



Prüfbericht-Nr.: <i>Test report no.:</i>	CN2118OG 003	Auftrags-Nr.: <i>Order no.:</i>	168323571	Seite 1 von 21 <i>Page 1 of 21</i>
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2021-06-21	
Auftraggeber: <i>Client:</i>	ALE International 32, avenue Kléber Colombes 92700 France			
Prüfgegenstand: <i>Test item:</i>	BT & WLAN Module			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	BTWDB01 (Trademark: Alcatel-Lucent Enterprise)			
Auftrags-Inhalt: <i>Order content:</i>	Test Report			
Prüfgrundlage: <i>Test specification:</i>	CFR47 FCC Part15: Subpart E Section 15.407 RSS-247 Issue 2 February 2017 RSS-Gen Issue 5 March 2019			
Wareneingangsdatum: <i>Date of sample receipt:</i>	2021-06-15	Please refer to Photo Document		
Prüfmuster-Nr.: <i>Test sample no.:</i>	A003071217-001,002			
Prüfzeitraum: <i>Testing period:</i>	2021-07-09 - 2021-07-22			
Ort der Prüfung: <i>Place of testing:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von: <i>tested by:</i>		genehmigt von: <i>authorized by:</i>		
Datum: <i>Date:</i>	2021-08-04 <small>Signed by: Chris Chen</small>	Ausstellungsdatum: <i>Issue date:</i>	2021-08-04 <small>Signed by: Lin Lin</small>	
Stellung / Position:	Senior Project Manager	Stellung / Position:	Reviewer	
Sonstiges / Other:	FCC ID: OL3BTWDB01 IC: 1737D-BTWDB01 HVIN: BTWDB01			
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>			
* Legende:	1 = sehr gut P(ass) = entspricht o.g. Prüfgrundlage(n)	2 = gut F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	3 = befriedigend N/A = nicht anwendbar	4 = ausreichend N/T = nicht getestet
* Legend:	1 = very good P(ass) = passed a.m. test specification(s)	2 = good F(ail) = failed a.m. test specification(s)	3 = satisfactory N/A = not applicable	4 = sufficient N/T = not tested
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER

RESULT: Pass

5.1.3 CONDUCTED POWER SPECTRAL DENSITY

RESULT: Pass

5.1.4 FREQUENCY STABILITY

RESULT: Pass

5.1.5 26dB BANDWIDTH AND 99% BANDWIDTH

RESULT: Pass

5.1.6 6dB BANDWIDTH

RESULT: Pass

5.1.7 RADIATED SPURIOUS EMISSION

RESULT: Pass

5.1.8 DYNAMIC FREQUENCY SELECTION (DFS)

RESULT: Pass

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Photographs of the Test Set-up

Appendix B: Test Results of 5GHz Wi-Fi

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

362 Huanguan Road Middle Longhua District, Shenzhen 518110 People's Republic of China

FCC Accreditation Designation No.: 694916

ISED wireless device testing laboratory: 25069

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Testing (TS8997)				
Equipment	Manufacturer	Model	Serial No.	Cal. until
Signal Analyzer	R&S	FSV 40	101441	2021-08-10
OSP	R&S	OSP 150	101017	2021-12-10
Control PC	DELL	OptiPlex 7050	FTJZ9P2	N/A
Test Software	R&S	WMS32 (V11.00.00)	N/A	N/A
Power Meter	R&S	NRP2	107105	2021-12-10
Wideband Power Sensor	R&S	NRP-Z81	105677	2021-09-10
Shielding Room 8#	Albatross	SR8	APC17151-SR8	2021-09-23
Unwanted Emission Testing (TS9975)				
Equipment	Manufacturer	Model	Serial No.	Cal. until
EMI Test Receiver	R&S	ESR 7	102021	2021-08-11
Signal Analyzer	R&S	FSV 40	101439	2021-08-10
System Controller Interface	R&S	SCI-100	S10010038	N/A
Filterbank	R&S	Wlan	100759	2021-08-10
OSP	R&S	OSP 120	102040	N/A
Pre-amplifier	R&S	SCU08F1	08320031	2021-08-10
Amplifier	R&S	SCU-18F	180070	2021-08-10
Amplifier	R&S	SCU40A	100475	2021-09-10
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	2022-08-08
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	2022-08-08
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	2022-08-08
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	2022-09-13
Wideband Ridged Horn Antenna (12-18 GHz)	Steatite	QMS-00208	18313	2021-09-02
Test software	R&S	EMC32 (V10.60.10)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	2022-07-01

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Parameter	Uncertainty
Radio Frequency	$\pm 1 \times 10^{-7}$
RF Power (conducted)	± 2.5 dB
Radiated Emission of Transmitter, valid up to 26.5 GHz	± 6 dB
Radiated Emission of Receiver, valid up to 26.5 GHz	± 6 dB
Temperature	± 1 °C
Humidity	± 5 %
Voltage (DC)	± 1 %
Voltage (AC, <10kHz)	± 2 %

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. File for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at 362 Huanguan Road Middle Longhua District, Shenzhen 518110 People's Republic of China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a BT & WLAN Module, which supports Bluetooth(dual mode), 2.4GHz Wi-Fi 802.11 b/g/n and 5GHz Wi-Fi 802.11a/b/g/n/ac wireless technology.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment:	BT & WLAN Module
Type Designation:	BTWDB01
Trademark:	Alcatel-Lucent Enterprise
FCC ID:	OL3BTWDB01
IC:	1737D-BTWDB01
HVIN:	BTWDB01
Operating Voltage:	DC 3.3V
Testing Voltage:	DC 3.3V from Host Unit
Antenna Type:	PCB Antenna
Antenna Gain:	3.16 dBi for (Bluetooth & 2.4G Wi-Fi) 3.00 dBi for (5G Wi-Fi)
Technical Specification of Bluetooth (dual mode)	
Operating Frequency:	2402 MHz to 2480 MHz
Type of Modulation:	GFSK, $\pi/4$ -DQPSK, 8DPSK
Channel Number:	BR & EDR mode:79 channels, Low Energy mode:40 channels
Channel Separation:	BR & EDR mode:1MHz, Low Energy mode:2MHz
Data Rate:	BR & EDR mode:(1Mbps, 3Mbps) Low Energy mode: (1Mbps, 2Mbps)
Technical Specification of Wi-Fi 802.11 b/g/n	
Operating Frequency:	2412 - 2462 MHz for 802.11b/g/n(HT20)
Type of Modulation:	DSSS(DBPSK/DQPSK/CCK) OFDM(BPSK/QPSK/16QAM/64QAM)
Data Rate:	1/2/5.5/11 Mbps for 802.11b 6/9/12/18/24/36/48/54 Mbps for 802.11g MCS0 ~ MCS7 Mbps for 802.11n(HT20)
Channel Number:	11 channels for 802.11b/g/n(HT20)
Channel Separation:	5 MHz
Technical Specification of Wi-Fi 802.11 a/n/ac	
Operating Frequency:	5180-5320MHz, 5500-5700MHz, 5745-5825MHz
Type of Modulation:	OFDM(BPSK/QPSK/16QAM/64QAM/256QAM)
Channel Number:	5180-5320MHz, 14CHs, 802.11 a/n20/n40/ac20/ac40/ac80

	5500-5700MHz, 12CHs, 802.11 a/n20/n40/ac20/ac40/ac80 5745-5825MHz, 8CHs, 802.11 a/n20/n40/ac20/ac40/ac80
Channel Separation	5 MHz

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Wi-Fi 802.11 a/n/ac wireless transmitting mode
 - 1. Low channel
 - 2. Middle channel
 - 3. High channel
- B. On, Wi-Fi 802.11 a/n/ac connecting mode
- C. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- Block Diagram
- User Manual
- Operation Description

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.10: 2013.

According to clause 3.1, all tests were performed on model BTWDB01 in this report.

Table 3: Test environments

Environment Parameter	Selected Values During Tests		
	Temperature	Voltage (adapter)	Relative Humidity
NTNV	24.6°C	3.3Vdc	Ambient
LTLV	-5 °C	3.135Vdc	---
LTHV	-5 °C	3.465Vdc	---
HTLV	45 °C	3.135Vdc	---
HTHV	45 °C	3.465Vdc	---

Table 4: Test channel and frequency

Mode	Test Channels
802.11 a/n-HT20/ac20	L: 5180MHz; 5260MHz; 5500MHz; 5745MHz M: MHz; 5200MHz;5280MHz; 5600MHz; 5785MHz H: 5240MHz;5320MHz; 5700MHz; 5825MHz
802.11 n-HT40/ac40	L/M: 5190MHz; 5270MHz; 5510MHz; 5590MHz; 5755MHz H: 5230MHz; 5310MHz; 5670MHz; 5795MHz
802.11 ac80	L/M/H: 5210MHz; 5290MHz; 5530MHz; 5610MHz; 5775MHz

4.3 Special Accessories and Auxiliary Equipment

Table 5: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N	Rating
Laptop	Lenovo	T480	PF-16A6N8	N/A
AC adapter	N/A	KSA-15E-051300HU	N/A	Input: 100-240V, 50/60Hz, 0.5A Output: DC 5.1V, 3.0A

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

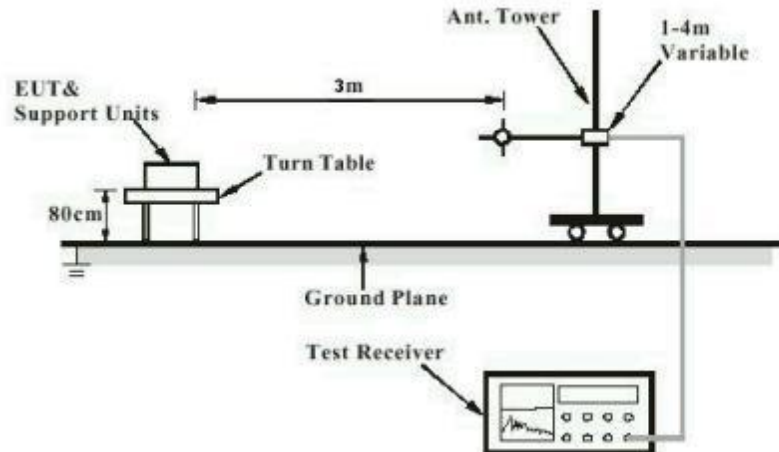


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

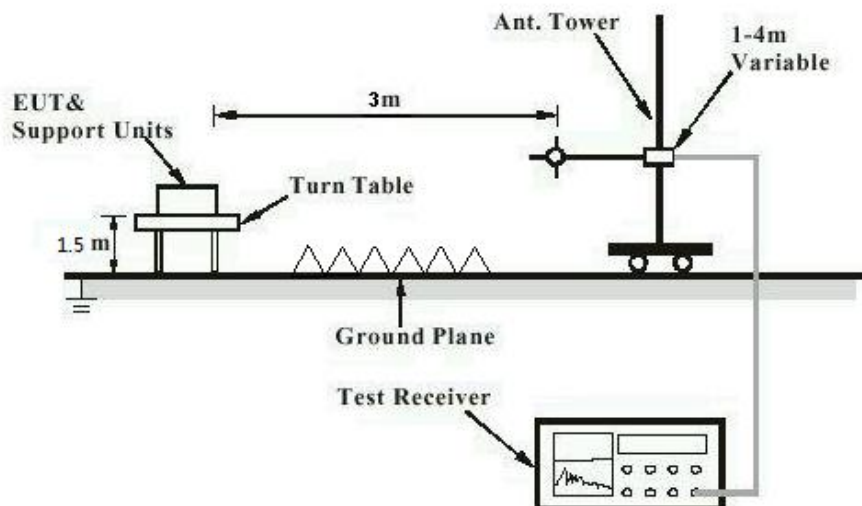
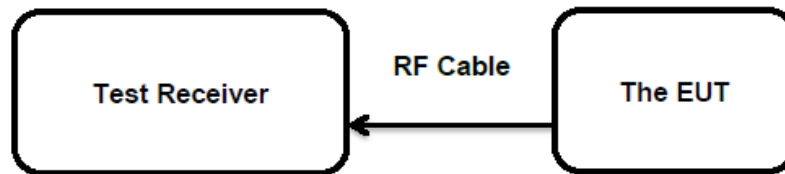
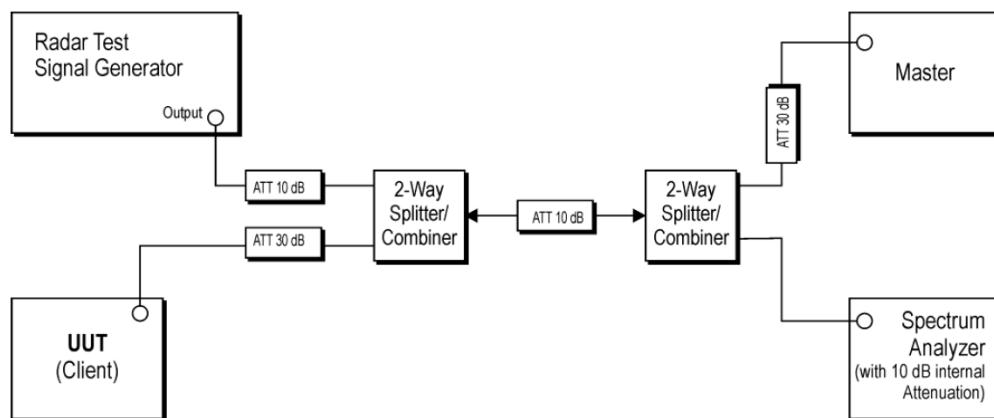


Diagram of Measurement Configuration for Conducted Transmitter Measurement

Diagram of Measurement Configuration for Dynamic Frequency Selection (DFS)


5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:**Pass****Test Specification**

Test standard : FCC Part 15.203

According to the manufacturer declared, the EUT has a PCB antenna, the directional gain of antenna is 3.00 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement.

Therefore, the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Maximum Peak Conducted Output Power

RESULT:

Pass

Test Specification

Test standard	: FCC Part 15.407(a)(1)&(2)&(4) RSS-247 clause 6.2
Basic standard	: ANSI C63.10: 2013
Limits	: FCC: <250mW (24dBm) (5150-5250MHz) * <250mW (24dBm) (5250-5350MHz, 5470-5725MHz) * 250 mW (24dBm) or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz, where is lesser. <1W (30dBm) (5725-5850MHz) IC: * Max e.i.r.p. <200mW (23dBm) (5150-5250MHz) * 200 mW (23dBm) or 10 dBm + 10 log B, where B is the 99% emission bandwidth in MHz, where is lesser. * Max conducted output power < 250mW (24dBm) (5250-5350MHz) * 250 mW (24dBm) or 11 dBm + 10 log B, where B is the 99% emission bandwidth in MHz, where is lesser. * Max e.i.r.p. <1W (30dBm) (5250-5350MHz) * 1 W (30dBm) or 17 dBm + 10 log B, where B is the 99% emission bandwidth in MHz, where is lesser. Max conducted output power <1W (30dBm) (5725-5850MHz)
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2021-07-14 ~ 2021-07-19
Input voltage	: DC 3.3V
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 24.6 °C
Relative humidity	: 55 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix B.

Note: Per RSS-247 section 6.2.3, transmission on channels which overlap 5600-5650MHz is prohibited. This device operates under these frequencies only under the control of a certified master device and does not support active scanning on these channels. This device does not transmit any beacons or initiate any transmissions in 5250-5350MHz or 5470-5725MHz.

5.1.3 Conducted Power Spectral Density

RESULT:**Pass****Test Specification**

Test standard	: FCC part 15.407(a) RSS-247 clause 6.2
Basic standard	: ANSI C63.10: 2013 KDB 789033 D02 v01r03
Limits	: FCC: <11dBm/MHz (5150-5250MHz 5250-5350MHz, 5470-5725MHz) <30dBm/500KHz (5725-5850MHz) IC: e.i.r.p. spectral density <10dBm/MHz (5150-5250MHz) <11dBm/1MHz (5250-5350MHz) <30dBm/500KHz (5725-5850MHz)
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2021-07-14 ~ 2021-07-19
Input voltage	: DC 3.3V
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 24.6 °C
Relative humidity	: 55 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix B.

5.1.4 Frequency Stability

RESULT:**Pass****Test Specification**

Test standard : FCC Part 15.407(g)
RSS-Gen Clause 6.11

Basic standard : ANSI C63.10: 2013

Limits : Within assigned bands

Kind of test site : Shielded Room

Test Setup

Date of testing : 2021-07-14 ~ 2021-07-19

Input voltage : DC 3.3V

Operation mode : A

Test channel : Low / Middle / High

Ambient temperature : 24.6 °C

Relative humidity : 55 %

Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix B.

Prüfbericht - Nr.: **CN2118OG 003**
Test Report No.:Seite 17 von 21
Page 17 of 21**5.1.5 26dB Bandwidth and 99% Bandwidth****RESULT:****Pass****Test Specification**

Test standard : FCC Part 15.407(e)
RSS-Gen Clause 6.6

Basic standard : ANSI C63.10: 2013

Limits : N/A

Kind of test site : Shielded Room

Test Setup

Date of testing : 2021-07-14 ~ 2021-07-19

Input voltage : DC 3.3V

Operation mode : A

Test channel : Low / Middle / High

Ambient temperature : 24.6 °C

Relative humidity : 55 %

Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix B.

5.1.6 6dB Bandwidth

RESULT:**Pass****Test Specification**

Test standard : FCC Part 15.407(e)
RSS-Gen Clause 6.6

Basic standard : ANSI C63.10: 2013

Limits : At least 500KHz (5725-5850MHz)

Kind of test site : Shielded Room

Test Setup

Date of testing : 2021-07-14 ~ 2021-07-19

Input voltage : DC 3.3V

Operation mode : A

Test channel : Low / Middle / High

Ambient temperature : 24.6 °C

Relative humidity : 55 %

Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix B.

