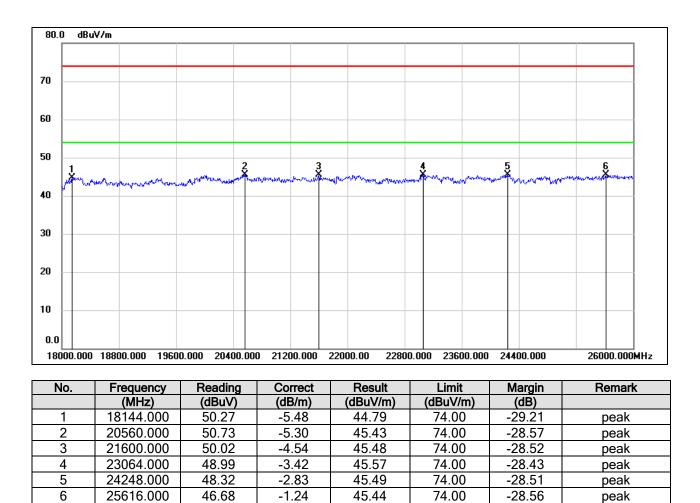
Note: All the modes had been tested, but only the worst data was recorded in the report.



# 8.5. SPURIOUS EMISSIONS (18 GHz ~ 26 GHz)

# 8.5.1. 802.11ax HE40 MODE

SPURIOUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



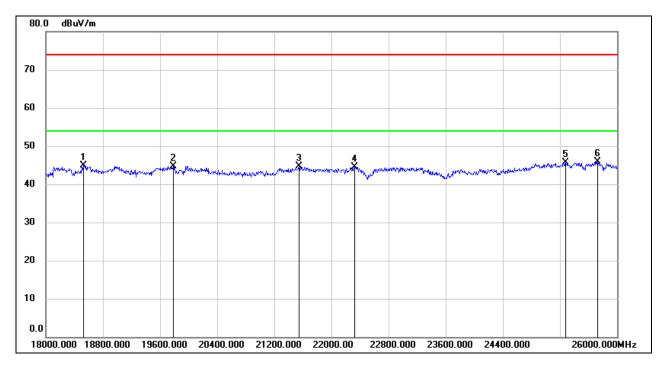
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	18528.000	50.11	-5.26	44.85	74.00	-29.15	peak
2	19784.000	50.07	-5.28	44.79	74.00	-29.21	peak
3	21544.000	49.26	-4.63	44.63	74.00	-29.37	peak
4	22328.000	48.70	-4.11	44.59	74.00	-29.41	peak
5	25280.000	47.30	-1.68	45.62	74.00	-28.38	peak
6	25728.000	46.61	-0.72	45.89	74.00	-28.11	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 the modes had been tested, but only the worst data was recorded in the report.



