



Page: 1 of 163



FCC Test Report

FCC ID : ACQ-HC200

Equipment : HC200 Model No. : HC200

Brand Name : HomeSight

Applicant : ARRIS

Address : 101 Tournament Drive, Horsham

Pennsylvania, United States, 19044

Standard : 47 CFR FCC Part 15.407

Received Date : Oct. 01, 2021

Tested Date : Nov. 18 ~ Nov. 25, 2021

We, International Certification Corporation, would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by: Approved by:

Along Chen // Assistant Manager

Gary Chand / Manager



Table of Contents

1	GENERAL DESCRIPTION	5
1.1	Information	5
1.2	Local Support Equipment List	10
1.3	Test Setup Chart	10
1.4	The Equipment List	11
1.5	Test Standards	12
1.6	Reference Guidance	12
1.7	Deviation from Test Standard and Measurement Procedure	12
1.8	Measurement Uncertainty	13
2	TEST CONFIGURATION	14
2.1	Testing Facility	14
2.2	The Worst Test Modes and Channel Details	15
3	TRANSMITTER TEST RESULTS	16
3.1	Conducted Emissions	16
3.2	Emission Bandwidth	21
3.3	RF Output Power	41
3.4	Peak Power Spectral Density	49
3.5	Transmitter Radiated and Band Edge Emissions	70
3.6	Frequency Stability	161
4	TEST LABORATORY INFORMATION	163

Page: 2 of 163



Release Record

Report No.	Version	Description	Issued Date
FR100103AN	Rev. 01	Initial issue	Jan. 25, 2022
FR100103AN	Rev. 02	Revising input power rating of adapter	Feb. 24, 2022

Report No.: FR1O0103AN Page: 3 of 163



Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.573MHz 35.02 (Margin -10.98dB) - AV	Pass
15.407(b)	Radiated Emissions	[dBuV/m at 3m]: 5460.00MHz	Pass
15.209		52.86 (Margin -1.14dB) - AV	
15.407(a)	Emission Bandwidth	Meet the requirement of limit	Pass
15.407(e)	6dB bandwidth	Meet the requirement of limit	Pass
15.407(a)	RF Output Power	Max Power [dBm]: 5150~5250MHz: 18.06 5250~5350MHz: 18.28 5470~5725MHz: 18.08 5725~5850MHz: 18.48	Pass
15.407(a)	Peak Power Spectral Density	Meet the requirement of limit	Pass
15.407(g)	Frequency Stability	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	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.

Page: 4 of 163

Report No.: FR100103AN

Report Version: Rev. 02



1 General Description

1.1 Information

1.1.1 Specification of the Equipment under Test (EUT)

	RF General Information						
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N _{TX})	Data Rate / MCS		
5150-5250 5250-5350 5470-5725 5725-5850	а	5180-5240 5260-5320 5500-5720 5745-5825	36-48 [4] 52-64 [4] 100-144 [12] 149-165 [5]	1	6-54 Mbps		
5150-5250 5250-5350 5470-5725 5725-5850	n (HT20)	5180-5240 5260-5320 5500-5720 5745-5825	36-48 [4] 52-64 [4] 100-144 [12] 149-165 [5]	1	MCS 0-7		
5150-5250 5250-5350 5470-5725 5725-5850	n (HT40)	5190-5230 5270-5310 5510-5710 5755-5795	38-46 [2] 54-62 [2] 102-142 [6] 151-159 [2]	1	MCS 0-7		
5150-5250 5250-5350 5470-5725 5725-5850	ac (VHT20)	5180-5240 5260-5320 5500-5720 5745-5825	36-48 [4] 52-64 [4] 100-144 [12] 149-165 [5]	1	MCS 0-9		
5150-5250 5250-5350 5470-5725 5725-5850	ac (VHT40)	5190-5230 5270-5310 5510-5710 5755-5795	38-46 [2] 54-62 [2] 102-142 [6] 151-159 [2]	1	MCS 0-9		
5150-5250 5250-5350 5470-5725 5725-5850	ac (VHT80)	5210 5290 5530~5690 5775	42 [1] 58 [1] 106-138 [3] 155 [1]	1	MCS 0-9		

Note 1: RF output power specifies that Maximum Conducted Output Power.

Note 2: 802.11a/n/ac uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.

1.1.2 Antenna Details

Ant.	Model	Туре	Connector	Operating	Frequenci	es (GHz) /	Antenna G	ain (dBi)
No.			Connector	2.4-2.4835	5.15-5.25	5.25-5.35	5.47-5.725	5.725-5.85
1	PSA/WA-F-L B-02-288	FPC Antenna	UFL	3.76	3.84	3.84	3.89	3.72

1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Supply Type 12V from adapter	
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Report No.: FR100103AN Page: 5 of 163



1.1.4 Accessories

	Accessories					
No.	Equipment	Description				
Brand: NetBit Model: NPD20AD5 Power Rating: I/P: 100-240V~, 50/60Hz, 0.5A O/P: 20.04W 12.0V 1.67A;5V 3.0A Power Line: 1.5m non-shielded without core		Model: NPD20AD5 Power Rating: I/P: 100-240V~, 50/60Hz, 0.5A O/P: 20.04W 12.0V 1.67A;5V 3.0A				
2	HDMI	1.73m shielded without core				
3	USB type-C	1.8m shielded without core				
4	Remote Control	Brand: Omni Remotes Model: RC4630501/01BRP				

Report No.: FR100103AN

Page: 6 of 163



1.1.5 Channel List

802.11 a / H	T20 / VHT20	HT40 /	VHT40
Channel	Frequency(MHz)	Channel	Frequency(MHz)
36	36 5180		5190
40	5200	46	5230
44	5220	54	5270
48	5240	62	5310
52	5260	102	5510
56	5280	110	5550
60	5300	118	5590
64	5320	126	5630
100	5500	134	5670
104	5520	142	5710
108	5540	151	5755
112	5560	159	5795
116	5580	VHT80	
120	5600	42	5210
124	5620	58	5290
128	5640	106	5530
132	5660	122	5610
136	5680	138	5690
140	5700	155	5775
144	5720		
149	5745		
153	5765		
157	5785		
161	5805		
165	5825		

1.1.6 Test Tool and Duty Cycle

Test Tool	QRCT, V4.0.001720				
	Mode	Duty Cycle (%)	Duty Factor (dB)		
	11a	98.48%	0.07		
Duty Cycle and Duty Factor	VHT20	98.38%	0.07		
	VHT40	95.74%	0.19		
	VHT80	90.76%	0.42		

Report No.: FR100103AN Page: 7 of 163

Report Version: Rev. 02



1.1.7 Power Index of Test Tool

Modulation Mode	Test Frequency (MHz)	Power Index
11a	5180	19
11a	5200	19
11a	5240	19
11a	5260	19.5
11a	5300	19.5
11a	5320	19.5
11a	5500	19.5
11a	5580	19.5
11a	5700	18.5
11a	5720	19.5
11a	5745	19.5
11a	5785	19.5
11a	5825	19.5
VHT20	5180	18
VHT20	5200	18
VHT20	5240	18
VHT20	5260	18
VHT20	5300	18
VHT20	5320	18
VHT20	5500	18.5
VHT20	5580	18.5
VHT20	5700	17.5
VHT20	5720	18
VHT20	5745	18
VHT20	5785	18
VHT20	5825	18



VHT40	5190	16
VHT40	5230	16
VHT40	5270	16
VHT40	5310	16
VHT40	5510	16.5
VHT40	5590	16.5
VHT40	5670	16.5
VHT40	5710	16
VHT40	5755	16
VHT40	5795	16
VHT80	5210	15.5
VHT80	5290	15.5
VHT80	5530	16
VHT80	5610	16
VHT80	5690	15.5
VHT80	5775	15.5

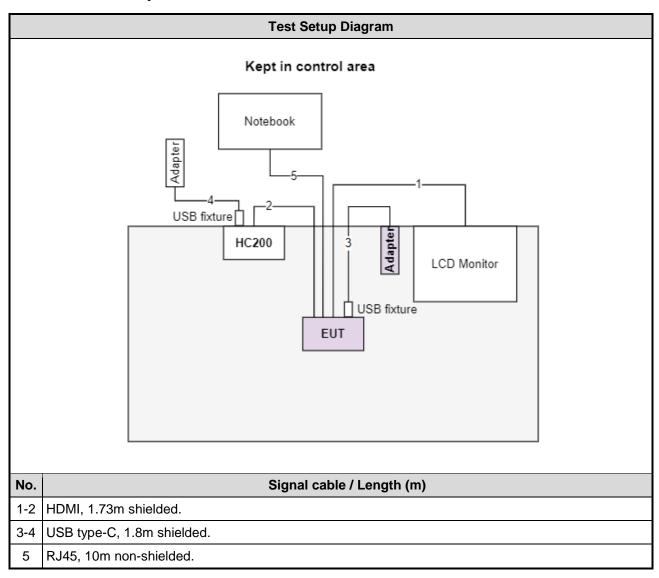
Page: 9 of 163



1.2 Local Support Equipment List

	Support Equipment List						
No.	Equipment	Brand	Model	FCC ID	Remarks		
1	Notebook	DELL	Latitude E5470	DoC			
2	LCD Monitor	ASUS	MX27UCS				
3	USB fixture				Provided by applicant.		

1.3 Test Setup Chart





1.4 The Equipment List

Test Item	Conducted Emission							
Test Site	Conduction room 1 / (CO01-WS)							
Tested Date	Nov. 23, 2021							
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until			
Receiver	R&S	ESR3	101658	Feb. 08, 2021	Feb. 07, 2022			
LISN	R&S	ENV216	101579	Mar. 17, 2021	Mar. 16, 2022			
LISN (Support Unit)	SCHWARZBECK	Schwarzbeck 8127	8127-666	Dec. 29, 2020	Dec. 28, 2021			
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Oct. 19, 2021	Oct. 18, 2022			
50 ohm terminal (Support Unit)	NA	50	04	May 25, 2021	May 24, 2022			
Measurement Software	AUDIX	e3	6.120210k	NA	NA			
Note: Calibration Inte	rval of instruments liste	d above is one year.						

Test Item	Radiated Emission							
Test Site	966 chamber1 / (03CH01-WS)							
Tested Date	Nov. 18 ~ Nov. 25, 2021							
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until			
Receiver	R&S	ESR3	101657	Mar. 12, 2021	Mar. 11, 2022			
Spectrum Analyzer	R&S	FSV40	101498	Dec. 04, 2020	Dec. 03, 2021			
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 08, 2021	Nov. 07, 2022			
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jun. 30, 2021	Jun. 29, 2022			
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 11, 2020	Dec. 10, 2021			
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170508	Dec. 31, 2020	Dec. 30, 2021			
Preamplifier	EMC	EMC02325	980225	Jun. 29, 2021	Jun. 28, 2022			
Preamplifier	Agilent	83017A	MY39501308	Sep. 28, 2021	Sep. 27, 2022			
Preamplifier	EMC	EMC184045B	980192	Jul. 14, 2021	Jul. 13, 2022			
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 05, 2021	Oct. 04, 2022			
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Oct. 05, 2021	Oct. 04, 2022			
LF cable 11M	EMC	EMCCFD400-NW-N W-11000	200801	Oct. 05, 2021	Oct. 04, 2022			
LF cable 1M	EMC	EMCCFD400-NM-N M-1000	160502	Oct. 05, 2021	Oct. 04, 2022			
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Oct. 05, 2021	Oct. 04, 2022			
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Oct. 05, 2021	Oct. 04, 2022			
Measurement Software	AUDIX	e3	6.120210g	NA	NA			
Note: Calibration Inter	Note: Calibration Interval of instruments listed above is one year.							

Report No.: FR1O0103AN Page: 11 of 163

Report Version: Rev. 02



Test Item	RF Conducted							
Test Site	(TH01-WS)							
Tested Date	Nov. 23 ~ Nov. 24, 20)21						
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until			
Spectrum Analyzer	R&S	FSV40	101498	Dec. 04, 2020	Dec. 03, 2021			
Power Meter	Anritsu	ML2495A	1218007	Jan. 26, 2021	Jan. 25, 2022			
Power Sensor	Anritsu	MA2411B	1207367	Jan. 26, 2021	Jan. 25, 2022			
AC POWER SOURCE	APC	AFC-500W	F312060012	Dec. 04, 2020	Dec. 03, 2021			
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	May 25, 2021	May 24, 2022			
Measurement Software	Sporton SENSE-15407_NII V5.10 NA NA							
Note: Calibration Inter	Note: Calibration Interval of instruments listed above is one year.							

1.5 Test Standards

47 CFR FCC Part 15.407 ANSI C63.10-2013

1.6 Reference Guidance

FCC KDB 412172 D01 Determining ERP and EIRP v01r01 FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01

1.7 Deviation from Test Standard and Measurement Procedure

None

Report No.: FR100103AN Page: 12 of 163

Report Version: Rev. 02



1.8 Measurement Uncertainty

The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)).

Measurement Uncertainty					
Parameters	Uncertainty				
Bandwidth	±34.130 Hz				
Conducted power	±0.808 dB				
Frequency error	±1x10 ⁻⁹				
Power density	±0.583 dB				
Conducted emission	±2.715 dB				
AC conducted emission	±2.92 dB				
Radiated emission ≤ 1GHz	±3.41 dB				
Radiated emission > 1GHz	±4.59 dB				
Time	±0.1%				
Temperature	±0.4 °C				

Page: 13 of 163



2 Test Configuration

2.1 Testing Facility

Test Laboratory	International Certification Corporation
Test Site	CO01-WS, 03CH01-WS, TH01-WS
Address of Test Site	No.3-1, Lane 6, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.)

FCC Designation No.: TW2732FCC site registration No.: 181692

➤ ISED#: 10807A

➤ CAB identifier: TW2732

Report No.: FR1O0103AN Page: 14 of 163



2.2 The Worst Test Modes and Channel Details

Frequen	cy band 5150~525	0 MHz / 5250~5350 MHz / 5470~5	725 MHz		
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration	
Conducted Emissions	11a	5260	6 Mbps		
Radiated Emissions ≤1GHz	11a	5260	6 Mbps		
	11a	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700 / 5720	6 Mbps		
	HT20	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700 / 5720	MCS		
RF Output Power	HT40	5190 / 5230/ 5270 / 5310 / 5510 5590 / 5670 / 5710	MCS 0		
	VHT20	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700 / 5720	MCS 0		
	VHT40	5190 / 5230/ 5270 / 5310 / 5510 5590 / 5670 / 5710	MCS 0		
	VHT80	5210 / 5290 / 5530 / 5610 / 5690	MCS 0		
	11a	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700 / 5720	6 Mbps		
Radiated Emissions >1GHz Emission Bandwidth Peak Power Spectral Density	VHT20	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700 / 5720	MCS 0		
	VHT40	5190 / 5230/ 5270 / 5310 / 5510 5590 / 5670 / 5710	MCS 0		
	VHT80	5210 / 5290 / 5530 / 5610 / 5690	MCS 0		
Frequency Stability	Un-modulation	5320			
	Frequenc	cy band 5725-5850 MHz			
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration	
Conducted Emissions	11a	5825	6 Mbps		
Radiated Emissions ≤1GHz	11a	5825	6 Mbps		
	11a	5745 / 5785 / 5825	6 Mbps		
	HT20	5745 / 5785 / 5825	MCS 0		
RF Output Power	HT40	5755 / 5795	MCS 0		
Kr Odipul Fower	VHT20	5745 / 5785 / 5825	MCS 0		
	VHT40	5755 / 5795	MCS 0		
	VHT80	5775	MCS 0	1	
Radiated Emissions >1GHz	11a	5745 / 5785 / 5825	6 Mbps		
Emission Bandwidth	VHT20	5745 / 5785 / 5825	MCS 0		
6dB bandwidth	VHT40	5755 / 5795	MCS 0		
Peak Power Spectral Density	VHT80	5775	MCS 0		
Frequency Stability	Un-modulation	5785			

Report No.: FR1O0103AN Report Version: Rev. 02



3 Transmitter Test Results

3.1 Conducted Emissions

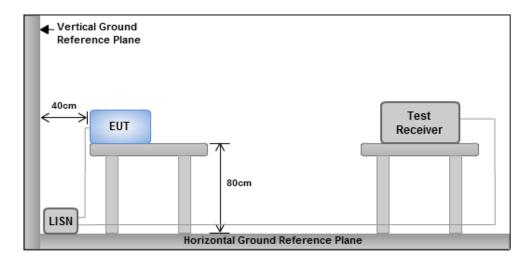
3.1.1 Limit of Conducted Emissions

Conducted Emissions Limit					
Frequency Emission (MHz)	Quasi-Peak	Average			
0.15-0.5	66 - 56 *	56 - 46 *			
0.5-5	56	46			
5-30	60	50			
Note 1: * Decreases with the logarith	m of the frequency.	-			

3.1.2 Test Procedures

- 1. The device is placed on a test table, raised 80 cm above the reference ground plane. The vertical conducting plane is located 40 cm to the rear of the device.
- 2. The device is connected to line impedance stabilization network (LISN) and other accessories are connected to other LISN. Measured levels of AC power line conducted emission are across the 50 Ω LISN port.
- 3. AC conducted emission measurements is made over frequency range from 150 kHz to 30 MHz.
- 4. This measurement was performed with AC 120V/60Hz

3.1.3 Test Setup



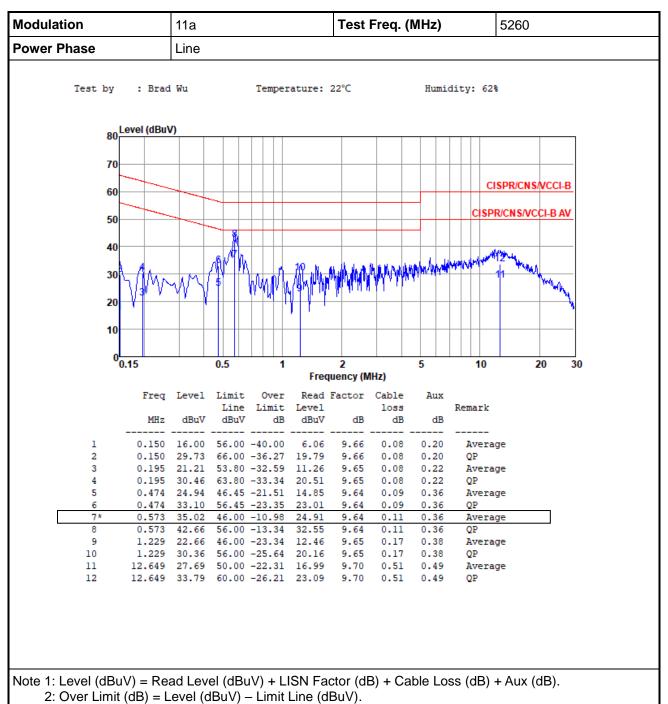
Note: 1. Support units were connected to second LISN.

Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

Report No.: FR100103AN Page: 16 of 163

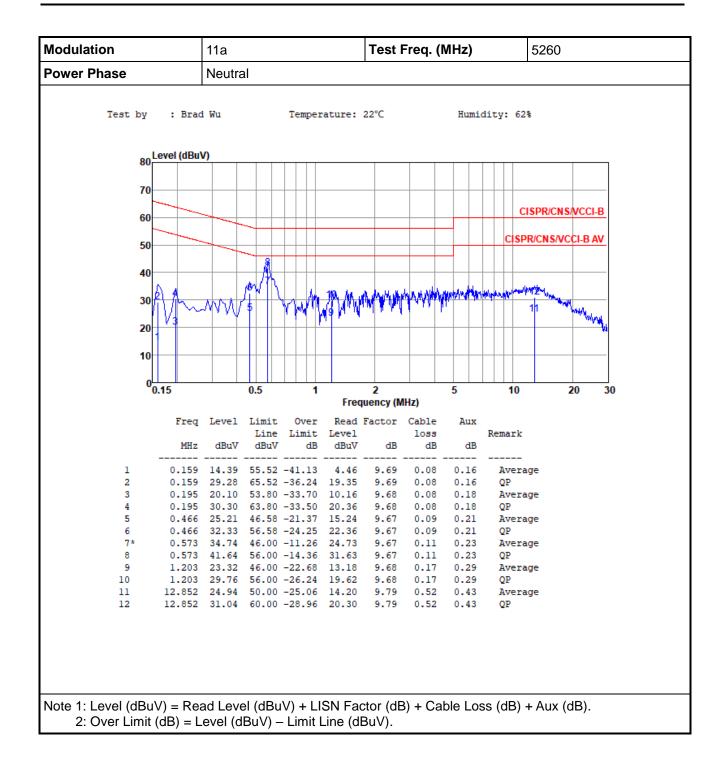


3.1.4 Test Result of Conducted Emissions



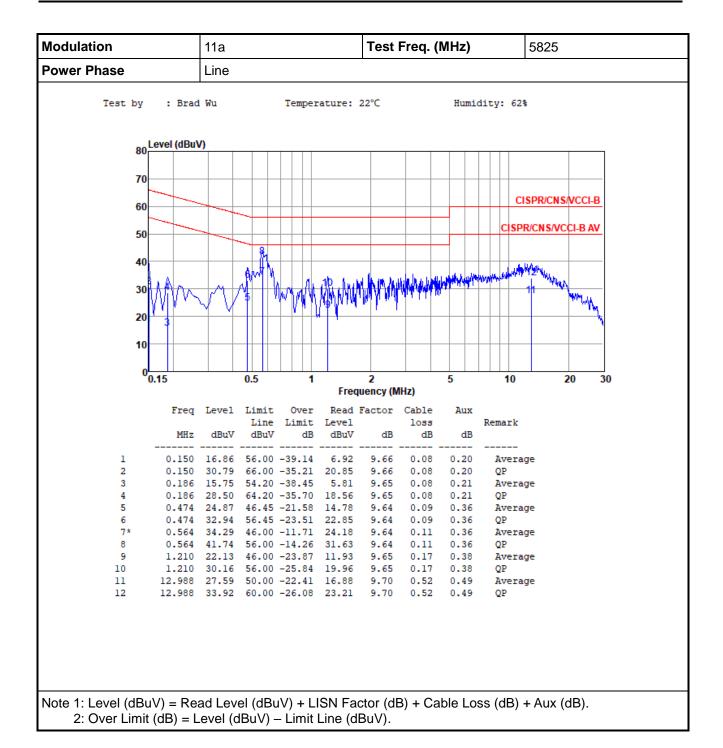
Report No.: FR100103AN Page: 17 of 163





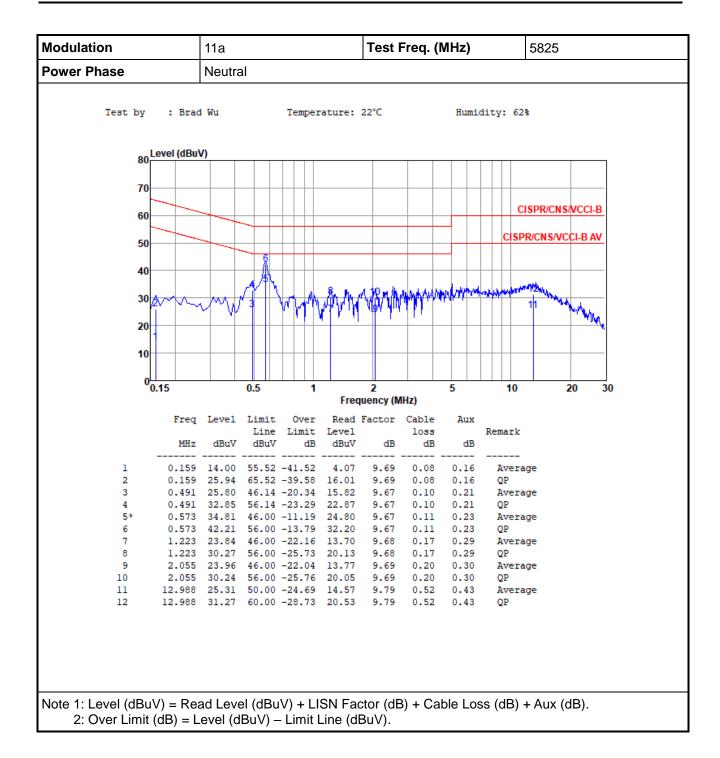
Report No.: FR100103AN Page: 18 of 163





Report No.: FR100103AN Page: 19 of 163





Report No.: FR100103AN Page: 20 of 163



3.2 Emission Bandwidth

3.2.1 Limit of Emission Bandwidth

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

3.2.2 Test Procedures

26dB Bandwidth

- 1. Set RBW = approximately 1% of the emission bandwidth.
- 2. Set the VBW > RBW, Detector = Peak.
- 3. Trace mode = max hold.
- 4. Measure the maximum width of the emission that is 26 dB down from the peak of the emission.

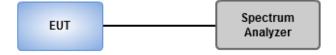
Occupied Bandwidth

- 1. Set RBW = 1 % to 5 % of the OBW.
- 2. Set VBW ≥ 3 RBW.
- 3. Sample detection and single sweep mode shall be used.
- 4. Use the 99 % power bandwidth function of the instrument.

6dB Bandwidth

- 1. Set RBW = 100kHz, VBW = 300kHz.
- 2. Detector = Peak, Trace mode = max hold.
- 3. Allow the trace to stabilize.
- 4. 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.

3.2.3 Test Setup



Report No.: FR100103AN Page: 21 of 163



3.2.4 **Test Result of Emission Bandwidth**

Ambient Condition	18-20°C / 63-65%	Tested By	Aska Huang	
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Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
5.15-5.25GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	24.058M	16.57M	16M6D1D	22.319M	16.498M
802.11ac VHT20_Nss1,(MCS0)_1TX	24.42M	17.8M	17M8D1D	23.768M	17.728M
802.11ac VHT40_Nss1,(MCS0)_1TX	41.014M	36.179M	36M2D1D	40.87M	36.179M
802.11ac VHT80_Nss1,(MCS0)_1TX	83.478M	75.832M	75M8D1D	83.478M	75.832M
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	23.768M	16.643M	16M6D1D	23.406M	16.57M
802.11ac VHT20_Nss1,(MCS0)_1TX	24.275M	17.728M	17M7D1D	23.768M	17.656M
802.11ac VHT40_Nss1,(MCS0)_1TX	41.159M	36.324M	36M3D1D	40.58M	36.179M
802.11ac VHT80_Nss1,(MCS0)_1TX	83.188M	75.832M	75M8D1D	83.188M	75.832M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	23.986M	16.643M	16M6D1D	15.348M	13.285M
802.11ac VHT20_Nss1,(MCS0)_1TX	23.841M	17.8M	17M8D1D	16.391M	13.893M
802.11ac VHT40_Nss1,(MCS0)_1TX	41.739M	36.324M	36M3D1D	35.406M	33.025M
802.11ac VHT80_Nss1,(MCS0)_1TX	83.478M	75.832M	75M8D1D	76.304M	72.287M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	15.797M	16.643M	16M6D1D	3.13M	6.194M
802.11ac VHT20_Nss1,(MCS0)_1TX	16.232M	17.8M	17M8D1D	3.768M	5.731M
802.11ac VHT40_Nss1,(MCS0)_1TX	35.507M	36.179M	36M2D1D	3.13M	4.515M
802.11ac VHT80_Nss1,(MCS0)_1TX	75.362M	75.832M	75M8D1D	3.13M	15.34M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;
Max-OBW = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Page: 22 of 163

Min-OBW = Minimum 99% occupied bandwidth;

Report No.: FR1O0103AN

Report Version: Rev. 02



Result

Mode	Result	Limit	Port 1-N dB	Port 1-OBW
		(Hz)	(Hz)	(Hz)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-
5180MHz	Pass	Inf	24.058M	16.57M
5200MHz	Pass	Inf	22.319M	16.57M
5240MHz	Pass	Inf	23.261M	16.498M
5260MHz	Pass	Inf	23.768M	16.643M
5300MHz	Pass	Inf	23.768M	16.643M
5320MHz	Pass	Inf	23.406M	16.57M
5500MHz	Pass	Inf	23.986M	16.57M
5580MHz	Pass	Inf	23.623M	16.57M
5700MHz	Pass	Inf	23.478M	16.643M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.348M	13.285M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.13M	6.194M
5745MHz	Pass	500k	15.797M	16.57M
5785MHz	Pass	500k	15.072M	16.57M
5825MHz	Pass	500k	14.928M	16.643M
802.11ac VHT20_Nss1,(MCS0)_1TX	-	-	-	-
5180MHz	Pass	Inf	23.768M	17.728M
5200MHz	Pass	Inf	24.42M	17.8M
5240MHz	Pass	Inf	24.275M	17.728M
5260MHz	Pass	Inf	24.275M	17.656M
5300MHz	Pass	Inf	24.13M	17.728M
5320MHz	Pass	Inf	23.768M	17.728M
5500MHz	Pass	Inf	23.768M	17.8M
5580MHz	Pass	Inf	23.841M	17.728M
5700MHz	Pass	Inf	23.551M	17.728M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	16.391M	13.893M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.768M	5.731M
5745MHz	Pass	500k	16.232M	17.728M
5785MHz	Pass	500k	14.13M	17.8M
5825MHz	Pass	500k	14.493M	17.728M
802.11ac VHT40_Nss1,(MCS0)_1TX	-	-	-	-
5190MHz	Pass	Inf	40.87M	36.179M
5230MHz	Pass	Inf	41.014M	36.179M
5270MHz	Pass	Inf	41.159M	36.179M
5310MHz	Pass	Inf	40.58M	36.324M
5510MHz	Pass	Inf	41.304M	36.179M
5590MHz	Pass	Inf	41.739M	36.179M

Report No.: FR1O0103AN

Report Version: Rev. 02



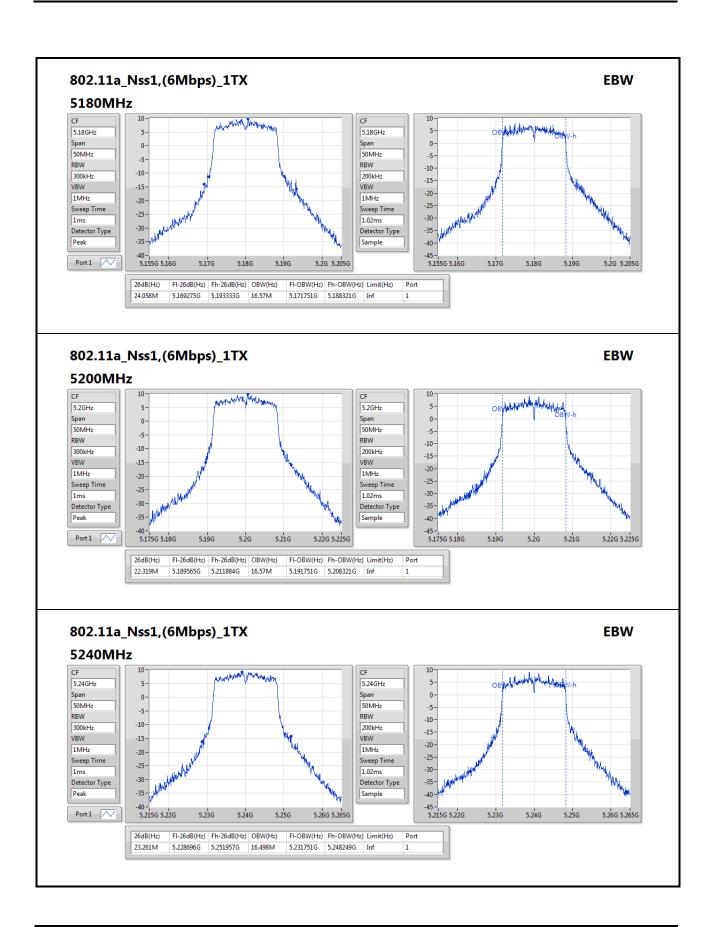
Mode	Result	Limit	Port 1-N dB	Port 1-OBW
		(Hz)	(Hz)	(Hz)
5670MHz	Pass	Inf	40.87M	36.324M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.406M	33.025M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.13M	4.515M
5755MHz	Pass	500k	35.507M	36.179M
5795MHz	Pass	500k	35.362M	36.179M
802.11ac VHT80_Nss1,(MCS0)_1TX	-	-	-	-
5210MHz	Pass	Inf	83.478M	75.832M
5290MHz	Pass	Inf	83.188M	75.832M
5530MHz	Pass	Inf	83.478M	75.832M
5610MHz	Pass	Inf	83.188M	75.543M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	76.304M	72.287M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.13M	15.34M
5775MHz	Pass	500k	75.362M	75.832M

Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band Port X-OBW = Port X 99% occupied bandwidth;

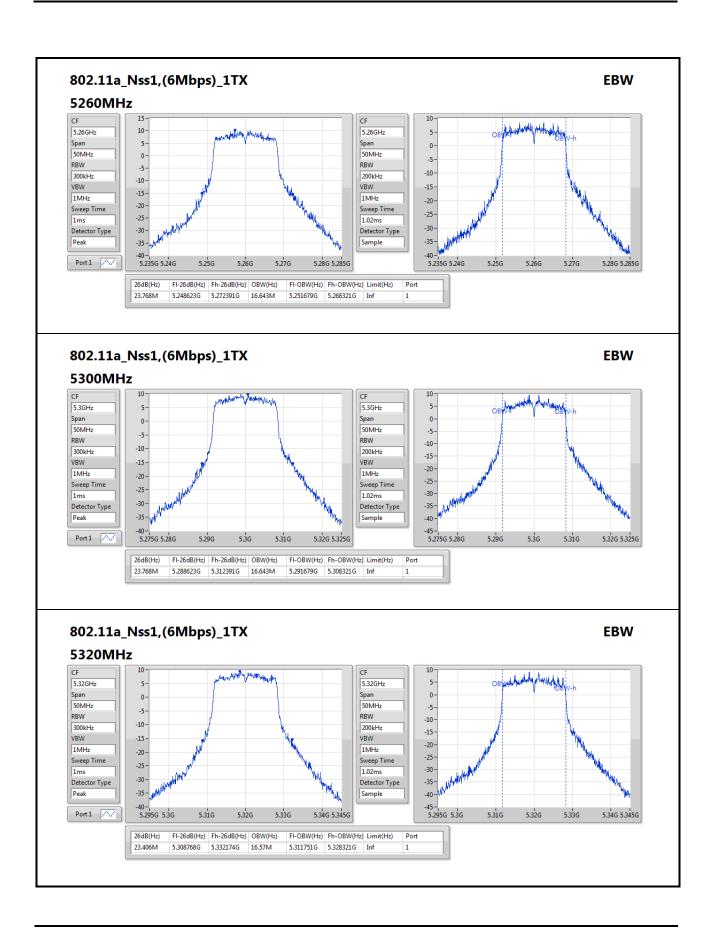
Report No.: FR100103AN Page: 24 of 163

Report Version: Rev. 02

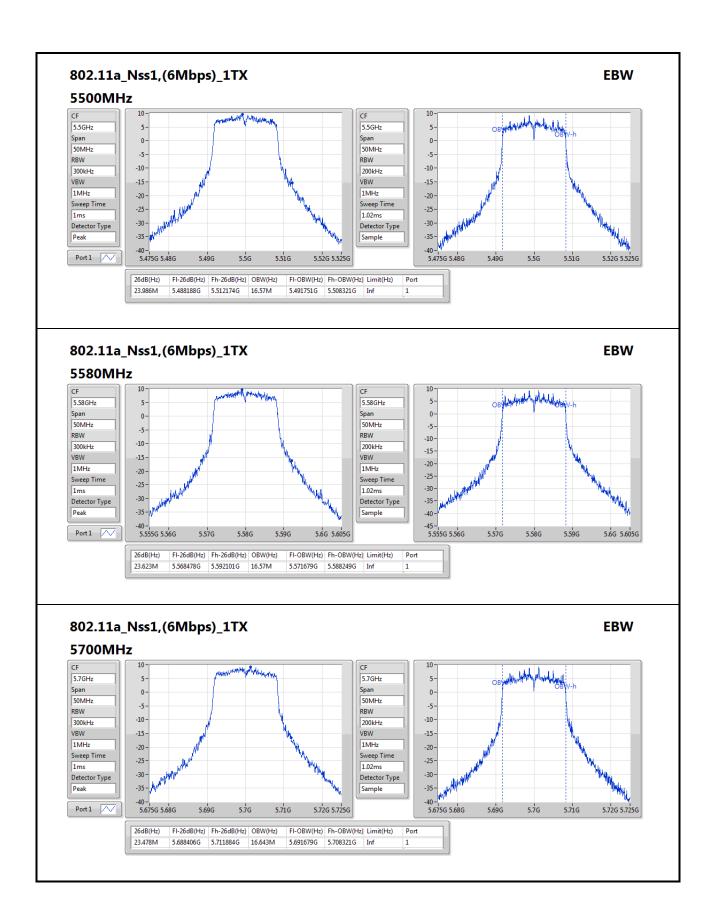




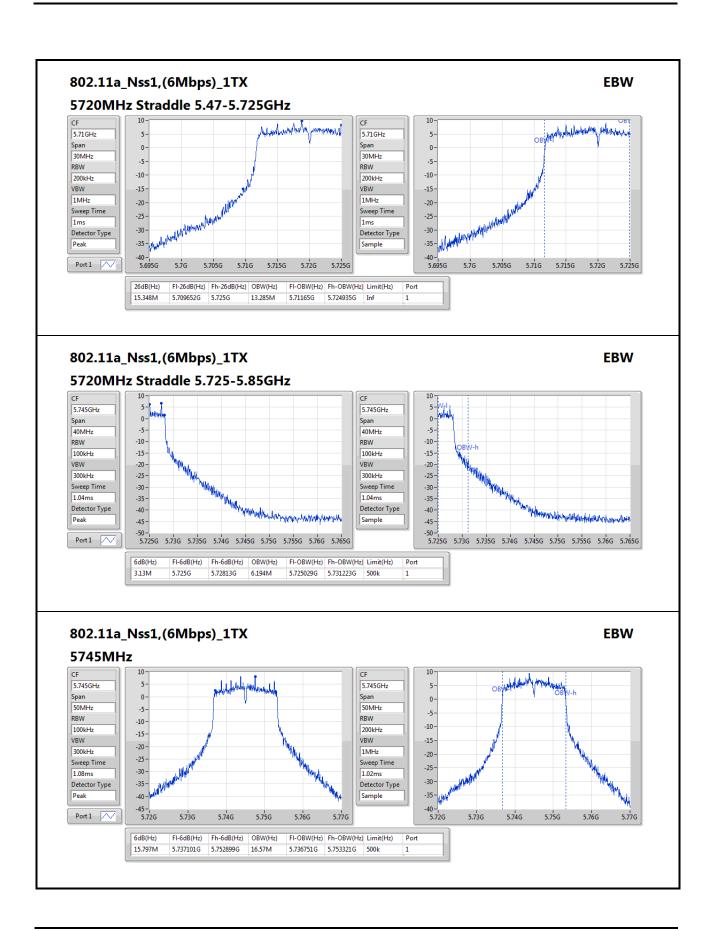






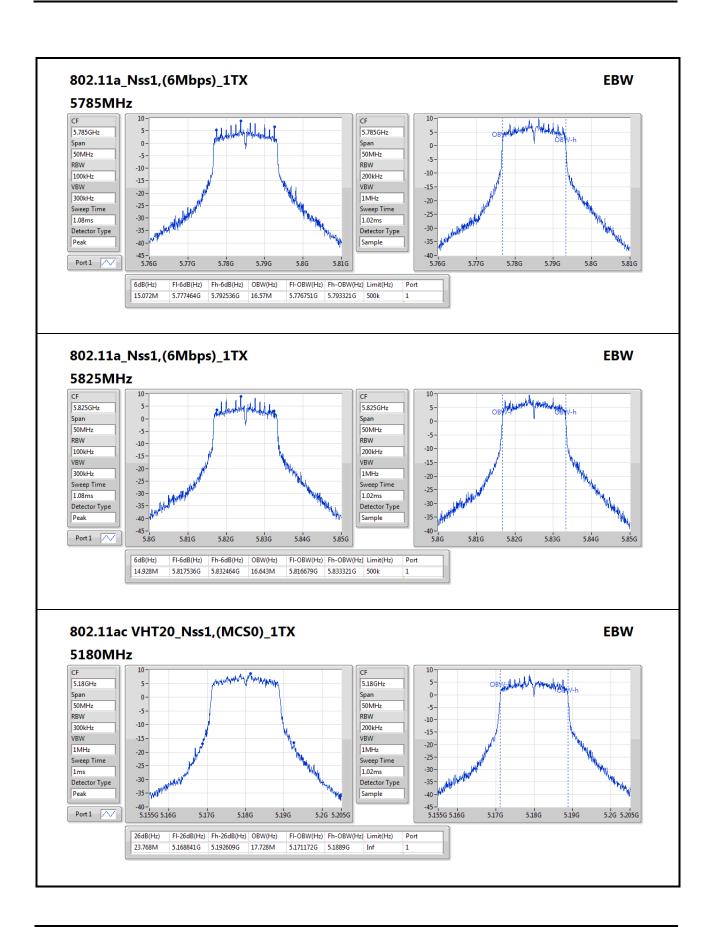




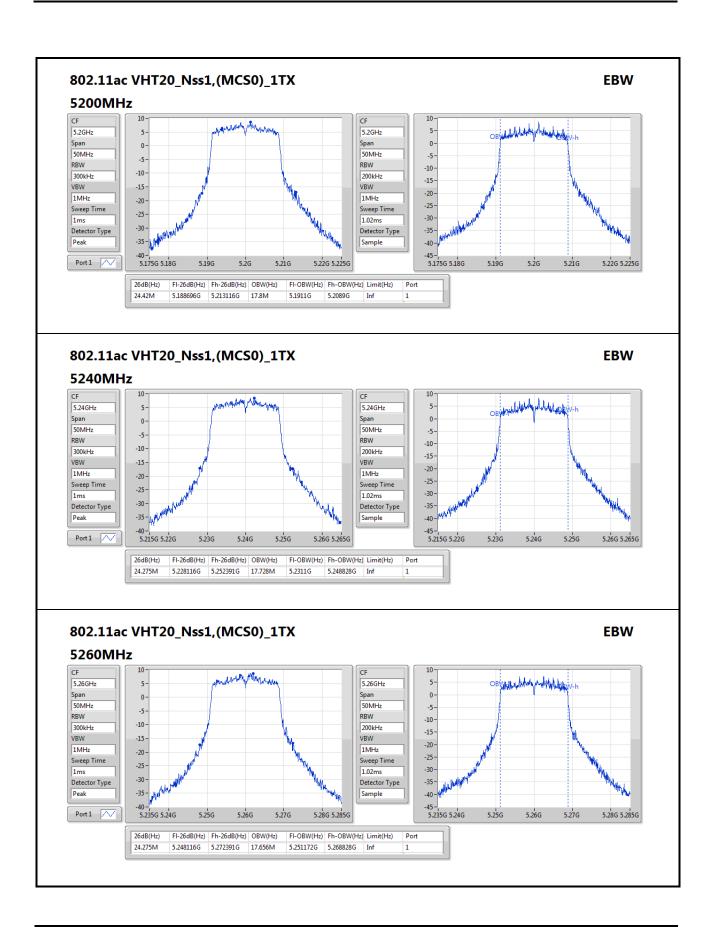


Page: 28 of 163

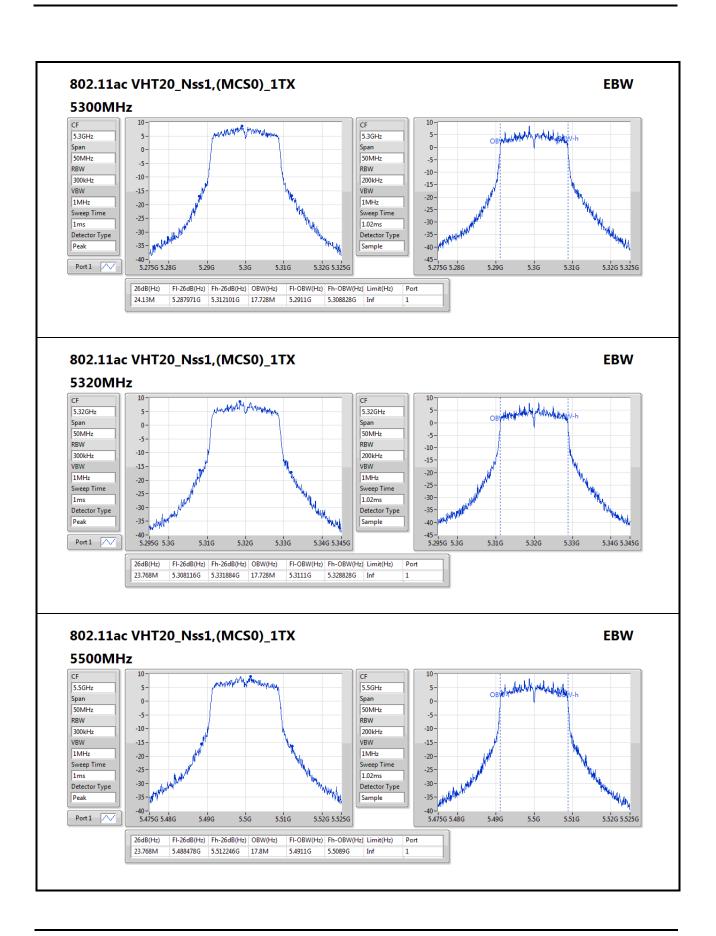






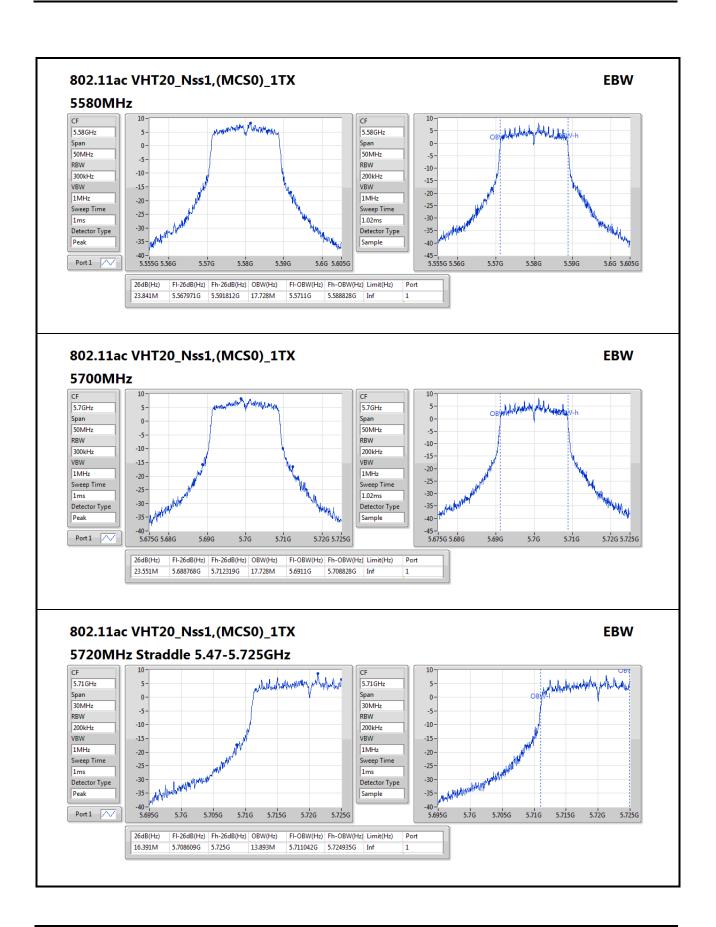




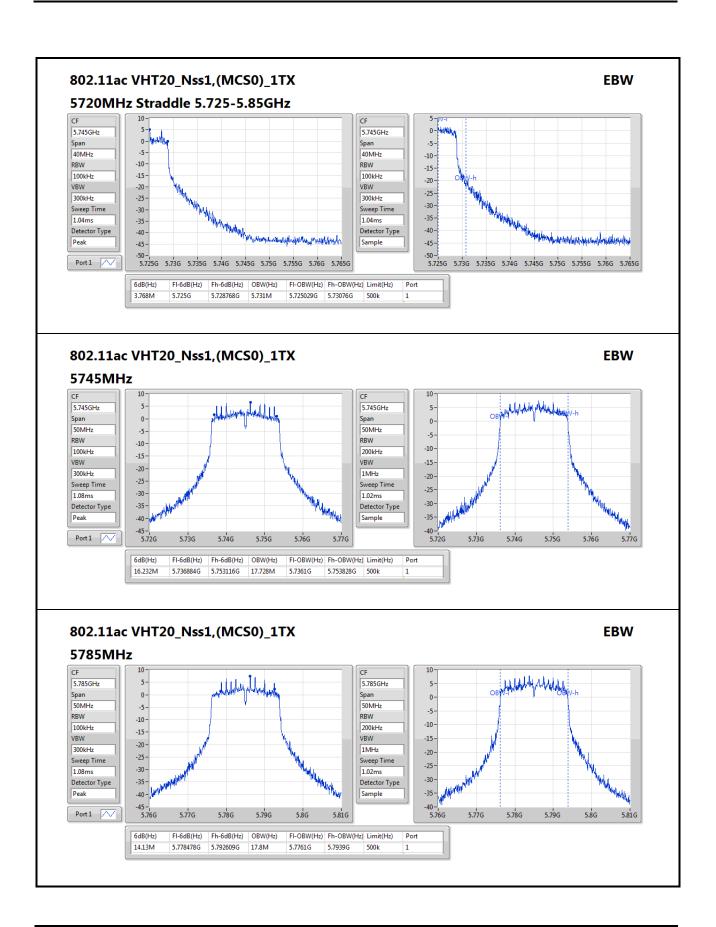


ort No.: FR1O0103AN Page : 31 of 163

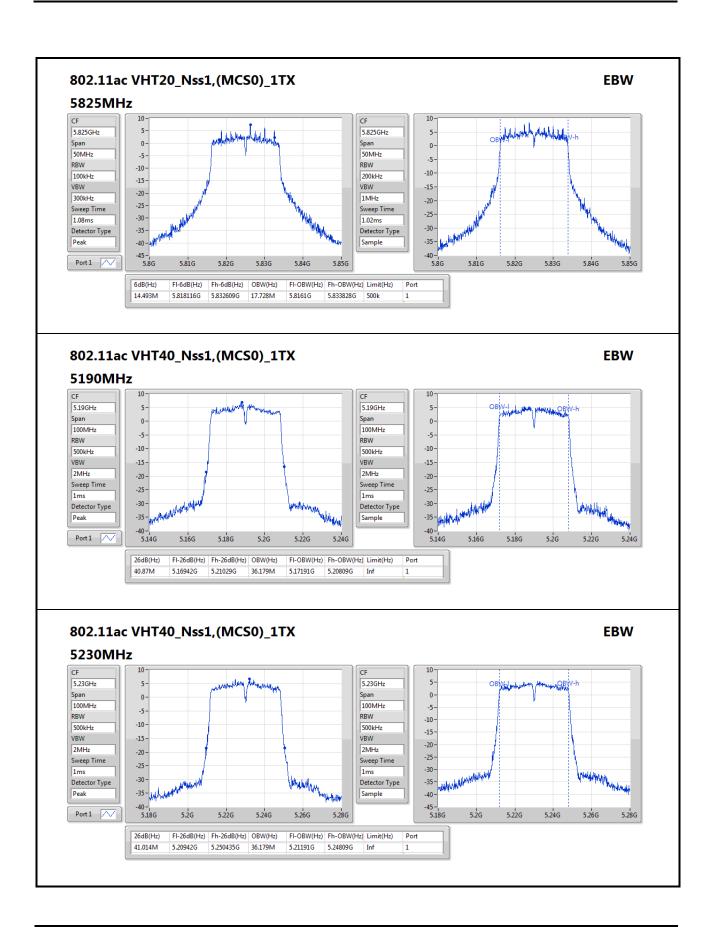




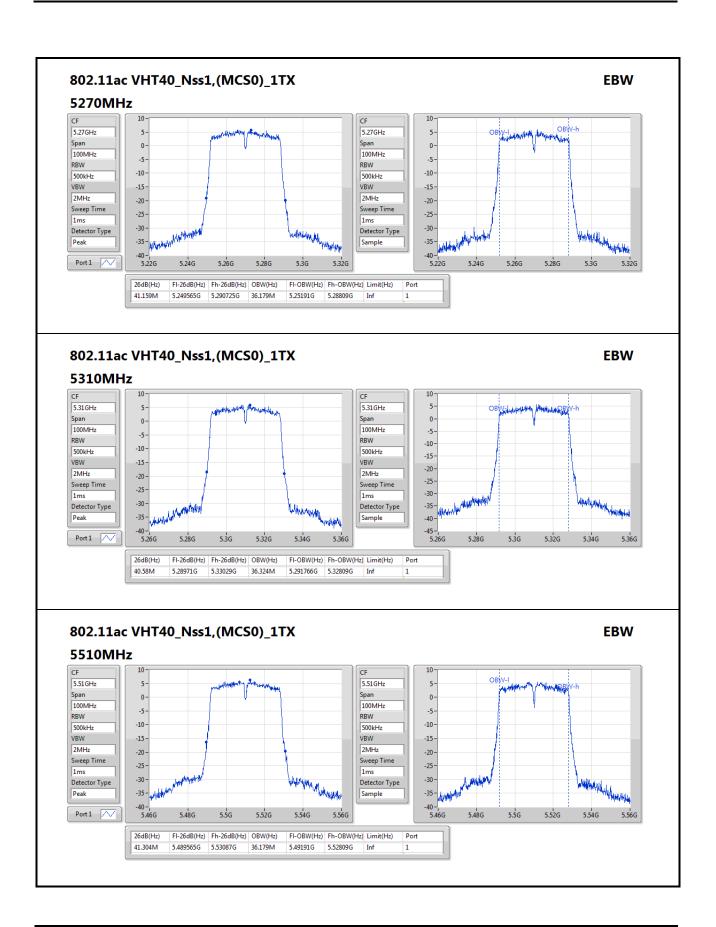




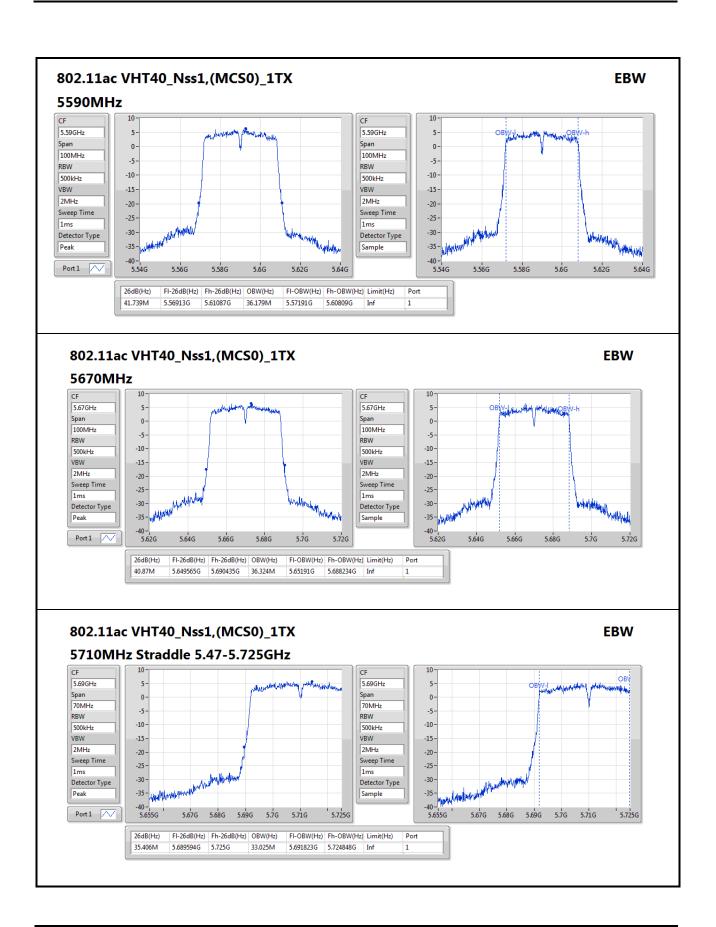




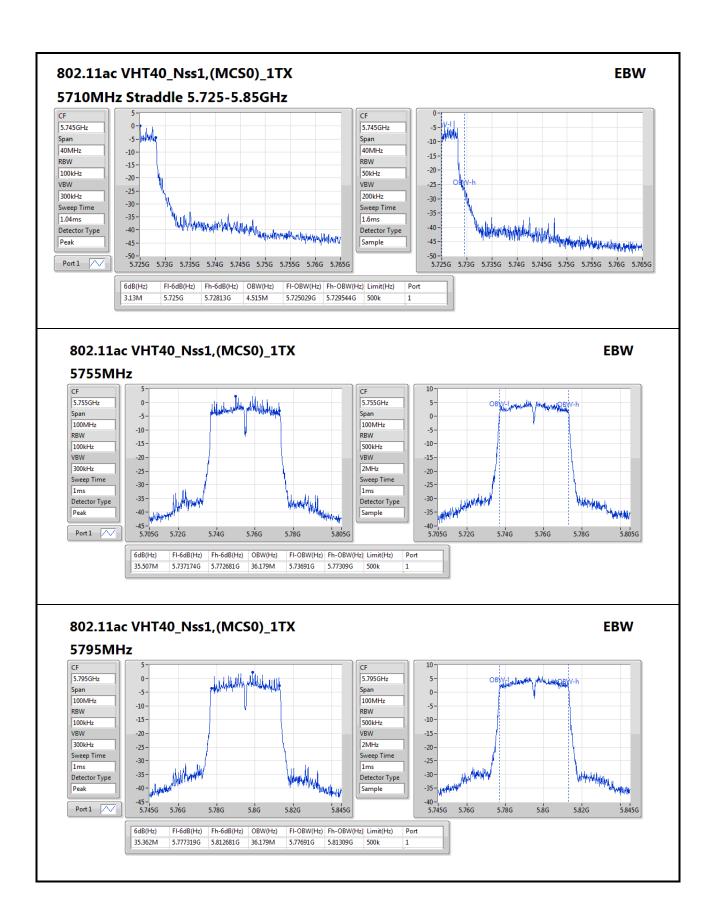




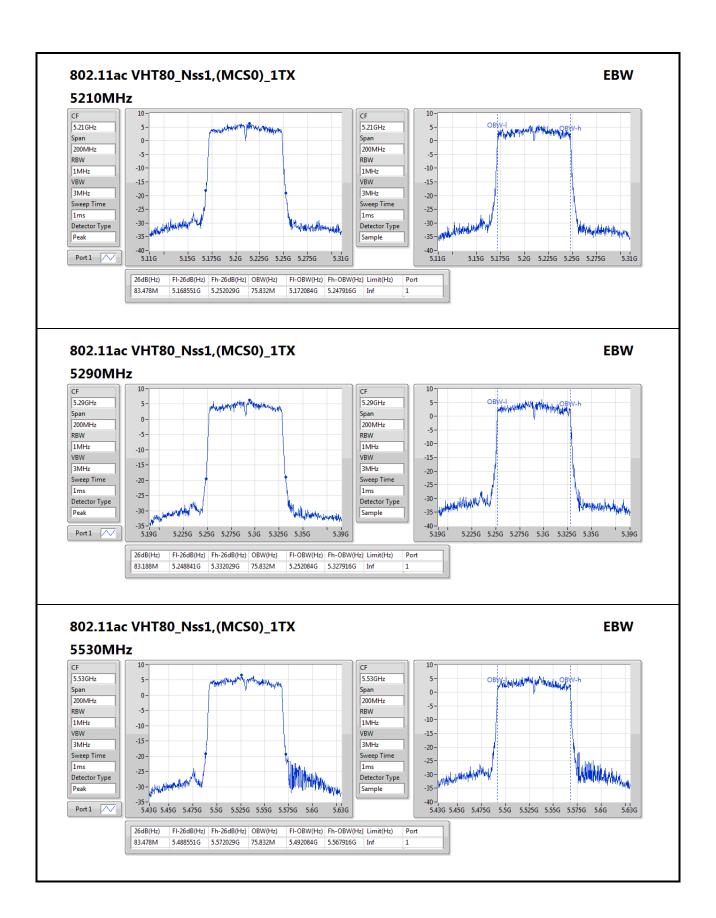




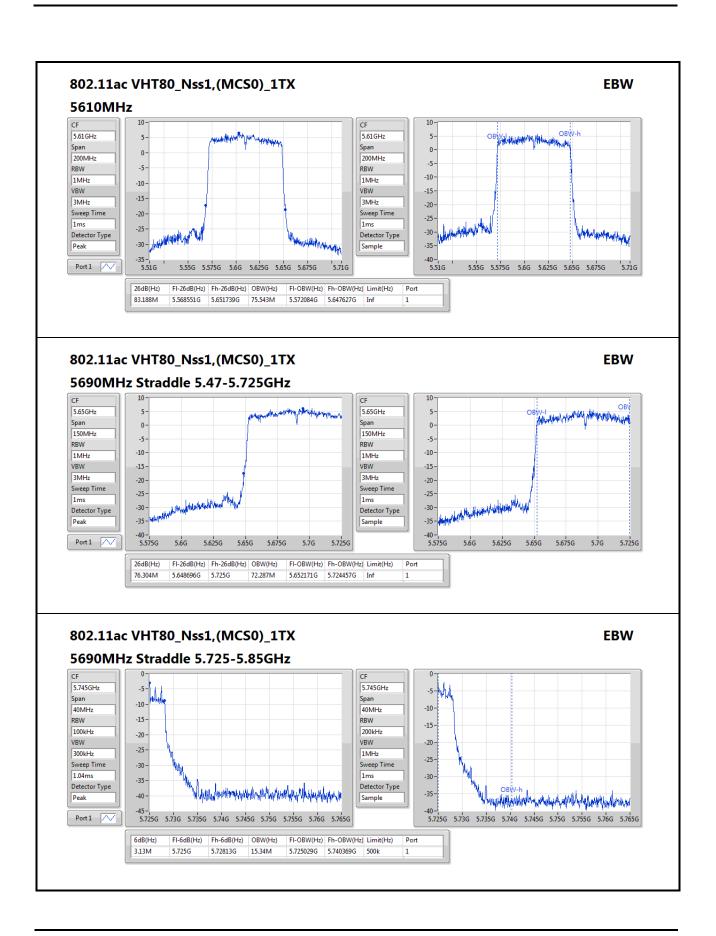






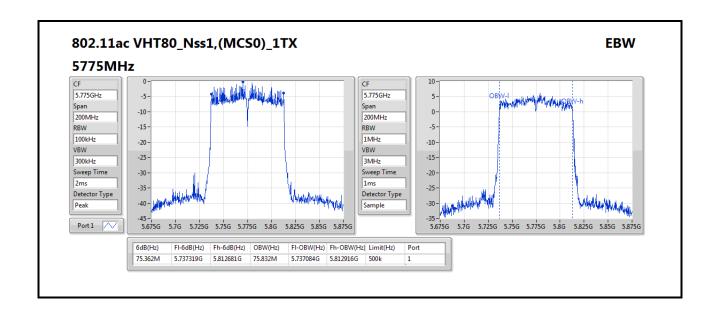






Report No.: FR100103AN Page: 39 of 163





Page: 40 of 163



3.3 RF Output Power

3.3.1 Limit of RF Output Power

	Frequency band 5150-5250 MHz						
Оре	erating Mode	Limit					
	Outdoor access point	Conducted Power: 1 W The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm)					
	Indoor access point	Conducted Power: 1 W					
	Fixed point-to-point access points	Conducted Power: 1 W					
\boxtimes	Client devices	Conducted Power: 250 mW					

Free	quency Band (MHz)	Limit				
\boxtimes	5250 ~ 5350	Conducted Power: 250mW or 11dBm+10 log B				
	5470 ~ 5725	Conducted Power: 250mW or 11dBm+10 log B				
Note	Note: "B" is the 26dB emission bandwidth in MHz.					

