

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

**CERTIFICATION TEST REPORT** 

For

### **Square Register**

### MODEL NUMBER: SPS1-01

FCC ID: 2AF3K-SPS1

IC: 21827-SPS1

REPORT NUMBER: 4789598114.1-3

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Prepared for

Square, Inc. (FCC) 1455 Market St, Suite 600, San Francisco, California, United States 94103

Square Canada, Inc. (ISED) 5000 Yonge Street, Suite 1501; Toronto, ON, M2N7E9 Canada

Prepared by

UL Verification Services (Guangzhou) Co., Ltd, Song Shan Lake Branch

Building 10, Innovation Technology Park, No. 1, Li Bin Road, Song Shan Lake Hi-Tech Development Zone Dongguan, 523808, People's Republic of China

> Tel: +86 769 22038881 Fax: +86 769 33244054 Website: www.ul.com

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### **Revision History**

Rev.	Issue Date	Revisions Revised	
V0	10/09/2020	Initial Issue	



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

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

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



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## **1. ATTESTATION OF TEST RESULTS**

FCC	
Applicant Information	
Company Name:	Square, Inc.
Address:	1455 Market St, Suite 600, San Francisco, California, United States 94103
ISED	
Applicant Information	
Company Name:	Square Canada, Inc.
Address:	5000 Yonge Street, Suite 1501; Toronto, ON, M2N7E9 Canada
FCC	
Manufacturer	
Information	
Company Name:	Square, Inc.
Address:	1455 Market St, Suite 600, San Francisco, California, United States 94103
ISED	
Manufacturer	
Information	
Company Name:	Square Canada, Inc.
Address:	5000 Yonge Street, Suite 1501; Toronto, ON, M2N7E9 Canada
EUT Information	
EUT Name:	Square Register
Square Register Model:	SPS1-01
Brand:	SQUARE
Sample Received Date:	August 17, 2020
Sample Status:	Normal
Sample ID:	2809002
Date of Tested:	August 17~ September 15, 2020



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

Prepared By:

Checked By:

Kebo. zhong.

Sherman les

Kebo Zhang Project Engineer

Shawn Wen Laboratory Leader

Approved By:

Aephenbuo

Stephen Guo Laboratory Manager



## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, CFR 47 FCC Part 2, CFR 47 FCC Part 15, ANSI C63.10-2013, ISED RSS-247 Issue 2 and ISED RSS-GEN Issue 5.

## 3. FACILITIES AND ACCREDITATION

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

Note 1: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China

Note 2: The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

Note 3: For below 30 MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30 MHz had been correlated to measurements performed on an OFS.



## 4. CALIBRATION AND UNCERTAINTY

## 4.1. MEASURING INSTRUMENT CALIBRATION

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

## 4.2. MEASUREMENT UNCERTAINTY

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

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



## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

EUT Name	Square Register				
Square Register Model	SPS1-01				
Radio Technology	WLAN (IEEE 802.11	b/g/n HT2	0/n HT40)		
Operation frequency	IEEE 802.11b: 2412MHz ~ 2462MHz IEEE 802.11g: 2412MHz ~ 2462MHz IEEE 802.11n HT20: 2412MHz ~ 2462MHz IEEE 802.11n HT40: 2422MHz ~ 2452MHz				
Modulation	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT40: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)				
Power Supply	Power Adapter	Input Output	100 ~ 240 Vac,50/60 Hz,1.2 A 12 Vdc,4.0 A		
	Battery	/	· ·		

### 5.2. CHANNEL LIST

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

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



## 5.3. MAXIMUM OUTPUT POWER

IEEE Std. 802.11	Frequency (MHz)	Channel Number	Maximum Conducted AVG Output Power (dBm)	Maximum AVG EIRP (dBm)
b	2412 ~ 2462	1-11[11]	20.91	23.37
g	2412 ~ 2462	1-11[11]	18.33	20.79
n HT20	2412 ~ 2462	1-11[11]	17.54	21.55
n HT40	2422 ~ 2452	3-9[7]	16.74	20.75

### 5.4. TEST CHANNEL CONFIGURATION

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

### 5.5. THE WORSE CASE POWER SETTING PARAMETER

The W	The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band						
Test Softw	vare			QF	RCT		
	Transmit		Т	est Software	e setting val	Je	
Modulation Mode	Antenna	1	NCB: 20MHz			ICB: 40MHz	
Widde	Number	CH 1	CH 6	CH 11	CH 3	CH 6	CH 9
802.11b	2	21	21	19.5			
802.11g	2	18	18 18 18 /				
802.11n HT20	2	15	15	15			
802.11n HT40	2		/			13	12



### 5.6. THE WORSE CASE CONFIGURATIONS

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

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

Test channels referring to section 5.5.

Maximum power setting referring to section 5.7.

Worst case Data Rates declared by the customer:

IEEE 802.11b / 1 Mbps IEEE 802.11g / 6 Mbps IEEE 802.11n HT20 / MCS0 IEEE 802.11n HT40 / MCS0

The EUT has 2 separate antennas which correspond to 2 separate antenna ports. Core 1 and Core 2 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.

Duty cycle and 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 unwanted emissions tests and out of band conducted unwanted 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.

Radiated unwanted emissions tests were performed with the MIMO modes if supported. 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.

5.7.	DESCRIPTION OF AVAILABLE ANTENNAS
------	-----------------------------------

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2412-2462	Internal PCB antenna	2.46
2	2412-2462	Internal PCB antenna	-0.53

Note: Directional gain= 10 log[(10<sup>G1</sup>/20 + 10G2 /20)2 /NANT] dBi =4.1 < 6dBi  $N_{\text{ANT}}$ : Antenna numbers

IEEE Std. 802.11	Transmit and Receive Mode	Description			
b	1TX, 1RX	Antenna 1, 2 can be used as transmitting/receiving antenna.			
g	1TX, 1RX	Antenna 1, 2 can be used as transmitting/receiving antenna.			
n HT20	2TX, 2RX	Antenna 1, 2 can be used as transmitting/receiving antenna.			
n HT40	2TX, 2RX	Antenna 1, 2 can be used as transmitting/receiving antenna.			
Note: 1. Only 802.11n HT20/HT40 support MIMO mode					

2. BT, BLE, 2.4G WLAN and 5G WLAN does not support transmit simultaneously. (Declared by customer.)

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



### 5.8. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Remarks
1	Laptop	ThinkPad	X230i	/
2	RJ45 terminal spring block adapter	Adafruit	485-4511	/
3	USB flash disk	Kingston	8GB	5PCS
4	Customer Display	SQUARE	SPS4-01/ SPS4-01-A	/

### I/O PORT

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	USB	/	/	1.0 m	/
2	USB	/	/	2.0 m	Customer display cable

### ACCESSORY

Item	Accessory	Brand Name	Model Name	Description
1	Power Adapter	SQUARE	SWB2-01	Input: 100-240V,50/60Hz, 1.2A Output: 12Vdc, 4A
2	Hub	SQUARE	SHF3-01	Hub Output X5: 5Vdc, 2.5A Output for Register: 12Vdc, 2.3A
3	HUB	SQUARE	SHB3-01	Hub Output: 5V, 2.5A Register Output: 12V2.3A

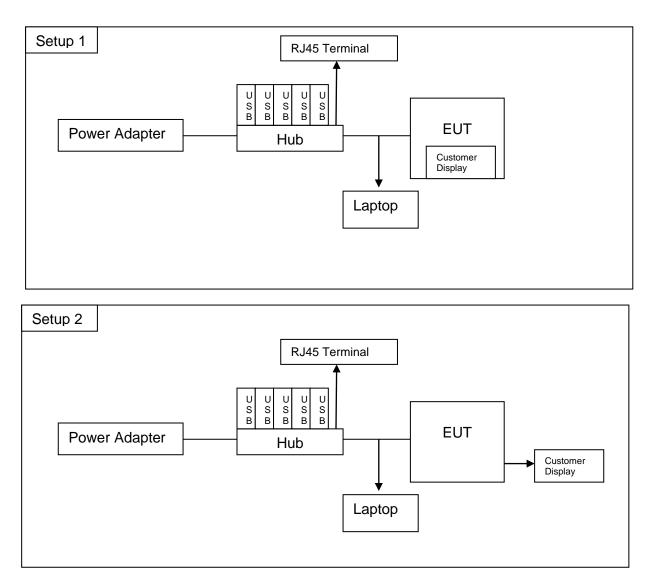
Note: Two Hubs had been considered, but only the worst data (SHF3-01) recorded in the report.



### TEST SETUP

The EUT can work in an engineering mode though the laptop before the testing.

### SETUP DIAGRAM FOR TESTS



Note:

- 1. After setting the EUT to engineering mode, the Laptop was removed from the test table.
- 2. There are two Settings for the sample and both settings have considered, Only the worst cases (Setup 1) were recorded in the report.

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## 6. MEASURING INSTRUMENT AND SOFTWARE USED

Conducted Emissions								
			Ins	trument				
Used	Equipment	Manufacturer	Mode	el No.	Seria	l No.	Last Cal.	Next Cal.
	EMI Test Receiver	R&S	ES	SR3	1019	961	Dec.05,2019	Dec.05,2020
$\checkmark$	Two-Line V- Network	R&S	EN\	/216	1019	983	Dec.05,2019	Dec.05,2020
			So	oftware				
Used		Description			Manufa	acturer	Name	Version
$\checkmark$	Test Softwar	re for Conduct	ed disturk	bance	Far	ad	EZ-EMC	Ver. UL-3A1
			Radiate	d Emissio	ons			
			Ins	trument				
Used	Equipment	Manufacturer	Mode	el No.	Seria	l No.	Last Cal.	Next Cal.
	MXE EMI Receiver	KESIGHT	N90	)38A	MY564	00036	Dec.06,2019	Dec.05,2020
V	Hybrid Log Periodic Antenna	TDK	HLP-:	3003C	1309	960	Sep.17,2018	Sep.17,2021
$\checkmark$	Preamplifier	HP	844	47D	2944A	09099	Dec.05,2019	Dec.05,2020
V	EMI Measurement Receiver	R&S	ES	R26	101:	377	Dec.05,2019	Dec.05,2020
$\checkmark$	Horn Antenna	TDK	HRN	-0118	130939		Sep.17,2018	Sep.17,2021
	High Gain Horn Antenna	Schwarzbeck	BBHA	-9170	69	1	Aug.11,2018	Aug.11,2021
V	Preamplifier	TDK	PA-02	2-0118	TRS- 000	67	Dec.05,2019	Dec.05,2020
V	Preamplifier	TDK	PA-	02-2	TRS- 000		Dec.05,2019	Dec.05,2020
	Loop antenna	Schwarzbeck		19B	000	08	Jan.07,2019	Jan.07,2022
V	Band Reject Filter	Wainwright	2400-2	/8-2350- 2483.5- 5-40SS	4		Dec.05,2019	Dec.05,2020
V	High Pass Filter	Wi	WHKX10-2700- 3000- 18000-40SS		23	3	Dec.05,2019	Dec.05,2020
Software								
Used	De	escription		Manufa	cturer		Name	Version
$\checkmark$	Test Software fo	r Radiated dis	turbance	Fara	ıd	E	Z-EMC	Ver. UL-3A1
			Other	instrumen	ts			
Used	Equipment	Manufact	IIror	odel S No. S	Serial No	).	Last Cal.	Next Cal.

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$\checkmark$	Spectrum Analyzer	Keysight	N9030A	MY55410512	Dec.06,2019	Dec.05,2020
$\checkmark$	Power sensor, Power Meter	R&S	OSP120	100921	Dec.06,2019	Dec.06,2020



# 7. ANTENNA PORT TEST RESULTS

### 7.1. ON TIME AND DUTY CYCLE

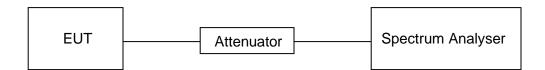
### <u>LIMITS</u>

None; for reporting purposes only

### PROCEDURE

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

### TEST SETUP



### TEST ENVIRONMENT

Temperature	24.1 °C	Relative Humidity	64.4 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120V,60HZ

### **RESULTS**

Please refer to appendix A.



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

### <u>LIMITS</u>

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

### TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.8 for DTS bandwidth and clause 6.9 for Occupied Bandwidth.

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

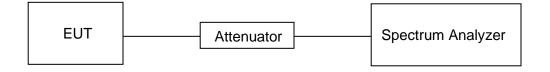
Center Frequency	The center frequency of the channel under test
Frequency Span	Between 1.5 times and 5.0 times the OBW
Detector	Peak
IBBW/	For 6 dB Bandwidth: 100 kHz For 99 % Occupied Bandwidth: 1 % to 5 % of the occupied bandwidth
VBW	For 6 dB Bandwidth: ≥3 × RBW For 99 % Occupied Bandwidth: ≥3 × RBW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

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

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



### **TEST SETUP**



### **TEST ENVIRONMENT**

Temperature	24.1 °C	Relative Humidity	64.4 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120V,60HZ

#### **RESULTS**

Please refer to appendix B & C.



### 7.3. CONDUCTED OUTPUT POWER

### <u>LIMITS</u>

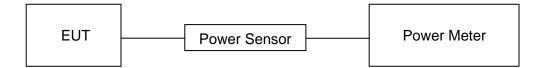
CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2				
Section Test Item Limit Frequency Range (MHz)				
CFR 47 FCC 15.247(b)(3) ISED RSS-247 5.4 (d)	Peak Output Power	1 watt or 30 dBm	2400-2483.5	

#### TEST PROCEDURE

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

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

#### TEST SETUP



#### TEST ENVIRONMENT

Temperature	24.1 °C	Relative Humidity	64.4 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120V,60HZ

#### **RESULTS**

Please refer to appendix D.



### 7.4. POWER SPECTRAL DENSITY

### <u>LIMITS</u>

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2				
Section Test Item Limit Frequency Rang (MHz)				
CFR 47 FCC §15.247 (e) ISED RSS-247 5.2 (b)	Power Spectral Density	8 dBm/3 kHz	2400-2483.5	

#### TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.10.

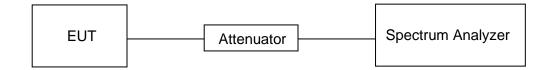
Connect the EUT to the spectrum analyser and use the following settings:

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

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

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

#### TEST SETUP



#### **TEST ENVIRONMENT**

Temperature	24.1 °C	Relative Humidity	64.4 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120V,60HZ

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Please refer to appendix E.



### 7.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

### <u>LIMITS</u>

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2			
Section Test Item Limit			
CFR 47 FCC §15.247 (d) ISED RSS-247 5.5	Conducted Bandedge and Spurious Emissions	at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power	

### TEST PROCEDURE

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

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

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

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

Change the settings for emission level measurement:

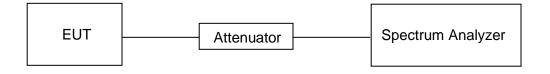
	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100 kHz
VBW	≥3 × RBW
measurement points	≥span/RBW
Trace	Max hold
Sweep time	Auto couple.

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

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### **TEST SETUP**



#### **TEST ENVIRONMENT**

Temperature	24.1 °C	Relative Humidity	64.4 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120V,60HZ

### **RESULTS**

Please refer to appendix F & G.



## 8. RADIATED TEST RESULTS

### <u>LIMITS</u>

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

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

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

Emissions radiated outside of the specified frequency bands above 30 MHz				
Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/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	
	500	74	54	

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

ISED General field strength limits at frequencies below 30 MHz

Table 6 – General field strength limits at 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 please refer to ISED RSS-GEN Clause 8.10

MHz	MHz	GHz
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	158.52475 - 158.52525	9.3 - 9.5
2.1735 - 2.1905	158.7 - 156.9	10.6 - 12.7
3.020 - 3.028	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 - 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	980 - 1427	31.2 - 31.8
8.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1845.5 - 1848.5	Above 38.6
8.382 - 8.388	1660 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3260 - 3267	
18.42 - 18.423	3332 - 3339	
18.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.8	7250 - 7750	
74.8 - 75.2	8025 - 8500	
108 – 138		

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

### FCC Restricted bands of operation refer to FCC §15.205 (a):

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

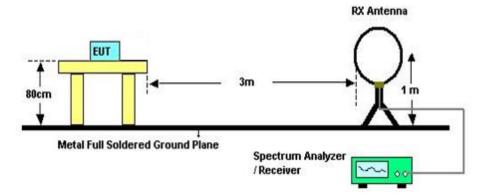
Note: <sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz. <sup>2</sup>Above 38.6c

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### TEST SETUP AND PROCEDURE

Below 30 MHz



The setting of the spectrum analyser

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

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.4.

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 1 m height antenna tower.

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

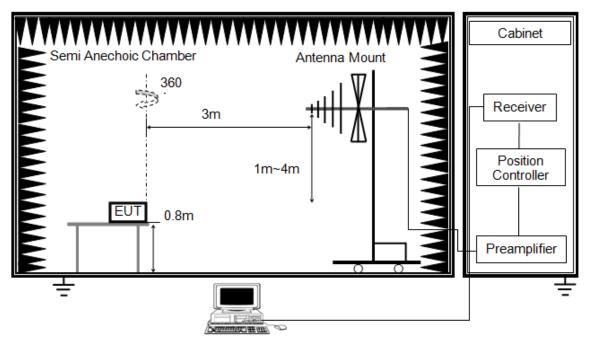
6. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak and average detector mode remeasured. If the emission level of the EUT measured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

7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 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.

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### Below 1 GHz and above 30 MHz



The setting of the spectrum analyser

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

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

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

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

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

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



### Above 1 GHz Cabinet emi Anechoic Chamber Antenna Mount 360 Receiver 3m 1m~4m Position Controller EÜT 1.5m 1m Preamplifier 5

The setting of the spectrum analyser

RBW	MHz			
IV BW	EAK: 3 MHz VG: see note 6			
Sweep	Auto			
Detector	Peak			
Trace	Max hold			

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

2. The EUT was arranged to its worst case and then tune the antenna tower (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.

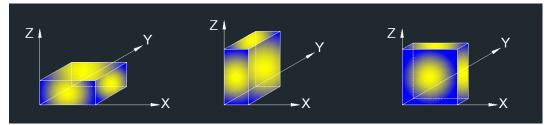
5. For measurement above 1 GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.

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.

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X axis, Y axis, Z axis positions:



Note 1: The manufacturer has recommended that the EUT only be used in the desktop (horizontal) orientation; therefore, all radiated testing was performed in desktop orientation(X).

Note 2: The EUT does not support simultaneous transmission.

Note 3: 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.

#### TEST ENVIRONMENT

Temperature	23.5 °C	Relative Humidity	58 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120V,60HZ

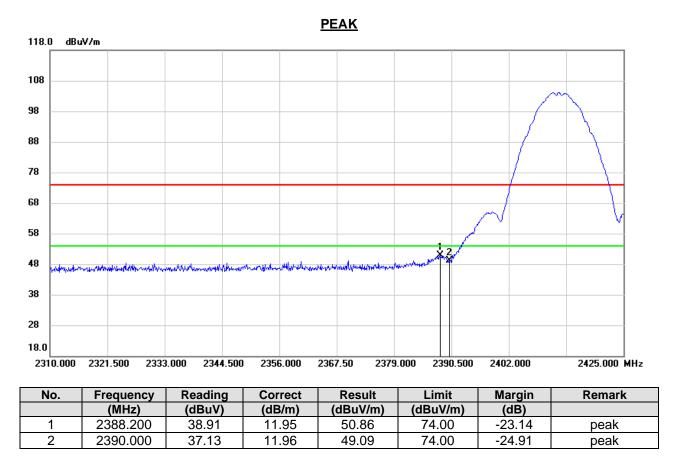
#### **RESULTS**



### 8.1.1. 802.11b SISO MODE

### ANTENNA 1 TEST RESULTS (WORST CASE)

### RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



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

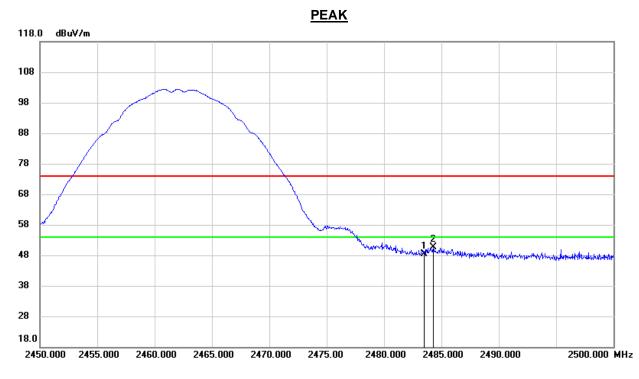
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	36.07	12.38	48.45	74.00	-25.55	peak
2	2484.300	38.21	12.38	50.59	74.00	-23.41	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.

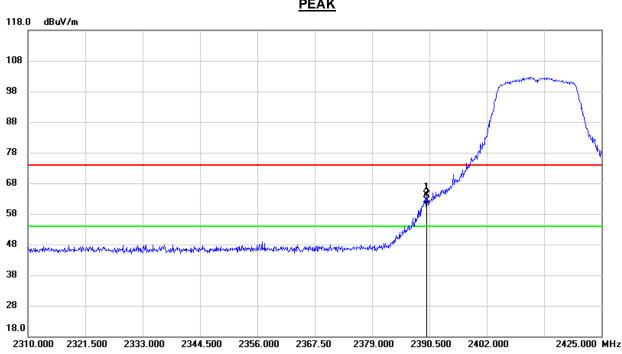
Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report. Note: Both antennas have been tested, only the worst data was recorded in the report.



No.

#### 8.1.2. 802.11g SISO MODE

ANTENNA 1 TEST RESULTS (WORST CASE)



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

	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.925	52.21	11.96	64.17	74.00	-9.83	peak
2	2390.000	50.37	11.96	62.33	74.00	-11.67	peak

Correct

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

Reading

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

Result

Limit

Margin

Remark

3. Peak: Peak detector.

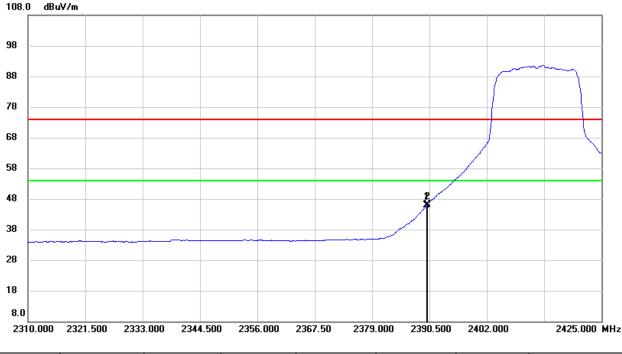
Frequency

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)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.925	33.86	11.96	45.82	54.00	-8.18	AVG
2	2390.000	34.05	11.96	46.01	54.00	-7.99	AVG

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

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

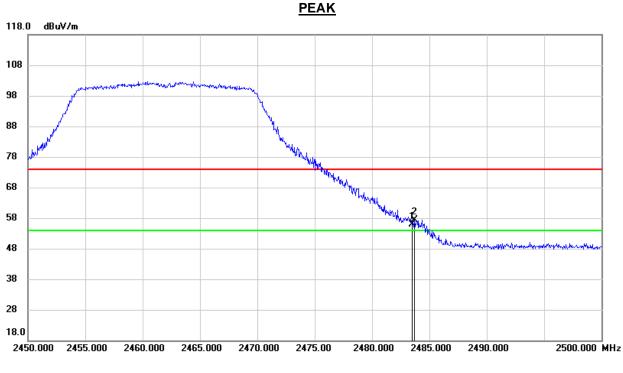
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	43.52	12.38	55.90	74.00	-18.10	peak
2	2483.700	45.06	12.38	57.44	74.00	-16.56	peak

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

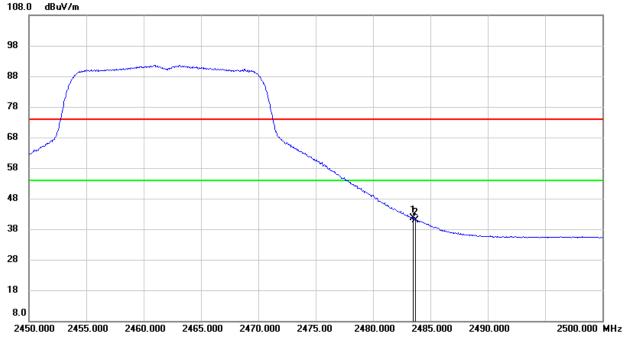
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	29.24	12.38	41.62	54.00	-12.38	AVG
2	2483.700	28.61	12.38	40.99	54.00	-13.01	AVG

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

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

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

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

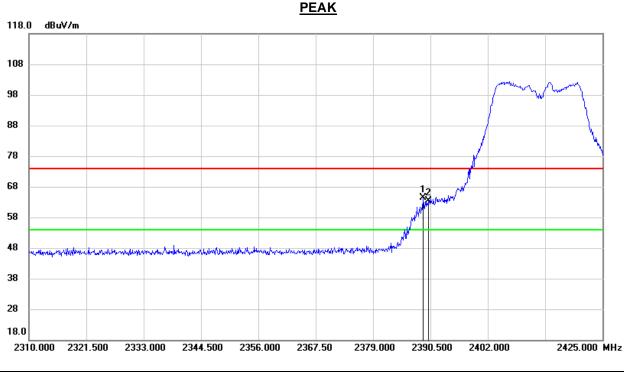
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

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



8.1.3. 802.11n HT20 MIMO MODE

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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.005	52.54	11.95	64.49	74.00	-9.51	peak
2	2390.000	51.46	11.96	63.42	74.00	-10.58	peak

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

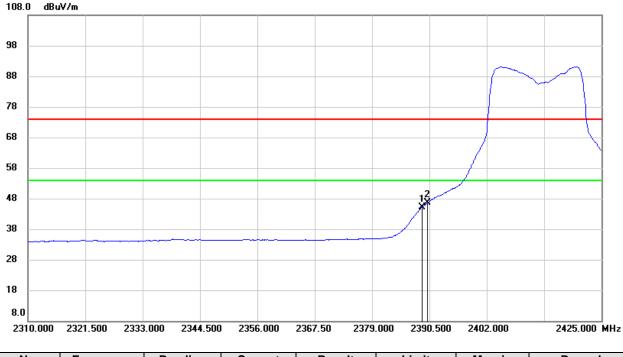
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.005	33.21	11.95	45.16	54.00	-8.84	AVG
2	2390.000	34.62	11.96	46.58	54.00	-7.42	AVG

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

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

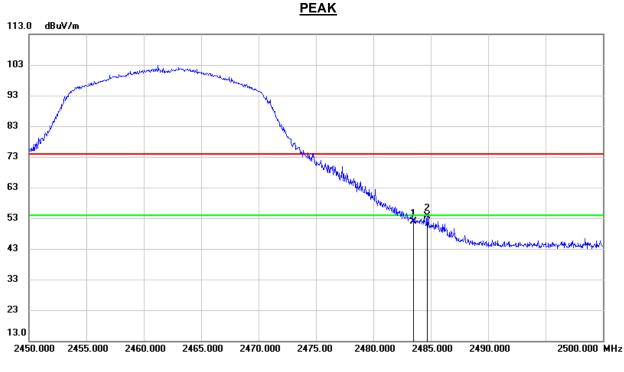
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	39.43	12.38	51.81	74.00	-22.19	peak
2	2484.700	41.26	12.38	53.64	74.00	-20.36	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.

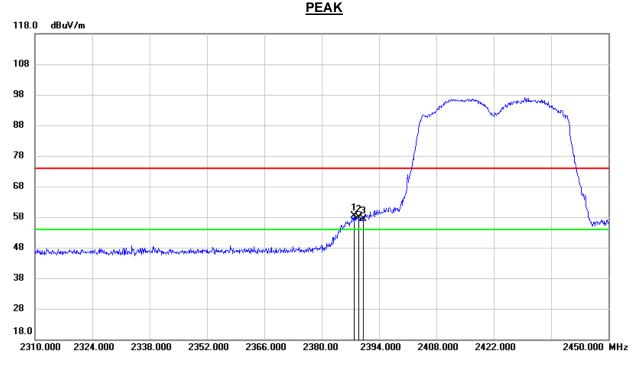
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

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





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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2387.980	46.54	11.95	58.49	74.00	-15.51	peak
2	2389.100	46.02	11.95	57.97	74.00	-16.03	peak
3	2390.000	45.35	11.96	57.31	74.00	-16.69	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.

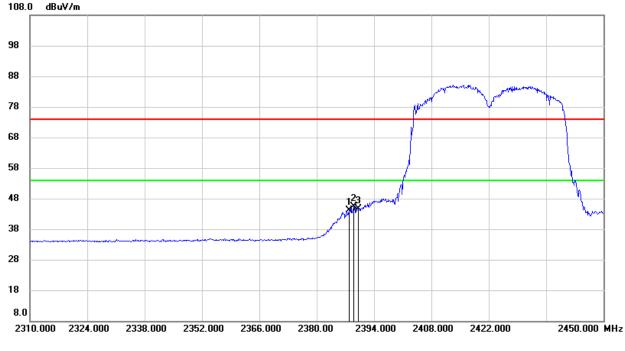
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

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



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2387.980	32.27	11.95	44.22	54.00	-9.78	AVG
2	2389.100	33.37	11.95	45.32	54.00	-8.68	AVG
3	2390.000	32.72	11.96	44.68	54.00	-9.32	AVG

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

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

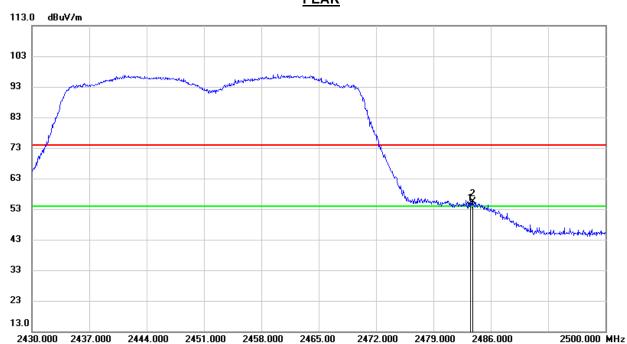
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	41.52	12.38	53.90	74.00	-20.10	peak
2	2483.760	42.94	12.38	55.32	74.00	-18.68	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.

