

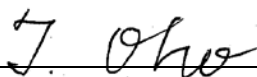
RADIO TEST REPORT

(for 5 GHz WLAN)

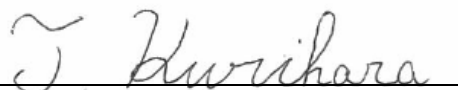
Project No. :JB-Z0420
Client :Sony Corporation
Client's Address :1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan
Product Name :Communication Module
Model No. :FLE01WBM
FCC ID :AK8FLE01WBM
Test Standard :47 CFR Part 15 Subpart E
Sample Receipt Date :May 14, 2018
Test Date :June 12, 2018 to July 18, 2018
Report Date :July 26, 2018
Test Result :Complied

Notice:

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- * This report must not be used by the client to claim product endorsement by A2LA or any agency of the U.S.
- * Hereby certify that no party is subject to a denial of federal benefits pursuant to section 5301 of the Anti-Drug Abuse Act.
- * All test results are traceable to the national and / or international standards.
- * The testing in which "Non-accreditation" is displayed is outside the accreditation scopes in Sony Global Manufacturing & Operations Corporation EMC/RF Test Laboratory.

Reported by:

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Technical Manager
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TESTING CERT #3203.01

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Note

- ☒-indicates that the listed condition, standard or equipment is applicable for this report.
☐-indicates that the listed condition, standard or equipment is not applicable for this report.

Revision History

Revision	Date	Overview	Page
JB-Z0420 (Original)	July 26, 2018	-	-

1. General Information

1.1. Description of Equipment Under Test (EUT)

General Specification

Test Sample Condition : ☐ Prototype ☒ Pre-production ☐ Mass-production
 Product Name : Communication Module
 Trade Name : SONY
 Model No. : FLE01WBM
 Serial No. : 1, 3
 Power Rating of the EUT : DC 3.3 V (The EUT was supplied with the power from the host device)

Similar model(s) to be covered by this report

Model No. : None

Radio Specification

Function of the Equipment : Transceiver

Operating Frequency :

IEEE Standard	Operating Frequency Band [MHz]			
	U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
802.11a	5180 to 5240	5260 to 5320	5500 to 5700	5745 to 5825
802.11n(HT20)				
802.11ac(VHT20)			5500 to 5720	
802.11n(HT40)	5190 to 5230	5270 to 5310	5510 to 5670	5755 to 5795
802.11ac(VHT40)			5510 to 5710	
802.11ac(VHT80)				
	5210 to 5290		5530 to 5690	5775

Modulation Type : OFDM

Antenna Type : Inverted-F antenna

Antenna Connector Type : None

Antenna Gain : 0.0 dBi

Operating Temperature : -30 to +85 deg.C

1.2. Summary of Test Result

Test Item	Worst Margin	Results	Note
AC Power-line Conducted Emissions	23.4 dB (AV) 9.408 MHz N / L1	Complied	-
26dB Emission Bandwidth	Refer to the test data	Complied	-
6dB Emission Bandwidth	Refer to the test data	Complied	-
Maximum Conducted Output Power	10.07 dB	Complied	-
Maximum Power Spectral Density	10.11 dB	Complied	-
Unwanted Emissions	3.0 dB (AV) 11590.03 MHz Vertical	Complied	-

Note

For DFS test results, referred to JB-Z0432 issued by Sony Global Manufacturing & Operations Corporation.

Other requirements

Part 15.31(e) Supply voltage requirement

: Complied (The EUT is provided with stable DC 3.3V from the host device)

Part 15.203 / 212 Antenna requirement

: Complied (Users cannot replace the external antenna, since it is mounted to the EUT inside)

1.3. Tested Methodology

Test Standard : 47 CFR Part15 Subpart E
 Test Method : ANSI C63.10 - 2013
 KDB 789033 D02 General UNII Test Procedures New Rules v02r01

Test Condition

AC Power-line Conducted Emissions

Dimensions of the EUT table : 0.8 m height, 2 m width and 1 m depth.

Unwanted Emissions

Test Distance : ☒ 3 m ☐ 10m (9 kHz to 30 MHz)
☒ 3 m ☐ 10m (30 MHz to 1000 MHz)
☒ 3 m (1 GHz to 40 GHz)

Dimensions of the EUT table

Below 1GHz : 0.8 m height, 0.5 m width and 1 m depth.

Above 1GHz : 1.5 m height, 2 m width and 1 m depth.

1.4. Measurement Procedures

We performed the measurements in accordance with NV3-06, available upon the request.

- ☒ No deviation
☐ Deviation from the above procedure

The summary of the above procedure is mentioned below

AC Power-line Conducted Emissions

1. The non-conductive table (EUT table) made of (☒ FRP, ☐ wood, ☐ other non-conductive material) was placed 0.4 m from its rear to the vertical reference ground plane.
2. The EUT was placed on the center of tabletop and its rear was flush with the rear of the table, connected through a LISN to the input power mains.
3. The LISN was placed in 80 cm from the nearest part of the EUT chassis.
4. The excess length of the AC cable between the EUT and the LISN receptacle, or an adaptor or extension cable connected to and measured with LISN, was folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
5. The connection of the all other equipment to the second LISN was performed. The second LISN was terminated with a 50-ohm terminator.
6. Interconnecting cables that hang closer than 40 cm to the horizontal reference ground plane was folded back and forth forming a bundle 30 to 40 cm long, hanging approximately in the middle between the horizontal reference ground plane and the tabletop.
7. Find the worst mode and arrangement of the EUT according to the follows;
 - Connecting all peripherals and change the position of peripherals and cables.
 - Changing the all test operation modes of the EUT.
 - On every condition, exploring the highest emissions with the spectrum analyzer. (150kHz - 30MHz, peak detector, RBW: 10 kHz)
8. On the worst condition of the EUT found in above, choose the six highest emissions on the spectrum data. The final measurements carried out on these emissions with EMI test receiver. (quasi-peak and average detector, RBW: 9 kHz)

Antenna-port Conducted Measurements

1. Antenna-port of the EUT was connected to the power sensor (Maximum Conducted Output Power) or spectrum analyzer. (other test items).
2. For each EUT operation mode, the Antenna-port Conducted Measurements were measured with spectrum analyzer.

Test Item Antenna-port Conducted Measurements	Detector	RBW
26dB Emission Bandwidth	Peak	100 kHz : IEEE 802.11a, 11n(HT20), 11ac(VHT20) 300 kHz : IEEE 802.11n(HT40), 11ac(VHT40) 1 MHz : IEEE 802.11ac(VHT80)
6dB Emission Bandwidth	Peak	100 kHz
99% Occupied Bandwidth	Peak	300 kHz : IEEE 802.11a, 11n(HT20), 11ac(VHT20) 1 MHz : IEEE 802.11n(HT40), 11ac(VHT40), 11ac(VHT80)
Maximum Conducted Output Power	Average	-
Maximum Power Spectral Density	RMS	100 kHz : U-NII-3 1 MHz : U-NII-1/ -2A/ -2C

Unwanted Emissions

- The non-conductive table (EUT table) made of (☐ FRP, ☒ Styrene Foam, ☐ other non-conductive material) was placed in the center of the turntable.
- The EUT was placed on the center of the tabletop.
- The test antenna was placed away from the EUT at test distance.
- The limits were compensated the distance factor with follows:
 $9\text{ kHz} - 490\text{ kHz} [\text{Limit at } 3\text{m}] = [\text{Limit at } 300\text{m}] + 40\log(300[\text{m}] / 3[\text{m}])$
 $490\text{ kHz} - 30\text{ MHz} [\text{Limit at } 3\text{m}] = [\text{Limit at } 30\text{m}] + 40\log(30[\text{m}] / 3[\text{m}])$
- Find the worst arrangement of the EUT according to follows;
 - Rotating the turntable and/or scanning the antenna.
 - On every condition, exploring the highest emissions with the spectrum analyzer.
(9 kHz - 40 GHz, peak detector)
- On the worst arrangement of the EUT found in above, choose the six highest harmonics or spurious emissions on the spectrum data.(*excluding carrier band edges)
 The final measurements of all test operating modes carried out on these emissions as follows;

The test antenna and the turntable were performed with follows;

	9 kHz to 30 MHz	30 MHz to 1000 MHz	1 GHz to 40 GHz
Antenna	Loop Antenna	Bi-conical Antenna, Log-periodic Antenna	Horn Antenna
Antenna scanning range	1 m, Vertical, 360 degrees	1 m to 4 m, Horizontal and Vertical	1 m to 4 m *, Horizontal and Vertical
Turntable rotating range	360 degrees	360 degrees	360 degrees

*: Final measurements are performed keeping the antenna in the "cone of radiation" from EUT area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response.

Instruments settings were carried out with follows;

	9 kHz to 90 kHz 110 kHz to 490 kHz	90 kHz to 110 kHz 490 kHz to 30 MHz	30 MHz to 1000 MHz	1 GHz to 40 GHz
Detector	Peak / Average	Quasi-peak	Quasi-peak	Peak / Average
RBW	9 kHz (6 dB) *1	9 kHz (6 dB) *1	120 kHz (6 dB)	1 MHz (3 dB)
VBW	N/A	N/A	N/A	3 MHz (for peak) 1 kHz or 10 kHz (for average) *2
Instrument	EMI test receiver	EMI test receiver	EMI test receiver	Spectrum analyzer

*1: When the measurement frequencies below 150 kHz, RBW: 200 Hz was used.

*2: VBW setting (for average) was higher than 1/T. (T is the minimum transmission duration)

- Although these tests were performed other than open field area test site, adequate comparison measurements were confirmed against 30 m open field area test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788 D01.

1.5. Test Location

Test Facility Name : Sony Global Manufacturing & Operations Corporation
EMC/RF Test Laboratory, Main Lab.
Address : Kisarazu Site 8-4 Shiomi Kisarazu-shi, Chiba, 292-0834 Japan
Phone : +81 438 37 2750

A2LA Certificate No. : 3203.01
Cert. Validated Date : Oct. 31, 2019

AC Power-line Conducted Emissions

Shielded Room

☒ 4th Site ☐ EMC Site

Antenna-port Conducted Measurements

Shielded Room

☒ 4th Site SR1

Unwanted Emissions

Semi-Anechoic chamber

☒ 4th Site ☐ EMC Site

1.6. Uncertainty

Test Item	Frequency	4th Site SR1
Maximum Conducted Output Power	1 GHz to 6 GHz	± 0.84 dB
Maximum Power Spectral Density	below 6 GHz	± 1.25 dB

Test Item	Frequency	Distance	4th Site	EMC Site
AC Power-line Conducted Emissions	150 kHz to 30 MHz	-	± 3.34 dB	± 3.34 dB
Unwanted Emissions	below 30 MHz	3m	± 2.60 dB	± 3.13 dB
	30 MHz to 300 MHz	3m	± 2.61 dB	± 3.14 dB
	300 MHz to 1000 MHz	3m	± 2.59 dB	± 3.12 dB
	1 GHz to 7 GHz	3m	± 2.84 dB	± 3.33 dB
	7 GHz to 18 GHz	3m	± 2.84 dB	± 3.33 dB
	18 GHz to 26.5 GHz	3m	± 2.84 dB	± 3.33 dB
	26.5 GHz to 40 GHz	3m	± 2.89 dB	± 3.38 dB

2. Test Specification

2.1. Validation

The system was configured for testing in a typical (as a customer would normally use it).
The tests were conducted with the worst case modes as follows.

2.2. Operating Condition

The tests have been carried out the following conditions.

[Transmitting mode]

Test Items	Test Channels [MHz]				Worst Data Rate *1
	U-NII-1	U-NII-2A	U-NII-2C	U-NII-3	
AC Power-line Conducted Emissions *2	5180	-	-	-	802.11a : 6 Mbps
26dB Emission Bandwidth	-	5260 5300 5320	5500 5600 5700 5720 *3	-	802.11a : 6 Mbps 802.11n(HT20) : MCS0 802.11ac(VHT20): MCS0
	-	5270 5310	5510 5590 5670 5710 *3	-	802.11n(HT40) : MCS0 802.11ac(VHT40): MCS0
	-	5290	5530 5610 5690	-	802.11ac(VHT80): MCS0
6dB Emission Bandwidth	-	-	-	5745 5785 5825	802.11a : 6 Mbps 802.11n(HT20) : MCS0 802.11ac(VHT20): MCS0
	-	-	-	5755 5795	802.11n(HT40) : MCS0 802.11ac(VHT40): MCS0
	-	-	-	5775	802.11ac(VHT80): MCS0
Maximum Conducted Output Power	5180 5200 5220 5240	5260 5280 5300 5320	5500 5600 5620 5700 5720 *3	5745 5785 5825	802.11a : 6 Mbps 802.11n(HT20) : MCS0 802.11ac(VHT20): MCS0
	5190 5230	5270 5310	5510 5590 5630 5670 5710 *3	5755 5795	802.11n(HT40) : MCS0 802.11ac(VHT40): MCS0
	5210	5290	5530 5610 5690	5775	802.11ac(VHT80): MCS0
99% Occupied Bandwidth, Maximum Power Spectral Density	5180 5220 5240	5260 5300 5320	5500 5600 5700 5720 *3	5745 5785 5825	802.11a : 6 Mbps 802.11n(HT20) : MCS0 802.11ac(VHT20): MCS0
	5190 5230	5270 5310	5510 5590 5670 5710 *3	5755 5795	802.11n(HT40) : MCS0 802.11ac(VHT40): MCS0
	5210	5290	5530 5610 5690	5775	802.11ac(VHT80): MCS0

Test Items	Test Channels [MHz]				Worst Data Rate *1
	U-NII-1	U-NII-2A	U-NII-2C	U-NII-3	
Unwanted Emissions *2 (Below 1GHz)	-	-	5510	5795	802.11n(HT40) : MCS0
Unwanted Emissions (Above 1GHz)	5180	5260 5320	5500 5600 *4 5700	5745 5785 *4 5825	802.11a : 6 Mbps 802.11ac(VHT20): MCS0
	5190	5270 5310	5510 5590 *5 5670	5755 5795	802.11n(HT40) : MCS0 802.11ac(VHT40): MCS0
	5210	5290	5530 5610	5775	802.11ac(VHT80): MCS0

Note

*1: The worst data rate has been decided based on the result of Maximum Conducted Output Power.