5.1.7 Radiated Spurious Emission

RESULT:

Pass

Test Specification

Test standard	: FCC Part 15.407(b) & FCC Part 15.205 & FCC Part 15.209 RSS-247 clause 6.2 & RSS-GEN clause 8.9 and 8.10
Basic standard	: ANSI C63.10: 2013 KDB 789033 D02 v01r03
Limits	: <ul style="list-style-type: none">• For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.• For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.• For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz. Emissions outside the band 5470-5600 MHz and 5650-5725 MHz shall not exceed -27 dBm/MHz e.i.r.p.• For transmitters operating in the 5.725-5.85 GHz band: 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. Restricted Bands meet the requirement of 15.209 limit and RSS-GEN
Kind of test site	: 3m Semi-anechoic Chamber

Test Setup

Date of testing	: 2021-07-09 ~ 2021-07-14
Input voltage	: DC 3.3V
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: Refer to test result
Relative humidity	: Refer to test result
Atmospheric pressure	: 101 kPa

Remark:

Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix B.

5.1.8 Dynamic Frequency Selection (DFS)

RESULT:**Pass****Test Specification**

Test standard : FCC Part 15.407(h)
RSS-247 clause 6.3

Basic standard : ANSI C63.10: 2013

Limits : 5250-5350MHz, 5470-5725MHz
Channel Move Time: Within 10 seconds.
Channel Closing Transmission Time: 200ms+aggregate of
60ms over remaining 10s period;
Non-Occupancy Period: at least 30 minutes.

Kind of test site : Shielded Room

Test Setup

Date of testing : 2021-07-21

Input voltage : DC 3.3V

Operation mode : A

Test channel : CH 58, CH 106

Ambient temperature : 24.6 °C

Relative humidity : 55 %

Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix B.

6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix A.

7 List of Tables

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Photograph 1: Set-up photo for Radiated Spurious Emission, 30MHz - 1GHz



Photograph 2: Set-up photo for Radiated Spurious Emission, 1GHz - 18GHz



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1. 26dB Bandwidth and 99% Bandwidth

1.1 Test Datas

Channel (mode)	Channel Frequency (MHz)	Emission Bandwidth	
		26dB Bandwidth (MHz)	99% Bandwidth (MHz)
36 (802.11a)	5180	21.300	18.900
40 (802.11a)	5200	21.400	18.200
48 (802.11a)	5240	21.400	18.000
52 (802.11a)	5260	21.400	16.700
56 (802.11a)	5280	22.200	16.700
64 (802.11a)	5320	21.400	16.700
100 (802.11a)	5500	22.400	17.700
120 (802.11a)	5600	21.200	17.400
140 (802.11a)	5700	22.500	17.500
149 (802.11a)	5745	--	18.300
157 (802.11a)	5785	--	18.300
165 (802.11a)	5825	--	18.100

Channel (mode)	Channel Frequency (MHz)	Emission Bandwidth	
		26dB Bandwidth (MHz)	99% Bandwidth (MHz)
36 (802.11n-HT20)	5180	21.700	19.100
40 (802.11n-HT20)	5200	22.000	19.200
48 (802.11n-HT20)	5240	22.000	18.600
52 (802.11n-HT20)	5260	21.900	18.000
56 (802.11n-HT20)	5280	21.700	18.000
64 (802.11n-HT20)	5320	21.600	17.900
100 (802.11n-HT20)	5500	21.600	18.400
120 (802.11n-HT20)	5600	24.000	18.400
140 (802.11n-HT20)	5700	23.800	18.300
149 (802.11n-HT20)	5745	--	18.700
157 (802.11n-HT20)	5785	--	18.700
165 (802.11n-HT20)	5825	--	19.400

Channel (mode)	Channel Frequency (MHz)	Emission Bandwidth	
		26dB Bandwidth (MHz)	99% Bandwidth (MHz)
36 (802.11ac20)	5180	25.100	19.200
40 (802.11ac20)	5200	21.800	19.100
48 (802.11ac20)	5240	21.500	18.600
52 (802.11ac20)	5260	21.200	17.700
56 (802.11ac20)	5280	21.100	17.800
64 (802.11ac20)	5320	21.700	17.700
100 (802.11ac20)	5500	21.300	18.000
120 (802.11ac20)	5600	21.100	18.000
140 (802.11ac20)	5700	21.300	17.900
149 (802.11ac20)	5745	--	19.000
157 (802.11ac20)	5785	--	18.700
165 (802.11ac20)	5825	--	19.000

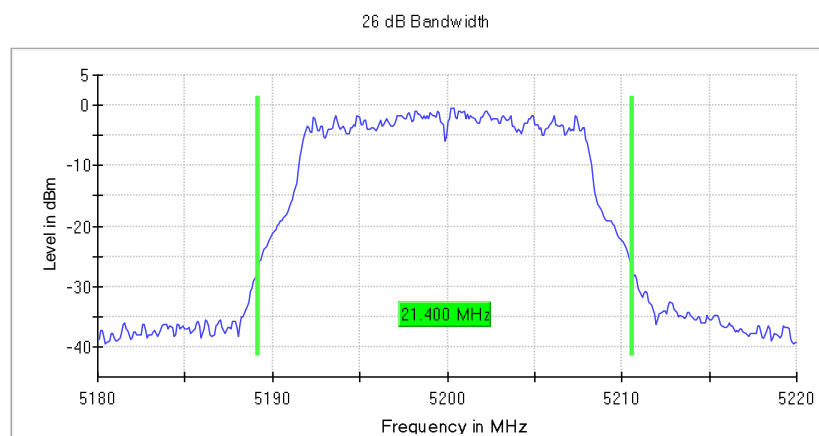
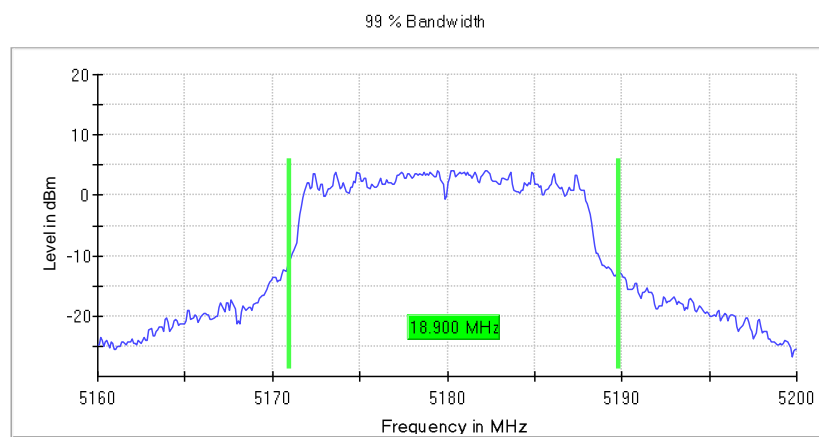
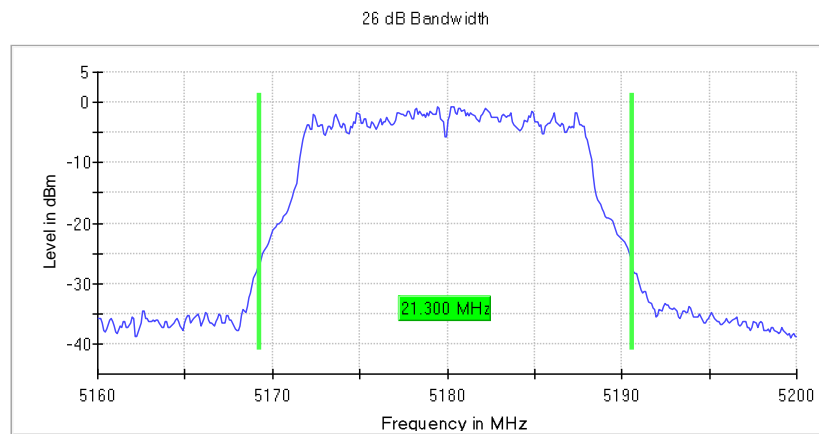
Channel (mode)	Channel Frequency (MHz)	Emission Bandwidth	
		26dB Bandwidth (MHz)	99% Bandwidth (MHz)
38 (802.11n-HT40)	5190	40.225	36.750
46 (802.11n-HT40)	5230	39.925	36.500
54 (802.11n-HT40)	5270	40.225	36.500
62 (802.11n-HT40)	5310	40.225	36.500
102 (802.11n-HT40)	5510	39.925	36.500
118 (802.11n-HT40)	5590	41.576	36.750
134 (802.11n-HT40)	5670	42.927	36.750
151 (802.11n-HT40)	5755	--	43.500
159 (802.11n-HT40)	5795	--	40.250

Channel (mode)	Channel Frequency (MHz)	Emission Bandwidth	
		26dB Bandwidth (MHz)	99% Bandwidth (MHz)
38 (802.11ac40)	5190	40.075	36.750
46 (802.11ac40)	5230	40.225	36.750
54 (802.11ac40)	5270	40.225	36.500
62 (802.11ac40)	5310	40.225	36.750
102 (802.11ac40)	5510	39.925	36.500
118 (802.11ac40)	5590	40.075	36.750
134 (802.11ac40)	5670	40.225	36.500
151 (802.11ac40)	5755	--	43.500
159 (802.11ac40)	5795	--	40.250

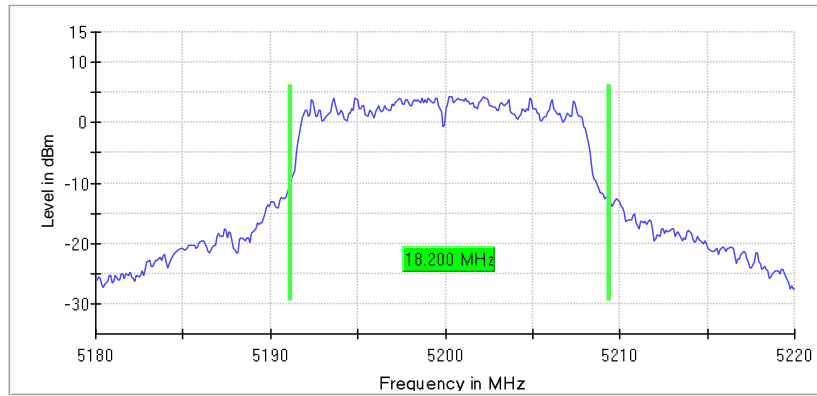
Channel (mode)	Channel Frequency (MHz)	Emission Bandwidth	
		26dB Bandwidth (MHz)	99% Bandwidth (MHz)
42 (802.11ac80)	5210	83.000	76.000
58 (802.11ac80)	5290	83.500	76.500
106 (802.11ac80)	5530	84.000	76.000
155 (802.11ac80)	5775	--	81.500