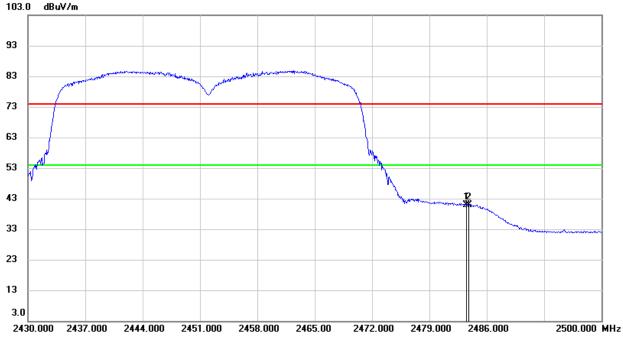
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

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<u>PEAK</u>



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	28.59	12.38	40.97	54.00	-13.03	AVG
2	2483.760	28.39	12.38	40.77	54.00	-13.23	AVG

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

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

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

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

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

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

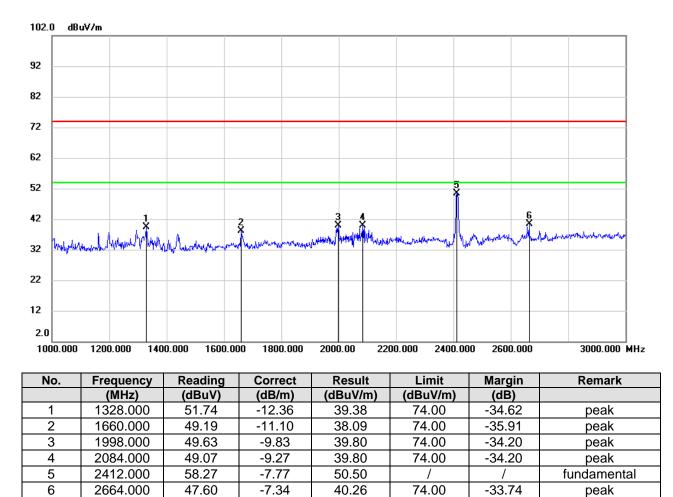


# 8.2. SPURIOUS EMISSIONS (1 GHz ~ 3 GHz)

# 8.2.1. 802.11b SISO MODE

# ANTENNA 1 TEST RESULTS (WORST CASE)

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



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

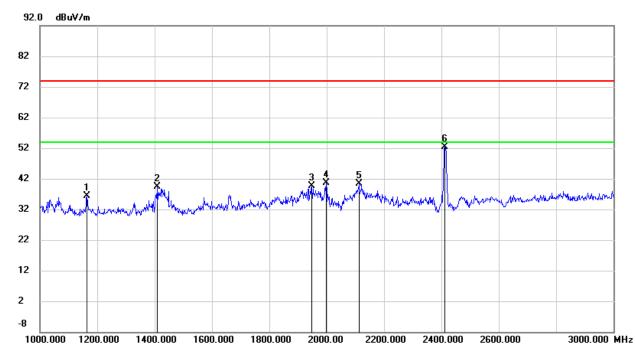
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1164.000	49.25	-12.97	36.28	74.00	-37.72	peak
2	1410.000	51.62	-12.36	39.26	74.00	-34.74	peak
3	1948.000	49.40	-9.89	39.51	74.00	-34.49	peak
4	1998.000	50.51	-9.83	40.68	74.00	-33.32	peak
5	2112.000	49.38	-9.10	40.28	74.00	-33.72	peak
6	2412.000	60.25	-7.77	52.48	/	/	fundamental

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

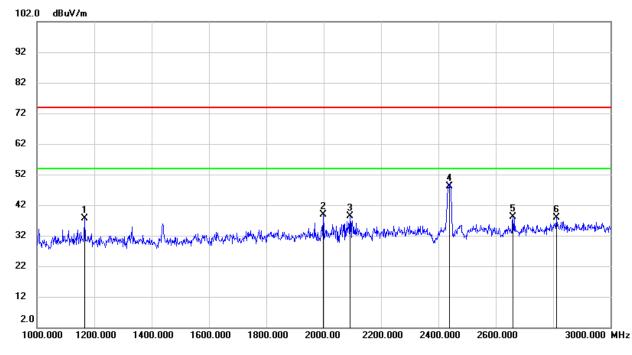
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



# HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1166.000	50.49	-12.96	37.53	74.00	-36.47	peak
2	1998.000	48.67	-9.83	38.84	74.00	-35.16	peak
3	2092.000	47.54	-9.20	38.34	74.00	-35.66	peak
4	2437.000	55.79	-7.60	48.19	/	/	fundamental
5	2660.000	45.41	-7.35	38.06	74.00	-35.94	peak
6	2812.000	43.88	-6.00	37.88	74.00	-36.12	peak

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

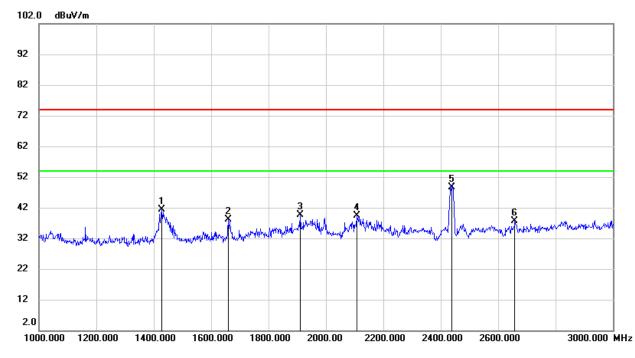
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1428.000	53.61	-12.34	41.27	74.00	-32.73	peak
2	1660.000	49.26	-11.10	38.16	74.00	-35.84	peak
3	1910.000	49.55	-9.93	39.62	74.00	-34.38	peak
4	2108.000	48.49	-9.12	39.37	74.00	-34.63	peak
5	2437.000	56.19	-7.60	48.59	/	/	fundamental
6	2658.000	44.99	-7.37	37.62	74.00	-36.38	peak

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

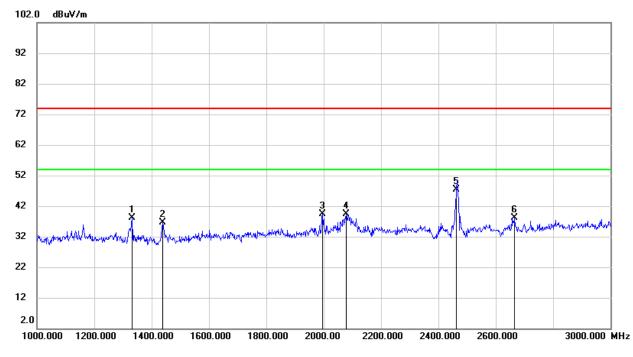
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1332.000	50.50	-12.35	38.15	74.00	-35.85	peak
2	1438.000	49.01	-12.32	36.69	74.00	-37.31	peak
3	1996.000	49.17	-9.83	39.34	74.00	-34.66	peak
4	2078.000	48.73	-9.30	39.43	74.00	-34.57	peak
5	2462.000	54.71	-7.43	47.28	/	/	fundamental
6	2666.000	45.37	-7.32	38.05	74.00	-35.95	peak

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

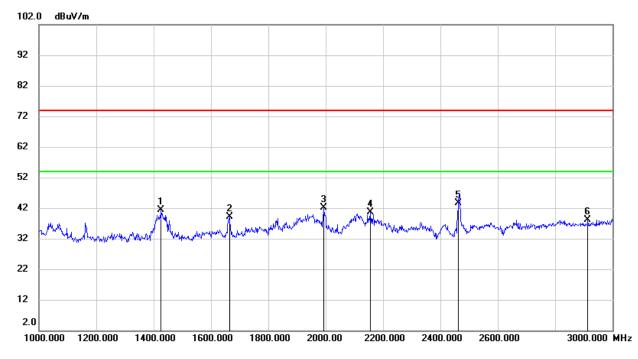
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



# HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1426.000	53.72	-12.34	41.38	74.00	-32.62	peak
2	1664.000	50.18	-11.09	39.09	74.00	-34.91	peak
3	1994.000	51.92	-9.83	42.09	74.00	-31.91	peak
4	2156.000	49.55	-8.88	40.67	74.00	-33.33	peak
5	2462.000	51.10	-7.43	43.67	/	/	fundamental
6	2914.000	43.60	-5.50	38.10	74.00	-35.90	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.

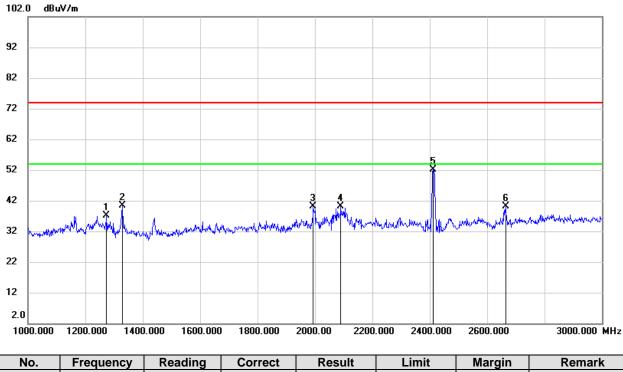
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

Note: Both the two antennas had been tested, but only the worst data was recorded in the report.



8.2.2. 802.11g SISO MODE

ANTENNA 1 TEST RESULTS (WORST CASE)



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

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1274.000	49.47	-12.43	37.04	74.00	-36.96	peak
2	1330.000	52.70	-12.36	40.34	74.00	-33.66	peak
3	1994.000	50.03	-9.83	40.20	74.00	-33.80	peak
4	2090.000	49.30	-9.22	40.08	74.00	-33.92	peak
5	2412.000	59.79	-7.77	52.02	/	/	fundamental
6	2664.000	47.49	-7.34	40.15	74.00	-33.85	peak

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

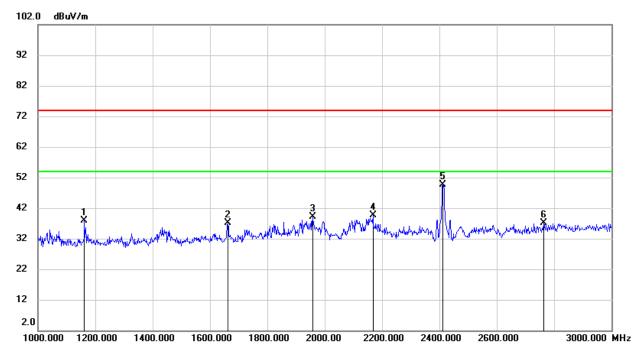
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1162.000	50.91	-13.00	37.91	74.00	-36.09	peak
2	1662.000	48.14	-11.09	37.05	74.00	-36.95	peak
3	1958.000	49.08	-9.87	39.21	74.00	-34.79	peak
4	2168.000	48.49	-8.82	39.67	74.00	-34.33	peak
5	2412.000	57.51	-7.77	49.74	/	/	fundamental
6	2764.000	43.67	-6.45	37.22	74.00	-36.78	peak

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

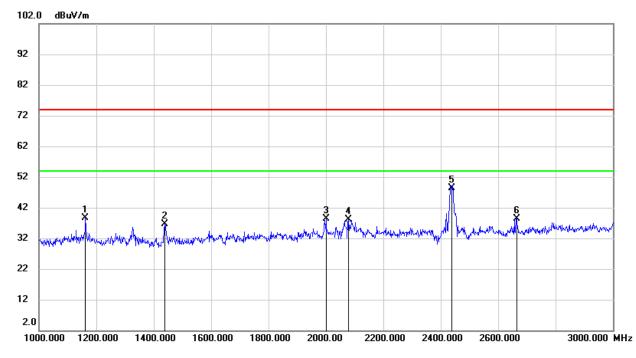
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



# HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1162.000	51.59	-13.00	38.59	74.00	-35.41	peak
2	1438.000	49.02	-12.32	36.70	74.00	-37.30	peak
3	2000.000	48.08	-9.82	38.26	74.00	-35.74	peak
4	2078.000	47.42	-9.30	38.12	74.00	-35.88	peak
5	2437.000	56.01	-7.60	48.41	/	/	fundamental
6	2664.000	45.82	-7.34	38.48	74.00	-35.52	peak

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

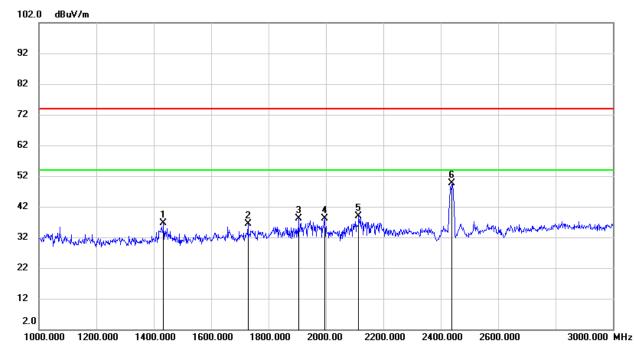
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1434.000	48.85	-12.33	36.52	74.00	-37.48	peak
2	1728.000	46.92	-10.62	36.30	74.00	-37.70	peak
3	1904.000	48.18	-9.94	38.24	74.00	-35.76	peak
4	1996.000	47.84	-9.83	38.01	74.00	-35.99	peak
5	2114.000	48.00	-9.08	38.92	74.00	-35.08	peak
6	2437.000	57.25	-7.60	49.65	/	/	fundamental

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

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

3. Peak: Peak detector.

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



#### 102.0 dBuV/m 92 82 72 62 52 42 ê 32 22 12 2.0 3000.000 MHz 1000.000 1200.000 1400.000 1600.000 1800.000 2000.00 2200.000 2400.000 2600.000

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

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1162.000	52.07	-13.00	39.07	74.00	-34.93	peak
2	1326.000	52.32	-12.35	39.97	74.00	-34.03	peak
3	2000.000	49.46	-9.82	39.64	74.00	-34.36	peak
4	2082.000	49.02	-9.28	39.74	74.00	-34.26	peak
5	2462.000	54.66	-7.43	47.23	/	/	fundamental
6	2662.000	47.59	-7.35	40.24	74.00	-33.76	peak

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

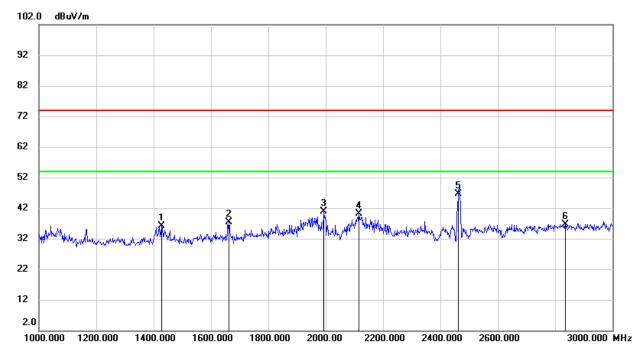
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1428.000	48.43	-12.34	36.09	74.00	-37.91	peak
2	1662.000	48.55	-11.09	37.46	74.00	-36.54	peak
3	1994.000	50.65	-9.83	40.82	74.00	-33.18	peak
4	2116.000	49.15	-9.08	40.07	74.00	-33.93	peak
5	2462.000	53.96	-7.43	46.53	/	/	fundamental
6	2836.000	42.57	-5.87	36.70	74.00	-37.30	peak

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

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

3. Peak: Peak detector.

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

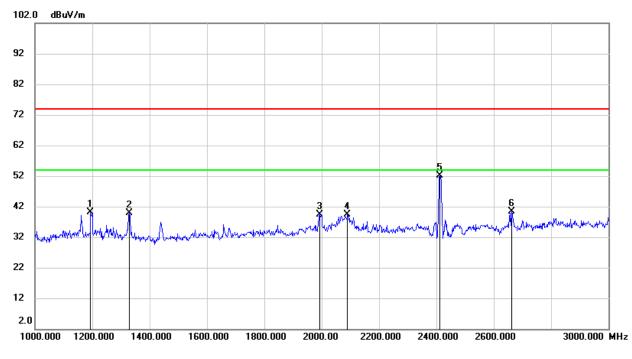
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

Note: Both the two antennas had been tested, but only the worst data was recorded in the report.









No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1194.000	52.75	-12.72	40.03	74.00	-33.97	peak
2	1330.000	52.24	-12.36	39.88	74.00	-34.12	peak
3	1992.000	49.22	-9.83	39.39	74.00	-34.61	peak
4	2090.000	48.60	-9.22	39.38	74.00	-34.62	peak
5	2412.000	59.89	-7.77	52.12	/	/	fundamental
6	2662.000	47.62	-7.35	40.27	74.00	-33.73	peak

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

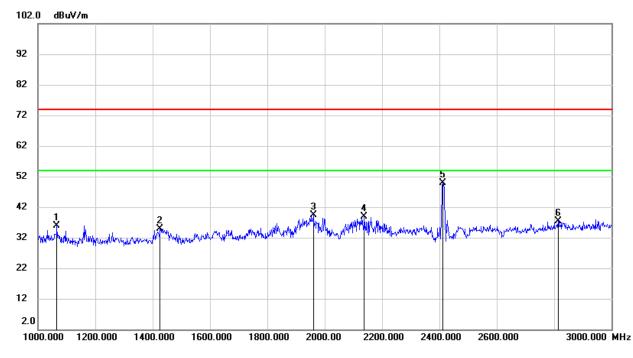
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1066.000	49.54	-13.54	36.00	74.00	-38.00	peak
2	1426.000	47.31	-12.34	34.97	74.00	-39.03	peak
3	1960.000	49.37	-9.87	39.50	74.00	-34.50	peak
4	2138.000	47.78	-8.97	38.81	74.00	-35.19	peak
5	2412.000	57.53	-7.77	49.76	/	/	fundamental
6	2814.000	43.45	-5.98	37.47	74.00	-36.53	peak

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

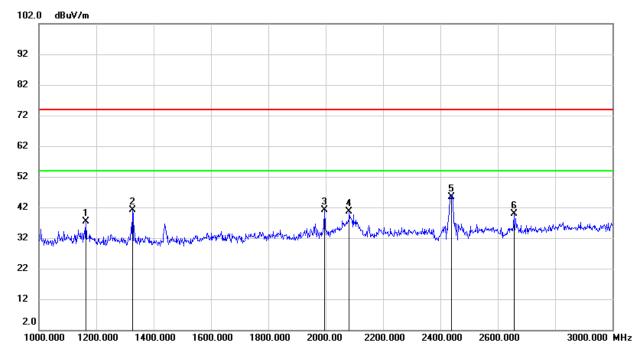
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1164.000	50.35	-12.97	37.38	74.00	-36.62	peak
2	1326.000	53.44	-12.35	41.09	74.00	-32.91	peak
3	1996.000	51.03	-9.83	41.20	74.00	-32.80	peak
4	2082.000	49.95	-9.28	40.67	74.00	-33.33	peak
5	2437.000	53.10	-7.60	45.50	/	/	fundamental
6	2656.000	47.24	-7.38	39.86	74.00	-34.14	peak

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

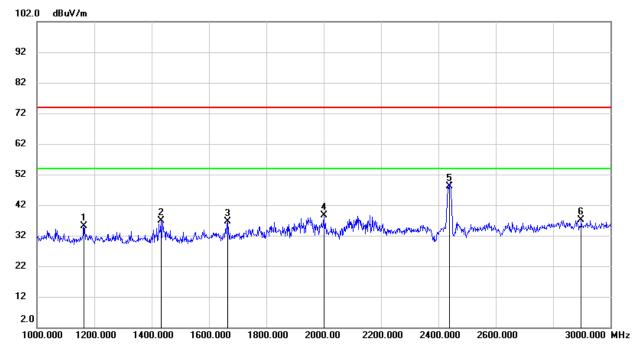
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1164.000	48.19	-12.97	35.22	74.00	-38.78	peak
2	1432.000	49.24	-12.33	36.91	74.00	-37.09	peak
3	1666.000	47.63	-11.07	36.56	74.00	-37.44	peak
4	2000.000	48.50	-9.82	38.68	74.00	-35.32	peak
5	2437.000	55.85	-7.60	48.25	/	/	fundamental
6	2898.000	42.66	-5.53	37.13	74.00	-36.87	peak

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

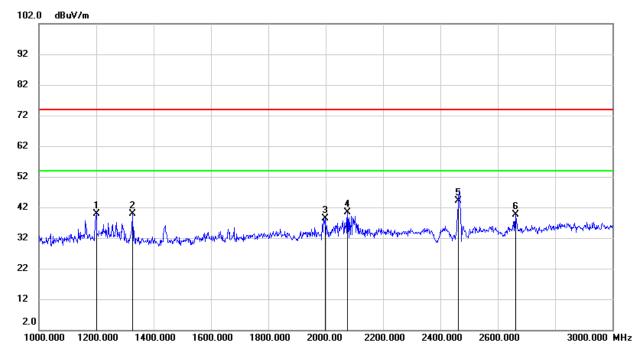
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1200.000	52.57	-12.68	39.89	74.00	-34.11	peak
2	1326.000	52.35	-12.35	40.00	74.00	-34.00	peak
3	1998.000	48.32	-9.83	38.49	74.00	-35.51	peak
4	2076.000	49.69	-9.31	40.38	74.00	-33.62	peak
5	2462.000	51.65	-7.43	44.22	/	/	fundamental
6	2662.000	47.07	-7.35	39.72	74.00	-34.28	peak

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

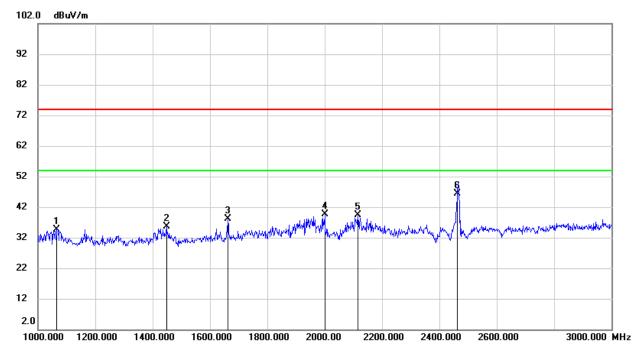
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1066.000	48.27	-13.54	34.73	74.00	-39.27	peak
2	1448.000	47.91	-12.30	35.61	74.00	-38.39	peak
3	1662.000	49.31	-11.09	38.22	74.00	-35.78	peak
4	2000.000	49.41	-9.82	39.59	74.00	-34.41	peak
5	2116.000	48.42	-9.08	39.34	74.00	-34.66	peak
6	2462.000	53.87	-7.43	46.44	/	/	fundamental

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

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

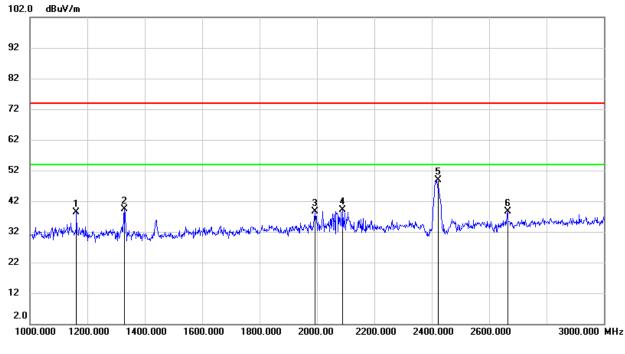
3. Peak: Peak detector.

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









No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1162.000	51.50	-13.00	38.50	74.00	-35.50	peak
2	1328.000	51.63	-12.36	39.27	74.00	-34.73	peak
3	1994.000	48.43	-9.83	38.60	74.00	-35.40	peak
4	2090.000	48.38	-9.22	39.16	74.00	-34.84	peak
5	2422.000	56.56	-7.71	48.85	/	/	fundamental
6	2664.000	46.09	-7.34	38.75	74.00	-35.25	peak

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

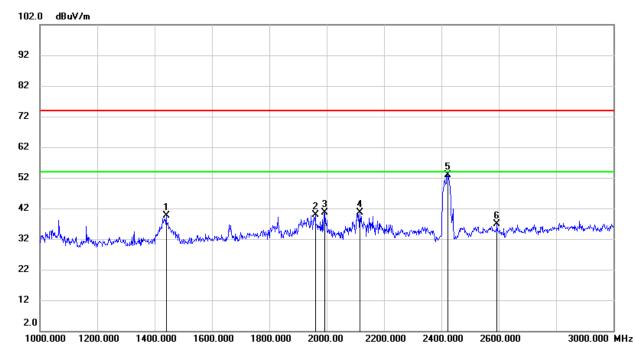
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1440.000	51.85	-12.32	39.53	74.00	-34.47	peak
2	1960.000	49.84	-9.87	39.97	74.00	-34.03	peak
3	1994.000	50.51	-9.83	40.68	74.00	-33.32	peak
4	2116.000	49.69	-9.08	40.61	74.00	-33.39	peak
5	2422.000	60.68	-7.71	52.97	/	/	fundamental
6	2594.000	44.50	-7.67	36.83	74.00	-37.17	peak

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

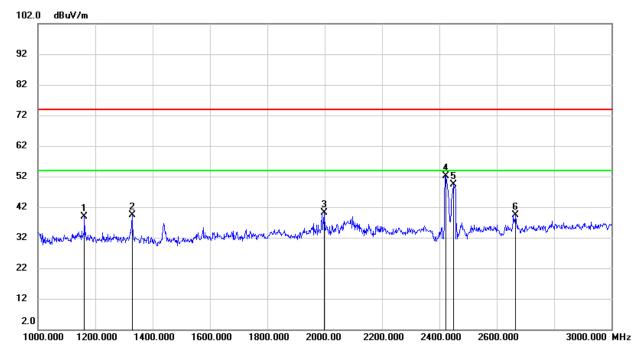
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



# HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1162.000	51.76	-13.00	38.76	74.00	-35.24	peak
2	1328.000	51.84	-12.36	39.48	74.00	-34.52	peak
3	1998.000	49.90	-9.83	40.07	74.00	-33.93	peak
4	2422.000	59.96	-7.71	52.25	74.00	-21.75	peak
5	2450.000	56.85	-7.51	49.34	74.00	-24.66	peak
6	2666.000	46.72	-7.32	39.40	74.00	-34.60	peak

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

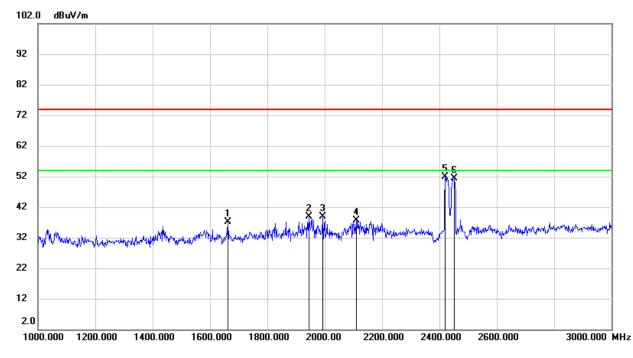
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1662.000	48.17	-11.09	37.08	74.00	-36.92	peak
2	1946.000	48.82	-9.90	38.92	74.00	-35.08	peak
3	1992.000	48.76	-9.83	38.93	74.00	-35.07	peak
4	2110.000	46.67	-9.10	37.57	74.00	-36.43	peak
5	2420.000	59.57	-7.72	51.85	74.00	-22.15	peak
6	2452.000	58.95	-7.50	51.45	74.00	-22.55	peak

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

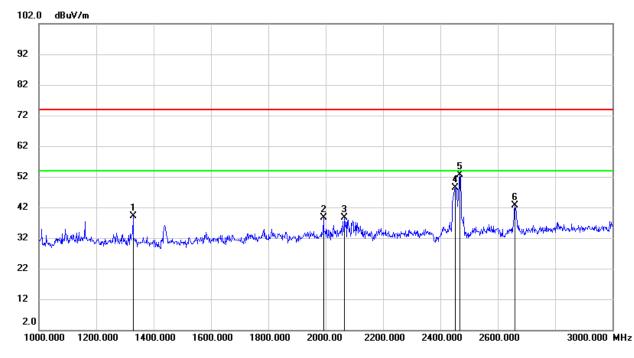
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1328.000	51.55	-12.36	39.19	74.00	-34.81	peak
2	1992.000	48.43	-9.83	38.60	74.00	-35.40	peak
3	2066.000	48.04	-9.39	38.65	74.00	-35.35	peak
4	2452.000	55.88	-7.50	48.38	/	/	fundamental
5	2468.000	59.99	-7.39	52.60	74.00	-21.40	peak
6	2660.000	49.97	-7.35	42.62	74.00	-31.38	peak

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

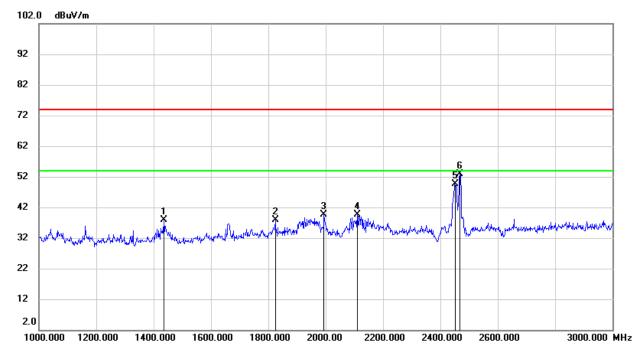
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1436.000	50.09	-12.33	37.76	74.00	-36.24	peak
2	1824.000	47.78	-9.93	37.85	74.00	-36.15	peak
3	1994.000	49.35	-9.83	39.52	74.00	-34.48	peak
4	2110.000	48.75	-9.10	39.65	74.00	-34.35	peak
5	2452.000	57.05	-7.50	49.55	/	/	fundamental
6	2468.000	60.30	-7.39	52.91	74.00	-21.09	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.

-24.15

-21.28

-20.53

peak

peak

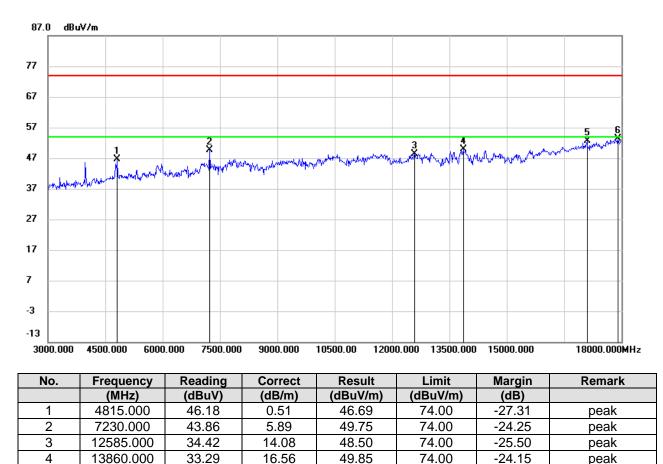
peak

#### SPURIOUS EMISSIONS (3 GHz ~ 18 GHz) 8.3.

#### 8.3.1. 802.11b SISO MODE

# ANTENNA 1 TEST RESULTS (WORST CASE)

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



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

33.29

32.08

30.12

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

49.85

52.72

53.47

74.00

74.00

3. Peak: Peak detector.

17100.000

17910.000

4

5

6

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

16.56

20.64

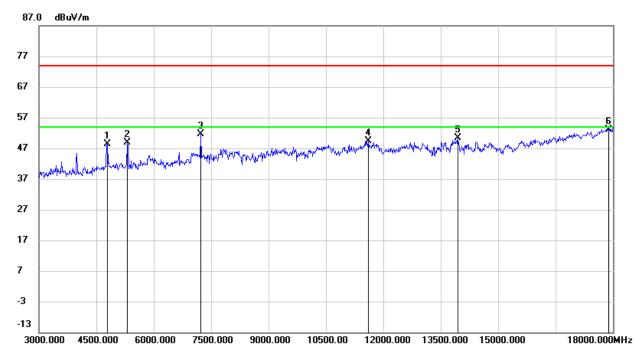
23.35

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4785.000	47.91	0.42	48.33	74.00	-25.67	peak
2	5310.000	46.75	2.02	48.77	74.00	-25.23	peak
3	7230.000	45.75	5.89	51.64	74.00	-22.36	peak
4	11610.000	36.31	13.15	49.46	74.00	-24.54	peak
5	13950.000	34.23	16.11	50.34	74.00	-23.66	peak
6	17880.000	29.81	23.34	53.15	74.00	-20.85	peak

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

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

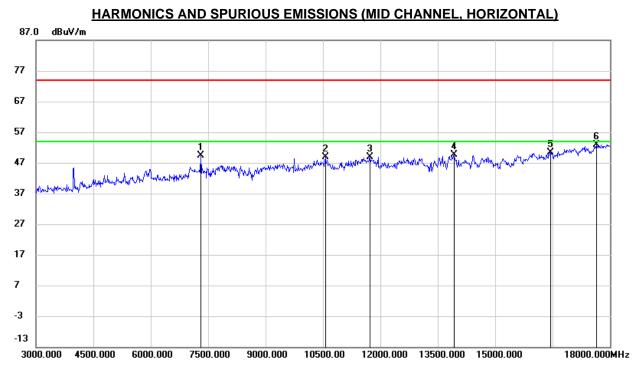
3. Peak: Peak detector.

