

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

# **CERTIFICATION TEST REPORT**

For

# **Notebook Computer**

# MODEL NUMBER: Lenovo IdeaPad S540-13ARE, Lenovo IdeaPad S540-13API

FCC ID: 057IPS540A13 IC: 10407A-IPS540A13

## **REPORT NUMBER: 4789547060-7**

ISSUE DATE: August 21, 2020

Prepared for

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## **Revision History**

Rev.	Issue Date	Revisions	Revised By
V0	08/21/2020	Initial Issue	



Summary of Test Results			
Clause	Test Items	FCC/IC Rules	Test Results
1	6dB/26dB Bandwidth	FCC 15.407 (a)&(e) RSS-247 Clause 6.2	PASS
2	99% Occupied Bandwidth	RSS-Gen Clause 6.6	PASS
3	Maximum Conducted Output Power	FCC 15.407 (a) RSS-247 Clause 6.2	PASS
4	Power Spectral Density	FCC 15.407 (a) RSS-247 Clause 6.2	PASS
5	Radiated Bandedge and Spurious Emission	FCC 15.407 (b) FCC 15.209 FCC 15.205 RSS-247 Clause 6.2 RSS-GEN Clause 8.9	PASS
6	Conducted Emission Test for AC Power Port	FCC 15.207 RSS-GEN Clause 8.8	PASS
7	Frequency Stability	FCC 15.407 (g)	PASS
8	Dynamic Frequency Selection	FCC 15.407 (h) RSS-247 Clause 6.3	PASS
9	Antenna Requirement	FCC 15.203 RSS-GEN Clause 8.3	PASS

Note:

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

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.



# TABLE OF CONTENTS

1.	AT٦	TESTATION OF TEST RESULTS	7
2.	TES	ST METHODOLOGY	8
3.	FAC	CILITIES AND ACCREDITATION	8
4.	CAI	LIBRATION AND UNCERTAINTY	9
4	4.1.	MEASURING INSTRUMENT CALIBRATION	9
4	4.2.	MEASUREMENT UNCERTAINTY	9
5.	EQI	UIPMENT UNDER TEST	10
5	5.1.	DESCRIPTION OF EUT	10
Ę	5.2.	MAXIMUM OUTPUT POWER	11
5	5.3.	CHANNEL LIST	12
5	5.4.	TEST CHANNEL CONFIGURATION	14
5	5.5.	DESCRIPTION OF AVAILABLE ANTENNAS	16
5	5.6.	THE WORSE CASE POWER SETTING PARAMETER	18
5	5.7.	THE WORSE CASE CONFIGURATIONS	20
5	5.8.	DESCRIPTION OF TEST SETUP	22
6.	ME	ASURING INSTRUMENT AND SOFTWARE USED	23
6. 7.		ASURING INSTRUMENT AND SOFTWARE USED TENNA PORT TEST RESULTS	
7.			25
<b>7</b> .	AN	TENNA PORT TEST RESULTS	<b>25</b> 25
<b>7</b> .	<b>AN</b> T 7.1.	TENNA PORT TEST RESULTS ON TIME AND DUTY CYCLE	<b>25</b> 25 26
<b>7.</b>	<b>AN</b> 7.1. 7.2.	TENNA PORT TEST RESULTS ON TIME AND DUTY CYCLE 6/26 EMISSION BANDWIDTH AND 99% OCCUPIED BANDWIDTH	<b>25</b> 25 26 28
<b>7.</b>	<b>AN</b> 7.1. 7.2. 7.3. 7.4.	TENNA PORT TEST RESULTS ON TIME AND DUTY CYCLE 6/26 EMISSION BANDWIDTH AND 99% OCCUPIED BANDWIDTH CONDUCTED OUTPUT POWER	25 25 26 28 33
7. 7. 7 7 8.	<b>AN</b> <sup>7</sup> .1. 7.2. 7.3. 7.4. <b>RAI</b> 3.1.	TENNA PORT TEST RESULTS ON TIME AND DUTY CYCLE 6/26 EMISSION BANDWIDTH AND 99% OCCUPIED BANDWIDTH CONDUCTED OUTPUT POWER POWER SPECTRAL DENSITY	25 26 26 28 33 35 42
7. 7. 7 7 8.	<b>AN</b> <sup>7</sup> 7.1. 7.2. 7.3. 7.4. <b>RAI</b> 3.1. 8.1.	TENNA PORT TEST RESULTS         ON TIME AND DUTY CYCLE         6/26 EMISSION BANDWIDTH AND 99% OCCUPIED BANDWIDTH         CONDUCTED OUTPUT POWER         POWER SPECTRAL DENSITY         DIATED TEST RESULTS         802.11a SISO MODE         1.	25 26 28 28 
7. 7. 7 7 8.	<b>AN</b> <sup>7</sup> 7.1. 7.2. 7.3. 7.4. <b>RAI</b> 8.1. 8.1. 8.1. 8.1.	TENNA PORT TEST RESULTS         ON TIME AND DUTY CYCLE         6/26 EMISSION BANDWIDTH AND 99% OCCUPIED BANDWIDTH.         CONDUCTED OUTPUT POWER         POWER SPECTRAL DENSITY         DIATED TEST RESULTS         802.11a SISO MODE.         1.       UNII-1 BAND         2.       UNII-2A BAND         3.       UNII-2C BAND	25 26 26 28 33 35 42 42 62 78
7. 7 7 8.	<b>AN</b> 7.1. 7.2. 7.3. 7.4. <b>RAI</b> 8.1. 8.1. 8.1. 8.1. 8.1.	TENNA PORT TEST RESULTS         ON TIME AND DUTY CYCLE         6/26 EMISSION BANDWIDTH AND 99% OCCUPIED BANDWIDTH         CONDUCTED OUTPUT POWER         POWER SPECTRAL DENSITY         DIATED TEST RESULTS         802.11a SISO MODE         1.       UNII-1 BAND         2.       UNII-2A BAND         3.       UNII-2C BAND         4.       UNII-3 BAND	25 26 28 28 33 35 35 42 42 62 78 96
7. 7 7 8.	<b>AN</b> <sup>7</sup> 7.1. 7.2. 7.3. 7.4. <b>RAI</b> 8.1. 8.1. 8.1. 8.1.	TENNA PORT TEST RESULTS         ON TIME AND DUTY CYCLE         6/26 EMISSION BANDWIDTH AND 99% OCCUPIED BANDWIDTH         CONDUCTED OUTPUT POWER         POWER SPECTRAL DENSITY         DIATED TEST RESULTS         802.11a SISO MODE         1       UNII-1 BAND         2       UNII-2A BAND         3       UNII-2C BAND         4       UNII-3 BAND         802.11n HT20 CDD MIMO MODE	25 25 26 28 33 35 35 42 42 62 78 96 96
7. 7 7 8.	<b>AN</b> 7.1. 7.2. 7.3. 7.4. <b>RAI</b> 8.1. 8.1. 8.1. 8.1. 8.1. 8.2. 8.2.	TENNA PORT TEST RESULTS         ON TIME AND DUTY CYCLE         6/26 EMISSION BANDWIDTH AND 99% OCCUPIED BANDWIDTH         CONDUCTED OUTPUT POWER         POWER SPECTRAL DENSITY         DIATED TEST RESULTS         802.11a SISO MODE         1       UNII-1 BAND         2       UNII-2A BAND         3       UNII-2C BAND         4       UNII-3 BAND         802.11n HT20 CDD MIMO MODE         1       UNII-1 BAND         2       UNII-1 BAND	25 26 26 28 33 35 35 42 42 62 78 96 96 112 112 132
7. 7 7 8.	<b>AN</b> 7.1. 7.2. 7.3. 7.4. <b>RAI</b> 8.1. 8.1. 8.1. 8.1. 8.1. 8.2. 8.2.	TENNA PORT TEST RESULTS         ON TIME AND DUTY CYCLE         6/26 EMISSION BANDWIDTH AND 99% OCCUPIED BANDWIDTH         CONDUCTED OUTPUT POWER         POWER SPECTRAL DENSITY         DIATED TEST RESULTS         802.11a SISO MODE         1       UNII-1 BAND         2       UNII-2A BAND         3       UNII-2C BAND         4       UNII-3 BAND         802.11n HT20 CDD MIMO MODE         1       UNII-1 BAND         2       UNII-2A BAND         3       UNII-2C BAND         4       UNII-3 BAND         2       UNII-2A BAND         3       UNII-2C BAND         3       UNII-2A BAND         3       UNII-2C BAND	25 25 26 28 33 35 35 35 35 35 35 35 35 35 35 35 
7. 7 7 7 7 7 7 8. 8. 8.	AN 7.1. 7.2. 7.3. 7.4. 8.1. 8.1. 8.1. 8.1. 8.1. 8.2. 8.2. 8.2	TENNA PORT TEST RESULTS         ON TIME AND DUTY CYCLE         6/26 EMISSION BANDWIDTH AND 99% OCCUPIED BANDWIDTH         CONDUCTED OUTPUT POWER         POWER SPECTRAL DENSITY         DIATED TEST RESULTS         802.11a SISO MODE         1       UNII-1 BAND         2       UNII-2A BAND         3       UNII-2C BAND         4       UNII-3 BAND         802.11n HT20 CDD MIMO MODE         1       UNII-1 BAND         2       UNII-2A BAND         3       UNII-2C BAND         4       UNII-3 BAND         2       UNII-2A BAND         3       UNII-2C BAND         3       UNII-2A BAND         3       UNII-2C BAND	
7. 7 7 7 7 7 7 8. 8. 8.	AN 7.1. 7.2. 7.3. 7.4. 8.1. 8.1. 8.1. 8.1. 8.1. 8.2. 8.2. 8.2	TENNA PORT TEST RESULTS         ON TIME AND DUTY CYCLE         6/26 EMISSION BANDWIDTH AND 99% OCCUPIED BANDWIDTH.         CONDUCTED OUTPUT POWER         POWER SPECTRAL DENSITY         DIATED TEST RESULTS         802.11a SISO MODE.         1       UNII-1 BAND         2       UNII-2A BAND         3       UNII-2C BAND         4       UNII-3 BAND         802.11n HT20 CDD MIMO MODE         1       UNII-2A BAND         3       UNII-2A BAND         802.11n HT20 CDD MIMO MODE         1       UNII-3 BAND         2       UNII-2A BAND         3       UNII-1 BAND         2       UNII-3 BAND         3       UNII-2A BAND         4       UNII-3 BAND         3       UNII-2A BAND         4       UNII-3 BAND	25 26 26 28 



8.3.3. 8.3.4.	UNII-2C BAND	-
	UNII-3 BAND	
<i>0.4.</i> 002 8.4.1.	UNII-1 BAND	
8.4.2.	UNII-2A BAND	
8.4.3.	UNII-2C BAND	256
8.4.4.	UNII-3 BAND	
	.11ac VHT160 CDD MIMO MODE	
8.5.1.	UNII-1 BAND	
8.5.2.	UNII-2C BAND	-
	JRIOUS EMISSIONS FOR SIMULTANEOUS TRANSMISSION	
8.6.1.	BT GFSK MODE AND 802.11a SISO MODE	
	JRIOUS EMISSIONS (18 GHz ~ 26 GHz)	
8.7.1.	802.11a SISO MODE	
8.8. SPU	JRIOUS EMISSIONS (26 GHz ~ 40 GHz)	302
8.8.1.	802.11a SISO MODE	302
8.9. SPU	JRIOUS EMISSIONS (30 MHz ~ 1 GHz)	304
8.9.1.	802.11a SISO MODE	304
8.10. S	PURIOUS EMISSIONS BELOW 30 MHz	306
8.10.1.		
9. AC POV	VER LINE CONDUCTED EMISSIONS	309
9.1. 802	.11a SISO MODE	310
	.11a SISO MODE	
10. FREQ	UENCY STABILITY	312
10. FREQ		312
10. FREQ 11. DYNA	UENCY STABILITY	312 314
<ol> <li>10. FREQ</li> <li>11. DYNA</li> <li>12. ANTE</li> </ol>	UENCY STABILITY MIC FREQUENCY SELECTION NNA REQUIREMENTS	312 314 318
<ol> <li>FREQ</li> <li>DYNA</li> <li>ANTE Appendix A</li> </ol>	UENCY STABILITY	<b>312</b> <b>314</b> <b>318</b> 319
<ul> <li>10. FREQ</li> <li>11. DYNA</li> <li>12. ANTE</li> <li>Appendix Area</li> <li>Test Res</li> </ul>	UENCY STABILITY MIC FREQUENCY SELECTION NNA REQUIREMENTS	<b>312</b> <b>314</b> <b>318</b> <i>319</i> 319
<ul> <li>10. FREQ</li> <li>11. DYNA</li> <li>12. ANTE</li> <li>Appendix A Test Res Test Grav</li> </ul>	UENCY STABILITY MIC FREQUENCY SELECTION NNA REQUIREMENTS	<b>312</b> <b>314</b> <b>318</b> <i>319</i> 319 320
<ul> <li>10. FREQ</li> <li>11. DYNA</li> <li>12. ANTE</li> <li>Appendix A Test Res Test Gra</li> <li>Appendix A</li> </ul>	UENCY STABILITY MIC FREQUENCY SELECTION NNA REQUIREMENTS	<b>312</b> <b>314</b> <b>318</b> 319 320 320
<ul> <li>10. FREQ</li> <li>11. DYNA</li> <li>12. ANTE</li> <li>Appendix A Test Res Test Gra</li> <li>Appendix A Test Gra</li> </ul>	UENCY STABILITY MIC FREQUENCY SELECTION NNA REQUIREMENTS	<b>312</b> <b>314</b> <b>318</b> <b>319</b> <b>320</b> <b>340</b> <b>340</b>
<ul> <li>10. FREQ</li> <li>11. DYNA</li> <li>12. ANTE</li> <li>Appendix A Test Res Test Gra</li> <li>Appendix A Test Gra</li> <li>Appendix A</li> </ul>	UENCY STABILITY MIC FREQUENCY SELECTION NNA REQUIREMENTS A1: 26dB Emission Bandwidth sult aphs A2: UNII Band-1 Unwanted Emissions aphs A3: Occupied channel bandwidth	<b>312</b> <b>314</b> <b>319</b> 320 340 340 342
<ul> <li>10. FREQ</li> <li>11. DYNA</li> <li>12. ANTE</li> <li>Appendix A Test Res Test Gra</li> <li>Appendix A Test Gra</li> <li>Appendix A Test Gra</li> </ul>	UENCY STABILITY MIC FREQUENCY SELECTION NNA REQUIREMENTS	<b>312</b> <b>314</b> <b>319</b> 319 320 340 340 342 342
<ul> <li>10. FREQ</li> <li>11. DYNA</li> <li>12. ANTE</li> <li>Appendix A Test Res Test Gra</li> <li>Appendix A Test Gra</li> <li>Appendix A Test Gra</li> </ul>	UENCY STABILITY	<b>312</b> <b>314</b> <b>319</b> 320 340 340 342 342 343
<ul> <li>10. FREQ</li> <li>11. DYNA</li> <li>12. ANTE</li> <li>Appendix A Test Res Test Gra</li> <li>Appendix A Test Gra</li> <li>Appendix A Test Res Test Gra</li> <li>Appendix A Test Res Test Gra</li> </ul>	UENCY STABILITY MIC FREQUENCY SELECTION NNA REQUIREMENTS	<b>312</b> <b>314</b> <b>319</b> 319 320 340 340 342 342 342 343 363
<ul> <li>10. FREQ</li> <li>11. DYNA</li> <li>12. ANTE</li> <li>Appendix A</li> <li>Test Res</li> <li>Test Gra</li> <li>Appendix A</li> <li>Test Res</li> <li>Test Res</li> <li>Appendix A</li> <li>Test Res</li> <li>Test Res</li> <li>Appendix A</li> <li>Test Res</li> </ul>	UENCY STABILITY MIC FREQUENCY SELECTION NNA REQUIREMENTS A1: 26dB Emission Bandwidth sult aphs A2: UNII Band-1 Unwanted Emissions aphs A3: Occupied channel bandwidth	<b>312</b> <b>314</b> <b>319</b> 319 320 340 340 342 343 363 363 363
<ul> <li>10. FREQ</li> <li>11. DYNA</li> <li>12. ANTE</li> <li>Appendix A</li> <li>Test Res</li> <li>Test Gra</li> <li>Appendix A</li> <li>Test Res</li> <li>Test Res</li> <li>Test Gra</li> <li>Appendix A</li> <li>Test Res</li> </ul>	UENCY STABILITY MIC FREQUENCY SELECTION NNA REQUIREMENTS A1: 26dB Emission Bandwidth sult	<b>312</b> <b>314</b> <b>319</b> 319 320 340 340 342 342 343 363 363 364
<ul> <li>10. FREQ</li> <li>11. DYNA</li> <li>12. ANTE</li> <li>Appendix A</li> <li>Test Res</li> <li>Test Gra</li> <li>Appendix A</li> <li>Test Res</li> <li>Test Gra</li> <li>Appendix A</li> <li>Test Res</li> <li>Test Res</li> <li>Test Res</li> <li>Test Gra</li> <li>Appendix A</li> <li>Test Res</li> <li>Test Gra</li> </ul>	UENCY STABILITY	<b>312</b> <b>314</b> <b>319</b> 319 319 320 340 340 342 343 363 363 364 369
<ul> <li>10. FREQ</li> <li>11. DYNA</li> <li>12. ANTE</li> <li>Appendix A Test Res Test Gra</li> </ul>	UENCY STABILITY MIC FREQUENCY SELECTION NNA REQUIREMENTS	<b>312</b> <b>314</b> <b>319</b> 319 320 340 340 342 343 363 363 364 369 369 369
<ul> <li>10. FREQ</li> <li>11. DYNA</li> <li>12. ANTE</li> <li>Appendix A</li> <li>Test Res</li> <li>Test Gra</li> <li>Appendix A</li> <li>Test Res</li> <li>Test Res</li> <li>Test Gra</li> <li>Appendix A</li> <li>Test Res</li> <li>Test Res</li> <li>Test Gra</li> <li>Appendix A</li> <li>Test Res</li> </ul>	UENCY STABILITY MIC FREQUENCY SELECTION NNA REQUIREMENTS	<b>312</b> <b>314</b> <b>319</b> 319 319 320 340 340 342 343 363 363 363 364 369 369 371



Test Graphs	406
Appendix D: Frequency Stability Test Result	
Appendix E: Dynamic Frequency Selection Test Result Test Graphs	410



# **1. ATTESTATION OF TEST RESULTS**

## Applicant Information

Company Name: Address:	Lenovo(Shanghai) Electronics Technology Co., Ltd. Section 304-305, Building No. 4, # 222, Meiyue Road, China (Shanghai) Pilot Free Trade Zone, 200131, CHINA
<b>Manufacturer Information</b> Company Name: Address:	Lenovo(Shanghai) Electronics Technology Co., Ltd. Section 304-305, Building No. 4, # 222, Meiyue Road, China (Shanghai) Pilot Free Trade Zone, 200131, CHINA
EUT Information	
EUT Name:	Notebook Computer
Model:	Lenovo IdeaPad S540-13ARE, Lenovo IdeaPad S540-13API
Brand:	Lenovo
Serial Model:	Please refer to clause 5.1. Description of EUT
Sample Received Date:	June 15, 2020
Sample Status:	Normal
Date of Tested:	July 3, 2020 ~ August 21, 2020

APPLICABLE STANDARDS		
STANDARD	TEST RESULTS	
CFR 47 FCC PART 15 SUBPART E	PASS	
ISED RSS-247 Issue 2	PASS	
ISED RSS-GEN Issue 5	PASS	

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Shawn Wen Laboratory Leader



# 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2013, CFR 47 FCC Part 2, CFR 47 FCC Part 15, KDB 789033 D02 v02r01, RSS-GEN Issue 5, RSS-247 Issue 2, KDB414788 D01 Radiated Test Site v01, KDB 662911 D01 Multiple Transmitter Output v02r01, KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02, KDB 905462 D03 UNII clients without radar detection New Rules v01r02 and KDB 905462 D04 Operational Modes for DFS Testing New Rules v01.

# 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.
Accreditation Certificate	<ul> <li>Has been recognized to perform compliance testing on equipment subject to the Commission's Delcaration of Conformity (DoC) and Certification rules</li> <li><b>ISED (Company No.: 21320)</b></li> <li>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320.</li> <li><b>VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)</b></li> <li>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name:</li> </ul>
	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 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30MHz had been correlated to measurements performed on an OFS.



# 4. CALIBRATION AND UNCERTAINTY

# 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to 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
	5.78 dB (1 GHz ~ 18 GHz)
Radiated Emission (Included Fundamental Emission) (1G Hz to 40 GHz)	5.23 dB (18 GHz ~ 26 GHz)
	5.64 dB (26 GHz-40 GHz)
Emission Bandwidth DTS Bandwidth 99% Occupied Bandwidth	±0.0196 %
Conducted Output Power	±0.766 dB
Conducted Power Spectral Density	±1.22 dB
Conducted Band edge Measurements	±1.328 dB
Conducted Spurious Emissions	±0.746 dB (9 kHz ~ 1 GHz) ±1.328 dB (1 GHz ~ 26 GHz)
Frequency Stability	±2.76 %
Note: This uncertainty represents an expanded uncertainty solution of k=2.	ainty expressed at approximately the



# 5. EQUIPMENT UNDER TEST

# 5.1. DESCRIPTION OF EUT

EUT Name	Notebook Computer		
Model Lenovo IdeaPad S540-13ARE, Lenovo IdeaPad S540-13API			
Series Model	Lenovo IdeaPad S540-13API		
Model Difference Lenovo IdeaPad S540-13API have the same technical construction including circuit diagram, PCB Layout, components and component la all electrical construction and mechanical construction with Lenovo Ide S540-13ARE. The difference lies only on the difference AMD platform CPU and model name. all these changes do not degrade the RF performance of the certified product.			
Radio Technology	WLAN (IEEE 802.11a/n HT20/n HT40/ac VHT20/VHT 40/VHT 80/VHT 160)		
Operation frequency	UNII-1: 5150-5250 MHz UNII-2A: 5250-5350 MHz UNII-2C: 5470-5725 MHz UNII-3: 5725-5850 MHz		
Modulation	IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac VHT20: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac VHT40: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac VHT80: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac VHT160: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)		
Battery	DC 11.55 V/4680 mAh/54 Wh		
FVIN	V1.0		
PMN	Lenovo IdeaPad S540-13ARE, Lenovo IdeaPad S540-13API		
HVIN	Lenovo IdeaPad S540-13ARE, Lenovo IdeaPad S540-13API		
EUT Serial Number	1385599200003		



# 5.2. MAXIMUM OUTPUT POWER

# UNII-1 BAND

IEEE Std. 802.11	Frequency (MHz)	Maximum Average Conducted Power (dBm)	Max Average EIRP (dBm)
а		16.87	19.40
n HT20		15.37	20.54
n HT40		17.26	22.43
ac VHT20	5150 ~ 5250	15.25	20.42
ac VHT40		17.09	22.26
ac VHT80		17.24	22.42
ac VHT160		17.08	22.25

## UNII-2A BAND

IEEE Std. 802.11	Frequency (MHz)	Maximum Average Conducted Power (dBm)
а	5250 ~ 5350	16.85
n HT20		18.92
n HT40		18.97
ac VHT20		18.81
ac VHT40		18.74
ac VHT80		18.98

#### UNII-2C BAND

IEEE Std. 802.11	Frequency (MHz)	Max Power (dBm)
а		15.22
n HT20		17.44
n HT40		17.85
ac VHT20	5470 ~ 5725	17.27
ac VHT40		17.50
ac VHT80		17.68
ac VHT160		17.75

## UNII-3 BAND

IEEE Std. 802.11	Frequency (MHz)	Max Power (dBm)
а		15.38
n HT20		17.65
n HT40		17.72
ac VHT20	5725 ~ 5850	17.47
ac VHT40		17.51
ac VHT80		17.43



# 5.3. CHANNEL LIST

UNI	II-1	UNII-1		UNII-1	
(For Bandwic	th=20 MHz)	(For Bandwidth=40 MHz)		(For Bandwidth=80 MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	38	5190	42	5210
40	5200	46	5230		
44	5220				
48	5240				

UNII-1		
(For Bandwidth=160 MHz)		
Channel Frequency (MHz)		
50	5250	

UNII (For Bandwid		UNII-2A (For Bandwidth=40 MHz)		UNII-2A (For Bandwidth=80 MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	54	5270	58	5290
56	5280	62	5310		
60	5300				
64	5320				

UNII (For Bandwid	-	UNII-2C (For Bandwidth=40 MHz)		UNII-2C (For Bandwidth=80 MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	102	5510	106	5530
104	5520	110	5550	122	5610
108	5540	118	5590	/	/
112	5560	126	5630		
116	5580	134	5670		
120	5600	/	/		
124	5620				
128	5640				
132	5660				
136	5680				
140	5700				
/	/				

UNII-2C		
(For Bandwidth=160 MHz)		
Channel	Frequency (MHz)	
114	5570	



UNII-3		UNII-3		UNII-3	
(For Bandwid	lth=20 MHz)	(For Bandwi	dth=40 MHz)	(For Bandwid	dth=80 MHz)
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	151	5755	155	5775
153	5765	159	5795		
157	5785				
161	5805				
165	5825				

Note: All channels in the 5600-5650MHz band was not operational in Canada.



