Test Report for FCC & ISED

Report Number		ESTRGC2310-003		
Applicant	Company name	DAVOLINK Inc.		
	Address	112, Beolmal-ro, Dongan-gu, Anyang-si, Gyeonggi-do, Republic of Korea		
	Telephone	+82-031-387-3240		
Product	Product name	Wireless Access Gateway		
	Model No.	DVW-642	Manufacturer	TONGWEILECTRONICS (VIETNAM) Co., Ltd
	Serial No.	NONE	Country of origin	VIETNAM
Test date	01-Aug-23 ~ 28-Sep-23		Date of issue	30-Oct-23
Testing location	140-16, Eongmalli-ro, Majang-myeon, Icheon-si, Gyeonggi-do, Rep. of Korea			
FCC ID	RZEDVW-642			
ISED ID	8081A-DVW642			
FCC Rule Part(s)	FCC Part 15 Subpart E 15.247,15.407,15.207, 15.205 & 15.209			
ISED Rule Part(s)	RSS 247 Issue 2 and RSS GEN Issue 5			
Test result				Complied
Measurement facility registration number	FCC:659627			
Measurement facility registration number	ISE:4475A			
Tested by	Engineer H.G. Lee			(Signature)
Reviewed by	Engineering Manager I.K. Hong			(Signature)
Abbreviation	OK, Pass = Complied, Fail = Failed, N/A = not applicable			

* Note
- This test report is not permitted to copy partly without our permission
- This test result is dependent on only equipment to be used
- This test report is not related to KOLAS accreditation
- This product is tested in a single channel at the request of the company.
- This is the reissue report due to the change of the applicant

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1. Laboratory Information

1.1 General

This EUT (Equipment Under Test) has been shown to be capable of compliance with the applicable technical standards and is tested in accordance with the measurement procedures as indicated in this report.ESTECH Lab attests to accuracy of test data. All measurement reported herein were performed by ESTECH Co., Ltd.
ESTECH Lab assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

1.2 Test Lab.

Corporation Name : ESTECH Co., Ltd.

Head Office : Suite 1015 World Meridian II, 123 Gasan Digital 2-ro, Geumcheon-gu, Seoul 153-759, R. O. Korea

EMC/Telecom/Safety Test Lab : 140-16, Eongmalli-ro, Majang-myeon, Icheon-si, Gyeonggi-do, Rep. of Korea

1.3 Official Qualification(s)

MSIP : Granted Accreditation from Ministry of Information & Communication for EMC, Safety and Telecommunication

KOLAS : Accredited Lab By Korea Laboratory Accreditation Schema base on CENELEC

FCC : Filed Laboratory at Federal Communications Commission

VCCI : Granted Accreditation from Voluntary Control Council for Interference from ITE

ISED : Accredited Lab By Canada Laboratory Accreditation

2. Description of EUT

2.1 Summary of Equipment Under Test

Product : Wireless Access Gateway

Model Number : DVW-642

Serial Number : NONE

Manufacturer : TONGWEI ELECTRONICS (VIETNAM) Co., Ltd

No. of Channels: (Refer Table 2)

Supply Voltage to Product : DC 12.0 V

Power Rating : INPUT: AC(100 - 240) V, (50-60)Hz, 0.75 A Max

OUTPUT: DC12.0 V, 2.0 A

Receipt Date : 2023-Jun-19

X-tal list(s) or Frequencies generated : The highest operating frequency is 5 825 MHz(Wifi-5G)

WLAN : 5 GHz

2.2 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT.
This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Uncertainty	
Parameter	Uncertainty
Occupied Channel Bandwidth	±143.88 kHz
Power Spectral Density	±0.743dB
Conducted Spurious Emission	±1.328dB
RF power conducted	±0.384dB
Conducted emission(9kHz~30MHz) AC main	±2.72dB
Radiated emission(9kHz~30MHz)	±2.66dB
Radiated emission (30MHz ~ 1GHz)	±4.62dB
Radiated emission (1GHz ~ 18GHz)	±4.86dB
Radiated emission (18GHz ~ 40GHz)	±3.80dB

3. Test Standards

Test Standard : FCC PART 15 Subpart C 15.247, 15.247,15.407,15.207, 15.205 & 15.209
This Standard sets out the regulations under which an intentional, unintentional, or incidental radiator may be operated without an individual license. It also contains the technical specifications, administrative requirements and other conditions relating to the marketing of Part 15 devices.

47 CFR FCC Part 15, Subpart E
KDB 662911 D01 Multiple Transmitter Output v02r01
KDB 789033 D02 General UNII Test Procedures New Rules v02r01

Test Standard : RSS-247and RSS GEN
RSS-Gen must be used in conjunction with other RSSs, as applicable to the specific type of radio apparatus, for assessing its compliance with ISED requirements.

Test Method : ANSI C 63.10 (2013)
This standard sets forth uniform methods of measurement of radio-frequency (RF) signals and noise emitted from both unintentional and intentional emitters of RF energy in the frequency range 9 kHz to 40 GHz. Methods for the measurement of radiated and AC power-line conducted radio noise are covered and may be applied to any such equipment unless otherwise specified by individual equipment requirements. These methods cover measurement of certain decides that deliberately radiate energy, such as intentional emitters, but does not cover licensed transmitters. This standard is not intended for certification/approval of avionic equipment or for industrial, scientific, and medical (ISM) equipment These method apply to the measurement of individual units or systems comprised of multiple units

3.1 Summary of Test Results

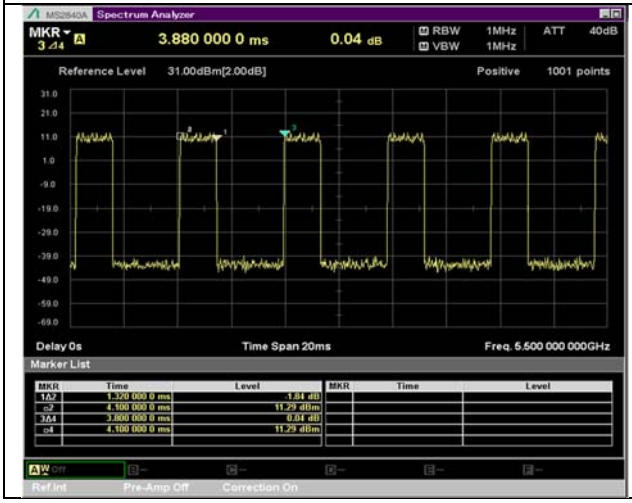
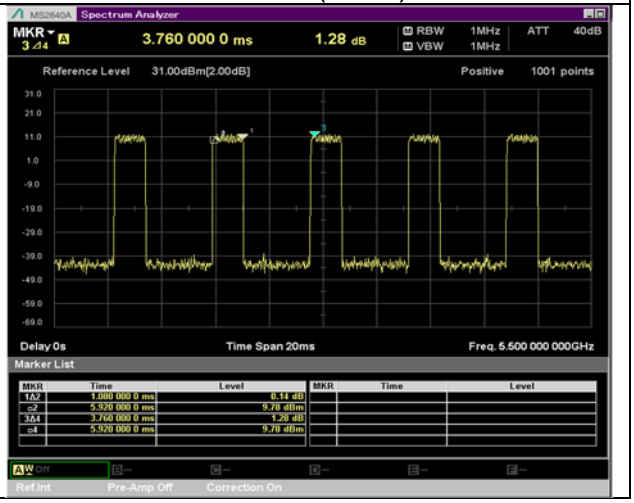
Test Description	FCC Part Section(s)	ISED Part Section(s)	Test Result
Emission Bandwidth	15.407 (a) & (e)	RSS Gen Issue 5 Section 6.7 RSS 247 Issue 2 Section 6.2.4.1	Pass
Frequency Stability	15.407 (g)	RSS Gen Issue 5 Section 8.11	Pass
Maximum Average conducted output power	15.407 (a)	RSS 247 Issue 2 Section 6.2.1; 6.2.2; 6.2.3; & Section 6.2.4	Pass
Maximum Power spectral density	15.407 (a)	RSS 247 Issue 2 Section 6.2.1; 6.2.2; 6.2.3; & Section 6.2.4	Pass
Spurious Radiated Emissions & Restricted Bands of Operation	15.407 (b) / (15.205 &15.209)	RSS 247 Issue 2 Section 6.2.1; 6.2.2; 6.2.3; & Section 6.2.4 RSS Gen Issue 5 Section 8.9 & 8.10	Pass
Power Spectral Density	15.407(a)	RSS 247 Issue 2 Section 6.2.1; 6.2.2; 6.2.3; & Section 6.2.4	Pass
Conducted AC Power Lines	15.207 15.407(b)	RSS Gen Issue 5 Section 8.8	Pass

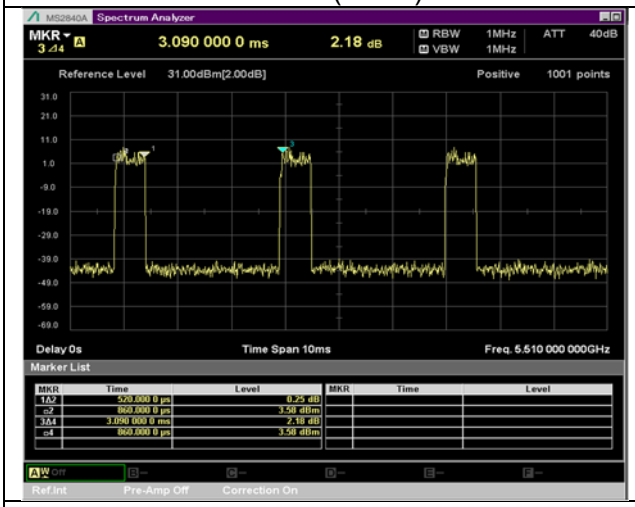
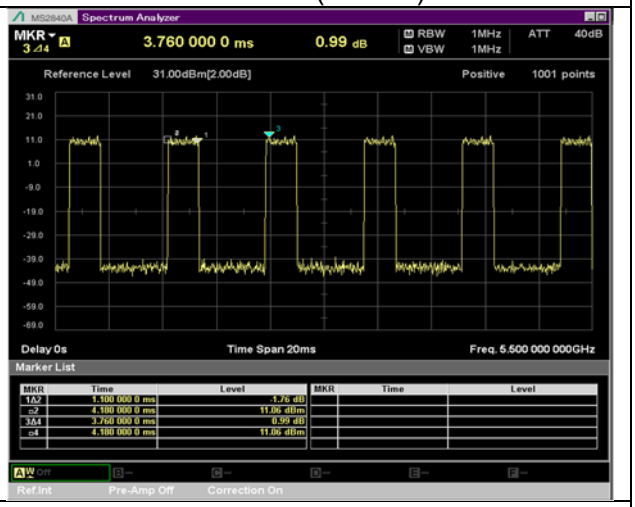
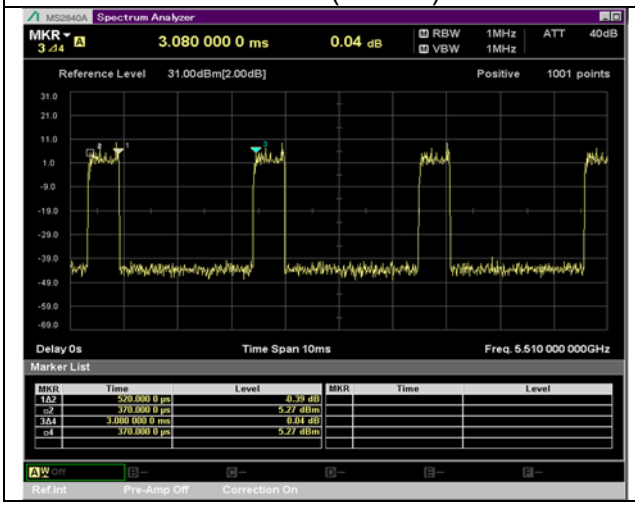
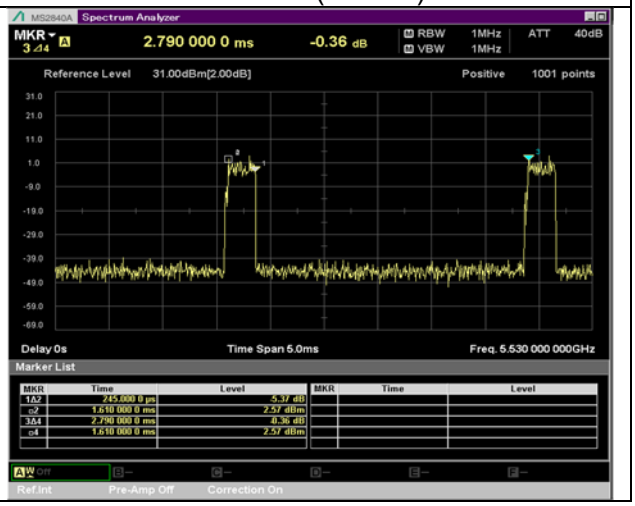
3.2 Duty Cycle of Test Signal

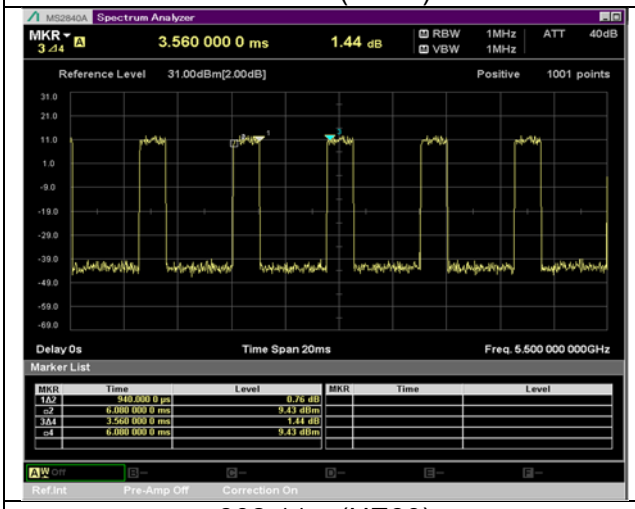
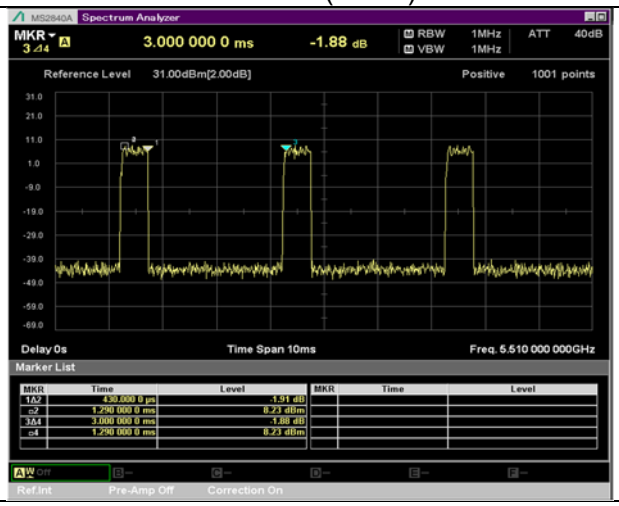
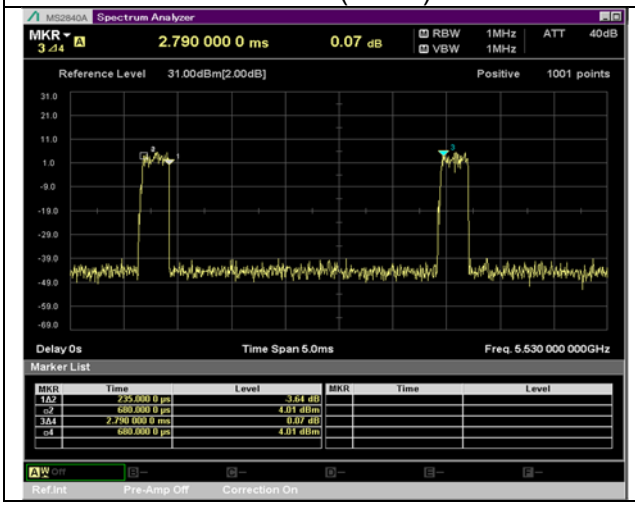
If duty cycle is ≥ 98 %, duty factor is not required.
If duty cycle is < 98 %, duty factor shall be considered.
All the duty factor of other test mode have been considered.

TestMode	Frequency [MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Duty Cycle Correction Factor(dB)
802.11a	5500	1.32	3.88	34.73	4.592
802.11n(HT20)	5500	1.08	3.76	28.72	5.417
802.11n(HT40)	5510	0.52	3.09	16.82	7.739
802.11ac(VHT20)	5500	1.10	3.76	29.25	5.337
802.11ac(VHT40)	5510	0.52	3.08	16.88	7.725
802.11ac(VHT80)	5530	0.25	2.79	10.47	10.476
802.11ax(HE20)	5500	0.94	3.56	26.4	5.783
802.11ax(HE40)	5510	0.43	3.00	14.33	8.436
802.11ax(HE80)	5530	0.24	2.79	8.42	10.745

Note: The Duty Cycle of different channels in the same mode is the same, and the above test channels are represented in the report.

Duty cycle plot	
802.11a	802.11n(HT20)
	

Duty cycle plot	
802.11n(HT40)	802.11ac(VHT20)
	
802.11ac(VHT40)	802.11ac(VHT80)
	

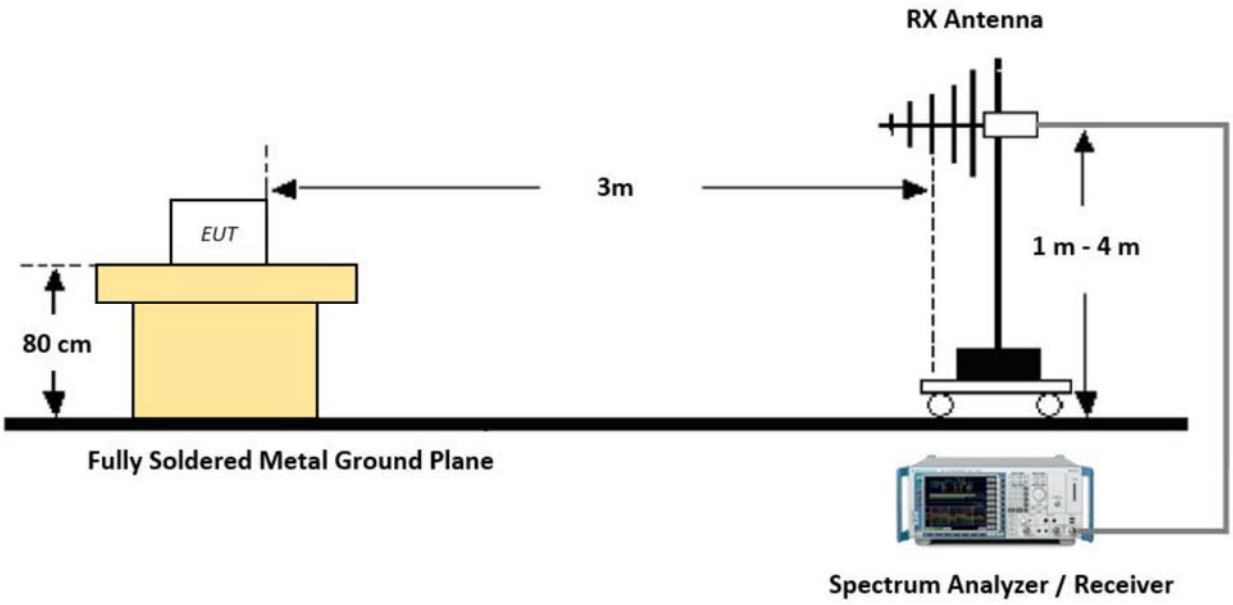
Duty cycle plot	
802.11ax(HE20)	802.11ax(HE40)
	
802.11ax(HE80)	
	

3.3 Antenna gain

Frequency (MHz)	ANT GAIN(dBi)	
UNII-1 5150 ~ 5350	ANT0	6.61
	ANT1	6.43
UNII-2C 5470 ~ 5725	ANT0	6.26
	ANT1	5.74
UNII-3 5725 ~ 5850	ANT0	6.86
	ANT1	6.23

*Table 1

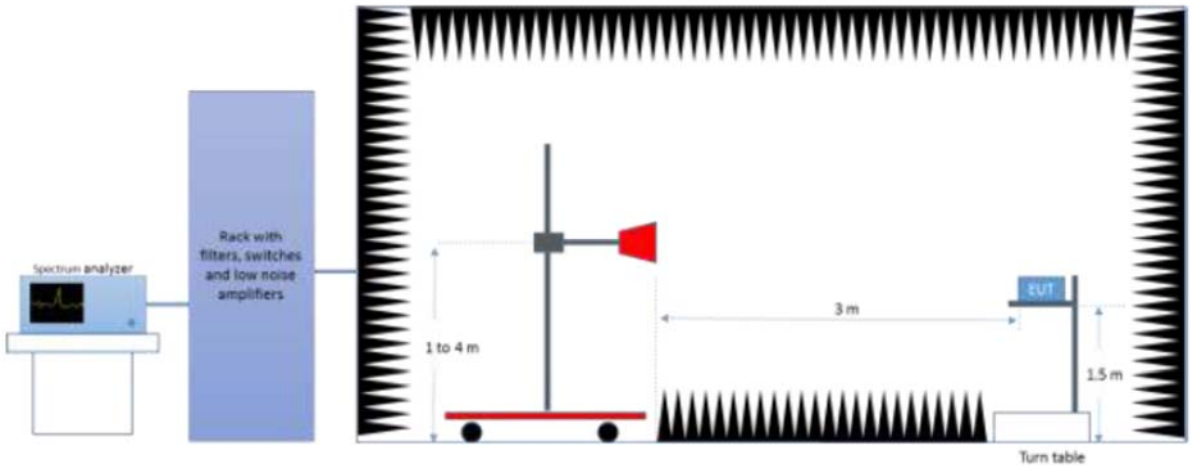
30 MHz - 1 GHz



Test Procedure of Radiated spurious emissions (Below 1GHz)