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

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

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





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	7305.000	43.40	6.08	49.48	74.00	-24.52	peak
2	10560.000	37.13	11.73	48.86	74.00	-25.14	peak
3	11730.000	35.86	13.02	48.88	74.00	-25.12	peak
4	13920.000	33.47	16.17	49.64	74.00	-24.36	peak
5	16440.000	31.56	18.94	50.50	74.00	-23.50	peak
6	17640.000	30.78	22.05	52.83	74.00	-21.17	peak

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

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

3. Peak: Peak detector.

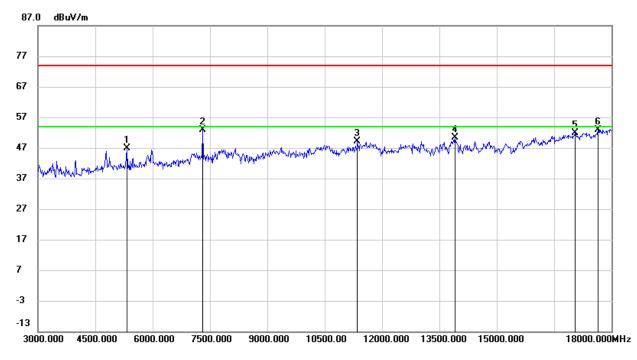
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5325.000	45.01	1.99	47.00	74.00	-27.00	peak
2	7305.000	46.81	6.08	52.89	74.00	-21.11	peak
3	11355.000	36.66	12.48	49.14	74.00	-24.86	peak
4	13905.000	34.06	16.20	50.26	74.00	-23.74	peak
5	17040.000	31.45	20.49	51.94	74.00	-22.06	peak
6	17640.000	30.86	22.05	52.91	74.00	-21.09	peak

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

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

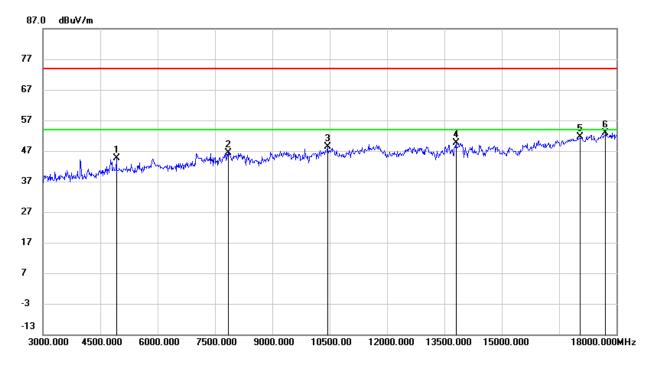
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4920.000	43.61	0.96	44.57	74.00	-29.43	peak
2	7845.000	38.72	7.62	46.34	74.00	-27.66	peak
3	10440.000	37.14	11.13	48.27	74.00	-25.73	peak
4	13800.000	32.61	17.10	49.71	74.00	-24.29	peak
5	17055.000	30.99	20.53	51.52	74.00	-22.48	peak
6	17715.000	30.34	22.56	52.90	74.00	-21.10	peak

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

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

3. Peak: Peak detector.

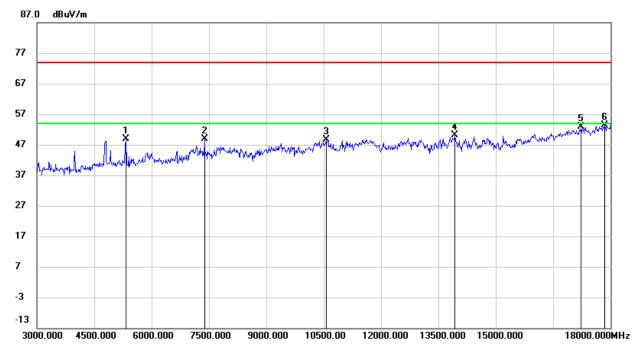
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5325.000	46.79	1.99	48.78	74.00	-25.22	peak
2	7380.000	42.51	6.41	48.92	74.00	-25.08	peak
3	10560.000	36.86	11.73	48.59	74.00	-25.41	peak
4	13935.000	33.90	16.15	50.05	74.00	-23.95	peak
5	17235.000	31.76	21.21	52.97	74.00	-21.03	peak
6	17850.000	30.16	23.32	53.48	74.00	-20.52	peak

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

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

3. Peak: Peak detector.

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

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

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

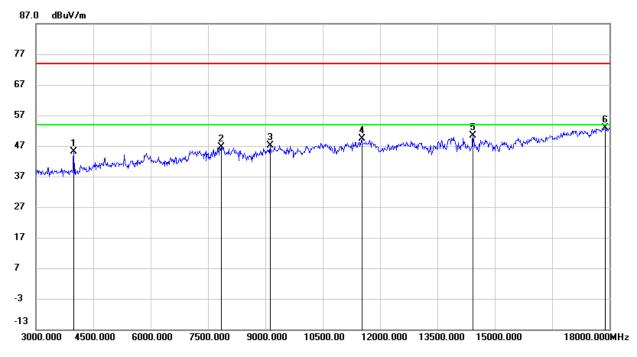
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

Note: Both the two antennas had been tested, but only the worst data was recorded in the report.



# 8.3.2. 802.11g SISO MODE

ANTENNA 1 TEST RESULTS (WORST CASE)



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

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3990.000	47.93	-2.89	45.04	74.00	-28.96	peak
2	7845.000	38.92	7.62	46.54	74.00	-27.46	peak
3	9120.000	37.92	9.16	47.08	74.00	-26.92	peak
4	11520.000	35.90	13.38	49.28	74.00	-24.72	peak
5	14430.000	34.09	16.35	50.44	74.00	-23.56	peak
6	17880.000	29.58	23.34	52.92	74.00	-21.08	peak

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

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

3. Peak: Peak detector.

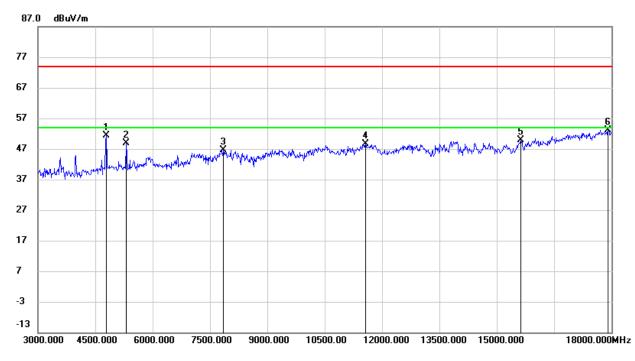
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4785.000	50.89	0.42	51.31	74.00	-22.69	peak
2	5310.000	46.87	2.02	48.89	74.00	-25.11	peak
3	7845.000	39.05	7.62	46.67	74.00	-27.33	peak
4	11565.000	35.30	13.26	48.56	74.00	-25.44	peak
5	15630.000	32.89	16.89	49.78	74.00	-24.22	peak
6	17910.000	29.78	23.35	53.13	74.00	-20.87	peak

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

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

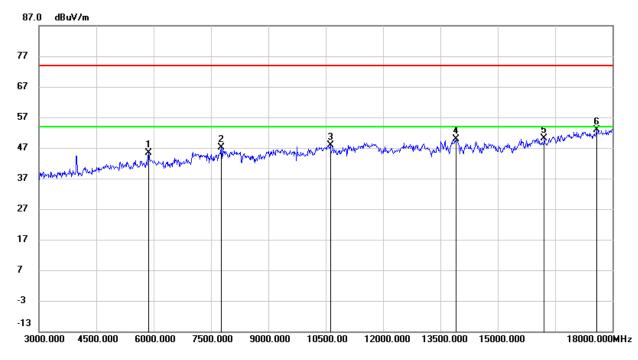
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5865.000	41.16	4.30	45.46	74.00	-28.54	peak
2	7770.000	39.59	7.50	47.09	74.00	-26.91	peak
3	10620.000	36.06	11.88	47.94	74.00	-26.06	peak
4	13905.000	33.67	16.20	49.87	74.00	-24.13	peak
5	16215.000	31.67	18.48	50.15	74.00	-23.85	peak
6	17580.000	31.13	21.71	52.84	74.00	-21.16	peak

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

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

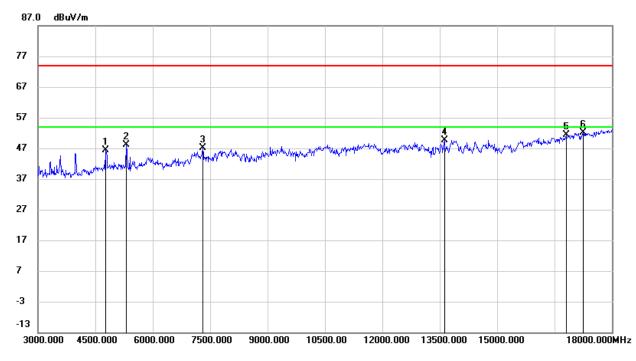
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

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







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4770.000	46.09	0.37	46.46	74.00	-27.54	peak
2	5310.000	46.14	2.02	48.16	74.00	-25.84	peak
3	7305.000	40.98	6.08	47.06	74.00	-26.94	peak
4	13620.000	33.72	15.99	49.71	74.00	-24.29	peak
5	16800.000	31.47	19.95	51.42	74.00	-22.58	peak
6	17250.000	30.71	21.33	52.04	74.00	-21.96	peak

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

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

3. Peak: Peak detector.

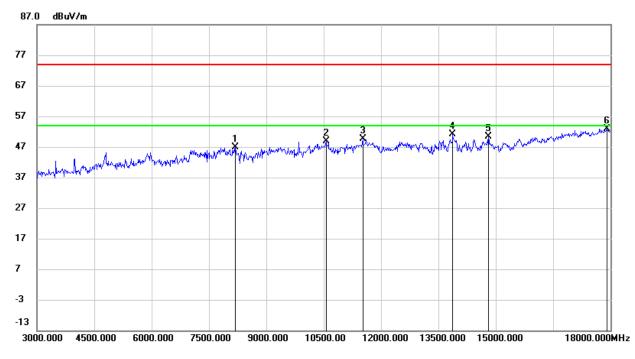
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8190.000	38.59	8.36	46.95	74.00	-27.05	peak
2	10560.000	37.12	11.73	48.85	74.00	-25.15	peak
3	11520.000	36.22	13.38	49.60	74.00	-24.40	peak
4	13875.000	34.59	16.44	51.03	74.00	-22.97	peak
5	14805.000	34.34	15.92	50.26	74.00	-23.74	peak
6	17910.000	29.54	23.35	52.89	74.00	-21.11	peak

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

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

3. Peak: Peak detector.

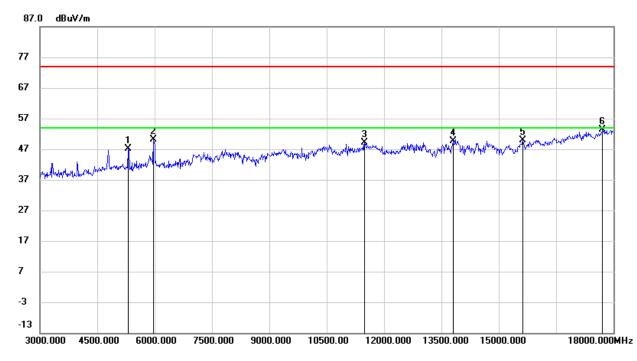
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5310.000	45.04	2.02	47.06	74.00	-26.94	peak
2	5970.000	46.43	3.79	50.22	74.00	-23.78	peak
3	11490.000	35.69	13.34	49.03	74.00	-24.97	peak
4	13800.000	32.45	17.10	49.55	74.00	-24.45	peak
5	15630.000	32.91	16.89	49.80	74.00	-24.20	peak
6	17715.000	30.84	22.56	53.40	74.00	-20.60	peak

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

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

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

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

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

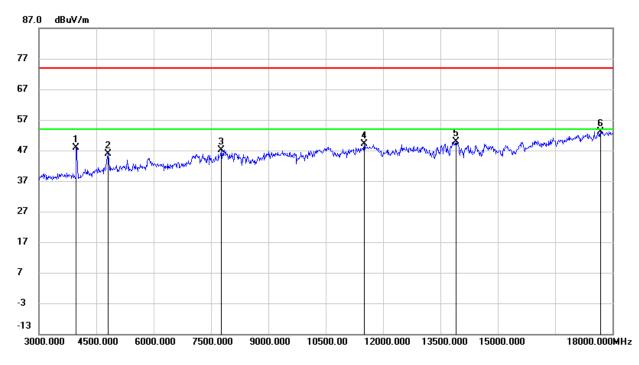
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

Note: Both the two antennas had been tested, but only the worst data was recorded in the report.









No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3975.000	50.80	-2.90	47.90	74.00	-26.10	peak
2	4800.000	45.54	0.46	46.00	74.00	-28.00	peak
3	7770.000	39.60	7.50	47.10	74.00	-26.90	peak
4	11505.000	35.71	13.42	49.13	74.00	-24.87	peak
5	13905.000	33.67	16.20	49.87	74.00	-24.13	peak
6	17685.000	30.80	22.33	53.13	74.00	-20.87	peak

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

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

3. Peak: Peak detector.

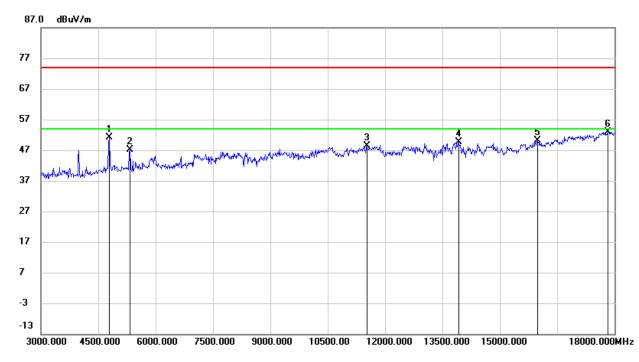
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4785.000	50.78	0.42	51.20	74.00	-22.80	peak
2	5325.000	45.03	1.99	47.02	74.00	-26.98	peak
3	11520.000	35.07	13.38	48.45	74.00	-25.55	peak
4	13920.000	33.42	16.17	49.59	74.00	-24.41	peak
5	15990.000	32.33	17.68	50.01	74.00	-23.99	peak
6	17835.000	29.69	23.31	53.00	74.00	-21.00	peak

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

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

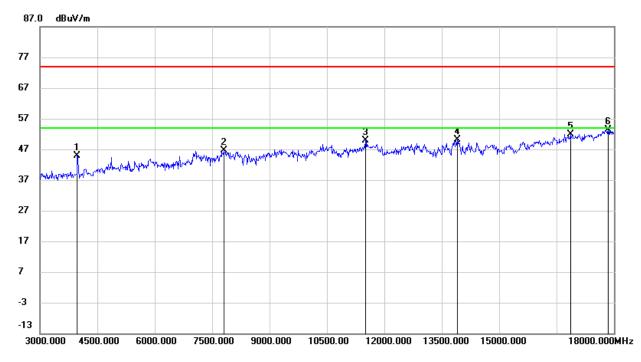
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3975.000	47.83	-2.90	44.93	74.00	-29.07	peak
2	7800.000	38.68	7.93	46.61	74.00	-27.39	peak
3	11505.000	36.43	13.42	49.85	74.00	-24.15	peak
4	13905.000	33.85	16.20	50.05	74.00	-23.95	peak
5	16860.000	31.88	19.95	51.83	74.00	-22.17	peak
6	17850.000	29.96	23.32	53.28	74.00	-20.72	peak

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

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

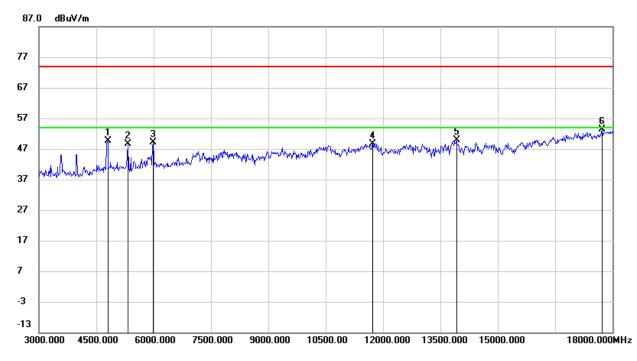
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

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







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4800.000	49.10	0.46	49.56	74.00	-24.44	peak
2	5325.000	46.56	1.99	48.55	74.00	-25.45	peak
3	5985.000	45.61	3.54	49.15	74.00	-24.85	peak
4	11730.000	35.73	13.02	48.75	74.00	-25.25	peak
5	13920.000	33.80	16.17	49.97	74.00	-24.03	peak
6	17730.000	30.68	22.70	53.38	74.00	-20.62	peak

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

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

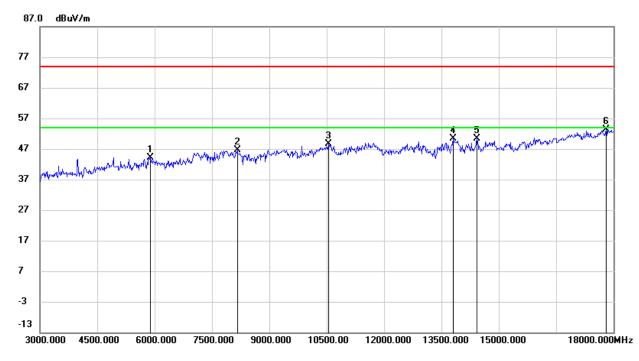
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5880.000	39.55	4.59	44.14	74.00	-29.86	peak
2	8160.000	38.39	8.18	46.57	74.00	-27.43	peak
3	10545.000	36.89	11.64	48.53	74.00	-25.47	peak
4	13800.000	33.16	17.10	50.26	74.00	-23.74	peak
5	14430.000	34.05	16.35	50.40	74.00	-23.60	peak
6	17805.000	30.06	23.31	53.37	74.00	-20.63	peak

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

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

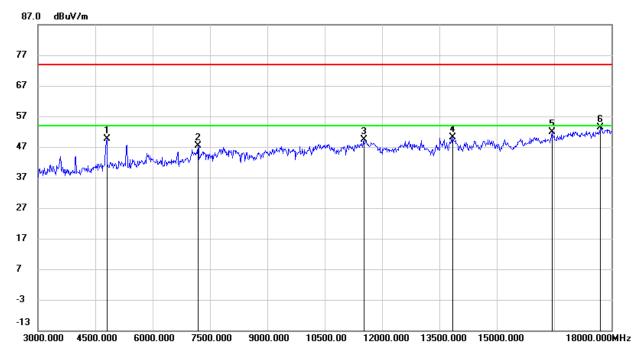
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4800.000	49.20	0.46	49.66	74.00	-24.34	peak
2	7185.000	41.47	5.83	47.30	74.00	-26.70	peak
3	11520.000	36.00	13.38	49.38	74.00	-24.62	peak
4	13845.000	33.41	16.70	50.11	74.00	-23.89	peak
5	16440.000	32.89	18.94	51.83	74.00	-22.17	peak
6	17700.000	30.83	22.43	53.26	74.00	-20.74	peak

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

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

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

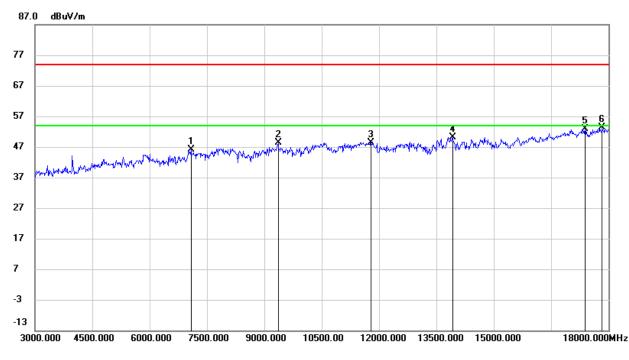
5. For the transmitting duration, please refer to clause 7.1.

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









No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	7080.000	40.15	5.89	46.04	74.00	-27.96	peak
2	9360.000	39.02	9.36	48.38	74.00	-25.62	peak
3	11790.000	35.32	13.17	48.49	74.00	-25.51	peak
4	13920.000	33.94	16.17	50.11	74.00	-23.89	peak
5	17385.000	31.33	21.46	52.79	74.00	-21.21	peak
6	17835.000	29.99	23.31	53.30	74.00	-20.70	peak

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

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

3. Peak: Peak detector.

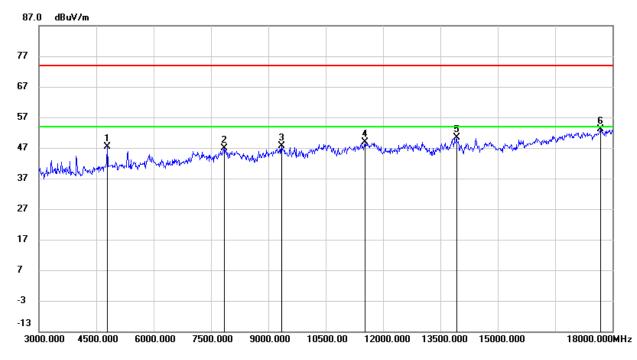
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4785.000	46.93	0.42	47.35	74.00	-26.65	peak
2	7845.000	39.22	7.62	46.84	74.00	-27.16	peak
3	9345.000	38.32	9.26	47.58	74.00	-26.42	peak
4	11535.000	35.66	13.33	48.99	74.00	-25.01	peak
5	13920.000	34.16	16.17	50.33	74.00	-23.67	peak
6	17685.000	30.72	22.33	53.05	74.00	-20.95	peak

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

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

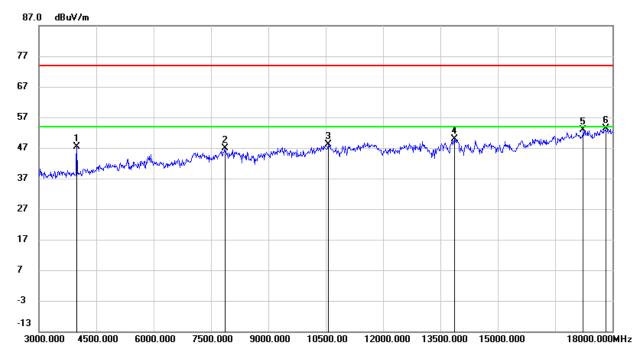
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

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







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3990.000	50.24	-2.89	47.35	74.00	-26.65	peak
2	7860.000	39.38	7.51	46.89	74.00	-27.11	peak
3	10560.000	36.49	11.73	48.22	74.00	-25.78	peak
4	13860.000	33.29	16.56	49.85	74.00	-24.15	peak
5	17235.000	31.60	21.21	52.81	74.00	-21.19	peak
6	17820.000	30.09	23.30	53.39	74.00	-20.61	peak

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

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

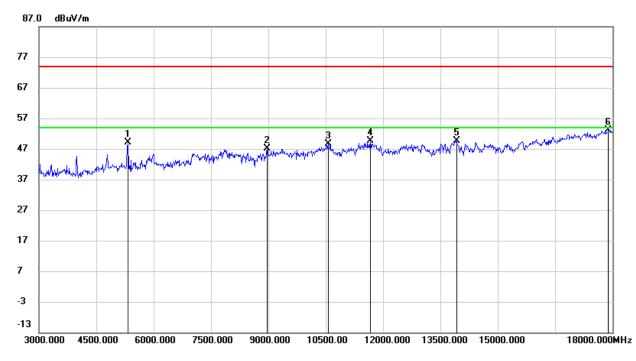
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

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







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5325.000	47.11	1.99	49.10	74.00	-24.90	peak
2	8970.000	38.21	9.00	47.21	74.00	-26.79	peak
3	10560.000	36.87	11.73	48.60	74.00	-25.40	peak
4	11670.000	36.52	13.01	49.53	74.00	-24.47	peak
5	13920.000	33.36	16.17	49.53	74.00	-24.47	peak
6	17895.000	29.85	23.34	53.19	74.00	-20.81	peak

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

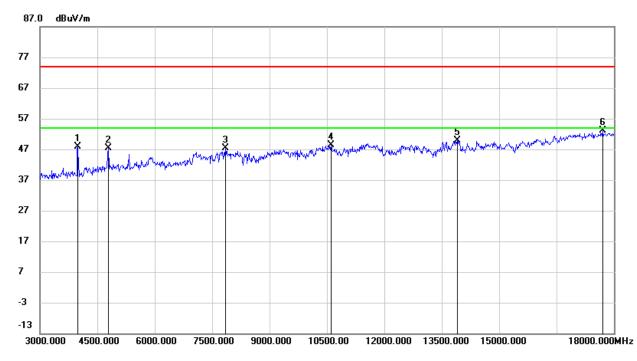
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3990.000	50.88	-2.89	47.99	74.00	-26.01	peak
2	4785.000	46.95	0.42	47.37	74.00	-26.63	peak
3	7845.000	39.76	7.62	47.38	74.00	-26.62	peak
4	10605.000	36.53	11.93	48.46	74.00	-25.54	peak
5	13905.000	33.62	16.20	49.82	74.00	-24.18	peak
6	17700.000	30.61	22.43	53.04	74.00	-20.96	peak

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

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

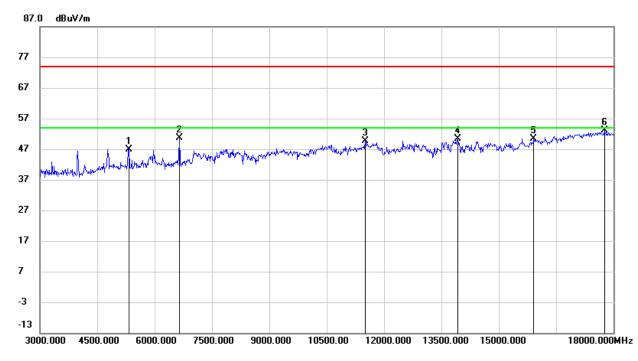
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5325.000	45.00	1.99	46.99	74.00	-27.01	peak
2	6645.000	45.40	5.22	50.62	74.00	-23.38	peak
3	11505.000	36.22	13.42	49.64	74.00	-24.36	peak
4	13935.000	34.19	16.15	50.34	74.00	-23.66	peak
5	15915.000	32.88	17.57	50.45	74.00	-23.55	peak
6	17760.000	30.14	22.95	53.09	74.00	-20.91	peak

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

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

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

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

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

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

Note: All antennas have been tested, only the worst data record in the report.

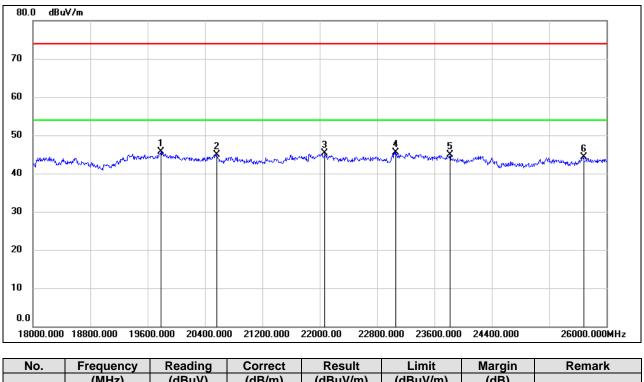


## 8.5. SPURIOUS EMISSIONS (18 GHz ~ 26 GHz)

### 8.5.1. 802.11b SISO MODE

### ANTENNA 1 TEST RESULTS (WORST CASE)

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



equency	Reading	Correct	Result	Limit	Margin	Remark
(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
784.000	51.08	-5.28	45.80	74.00	-28.20	peak
560.000	50.23	-5.30	44.93	74.00	-29.07	peak
2072.000	49.77	-4.41	45.36	74.00	-28.64	peak
8064.000	48.99	-3.42	45.57	74.00	-28.43	peak
8816.000	47.89	-3.08	44.81	74.00	-29.19	peak
680.000	45.21	-0.93	44.28	74.00	-29.72	peak
	(MHz) 0784.000 0560.000 2072.000 8064.000 8816.000	(MHz)         (dBuV)           0784.000         51.08           0560.000         50.23           2072.000         49.77           3064.000         48.99           3816.000         47.89	(MHz)         (dBuV)         (dB/m)           0784.000         51.08         -5.28           0560.000         50.23         -5.30           0272.000         49.77         -4.41           0364.000         48.99         -3.42           03816.000         47.89         -3.08	(MHz)(dBuV)(dB/m)(dBuV/m)0784.00051.08-5.2845.800560.00050.23-5.3044.932072.00049.77-4.4145.363064.00048.99-3.4245.573816.00047.89-3.0844.81	(MHz)(dBuV)(dB/m)(dBuV/m)(dBuV/m)0784.00051.08-5.2845.8074.000560.00050.23-5.3044.9374.000272.00049.77-4.4145.3674.0003064.00048.99-3.4245.5774.000816.00047.89-3.0844.8174.00	(MHz)(dBuV)(dB/m)(dBuV/m)(dBuV/m)(dB)0784.00051.08-5.2845.8074.00-28.200560.00050.23-5.3044.9374.00-29.072072.00049.77-4.4145.3674.00-28.643064.00048.99-3.4245.5774.00-28.433816.00047.89-3.0844.8174.00-29.19

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

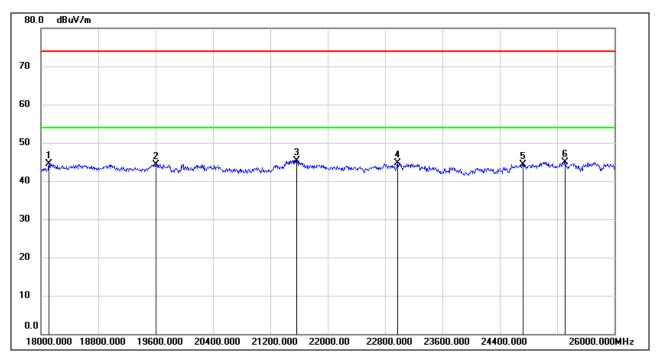
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. The preamplifier only effect to the above 18GHz signal and no filter added to the measurement chain.