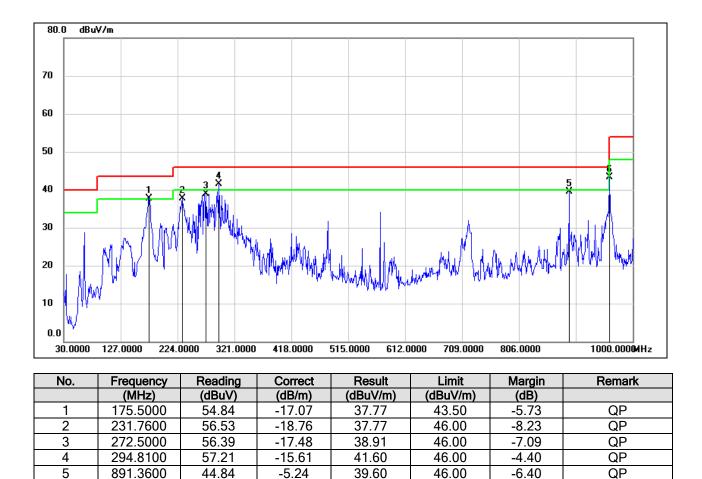
6

960.2300

# 8.6. SPURIOUS EMISSIONS (30 MHz ~ 1 GHz)

# 8.6.1. 802.11ax HE40 MODE

SPURIOUS EMISSIONS (MID\_CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



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

47.80

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

43.26

54.00

-10.74

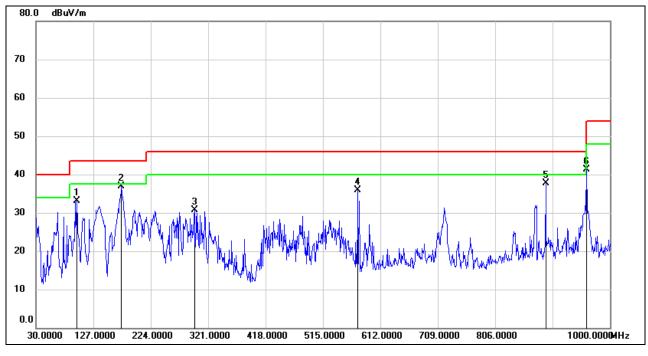
QP

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

-4.54



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	98.8700	54.33	-21.23	33.10	43.50	-10.40	QP
2	174.5300	54.12	-17.12	37.00	43.50	-6.50	QP
3	297.7200	46.05	-15.44	30.61	46.00	-15.39	QP
4	574.1700	46.01	-10.04	35.97	46.00	-10.03	QP
5	891.3600	42.95	-5.24	37.71	46.00	-8.29	QP
6	960.2300	45.94	-4.54	41.40	54.00	-12.60	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 the modes had been tested, but only the worst data was recorded in the report.

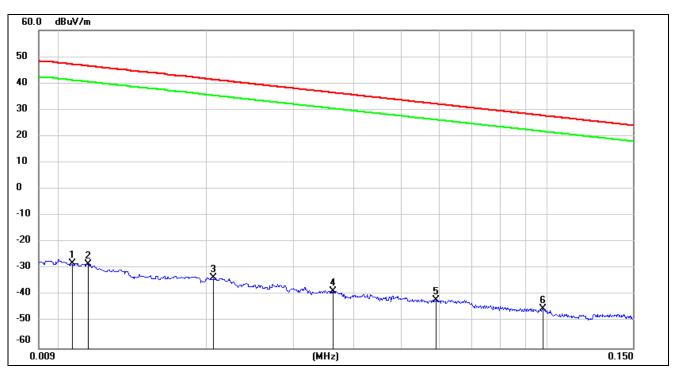


# 8.7. SPURIOUS EMISSIONS BELOW 30 MHz

# 8.7.1. 802.11ax HE40 MODE

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

<u>9 kHz ~ 150 kHz</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	0.0106	73.38	-101.39	-28.01	47.09	-79.51	-4.41	-75.10	peak
2	0.0114	73.00	-101.40	-28.4	46.46	-79.90	-5.04	-74.86	peak
3	0.0206	67.92	-101.35	-33.43	41.32	-84.93	-10.18	-74.75	peak
4	0.0362	63.01	-101.42	-38.41	36.43	-89.91	-15.07	-74.84	peak
5	0.0589	59.81	-101.52	-41.71	32.2	-93.21	-19.30	-73.91	peak
6	0.0981	56.77	-101.78	-45.01	27.77	-96.51	-23.73	-72.78	peak

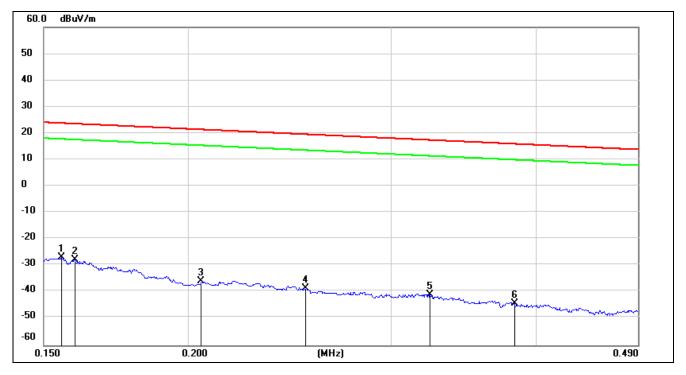
Note: 1. Measurement = Reading Level + Correct Factor (dBuA/m= dBuV/m- 20Log10[120 $\pi$ ] = dBuV/m- 51.5).