3.3.2 Test Procedures

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

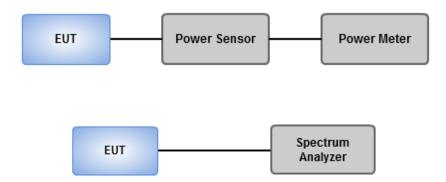
Measurements is performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle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

Spectrum analyzer (For channel that extends across the 5.725 GHz boundary)

- 1. Set RBW = 1MHz, VBW = 3MHz, Sweep time = Auto, Detector = RMS.
- 2. Trace average at least 100 traces in power averaging mode.
- 3. Compute power by integrating the spectrum across the 26 dB EBW.
- 4. Add 10 log(1/X, X:duty cycle) if duty cycle is <98%).



3.3.3 Test Setup





3.3.4 Test Result of Maximum Conducted Output Power

Ambient Condition	18-20°C / 63-65%	Tested By	Aska Huang
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Summary

Mode	Total Power	Total Power	EIRP	EIRP
	(dBm)	(W)	(dBm)	(W)
5.15-5.25GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	18.06	0.06397	21.90	0.15488
802.11ac VHT20_Nss1,(MCS0)_1TX	16.83	0.04819	20.67	0.11668
802.11ac VHT40_Nss1,(MCS0)_1TX	15.35	0.03428	19.19	0.08299
802.11ac VHT80_Nss1,(MCS0)_1TX	14.67	0.02931	18.51	0.07096
5.25-5.35GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	18.28	0.06730	22.12	0.16293
802.11ac VHT20_Nss1,(MCS0)_1TX	16.75	0.04732	20.59	0.11455
802.11ac VHT40_Nss1,(MCS0)_1TX	15.22	0.03327	19.06	0.08054
802.11ac VHT80_Nss1,(MCS0)_1TX	14.65	0.02917	18.49	0.07063
5.47-5.725GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	18.08	0.06427	21.97	0.15740
802.11ac VHT20_Nss1,(MCS0)_1TX	16.86	0.04853	20.75	0.11885
802.11ac VHT40_Nss1,(MCS0)_1TX	15.62	0.03648	19.51	0.08933
802.11ac VHT80_Nss1,(MCS0)_1TX	14.62	0.02897	18.51	0.07096
5.725-5.85GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	18.48	0.07047	22.20	0.16596
802.11ac VHT20_Nss1,(MCS0)_1TX	16.89	0.04887	20.61	0.11508
802.11ac VHT40_Nss1,(MCS0)_1TX	15.32	0.03404	19.04	0.08017
802.11ac VHT80_Nss1,(MCS0)_1TX	14.59	0.02877	18.31	0.06776

Report No.: FR1O0103AN Report Version: Rev. 02

FR1O0103AN Page: 43 of 163



Result

Mode	Result	DG	Port 1	Total Power	Power Limit	EIRP	EIRP Limit
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-
5180MHz	Pass	3.84	18.03	18.03	24.00	21.87	30.00
5200MHz	Pass	3.84	18.06	18.06	24.00	21.90	30.00
5240MHz	Pass	3.84	18.01	18.01	24.00	21.85	30.00
5260MHz	Pass	3.84	18.28	18.28	24.00	22.12	30.00
5300MHz	Pass	3.84	18.25	18.25	24.00	22.09	30.00
5320MHz	Pass	3.84	18.02	18.02	24.00	21.86	30.00
5500MHz	Pass	3.89	18.01	18.01	24.00	21.90	30.00
5580MHz	Pass	3.89	18.08	18.08	24.00	21.97	30.00
5700MHz	Pass	3.89	17.77	17.77	24.00	21.66	30.00
5720MHz Straddle 5.47-5.725GHz	Pass	3.89	17.77	17.77	22.86	21.66	28.86
5720MHz Straddle 5.725-5.85GHz	Pass	3.72	10.79	10.79	30.00	14.51	36.00
5745MHz	Pass	3.72	18.44	18.44	30.00	22.16	36.00
5785MHz	Pass	3.72	18.38	18.38	30.00	22.10	36.00
5825MHz	Pass	3.72	18.48	18.48	30.00	22.20	36.00
802.11ac VHT20_Nss1,(MCS0)_1TX	-	-	-00	-	-	-	-
5180MHz	Pass	3.84	16.82	16.82	24.00	20.66	30.00
5200MHz	Pass	3.84	16.81	16.81	24.00	20.65	30.00
5240MHz	Pass	3.84	16.83	16.83	24.00	20.67	30.00
5260MHz	Pass	3.84	16.73	16.73	24.00	20.57	30.00
5300MHz	Pass	3.84	16.75	16.75	24.00	20.59	30.00
5320MHz	Pass	3.84	16.49	16.49	24.00	20.33	30.00
5500MHz	Pass	3.89	16.84	16.84	24.00	20.73	30.00
5580MHz	Pass	3.89	16.86	16.86	24.00	20.75	30.00
5700MHz	Pass	3.89	16.58	16.58	24.00	20.47	30.00
5720MHz Straddle 5.47-5.725GHz	Pass	3.89	16.23	16.23	23.15	20.12	29.15
5720MHz Straddle 5.725-5.85GHz	Pass	3.72	9.81	9.81	30.00	13.53	36.00
5745MHz	Pass	3.72	16.89	16.89	30.00	20.61	36.00
5785MHz	Pass	3.72	16.85	16.85	30.00	20.57	36.00
5825MHz	Pass	3.72	16.87	16.87	30.00	20.59	36.00
802.11ac VHT40_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
5190MHz	Pass	3.84	15.31	15.31	24.00	19.15	30.00
5230MHz	Pass	3.84	15.35	15.35	24.00	19.19	30.00
5270MHz	Pass	3.84	15.22	15.22	24.00	19.06	30.00
5310MHz	Pass	3.84	15.15	15.15	24.00	18.99	30.00
5510MHz	Pass	3.89	15.45	15.45	24.00	19.34	30.00

Report No.: FR100103AN
Report Version: Rev. 02

Report Version: Rev. 02
The previous version of the test report has been cancelled and replaced by new version.

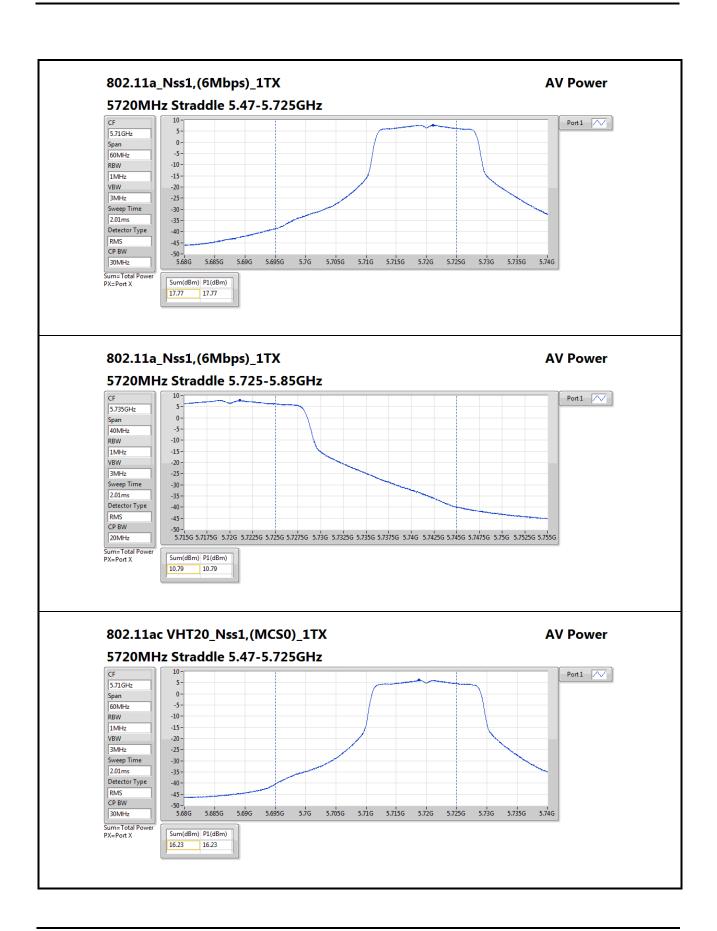
Page: 44 of 163



Mode	Result	DG	Port 1	Total Power	Power Limit	EIRP	EIRP Limit
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
5590MHz	Pass	3.89	15.29	15.29	24.00	19.18	30.00
5670MHz	Pass	3.89	15.62	15.62	24.00	19.51	30.00
5710MHz Straddle 5.47-5.725GHz	Pass	3.89	15.07	15.07	24.00	18.96	30.00
5710MHz Straddle 5.725-5.85GHz	Pass	3.72	4.19	4.19	30.00	7.91	36.00
5755MHz	Pass	3.72	15.32	15.32	30.00	19.04	36.00
5795MHz	Pass	3.72	15.31	15.31	30.00	19.03	36.00
802.11ac VHT80_Nss1,(MCS0)_1TX	-	-	_	-	_	-	-
5210MHz	Pass	3.84	14.67	14.67	24.00	18.51	30.00
5290MHz	Pass	3.84	14.65	14.65	24.00	18.49	30.00
5530MHz	Pass	3.89	14.53	14.53	24.00	18.42	30.00
5610MHz	Pass	3.89	14.61	14.61	24.00	18.50	30.00
5690MHz Straddle 5.47-5.725GHz	Pass	3.89	14.62	14.62	24.00	18.51	30.00
5690MHz Straddle 5.725-5.85GHz	Pass	3.72	0.51	0.51	30.00	4.23	36.00
5775MHz	Pass	3.72	14.59	14.59	30.00	18.31	36.00

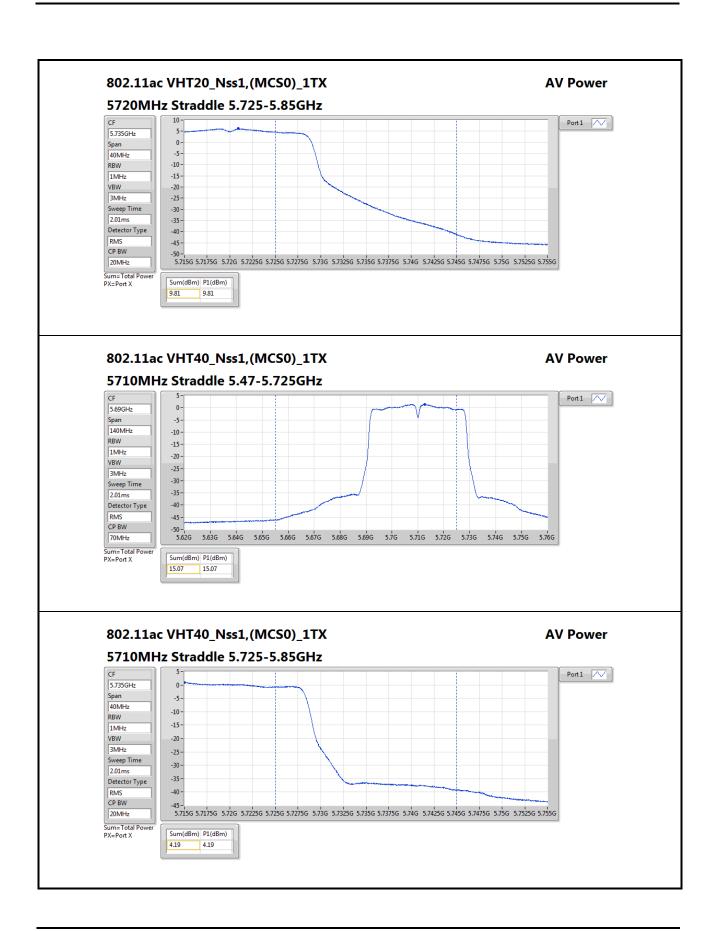
DG = Directional Gain; **Port X** = Port X output power





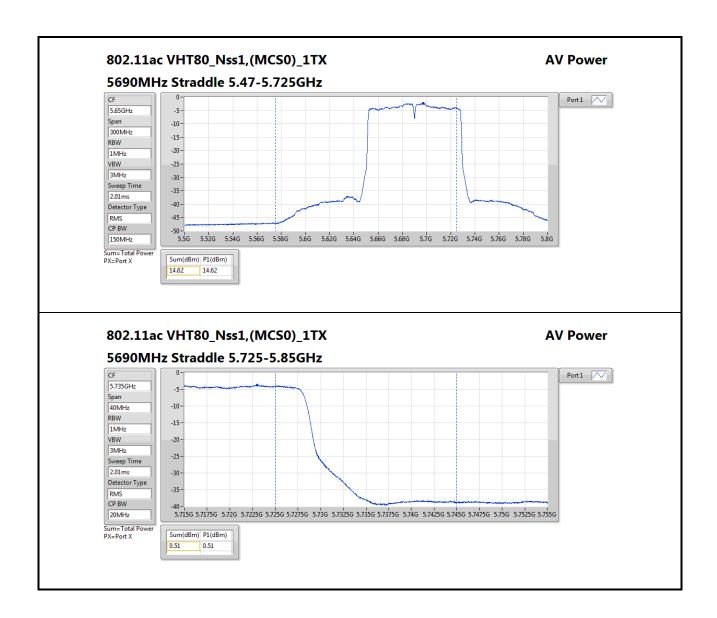
Page: 46 of 163





Page: 47 of 163







3.4 Peak Power Spectral Density

3.4.1 Limit of Peak Power Spectral Density

	Frequency band 5150-5250 MHz					
Ope	erating Mode	Limit				
	Outdoor access point	17 dBm / MHz				
	Indoor access point	17 dBm / MHz				
	Fixed point-to-point access points	17 dBm / MHz				
\boxtimes	Client devices	11 dBm / MHz				

Free	quency Band (MHz)	Limit
\boxtimes	5250 ~ 5350	11 dBm / MHz
\boxtimes	5470 ~ 5725	11 dBm / MHz
\boxtimes	5725 ~ 5850	30 dBm /500 kHz

Report No.: FR100103AN Page: 49 of 163



3.4.2 Test Procedures

For 5150 ~ 5250 MHz / 5250 ~ 5350 MHz / 5470 ~ 5725 MHz

Duty cycle ≥ 98 %

- 1. Set RBW = 1 MHz, VBW = 3 MHz, Sweep time = auto, Detector = RMS.
- 2. Trace average 100 traces.
- 3. Use the peak marker function to determine the maximum amplitude level.

Duty cycle < 98 %

- Set RBW = 1 MHz, VBW = 3 MHz, Detector = RMS.
- 2. Set sweep time ≥ 10 * (number of points in sweep) * (total on/off period of the transmitted signal).
- 3. Perform a single sweep.
- 4. Use the peak marker function to determine the maximum amplitude level.
- 5. Add 10 log(1/x), where x is the duty cycle.

For 5725 ~ 5850 MHz

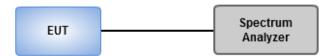
Duty cycle ≥ 98 %

- 1. Set RBW = 500 kHz, VBW = 3 MHz, Sweep time = auto, Detector = RMS.
- 2. Trace average 100 traces.
- 3. Use the peak marker function to determine the maximum amplitude level.

Duty cycle < 98 %

- 1. Set RBW = 500 kHz, VBW = 3 MHz, Detector = RMS.
- 2. Set sweep time ≥ 10 * (number of points in sweep) * (total on/off period of the transmitted signal).
- 3. Perform a single sweep.
- 4. Use the peak marker function to determine the maximum amplitude level.
- 5. Add 10 log(1/x), where x is the duty cycle.

3.4.3 Test Setup



Report No.: FR100103AN Page: 50 of 163



3.4.4 Test Result of Peak Power Spectral Density

Ambient Condition	18-20°C / 63-65%	Tested By	Aska Huang
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Summary

Mode	PD	EIRP PD
	(dBm/RBW)	(dBm/RBW)
5.15-5.25GHz	-	-
802.11a_Nss1,(6Mbps)_1TX	5.86	9.70
802.11ac VHT20_Nss1,(MCS0)_1TX	4.52	8.36
802.11ac VHT40_Nss1,(MCS0)_1TX	0.18	4.02
802.11ac VHT80_Nss1,(MCS0)_1TX	-3.63	0.21
5.25-5.35GHz	-	-
802.11a_Nss1,(6Mbps)_1TX	6.15	9.99
802.11ac VHT20_Nss1,(MCS0)_1TX	4.56	8.40
802.11ac VHT40_Nss1,(MCS0)_1TX	-0.06	3.78
802.11ac VHT80_Nss1,(MCS0)_1TX	-3.75	0.09
5.47-5.725GHz	-	-
802.11a_Nss1,(6Mbps)_1TX	6.27	10.16
802.11ac VHT20_Nss1,(MCS0)_1TX	4.94	8.83
802.11ac VHT40_Nss1,(MCS0)_1TX	0.36	4.25
802.11ac VHT80_Nss1,(MCS0)_1TX	-3.53	0.36
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_1TX	4.9	8.62
802.11ac VHT20_Nss1,(MCS0)_1TX	3.2	6.92
802.11ac VHT40_Nss1,(MCS0)_1TX	-1.39	2.33
802.11ac VHT80_Nss1,(MCS0)_1TX	-5.22	-1.50

Page: 51 of 163

RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

Report No.: FR1O0103AN Report Version: Rev. 02



Result

Mode	Result	DG	Port 1	PD	PD Limit	EIRP PD	EIRP PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-
5180MHz	Pass	3.84	5.86	5.86	11.00	9.70	17.00
5200MHz	Pass	3.84	5.76	5.76	11.00	9.60	17.00
5240MHz	Pass	3.84	5.7	5.70	11.00	9.54	17.00
5260MHz	Pass	3.84	6.09	6.09	11.00	9.93	17.00
5300MHz	Pass	3.84	6.15	6.15	11.00	9.99	17.00
5320MHz	Pass	3.84	5.82	5.82	11.00	9.66	17.00
5500MHz	Pass	3.89	5.97	5.97	11.00	9.86	17.00
5580MHz	Pass	3.89	5.88	5.88	11.00	9.77	17.00
5700MHz	Pass	3.89	5.6	5.60	11.00	9.49	17.00
5720MHz Straddle 5.47-5.725GHz	Pass	3.89	6.27	6.27	11.00	10.16	17.00
5720MHz Straddle 5.725-5.85GHz	Pass	3.72	3.03	3.03	30.00	6.75	36.00
5745MHz	Pass	3.72	4.76	4.76	30.00	8.48	36.00
5785MHz	Pass	3.72	4.88	4.88	30.00	8.60	36.00
5825MHz	Pass	3.72	4.9	4.90	30.00	8.62	36.00
802.11ac VHT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
5180MHz	Pass	3.84	4.52	4.52	11.00	8.36	17.00
5200MHz	Pass	3.84	4.52	4.52	11.00	8.36	17.00
5240MHz	Pass	3.84	4.5	4.50	11.00	8.34	17.00
5260MHz	Pass	3.84	4.54	4.54	11.00	8.38	17.00
5300MHz	Pass	3.84	4.56	4.56	11.00	8.40	17.00
5320MHz	Pass	3.84	4.26	4.26	11.00	8.10	17.00
5500MHz	Pass	3.89	4.94	4.94	11.00	8.83	17.00
5580MHz	Pass	3.89	4.17	4.17	11.00	8.06	17.00
5700MHz	Pass	3.89	4.29	4.29	11.00	8.18	17.00
5720MHz Straddle 5.47-5.725GHz	Pass	3.89	4.51	4.51	11.00	8.40	17.00
5720MHz Straddle 5.725-5.85GHz	Pass	3.72	1.38	1.38	30.00	5.10	36.00
5745MHz	Pass	3.72	3.12	3.12	30.00	6.84	36.00
5785MHz	Pass	3.72	3.19	3.19	30.00	6.91	36.00
5825MHz	Pass	3.72	3.2	3.20	30.00	6.92	36.00
802.11ac VHT40_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
5190MHz	Pass	3.84	0.18	0.18	11.00	4.02	17.00
5230MHz	Pass	3.84	0	0.00	11.00	3.84	17.00
5270MHz	Pass	3.84	-0.06	-0.06	11.00	3.78	17.00
5310MHz	Pass	3.84	-0.07	-0.07	11.00	3.77	17.00
5510MHz	Pass	3.89	0.21	0.21	11.00	4.10	17.00
5590MHz	Pass	3.89	0.02	0.02	11.00	3.91	17.00

Page: 52 of 163

Report No.: FR1O0103AN

Report Version: Rev. 02

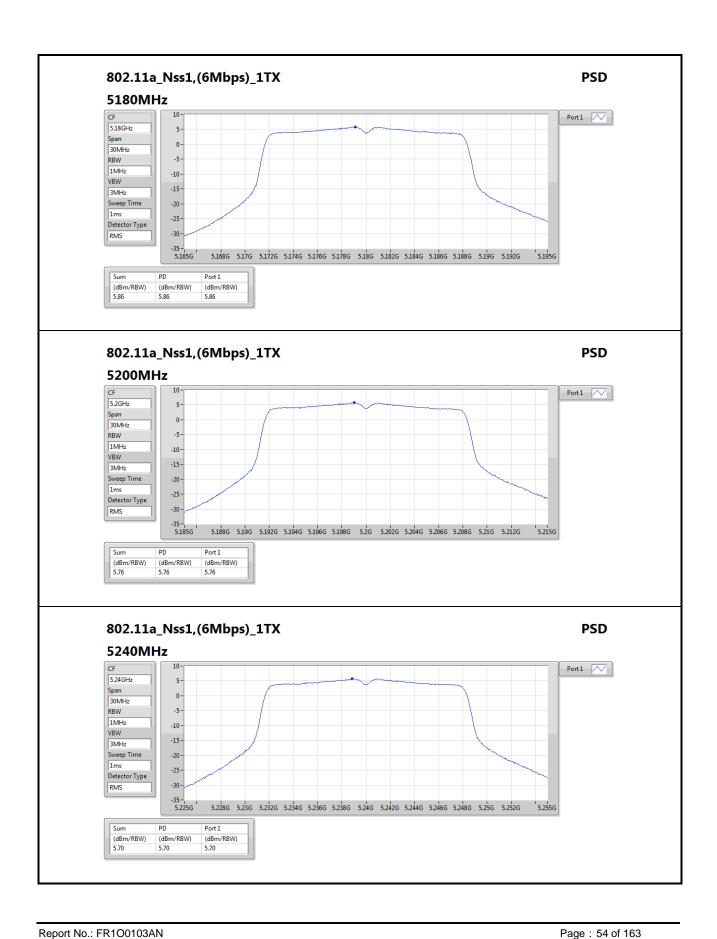


Mode	Result	DG	Port 1	PD	PD Limit	EIRP PD	EIRP PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5670MHz	Pass	3.89	0.36	0.36	11.00	4.25	17.00
5710MHz Straddle 5.47-5.725GHz	Pass	3.89	-0.25	-0.25	11.00	3.64	17.00
5710MHz Straddle 5.725-5.85GHz	Pass	3.72	-3.77	-3.77	30.00	-0.05	36.00
5755MHz	Pass	3.72	-1.5	-1.50	30.00	2.22	36.00
5795MHz	Pass	3.72	-1.39	-1.39	30.00	2.33	36.00
802.11ac VHT80_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
5210MHz	Pass	3.84	-3.63	-3.63	11.00	0.21	17.00
5290MHz	Pass	3.84	-3.75	-3.75	11.00	0.09	17.00
5530MHz	Pass	3.89	-3.58	-3.58	11.00	0.31	17.00
5610MHz	Pass	3.89	-3.53	-3.53	11.00	0.36	17.00
5690MHz Straddle 5.47-5.725GHz	Pass	3.89	-4.08	-4.08	11.00	-0.19	17.00
5690MHz Straddle 5.725-5.85GHz	Pass	3.72	-6.88	-6.88	30.00	-3.16	36.00
5775MHz	Pass	3.72	-5.22	-5.22	30.00	-1.50	36.00

DG = Directional Gain; **RBW** = 500kHz for 5.725-5.85GHz band / 1MHz for other band; **PD** = Power density; **Port X** = Port X power density;