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	18112.000	49.96	-5.47	44.49	74.00	-29.51	peak
2	19600.000	49.79	-5.43	44.36	74.00	-29.64	peak
3	21568.000	49.94	-4.59	45.35	74.00	-28.65	peak
4	22976.000	48.26	-3.46	44.80	74.00	-29.20	peak
5	24720.000	46.72	-2.33	44.39	74.00	-29.61	peak
6	25312.000	46.70	-1.70	45.00	74.00	-29.00	peak

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

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

3. Peak: Peak detector.

4. The preamplifier only effect to the above 18GHz signal and no filter added to the measurement chain.

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

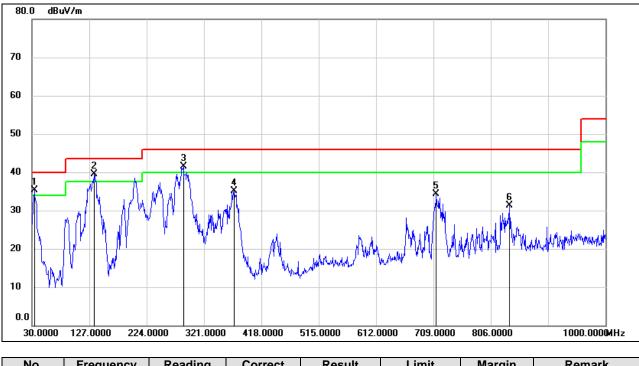


## 8.6. SPURIOUS EMISSIONS (30 MHz ~ 1 GHz)

### 8.6.1. 802.11b SISO MODE

### ANTENNA 1 TEST RESULTS (WORST CASE)

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



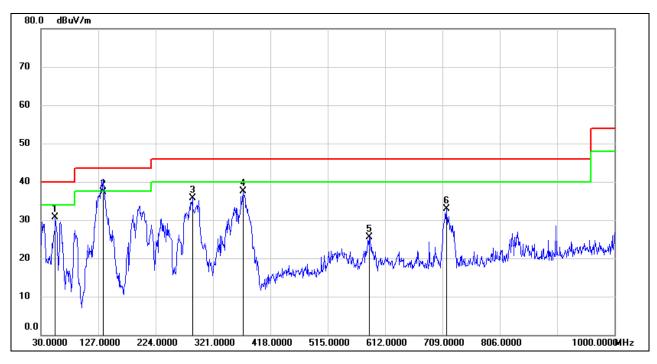
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	33.8800	52.73	-17.33	35.40	40.00	-4.60	QP
2	134.7600	58.92	-19.40	39.52	43.50	-3.98	QP
3	286.0799	56.35	-14.85	41.50	46.00	-4.50	QP
4	371.4400	48.29	-13.14	35.15	46.00	-10.85	QP
5	713.8500	40.87	-6.64	34.23	46.00	-11.77	QP
6	838.0100	36.27	-4.91	31.36	46.00	-14.64	QP

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	54.2500	49.43	-18.71	30.72	40.00	-9.28	QP
2	134.7600	56.75	-19.40	37.35	43.50	-6.15	QP
3	286.0799	50.48	-14.85	35.63	46.00	-10.37	QP
4	371.4400	50.66	-13.14	37.52	46.00	-8.48	QP
5	584.8400	34.57	-9.15	25.42	46.00	-20.58	QP
6	715.7900	39.39	-6.58	32.81	46.00	-13.19	QP

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

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

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

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

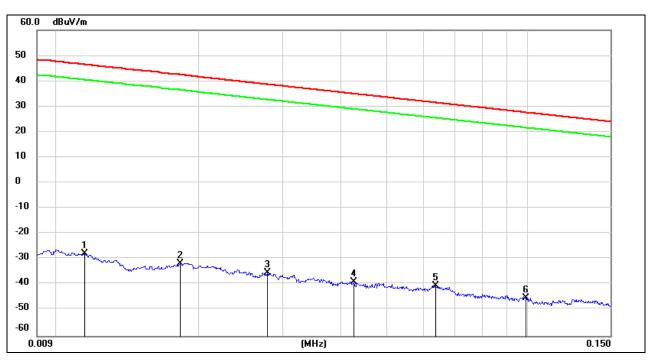


### 8.7. SPURIOUS EMISSIONS BELOW 30 MHz

### 8.7.1. 802.11b SISO MODE

### ANTENNA 1 TEST RESULTS (WORST CASE)

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



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

No.	Frequency	Reading	Correct	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.0114	73.50	-101.40	-27.90	46.46	-79.40	-5.04	-74.36	peak
2	0.0182	69.85	-101.36	-31.51	42.40	-83.01	-9.10	-73.91	peak
3	0.0279	66.17	-101.38	-35.21	38.69	-86.71	-12.81	-73.90	peak
4	0.0427	62.64	-101.45	-38.81	34.99	-90.31	-16.51	-73.80	peak
5	0.0636	61.31	-101.54	-40.23	31.53	-91.73	-19.97	-71.76	peak
6	0.0994	56.70	-101.80	-45.10	27.65	-96.60	-23.85	-72.75	peak

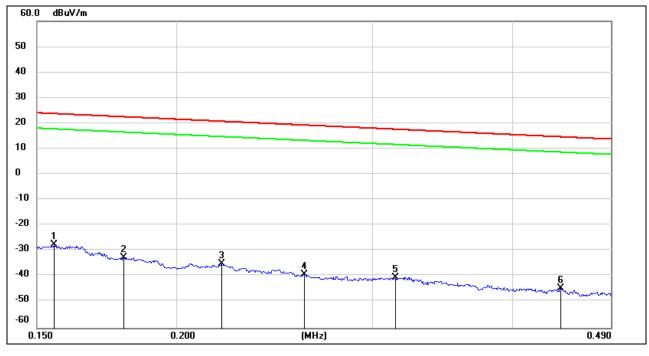
Note: 1. Measurement = Reading Level + Correct Factor ( $dBuA/m = dBuV/m - 20Log10[120\pi] = dBuV/m - 51.5$ ).

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

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



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



No.	Frequency	Reading	Correct	FCC	FCC	ISED	ISED	Margin	Remark
				Result	Limit	Result	Limit		
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.1554	74.27	-101.65	-27.38	23.77	-78.88	-27.73	-51.15	peak
2	0.1794	69.27	-101.68	-32.41	22.53	-83.91	-28.97	-54.94	peak
3	0.2197	66.77	-101.75	-34.98	20.76	-86.48	-30.74	-55.74	peak
4	0.2605	62.64	-101.81	-39.17	19.28	-90.67	-32.22	-58.45	peak
5	0.3140	61.64	-101.87	-40.23	17.66	-91.73	-33.84	-57.89	peak
6	0.4415	57.35	-102.01	-44.66	14.70	-96.16	-36.80	-59.36	peak

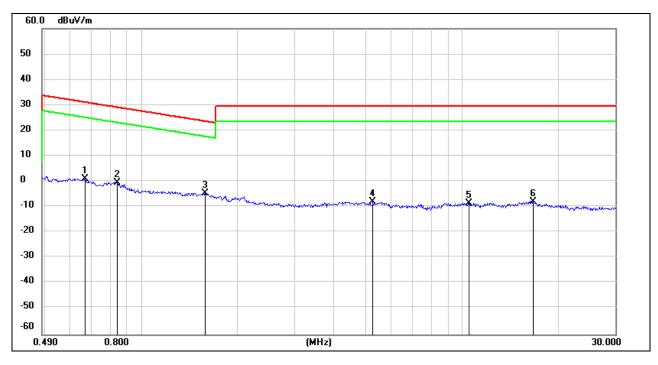
Note: 1. Measurement = Reading Level + Correct Factor ( $dBuA/m = dBuV/m - 20Log10[120\pi] = dBuV/m - 51.5$ ).

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

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



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



No.	Frequency	Reading	Correct	FCC	FCC	ISED	ISED	Margin	Remark
				Result	Limit	Result	Limit		
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.6671	63.25	-62.10	1.15	31.12	-50.35	-20.38	-29.97	peak
2	0.8400	61.71	-62.17	-0.46	29.12	-51.96	-22.38	-29.58	peak
3	1.5826	57.38	-62.01	-4.63	23.61	-56.13	-27.89	-28.24	peak
4	5.2705	53.54	-61.45	-7.91	29.54	-59.41	-21.96	-37.45	peak
5	10.5234	52.30	-60.82	-8.52	29.54	-60.02	-21.96	-38.06	peak
6	16.6021	53.02	-60.96	-7.94	29.54	-59.44	-21.96	-37.48	peak

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

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

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

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



## 9. AC POWER LINE CONDUCTED EMISSIONS

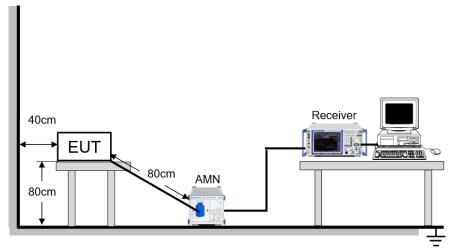
### LIMITS

Please refer to CFR 47 FCC §15.207 (a) and ISED RSS-Gen Clause 8.8

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

### TEST SETUP AND PROCEDURE

Refer to ANSI C63.10-2013 clause 6.2.



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

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

#### TEST ENVIRONMENT

Temperature	22 °C	Relative Humidity	68.9 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120V,60HZ

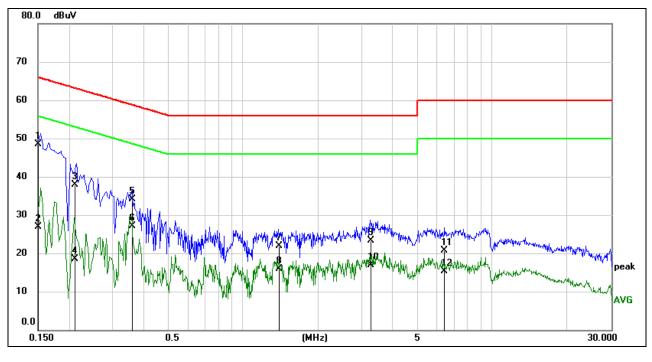
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### 9.1. 802.11b SISO MODE

### ANTENNA 1 TEST RESULTS (WORST CASE)

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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1501	48.52	0.01	48.53	65.99	-17.46	QP
2	0.1501	26.96	0.01	26.97	55.99	-29.02	AVG
3	0.2106	37.95	0.01	37.96	63.18	-25.22	QP
4	0.2106	18.50	0.01	18.51	53.18	-34.67	AVG
5	0.3560	34.04	0.01	34.05	58.82	-24.77	QP
6	0.3560	27.16	0.01	27.17	48.82	-21.65	AVG
7	1.4019	21.88	0.01	21.89	56.00	-34.11	QP
8	1.4019	15.94	0.01	15.95	46.00	-30.05	AVG
9	3.2656	23.25	0.03	23.28	56.00	-32.72	QP
10	3.2656	16.92	0.03	16.95	46.00	-29.05	AVG
11	6.4209	20.59	0.05	20.64	60.00	-39.36	QP
12	6.4209	15.17	0.05	15.22	50.00	-34.78	AVG

Note: 1. Result = Reading +Correct Factor.

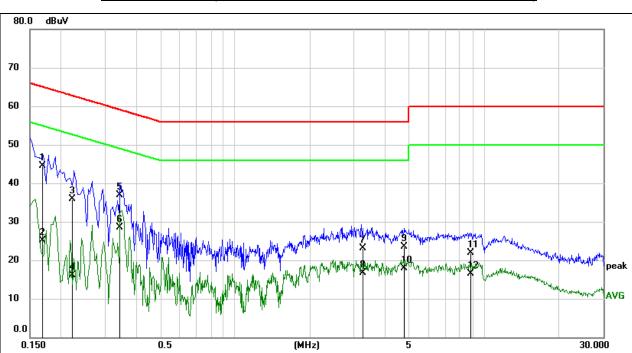
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.

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

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

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LINE L RESULTS (LOW CHANNEL, WORST-CASE CONFIGURATION)
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No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1681	34.86	9.61	44.47	65.05	-20.58	QP
2	0.1681	15.52	9.61	25.13	55.05	-29.92	AVG
3	0.2220	26.37	9.60	35.97	62.74	-26.77	QP
4	0.2220	6.45	9.60	16.05	52.74	-36.69	AVG
5	0.3458	27.22	9.60	36.82	59.06	-22.24	QP
6	0.3458	18.94	9.60	28.54	49.06	-20.52	AVG
7	3.2601	13.47	9.65	23.12	56.00	-32.88	QP
8	3.2601	7.05	9.65	16.70	46.00	-29.30	AVG
9	4.7601	13.91	9.67	23.58	56.00	-32.42	QP
10	4.7601	8.16	9.67	17.83	46.00	-28.17	AVG
11	8.8271	12.09	9.73	21.82	60.00	-38.18	QP
12	8.8271	6.73	9.73	16.46	50.00	-33.54	AVG

Note: 1. Result = Reading +Correct Factor.

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

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

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

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



## **10. ANTENNA REQUIREMENTS**

#### **APPLICABLE REQUIREMENTS**

#### Please refer to FCC §15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

### Please refer to FCC §15.247(b)(4)

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

### **RESULTS**

Complies



## APPENDIX A: DUTY CYCLE

### **Test Result**

Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
11b	8.107	8.211	0.9873	98.73%	0.0554	0.12	0.01
11g	1.341	1.44	0.9313	93.13%	0.3091	0.75	1
11n HT20	1.258	1.362	0.9236	92.36%	0.3452	0.79	1
11n HT40	0.6245	0.7169	0.8711	87.11%	0.5993	1.60	2

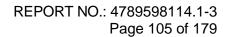
Note:

Duty Cycle Correction Factor=10log (1/x).

Where: x is Duty Cycle (Linear)

Where: T is On Time

If that calculated VBW is not available on the analyzer then the next higher value should be used.





### **Test Graphs**

- Reysignes	spectrum a	Analyzer - Swe	.pt on											
Center	Frea 2			Hz	Т	SENSE: rig Delay-20		#Avg Ty	ALIGN AUTO	0	2:10:15 PI TRAC	M Aug 26, 20 CE 1 2 3 4 PE WWWW	20	Frequency
o or nor 1	1091		NFE I	PNO: Fast FGain:Low	→ T #/	rig: Video Atten: 40 di	в				TYP		P P	
10 dB/div	Ref Re	Offset 19 f 35.00 c	.79 dB							ΔΜΙ		. <mark>211 m</mark> 1.71 d		Auto Tune
25.0						3∆1								Center Freq
15.0				_										2.437000000 GHz
5.00									_			TRIG L	×-	
-5.00										_				Start Freq
-15.0														2.437000000 GHz
-25.0														
-35.0														Stop Freq
-45.0														2.437000000 GHz
Center 2 Res BW			Hz	#\/F	3W 8.0	) MHz			Sweep	20.21		pan 0 H		CF Step 8.000000 MHz
MKR MODE			×	<i>"</i> •••	511 0.	y 141112	EUNC	TION LEI				ON VALUE		uto Man
1 N 2 Δ1	1 t 1 t		4	00.3 µs 107 ms (J	A) 2	4.14 dBm 2.02 dB								
<b>3</b> Δ1			8.	211 ms (	Δ)	1.71 dB								Freq Offset
4 5													E	0 Hz
6 7 8														Scale Type
9 10														
11													- Lo	og <u>Lin</u>
MSG									STAT	us				
									31/41					
						11B	Ant2	2437	,					
	pectrum /	Analyzer - Swe	pt SA			11B_	_Ant2	_2437	,					
Keysight S IXI R L	RF	50 Ω	DC	Hz	T	SENSE:	INT		ALIGN AUTO		TRAC	M Aug 26, 20 DE 1 2 3 4	5.6	Frequency
Keysight S	RF	50 Ω 2.43700	DC 0000 G NFE	Hz PNO: Fast FGain:Low			INT 00.0 µs		,		TRAC	M Aug 26, 20 2E 1 2 3 4 PE WWWW ET P P P P	5.6	
Keysight S R L Center	RF Freq 2 Ref	50 Ω 2.43700	DC 00000 G NFE II .79 dB	PNO: Fast		SENSE: rig Delay-20 rig: Video	INT 00.0 µs		ALIGN AUTO	) 0:	TRAC TYPE DE	E 1 2 3 4	56 PP	
10 dB/div	RF Freq 2 Ref	<u>50 Ω</u> 2.43700	DC 00000 G NFE II .79 dB	PNO: Fast		SENSE: rig Delay-2( rig: Video Atten: 40 dl	INT 00.0 µs B	#Avg Ty	ALIGN AUTO	) 0:	TRAC TYPE DE	E 1 2 3 4 PE WWWW ET P P P P .440 m	56 PP	Frequency Auto Tune
Keysight S R L Center	RF Freq 2 Ref	50 Ω 2.43700	DC 00000 G NFE 11 .79 dB 18m	PNO: Fast FGain:Low		SENSE: rig Delay-2( rig: Video Atten: 40 dl	INT 00.0 µs	#Avg Ty	ALIGN AUTO ppe: RMS	) 0:	TRAC TYP DE Kr3 1.	E 1 2 3 4 PE WWWW ET P P P P .440 m	S 6 P P B	Frequency
Exercise to the second	RF Freq 2 Ref	50 Ω 2.43700	DC 00000 G NFE 11 .79 dB 18m	PNO: Fast FGain:Low	TI #/	SENSE: rig Delay-2( rig: Video Atten: 40 dl	INT 00.0 µs B	#Avg Ty	ALIGN AUTO ppe: RMS		TRAC TYP DE Kr3 1.	440 m 0.35 d	S 6 P P B	Frequency Auto Tune Center Freq
25.0 Keysight S RL Center 10 dB/div 25.0 15.0	RF Freq 2 Ref	50 Ω 2.43700	DC 00000 G NFE 11 .79 dB 18m	PNO: Fast FGain:Low	TI #/	SENSE: rig Delay-2( rig: Video Atten: 40 dl	INT 00.0 µs B	#Avg Ty	ALIGN AUTO ppe: RMS		TRAC TYP DE Kr3 1.	440 m 0.35 d	S 6 P P B	Frequency Auto Tune Center Freq 2.437000000 GHz
Keysight S           XI         RL           Center         I           10         dB/div           25.0	RF Freq 2 Ref	50 Ω 2.43700	DC 00000 G NFE 11 .79 dB 18m	PNO: Fast FGain:Low	TI #/	SENSE: rig Delay-2( rig: Video Atten: 40 dl	INT 00.0 µs B	#Avg Ty	ALIGN AUTO ppe: RMS		TRAC TYP DE Kr3 1.	440 m 0.35 d	5 6 ₩ P P B B 	Frequency Auto Tune Center Freq
Keysight S           X         RL           Center         Image: Center           10         dB/div           25.0	RF Freq 2 Ref	50 Ω 2.43700	DC 00000 G NFE 11 .79 dB 18m	PNO: Fast FGain:Low	TI #/	SENSE: rig Delay-2( rig: Video Atten: 40 dl	INT 00.0 µs B	#Avg Ty	ALIGN AUTO ppe: RMS		TRAC TYP DE Kr3 1.	440 m 0.35 d	5 6 ₩ P P B B 	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq
Keysight S           RL           Center           10 dB/div           25.0           9           25.0           -5.00           -15.0           -25.0           -35.0	RF Freq 2 Ref	50 Ω 2.43700	DC 00000 G NFE 11 .79 dB 18m	PNO: Fast FGain:Low	TI #/	SENSE: rig Delay-2( rig: Video Atten: 40 dl	INT 00.0 µs B	#Avg Ty	ALIGN AUTO ppe: RMS		TRAC TYP DE Kr3 1.	440 m 0.35 d	5 6 ₩ P P B B 	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq
Keysight S           RL           Center           10 dB/div           25.0	RF Freq 2 Ref	50 Ω 2.43700	DC 00000 G NFE 11 .79 dB 18m	PNO: Fast FGain:Low	TI #/	SENSE: rig Delay-2( rig: Video Atten: 40 dl	INT 00.0 µs B	#Avg Ty	ALIGN AUTO ppe: RMS		TRAC TYP DE Kr3 1.	440 m 0.35 d		Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz
Keysight S           RL           Center           10 dB/div           25.0           25.0           5.00           -5.00           -35.0           -35.0           -55.0	Ref Ref	50 Q 2.43700 7 Offset 19 f 35.00 c	DC 00000 G	PNO: Fast FGain:Low	TI #/	SENSE: rig Delay-2( rig: Video Atten: 40 dl	INT 00.0 µs B	#Avg Ty	ALIGN AUTO ppe: RMS		TRAC TYP DE Kr3 1.	2E 12 34 PE WWWWITP PP P 440 m 0.35 d MWWWITP P MWWWITP PP TROOL		Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz Stop Freq 2.437000000 GHz
Keysight S           22         RL           25:0         25:0           15:0         14:0           5:00         15:0           -15:0	Ref Ref 2.4370	2.43700 2.43700 7 Offset 19 7 35.00 c	DC 00000 G	PNO: Fast FGain:Low		SENSE:	INT 00.0 µs B	#Avg Ty			TRAC TYP DE Kr3 1.	22 34 ET 2 34 ET P P P P 440 m 0.35 d m 100 100 100 100 100 100 100		Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz Stop Freq 2.437000000 GHz
Keysight S           RL           Center           10 dB/div           25.0           25.0           5.00           -5.00           -35.0           -35.0           -55.0	Ref Ref 2.4370 8 MH	2.43700 2.43700 7 Offset 19 f 35.00 c	DC 00000 G	PNO: Fast FGain:Low	TI #/	SENSE:	INT   00.0 μs B	#Avg Ty	ALIGN AUTO ppe: RMS		TRAC TYPE RC3 1.	22 34 ET 2 34 ET P P P P 440 m 0.35 d m 100 100 100 100 100 100 100	5 6 400 PP P S B M M M M M M M M M M M M M	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz Stop Freq 2.437000000 GHz
Keysight S           27         RL           Center         25.0           25.0         25.0           16.0         49.0           -5.0	Ref Ref Ref 2.4370 8 MH	2.43700 2.43700 6 f 35.00 c	DC         00000 G           NFE         II	#VIC: Fast FGain:Low	3W 8.0	SENSE: rig Delay-21 rig: Video Atten: 40 dl Participation Participation D MHz	INT 00.0 µs B	#Avg Ty	ALIGN AUTO rpe: RMS		TRAC TYPE RC3 1.	22 34 EV EV EV EV EV EV EV EV EV EV	5 6 400 PP P S B M M M M M M M M M M M M M	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz Stop Freq 2.437000000 GHz CF Step 8.000000 MHz Man
Keysight S           RL           Center           250           250           250           360           500           -500           -550           -500           -500           -500           -500      -500 <t< td=""><td>Ref Ref Ref 2.4370 8 MH:</td><td>2.43700 2.43700 6 f 35.00 c</td><td>DC 00000 G NFE 1 IBM 3∆1 TP PR 44 TP P</td><td>#VE</td><td>3W 8.6</td><td>SENSE: rig Delay-2t rig: Video Atten: 40 dl</td><td>INT 00.0 µs B FUNC</td><td>#Avg Ty</td><td>ALIGN AUTO rpe: RMS</td><td></td><td>TRAC TYPE RC3 1.</td><td>22 34 EV EV EV EV EV EV EV EV EV EV</td><td>5 6 400 PP P S B M M M M M M M M M M M M M</td><td>Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz Stop Freq 2.437000000 GHz CF Step 8.000000 MHz uto Man</td></t<>	Ref Ref Ref 2.4370 8 MH:	2.43700 2.43700 6 f 35.00 c	DC 00000 G NFE 1 IBM 3∆1 TP PR 44 TP P	#VE	3W 8.6	SENSE: rig Delay-2t rig: Video Atten: 40 dl	INT 00.0 µs B FUNC	#Avg Ty	ALIGN AUTO rpe: RMS		TRAC TYPE RC3 1.	22 34 EV EV EV EV EV EV EV EV EV EV	5 6 400 PP P S B M M M M M M M M M M M M M	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz Stop Freq 2.437000000 GHz CF Step 8.000000 MHz uto Man
Keysight S           RL           Center           250           250           250           360           500           -500           -550           -500           -500           -500           -500      -500 <t< td=""><td>Ref Ref Ref 2.4370 8 MH:</td><td>2.43700 2.43700 c Offset 19 f 35.00 c c Offset 29 f 35.00 c c Offset 20 f 35.00 c c Offset 29 f 35.00 c c Offset 29</td><td>DC 00000 G NFE 1 IBM 3∆1 TP PR 44 TP P</td><td>#VE</td><td>3W 8.6</td><td>SENSE: rig Delay-21 rig: Video Atten: 40 dl Meter 40 d</td><td>INT 00.0 µs B FUNC</td><td>#Avg Ty</td><td>ALIGN AUTO rpe: RMS</td><td></td><td>TRAC TYPE RC3 1.</td><td>22 34 EV EV EV EV EV EV EV EV EV EV</td><td>5 6 400 PP P S B M M M M M M M M M M M M M</td><td>Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz Stop Freq 2.437000000 GHz CF Step 8.000000 MHz Man</td></t<>	Ref Ref Ref 2.4370 8 MH:	2.43700 2.43700 c Offset 19 f 35.00 c c Offset 29 f 35.00 c c Offset 20 f 35.00 c c Offset 29 f 35.00 c c Offset 29	DC 00000 G NFE 1 IBM 3∆1 TP PR 44 TP P	#VE	3W 8.6	SENSE: rig Delay-21 rig: Video Atten: 40 dl Meter 40 d	INT 00.0 µs B FUNC	#Avg Ty	ALIGN AUTO rpe: RMS		TRAC TYPE RC3 1.	22 34 EV EV EV EV EV EV EV EV EV EV	5 6 400 PP P S B M M M M M M M M M M M M M	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz Stop Freq 2.437000000 GHz CF Step 8.000000 MHz Man
Keysight S           RL           Center           250           250           250           360           500           -500           -550           -500           -500           -500           -500      -500 <t< td=""><td>Ref Ref Ref 2.4370 8 MH:</td><td>2.43700 2.43700 c Offset 19 f 35.00 c c Offset 29 f 35.00 c c Offset 20 f 35.00 c c Offset 29 f 35.00 c c Offset 29</td><td>DC 00000 G NFE 1 IBM 3∆1 TP PR 44 TP P</td><td>#VE</td><td>3W 8.6</td><td>SENSE: rig Delay-21 rig: Video Atten: 40 dl Meter 40 d</td><td>INT 00.0 µs B FUNC</td><td>#Avg Ty</td><td>ALIGN AUTO rpe: RMS</td><td></td><td>TRAC TYPE RC3 1.</td><td>22 34 EV EV EV EV EV EV EV EV EV EV</td><td>5 6 400 PP P S B M M M M M M M M M M M M M</td><td>Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz Stop Freq 2.437000000 GHz CF Step 8.000000 MHz uto Man Freq Offset 0 Hz</td></t<>	Ref Ref Ref 2.4370 8 MH:	2.43700 2.43700 c Offset 19 f 35.00 c c Offset 29 f 35.00 c c Offset 20 f 35.00 c c Offset 29 f 35.00 c c Offset 29	DC 00000 G NFE 1 IBM 3∆1 TP PR 44 TP P	#VE	3W 8.6	SENSE: rig Delay-21 rig: Video Atten: 40 dl Meter 40 d	INT 00.0 µs B FUNC	#Avg Ty	ALIGN AUTO rpe: RMS		TRAC TYPE RC3 1.	22 34 EV EV EV EV EV EV EV EV EV EV	5 6 400 PP P S B M M M M M M M M M M M M M	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz Stop Freq 2.437000000 GHz CF Step 8.000000 MHz uto Man Freq Offset 0 Hz
Keysight S           RL           Center           10 dB/dlv           25.0           15.0           15.0           15.0           15.0           15.0           15.0           15.0           15.0           15.0           15.0           15.0           15.0           15.0           15.0           25.0           35.0           -55.0 </td <td>Ref Ref Ref 2.4370 8 MH:</td> <td>2.43700 2.43700 c Offset 19 f 35.00 c c Offset 29 f 35.00 c c Offset 20 f 35.00 c c Offset 29 f 35.00 c c Offset 29</td> <td>DC 00000 G NFE 1 IBM 3∆1 TP PR 44 TP P</td> <td>#VE</td> <td>3W 8.6</td> <td>SENSE: rig Delay-21 rig: Video Atten: 40 dl Meter 40 d</td> <td>INT 00.0 µs B FUNC</td> <td>#Avg Ty</td> <td>ALIGN AUTO rpe: RMS</td> <td></td> <td>TRAC TYPE RC3 1.</td> <td>22 34 EV EV EV EV EV EV EV EV EV EV</td> <td>S 6 P P P IS B </td> <td>Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz 2.437000000 GHz 8.00000 MHz 8.00000 MHz Uto Man Freq Offset 0 Hz Scale Type</td>	Ref Ref Ref 2.4370 8 MH:	2.43700 2.43700 c Offset 19 f 35.00 c c Offset 29 f 35.00 c c Offset 20 f 35.00 c c Offset 29 f 35.00 c c Offset 29	DC 00000 G NFE 1 IBM 3∆1 TP PR 44 TP P	#VE	3W 8.6	SENSE: rig Delay-21 rig: Video Atten: 40 dl Meter 40 d	INT 00.0 µs B FUNC	#Avg Ty	ALIGN AUTO rpe: RMS		TRAC TYPE RC3 1.	22 34 EV EV EV EV EV EV EV EV EV EV	S 6 P P P IS B 	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz 2.437000000 GHz 8.00000 MHz 8.00000 MHz Uto Man Freq Offset 0 Hz Scale Type
Keysight S           RL           Center           25.0           16.0           15.0           5.00           -5.00           -5.00           -5.00           -6.00           -6.00           -6.00           -6.00           -6.00           -6.00           -6.00           -6.00           -6.00           -6.00           -6.00           -6.00           -6.00           -6.00           -6.00           -6.00           -75.0           -6.00           -6.00           -75.0 <td>Ref Ref Ref 2.4370 8 MH:</td> <td>2.43700 2.43700 f 35.00 c</td> <td>DC 00000 G NFE 1 IBM 3∆1 TP PR 44 TP P</td> <td>#VE</td> <td>3W 8.6</td> <td>SENSE: rig Delay-21 rig: Video Atten: 40 dl Meter 40 d</td> <td>INT 00.0 µs B FUNC</td> <td>#Avg Ty</td> <td>ALIGN AUTO rpe: RMS</td> <td></td> <td>TRAC TYPE RC3 1.</td> <td>22 34 EV EV EV EV EV EV EV EV EV EV</td> <td>5 6 400 PP P S B M M M M M M M M M M M M M</td> <td>Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz 2.437000000 GHz 8.00000 MHz 8.00000 MHz Uto Man Freq Offset 0 Hz Scale Type</td>	Ref Ref Ref 2.4370 8 MH:	2.43700 2.43700 f 35.00 c	DC 00000 G NFE 1 IBM 3∆1 TP PR 44 TP P	#VE	3W 8.6	SENSE: rig Delay-21 rig: Video Atten: 40 dl Meter 40 d	INT 00.0 µs B FUNC	#Avg Ty	ALIGN AUTO rpe: RMS		TRAC TYPE RC3 1.	22 34 EV EV EV EV EV EV EV EV EV EV	5 6 400 PP P S B M M M M M M M M M M M M M	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz 2.437000000 GHz 8.00000 MHz 8.00000 MHz Uto Man Freq Offset 0 Hz Scale Type
Keysight S           RL           Center           10 dB/dlv           25.0           15.0           15.0           15.0           15.0           15.0           15.0           15.0           15.0           15.0           15.0           15.0           15.0           15.0           15.0           25.0           35.0           -55.0 </td <td>Ref Ref Ref 2.4370 8 MH:</td> <td>2.43700 2.43700 f 35.00 c</td> <td>DC 00000 G NFE 1 IBM 3∆1 TP PR 44 TP P</td> <td>#VE</td> <td>3W 8.6</td> <td>SENSE: rig Delay-21 rig: Video Atten: 40 dl ME 20 MHz V 20.36 dB 0.35 dB</td> <td>INT 00.0 µs B FUNC</td> <td>#Avg Ty</td> <td>ALIGN AUTO rpe: RMS</td> <td></td> <td>TRAC TYPE RC3 1.</td> <td>22 34 EV EV EV EV EV EV EV EV EV EV</td> <td>S 6 P P P IS B </td> <td>Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz 2.437000000 GHz 8.00000 MHz 8.00000 MHz Uto Man Freq Offset 0 Hz Scale Type</td>	Ref Ref Ref 2.4370 8 MH:	2.43700 2.43700 f 35.00 c	DC 00000 G NFE 1 IBM 3∆1 TP PR 44 TP P	#VE	3W 8.6	SENSE: rig Delay-21 rig: Video Atten: 40 dl ME 20 MHz V 20.36 dB 0.35 dB	INT 00.0 µs B FUNC	#Avg Ty	ALIGN AUTO rpe: RMS		TRAC TYPE RC3 1.	22 34 EV EV EV EV EV EV EV EV EV EV	S 6 P P P IS B 	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz 2.437000000 GHz 8.00000 MHz 8.00000 MHz Uto Man Freq Offset 0 Hz Scale Type

