

Report No. : FR912813B



# FCC RADIO TEST REPORT

FCC ID	:2AG7G-C1A
Equipment	: Plume PowerPod
Brand Name	: Plume Design Inc
Model Name	: C1A
Applicant	: Plume Design Inc
	290 S California Ave, Suite 200, Palo Alto, CA 94306, USA
Manufacturer	: Plume Design Inc
	290 S California Ave, Suite 200, Palo Alto, CA 94306, USA
Standard	: FCC Part 15 Subpart C §15.247

The product was received on Jan. 28, 2019 and testing was started from Feb. 04, 2019 and completed on May 03, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Jones Tsai SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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# History of this test report

Report No.	Version	Description	Issued Date
FR912813B	01	Initial issue of report	May 07, 2019



# Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.247(a)(2)	6dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.247(b)	Power Output Measurement	Pass	-
3.3	15.247(e)	Power Spectral Density	Pass	-
2.4	15.247(d)	Conducted Band Edges	Pass	-
3.4		Conducted Spurious Emission	Pass	-
0	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	Pass	Under limit 1.05 dB at 2489.590 MHz
3.6	15.207	AC Conducted Emission	Pass	Under limit 12.44 dB at 0.152 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	Pass	-

#### Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

#### **Comments and Explanations:**

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

#### Reviewed by: Wii Chang

#### **Report Producer: Natasha Hsieh**



# **1** General Description

## **1.1 Product Feature of Equipment Under Test**

Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n/ac, and Wi-Fi 5GHz 802.11a/n/ac

Product specification subjective to this standard			
Antenna Type	WLAN 2.4GHz: <ant. 1="">: PIFA Antenna <ant. 2="">: PIFA Antenna WLAN 5GHz: <ant. 1="">: PIFA Antenna <ant. 2="">: PIFA Antenna <ant. 3="">: PIFA Antenna <ant. 4="">: PIFA Antenna</ant.></ant.></ant.></ant.></ant.></ant.>		
	Bluetooth: PIFA Antenna		

# **1.2 Modification of EUT**

No modifications are made to the EUT during all test items.

# **1.3 Testing Location**

Test Site	SPORTON INTERNATIONAL INC.			
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978			
Test Site No.	Sporton Site No.TH05-HYCO05-HY			

Note: The test site complies with ANSI C63.4 2014 requirement.

Test Site	SPORTON INTERNATIONAL INC.		
Test Site LocationNo.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855			
Test Site No.	Sporton Site No. 03CH16-HY		

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC Designation No.: TW1190 and TW0007



# **1.4 Applicable Standards**

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.247
- FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05r02
- FCC KDB 414788 D01 Radiated Test Site v01r01.
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ANSI C63.10-2013

#### Remark:

- 1. All test items were verified and recorded according to the standards and without any deviation during the test.
- 2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

# 2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report.
- b. AC power line Conducted Emission was tested under maximum output power.

# 2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
	1	2412	7	2442
2400-2483.5 MHz	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437		



# 2.2 Test Mode

Final test modes are considering the modulation and worse data rates as below table.

#### Single Mode

Modulation	Data Rate
802.11b	1 Mbps
802.11g	6 Mbps
802.11n HT20 (Covered by VHT20)	MCS0
802.11n HT40 (Covered by VHT40)	MCS0
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0

#### MIMO Mode

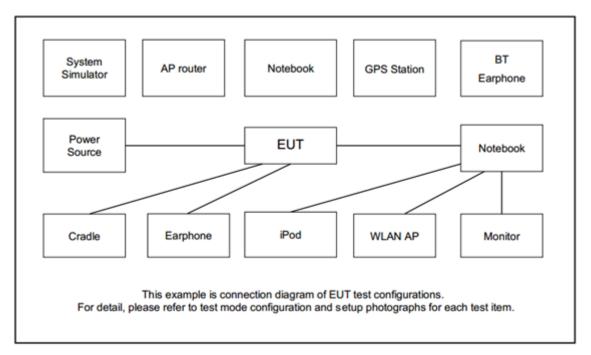
Modulation	Data Rate
802.11b	1 Mbps
802.11g	6 Mbps
802.11n HT20 (Covered by VHT20)	MCS0
802.11n HT40 (Covered by VHT40)	MCS0
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0

TXBF Mode

Modulation		Data Rate			
80	2.11ac VHT20	MCS0			
80	2.11ac VHT40	MCS0			
	Test Cases				
AC Conducted Mode 1 :WLAN (2.4GHz) Link + Bluetooth Idle + Lan Link					
Emission					



# 2.3 Connection Diagram of Test System



# 2.4 Support Unit used in test configuration and system

ltem	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	iPod Earphone	Apple	A1387	Verification	Unshielded, 1.0 m	N/A
2.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
3.	Smart Phone	Samsung	SM-A703F/DS	N/A	N/A	Unshielded, 1.8 m
4.	LCD Monitor	ASUS	S2316-HC	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
5.	Notebook	DELL	Latitude E6320	FCC DoC/	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m



## 2.5 EUT Operation Test Setup

The RF test items, utility "Putty" was installed in EUT which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

For TXBF mode, the modulation modes and data rates manipulated by the command lines in the engineering program made the EUT link to another EUT by power under the normal operation. The "Putty" software tool was used to enable the EUT to transmit signals continuously.

## 2.6 Measurement Results Explanation Example

#### For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).= 4.2 + 10 = 14.2 (dB)



# 3 Test Result

## 3.1 6dB and 99% Bandwidth Measurement

#### 3.1.1 Limit of 6dB and 99% Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

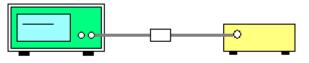
#### 3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

#### 3.1.3 Test Procedures

- 1. The testing follows the ANSI C63.10 Section 6.9.3 (OBW) and 11.8.1 (6dB BW).
- 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 3. Set to the maximum power setting and enable the EUT transmit continuously.
- Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
- 5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1-5% of the emission bandwidth and set the Video bandwidth (VBW)  $\geq$  3 \* RBW.
- 6. Measure and record the results in the test report.