Page: 53 of 163

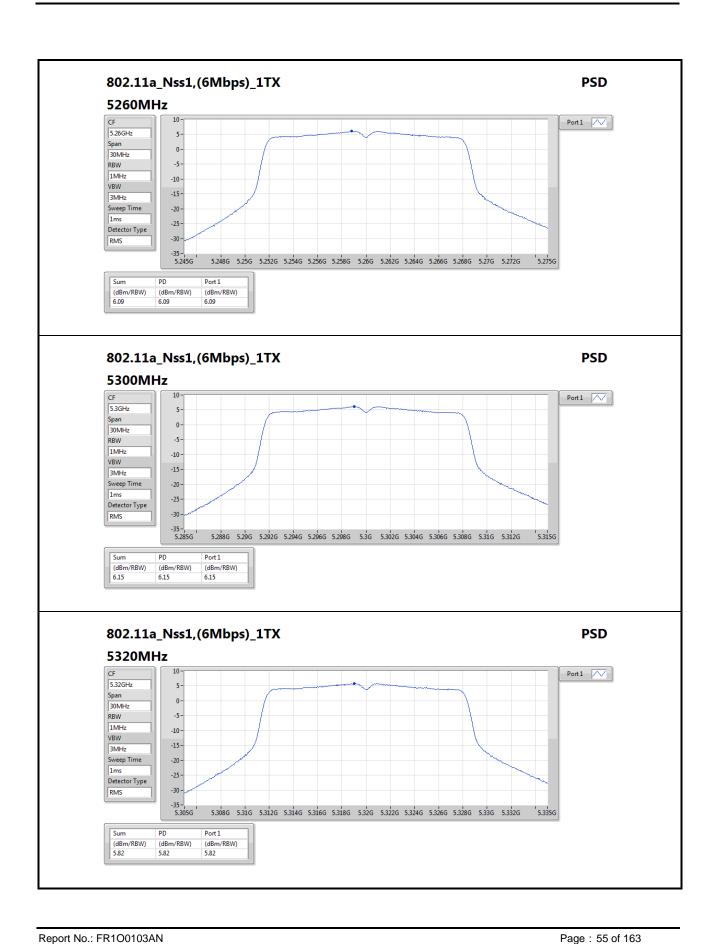




Report No.: FR1O0103AN

Report Version: Rev. 02

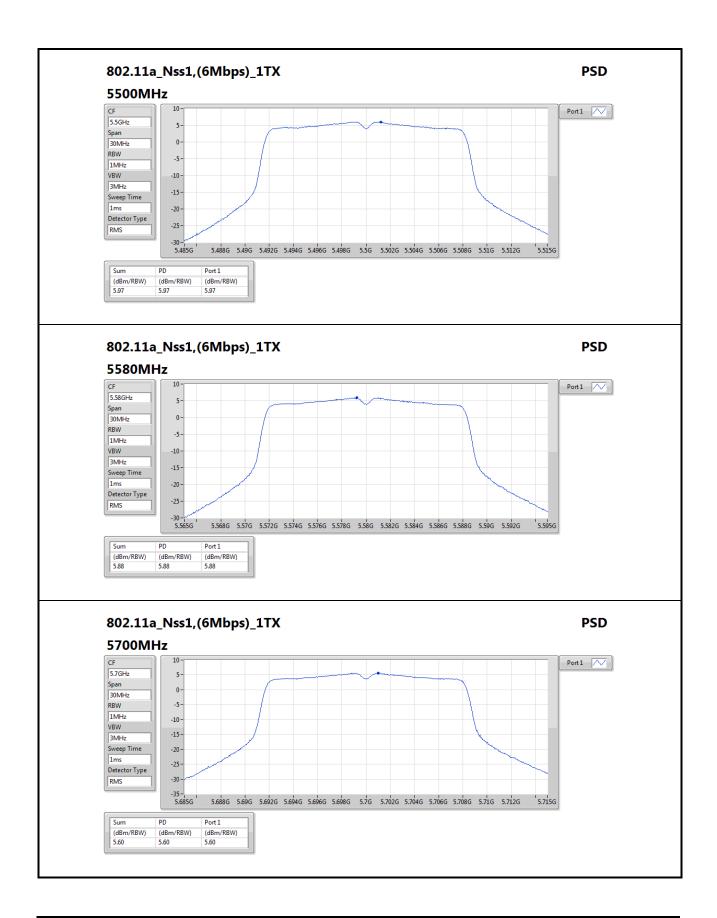




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Report Version: Rev. 02

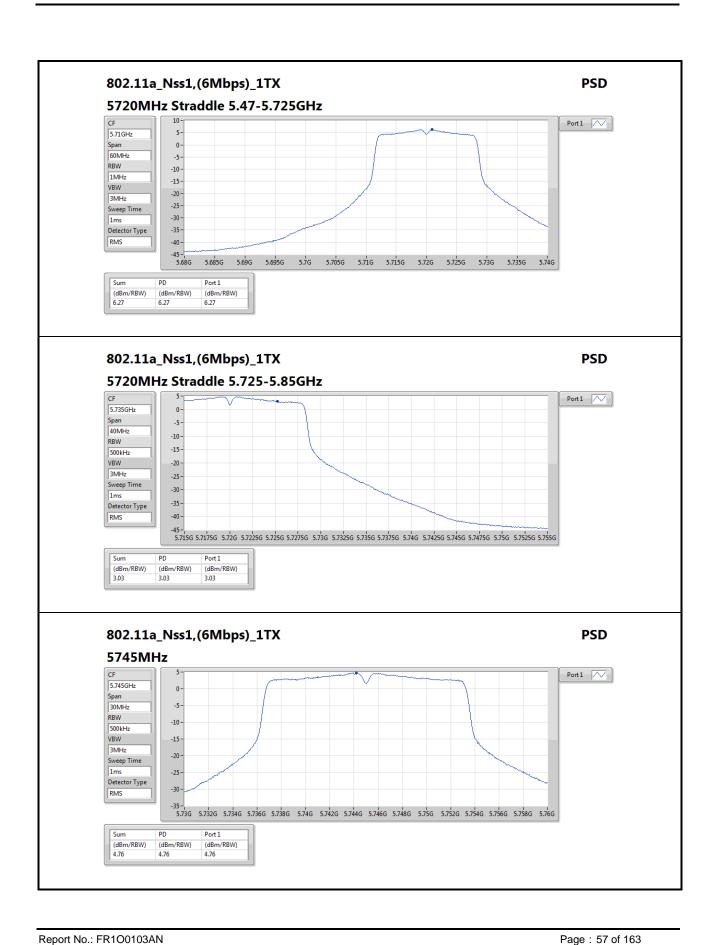




Report No.: FR100103AN

Report Version: Rev. 02

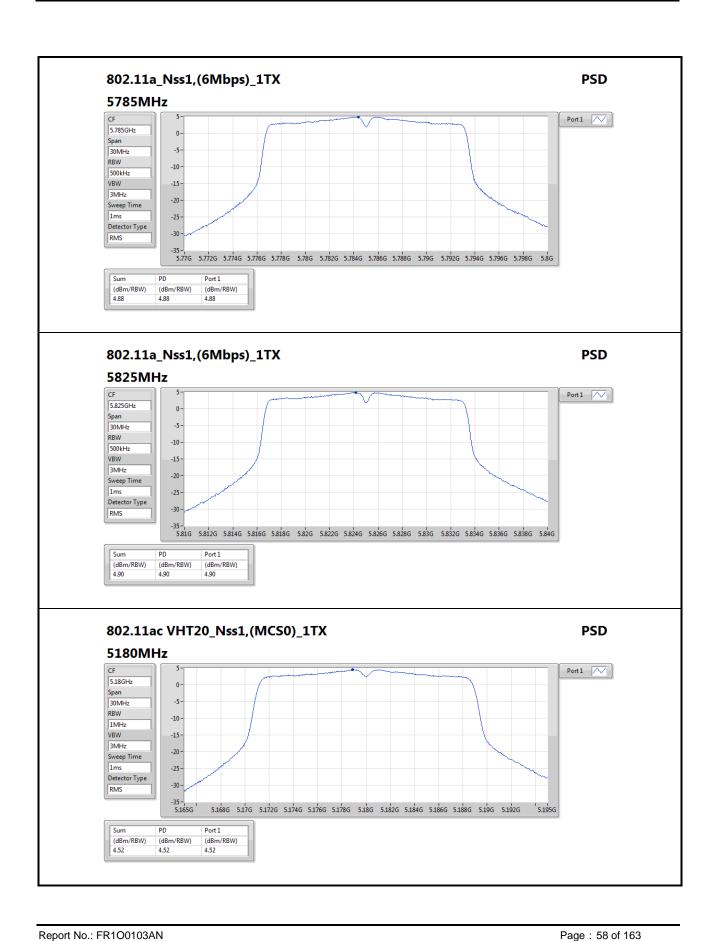




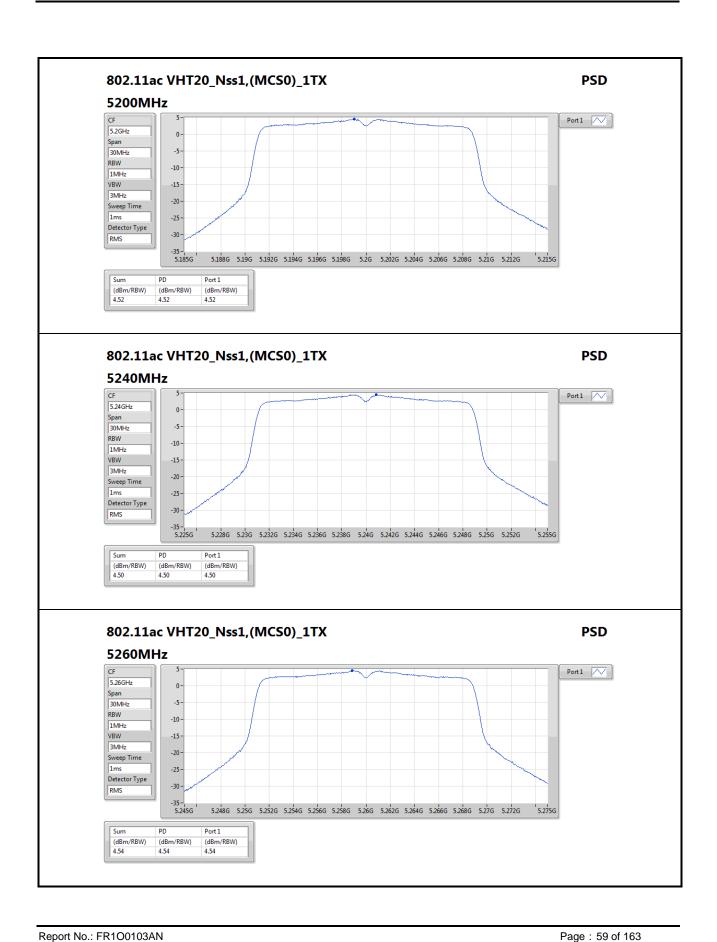
Report No.: FR1O0103AN

Report Version: Rev. 02

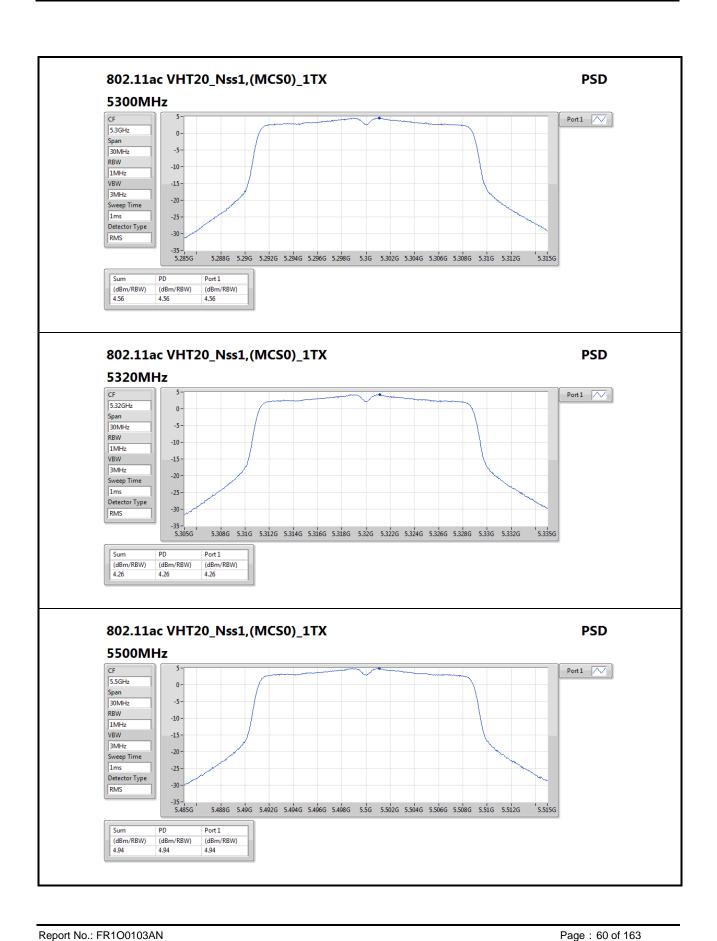




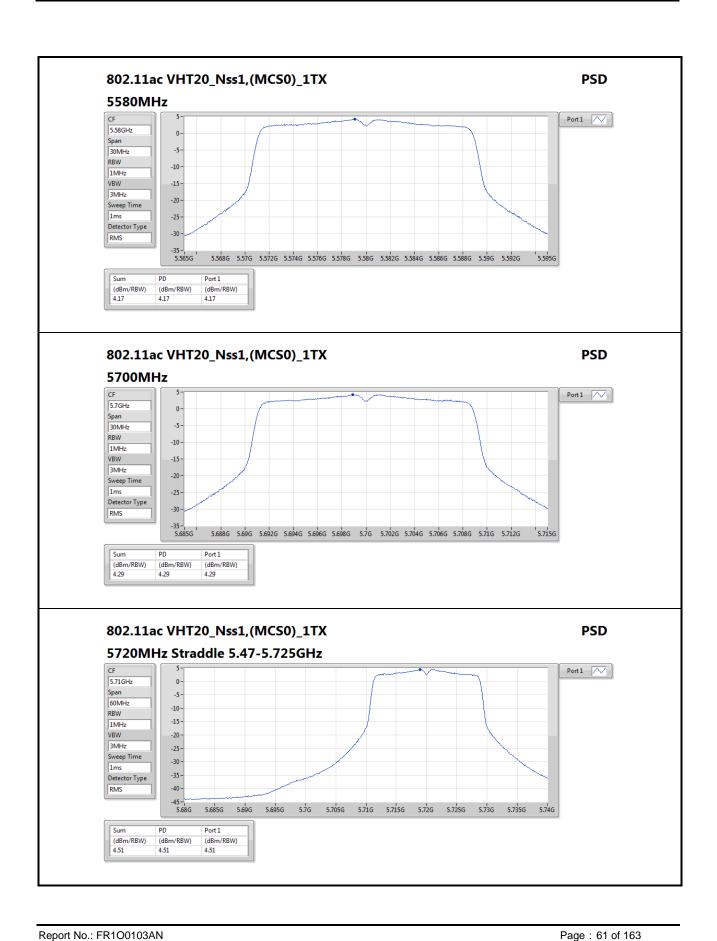




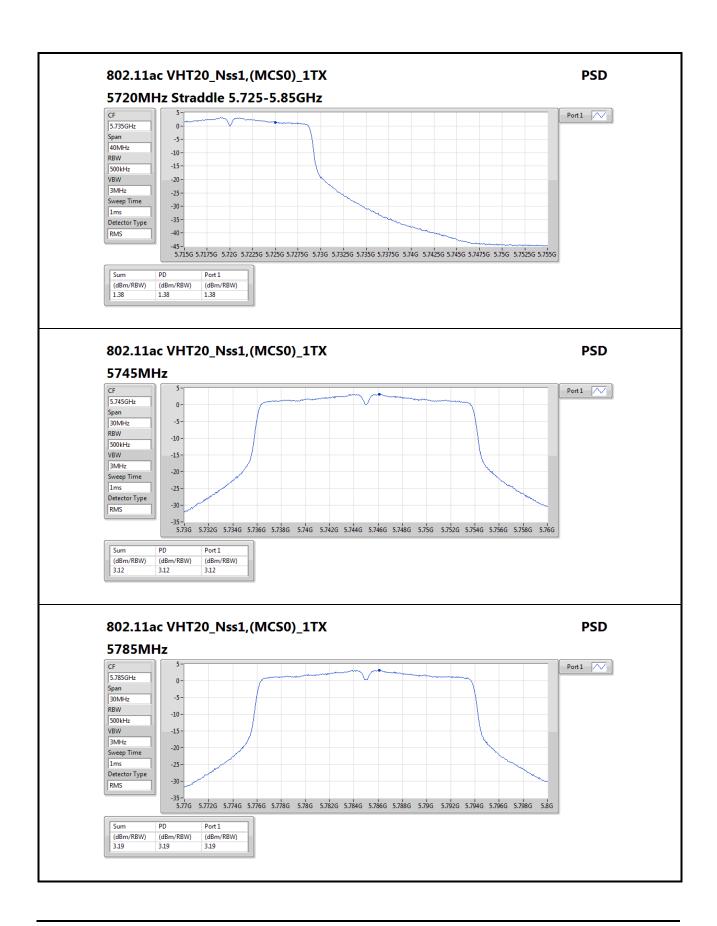




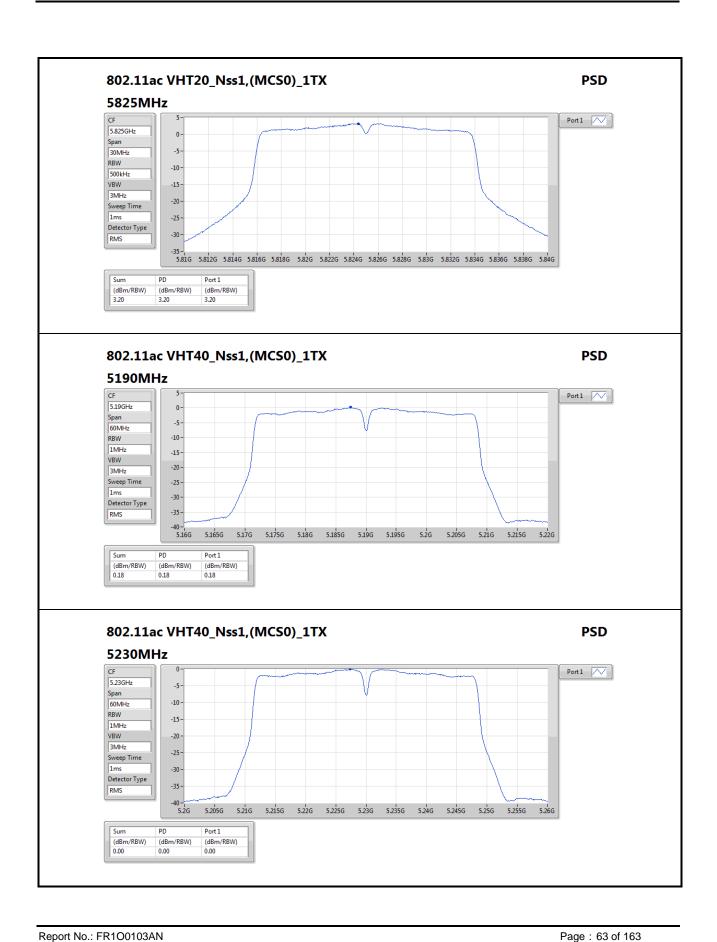






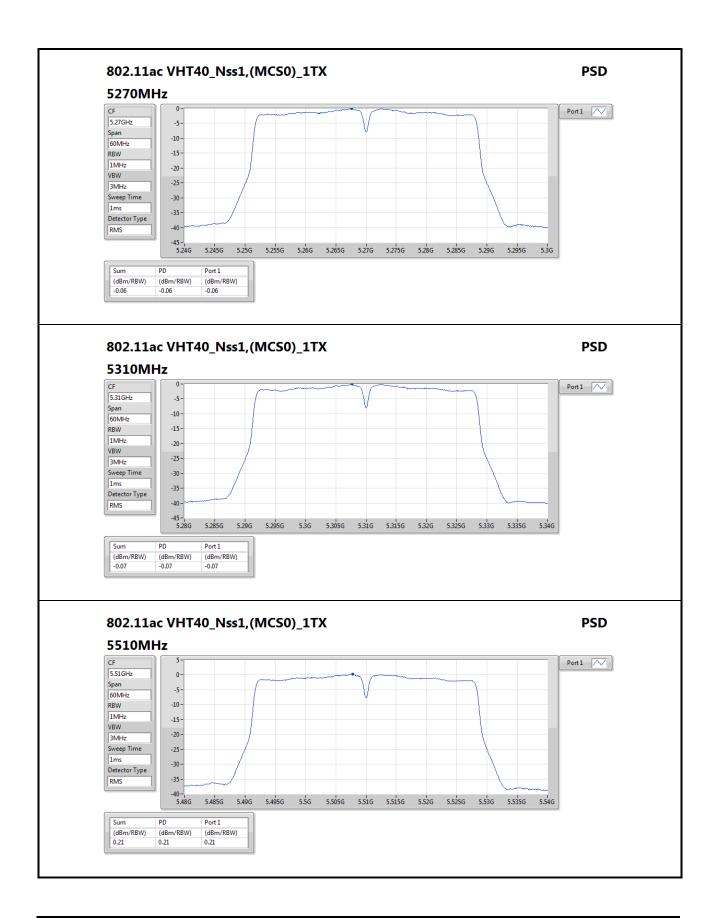




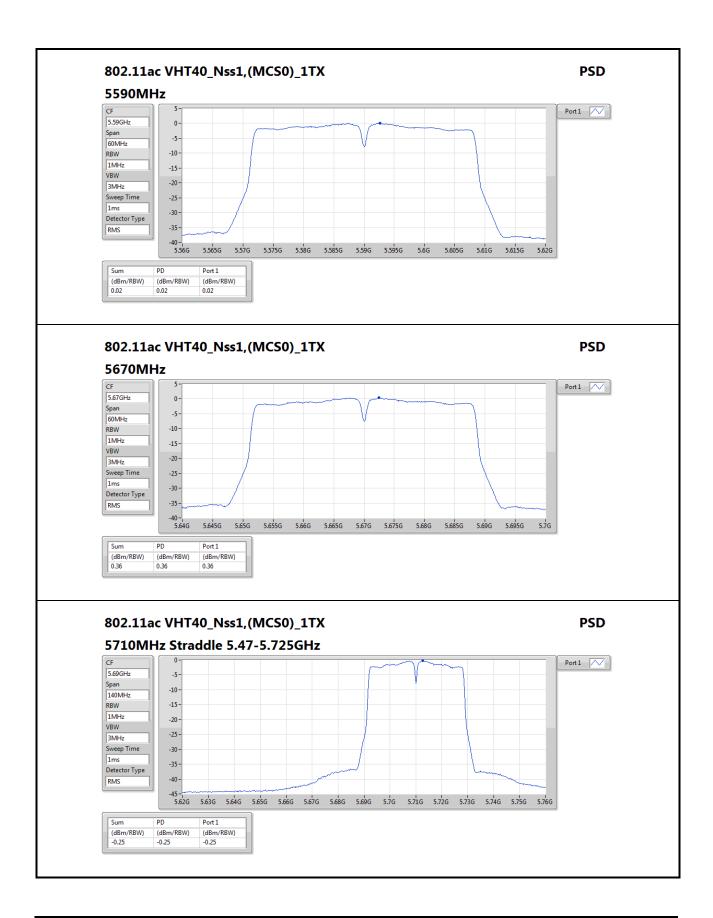


Court Venting Day 99

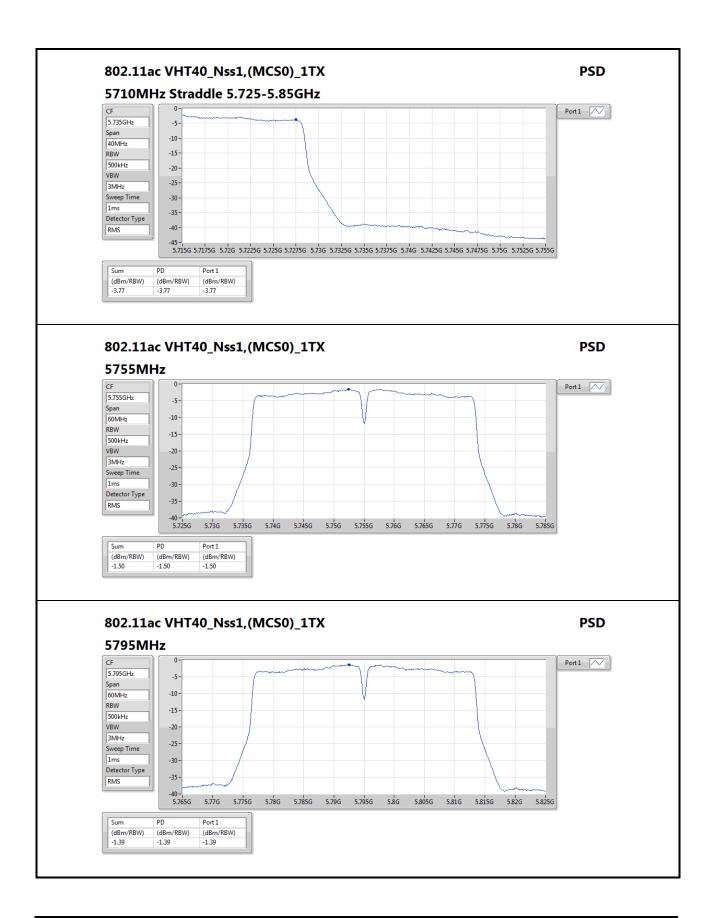




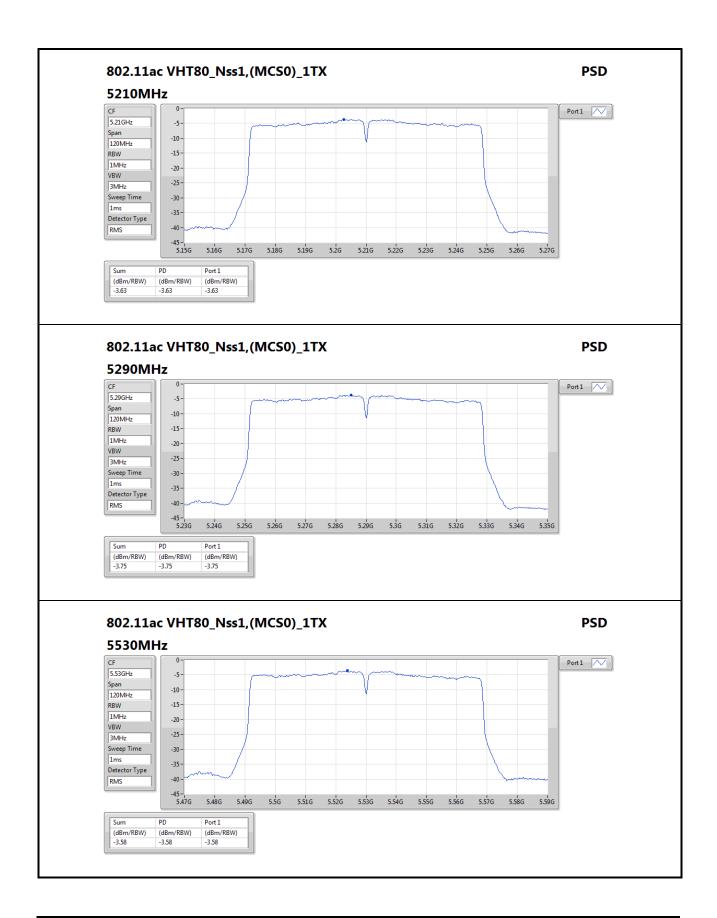




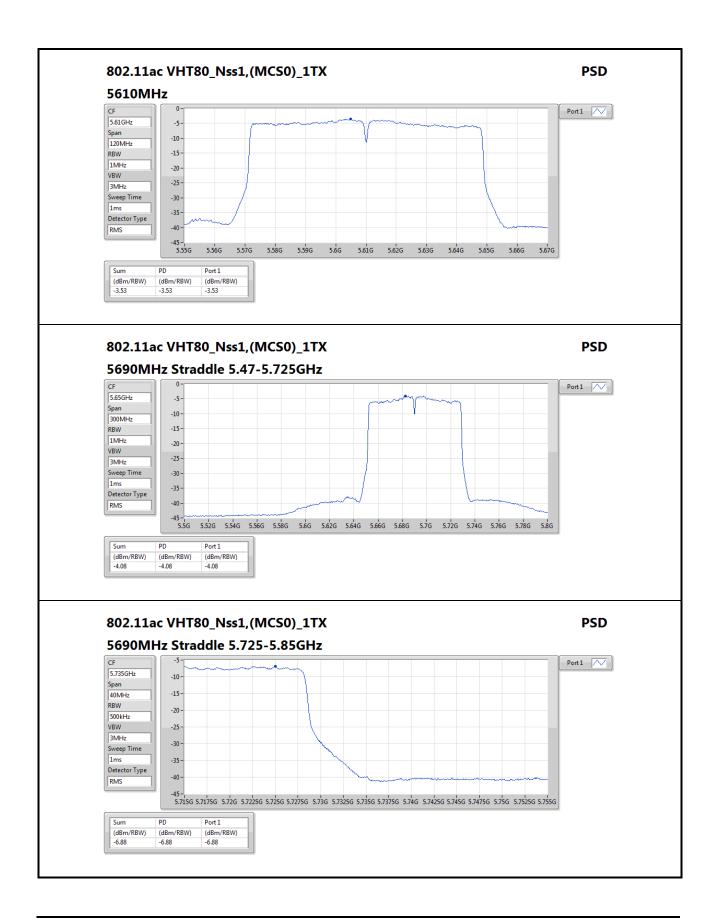




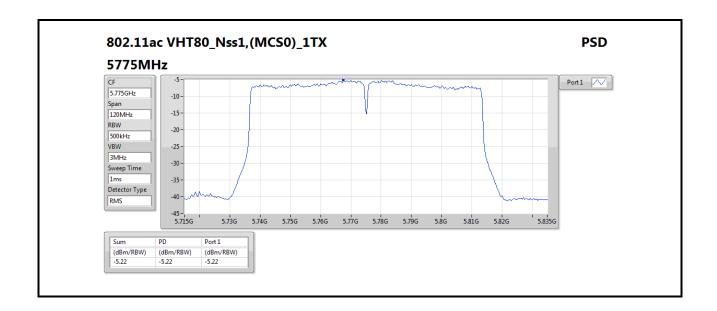












Page: 69 of 163



3.5 Transmitter Radiated and Band Edge Emissions

3.5.1 Limit of Transmitter Radiated and Band Edge Emissions

Restricted Band Emissions Limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1:

Qusai-Peak value is measured for frequency below 1GHz except for 9–90 kHz, 110–490 kHz frequency band. Peak and average value are measured for frequency above 1GHz. The limit on average radio frequency emission is as above table. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit **Note 2:**

Measurements may be performed at a distance other than what is specified provided. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor as below, Frequency at or above 30 MHz: 20 dB/decade Frequency below 30 MHz: 40 dB/decade.

Un-restricted band emissions above 1GHz Limit		
Operating Band	Limit	
5.15 - 5.25 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]	
5.25 - 5.35 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]	
5.47 - 5.725 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]	
5.725 - 5.850 GHz	All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	

Note 1: Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Page: 70 of 163

Report No.: FR100103AN

Report Version: Rev. 02



3.5.2 Test Procedures

- 1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at test table. For emissions testing at or below 1 GHz, the table height is 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height is 1.5 m
- 2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
- 3. This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

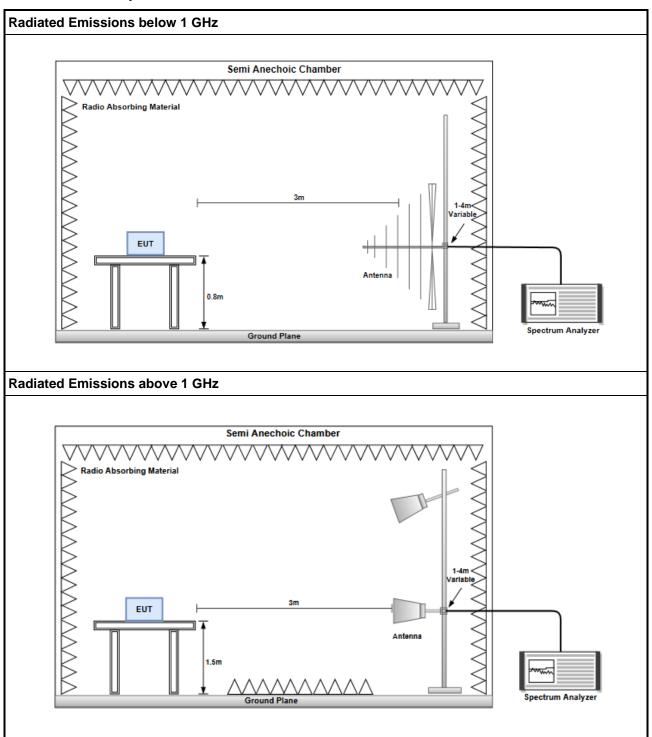
Note:

- 1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
- 2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
- 3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above 1GHz.

Report No.: FR100103AN Page: 71 of 163

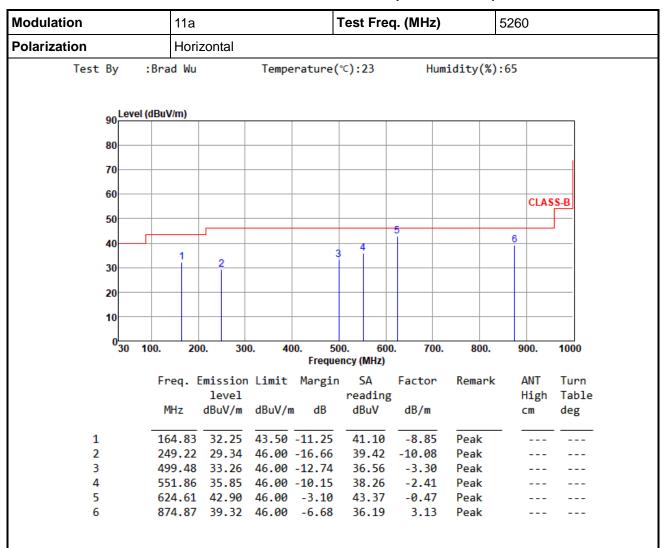


3.5.3 Test Setup





3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)



Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) - Limit (dBuV/m).