# 5.4. TEST CHANNEL CONFIGURATION

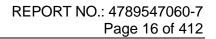
	UNII-1 Test Channel Configuration				
IEEE Std.	Test Channel Number	Frequency			
802.11a	CH 36(Low Channel), CH 40(MID Channel), CH 48(High Channel)	5180 MHz, 5200 MHz, 5240 MHz			
802.11n HT20	CH 36(Low Channel), CH 40(MID Channel), CH 48(High Channel)	5180 MHz, 5200 MHz, 5240 MHz			
802.11n HT40	CH 38(Low Channel), CH 46(High Channel)	5190 MHz, 5230 MHz			
802.11ac VHT20	CH 36(Low Channel), CH 40(MID Channel), CH 48(High Channel)	5180 MHz, 5200 MHz, 5240 MHz			
802.11ac VHT40	CH 38(Low Channel), CH 46(High Channel)	5190 MHz, 5230 MHz			
802.11ac VHT80	CH 42(Low Channel)	5210 MHz			
802.11ac VHT160	CH 50(Low Channel)	5250 MHz			

UNII-2A Test Channel Configuration			
IEEE Std.	Test Channel Number	Frequency	
802.11a	CH 52(Low Channel), CH 56(MID Channel), CH 64(High Channel)	5260 MHz, 5280 MHz, 5320 MHz	
802.11n HT20	CH 52(Low Channel), CH 56(MID Channel), CH 64(High Channel)	5260 MHz, 5280 MHz, 5320 MHz	
802.11n HT40	CH 54(Low Channel), CH 62(High Channel)	5270 MHz, 5310 MHz	
802.11ac VHT20	CH 52(Low Channel), CH 56(MID Channel), CH 64(High Channel)	5260 MHz, 5280 MHz, 5320 MHz	
802.11ac VHT40	CH 54(Low Channel), CH 62(High Channel)	5270 MHz, 5310 MHz	
802.11ac VHT80	CH 58(Low Channel)	5290 MHz	

	UNII-2C Test Channel Configuration				
IEEE Std.	Test Channel Number	Frequency			
802.11a	CH 100(Low Channel), CH 120(MID Channel), CH 140(High Channel)	5500 MHz, 5600 MHz, 5700 MHz			
802.11n VHT20	CH 100(Low Channel), CH 120(MID Channel), CH 140(High Channel)	5500 MHz, 5600 MHz, 5700 MHz			
802.11n VHT40	CH 102(Low Channel), CH 118(MID Channel), CH 134(High Channel)	5510 MHz, 5590 MHz, 5670 MHz			
802.11ac VHT20	CH 100(Low Channel), CH 120(MID Channel), CH 140(High Channel)	5500MHz, 5600 MHz, 5700MHz			
802.11ac VHT40	CH 102(Low Channel), CH 118(MID Channel), CH 134(High Channel)	5510 MHz, 5590 MHz, 5670 MHz			
802.11ac VHT80	CH 102(Low Channel), CH 122(High Channel)	5530 MHz, 5610 MHz			
802.11ac VHT160	CH 114(Low Channel)	5570 MHz			



UNII-3 Test Channel Configuration				
IEEE Std.	Test Channel Number	Frequency		
802.11a	CH 149(Low Channel), CH 157(MID Channel), CH 165(High Channel)	5745 MHz, 5785 MHz, 5825 MHz		
802.11n HT20	CH 149(Low Channel), CH 157(MID Channel), CH 165(High Channel)	5745 MHz, 5785 MHz, 5825 MHz		
802.11n HT40	CH 151(Low Channel), CH 159(High Channel)	5755MHz, 5795MHz		
802.11ac VHT20	CH 149(Low Channel), CH 157(MID Channel), CH 165(High Channel)	5745 MHz, 5785 MHz, 5825 MHz		
802.11ac VHT40	CH 151(Low Channel), CH 159(High Channel)	5755 MHz, 5795 MHz		
802.11ac VHT80	CH 155(Low Channel)	5775 MHz		





# 5.5. DESCRIPTION OF AVAILABLE ANTENNAS

SPEEDWIRE(SPD) Antenna

Antenna	Frequency	Antenna	Maximum Antenna Gain Directiona		Gain (dBi)
Antenna	Band	Туре	(dBi)	CDD Mode	STBC Mode
Tx1	UNII-1	PIFA	1.78	5.17	3.81
Tx2	UNII-1	PIFA	2.53	5.17	3.01
Tx1	UNII-2A	PIFA	1.78	E 17	2.01
Tx2	UNII-2A	PIFA	2.53	5.17	3.81
Tx1	UNII-2C	PIFA	2.81	5.75	4.52
Tx2	UNII-2C	PIFA	2.67	5.75	4.52
Tx1	UNII-3	PIFA	2.97	E 92	4.62
Tx2	UNII-3	PIFA	2.67	5.83	4.63

IEEE Std. 802.11	Transmit and Receive Mode	Description			
а	⊠2TX, 2RX	ANT 1, 2 can be used as transmitting/receiving antenna.			
n HT20	⊠2TX, 2RX	ANT 1, 2 can be used as transmitting/receiving antenna.			
n HT40	⊠2TX, 2RX	ANT 1, 2 can be used as transmitting/receiving antenna.			
ac VHT20	⊠2TX, 2RX	ANT 1, 2 can be used as transmitting/receiving antenna.			
ac VHT40	⊠2TX, 2RX	ANT 1, 2 can be used as transmitting/receiving antenna.			
ac VHT80	⊠2TX, 2RX	ANT 1, 2 can be used as transmitting/receiving antenna.			
ac VHT160	⊠2TX, 2RX	ANT 1, 2 can be used as transmitting/receiving antenna.			
Note: 1. Only 802.1	Note: 1. Only 802.11n HT20/HT40 and 802.11ac HT20/40/80/160 support MIMO mode.				



## ICT Antenna

Antenna	Frequency	Antenna	Maximum Antenna Gain	Directional	Gain (dBi)
Antenna	Band	Туре	(dBi)	CDD Mode	STBC Mode
Tx1	UNII-1	PIFA	-0.06	2.52	1.43
Tx2	UNII-1	PIFA	-0.93	2.52	1.43
Tx1	UNII-2A	PIFA	-0.06	2.52	1 40
Tx2	UNII-2A	PIFA	-0.93	2.52	1.43
Tx1	UNII-2C	PIFA	-1.99	1.96	0.45
Tx2	UNII-2C	PIFA	-0.20	1.90	0.45
Tx1	UNII-3	PIFA	-1.99	0.58	-0.5
Tx2	UNII-3	PIFA	-2.90	0.56	-0.5

IEEE Std. 802.11	Transmit and Receive Mode	Description
а	⊠2TX, 2RX	ANT 1, 2 can be used as transmitting/receiving antenna.
n HT20	⊠2TX, 2RX	ANT 1, 2 can be used as transmitting/receiving antenna.
n HT40	⊠2TX, 2RX	ANT 1, 2 can be used as transmitting/receiving antenna.
ac VHT20	⊠2TX, 2RX	ANT 1, 2 can be used as transmitting/receiving antenna.
ac VHT40	⊠2TX, 2RX	ANT 1, 2 can be used as transmitting/receiving antenna.
ac VHT80	⊠2TX, 2RX	ANT 1, 2 can be used as transmitting/receiving antenna.
ac VHT160	⊠2TX, 2RX	ANT 1, 2 can be used as transmitting/receiving antenna.
Note: 1. Only 802.1	1n HT20/HT40 ar	nd 802.11ac HT20/40/80/160 support MIMO mode.

Note 1: The EUT have two kinds of antennas, one is called SPEEDWIRE antenna and the other one called ICT antenna.

Note 2: The EUT has two antennas, one is Tx1 which is the main antenna and the other one is Tx2 which is the auxiliary (AUX) antenna.

Note 3: CDD Mode Directional gain=  $10 \log [(10^{G1/20} + 10^{G2/20})^2/N_{ANT}]$ STBC Mode Directional gain=  $10 \log [(10^{G1/10} + 10^{G2/10})/N_{ANT}]$ 

 $G_{\text{ANT}}$ : Average of the Antenna Gain  $N_{\text{ANT}}$ : Antenna numbers

Note 4: The value of the antenna gain was declared by customer.



# 5.6. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter		
Test Software DRTU, Version 11.1941.0-10270		

### UNII-1

IEEE Std. 802.11	Rate	Channel	Test Software	Setting Value
1222 Std. 802.11	Nate	Unanner	ANT1	ANT2
		36	16	17
а	6M	40	16	17
		48	16	17
		36	11.5	12.5
n HT20	MCS0	40	11.5	12.5
		48	11.5	12.5
n HT40	MCS0	38	13	14
	NIC30	46	13	14
		36	11.5	12.5
ac VHT20	MCS0	40	11.5	12.5
		48	11.5	12.5
ac VHT40	MCS0	38	13	14
	IVICOU	46	13	14
ac VHT80	MCS0	42	13	14
ac VHT160	MCS0	50	15.5	16

#### UNII-2A

	Dete	Channel	Soft se	et value
IEEE Std. 802.11	Rate	Channel	ANT1	ANT2
		52	С	16.5
а	6M	60	16	16.5
		64	16	17
		52	15.5	16
n HT20	MCS0	60	15.5	16
		64	15.5	16
n HT40	MCS0	54	15	16
11 H140		62	15.5	16.5
		52	15.5	16
ac VHT20	MCS0	60	15.5	16
		64	15.5	16.5
ac VHT40	MCS0	54	15	16
	1000	62	15.5	16.5
ac VHT80	MCS0	58	13	13.5



#### UNII-2C

IEEE Std. 802.11	Rate	Channel	Soft s	et value
1EEE Std. 802.11	Rale	Channel	ANT1	ANT2
		100	14	15
а	6M	120	14	15
		140	15	15.5
		100	14	15
n HT20	MCS0	120	14	15
		140	14.5	15
	MCS0	102	15	15.5
n HT40		118	15	15.5
		134	14	15
		100	14	15
ac VHT20	MCS0	120	14	15
		140	14.5	15
		102	14	15
ac VHT40	MCS0	118	14	15
		134	14	15
ac VHT80	MCS0	106	14	15
		122	14	15
ac VHT160	MCS0	114	14	15

#### UNII-3

	Data	Channel	Soft se	et value
IEEE Std. 802.11	Rate	Channel	ANT1	ANT2
		149	15	15.5
а	6M	157	14.5	15
		165	15	15.5
		149	15	15.5
n HT20	MCS0	157	15	15
		165	14.5	15
n HT40	MCS0	151	14.5	14.5
11 H 140		159	14.5	14.5
		149	15	15.5
ac VHT20	MCS0	157	15	15
		165	14.5	15
ac VHT40	MCS0	151	14.5	14.5
	IVIC SU	159	14.5	14.5
ac VHT80	MCS0	155	14.5	14.5

Note: 1. STBC mode and CDD mode use the same power setting.

2. SPEEDWIRE(SPD) antenna and ICT antenna use the same power setting.



# 5.7. 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 5.6.

Worst case Data Rates declared by the customer:

IEEE 802.11a / SISO – BPSK / 6 Mbps IEEE 802.11n HT20 / SISO – BPSK / MCS0 IEEE 802.11n HT40 / SISO – BPSK / MCS0 IEEE 802.11n HT20 / MIMO / 2Tx CDD – BPSK / MCS0 IEEE 802.11ac VHT20 / MIMO / 2Tx CDD – BPSK / MCS0 IEEE 802.11ac VHT20 / MIMO / 2Tx CDD – BPSK / MCS0 IEEE 802.11ac VHT40 / MIMO / 2Tx CDD – BPSK / MCS0 IEEE 802.11ac VHT40 / MIMO / 2Tx CDD – BPSK / MCS0 IEEE 802.11ac VHT60 / MIMO / 2Tx CDD – BPSK / MCS0 IEEE 802.11ac VHT60 / MIMO / 2Tx CDD – BPSK / MCS0 IEEE 802.11ac VHT160 / MIMO / 2Tx CDD – BPSK / MCS0 IEEE 802.11ac VHT160 / MIMO / STBC – BPSK / MCS0 IEEE 802.11ac VHT20 / MIMO / STBC – BPSK / MCS0 IEEE 802.11ac VHT40 / MIMO / STBC – BPSK / MCS0 IEEE 802.11ac VHT40 / MIMO / STBC – BPSK / MCS0 IEEE 802.11ac VHT40 / MIMO / STBC – BPSK / MCS0 IEEE 802.11ac VHT40 / MIMO / STBC – BPSK / MCS0 IEEE 802.11ac VHT40 / MIMO / STBC – BPSK / MCS0

Since 802.11ac VHT20/VHT40 mode are different from 802.11n HT20/HT40 only in control messages, so all the tests (except conducted output power and power spectral density) were performed on the worst case (802.11n HT20/802.11n HT40) mode between these 4 modes and only the worst data was recorded in this report.

The EUT has 2 separate antennas which correspond to 2 separate antenna ports. Tx1 and Tx2 correspond to antenna 1 and antenna 2 respectively.

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

Conducted output power, power spectral density tests separately on each port with all supported SISO & MIMO port combinations.

Duty cycle and 6dB/26dB DTS bandwidth/occupied channel bandwidth tests, only SISO mode and one chain were tested since the duty cycle and bandwidth does not change depending on chains used.

Conducted bandedge and spurious emissions tests were performed with SISO mode, as this port was found to have the worst case in terms of power settings amongst all supported possible SISO & MIMO port combinations.

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Radiated emissions tests were performed with the MIMO modes. These were found to be the worst modulation scheme with regards to emissions after preliminary investigations and, as this mode emits the highest conducted output power level, it was deemed to be the worst case.

STBC mode and CDD mode use the same power setting, only the worst data was recorded in the report.

Both SPEEDWIRE(SPD) antenna and ICT antenna were tested, but only the worst data was recorded in the report.



# 5.8. DESCRIPTION OF TEST SETUP

#### SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	FCC ID
1	Router	TP-Link	Archer AX11000	TE7AX11000

#### I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	DC Input	Туре С	/	/	/
2	USB	USB	/	/	/
3	Туре С	Туре С	/	/	/
4	AUX	AUX	/	/	/

#### **ACCESSORIES**

Item	Accessory	Brand Name	Model Name	Description
1	AC ADAPTER	Lenovo	ADLX95YCC3A	Input: AC 100 ~ 240 V/1.6 A/50 ~ 60 Hz Output: DC 20 V, 4.75 A/ DC 15 V, 3 A/DC 5 V, 3 A

#### TEST SETUP

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

#### SETUP DIAGRAM FOR TESTS

For DFS Test:



For the other RF Test:



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# 6. MEASURING INSTRUMENT AND SOFTWARE USED

Conducted Emissions										
Instrument										
Used	Equipment	Manufactur er	Model N	Model No.		Last Cal.	Next Cal.			
$\checkmark$	EMI Test Receiver	R&S	ESR3	3	101961	Dec.05,2019	Dec.05,2020			
V	Two-Line V- Network	R&S	ENV21	6	101983	Dec.05,2019	Dec.05,2020			
Software										
Used	Des	cription		Manu	ufacturer	Name	Version			
$\checkmark$	Test Software for C	Conducted di	sturbance	F	arad	EZ-EMC	Ver. UL-3A1			
		F	Radiated Er	nissio	ns					
			Instrum	nent						
Used	Equipment	Manufactur er	Model N	No.	Serial No.	Last Cal.	Next Cal.			
	MXE EMI Receiver	KESIGHT	N9038	A	MY56400 036	Dec.06,2019	Dec.06,2020			
$\checkmark$	Hybrid Log Periodic Antenna	TDK	HLP-300	)3C	130960	Sep.17, 2018	Sep.17, 2021			
$\checkmark$	Preamplifier	HP	8447[	8447D		Dec.05,2019	Dec.05,2020			
V	EMI Measurement Receiver	R&S	ESR2	6	101377	Dec.05,2019	Dec.05,2020			
$\checkmark$	Horn Antenna	TDK	HRN-01	18	130939	Sep.17, 2018	Sep.17, 2021			
	High Gain Horn Antenna	Schwarzbe ck	BBHA-9	170	691	Aug.11, 2018	Aug.11, 2021			
V	Preamplifier	TDK	PA-02-0	118	TRS-305- 00066	Dec.05,2019	Dec.05,2020			
$\checkmark$	Preamplifier	TDK	PA-02-	-2	TRS-307- 00003	Dec.05,2019	Dec.05,2020			
V	Preamplifier	TDK	PA-02-	-3	TRS-308- 00002	Dec.05,2019	Dec.05,2020			
V	Loop antenna	Schwarzbe ck	15198	3	00008	Jan.07, 2019	Jan.07, 2022			
	Band Reject Filter	Wainwright	5725-5850 40SS	WRCJV12-5695- 5725-5850-5880- 40SS		Dec.05,2019	Dec.05,2020			
	Band Reject Filter	Wainwright	WRCJV20-5120- 5150-5350-5380- 60SS		2	Dec.05,2019	Dec.05,2020			
V	Band Reject Filter	Wainwright	WRCJV20- 5470-5725- 60SS	-5755- 5	1	Dec.05,2019	Dec.05,2020			
V	Band Reject Filter	Wainwright	WRCJV8-2 2400-248		4	Dec.05,2019	Dec.05,2020			



			253	3.5-40S	S			
$\checkmark$	High Pass Filter	Wainwright	WHK	(X10-58	50-	4	Dec.05,2019	Dec.05,2020
		wannwingin	6500·	-1800-40	)SS		Dec.03,2019	Dec.03,2020
$\checkmark$	Cable	/		/		9879/44E A	Dec.05,2019	Dec.05,2020
$\checkmark$	Cable	/		/		20160201 001	Dec.05,2019	Dec.05,2020
			9	Software	;			
Used	Descri	ption		Manufa	cture	er	Name	Version
$\checkmark$	Test Software disturb			Fara	ad	E	Z-EMC	Ver. UL-3A1
			Other	instrum	nent	s		
Used	Equipment	Manufactur er	Мос	del No.	S	erial No.	Last Cal.	Next Cal.
$\checkmark$	Spectrum Analyzer	Keysight	N9	030A	MY	55410512	Dec.06,2019	Dec.06,2020
V	Power sensor, Power Meter	R&S	OS	OSP120		100921	Dec.06,2019	Dec.06,2020
V	Temperature & Humidity Chamber	SANMOOD	SG-8	30-CC-2		2088	Dec.06,2019	Dec.06,2020
$\checkmark$	DC power supply	Array	36	662A	A	1512015	Dec.05,2019	Dec.05,2020
$\checkmark$	Power sensor, Power Meter	R&S	OS	P120		100921	Mar.13,2020	Mar.13,2021
V	Vector Signal Generator	R&S	SME	8V100A		261637	Dec.06,2019	Dec.06,2020
$\checkmark$	Signal Generator	R&S	SM	B100A		178553	Dec.06,2019	Dec.06,2020
$\checkmark$	Signal Analyzer	R&S	F٤	SV40	A	1512015	Dec.06,2019	Dec.06,2020
$\checkmark$	Attenuator	Weinschel	31	M-10		T9692	Dec.06,2019	Dec.06,2020
	Cable	R&S		۱ /		11565/4P E	Dec.06,2019	Dec.06,2020
V	Cable	R&S	/ N		MY	11566/4P E	Dec.06,2019	Dec.06,2020
			Ş	Software				
Used	Descri	ption		Manufa	cture		Name	Version
V	Test Software for R	F Conducted	Test	Tonscend		JS1120-3 RF Test System		2.6.77.0518
$\checkmark$	Test Software	for DFS Test		R&				10.60.10



# 7. ANTENNA PORT TEST RESULTS

# 7.1. ON TIME AND DUTY CYCLE

## LIMITS

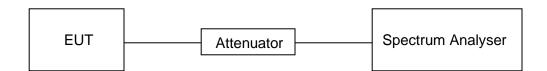
None; for reporting purposes only.

## PROCEDURE

Refer to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.B.

The zero-span mode on a spectrum analyzer or EMI receiver, if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set RBW  $\geq$  EBW if possible; otherwise, set RBW to the largest available value. Set VBW  $\geq$  RBW. Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T, where T is defined in II.B.1.a), and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if T  $\leq$  16.7 microseconds.)

## TEST SETUP



## TEST ENVIRONMENT

Temperature	25.6 °C	Relative Humidity	59.8 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 11.55 V

## **RESULTS**

Please refer to appendix C.



# 7.2. 6/26 EMISSION BANDWIDTH AND 99% OCCUPIED BANDWIDTH

#### LIMITS

CFR 47 FCC Part15, Subpart E ISED RSS-247 ISSUE 2							
Test Item	Limit	Frequency Range (MHz)					
26 dB Emission Bandwidth	For reporting purposes only.	5150 ~ 5250					
26 dB Emission Bandwidth	For reporting purposes only.	5250 ~ 5350					
26 dB Emission Bandwidth	For reporting purposes only.	5470 ~ 5725 (For FCC) 5470 ~ 5600 (For ISED) 5650 ~ 5725 (For ISED)					
6 dB Emission Bandwidth	The minimum 6 dB emission bandwidth shall be 500 kHz.	5725 ~ 5850					
99 % Occupied Bandwidth	For reporting purposes only.	5150 ~ 5825 (For ISED)					

ISED RSS-247 6.2.1.2 clause unwanted emission limits

For transmitters with operating frequencies in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. Any unwanted emissions that fall into the band 5250-5350 MHz shall be attenuated below the channel power by at least 26 dB, when measured using a resolution bandwidth between 1 and 5% of the occupied bandwidth (i.e. 99% bandwidth), above 5250 MHz.

#### TEST PROCEDURE

Refer to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.C1. for 26 dB Emission Bandwidth; section II.C2. for 6 dB Emission Bandwidth; section II.D. for 99 % Occupied Bandwidth.

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	For 6 dB Emission Bandwidth: RBW=100 kHz For 26 dB Emission bandwidth: approximately 1 % of the EBW. For 99 % Occupied Bandwidth: approximately 1 % ~ 5 % of the OBW.
VBW	For 6 dB Bandwidth: ≥ 3*RBW For 26 dB Bandwidth: > RBW For 99 % 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 6/26 dB relative to the maximum level measured in the fundamental emission.

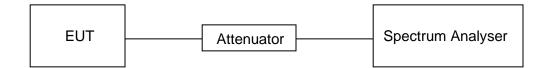


## Calculation for 99% Bandwidth of UNII-2C and UNII-3 Straddle Channel:

For Example: Fundamental Frequency: 5720 MHz 99% OBW: 21.00 MHz Turning Frequency: 5725 MHz 99% Bandwidth of UNII-2C Band Portion = (5725-(5720-(21.00/2)) = 15.50 MHz 99% Bandwidth of UNII-3 Band Portion = (5720+(21.00/2)-5725) = 5.50 MHz **Calculation for 26dB Bandwidth of UNII-2C Straddle Channel:** For Example: Fundamental frequency: 5720 MHz 26dB BW: 20.00 MHz FL:5710.16 MHz FL:5710.16 MHz Turning Frequency: 5725 MHz 26dB Bandwidth of UNII-2C Band Portion = 5725-5710.16=14.84 MHz **Calculation for 6dB Bandwidth of UNII-3 Straddle Channel:** For Example: Fundamental frequency:5720

> 6dB BW: 16.44 MHz FL: 5711.76 MHz FH: 5728.2 MHz Turning Frequency: 5725 MHz 6dB Bandwidth of UNII-3 band Portion = 5728.2-5725=3.2 MHz

## TEST SETUP



#### **TEST ENVIRONMENT**

Temperature	25.6 °C	Relative Humidity	59.8 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 11.55 V

#### **RESULTS**

Please refer to Appendix A1&A2&A3&A4.



# 7.3. CONDUCTED OUTPUT POWER

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

CFR 47 FCC Part15, Subpart E							
Test Item	Limit	Frequency Range (MHz)					
Conducted	<ul> <li>Outdoor Access Point: 1 W (30 dBm)</li> <li>Indoor Access Point: 1 W (30 dBm)</li> <li>Fixed Point-To-Point Access Points: 1 W (30 dBm)</li> <li>Client Devices: 250 mW (24 dBm)</li> </ul>	5150 ~ 5250					
Output Power	Shall not exceed the lesser of 250 mW (24 dBm) or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz.	5250 ~ 5350 5470 ~ 5725					
	Shall not exceed 1 Watt (30 dBm).	5725 ~ 5850					

ISED RSS-247 ISSUE 2								
Test Item	Limit	Frequency Range (MHz)						
	The maximum e.i.r.p. shall not exceed 200 mW (23 dBm) or 10 + 10 log <sub>10</sub> B, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz.	5150 ~ 5250						
Conducted Output Power or e.i.r.p.	a. The maximum conducted output power shall not exceed 250 mW (24dBm) or $11 + 10 \log_{10}$ B dBm, whichever is less. b. The maximum e.i.r.p. shall not exceed 1.0 W (30 dBm) or 17 + 10 log_{10}B dBm, whichever is less. B is the 99 % emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p.greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.	5250 ~ 5350 5470 ~ 5600 5650 ~ 5725						
	Shall not exceed 1 W1 Watt (30 dBm). The e.i.r.p. shall not exceed 4 W	5725 ~ 5850						

Note:

The above limits are based upon the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.



## TEST PROCEDURE

Refer to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.E.

# Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep):

(i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.

(ii) Set RBW = 1 MHz.

(iii) Set VBW ≥ 3 MHz.

(iv) Number of points in sweep  $\ge 2 \times \text{span} / \text{RBW}$ . (This ensures that bin-to-bin spacing is  $\le \text{RBW}/2$ , so that narrowband signals are not lost between frequency bins.)

(v) Sweep time = auto.

(vi) Detector = power averaging (rms), if available. Otherwise, use sample detector mode.
 (vii) If transmit duty cycle < 98%, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98%, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run."</li>

(viii) Trace average at least 100 traces in power averaging (rms) mode.

(ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

## Method PM (Measurement using an RF average power meter):

(i) Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the following conditions are satisfied:

a. The EUT is configured to transmit continuously or to transmit with a constant duty cycle. b. At all times when the EUT is transmitting, it must be transmitting at its maximum power control level.

c. The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.

(ii) If the transmitter does not transmit continuously, measure the duty cycle, x, of the transmitter output signal as described in II.B.