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	50 Ω DC	•	SENSE:INT			:34:59 PM Aug 26, 2020	Frequency
Center Freq 2.4	137000000 GHz	O: Fast +++ Trig:	Delay-200.0 µs : Video en: 40 dB	s #Avg Type: F	am s	TRACE 1 2 3 4 5 6 TYPE WWWWWW DET P P P P P P	Trequency
		ain:Low #Atte	en. 40 ab			r3 1.362 ms	Auto Tune
10 dB/div Ref 3	fset 19.79 dB <b>5.00 dBm</b>					-15.61 dB	
25.0							Center Freq
15.0	in the second	na particular and a second second				alarshillingshi. And read areas alarshillingshi	2.437000000 GHz
5.00	3∆1					TRIG LVL	
-5.00							Start Freq 2.437000000 GHz
-25.0		•					2.437000000 GHz
-35.0							Stop Freq
-45.0							2.437000000 GHz
-55.0							
Center 2.437000 Res BW 8 MHz	000 GHz	#VBW 8.0 N	/IHz	Sw	eep 10.13	Span 0 Hz ms (8000 pts)	CF Step 8.000000 MHz
MKR MODE TRC SCL	×	Y		NCTION FUNCTION	-		<u>Auto</u> Man
1 N 1 t 2 Δ1 1 t (Δ 3 Δ1 1 t (Δ	.) 1.25	8 ms (Δ) 2	21 dBm 2.93 dB 5.61 dB				Freq Offset
3 Δ1 1 t (Δ 4 5	1.50	22 ms (Δ) -18	5.01 UB			=	0 Hz
6 7 8							
9							Scale Type
10 11						-	Log <u>Lin</u>
MSG					STATUS		
		11N		_Ant2_243	7		
Keysight Spectrum Anal			SENSE:INT			:22:42 PM Aug 26, 2020	
Center Freq 2.4		Taking Taking	Delay-200.0 µs Video			TRACE 1 2 3 4 5 6	Frequency
	NFE PNO	O:Fast ⊶ Trig: ain:Low #Atte	en: 40 dB			DETPPPPP	
	IFG						Auto Tune
	fset 19.79 dB				ΔM	kr3 716.9 µs	Auto Tune
10 dB/div Ref 3					ΔΜ		
10 dB/div Ref 3	fset 19.79 dB 5.00 dBm					kr3 716.9 µs -7.93 dB	Auto Tune Center Freq 2.43700000 GHz
10 dB/div Ref 3 25.0 15.0 5.00	fset 19.79 dB 5.00 dBm					kr3 716.9 µs	Center Freq
10 gB/div Ref 3 25.0 15.0 -5.00	fset 19.79 dB 5.00 dBm					kr3 716.9 µs -7.93 dB	Center Freq 2.437000000 GHz Start Freq
10 dB/div Ref 3 25.0 15.0 5.00	fset 19.79 dB 5.00 dBm					kr3 716.9 µs -7.93 dB	Center Freq 2.437000000 GHz
10 dB/div Ref 3 25.0 15.0 -5.00 -15.0	fset 19.79 dB 5.00 dBm					kr3 716.9 µs -7.93 dB	Center Freq 2.43700000 GHz Start Freq 2.437000000 GHz
Loge         Ref 3           25.0	fset 19.79 dB 5.00 dBm					kr3 716.9 µs -7.93 dB	Center Freq 2.437000000 GHz Start Freq
Loge/div         Ref 3           25.0         1           15.0         1           5.00         1           -1.0         3           -5.0         -           -5.0         -           -5.0         -           -5.0         -           -5.0         -           -5.0         -           -5.0         -           -5.0         -	Tset 19.79 dB 5.00 dBm					kr3 716.9 µs -7.93 dB male constraints male constraints m	Center Freq 2.43700000 GHz Start Freq 2.43700000 GHz Stop Freq 2.437000000 GHz
10 gB/div         Ref 3           25.0	Tset 19.79 dB 5.00 dBm	#VBW 8.0 M		Sw		kr3 716.9 µs -7.93 dB	Center Freq 2.43700000 GHz Start Freq 2.43700000 GHz Stop Freq 2.43700000 GHz CF Step 8.00000 MHz
10 dB/div         Ref 3           25.0	Fiset 19.79 dB 5.00 dBm	#VBW 8.0 M	AHz	Sw NCTION   FUNCTION	eep 10.13	kr3 716.9 µs -7.93 dB Treduve Span 0 Hz	Center Freq 2.43700000 GHz Start Freq 2.43700000 GHz Stop Freq 2.43700000 GHz CF Step
10 dB/div         Ref 3           25.0	Fiset 19.79 dB 5.00 dBm	#VBW 8.0 M	AHz 38 dBm 2.45 dB		eep 10.13	kr3 716.9 µs -7.93 dB TROLVL Span 0 Hz G ms (8000 pts)	Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz 2.437000000 GHz 2.437000000 GHz CF Step 8.00000 MHz Auto Man
10 dB/div         Ref 3           25.0         1         22           15.0         1         24           5.00         1         3           -5.0         -         - <td>Fiset 19.79 dB 5.00 dBm</td> <td>#VBW 8.0 Ν</td> <td>AHz 38 dBm</td> <td></td> <td>eep 10.13</td> <td>kr3 716.9 µs -7.93 dB TROLVL Span 0 Hz G ms (8000 pts)</td> <td>Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz 2.437000000 GHz 2.437000000 GHz 8.000000 MHz</td>	Fiset 19.79 dB 5.00 dBm	#VBW 8.0 Ν	AHz 38 dBm		eep 10.13	kr3 716.9 µs -7.93 dB TROLVL Span 0 Hz G ms (8000 pts)	Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz 2.437000000 GHz 2.437000000 GHz 8.000000 MHz
10 dB/div         Ref 3           25.0	Fiset 19.79 dB 5.00 dBm	#VBW 8.0 M	AHz 38 dBm 2.45 dB		eep 10.13	kr3 716.9 µs -7.93 dB TROLVL Span 0 Hz G ms (8000 pts)	Center Freq           2.437000000 GHz           Start Freq           2.437000000 GHz           Stop Freq           2.437000000 GHz           CF Step           8.000000 MHz           Auto           Freq Offset           0 Hz
10 dB/div         Ref 3           25.0	Fiset 19.79 dB 5.00 dBm	#VBW 8.0 M	AHz 38 dBm 2.45 dB		eep 10.13	kr3 716.9 µs -7.93 dB TROLVL Span 0 Hz G ms (8000 pts)	Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz 2.437000000 GHz 2.437000000 GHz 8.000000 MHz Auto Man Freq Offset 0 Hz Scale Type
10 dB/div         Ref 3           25.0	Fiset 19.79 dB 5.00 dBm	#VBW 8.0 M	AHz 38 dBm 2.45 dB		eep 10.13	kr3 716.9 µs -7.93 dB TROLVL Span 0 Hz G ms (8000 pts)	Center Freq           2.437000000 GHz           Start Freq           2.437000000 GHz           Stop Freq           2.437000000 GHz           CF Step           8.000000 MHz           Auto           Freq Offset           0 Hz
Io dB/div         Ref 3           25.0	Fiset 19.79 dB 5.00 dBm	#VBW 8.0 M	AHz 38 dBm 2.45 dB		eep 10.13	kr3 716.9 µs -7.93 dB TROLVL Span 0 Hz G ms (8000 pts)	Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz 2.437000000 GHz 2.437000000 GHz 8.000000 MHz Auto Man Freq Offset 0 Hz Scale Type



## **APPENDIX B: DTS BANDWIDTH**

### **Test Result**

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
	Ant1	2412	8.680	2407.920	2416.600	0.5	PASS
	Ant2	2412	8.120	2407.960	2416.080	0.5	PASS
11B	Ant1	2437	7.640	2432.960	2440.600	0.5	PASS
IID	Ant2	2437	7.120	2433.440	2440.560	0.5	PASS
	Ant1	2462	7.640	2457.960	2465.600	0.5	PASS
	Ant2	2462	7.640	2457.960	2465.600	0.5	PASS
	Ant1	2412	15.800	2404.400	2420.200	0.5	PASS
	Ant2	2412	16.000	2404.200	2420.200	0.5	PASS
110	Ant1	2437	16.400	2428.800	2445.200	0.5	PASS
11G	Ant2	2437	16.160	2428.800	2444.960	0.5	PASS
	Ant1	2462	15.200	2454.400	2469.600	0.5	PASS
	Ant2	2462	15.800	2453.800	2469.600	0.5	PASS
	Ant1	2412	16.200	2404.400	2420.600	0.5	PASS
	Ant2	2412	15.320	2404.480	2419.800	0.5	PASS
11N20MIMO	Ant1	2437	17.000	2428.200	2445.200	0.5	PASS
	Ant2	2437	17.240	2428.200	2445.440	0.5	PASS
	Ant1	2462	17.120	2453.440	2470.560	0.5	PASS
	Ant2	2462	15.640	2453.840	2469.480	0.5	PASS
	Ant1	2422	35.200	2404.400	2439.600	0.5	PASS
	Ant2	2422	35.200	2404.400	2439.600	0.5	PASS
11N40MIMO	Ant1	2437	36.480	2418.760	2455.240	0.5	PASS
	Ant2	2437	36.480	2418.760	2455.240	0.5	PASS
	Ant1	2452	35.280	2434.400	2469.680	0.5	PASS
	Ant2	2452	35.200	2434.400	2469.600	0.5	PASS



### **Test Graphs**



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Keysight Spectrum Analyzer - Swept SA           Κ         RF         50 Ω         DC	SENSE:INT	ALIGN AUTO	10:16:22 AM Aug 26, 2020	
Center Freq 2.41200000 NFE		#Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P P P P P P	Frequency
Ref Offset 19.79 d		ΔMk	r3 15.80 MHz	Auto Tune
10 dB/div Ref 20.00 dBm			2.129 dB	
10.0	2	3∆1		Center Freq
0.00	Andra landra land march	warmalen -	DL1 2.06 dBm	2.412000000 GHz
-10.0				
-20.0	1917	10 M M M M	Mar Marina Marina	Start Freq
-30.0 -40.0			Man Martin	2.392000000 GHz
-50.0				Stop Freq
-60.0				2.432000000 GHz
-70.0				
Center 2.41200 GHz #Res BW 100 kHz	#VBW 300 kHz		Span 40.00 MHz 3 ms (1001 pts)	CF Step 4.000000 MHz
MKR MODE TRC SCL		Sweep 1.53		Auto Man
1 N 1 f 2	.404 40 GHz -0.917 dBm	DREHON FONCTION WIDTH		
<b>3</b> Δ1 1 f (Δ)	.410 76 GHz 8.055 dBm 15.80 MHz (Δ) 2.129 dB			Freq Offset
4 5			E	0 Hz
6 7 8 9				Scale Type
8				Scale Type
10 11			-	Log <u>Lin</u>
≺ MSG	III	STATUS	Þ	
• ·	110 4-			
Keysight Spectrum Analyzer - Swent SA	11G_Ar	t1_2412		
Keysight Spectrum Analyzer - Swept SA         Keysight Spectrum Analyzer - Swept SA           (Y)         RL         RF         50 Ω         DC           Comptote Energy         412000000         C         C         C	SENSE:INT	t1_2412	10:30:04 AM Aug 26, 2020	Frequency
	O GHz PNO: Wide ↔ Trig: Free Run	t1_2412	10:30:04 AM Aug 26, 2020 TRACE 1 2 3 4 5 6 TYPE M WWWW DET P P P P P	
04 RL RF 50Ω DC Center Freq 2.41200000 NFE	O GHz PNO: Wide ↔ Trig: Free Run IFGain:Low #Atten: 30 dB	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE M WWWW DET P P P P P P	
00 RL RF 50 Ω DC Center Freq 2.41200000 NFE Ref Offset 19.79 dl 10 dB/div Ref 20.00 dBm	O GHz PNO: Wide →→ IFGain:Low #Atten: 30 dB	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	10:30:04 AM Aug 26, 2020 ТRACE 1 2 3 4 5 6 ТУРЕ МИМИЧИНИ DET P P P P P P r3 16.00 MHz 0.041 dB	Frequency
22 RL RF 50 Ω DC Center Freq 2.41200000 NFE Ref Offset 19.79 dl	O GHz PNO: Wide →→ IFGain:Low #Atten: 30 dB	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P P P P P T3 16.00 MHz	Frequency Auto Tune
RL         RF         50 g DC           Center Freq 2.41200000 NFE         Ref Offset 19.79 dl Ref Offset 19.79 dl Log	O GHz PNO: Wide →→ IFGain:Low #Atten: 30 dB	t1_2412 ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 ΔMk	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P P P P P T3 16.00 MHz	Frequency
00 RL RF 50Ω DC Center Freq 2.41200000 NFE 10 dB/div Ref Offset 19.79 dl Log 10.0 0.00	B 10 GHz PNO: Wide → Trig: Free Run #Atten: 30 dB Augusta Augusta	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 AMk	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P P P P P P 0.041 dB	Frequency Auto Tune Center Freq
00 RL RF 50Ω DC Center Freq 2.41200000 NFE 10 dB/div Ref Offset 19.79 dl Log 10.0 0.00	B 10 GHz PNO: Wide → Trig: Free Run #Atten: 30 dB Augusta Augusta	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 AMk	TRACE [1 2 3 4 5 6 TYPE MWWWW DET P P P P P P r3 16.00 MHz 0.041 dB	Frequency Auto Tune Center Freq
00 RL RF 50Ω DC Center Freq 2.41200000 NFE 10 dB/div Ref Offset 19.79 dl Log 10.0 0.00	B 10 GHz PNO: Wide → Trig: Free Run #Atten: 30 dB Augusta Augusta	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 AMk	r3 16.00 MHz 0.041 dB	Frequency Auto Tune Center Freq 2.412000000 GHz
Ref         50 g         DC           Center Freq 2.41200000         NFE           Ref Offset 19.79 dl         NFE           10 dB/div         Ref 20.00 dBm           -0g	B 10 GHz PNO: Wide → Trig: Free Run #Atten: 30 dB Augusta Augusta	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 AMk	TRACE [1 2 3 4 5 6 TYPE MWWWW DET P P P P P P r3 16.00 MHz 0.041 dB	Frequency Auto Tune Center Freq 2.412000000 GHz Start Freq
Ref         50 g         DC           Center Freq 2.41200000         NFE           Ref Offset 19.79 dl         Ref 20.00 dBm           10 dB/div         Ref 20.00 dBm           10.0	B 10 GHz PNO: Wide → Trig: Free Run #Atten: 30 dB Augusta Augusta	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 AMk	TRACE [1 2 3 4 5 6 TYPE MWWWW DET P P P P P P r3 16.00 MHz 0.041 dB	Frequency Auto Tune Center Freq 2.412000000 GHz Start Freq 2.392000000 GHz Stop Freq
Ref         50 g         DC           Center Freq 2.41200000         NFE           Ref Offset 19.79 dl         0 dB/div         Ref 20.00 dBm           0 dB/div         Ref 20.00 dBm           10.0         0.00         0.00           -10.0         -20.0         -20.0           -30.0         -40.0         -40.0           -60.0         -40.0         -40.0	B 10 GHz PNO: Wide → Trig: Free Run #Atten: 30 dB Augusta Augusta	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 AMk	TRACE [1 2 3 4 5 6 TYPE MWWWW DET P P P P P P r3 16.00 MHz 0.041 dB	Frequency Auto Tune Center Freq 2.412000000 GHz Start Freq 2.392000000 GHz
Ref         50 g         DC           Center Freq 2.41200000         NFE           Ref Offset 19.79 dl         Ref 20.00 dBm           10 dB/div         Ref 20.00 dBm           10 dB/div         Ref 20.00 dBm           00	B 10 GHz PNO: Wide → Trig: Free Run #Atten: 30 dB Augusta Augusta	t1_2412 ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 AMK 3Δ1 MMMMM	TRACE [1 23 4 5 6 TYPE MWWWWW DET P P P P P P r3 16.00 MHz 0.041 dB DL11.85 dBm hmml	Frequency Auto Tune Center Freq 2.412000000 GHz 2.392000000 GHz 2.392000000 GHz 2.432000000 GHz
Ref         50 g         DC           Center Freq 2.41200000         NFE           Ref Offset 19.79 dl         0 dB/div         Ref 20.00 dBm           0 dB/div         Ref 20.00 dBm           10.0         0.00         0.00           -10.0         -20.0         -20.0           -30.0         -40.0         -40.0           -60.0         -40.0         -40.0	B 10 GHz PNO: Wide → Trig: Free Run #Atten: 30 dB Augusta Augusta	t1_2412 ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 AMK 3Δ1 MMMMM	TRACE [1 2 3 4 5 6 TYPE MWWWW DET P P P P P P r3 16.00 MHz 0.041 dB	Frequency Auto Tune Center Freq 2.412000000 GHz Start Freq 2.392000000 GHz Stop Freq
Ref         50 g         DC           Center Freq 2.41200000         NFE           Ref Offset 19.79 dl         NFE           10 dB/div         Ref 20.00 dBm           -00	B Horizon Constraints of the service of the servic	t1_2412 ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 AMK 3Δ1 MMMMM	TRACE [1 2 3 4 5 6 TYPE MWWWW DET P P P P P P 73 16.00 MHz 0.041 dB DL1185 dBm MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM	Frequency Auto Tune Center Freq 2.412000000 GHz 2.392000000 GHz Stop Freq 2.432000000 GHz CF Step
M         RL         RF         50 g DC           Center Freq 2.41200000         NFE           Ref Offset 19.79 dl         NFE           10 dB/div         Ref 20.00 dBm           20 dB/div         Ref 20.00 dBm	B AU AU AU GHZ 1.327 dBm	t1_2412 #Avg Type: RMS Avg Hold: 100/100 ΔΜk 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1	TRACE [1 2 3 4 5 6 TYPE MWWWW DET P P P P P P 73 16.00 MHz 0.041 dB DL1185 dBm MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM	Frequency Auto Tune Center Freq 2.412000000 GHz 2.392000000 GHz 2.392000000 GHz 2.432000000 GHz 2.432000000 GHz CF Step 4.000000 MHz Auto Man
M         RL         RF         50 g DC           Center Freq 2.41200000         NFE           Ref Offset 19.79 dl         Ref 20.00 dBm           10 dB/div         Ref 20.00 dBm           10 dB/div         Ref 20.00 dBm	B A Constraint of the second	t1_2412 #Avg Type: RMS Avg Hold: 100/100 ΔΜk 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1	TRACE [1 2 3 4 5 6 TYPE MWWWW DET P P P P P P 73 16.00 MHz 0.041 dB DL1185 dBm MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM	Frequency Auto Tune Center Freq 2.412000000 GHz 2.392000000 GHz 2.392000000 GHz 2.432000000 GHz CF Step 4.000000 MHz Auto Man
M         RL         RF         50 g DC           Center Freq 2.41200000         NFE           Ref Offset 19.79 dl         Ref 20.00 dBm           10 dB/div         Ref 20.00 dBm           10 dB/div         Ref 20.00 dBm	U GHz PNO: Wide → Trig: Free Run IFGain:Low #Atten: 30 dB B #VBW 300 kHz #VBW 300 kHz 404 20 GHz 1.327 dBm 1.327 dBm 410 72 GHz 1.327 dBm	t1_2412 #Avg Type: RMS Avg Hold: 100/100 ΔΜk 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1	TRACE [1 2 3 4 5 6 TYPE MWWWW DET P P P P P P 73 16.00 MHz 0.041 dB DL1185 dBm MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM	Frequency Auto Tune Center Freq 2.412000000 GHz 2.392000000 GHz 2.392000000 GHz 2.432000000 GHz 2.432000000 GHz CF Step 4.000000 MHz Auto Man
M         RL         RF         50 g DC           Center Freq 2.41200000         NFE           Ref Offset 19.79 dl         Ref 20.00 dBm           10 dB/div         Ref 20.00 dBm           10 dB/div         Ref 20.00 dBm	U GHz PNO: Wide → Trig: Free Run IFGain:Low #Atten: 30 dB B #VBW 300 kHz #VBW 300 kHz 404 20 GHz 1.327 dBm 1.327 dBm 410 72 GHz 1.327 dBm	t1_2412 #Avg Type: RMS Avg Hold: 100/100 ΔΜk 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1	TRACE [1 2 3 4 5 6 TYPE MWWWW DET P P P P P P 73 16.00 MHz 0.041 dB DL1185 dBm MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM	Frequency Auto Tune Center Freq 2.412000000 GHz 2.392000000 GHz 2.392000000 GHz 2.432000000 GHz 2.432000000 MHz Auto Man Freq Offset 0 Hz
M         RL         RF         50 g DC           Center Freq 2.41200000         NFE           Ref Offset 19.79 dl         Ref 20.00 dBm           10 dB/div         Ref 20.00 dBm           10 dB/div         Ref 20.00 dBm	U GHz PNO: Wide → Trig: Free Run IFGain:Low #Atten: 30 dB B #VBW 300 kHz #VBW 300 kHz 404 20 GHz 1.327 dBm 1.327 dBm 410 72 GHz 1.327 dBm	t1_2412 #Avg Type: RMS Avg Hold: 100/100 ΔΜk 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1	TRACE [1 23 4 5 6 TYPE MWWWW DET P P P P P P r3 16.00 MHz 0.041 dB DL11.85 dbm MWWWWWW Span 40.00 MHz 3 ms (1001 pts)	Frequency Auto Tune Center Freq 2.412000000 GHz 2.392000000 GHz 2.392000000 GHz 2.432000000 GHz 4.000000 MHz Auto Man Freq Offset 0 Hz Scale Type
M         RL         RF         50 Ω         DC           Center Freq 2.41200000 NFE         NFE         NFE         NFE           0 dB/div         Ref Offset 19.79 dl Combined and the set of t	U GHz PNO: Wide → Trig: Free Run IFGain:Low #Atten: 30 dB B #VBW 300 kHz #VBW 300 kHz 404 20 GHz 1.327 dBm 1.327 dBm 410 72 GHz 1.327 dBm	t1_2412 #Avg Type: RMS Avg Hold: 100/100 ΔΜk 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1	TRACE [1 23 4 5 6 TYPE MWWWW DET P P P P P P r3 16.00 MHz 0.041 dB DL11.85 dbm MWWWWWW Span 40.00 MHz 3 ms (1001 pts)	Frequency Auto Tune Center Freq 2.412000000 GHz 2.392000000 GHz 2.392000000 GHz 2.432000000 GHz 2.432000000 MHz Auto Man Freq Offset 0 Hz
M         RL         PF         50 Ω         DC           Center Freq 2.41200000 NFE         Ref Offset 19.79 dl Combo         Combo         NFE           0         dB/div         Ref 20.00 dBm         Combo         Comb         Combo         Combo	U GHz PNO: Wide → Trig: Free Run IFGain:Low #Atten: 30 dB B #VBW 300 kHz #VBW 300 kHz 404 20 GHz 1.327 dBm 1.327 dBm 410 72 GHz 1.327 dBm	t1_2412 #Avg Type: RMS Avg Hold: 100/100 ΔΜk 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1	TRACE [1 23 4 5 6 TYPE MWWWW DET P P P P P P r3 16.00 MHz 0.041 dB DL11.85 dbm MWWWWWW Span 40.00 MHz 3 ms (1001 pts)	Frequency Auto Tune Center Freq 2.412000000 GHz 2.392000000 GHz 2.392000000 GHz 2.432000000 GHz 4.000000 MHz Auto Man Freq Offset 0 Hz Scale Type