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The EUT is placed on a turntable, which is 0.8m above ground plane.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
4. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
5. Spectrum Setting
(1) Measurement Type (Peak):
▪ Measured Frequency Range: 30 MHz – 1 GHz
▪ Detector = Peak
▪ Trace = Max hold
▪ RBW = 100 kHz
▪ VBW ≥ 3*RBW
(2) Measurement Type(Quasi-peak):
▪ Measured Frequency Range: 30 MHz – 1 GHz
▪ Detector = Quasi-Peak
▪ RBW = 120 kHz
In general, the method (1) is mainly used
6. Total = Reading Value + Antenna Factor (A.F) + Cable Loss (C.L)

1 GHz – 40 GHz



Test Procedure of Radiated spurious emissions (Above 1GHz)

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The EUT is placed on a turntable, which is 0.8m above ground plane.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
4. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
5. Spectrum Setting

(1) Measurement Type (Peak):
- Measured Frequency Range: 1 GHz – 40 GHz
- Detector = Peak
- Trace = Max hold
- RBW = 1 MHz
- VBW ≥ 3*RBW

(2) Measurement Type(Average):
- Measured Frequency Range: 1 GHz – 40 GHz
- Detector = average or rms
- RBW = 1 MHz

In general, the method (1) is mainly used

6. Total = Reading Value + Antenna Factor (A.F) + Cable Loss (C.L)

4. TEST SET-UP AND OPERATION MODE

4.1 Operation and Software of the EUT

Soft ware Version:1627
Hard ware Version: V0.4

4.2 Simultaneous Transmission

This product doesn't supports Simultaneous operation

4.3 List of frequencies

UNII-1			
Frequency Band (MHz)	Channel No.	Channel No.	Channel No.
802.11a	5180	5200	5240
802.11n(HT20)	5180	5200	5240
802.11ac(VHT20)	5180	5200	5240
802.11ax(HE20)	5180	5200	5240
802.11n(HT40)	5190	5230	
802.11ac(VHT40)	5190	5230	
802.11ax(HE40)	5190	5230	
802.11ac(VHT80)	5210		
802.11ax(HE80)	5210		
UNII-2A			
Frequency Band (MHz)	Channel No.	Channel No.	Channel No.
802.11a	5260	5280	5320
802.11n(HT20)	5260	5280	5320
802.11ac(VHT20)	5260	5280	5320
802.11ax(HE20)	5260	5280	5320
802.11n(HT40)	5270	5310	
802.11ac(VHT40)	5270	5310	
802.11ax(HE40)	5270	5310	
802.11ac(VHT80)	5290		
802.11ax(HE80)	5290		
UNII-2C			
Frequency Band (MHz)	Channel No.	Channel No.	Channel No.
802.11a	5500	5580	5700
802.11n(HT20)	5500	5580	5700
802.11ac(VHT20)	5500	5580	5700
802.11ax(HE20)	5500	5580	5700
802.11n(HT40)	5510	5550	5670
802.11ac(VHT40)	5510	5550	5670
802.11ax(HE40)	5510	5550	5670
802.11ac(VHT80)	5530	5690	
802.11ax(HE80)	5530	5690	
UNII-3			
Frequency Band (MHz)	Channel No.	Channel No.	Channel No.
802.11a	5745	5785	5825
802.11n(HT20)	5745	5785	5825

802.11ac(VHT20)	5745	5785	5825
802.11ax(HE20)	5745	5785	5825
802.11n(HT40)	5755	5795	
802.11ac(VHT40)	5755	5795	
802.11ax(HE40)	5755	5795	
802.11ac(VHT80)	5775		
802.11ax(HE80)	5775		

Table2 : List of Wi-Fi center Frequencies

11n(HT20) and11ac(VHT20) mode have the same modulation, and the 11ac(VHT20) mode power setting is not greater than 11n(HT20), so the test of 11ac(VHT20) mode is covered by 11n(HT20).
11n(HT40) and11ac(VHT40) mode have the same modulation, and 11ac(VHT40) mode power setting is not greater than 11n(HT40), so the test of 11ac(VHT40) mode is covered by 11n(HT40).
The EUT supports non-beamforming and beamforming modes, both modes have the same power setting, after evaluating, the beamforming mode has been evaluated to be the worst case, so it was selected to test.

4.4 Measurement equipments (Conducted Setup)

Description	Model	Serial Number	Cal. Date	Cal. Due Date
Spectrum Analyzer	E440A	US42041291	28-Nov-22	28-Nov-23
Spectrum Analyzer	FSV40	100939	28-Nov-22	28-Nov-23
Power meter	N1912A	MY45100570	28-Nov-22	28-Nov-23
Power sensor	A1921A	MY45240427	28-Nov-22	28-Nov-23
RF Cable	Length: 100 cm	-		
-Spectrum Analyzer <=> EUT	Loss: 1 dB	-		

4.5 Measurement equipments(Radiated setup)

Equipment Name	Type	Manufacturer	Serial No.	Cal. Date	Cal. Due Date
TEST Receiver	ESCI7	ROHDE & SCHWARZ	100916	12-Jun-23	12-Jun-24
LOOP Antenna	HFH2-Z2	ROHDE & SCHWARZ	100188	29-Aug-22	29-Aug-24
Logbicon Antenna	VULB 9168	SCHWARZBECK	193	09-Dec-21	09-Dec-23
Turn Table	DT3000-2t	Innco System GmbH	N/A	-	-
Antenna Mast	MA4000-EP	Innco System GmbH	N/A	-	-
PREAMPLIFIER	8449B	HP	3008A00581	12-Jun-23	12-Jun-24
Horn Antenna	LB-42-15-C-SF	A-INFOMF	J2020079000055	11-Nov-22	11-Nov-23
Horn Antenna	BBHA9120D	SCHWARZBECK	469	08-Nov-22	08-Nov-23
TEST Receiver	ESU	ROHDE & SCHWARZ	100529	12-Jun-23	12-Jun-24
Turn Table	DT1500-S	Innco System GmbH	N/A	-	-
Antenna Mast	MA4000-EP	Innco System GmbH	N/A	-	-
Antenna Master & Turn table controller	CO2000-P	Innco System GmbH	CO2000/642 /28051111/L	-	-

4.6 Conducted Spurious Emission on AC Power lines Measurement equipments

Equipment Name	**Type**	**Manufacturer**	**Serial No.**	Cal. Date	Cal. Due Date
TEST Receiver	ESHS 30	Rohde & Schwarz	828765/002	28-Jun-23	28-Jun-24
LISN	ESH2-Z5	Rohde & Schwarz	836679/025	28-Jun-23	28-Jun-24
Pulse Limiter	ESH3-Z2	Rohde & Schwarz	NONE	28-Jun-23	28-Jun-24

5. OPERATIONAL DESCRIPTION

Vscan Air SL is a handheld, pocket sized, battery powered general purpose diagnostic ultrasound system. The system consists of a probe with two heads. One for deep scanning (Sector) and another one for shallow scanning (Linear). The probe can be paired with a mobile device through WiFi, to see the ultrasound image. Mobile device needs an app (available in iOS & android) to enable pairing and ultrasound imaging. The internal battery operation is designed for providing approximately one hour of active scanning capacity with a fully charged battery. The probe supports Qi wireless charging to charge the battery. Probe will automatically turn off during charging.

6. TEST METHODOLOGY

6.1 Conducted Spurious Emission Test on AC Power Line

Measured levels of ac power-line conducted emission across the 50Ω LISN port (to which the EUT Is connected). All emission voltage and current measurements shall be made on each current-carrying conductor at the plug end of the EUT power cord by the use of mating plugs and receptacles on the LISN, if used. Equipment shall be tested with power cords that are normally supplied or recommended by the manufacturer and that have electrical and shielding characteristics that are the same as those cords normally supplied or recommended by the manufacturer. The device is placed on the test table, raised 80cm above the referance ground plane. The vertical conducting plane is located 40cm to the rear of the device. AC Conducted emission measurement is made over frequency range from 150kHz to 30MHz, this measurement was performed with EUT powered by 2 methods and both method are tested individually, one with an AC adaptor with 120V AC 60Hz supply and second with Wireless charger with supply 120V AC 60Hz.

6.2 Radiated Emission Test

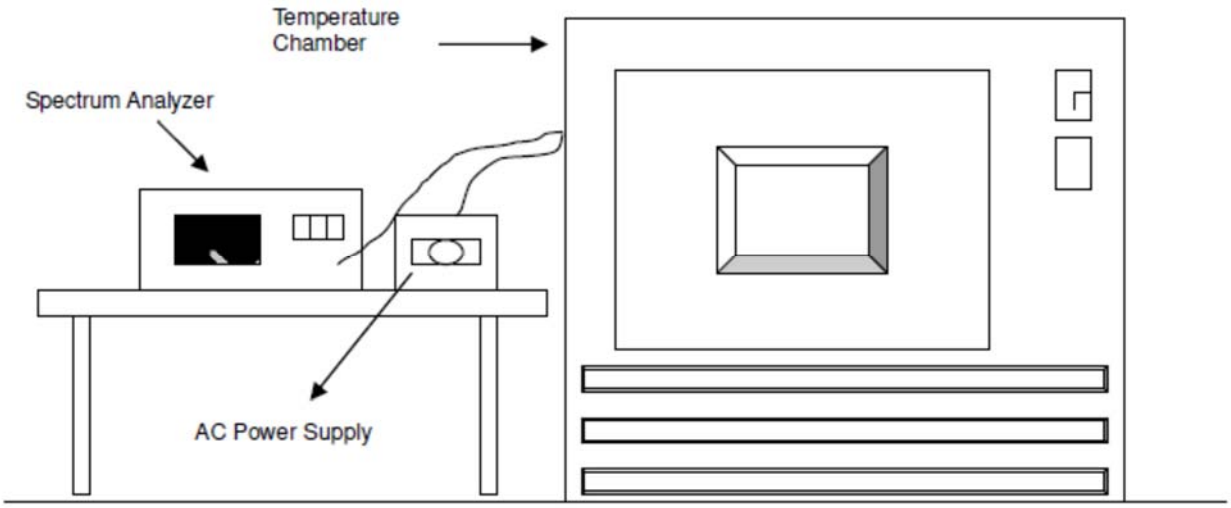
The radiated emission measurement was performed according to the procedures in ANSI C63.10-2013. The equipment under test (EUT) was placed at the middle of the 80 cm high turntable for below 1 GHz & 1.5 m height for above 1 GHz measurement, and the EUT is 3 meters far from the measuring antenna. The turntable was rotated 360° for obtaining the maximum emission. The height of the measuring antennas was scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained. The measurement above 1000 MHz was performed by horn antenna, The measurement below 30 MHz was performed by loop antenna, Measurement from 30 MHz to 200 MHz was performed by Baloon and Biconical Antenna, and mesurement from 200 MHz to 1 GHz was performed by Log-Periodic Antenna. The EUT was rotated around the X-, Y-, and Z-Axis and the results from worst case axis are recorded

7 FREQUENCY STABILITY

7.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency of the carrier signal shall be maintained within band of operation.

7.2 TEST SETUP



TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

7.3 TEST PROCEDURE

a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.

b. Turn the EUT on and couple its output to a spectrum analyzer.

c. Turn the EUT off and set the chamber to the highest temperature specified.

d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.

e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.

f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

DEVIATION FROM TEST STANDARD

No deviation.

EUT OPERATING CONDITION

Set the EUT transmit at un-modulation mode to test frequency stability.

TEST RESULTS

FREQUEMCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5180MHz									
TEMP. (℃)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift	Measured Frequency (MHz)	Frequency Drift	Measured Frequency (MHz)	Frequency Drift	Measured Frequency (MHz)	Frequency Drift
50	12.0	5180.0062	0.00012	5180.0058	0.00011	5180.0032	0.00006	5180.0050	0.00010
40	12.0	5179.9771	-0.00044	5179.9787	-0.00041	5179.9790	-0.00041	5179.9780	-0.00042
30	12.0	5179.9993	-0.00001	5180.0031	0.00006	5180.0030	0.00006	5180.0012	0.00002
20	12.0	5179.9838	-0.00031	5179.9852	-0.00029	5179.9842	-0.00031	5179.9846	-0.00030
10	12.0	5179.9788	-0.00041	5179.9791	-0.00040	5179.9825	-0.00034	5179.9784	-0.00042
0	12.0	5180.0195	0.00038	5180.0215	0.00042	5180.0173	0.00033	5180.0187	0.00036
-10	12.0	5179.9933	-0.00013	5179.9929	-0.00014	5179.9923	-0.00015	5179.9956	-0.00008
-20	12.0	5180.0063	0.00012	5180.0046	0.00009	5180.0060	0.00012	5180.0045	0.00009
-30	12.0	5180.0002	0.00000	5180.0038	0.00007	5180.0023	0.00004	5180.0030	0.00006

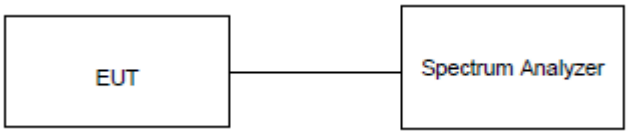
FREQUEMCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5180MHz									
TEMP. (℃)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift	Measured Frequency (MHz)	Frequency Drift	Measured Frequency (MHz)	Frequency Drift	Measured Frequency (MHz)	Frequency Drift
20	13.8	5179.9837	-0.00031	5179.9853	-0.00028	5179.9842	-0.00031	5179.9851	-0.00029
	12.0	5179.9838	-0.00031	5179.9852	-0.00029	5179.9842	-0.00031	5179.9846	-0.00030
	10.2	5179.9848	-0.00029	5179.9844	-0.00030	5179.9832	-0.00032	5179.9844	-0.00030

8. TEST RESULTS FOR Wi-Fi

8.1 Emission Bandwidth

Result	***Pass***
Test Specification	FCC part 15 Subpart C 15.407 (a) & (e) / RSS 247 Issue 2, Section 6.2.4.1 & RSS Gen Issue 5, Section 6.7
Test Method	Subclause 6.9.3 of ANSI C63.10
Measurement Bandwidth	Refer Test Method below
Detector	Refer Test Method below
Port of testing	Antenna port
Requirement	1. 99% emission band width measurement for reporting purpose only in the band 5150-5250 MHz, 5250-5350 MHz 5470-5725 MHz, 5725-5850 MHz 2. For equipment operating in the band 5725-5850 MHz, the minimum 6 dB bandwidth shall be at least 500 kHz

Test Method



The following procedure shall be used for measuring (99%) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency
2. Set span = 1.5 times to 5.0 times the OBW
3. Set RBW = 1% to 5% of the OBW
4. Set VBW ≥ 3 RBW
5. Use the 99% power bandwidth function of the instrument
6. Use sample detector with single sweep mode, or use Peak detector and Max Hold mode (until the trace is stabilized)

The following procedure shall be used for measuring 6dB or 26dB emission bandwidth:
1. Set center frequency to the nominal EUT channel center frequency
2. Set span = 1.5 times to 5.0 times the OBW
3. Set RBW = 1% to 5% of the OBW (for 26 dB BW) & 100 kHz (for 6dB BW)
4. Set VBW ≥ 3 RBW
5. Determine the “−xx dB down amplitude” using [(reference value) − xx]. Alternatively, this calculation may be made by using the marker-delta function of the instrument.

Note : All the steps in measurement method of KDB 789033 D02, ANSI C63.10 section 6.9.2 & 6.9.3, RSS GEN section 6.9 are followed

Test Condition

Normal Test Condition:

Temperature (Norm) = + 22.3 °C	Voltage =DC 12.0 V	Relative humidity: 54 %

KDB Guidelines applied:
Measurements were made as per section C & D in KDB 789033 D02 General UNII Test Procedures New Rules v02r01

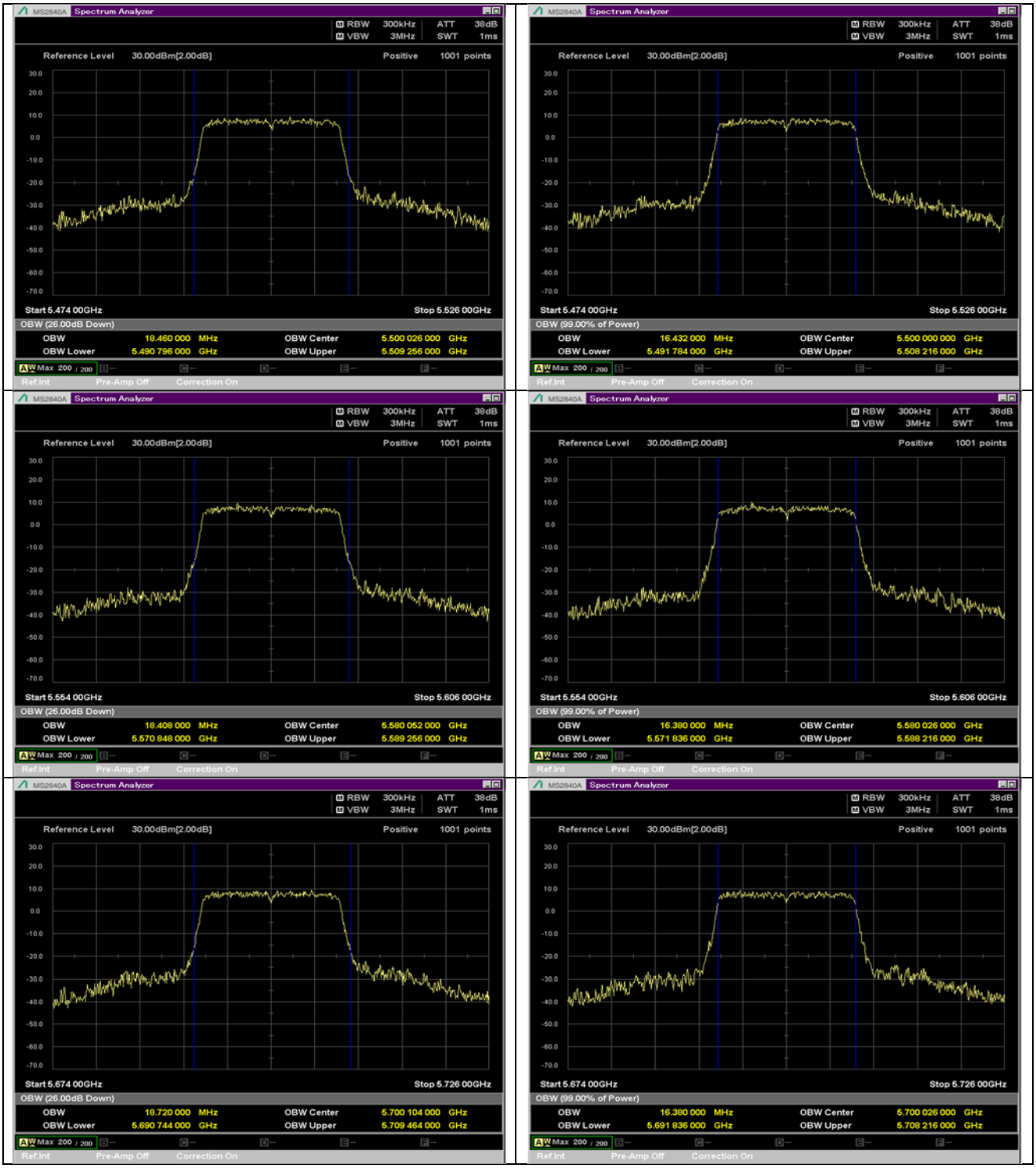
Test results:

Modulation: 802.11a

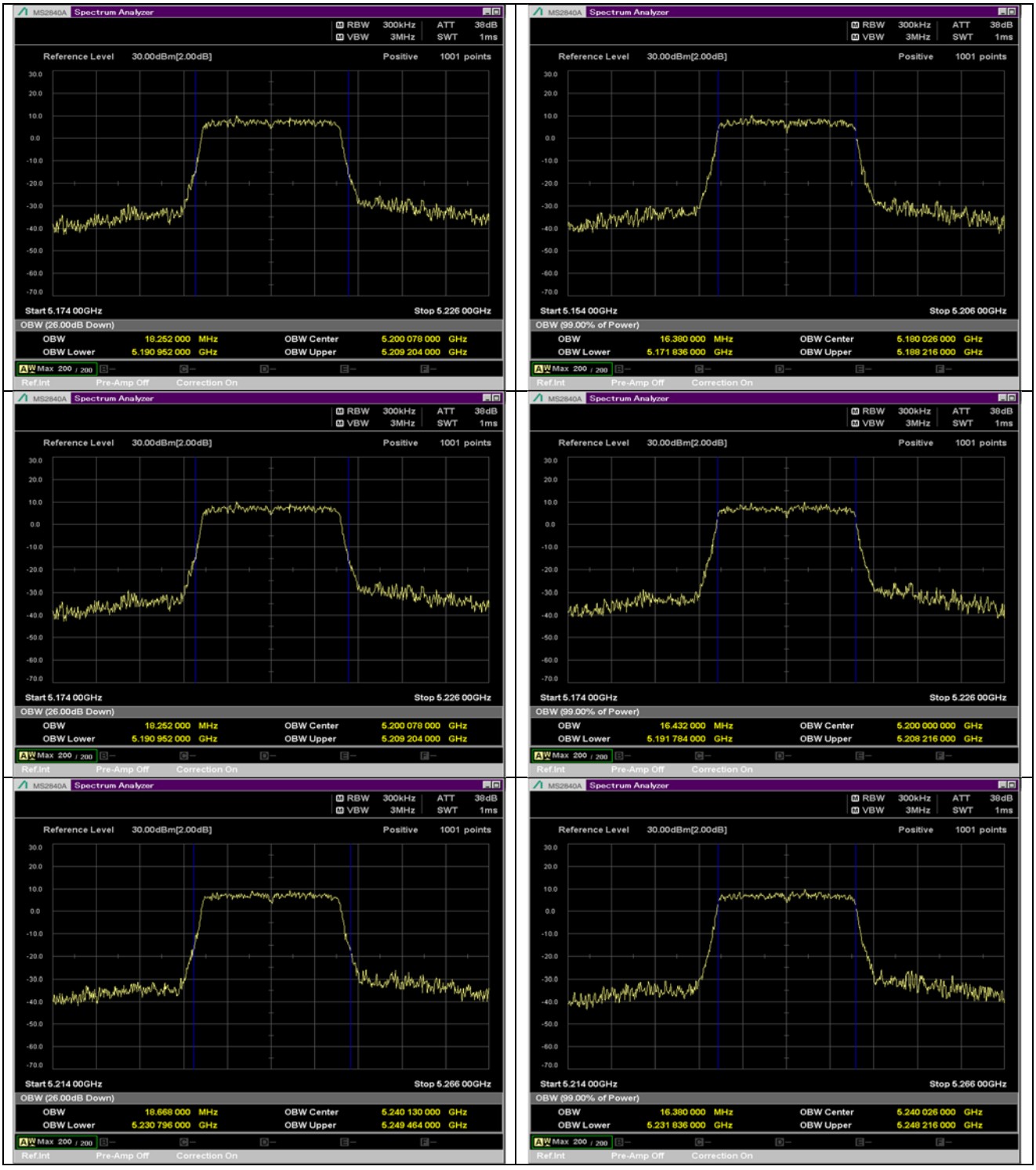
ANT0				ANT1	
Data rate	**Channel Frequency (MHz)**	**26 dB emission bandwidth (MHz)**	**99% Occupied Bandwidth (MHz)**	**26 dB emission bandwidth (MHz)**	**99% Occupied Bandwidth (MHz)**
6 Mbps	**5180**	**18.40**	**16.38**	**18.41**	**16.38**
	5200	**18.46**	**16.43**	**18.25**	**16.43**
	5240	**18.51**	**16.38**	**18.67**	**16.38**
	5260	**18.67**	**16.38**	**18.56**	**16.43**
	5280	**18.72**	**16.43**	**18.72**	**16.43**
	5320	**18.51**	**16.38**	**18.46**	**16.43**
	5500	**18.46**	**16.43**	**18.51**	**16.43**
	5580	**18.41**	**16.38**	**18.25**	**16.43**
	5700	**18.72**	**16.38**	**18.51**	**16.38**
	5745	**18.2**	**16.43**	**18.56**	**16.38**
	5785	**18.2**	**16.43**	**18.51**	**16.38**
	5825	**18.56**	**16.38**	**18.62**	**16.43**

ANT0				ANT1	
Data rate	**Channel Frequency (MHz)**	**6 dB emission bandwidth (MHz)**		**6 dB emission bandwidth (MHz)**	
6 Mbps	**5745**	**16.29**		**16.41**	
	5785	**16.39**		**16.29**	
	5825	**16.34**		**16.39**	