## 3.1.4 Test Setup



EUT

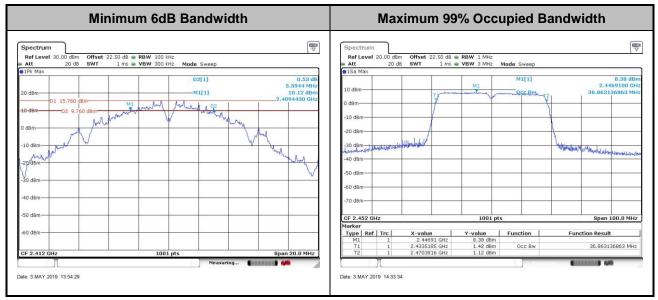
Spectrum Analyzer



## 3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

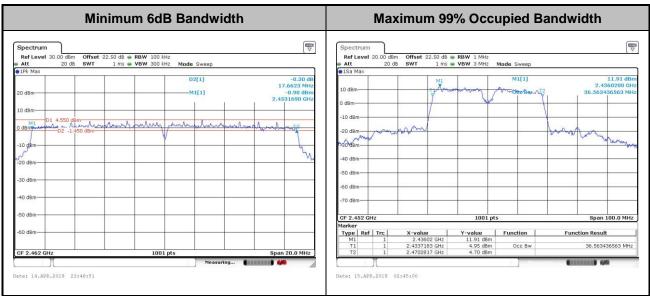
Please refer to Appendix A.

#### <CDD Mode>



Note : The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

#### <TXBF Modes>



Note : The occupied channel bandwidth is maintained within the band of operation for all of the modulations.



## 3.2 Output Power Measurement

#### 3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for output power is 30dBm. If transmitting antenna with directional gain greater than 6dBi is used, the output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

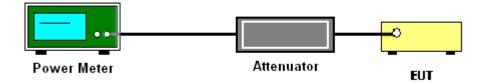
#### 3.2.2 Measuring Instruments

See list of measuring equipment of this test report.

#### 3.2.3 Test Procedures

- 1. For Average Power, the testing follows the ANSI C63.10 Section 11.9.2.3.2 Method AVGPM-G.
- 2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 3. Set to the maximum power setting and enable the EUT transmit continuously.
- 4. Measure the conducted output power and record the results in the test report.
- 5. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

#### 3.2.4 Test Setup



## 3.2.5 Test Result of Average output Power

Please refer to Appendix A.



## 3.3 Power Spectral Density Measurement

#### 3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

#### 3.3.2 Measuring Instruments

See list of measuring equipment of this test report.

#### 3.3.3 Test Procedures

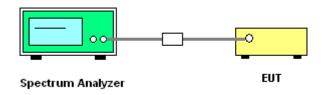
- The testing follows the ANSI C63.10 Section 11.10.2 Method PKPSD. 1.
- 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- Set to the maximum power setting and enable the EUT transmit continuously. 3.
- 4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
- 5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
- Measure and record the results in the test report. 6.
- 7. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

If measurements performed using method (2) plus 10 log (N) exceeds the emission limit, the test should choose method (1) before declaring that the device fails the emission limit.

Method (1): Measure and sum the spectra across the outputs.

The total final Power Spectral Density is from a device with 2 transmitter outputs. The spectrum measurements of the individual outputs are all performed with the same span and number of points, the spectrum value in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 to obtain the value for the first frequency bin of the summed spectrum. Method (2): Measure and add 10 log (N) dB, where N is the number of outputs. (N=2)

## 3.3.4 Test Setup

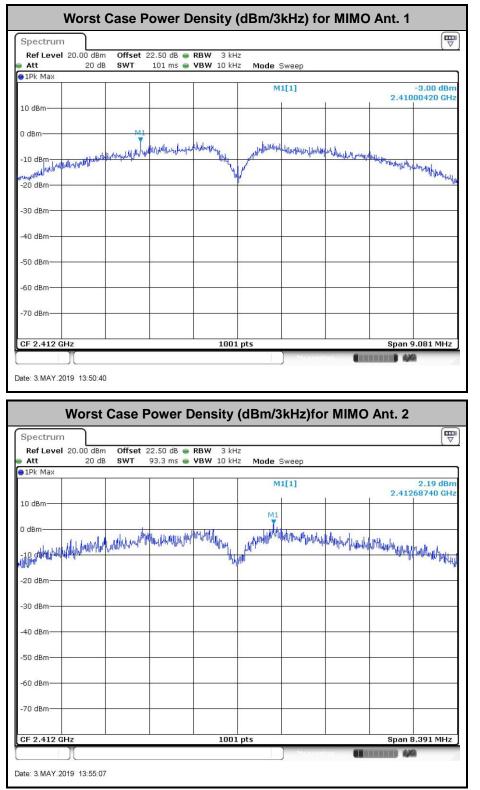




#### 3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

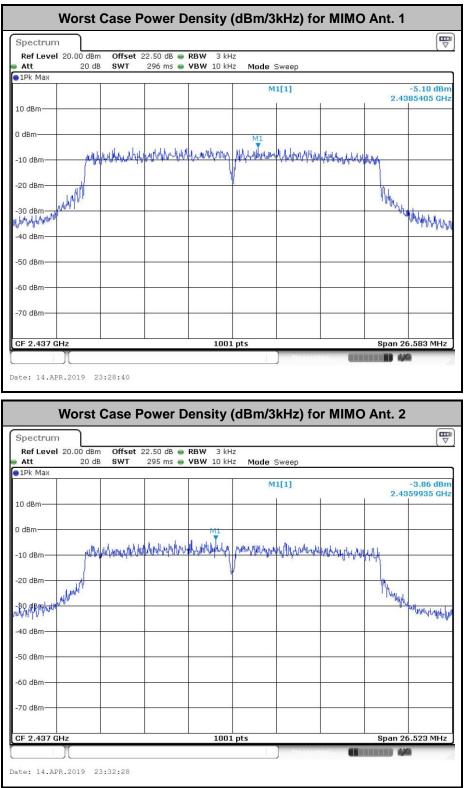
#### <CDD Modes>



: May 07, 2019



#### <TXBF Modes>



# 3.4 Conducted Band Edges and Spurious Emission Measurement

## 3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement.

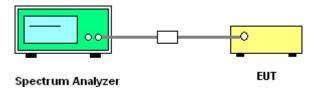
#### 3.4.2 Measuring Instruments

See list of measuring equipment of this test report.