*2: The test was performed with the representative mode that had been found as the worst emissions while exploratory testing.

*3: It applies only to IEEE802.11ac.

*4: It applies only to IEEE802.11a.

*5: It applies only to IEEE802.11n.

Power Setting

IEEE Standard	Power Setting [dBm]			
	U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
802.11a	12.0	12.0	12.0	12.0
802.11n(HT20)	12.0	12.0	12.0	12.0
802.11ac(VHT20)	8.0	8.0	8.0	8.0
802.11n(HT40)	10.0	10.0	10.0	10.0
802.11ac(VHT40)	8.0	8.0	8.0	8.0
802.11ac(VHT80)	5.0	5.0	5.0	5.0

The Software for Operating Mode

Software Name : Labtool

Software Version : 2.0.0.59

2.3. Special Accessories

Special accessories needed for connecting the EUT to achieve compliance:

Item	Manufacturer	Model No.	Serial No.	Remark
Personal Computer	lenovo	X230	38-35674	*6
AC Adaptor	lenovo	42T4418	Z1ZGWG08PAWL	*6
Personal Computer	DELL	E5530	35-38090	*7
AC Adaptor	DELL	LA65NS-01	2CH-6C50	*7

Note

*6: Used in AC Power-line Conducted Emissions and Unwanted Emissions.

*7: Used in Antenna-port Conducted Measurements.

2.4. EUT Modifications

- ☒ No equipment modification to achieve compliance to the standard levels was done during the tests.
☐ Equipment was modified to achieve compliance to the standard level as below.

Responsible Party Signature

Typed/ Print Name	:
Responsible Party	:
Position	:
Date	:

2.5. Configuration of EUT System

AC Power-line Conducted Emissions

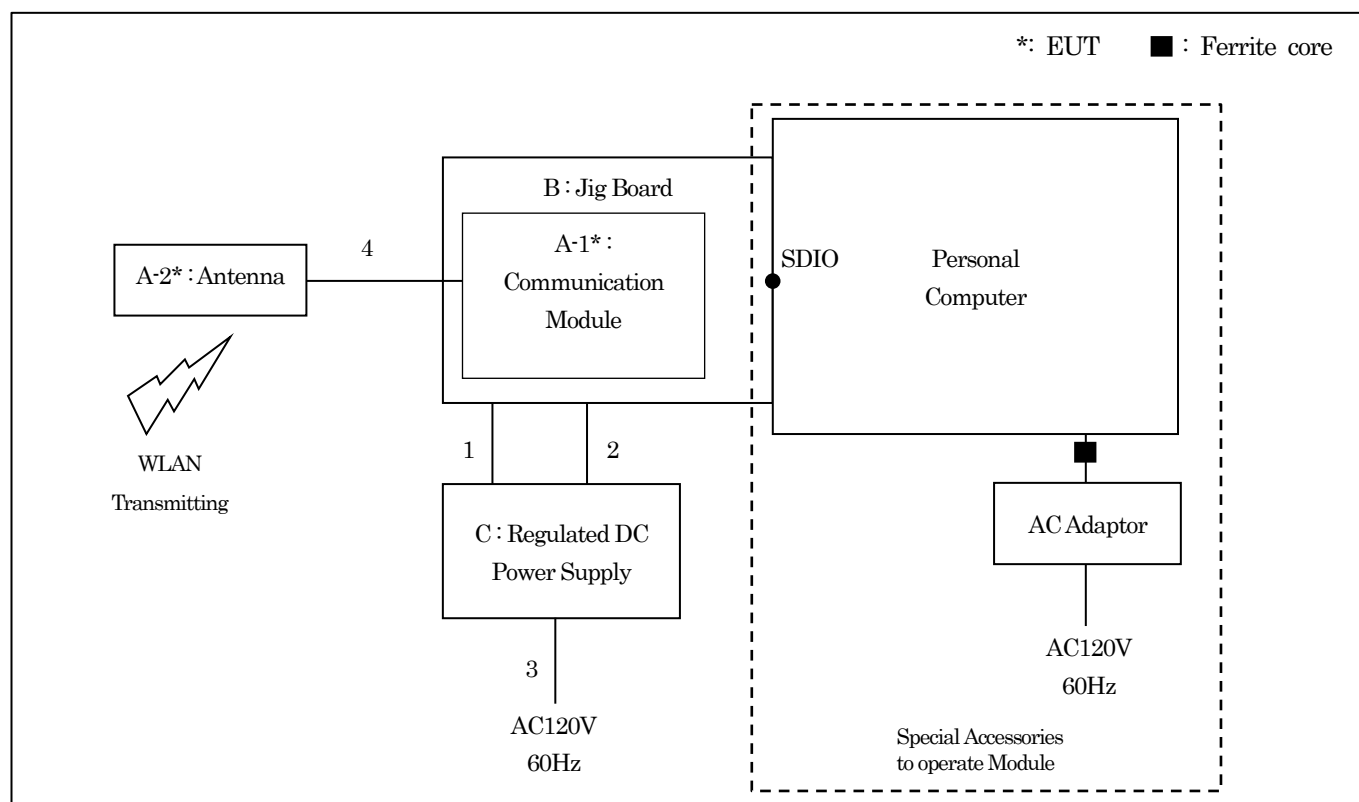
[EUT and Associated Equipment (AE)]

Symbol	EUT/AE	Item	Manufacturer	Model No.	Serial No.
A-1	EUT	Communication Module	SONY	FLE01WBM	3
A-2	EUT	Antenna	SONY	-	-
B	AE	Jig Board	-	-	-
C	AE	Regulated DC Power Supply	KENWOOD	PW18-1.3AT	7030091

[Type of Cable]

Symbol	Description	Identification (Manufacturer etc.)	Shielded Yes / No	Ferrite Core	Length (m)	Bundled
1	DC Cable	-	No	No	1.8	-
2	DC Cable	-	No	No	2.0	-
3	AC Cable	-	No	No	2.0	Bundled
4	Antenna Cable	-	No	No	0.5	-

[Connecting Diagram]



Antenna-port Conducted Measurements

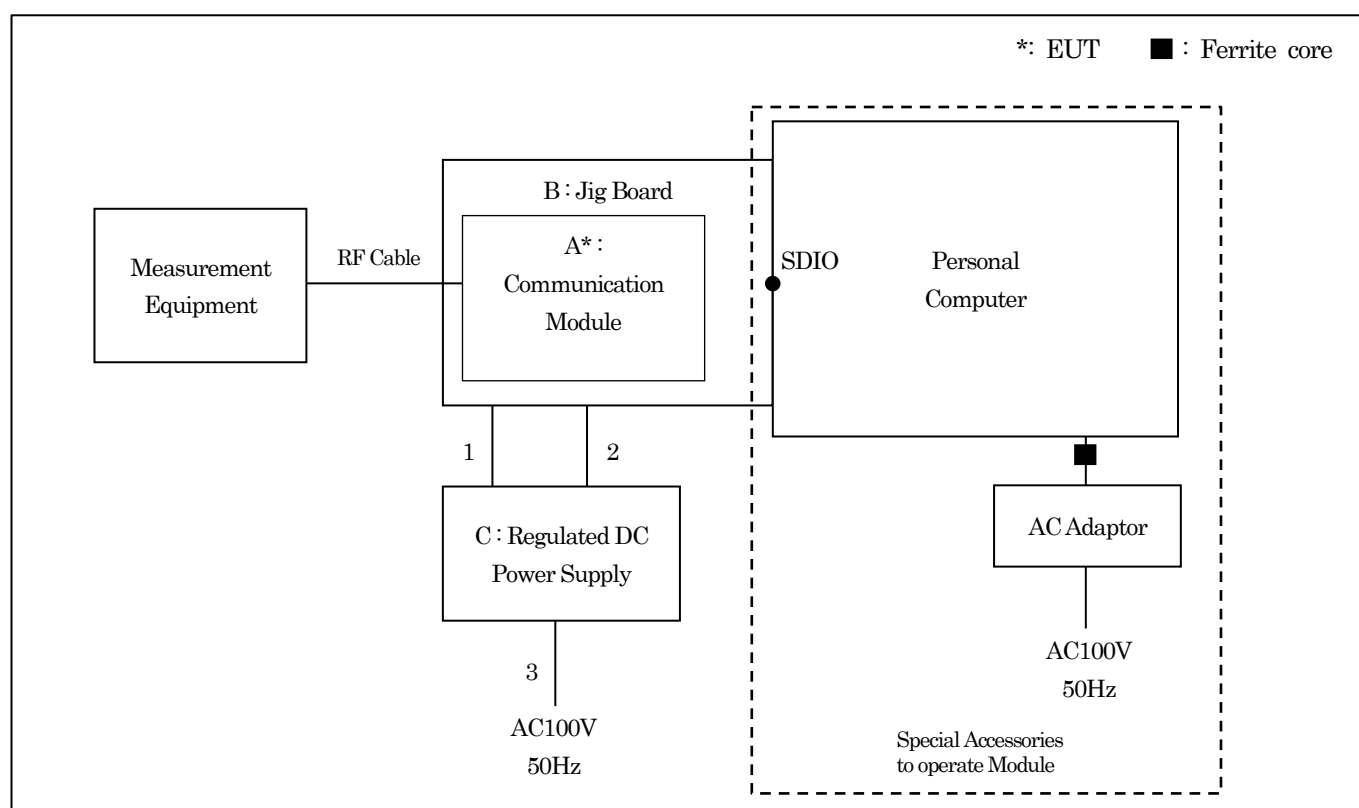
[EUT and Associated Equipment (AE)]

Symbol	EUT/ AE	Item	Manufacturer	Model No.	Serial No.
A	EUT	Communication Module	SONY	FLE01WBM	1
B	AE	Jig Board	-	-	-
C	AE	Regulated DC Power Supply	KENWOOD	PW18-1.3AT	7030091

[Type of Cable]

Symbol	Description	Identification (Manufacturer etc.)	Shielded Yes / No	Ferrite Core	Length (m)	Bundled
1	DC Cable	-	No	No	1.0	-
2	DC Cable	-	No	No	1.0	-
3	AC Cable	-	No	No	2.0	-

[Connecting Diagram]



Unwanted Emissions

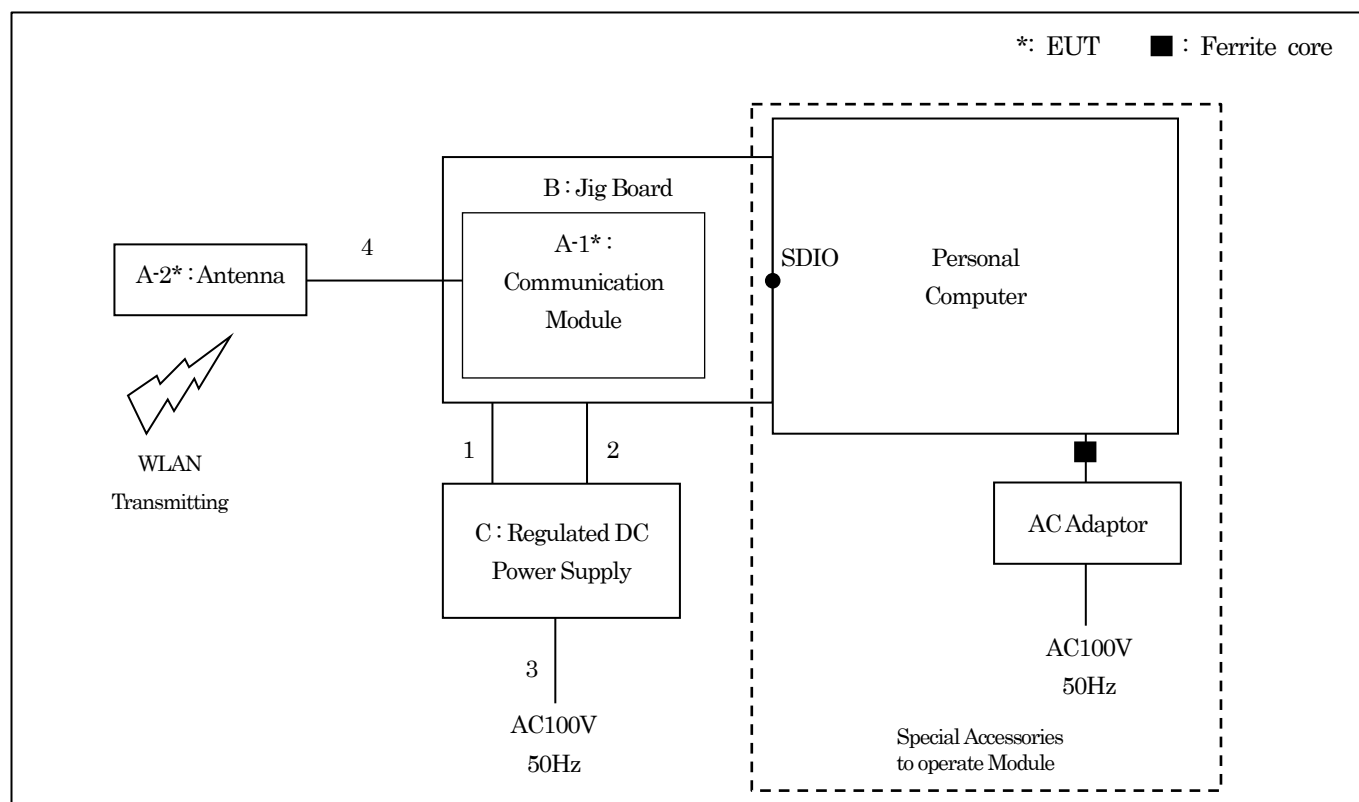
[EUT and Associated Equipment (AE)]