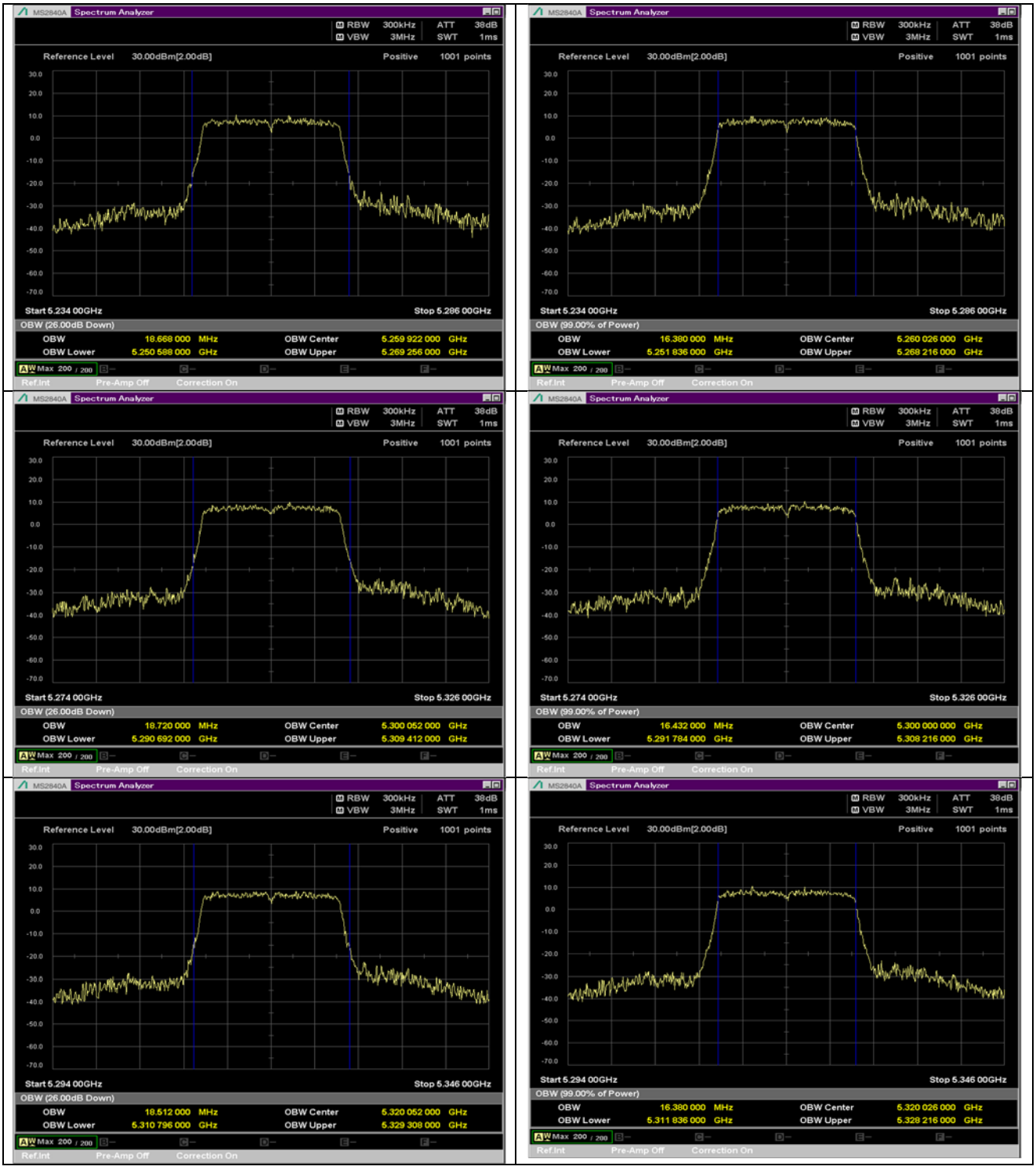
UNII-1_11a_5150MHz to 5250MHz ANT0



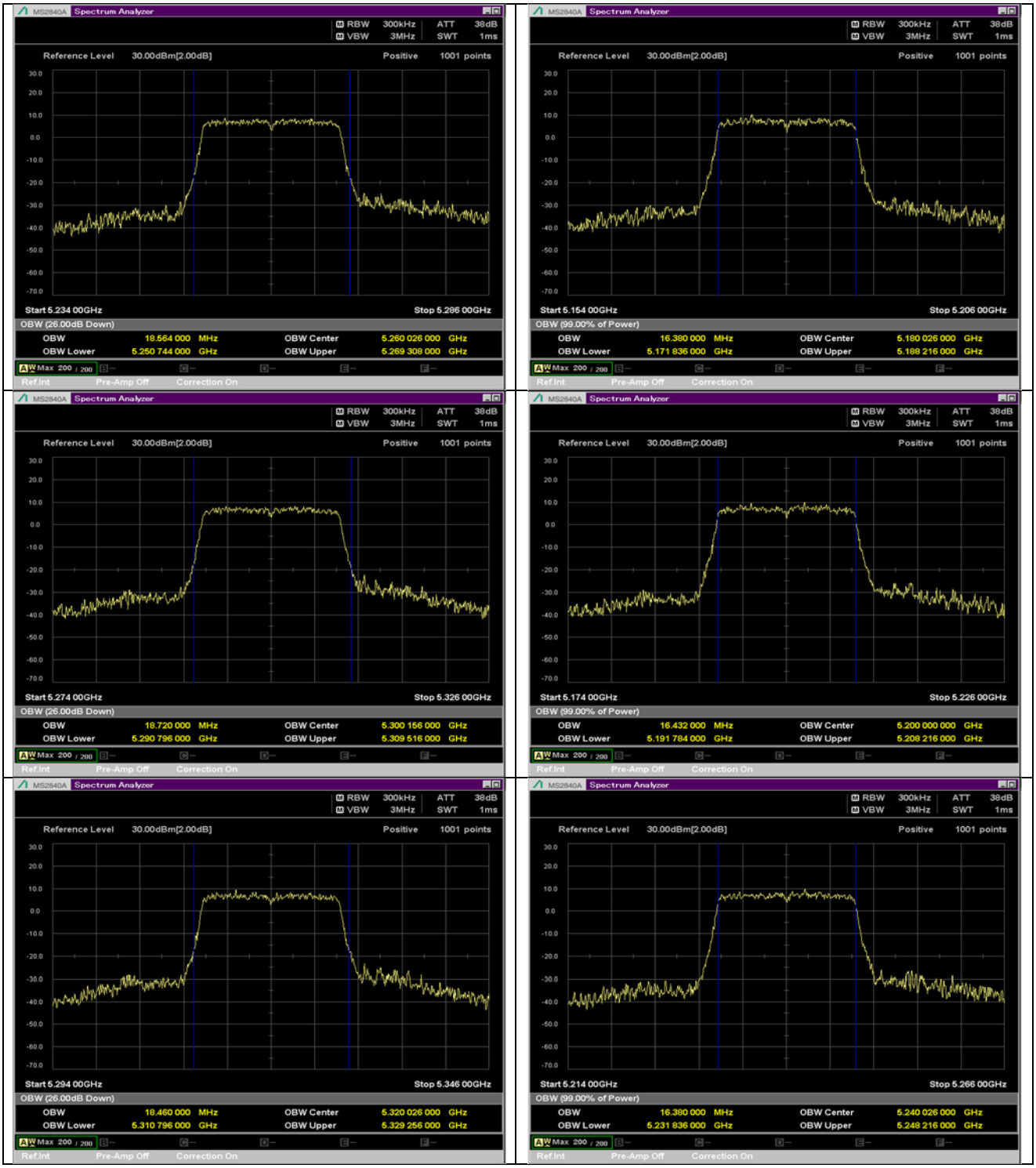
UNII-1_11a_5150MHz to 5250MHz ANT1



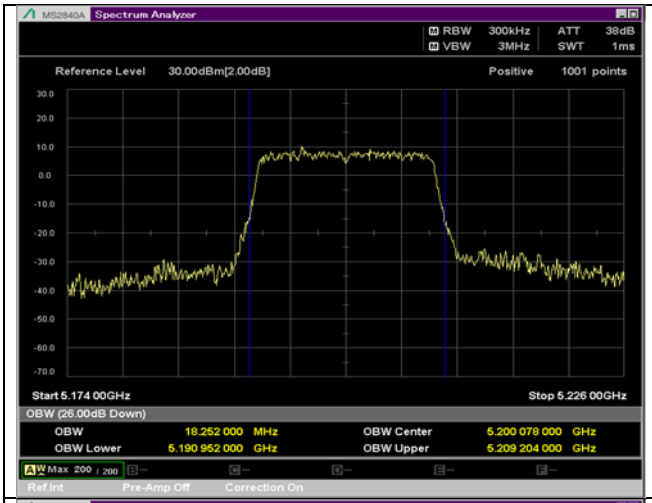
UNII-2A _11a_5250MHz to 5320MHz ANT0

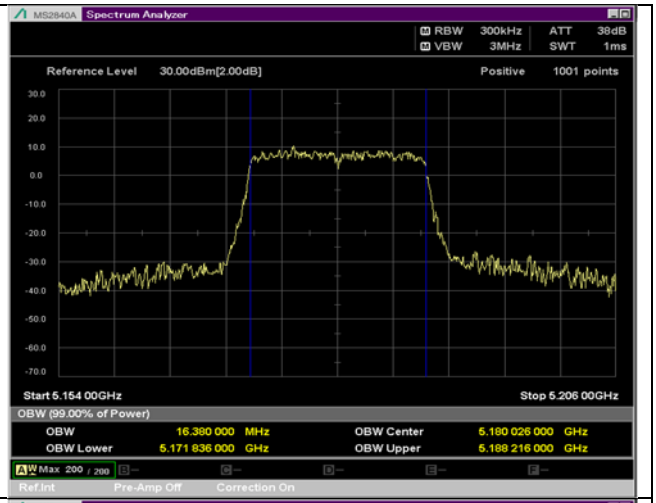


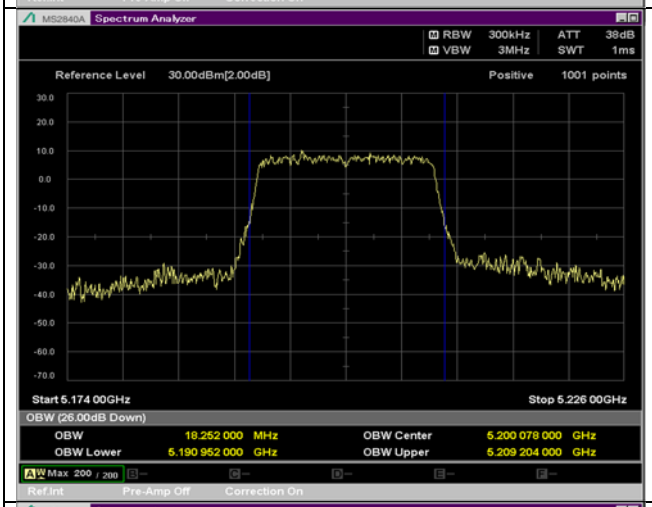
UNII-2A _11a_5250MHz to 5320MHz ANT1

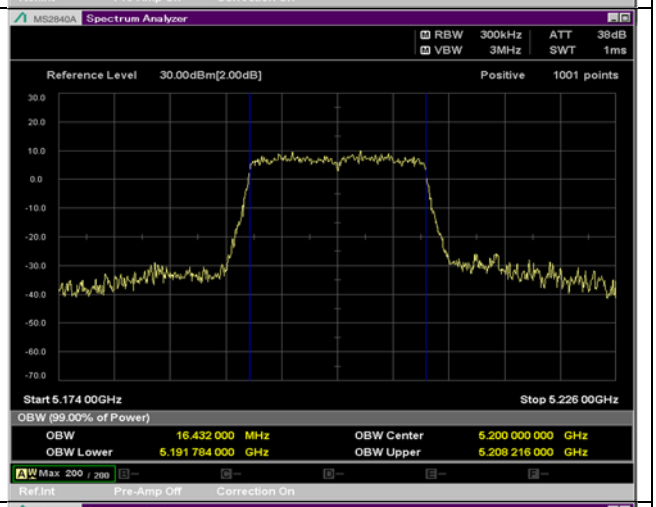


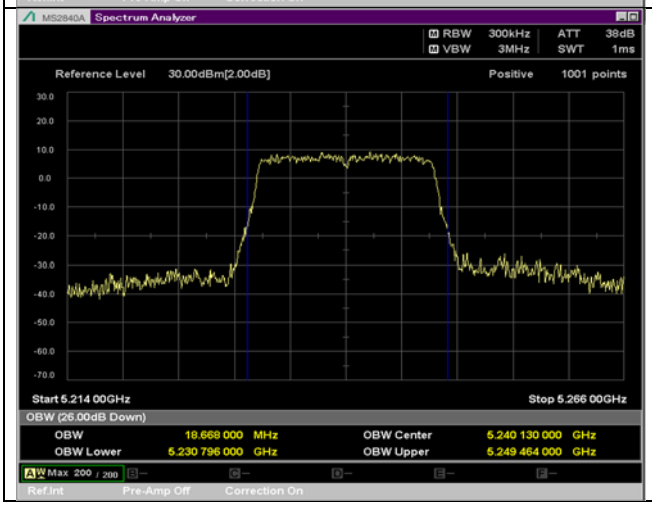
UNII-2C_11a_5470MHz to 5725MHz ANT0

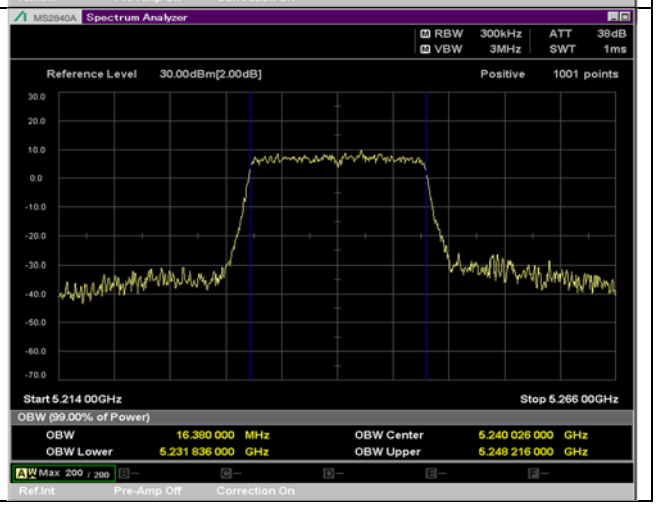




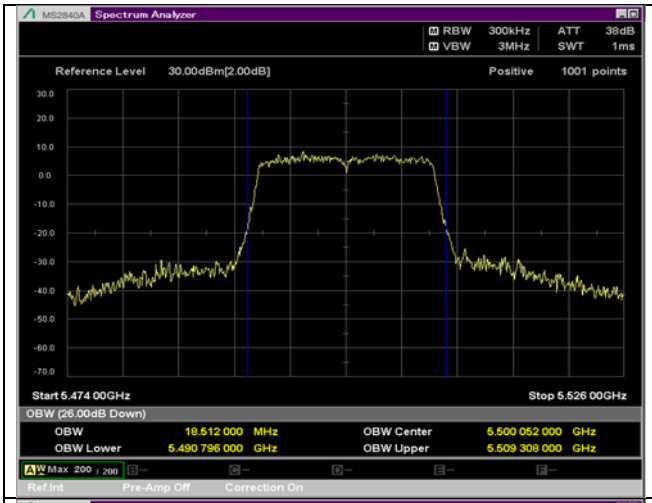


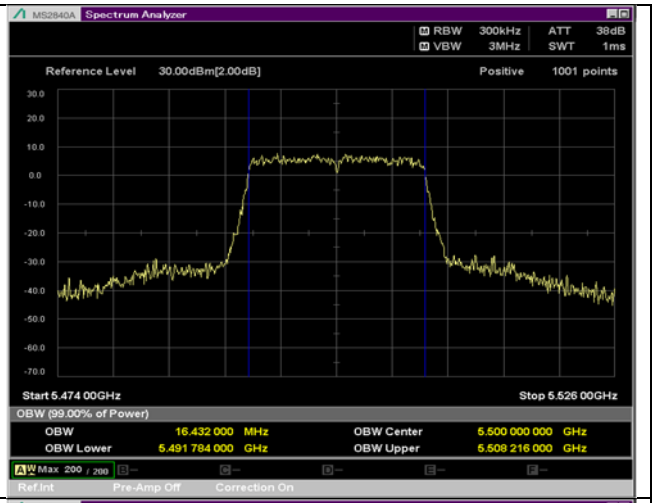


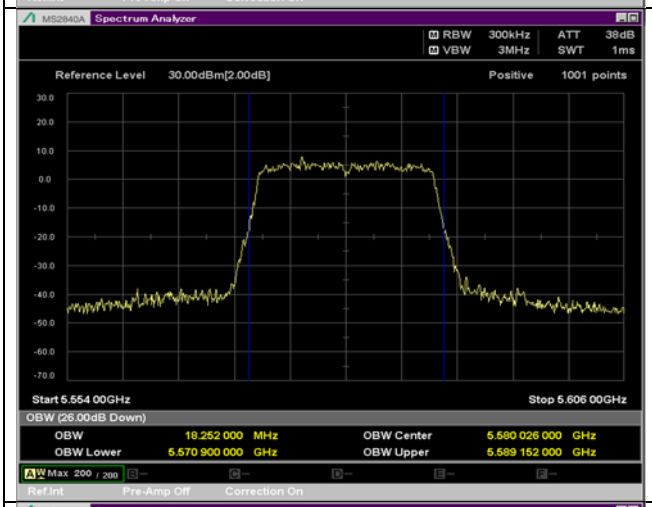


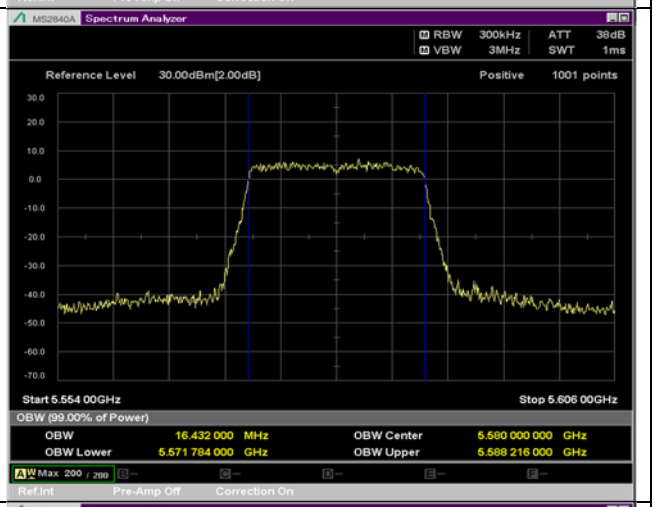


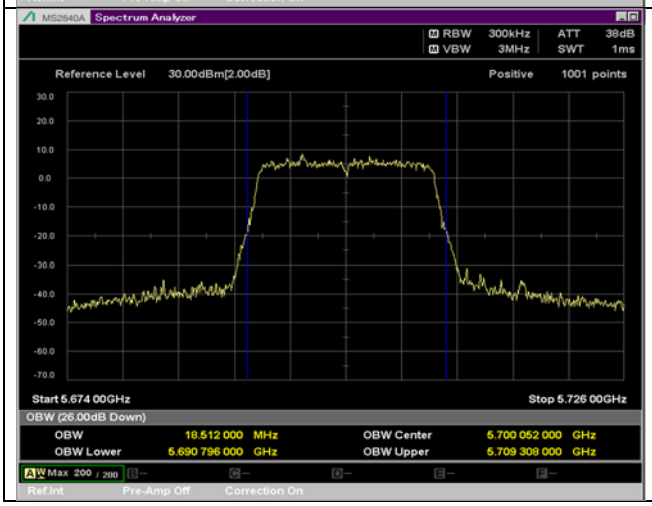
UNII-2C_11a_5470MHz to 5725MHz ANT1

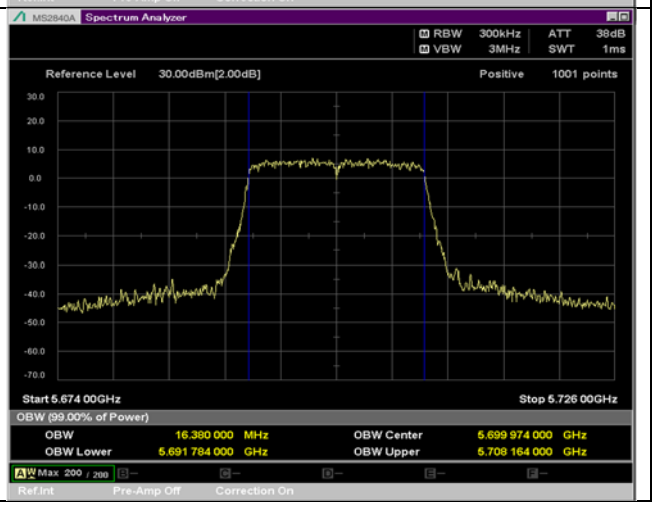




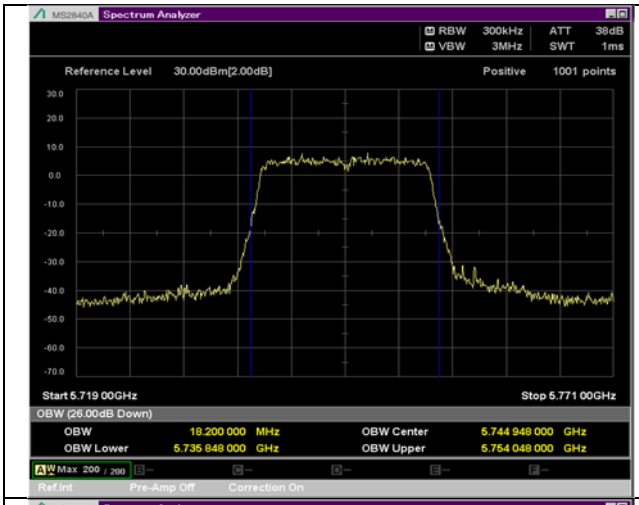


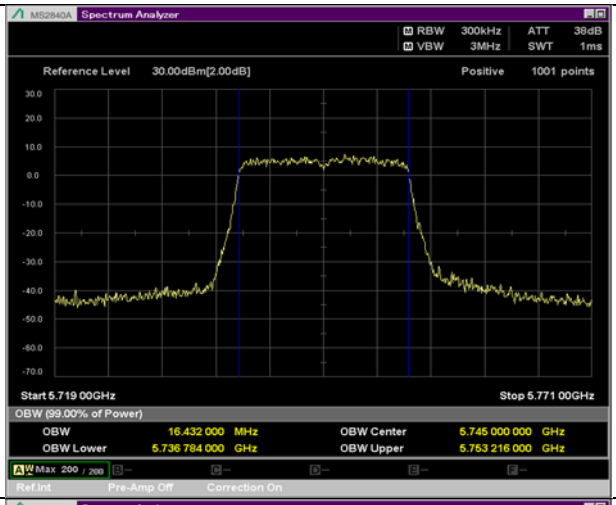


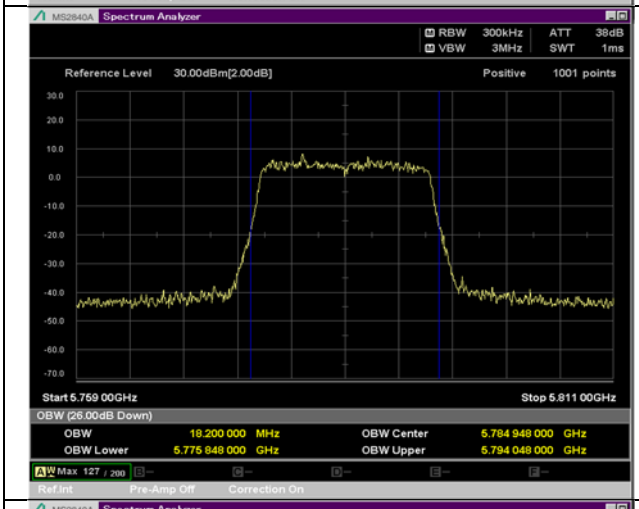


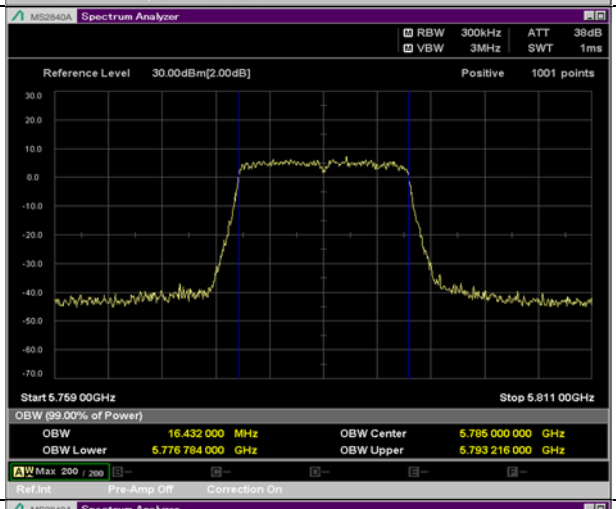


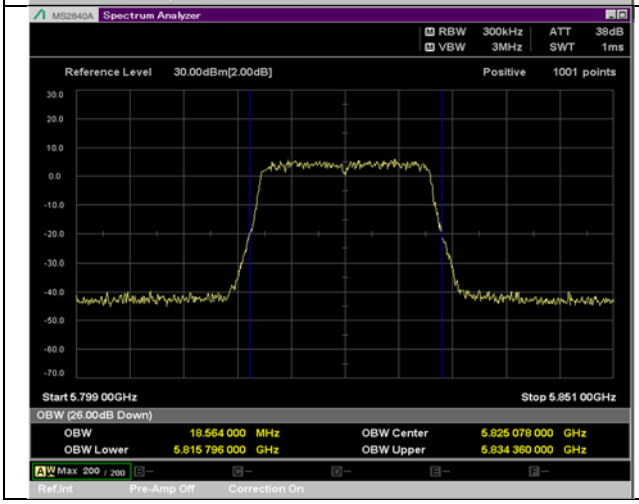
UNII-3_11a_5725MHz to 5825MHz ANT0

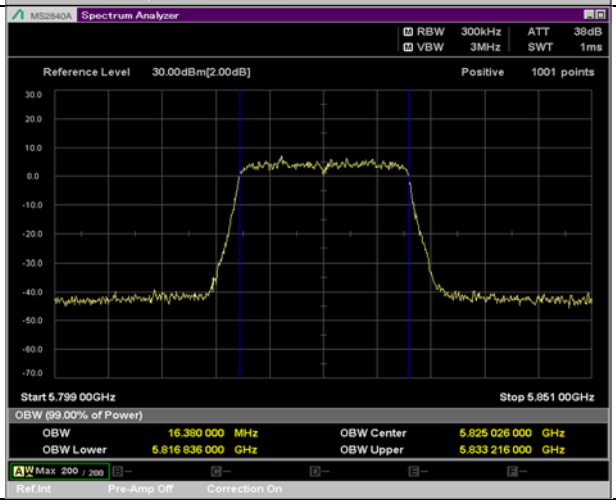




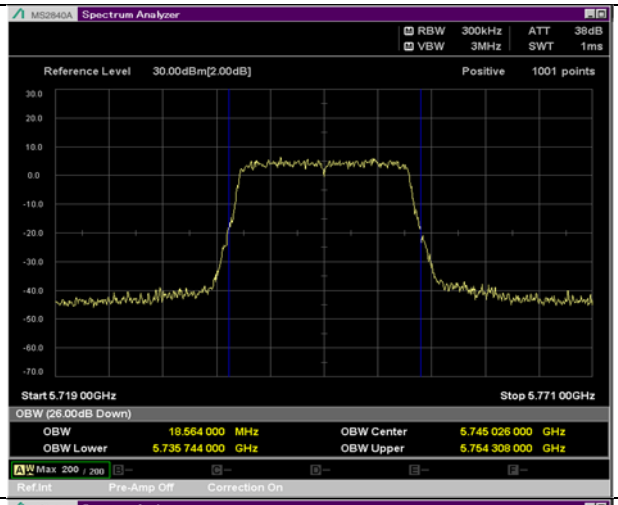


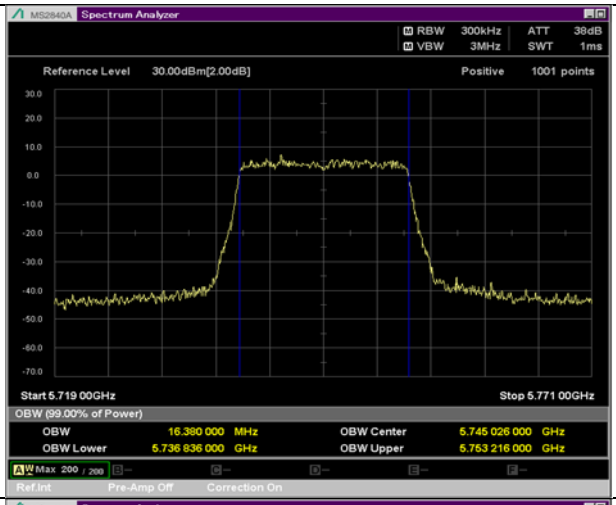


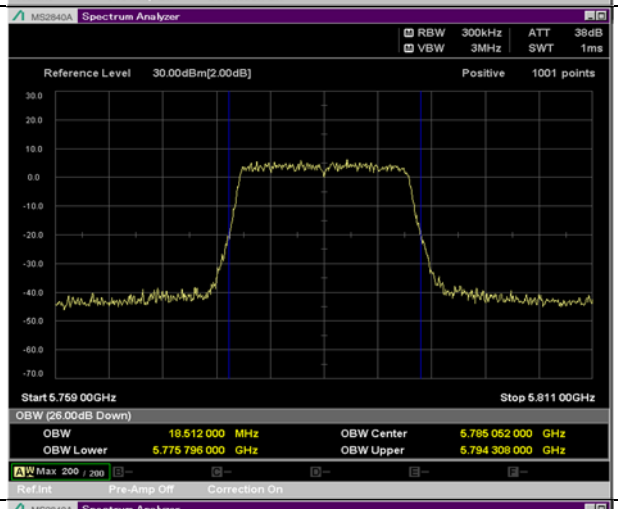


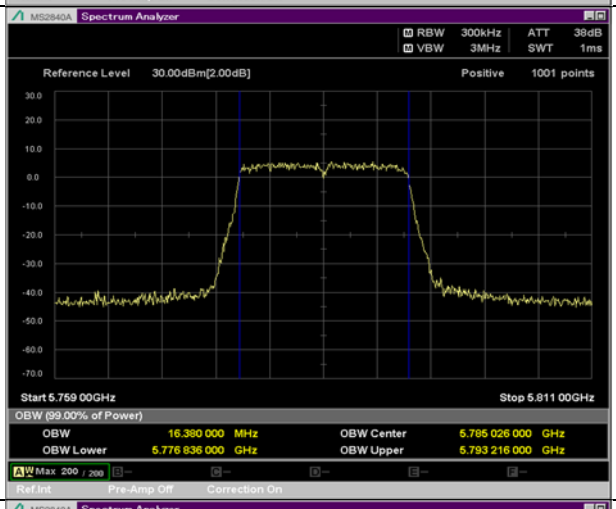


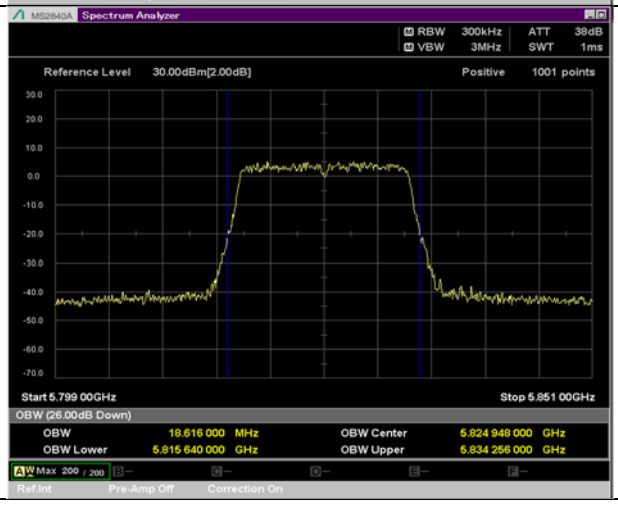
UNII-3_11a_5725MHz to 5825MHz ANT1

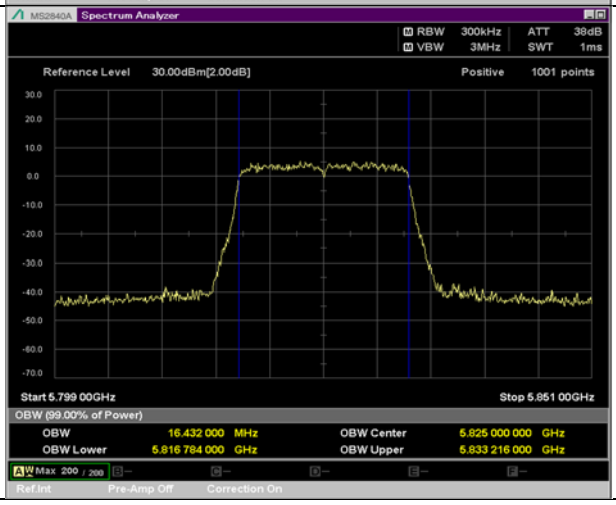




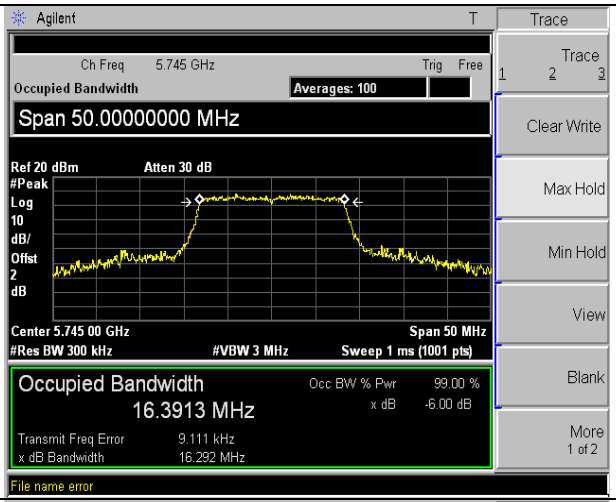
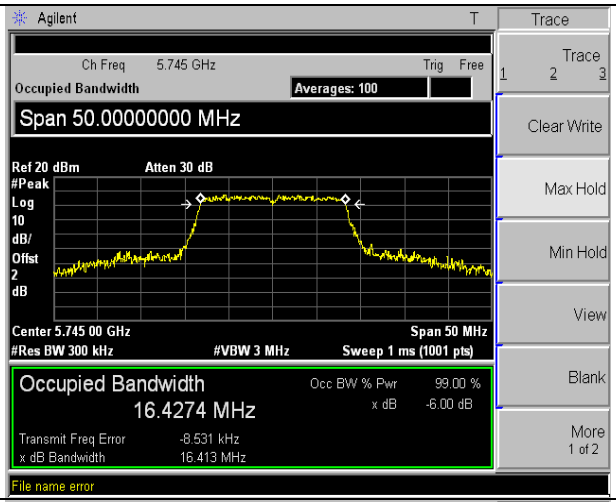
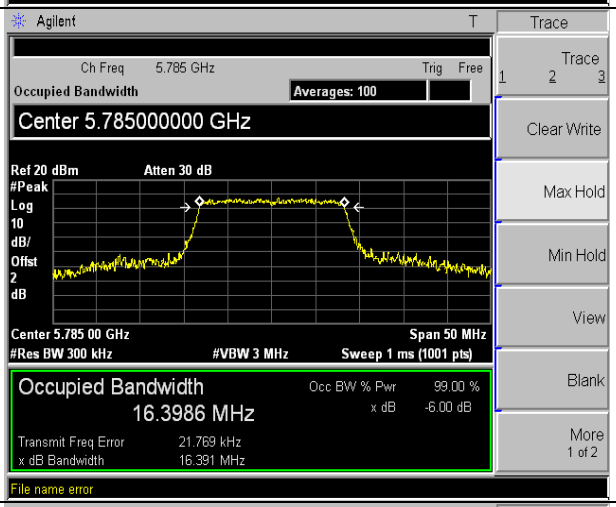
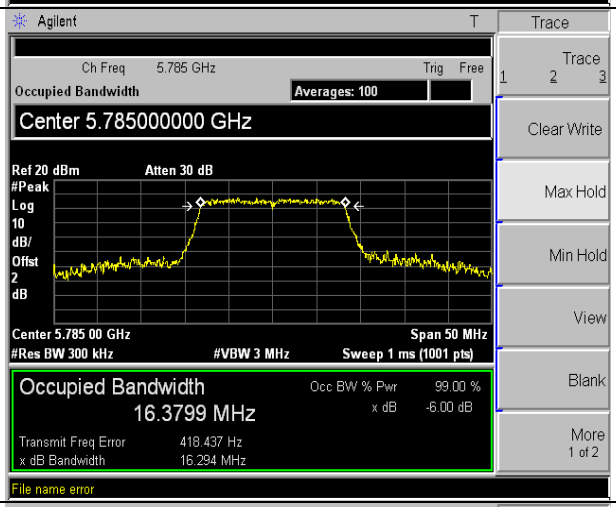
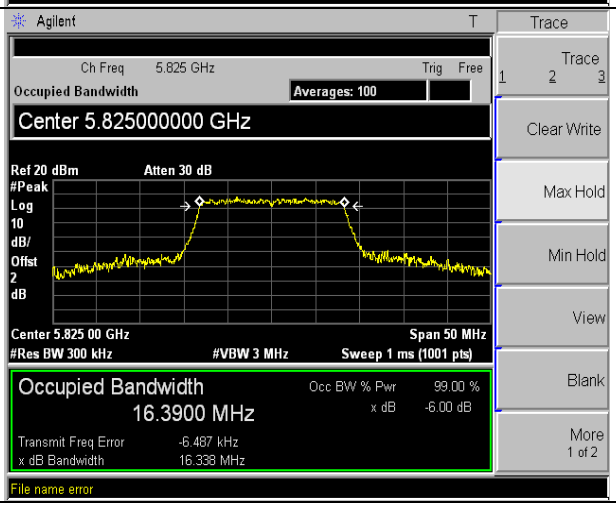
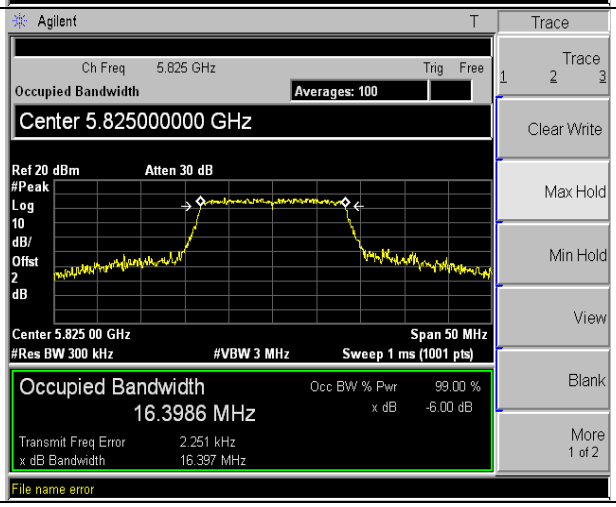