#### 3.4.3 Test Procedures

- 1. The testing follows the ANSI C63.10 Section 11.11.3 Emission level measurement
- 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 3. Set to the maximum power setting and enable the EUT transmit continuously.
- 4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).
- 5. Measure and record the results in the test report.
- 6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

## 3.4.4 Test Setup

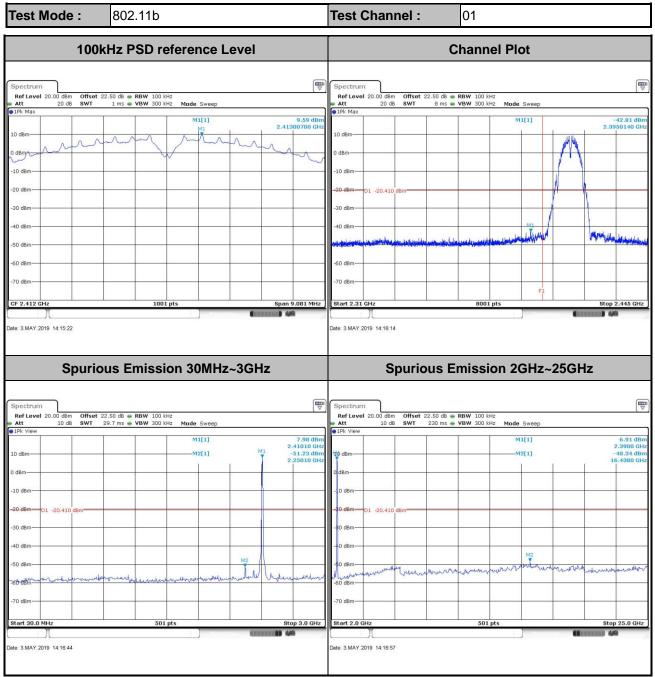




## 3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Test Engineer :		Temperature :	<b>21~25</b> ℃
Test Engineer .	Eason nuang	Relative Humidity :	51~54%

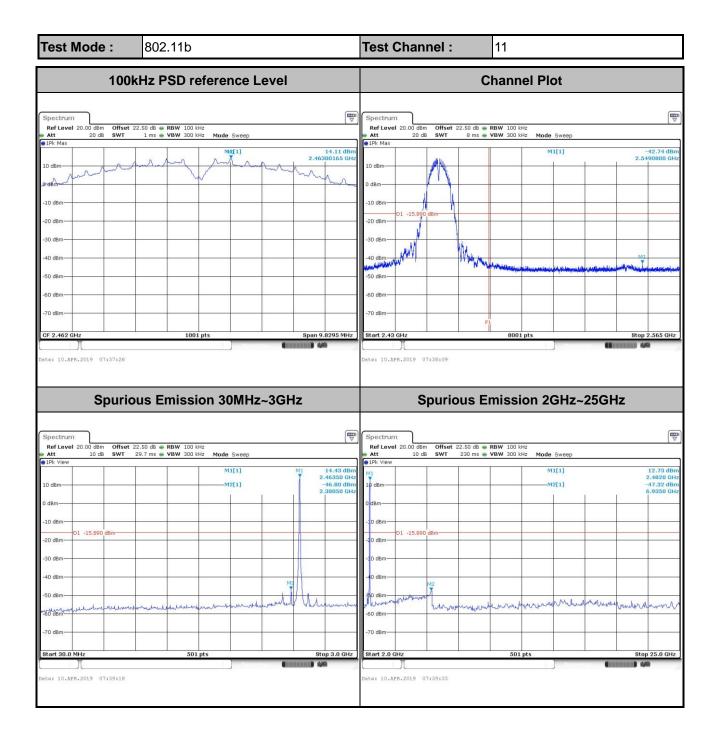
#### Number of TX = 1, Ant. 1 (Measured)



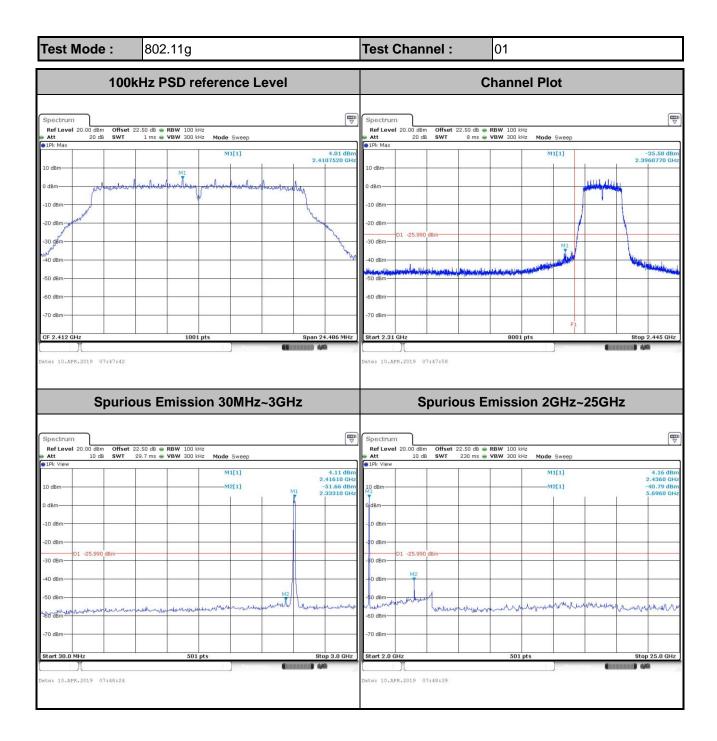


Test Mode :	802.11b			Test Channe			
100	100kHz PSD reference Level				Char	nnel Plot	
Att         20 dB         SWT           91 Pk Max	Bitm         Offset 22.50 dB         RBW 100 kHz           dB         SWT         1 ms         WBW 300 kHz         Mode Sweep						
-40 dBm			Span 9.7995 MHz				
	1001 pts	. Mexanting	100 C				
Spectrum	ious Emissior	a) a straintine	(11111 <b>1)</b> 44	Spectrum		sion 2GHz~250	GHz
ье: 10.дря.2019 07:31:28 Spectrum	ious Emissior	a) a straintine	GHz	Spectrum     Rof Lovel 20.00 dBm     Att 10 dB     Ib dbm	Offset 22.50 dB      RBW 1 SWT 230 ms      VBW 3	00 kHz	12.27 dE 2.4360 G -48.30 dE
Comparison of the second	ious Emission	Made Sweep M3[1] M2[1]	GHz 3.3.05 dBr 2.43390 dBr 2.27970 dH	Spectrum           Ref Level 20.00 dBm           ************************************	Offset 22.50 dB      RBW 1 SWT 230 ms      VBW 3	00 kHz 00 kHz Mode Sweep M1[1] M2[1]	12.27 dB 2.4360 dD -48.30 dB 6.9810 dD