1.2 Test Graphs

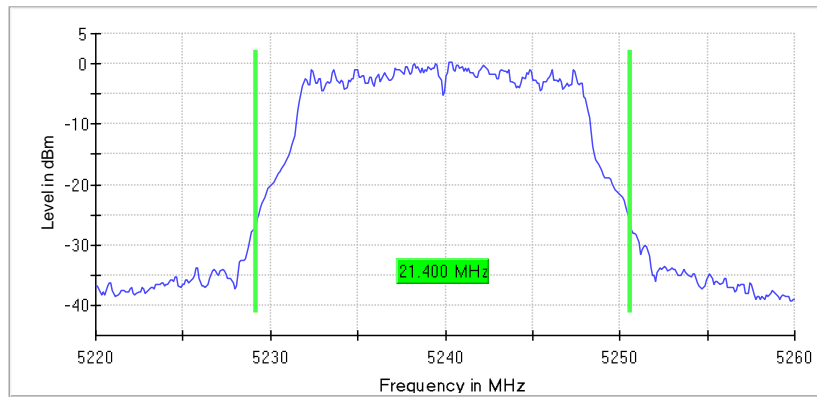
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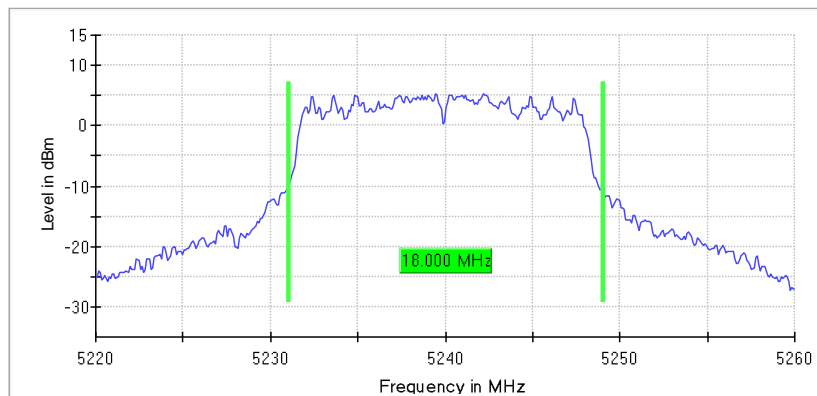
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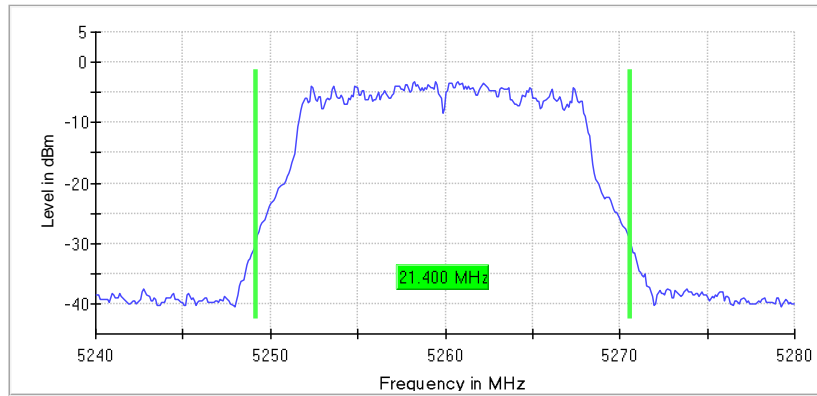
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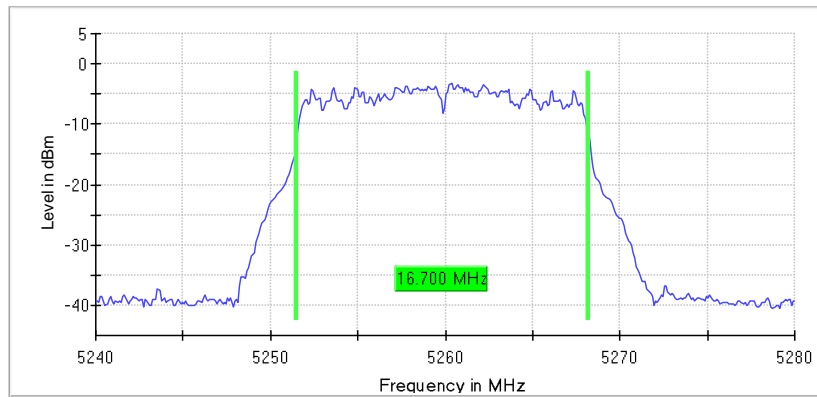
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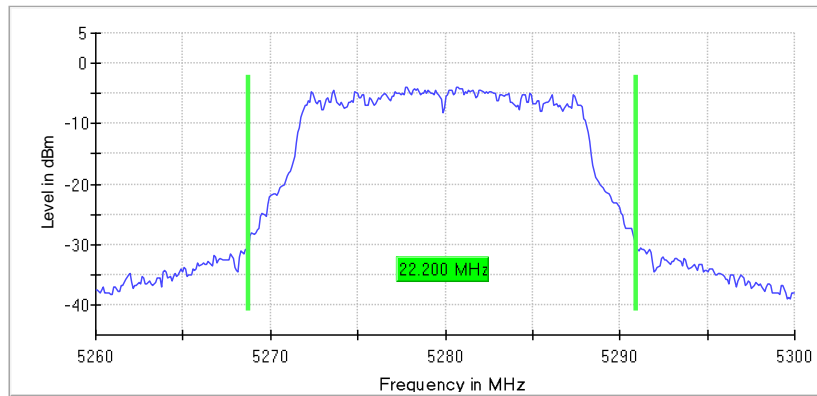
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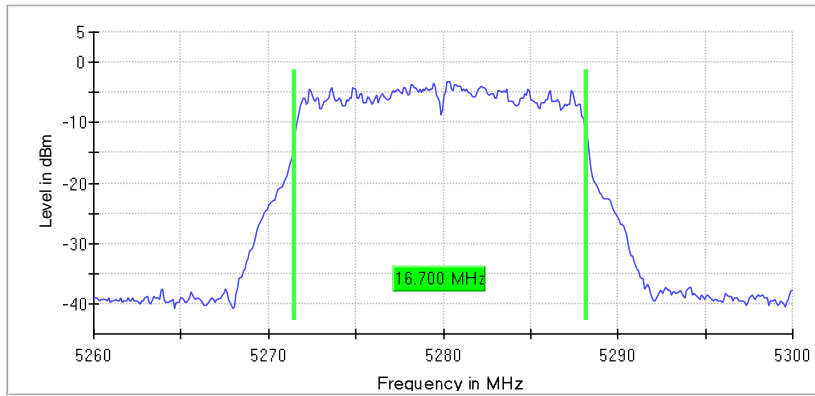
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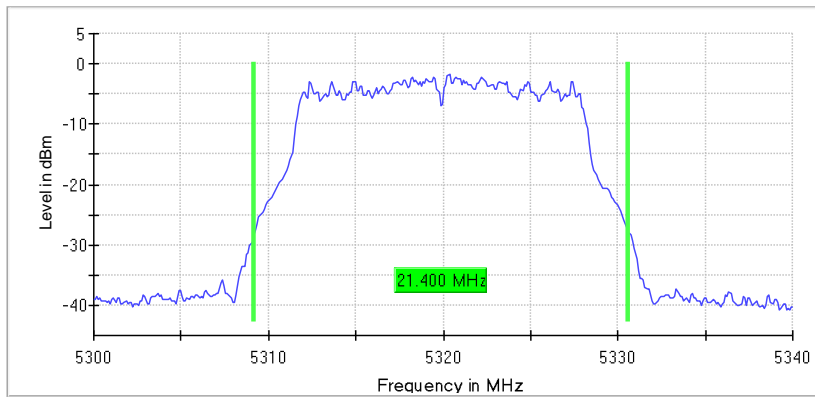
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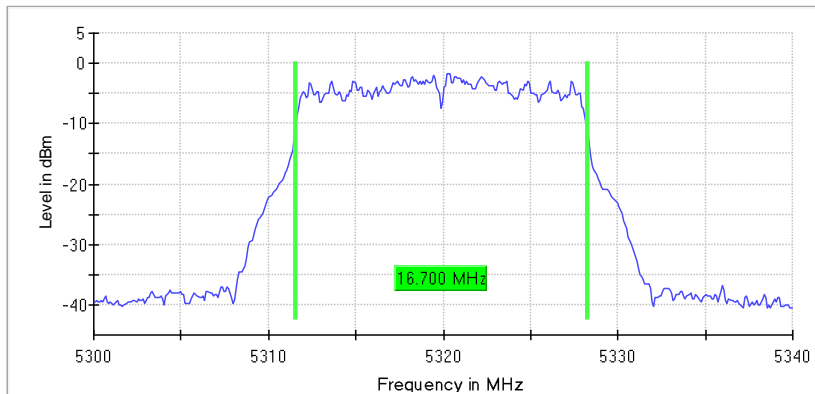
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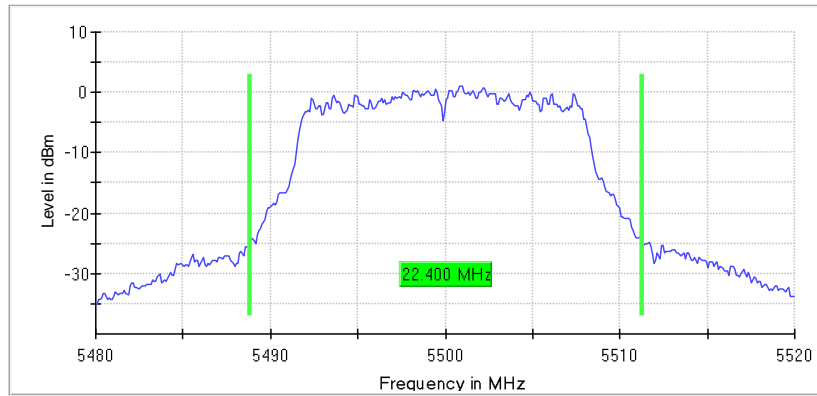
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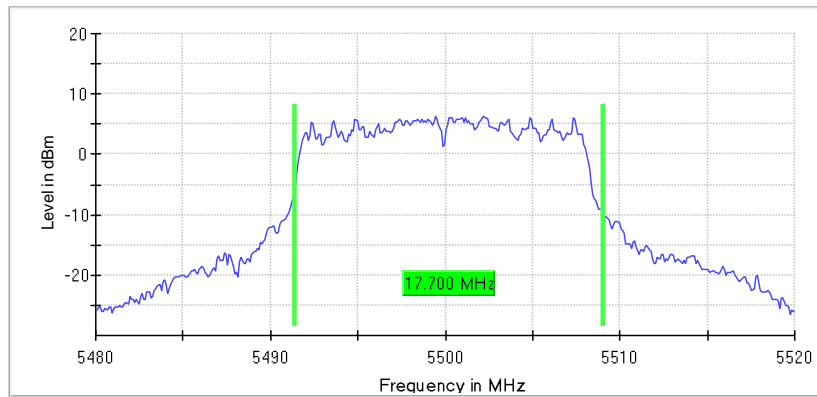
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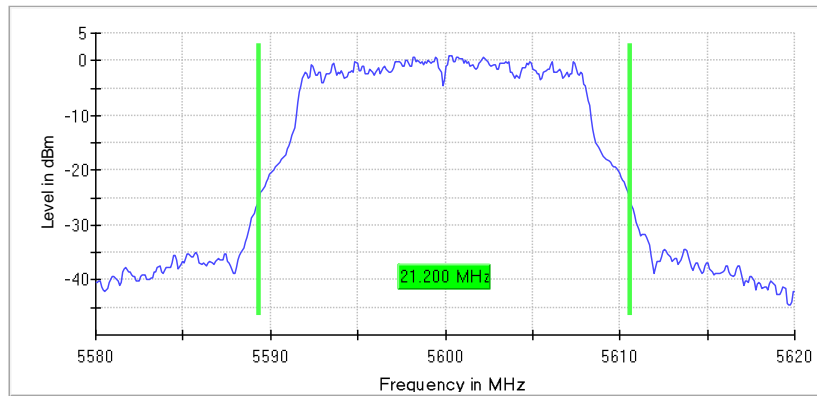
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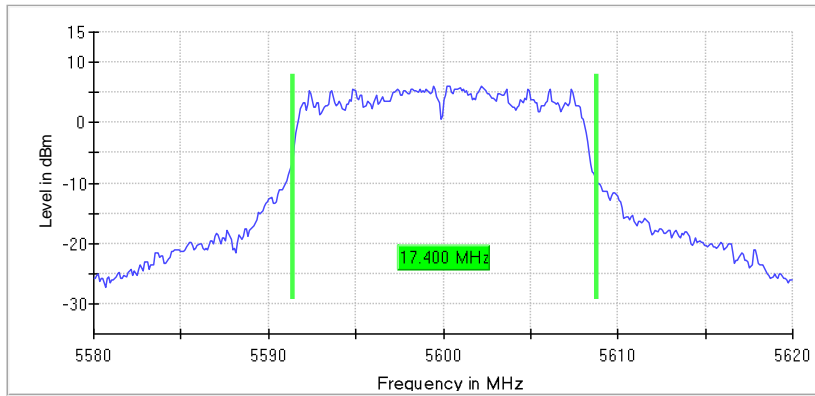
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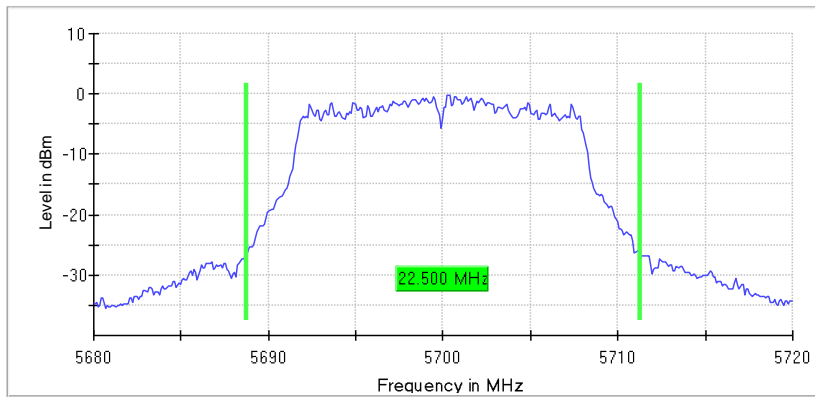
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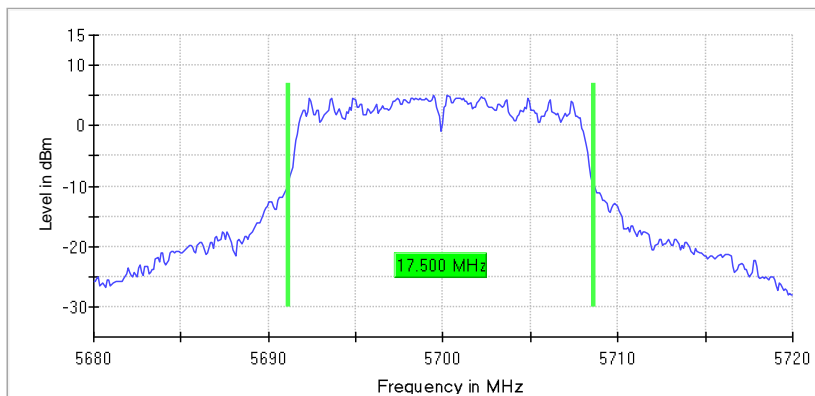
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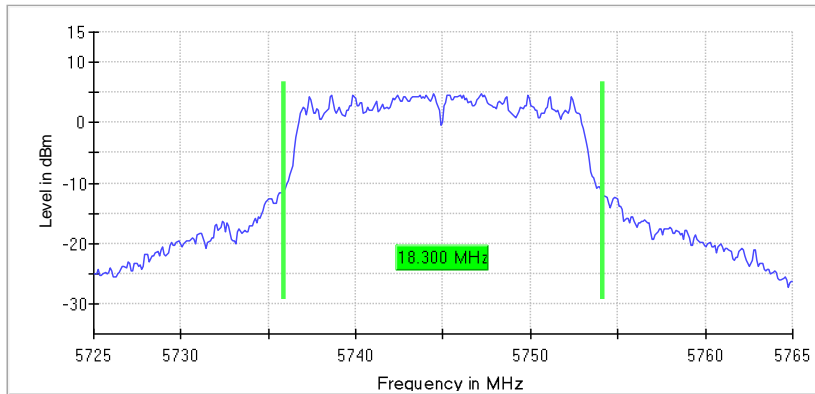
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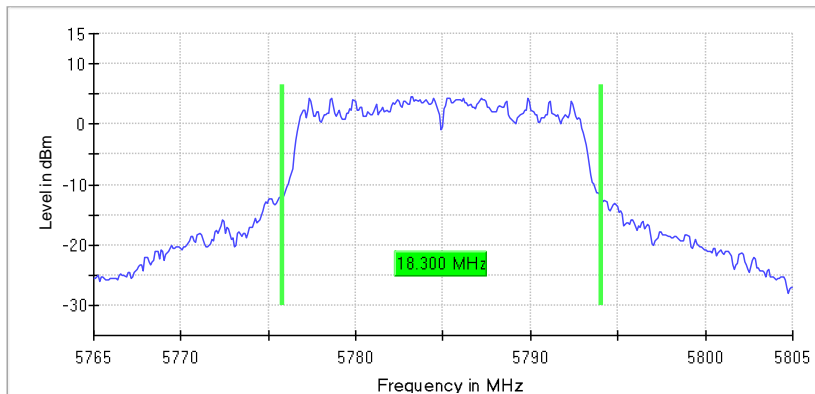
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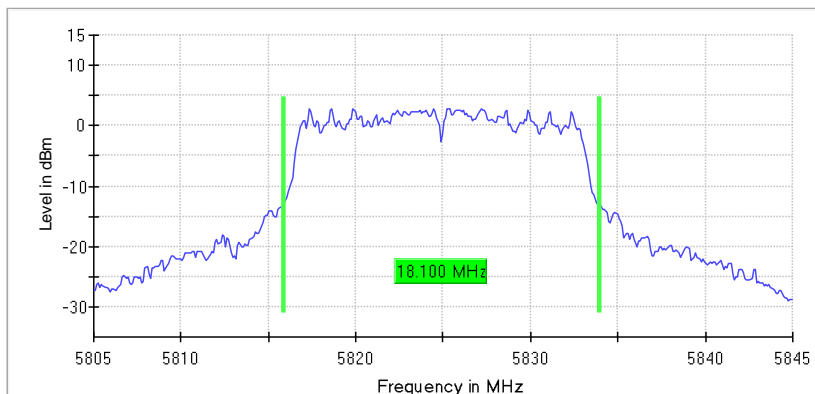
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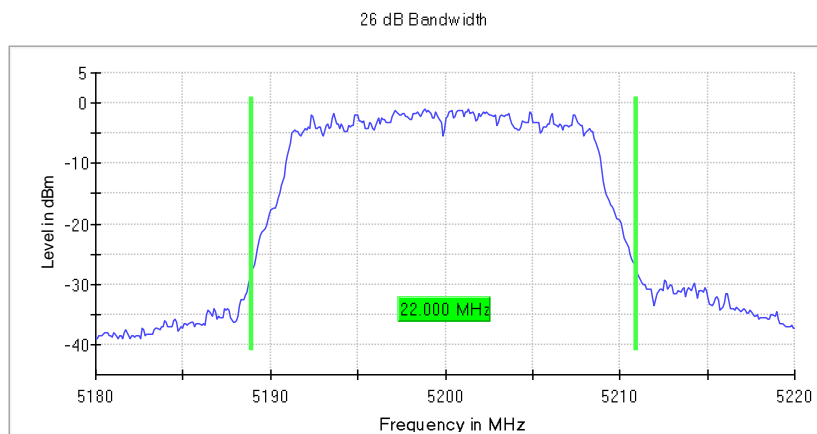