UNII-3_11a_5725MHz to 5825MHz (6 dB)

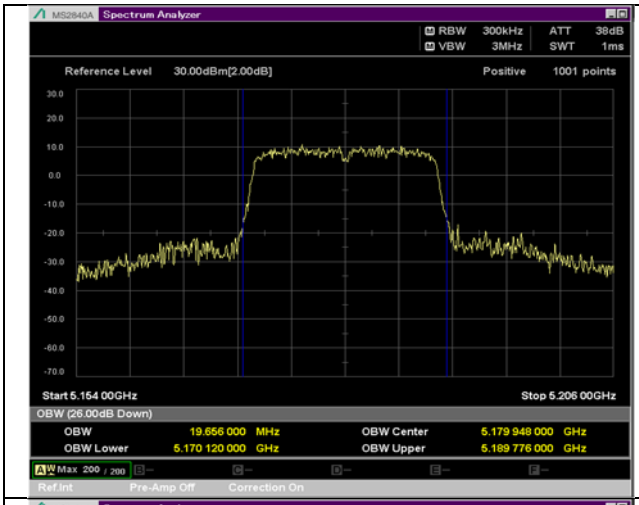
ANT0	ANT1
	
	
	

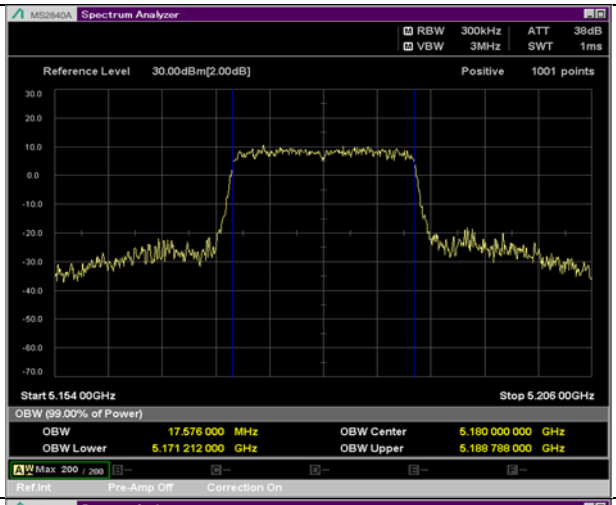
Modulation: 802.11n(HT20)

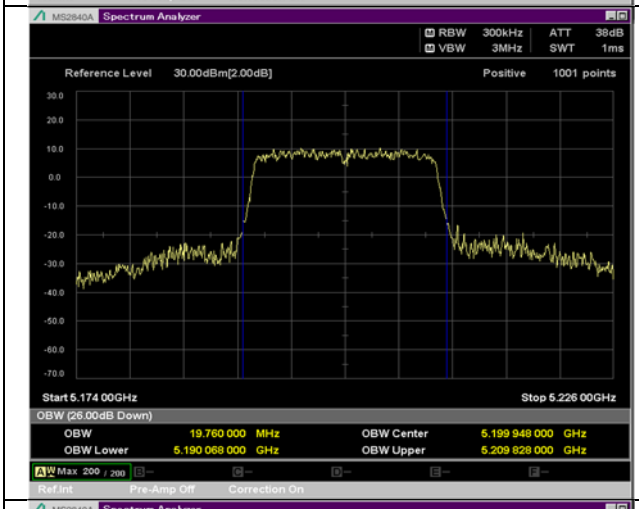
ANT0				ANT1	
Data rate	Channel Frequency (MHz)	26 dB emission bandwidth (MHz)	99% Occupied Bandwidth (MHz)	26 dB emission bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Mcs0	5180	19.66	17.58	19.5	17.58
	5200	19.76	17.58	19.76	17.58
	5240	19.55	17.58	19.55	17.58
	5260	19.40	17.58	19.71	17.58
	5280	19.55	17.58	19.60	17.58
	5320	19.60	17.58	19.60	17.58
	5500	19.50	17.58	19.45	17.52
	5580	19.50	17.58	19.45	17.52
	5700	19.45	17.58	19.67	17.58
	5745	19.50	17.58	19.40	17.58
	5785	19.34	17.58	19.55	17.58
	5825	19.60	17.58	19.50	17.52

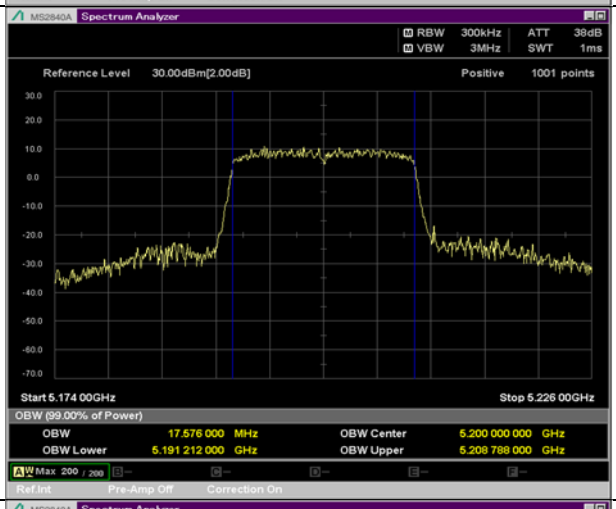
ANT0				ANT1	
Data rate	Channel Frequency (MHz)	6 dB emission bandwidth (MHz)		6 dB emission bandwidth (MHz)	
Mcs0	5745	17.52		17.46	
	5785	17.36		17.43	
	5825	17.57		17.60	

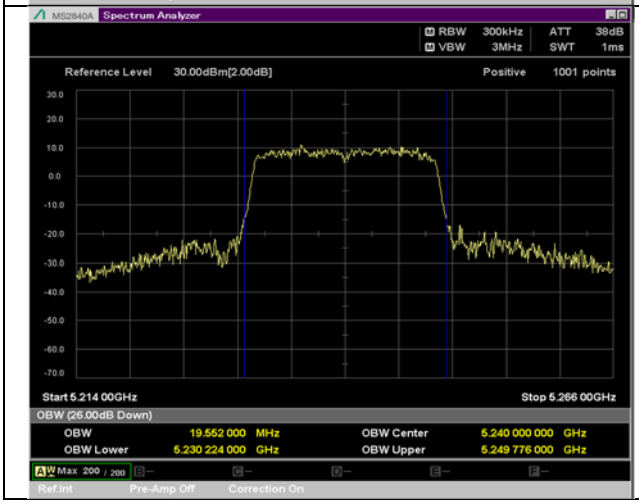
UNII-1_11n(HT20)_5150MHz to 5250MHz ANT0

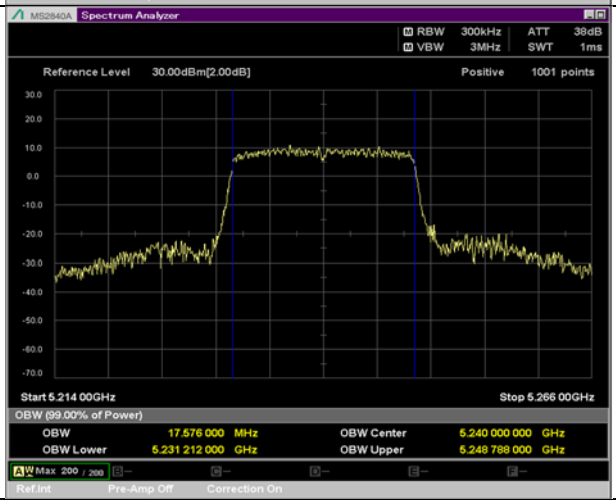




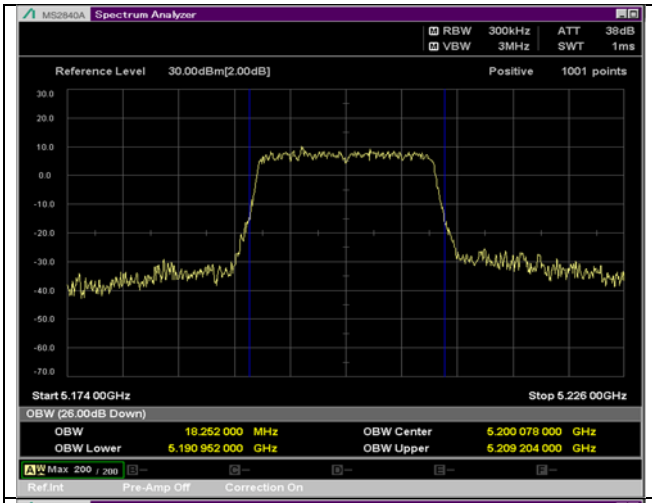


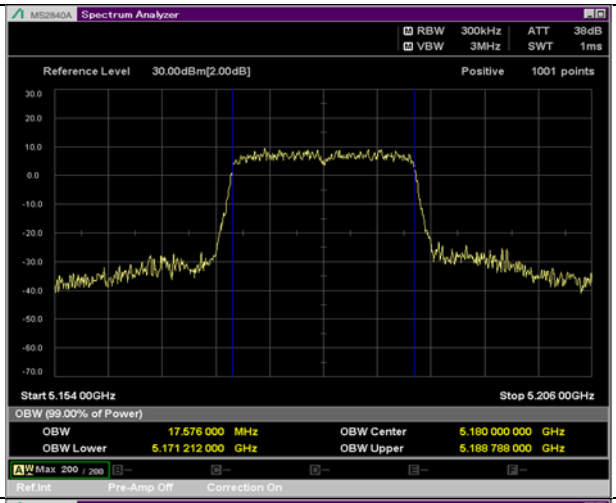


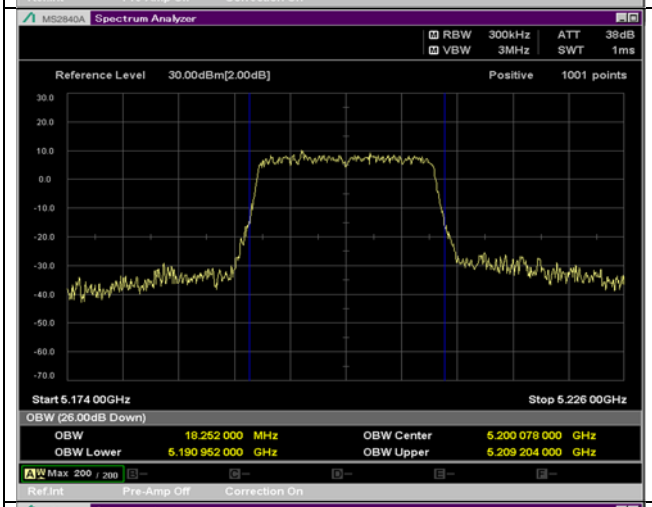


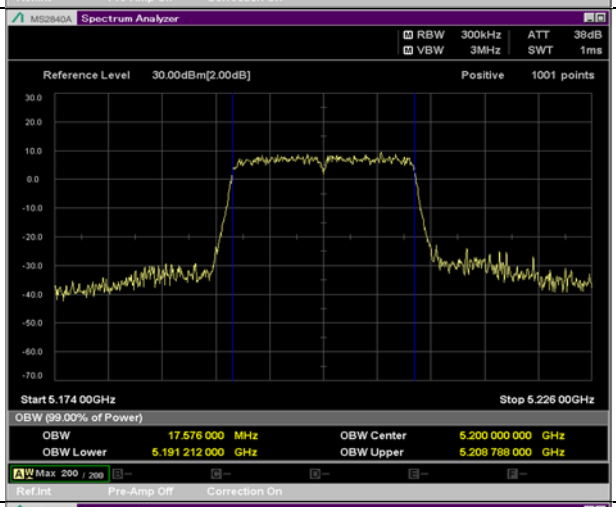


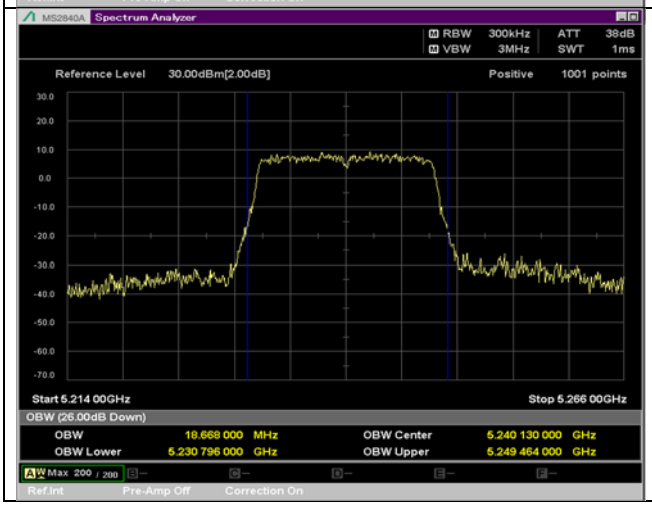
UNII-1_11n(HT20)_5150MHz to 5250MHz ANT1

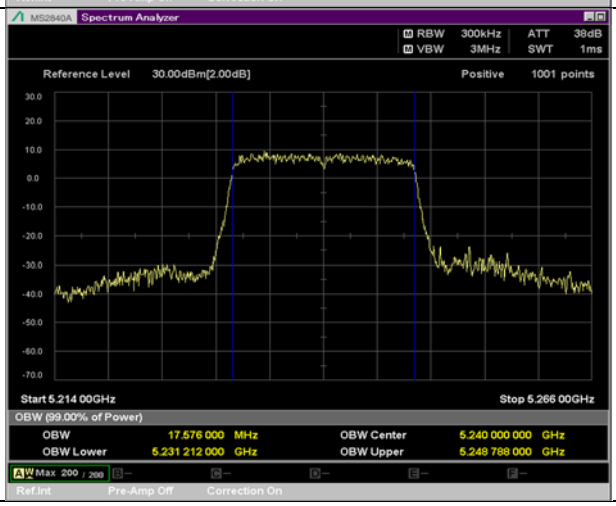




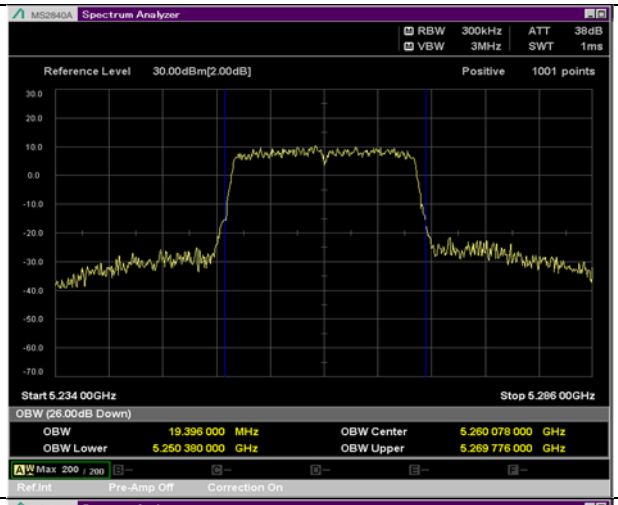


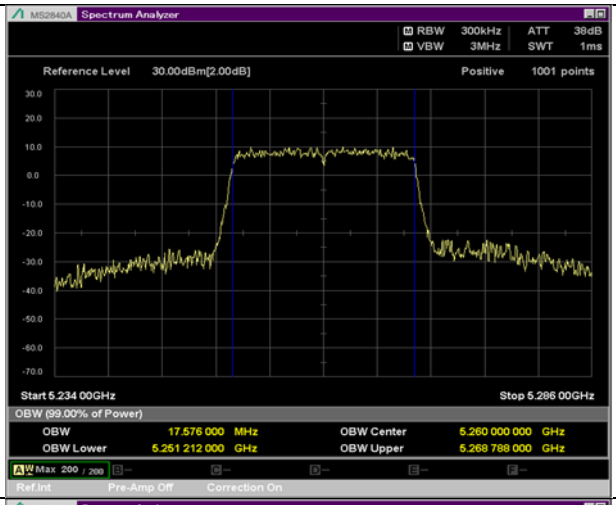


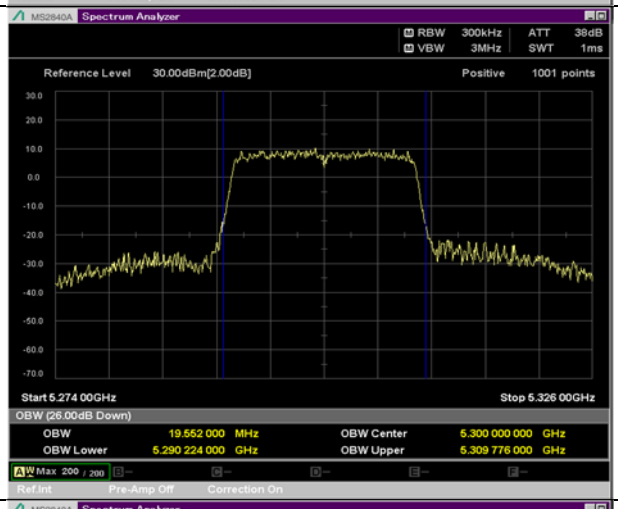


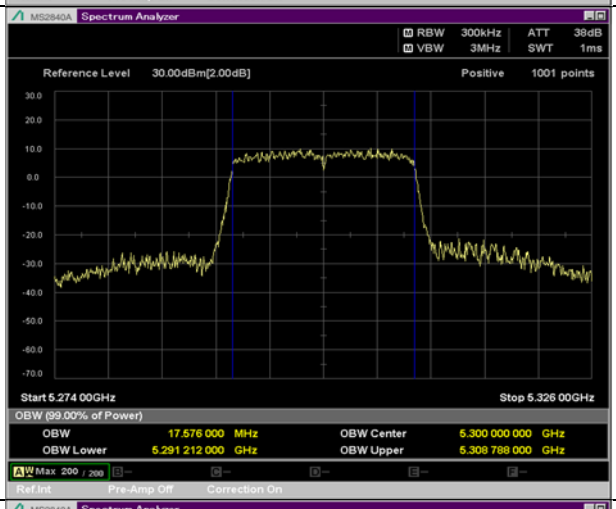


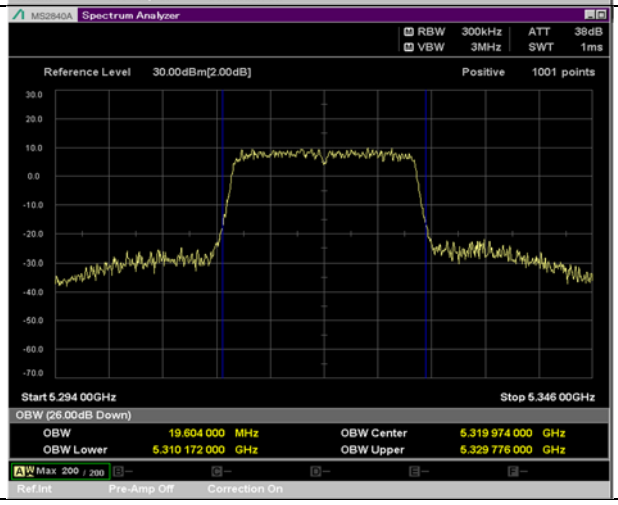
UNII-2A_11n(HT20)_5250MHz to 5320MHz ANT0