(iii) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.

(iv) Adjust the measurement in dBm by adding 10 log (1/x) where x is the duty cycle (e.g., 10 log (1/0.25) if the duty cycle is 25%).

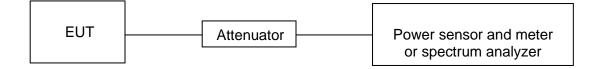
## Method PM-G (Measurement using a gated RF average power meter):

Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

Straddle channel power was measured using spectrum analyzer.



# TEST SETUP



#### **TEST ENVIRONMENT**

Temperature	25.6 °C	Relative Humidity	59.8 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 11.55 V



## RESULTS

Mode	Frequency (MHz)	Frequency (MHz)		FCC Conducted Power Limit	ISED Conducted Power Limit	Average EIRP (dBm)			ISED EIRP Limit	
	(101112)	ANT 1	ANT 2	Total	(dBm)	(dBm)	ANT 1	ANT 2	Total	(dBm)
	5180	14.99	16.82	/	24.00	/	16.77	19.35	/	22.26
	5200	15.10	16.86	/	24.00	/	16.88	19.39	/	22.26
	5240	15.45	16.87	/	24.00	/	17.23	19.40	/	22.26
	5260	15.37	16.52	/	24.00	23.26	17.15	19.05	/	29.26
	5280	15.43	16.55	/	24.00	23.26	17.21	19.08	/	29.26
802.11a	5320	15.57	16.85	/	24.00	23.26	17.35	19.38	/	29.26
002.11a	5500	14.11	14.85	/	24.00	23.26	16.92	17.52	/	29.26
	5600	13.82	14.89	/	24.00	23.26	16.63	17.56	/	29.26
	5700	14.21	15.22	/	24.00	23.26	17.02	17.89	/	29.26
	5745	14.33	15.23	/	30.00	30.00	17.30	17.90	/	36.00
	5785	14.19	15.21	/	30.00	30.00	17.16	17.88	/	36.00
	5825	14.31	15.38	/	30.00	30.00	17.28	18.05	/	36.00
	5180	11.84	12.75	15.33	24.00	/	/	/	20.50	22.54
	5200	11.54	12.74	15.19	24.00	/	/	/	20.37	22.54
	5240	11.62	12.99	15.37	24.00	/	/	/	20.54	22.54
	5260	15.11	16.18	18.69	24.00	23.54	/	/	23.86	29.54
	5280	15.24	16.11	18.71	24.00	23.54	/	/	23.88	29.54
802.11n	5320	15.46	16.31	18.92	24.00	23.54	/	/	24.09	29.54
HT20	5500	14.04	14.79	17.44	24.00	23.54	/	/	23.19	29.54
	5600	14.04	14.75	17.42	24.00	23.54	/	/	23.17	29.54
	5700	14.01	14.70	17.38	24.00	23.54	/	/	23.13	29.54
	5745	14.02	15.19	17.65	30.00	30.00	/	/	23.49	36.00
	5785	14.21	14.89	17.57	30.00	30.00	/	/	23.41	36.00
	5825	14.05	14.92	17.52	30.00	30.00	/	/	23.35	36.00
	5190	13.59	14.82	17.26	24.00	/	/	/	22.43	23.00
	5230	13.38	14.57	17.03	24.00	/	/	/	22.20	23.00
	5270	15.39	16.46	18.97	24.00	24.00	/	/	24.14	30.00
	5310	15.19	16.34	18.81	24.00	24.00	/	/	23.99	30.00
802.11n HT40	5510	14.33	15.11	17.75	24.00	24.00	/	/	23.50	30.00
	5590	14.45	15.20	17.85	24.00	24.00	/	/	23.60	30.00
	5670	14.08	15.01	17.58	24.00	24.00	/	/	23.33	30.00
	5755	14.40	15.00	17.72	30.00	30.00	/	/	23.56	36.00
	5795	14.27	14.93	17.62	30.00	30.00	/	/	23.45	36.00



Mode	Frequency (MHz)	Frequency (MHz)		FCC Conducted Power Limit	ISED Conducted Power Limit	Average EIRP (dBm)			ISED Limit	
	(	ANT 1	ANT 2	Total	(dBm)	(dBm)	ANT 1	ANT 2	Total	(dBm)
	5180	11.74	12.24	15.01	24.00	/	/	/	20.18	22.54
	5200	11.41	12.47	14.98	24.00	/	/	/	20.16	22.54
	5240	11.50	12.87	15.25	24.00	/	/	/	20.42	22.54
	5260	15.09	16.16	18.67	24.00	23.54	/	/	23.84	29.54
	5280	15.21	15.97	18.62	24.00	23.54	/	/	23.79	29.54
802.11ac	5320	15.29	16.26	18.81	24.00	23.54	/	/	23.99	29.54
HT20	5500	14.01	14.47	17.26	24.00	23.54	/	/	23.01	29.54
	5600	14.00	14.50	17.27	24.00	23.54	/	/	23.02	29.54
	5700	13.94	14.49	17.23	24.00	23.54	/	/	22.98	29.54
	5745	14.00	14.88	17.47	30.00	30.00	/	/	23.30	36.00
	5785	14.01	14.87	17.47	30.00	30.00	/	/	23.30	36.00
	5825	14.04	14.81	17.45	30.00	30.00	/	/	23.28	36.00
	5190	13.59	14.52	17.09	24.00	/	/	/	22.26	23.00
	5230	13.03	14.80	17.01	24.00	/	/	/	22.19	23.00
	5270	15.00	16.26	18.69	24.00	24.00	/	/	23.86	30.00
	5310	15.17	16.23	18.74	24.00	24.00	/	/	23.92	30.00
802.11ac HT40	5510	14.06	14.56	17.33	24.00	24.00	/	/	23.08	30.00
11140	5590	14.17	14.70	17.45	24.00	24.00	/	/	23.20	30.00
	5670	14.03	14.90	17.50	24.00	24.00	/	/	23.25	30.00
	5755	13.90	14.99	17.49	30.00	30.00	/	/	23.32	36.00
	5795	14.06	14.89	17.51	30.00	30.00	/	/	23.34	36.00
	5210	13.33	14.98	17.24	24.00	/	/	/	22.42	23.00
	5290	15.37	16.50	18.98	24.00	24.00	/	/	24.21	30.00
802.11ac HT80	5530	14.14	15.10	17.66	24.00	24.00	/	/	23.41	30.00
11100	5610	13.89	15.33	17.68	24.00	24.00	/	/	23.43	30.00
	5775	14.35	14.48	17.43	30.00	30.00	/	/	23.26	30.00
802.11ac	5250	13.48	14.59	17.08	24.00	/	/	/	22.25	23.00
HT160	5570	14.38	15.08	17.75	24.00	24.00	/	/	23.50	30.00

Note: 1. 802.11a does not support MIMO mode.

2. Average EIRP = Average Conducted Output Power + Antenna gain/Directional gain.

3. The test results have already included the duty cycle correction factor. About correction Factor please refer to section 7.1.

4. STBC mode and CDD mode use the same power setting, only the worst EIRP data was recorded in the report, for more about the antenna gain/directional gain, please refer to clause 5.5.



# 7.4. POWER SPECTRAL DENSITY

#### LIMITS

CFR 47 FCC Part15, Subpart E							
Test Item	Limit	Frequency Range (MHz)					
Power Spectral Density	<ul> <li>Outdoor Access Point: 17 dBm/MHz</li> <li>Indoor Access Point: 17 dBm/MHz</li> <li>Fixed Point-To-Point Access Points: 17 dBm/MHz</li> <li>Client Devices: 11 dBm/MHz</li> </ul>	5150 ~ 5250					
Density	11 dBm/MHz	5250 ~ 5350 5470 ~ 5725					
	30 dBm/500 kHz	5725 ~ 5850					

ISED RSS-247 ISSUE 2			
Test Item	Limit	Frequency Range (MHz)	
Power Spectral Density	The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.	5150 ~ 5250	
	The power spectral density shall not exceed 11 dBm inany 1.0 MHz band.	5250 ~ 5350 5470 ~ 5600 5650 ~ 5725	
	30 dBm/500 kHz	5725 ~ 5850	

Note:

The above limits are based upon the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

## TEST PROCEDURE

Refer to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.F.



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

Center Frequency	The center frequency of the channel under test
Detector	RMS
RBW	1 MHz
VBW	≥3 × RBW
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

For U-NII-1, U-NII-2A and U-NII-2C band:

#### For U-NII-3:

Center Frequency	The center frequency of the channel under test
Detector	RMS
RBW	500 kHz
VBW	≥3 × RBW
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

Allow trace to fully stabilize and Use the peak search function on the instrument to find the peak of the spectrum and record its value.

Add 10 log (1/x), where x is the duty cycle, to the peak of the spectrum, the result is the Maximum PSD over 1 MHz/500kHz reference bandwidth.

# TEST SETUP



#### TEST ENVIRONMENT

Temperature	25.6 °C	Relative Humidity	59.8 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 11.55 V

## **RESULTS**

Please refer to Appendix B.



# 8. RADIATED TEST RESULTS

## <u>LIMITS</u>

Refer to CFR 47 FCC §15.205, §15.209 and §15.407 (b).

Refer to ISED RSS-GEN Clause 8.9, Clause 8.10 and ISED RSS-247 6.2.

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

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

FCC Emissions radiated outside of the specified frequency bands below 30 MHz			
Frequency (MHz) Field strength (microvolts/meter) Measurement distance (meter			
0.009-0.490	2400/F(kHz)	300	
0.490-1.705	24000/F(kHz)	30	
1.705-30.0	30	30	

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

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

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



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

Hz	MHz	GHz
90 - 0.110	149.9 - 150.05	9.0 - 9.2
95 - 0.505	158.52475 - 158.52525	9.3 - 9.5
1735 - 2.1905	158.7 - 156.9	10.6 - 12.7
120 - 3.028	162.0125 - 187.17	13.25 - 13.4
25 - 4.128	167.72 - 173.2	14.47 - 14.5
17725 - 4.17775	240 - 285	15.35 - 16.2
0725 - 4.20775	322 - 335.4	17.7 - 21.4
377 - 5.683	399.9 - 410	22.01 - 23.12
215 - 6.218	608 - 614	23.6 - 24.0
8775 - 6.28825	960 - 1427	31.2 - 31.8
1175 - 6.31225	1435 - 1626.5	36.43 - 36.5
1 - 8.294	1645.5 - 1646.5	Above 38.6
32 - 8.366	1660 - 1710	
7625 - 8.38675	1718.8 - 1722.2	
425 - 8.41475	2200 - 2300	
29 - 12.293	2310 - 2390	
.51975 - 12.52025	2483.5 - 2500	
57675 - 12.57725	2655 - 2900	
38 - 13.41	3260 - 3267	
.42 - 16.423	3332 - 3339	
69475 - 16.69525	3345.8 - 3358	
80425 - 16.80475	3500 - 4400	
5 - 25.67	4500 - 5150	
5 - 38.25	5350 - 5460	
- 74.6	7250 - 7750	
8 - 75.2	8025 - 8500	

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

# FCC Restricted bands of operation 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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Limits of unwanted/undesirable emission out of the restricted bands refer to CFR 47 FCC §15.407 (b) and ISED RSS-247 6.2.

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1GHz)								
Frequency Range		Field Strength Limit						
(MHz)	EIRP Limit	(dBuV/m) at 3 m						
5150~5250 MHz								
5250~5350 MHz	PK: -27 (dBm/MHz)	PK:68.2(dBµV/m)						
5470~5725 MHz								
	PK: -27 (dBm/MHz) *1	PK: 68.2(dBµV/m) *1						
5725~5850 MHz	PK: 10 (dBm/MHz) *2	PK: 105.2 (dBµV/m) *2						
5725~5650 WIFIZ	PK: 15.6 (dBm/MHz) *3	PK: 110.8(dBµV/m) *3						
	PK: 27 (dBm/MHz) *4	PK: 122.2 (dBµV/m) *4						
Note:								

\*1 beyond 75 MHz or more above of the band edge.

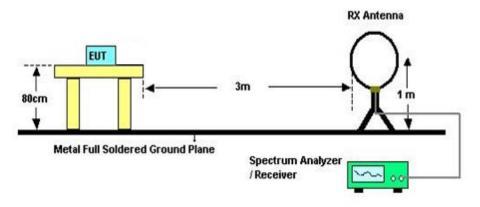
\*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

\*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.

\*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

#### TEST SETUP AND PROCEDURE

Below 30 MHz



The setting of the spectrum analyser

RBW	200Hz (From 9kHz to 0.15 MHz)/ 9kHz (From 0.15 MHz to 30 MHz)
VBW	200Hz (From 9kHz to 0.15 MHz)/ 9kHz (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.

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

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

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

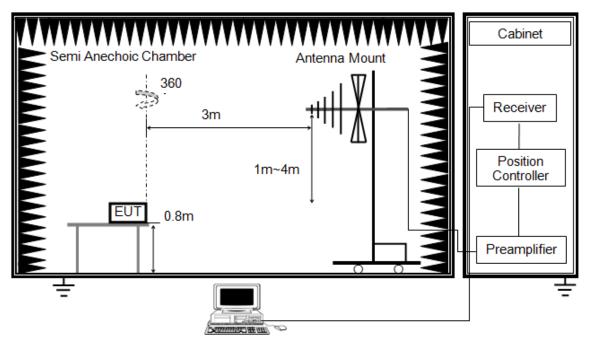
5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

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 30 m 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.



## 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 11.11.

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.

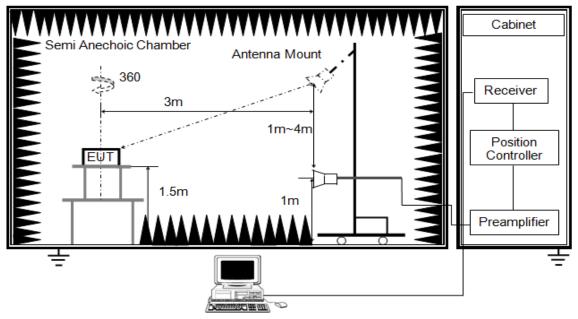
3. The EUT was placed on a turntable with 80 cm above ground.

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.



#### Above 1 GHz



The setting of the spectrum analyser

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

1. The testing follows the guidelines in KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.G.3 ~ II.G.6.

2. The EUT was arranged to its worst case and then tune the antenna tower (1.5 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter 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.

#### TEST ENVIRONMENT



Temperature	25.2 °C	Relative Humidity	63 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 11.55 V

#### **RESULTS**

Note 1: Simultaneous transmission had been evaluated with the 5 GHz WiFi and BT/BLE transmitter and has no additional or worse emissions found. Only the worst data was recorded in the test 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: Both SPEEDWIRE(SPD) antenna and ICT antenna were tested, but only the worst data (SPEEDWIRE(SPD) antenna) was recorded in the report.

Note 4: Both STBC and CDD modes had been tested, only the worst data was recorded in the report.

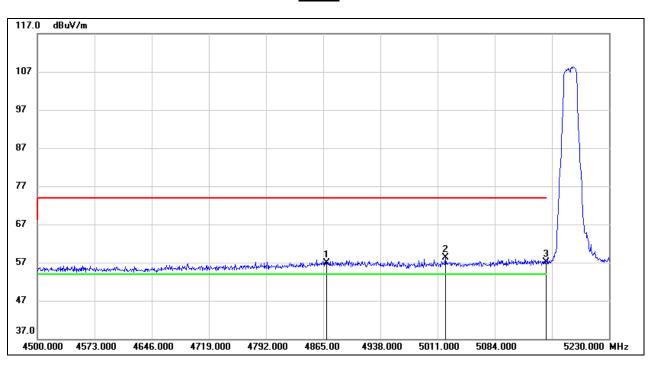


# 8.1. 802.11a SISO MODE

# 8.1.1. UNII-1 BAND

## ANTENNA 2 TEST RESULTS (WORST CASE)

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



PEAK

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	4869.380	17.50	39.43	56.93	74.00	-17.07	peak
2	5021.220	18.17	40.10	58.27	74.00	-15.73	peak
3	5150.000	16.62	40.46	57.08	74.00	-16.92	peak

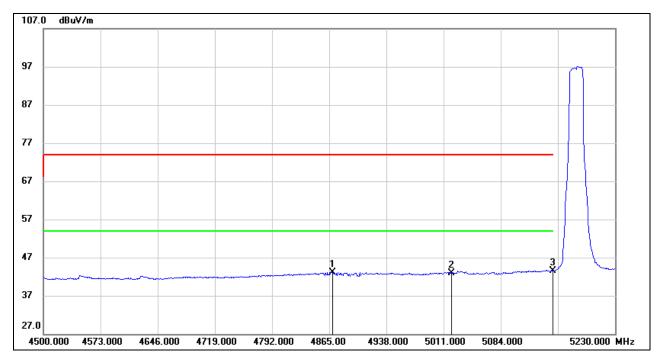
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



#### <u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	4869.380	3.67	39.43	43.10	54.00	-10.90	AVG
2	5021.220	2.87	40.10	42.97	54.00	-11.03	AVG
3	5150.000	3.14	40.46	43.60	54.00	-10.40	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.

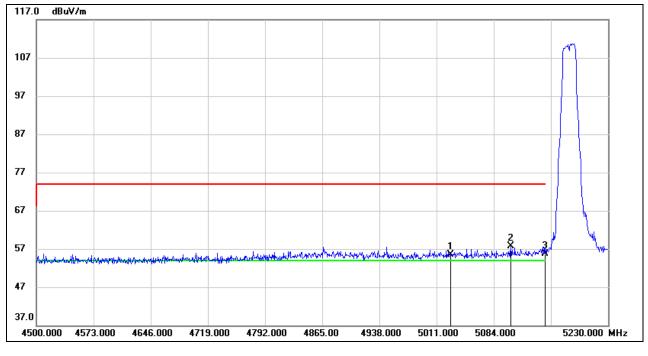
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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



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

<u>PEAK</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5029.250	15.37	40.11	55.48	74.00	-18.52	peak
2	5105.900	17.39	40.22	57.61	74.00	-16.39	peak
3	5150.000	15.25	40.46	55.71	74.00	-18.29	peak

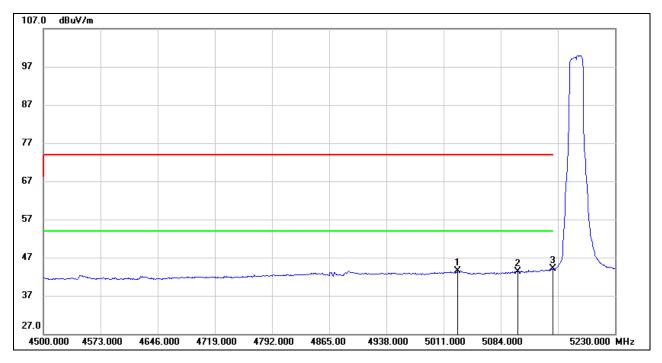
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



#### <u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5029.250	3.45	40.11	43.56	54.00	-10.44	AVG
2	5105.900	3.14	40.22	43.36	54.00	-10.64	AVG
3	5150.000	3.56	40.46	44.02	54.00	-9.98	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.

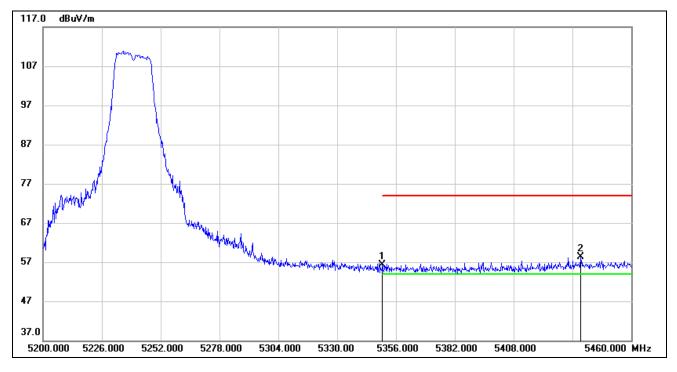
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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



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

<u>PEAK</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5350.000	15.67	40.64	56.31	74.00	-17.69	5350.000
2	5437.640	17.39	41.00	58.39	74.00	-15.61	5437.640

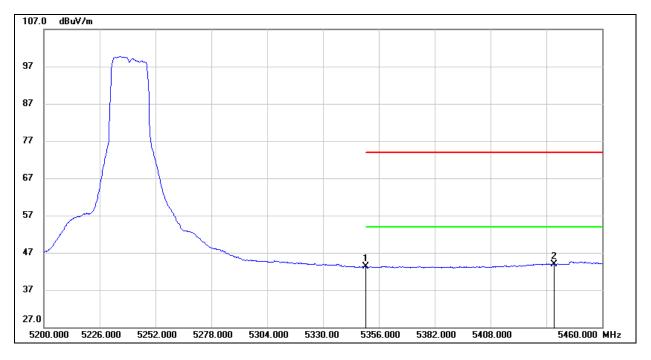
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5350.000	2.60	40.64	43.24	54.00	-10.76	AVG
2	5437.640	3.00	41.00	44.00	54.00	-10.00	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.

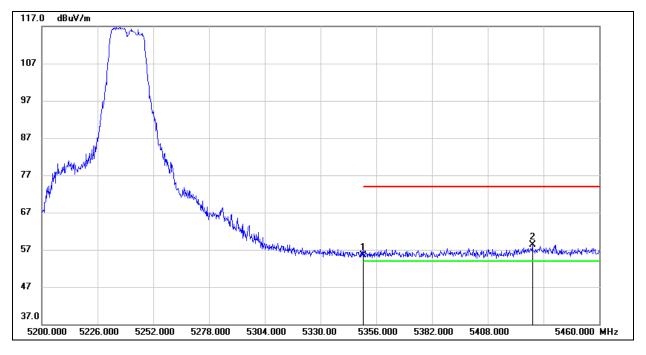
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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



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





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5350.000	14.84	40.64	55.48	74.00	-18.52	5350.000
2	5428.800	17.36	40.88	58.24	74.00	-15.76	5428.800

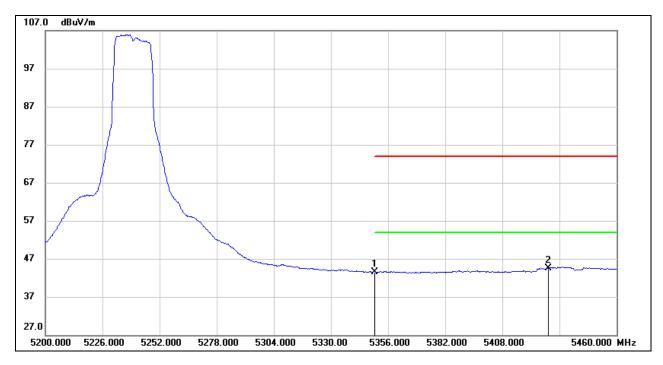
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5350.000	2.96	40.64	43.60	54.00	-10.40	AVG
2	5428.800	3.56	40.88	44.44	54.00	-9.56	AVG

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

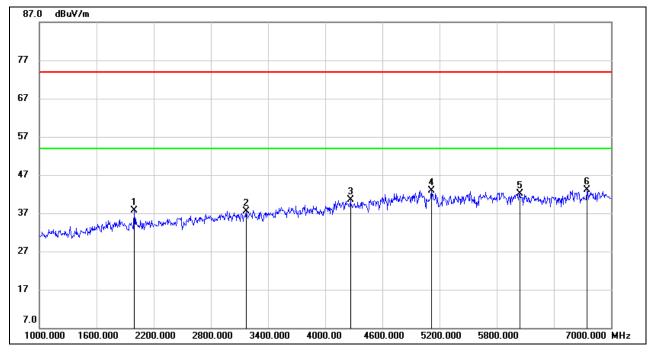
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

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

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



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



<u>1-7GHz</u>
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No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1996.000	47.96	-10.24	37.72	74.00	-36.28	peak
2	3172.000	43.18	-5.72	37.46	74.00	-36.54	peak
3	4264.000	42.41	-1.84	40.57	74.00	-33.43	peak
4	5116.000	41.36	1.47	42.83	74.00	-31.17	peak
5	6040.000	39.52	2.57	42.09	74.00	-31.91	peak
6	6748.000	38.73	4.45	43.18	74.00	-30.82	peak

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

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

3. Peak: Peak detector.

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

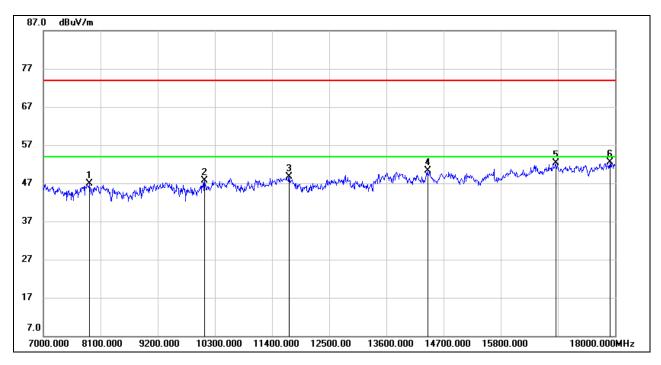
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	7880.000	39.12	7.72	46.84	74.00	-27.16	peak
2	10102.000	37.00	10.78	47.78	74.00	-26.22	peak
3	11730.000	35.61	13.11	48.72	74.00	-25.28	peak
4	14392.000	33.70	16.65	50.35	74.00	-23.65	peak
5	16856.000	32.11	20.13	52.24	74.00	-21.76	peak
6	17901.000	29.06	23.40	52.46	74.00	-21.54	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. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