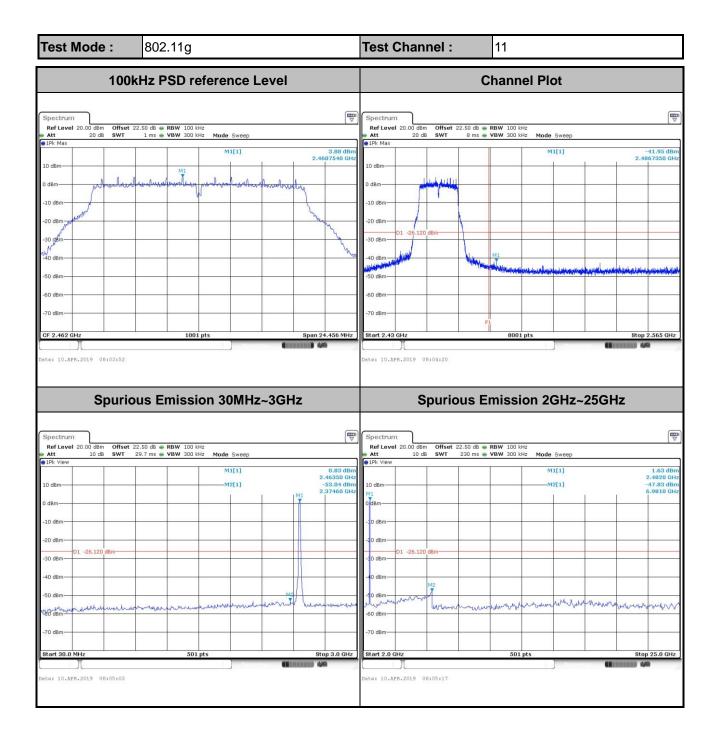




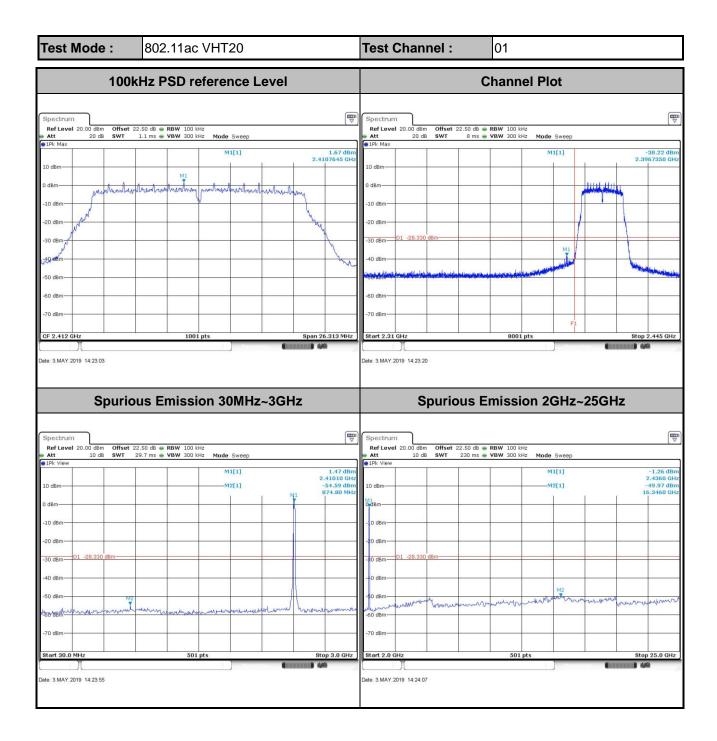


Test Mode :	802.11g	Test Channel : 06
100k	Hz PSD reference Level	Channel Plot
Att 20 dB SWT     1Pk Max	2.50 db = RBW 100 kHz 1 ms = VBW 300 kHz Mode Sweep M1[1] 10.25 2.4387310 M1[1] 10.25 2.4387310	
Spurio	us Emission 30MHz~3GHz	Spurious Emission 2GHz~25GHz
Spectrum           Ref Lovel 20.00 dbm         Offset 21           Att         10 dB           OTPL View         10 dbm           10 dbm         10 dbm           -10 dbm         10 dbm           -10 dbm         10 dbm           -20 dbm         01 -19.750 dbm           -30 dbm         -19.750 dbm           -50 dbm         -70 dbm	2.50 db • R8W 100 HH: 29.7 ms • V8W 300 HH: Mode Sweep M1[1] 10.14 M1 2.43980 M2[1] 2.23230 	Image: Spectrum         Image: Spe
Start 30.0 MHz	501 pts Stop 3.0	Hz Start 2.0 GHz S01 pts Stop 25.0 GHz
Date: 10.APR.2019 07:56:12		Date: 10.APR.2019 07:56:49