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.



#### <u>150 kHz ~ 490 kHz</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	0.1554	74.77	-101.65	-26.88	23.77	-78.38	-27.73	-50.65	peak
2	0.1595	73.86	-101.65	-27.79	23.55	-79.29	-27.95	-51.34	peak
3	0.2053	65.79	-101.73	-35.94	21.35	-87.44	-30.15	-57.29	peak
4	0.2530	63.14	-101.80	-38.66	19.54	-90.16	-31.96	-58.20	peak
5	0.3240	60.87	-101.88	-41.01	17.39	-92.51	-34.11	-58.40	peak
6	0.3830	57.70	-101.94	-44.24	15.94	-95.74	-35.56	-60.18	peak

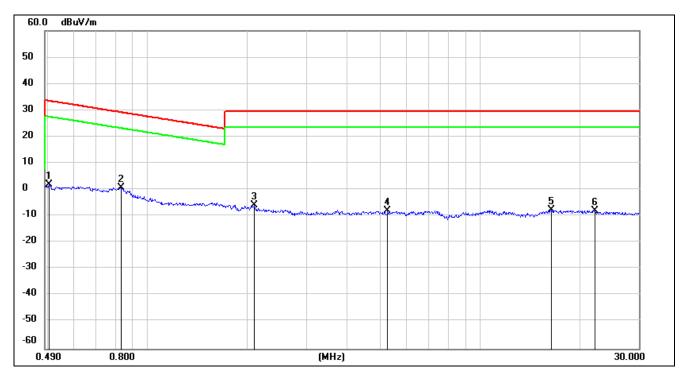
Note: 1. Measurement = Reading Level + Correct Factor (dBuA/m= dBuV/m- 20Log10[120 $\pi$ ] = dBuV/m- 51.5).

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.



#### <u>490 kHz ~ 30 MHz</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	0.5039	63.94	-62.07	1.87	33.56	-49.63	-17.94	-31.69	peak
2	0.8296	62.94	-62.17	0.77	29.23	-50.73	-22.27	-28.46	peak
3	2.0939	55.89	-61.79	-5.9	29.54	-57.40	-21.96	-35.44	peak
4	5.2705	53.54	-61.45	-7.91	29.54	-59.41	-21.96	-37.45	peak
5	16.3959	53.17	-60.96	-7.79	29.54	-59.29	-21.96	-37.33	peak
6	22.1503	52.70	-60.67	-7.97	29.54	-59.47	-21.96	-37.51	peak

Note: 1. Measurement = Reading Level + Correct Factor (dBuA/m= dBuV/m- 20Log10[120 $\pi$ ] = dBuV/m- 51.5).

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.

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



# 9. AC POWER LINE CONDUCTED EMISSIONS

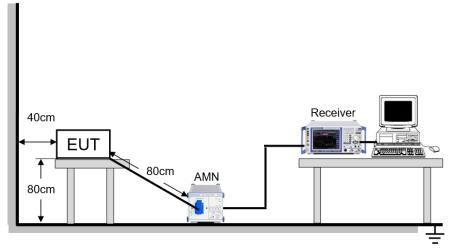
## LIMITS

Please refer to CFR 47 FCC §15.207 (a).

FREQUENCY (MHz)	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

## TEST SETUP AND PROCEDURE

Refer to ANSI C63.10-2013 clause 6.2.



The EUT is put on a table of non-conducting material that is 80 cm high. The vertical conducting wall of shielding is located 40 cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9 kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

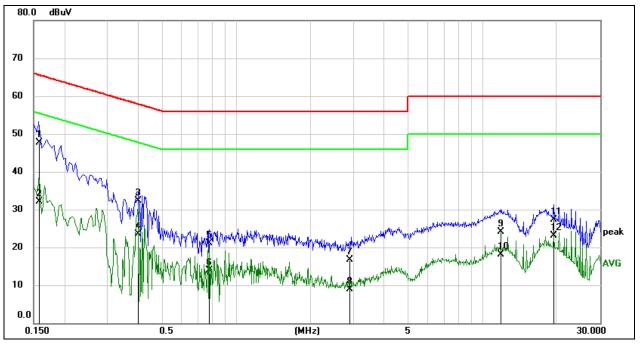
## TEST ENVIRONMENT

Temperature	25.7 °C	Relative Humidity	64 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V/60 Hz