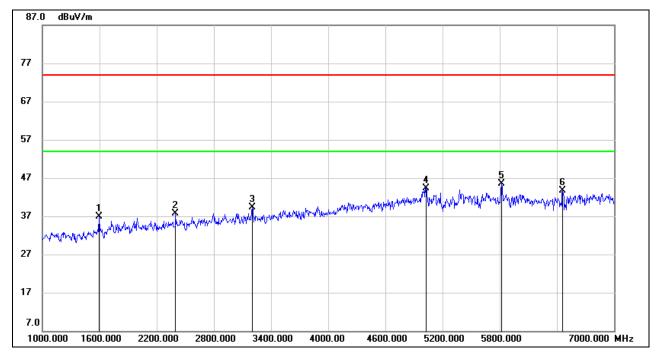
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



<u>1-7GHz</u>

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1594.000	48.66	-11.66	37.00	74.00	-37.00	peak
2	2398.000	46.35	-8.62	37.73	74.00	-36.27	peak
3	3202.000	44.99	-5.66	39.33	74.00	-34.67	peak
4	5026.000	43.35	0.99	44.34	74.00	-29.66	peak
5	5818.000	43.50	2.00	45.50	74.00	-28.50	peak
6	6460.000	40.00	3.76	43.76	74.00	-30.24	peak

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

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

3. Peak: Peak detector.

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

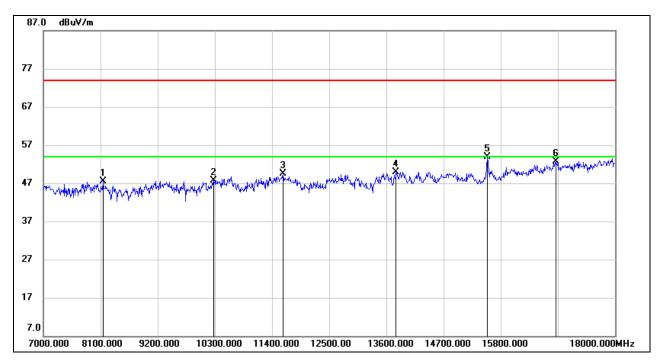
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	8144.000	39.12	8.44	47.56	74.00	-26.44	peak
2	10278.000	36.59	11.10	47.69	74.00	-26.31	peak
3	11609.000	35.94	13.50	49.44	74.00	-24.56	peak
4	13787.000	33.05	16.94	49.99	74.00	-24.01	peak
5	15536.000	37.11	16.75	53.86	74.00	-20.14	peak
6	16856.000	32.66	20.13	52.79	74.00	-21.21	peak

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

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

3. Peak: Peak detector.

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

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

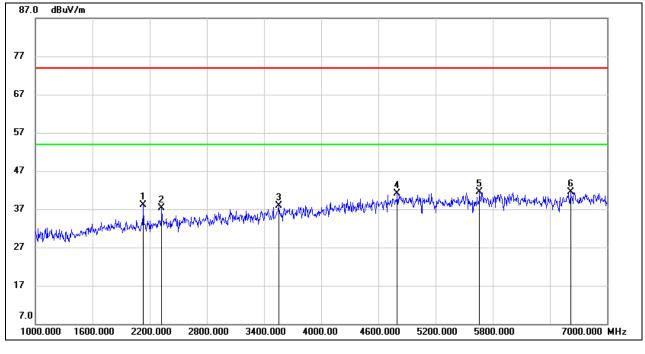
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



<u>1-7GHz</u>
---------------

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	2134.000	47.56	-9.53	38.03	74.00	-35.97	peak
2	2326.000	46.18	-8.83	37.35	74.00	-36.65	peak
3	3556.000	42.65	-4.70	37.95	74.00	-36.05	peak
4	4798.000	40.49	0.52	41.01	74.00	-32.99	peak
5	5662.000	39.61	1.99	41.60	74.00	-32.40	peak
6	6616.000	37.04	4.48	41.52	74.00	-32.48	peak

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

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

3. Peak: Peak detector.

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

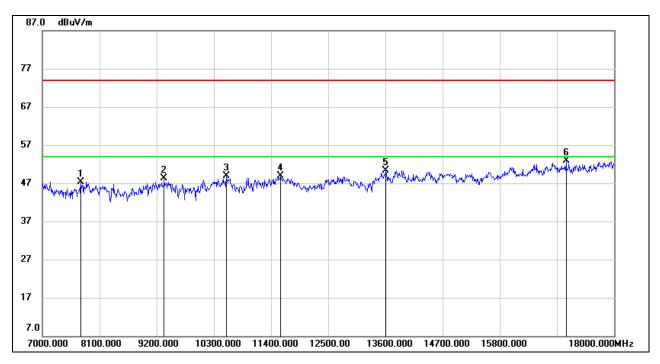
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	7737.000	40.05	7.33	47.38	74.00	-26.62	peak
2	9343.000	38.80	9.57	48.37	74.00	-25.63	peak
3	10542.000	37.13	11.83	48.96	74.00	-25.04	peak
4	11587.000	35.41	13.52	48.93	74.00	-25.07	peak
5	13611.000	34.28	16.10	50.38	74.00	-23.62	peak
6	17076.000	32.08	20.82	52.90	74.00	-21.10	peak

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

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

3. Peak: Peak detector.

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

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

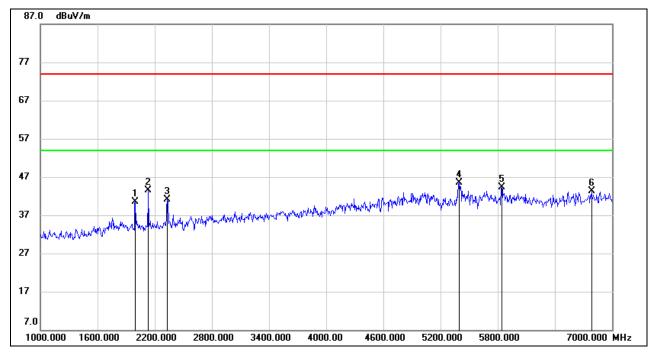
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1996.000	50.77	-10.24	40.53	74.00	-33.47	peak
2	2134.000	53.06	-9.53	43.53	74.00	-30.47	peak
3	2332.000	49.90	-8.80	41.10	74.00	-32.90	peak
4	5398.000	43.96	1.58	45.54	74.00	-28.46	peak
5	5842.000	42.24	2.08	44.32	74.00	-29.68	peak
6	6784.000	38.95	4.44	43.39	74.00	-30.61	peak

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

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

3. Peak: Peak detector.

4. AVG: 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 Band reject filter losses.

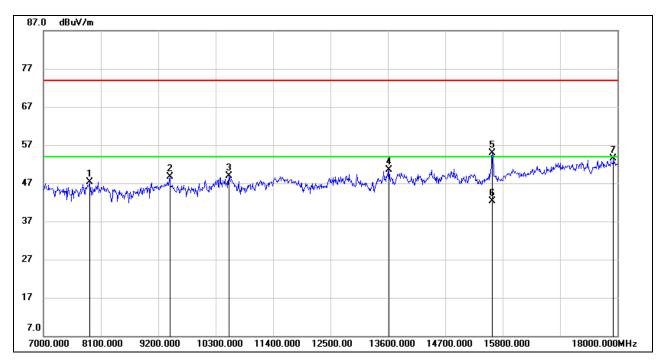
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

8. Owing to the highest peak level of unwanted emission out of the restricted bands

complies with the lowest limit(54dBuV/m), so all the test point was deemed to comply with the limits list in the standard.

<u>1-7GHz</u>





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	7880.000	39.62	7.72	47.34	74.00	-26.66	peak
2	9420.000	38.74	9.90	48.64	74.00	-25.36	peak
3	10553.000	36.91	11.93	48.84	74.00	-25.16	peak
4	13622.000	34.40	16.08	50.48	74.00	-23.52	peak
5	15600.880	37.83	17.12	54.95	74.00	-19.05	peak
6	15600.880	25.22	17.12	42.34	54.00	-11.66	AVG
7	17923.000	29.99	23.42	53.41	74.00	-20.59	peak

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

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

3. Peak: Peak detector.

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

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

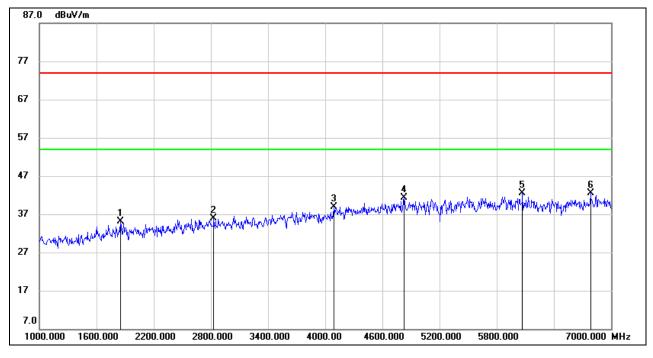
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



<u>1-7GHz</u>
---------------

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1852.000	45.15	-10.13	35.02	74.00	-38.98	peak
2	2830.000	42.63	-6.81	35.82	74.00	-38.18	peak
3	4090.000	41.71	-2.86	38.85	74.00	-35.15	peak
4	4828.000	40.84	0.56	41.40	74.00	-32.60	peak
5	6070.000	39.86	2.55	42.41	74.00	-31.59	peak
6	6784.000	38.02	4.44	42.46	74.00	-31.54	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. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

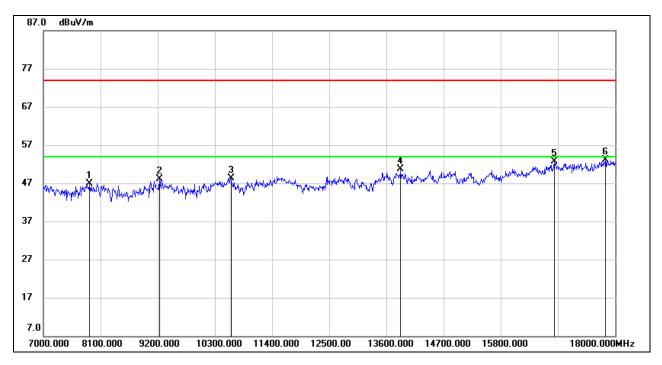
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	7891.000	39.29	7.66	46.95	74.00	-27.05	peak
2	9233.000	39.06	9.03	48.09	74.00	-25.91	peak
3	10608.000	35.83	12.39	48.22	74.00	-25.78	peak
4	13875.000	34.30	16.39	50.69	74.00	-23.31	peak
5	16834.000	32.53	20.15	52.68	74.00	-21.32	peak
6	17813.000	29.72	23.41	53.13	74.00	-20.87	peak

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

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

3. Peak: Peak detector.

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

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

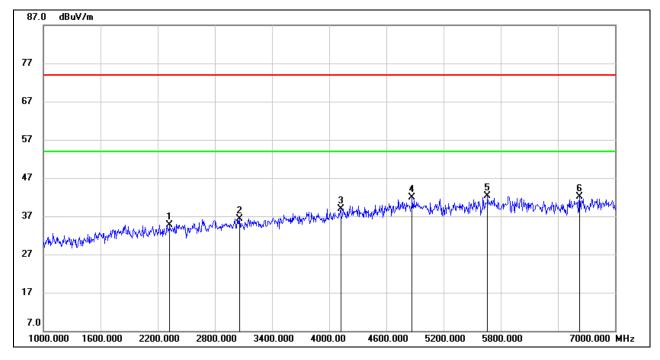
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



1-7GHz

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	2326.000	43.60	-8.83	34.77	74.00	-39.23	peak
2	3058.000	42.32	-5.94	36.38	74.00	-37.62	peak
3	4120.000	41.52	-2.56	38.96	74.00	-35.04	peak
4	4870.000	41.29	0.63	41.92	74.00	-32.08	peak
5	5662.000	40.29	1.99	42.28	74.00	-31.72	peak
6	6628.000	37.64	4.47	42.11	74.00	-31.89	peak

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

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

3. Peak: Peak detector.

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

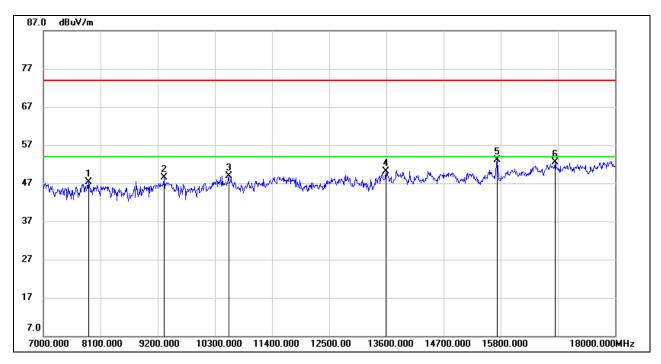
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	7869.000	39.45	7.79	47.24	74.00	-26.76	peak
2	9321.000	38.97	9.44	48.41	74.00	-25.59	peak
3	10564.000	36.92	12.06	48.98	74.00	-25.02	peak
4	13589.000	34.10	16.08	50.18	74.00	-23.82	peak
5	15734.000	36.21	16.93	53.14	74.00	-20.86	peak
6	16845.000	32.32	20.15	52.47	74.00	-21.53	peak

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

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

3. Peak: Peak detector.

4. AVG: 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.

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

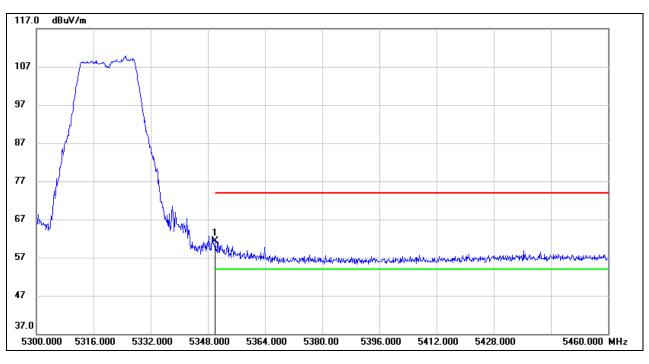
8. Owing to the highest peak level of unwanted emission out of the restricted bands



# 8.1.2. UNII-2A BAND

## ANTENNA 2 TEST RESULTS (WORST CASE)

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



**PEAK** 

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5350.000	20.64	40.64	61.28	74.00	-12.72	peak

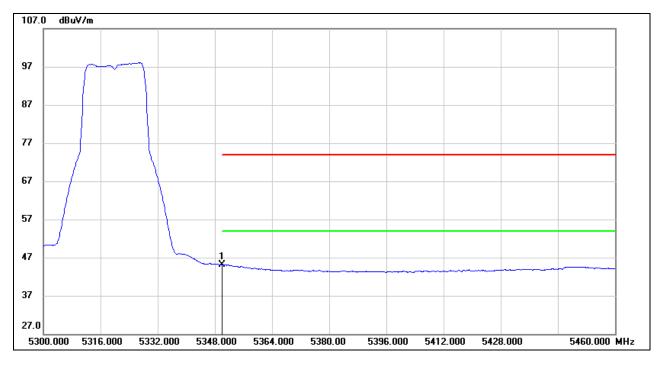
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5350.000	4.41	40.64	45.05	54.00	-8.95	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.

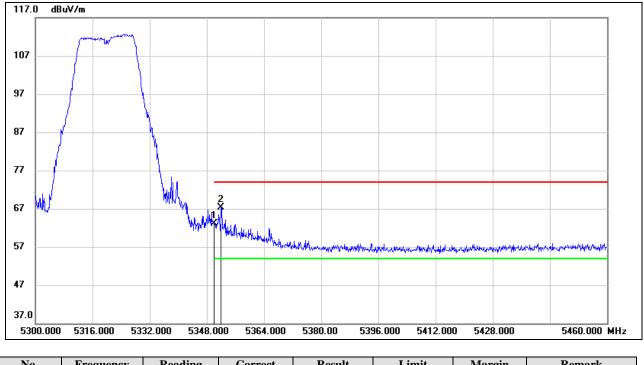
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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



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

<u>PEAK</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5350.000	22.41	40.64	63.05	74.00	-10.95	peak
2	5352.000	26.67	40.63	67.30	74.00	-6.70	peak

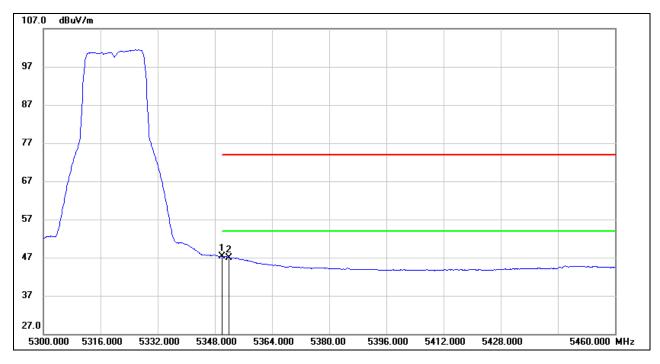
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5350.000	6.61	40.64	47.25	54.00	-6.75	AVG
2	5352.000	6.27	40.63	46.90	54.00	-7.10	AVG

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

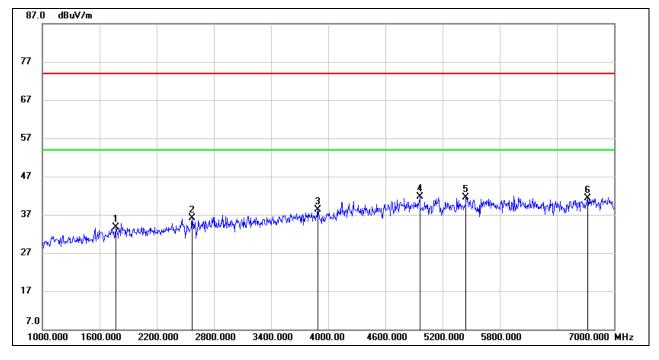
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1768.000	44.01	-10.35	33.66	74.00	-40.34	peak
2	2572.000	44.46	-8.26	36.20	74.00	-37.80	peak
3	3892.000	41.94	-3.59	38.35	74.00	-35.65	peak
4	4960.000	40.92	0.78	41.70	74.00	-32.30	peak
5	5446.000	39.90	1.67	41.57	74.00	-32.43	peak
6	6724.000	36.87	4.45	41.32	74.00	-32.68	peak

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

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

3. Peak: Peak detector.

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

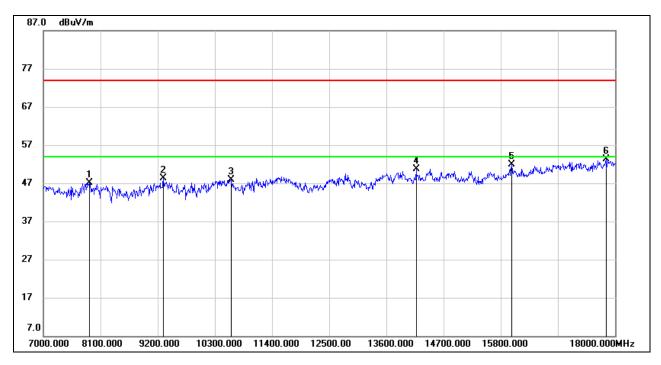
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	7880.000	39.34	7.72	47.06	74.00	-26.94	peak
2	9310.000	38.98	9.37	48.35	74.00	-25.65	peak
3	10608.000	35.51	12.39	47.90	74.00	-26.10	peak
4	14172.000	34.28	16.43	50.71	74.00	-23.29	peak
5	16009.000	34.03	17.85	51.88	74.00	-22.12	peak
6	17824.000	29.81	23.42	53.23	74.00	-20.77	peak

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

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

3. Peak: Peak detector.

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

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

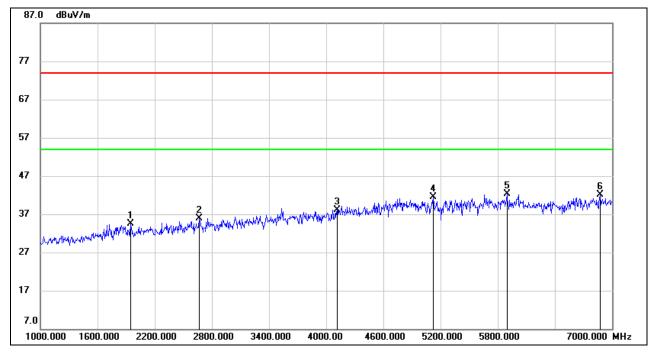
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



1-7GHz	

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1948.000	44.76	-10.21	34.55	74.00	-39.45	peak
2	2668.000	43.70	-7.76	35.94	74.00	-38.06	peak
3	4114.000	40.71	-2.62	38.09	74.00	-35.91	peak
4	5122.000	40.02	1.51	41.53	74.00	-32.47	peak
5	5896.000	40.13	2.27	42.40	74.00	-31.60	peak
6	6874.000	37.48	4.61	42.09	74.00	-31.91	peak

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

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

3. Peak: Peak detector.

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

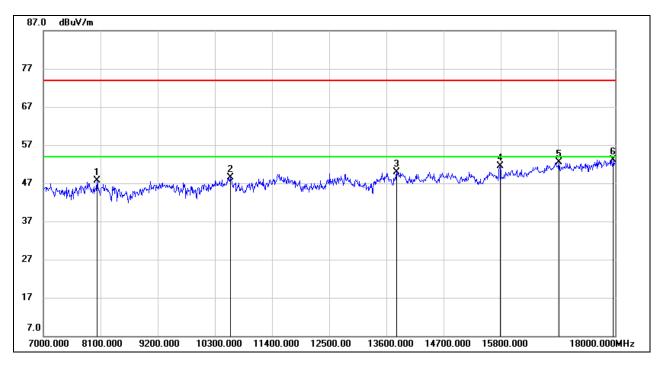
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	8034.000	40.04	7.67	47.71	74.00	-26.29	peak
2	10597.000	36.01	12.43	48.44	74.00	-25.56	peak
3	13798.000	32.94	17.05	49.99	74.00	-24.01	peak
4	15789.000	34.31	17.13	51.44	74.00	-22.56	peak
5	16922.000	32.37	20.22	52.59	74.00	-21.41	peak
6	17967.000	29.61	23.49	53.10	74.00	-20.90	peak

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

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

3. Peak: Peak detector.

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

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

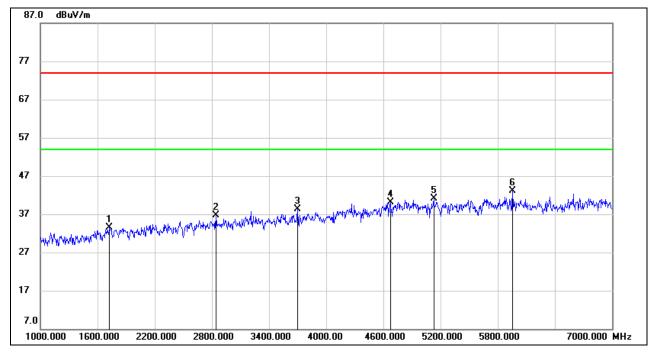
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



<u>1-7GHz</u>
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No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1726.000	44.23	-10.66	33.57	74.00	-40.43	peak
2	2842.000	43.39	-6.76	36.63	74.00	-37.37	peak
3	3700.000	42.21	-3.95	38.26	74.00	-35.74	peak
4	4672.000	40.41	-0.22	40.19	74.00	-33.81	peak
5	5128.000	39.64	1.54	41.18	74.00	-32.82	peak
6	5956.000	40.66	2.46	43.12	74.00	-30.88	peak

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

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

3. Peak: Peak detector.

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

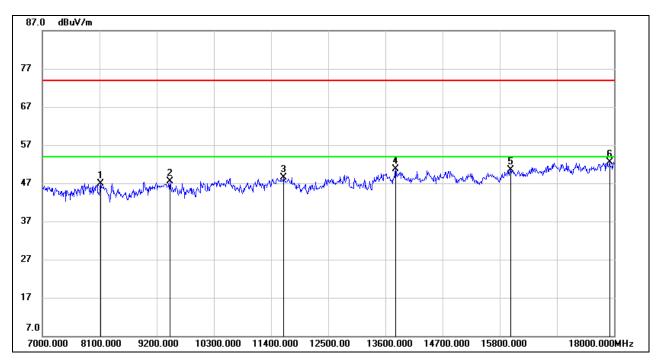
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	8122.000	38.61	8.29	46.90	74.00	-27.10	peak
2	9453.000	37.70	9.83	47.53	74.00	-26.47	peak
3	11642.000	35.12	13.33	48.45	74.00	-25.55	peak
4	13798.000	33.75	17.05	50.80	74.00	-23.20	peak
5	16009.000	32.60	17.85	50.45	74.00	-23.55	peak
6	17912.000	29.08	23.42	52.50	74.00	-21.50	peak

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

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

3. Peak: Peak detector.

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

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

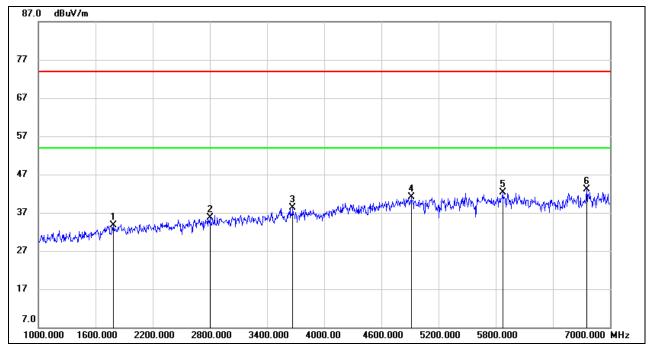
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1786.000	43.91	-10.21	33.70	74.00	-40.30	peak
2	2800.000	42.66	-6.95	35.71	74.00	-38.29	peak
3	3670.000	42.40	-4.11	38.29	74.00	-35.71	peak
4	4912.000	40.35	0.71	41.06	74.00	-32.94	peak
5	5872.000	40.13	2.19	42.32	74.00	-31.68	peak
6	6754.000	38.75	4.45	43.20	74.00	-30.80	peak