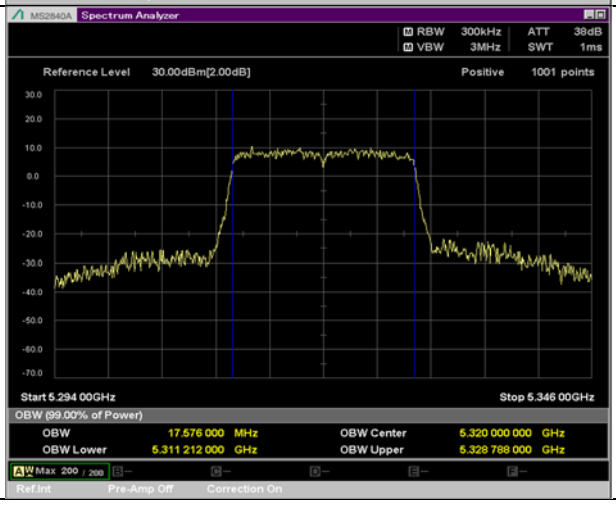




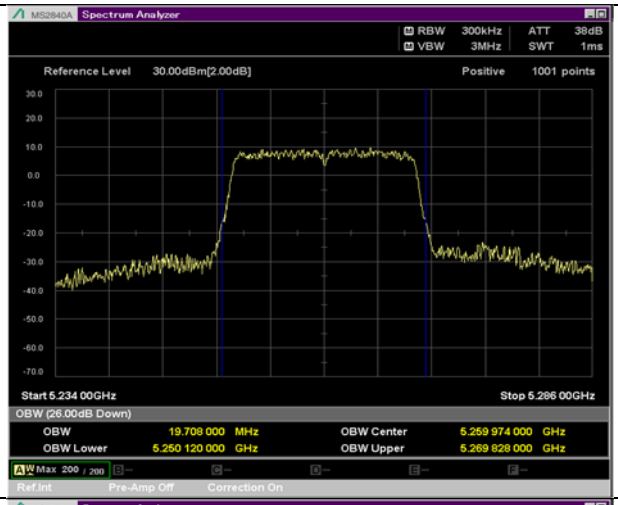


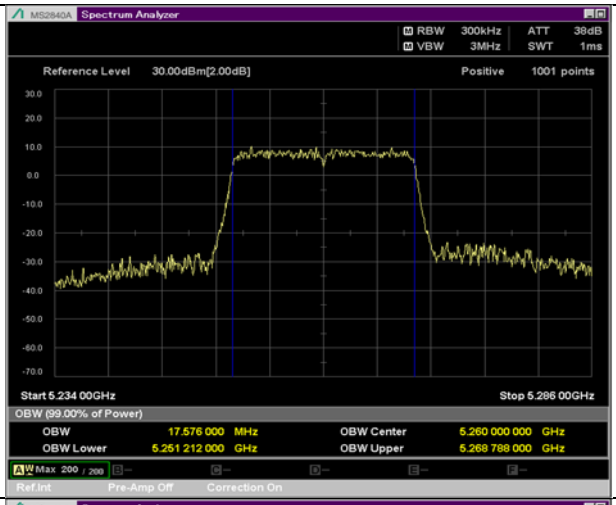


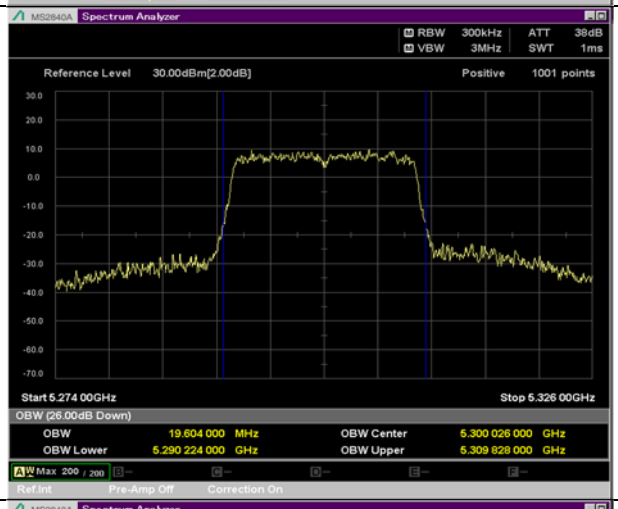


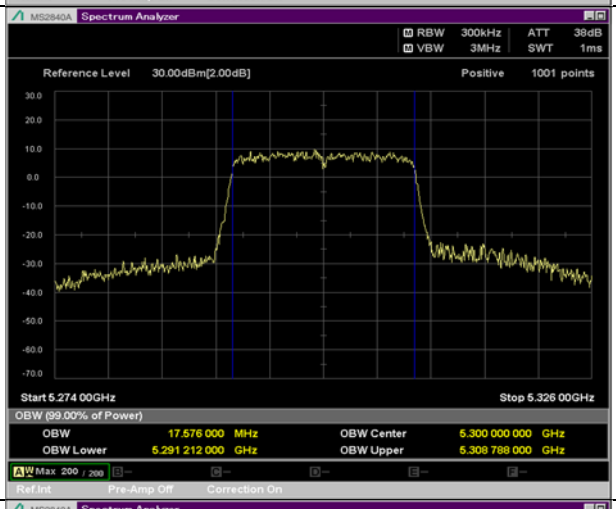


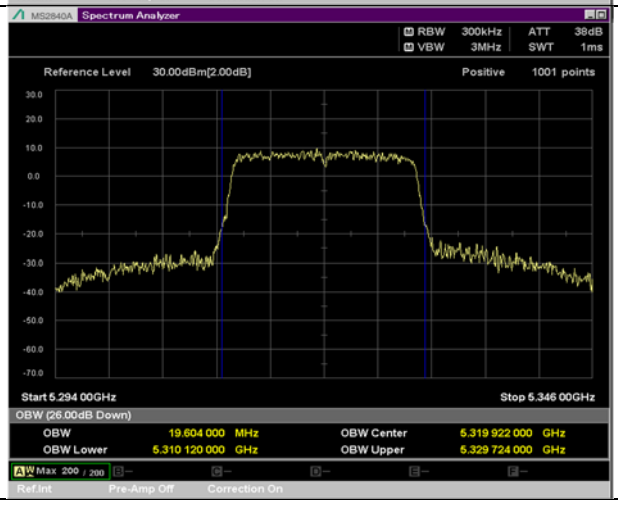
UNII-2A_11n(HT20)_5250MHz to 5320MHz ANT1

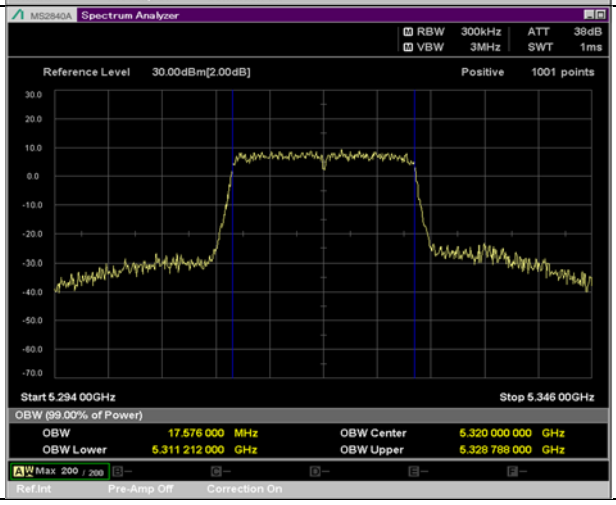




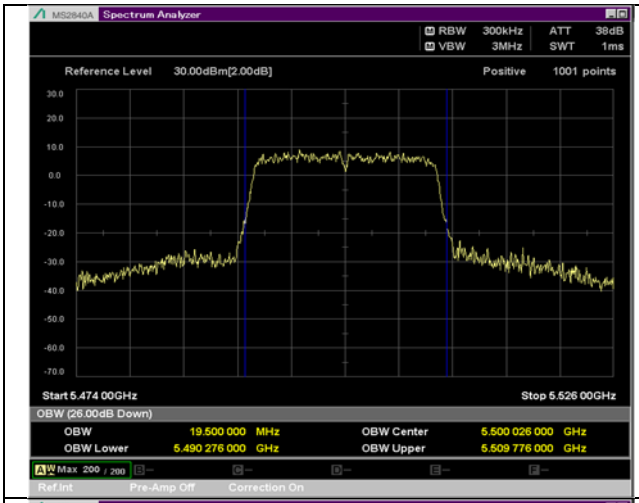


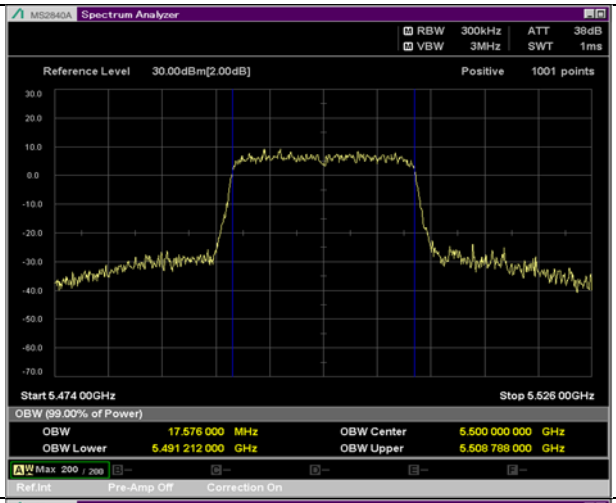


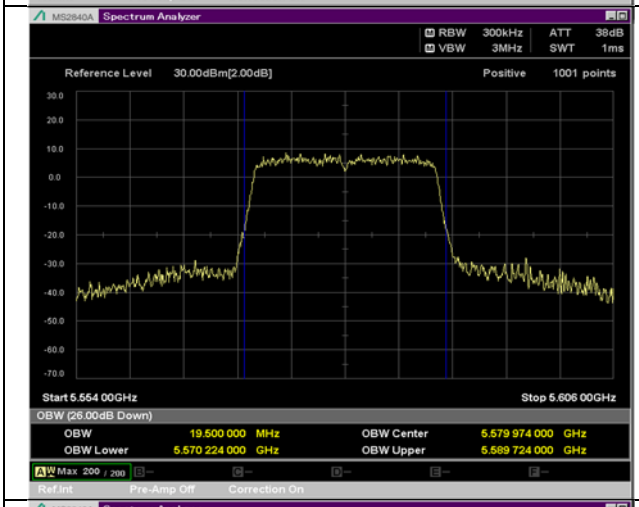


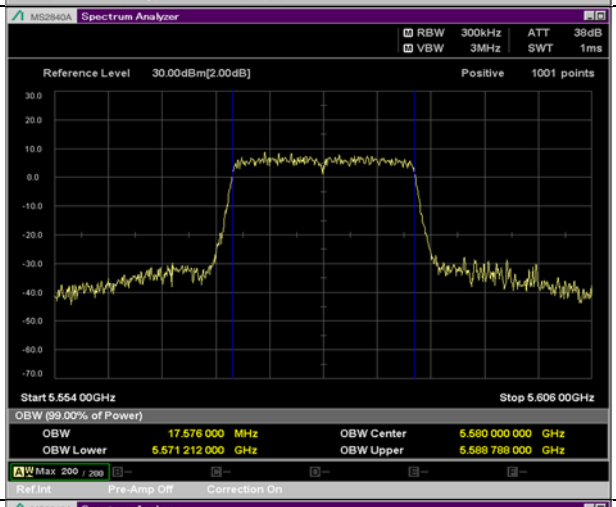


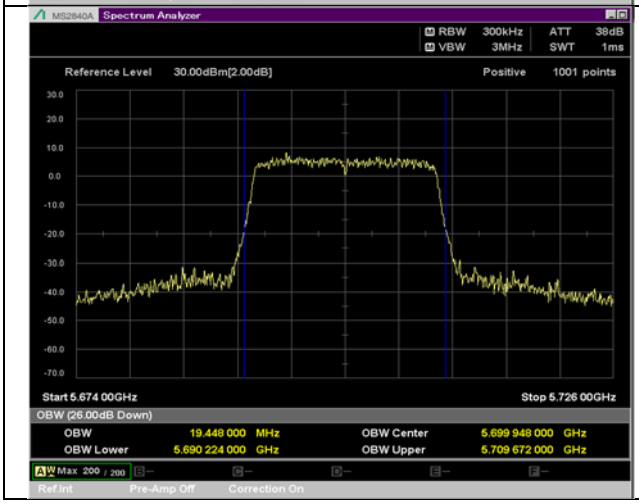
UNII-2C_11n(HT20)_5470MHz to 5725MHz ANT0

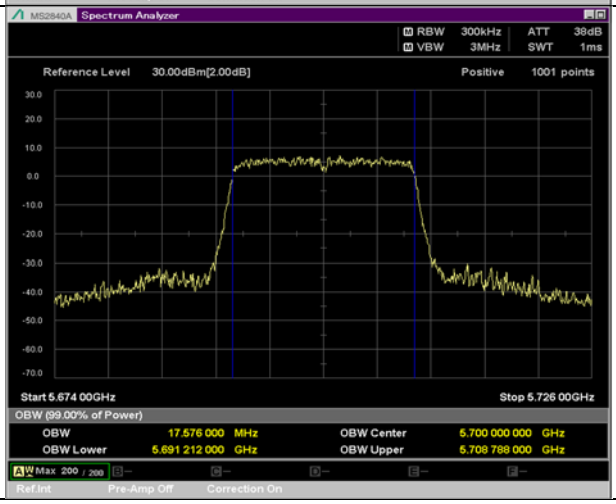




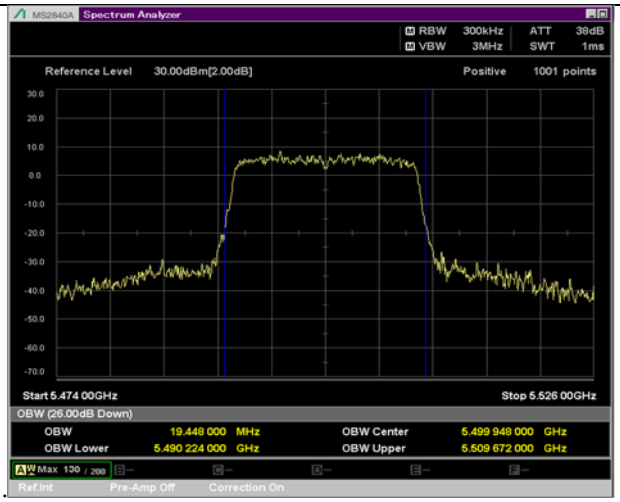


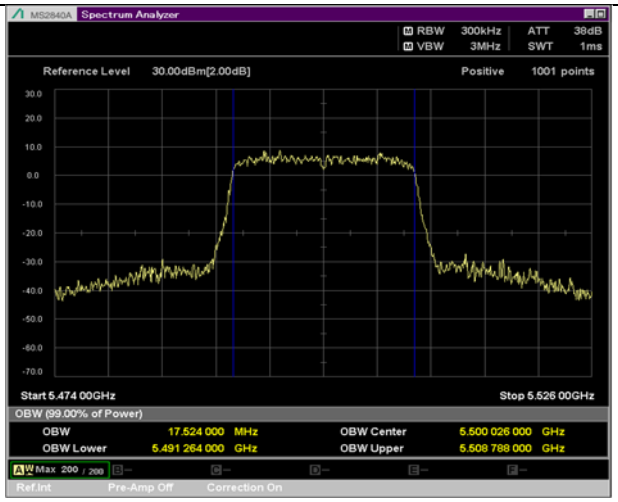


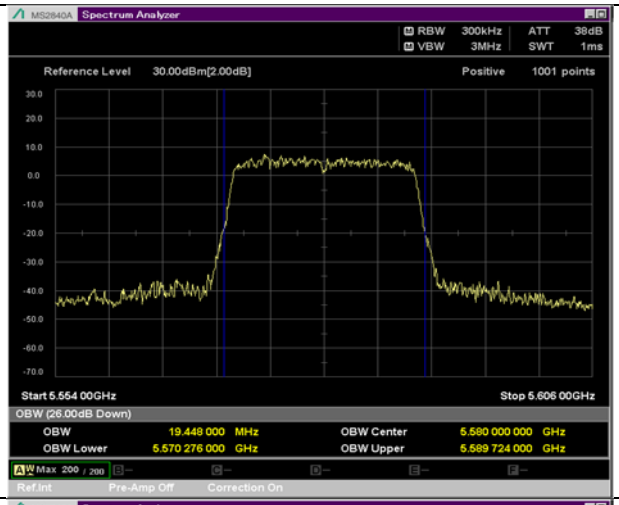


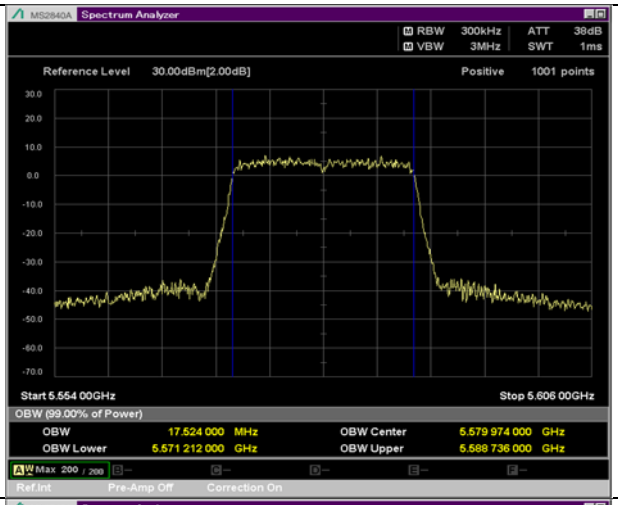


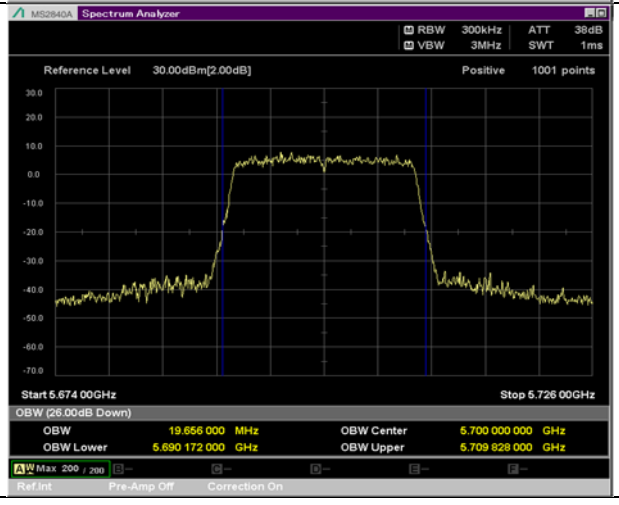
UNII-2C_11n(HT20)_5470MHz to 5725MHz ANT1