Symbol	EUT/ AE	Item	Manufacturer	Model No.	Serial No.
A-1	EUT	Communication Module	SONY	FLE01WBM	3
A-2	EUT	Antenna	SONY	-	-
B	AE	Jig Board	-	-	-
C	AE	Regulated DC Power Supply	KENWOOD	PWR18-2P	6120013

[Type of Cable]

Symbol	Description	Identification (Manufacturer etc.)	Shielded Yes / No	Ferrite Core	Length (m)	Bundled
1	DC Cable	-	No	No	1.8	-
2	DC Cable	-	No	No	2.0	-
3	AC Cable	-	No	No	2.0	-
4	Antenna Cable	-	No	No	0.5	-

[Connecting Diagram]



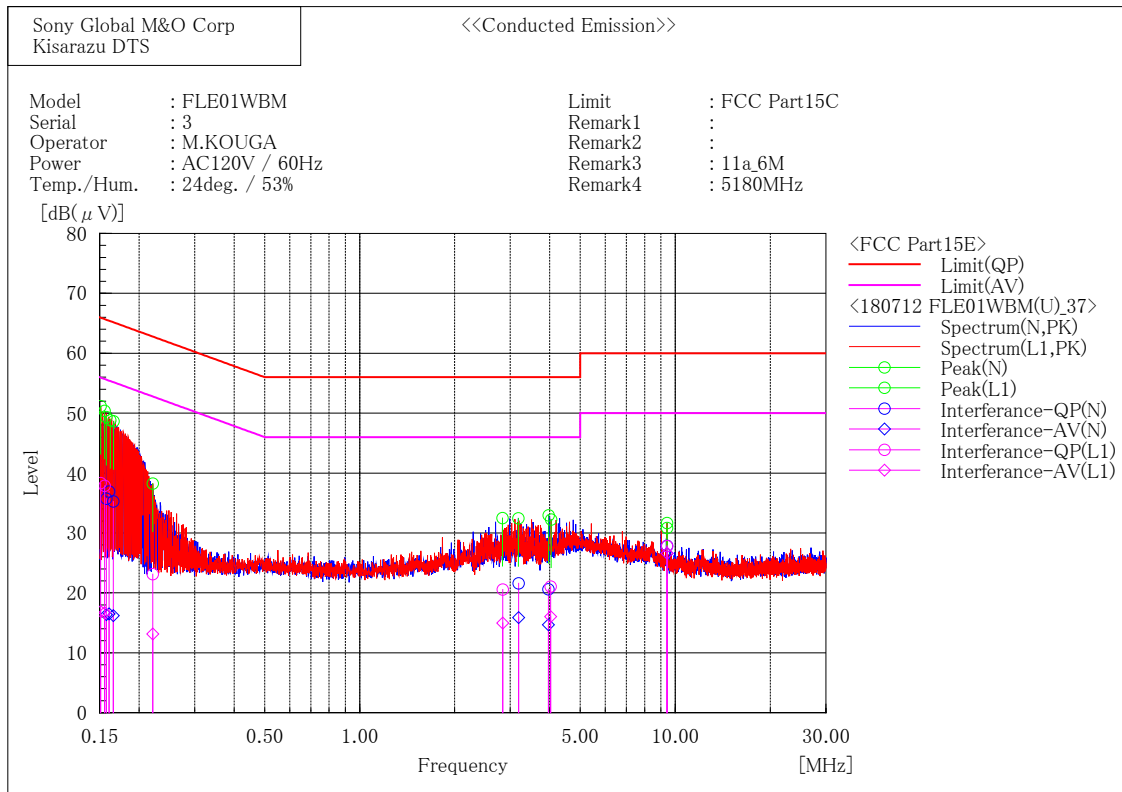
3. Test Data

3.1. AC Power-line Conducted Emissions

1) Date of measurement : July 12, 2018

The test data is mentioned as follows.

[802.11a/ 5180 MHz]



Final Result

--- N Phase ---

No.	Frequency [MHz]	Reading QP [dB(μV)]	Reading AV [dB(μV)]	c. f [dB]	Result QP [dB(μV)]	Result AV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin QP [dB]	Margin AV [dB]
1	0.158	19.3	0.0	16.4	35.7	16.4	65.6	55.6	29.9	39.2
2	0.161	20.4	0.0	16.5	36.9	16.5	65.4	55.4	28.5	38.9
3	0.166	18.6	-0.4	16.6	35.2	16.2	65.2	55.2	30.0	39.0
4	3.188	5.5	-0.2	16.1	21.6	15.9	56.0	46.0	34.4	30.1
5	3.962	4.5	-1.4	16.1	20.6	14.7	56.0	46.0	35.4	31.3
6	9.408	11.5	10.3	16.3	27.8	26.6	60.0	50.0	32.2	23.4

--- L1 Phase ---

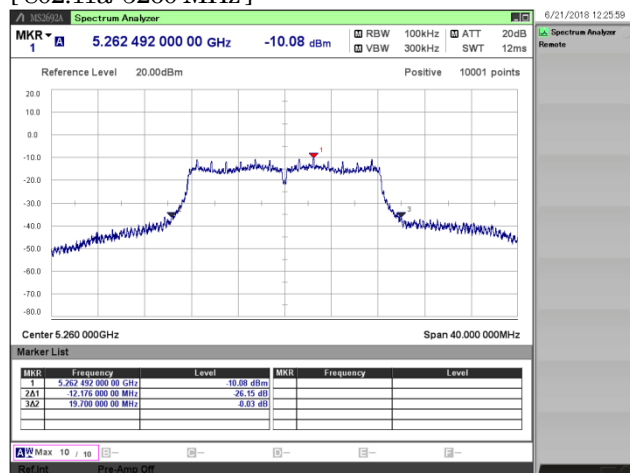
No.	Frequency [MHz]	Reading QP [dB(μV)]	Reading AV [dB(μV)]	c. f [dB]	Result QP [dB(μV)]	Result AV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin QP [dB]	Margin AV [dB]
1	0.151	22.1	0.7	16.2	38.3	16.9	65.9	55.9	27.6	39.0
2	0.156	21.6	0.4	16.3	37.9	16.7	65.7	55.7	27.8	39.0
3	0.221	7.1	-2.9	16.0	23.1	13.1	62.8	52.8	39.7	39.7
4	2.841	4.4	-1.2	16.1	20.5	14.9	56.0	46.0	35.5	31.1
5	4.027	4.8	-0.2	16.2	21.0	16.0	56.0	46.0	35.0	30.0
6	9.408	11.5	10.3	16.3	27.8	26.6	60.0	50.0	32.2	23.4

3.2. 26dB Emission Bandwidth

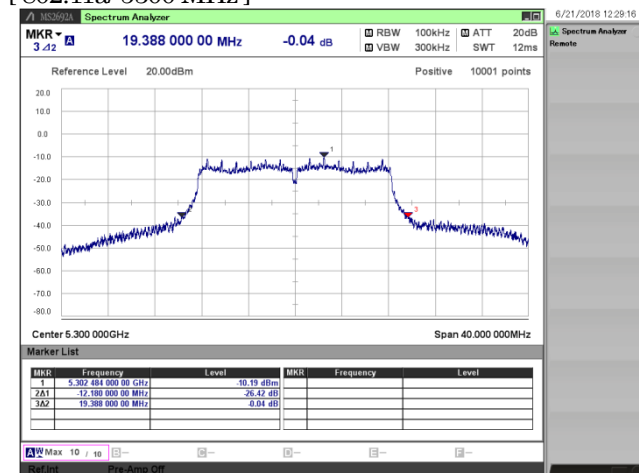
- 1) Ambient temperature : 23.4deg.C
 2) Relative humidity : 50.0 %
 3) Date of measurement : June 21, 2018
 4) Measured by : M.KOUGA
 5) Operating mode : Transmitting mode

Mode	Rate [Mbps]	Channel [MHz]	Result [MHz]	Limit [MHz]
11a	6	5260	19.700	-
		5300	19.388	-
		5320	20.080	-
		5500	20.332	-
		5600	20.092	-
		5700	20.044	-
11n (HT20)	MCS0	5260	21.168	-
		5300	21.552	-
		5320	23.088	-
		5500	20.444	-
		5600	22.864	-
		5700	22.064	-
11ac (VHT20)	MCS0	5260	19.348	-
		5300	19.336	-
		5320	19.536	-
		5500	19.352	-
		5600	19.352	-
		5700	19.388	-
11n (HT40)	MCS0	5270	19.376	-
		5270	40.400	-
		5310	41.120	-
		5510	47.960	-
		5590	48.024	-
		5670	50.464	-
11ac (VHT40)	MCS0	5270	40.048	-
		5310	40.424	-
		5510	40.384	-
		5590	42.296	-
		5670	40.240	-
		5710	40.240	-
11ac (VHT80)	MCS0	5290	82.112	-
		5530	82.880	-
		5610	83.072	-
		5690	83.264	-

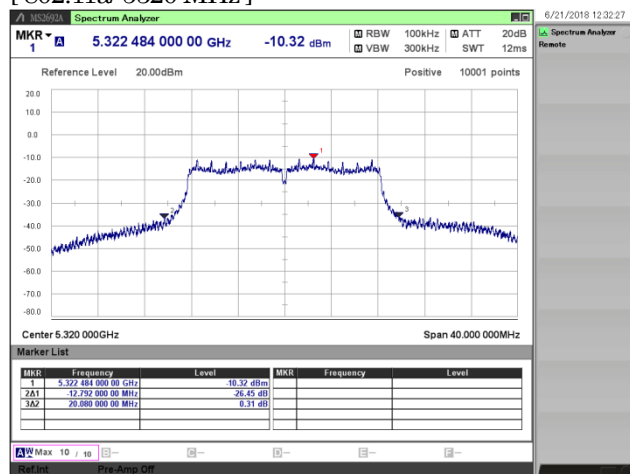
[802.11a/ 5260 MHz]



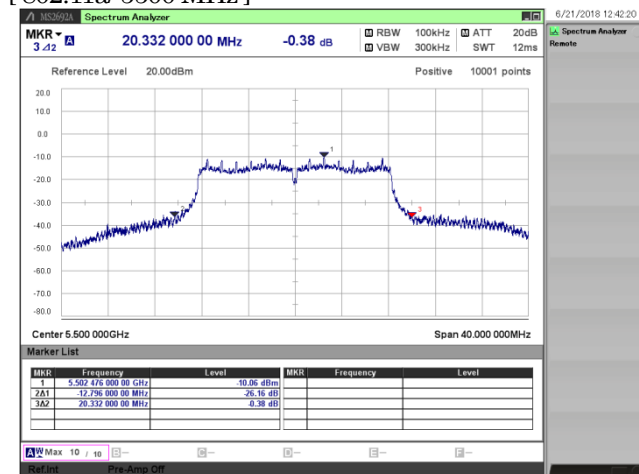
[802.11a/ 5300 MHz]



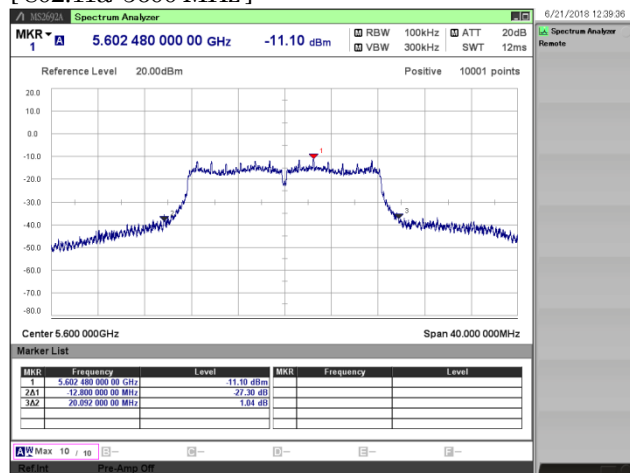
[802.11a/ 5320 MHz]



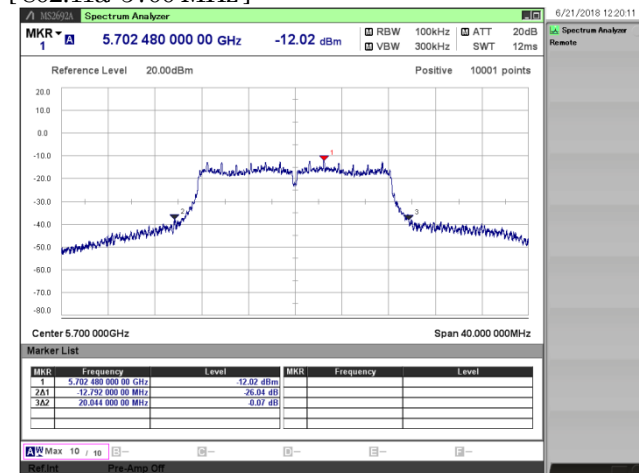
[802.11a/ 5500 MHz]



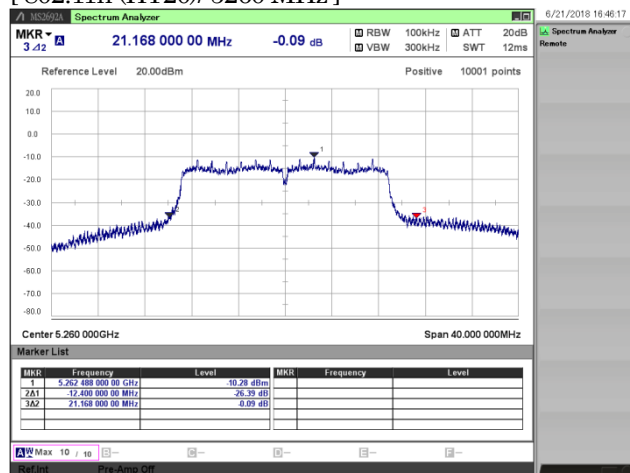
[802.11a/ 5600 MHz]