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

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

3. Peak: Peak detector.

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

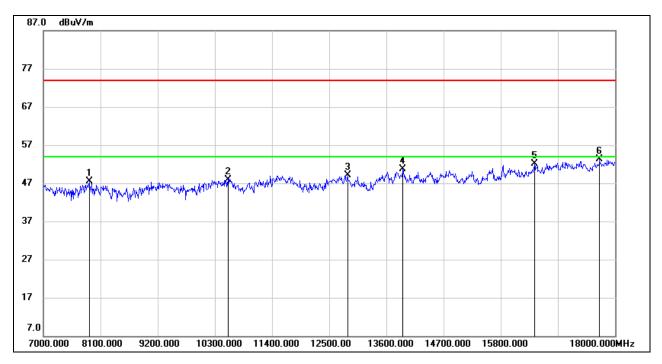
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	7880.000	39.78	7.72	47.50	74.00	-26.50	peak
2	10553.000	36.03	11.93	47.96	74.00	-26.04	peak
3	12852.000	33.47	15.61	49.08	74.00	-24.92	peak
4	13919.000	34.55	16.16	50.71	74.00	-23.29	peak
5	16449.000	32.64	19.45	52.09	74.00	-21.91	peak
6	17703.000	30.69	22.52	53.21	74.00	-20.79	peak

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

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

3. Peak: Peak detector.

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

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

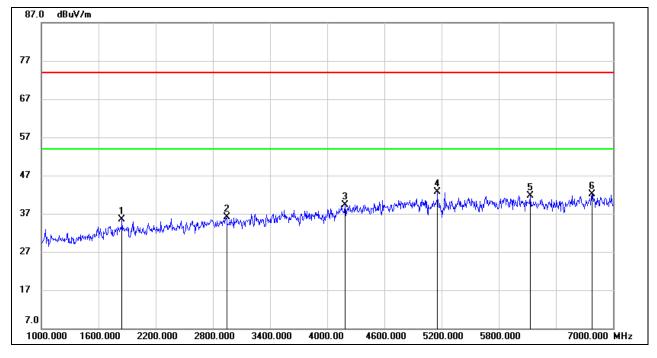
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



<u>1-7GHz</u>

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1846.000	45.55	-10.14	35.41	74.00	-38.59	peak
2	2944.000	42.42	-6.31	36.11	74.00	-37.89	peak
3	4186.000	41.28	-1.92	39.36	74.00	-34.64	peak
4	5158.000	41.02	1.70	42.72	74.00	-31.28	peak
5	6130.000	39.25	2.51	41.76	74.00	-32.24	peak
6	6778.000	37.68	4.44	42.12	74.00	-31.88	peak

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

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

3. Peak: Peak detector.

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

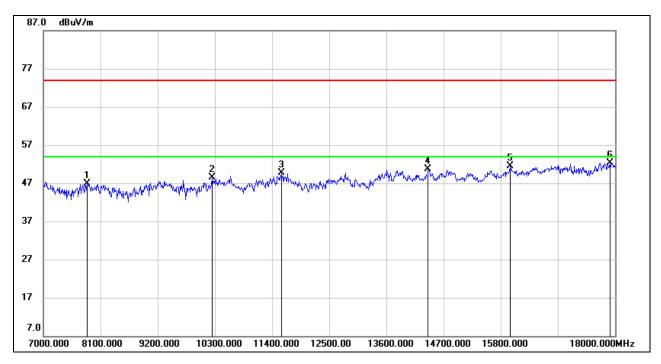
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	7836.000	39.02	7.96	46.98	74.00	-27.02	peak
2	10245.000	37.72	10.82	48.54	74.00	-25.46	peak
3	11576.000	36.25	13.51	49.76	74.00	-24.24	peak
4	14403.000	34.03	16.68	50.71	74.00	-23.29	peak
5	15976.000	33.69	17.78	51.47	74.00	-22.53	peak
6	17901.000	28.87	23.40	52.27	74.00	-21.73	peak

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

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

3. Peak: Peak detector.

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

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

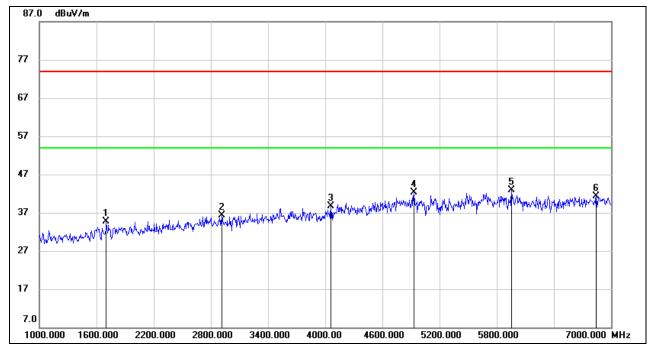
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



1-7GHz	

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1702.000	45.52	-10.85	34.67	74.00	-39.33	peak
2	2914.000	42.74	-6.45	36.29	74.00	-37.71	peak
3	4060.000	41.79	-3.15	38.64	74.00	-35.36	peak
4	4930.000	41.60	0.74	42.34	74.00	-31.66	peak
5	5956.000	40.43	2.46	42.89	74.00	-31.11	peak
6	6844.000	36.85	4.55	41.40	74.00	-32.60	peak

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

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

3. Peak: Peak detector.

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

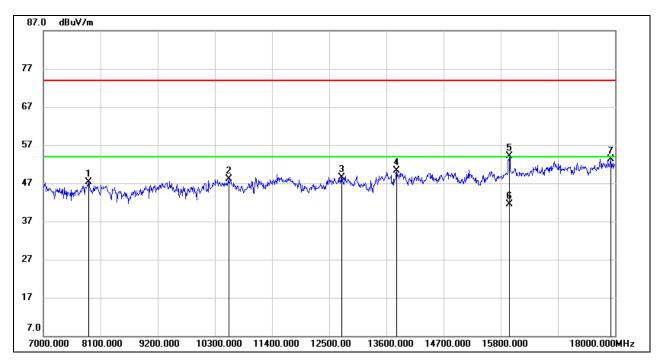
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	7869.000	39.43	7.79	47.22	74.00	-26.78	peak
2	10564.000	36.03	12.06	48.09	74.00	-25.91	peak
3	12742.000	33.40	15.16	48.56	74.00	-25.44	peak
4	13798.000	33.34	17.05	50.39	74.00	-23.61	peak
5	15957.590	36.34	17.76	54.10	74.00	-19.90	peak
6	15957.590	23.79	17.76	41.55	54.00	-12.45	AVG
7	17923.000	29.95	23.42	53.37	74.00	-20.63	peak

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

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

3. Peak: Peak detector.

4. AVG: 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.

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

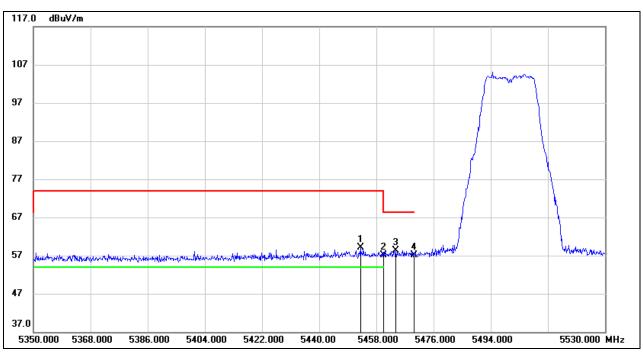
8. Owing to the highest peak level of unwanted emission out of the restricted bands



# 8.1.3. UNII-2C BAND

# ANTENNA 2 TEST RESULTS (WORST CASE)

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



<u>PEAK</u>

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5452.960	17.86	41.19	59.05	74.00	-14.95	peak
2	5460.000	15.85	41.28	57.13	68.20	-11.07	peak
3	5464.120	16.94	41.34	58.28	68.20	-9.92	peak
4	5470.000	15.70	41.41	57.11	68.20	-11.09	peak

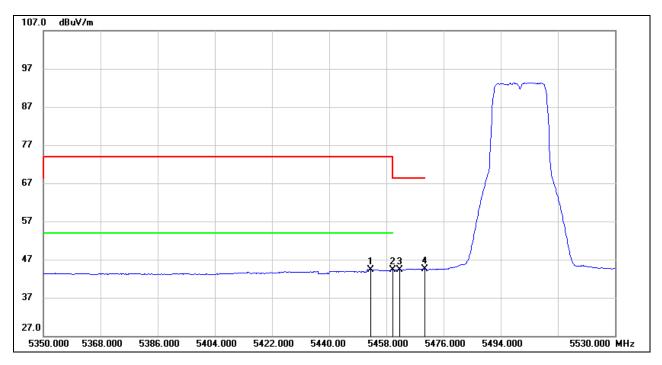
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



#### <u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5452.960	3.04	41.19	44.23	54.00	-9.77	AVG
2	5460.000	2.98	41.28	44.26	54.00	-9.74	AVG
3	5462.120	3.00	41.31	44.31	68.20	-23.89	AVG
4	5470.000	3.15	41.41	44.56	68.20	-23.64	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.

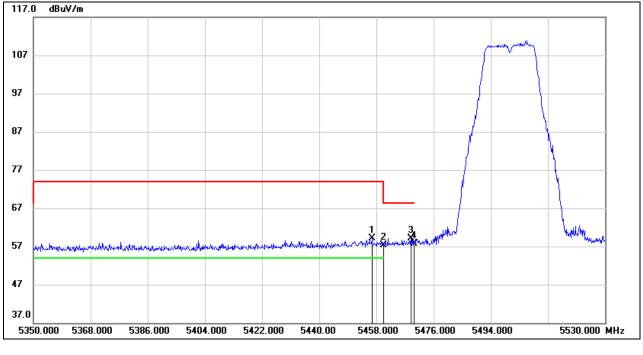
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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



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

<u>PEAK</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5456.560	17.78	41.24	59.02	74.00	-14.98	peak
2	5460.000	16.11	41.28	57.39	68.20	-10.81	peak
3	5468.800	17.80	41.39	59.19	68.20	-9.01	peak
4	5470.000	16.33	41.41	57.74	68.20	-10.46	peak

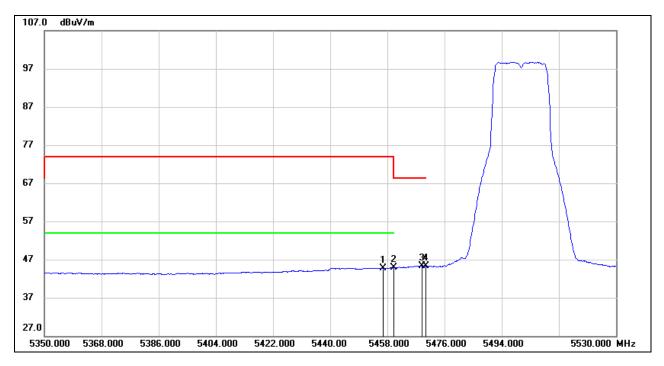
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



#### <u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5456.560	3.42	41.24	44.66	54.00	-9.34	AVG
2	5460.000	3.58	41.28	44.86	54.00	-9.14	AVG
3	5468.800	3.93	41.39	45.32	68.20	-22.88	AVG
4	5470.000	3.92	41.41	45.33	68.20	-22.87	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.

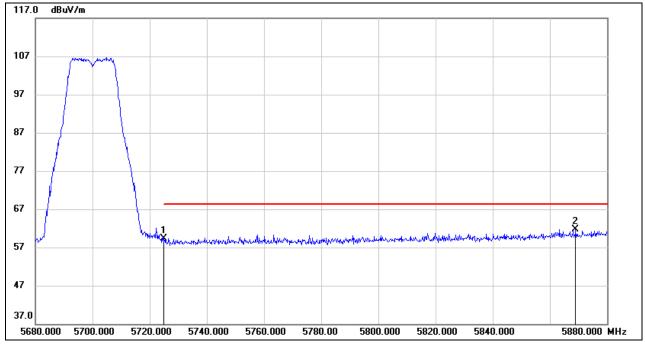
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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



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

<u>PEAK</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5725.000	17.77	41.61	59.38	68.20	-8.82	peak
2	5869.000	18.53	43.25	61.78	68.20	-6.42	peak

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

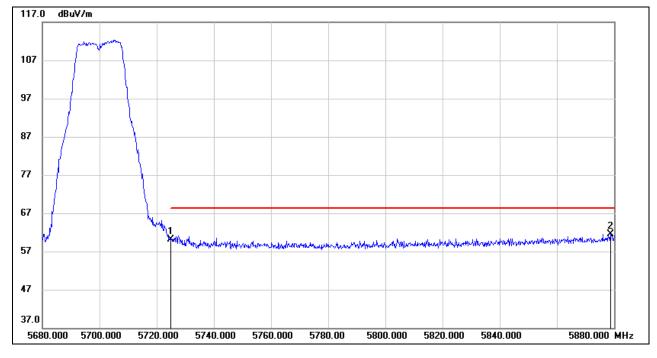
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.



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

<u>PEAK</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5725.000	18.51	41.61	60.12	68.20	-8.08	peak
2	5878.800	18.13	43.44	61.57	68.20	-6.63	peak

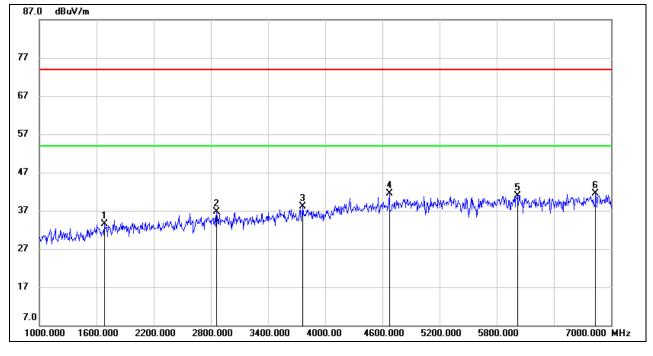
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



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



1-7GHz	

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1684.000	44.45	-10.98	33.47	74.00	-40.53	peak
2	2860.000	43.31	-6.68	36.63	74.00	-37.37	peak
3	3766.000	41.72	-3.63	38.09	74.00	-35.91	peak
4	4672.000	41.66	-0.22	41.44	74.00	-32.56	peak
5	6016.000	38.26	2.60	40.86	74.00	-33.14	peak
6	6838.000	36.93	4.54	41.47	74.00	-32.53	peak

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

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

3. Peak: Peak detector.

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

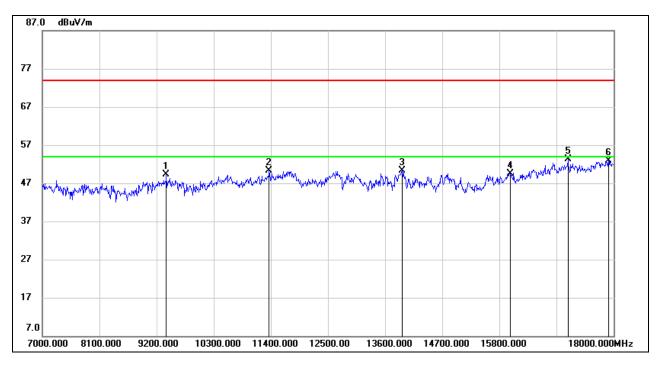
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	9387.000	39.37	9.94	49.31	74.00	-24.69	peak
2	11367.000	36.95	13.38	50.33	74.00	-23.67	peak
3	13930.000	34.08	16.24	50.32	74.00	-23.68	peak
4	16009.000	31.72	17.74	49.46	74.00	-24.54	peak
5	17120.000	32.04	21.20	53.24	74.00	-20.76	peak
6	17901.000	29.27	23.59	52.86	74.00	-21.14	peak

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

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

3. Peak: Peak detector.

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

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

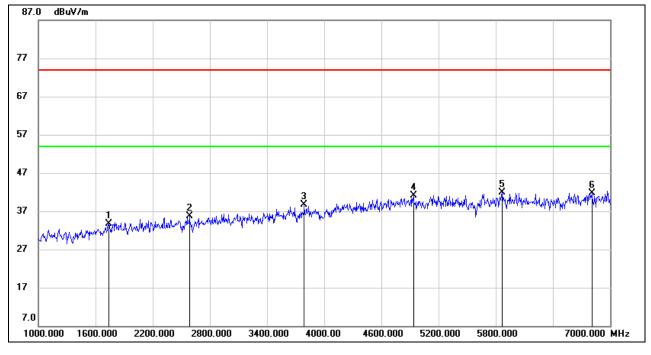
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



<u>1-7GHz</u>

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1738.000	44.33	-10.57	33.76	74.00	-40.24	peak
2	2584.000	43.88	-8.22	35.66	74.00	-38.34	peak
3	3790.000	42.24	-3.51	38.73	74.00	-35.27	peak
4	4936.000	40.43	0.75	41.18	74.00	-32.82	peak
5	5866.000	39.80	2.16	41.96	74.00	-32.04	peak
6	6808.000	37.22	4.45	41.67	74.00	-32.33	peak

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

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

3. Peak: Peak detector.

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

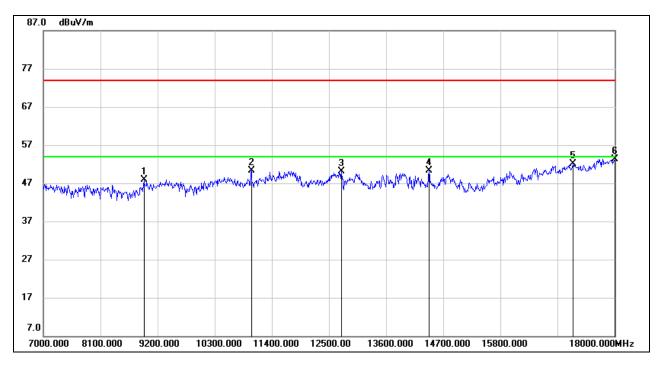
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8936.000	38.40	9.53	47.93	74.00	-26.07	peak
2	11004.000	37.61	12.63	50.24	74.00	-23.76	peak
3	12742.000	34.81	15.28	50.09	74.00	-23.91	peak
4	14425.000	34.27	16.11	50.38	74.00	-23.62	peak
5	17197.000	30.39	21.68	52.07	74.00	-21.93	peak
6	18000.000	29.67	23.69	53.36	74.00	-20.64	peak

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

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

3. Peak: Peak detector.

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

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

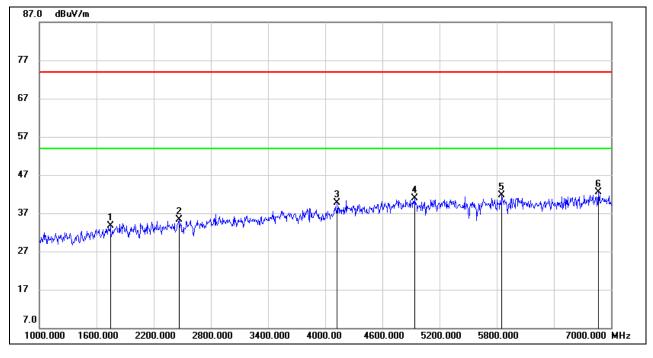
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



<u>1-7GHz</u>
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No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1744.000	44.26	-10.52	33.74	74.00	-40.26	peak
2	2464.000	43.82	-8.52	35.30	74.00	-38.70	peak
3	4126.000	42.15	-2.50	39.65	74.00	-34.35	peak
4	4942.000	40.16	0.76	40.92	74.00	-33.08	peak
5	5854.000	39.63	2.12	41.75	74.00	-32.25	peak
6	6868.000	38.00	4.60	42.60	74.00	-31.40	peak

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

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

3. Peak: Peak detector.

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

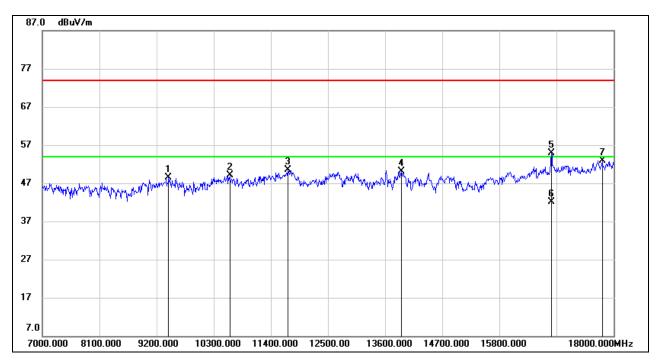
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	9431.000	38.44	10.09	48.53	74.00	-25.47	peak
2	10608.000	37.22	11.86	49.08	74.00	-24.92	peak
3	11730.000	36.29	14.25	50.54	74.00	-23.46	peak
4	13908.000	33.88	16.26	50.14	74.00	-23.86	peak
5	16800.000	34.84	20.12	54.96	74.00	-19.04	peak
6	16800.000	22.04	20.12	42.16	54.00	-11.84	AVG
7	17780.000	29.58	23.35	52.93	74.00	-21.07	peak

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

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

3. Peak: Peak detector.

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

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

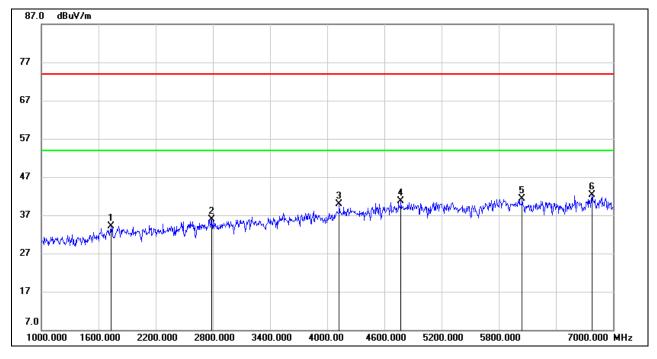
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



1-7GHz
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No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1732.000	44.81	-10.62	34.19	74.00	-39.81	peak
2	2788.000	42.84	-7.01	35.83	74.00	-38.17	peak
3	4126.000	42.40	-2.50	39.90	74.00	-34.10	peak
4	4774.000	40.33	0.36	40.69	74.00	-33.31	peak
5	6046.000	38.79	2.57	41.36	74.00	-32.64	peak
6	6778.000	37.81	4.44	42.25	74.00	-31.75	peak

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

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

3. Peak: Peak detector.

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

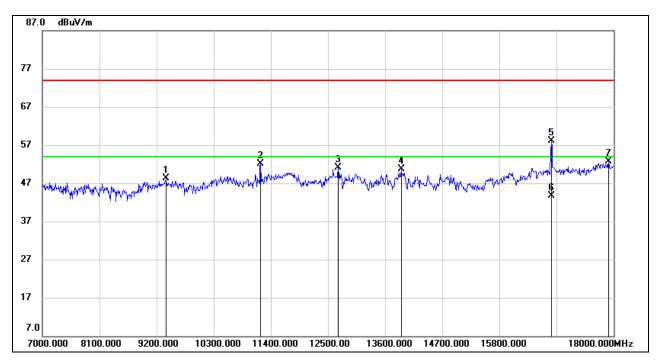
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	9387.000	38.37	9.94	48.31	74.00	-25.69	peak
2	11202.000	39.08	13.04	52.12	74.00	-21.88	peak
3	12698.000	35.88	15.25	51.13	74.00	-22.87	peak
4	13908.000	34.49	16.26	50.75	74.00	-23.25	peak
5	16800.000	37.89	20.12	58.01	74.00	-15.99	peak
6	16800.000	23.60	20.12	43.72	54.00	-10.28	AVG
7	17901.000	29.04	23.59	52.63	74.00	-21.37	peak

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

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

3. Peak: Peak detector.

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

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

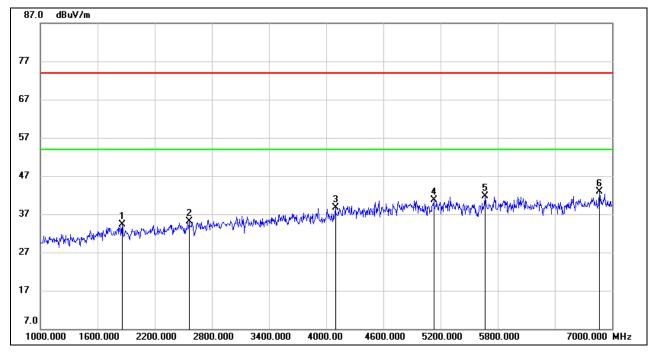
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



1-7GHz	

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1858.000	44.45	-10.14	34.31	74.00	-39.69	peak
2	2560.000	43.36	-8.29	35.07	74.00	-38.93	peak
3	4096.000	41.45	-2.80	38.65	74.00	-35.35	peak
4	5128.000	39.25	1.54	40.79	74.00	-33.21	peak
5	5668.000	39.73	1.99	41.72	74.00	-32.28	peak
6	6868.000	38.34	4.60	42.94	74.00	-31.06	peak

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

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

3. Peak: Peak detector.

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

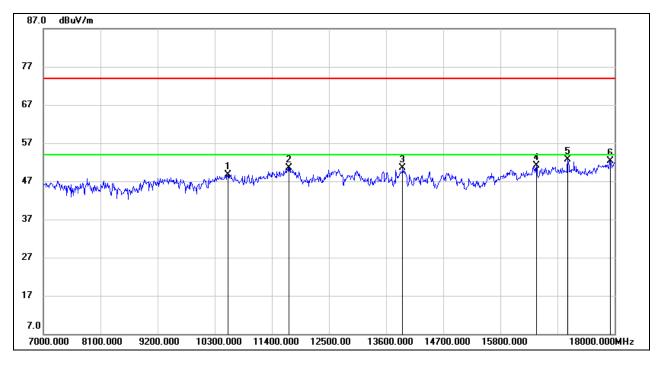
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	10553.000	37.03	11.70	48.73	74.00	-25.27	peak
2	11730.000	36.35	14.25	50.60	74.00	-23.40	peak
3	13919.000	34.35	16.24	50.59	74.00	-23.41	peak
4	16493.000	31.67	19.42	51.09	74.00	-22.91	peak
5	17098.000	31.65	21.07	52.72	74.00	-21.28	peak
6	17923.000	28.76	23.61	52.37	74.00	-21.63	peak