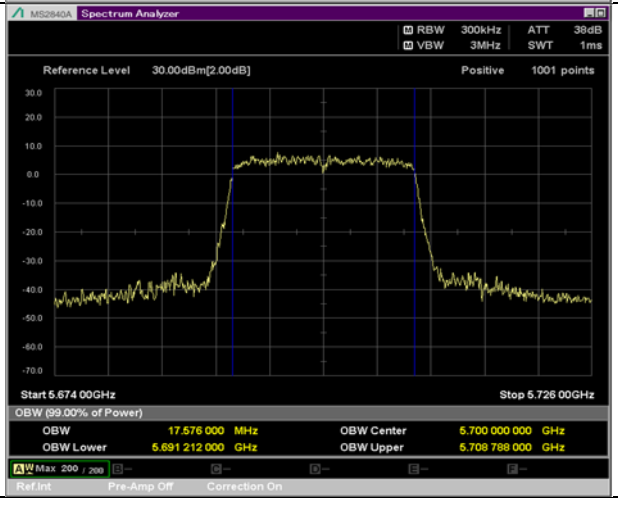




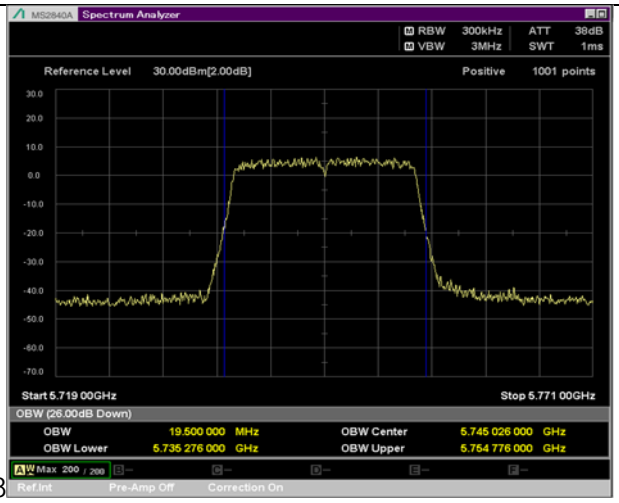


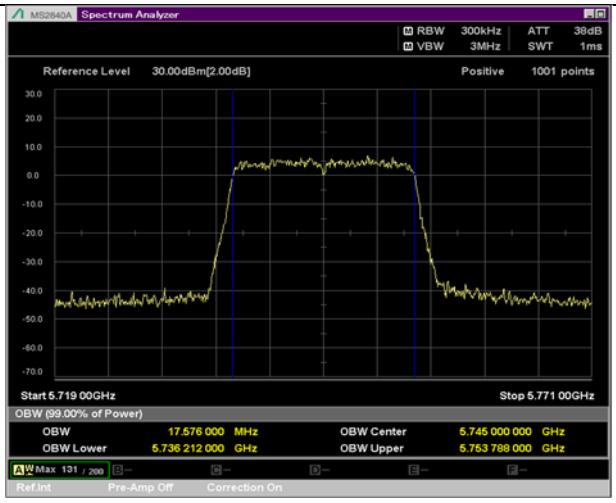


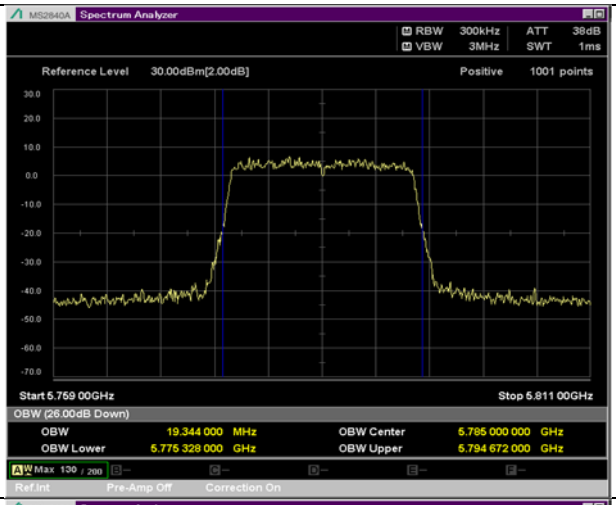


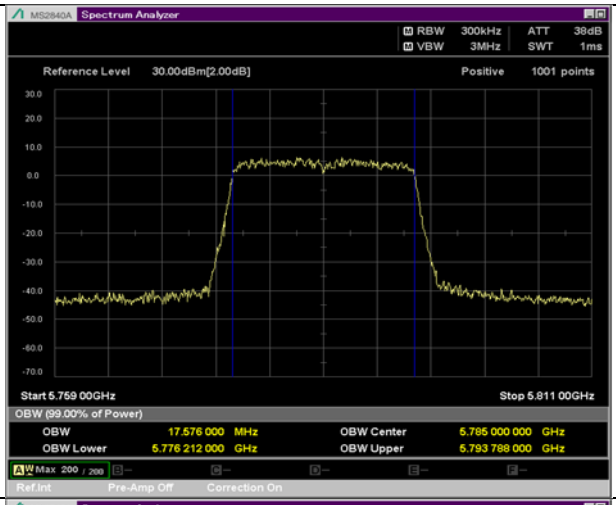


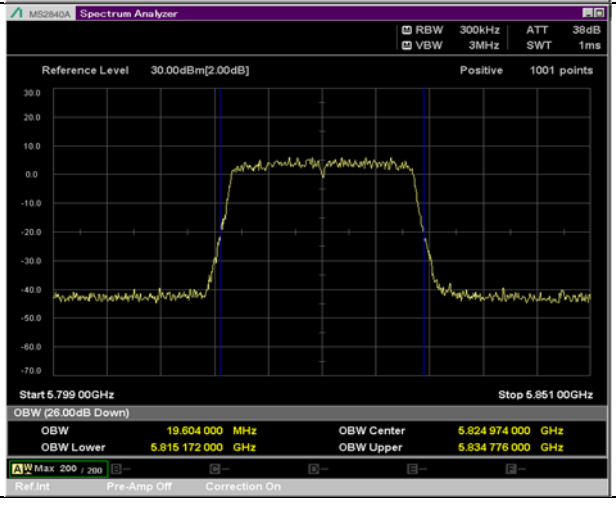
UNII-3_11n(HT20)_5725MHz to 5825MHz ANT0

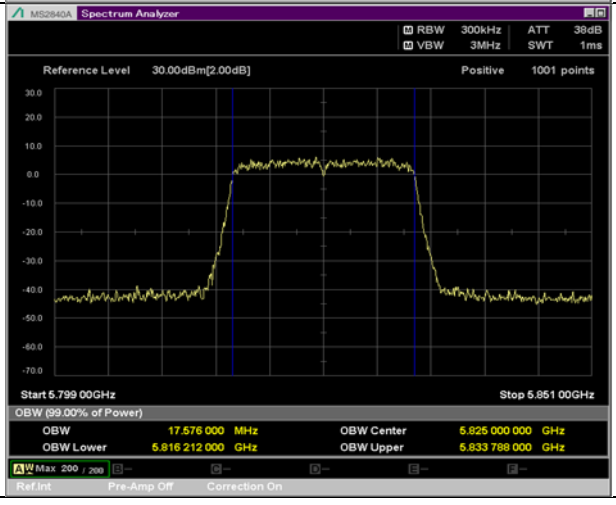




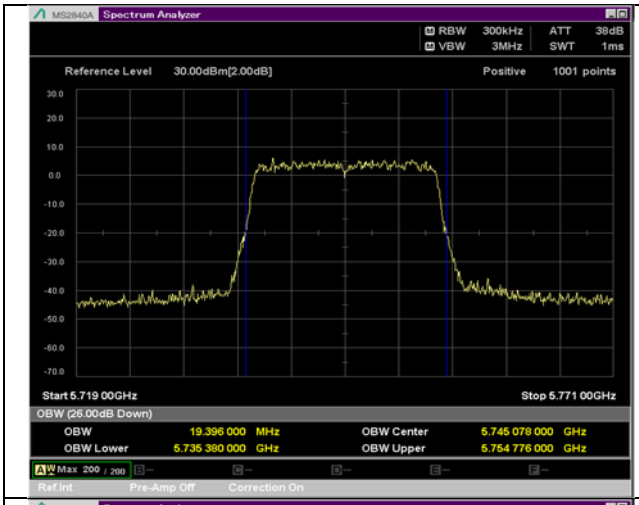


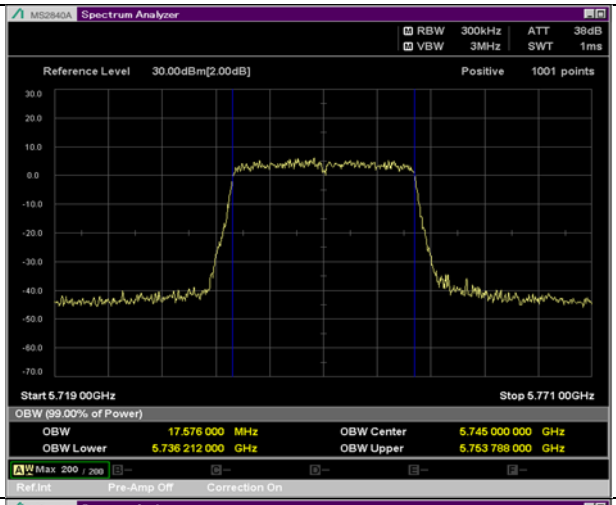


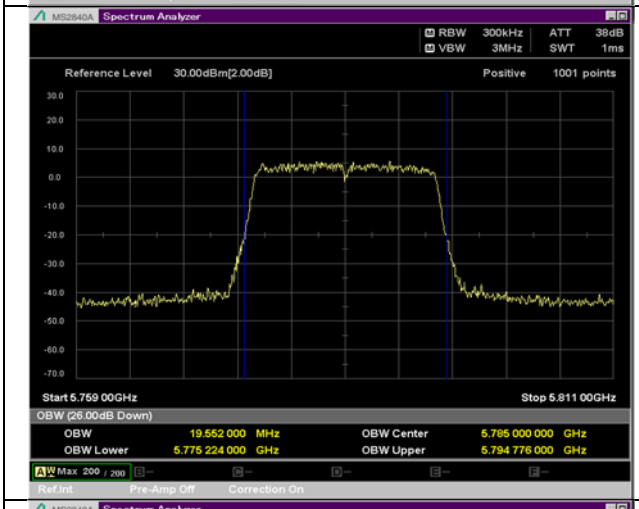


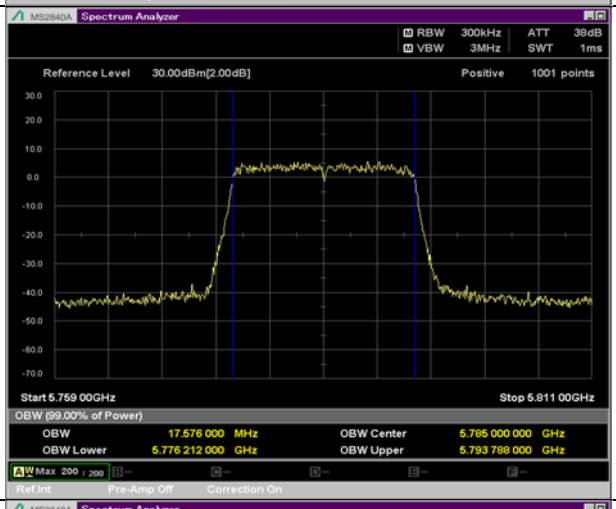


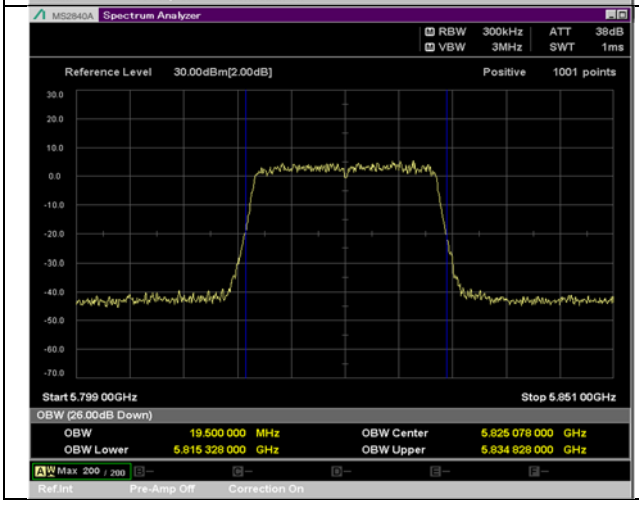
UNII-3_11n(HT20)_5725MHz to 5825MHz ANT1

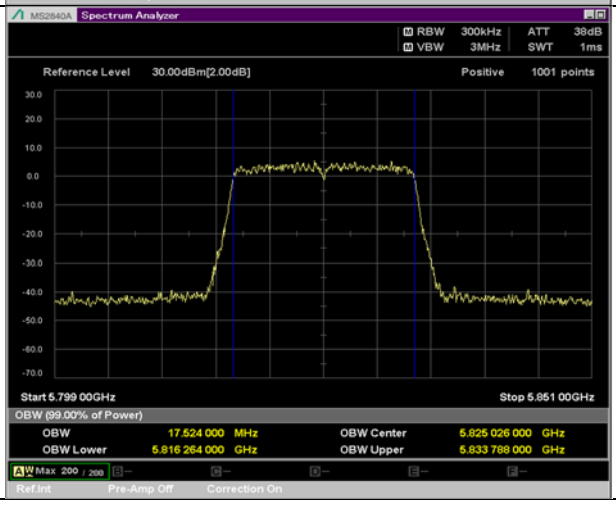




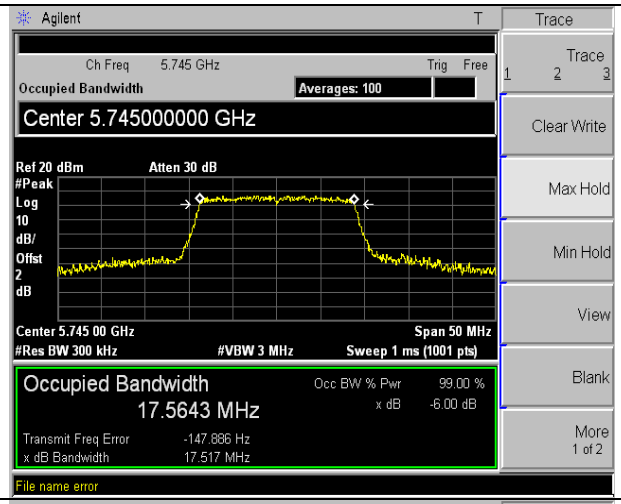
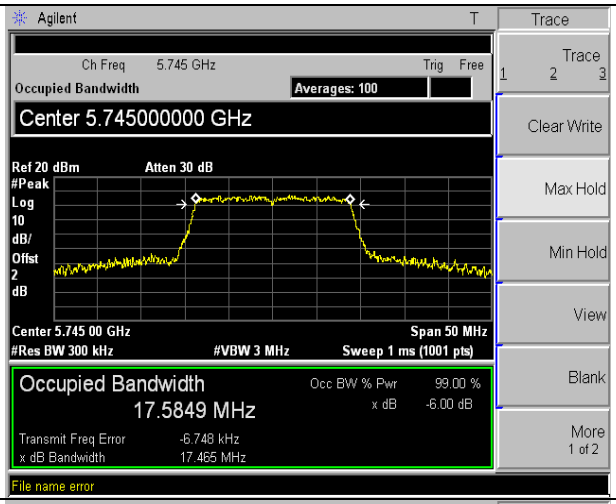
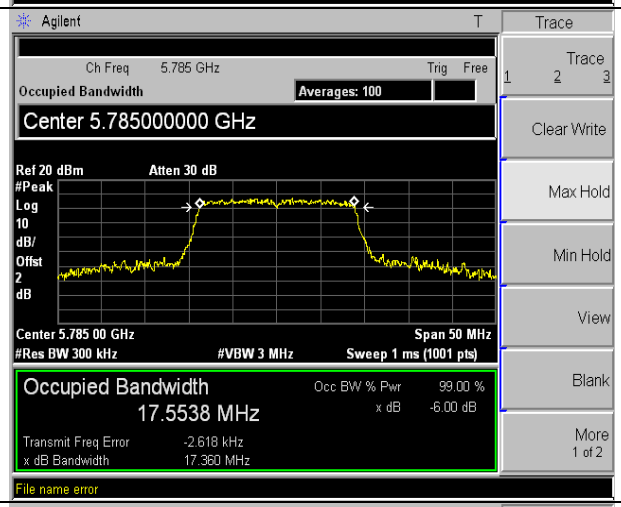
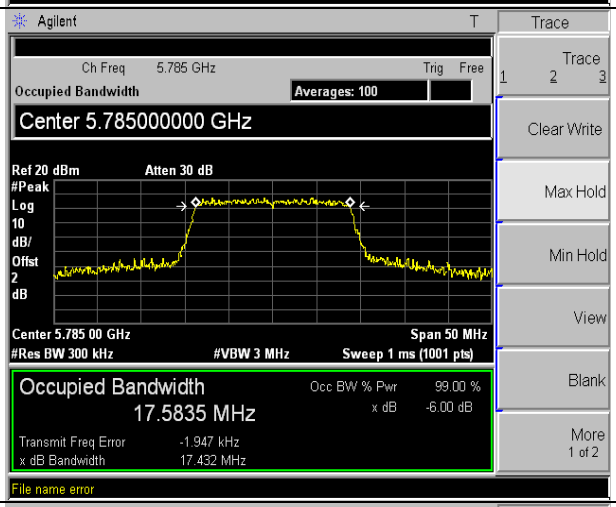
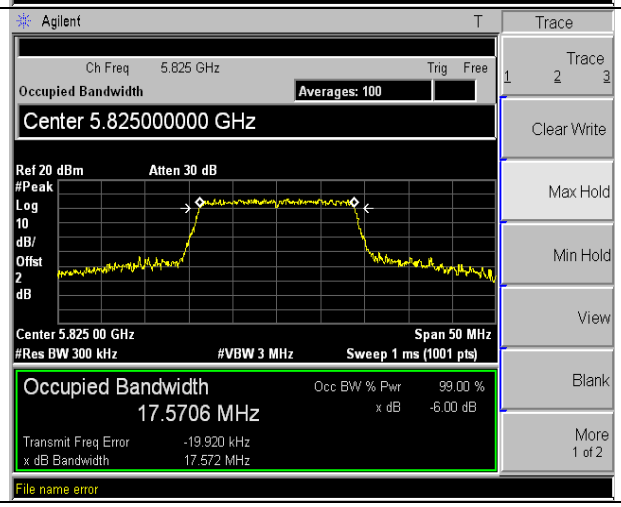
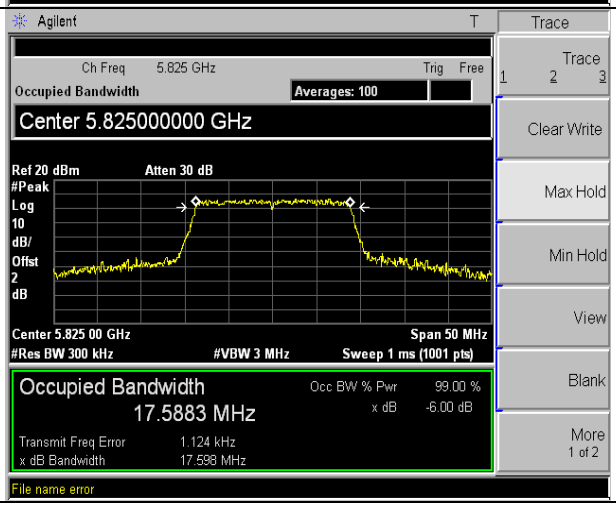








UNII-3_11n(HT20)_5725MHz to 5825MHz (6 dB)

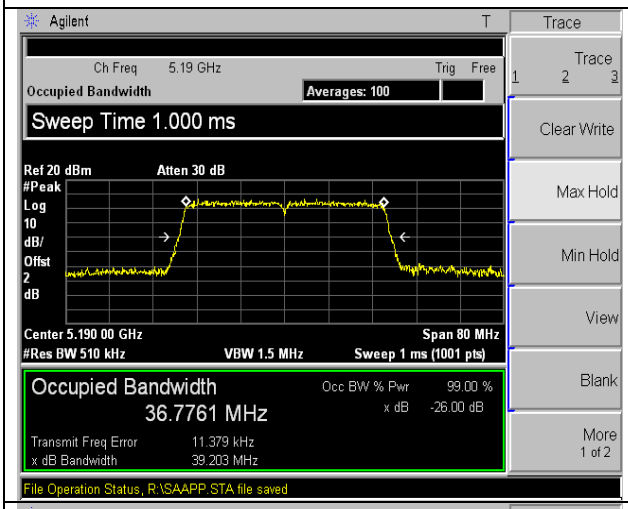
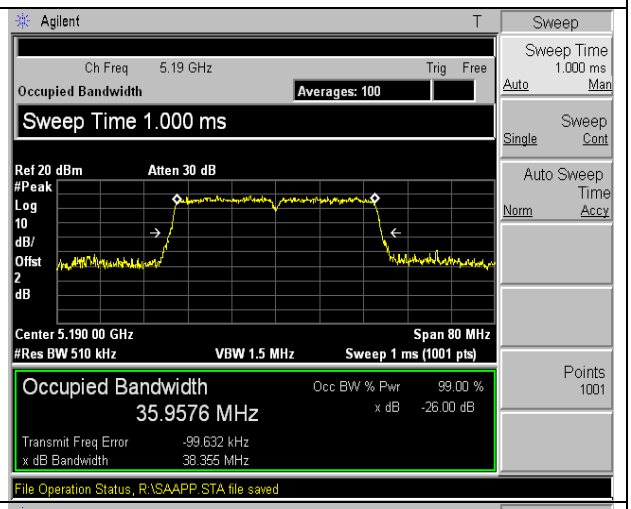
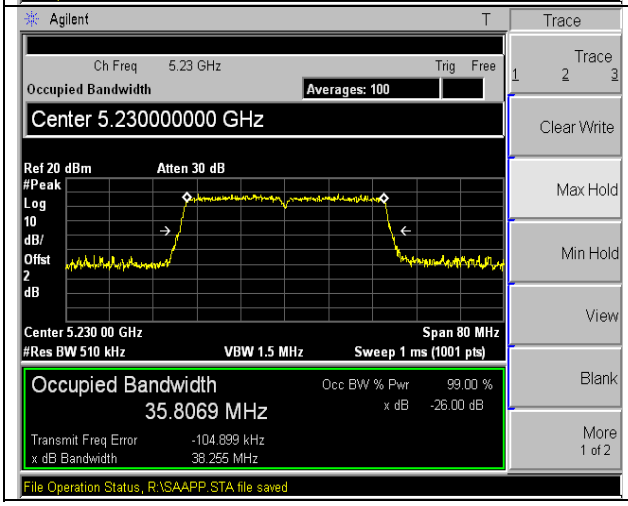
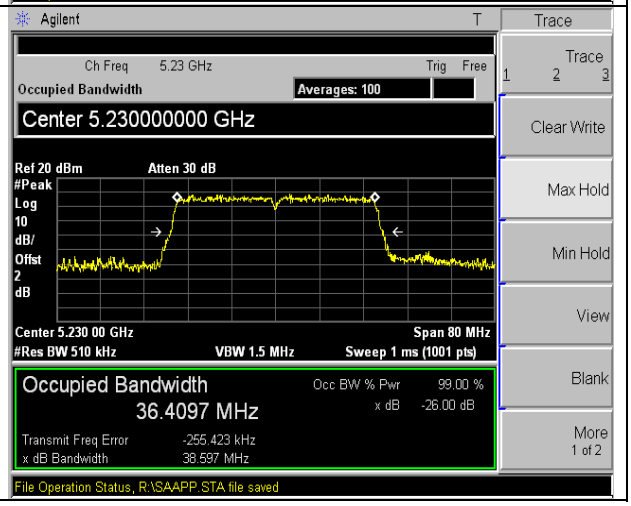
ANT0	ANT1
	
	
	

Modulation: 802.11n(HT40)