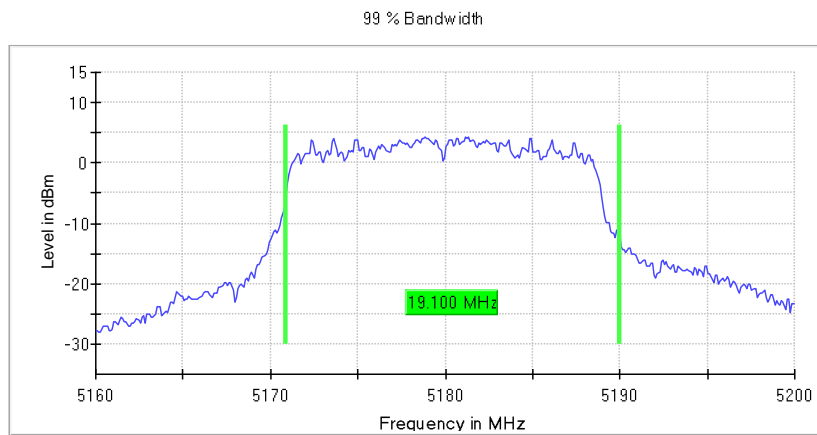
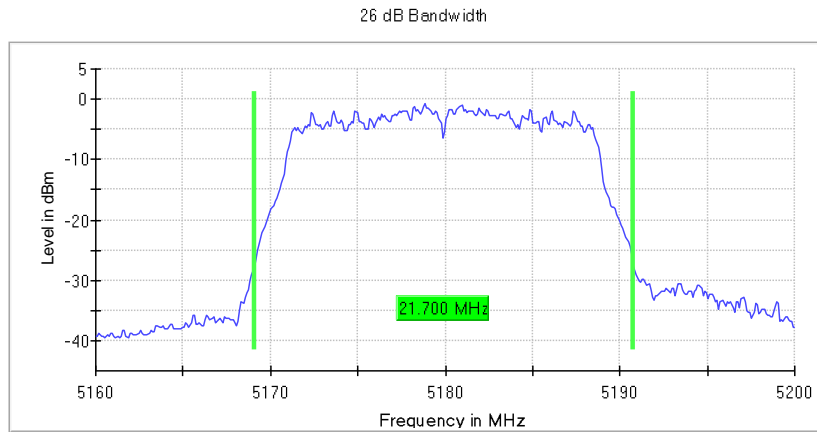
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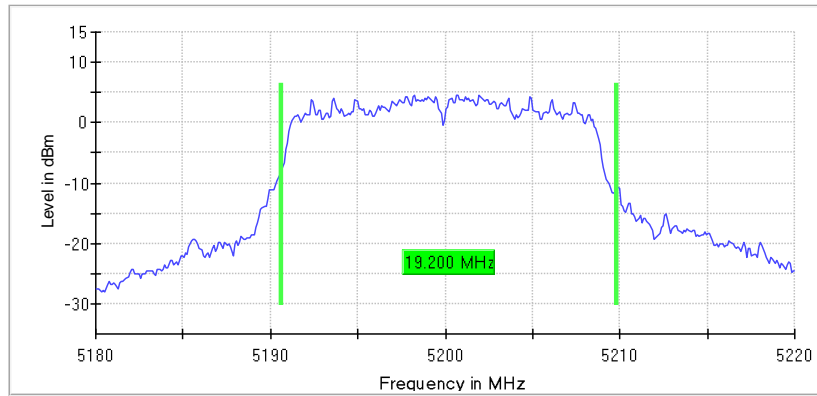
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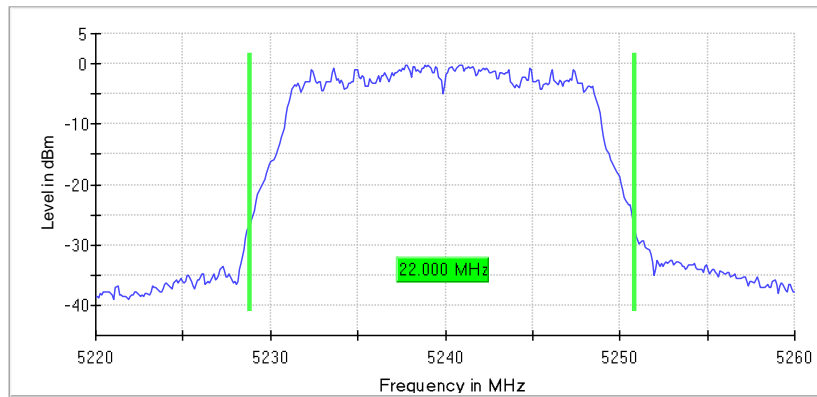
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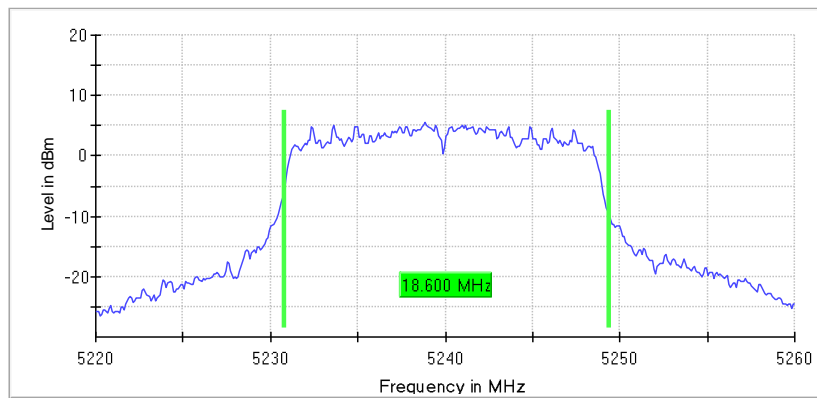
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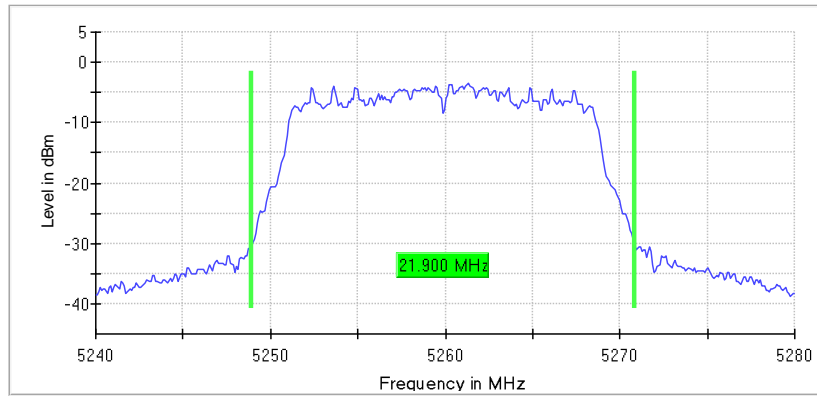
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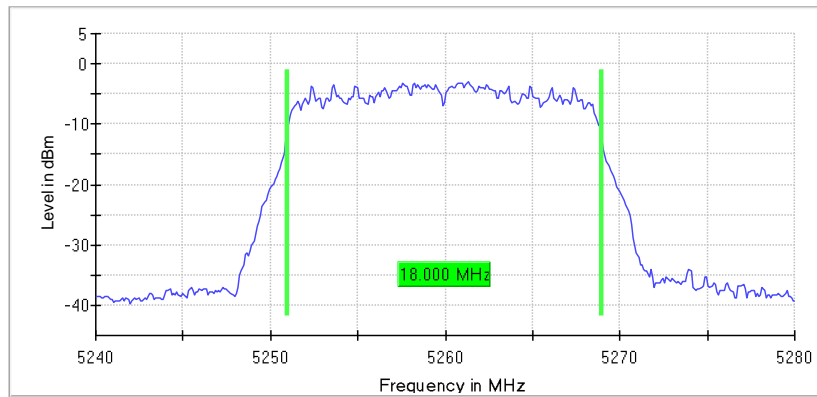
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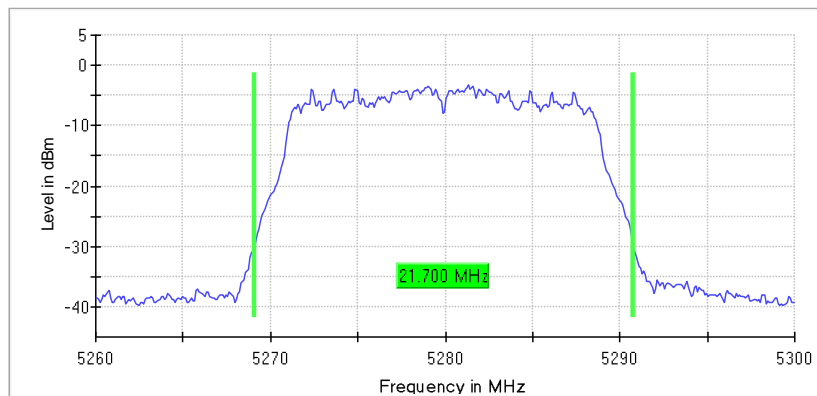
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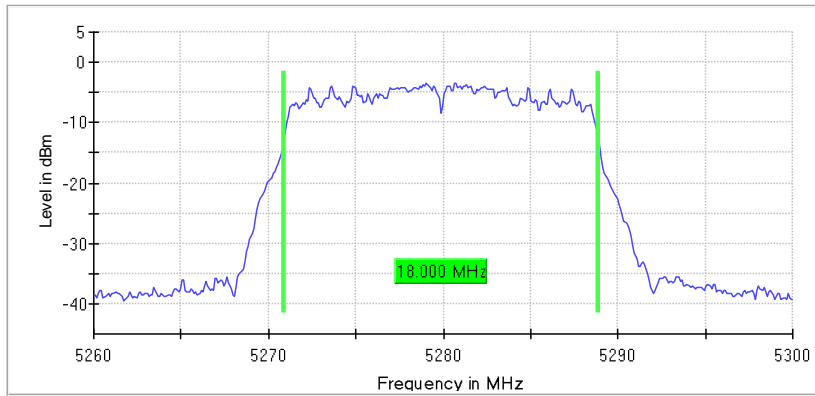
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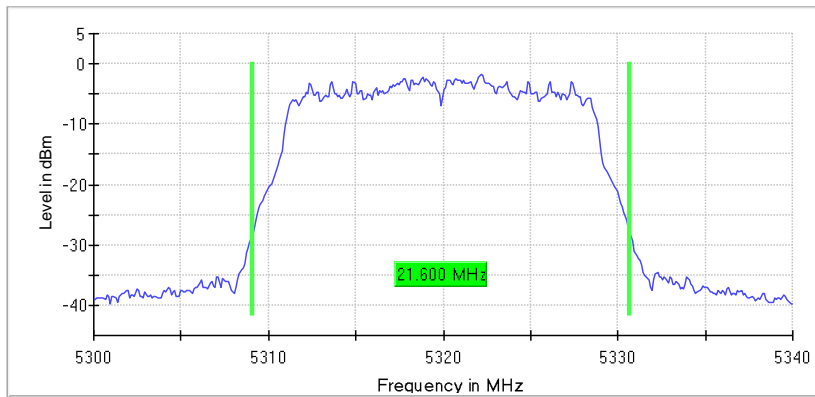
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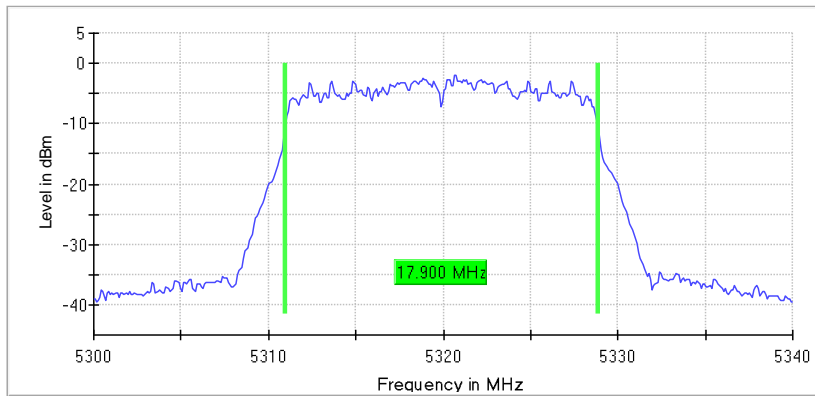
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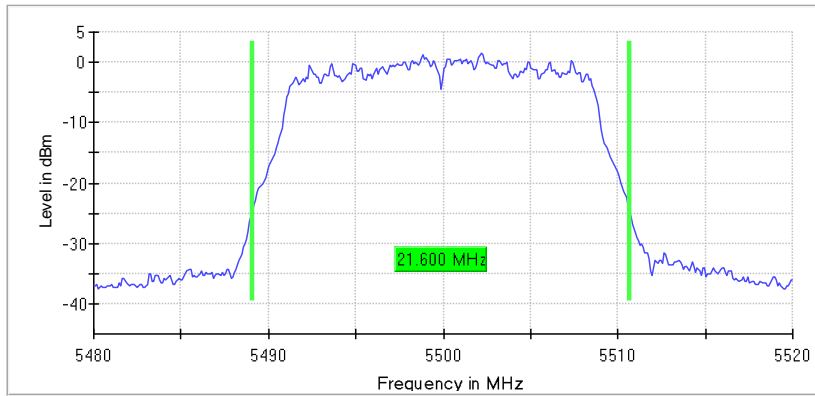
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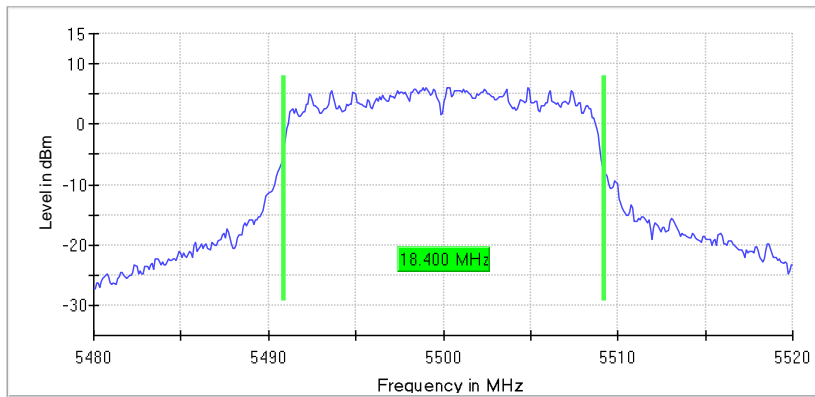
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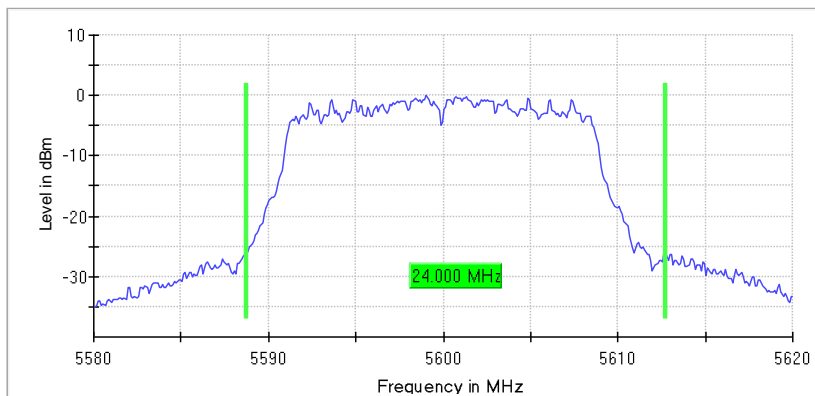
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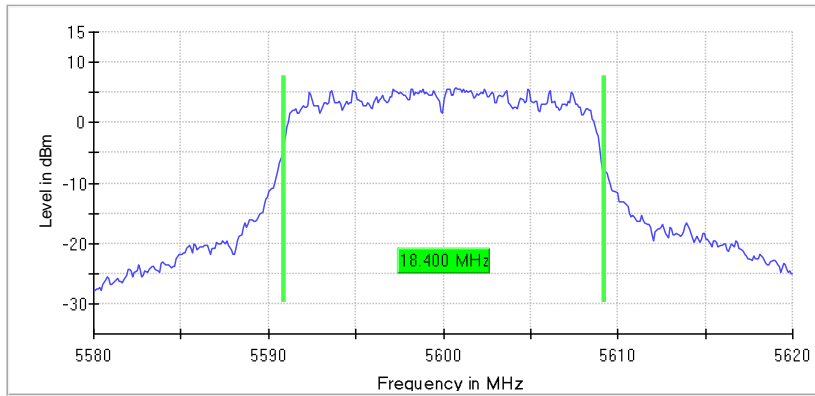
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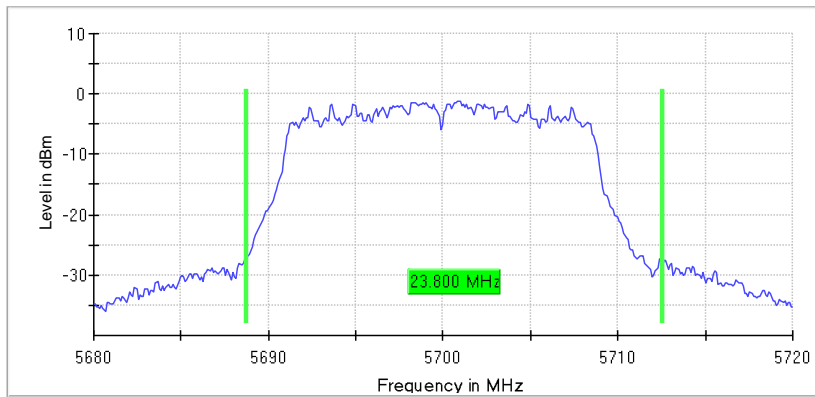
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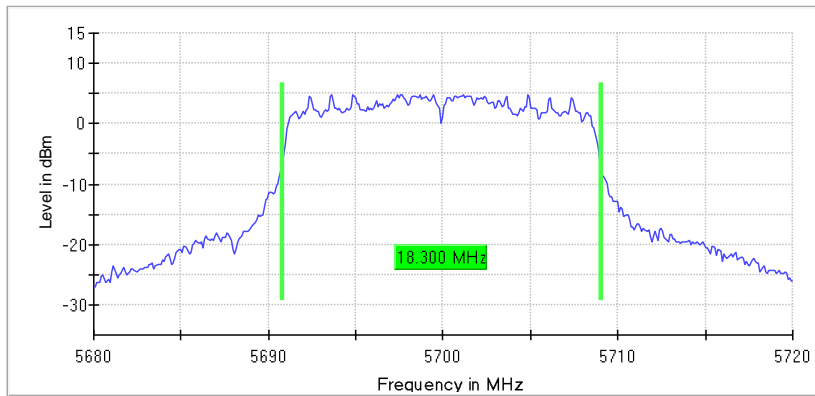
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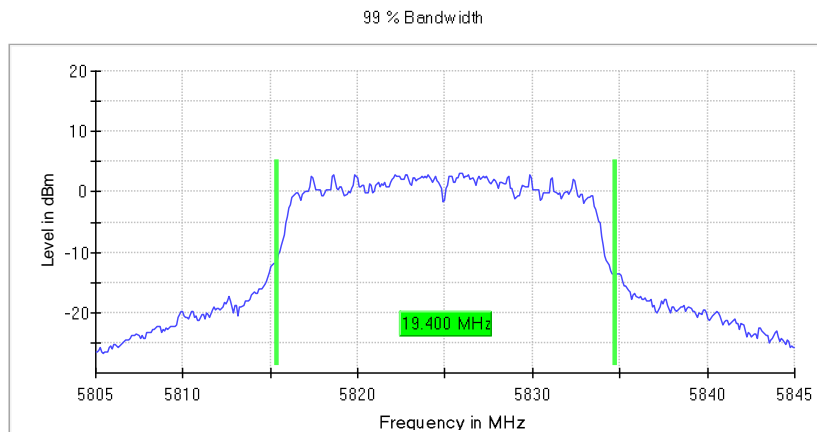
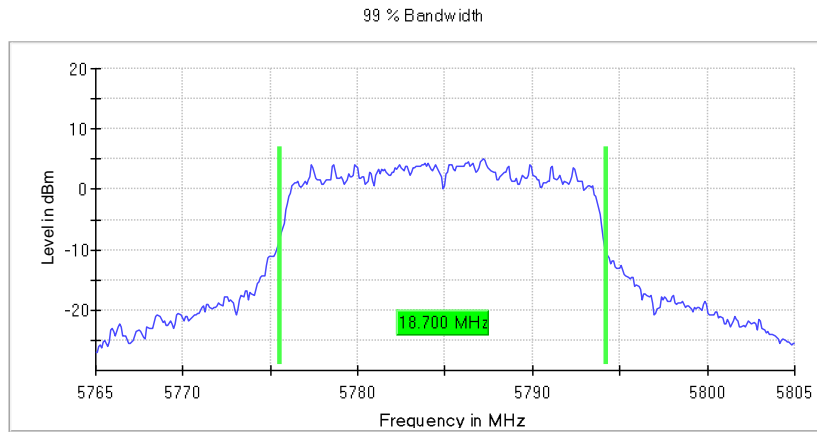
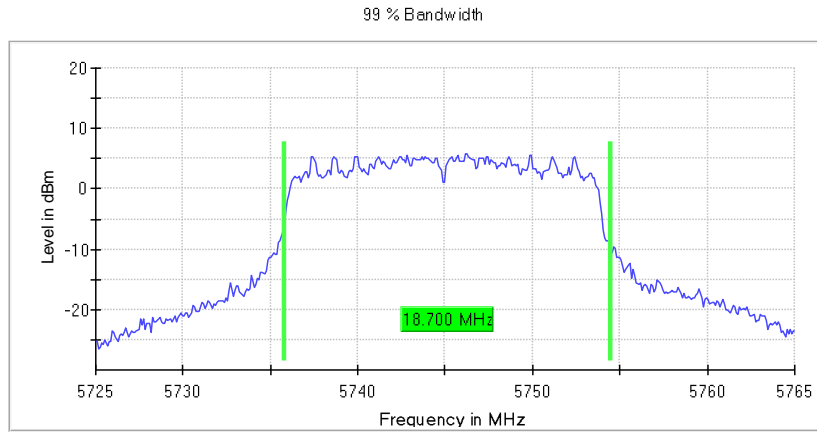