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

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

3. Peak: Peak detector.

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

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

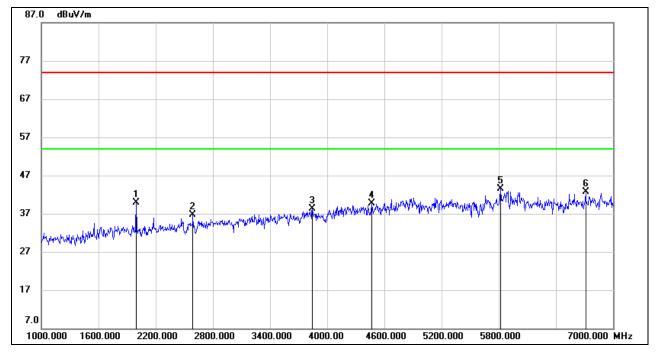
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1996.000	50.21	-10.24	39.97	74.00	-34.03	peak
2	2590.000	44.94	-8.21	36.73	74.00	-37.27	peak
3	3844.000	41.77	-3.51	38.26	74.00	-35.74	peak
4	4468.000	41.17	-1.54	39.63	74.00	-34.37	peak
5	5818.000	41.44	2.00	43.44	74.00	-30.56	peak
6	6712.000	38.15	4.46	42.61	74.00	-31.39	peak

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

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

3. Peak: Peak detector.

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

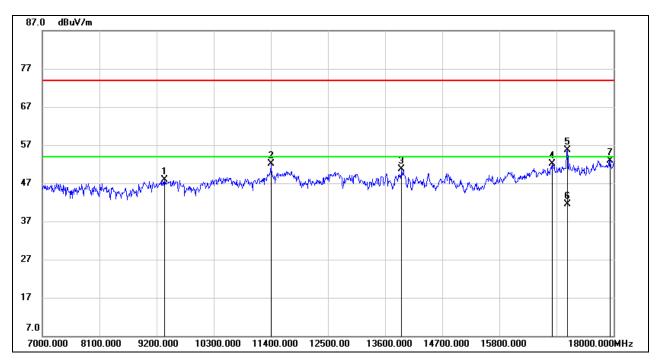
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	9354.000	38.05	9.78	47.83	74.00	-26.17	peak
2	11400.000	38.60	13.45	52.05	74.00	-21.95	peak
3	13919.000	34.39	16.24	50.63	74.00	-23.37	peak
4	16812.000	31.91	20.14	52.05	74.00	-21.95	peak
5	17100.000	34.54	21.08	55.62	74.00	-18.38	peak
6	17100.000	20.50	21.08	41.58	54.00	-12.42	AVG
7	17934.000	29.37	23.62	52.99	74.00	-21.01	peak

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

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

3. Peak: Peak detector.

4. AVG: 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.

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

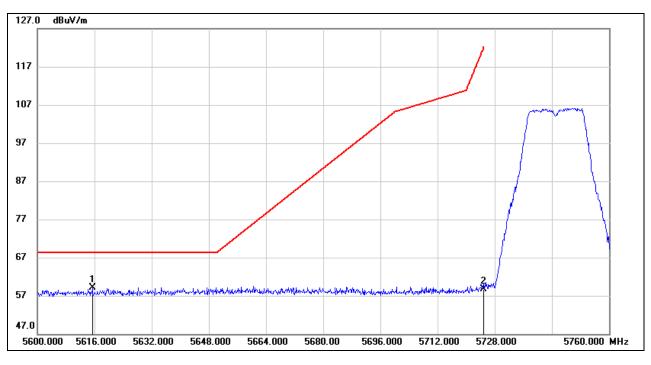
8. Owing to the highest peak level of unwanted emission out of the restricted bands



# 8.1.4. UNII-3 BAND

# ANTENNA 2 TEST RESULTS (WORST CASE)

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



<u>PEAK</u>

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5615.360	17.62	41.47	59.09	68.20	-9.11	peak
2	5725.000	17.19	41.61	58.80	122.20	-63.40	peak

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

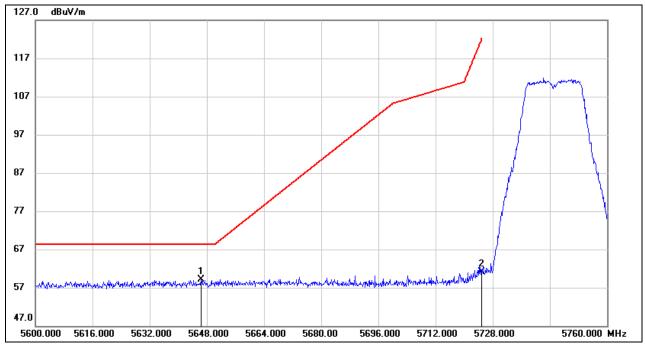
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.



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

<u>PEAK</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5646.400	17.62	41.48	59.10	68.20	-9.10	peak
2	5725.000	19.52	41.61	61.13	122.20	-61.07	peak

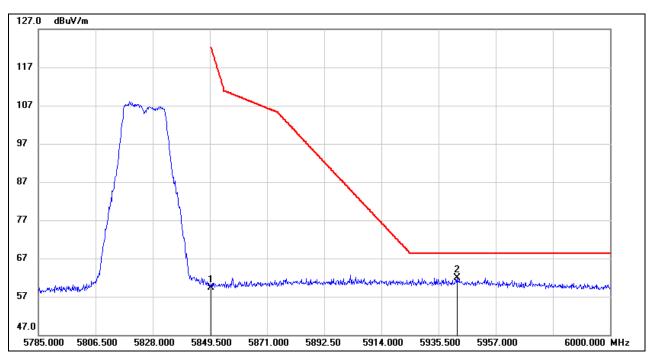
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5850.000	16.34	42.89	59.23	122.20	-62.97	peak
2	5942.380	18.83	43.12	61.95	68.20	-6.25	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.

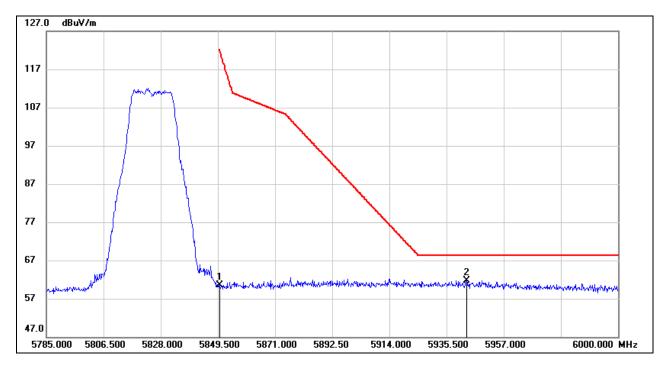
3. Peak: Peak detector.

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

<u>PEAK</u>



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5850.000	17.63	42.89	60.52	122.20	-61.68	peak
2	5943.025	18.68	43.11	61.79	68.20	-6.41	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.

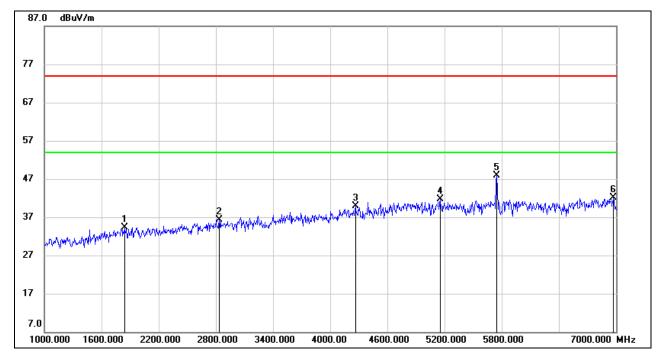
3. Peak: Peak detector.

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

<u>PEAK</u>



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1840.000	44.53	-10.13	34.40	74.00	-39.60	peak
2	2836.000	43.19	-6.79	36.40	74.00	-37.60	peak
3	4264.000	41.84	-1.84	40.00	74.00	-34.00	peak
4	5152.000	40.11	1.66	41.77	74.00	-32.23	peak
5	5746.000	45.85	1.97	47.82	74.00	-26.18	peak
6	6970.000	37.22	4.83	42.05	74.00	-31.95	peak

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

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

3. Peak: Peak detector.

4. AVG: 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 Band reject filter losses.

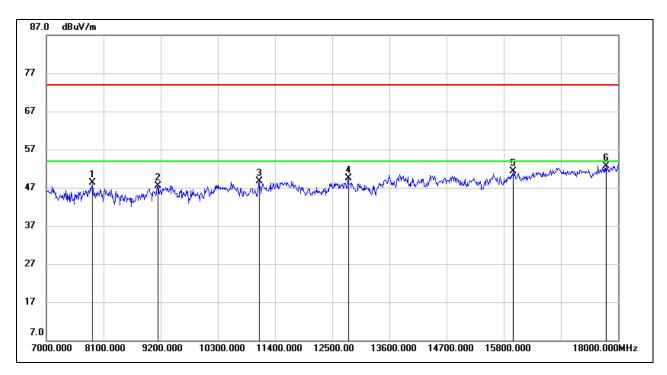
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

8. Owing to the highest peak level of unwanted emission out of the restricted bands

complies with the lowest limit(54dBuV/m), so all the test point was deemed to comply with the limits list in the standard.

<u>1-7GHz</u>





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	7891.000	40.68	7.66	48.34	74.00	-25.66	peak
2	9145.000	38.28	9.22	47.50	74.00	-26.50	peak
3	11092.000	36.03	12.65	48.68	74.00	-25.32	peak
4	12808.000	33.32	16.09	49.41	74.00	-24.59	peak
5	15987.000	33.50	17.79	51.29	74.00	-22.71	peak
6	17769.000	29.61	23.12	52.73	74.00	-21.27	peak

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

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

3. Peak: Peak detector.

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

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

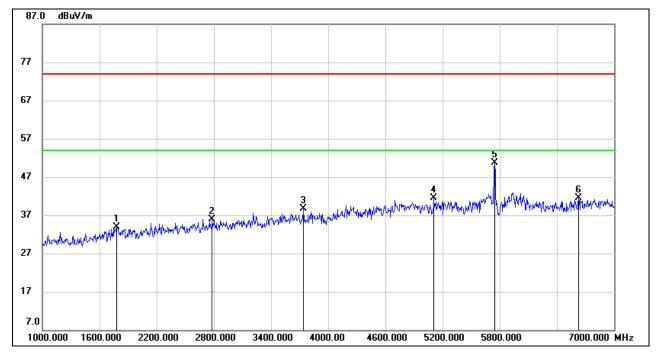
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



<u>1-7GHz</u>

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1780.000	44.20	-10.26	33.94	74.00	-40.06	peak
2	2782.000	43.01	-7.06	35.95	74.00	-38.05	peak
3	3742.000	42.40	-3.75	38.65	74.00	-35.35	peak
4	5110.000	40.01	1.43	41.44	74.00	-32.56	peak
5	5746.000	48.68	1.97	50.65	74.00	-23.35	peak
6	6628.000	36.96	4.47	41.43	74.00	-32.57	peak

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

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

3. Peak: Peak detector.

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

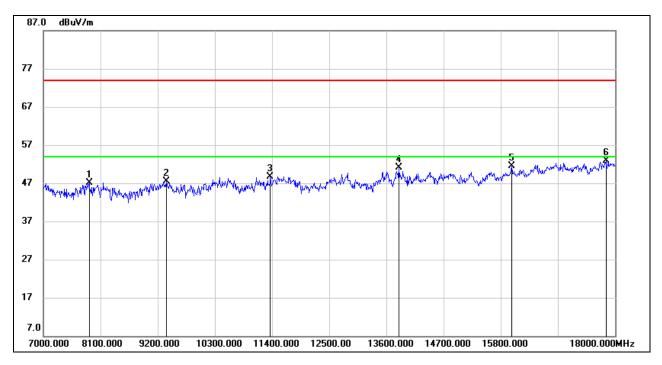
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	7880.000	39.41	7.72	47.13	74.00	-26.87	peak
2	9365.000	37.81	9.72	47.53	74.00	-26.47	peak
3	11367.000	36.14	12.58	48.72	74.00	-25.28	peak
4	13842.000	34.44	16.69	51.13	74.00	-22.87	peak
5	16009.000	33.75	17.85	51.60	74.00	-22.40	peak
6	17824.000	29.48	23.42	52.90	74.00	-21.10	peak

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

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

3. Peak: Peak detector.

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

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

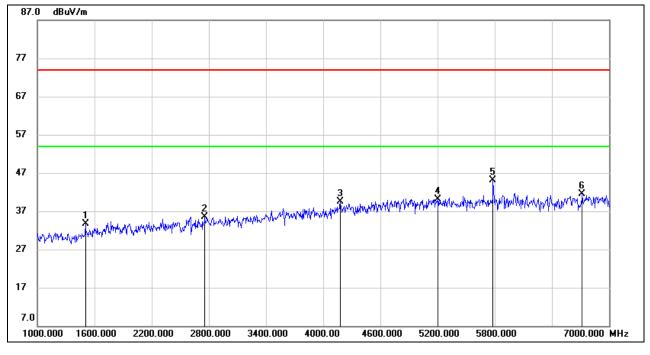
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



1-7GHz
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No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1504.000	45.89	-12.26	33.63	74.00	-40.37	peak
2	2758.000	42.66	-7.20	35.46	74.00	-38.54	peak
3	4180.000	41.39	-1.98	39.41	74.00	-34.59	peak
4	5200.000	38.22	1.92	40.14	74.00	-33.86	peak
5	5782.000	43.20	1.95	45.15	74.00	-28.85	peak
6	6718.000	37.13	4.45	41.58	74.00	-32.42	peak

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

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

3. Peak: Peak detector.

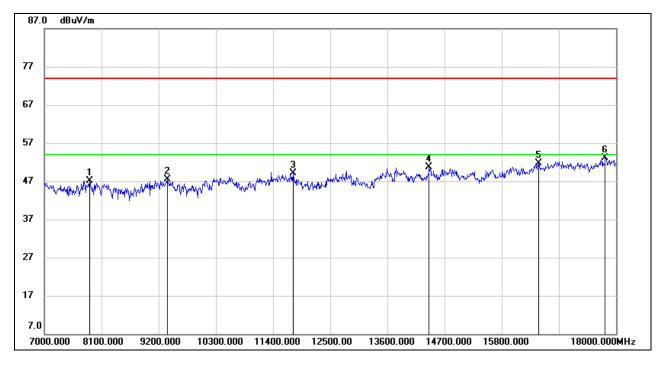
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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 Band reject filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	7869.000	39.27	7.79	47.06	74.00	-26.94	peak
2	9365.000	37.75	9.72	47.47	74.00	-26.53	peak
3	11785.000	35.92	13.22	49.14	74.00	-24.86	peak
4	14403.000	34.07	16.68	50.75	74.00	-23.25	peak
5	16504.000	32.08	19.61	51.69	74.00	-22.31	peak
6	17791.000	29.84	23.33	53.17	74.00	-20.83	peak

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

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

3. Peak: Peak detector.

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

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

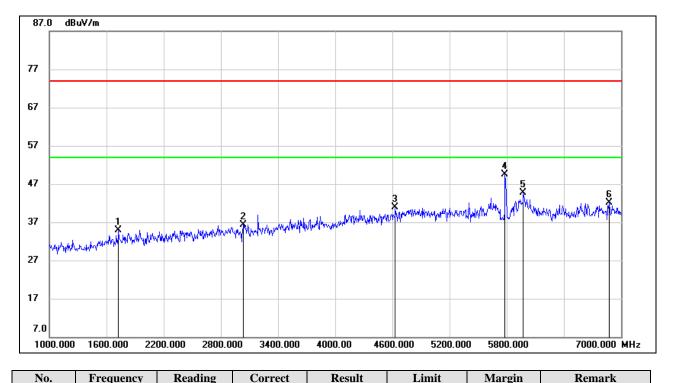
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



(dBuV/m)

34.93

36.38

40.93

49.54

44.80

(dBuV/m)

74.00

74.00

74.00

74.00

74.00

(**dB**)

-39.07

-37.62

-33.07

-24.46

-29.20

peak

peak

peak

peak

peak

6	6874.000	37.43	4.61	42.04	74.00	-31.96	peak
Note: 1	. Measureme	nt = Readin	g Level + C	orrect Factor	r.		
2	2. If Peak Res	ult complies	with AV lim	nit, AV Resul	t is deemed	to comply w	vith AV limit.

(dB/m)

-10.66

-6.00

-0.46

1.95

2.53

3. Peak: Peak detector.

(MHz)

1726.000

3034.000

4630.000

5782.000

5974.000

1

2

3

4

5

ľ

(dBuV)

45.59

42.38

41.39

47.59

42.27

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 Band reject filter losses.

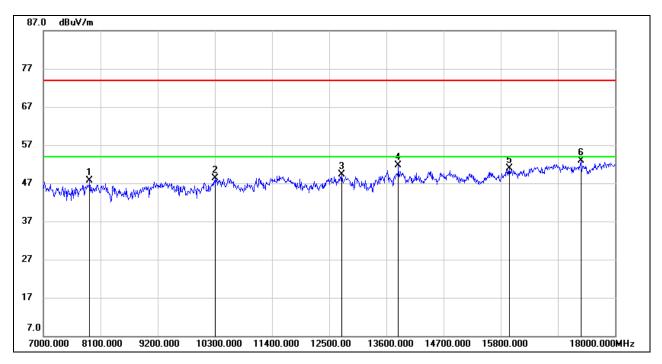
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

8. Owing to the highest peak level of unwanted emission out of the restricted bands

complies with the lowest limit(54dBuV/m), so all the test point was deemed to comply with the limits list in the standard.

<u>1-7GHz</u>





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	7891.000	40.12	7.66	47.78	74.00	-26.22	peak
2	10311.000	37.10	11.29	48.39	74.00	-25.61	peak
3	12742.000	34.17	15.16	49.33	74.00	-24.67	peak
4	13831.000	34.92	16.79	51.71	74.00	-22.29	peak
5	15965.000	33.05	17.76	50.81	74.00	-23.19	peak
6	17340.000	31.12	21.74	52.86	74.00	-21.14	peak

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

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

3. Peak: Peak detector.

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

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

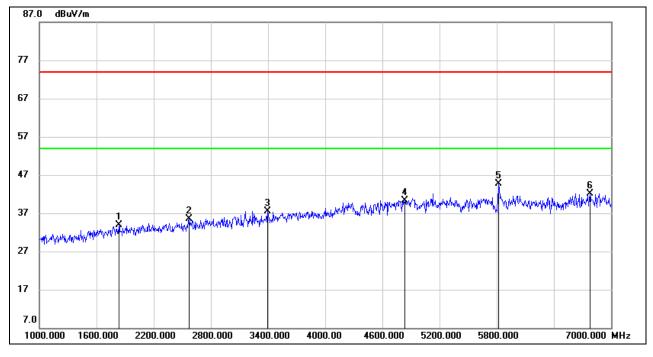
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



1-7GHz
--------

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1834.000	44.08	-10.13	33.95	74.00	-40.05	peak
2	2572.000	43.85	-8.26	35.59	74.00	-38.41	peak
3	3394.000	42.87	-5.45	37.42	74.00	-36.58	peak
4	4834.000	39.80	0.57	40.37	74.00	-33.63	peak
5	5818.000	42.72	2.00	44.72	74.00	-29.28	peak
6	6778.000	37.75	4.44	42.19	74.00	-31.81	peak

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

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

3. Peak: Peak detector.

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

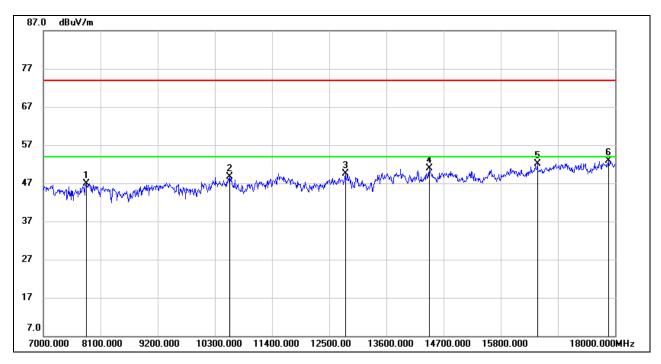
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	7825.000	38.81	8.04	46.85	74.00	-27.15	peak
2	10586.000	36.47	12.30	48.77	74.00	-25.23	peak
3	12808.000	33.40	16.09	49.49	74.00	-24.51	peak
4	14425.000	34.18	16.65	50.83	74.00	-23.17	peak
5	16504.000	32.57	19.61	52.18	74.00	-21.82	peak
6	17879.000	29.55	23.40	52.95	74.00	-21.05	peak

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

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

3. Peak: Peak detector.

4. AVG: 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.

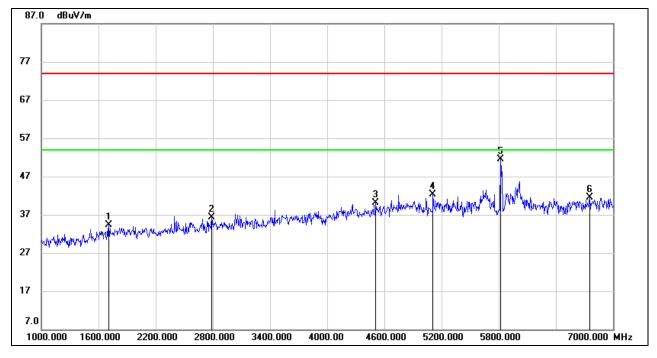
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

8. Owing to the highest peak level of unwanted emission out of the restricted bands



# HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

1-7GHz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1708.000	45.01	-10.80	34.21	74.00	-39.79	peak
2	2788.000	43.22	-7.01	36.21	74.00	-37.79	peak
3	4510.000	41.29	-1.26	40.03	74.00	-33.97	peak
4	5110.000	40.95	1.43	42.38	74.00	-31.62	peak
5	5818.000	49.42	2.00	51.42	74.00	-22.58	peak
6	6754.000	37.13	4.45	41.58	74.00	-32.42	peak

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

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

3. Peak: Peak detector.

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

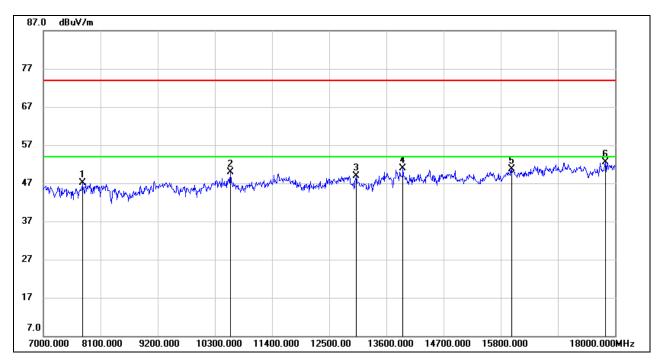
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	7748.000	39.63	7.48	47.11	74.00	-26.89	peak
2	10597.000	37.40	12.43	49.83	74.00	-24.17	peak
3	13017.000	33.76	15.08	48.84	74.00	-25.16	peak
4	13919.000	34.84	16.16	51.00	74.00	-23.00	peak
5	16009.000	32.76	17.85	50.61	74.00	-23.39	peak
6	17813.000	29.10	23.41	52.51	74.00	-21.49	peak

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

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

3. Peak: Peak detector.

4. AVG: 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.

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

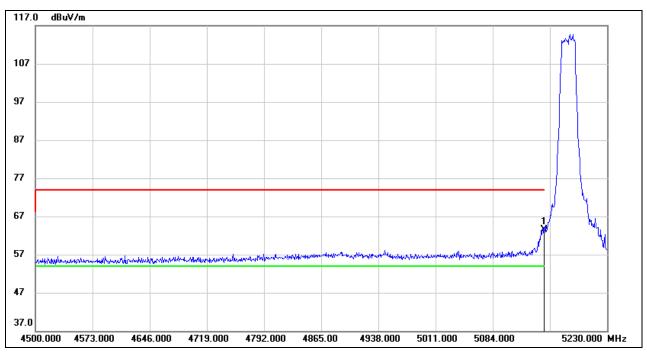
8. Owing to the highest peak level of unwanted emission out of the restricted bands

# 8.2. 802.11n HT20 CDD MIMO MODE

# 8.2.1. UNII-1 BAND

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

PEAK



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5150.000	22.98	40.46	63.44	74.00	-10.56	peak

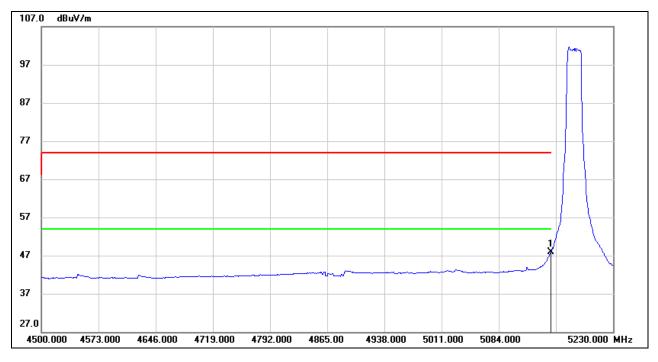
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



# <u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5150.000	7.43	40.46	47.89	74.00	-26.11	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.