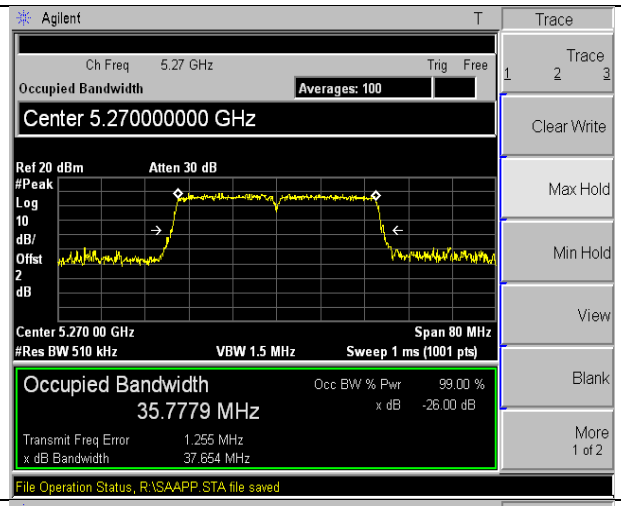
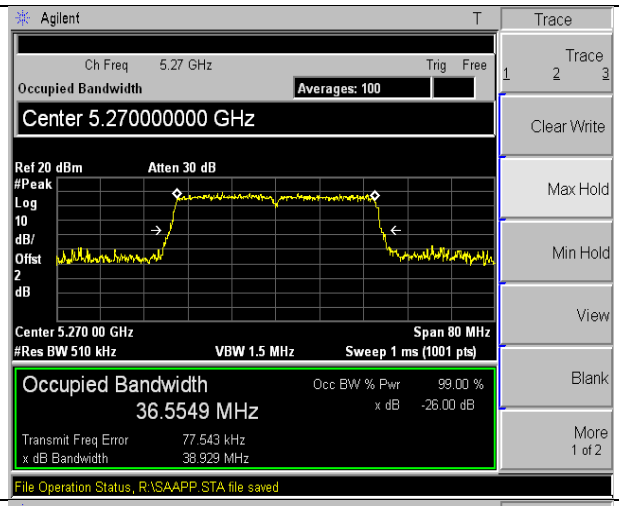
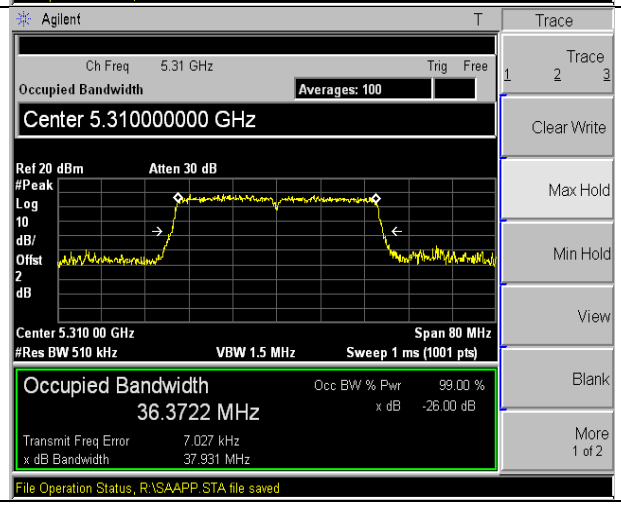
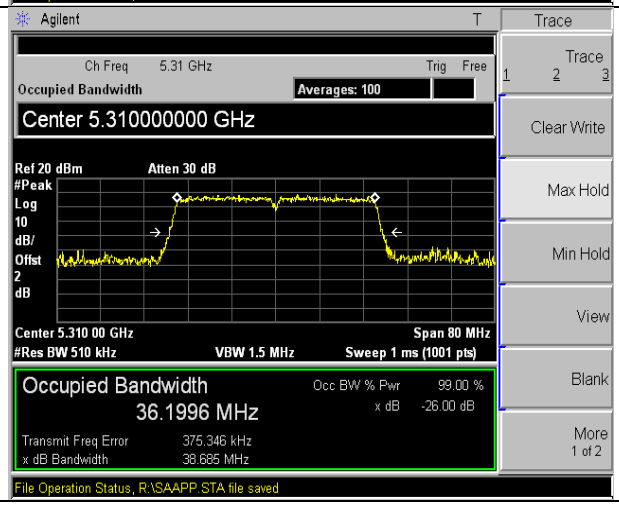
ANT0				ANT1	
Data rate	Channel Frequency (MHz)	26 dB emission bandwidth (MHz)	99% Occupied Bandwidth (MHz)	26 dB emission bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Mcs0	5190	39.20	36.78	38.36	35.96
	5230	38.26	35.81	38.60	36.41
	5270	37.65	35.78	38.93	36.55
	5310	37.93	36.37	38.69	36.20
	5510	38.47	35.89	38.21	35.90
	5590	38.87	36.36	37.52	35.25
	5670	40.45	38.39	38.49	35.83
	5755	38.18	35.94	38.06	35.35
	5795	37.91	35.54	37.69	35.36

ANT0				ANT1	
Data rate	Channel Frequency (MHz)	6 dB emission bandwidth (MHz)		6 dB emission bandwidth (MHz)	
Mcs0	5755	36.10		36.23	
	5795	36.26		36.34	

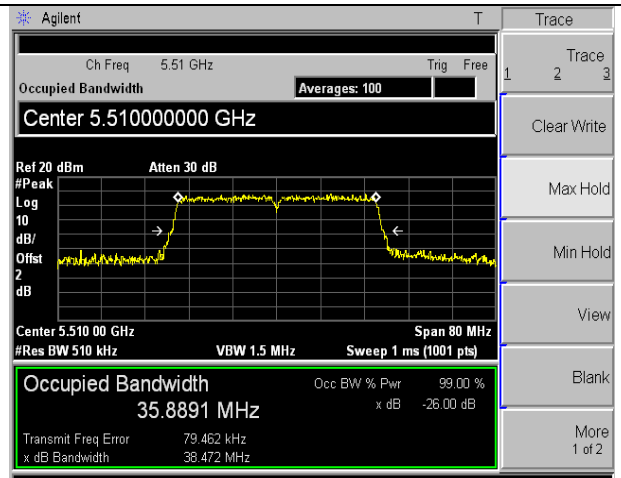
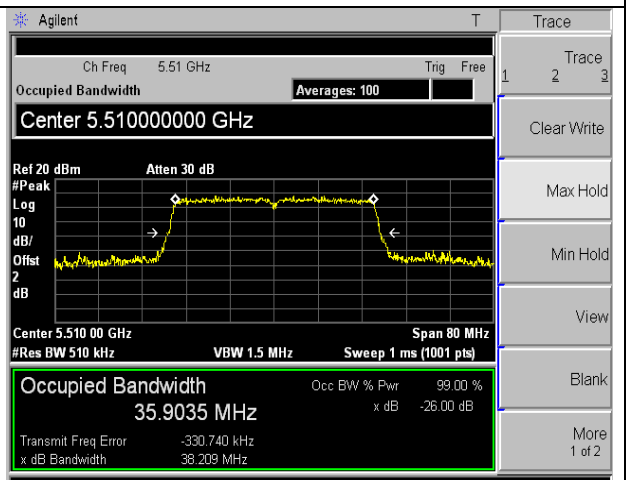
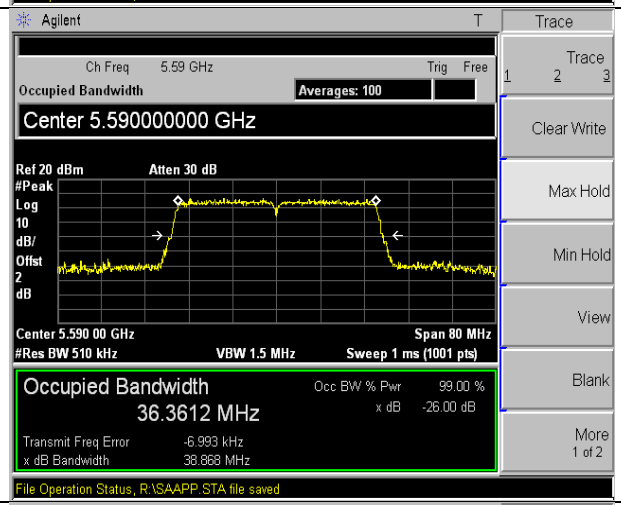
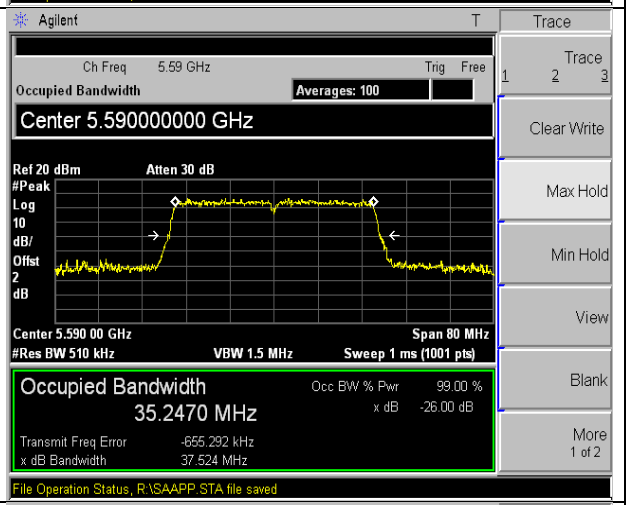
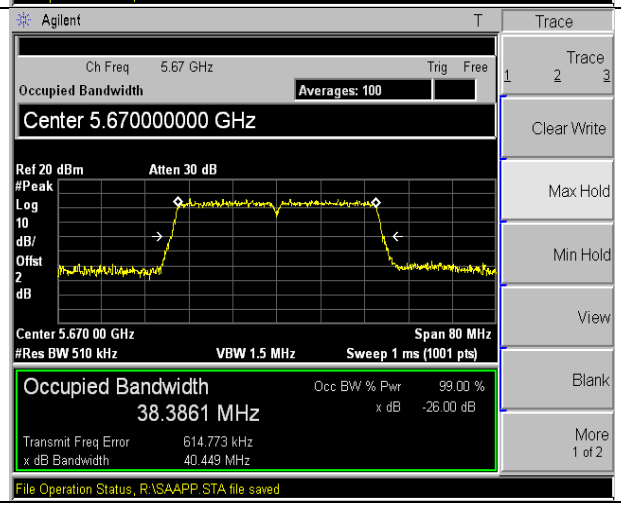
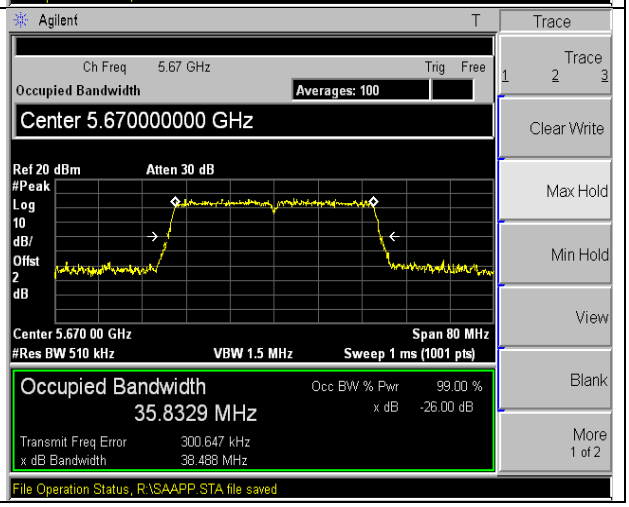
UNII-1_11n(HT40)_5150MHz to 5250MHz

Ant0	Ant1
	
	

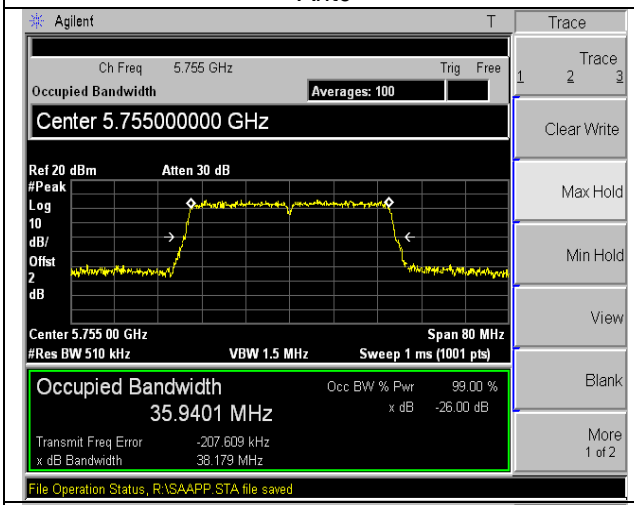
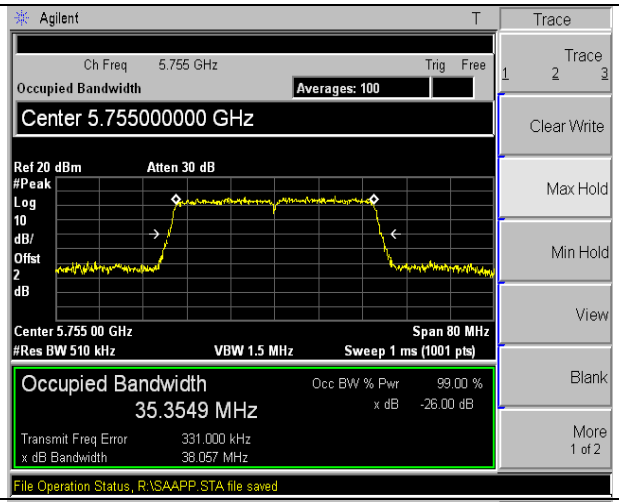
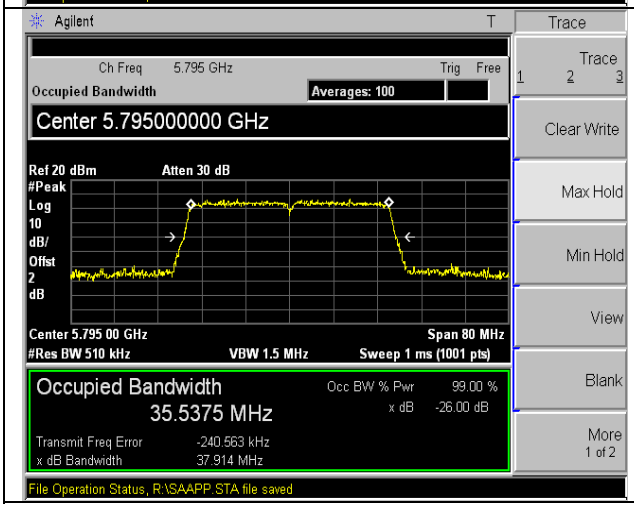
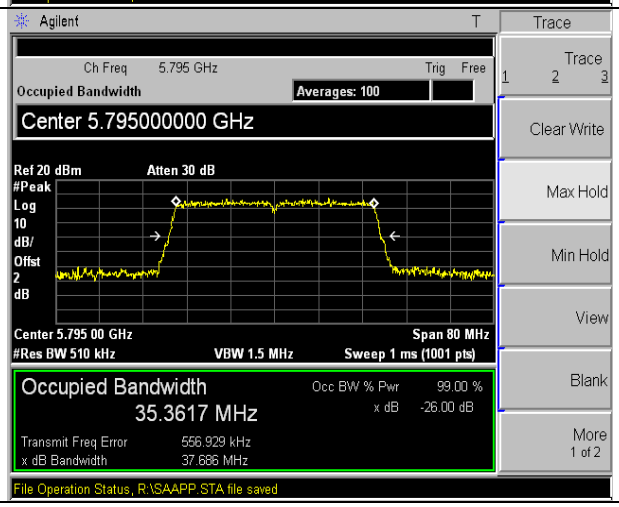
UNII-2A_11n(HT40)_5250MHz to 5320MHz

Ant0	Ant1
	
	

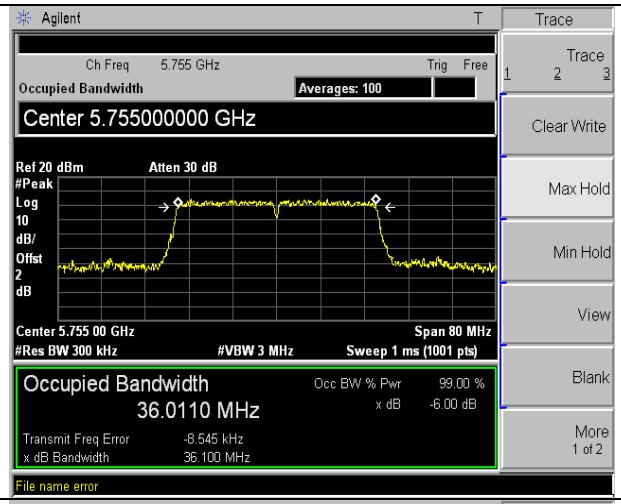
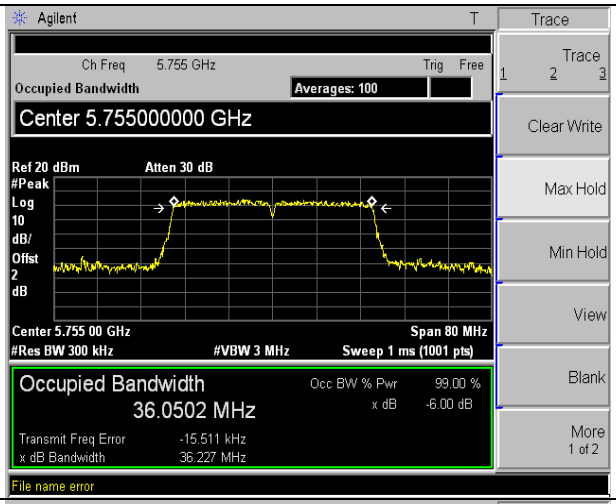
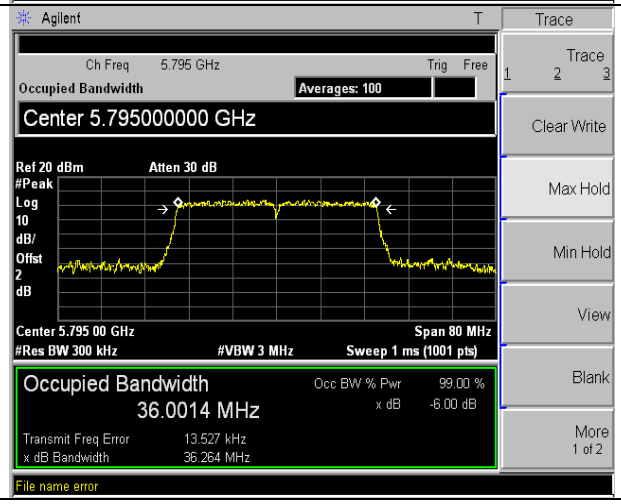
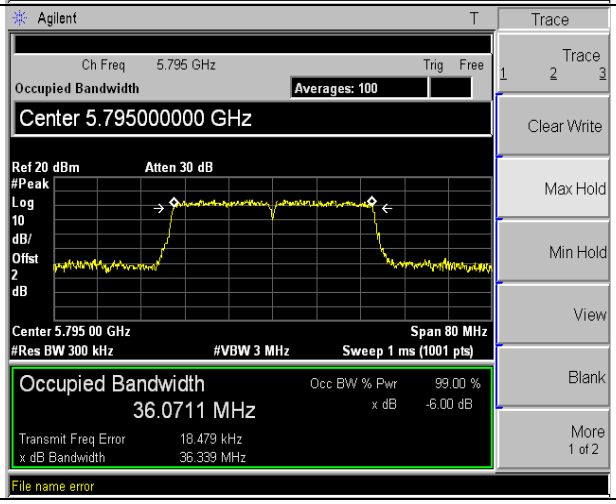
UNII-2C_11n(HT40)_5470MHz to 5725MHz

Ant0	Ant1
	
	
	

UNII-3_11n(HT40)_5725MHz to 5825MHz ANT0

Ant0	Ant1
	
	

UNII-3_11n(HT40)_5725MHz to 5825MHz (6 dB)

ANT0	ANT1
	
	

Modulation: 802.11ac(VHT20)

ANT0				ANT1	
Data rate	Channel Frequency (MHz)	26 dB emission bandwidth (MHz)	99% Occupied Bandwidth (MHz)	26 dB emission bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Mcs0	5180	19.66	17.58	19.66	17.58
	5200	19.40	17.58	19.71	17.58
	5240	19.50	17.58	19.71	17.58
	5260	19.40	17.58	19.45	17.58
	5280	19.45	17.58	19.50	17.58
	5320	19.40	17.58	19.55	17.58
	5500	19.55	17.58	19.40	17.58
	5580	19.34	17.58	19.45	17.58
	5700	19.40	17.58	19.40	17.58
	5745	19.50	17.58	19.29	17.58
	5785	19.40	17.58	19.60	17.58
	5825	19.34	17.58	19.50	17.58

ANT0				ANT1	
Data rate	Channel Frequency (MHz)	6 dB emission bandwidth (MHz)		6 dB emission bandwidth (MHz)	
Mcs0	5745	17.46		17.49	
	5785	17.57		17.48	
	5825	17.35		17.40	

UNII-1_11ac(VHT20)_5150MHz to 5250MHz ANT0