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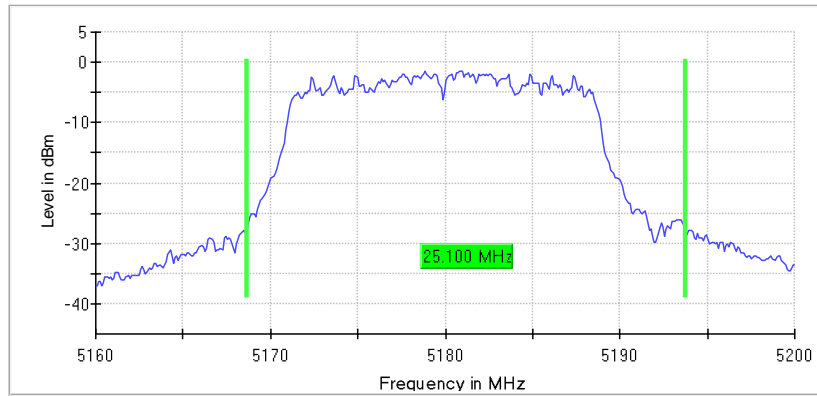
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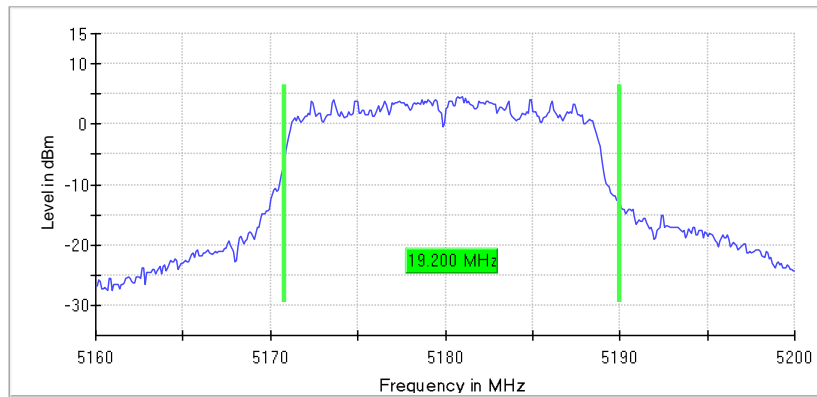