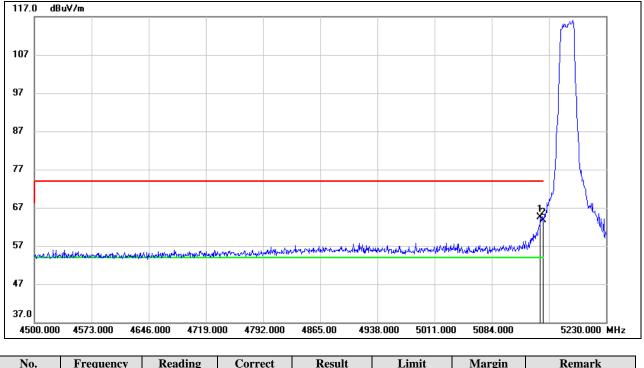
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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



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

<u>PEAK</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5146.050	24.05	40.45	64.50	74.00	-9.50	peak
2	5150.000	23.23	40.46	63.69	74.00	-10.31	peak

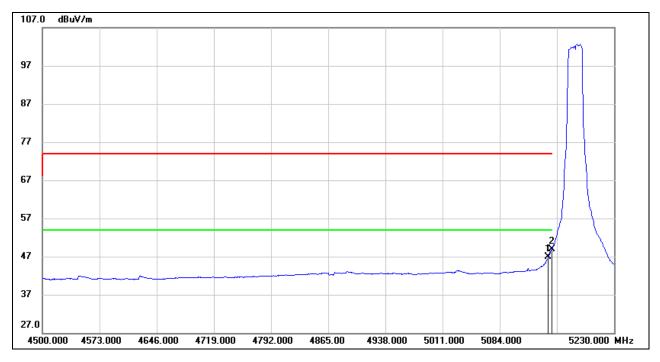
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



# <u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5146.050	6.36	40.45	46.81	54.00	-7.19	AVG
2	5150.000	8.42	40.46	48.88	54.00	-5.12	AVG

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

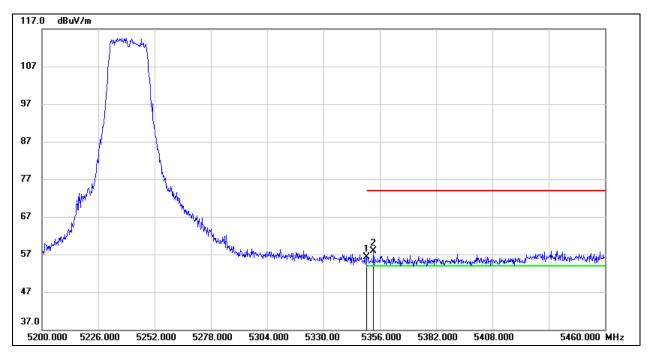
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5350.000	15.62	40.64	56.26	74.00	-17.74	peak
2	5353.140	17.21	40.63	57.84	74.00	-16.16	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.

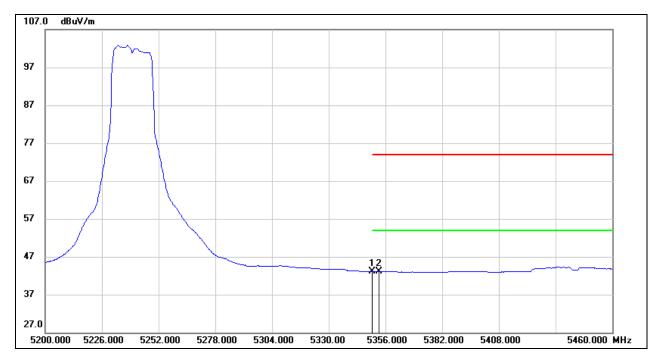
3. Peak: Peak detector.

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

**PEAK** 



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5350.000	2.52	40.64	43.16	54.00	-10.84	AVG
2	5353.140	2.48	40.63	43.11	54.00	-10.89	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.

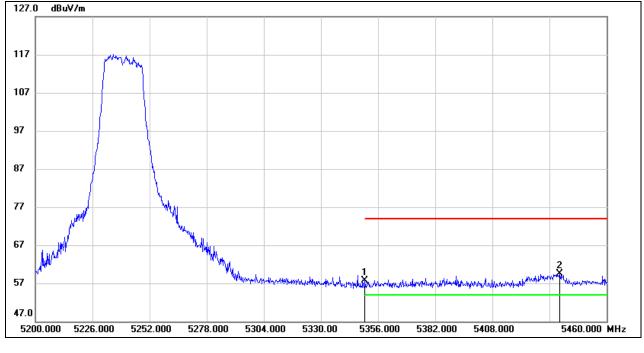
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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



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

**PEAK** 



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5350.000	17.15	40.64	57.79	74.00	-16.21	peak
2	5438.680	18.57	41.01	59.58	74.00	-14.42	peak

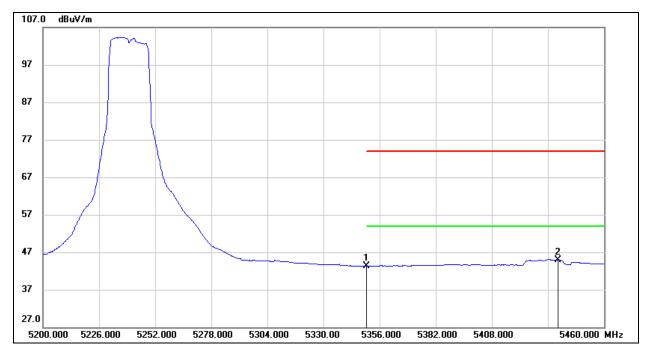
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5350.000	2.73	40.64	43.37	54.00	-10.63	AVG
2	5438.680	3.81	41.01	44.82	54.00	-9.18	AVG

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

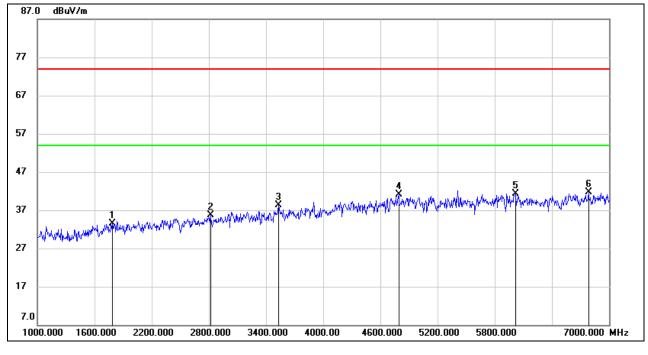
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

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

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



# HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



<u>1-7GHz</u>

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1786.000	43.73	-10.21	33.52	74.00	-40.48	peak
2	2818.000	42.58	-6.88	35.70	74.00	-38.30	peak
3	3532.000	43.10	-4.84	38.26	74.00	-35.74	peak
4	4792.000	40.57	0.47	41.04	74.00	-32.96	peak
5	6016.000	38.74	2.60	41.34	74.00	-32.66	peak
6	6784.000	37.30	4.44	41.74	74.00	-32.26	peak

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

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

3. Peak: Peak detector.

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

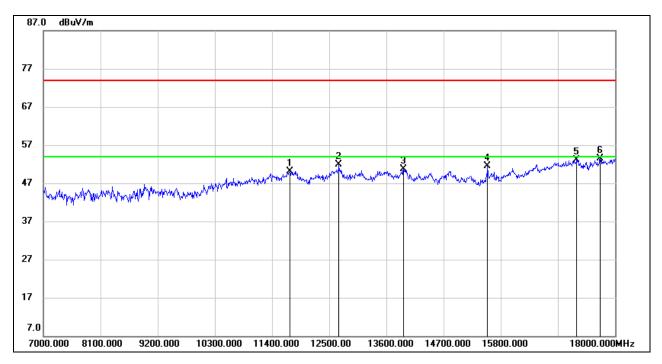
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	11741.000	35.81	14.29	50.10	74.00	-23.90	peak
2	12687.000	36.73	15.24	51.97	74.00	-22.03	peak
3	13930.000	34.45	16.24	50.69	74.00	-23.31	peak
4	15547.000	34.99	16.54	51.53	74.00	-22.47	peak
5	17263.000	31.67	21.53	53.20	74.00	-20.80	peak
6	17714.000	30.62	22.85	53.47	74.00	-20.53	peak

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

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

3. Peak: Peak detector.

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

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

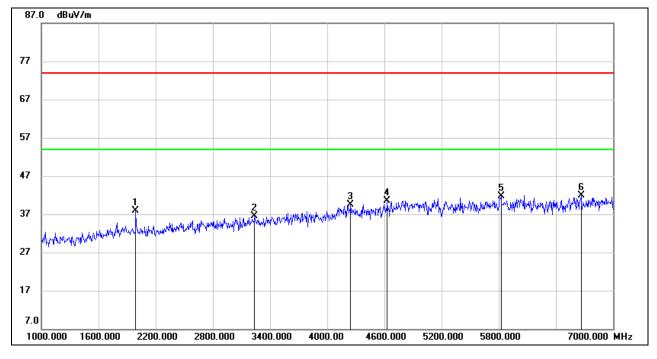
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



# HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



1-7GHz
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No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1990.000	48.10	-10.24	37.86	74.00	-36.14	peak
2	3238.000	42.06	-5.62	36.44	74.00	-37.56	peak
3	4246.000	41.32	-1.83	39.49	74.00	-34.51	peak
4	4630.000	41.02	-0.46	40.56	74.00	-33.44	peak
5	5824.000	39.58	2.03	41.61	74.00	-32.39	peak
6	6664.000	37.44	4.47	41.91	74.00	-32.09	peak

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

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

3. Peak: Peak detector.

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

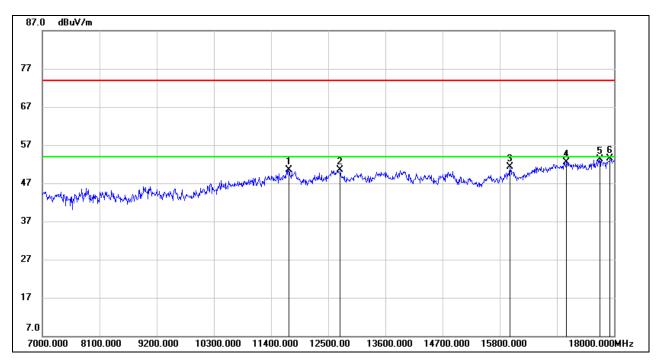
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	11741.000	36.17	14.29	50.46	74.00	-23.54	peak
2	12731.000	35.17	15.26	50.43	74.00	-23.57	peak
3	15998.000	33.49	17.73	51.22	74.00	-22.78	peak
4	17087.000	31.58	21.00	52.58	74.00	-21.42	peak
5	17725.000	30.30	22.94	53.24	74.00	-20.76	peak
6	17923.000	29.97	23.61	53.58	74.00	-20.42	peak

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

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

3. Peak: Peak detector.

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

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

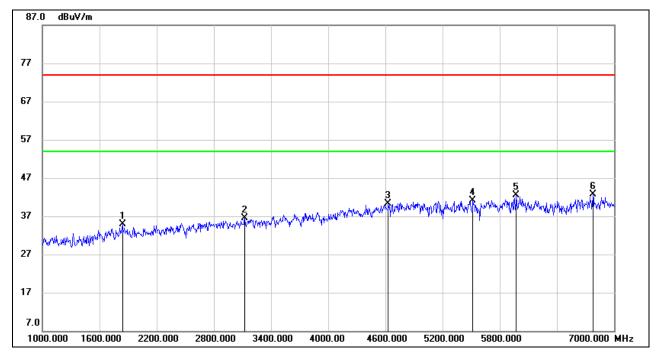
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



# HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



<u>1-7GHz</u>

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1840.000	45.06	-10.13	34.93	74.00	-39.07	peak
2	3124.000	42.33	-5.82	36.51	74.00	-37.49	peak
3	4630.000	40.72	-0.46	40.26	74.00	-33.74	peak
4	5518.000	39.18	1.84	41.02	74.00	-32.98	peak
5	5974.000	40.07	2.53	42.60	74.00	-31.40	peak
6	6778.000	38.22	4.44	42.66	74.00	-31.34	peak

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

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

3. Peak: Peak detector.

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

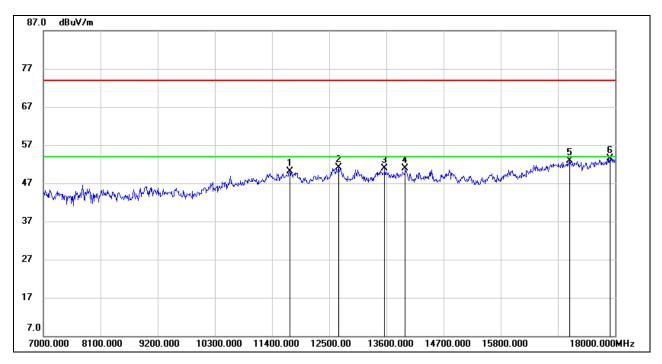
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	11741.000	35.79	14.29	50.08	74.00	-23.92	peak
2	12676.000	35.84	15.23	51.07	74.00	-22.93	peak
3	13567.000	35.05	15.89	50.94	74.00	-23.06	peak
4	13963.000	34.76	16.17	50.93	74.00	-23.07	peak
5	17131.000	31.71	21.27	52.98	74.00	-21.02	peak
6	17901.000	29.87	23.59	53.46	74.00	-20.54	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. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

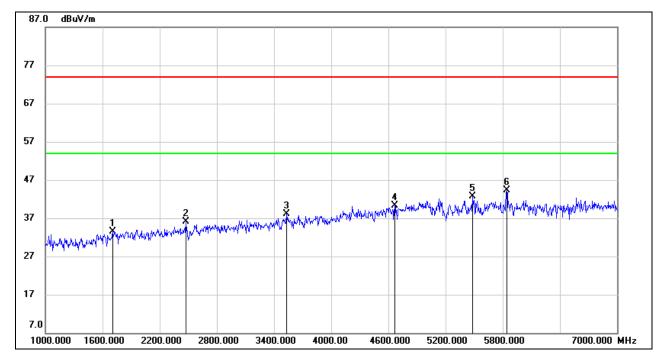
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



# HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1708.000	44.40	-10.80	33.60	74.00	-40.40	peak
2	2476.000	44.60	-8.52	36.08	74.00	-37.92	peak
3	3532.000	42.90	-4.84	38.06	74.00	-35.94	peak
4	4666.000	40.58	-0.25	40.33	74.00	-33.67	peak
5	5482.000	40.90	1.75	42.65	74.00	-31.35	peak
6	5842.000	42.30	2.08	44.38	74.00	-29.62	peak

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

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

3. Peak: Peak detector.

4. AVG: 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 Band reject filter losses.

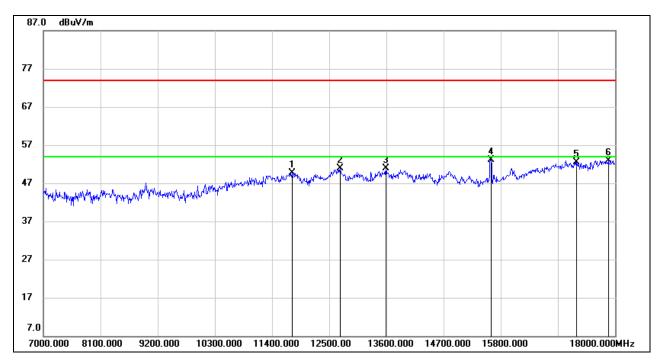
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

8. Owing to the highest peak level of unwanted emission out of the restricted bands

complies with the lowest limit(54dBuV/m), so all the test point was deemed to comply with the limits list in the standard.

<u>1-7GHz</u>





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	11785.000	35.19	14.47	49.66	74.00	-24.34	peak
2	12709.000	35.72	15.26	50.98	74.00	-23.02	peak
3	13589.000	34.97	15.87	50.84	74.00	-23.16	peak
4	15613.000	36.44	16.76	53.20	74.00	-20.80	peak
5	17263.000	31.06	21.53	52.59	74.00	-21.41	peak
6	17868.000	29.34	23.56	52.90	74.00	-21.10	peak

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

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

3. Peak: Peak detector.

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

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

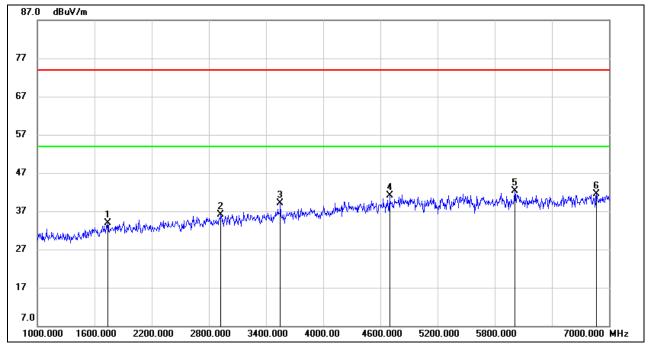
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



# HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



1-7GHz	

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1738.000	44.49	-10.57	33.92	74.00	-40.08	peak
2	2926.000	42.53	-6.40	36.13	74.00	-37.87	peak
3	3550.000	43.82	-4.74	39.08	74.00	-34.92	peak
4	4696.000	41.16	-0.09	41.07	74.00	-32.93	peak
5	6010.000	39.69	2.61	42.30	74.00	-31.70	peak
6	6868.000	36.97	4.60	41.57	74.00	-32.43	peak

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

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

3. Peak: Peak detector.

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

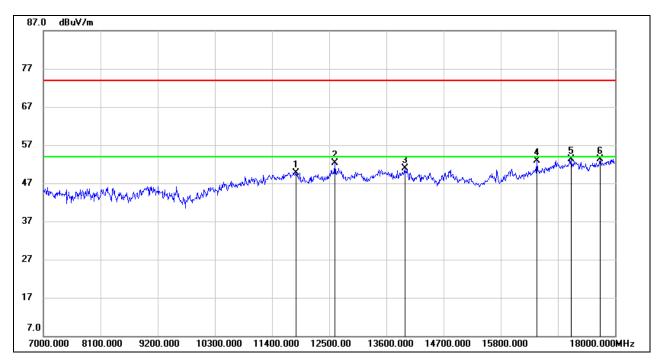
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	11862.000	35.34	14.44	49.78	74.00	-24.22	peak
2	12610.000	37.18	15.17	52.35	74.00	-21.65	peak
3	13952.000	34.74	16.19	50.93	74.00	-23.07	peak
4	16493.000	33.43	19.42	52.85	74.00	-21.15	peak
5	17153.000	31.92	21.40	53.32	74.00	-20.68	peak
6	17714.000	30.36	22.85	53.21	74.00	-20.79	peak

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

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

3. Peak: Peak detector.

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

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

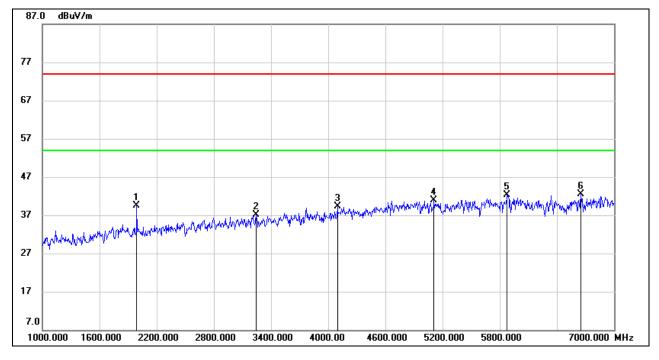
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



# HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)



<u>1-7GHz</u>

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1990.000	49.68	-10.24	39.44	74.00	-34.56	peak
2	3244.000	42.73	-5.61	37.12	74.00	-36.88	peak
3	4096.000	42.04	-2.80	39.24	74.00	-34.76	peak
4	5110.000	39.47	1.43	40.90	74.00	-33.10	peak
5	5878.000	40.17	2.20	42.37	74.00	-31.63	peak
6	6652.000	37.96	4.47	42.43	74.00	-31.57	peak

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

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

3. Peak: Peak detector.

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

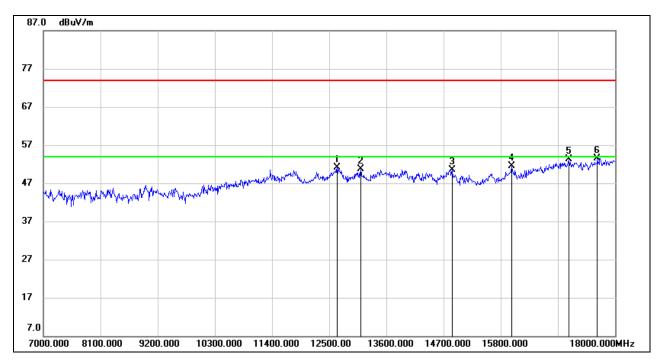
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	12654.000	35.99	15.20	51.19	74.00	-22.81	peak
2	13105.000	35.19	15.46	50.65	74.00	-23.35	peak
3	14865.000	34.47	16.03	50.50	74.00	-23.50	peak
4	16009.000	33.71	17.74	51.45	74.00	-22.55	peak
5	17109.000	32.09	21.13	53.22	74.00	-20.78	peak
6	17659.000	31.08	22.45	53.53	74.00	-20.47	peak

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

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

3. Peak: Peak detector.

4. AVG: 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.

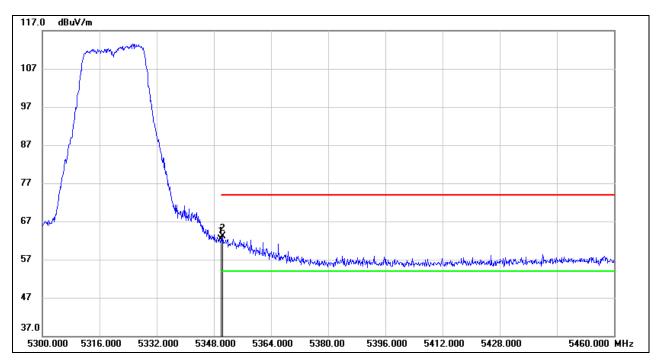
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

8. Owing to the highest peak level of unwanted emission out of the restricted bands



# 8.2.2. UNII-2A BAND

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



<u>PEAK</u>

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5350.000	21.57	40.64	62.21	74.00	-11.79	peak
2	5350.400	22.45	40.64	63.09	74.00	-10.91	peak

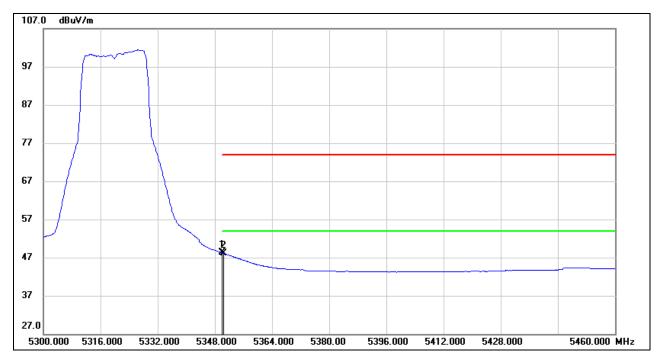
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5350.000	7.56	40.64	48.20	54.00	-5.80	AVG
2	5350.400	7.46	40.64	48.10	54.00	-5.90	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.