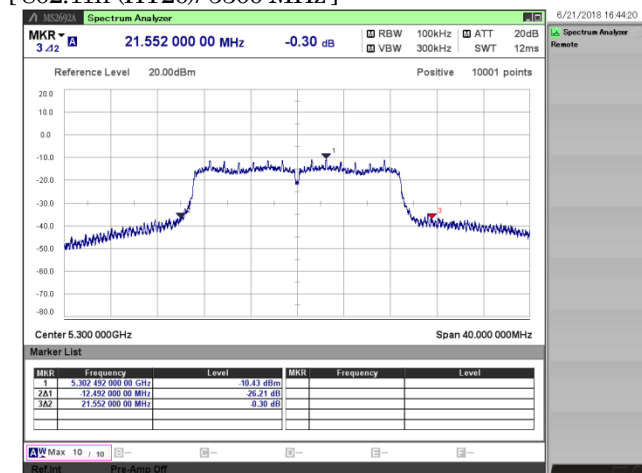
[802.11a/ 5700 MHz]



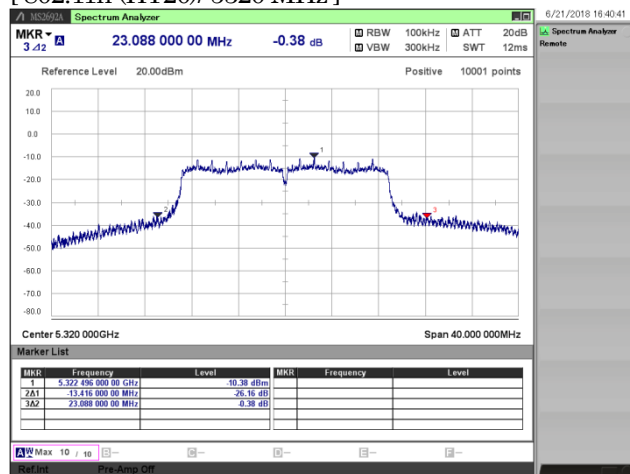
[802.11n (HT20)/ 5260 MHz]



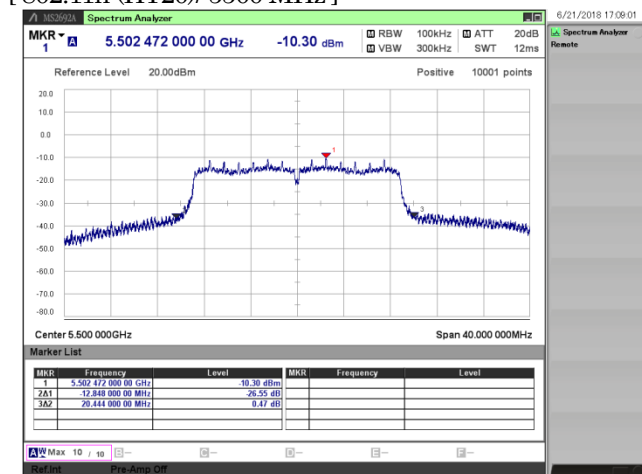
[802.11n (HT20)/ 5300 MHz]



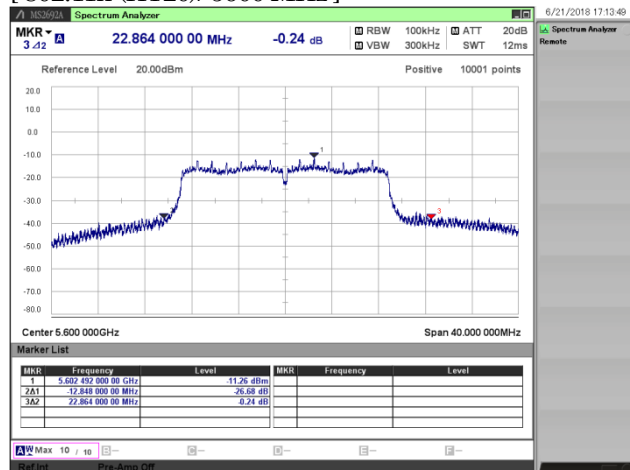
[802.11n (HT20)/ 5320 MHz]



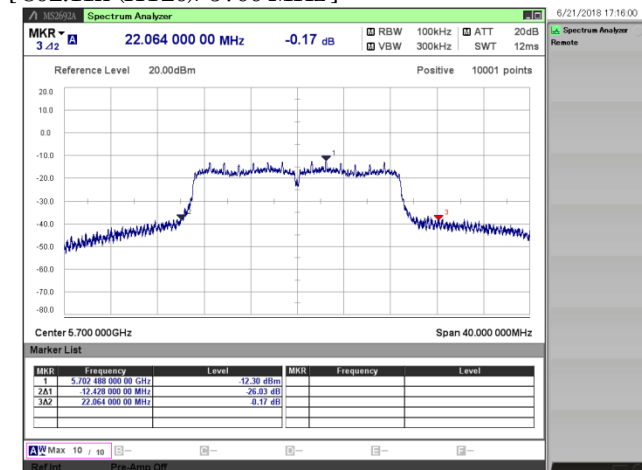
[802.11n (HT20)/ 5500 MHz]



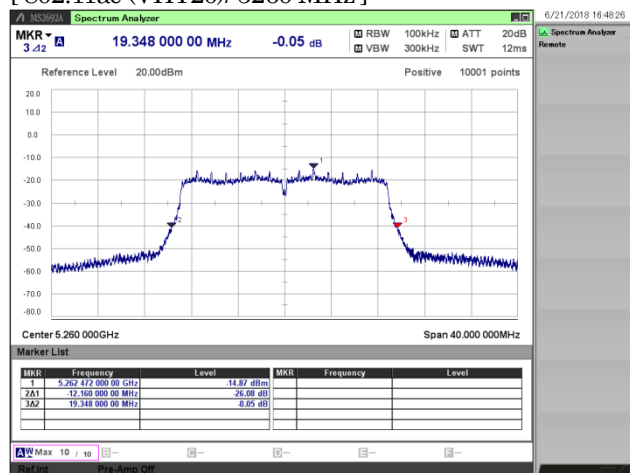
[802.11n (HT20)/ 5600 MHz]



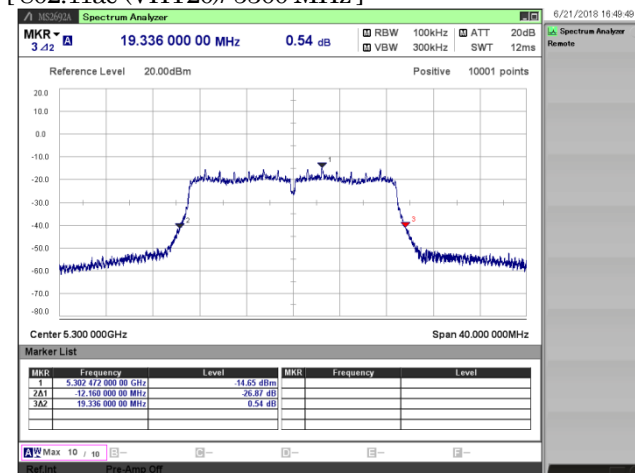
[802.11n (HT20)/ 5700 MHz]



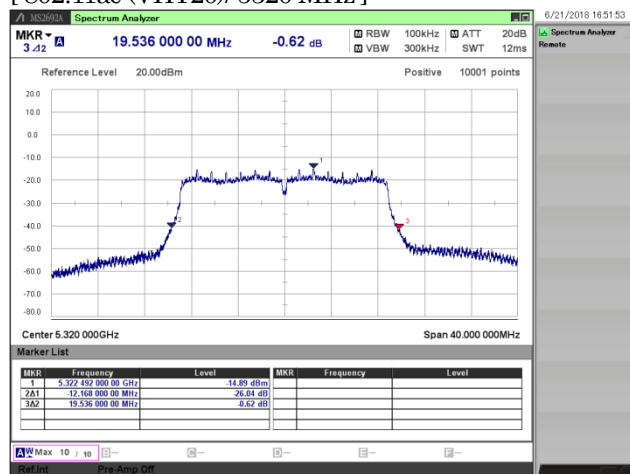
[802.11ac (VHT20)/ 5260 MHz]



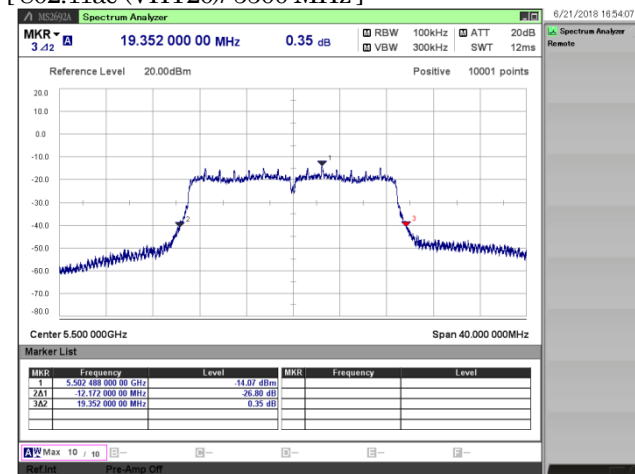
[802.11ac (VHT20)/ 5300 MHz]



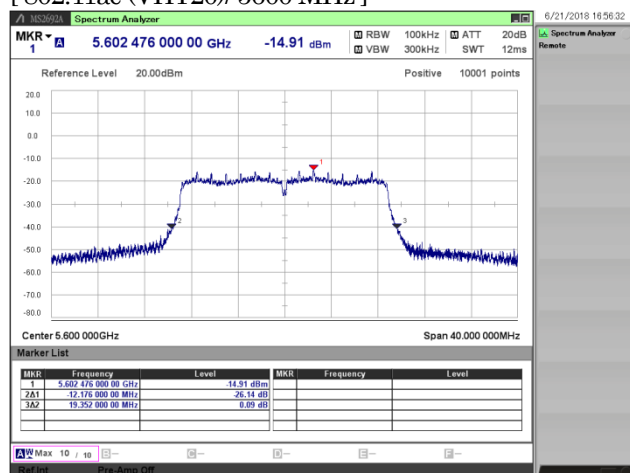
[802.11ac (VHT20)/ 5320 MHz]



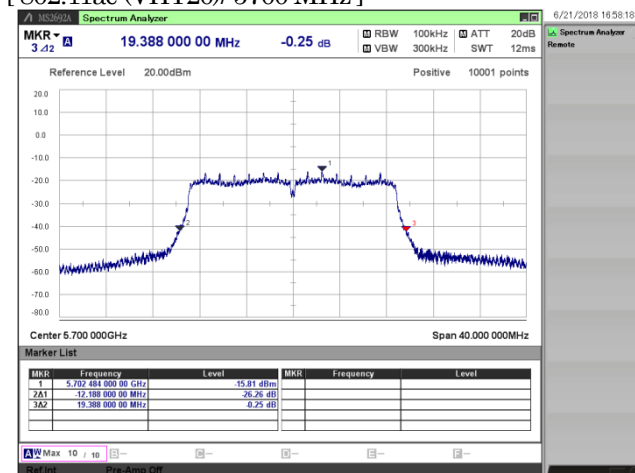
[802.11ac (VHT20)/ 5500 MHz]



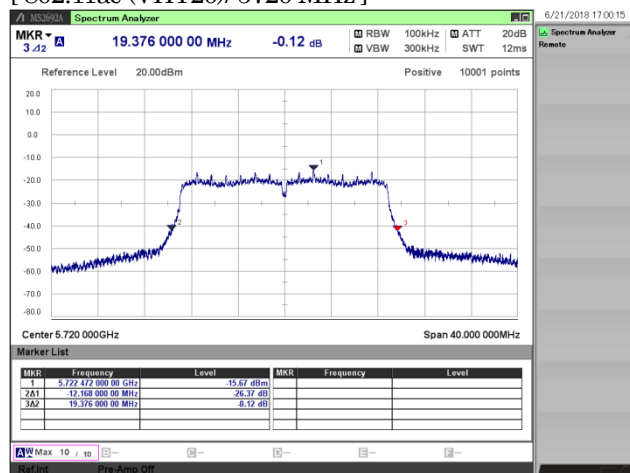
[802.11ac (VHT20)/ 5600 MHz]



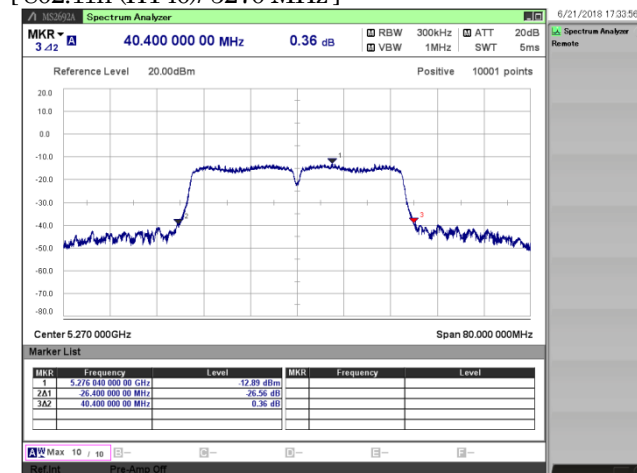
[802.11ac (VHT20)/ 5700 MHz]



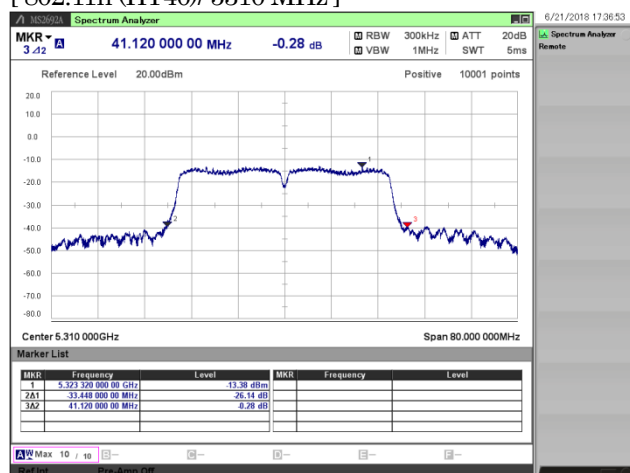
[802.11ac (VHT20)/ 5720 MHz]