# 9.1. 802.11ax HE40 MODE

## LINE L RESULTS (MID CHANNEL, WORST-CASE CONFIGURATION)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1587	38.10	9.59	47.69	65.53	-17.84	QP
2	0.1587	22.46	9.59	32.05	55.53	-23.48	AVG
3	0.3992	22.63	9.59	32.22	57.87	-25.65	QP
4	0.3992	13.84	9.59	23.43	47.87	-24.44	AVG
5	0.7752	11.57	9.60	21.17	56.00	-34.83	QP
6	0.7752	4.31	9.60	13.91	46.00	-32.09	AVG
7	2.8973	7.00	9.62	16.62	56.00	-39.38	QP
8	2.8973	-0.71	9.62	8.91	46.00	-37.09	AVG
9	11.9199	14.37	9.66	24.03	60.00	-35.97	QP
10	11.9199	8.52	9.66	18.18	50.00	-31.82	AVG
11	19.4973	17.39	9.82	27.21	60.00	-32.79	QP
12	19.4973	13.20	9.82	23.02	50.00	-26.98	AVG

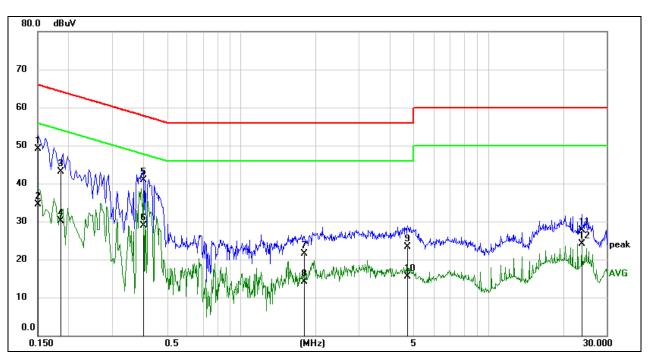
Note: 1. Result = Reading +Correct Factor.

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

3. Test setup: RBW: 200 Hz (9 kHz ~ 150 kHz), 9 kHz (150 kHz ~ 30 MHz).

4. Step size: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.





#### LINE N RESULTS (MID CHANNEL, WORST-CASE CONFIGURATION)

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1500	39.51	9.59	49.10	66.00	-16.90	QP
2	0.1500	24.90	9.59	34.49	56.00	-21.51	AVG
3	0.1850	33.46	9.59	43.05	64.26	-21.21	QP
4	0.1850	20.44	9.59	30.03	54.26	-24.23	AVG
5	0.4021	31.33	9.60	40.93	57.81	-16.88	QP
6	0.4021	19.32	9.60	28.92	47.81	-18.89	AVG
7	1.8007	11.89	9.62	21.51	56.00	-34.49	QP
8	1.8007	4.53	9.62	14.15	46.00	-31.85	AVG
9	4.7144	13.67	9.61	23.28	56.00	-32.72	QP
10	4.7144	5.82	9.61	15.43	46.00	-30.57	AVG
11	23.8851	17.77	9.85	27.62	60.00	-32.38	QP
12	23.8851	14.28	9.85	24.13	50.00	-25.87	AVG

Note: 1. Result = Reading +Correct Factor.