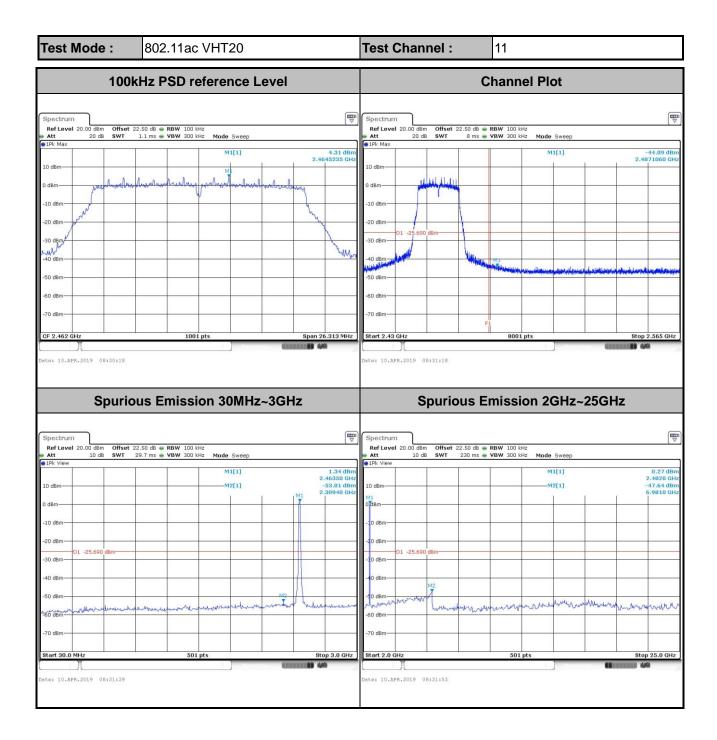




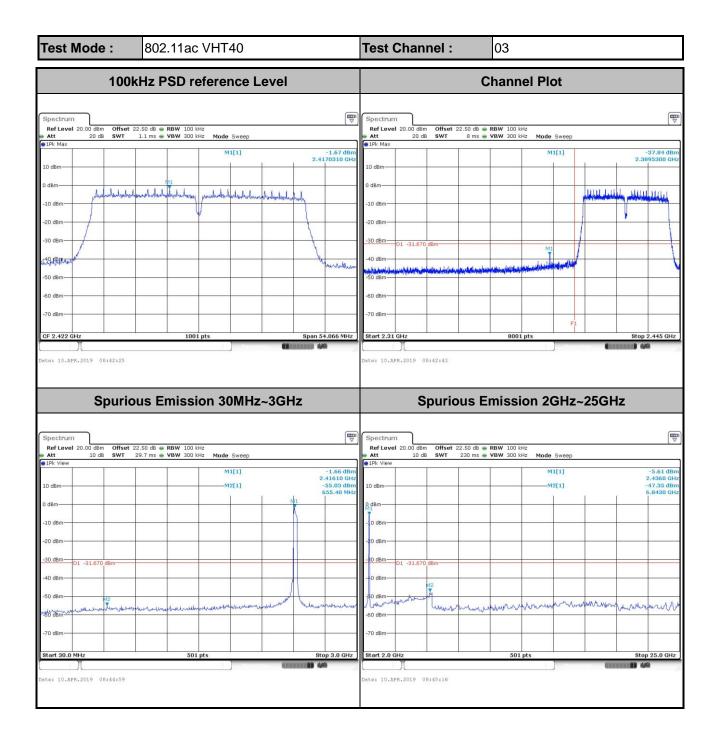


Test Mode :	802.11ac VHT20	Test Channel :	06	
100k	Hz PSD reference Level		Channel Plot	
Att 20 dB SWT 1     19k Max     10 dBm	mi 2.435731			
Spuriou	us Emission 30MHz~3GHz	Spurious	Emission 2GHz~25GHz	
Att 10 dB SWT 29	50 dB <b>RBW</b> 100 kHz 9.7 ms <b>VBW</b> 300 kHz <b>Mode</b> Sweep	Att 10 dB SWT 230 ms	RBW 100 kHz     VBW 300 kHz     Mode Sweep	
1Pk View     10 dBm     10 dBm     -10 dBm     -20 dBm     -20 dBm     -30 dBm     -30 dBm     -50 dBm     -50 dBm     -70 dBm     -70 dBm	M2[1] M1 2-427 	2 dBm 10 GHz 0 GHz 0 dBm -10 dBm -	M1[1] M2	7,43 dBm 2,4360 GHz -47,45 dBm 6,9810 GHz





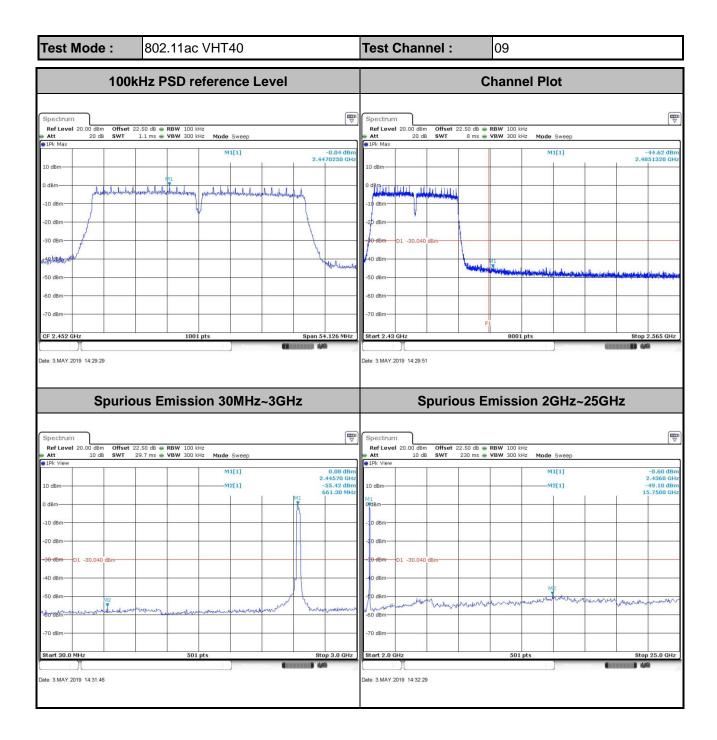






Test Mode :	802.11ac VHT40	Test Channel : 06
100	kHz PSD reference Level	Channel Plot
Att 20 dB SWT     IPk Max	22.50 dB = RBW 100 kHz 1.1ms = VBW 300 kHz Mode Sweep M1[1] 1.49 dBm 2.4320250 GHz 101 pts 8pan 54.126 MHz 1001 pts 8pan 54.126 MHz	
Spurio	ous Emission 30MHz~3GHz	Spurious Emission 2GHz~25GHz
Spectrum RefLevel 20.00 dBm Offset att 10 dB SWT	22.50 dB ● RBW 100 kHz 29.7 ms ● VBW 300 kHz Mode Sweep	RefLevel         20.00         dBm         Offset         22.50         dB         RBW         100         Hz           Att         10         dB         SWT         230         ms         VBW         300         kHz           GIPK         VBW         300         kHz         Mode         Sweep         Image: Sweep
10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -30 dBm -40 dBm -50 dBm -50 dBm -70 dBm -70 dBm	MI[1] 1.64 dBm 2.4390 GH 	10 dBm
Stort 30.0 MHz	501 pts Stop 3.0 GHz	Start 2.0 GHz 501 pts Stop 25.0 GHz