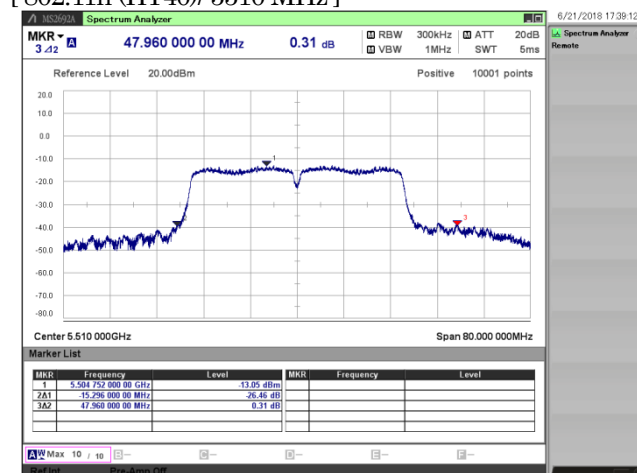
[802.11n (HT40)/ 5270 MHz]



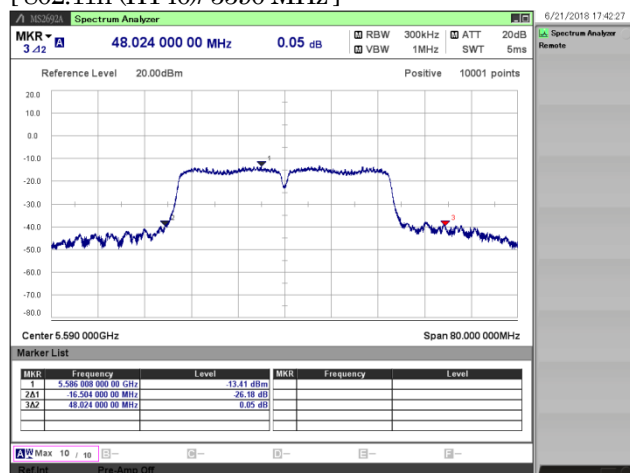
[802.11n (HT40)/ 5310 MHz]



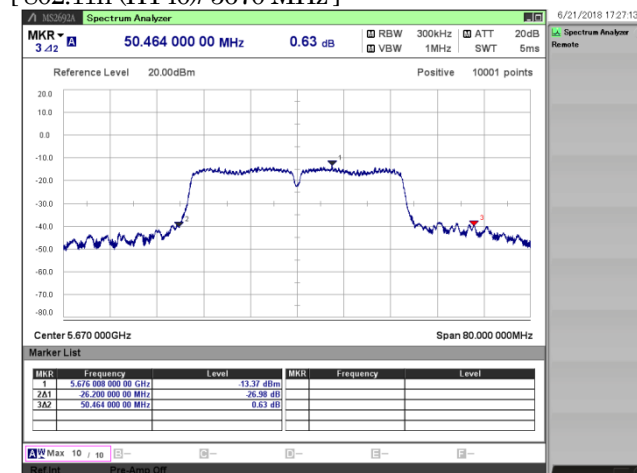
[802.11n (HT40)/ 5510 MHz]



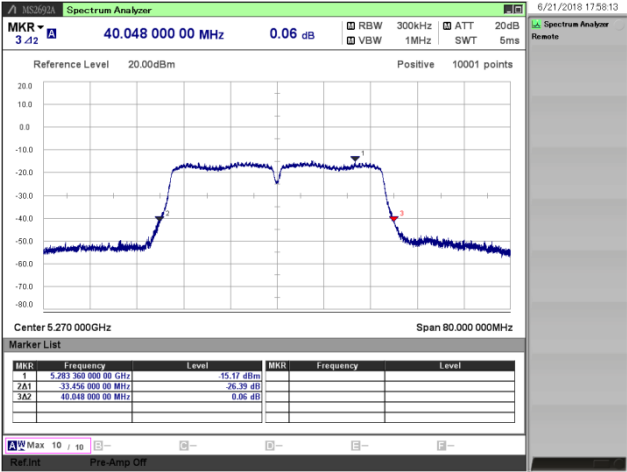
[802.11n (HT40)/ 5590 MHz]



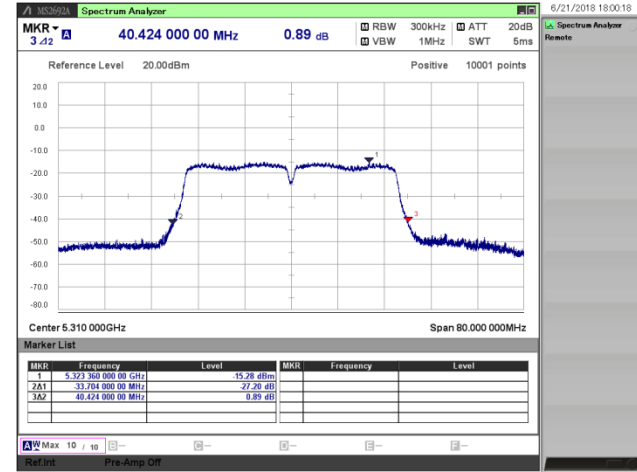
[802.11n (HT40)/ 5670 MHz]



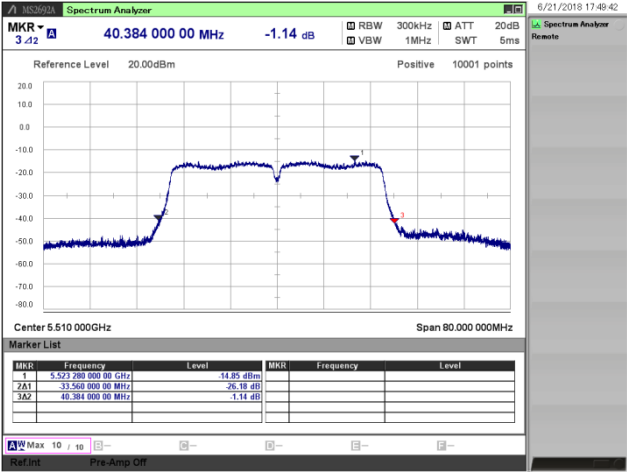
[802.11ac (VHT40)/ 5270 MHz]



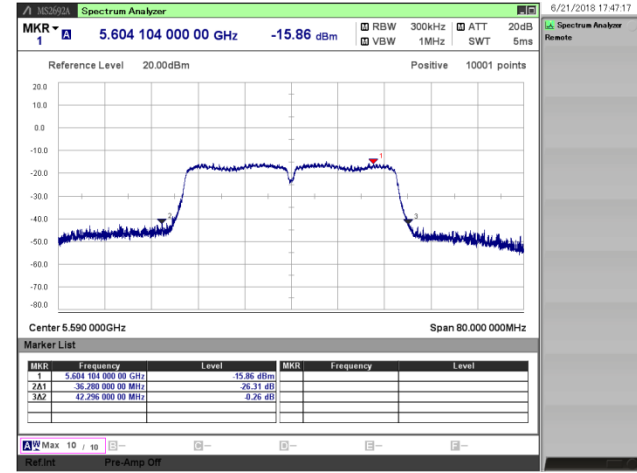
[802.11ac (VHT40)/ 5310 MHz]



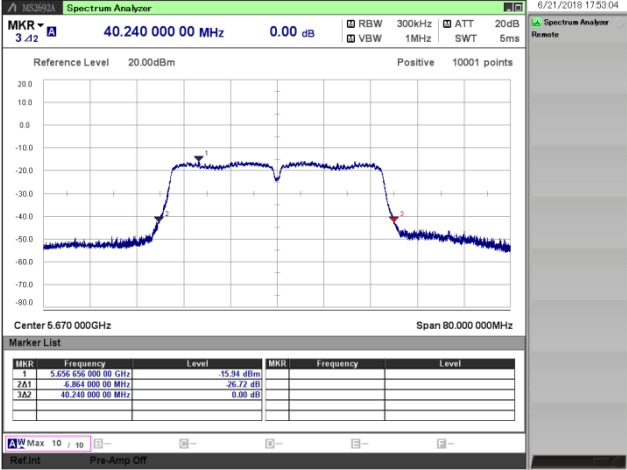
[802.11ac (VHT40)/ 5510 MHz]



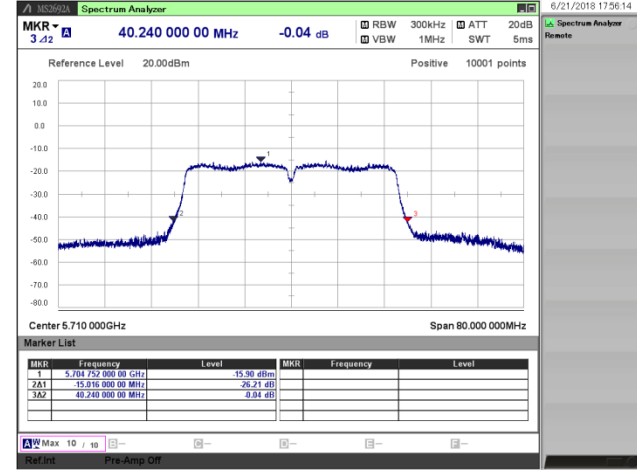
[802.11ac (VHT40)/ 5590 MHz]



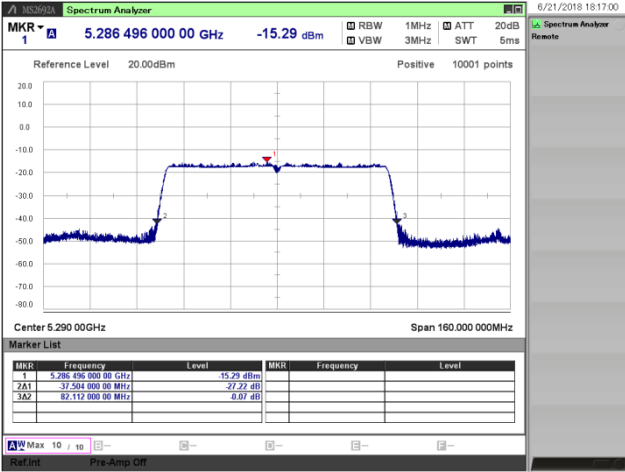
[802.11ac (VHT40)/ 5670 MHz]



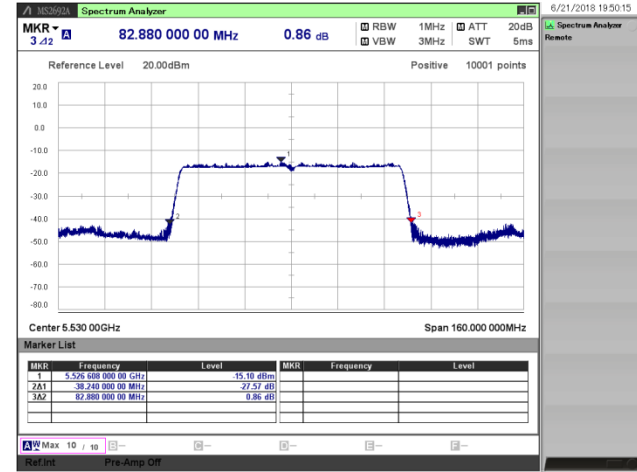
[802.11ac (VHT40)/ 5710 MHz]



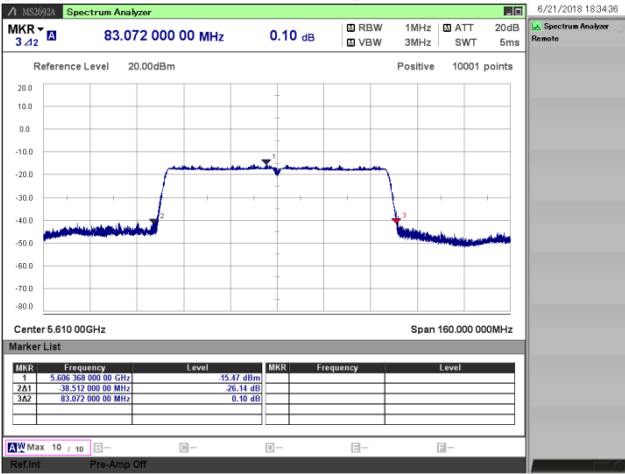
[802.11ac (VHT80)/ 5290 MHz]



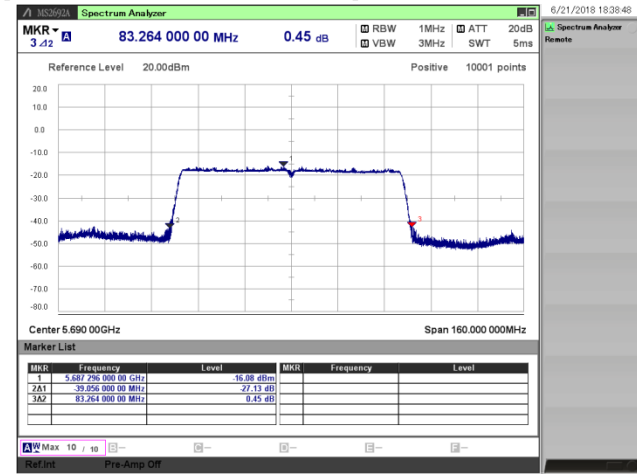
[802.11ac (VHT80)/ 5530 MHz]



[802.11ac (VHT80)/ 5610 MHz]



[802.11ac (VHT80)/ 5690 MHz]