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(X/ RL RF 50Ω D	A SENSE:INT	ALIGN AUTO	10:21:01 AM Aug 26, 2020	
Center Freq 2.4370000	00 GHz PNO: Wide ↔ Trig: Free Run	#Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P P P P P P	Frequency
Ref Offset 19.79	dB	ΔΜ	kr3 16.40 MHz -0.153 dB	Auto Tune
10 dB/div Ref 20.00 dBr	n		-0.155 UB	
10.0		3Δ1		Center Freq
0.00	Shehman handren who have	al among well	DL1 0.41 dBm	2.437000000 GHz
-10.0				
-10.0 -20.0 -30.0 ministration	N/M00		Mun Mon Millin	Start Freq
-30.0 Mylywany war			and a start when the	2.417000000 GHz
-40.0				
-50.0				Stop Freq
-60.0				2.457000000 GHz
-70.0				
Center 2.43700 GHz			Span 40.00 MHz	CF Step
#Res BW 100 kHz	#VBW 300 kHz	Sweep 1.	533 ms (1001 pts)	4.000000 MHz
		NCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Man
2 N 1 f	2.428 80 GHz -0.727 dBm 2.435 80 GHz 6.409 dBm			Freq Offset
<b>3</b> Δ1 1 f (Δ) 4	16.40 MHz (Δ) -0.153 dB			0 Hz
5 6 7			E	
8				Scale Type
9 10				Log <u>Lin</u>
11			-	
MSG		STATUS	,	
	11G Ap	1 2/37		
Keysight Spectrum Analyzer - Swept SA	11G_An	t1_2437		
Keysight Spectrum Analyzer - Swept S/     KL RF 50 Ω DI     Constor Force 2, 14270000	A SENSE:INT	ALIGN AUTO	10:31:09 AM Aug 26, 2020	Frequency
	A C SENSE:INT OO GHZ PNO: Wide ↔ Trig: Free Run		10:31:09 AM Aug 26, 2020 TRACE 1 2 3 4 5 6 TYPE M WWWWW DT P P P P P	
VARL RF 50 Ω D4 Center Freq 2.4370000 NFE	A C SENSE:INT OO GHZ PNO: Wide ← Trig: Free Run IFGain:Low #Atten: 30 dB	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE M WWWW DET P P P P P P	
RL         RF         50 Ω         Dd           Center Freq 2.4370000         NFE         NFE           Ref Offset 19.79         Ref Offset 20.00 dBr	C SENSE:INT 00 GHz PNO: Wide →→ IFGain:Low #Atten: 30 dB dB	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6	Frequency
RL         RF         50 0.0         DC           Center Freq 2.4370000         NFE         NFE           10 dB/div         Ref Offset 19.79         Ref 20.00 dBr	C SENSE:INT 00 GHz PNO: Wide →→ IFGain:Low #Atten: 30 dB dB	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE MWWW DET P P P P P kr3 16.16 MHz	Frequency Auto Tune
RL         RF         50 Ω         DC           Center Freq 2,4370000         NFE         NFE           10 dB/div         Ref Offset 19.79         Ref 20.00 dBr           10.0         10.0         Ref 20.00 dBr	C SENSE:INT 00 GHz PNO: Wide →→ IFGain:Low #Atten: 30 dB dB	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE MWWW DET P P P P P kr3 16.16 MHz	Frequency Auto Tune Center Freq
RL         RF         50 Ω         DC           Center Freq 2.4370000         NFE           0         Ref Offset 19.79           10         Ref 20.00 dBr           10.0         0.00	A C C C C C C C C C C C C C	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 123456 TYPE MWWWW DET PPPPP kr3 16.16 MHz 0.942 dB	Frequency Auto Tune
RL         RF         50 Ω         DC           Center Freq 2.4370000         NFE           0         Ref Offset 19.79           10         Ref 20.00 dBr           10.0         0.00	A C C C C C C C C C C C C C	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 123456 TYPE MWWWW DET PPPPP kr3 16.16 MHz 0.942 dB	Frequency Auto Tune Center Freq 2.437000000 GHz
RL         RF         50 Ω         DC           Center Freq 2.4370000         NFE           0         Ref Offset 19.79           10         Ref 20.00 dBr           10.0         0.00	A C C C C C C C C C C C C C	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 123456 TYPE MWWWW DET PPPPP kr3 16.16 MHz 0.942 dB	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq
RL         RF         50 0.2 Dr           Center Freq 2.4370000         NFE           Ref Offset 19.79         Ref 20.00 dBr           10 dB/div         Ref 20.00 dBr           10.0         0.00           -10.0         -20.0	A C C C C C C C C C C C C C	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 123456 TYPE MWWWW DET PPPPP kr3 16.16 MHz 0.942 dB	Frequency Auto Tune Center Freq 2.437000000 GHz
RL         RF         50 0.2 Dr           Center Freq 2.4370000         NFE           Ref Offset 19.79         Ref 20.00 dBr           10 dB/div         Ref 20.00 dBr           10.0         0.00           -10.0         0.00           -10.0         0.00           -30.0         www.youth.mar.mar.mar.mar.mar.mar.mar.mar.mar.mar	A C C C C C C C C C C C C C	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	тяасе 1 2345 6 туре мужижи ост Р Р Р Р Р Р kr3 16.16 MHz 0.942 dB	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.417000000 GHz
RL         RF         50 0.2 Dr           Center Freq 2.4370000         NFE           Ref Offset 19.79         Ref 20.00 dBr           10 dB/div         Ref 20.00 dBr           10.0         0.00           -10.0         0.00           -20.0         -20.0           -30.0         -40.0	A C C C C C C C C C C C C C	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 123456 TYPE MWWWW DET PPPPP kr3 16.16 MHz 0.942 dB	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.417000000 GHz Stop Freq
RL         RF         50 0.2 Dr           Center Freq 2.4370000         NFE           Ref Offset 19.79         Ref 20.00 dBr           10 dB/div         Ref 20.00 dBr           10.0	A C C C C C C C C C C C C C	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 123456 TYPE MWWWW DET PPPPP kr3 16.16 MHz 0.942 dB	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.417000000 GHz
RL         RF         50 0.2 Dr           Center Freq 2.4370000         NFE           Ref Offset 19.79         Ref 20.00 dBr           10 dB/div         Ref 20.00 dBr           10.0         0.00           -10.0         0.00           -20.0         -40.0           -60.0         -60.0	A C C C C C C C C C C C C C	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 123456 TYPE MWWWW DET PPPPP kr3 16.16 MHz 0.942 dB	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.417000000 GHz Stop Freq 2.457000000 GHz
RL         RF         50.0. Dt           Center Freq 2.4370000         NFE           Ref Offset 19.79         Ref 20.00 dBr           10 dB/div         Ref 20.00 dBr           10.0	A C C C C C C C C C C C C C	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	Menuli Willings	Frequency           Auto Tune           Center Freq           2.43700000 GHz           Start Freq           2.417000000 GHz           Stop Freq           2.457000000 GHz           CF Step           4.000000 MHz
RL         RF         50 0. Dt           Center Freq 2.4370000         NFE           Ref Offset 19.79         Ref Offset 19.79           10 dB/div         Ref 20.00 dBr           10.0	A C C C C C C C C C C C C C	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 12345 6 TYPE NUMBER DET P P P P P P kr3 16.16 MHz 0.942 dB DL1127 dbn DL1127 dbn DL1127 dbn Span 40.00 MHz 533 ms (1001 pts)	Frequency Auto Tune Center Freq 2.43700000 GHz 2.417000000 GHz 2.457000000 GHz 2.457000000 GHz
X         RL         RF         50.0         DC           Center Freq 2.4370000         NFE           Ref Offset 19.79         Ref 20.00 dBr           10 dB/div         Ref 20.00 dBr           10.0         Context 10.79           -20.0         Context 10.79           -30.0         Context 10.79           -40.0         Context 10.70           -50.0         Context 2.43700 GHz           #Res BW 100 kHz         Context 2.43700 GHz           Missing Model REC Sequence         Sequence           1         1         Context 2.43700 GHz	BIC: SENSE:INT PRO: Wide → Trig: Free Run #Atten: 30 dB dB n dB n #VBW 300 kHz X 2,428 80 GHz 2,438 28 GHz 7,266 dBm	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 Avg down work and	TRACE 12345 6 TYPE NUMBER DET P P P P P P kr3 16.16 MHz 0.942 dB DL1127 dbn DL1127 dbn DL1127 dbn Span 40.00 MHz 533 ms (1001 pts)	Frequency           Auto Tune           Center Freq           2.437000000 GHz           Start Freq           2.417000000 GHz           Stop Freq           2.457000000 GHz           CF Step           4.000000 MHz           Auto
X         RL         RF         50.0         Def           Center Freq 2.4370000         NFE           Center Freq 2.4370000         NFE           Ref Offset 19.79         Ref Offset 19.79           Log         Ref 20.00 dBr           10 dB/div         Ref 20.00 dBr           10 dB/div         Ref 20.00 dBr           -00	A C SENSE:INT PNO: Wide ↔ Trig: Free Run #Atten: 30 dB dB n A #WBW 300 kHz X 2428 80 GHz -0.951 dBm	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 Avg down work and	TRACE 12345 6 TYPE NUMBER DET P P P P P P kr3 16.16 MHz 0.942 dB DL1127 dbn DL1127 dbn DL1127 dbn Span 40.00 MHz 533 ms (1001 pts)	Frequency           Auto Tune           Center Freq           2.43700000 GHz           Start Freq           2.417000000 GHz           Stop Freq           2.457000000 GHz           CF Step           4.000000 MHz
X         RL         RF         50.0         Def           Center Freq 2.4370000         NFE           Center Freq 2.4370000         NFE           Ref Offset 19.79         Ref Offset 19.79           Log         Ref 20.00 dBr           10 dB/div         Ref 20.00 dBr           10 dB/div         Ref 20.00 dBr           -00	BIC: SENSE:INT PRO: Wide → Trig: Free Run #Atten: 30 dB dB n dB n #VBW 300 kHz X 2,428 80 GHz 2,438 28 GHz 7,266 dBm	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 Avg down work and	TRACE 12345 6 TYPE NUMBER DET P P P P P P kr3 16.16 MHz 0.942 dB DL1127 dbn DL1127 dbn DL1127 dbn Span 40.00 MHz 533 ms (1001 pts)	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.417000000 GHz 2.457000000 GHz CF Step 4.000000 MHz Auto Man
X         RL         RF         50.0         Def           Center Freq 2.4370000         NFE           Center Freq 2.4370000         NFE           Ref Offset 19.79         Ref Offset 19.79           Log         Ref 20.00 dBr           10 dB/div         Ref 20.00 dBr           10 dB/div         Ref 20.00 dBr           -00	BIC: SENSE:INT PRO: Wide → Trig: Free Run #Atten: 30 dB dB n dB n #VBW 300 kHz X 2,428 80 GHz 2,438 28 GHz 7,266 dBm	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 Avg down work and	TRACE 12345 6 TYPE NUMBER DET P P P P P P kr3 16.16 MHz 0.942 dB DL1127 dbn DL1127 dbn DL1127 dbn Span 40.00 MHz 533 ms (1001 pts)	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.417000000 GHz 2.457000000 GHz CF Step 4.000000 MHz Auto Man
NL         RF         50 Ω         Dec           Center Freq 2.4370000         NFE           Center Freq 2.4370000         NFE           Ref Offset 19.79         Ref Offset 19.79           Log         Ref Offset 19.79           10 dB/div         Ref 20.00 dBr           -00         -00           -10.0         -00           -20.0         -00           -30.0         -00           -40.0         -00           -50.0         -00           -70.0         -00           Center 2.43700 GHz           #Res BW 100 kHz           MRE MODE FRE SE           1         f           3         1         f           3         1         f           3         1         f           3         1         f           3         1         f           3         1         f           3         1         f           3         1         f           3         1         f           3         1         f           3         9         9	BIC: SENSE:INT PRO: Wide → Trig: Free Run #Atten: 30 dB dB n dB n #VBW 300 kHz X 2,428 80 GHz 2,438 28 GHz 7,266 dBm	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 Avg down work and	TRACE [12:345:6]       TYPE INWING       DET  P P P P P       kr3 16.16 MHz       0.942 dB       DL11:27 dBn       Menution       Span 40.00 MHz       S33 ms (1001 pts)       FUNCTION VALUE	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.417000000 GHz 2.457000000 GHz 4.000000 MHz Auto Man Freq Offset 0 Hz Scale Type
M         RF         50 Ω         Def           Center Freq 2.4370000         NFE           Center Freq 2.4370000         NFE           Ref Offset 19.79         Odd B/div         Ref Offset 19.79           Log         Ref Offset 19.79         Odd B/div         Ref 20.00 dBr           10.0	BIC: SENSE:INT PRO: Wide → Trig: Free Run #Atten: 30 dB dB n dB n #VBW 300 kHz X 2,428 80 GHz 2,438 28 GHz 7,266 dBm	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 Avg down work and	TRACE [12:345:6]       TYPE INWING       DET  P P P P P       kr3 16.16 MHz       0.942 dB       DL11:27 dBn       Menution       Span 40.00 MHz       S33 ms (1001 pts)       FUNCTION VALUE	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.417000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz
NL         RF         50 0.0           Center Freq 2.4370000         NFE           Ref Offset 19.79         Ref Offset 19.79           Log         Ref 20.00 dBr           10.0         Ref 20.00 dBr           0.00         Ref 20.00 dBr           -20.0         Ref 20.00 dBr           -30.0         Ref 20.00 dBr           -20.0         Ref	BIC: SENSE:INT PRO: Wide → Trig: Free Run #Atten: 30 dB dB n dB n #VBW 300 kHz X 2,428 80 GHz 2,438 28 GHz 7,266 dBm	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 Avg down work and	TRACE [12:345:6]       TYPE INWING       DET  P P P P P       kr3 16.16 MHz       0.942 dB       DL11:27 dBn       Menution       Span 40.00 MHz       S33 ms (1001 pts)       FUNCTION VALUE	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.417000000 GHz 2.457000000 GHz 4.000000 MHz Auto Man Freq Offset 0 Hz Scale Type

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LXI RL RF 50Ω D	SA DC SENSE:INT		0:22:02 AM Aug 26, 2020	
Center Freq 2.462000	E PNO: Wide +++ Trig: Free Run	#Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P P P P P P	Frequency
Ref Offset 19.79	dB	ΔMk	r3 15.20 MHz 1.235 dB	Auto Tune
10 dB/div Ref 20.00 dB/	m	3∆1	DL1 2.32 dBm	Center Freq 2.462000000 GHz
-10.0	where a start a			Start Freq
-20.0 -30.0 -40.0 maantaanaanaanaanaanaanaanaanaanaanaanaan			Myman orthonor with	2.442000000 GHz
-70.0				<b>Stop Freq</b> 2.482000000 GHz
Center 2.46200 GHz #Res BW 100 kHz	#VBW 300 kHz	Sweep 1.53	Span 40.00 MHz 3 ms (1001 pts)	<b>CF Step</b> 4.000000 MHz <u>Auto</u> Man
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	X Y 2.454 40 GHz 0.023 dBm 2.460 76 GHz 8.323 dBm 15.20 MHz (Δ) 1.235 dB	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	Freq Offset 0 Hz
6 7 8 9			10-	Scale Type
10 11			-	Log <u>Lin</u>
•			- F	
MSG		STATUS		
MSG	11G A	STATUS		
		status nt1_2462		
Keysight Spectrum Analyzer - Swept S X RL RF 50 Ω D	SASENSE:INT	nt1_2462	10:32:26 AM Aug 26, 2020	Frequency
Keysight Spectrum Analyzer - Swept S	SA SENSE:INT	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE M WWWW DET P P P P P P	Frequency
Keysight Spectrum Analyzer - Swept S     We RL RF 50 2 D     Center Freq 2.4620000     NF6     Ref Offset 19.79     10 dB/div Ref 20.00 dB	SA DC SENSE:INT D00 GHz FNO: Wide IFGain:Low #Atten: 30 dB dB	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6	
Keysight Spectrum Analyzer - Swept S     Ø RL RF 50 Ω D     Center Freq 2.4620000     NFE     Ref Offset 19.79	SA DC SENSE:INT D00 GHz FNO: Wide IFGain:Low #Atten: 30 dB dB	ALIGN AUTO 2 #Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P P P P P T3 15.80 MHz	Frequency
Keysight Spectrum Analyzer - Swept S     Greater Freq 2.4620000     Ref Offset 19.79     O dB/div Ref 20.00 dB     10.0     0.00	SA SC SENSE:INT SC SENSE:INT SENSE:INT SENSE:INT Trig: Free Run #Atten: 30 dB M A A A M A A M A M	ALIGN AUTO	тяде [1 2 3 4 5 6 туре Миниунур рет Р Р Р Р Р Р Р 73 15.80 MHz 1.588 dB	Frequency Auto Tune Center Freq 2.462000000 GHz
Keysight Spectrum Analyzer - Swept S     Q     RL RF 50 Ω D     Center Freq 2.4620000     NFE     Ref Offset 19.79     10 dB/dlv Ref 20.00 dBi     0.00     -10.0     -20.0     -30.0     -40.0     Mommmum mmmmum mmmmmmmmmmmmmmmmmmmmm	SA SC SENSE:INT SC SENSE:INT SENSE:INT SENSE:INT Trig: Free Run #Atten: 30 dB M A A A M A A M A M	ALIGN AUTO	r3 15.80 MHz 1.588 dB	Frequency Auto Tune Center Freq
Keysight Spectrum Analyzer - Swept S     Greater Freq 2.4620000     Ref Offset 19.79     O dB/div Ref 20.00 dB     10.0     0.00	SA SC SENSE:INT SC SENSE:INT SENSE:INT SENSE:INT Trig: Free Run #Atten: 30 dB M A A A M A A M A M	ALIGN AUTO	тяде [1 2 3 4 5 6 туре Миниунурет рет Р Р Р Р Р Р Р 15.80 MHz 1.588 dB	Frequency Auto Tune Center Freq 2.46200000 GHz Start Freq
Keysight Spectrum Analyzer - Swept S     Q     RL RF 50 Ω D     Center Freq 2.4620000     NFE     Ref Offset 19.79     10 dB/div Ref 20.00 dBi     0.00     -0.	SA SC SENSE:INT SC SENSE:INT SENSE:INT SENSE:INT Trig: Free Run #Atten: 30 dB M A A A M A A M A M	nt1_2462	тяде [1 2 3 4 5 6 туре Миниунурет рет Р Р Р Р Р Р Р 15.80 MHz 1.588 dB	Frequency Auto Tune Center Freq 2.462000000 GHz Start Freq 2.442000000 GHz 2.482000000 GHz 2.482000000 GHz CF Step 4.000000 MHz
Keysight Spectrum Analyzer - Swept S           Ref Offset 19.79           Center Freq 2.462000C           Ref Offset 19.79           10 dB/dlv         Ref 20.00 dB           10.0         Ref 20.00 dB           20.0         Ref 20.00 dB           20.0 </td <td>SA SC SENSE:INT SOO GHZ F PNO: Wide IFGain:Low Trig: Free Run #Atten: 30 dB m </td> <td>nt1_2462</td> <td>TRACE [1 2 3 4 5 6 TYPE MWWWW DET P P P P P r3 15.80 MHz 1.588 dB DL1128 dBm DL1128 dBm</td> <td>Frequency Auto Tune Center Freq 2.46200000 GHz 2.44200000 GHz 2.44200000 GHz 2.48200000 GHz CF Step</td>	SA SC SENSE:INT SOO GHZ F PNO: Wide IFGain:Low Trig: Free Run #Atten: 30 dB m 	nt1_2462	TRACE [1 2 3 4 5 6 TYPE MWWWW DET P P P P P r3 15.80 MHz 1.588 dB DL1128 dBm DL1128 dBm	Frequency Auto Tune Center Freq 2.46200000 GHz 2.44200000 GHz 2.44200000 GHz 2.48200000 GHz CF Step
Keysight Spectrum Analyzer - Swept S           Off RL         RF         50.0         D           Center Freq 2.46200000         NFE           Ref Offset 19.79         Ref 20.00 dB         D           Og         Ref 20.00 dB         D         D           10.0         Ref 20.00 dB         D         D           20.0         Ref 20.00 dB         D         D           10.0         Ref 20.00 dB         D         D         D           10.0         Ref 20.00 dB         D         D         D           11.0         1         1         1         D         D           20.0         1         1         1	SA DOO GHZ E PNO: Wide + Trig: Free Run IFGain:Low #Atten: 30 dB m 1 dB m 4 dB m 4 dB m 4 dB m 4 dB m 4 dB m 4 dB 4 dB m 4 dB m 4 dB 4 dB	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 AMK 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1	TRACE [1 2 3 4 5 6 TYPE MWWWW DET P P P P P r3 15.80 MHz 1.588 dB 0L1120 dBm 0L1120 dBm 0L120 dBm 0L120 dBm 0L120 dBm 0L120 dBm 0L120 dBm 0L120 dBm 0L120	Frequency Auto Tune Center Freq 2.462000000 GHz Start Freq 2.442000000 GHz 2.482000000 GHz 2.482000000 GHz CF Step 4.000000 MHz
Keysight Spectrum Analyzer - Swept S           Ref Offset 19.79           Center Freq 2.462000C           Ref Offset 19.79           10 dB/dlv         Ref 20.00 dB           10.0         Ref 20.00 dB           20.0         Ref 20.00 dB           20.0 </td <td>SA SC SENSE:INT SC SENSE:INT SC SENSE:INT SC SENSE:INT SC SENSE:INT Trig: Free Run #Atten: 30 dB m Atten: 30 dB m #VBW 300 kHz X 2 459 80 GHz 2 459 80 GHz 2 459 60 GHz 7 279 dBm</td> <td>ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 AMK 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1</td> <td>TRACE [1 2 3 4 5 6 TYPE MWWWW DET P P P P P r3 15.80 MHz 1.588 dB 0L1120 dBm 0L1120 dBm 0L120 dBm 0L120 dBm 0L120 dBm 0L120 dBm 0L120 dBm 0L120 dBm 0L120</td> <td>Frequency Auto Tune Center Freq 2.462000000 GHz 2.442000000 GHz 2.442000000 GHz 2.442000000 GHz 2.482000000 GHz 4.000000 MHz Auto Man Freq Offset 0 Hz Scale Type</td>	SA SC SENSE:INT SC SENSE:INT SC SENSE:INT SC SENSE:INT SC SENSE:INT Trig: Free Run #Atten: 30 dB m Atten: 30 dB m #VBW 300 kHz X 2 459 80 GHz 2 459 80 GHz 2 459 60 GHz 7 279 dBm	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 AMK 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1	TRACE [1 2 3 4 5 6 TYPE MWWWW DET P P P P P r3 15.80 MHz 1.588 dB 0L1120 dBm 0L1120 dBm 0L120 dBm 0L120 dBm 0L120 dBm 0L120 dBm 0L120 dBm 0L120 dBm 0L120	Frequency Auto Tune Center Freq 2.462000000 GHz 2.442000000 GHz 2.442000000 GHz 2.442000000 GHz 2.482000000 GHz 4.000000 MHz Auto Man Freq Offset 0 Hz Scale Type
Keysight Spectrum Analyzer - Swept S           R         RF         S0.9         D           Center Freq 2.462000C         NFE           Ref Offset 19.79         O dB/div         Ref 20.00 dB           10.0         Ref 20.00 dB         D           20.0         Ref 20.00 dB         Z           20.0         Ref 20.00 dB         Z           3         Δ1         1         1           3         Δ1         1         1         1           3         Δ1         1         1         1           4         1         1         1 <th1< td=""><td>SA SC SENSE:INT SC SENSE:INT SC SENSE:INT SC SENSE:INT SC SENSE:INT Trig: Free Run #Atten: 30 dB m Atten: 30 dB m #VBW 300 kHz X 2 459 80 GHz 2 459 80 GHz 2 459 60 GHz 7 279 dBm</td><td>ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 AMK 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1</td><td>TRACE [1 2 3 4 5 6 TYPE MWWWW DET P P P P P r3 15.80 MHz 1.588 dB 0L1120 dBm 0L1120 dBm 0L120 dBm 0L120 dBm 0L120 dBm 0L120 dBm 0L120 dBm 0L120 dBm 0L120</td><td>Frequency Auto Tune Center Freq 2.462000000 GHz Start Freq 2.442000000 GHz 2.442000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz</td></th1<>	SA SC SENSE:INT SC SENSE:INT SC SENSE:INT SC SENSE:INT SC SENSE:INT Trig: Free Run #Atten: 30 dB m Atten: 30 dB m #VBW 300 kHz X 2 459 80 GHz 2 459 80 GHz 2 459 60 GHz 7 279 dBm	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 AMK 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1 3Δ1	TRACE [1 2 3 4 5 6 TYPE MWWWW DET P P P P P r3 15.80 MHz 1.588 dB 0L1120 dBm 0L1120 dBm 0L120 dBm 0L120 dBm 0L120 dBm 0L120 dBm 0L120 dBm 0L120 dBm 0L120	Frequency Auto Tune Center Freq 2.462000000 GHz Start Freq 2.442000000 GHz 2.442000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz