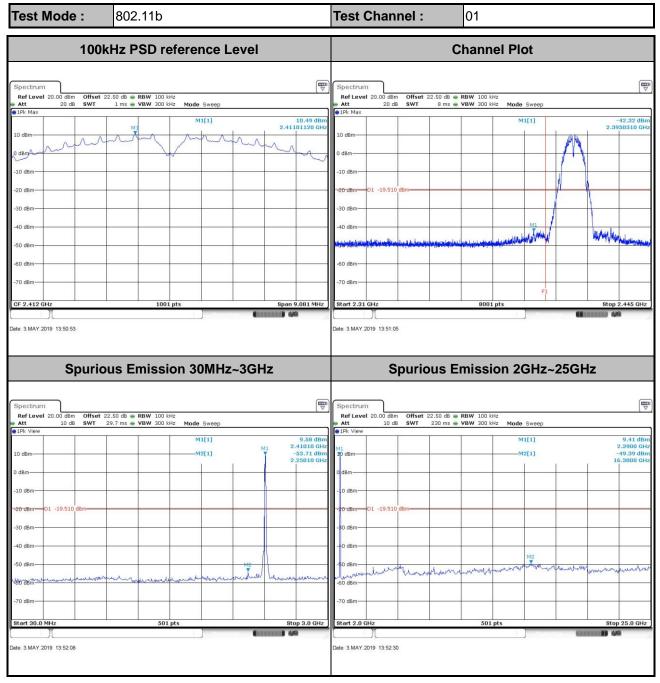






#### <CDD Modes>

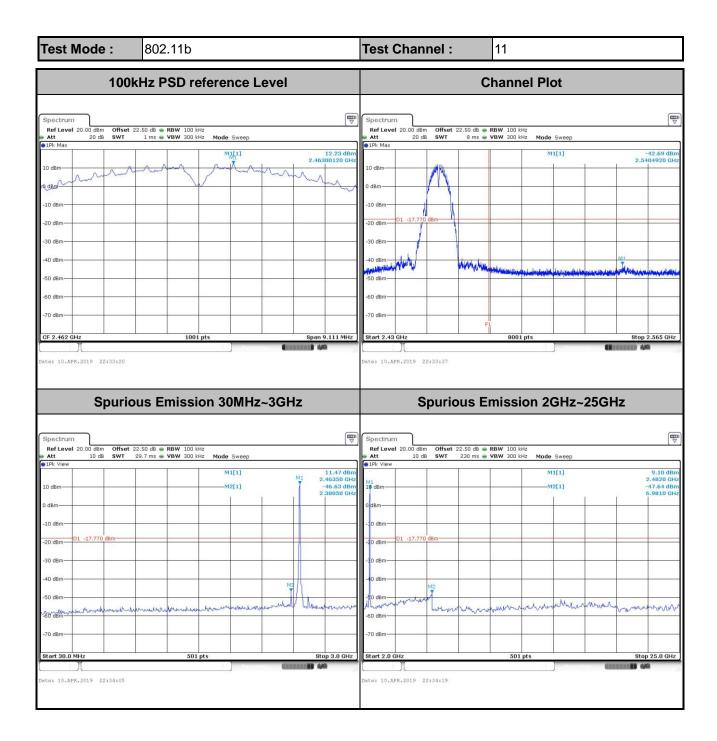
#### Number of TX = 2, Ant. 1 (Measured)



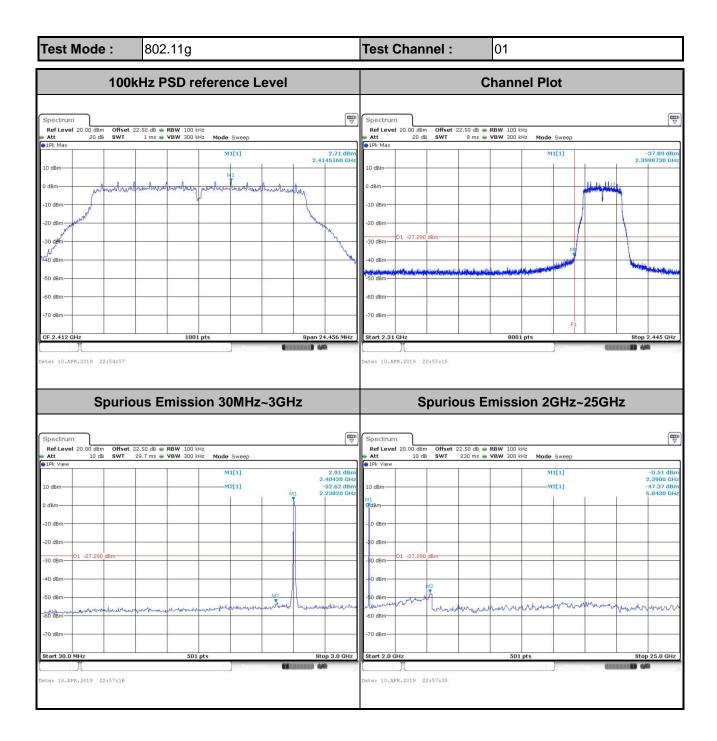


Test Mode :	802.11b	Test Chan	<b>nel</b> : 06	
100	kHz PSD reference Leve	əl	Channel Plot	
Spectrum           Ref Level 20.00 dBm         Offset 2           10 dBm         SWT           10 dBm	22:50 dB = RBW 100 kHz 1 ms = VBW 300 kHz Mode Sweep M11 M1111 M111	IA: 30 dBm           2.43650100 GHz           4           5           5           5           4           4           4           4           4           4           4           4           4           4           4           4           4           4		
Spurio	ous Emission 30MHz~30	GHz S	purious Emission 2GHz~25	iGHz
Spectrum         Offset 2           Att         10 d8         SWT           IPIK View         10 d8m         0 d8m           10 d8m         0 d8m         0 d8m           -10 d8m         01 -15.700 d8m         -20 d8m	22.50 dB	Image: System in the image is a state in the image in the image is a state in the image in the image is	SWT         230 ms         VBW         300 kHz         Mode Sweep           M1[1]         -M2[1]         -M2[1]	12.40 dBm           2.4660 GHz           -47.15 dBm           6.9810 GHz
-40 dBm -50 dBm -70 dB	subarbara and an and an	N2         -0 dBm           -0 dBm         -0 dBm           -0 dBm         -0 dBm           -0 dBm         -0 dBm           -50 dBm         -0 dBm           -70 dBm	M2 	Stop 25.0 GHz