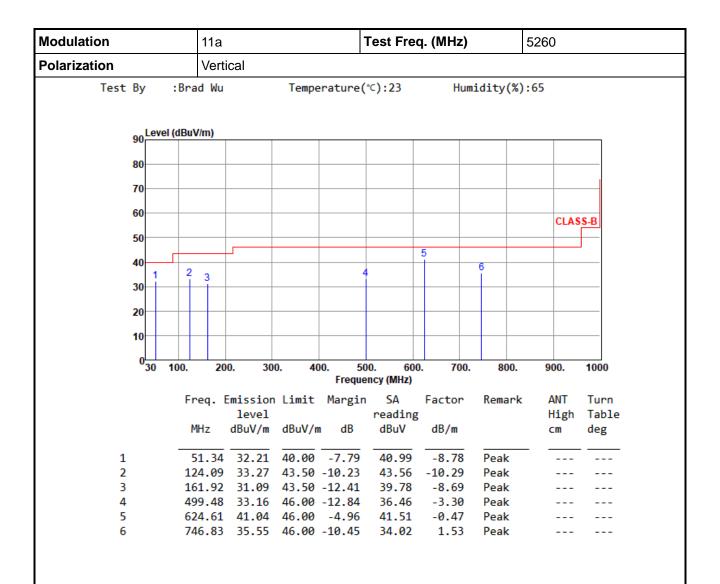
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Page: 73 of 163

Report No.: FR1O0103AN

Report Version: Rev. 02





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

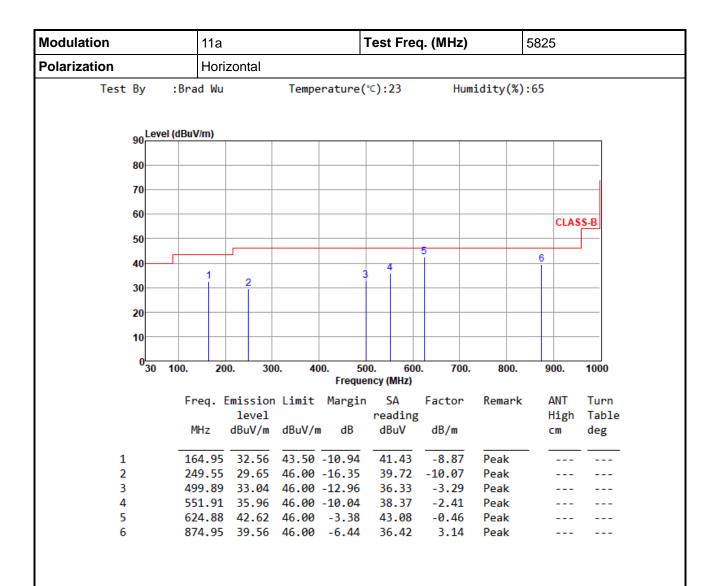
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Page: 74 of 163

Report No.: FR1O0103AN

Report Version: Rev. 02





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

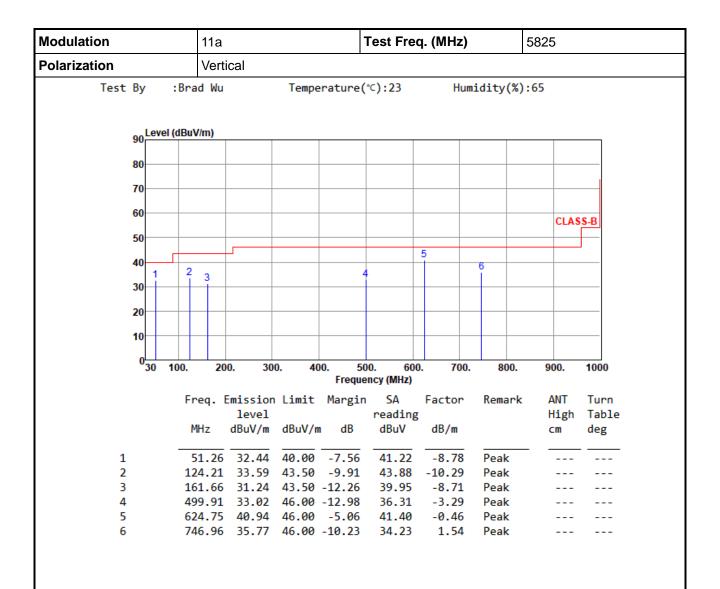
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Page: 75 of 163

Report No.: FR1O0103AN

Report Version: Rev. 02





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

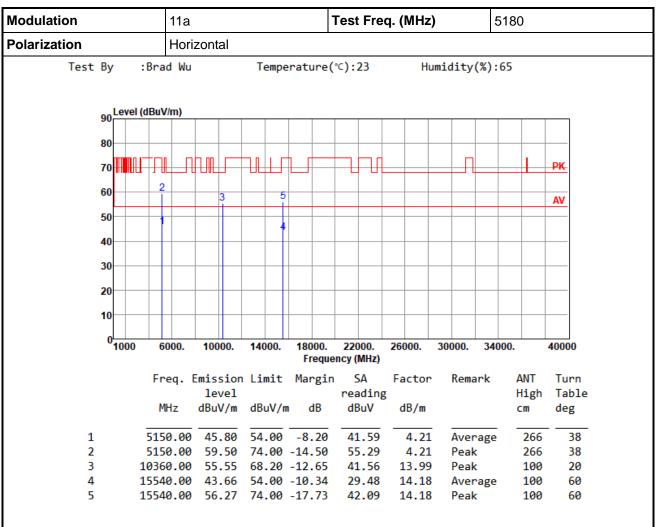
Page: 76 of 163

Report No.: FR1O0103AN

Report Version: Rev. 02



3.5.5 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11a



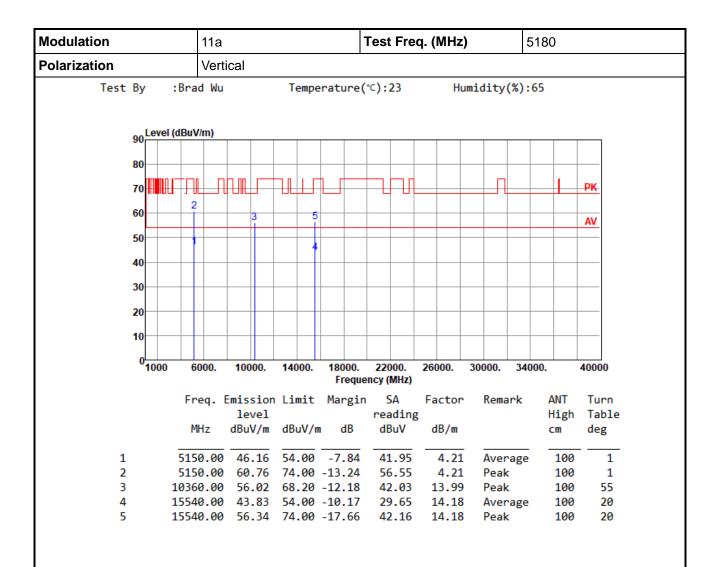
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) - Limit (dBuV/m).

Report Version: Rev. 02





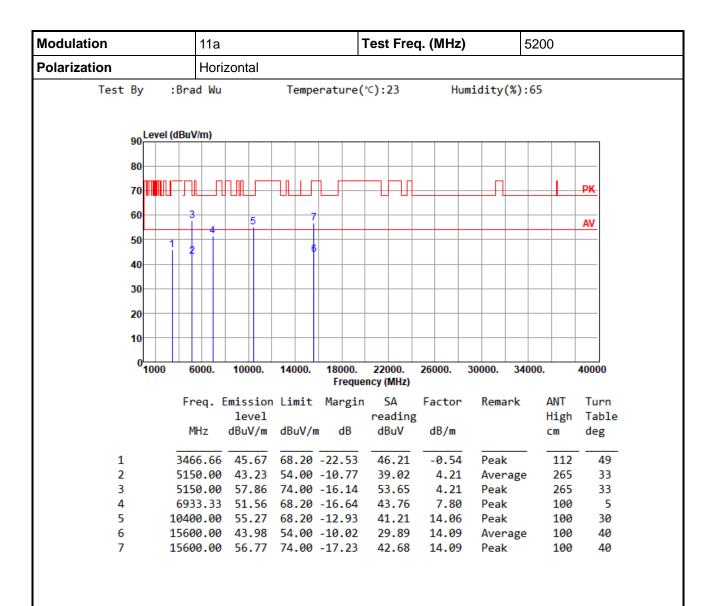
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report Version: Rev. 02

Report No.: FR1O0103AN Page: 78 of 163





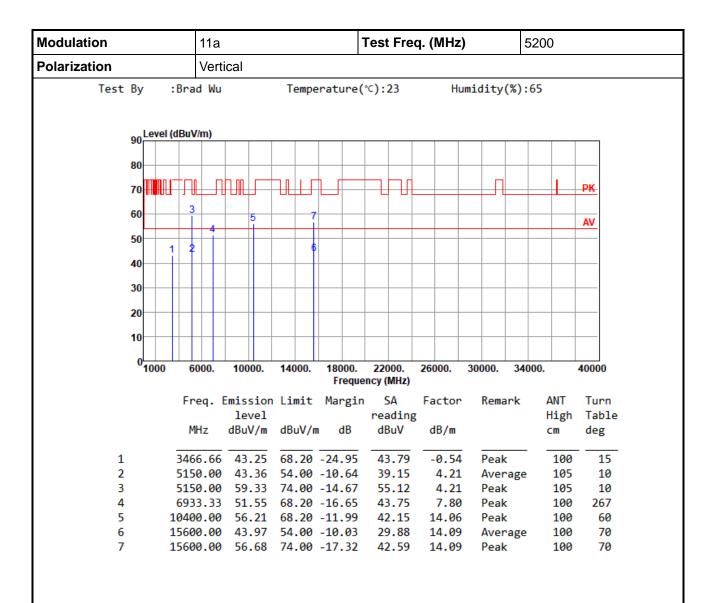
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN Report Version: Rev. 02

Page: 79 of 163





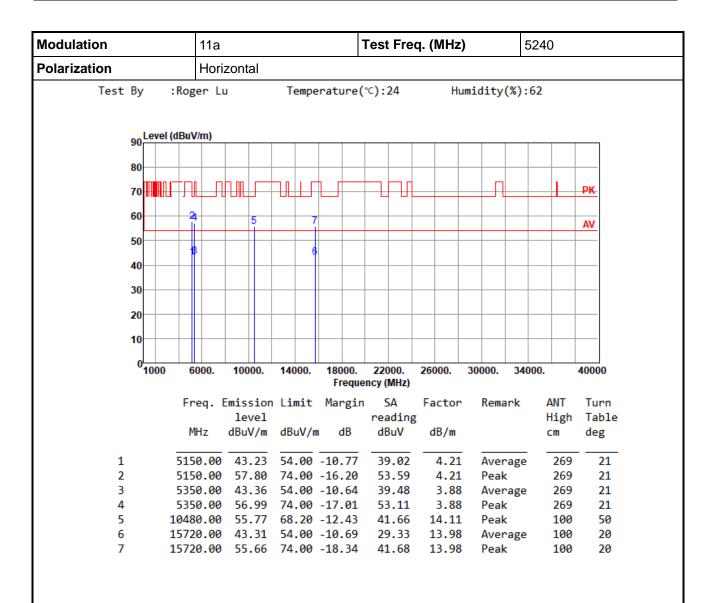
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN Report Version: Rev. 02

Page: 80 of 163





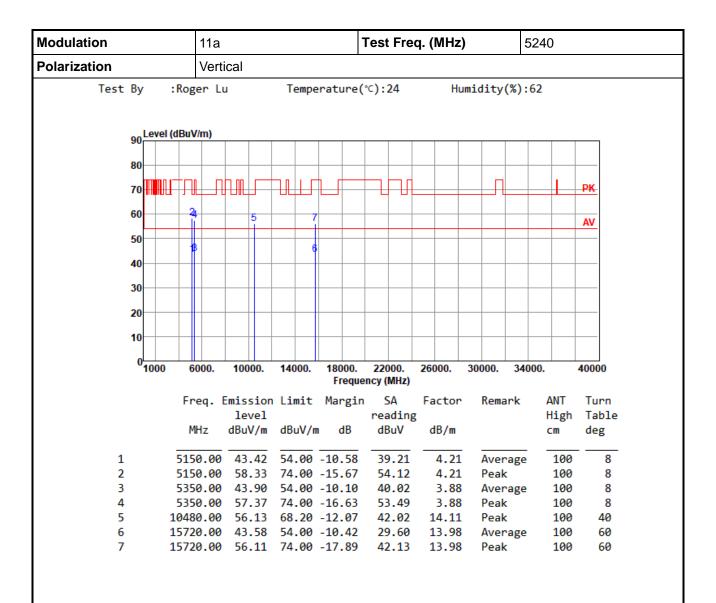
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR100103AN Report Version: Rev. 02

Report No.: FR100103AN Page: 81 of 163





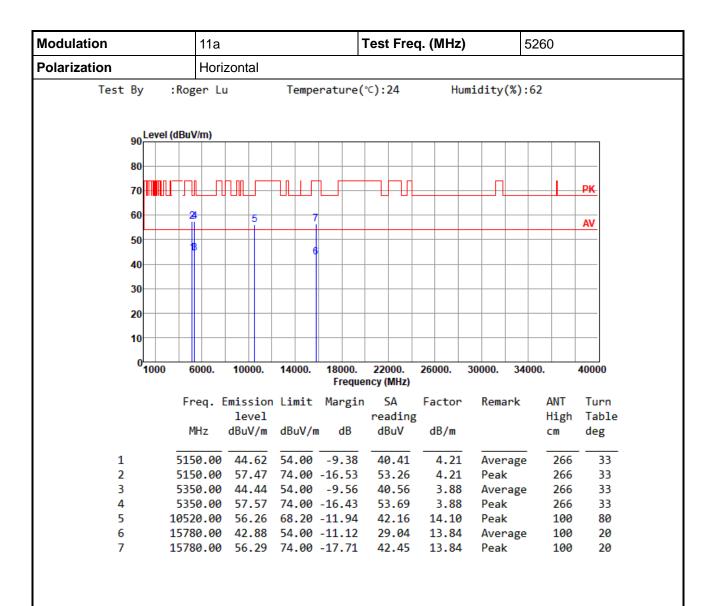
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report Version: Rev. 02

Report No.: FR100103AN Page: 82 of 163





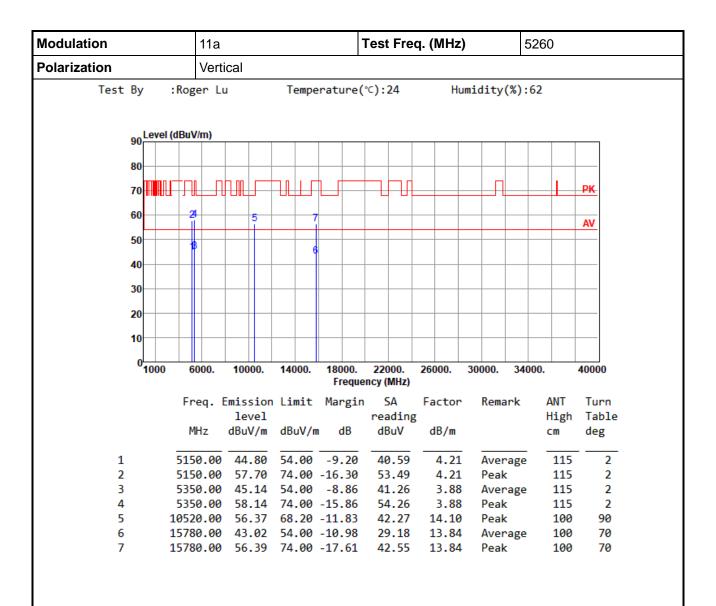
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN

Page: 83 of 163 Report Version: Rev. 02





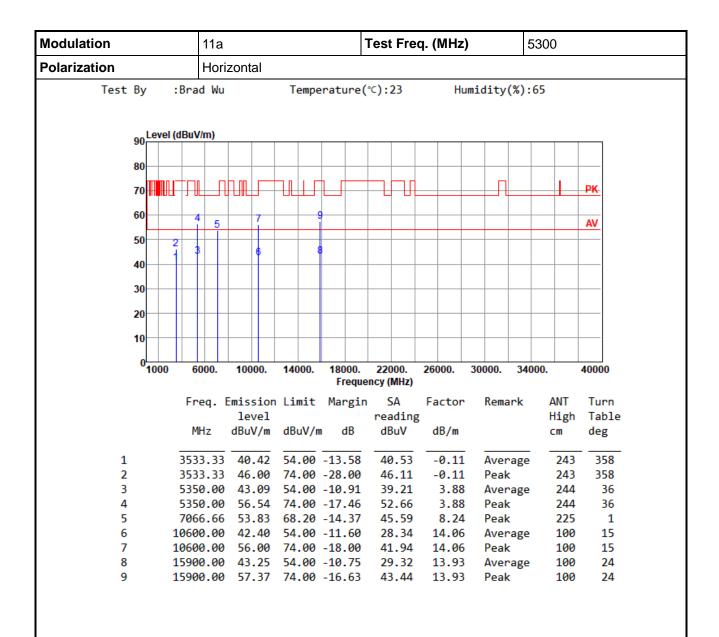
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN Report Version: Rev. 02

Page: 84 of 163





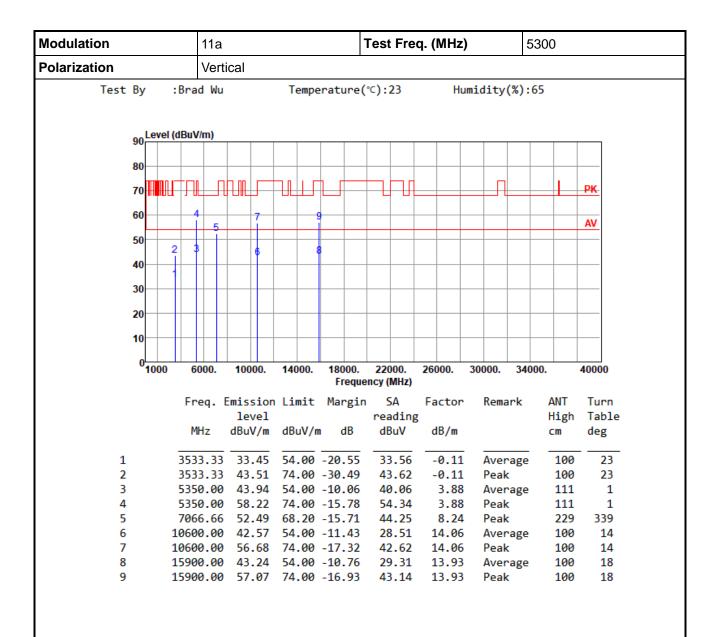
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN Report Version: Rev. 02

Page: 85 of 163





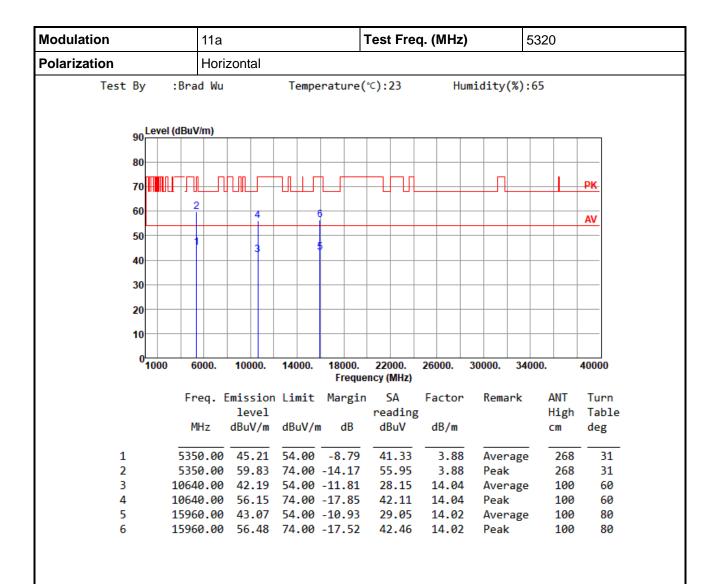
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN Report Version: Rev. 02

Page: 86 of 163



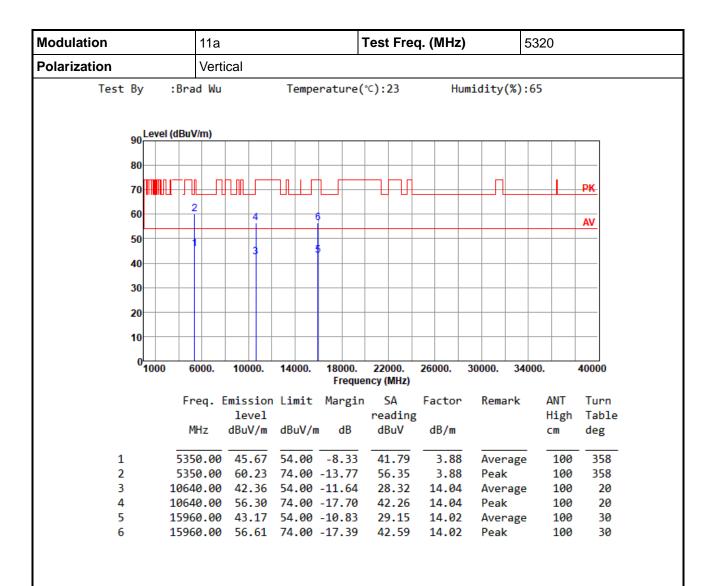


*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report Version: Rev. 02





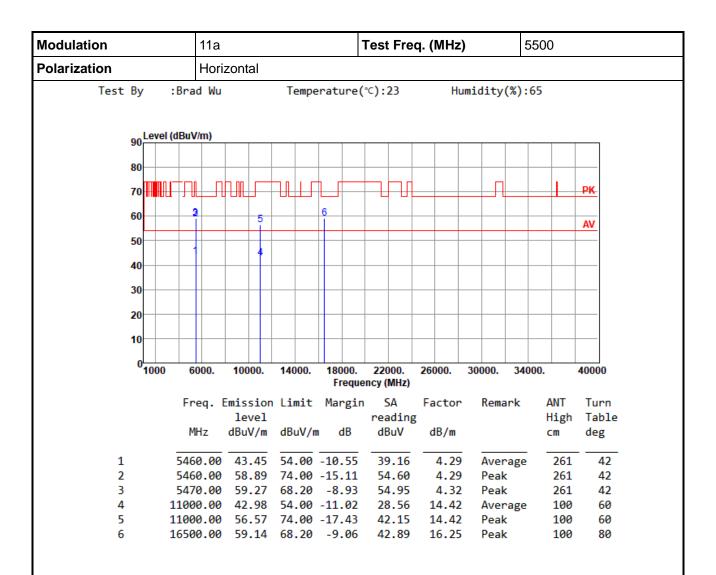
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report Version: Rev. 02

Report No.: FR100103AN Page: 88 of 163





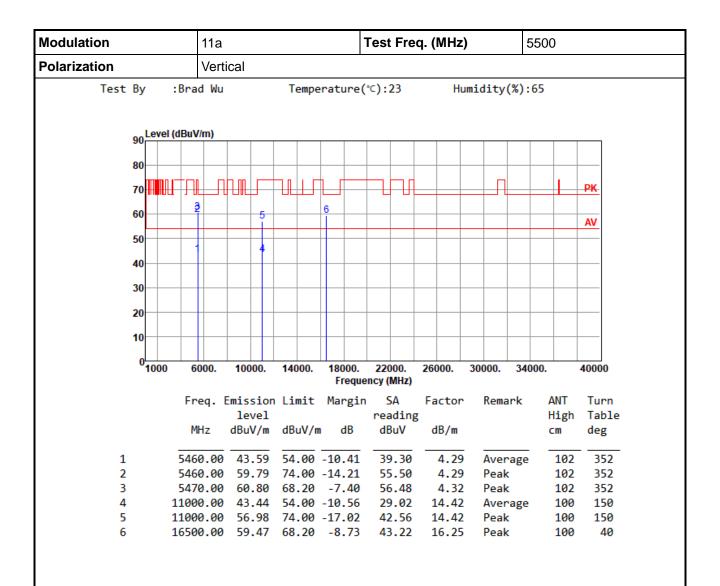
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN

Report Version: Rev. 02





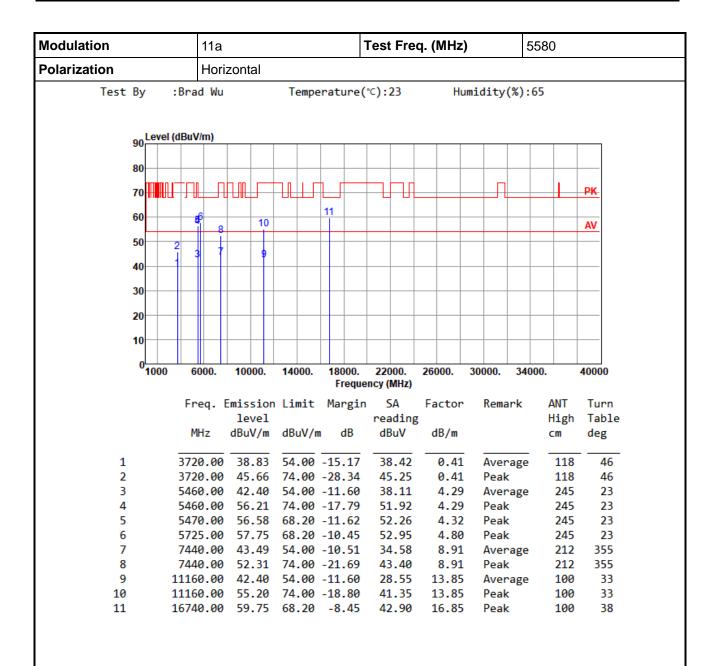
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report Version: Rev. 02

Report No.: FR1O0103AN Page: 90 of 163





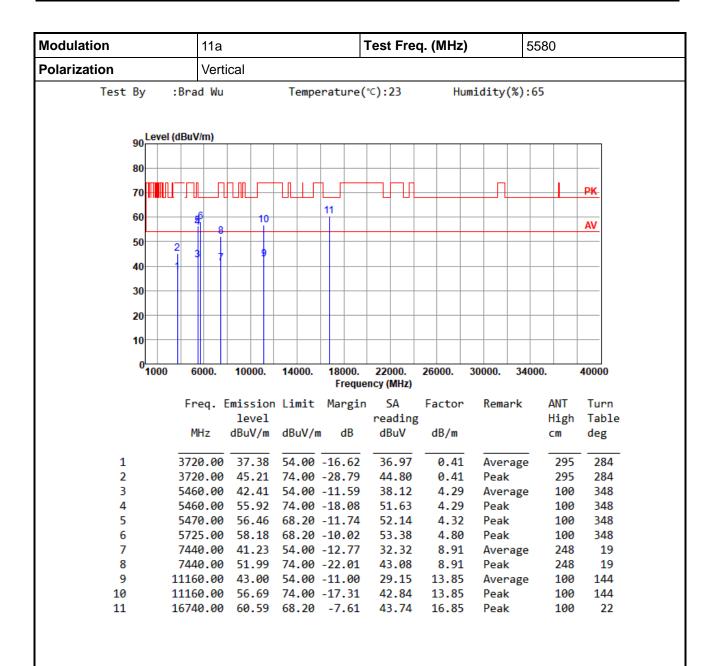
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report Version: Rev. 02

Report No.: FR100103AN Page: 91 of 163





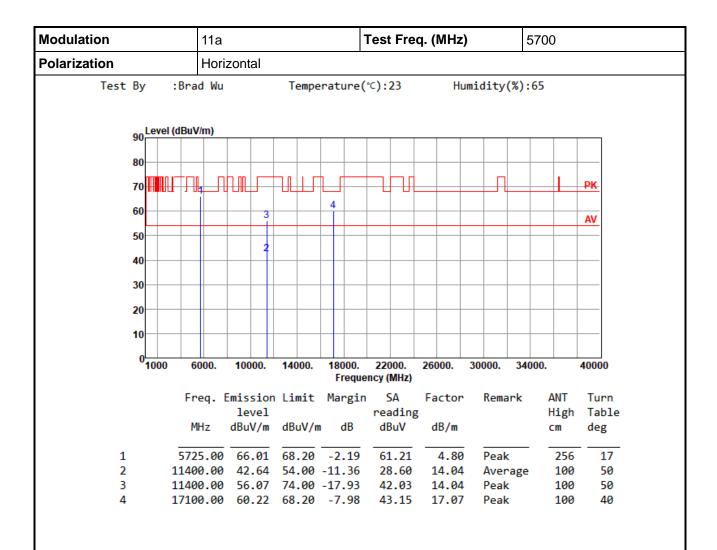
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN Report Version: Rev. 02

Page: 92 of 163





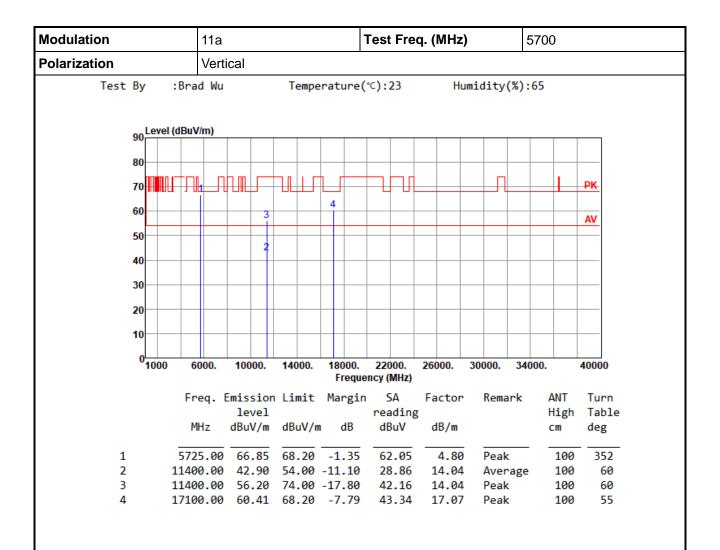
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN Report Version: Rev. 02

Page: 93 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report Version: Rev. 02

Report No.: FR100103AN Page: 94 of 163



Modulation 11a		Test Freq. (MHz)			5720		
Polarization	Horiz	ontal	1			-	
Test By	:Roger Lu	Tempe	rature(°C	:):24	Humidity(%):62	
90 Level	(dBuV/m)						
80							
70				₩.		P	K.
60	11	3	4				_
50						A	<u>.v</u>
		2					
40							
30							
20							
10							_
0 1000	6000.	10000. 14000.	18000. Frequen		26000. 30000.	34000. 40	000
	Freq. En	nission Limit	_		Factor Remar	rk ANT 1	Turn
	•	level		reading		_	Table
	MHz o	dBuV/m dBuV/m	dB	dBuV	dB/m	CM C	deg
1	5850.00	58.45 68.20	-9.75	53.26	5.19 Peak	261	32
		43.14 54.00		29.15	13.99 Avera	_	30
3	11440.00	56.14 74.00	-17.86	42.15	13.99 Peak	100	30

*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) - Limit (dBuV/m).

Report Version: Rev. 02

Report No.: FR1O0103AN Page: 95 of 163



Modulation 11a			Test Freq. (MHz)	5720		
Polarization	Vertical				<u> </u>	
Test By :Rog	er Lu	Temperature	(°C):24 Hu	midity(%)):62	
90 Level (dBu\	//m)					
80						
70					PK	
60	3	4			AV	
50	2					
30						
20						
10						
01000 6	000. 10000.	14000. 18000. Frequ	22000. 26000. ency (MHz)	30000. 3	4000. 4000	00
Fr	eq. Emission level	Limit Margi	n SA Factor reading	Remark		rn ble
М		dBuV/m dB	dBuV dB/m		cm de	
		68.20 -9.56		Peak		56
		54.00 -10.75		Averag	•	56
		74.00 -17.62 68.20 -8.46		Peak Peak		56 60

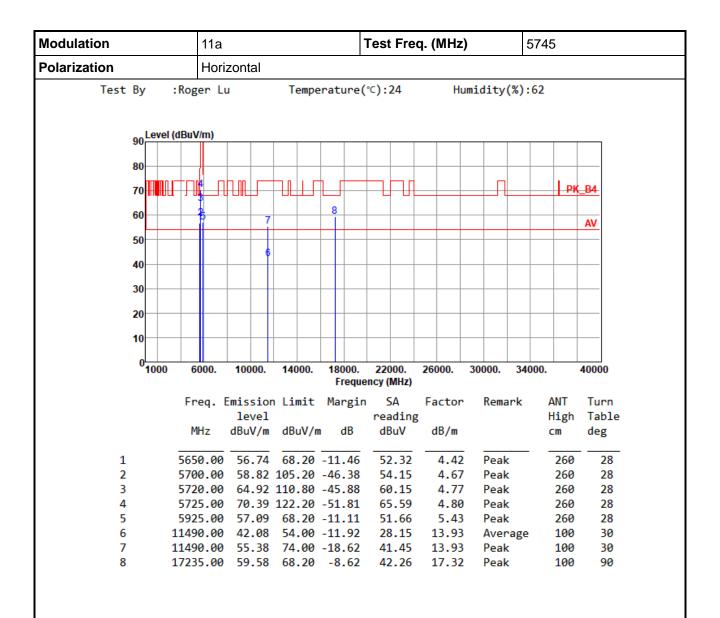
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) - Limit (dBuV/m).