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Intel Field 2-1/22/00       Pio Mich       Trig Free Run       Avgitelds: 100/100       Trig Preserve       Auto Tune         Ref Offset 13:73 dB       Addr.3 16:20 MHz       Auto Tune       Center Freq       2.412200000 GHz         diama		SA DC SENSE:IN		10:37:35 AM Aug 26, 2020	Frequency
Ber Offset 13.73 dB         ΔMKr3 16.20 MHz         Auto Tune           dB/div         Ref 20.00 dBm         1.802 dB         1.802 dB         2.41200000 dHz         2.41200000 dHz           under E.4.1220 GHz         #VBW 300 KHz         Sweep 1.533 ms (1001 pts)         Storp Freq         2.43220000 GHz           N         I         2.404 40 GHz         2.947 dBm         Auto Tune         Storp Freq         2.43220000 GHz           N         I         2.404 40 GHz         #VBW 300 KHz         Sweep 1.533 ms (1001 pts)         Auto Tune           N         I         2.404 40 GHz         2.947 dBm         Auto Tune         Freq Offset           N         I         I         (.0)         1.802 dB         Auto Tune         Freq Offset           N         I         2.404 40 GHz         2.947 dBm         Auto Tune         Freq Offset           N         I         2.404 40 GHz         2.947 dBm         Auto Tune         Freq Offset           N         I         2.404 40 GHZ         2.947 dBm         Auto Tune         Freq Offset           N         I         2.404 40 GHZ         Sold BBm         Auto Tune         Freq Offset           N         I         I         2.404 40 GHZ         Sold BBm <t< th=""><th></th><th>E PNO: Wide 🛶 Trig: Free Run</th><th>Avg Hold: 100/100</th><th>TYPE MWWWW</th><th>,</th></t<>		E PNO: Wide 🛶 Trig: Free Run	Avg Hold: 100/100	TYPE MWWWW	,
attacy         Ref 20.00 dBm         1.902 dB           attacy         Ref 20.00 dBm         2.4120000 GHz           attacy         Ref 20.00 dBm         2.4120000 GHz           attac         Span 40.00 MHz         Span 40.00 MHz           attac			AMI		Auto Tune
Image: second			<b>Δ</b> (0)		
Image: Second	10.0		2		Contor From
Image: Distribution         Control         Contro         Control         Control <td>0.00</td> <td>1 Martine the provider where</td> <td>manufarmenter 301</td> <td>DL1 0.02 dBm</td> <td></td>	0.00	1 Martine the provider where	manufarmenter 301	DL1 0.02 dBm	
Image: Section 2000 GHz         Stop Freq           1         2.41220 GHz         #VBW 300 KHz         Sweep 1.533 ms (1001 pts)           1         2.41220 GHz         #VBW 300 KHz         Sweep 1.533 ms (1001 pts)           1         1         2.412 0 GHz         #VBW 300 KHz         Sweep 1.533 ms (1001 pts)           1         1         2.412 0 GHz         #VBW 300 KHz         Sweep 1.533 ms (1001 pts)           1         1         2.412 0 GHz         #VBW 300 KHz         Sweep 1.533 ms (1001 pts)           1         1         1.802 dB         1.802 dB         1.802 dB	-10.0	hander have h			
Image: Section 2000 GHz         Stop Freq           1         2.41220 GHz         #VBW 300 KHz         Sweep 1.533 ms (1001 pts)           1         2.41220 GHz         #VBW 300 KHz         Sweep 1.533 ms (1001 pts)           1         1         2.412 0 GHz         #VBW 300 KHz         Sweep 1.533 ms (1001 pts)           1         1         2.412 0 GHz         #VBW 300 KHz         Sweep 1.533 ms (1001 pts)           1         1         2.412 0 GHz         #VBW 300 KHz         Sweep 1.533 ms (1001 pts)           1         1         1.802 dB         1.802 dB         1.802 dB	-20.0	U. Mural	- Monoral Maria	Λε.	Start Fred
Image: Section 2000 GHz         Stop Freq           1         2.41220 GHz         #VBW 300 KHz         Sweep 1.533 ms (1001 pts)           1         2.41220 GHz         #VBW 300 KHz         Sweep 1.533 ms (1001 pts)           1         1         2.412 0 GHz         #VBW 300 KHz         Sweep 1.533 ms (1001 pts)           1         1         2.412 0 GHz         #VBW 300 KHz         Sweep 1.533 ms (1001 pts)           1         1         2.412 0 GHz         #VBW 300 KHz         Sweep 1.533 ms (1001 pts)           1         1         1.802 dB         1.802 dB         1.802 dB	-30.0			WWWWWWWWWWWWWWW	
Image: Section Analyse: Section         State: 10 (0)         State: 10 (0)         State: 10 (0)         Freq Offset           0					
<ul> <li></li></ul>	-50.0				Stop Freq
Immer 2.41220 GHz         Span 40.00 MHz           Eves BW 100 kHz         #VBW 300 kHz         Sweep 1.533 ms (1001 pts)           Immer 2.41220 GHz         2.404.40 GHz         2.937 dBm           Immer 2.41220 GHz         2.404.40 GHz         2.937 dBm           Immer 2.41220 GHz         0.100 Hz         FUNCTION WOULD         FUNCTION WOULD           Immer 2.41220 GHz         0.1302 dB         0.1302 dB         FUNCTION WOULD           Immer 2.4120 GHz         0.0000 GHz         FUNCTION WOULD         FUNCTION WOULD           Immer 7 for 0 first         0.1302 dB         0.1302 dB         0.133 dB           Immer 7 for 0 first         0.133 dB         0.133 dB         0.133 dB           Immer 7 for 0 first         0.133 dB         0.133 dB         0.133 dB           Immer 7 for 0 first         0.133 dB         0.133 dB         0.133 dB           Immer 7 for 0 first         0.133 dB         0.133 dB         0.133 dB           Immer 7 for 0 first         0.133 dB         0.133 dB         0.133 dB           Immer 7 for 0 first         0.133 dB         0.133 dB         0.133 dB           Immer 7 for 0 first         0.133 dB         0.133 dB         0.133 dB           Immer 7 for 0 first         0.133 dB         0.133 dB         <	-60.0				2.432200000 GHz
Les BW 100 kHz         #VBW 300 kHz         Sweep 1.533 ms (1001 pts)         4.000000 MHz           International internationalinternatintereal international internatintereal international i					
Red Offset 19:20         Xo         FUNCTION	Center 2.41220 GHz #Res BW 100 kHz	#VBW 300 kHz	Sween 15		
N       I       f       2.404 40 CHz       -2.947 dBm       Freq Offset         N       I       f       2.416 72 CHz       6.020 dBm       Freq Offset       O Hz         N       I       f       2.416 72 CHz       6.020 dBm       Freq Offset       O Hz         N       I       f       2.416 72 CHz       6.020 dBm       Freq Offset       O Hz         N       I       f       2.416 72 CHz       6.020 dBm       Freq Offset       O Hz         Image: State       Image: State       Alloh Atro       10.55:38 AM Aug 26.200       Freq Offset       Freq Offset         Image: State       Alloh Atro       10.55:38 AM Aug 26.200       Frequency       Alloh Atro       Image: State       Alloh Atro       10.55:38 AM Aug 26.200       Frequency         Image: State       Alloh Atro       10.55:38 AM Aug 26.200       Frequency       Auto Tune         Ref Offset 19:79 B       PhO: Wide       Trig: Free Run If Gain: Low       Alloh Atro       10.55:38 AM Aug 26.200       Center Freq 2.412000000 CHz         Image: State       O.133 dB       O.133 dB       O.133 dB       Center Freq 2.42000000 CHz       State Freq 2.332000000 CHz       State Freq 2.332000000 CHz         Image: State       Image: State Treq 2.41200 CHz       Stat	MKR MODE TRC SCL	× • • • • • • • • • • • • • • • • • • •	-		
Δ1       1       f       (Δ)       16.20 MHz       (Δ)       1.802 dB       Freq Offset         0 Hz       0 Hz       0 Hz       Scale Type       Log       Lin         Scale Type         Log       Log       Lin         TIDE Tree Q.2.412000000 GHz       SENSE.INT       Alog Type.RMS       Tree P PROVIDE       Frequency         NFE       PNC Wide       Tree PROVIDE       Tree PROVIDE       Tree PROVIDE       Tree PROVIDE       Tree PROVIDE       Alog Type.RMS       Tree PROVIDE       Frequency         Augint Spectrum Analyzer Swept 5A         Ref Offset 13.79 dB       Colspan="2">Center Freq         Offset 13.79 dB       Center Freq         Offset 13.73 dB       Center Freq         Center Freq         2.404.		2.404 40 GHz -2.947 dBm			
Inter Freq 2.41200 000 GHz         Trig: Freq Run #Atten: 30 dB         Allon Autor Avg Type: RMA Avg Type: RMA Av	<b>3</b> Δ1 1 f (Δ) 4	16.20 MHz (Δ) 1.802 dB			-
Log       Ling         Introduction       Status         RL       RF       S0 G       DC         RL       RF       S0 G       DC         NFE       PNO: Wide       Trig: Free Run       #Avg Type: RMS       Trace[1:33:45]         Arge 19:33:43       Center Freq       2.412000000 GHz       Frequency         Arge 19:33:43       Center Freq       2.41200000 GHz       Frequency         Arge 19:33:43       Center Freq       2.41200000 GHz       Frequency         Arge 19:33:43       Center Freq       2.41200000 GHz       Arge 19:33:43         Control Ref Offset 19:79 dB       Center Freq       2.412000000 GHz       Arge 19:33:43         Control Ref 19:79 dB       Center Freq       2.412000000 GHz       Start Freq         Control Ref 19:79 dB       Center Freq       2.4200000 GHz       Start Freq         Control Ref 19:79 dB       Center Freq       2.4200000 GHz       Start Freq         Control Ref 19:79 dB       Center Freq       2.4200000 GHz       Start Freq         Control Ref 19:79 dB       Center Freq       2.4200000 GHz       Start Freq         Control Ref 19:79 dB       Center Freq       2.4200000 GHz       Center Freq         Contor Ref 19:79 dB       Center Freq <td>5</td> <td></td> <td></td> <td>E</td> <td>0 HZ</td>	5			E	0 HZ
Log       Ling         Introduction       Status         RL       RF       S0 G       DC         RL       RF       S0 G       DC         NFE       PNO: Wide       Trig: Free Run       #Avg Type: RMS       Trace[1:33:45]         Arge 19:33:43       Center Freq       2.412000000 GHz       Frequency         Arge 19:33:43       Center Freq       2.41200000 GHz       Frequency         Arge 19:33:43       Center Freq       2.41200000 GHz       Frequency         Arge 19:33:43       Center Freq       2.41200000 GHz       Arge 19:33:43         Control Ref Offset 19:79 dB       Center Freq       2.412000000 GHz       Arge 19:33:43         Control Ref 19:79 dB       Center Freq       2.412000000 GHz       Start Freq         Control Ref 19:79 dB       Center Freq       2.4200000 GHz       Start Freq         Control Ref 19:79 dB       Center Freq       2.4200000 GHz       Start Freq         Control Ref 19:79 dB       Center Freq       2.4200000 GHz       Start Freq         Control Ref 19:79 dB       Center Freq       2.4200000 GHz       Start Freq         Control Ref 19:79 dB       Center Freq       2.4200000 GHz       Center Freq         Contor Ref 19:79 dB       Center Freq <td>5 6 7 8 9</td> <td></td> <td></td> <td></td> <td>Scale Type</td>	5 6 7 8 9				Scale Type
Introduction         Status           Register         Status           Frequency         Frequency           MFE         PRO         Status           MFE         PRO         Status         Trace         13.3 4.5 million           MFE         PRO         Status         Trace         10.56.38 AM up 26, 2020         Frequency           MFE         PRO         Status         Trace         10.56.38 AM up 26, 2020         Frequency           MFE         PRO         Trace	9 10				
11N20MIMO_Ant1_2412         Keysight Spectrum Analyzer - Swept SA         RL       RF 50 0000 GHz         Trig: Free Run #Atten: 30 dB       ALION AUTO       10:56:38 AM Aug26, 200         TRACE [12:3 + 5 6]         PHO: Wide	11				
Kepight Spectrum Analyzer - Swept SA         Image: Control of the system of the	MSG		STATUS		]
Kepight Spectrum Analyzer - Swept SA         Image: Control of the system of the					
Prequency         #Avg Type: RNS AvgHold: 100/100         Trace [12:3:4:56] Trace [12:3:4:56]         Frequency           MFE         PNC: Wide + (FedinLow         Trig: Free Run #Atten: 30 dB         #Avg Type: RNS AvgHold: 100/100         Trace [12:3:4:56]         Auto Tune           dB/div         Ref Offset 19.79 dB 0.133 dB         0.133 dB         0.133 dB         Center Freq 2.41200000 GHz         Auto Tune           dB/div         Ref Offset 19.79 dB 0.0         0.133 dB         0.113 dB         Center Freq 2.41200000 GHz           00 00 00 00 00 00 00 00 00 00 00 00 00		11N20MIN	/IO_Ant1_2412		
Ref Offset 19.79 dB         ΔMkr3 15.32 MHz         Auto Tune           dB/div         Ref 20.00 dBm         0.133 dB         Center Freq           00         0         0         0         0         0         Center Freq           00         0 <t< td=""><td>Keysight Spectrum Analyzer - Swept</td><td>SA</td><td></td><td>10-55-20 MM 25-2020</td><td></td></t<>	Keysight Spectrum Analyzer - Swept	SA		10-55-20 MM 25-2020	
Ref Offset 19.79 dB         0.133 dB           dB/div         Ref 20.00 dBm         0.133 dB           0         0         0         0.133 dB           0         0         0         0.113 dBm         0.113 dBm           0         0         0.113 dBm         0.113 dBm         0.113 dBm           0         0         0         0         0         0.113 dBm         0.113 dBm           0         0         0         0.133 dB         0.113 dBm         0.113 dBm         0.113 dBm           0         0         0         0         0.111 dBm         0.113 dBm         0.111 dBm           0         0         0         0         0         0.111 dBm	RL RF 50 Ω     Center Freq 2.412000	SA DC SENSE:IN 000 GHz	T ALIGN AUTO #Avg Type: RMS	10:56:38 AM Aug 26, 2020 TRACE 1 2 3 4 5 6	
g       1	RL RF 50 Ω     Center Freq 2.412000	SA DC SENSE:IN 000 GHz FE PNO: Wide +++ Trig: Free Run	T ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P P P P P P	Frequency
000       0.1134 dBm       0.1134 dBm       2.41200000 GHz         000       0.01134 dBm       0.01134 dBm       2.41200000 GHz         000       0.01134 dBm       0.000 GHz       2.39200000 GHz         000       0.01134 dBm       0.000 GHz       0.000 GHz         000       0.0113 dBm       0.000 GHz       0.000 GHz         000       0.010 GHz       0.000 GHz       0.000 GHz         000       0.013 GB       0.000 GHz       0.000 GHz         0.000 GHz       0.000 GHz       0.000 GHz       0.000 GHz       0.000 GHz         0.000 GHz       0.000 GHz       0.000 GHz       0.000 GHz       0.000 GHz         0.000 GHz       0.000 GHz       0.000 GHz       0.000 GHz	04 RL RF 50 Ω Center Freq 2.412000 NF Ref Offset 19.75	SA DC SENSE:IN 000 GHz FRO: Wide + IFGain:Low #Atten: 30 dB	T ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P P P P P P (r3 15.32 MHz	Frequency
2.41200000 GHz         2.41200000 GHz         2.3200000 GHz         2.41200 GHz         EMDE       FUNCTION         FUNCTION       FUNCTION         FUNCTION       FUNCTION         A1       f         A1       f <td>04 RL RF 50 Ω Center Freq 2.412000 NF Ref Offset 19.75</td> <td>SA DC SENSE:IN 000 GHz FRO: Wide + IFGain:Low #Atten: 30 dB</td> <td>T ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100</td> <td>TRACE 1 2 3 4 5 6 TYPE MWWWW DET P P P P P P (r3 15.32 MHz</td> <td>Frequency</td>	04 RL RF 50 Ω Center Freq 2.412000 NF Ref Offset 19.75	SA DC SENSE:IN 000 GHz FRO: Wide + IFGain:Low #Atten: 30 dB	T ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P P P P P P (r3 15.32 MHz	Frequency
0	By RL         RF         50 Ω           Center Freq 2.412000         NF           NF         0 ΔB/div         Ref Offset 19.75           10 dB/div         Ref 20.00 dE           10.0         10.0	SA DC SENSE:IN DOOD GHZ Trig: Free Run IFGain:Low #Atten: 30 dB BM	T ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	rrace 1 2 3 4 5 6 TYPE M WWWWW DET P P P P P 0.133 dB	Frequency Auto Tune Center Freq
Image: solution of the solutio	RL         RF         50 Ω           Center Freq 2.412000         NF           NF         0 dB/dlv         Ref Offset 19.75           10 dB/dlv         Ref 20.00 dE           10.0         0.00	SA DC SENSE:IN DOOD GHZ Trig: Free Run IFGain:Low #Atten: 30 dB BM	T ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 ΔΜΗ	TRACE [] 2 3 4 5 6 TYPE MWWWW DET P P P P P P Cr3 15.32 MHz 0.133 dB	Frequency Auto Tune Center Freq
Image: solution of the solutio	W         RL         RF         50.0           Center Freq 2.412000         NF           NF         10.0         NF           10 dB/div         Ref Offset 19.75           10.0	SA DC SENSE:IN DOOD GHZ F PRO: Wide ++ IFGain:Low B dB Sm Production P	T ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 ΔΜΗ	TRACE [] 2 3 4 5 6 TYPE MWWWW DET P P P P P P Cr3 15.32 MHz 0.133 dB	Frequency Auto Tune Center Freq 2.412000000 GHz
Image: solution of the solutio	W         RL         RF         50.0           Center Freq 2.412000         NF           NF         10.0         NF           10 dB/div         Ref Offset 19.75           10.0	SA DC SENSE:IN DOOD GHZ F PRO: Wide ++ IFGain:Low B dB Sm Production P	T ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 ΔΜΗ	TRACE [] 2 3 4 5 6 TYPE MWWWW DET P P P P P P Cr3 15.32 MHz 0.133 dB	Frequency Auto Tune Center Freq 2.412000000 GHz Start Freq
Δ         Δ	W         RL         RF         50.0           Center Freq 2.412000         NF           NF         10.0         NF           10 dB/div         Ref Offset 19.75           10.0	SA DC SENSE:IN DOOD GHZ F PRO: Wide ++ IFGain:Low B dB Sm Production P	T ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 ΔΜΗ	TRACE [] 2 3 4 5 6 TYPE MWWWW DET P P P P P P Cr3 15.32 MHz 0.133 dB	Frequency Auto Tune Center Freq 2.412000000 GHz Start Freq
Enter 2.41200 GHz         #VBW 300 kHz         Span 40.00 MHz         Span 40.00 MHz           RMODE FICE         Sat         #VBW 300 kHz         Sweep         1.533 ms (1001 pts)           N         f         2.404 48 GHz         0.807 dBm         FUNCTION         FUNCTION MIDTH         FUNCTION VALUE           N         f         2.414 52 GHz         7.338 dBm         FUNCTION         FUNCTION VALUE         Freq Offset           Δ1         f         Δ.414 52 GHz         0.133 dB         0.133 dB         Function value         Freq Offset           Δ1         f         Δ.2474 452 GHz         7.338 dBm         Function value         Function value         Function value         Freq Offset           Δ1         f         Δ.0         15.32 MHz         Δ.0         0.133 dB         Function value         Function value <t< td=""><td>W         RL         RF         50.0           Center Freq 2.412000         NF           NF         10.0         NF           10 dB/div         Ref Offset 19.75           10.0        </td><td>SA DC SENSE:IN DOOD GHZ F PRO: Wide ++ IFGain:Low B dB Sm Production P</td><td>T ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 ΔΜΗ</td><td>TRACE [] 2 3 4 5 6 TYPE MWWWW DET P P P P P P Cr3 15.32 MHz 0.133 dB</td><td>Frequency Auto Tune Center Freq 2.412000000 GHz Start Freq 2.392000000 GHz</td></t<>	W         RL         RF         50.0           Center Freq 2.412000         NF           NF         10.0         NF           10 dB/div         Ref Offset 19.75           10.0	SA DC SENSE:IN DOOD GHZ F PRO: Wide ++ IFGain:Low B dB Sm Production P	T ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 ΔΜΗ	TRACE [] 2 3 4 5 6 TYPE MWWWW DET P P P P P P Cr3 15.32 MHz 0.133 dB	Frequency Auto Tune Center Freq 2.412000000 GHz Start Freq 2.392000000 GHz
R     MODE     TRC 42404 48 GHz     Sweep     1.533 ms (1001 pts)       N     1     f     2.404 48 GHz     0.807 dBm       L     Δ1     1     f     2.414 52 GHz     7.338 dBm       L     Δ1     1     f     (Δ)     0.133 dB	W         RL         RF         50 Ω           Center Freq 2.412000         NF           Ref Offset 19.75         NF           10 dB/div         Ref 20.00 dB           10.0	SA DC SENSE:IN DOOD GHZ F PRO: Wide ++ IFGain:Low B dB Sm Production P	T ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 ΔΜΗ	TRACE [] 2 3 4 5 6 TYPE MWWWW DET P P P P P P Cr3 15.32 MHz 0.133 dB	Frequency Auto Tune Center Freq 2.412000000 GHz Start Freq 2.392000000 GHz Stop Freq
R MODE TRC     SCI     X     Y     FUNCTION     FUNCTION MIDTH     FUNCTION VALUE     Auto     Man       N     1     f     2.404.48 GHz     0.807 dBm     Function value     Function value     Auto     Man       Δ1     1     f     2.414.52 GHz     7.338 dBm     Freq Offset     0.133 dB     Freq Offset       Δ1     1     f     Δ1     1.5.32 MHz     Δ1     0.133 dB     Freq Offset     0.133 dB	M         RL         RF         50 Ω           Center Freq 2.412000         NF           Ref Offset 19.75         NF           10 dB/div         Ref 20.00 dB           10.0	SA DC SENSE:IN DOOD GHZ F PRO: Wide ++ IFGain:Low B dB Sm Production P	T ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 ΔΜΗ	TRACE [] 2 3 4 5 6 TYPE MWWWW DET P P P P P P Cr3 15.32 MHz 0.133 dB	Frequency Auto Tune Center Freq 2.412000000 GHz Start Freq 2.392000000 GHz Stop Freq
N       1       f       2.404 48 GHz       0.807 dBm         Δ1       1       f       2.414 62 GHz       7.338 dBm         Δ1       1       f       (Δ)       15.32 MHz       (Δ)       0.133 dB         Δ1       1       f       (Δ)       15.32 MHz       (Δ)       0.133 dB         Δ1       1       f       (Δ)       15.32 MHz       (Δ)       0.133 dB         Δ1       1       f       (Δ)       15.32 MHz       (Δ)       0.133 dB         Δ1       1       f       (Δ)       15.32 MHz       (Δ)       0.133 dB         Δ2       4       4       4       4       4       4         Δ2       4       4       4       4       4       4         Δ3       4       4       4       4       4       4         Δ4       4       4       4       4       4       4       4         Δ4       4       4       4       4       4       4       4       4         Δ4       4       4       4       4       4       4       4       4         Δ5       4       4       4	M         RL         RF         50 Ω           Center Freq 2.412000         NF           Ref Offset 19.75         NF           10 dB/div         Ref 20.00 dB           10.0	SA DC SENSE:IN DOOD GHZ Trig: Free Run #Atten: 30 dB 30 dB	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 12 3.4 5.6 TYPE M.WWWW DET P.P.P.P.P.P (r3 15.32 MHz 0.133 dB 0.1134 dBm 0L1134 dBm 0L1134 dBm 0L1134 dBm 5pan 40.00 MHz	Frequency Auto Tune Center Freq 2.41200000 GHz Start Freq 2.39200000 GHz Stop Freq 2.43200000 GHz CF Step
" OHz Scale Type Log Lin	M         RL         RF         50 Ω           Center Freq 2.412000         NF           Ref Offset 19.75         Ref 20.00 dE           10 dB/div         Ref 20.00 dE           10.0	SA DC SENSE:IN DOOD GHZ Trig: Free Run #Atten: 30 dB 30 dB	Augn Autoo #Avg Type: RMS Avg Hold: 100/100 AMP	TRACE [] 2 3 4 5 6 TYPE [] WWWWW DET [P P P P P P (r3 15.32 MHz 0.133 dB DL1134 dbn	Frequency Auto Tune Center Freq 2.412000000 GHz Start Freq 2.392000000 GHz 2.432000000 GHz 2.432000000 GHz CF Step 4.000000 MHz
log Lin	By RL         RF         50 Q           Center Freq 2.412000         NF           0 dB/dlv         Ref Offset 19.75           10 dB/dlv         Ref Offset 19.75           0 dB/dlv         Ref Offset 19.75           0 dB/dlv         Ref Offset 19.75           10 dB/dlv         Ref Offset 19.75           0 dB/dlv         Ref Offset 19.75           0 dB/dlv         Ref Offset 19.75           0 dB/dlv         Ref Malk/Milk           0 dB/dlv         Ref Malk/Milk           0 dB/dlv         Ref Malk/Milk           0 dB/dlv         Ref Malk/Milk           0 dB/dlv         Ref Blkv	SA DC SENSE:IN DOOD GHZ Trig: Free Run #Atten: 30 dB 30 dB	Augn Autoo #Avg Type: RMS Avg Hold: 100/100 AMP	TRACE [] 2 3 4 5 6 TYPE [] WWWWW DET [P P P P P P (r3 15.32 MHz 0.133 dB DL1134 dbn	Frequency Auto Tune Center Freq 2.412000000 GHz Start Freq 2.392000000 GHz 2.432000000 GHz 2.432000000 GHz CF Step 4.000000 MHz
log Lin	M         RL         RF         50 Ω           Center Freq 2.412000 NF         Ref Offset 19.75         Ref 20.00 dE           10 dB/dlv         Ref 20.00 dE         NF           10 dB/dlv         Ref 20.00 dE         NF           10 dB/dlv         Ref 20.00 dE         NF           10.0 </td <td>SA DC SENSE:IN DOOD GHZ F PNO: Wide ++ IFGain:Low Atten: 30 dB Bm Atta 52 GHZ 7:338 dBm</td> <td>Augn Autoo #Avg Type: RMS Avg Hold: 100/100 AMP</td> <td>TRACE [] 2 3 4 5 6 TYPE [] WWWWW DET [P P P P P P (r3 15.32 MHz 0.133 dB DL1134 dbn</td> <td>Frequency Auto Tune Center Freq 2.412000000 GHz Start Freq 2.392000000 GHz 2.432000000 GHz 2.432000000 GHz CF Step 4.000000 MHz Auto Man</td>	SA DC SENSE:IN DOOD GHZ F PNO: Wide ++ IFGain:Low Atten: 30 dB Bm Atta 52 GHZ 7:338 dBm	Augn Autoo #Avg Type: RMS Avg Hold: 100/100 AMP	TRACE [] 2 3 4 5 6 TYPE [] WWWWW DET [P P P P P P (r3 15.32 MHz 0.133 dB DL1134 dbn	Frequency Auto Tune Center Freq 2.412000000 GHz Start Freq 2.392000000 GHz 2.432000000 GHz 2.432000000 GHz CF Step 4.000000 MHz Auto Man
log Lin	M         RL         RF         50 Ω           Center Freq 2.412000 NF         Ref Offset 19.75         Ref 20.00 dE           10 dB/dlv         Ref 20.00 dE         NF           10 dB/dlv         Ref 20.00 dE         NF           10 dB/dlv         Ref 20.00 dE         NF           10.0 </td <td>SA DC SENSE:IN DOOD GHZ F PNO: Wide ++ IFGain:Low Atten: 30 dB Bm Atta 52 GHZ 7:338 dBm</td> <td>Augn Autoo #Avg Type: RMS Avg Hold: 100/100 AMP</td> <td>TRACE [] 2 3 4 5 6 TYPE [] WWWWW DET [P P P P P P (r3 15.32 MHz 0.133 dB DL1134 dbn</td> <td>Frequency Auto Tune Center Freq 2.412000000 GHz Start Freq 2.392000000 GHz 2.432000000 GHz 2.432000000 GHz CF Step 4.000000 MHz Auto Man</td>	SA DC SENSE:IN DOOD GHZ F PNO: Wide ++ IFGain:Low Atten: 30 dB Bm Atta 52 GHZ 7:338 dBm	Augn Autoo #Avg Type: RMS Avg Hold: 100/100 AMP	TRACE [] 2 3 4 5 6 TYPE [] WWWWW DET [P P P P P P (r3 15.32 MHz 0.133 dB DL1134 dbn	Frequency Auto Tune Center Freq 2.412000000 GHz Start Freq 2.392000000 GHz 2.432000000 GHz 2.432000000 GHz CF Step 4.000000 MHz Auto Man
	M         RL         RF         50 Ω           Center Freq 2.412000 NF         Ref Offset 19.75         Ref 20.00 dE           10 dB/dlv         Ref 20.00 dE         NF           10 dB/dlv         Ref 20.00 dE         NF           10 dB/dlv         Ref 20.00 dE         NF           10.0 </td <td>SA DC SENSE:IN DOOD GHZ F PNO: Wide ++ IFGain:Low Atten: 30 dB Bm Atta 52 GHZ 7:338 dBm</td> <td>Augn Autoo #Avg Type: RMS Avg Hold: 100/100 AMP</td> <td>TRACE [] 2 3 4 5 6 TYPE [] WWWWW DET [P P P P P P (r3 15.32 MHz 0.133 dB DL1134 dbn</td> <td>Frequency Auto Tune Center Freq 2.412000000 GHz 2.392000000 GHz 2.392000000 GHz 2.432000000 GHz 4.000000 MHz Auto Man Freq Offset 0 Hz</td>	SA DC SENSE:IN DOOD GHZ F PNO: Wide ++ IFGain:Low Atten: 30 dB Bm Atta 52 GHZ 7:338 dBm	Augn Autoo #Avg Type: RMS Avg Hold: 100/100 AMP	TRACE [] 2 3 4 5 6 TYPE [] WWWWW DET [P P P P P P (r3 15.32 MHz 0.133 dB DL1134 dbn	Frequency Auto Tune Center Freq 2.412000000 GHz 2.392000000 GHz 2.392000000 GHz 2.432000000 GHz 4.000000 MHz Auto Man Freq Offset 0 Hz
	M         RL         RF         50 Ω           Center Freq 2.412000         NF           Ref Offset 19.75         Ref Offset 19.75           Log         Ref Offset 19.75           10         Max           0.00         Max           -0.00         Max           Max         Max           M	SA DC SENSE:IN DOOD GHZ F PNO: Wide ++ IFGain:Low Atten: 30 dB Bm Atta 52 GHZ 7:338 dBm	Augn Autoo #Avg Type: RMS Avg Hold: 100/100 AMP	TRACE 12 2 3 4 5 6 TYPE MWWWW DET P P P P P P (r3 15.32 MHz 0.133 dB DL11.34 dBn MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM	Frequency Auto Tune Center Freq 2.412000000 GHz 2.392000000 GHz 2.392000000 GHz 2.432000000 GHz 4.000000 MHz Auto Man Freq Offset 0 Hz Scale Type
STATUS	M         RL         RF         50 Ω           Center Freq 2.412000 NF         Ref Offset 19.75         Ref 20.00 dE           10 dB/dlv         Ref 20.00 dE         NF           10 dB/dlv         Ref 20.00 dE         NF           10 dB/dlv         Ref 20.00 dE         NF           10.0 </td <td>SA DC SENSE:IN DOOD GHZ F PNO: Wide ++ IFGain:Low Atten: 30 dB Bm Atta 52 GHZ 7:338 dBm</td> <td>Augn Autoo #Avg Type: RMS Avg Hold: 100/100 AMP</td> <td>TRACE 12 2 3 4 5 6 TYPE MWWWW DET P P P P P P (r3 15.32 MHz 0.133 dB DL11.34 dBn MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM</td> <td>Frequency Auto Tune Center Freq 2.412000000 GHz 2.392000000 GHz 2.392000000 GHz 2.432000000 GHz 4.000000 MHz Auto Man Freq Offset 0 Hz Scale Type</td>	SA DC SENSE:IN DOOD GHZ F PNO: Wide ++ IFGain:Low Atten: 30 dB Bm Atta 52 GHZ 7:338 dBm	Augn Autoo #Avg Type: RMS Avg Hold: 100/100 AMP	TRACE 12 2 3 4 5 6 TYPE MWWWW DET P P P P P P (r3 15.32 MHz 0.133 dB DL11.34 dBn MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM	Frequency Auto Tune Center Freq 2.412000000 GHz 2.392000000 GHz 2.392000000 GHz 2.432000000 GHz 4.000000 MHz Auto Man Freq Offset 0 Hz Scale Type

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RL RF 50 Ω DC     Center Freq 2.43700000	0 GHz	SENSE:INT	#Avg Type: RMS	12:28:49 PM Aug 26, 2020 TRACE 1 2 3 4 5 6	Frequency
NFE	PNO: Wide	Trig: Free Run #Atten: 30 dB	Avg Hold: 100/100	DET P P P P P	<b>A</b>
Ref Offset 19.79 d			ΔΜκ	r3 17.00 MHz 0.604 dB	Auto Tune
10 dB/div Ref 20.00 dBm	<u>ا</u>			0.004 01	
0.00	Que Carrowshall	- markel andreas	<u>∧ ∧ ∧ √</u> 3∆1	DL1 0.11 dBm	Center Freq 2.437000000 GHz
10.0		- Ψ	· Maha da adara dan		2.407000000 0112
-20.0 -30.0	Mar.		Mr. Mr.	myrman	Start Freq
				- nonderfaller Aleren	2.417000000 GHz
-40.0					
-60.0					Stop Freq 2.457000000 GHz
-70.0					
Center 2.43700 GHz #Res BW 100 kHz	#VBW 3	200 kHz		Span 40.00 MHz 33 ms (1001 pts)	CF Step 4.000000 MHz
#Res BW 100 KHZ			Sweep 1.5	SS MS (1001 pts)	Auto Man
1 N 1 f 2 2 N 1 f 2	2.428 20 GHz	-1.026 dBm 6.114 dBm			
<mark>3</mark> Δ1 1 f (Δ) 4 5	17.00 MHz (Δ)	0.604 dB			Freq Offset 0 Hz
5 6 7				E	
6 7 8 9					Scale Type
10 11					Log <u>Lin</u>
4					
		m	STATUS	Þ	
MSG	1	" 1N20MIMO	STATUS	•	
MSG		"" 1N20MIMO	_Ant1_2437	, F	
MSG 	00 GHz	SENSE:INT	_Ant1_2437	12:35:23 PM Aug 26, 2020 TRACE 1 2 3 4 5 6 TYPE IM WARMANY	Frequency
MSG Keysight Spectrum Analyzer - Swept SA W RL RF 50 Ω DC	00 GHz		_Ant1_2437 ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P P P P P P	Frequency
Keysight Spectrum Analyzer - Swept SA R RL RF 50 Ω DC Center Freq 2.43700000 NFE Ref Offset 19.79 d	DO GHz PNO: Wide ↔ IFGain:Low	SENSE:INT	_Ant1_2437 ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	12:35:23 PM Aug 26, 2020 TRACE 1 2 3 4 5 6 TYPE M WWWW DET P P P P P rr3 17.24 MHz 1.037 dB	[
Keysight Spectrum Analyzer - Swept SA (Ø RL RF 50 Ω DC Center Freq 2.43700000 NFE	DO GHz PNO: Wide ↔ IFGain:Low	SENSE:INT	Ant1_2437	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P P P P P P	Frequency Auto Tune
MSG           RL         RF         50 Ω         DC           Center Freq 2.4370000C         NFE         NFE           10 dB/dlv         Ref Offset 19.79 d         Ref 20.00 dBm	DO GHz PNO: Wide ↔ IFGain:Low	SENSE:INT	_Ant1_2437 ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P P P P P P	Frequency
MsG           RL         RF         50 Ω         DC           Center Freq 2.43700000         NFE           Ref Offset 19.79 d         10 dB/div         Ref 20.00 dBm           10 dB/div         Ref 20.00 dBm           10.0	DO GHz PNO: Wide ↔ IFGain:Low	SENSE:INT	_Ant1_2437	TRACE 123456 TYPE MWWWW DET PPPPP Cr3 17.24 MHz 1.037 dB	Frequency Auto Tune Center Freq
MsG           RL         RF         50 Ω         DC           Center Freq 2.43700000         NFE           NE         Ref Offset 19.79 d           10 dB/div         Ref 20.00 dBm           10.0	DO GHz PNO: Wide ↔ IFGain:Low	SENSE:INT	_Ant1_2437	TRACE 123456 TYPE MWWWW DET PPPPP Cr3 17.24 MHz 1.037 dB	Frequency Auto Tune Center Freq 2.43700000 GHz Start Freq
MsG           RL         RF         50 Ω         DC           Center Freq 2.43700000         NFE           Ref Offset 19.79 d         10 dB/div         Ref 20.00 dBm           10 dB/div         Ref 20.00 dBm           10.0	DO GHz PNO: Wide ↔ IFGain:Low	SENSE:INT	Ant1_2437	TRACE 123456 TYPE MWWWW DET PPPPP Cr3 17.24 MHz 1.037 dB	Frequency Auto Tune Center Freq 2.437000000 GHz
MSG RESUBLE Sectrum Analyzer - Swept SA R RL RF 50 Ω DC Center Freq 2.43700000 NFE Ref Offset 19.79 d 10 dB/div Ref 20.00 dBm 10 0 0.00 -10.0 -20.0 -30.0 -30.0 -30.0	DO GHz PNO: Wide ↔ IFGain:Low	SENSE:INT	Ant1_2437	rrace 123456 TYPE MWWWW DETPPPPP rr3 17.24 MHz 1.037 dB	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.417000000 GHz
Keysight Spectrum Analyzer - Swept SA           M RL         RF         50 Ω         DC           Center Freq 2.43700000         NFE           10 dB/div         Ref Offset 19.79 d           10 dB/div         Ref 20.00 dBm           -200	DO GHz PNO: Wide ↔ IFGain:Low	SENSE:INT	Ant1_2437	TRACE 123456 TYPE MWWWW DET PPPPP Cr3 17.24 MHz 1.037 dB	Frequency Auto Tune Center Freq 2.43700000 GHz Start Freq
MSG         Keysight Spectrum Analyzer - Swept SA           M         RL         RF         50 Ω         DC           Center Freq 2.43700000         NFE         NFE         NFE           0 dB/div         Ref Offset 19.79 d         0         0         0           10 dB/div         Ref 20.00 dBm         0         0         0         0           10.0	DO GHz PNO: Wide ↔ IFGain:Low	SENSE:INT	Ant1_2437	трасе 1 2 3 4 5 6 туре Мининин рет Р Р Р Р Р Р Р (r3 17.24 МНz 1.037 dB DL1 0.09 dBm	Frequency Auto Tune Center Freq 2.43700000 GHz Start Freq 2.41700000 GHz Stop Freq 2.45700000 GHz
Keysight Spectrum Analyzer - Swept SA           M RL         RF         50 Ω         DC           Center Freq 2.43700000         NFE         NFE           Ref Offset 19.79 d         0         0           0 dB/div         Ref 20.00 dBm         0           10 dB/div         Ref 20.00 dBm         0           -00	DO GHz PNO: Wide ↔ IFGain:Low	SENSE:INT Trig: Free Run #Atten: 30 dB	Ant1_2437	TRACE 123456 TYPE MWWWW DET PPPPP Cr3 17.24 MHz 1.037 dB	Frequency Auto Tune Center Freq 2.43700000 GHz Start Freq 2.41700000 GHz Stop Freq
Miss           Keysight Spectrum Analyzer - Swept SA           Miss         SD 0         DC           Center Freq 2.437000000         NFE           Ref Offset 19.79 d         Ref 20.00 dBm           Log         Ref 20.00 dBm           10.0         Ref 20.00 dBm           10.0         Ref 20.00 dBm           .00             .00             .00              .00               .00               .00               .00                .00                 .00                  .00                  .00	DO GHZ PRO: Wide +	SENSE:INT Trig: Free Run #Atten: 30 dB sauce door produce of a second secon	Ant1_2437	CRACE 1 2 3 4 5 6 TYPE MWWWW DET P P P P P P Cr3 17.24 MHz 1.037 dB DL1 0.09 dBm DL1 0.09 dBm Span 40.00 MHz	Frequency Auto Tune Center Freq 2.43700000 GHz 2.417000000 GHz 2.457000000 GHz 2.457000000 GHz CF Step
MSG           Keysight Spectrum Analyzer - Swept SA           R         RF         50 Ω         DC           Center Freq 2.43700000         NFE           Ref Offset 19.79 d         Ref Offset 19.79 d         Ref Offset 19.79 d           10 dB/div         Ref 20.00 dBm         Ref 20.00 dBm           10 dB/div         Ref 20.00 dBm         Ref 20.00 dBm           0.00         Ref 20.00 dBm	PNO: Wide	SENSE:INT Trig: Free Run #Atten: 30 dB supplements with the sense of the sense with the sense of the sense of the sense with the sense of the	Ant1_2437	Cr3 17.24 MHz DET P P P P P P DET P P P P P P DET O DET O DE	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.417000000 GHz 2.457000000 GHz CF Step 4.00000 MHz Auto Man
MSG           RL         RF         50 Ω         DC           Center Freq 2.43700000         NFE         NFE         NFE           Ref Offset 19.79 d         CO         NFE         NFE           10 dB/dlv         Ref 20.00 dBm         O         NFE           10 dB/dlv         Ref 20.00 dBm         O         O           0.00	DO GHZ PRO: Wide +	SENSE:INT Trig: Free Run #Atten: 30 dB aquet dros performance aquet dros p	Ant1_2437	Cr3 17.24 MHz DET P P P P P P DET P P P P P P DET O DET O DE	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.417000000 GHz Stop Freq 2.457000000 GHz CF Step 4.00000 MHz
MSG           RL         RF         50 Ω         DC           Center Freq 2.43700000         NFE         NFE         NFE           Ref Offset 19.79 d         CO         NFE         NFE           10 dB/dlv         Ref 20.00 dBm         O         NFE           10 dB/dlv         Ref 20.00 dBm         O         O           0.00	PNO: Wide	SENSE:INT Trig: Free Run #Atten: 30 dB supplements with the sense of the sense with the sense of the sense of the sense with the sense of the	Ant1_2437	Cr3 17.24 MHz DET P P P P P P DET P P P P P P DET O DET O DE	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.417000000 GHz 2.457000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz
MSG         MSG           MSG         RL         RF         50 Ω         DC           Center Freq 2.43700000           NFE           Ref Offset 19.79 d           O dB/div         Ref Offset 19.79 d           NFE           O dB/div         Ref Offset 19.79 d           O dB/div         Ref Offset 19.79 d           O dB/div         Ref 20.00 dBm           -0.0         -	PNO: Wide	SENSE:INT Trig: Free Run #Atten: 30 dB supplements with the sense of the sense with the sense of the sense of the sense with the sense of the	Ant1_2437	Cr3 17.24 MHz DET P P P P P P DET P P P P P P DET O DET O DE	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.417000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz Scale Type
MSG           RL         RF         50 Ω         DC           Center Freq 2.43700000         NFE         NFE         NFE           Ref Offset 19.79 d         CO         NFE         NFE           10 dB/dlv         Ref 20.00 dBm         O         NFE           10 dB/dlv         Ref 20.00 dBm         O         O           0.00	PNO: Wide	SENSE:INT Trig: Free Run #Atten: 30 dB supplements with the sense of the sense with the sense of the sense of the sense with the sense of the	Ant1_2437	Cr3 17.24 MHz DET P P P P P P DET P P P P P P DET O DET O DE	Frequency Auto Tune Center Freq 2.437000000 GHz Start Freq 2.417000000 GHz 2.457000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz