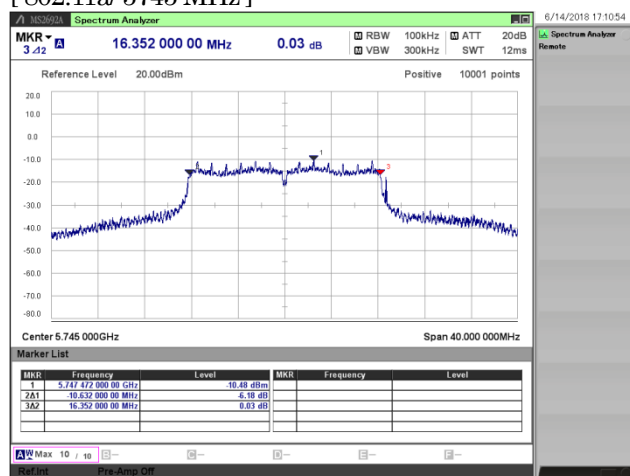


3.3. 6dB Emission Bandwidth

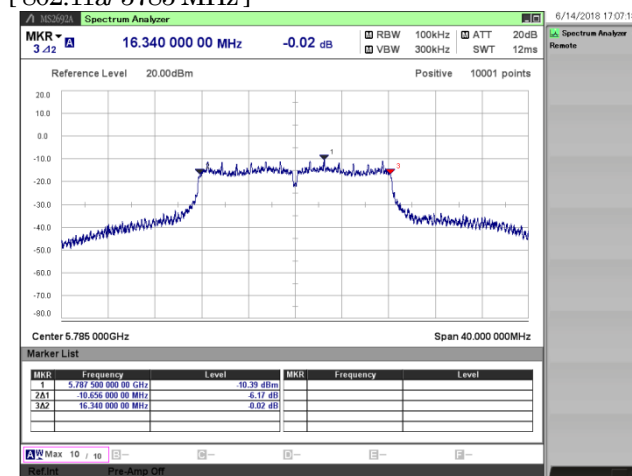
- | | | |
|------------------------|---------------------|---------------|
| 1) Ambient temperature | : 23.7deg.C | 23.4deg.C |
| 2) Relative humidity | : 53.0 % | 50.0 % |
| 3) Date of measurement | : June 14, 2018 | June 21, 2018 |
| 4) Measured by | : M.KOUGA | M.KOUGA |
| 5) Operating mode | : Transmitting mode | |

Mode	Rate [Mbps]	Channel [MHz]	Result [MHz]	Limit [MHz]
11a	6	5745	16.352	0.500
		5785	16.340	0.500
		5825	16.340	0.500
11n (HT20)	MCS0	5745	17.560	0.500
		5785	17.548	0.500
		5825	17.548	0.500
11ac (VHT20)	MCS0	5745	17.532	0.500
		5785	17.544	0.500
		5825	17.548	0.500
11n (HT40)	MCS0	5755	35.464	0.500
		5795	35.152	0.500
11ac (VHT40)	MCS0	5755	35.368	0.500
		5795	35.568	0.500
11ac (VHT80)	MCS0	5775	76.368	0.500

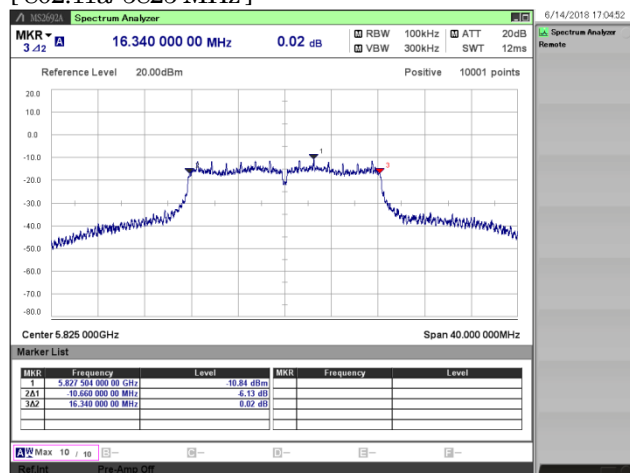
[802.11a/ 5745 MHz]



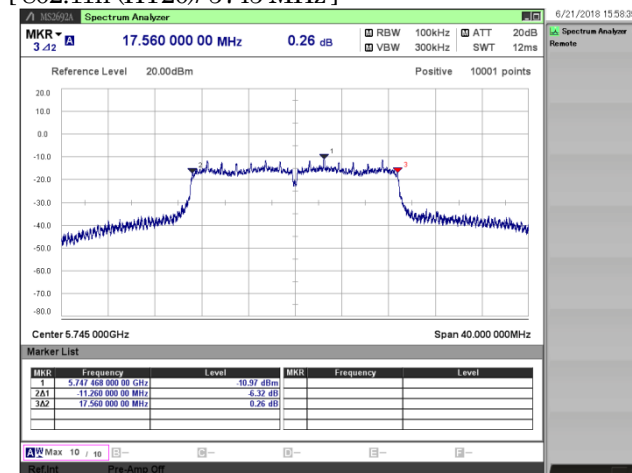
[802.11a/ 5785 MHz]



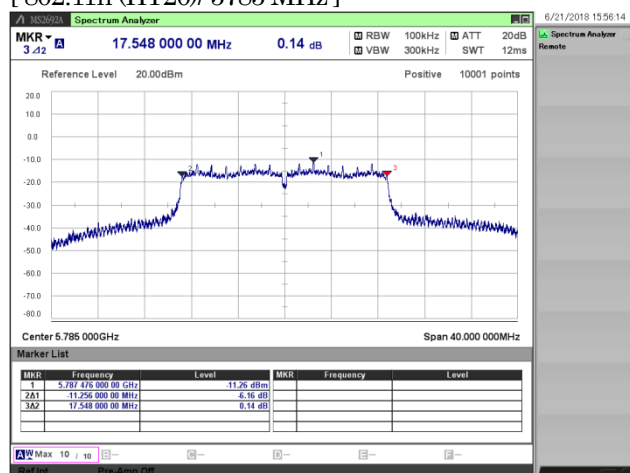
[802.11a/ 5825 MHz]



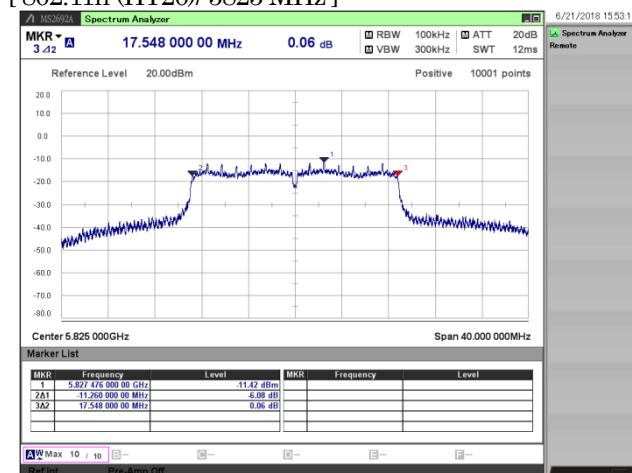
[802.11n (HT20)/ 5745 MHz]



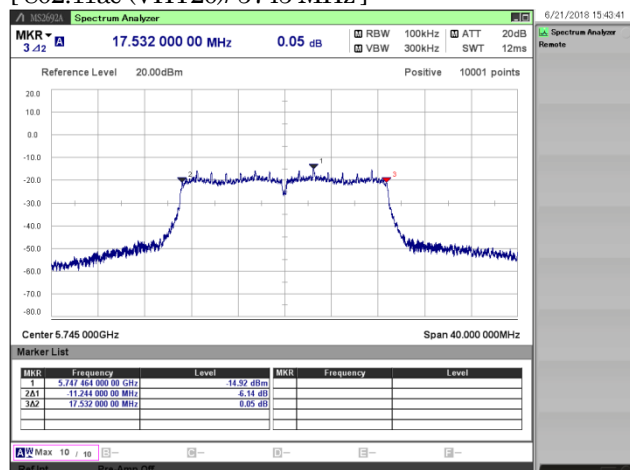
[802.11n (HT20)/ 5785 MHz]



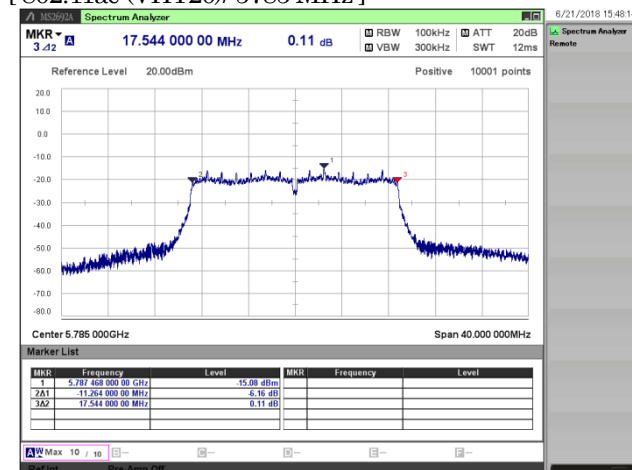
[802.11n (HT20)/ 5825 MHz]



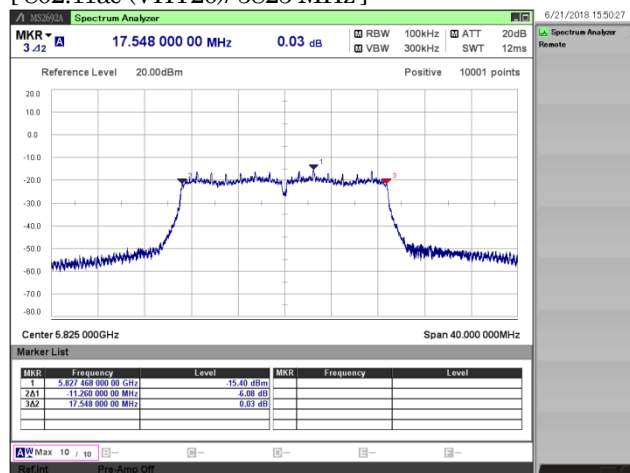
[802.11ac (VHT20)/ 5745 MHz]



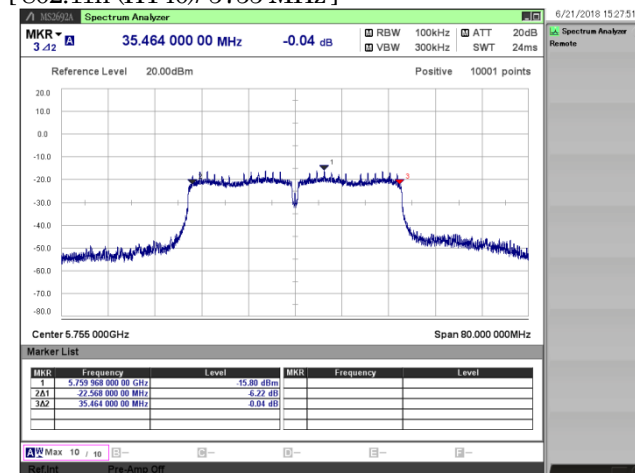
[802.11ac (VHT20)/ 5785 MHz]



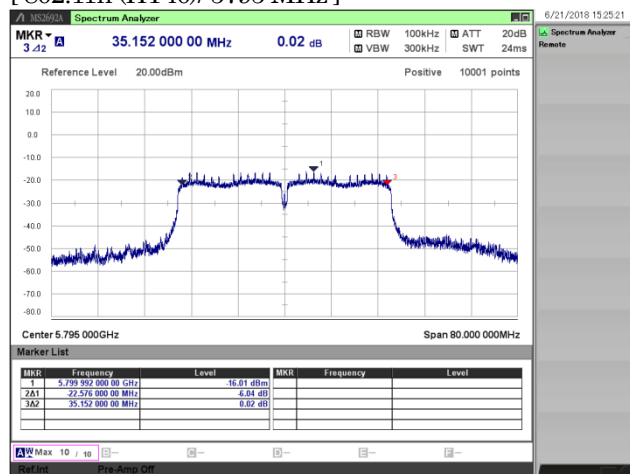
[802.11ac (VHT20)/ 5825 MHz]



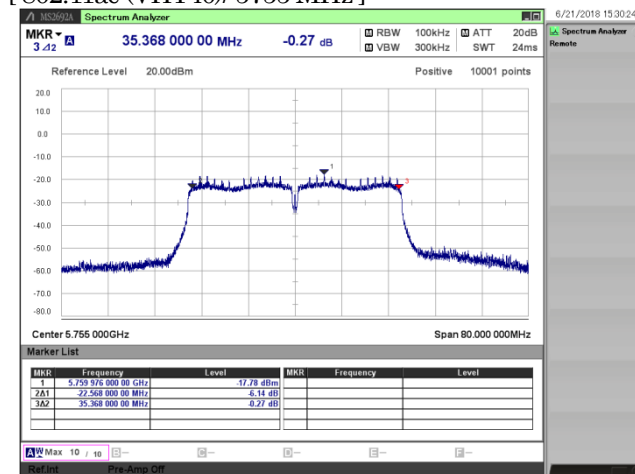
[802.11n (HT40)/ 5755 MHz]



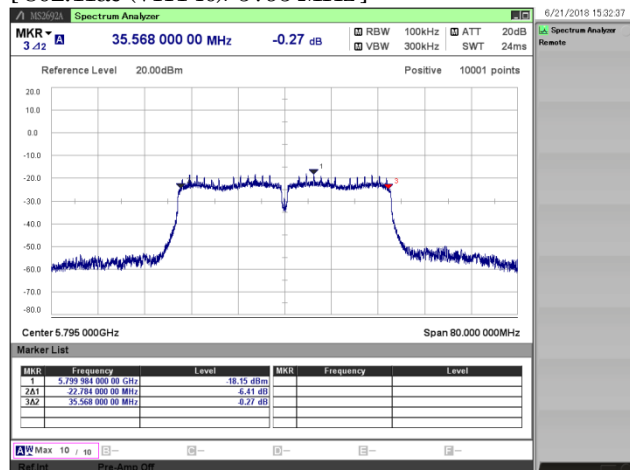
[802.11n (HT40)/ 5795 MHz]



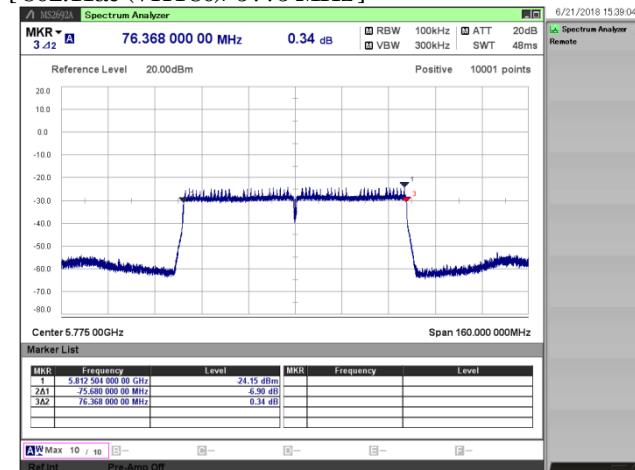
[802.11ac (VHT40)/ 5755 MHz]