802.11ac20

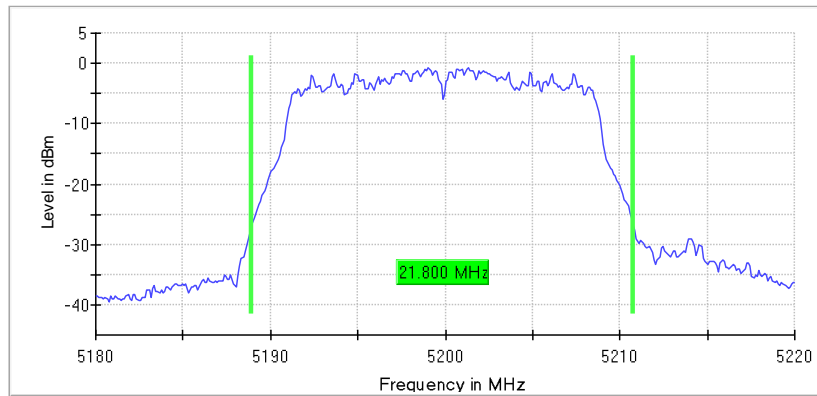
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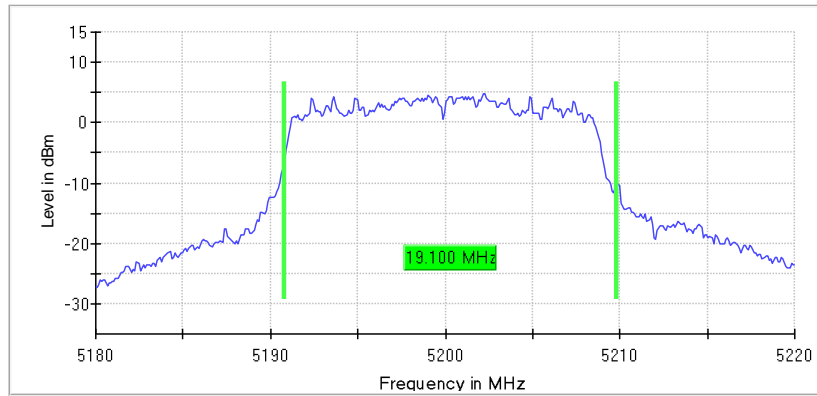
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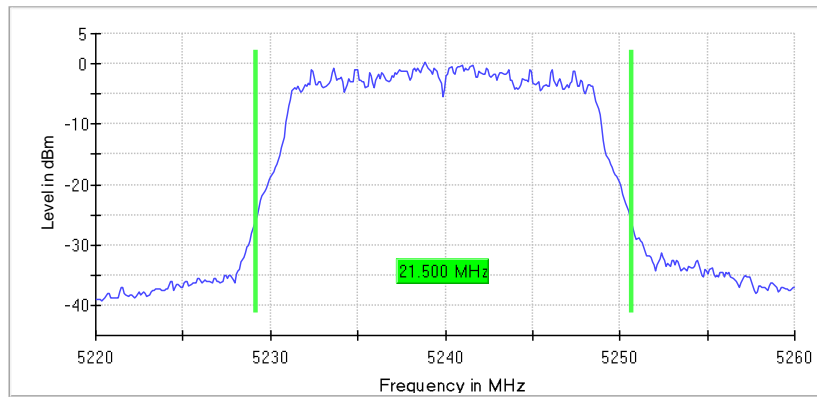
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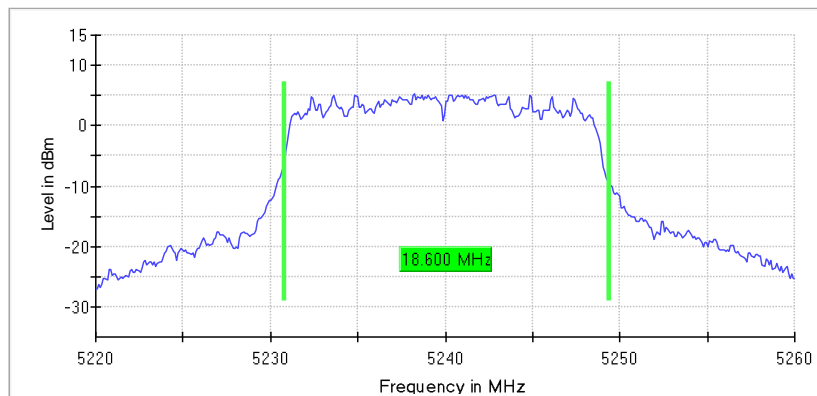
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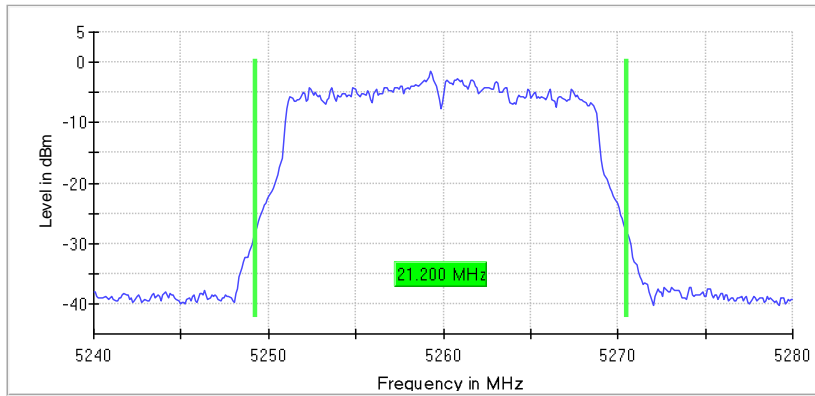
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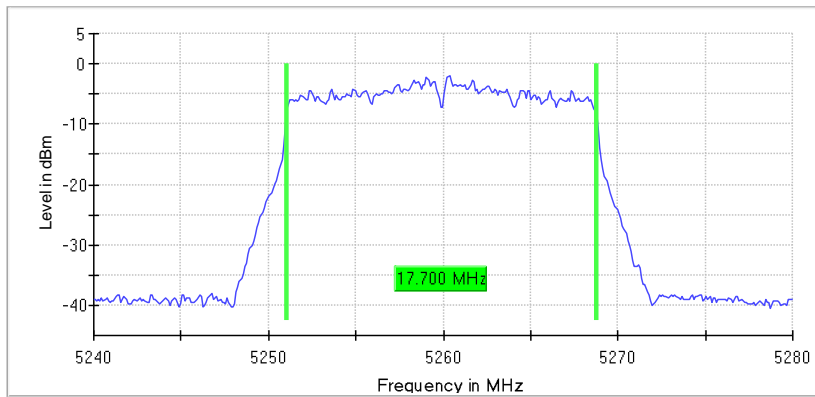
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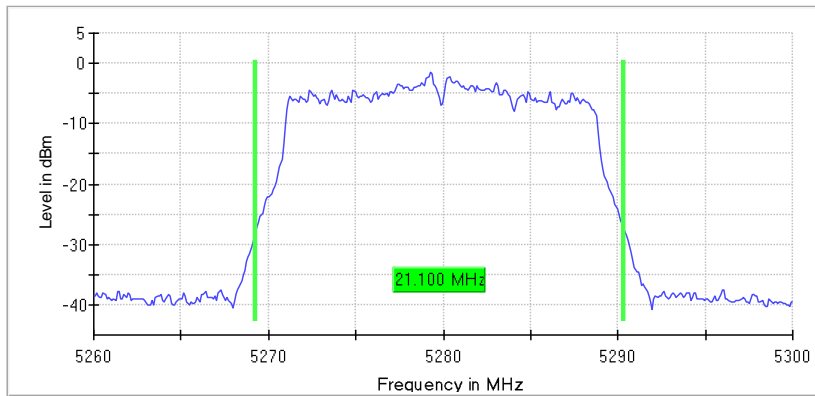
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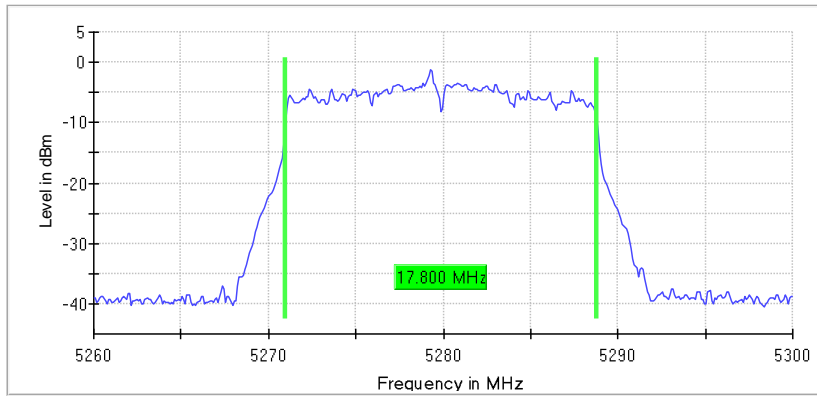
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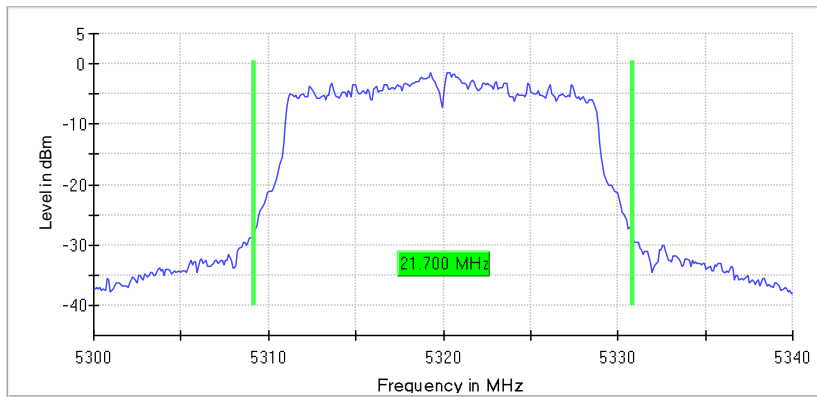
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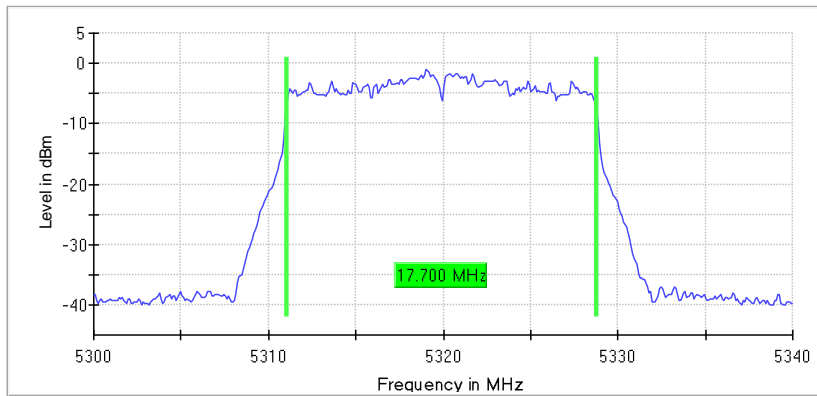
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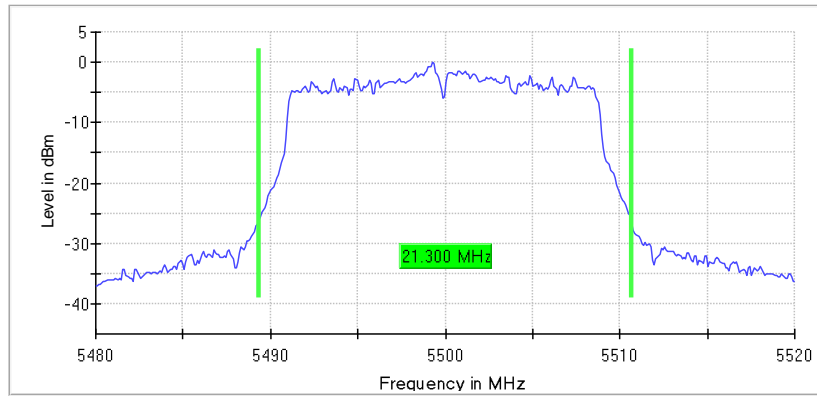
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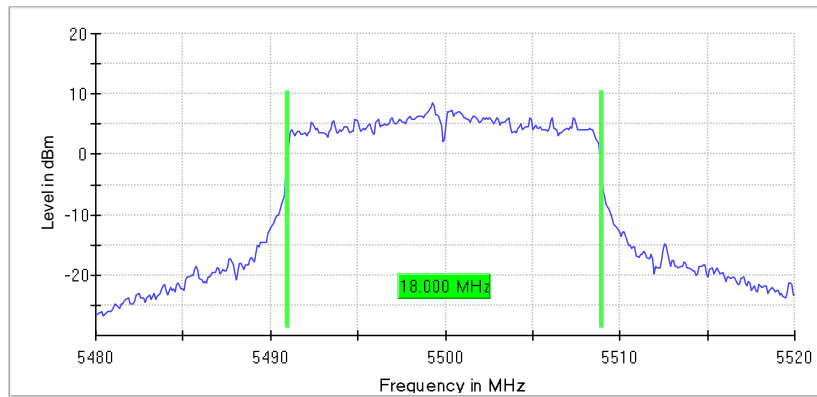
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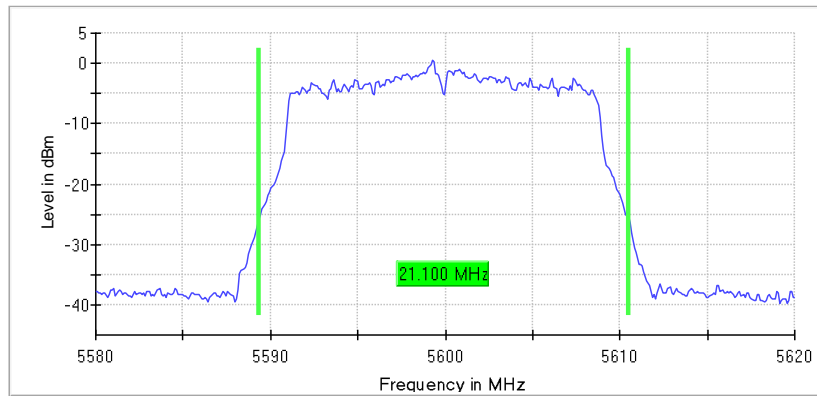
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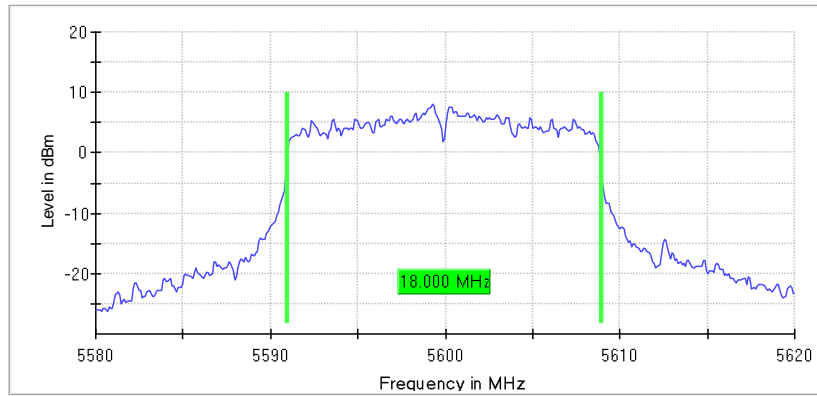
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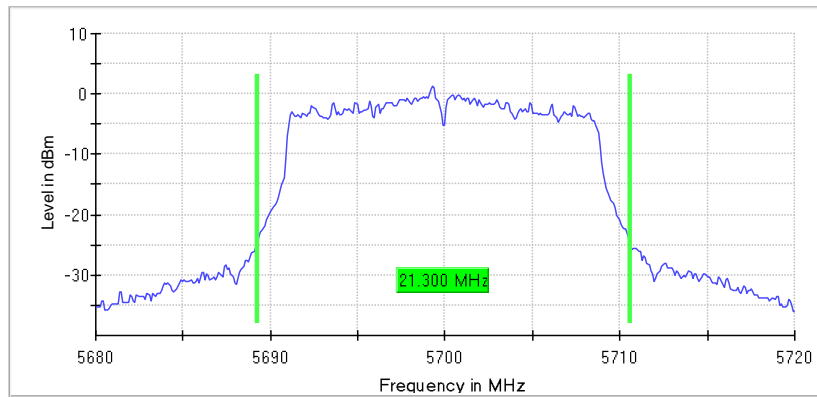
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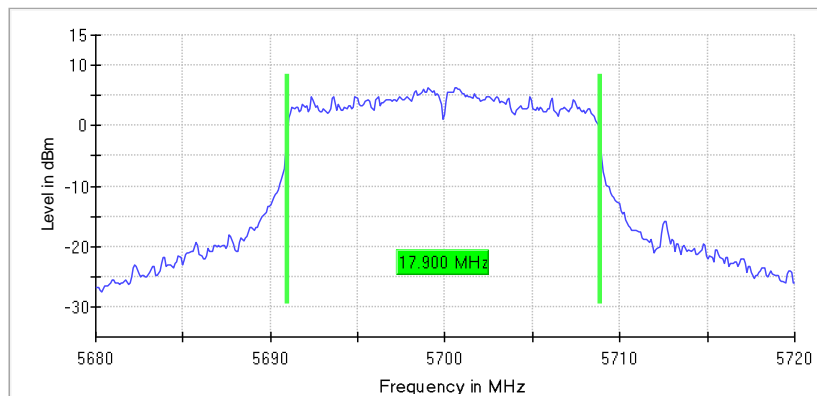
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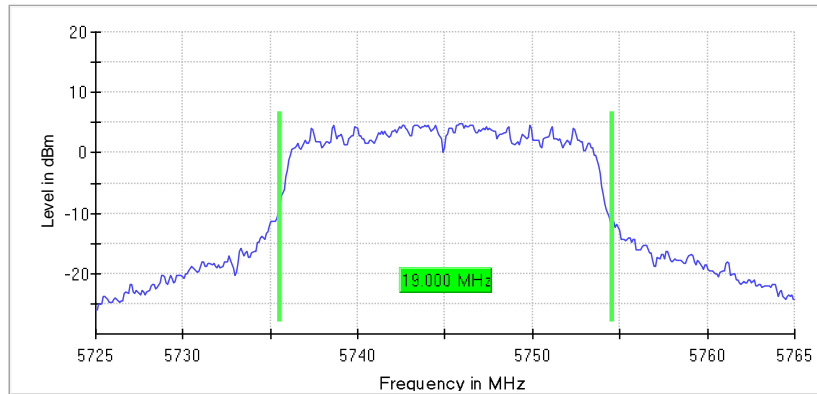
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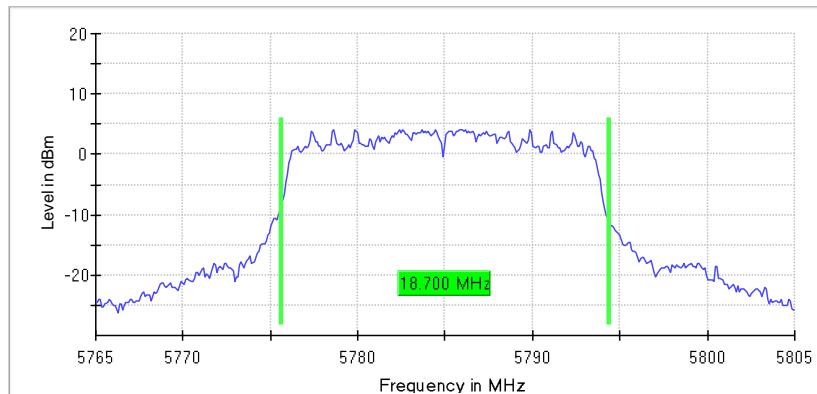
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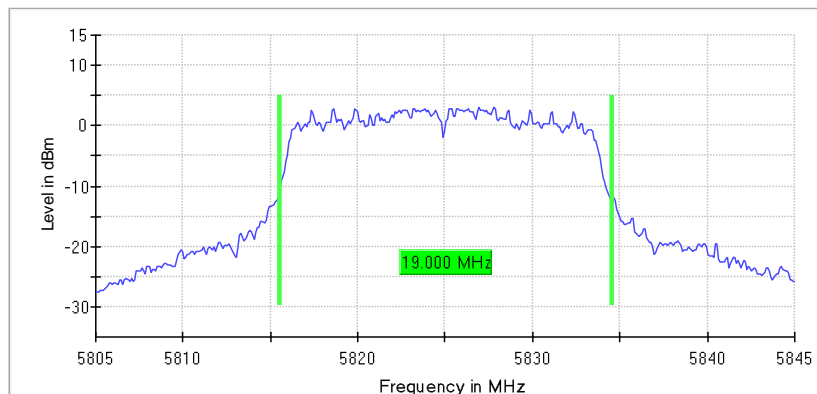
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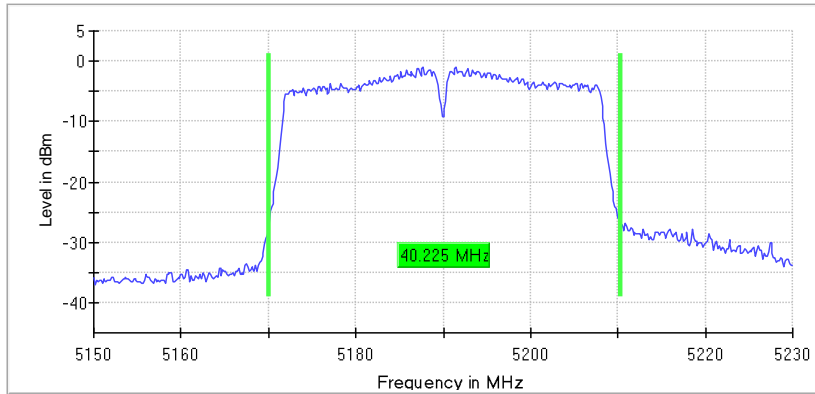