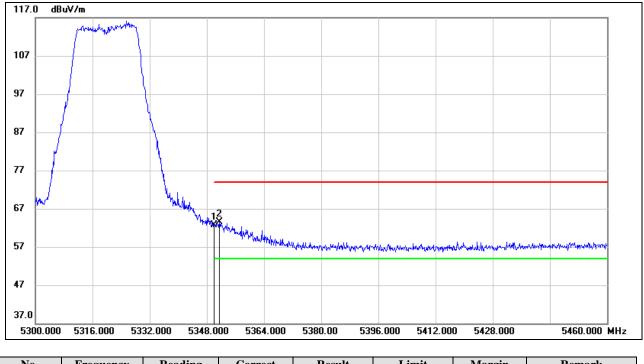
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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



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





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5350.000	22.09	40.64	62.73	74.00	-11.27	peak
2	5351.520	22.84	40.63	63.47	74.00	-10.53	peak

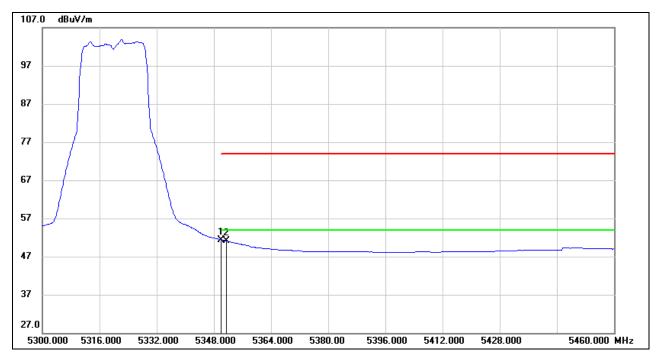
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5350.000	10.76	40.64	51.40	54.00	-2.60	AVG
2	5351.520	10.45	40.63	51.08	54.00	-2.92	AVG

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

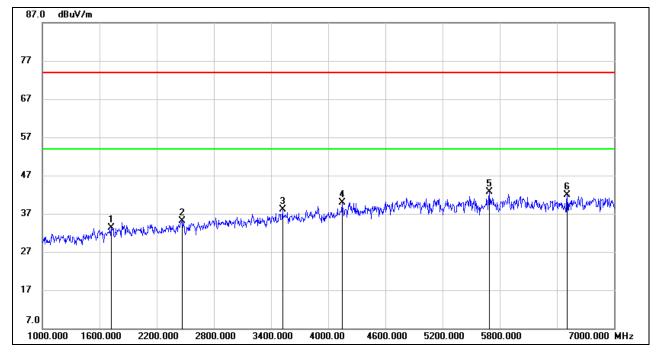
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

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

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



# HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



<u>1-7GHz</u>

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1720.000	44.07	-10.71	33.36	74.00	-40.64	peak
2	2464.000	43.68	-8.52	35.16	74.00	-38.84	peak
3	3520.000	43.07	-4.90	38.17	74.00	-35.83	peak
4	4144.000	42.30	-2.33	39.97	74.00	-34.03	peak
5	5692.000	40.81	1.98	42.79	74.00	-31.21	peak
6	6508.000	37.86	4.00	41.86	74.00	-32.14	peak

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

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

3. Peak: Peak detector.

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

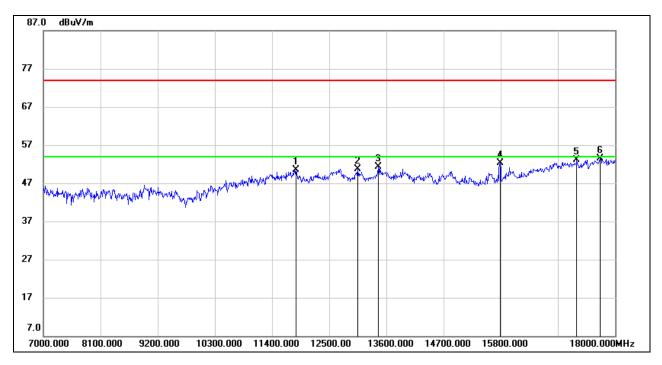
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	11862.000	36.03	14.44	50.47	74.00	-23.53	peak
2	13050.000	35.10	15.55	50.65	74.00	-23.35	peak
3	13446.000	35.30	15.96	51.26	74.00	-22.74	peak
4	15789.000	35.49	16.86	52.35	74.00	-21.65	peak
5	17263.000	31.67	21.53	53.20	74.00	-20.80	peak
6	17714.000	30.63	22.85	53.48	74.00	-20.52	peak

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

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

3. Peak: Peak detector.

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

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

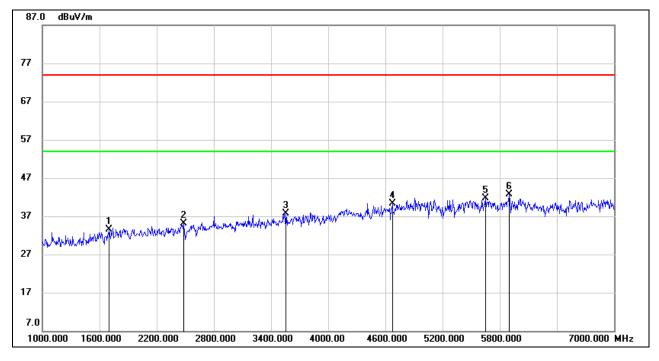
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



# HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



<u>1-7GHz</u>

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1702.000	44.42	-10.85	33.57	74.00	-40.43	peak
2	2482.000	43.66	-8.50	35.16	74.00	-38.84	peak
3	3556.000	42.41	-4.70	37.71	74.00	-36.29	peak
4	4672.000	40.57	-0.22	40.35	74.00	-33.65	peak
5	5650.000	39.76	2.01	41.77	74.00	-32.23	peak
6	5896.000	40.41	2.27	42.68	74.00	-31.32	peak

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

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

3. Peak: Peak detector.

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

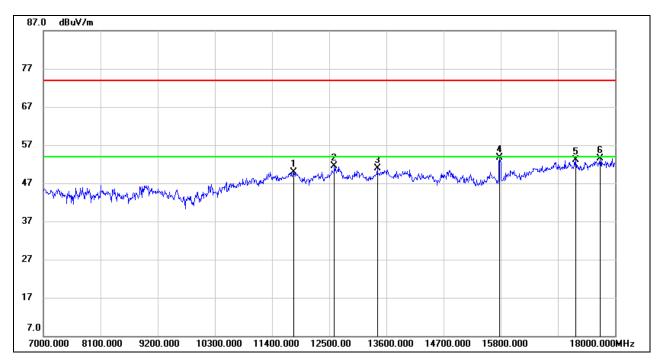
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	11818.000	35.39	14.50	49.89	74.00	-24.11	peak
2	12599.000	36.36	15.16	51.52	74.00	-22.48	peak
3	13424.000	34.90	15.95	50.85	74.00	-23.15	peak
4	15778.000	36.77	16.86	53.63	74.00	-20.37	peak
5	17241.000	31.54	21.58	53.12	74.00	-20.88	peak
6	17714.000	30.60	22.85	53.45	74.00	-20.55	peak

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

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

3. Peak: Peak detector.

4. AVG: 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.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands

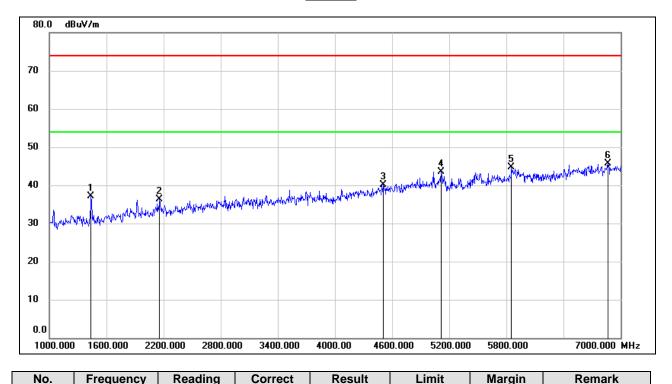


No.

1

2

# HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



3	4510.000	41.77	-1.75	40.02	74.00	-33.90	L
4	5116.000	42.73	0.86	43.59	74.00	-30.41	I
5	5854.000	41.23	3.48	44.71	74.00	-29.29	I
6	6868.000	40.72	4.98	45.70	74.00	-28.30	I
Noto: 1	Mooguromo	at - Roadin		orraat Eastar			

(dB/m)

-12.99

-9.83

\_1 75

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

(dBuV)

50.19

46.06

11 77

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

(dBuV/m)

37.20

36.23

10 02

(dBuV/m)

74.00

74.00

74 00

(dB)

-36.80

-37.77

22.00

peak

peak

peak peak peak peak

3. Peak: Peak detector.

(MHz)

1438.000

2158.000

1510 000

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 Band reject filter losses.

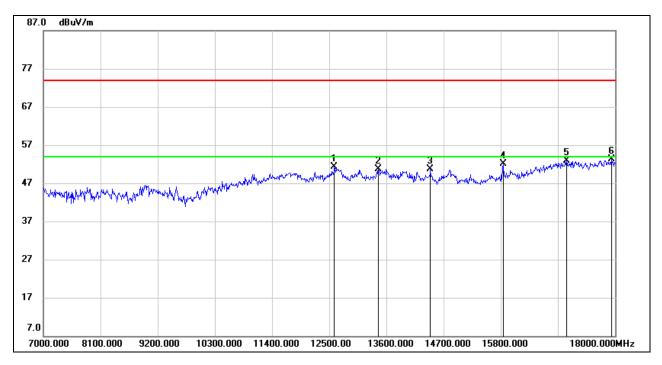
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

8. Owing to the highest peak level of unwanted emission out of the restricted bands

complies with the lowest limit(54dBuV/m), so all the test point was deemed to comply with the limits list in the standard.

1-7GHz





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	12599.000	36.13	15.16	51.29	74.00	-22.71	peak
2	13446.000	34.75	15.96	50.71	74.00	-23.29	peak
3	14447.000	34.60	16.08	50.68	74.00	-23.32	peak
4	15844.000	34.96	17.06	52.02	74.00	-21.98	peak
5	17065.000	31.99	20.87	52.86	74.00	-21.14	peak
6	17934.000	29.63	23.62	53.25	74.00	-20.75	peak

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

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

3. Peak: Peak detector.

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

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

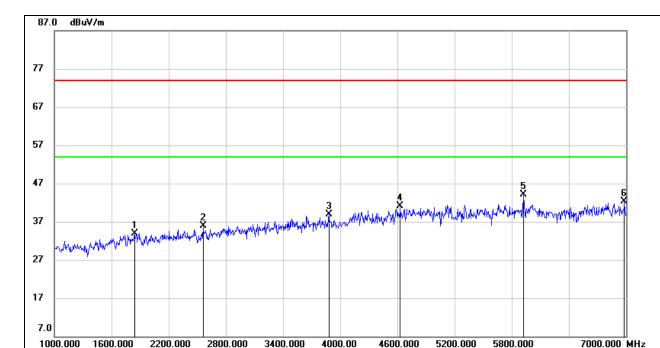
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



# HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



<u>1-7GHz</u>

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1840.000	43.94	-10.13	33.81	74.00	-40.19	peak
2	2560.000	44.16	-8.29	35.87	74.00	-38.13	peak
3	3880.000	42.55	-3.57	38.98	74.00	-35.02	peak
4	4630.000	41.62	-0.46	41.16	74.00	-32.84	peak
5	5920.000	41.85	2.34	44.19	74.00	-29.81	peak
6	6982.000	37.36	4.85	42.21	74.00	-31.79	peak

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

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

3. Peak: Peak detector.

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

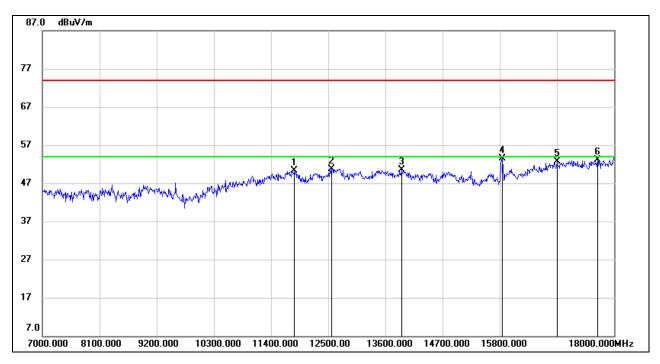
5. For the transmitting duration, please refer to clause 7.1.

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

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	11851.000	35.85	14.45	50.30	74.00	-23.70	peak
2	12566.000	35.70	15.10	50.80	74.00	-23.20	peak
3	13919.000	34.31	16.24	50.55	74.00	-23.45	peak
4	15844.000	36.53	17.06	53.59	74.00	-20.41	peak
5	16900.000	32.50	20.29	52.79	74.00	-21.21	peak
6	17681.000	30.56	22.61	53.17	74.00	-20.83	peak

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

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

3. Peak: Peak detector.

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

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

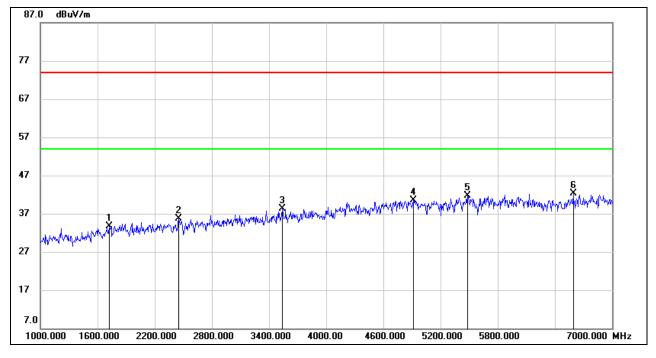
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



# HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



1-7	'GHz

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1726.000	44.33	-10.66	33.67	74.00	-40.33	peak
2	2452.000	44.34	-8.55	35.79	74.00	-38.21	peak
3	3538.000	43.06	-4.80	38.26	74.00	-35.74	peak
4	4912.000	39.78	0.71	40.49	74.00	-33.51	peak
5	5482.000	39.98	1.75	41.73	74.00	-32.27	peak
6	6592.000	37.78	4.44	42.22	74.00	-31.78	peak

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

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

3. Peak: Peak detector.

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

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

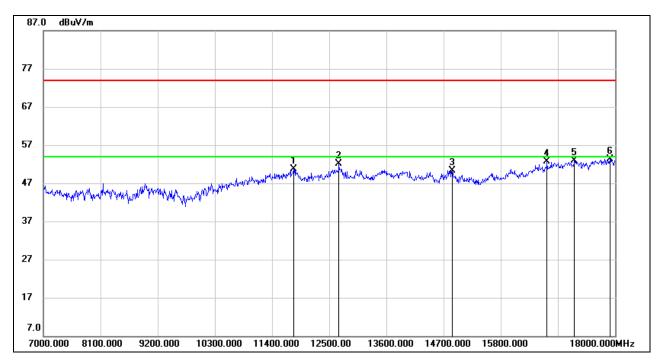
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



## <u>7-18GHz</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	11818.000	36.20	14.50	50.70	74.00	-23.30	peak
2	12687.000	36.81	15.24	52.05	74.00	-21.95	peak
3	14865.000	34.24	16.03	50.27	74.00	-23.73	peak
4	16691.000	32.68	20.02	52.70	74.00	-21.30	peak
5	17219.000	31.36	21.64	53.00	74.00	-21.00	peak
6	17901.000	29.80	23.59	53.39	74.00	-20.61	peak

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

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

3. Peak: Peak detector.

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

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

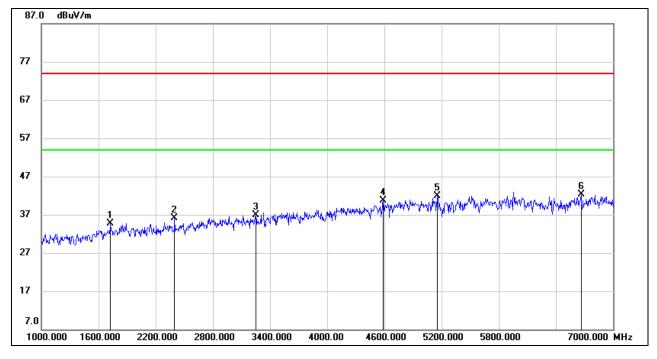
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1726.000	45.33	-10.66	34.67	74.00	-39.33	peak
2	2398.000	44.80	-8.62	36.18	74.00	-37.82	peak
3	3250.000	42.61	-5.61	37.00	74.00	-37.00	peak
4	4588.000	41.49	-0.73	40.76	74.00	-33.24	peak
5	5158.000	40.19	1.70	41.89	74.00	-32.11	peak
6	6664.000	37.80	4.47	42.27	74.00	-31.73	peak

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

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

3. Peak: Peak detector.

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

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

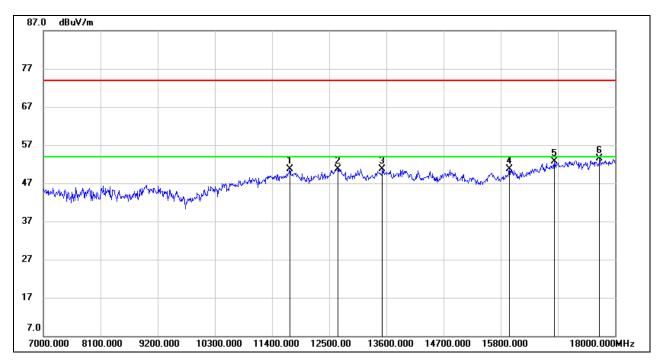
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



## <u>7-18GHz</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	11741.000	36.39	14.29	50.68	74.00	-23.32	peak
2	12665.000	35.58	15.22	50.80	74.00	-23.20	peak
3	13523.000	34.79	15.93	50.72	74.00	-23.28	peak
4	15965.000	33.22	17.58	50.80	74.00	-23.20	peak
5	16834.000	32.56	20.17	52.73	74.00	-21.27	peak
6	17703.000	30.73	22.77	53.50	74.00	-20.50	peak

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

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

3. Peak: Peak detector.

4. AVG: 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.

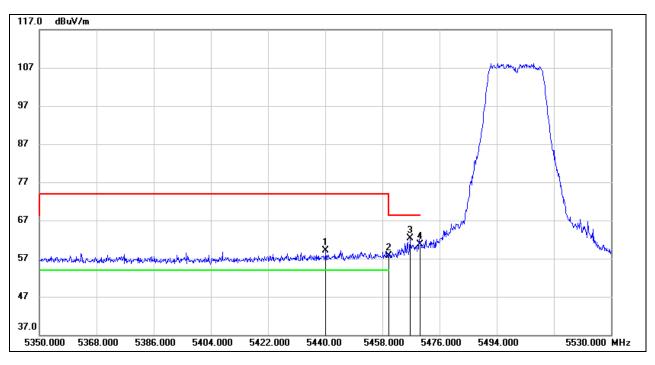
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

8. Owing to the highest peak level of unwanted emission out of the restricted bands



# 8.2.3. UNII-2C BAND

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



<u>PEAK</u>

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5440.180	18.13	41.03	59.16	74.00	-14.84	peak
2	5460.000	16.49	41.28	57.77	68.20	-10.43	peak
3	5466.640	20.91	41.37	62.28	68.20	-5.92	peak
4	5470.000	19.25	41.41	60.66	68.20	-7.54	peak

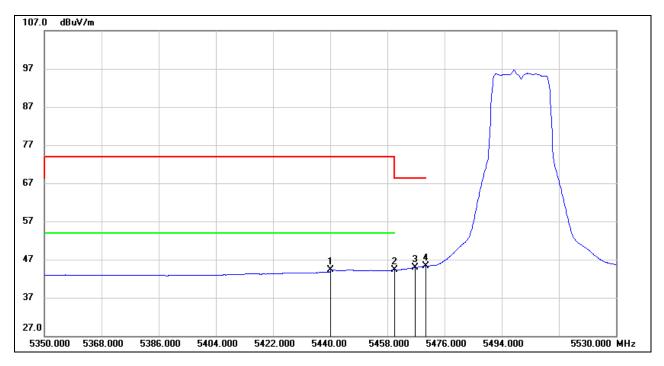
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



#### <u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5440.180	3.26	41.03	44.29	54.00	-9.71	AVG
2	5460.000	3.00	41.28	44.28	54.00	-9.72	AVG
3	5466.640	3.53	41.37	44.90	68.20	-23.30	AVG
4	5470.000	3.95	41.41	45.36	68.20	-22.84	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.

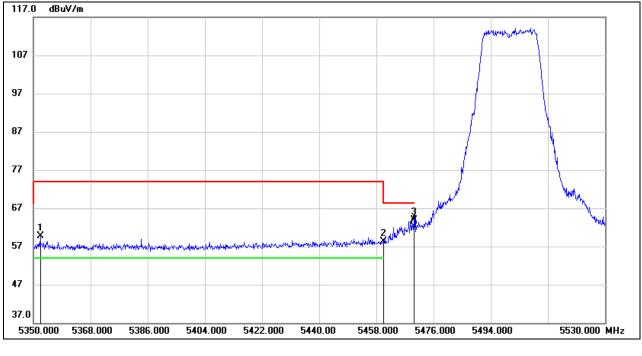
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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



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

<u>PEAK</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5352.160	19.07	40.63	59.70	74.00	-14.30	peak
2	5460.000	16.98	41.28	58.26	68.20	-9.94	peak
3	5469.880	22.52	41.41	63.93	68.20	-4.27	peak
4	5470.000	20.75	41.41	62.16	68.20	-6.04	peak

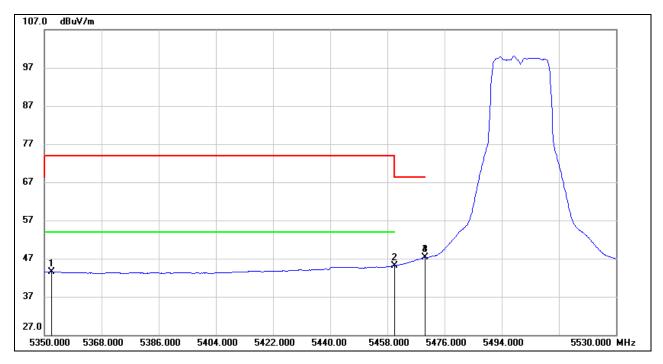
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



#### <u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5352.160	2.82	40.63	43.45	54.00	-10.55	AVG
2	5460.000	3.90	41.28	45.18	54.00	-8.82	AVG
3	5469.880	5.97	41.41	47.38	68.20	-20.82	AVG
4	5470.000	5.94	41.41	47.35	68.20	-20.85	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.

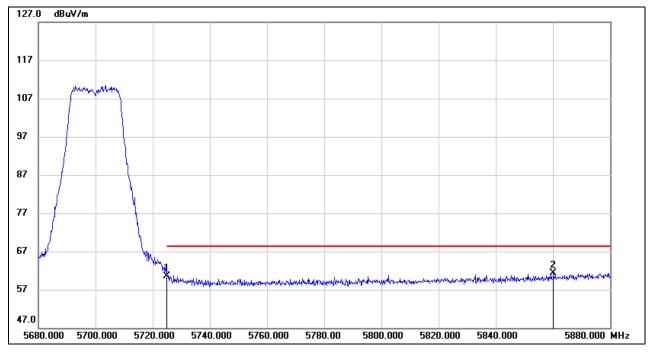
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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



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

<u>PEAK</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5725.000	18.99	41.61	60.60	68.20	-7.60	peak
2	5860.200	18.23	43.08	61.31	68.20	-6.89	peak

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

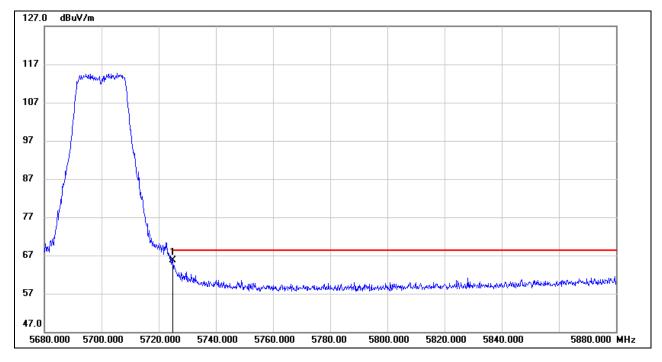
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.



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

#### <u>PEAK</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	5725.000	24.19	41.61	65.80	68.20	-2.40	peak

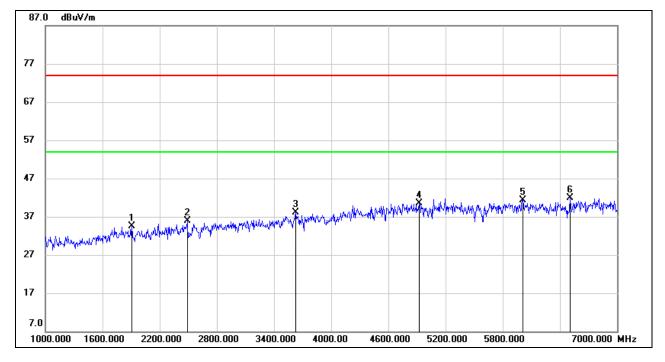
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



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



<u>1-7GHz</u>

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1906.000	44.75	-10.18	34.57	74.00	-39.43	peak
2	2488.000	44.37	-8.50	35.87	74.00	-38.13	peak
3	3628.000	42.33	-4.31	38.02	74.00	-35.98	peak
4	4924.000	39.85	0.72	40.57	74.00	-33.43	peak
5	6010.000	38.79	2.61	41.40	74.00	-32.60	peak
6	6508.000	37.96	4.00	41.96	74.00	-32.04	peak

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

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

3. Peak: Peak detector.

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

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

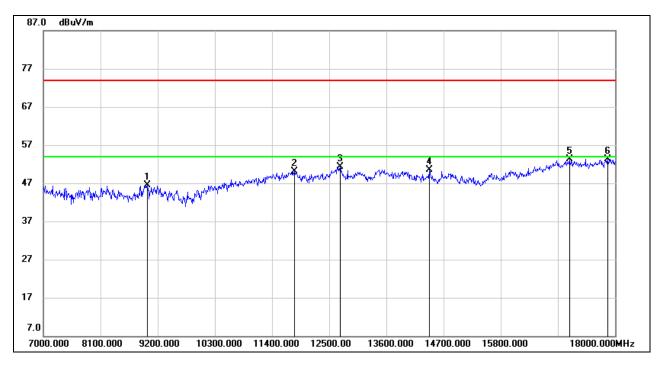
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



## <u>7-18GHz</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	9002.000	36.26	10.19	46.45	74.00	-27.55	peak
2	11829.000	35.61	14.48	50.09	74.00	-23.91	peak
3	12709.000	36.07	15.26	51.33	74.00	-22.67	peak
4	14425.000	34.37	16.11	50.48	74.00	-23.52	peak
5	17120.000	32.10	21.20	53.30	74.00	-20.70	peak
6	17857.000	29.75	23.55	53.30	74.00	-20.70	peak

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

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

3. Peak: Peak detector.

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

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

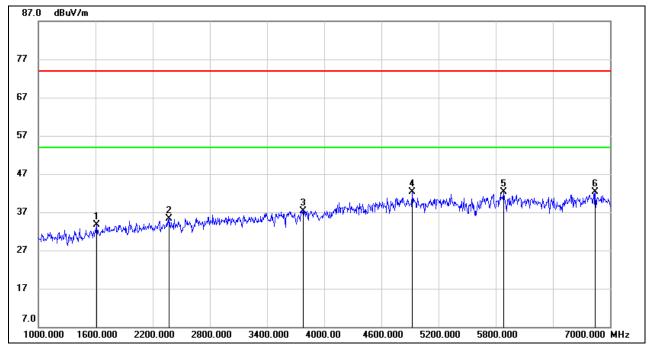
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands



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



1-7GHz
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No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	( <b>dB</b> / <b>m</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
1	1612.000	45.30	-11.52	33.78	74.00	-40.22	peak
2	2374.000	44.07	-8.69	35.38	74.00	-38.62	peak
3	3778.000	40.96	-3.56	37.40	74.00	-36.60	peak
4	4924.000	41.59	0.72	42.31	74.00	-31.69	peak
5	5884.000	39.98	2.23	42.21	74.00	-31.79	peak
6	6844.000	37.67	4.55	42.22	74.00	-31.78	peak

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

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

3. Peak: Peak detector.

4. AVG: 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 Band reject filter losses.

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

8. Owing to the highest peak level of unwanted emission out of the restricted bands