[802.11ac (VHT40)/ 5795 MHz]



[802.11ac (VHT80)/ 5775 MHz]



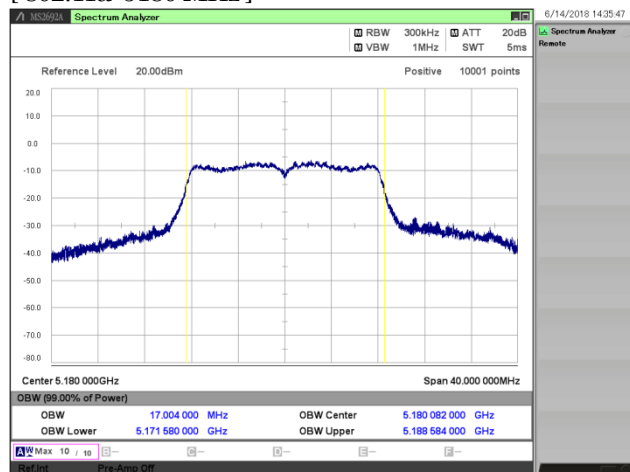
3.4. 99% Occupied Bandwidth

- 1) Ambient temperature : 23.7deg.C 23.4deg.C
 2) Relative humidity : 53.0 % 50.0 %
 3) Date of measurement : June 14, 2018 June 21, 2018
 4) Measured by : M.KOUGA M.KOUGA
 5) Operating mode : Transmitting mode

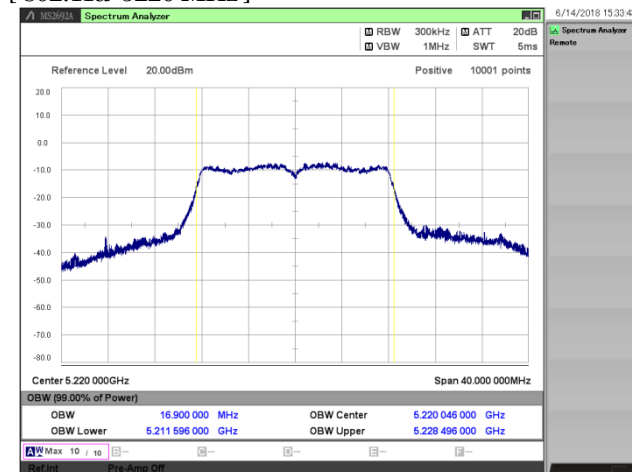
Mode	Rate [Mbps]	Channel [MHz]	Result [MHz]	Limit [MHz]
11a	6	5180	17.004	-
		5220	16.900	-
		5240	16.976	-
		5260	16.988	-
		5300	17.024	-
		5320	17.040	-
		5500	17.680	-
		5600	17.024	-
		5700	17.000	-
		5745	17.044	-
		5785	17.840	-
		5825	17.448	-
11n (HT20)	MCS0	5180	17.776	-
		5220	17.892	-
		5240	17.872	-
		5260	17.756	-
		5300	17.864	-
		5320	17.820	-
		5500	18.208	-
		5600	17.920	-
		5700	17.892	-
		5745	19.196	-
		5785	18.380	-
		5825	18.200	-
11ac (VHT20)	MCS0	5180	17.648	-
		5220	17.652	-
		5240	17.660	-
		5260	17.656	-
		5300	17.640	-
		5320	17.640	-
		5500	17.660	-
		5600	17.720	-
		5700	17.656	-
		5720	17.656	-
		5745	17.688	-
		5785	17.696	-
		5825	17.664	-

Mode	Rate [Mbps]	Channel [MHz]	Result [MHz]	Limit [MHz]
11n (HT40)	MCS0	5190	36.544	-
		5230	36.480	-
		5270	36.624	-
		5310	36.776	-
		5510	36.696	-
		5590	36.888	-
		5670	36.968	-
		5755	36.936	-
		5795	36.936	-
11ac (VHT40)	MCS0	5190	36.368	-
		5230	36.408	-
		5270	36.360	-
		5310	36.360	-
		5510	36.408	-
		5590	36.440	-
		5670	36.400	-
		5710	36.368	-
		5755	36.512	-
11ac (VHT80)	MCS0	5210	76.240	-
		5290	76.176	-
		5530	76.240	-
		5610	76.240	-
		5690	76.192	-
		5775	76.528	-

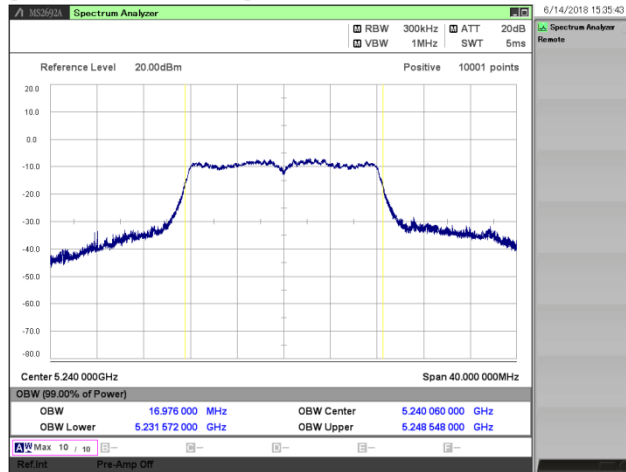
[802.11a/ 5180 MHz]



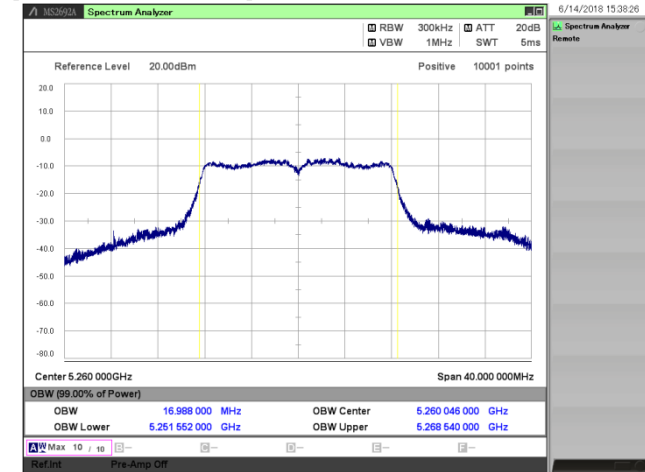
[802.11a/ 5220 MHz]



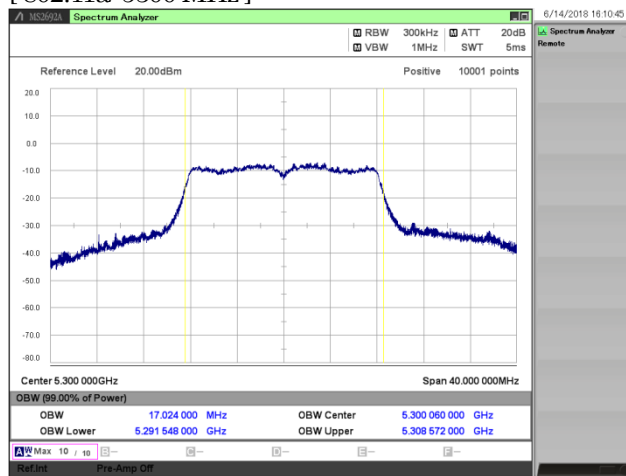
[802.11a/ 5240 MHz]



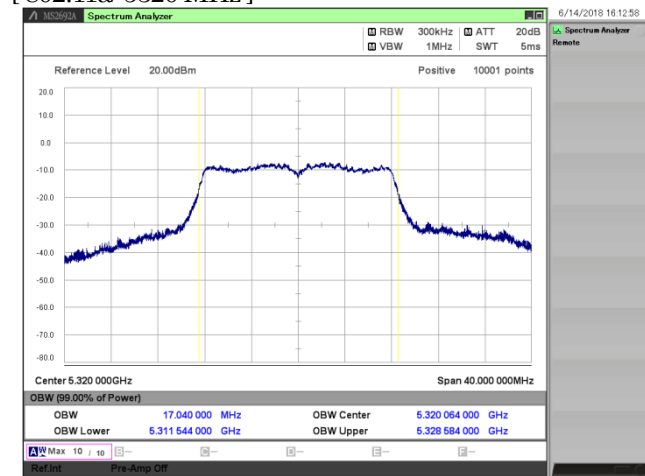
[802.11a/ 5260 MHz]



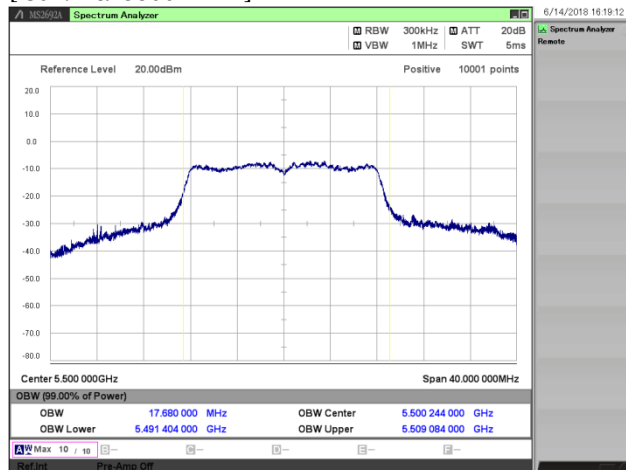
[802.11a/ 5300 MHz]



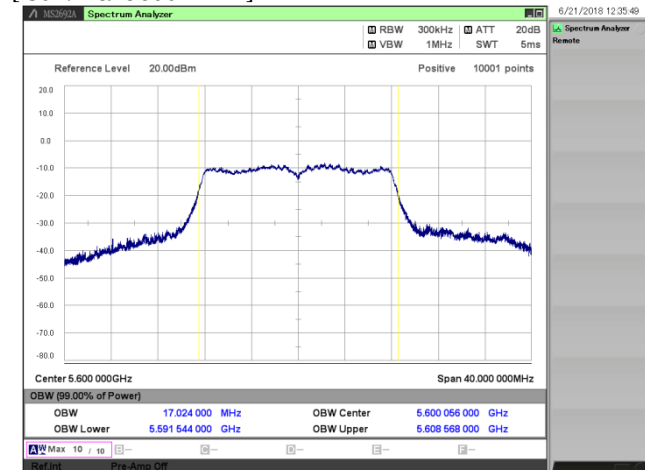
[802.11a/ 5320 MHz]



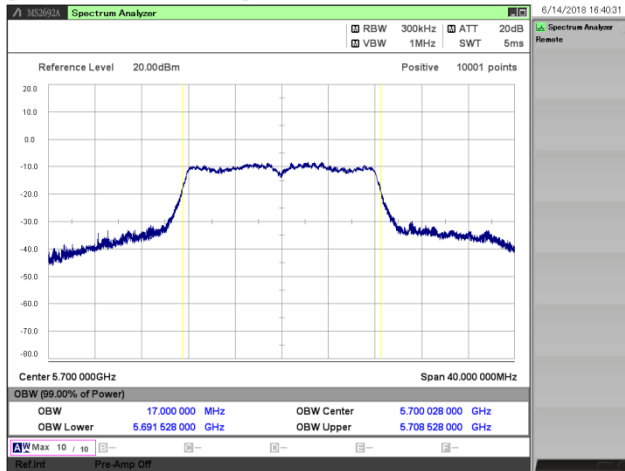
[802.11a/ 5500 MHz]



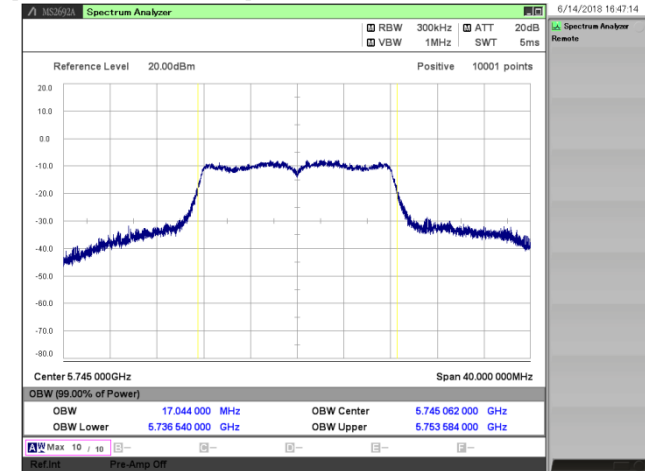
[802.11a/ 5600 MHz]



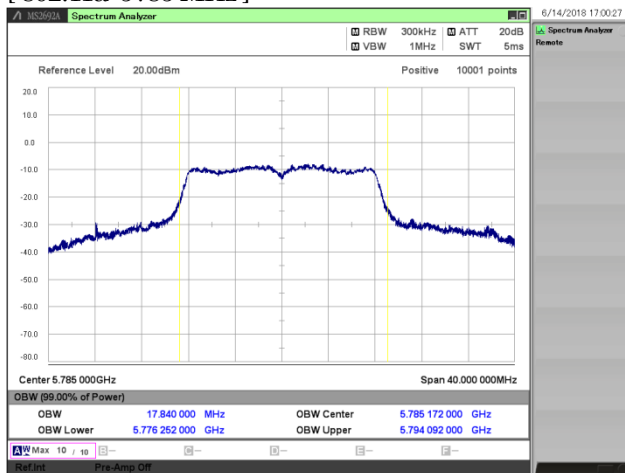
[802.11a/ 5700 MHz]