Report No.: FR1O0103AN

Report Version: Rev. 02





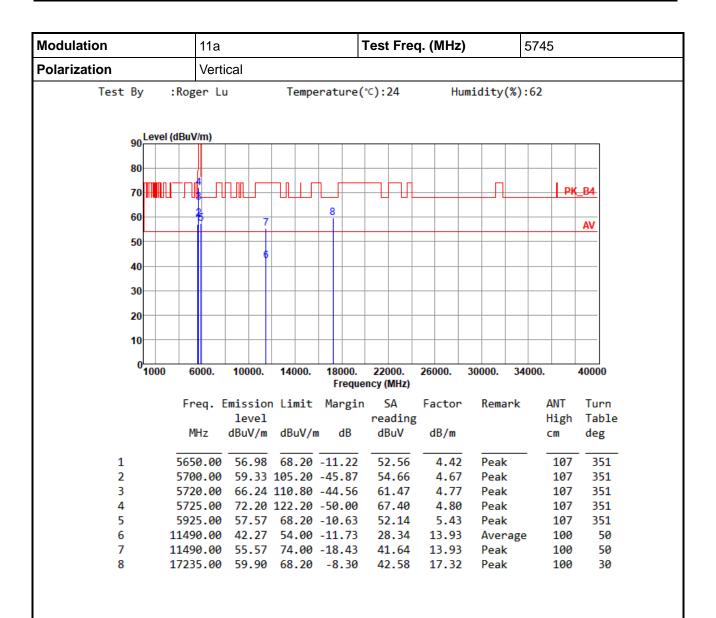
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN Report Version: Rev. 02

Page: 97 of 163





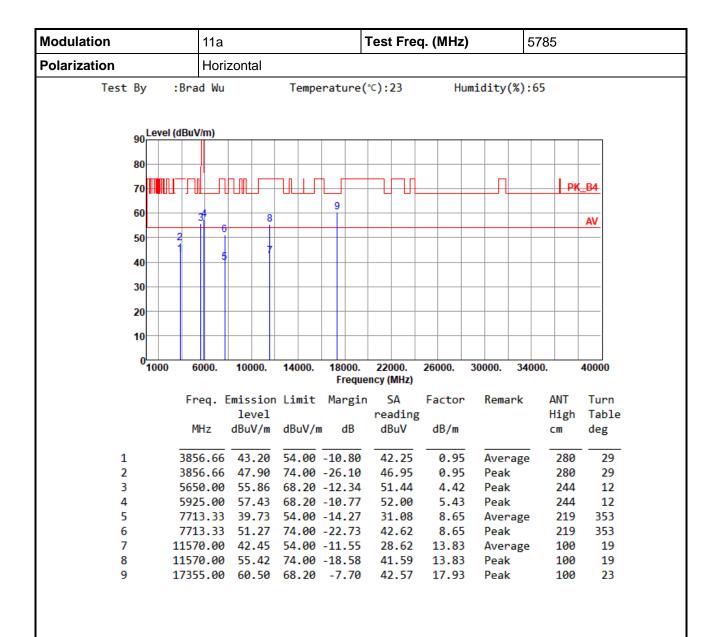
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN Report Version: Rev. 02

Page: 98 of 163



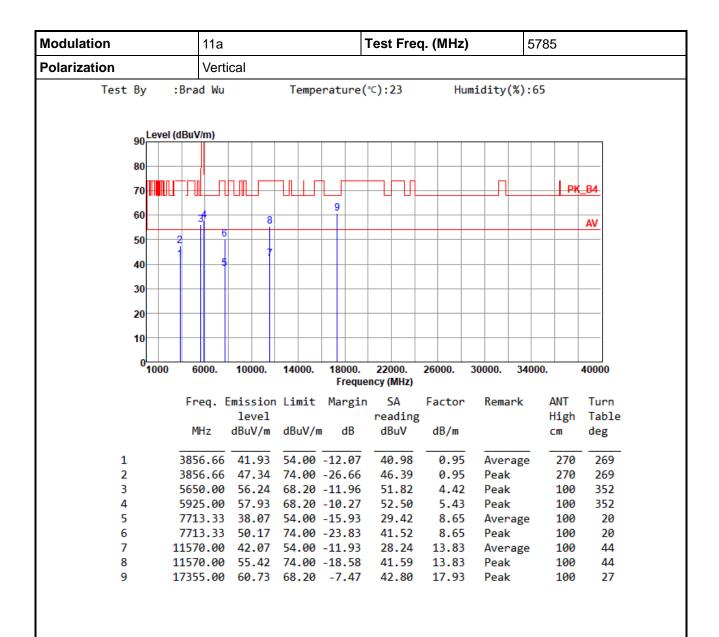


*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN Report Version: Rev. 02





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

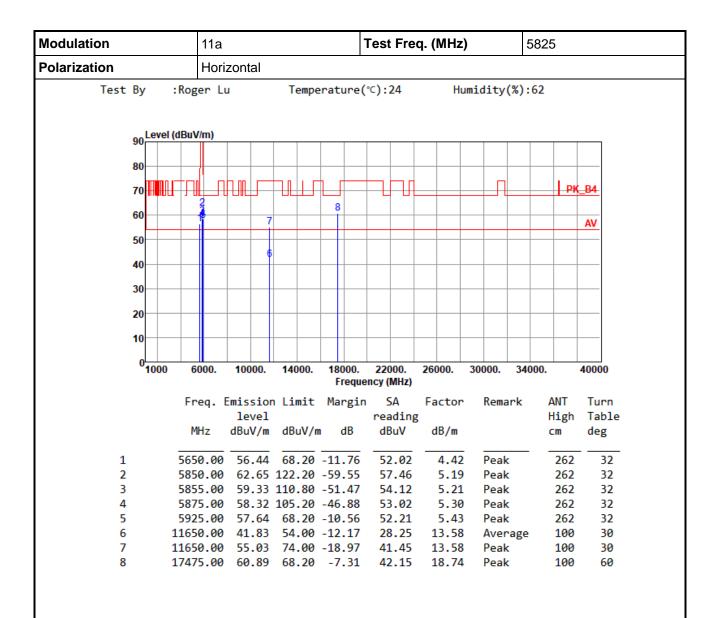
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 100 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

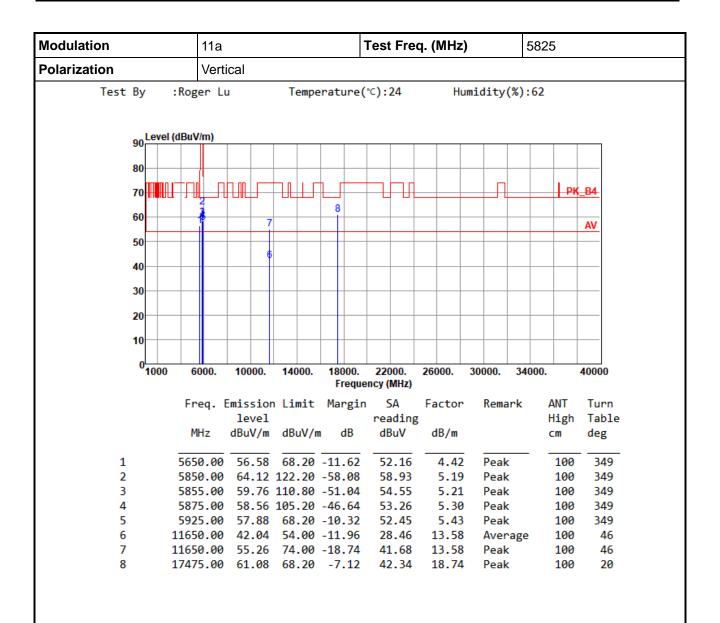
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 101 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN

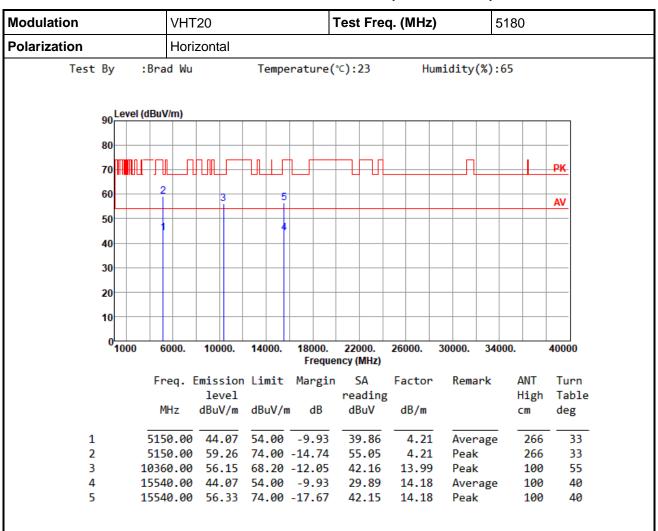
Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 102 of 163



3.5.6 Transmitter Radiated Unwanted Emissions (Above 1GHz) for VHT20



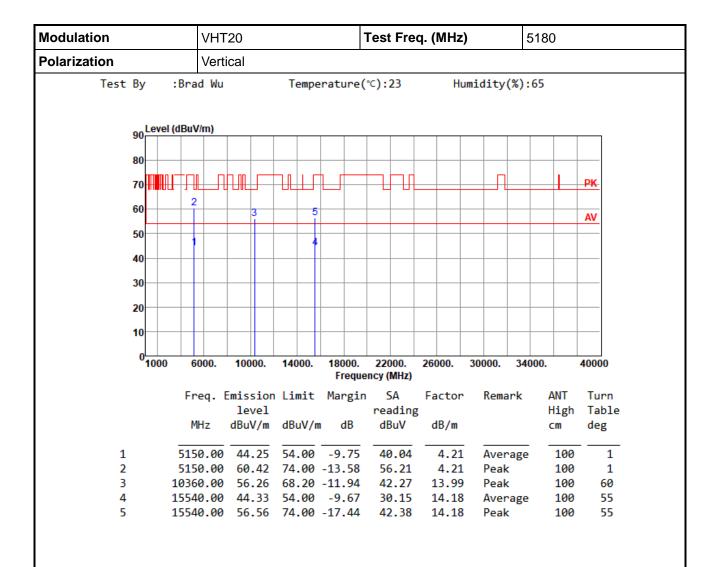
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report Version: Rev. 02





*Factor includes antenna factor, cable loss and amplifier gain

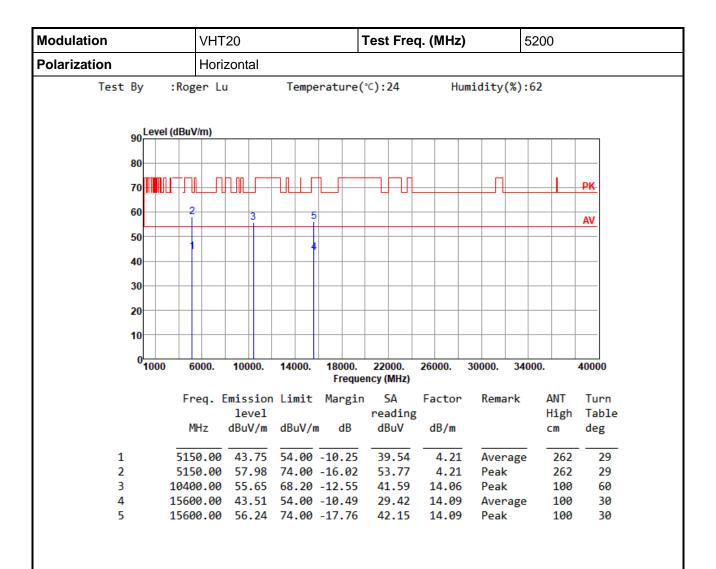
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN

Page: 104 of 163

Report Version: Rev. 02





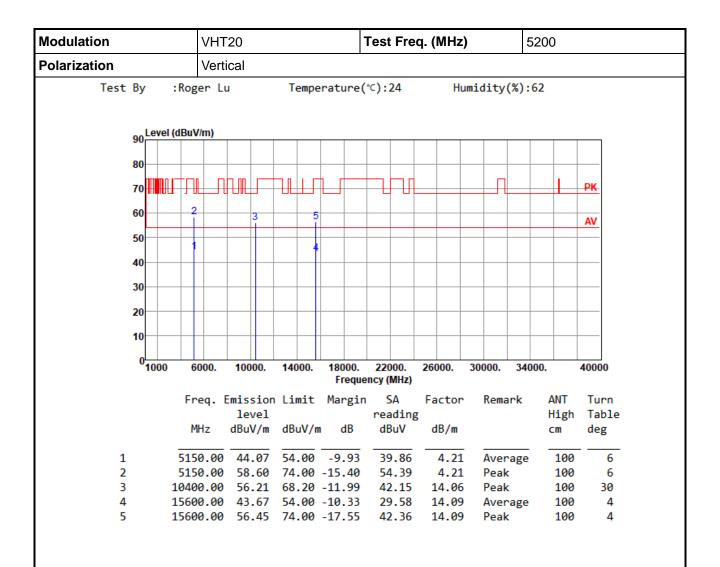
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FRTOUTUSAN
Report Version: Rev. 02

Report No.: FR1O0103AN Page: 105 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

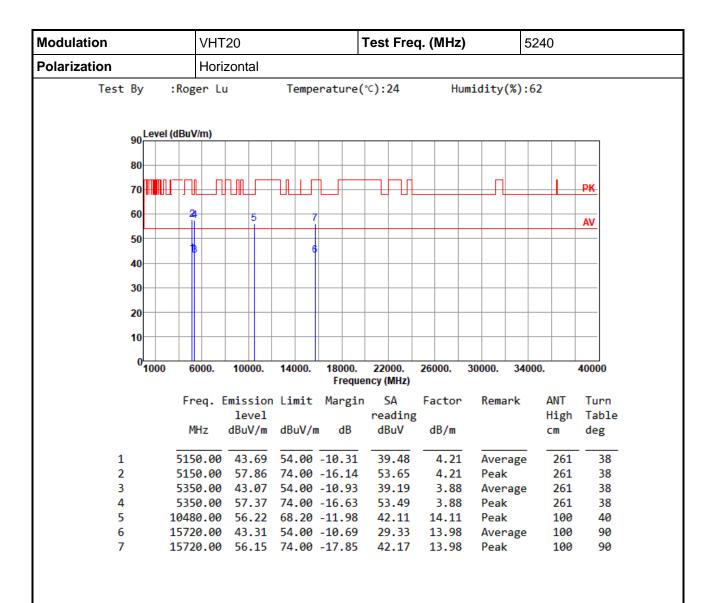
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 106 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

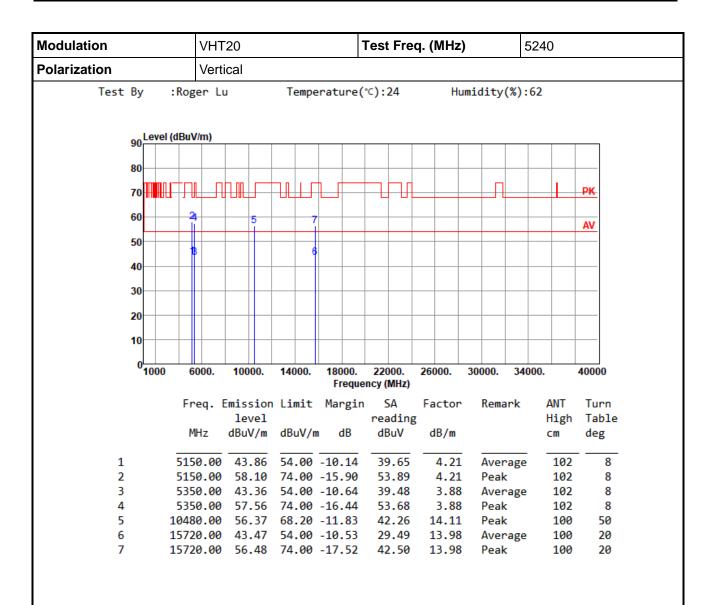
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 107 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

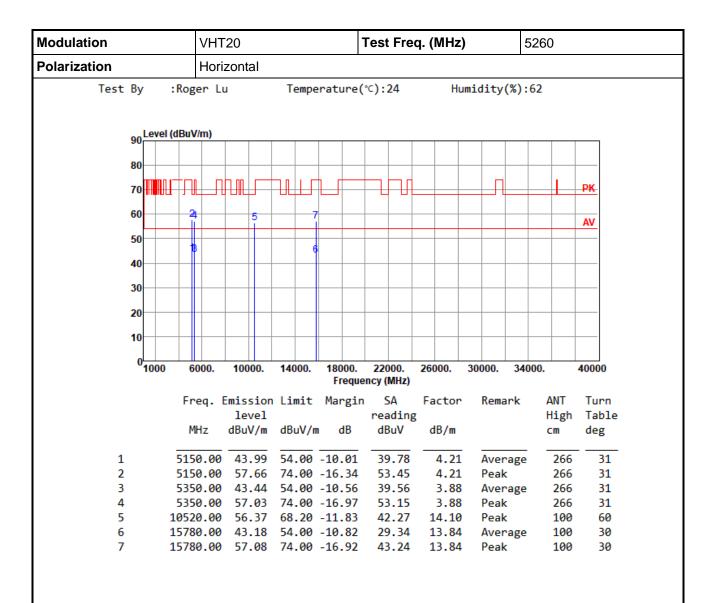
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 108 of 163





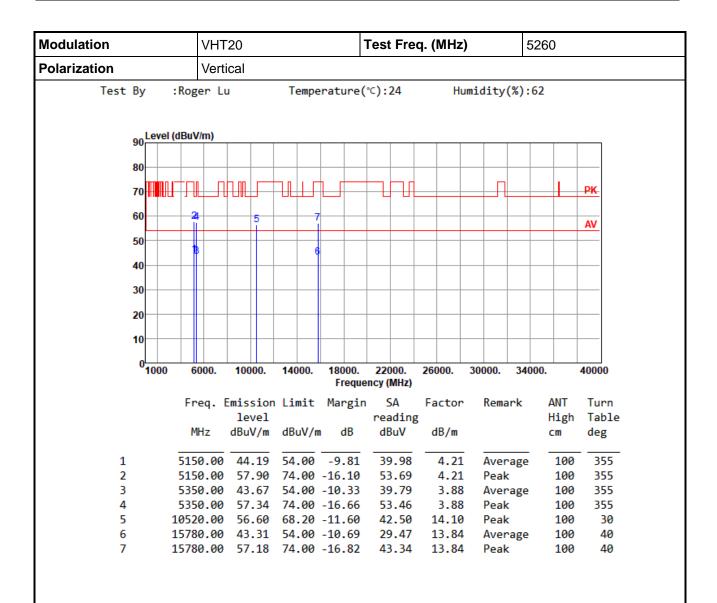
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN

Page: 109 of 163





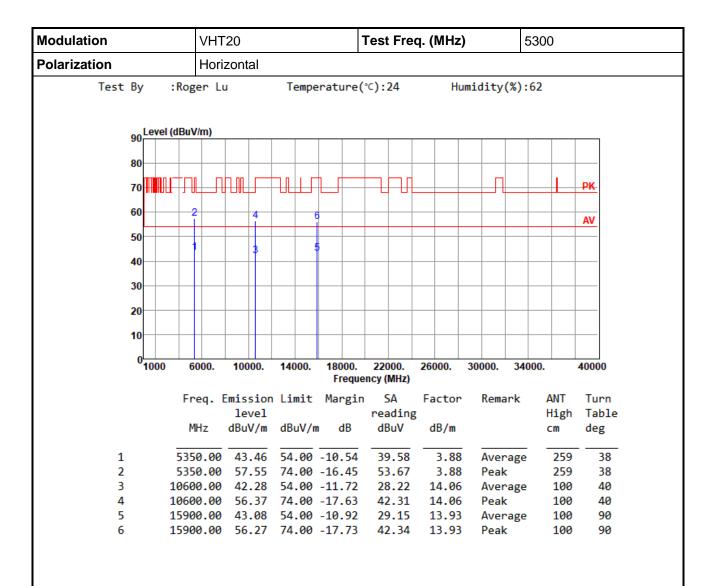
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN Report Version: Rev. 02

Page: 110 of 163





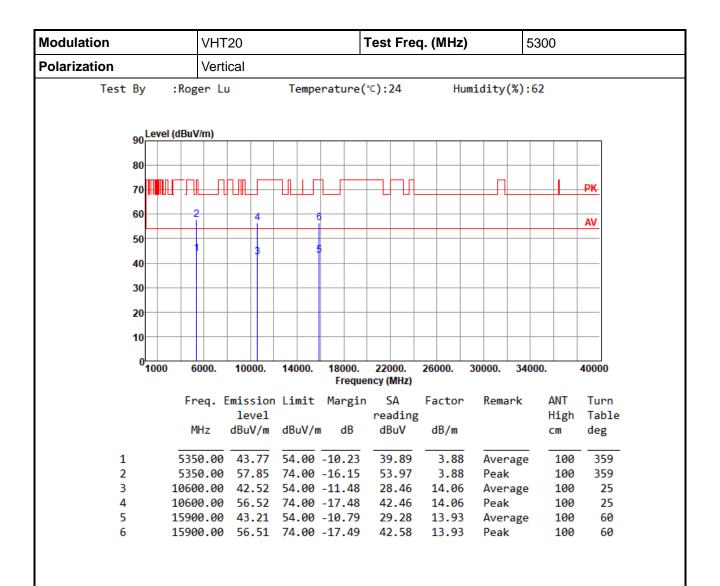
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN Report Version: Rev. 02

Page: 111 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

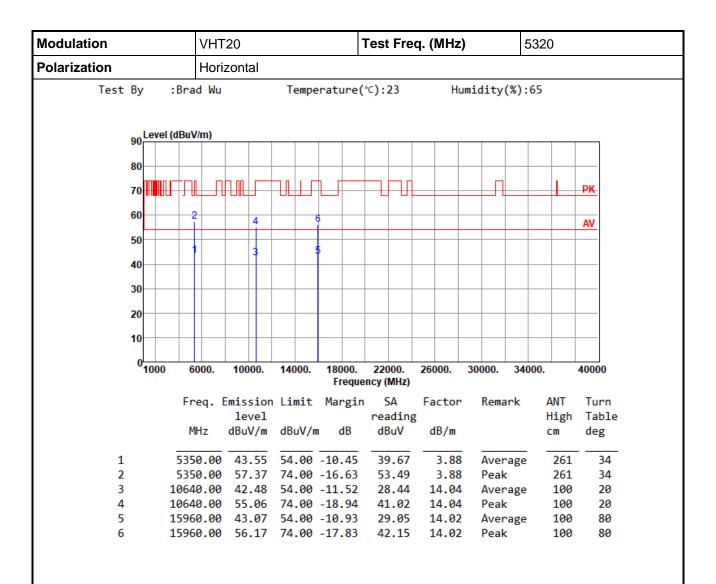
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 112 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

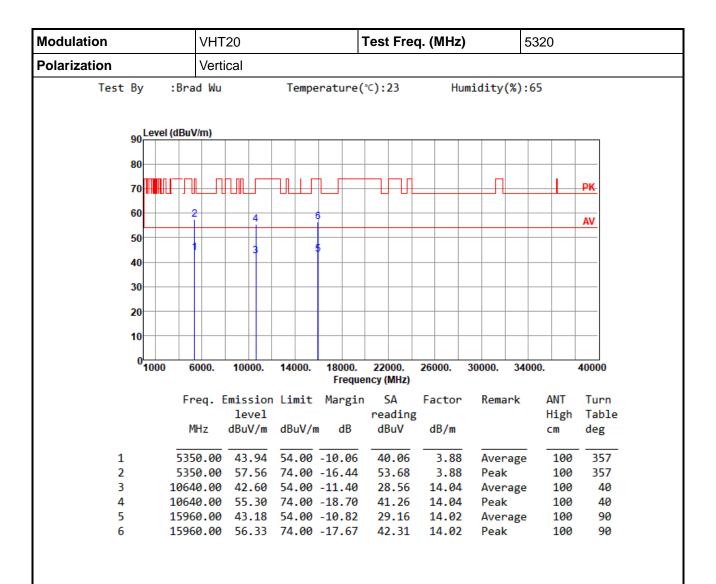
Report No.: FR100103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 113 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

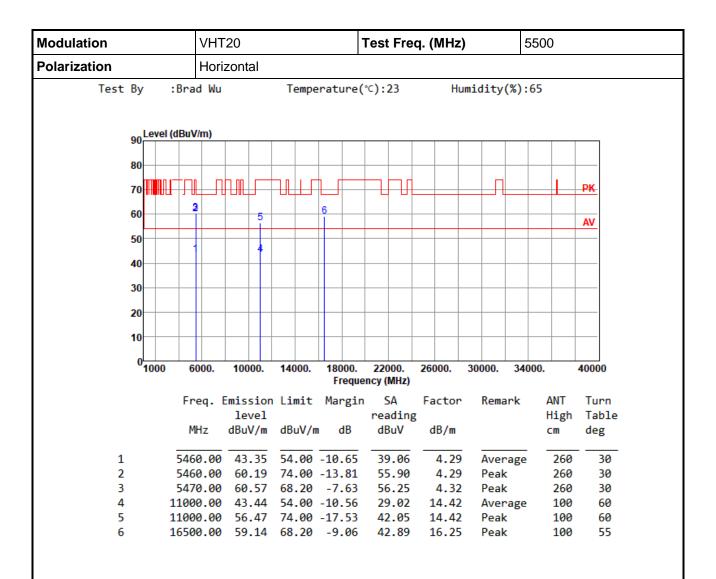
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 114 of 163





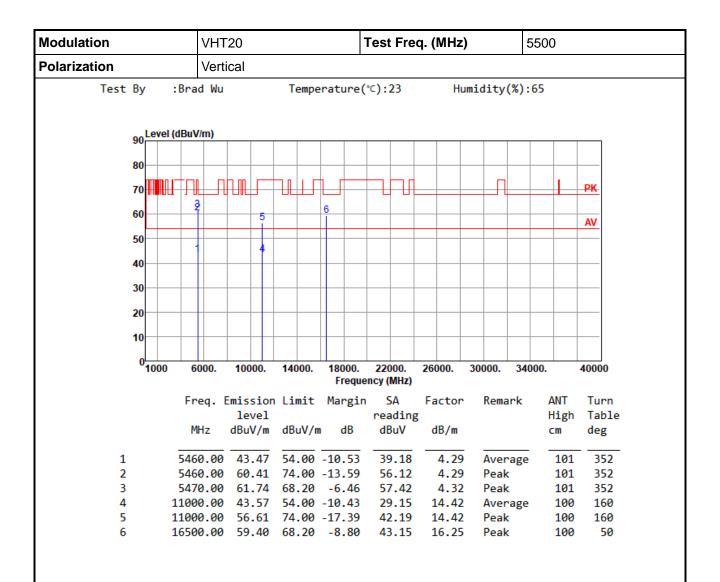
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR100103AN

Page: 115 of 163





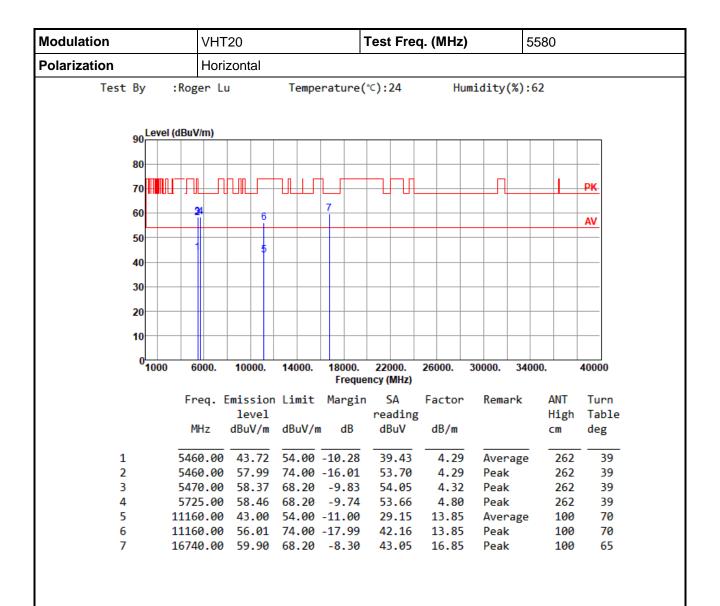
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN Report Version: Rev. 02

Page: 116 of 163





*Factor includes antenna factor, cable loss and amplifier gain

The previous version of the test report has been cancelled and replaced by new version.