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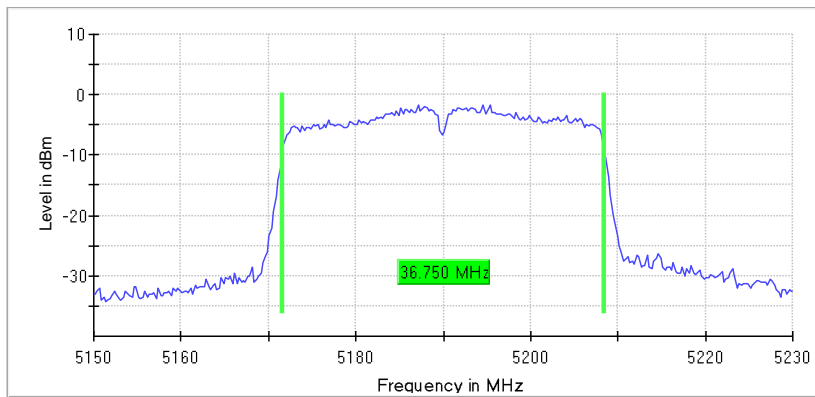


802.11n-HT40

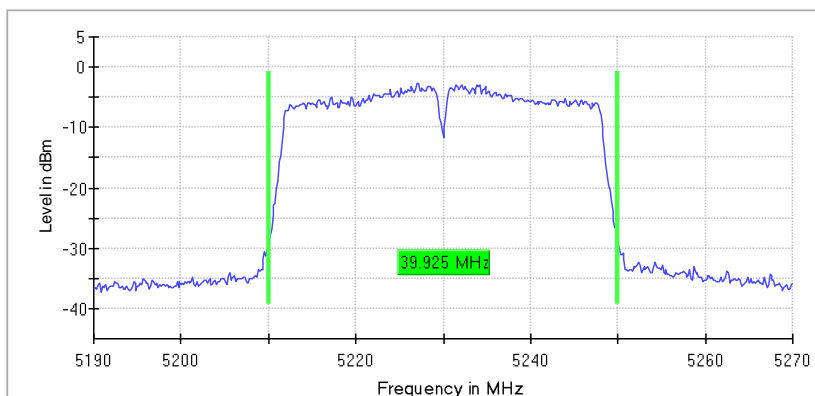
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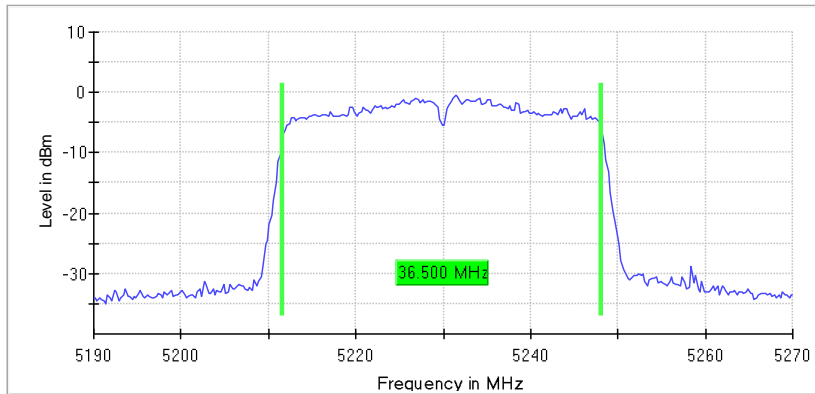
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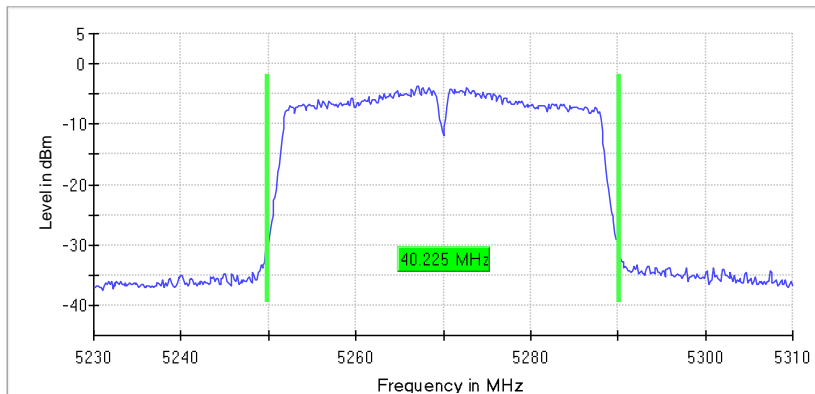
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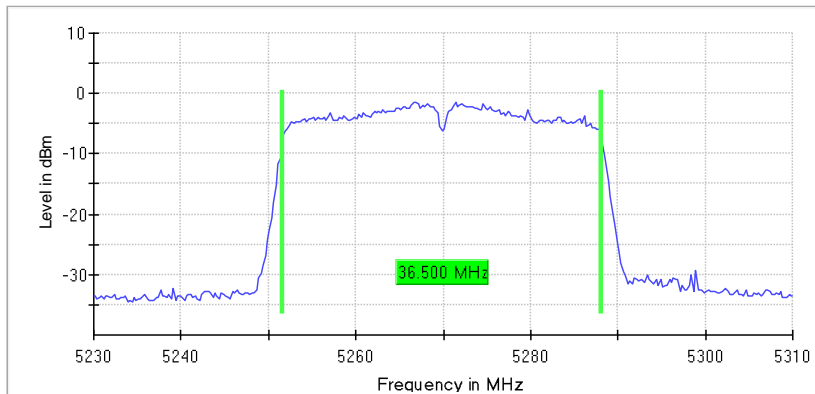
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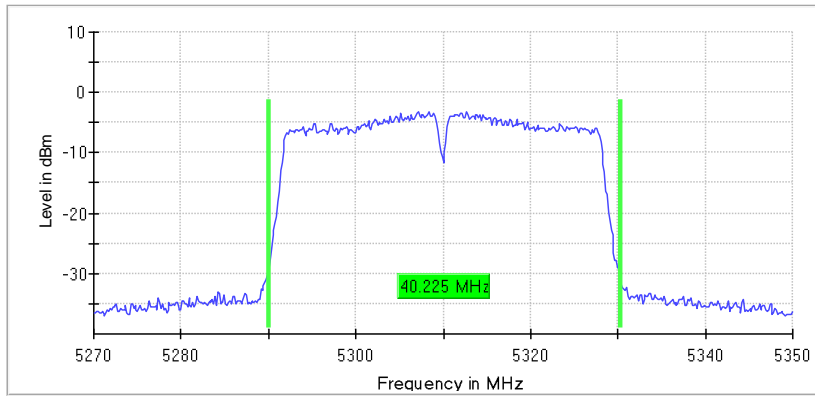
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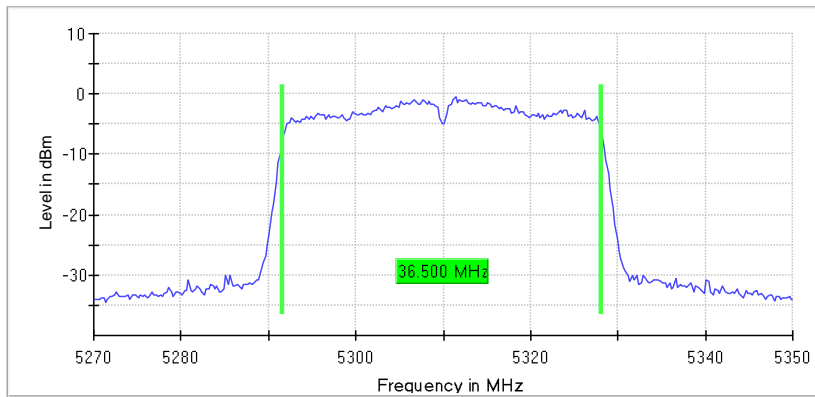
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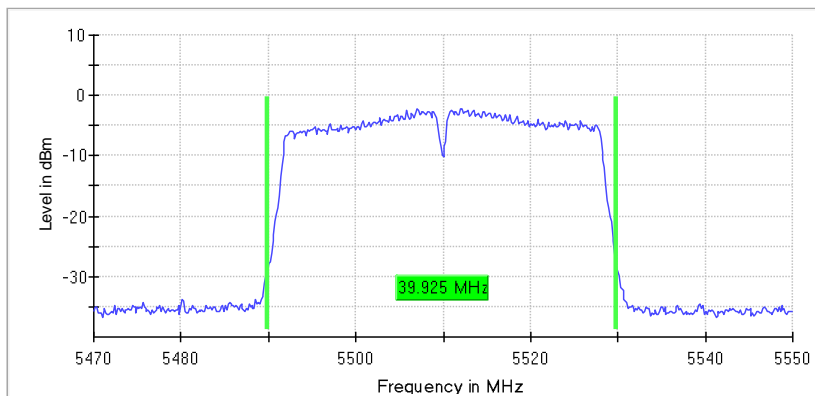
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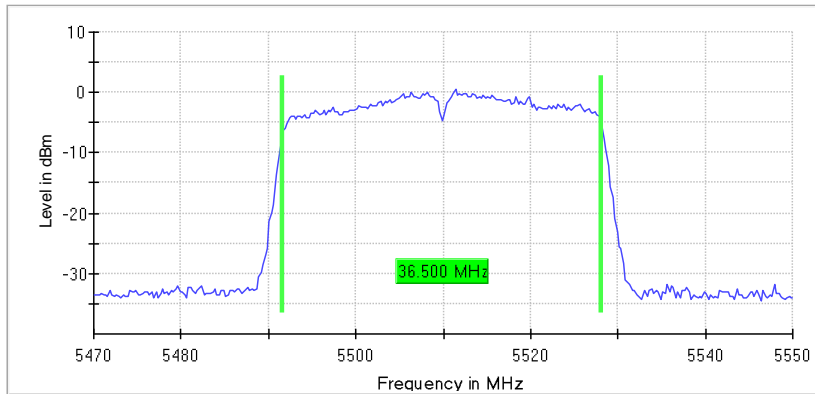
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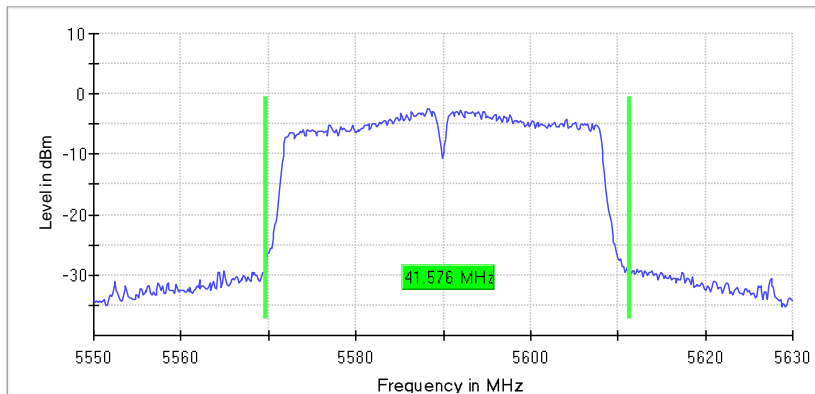
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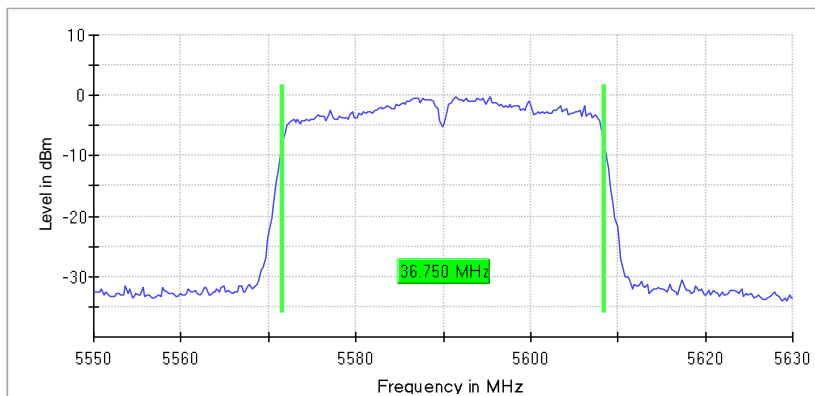
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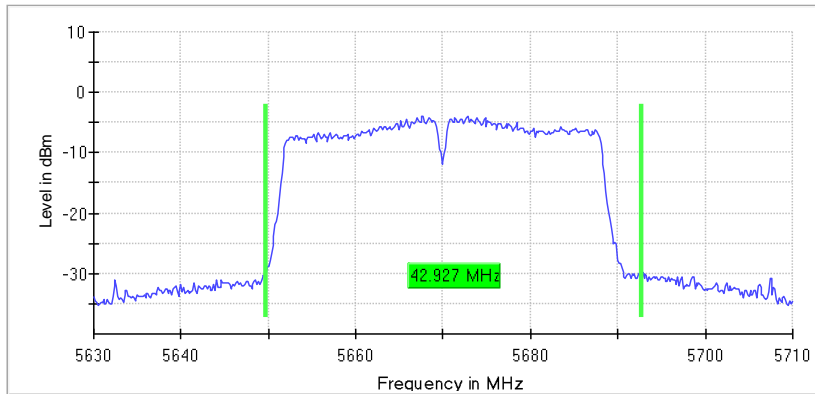
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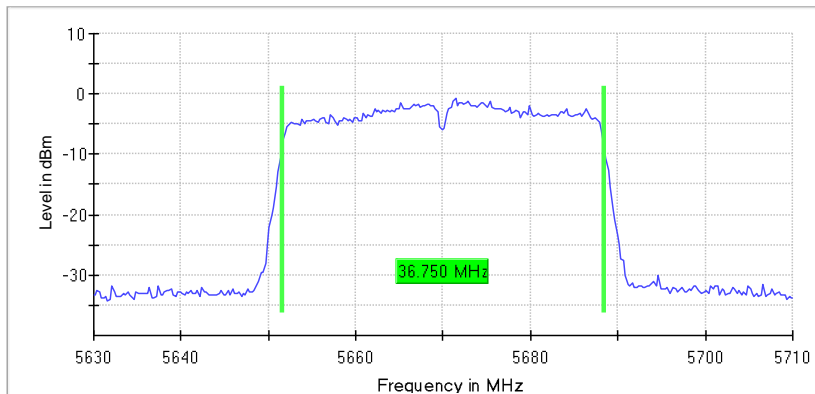
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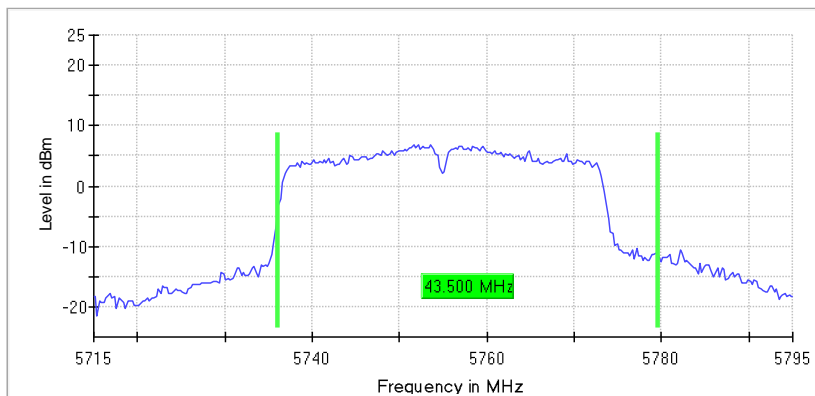
26 dB Bandwidth