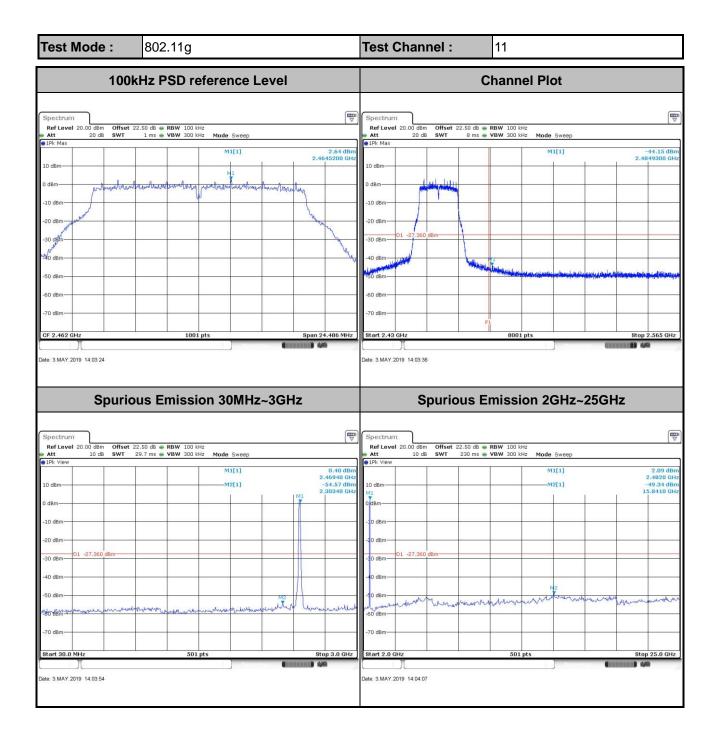






Test Mode :	802.11g		Test Channe	el : 06		
100k	Hz PSD reference Level			Channel	Plot	
Att 20 dB SWT     1Pk Max	2.50 dB = RBW 100 HH2 1 ms = VBW 300 HH2 Mode Sweep MI[1] Ayen/mg/mg/mg/mg/mg/mg/mg/mg/mg/mg/mg/mg/mg/	10.06 dBm 2.4382700 dHz				
Spurio	us Emission 30MHz~3GHz	Z	Spi	rious Emissior	າ 2GHz~25G	Hz
Spectrum Ref Level 20.00 dBm Offset 22	2.50 dB • RBW 100 H4: 29.7 ms • VBW 300 H4: Mode Sweep M1[1] M2[1] M2[1] M2 M2[1] M2 M2 M2 M2 M2 M2 M2 M2 M2 M2		Spectrum           Rof Lovel 20.00 dBm           • IPk View           • IPk View           • ID dBm           • 0 dBm	<b>iffset</b> 22.50 dB <b>● RBW</b> 100 kHz	Mode Sweep M1[1] M2[1]	ETT 6.33 dBm 2.4360 GHz -448.38 dBm 6.9350 GHz 
Date: 10.APR.2019 23:13:16	Meanathin		Date: 10.APR.2019 23:13	:39	The sources	<b>(</b> ()))))))))))))))))))))))))))))))))))







Test Mode :	802.11ac VHT20		Test Channel :	01		
100	100kHz PSD reference Level			Channel Plot		
Spectrum           Ref Level 20.00 dBm           Att         20 dB           91Pk Max           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm           -60 dBm           -70 dBm           -70 dBm           -20 dBm           -20 dBm           -20 dBm           -40 dBm           -50 dBm           -60 dBm           -60 dBm           -20 dBm           -30 dBm           -30 dBm           -30 dBm           -30 dBm           -30 dBm	M1[1]	5.01 dBm 2.4145140 GHz	Spectrum           Ref Level 20.00 dBm         Offset 22.50 dB           Att         20 dB         SWT         8 ms           9 IPk Max         0	VBW 300 kHz Mode Sweep	-27.87 dbm 2.3998570 GHz	
Spuri	ious Emission 30MHz~30	GHz	Spurious	Emission 2GHz~25GI	Ηz	
Spectrum           Ref Level 20.00 dBm         Offse           Att         10 dB         SWT           ID dBm         0         dBm           10 dBm         0         dBm           -10 dBm         -         -           -20 dBm         -         -24.190 dBm	NT 22.50 dB  NT 88W 100 KHz 29.7 ms  VBW 300 KHz Mode Sweep  N2[1] N1[1] N1[1]	-54-77 dBm 1.07/040 dBm 4.91 dBm ¥ 2.40420 GHz	Spectrum         Offset 22.50 dB           Att         10 dB         SWT         230 ms           1Pk View         10 dBm         0 dBm         0 dBm         0 dBm           -0 dBm         01 -24.100 dBm         01 -24.100 dBm         01 -24.100 dBm	RBW 100 kHz     VBW 300 kHz     Mode Sweep      M12[1]     M1[1]	-47.18 dbm 6.0350 GHz 2.3900 GHz	
-40 dBm -50 dBm -70 dBm -70 dBm -70 dBm Btart 30.0 MHz Date: 25.AFR.2019 16:27:16	501 pts	Stop 3.0 GHz	-0 dBm	501 pts	Stop 25.0 GHz	



Channel Plot
Spurious Emission 2GHz~25GHz
Spectrum         mm           Ref Level 20.00 dBm         Offset 22.50 dB • RBW 100 kHz           Att         10 dB         SWT         230 ms • VBW 300 kHz         Mode Sweep
IPk View         M2[1]         -47.06 dBr           M1         6.9810 GH         6.9810 GH           ID dBm         9.76 dBr         9.76 dBr           0 dBm         2.4360 GH         9.76 dBr           -10 dBm         2.4360 GH         9.76 dBr           -20 dBm         01 -19.990 dBm         9.76 dBr           -20 dBm         01 -19.990 dBm         9.76 dBr           -0 dBm         -0 dBm         -0 dBm           -0 dBm         -0 dBm         -0 dBm           -70 dBm         -70 dBm         -10 dBm           -70 dBm         -10 dBm         -10 dBm
MI 1 - - - - - - - - - - - - -