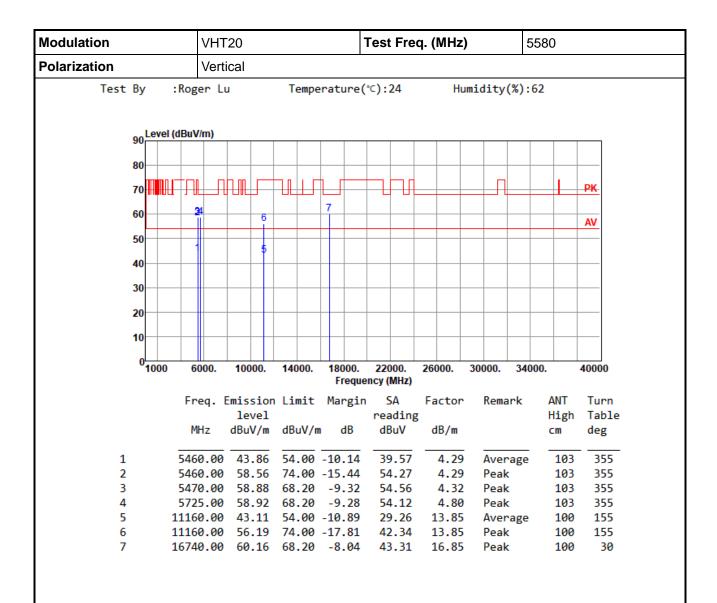
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN

Report Version: Rev. 02

Page: 117 of 163





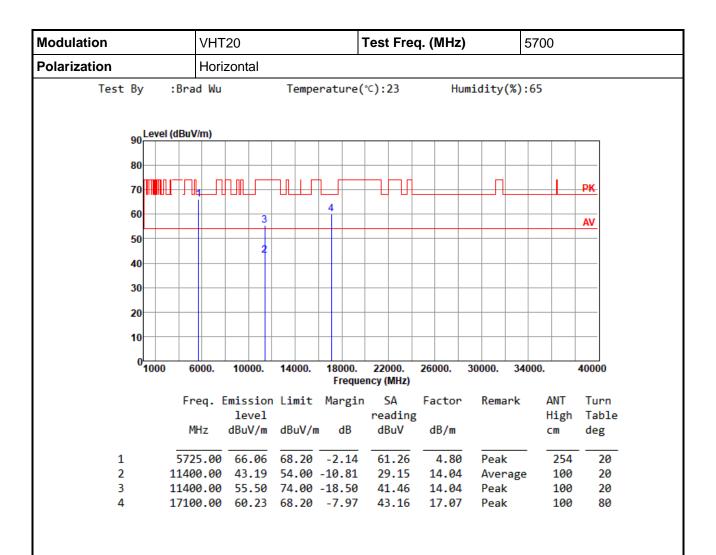
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN Report Version: Rev. 02

Page: 118 of 163





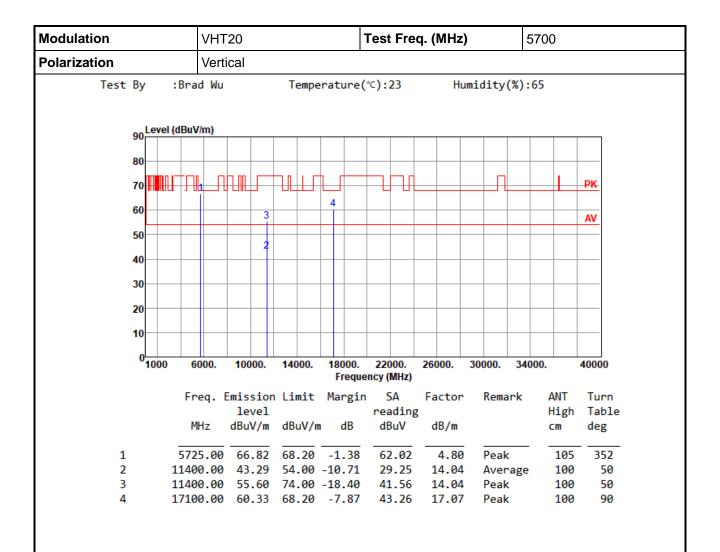
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN Report Version: Rev. 02

Page: 119 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR100103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 120 of 163



Modulation	VHT20	Test Fre	eq. (MHz)	5720
Polarization	Horizontal			
Test By :Ro	oger Lu Te	mperature(°⊂):24	Humidity(%)	:62
90 Level (dB	uV/m)			
80				
70				PK.
60	3	4		AV
50	2			
40				
30				
20				
10				
01000	6000. 10000. 1400	00. 18000. 22000. Frequency (MHz)		4000. 40000
ı	Freq. Emission Lim	it Margin SA reading	Factor Remark	ANT Turn High Table
	MHz dBuV/m dBu	,	dB/m	cm deg
1 58	850.00 58.65 68.	20 -9.55 53.46	5.19 Peak	268 22
	140.00 43.04 54.0 140.00 56.09 74.0	00 -10.96 29.05 00 -17.91 42.10		≘ 100 60 100 60
	160.00 60.17 68.			100 80

*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) - Limit (dBuV/m).

Report No.: FR1O0103AN

Report Version: Rev. 02



Modulation	VHT20				-	Test Freq. (MHz)						57	5720					
Polarization			Vert	ical												I		
Test By	/	:Rog	er L	u		Te	empe	erat	ure(℃):2	4		Hui	midi	ty(%):6	2	
90	Level	(dBuV	//m)															
80															_			+-
70		П			厂	$\exists \mathbb{L}$	Ш	1		\Box	\Box \Box				Д			PK
60			1		3			4										
	\vdash	+-			1									+				AV
50					2													
40																		+
30																		
20	,																	
10														\dashv	_			
(1000	60	000.	100	000.	140	00.		000. reque	220 ency (N		260	00.	3000	00.	3400	0.	40000
		Fr	eq.	Emis	sior	n Lim	nit	Ma	rgin	S	Д	Fac	ctor	R	emar	rk	ANT	Turn
			-	le	vel					rea	ding						High	
		М	Hz	dBu	V/m	dBu	ıV/n	n	dB	dB	uV	dl	B/m				cm	deg
1		585	0.00	58	.78	68.	20	-9	.42	53	.59	_	5.19	P	eak	_	104	356
2		1144								29	.18	13	3.99	A	vera	age	100	
3		1144									. 29		3.99		eak		100	
4		1716	0.00	60	.30	68.	20	-7	.90	43	.15	17	7.15	P	eak		100	40

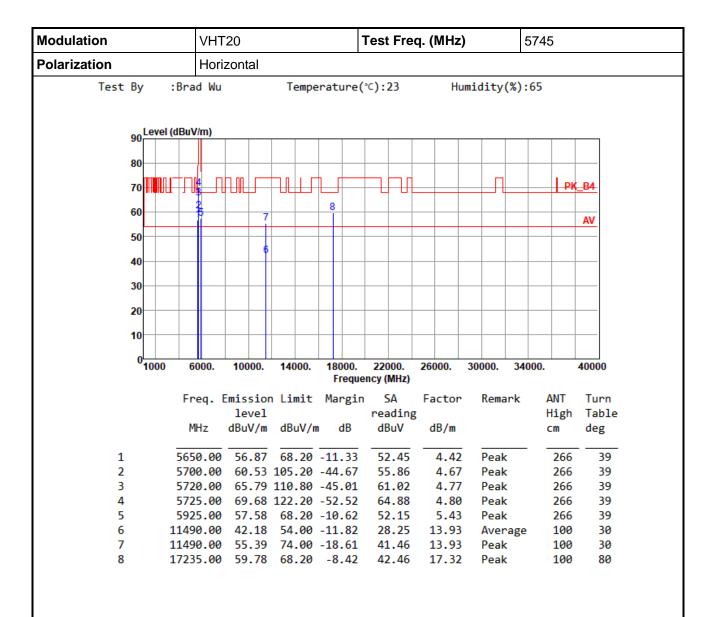
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) - Limit (dBuV/m).

Report No.: FR100103AN Page: 122 of 163

Report Version: Rev. 02





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

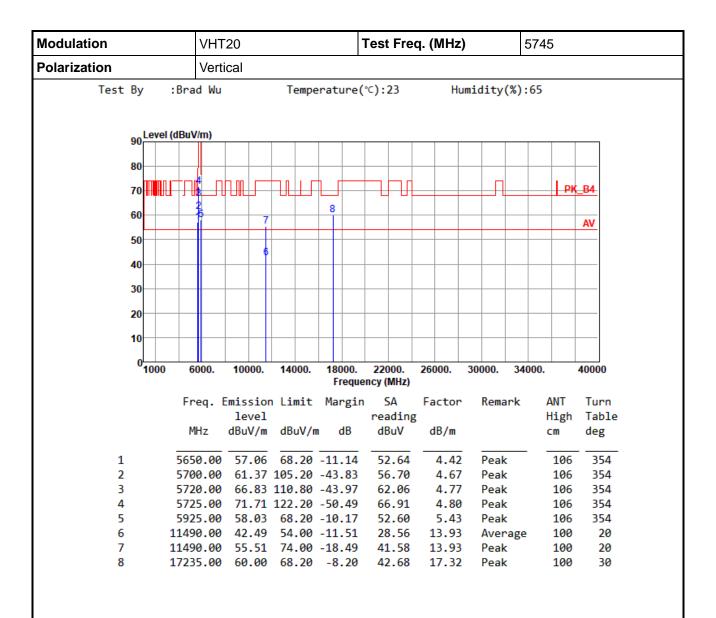
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 123 of 163





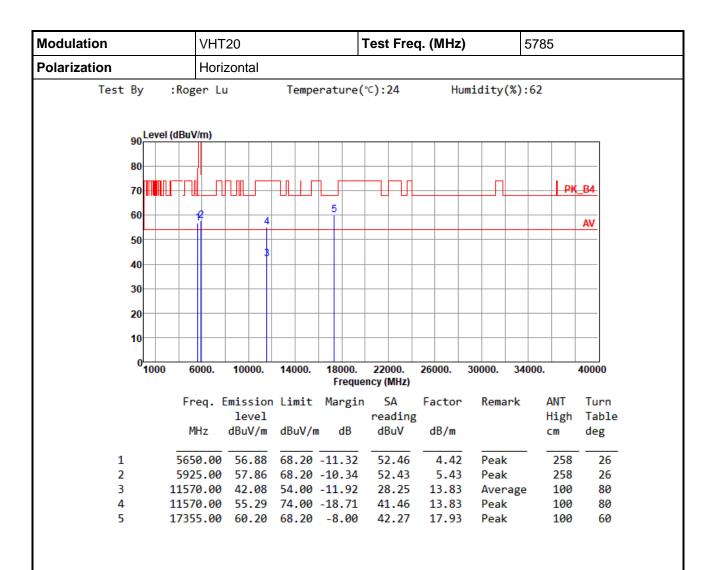
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR100103AN

Report Version: Rev. 02





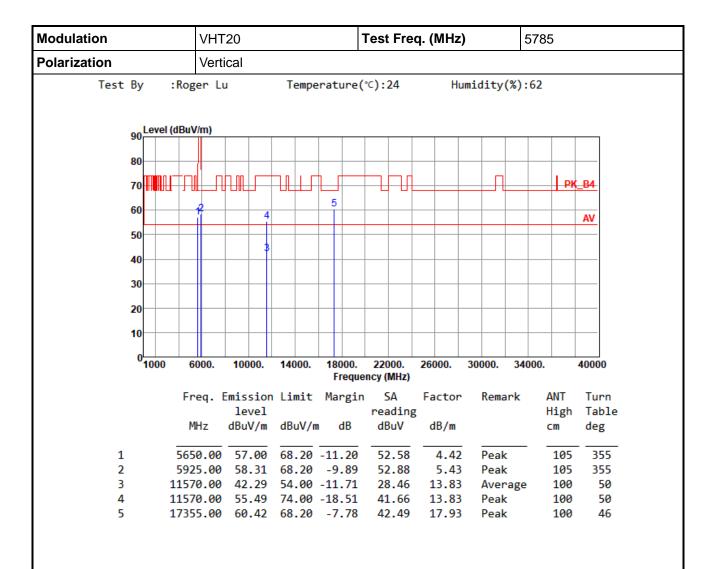
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN Page: 125 of 163

Report Version: Rev. 02





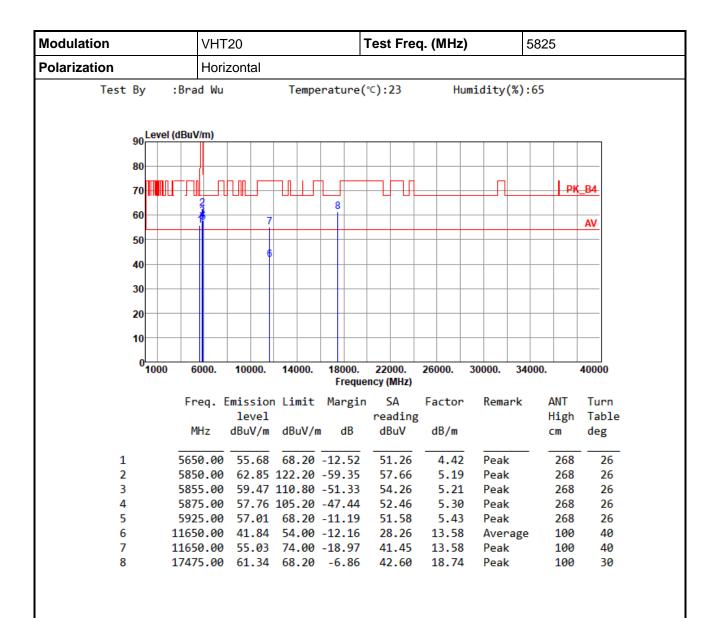
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN Page: 126 of 163

Report Version: Rev. 02





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

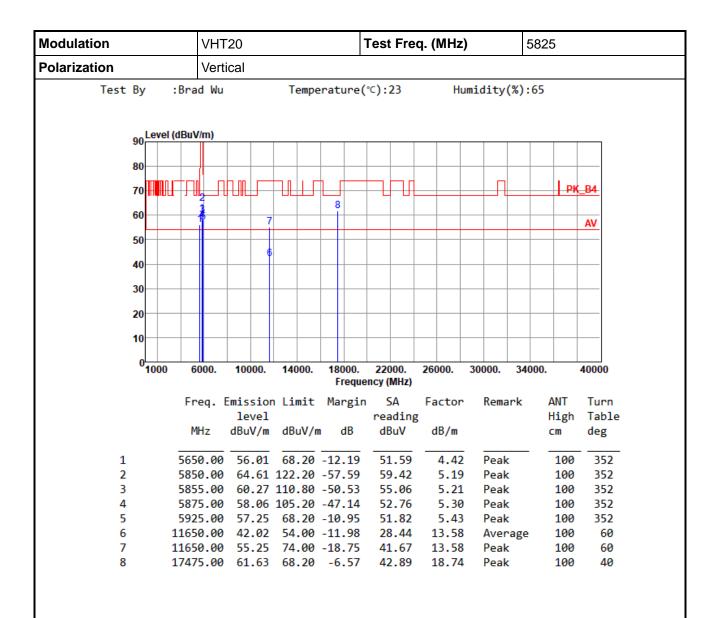
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 127 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

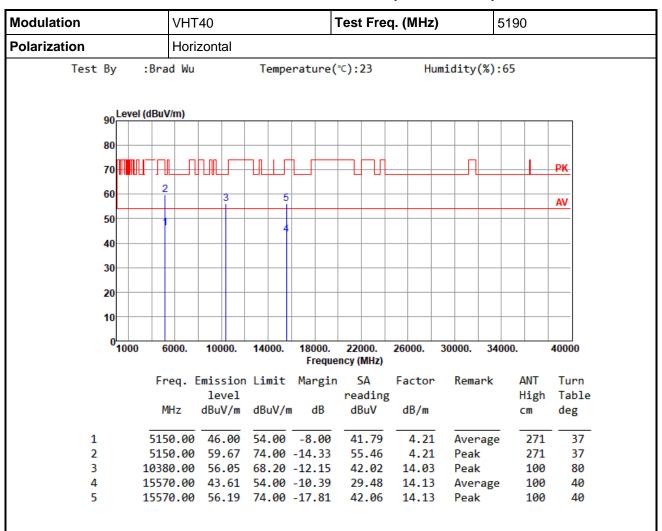
Report No.: FR100103AN

Page: 128 of 163

Report Version: Rev. 02



Transmitter Radiated Unwanted Emissions (Above 1GHz) for VHT40 3.5.7



Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

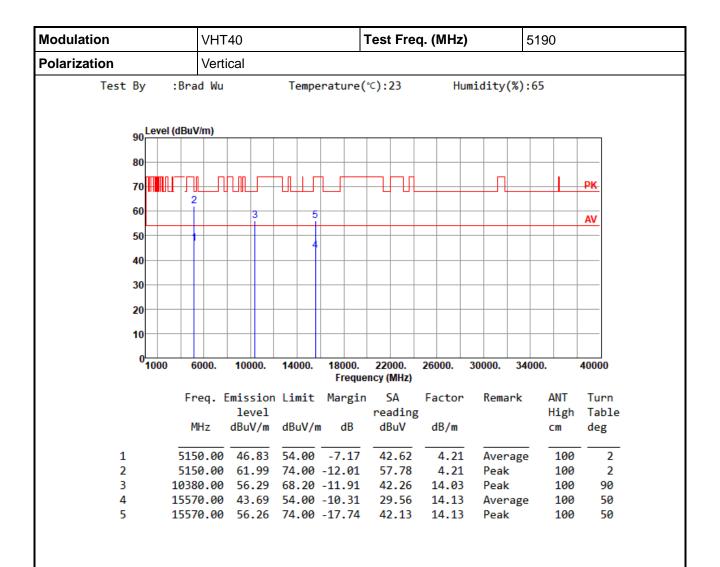
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN Report Version: Rev. 02

Page: 129 of 163





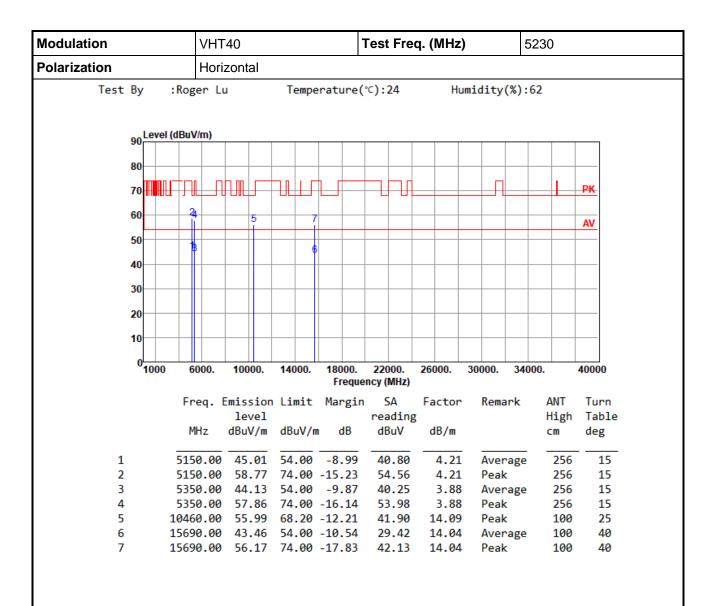
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR100103AN Page: 130 of 163

Report Version: Rev. 02





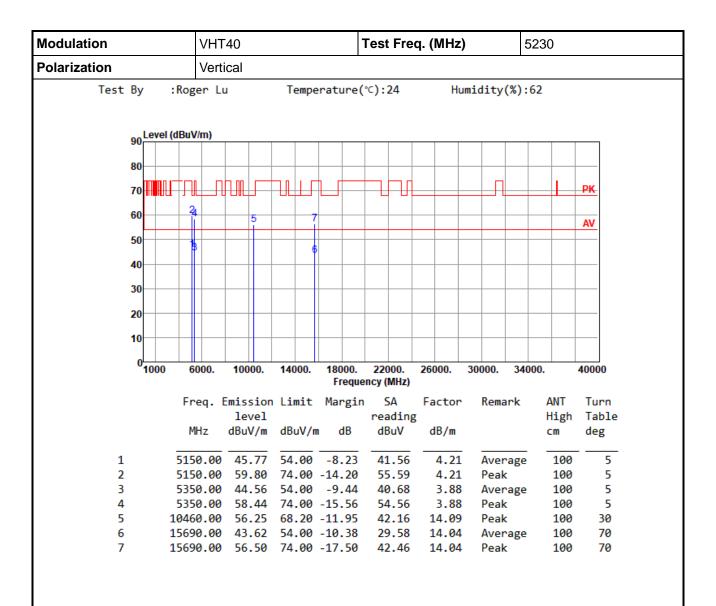
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN

Page: 131 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

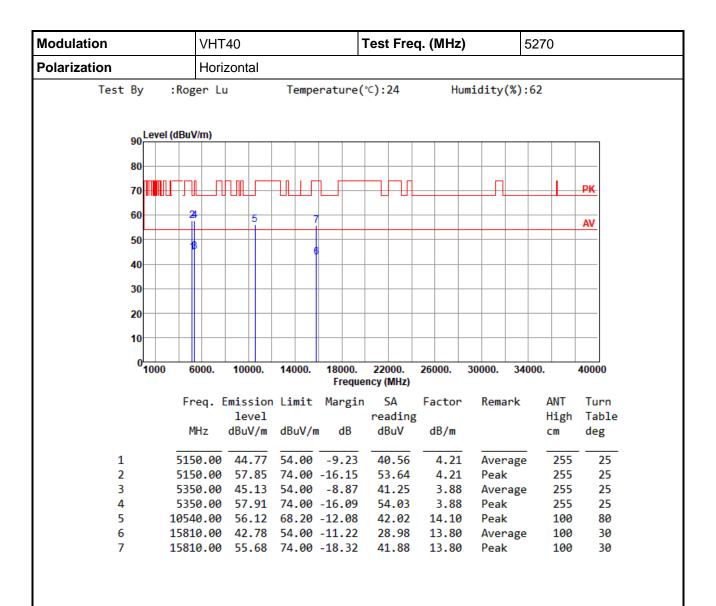
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 132 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

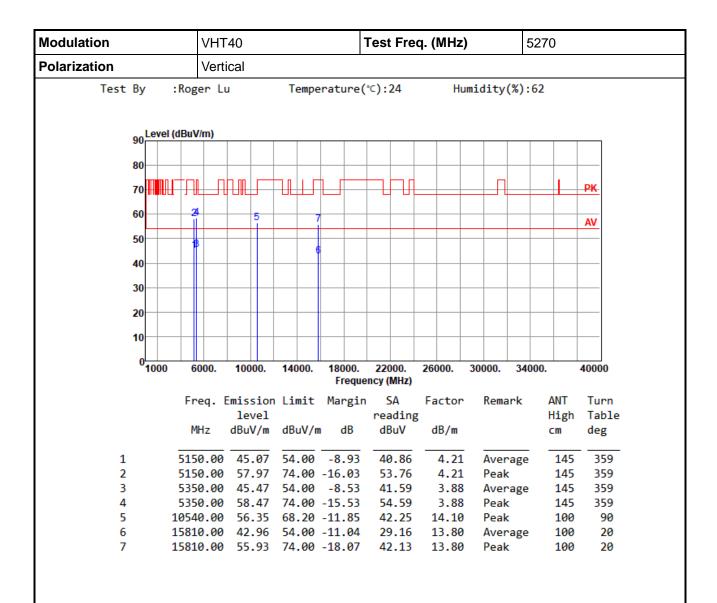
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 133 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

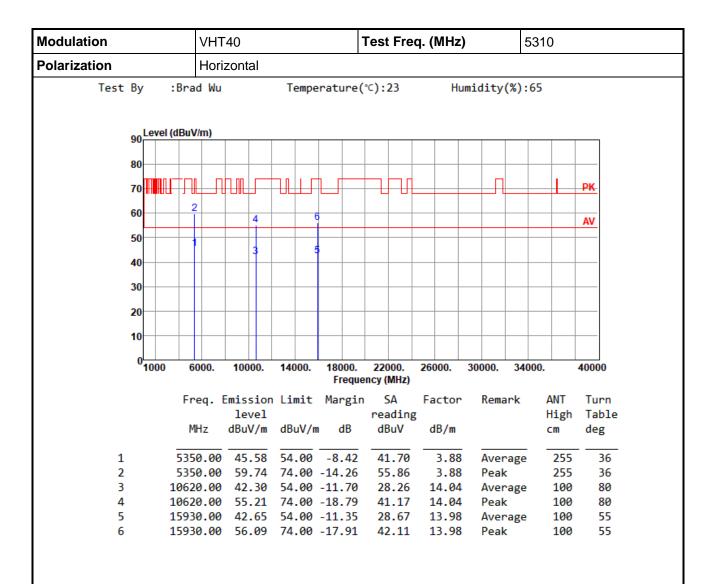
Report No.: FR100103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 134 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

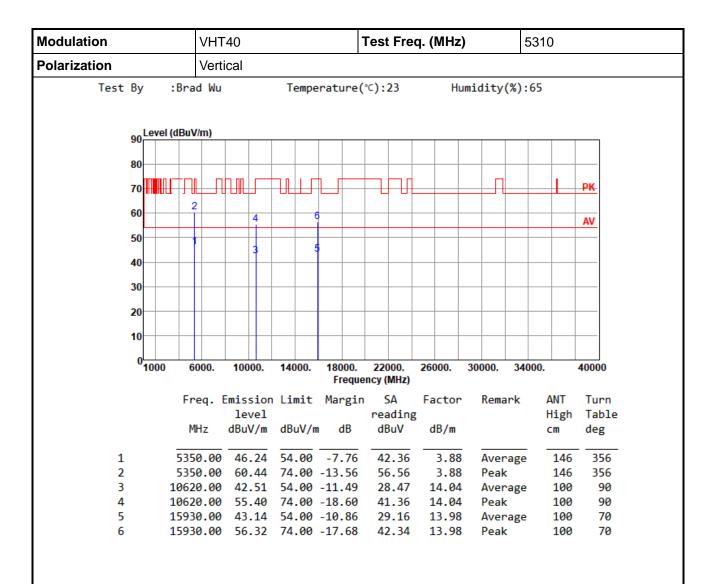
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 135 of 163





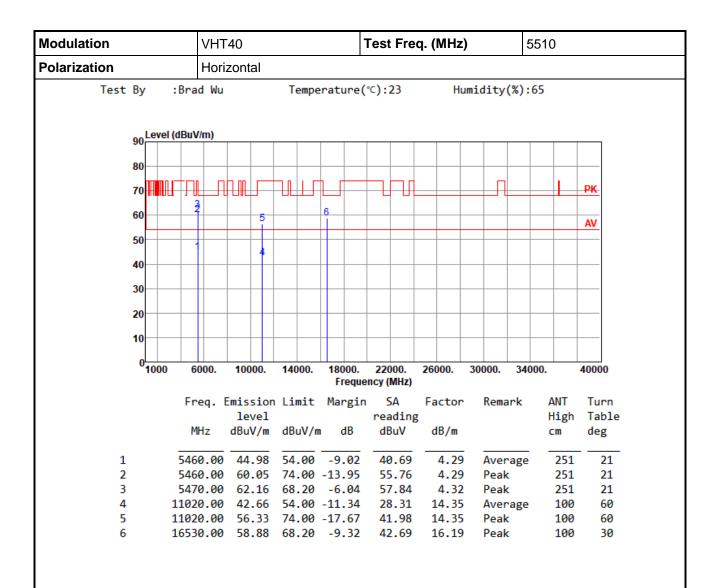
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN Page: 136 of 163

Report Version: Rev. 02





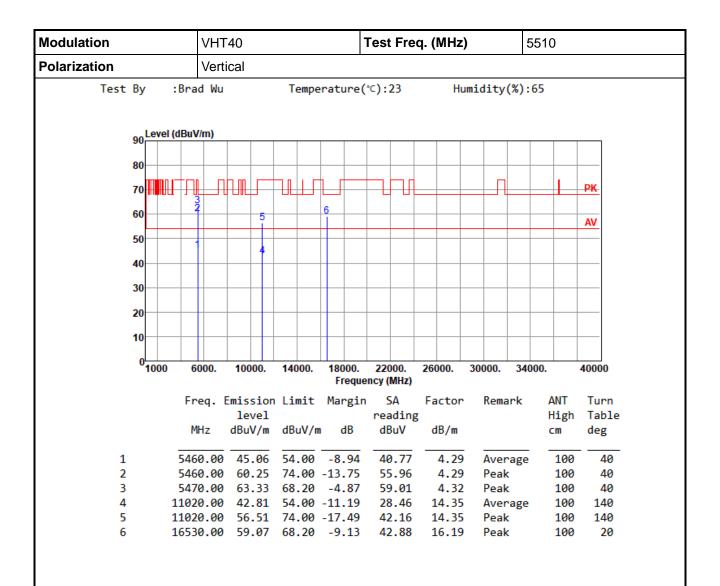
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN

Report Version: Rev. 02





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

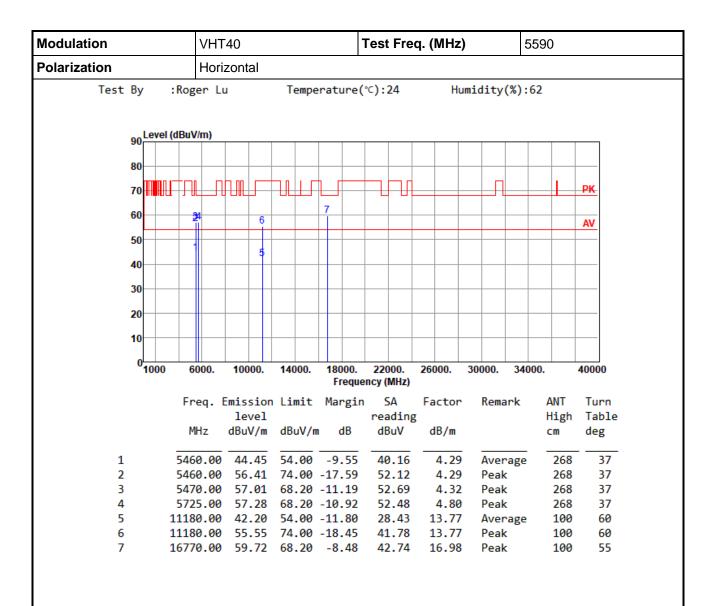
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 138 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

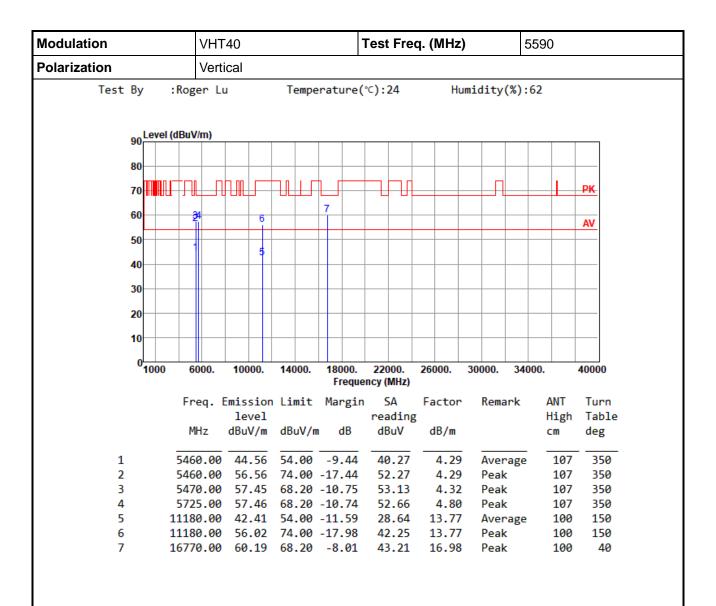
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 139 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

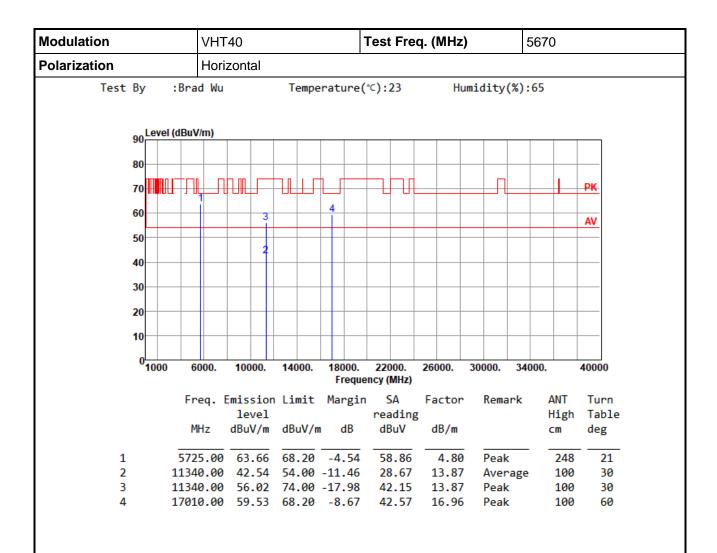
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 140 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