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<b>LXI RL RF 50 Ω I</b>	SA SENSE:INT	ALIGN AUTO	12:43:30 PM Aug 26, 2020	
Center Freq 2.462000	000 GHz E PNO: Wide ↔ Trig: Free Run	#Avg Type: RMS Avg Hold: 100/100	12:43:30 PM Aug 26, 2020           TRACE         1         2         3         4         5         6           TYPE         M <t< th=""><th>Frequency</th></t<>	Frequency
Ref Offset 19.79 10 dB/div Ref 20.00 dB	IFGain:Low #Atten: 30 dB	ΔΜ	kr3 17.12 MHz -0.016 dB	Auto Tune
10.0 0.00 -10.0	Anna the second the second for the second	wlwantuntunt	DL1 -3:69 dBm	Center Freq 2.462000000 GHz
-20.0 -30.0 -40.0			Martin Martin	<b>Start Freq</b> 2.442000000 GHz
-50.0				<b>Stop Freq</b> 2.482000000 GHz
Center 2.46200 GHz #Res BW 100 kHz	#VBW 300 kHz	Sweep 1.	Span 40.00 MHz 533 ms (1001 pts) FUNCTION VALUE	<b>CF Step</b> 4.000000 MHz <u>Auto</u> Man
1 N 1 f 2 N 1 f 3 Δ1 1 f (Δ) 4 5	2.453 44 GHz -4.447 dBm 2.463 24 GHz 2.311 dBm 17.12 MHz (Δ) -0.016 dB		E	Freq Offset 0 Hz
6 7 8 9 10 11				Scale Type
MSG	m	STATUS	Þ	
	11N20MIMC	) Ant1 2462		
Keysight Spectrum Analyzer - Swept 1			12:40:50 PM Ave 26, 2020	
	SA DC SENSE:INT 000 GHz	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	12:48:59 PM Aug 26, 2020 TRACE 1 2 3 4 5 6 TYPE M WWWWW DET P P P P P	Frequency
20 RL RF 50 Ω 1 Center Freq 2.4620000 NF Ref Offset 19.75	SA DC SENSE:INT 000 GHz IFGain:Low Atten: 30 dB	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6	
RL         RF         50 Ω           Center Freq 2.4620000         NF           0 dB/div         Ref Offset 19.75           10 dB/div         Ref 20.00 dB           10.0         0.00	SA DC SENSE:INT 000 GHz IFGain:Low Atten: 30 dB	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE MWWW DET P P P P P P kr3 15.64 MHz	Frequency
Ref         50.0           Center Freq 2.4620000         NF           Ref Offset 19.75         NF           10 dB/div         Ref 20.00 dB           10.0	SA DC SENSE:INT DOO GHZ F PNO: Wide IFGain:Low #Atten: 30 dB D dB IM 1 C C C C C C C C C C C C C C C C C C C	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 123456 TYPE NWWWW DET PPPPP kr3 15.64 MHz -0.824 dB	Frequency Auto Tune Center Freq
RL         RF         50 Ω           Center Freq 2.4620000         NF           Io         Ref Offset 19.75           10 dB/div         Ref 20.00 dB           10.0	SA DC SENSE:INT DOO GHZ F PNO: Wide IFGain:Low #Atten: 30 dB D dB IM 1 C C C C C C C C C C C C C C C C C C C	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	trace: 1:2345 6 Type: MWWWWW Det P P P P P P kr3 15.64 MHz -0.824 dB	Frequency Auto Tune Center Freq 2.46200000 GHz Start Freq
RI         RF         50 Ω           Center Freq 2.462000         NF           Ref Offset 19.75         Ref 20.00 dB           Od dB/div         Ref 20.00 dB           10.0	SA DOOD GHZ E PNO: Wide	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 123456 TYPE NAWNWW DET P P P P P P kr3 15.64 MHz -0.824 dB Dt1-200 dbn Dt1-200 dbn Dt1-200 dbn Span 40.00 MHz 533 ms (1001 pts)	Frequency Auto Tune Center Freq 2.46200000 GHz Start Freq 2.44200000 GHz Stop Freq
M         RL         RF         50 Ω           Center Freq 2.462000         NF           Ref Offset 19.75         Ref 20.00 dB           Log         Ref 20.00 dB           10.0         Anno 1000           10.0         1000           10.0         1000           10.0         1000           10.0         1000           10.0         1000           10.0         1000           10.0         1000           10.0         1000           10.0         1000           10.0         1000           10.00         1000	SA DOOD GHZ E PNO: Wide	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 123456 TYPE P P P P P kr3 15.64 MHz -0.824 dB 0t1-200 dbn 0t1-200 dbn	Frequency Auto Tune Center Freq 2.462000000 GHz Start Freq 2.442000000 GHz 2.482000000 GHz CF Step 4.000000 MHz
M         RL         RF         50 Ω           Center Freq 2.462000         NF           Ref Offset 19.72         NF           0         B/dlv         Ref 20.00 dB           0.0	SA DO DOOO GHZ E PNO: Wide	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 123456 TYPE P P P P P kr3 15.64 MHz -0.824 dB 0t1-200 dbn 0t1-200 dbn	Frequency Auto Tune Center Freq 2.462000000 GHz Start Freq 2.442000000 GHz 2.442000000 GHz 2.482000000 GHz 4.000000 MHz Auto Man Freq Offset 0 Hz Scale Type
M         RL         RF         50 Ω           Center Freq 2.462000         NF           Ref Offset 19.75         Ref 20.00 dB           10 dB/div         Ref 20.00 dB           10.0	SA DO DOOO GHZ E PNO: Wide	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 123456 TYPE P P P P P kr3 15.64 MHz -0.824 dB 0t1-200 dbn 0t1-200 dbn	Frequency Auto Tune Center Freq 2.46200000 GHz Start Freq 2.44200000 GHz 2.44200000 GHz 2.48200000 GHz 4.00000 MHz Auto Man Freq Offset 0 Hz

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	SA DC SENSE:INT	ALIGN AUTO	01:35:45 PM Aug 26, 2020	
K     RL     RF     50 Ω     I     Center Freq 2.452000     NF     NF	000 GHz E PNO: Fast +++ Trig: Free Run	#Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE M WWWW DET P P P P P P	Frequency
Ref Offset 19.79 10 dB/div Ref 20.00 dB		ΔΜ	r3 35.28 MHz 0.408 dB	Auto Tune
10.0 10.0 10.0	and the start of t	2 handharahallantashallantash	DL1 -6.23 dBm	Center Freq 2.452000000 GHz
-20.0 -30.0 -40.0 Jookhikessinghikessinghikessinghikessinghikessinghikessinghikessinghikessinghikessinghikesin			anaran filler and for the source and the	<b>Start Freq</b> 2.412000000 GHz
-50.0				<b>Stop Freq</b> 2.492000000 GHz
Center 2.45200 GHz #Res BW 100 kHz	#VBW 300 kHz	Sweep 3.0	Span 80.00 MHz 00 ms (1001 pts) Function value	<b>CF Step</b> 8.000000 MHz <u>Auto</u> Man
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	2.434 40 GHz -8.799 dBm 2.457 04 GHz -0.231 dBm 35.28 MHz (Δ) 0.408 dB	INCTION FUNCTION WIDTH		Freq Offset 0 Hz
6 7 8 9 10				Scale Type
11 •	m		• •	
MSG		STATUS		
	11N40MIMO	_Ant1_2452		
Keysight Spectrum Analyzer - Swept	SA	— —	01:45:08 PM Aug 26, 2020	
	SA DC SENSE:INT 000 GHz		01:45:08 PM Aug 26, 2020 TRACE 1 2 3 4 5 6 TYPE M WWWW DET P P P P P P	Frequency
22 RL RF 50 Ω Center Freq 2.4520000 NF Ref Offset 19.75 10 dB/div Ref 20.00 dB	SA DC SENSE:INT D00 GHZ F PNO: Fast +	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6	
04 RL RF 50 Ω 1 Center Freq 2.4520000 NF Ref Offset 19.75	SA DC SENSE:INT D00 GHZ F PNO: Fast +	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P P P P P T73 35.20 MHz	Frequency
RL         RF         50 Ω         1           Center Freq 2.4520001         Ref         NF           NF         NF         NF           10 dB/dlv         Ref Offset 19.75         Ref 20.00 dB           10.0         0.00         0.00         0.00	SA DC SENSE:INT DOOD GHZ E PNO: Fast +++ IFGain:Low #Atten: 30 dB B dB Sm	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE [1 2 3 4 5 6 TYPE MWWWW DET P P P P P P 1.832 dB DL1 6 25 dBm	Frequency Auto Tune Center Freq
Image: Weight of the second	SA DC SENSE:INT DOOD GHZ E PNO: Fast +++ IFGain:Low #Atten: 30 dB B dB Sm	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE M WWWW DET P P P P P P 1.832 dB	Frequency Auto Tune Center Freq 2.45200000 GHz Start Freq
RL         RF         50 20           Center Freq 2.4520001         NF           Ref Offset 19.75         Ref 20.00 dB           10.0         Ref 20.00 dB           10.0<	SA DC SENSE:INT DOOD GHZ F PNO: Fast IFGain:Low Add Sim Add Add Add Add Add Add Add Ad	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE [] 2 3 4 5 6 TYPE [] 2 3 4 5 6 TYPE [] P P P P P P P P P P DET [] P P P P P P P P P DET [] P P P P P P P P P P P P P DET [] P P P P P P P P P DET [] P P P P P P P P DET [] P P P P P P P DET [] P P P P P P P P DET [] P P P P P P P P P P DET [] P P P P P P P P P P P P P P P P P P	Frequency Auto Tune Center Freq 2.45200000 GHz Start Freq 2.41200000 GHz Stop Freq
M         RL         RF         50 Q           Center Freq 2.4520001         NF           Center Freq 2.452000         NF           Ref Offset 19.75         Ref 20.00 dB           Log         Ref 20.00 dB           10.0         Ref 20.00 dB           0.00         Ref 20.00 dB           0.00         Ref 20.00 dB           0.00         Ref 20.00 dB           0.00         Ref 20.00 dB           -20.0         Ref 20.00 dB           -30.0         Ref 20.00 dB           -40.0         Ref 20.00 dB           -50.0         Ref 20.00 dB           -60.0         Ref 20.00 dB           -70.0         Ref 20.00 dB           Center 2.45200 GHz         Ref 20.00 dB           #Res BW 100 kHz         Ref 20.00 dB           1         1         1           3         1         1         1           3         1         1         1         1	SA DC SENSE:INT DOOD GHZ F PNO: Fast IFGain:Low Add Sim Add Add Add Add Add Add Add Ad	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE [] 2 3 1 5 6 TYPE MWWWW DET P P P P P P (r3 35.20 MHz 1.832 dB DL1-6.25 dBm DL1-6.25 dBm Mend Maken Maken Maken Span 80.00 MHz D0 ms (1001 pts)	Frequency Auto Tune Center Freq 2.452000000 GHz 2.412000000 GHz 2.492000000 GHz 2.492000000 GHz CF Step 8.000000 MHz
M         RL         RF         50 Q           Center Freq 2.4520001         NF           Center Freq 2.452000         NF           Ref Offset 19.75         Ref 20.00 dB           Cog         Ref 20.00 dB           10.0         Ref 20.00 dB           0.00         Ref 20.00 dB           Res BW 100 kHz           1         1           2         N         1	SA DC SENSE:INT DOOD GHZ F PNO: Fast ++ IFGain:Low Atten: 30 dB Sm Frig: Free Run #Atten: 30 dB Sm #VBW 300 kHZ X 2457 04 GHz -0.247 dBm	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE [] 2 3 4 5 6 TYPE [] 2 3 4 5 6 TYPE [] P P P P P P P P P P DET [] P P P P P P P P P DET [] P P P P P P P P P P P P P DET [] P P P P P P P P P DET [] P P P P P P P P DET [] P P P P P P P DET [] P P P P P P P P DET [] P P P P P P P P DET [] P P P P P P P P P DET [] P P P P P P P P P P P P DET [] P P P P P P P P P P P P P P P P P P	Frequency Auto Tune Center Freq 2.452000000 GHz Start Freq 2.412000000 GHz 2.492000000 GHz 2.492000000 GHz 8.000000 MHz Auto Man
M         RL         RF         50 Ω           Center Freq 2.4520001         NF           Conter Freq 2.452000         NF           Ref Offset 19.75         Ref 20.00 dB           Log         Ref 20.00 dB           10.0         Ref 20.00 dB           0.00         Ref 20.00 dB           -20.0         Ref 20.00 dB           -30.0         Ref 20.00 dB           -20.0         Ref 20.00	SA DC SENSE:INT DOOD GHZ F PNO: Fast ++ IFGain:Low Atten: 30 dB Sm Frig: Free Run #Atten: 30 dB Sm #VBW 300 kHZ X 2457 04 GHz -0.247 dBm	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE [] 2 3 4 5 6 TYPE [] 2 3 4 5 6 TYPE [] P P P P P [] 2 3 4 5 6 TYPE [] 2 3 4 5 6 TYPE [] 2 3 4 5 6 [] 2 4 4 4 5 6 [] 2 4 4 4 5 6 [] 2 4 4 4 4 5 6 [] 2	Frequency Auto Tune Center Freq 2.452000000 GHz Start Freq 2.412000000 GHz 2.492000000 GHz 8.000000 MHz Auto Man Freq Offset 0 Hz
M         RL         RF         50 Ω           Center Freq 2.4520001         NF           Ref Offset 19.75         Ref 20.00 dB           0 dB/dlv         Ref 20.00 dB           0 0         0         0           0.00         0         0           0.00         0         0           0.00         0         0           0.00         0         0           0.00         0         0           20.0         0         0           -0.0         0         0           -0.0         0         0           -0.0         0         0         0           -0.0         0         0         0           -0.0         0         0         0           -0.0         0         0         0           -0.0         0         0         0           -0.0         0         0         0         0           -0.0         0         0         0         0           -0.0         0         0         0         0           -0.0         0         0         0         0           -0.0	SA DC SENSE:INT DOOD GHZ F PNO: Fast ++ IFGain:Low Atten: 30 dB Sm Frig: Free Run #Atten: 30 dB Sm #VBW 300 kHZ X 2457 04 GHz -0.247 dBm	ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	TRACE [] 2 3 4 5 6 TYPE [] 2 3 4 5 6 TYPE [] P P P P P [] 2 3 4 5 6 TYPE [] 2 3 4 5 6 TYPE [] 2 3 4 5 6 [] 2 4 4 4 5 6 [] 2 4 4 4 5 6 [] 2 4 4 4 4 5 6 [] 2	Frequency Auto Tune Center Freq 2.452000000 GHz 2.412000000 GHz 2.412000000 GHz 2.492000000 GHz 8.000000 MHz Auto Man Freq Offset 0 Hz Scale Type



# APPENDIX C: OCCUPIED CHANNEL BANDWIDTH

# **Test Result**

Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Verdict
	Ant1	2412	15.023	2404.936	2419.959	PASS
	Ant2	2412	13.943	2405.294	2419.237	PASS
11B	Ant1	2437	14.595	2429.526	2444.121	PASS
IID	Ant2	2437	13.251	2430.302	2443.553	PASS
	Ant1	2462	12.818	2455.547	2468.365	PASS
	Ant2	2462	13.159	2455.389	2468.548	PASS
	Ant1	2412	17.258	2403.625	2420.883	PASS
	Ant2	2412	17.079	2403.563	2420.642	PASS
11G	Ant1	2437	17.615	2427.938	2445.553	PASS
ПG	Ant2	2437	17.125	2428.365	2445.490	PASS
	Ant1	2462	16.840	2453.564	2470.404	PASS
	Ant2	2462	16.969	2453.461	2470.430	PASS
	Ant1	2412	18.104	2403.134	2421.238	PASS
	Ant2	2412	18.062	2403.072	2421.134	PASS
11N20MIMO	Ant1	2437	18.495	2427.608	2446.103	PASS
	Ant2	2437	18.250	2427.771	2446.021	PASS
	Ant1	2462	17.929	2453.004	2470.933	PASS
	Ant2	2462	17.900	2453.030	2470.930	PASS
	Ant1	2422	35.989	2403.962	2439.951	PASS
	Ant2	2422	36.043	2403.933	2439.976	PASS
11N40MIMO	Ant1	2437	36.697	2418.574	2455.271	PASS
	Ant2	2437	36.541	2418.699	2455.240	PASS
	Ant1	2452	36.300	2433.886	2470.186	PASS
	Ant2	2452	36.287	2433.825	2470.112	PASS



# **Test Graphs**

Keysight Spectrum Analyzer - Oc	cupied BW		-	ALTON: CONT.	10.77		
X RL RF 50 Ω Center Freq 2.41200	NFE	😛 Trig: Free Run	412000000 GHz	ALIGN AUTO	Radio Std		Frequency
D.407	#IFGain:Low	#Atten: 30 dB		Mkr	Radio Dev 1 2.412	de: BTS	
Ref Offset 10 dB/div Ref 20.0				1		64 dBm	
10.0		mmm	mon				Center Freq
-10.0	- mark			how			2.412000000 GHz
-20.0				L h	m		
-30.0	$\vee$			V V		ha	
-40.0							
-60.0							
-70.0							
Center 2.412 GHz #Res BW 430 kHz		#VBW	I.5 MHz			n 40 MHz ep 1 ms	CF Step 4.000000 MHz
Occupied Band	lwidth	Tot	al Power	24.5	5 dBm		Auto Man
Occupica Balla	15.023 N						Freq Offset
Transmit Freq Er			of OBW Pow	er 99	9.00 %		0 Hz
x dB Bandwidth		3 MHz x d			00 dB		
MSG					s		L
libe				STATU	-		
		11B_/	Ant1_2412	STATU	-		
	DC	SENSE:IN	г	ALIGN AUTO	10:23:54 A	M Aug 26, 2020	Frequency
RL RF 50 Ω Center Freq 2.41200	DC 00000 GHz NFE	SENSE:IN Center Freq: 2 Trig: Free Run	412000000 GHz		10:23:54 A Radio Std	: None	Frequency
Keysight Spectrum Analyzer - Οc Rt Rt So Ω Center Freq 2.41200	DC DOOOO GHZ NFE #IFGain:Low	SENSE:IN Center Freq: 2 Trig: Free Run	412000000 GHz	ALIGN AUTO	10:23:54 A Radio Std Radio Dev 1 2.412	: None rice: BTS 252 GHz	
RL RF 50 Ω Center Freq 2.41200	DC D0000 GHz NFE #IFGain:Low	SENSE:IN Center Freq: 2 Trig: Free Run	412000000 GHz	ALIGN AUTO	10:23:54 A Radio Std Radio Dev 1 2.412	: None rice: BTS	
Keysight Spectrum Analyzer - Oc RL RF 50 Ω Center Freq 2.41200 Ref Offset 10 dB/div Ref 20.0 10.0	DC D0000 GHz NFE #IFGain:Low	SENSE:IN Center Freq: 2 Trig: Free Run	412000000 GHz	ALIGN AUTO	10:23:54 A Radio Std Radio Dev 1 2.412	: None rice: BTS 252 GHz	Frequency Center Freq
Reysight Spectrum Analyzer - Oc RL RF 50 Ω Center Freq 2.41200 Ref Offset 10 dB/div Ref 20.0 Log	DC D0000 GHz NFE #IFGain:Low	SENSE:IN Center Freq: 2 Trig: Free Run	412000000 GHz	ALIGN AUTO	10:23:54 A Radio Std Radio Dev 1 2.412	: None rice: BTS 252 GHz	Frequency
Keysight Spectrum Analyzer - Oc     R = RF 50 Ω     Center Freq 2.41200     Ref Offset     lo dB/div Ref 20.0     0.0     0.0     0.0     -0.0     -20.0	DC D0000 GHz NFE #IFGain:Low	SENSE:IN Center Freq: 2 Trig: Free Run	412000000 GHz	ALIGN AUTO	10:23:54 A Radio Std Radio Dev 1 2.412	: None rice: BTS 252 GHz	Frequency Center Freq
Keysight Spectrum Analyzer - Oc RL RF 50 Ω Center Freq 2.41200 Center Freq 2.41200 Ref Offset 10 dB/div Ref 20.0 10.0 0.00 -0.0 -20.0 -30.0	DC D0000 GHz NFE #IFGain:Low	SENSE:IN Center Freq: 2 Trig: Free Run	412000000 GHz	ALIGN AUTO	10:23:54 A Radio Std Radio Dev 1 2.412 14.0	: None rice: BTS 252 GHz	Frequency Center Freq
Keysight Spectrum Analyzer - Oc     R = RF 50 Ω     Center Freq 2.41200     Ref Offset     lo dB/div Ref 20.0     0.0     0.0     0.0     -0.0     -20.0	DC D0000 GHz NFE #IFGain:Low	SENSE:IN Center Freq: 2 Trig: Free Run	412000000 GHz	ALIGN AUTO	10:23:54 A Radio Std Radio Dev 1 2.412 14.0	: None rice: BTS 252 GHz 80 dBm	Frequency Center Freq
Keyright Spectrum Analyzer - Oc           RL         RF         50 Ω           Center Freq 2.41200           Ref Offset           Ref Offset           Ref Offset           10 dB/div         Ref 20.0	DC D0000 GHz NFE #IFGain:Low	SENSE:IN Center Freq: 2 Trig: Free Run	412000000 GHz	ALIGN AUTO	10:23:54 A Radio Std Radio Dev 1 2.412 14.0	: None rice: BTS 252 GHz 80 dBm	Frequency Center Freq
Keysight Spectrum Analyzer - Oc     R	DC D0000 GHz NFE #IFGain:Low	SENSE:IN Center Freq: 2 Trig: Free Run	412000000 GHz	ALIGN AUTO	10:23:54 A Radio Std Radio Dev 1 2.412 14.0	: None rice: BTS 252 GHz 80 dBm	Frequency Center Freq 2.412000000 GHz
Keyright Spectrum Analyzer - Oc           RL         RF         50 Ω           Center Freq 2.41200           Ref Offset           Ref Offset           Ref Offset           10 dB/div         Ref 20.0	DC D0000 GHz NFE #IFGain:Low	SENSE:IN Center Freq: 2 Trig: Free Run	41200000 GHz Avg Hold	ALIGN AUTO	10:23:54 A Radio Std Radio Dev 1 2.412 14.0	: None rice: BTS 252 GHz 80 dBm	Frequency Center Freq 2.41200000 GHz CF Step 4.00000 MHz
Keyright Spectrum Analyzer - Oc           RL         RF         50 Ω           Center Freq 2.41200           Io         Ref Offset           Io         Io           Io	DEC 00000 GHz NFE #IFGain:Low 19.79 dB 0 dBm	SENSEIN Center Freq: 2. Trig: Free Run #Atten: 30 dB	41200000 GHz Avg Hold	ALIGN AUTO 3: 100/100 MKr	10:23:54 A Radio Std Radio Dev 1 2.412 14.0	: None rice: BTS 252 GHz 80 dBm	Frequency Center Freq 2.412000000 GHz
Keysight Spectrum Analyzer - 0c           RL         RF         50 Ω           Center Freq 2.41200         Ref Offset           10 dB/div         Ref 20.0           0.0	DEC 00000 GHz NFE #IFGain:Low 19.79 dB 0 dBm	Sense III Center Freq: 2. Trig: Free Run #Atten: 30 dB	41200000 GHz Avg Hold	ALIGN AUTO 3: 100/100 MKr	10:23:54 A Radio Std Radio Dev 1 2.412 14.0	: None rice: BTS 252 GHz 80 dBm	Frequency Center Freq 2.412000000 GHz 4.000000 MHz <u>Auto</u> Man
Keysight Spectrum Analyzer - 0c           RL         RF         50 Ω           Center Freq 2.41200         Ref Offset           10 dB/div         Ref 20.0           0.0	D0000 GHz NFE #FGain:Low 19.79 dB 0 dBm	SENSE IN Center Freq: 2. Trig: Free Run #Atten: 30 dB	41200000 GHz Avg Hold	ALIGN AUTO ± 100/100 Mkr 4. 24.	10:23:54 A Radio Std Radio Dev 1 2.412 14.0	: None rice: BTS 252 GHz 80 dBm	Frequency Center Freq 2.41200000 GHz CF Step 4.00000 MHz
Reysight Spectrum Analyzer - Oc           RL         RF         50 Q           Center Freq 2.41200         Ref Offset           Ref Offset         Ref Offset           10 dB/div         Ref 20.0           0.0	Dec 0 0000 GHz NFE #FGain:Low 19.79 dB 0 dBm 0 dBm 19.79 dB 0 dBm 13.79 dB 14.1000 14.1000 14	SENSE IN Center Freq: 2. Trig: Free Run #Atten: 30 dB	41200000 GHz Avg Hold	ALIGN AUTO ± 100/100 Mkr 24.: er 95	10:23:54 A Radio Std Radio Dev 1 2.412 14.0	: None rice: BTS 252 GHz 80 dBm	Frequency Center Freq 2.41200000 GHz 4.00000 MHz Auto Man Freq Offset
Keysight Spectrum Analyzer - Oc           RL         RF         50 Q           Center Freq 2.41200         Ref Offset           Io         Ref Offset         Ref Offset           Io         Io         Io         Io           Io         Io         Io         Io           Io         Io         Io         Io         Io           Io         Io         Io         Io         Io           Io         Io         Io         Io         Io           Io         Io         Io         Io         Io           Io         Io         Io         Io	Dec 0 0000 GHz NFE #FGain:Low 19.79 dB 0 dBm 0 dBm 19.79 dB 0 dBm 13.79 dB 14.1000 14.1000 14	SENSE IN Center Freq: 2. Trig: Free Run #Atten: 30 dB #VBW ✓ Tot MHZ 7 kHz % c	41200000 GHz Avg Hold	ALIGN AUTO ± 100/100 Mkr 24.: er 95	10:23:54 A Radio Std Radio Dev 1 2.412 14.0 	: None rice: BTS 252 GHz 80 dBm	Frequency Center Freq 2.41200000 GHz 4.00000 MHz Auto Man Freq Offset
Keysight Spectrum Analyzer - Oc           RL         RF         50 Q           Center Freq 2.41200         Ref Offset           Io         Ref Offset         Ref Offset           Io         Io         Io         Io           Io         Io         Io         Io           Io         Io         Io         Io         Io           Io         Io         Io         Io         Io           Io         Io         Io         Io         Io           Io         Io         Io         Io         Io           Io         Io         Io         Io	Dec 0 0000 GHz NFE #FGain:Low 19.79 dB 0 dBm 0 dBm 19.79 dB 0 dBm 13.79 dB 14.1000 14.1000 14	SENSE IN Center Freq: 2. Trig: Free Run #Atten: 30 dB #VBW ✓ Tot MHZ 7 kHz % c	41200000 GHz Avg Hold	ALIGN AUTO ± 100/100 Mkr 24.: er 95	10:23:54 A Radio Std Radio Dev 1 2.412 14.0 	: None rice: BTS 252 GHz 80 dBm	Frequency Center Freq 2.41200000 GHz 4.00000 MHz Auto Man Freq Offset
Keysight Spectrum Analyzer - Oc           RL         RF         50 Q           Center Freq 2.41200         Ref Offset           Io         Ref Offset         Ref Offset           Io         Io         Io         Io           Io         Io         Io         Io           Io         Io         Io         Io         Io           Io         Io         Io         Io         Io           Io         Io         Io         Io         Io           Io         Io         Io         Io         Io           Io         Io         Io         Io	Dec 0 0000 GHz NFE #FGain:Low 19.79 dB 0 dBm 0 dBm 19.79 dB 0 dBm 13.79 dB 14.0000 14.00000 14.0000 14.00000 14.00000 14.00000 14.000	SENSE IN Center Freq: 2. Trig: Free Run #Atten: 30 dB #VBW ✓ Tot MHZ 7 kHz % c	41200000 GHz Avg Hold	ALIGN AUTO ± 100/100 Mkr 24.: er 95	10:23:544 Radio Std Radio Dev 1 2.412 14.0 Spa Swa 5 dBm 9.00 % 00 dB	: None rice: BTS 252 GHz 80 dBm	Frequency Center Freq 2.41200000 GHz 4.00000 MHz Auto Man Freq Offset