Test Mode : 802.11ac VH	IT20	Test Channel :	11	
100kHz PSD refer	rence Level	Channel Plot		
Spectrum           Ref Lovel 20.00 dBm         Offset 22.50 dB • RBW 100 kHz           Att         20 dB           11 ms         VBW 300 kHz           In dBm         In ms	Inde Sweep	Att 20 dB SWT 8 m     PIPk Max     10 dBm     0 dBm     -10 dBm     -20 dBm     01 -24.390 dBm     -30 dBm	iB       RBW 100 kHZ         is       VBW 300 kHZ         M1[1]         M1[1] </th <th>-40,47 dbm 2.4854700 GHz</th>	-40,47 dbm 2.4854700 GHz
Spurious Emission	30MHz~3GHz	Spurious	Emission 2GHz~25G	iHz
Spectrum           Ref Level 20.00 dBm         Offset 22.50 dB         RBW 100 kHz           Att         10 dB         SWT         29.7 ms         VBW 300 kHz         M           ID dBm         ID dBm <th< th=""><th>Inde Sweep           M2[1]         -52.16 dbm           M1[1]         M1         5.19 dbm           M1[1]         M1         2.46940 GHz           M1[1]         M1         2.46940 GHz           M1         M1         0.19 dbm           M1         M1         0.19 dbm           M2         M2         0.10 dbm           M1         M1         0.10 dbm           M1         M1         0.10 dbm           M2         M2         0.10 dbm</th><th>1Pk View      10 dBm      0 dBm      -10 dBm      -20 dBm      -20 dBm      -30 dBm      -30 dBm      -10 dBm      -20 dBm      -30 dBm      -3</th><th>B         RBW 100 kHz           IS         VBW 300 kHz           M2[1]           M1[1]           M1[1]</th><th>-47,41 dbm 6.9810 GHz 4.05 dbm 2.4820 GHz</th></th<>	Inde Sweep           M2[1]         -52.16 dbm           M1[1]         M1         5.19 dbm           M1[1]         M1         2.46940 GHz           M1[1]         M1         2.46940 GHz           M1         M1         0.19 dbm           M1         M1         0.19 dbm           M2         M2         0.10 dbm           M1         M1         0.10 dbm           M1         M1         0.10 dbm           M2         M2         0.10 dbm	1Pk View      10 dBm      0 dBm      -10 dBm      -20 dBm      -20 dBm      -30 dBm      -30 dBm      -10 dBm      -20 dBm      -30 dBm      -3	B         RBW 100 kHz           IS         VBW 300 kHz           M2[1]           M1[1]           M1[1]	-47,41 dbm 6.9810 GHz 4.05 dbm 2.4820 GHz



Test Mode :	802.11ac VHT40	Test (	Channel : 03	3	
100	kHz PSD reference Level		Channel Plot		
Spectrum           Ref Lovel 20.00 dBm         Offset           Att         20 dB         SWT           ID dBm         ID dBm         ID dBm           0 dBm         ID dBm         ID dBm           -20 dBm         ID dBm         ID dBm           -30 dBm         ID dBm         ID dBm           -20 dBm         ID dBm         ID dBm           -30 dBm         ID dBm         ID dBm           -20 dBm         ID dBm         ID dBm           -20 dBm         ID dBm         ID dBm           -30 dBm         ID dBm         ID dBm           -50 dBm         ID dBm         ID dBm           -70 dBm         ID dBm         ID dBm <th>t 22.50 dB = RBW 100 kHz 1.1 ms = VBW 300 kHz Mode Sweep M1[1] 011 011 011 011 011 011 011 0</th> <th>-2.03 dBm 2.4169980 GHz 0 dBm 0 dBm -10 dBm -20 dBm -20 dBm -30 dBm -30 dBm -30 dBm -30 dBm -30 dBm -70 dBm -70 dBm -70 dBm</th> <th>20.00 dBm Offset 22.50 dB RBW 20 dB SWT 8 ms VBW 01 -32.030 dBm 01 -32.030 dBm</th> <th>100 kHz 300 kHz Mode Sweep M1[1] M1[1] M1 M1 M1 M1 M1 M1 M1 M1 M1 M1 M1 M1 M1</th> <th>-40.35 dBm 2.3951320 GHz</th>	t 22.50 dB = RBW 100 kHz 1.1 ms = VBW 300 kHz Mode Sweep M1[1] 011 011 011 011 011 011 011 0	-2.03 dBm 2.4169980 GHz 0 dBm 0 dBm -10 dBm -20 dBm -20 dBm -30 dBm -30 dBm -30 dBm -30 dBm -30 dBm -70 dBm -70 dBm -70 dBm	20.00 dBm Offset 22.50 dB RBW 20 dB SWT 8 ms VBW 01 -32.030 dBm 01 -32.030 dBm	100 kHz 300 kHz Mode Sweep M1[1] M1[1] M1 M1 M1 M1 M1 M1 M1 M1 M1 M1 M1 M1 M1	-40.35 dBm 2.3951320 GHz
Spuri	ous Emission 30MHz~3GHz		Spurious Emi	ssion 2GHz~25GH	łz
Spectrum           Ref Level 20.00 dBm         Offset           Att         10 dB         SWT           ID dBm         0         dBm           0 dBm         -         0           -10 dBm         -         -	t 22.50 dB = RBW 100 kHz 29.7 ms = VBW 300 kHz Mode Sweep M2[1] M1[1] M1	Image: Spectrum         Spectrum           Ref Lovel         Att           • 7.52.55 dBm         • FIk View           • 2.35600 GHz         • 0 dBm           • 2.40420 GHz         • g gBm           • 0 dBm         • 0 dBm           • 20 dBm         • 20 dBm	20.00 dBm Offset 22.50 dB = RBW 10 dB SWT 230 ms = VBW	100 842 300 842 Mode Sweep M2[1] 	-46.89 dBm 6.9810 GHz -3.85 dBm 2.3900 GHz
-30 dBm 01 -32.030 dBm -40 dBm -50 dBm -50 dBm -70 dBm -70 dBm Stort 30.0 MHz Date: 25.APR.2019 17:01:52	501 pts			501 pts	Stop 25.0 GHz



Test Mode :	802.11ac VHT40	Test Channel : 06	3	
100	0kHz PSD reference Level	Cha	nnel Plot	
Att 20 dB SWT     1Pk Max     10 dBm	t 22.50 dB @ RBW 100 kHz         Mode Sweep           1.1 ms @ VBW 300 kHz         Mode Sweep			
Spuri	ous Emission 30MHz~3GHz	Spurious Emi	ssion 2GHz~25GH	z
Spectrum           Ref Level 20.00 dBm         Offsel           Att         10 dB         SWT           ID dBm         0         0           0 dBm         -         0           -10 dBm         -         -           -20 dBm         -         -           -30 dBm         01 - 28.740 dBm         -           -50 dBm         -         -	t 22.50 dB = RBW 100 kHz 29.7 ms = VBW 300 kHz Mode Sweep M2[1] -52.14 dBm M1[1] 1.42 dBm M1[1] 2.42790 GHz M1 M1 M1 M1 M1 M1 M1 M1 M1 M1 M1 M1 M1		300 kHz Mode Sweep	-48.14 dBm 6.8890 GHz 1.04 dBm 2.4360 GHz
260 dBm	501 pts Stop 3.0 GHz	-50 dBm	501 pts	Stop 25.0 GHz