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

3. Test setup: RBW: 200 Hz (9 kHz ~ 150 kHz), 9 kHz (150 kHz ~ 30 MHz).

4. Step size: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

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



# 10. 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.

#### **RESULTS**

Complies



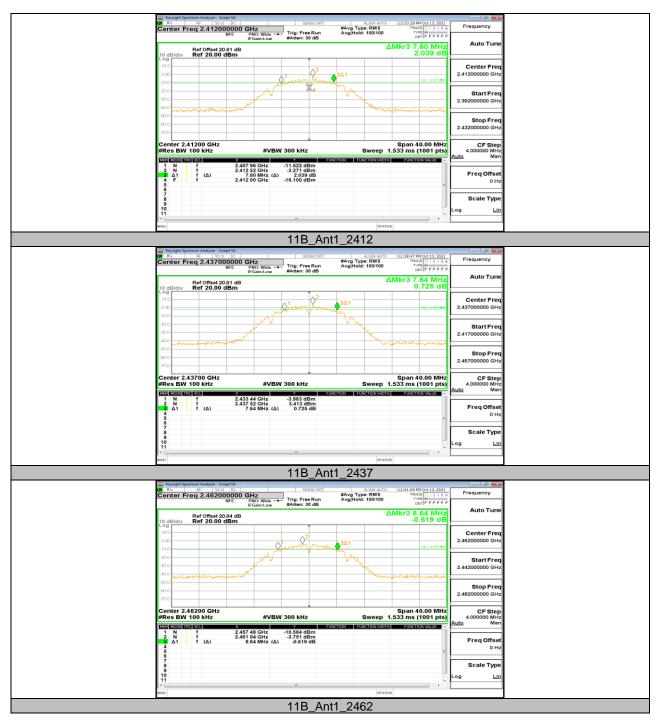
# 11. Appendix

# 11.1. Appendix A: DTS Bandwidth 11.1.1. Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
		2412	7.600	2407.960	2415.560	0.5	PASS
11B	Ant1	2437	7.640	2433.440	2441.080	0.5	PASS
		2462	8.640	2457.480	2466.120	0.5	PASS
		2412	16.440	2403.800	2420.240	0.5	PASS
11G	Ant1	2437	16.440	2428.800	2445.240	0.5	PASS
		2462	16.440	2453.800	2470.240	0.5	PASS
	Ant1	2412	17.680	2403.200	2420.880	0.5	PASS
11N20SISO		2437	17.640	2428.200	2445.840	0.5	PASS
		2462	17.720	2453.160	2470.880	0.5	PASS
	Ant1	2422	36.240	2403.760	2440.000	0.5	PASS
11N40SISO		2437	36.480	2418.760	2455.240	0.5	PASS
		2452	36.480	2433.760	2470.240	0.5	PASS
		2412	18.640	2402.800	2421.440	0.5	PASS
11AX20SISO	Ant1	2437	18.640	2427.600	2446.240	0.5	PASS
		2462	18.880	2452.600	2471.480	0.5	PASS
		2422	37.760	2403.120	2440.880	0.5	PASS
11AX40SISO	Ant1	2437	38.080	2418.040	2456.120	0.5	PASS
		2452	37.920	2433.040	2470.960	0.5	PASS

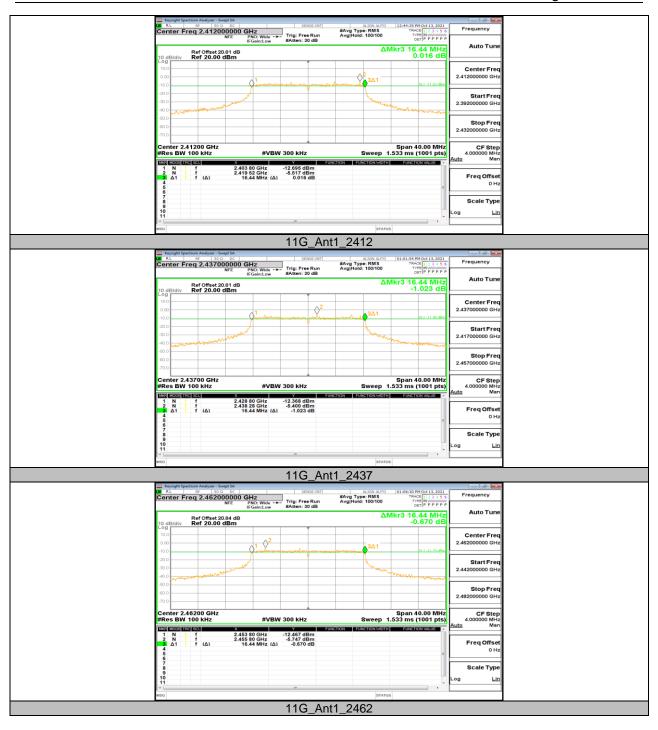


# 11.1.2. Test Graphs





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