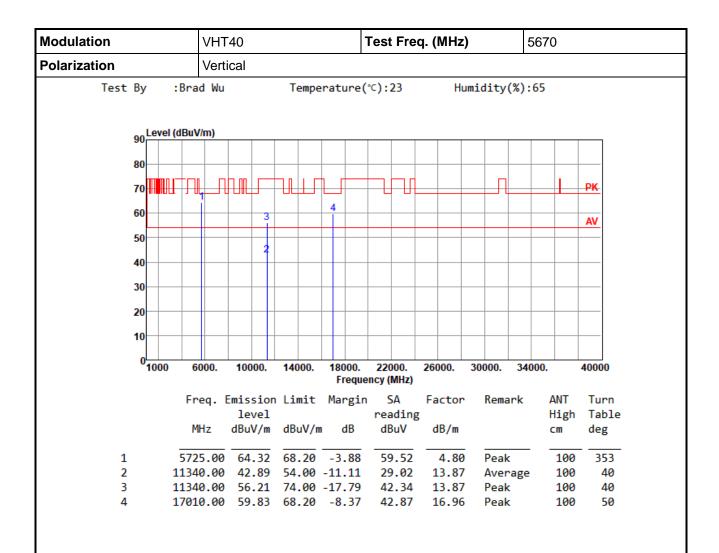
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 141 of 163





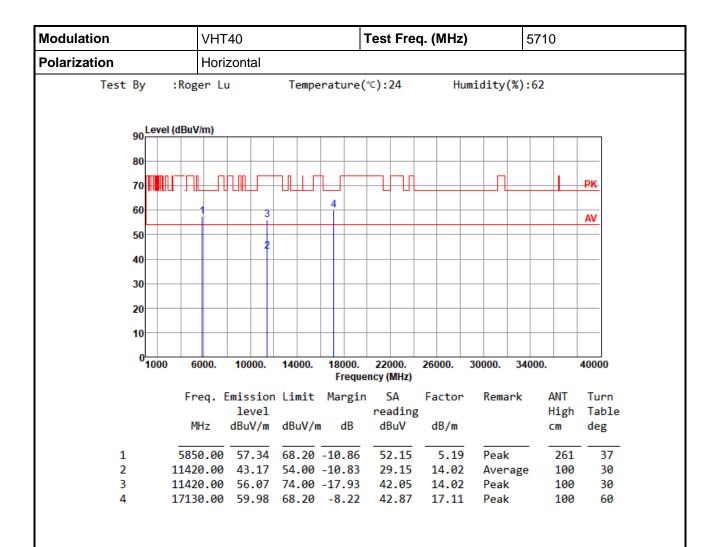
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN

Report Version: Rev. 02





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

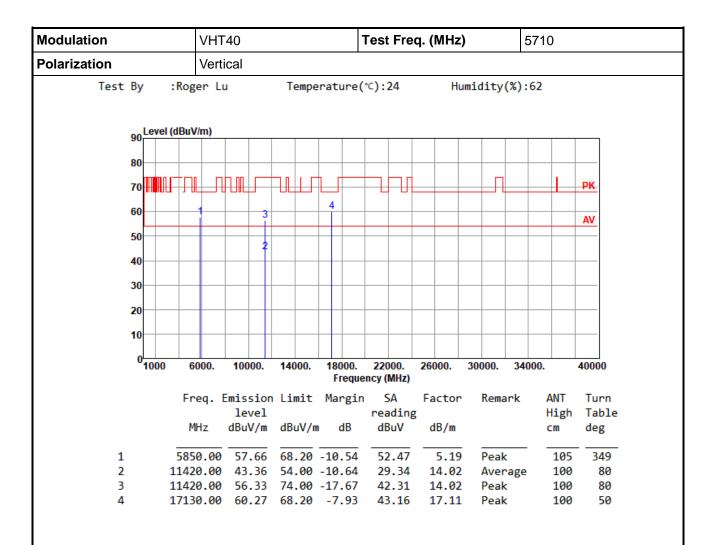
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 143 of 163





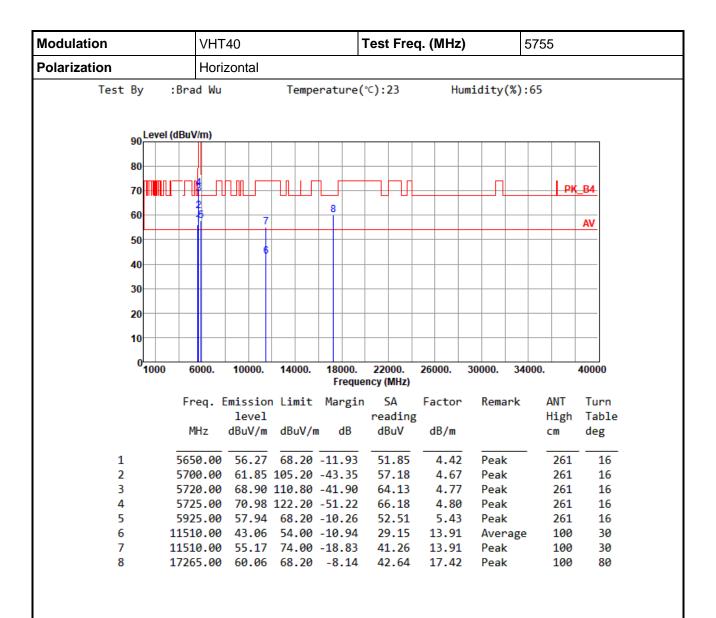
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) - Limit (dBuV/m).

Report No.: FR100103AN Page: 144 of 163

Report Version: Rev. 02





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

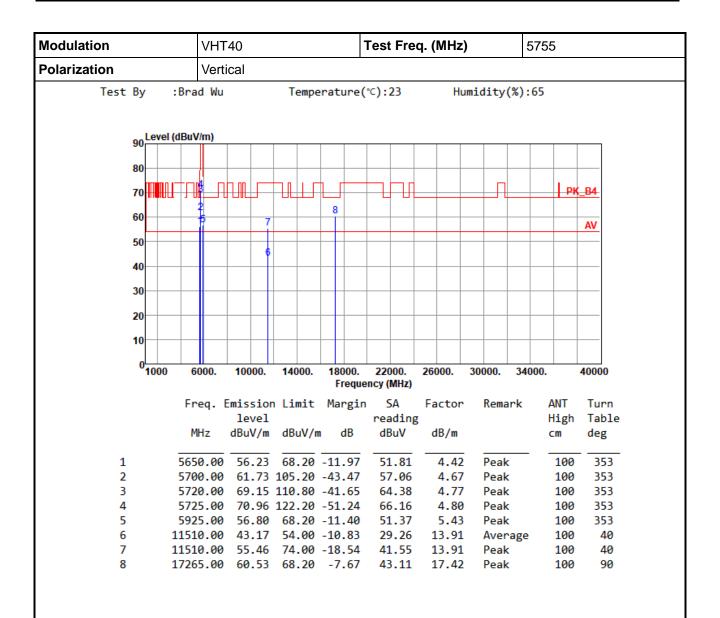
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 145 of 163





*Factor includes antenna factor, cable loss and amplifier gain

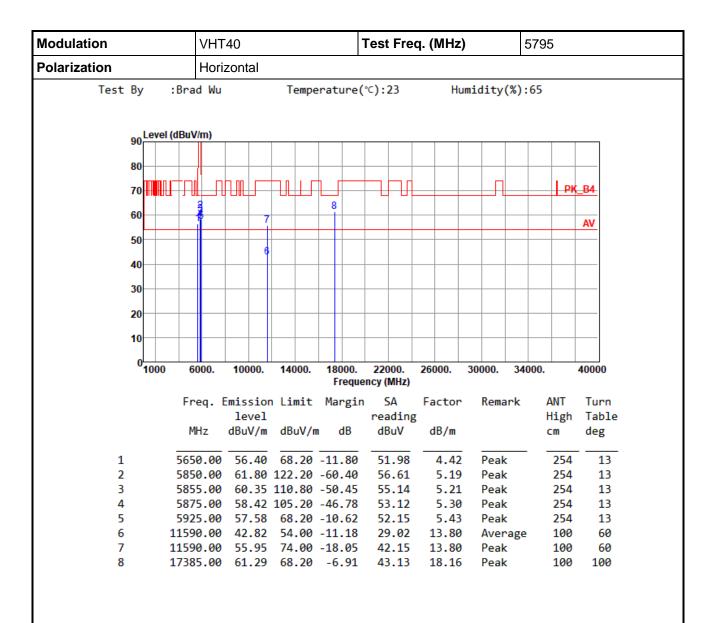
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR100103AN

Page: 146 of 163

Report Version: Rev. 02





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

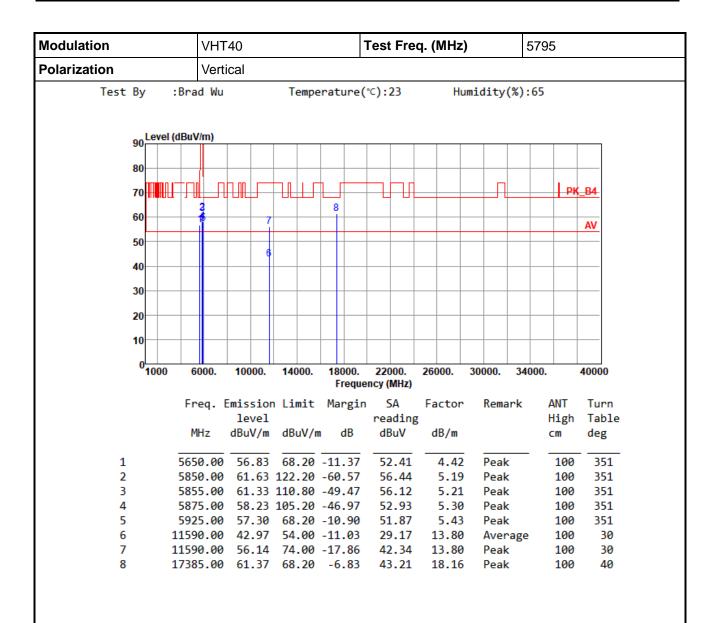
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 147 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN

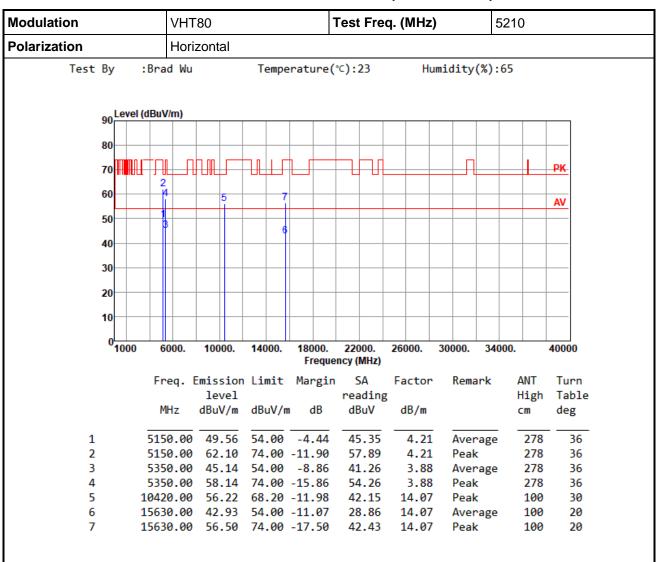
Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 148 of 163



3.5.8 Transmitter Radiated Unwanted Emissions (Above 1GHz) for VHT80



Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

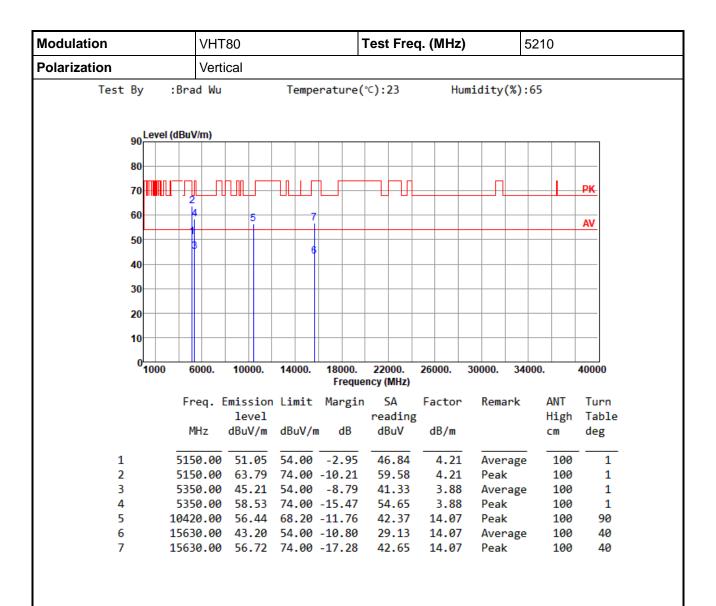
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR100103AN
Report Version: Rev. 02

Report No.: FR100103AN Page: 149 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

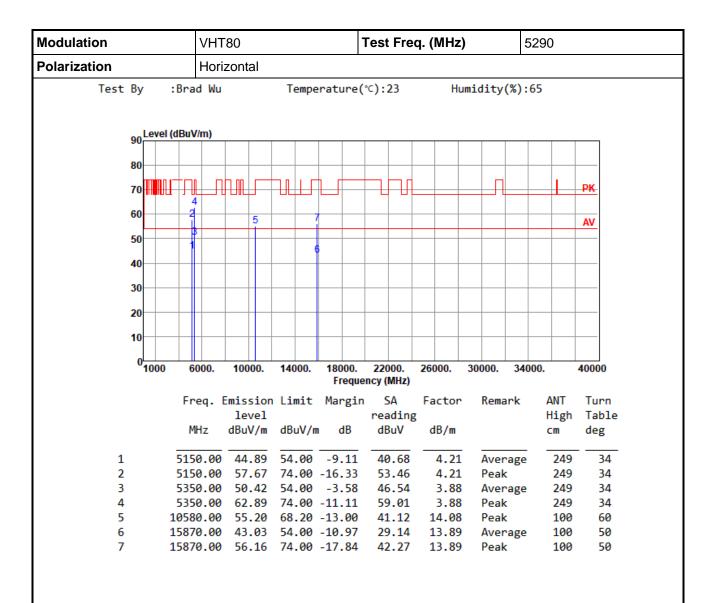
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 150 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

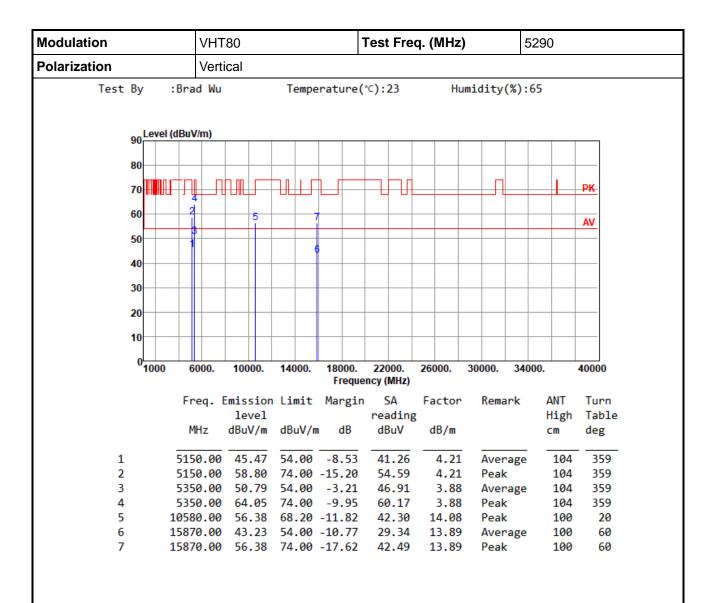
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 151 of 163





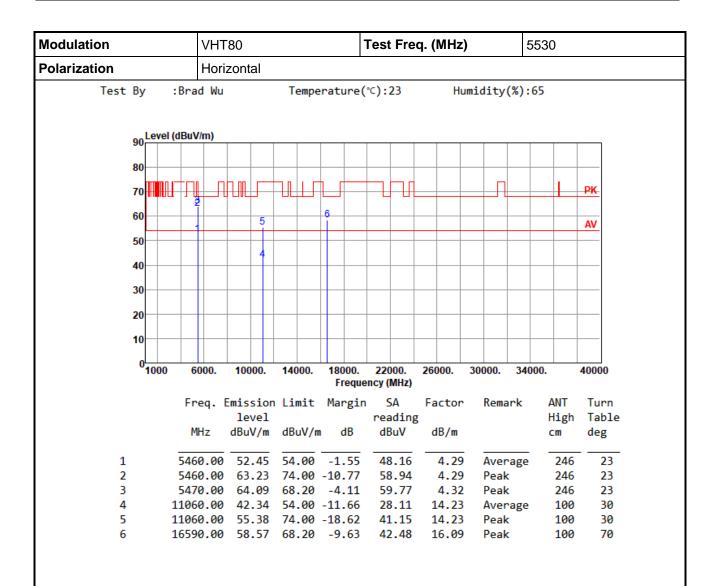
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN Page: 152 of 163

Report Version: Rev. 02





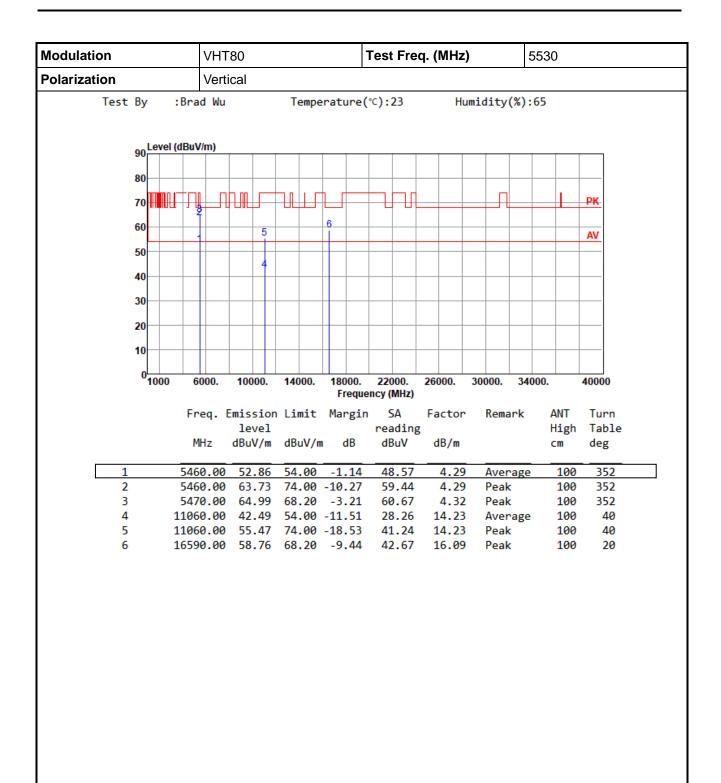
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN

Report Version: Rev. 02





Page: 154 of 163

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

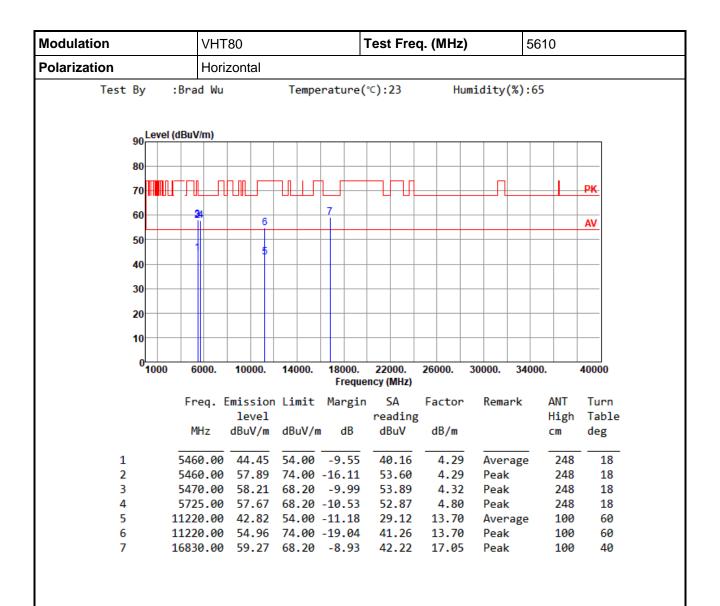
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN

Report Version: Rev. 02





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

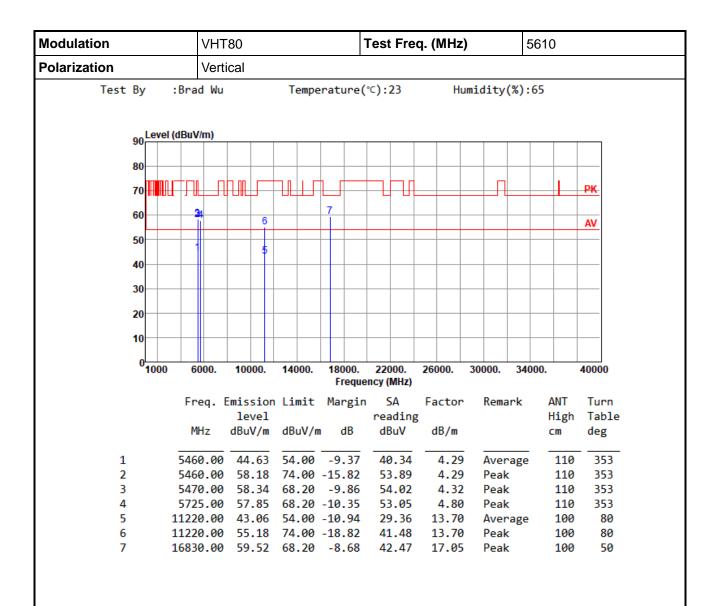
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 155 of 163





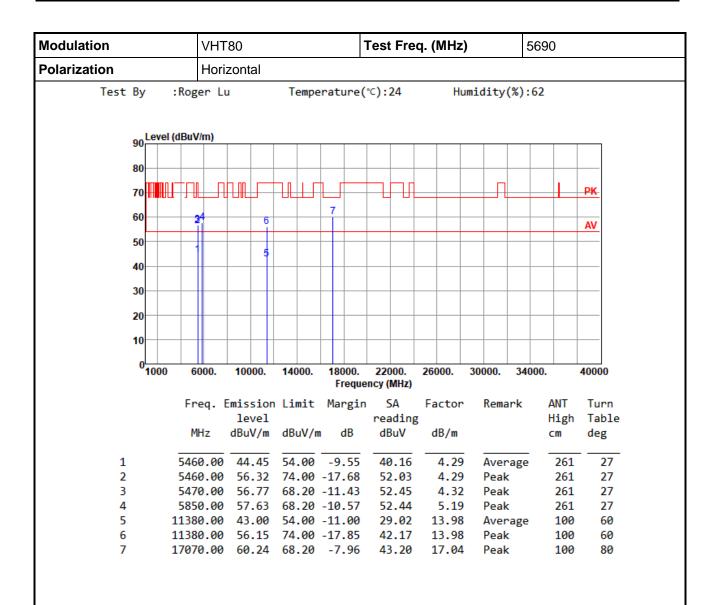
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR100103AN Page: 156 of 163

Report Version: Rev. 02





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

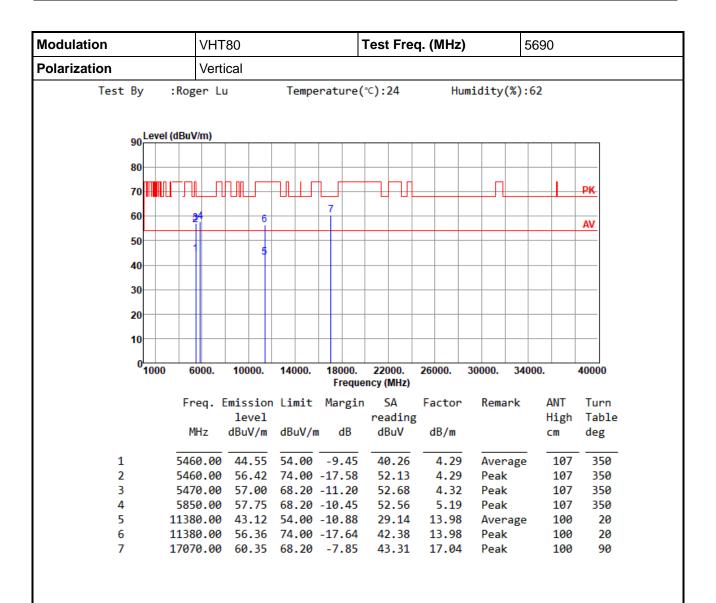
Report No.: FR100103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 157 of 163





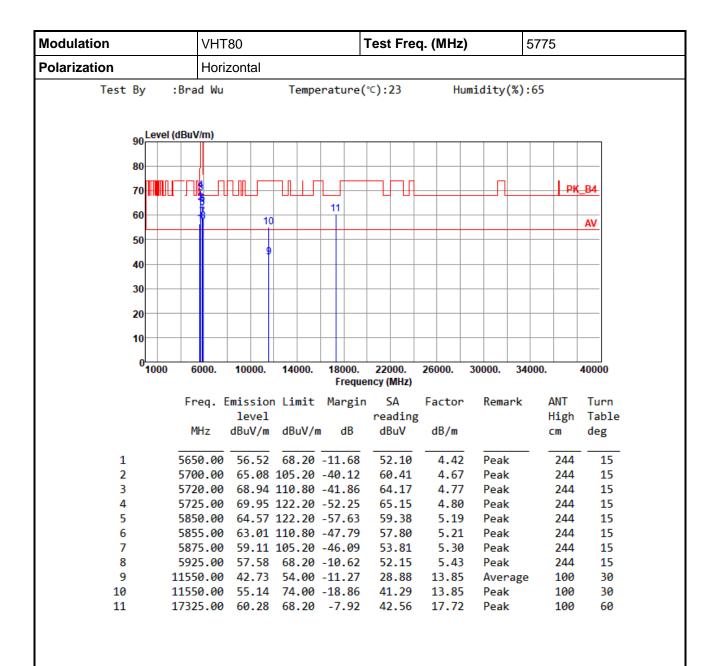
*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR100103AN Page: 158 of 163

Report Version: Rev. 02





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

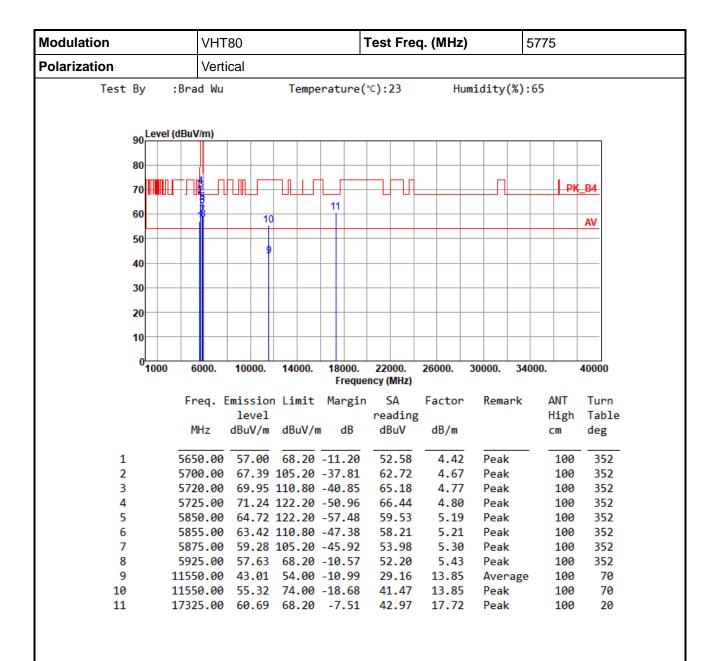
Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 159 of 163





*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR1O0103AN

Report Version: Rev. 02

The previous version of the test report has been cancelled and replaced by new version.

Page: 160 of 163



3.6 Frequency Stability

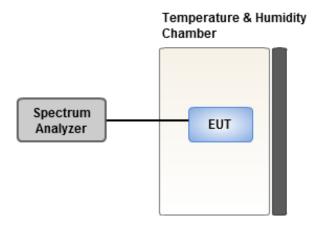
3.6.1 Limit of Frequency Stability

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

3.6.2 Test Procedures

- 1. The EUT is installed in an environment test chamber with external power source.
- Set the chamber to operate at 20 centigrade and external power source to output at nominal voltage of EUT.
- 3. A sufficient stabilization period at each temperature is used prior to each frequency measurement.
- 4. When temperature is stabled, measure the frequency stability.
- 5. The test shall be performed under normal and extreme condition for temperature and voltage.

3.6.3 Test Setup



Report No.: FR100103AN Page: 161 of 163



3.6.4 Test Result of Frequency Stability

Ambient Condition	18-20°C / 63-65%	Tested By	Aska Huang
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Frequency: 5320 MHz	Frequency Drift (ppm)				
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes	
T20°CVmax	0.84	0.54	1.00	0.58	
T20°CVmin	1.61	0.75	1.40	1.12	
T50CVnom	-4.39	-3.78	-4.14	-3.49	
T40°CVnom	-1.14	-1.48	-1.46	-1.81	
T30°CVnom	0.61	1.43	0.69	1.22	
T20°CVnom	0.60	1.64	1.50	1.75	
T10°CVnom	1.36	1.92	1.48	1.79	
T0°CVnom	0.82	1.37	1.10	1.49	
T-10°CVnom	1.33	2.25	1.36	1.63	
T-20°CVnom	1.73	2.06	1.50	1.55	
T-30°CVnom	1.89	1.78	2.25	2.24	
Vnom [V]: 120		Vmax [V]: 138		Vmin [V]: 102	
Tnom [°C]: 20		Tmax [°C]: 50		Tmin [°C]: -30	

Frequency: 5785 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°CVmax	0.81	0.77	0.93	1.38
T20°CVmin	1.34	1.35	1.59	1.82
T50CVnom	-4.39	-4.40	-3.87	-4.18
T40°CVnom	-0.71	-0.93	-0.86	-0.75
T30°CVnom	0.56	0.62	0.60	0.30
T20°CVnom	0.68	0.97	1.14	1.04
T10°CVnom	1.52	1.59	1.94	2.27
T0°CVnom	0.32	0.10	0.66	0.36
T-10°CVnom	1.63	1.79	1.53	2.10
T-20°CVnom	1.70	1.70	1.89	2.13
T-30°CVnom	1.74	2.23	1.87	1.49
Vnom [V]: 120		Vmax [V]: 138		Vmin [V]: 102
Tnom [°C]: 20		Tmax [°C]: 50		Tmin [°C]: -30

Report No.: FR100103AN Page: 162 of 163

Report Version: Rev. 02



4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corporation (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website http://www.icertifi.com.tw.

Linkou

Tel: 886-2-2601-1640 No.30-2, Ding Fwu Tsuen, Lin Kou District, New Taipei City, Taiwan

(R.O.C.)

Kwei Shan

Tel: 886-3-271-8666

No.3-1, Lane 6, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.) No.2-1, Lane 6, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.)

Kwei Shan Site II

Tel: 886-3-271-8640

No.14-1, Lane 19, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 333, Taiwan (R.O.C.)

If you have any suggestion, please feel free to contact us as below information.

Tel: 886-3-271-8666 Fax: 886-3-318-0345

Email: ICC_Service@icertifi.com.tw



Report No.: FR1O0103AN Page: 163 of 163

Report Version: Rev. 02