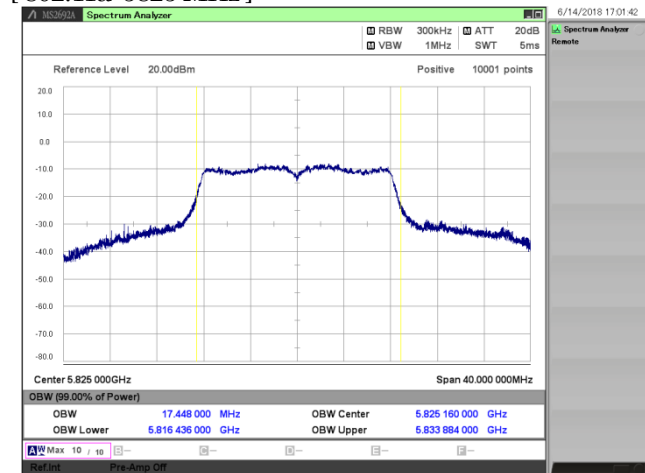
[802.11a/ 5745 MHz]



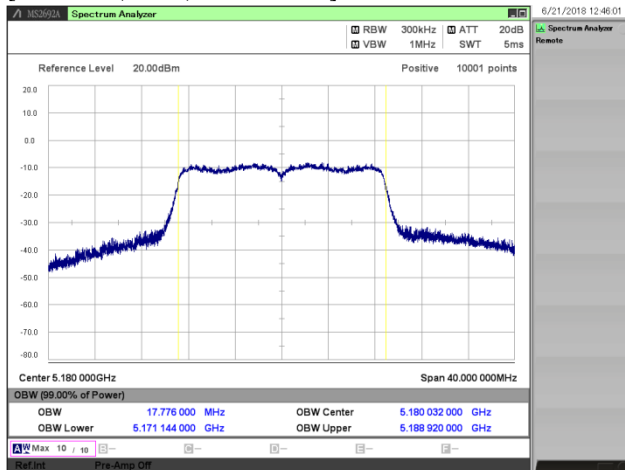
[802.11a/ 5785 MHz]



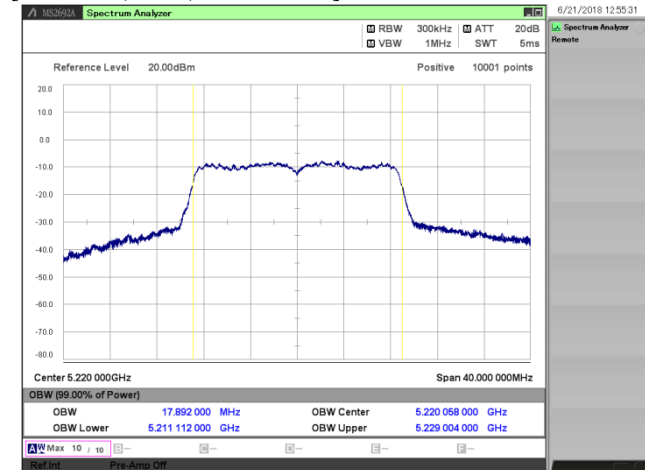
[802.11a/ 5825 MHz]



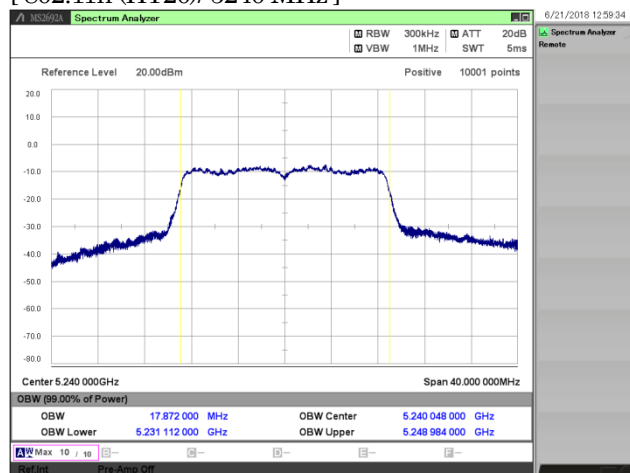
[802.11n (HT20)/ 5180 MHz]



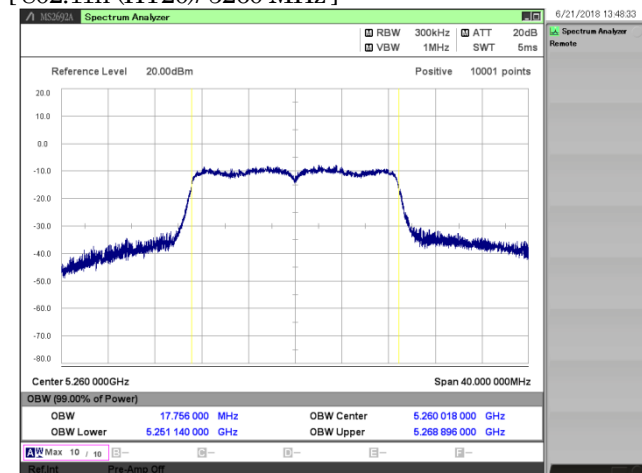
[802.11n (HT20)/ 5220 MHz]



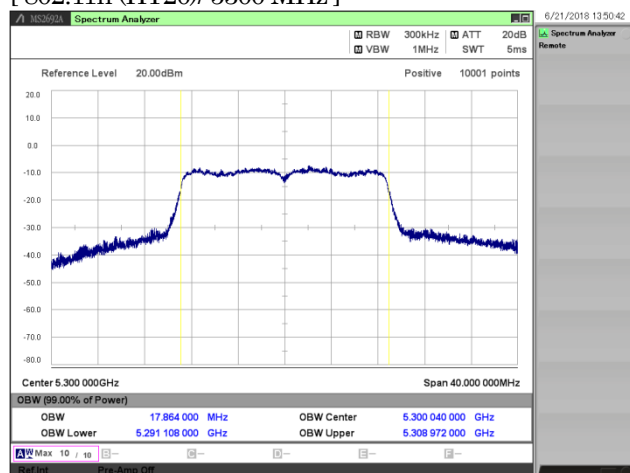
[802.11n (HT20)/ 5240 MHz]



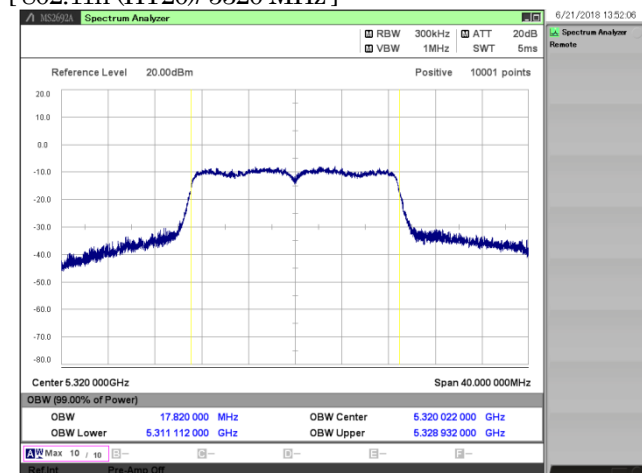
[802.11n (HT20)/ 5260 MHz]



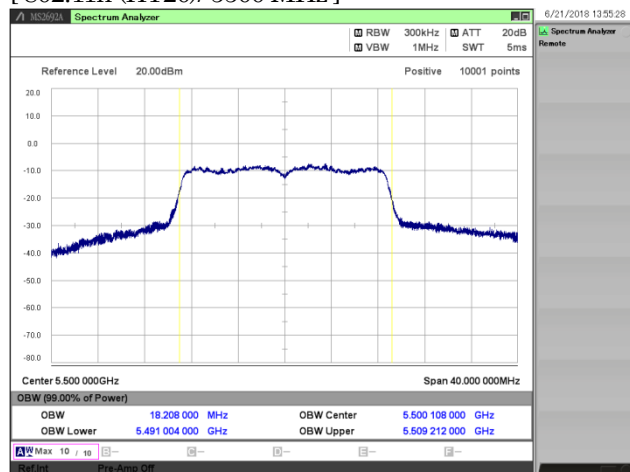
[802.11n (HT20)/ 5300 MHz]



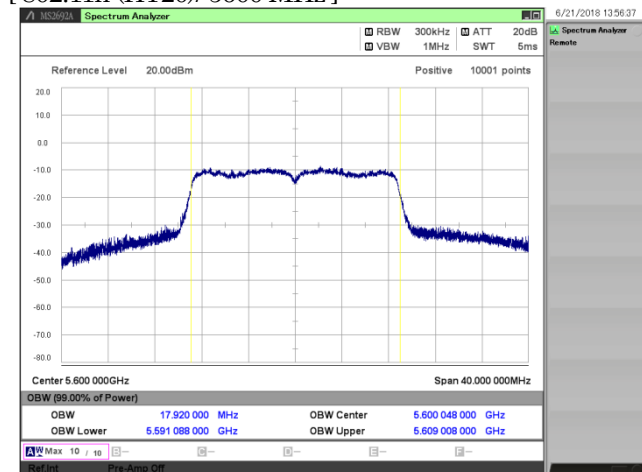
[802.11n (HT20)/ 5320 MHz]



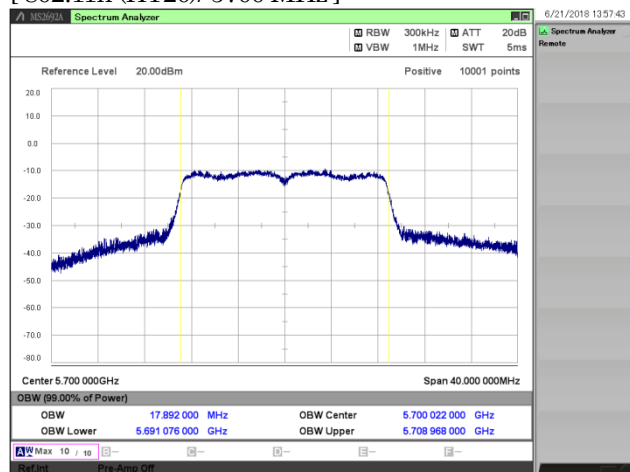
[802.11n (HT20)/ 5500 MHz]



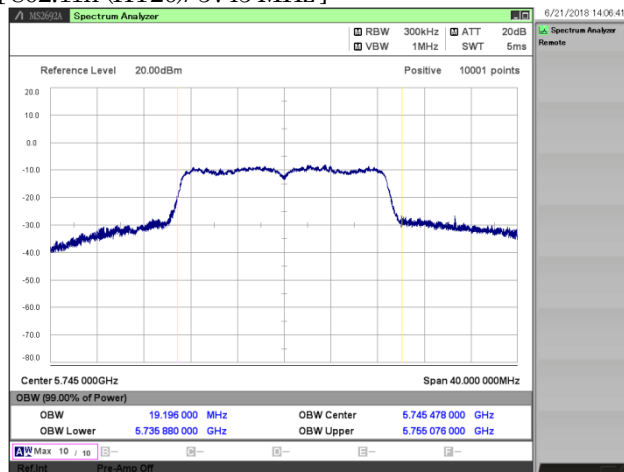
[802.11n (HT20)/ 5600 MHz]



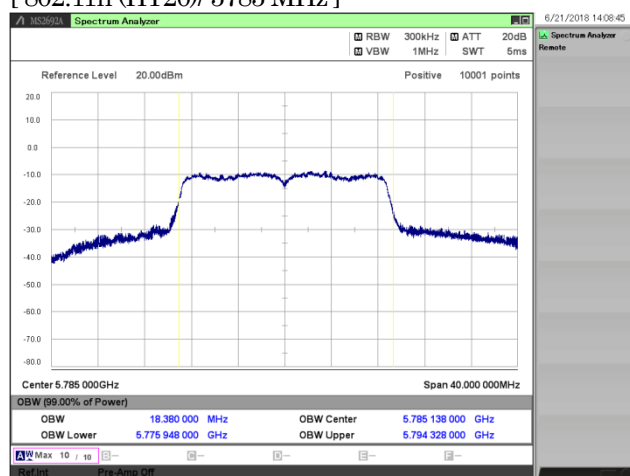
[802.11n (HT20)/ 5700 MHz]



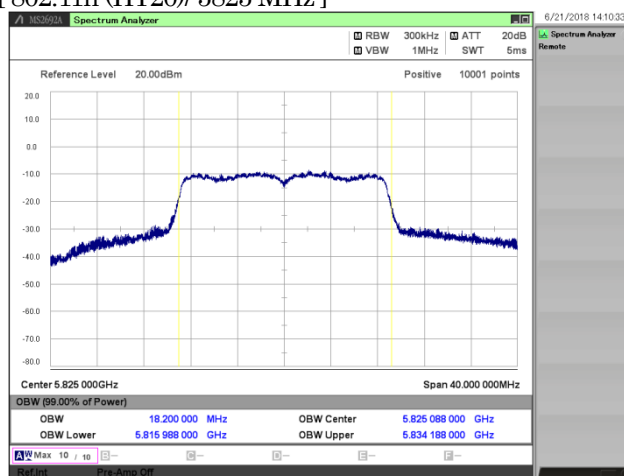
[802.11n (HT20)/ 5745 MHz]



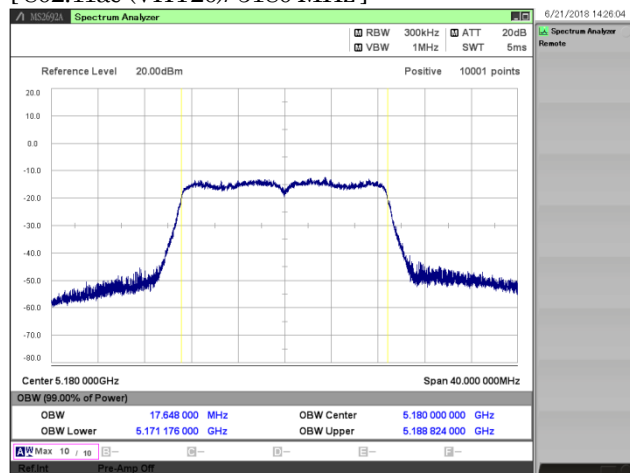
[802.11n (HT20)/ 5785 MHz]



[802.11n (HT20)/ 5825 MHz]



[802.11ac (VHT20)/ 5180 MHz]



[802.11ac (VHT20)/ 5220 MHz]