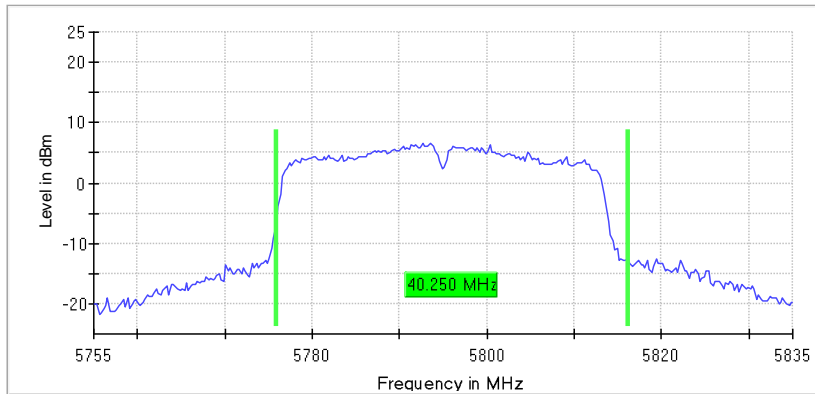
99 % Bandwidth



99 % Bandwidth

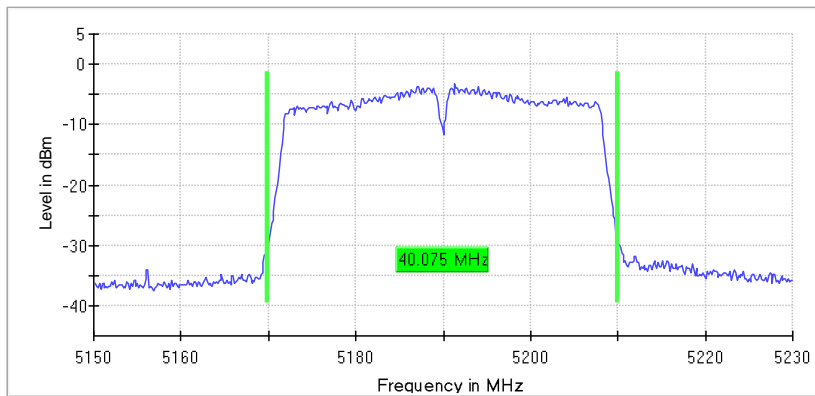


99 % Bandwidth

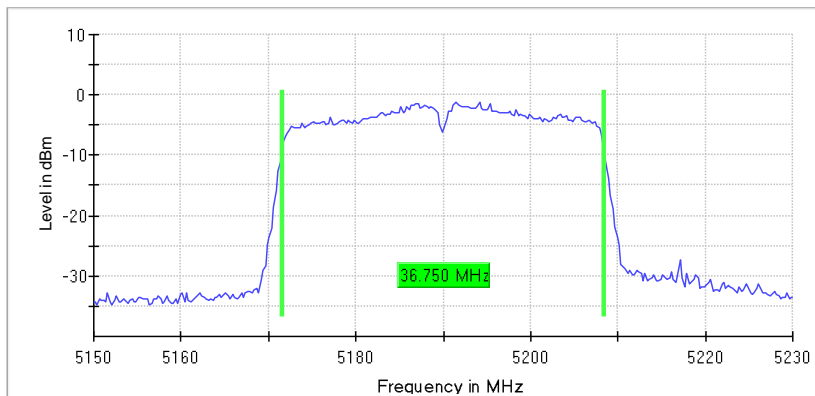


802.11ac40

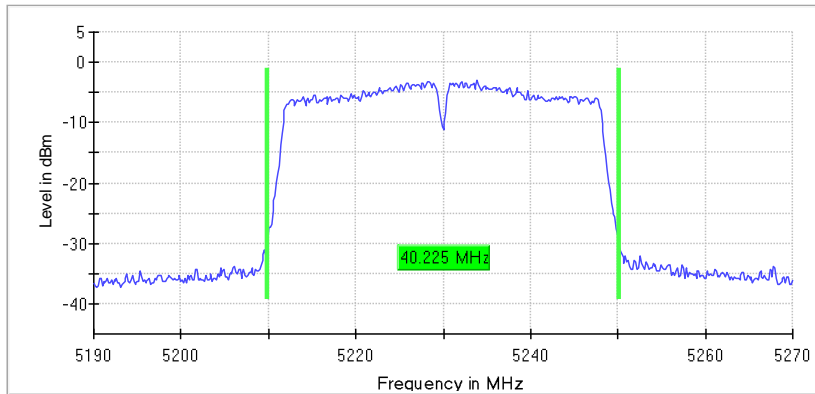
26 dB Bandwidth



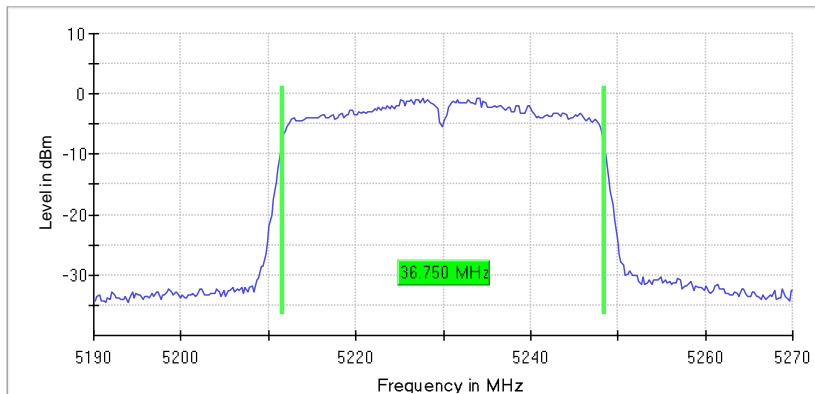
99 % Bandwidth



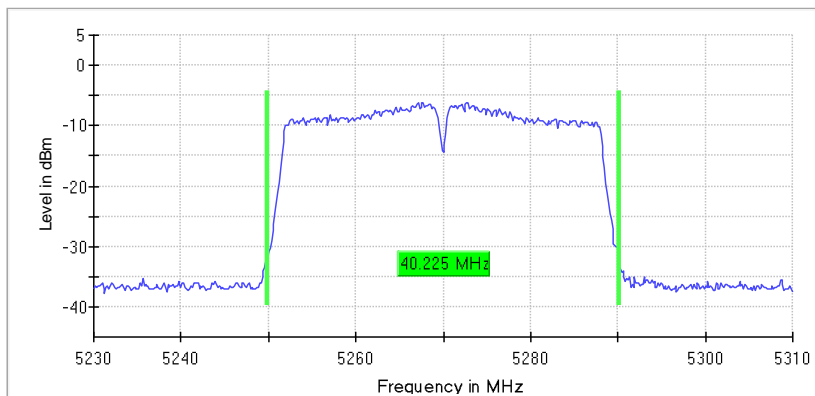
26 dB Bandwidth



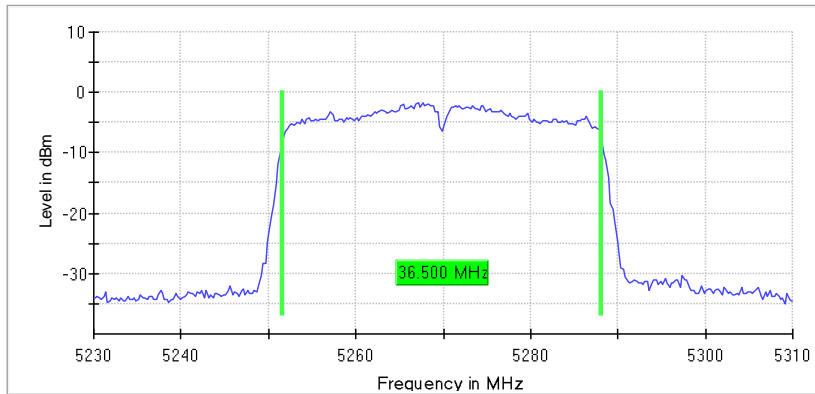
99 % Bandwidth



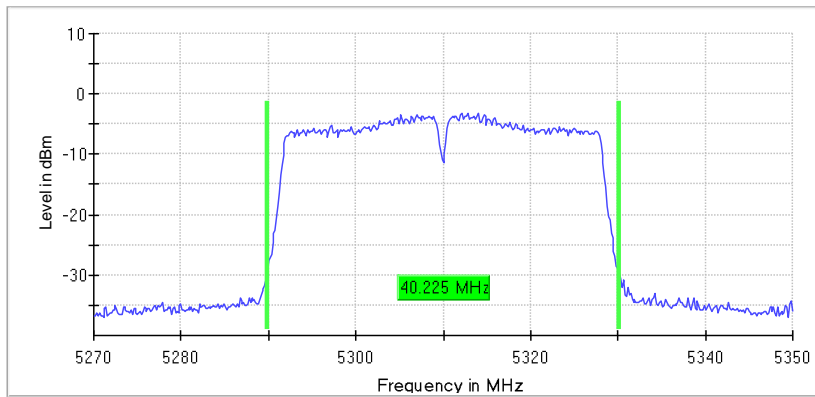
26 dB Bandwidth



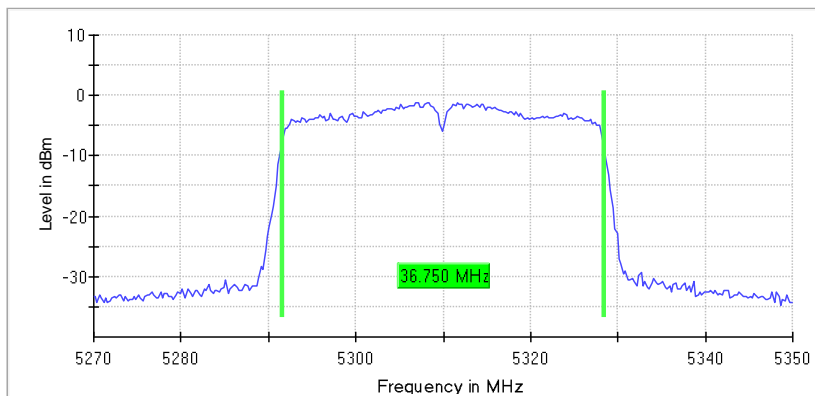
99 % Bandwidth



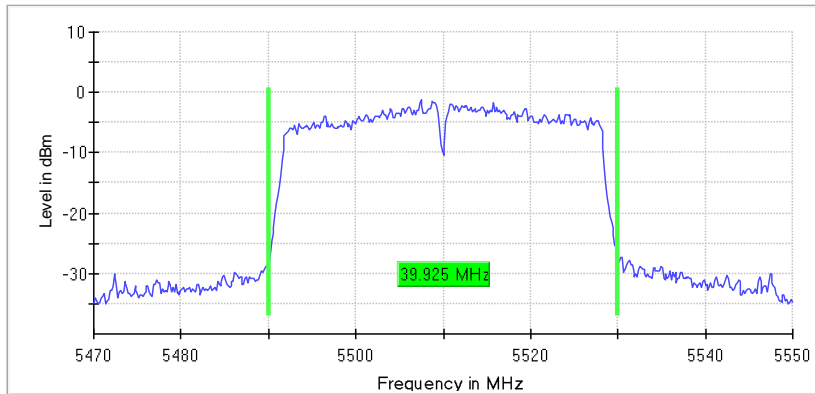
26 dB Bandwidth



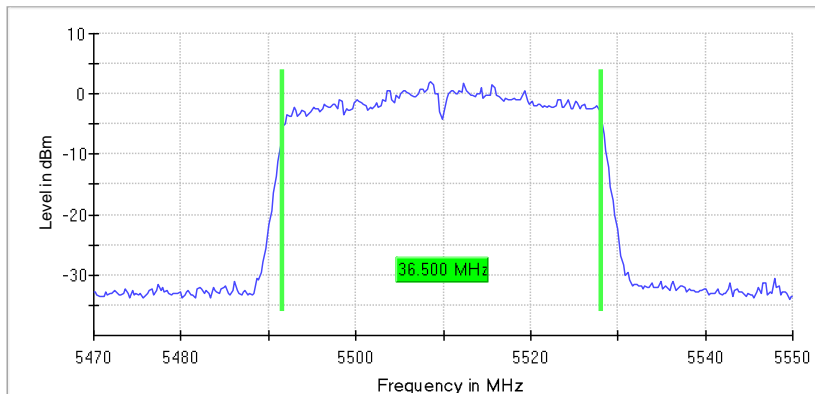
99 % Bandwidth



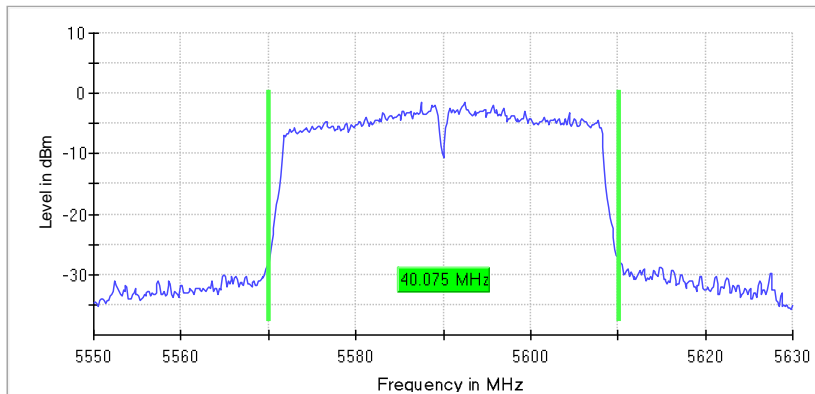
26 dB Bandwidth



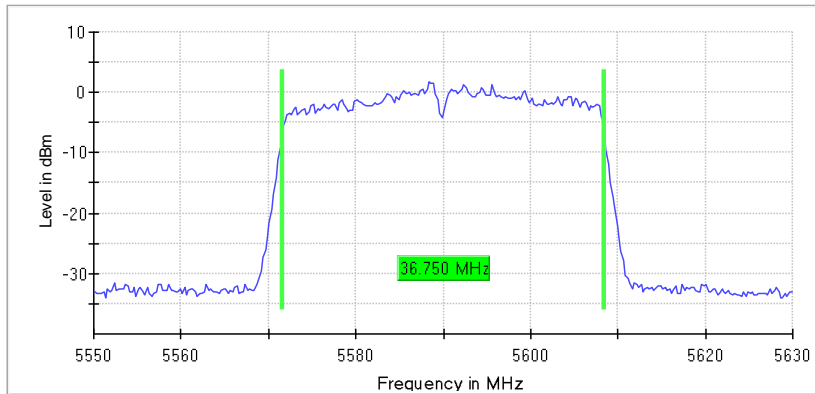
99 % Bandwidth



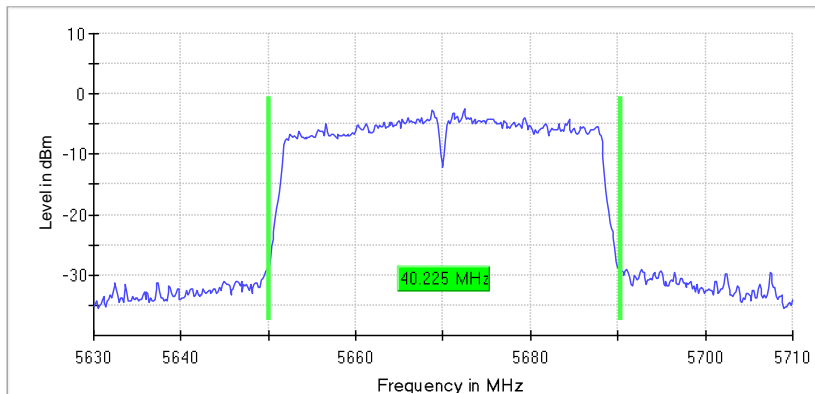
26 dB Bandwidth



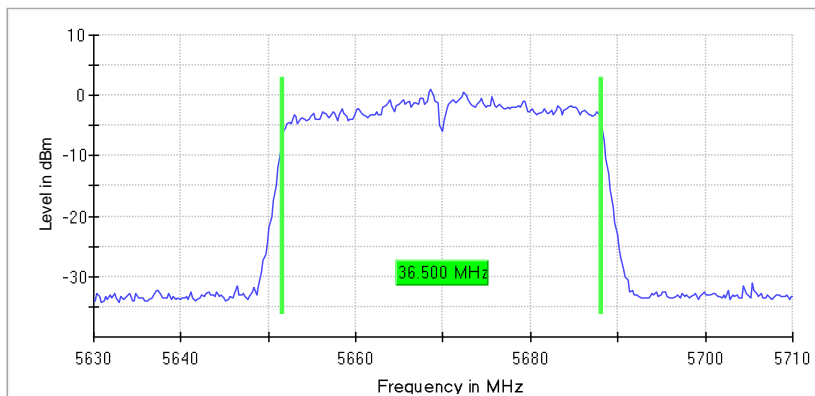
99 % Bandwidth



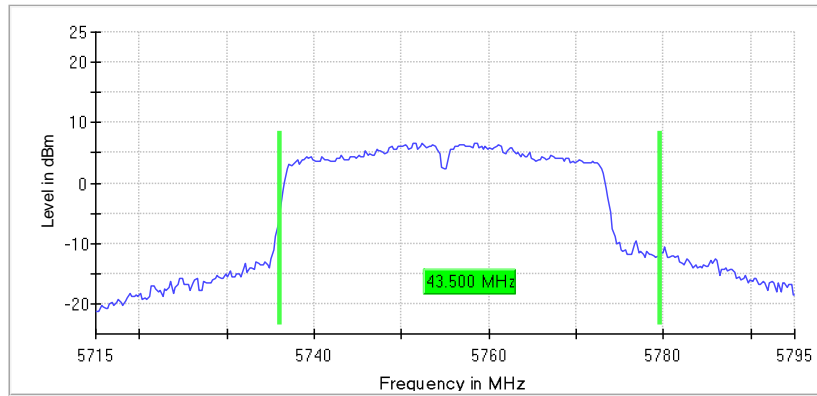
26 dB Bandwidth



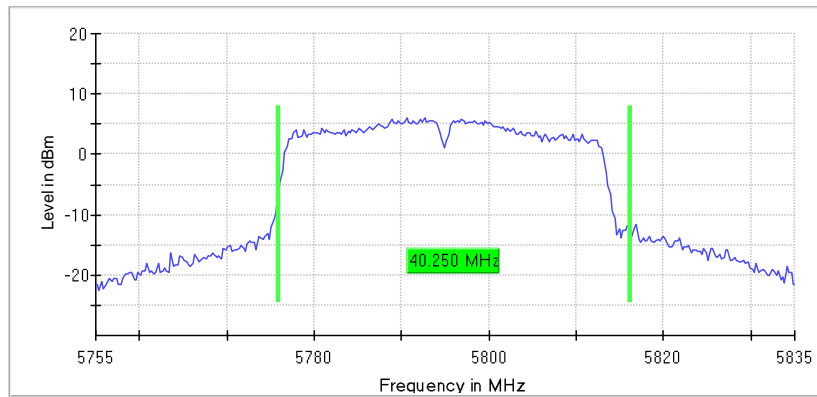
99 % Bandwidth



99 % Bandwidth

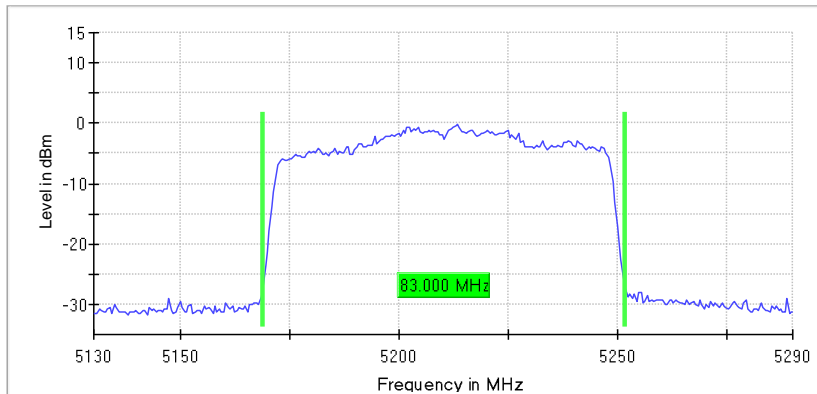


99 % Bandwidth

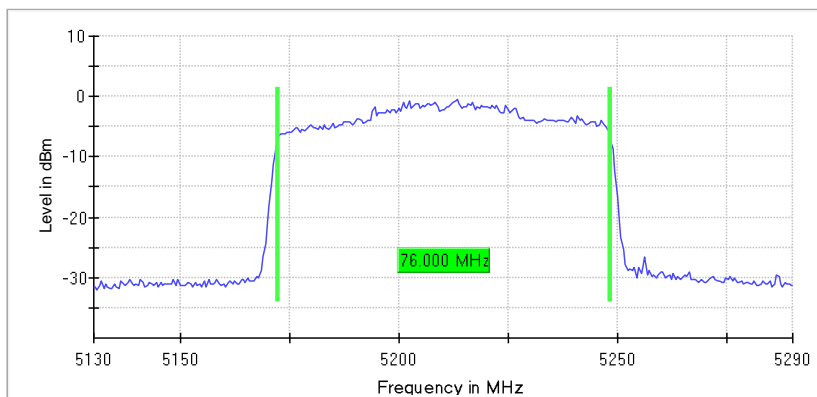


802.11ac80

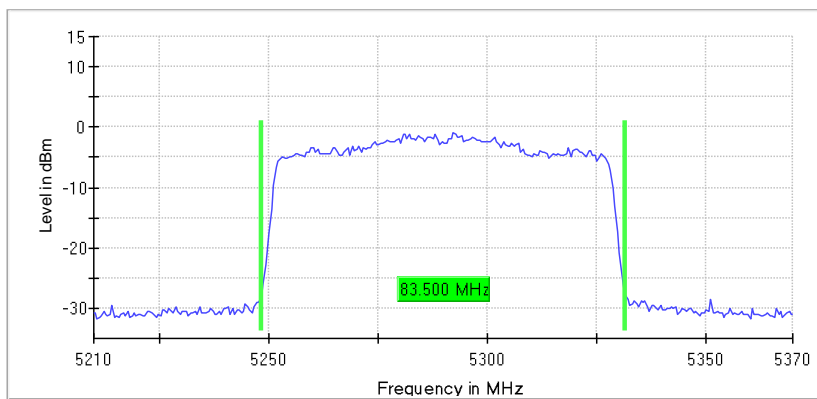
26 dB Bandwidth



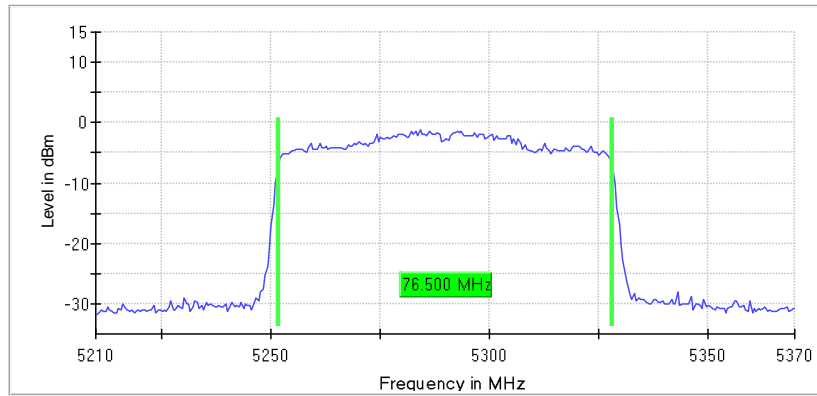
99 % Bandwidth



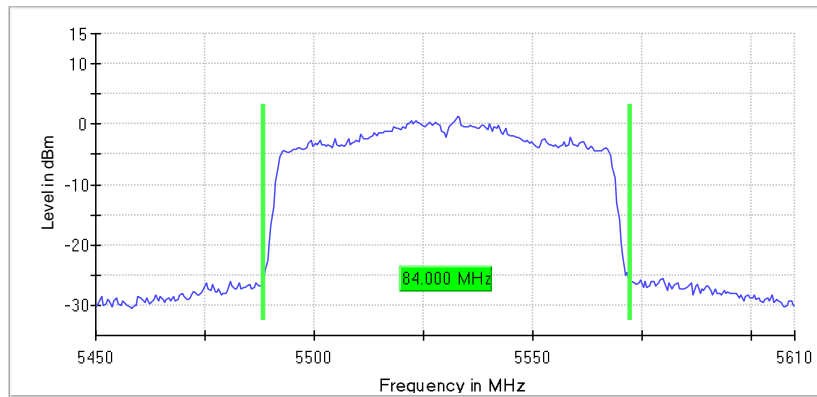
26 dB Bandwidth



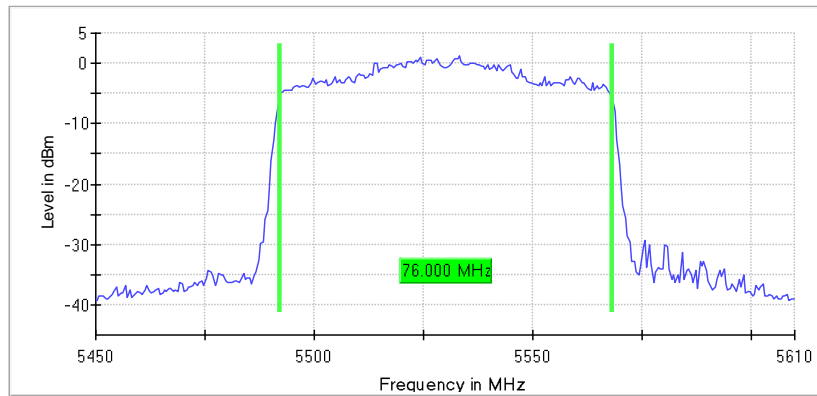
99 % Bandwidth

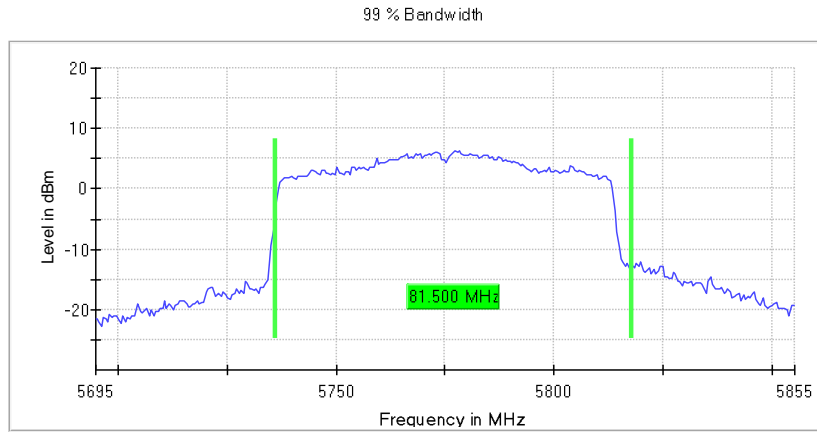


26 dB Bandwidth



99 % Bandwidth





2. 6dB Bandwidth

2.1 Test Datas

Channel (mode)	Channel Frequency (MHz)	Emissions bandwidth
		6dB Bandwidth (MHz)
149 (802.11a)	5745	16.400
157 (802.11a)	5785	16.400
165 (802.11a)	5825	16.150

Channel (mode)	Channel Frequency (MHz)	Emissions bandwidth
		6dB Bandwidth (MHz)
149 (802.11n-HT20)	5745	17.600
157 (802.11n-HT20)	5785	17.350
165 (802.11n-HT20)	5825	17.350

Channel (mode)	Channel Frequency (MHz)	Emissions bandwidth
		6dB Bandwidth (MHz)
149 (802.11ac20)	5745	17.600
157 (802.11ac20)	5785	17.600
165 (802.11ac20)	5825	17.600

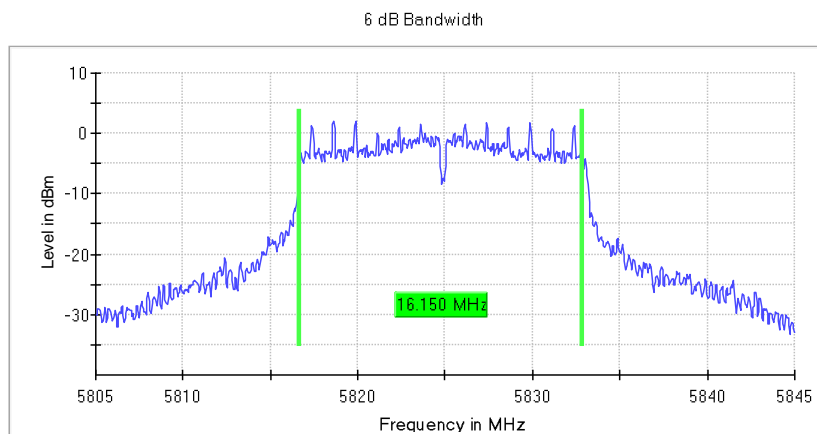
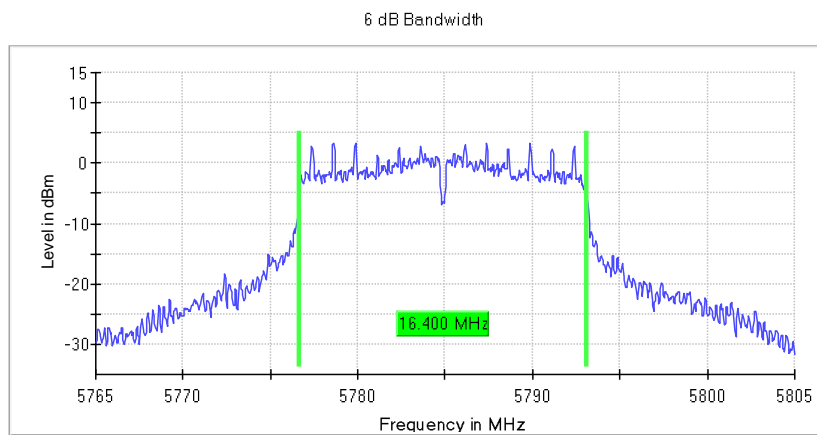
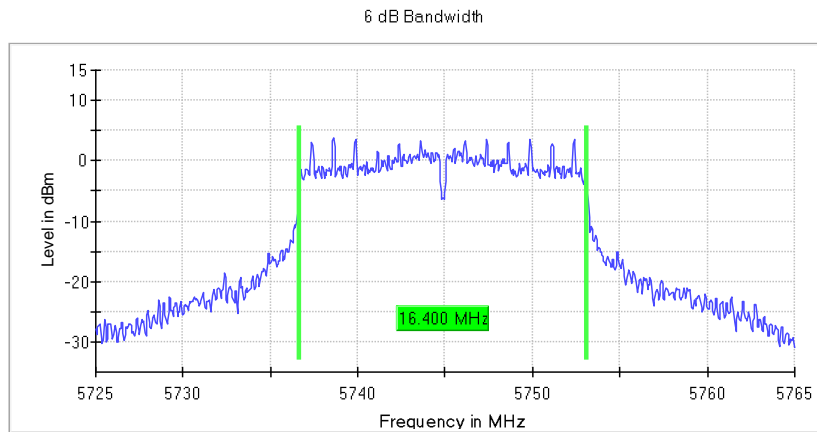
Channel (mode)	Channel Frequency (MHz)	Emissions bandwidth
		6dB Bandwidth (MHz)
151 (802.11n-HT40)	5755	36.350
159 (802.11n-HT40)	5795	36.150

Channel (mode)	Channel Frequency (MHz)	Emissions bandwidth
		6dB Bandwidth (MHz)
151 (802.11ac40)	5755	36.100
159 (802.11ac40)	5795	36.000

Channel (mode)	Channel Frequency (MHz)	Emissions bandwidth
		6dB Bandwidth (MHz)
155 (802.11ac80)	5775	75.200

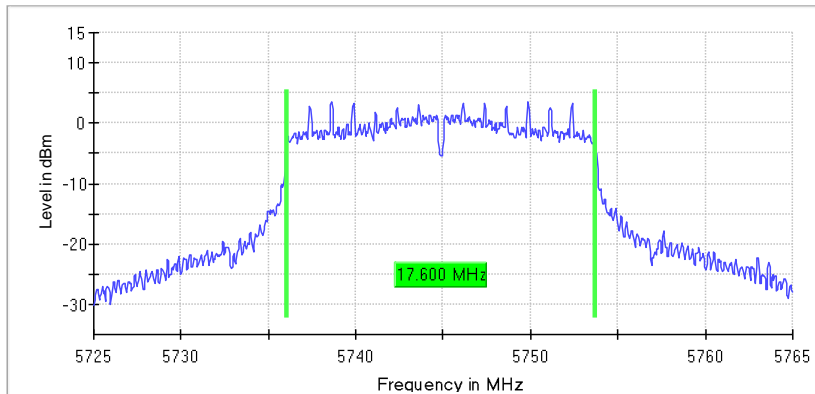
2.2 Test Graphs

802.11a

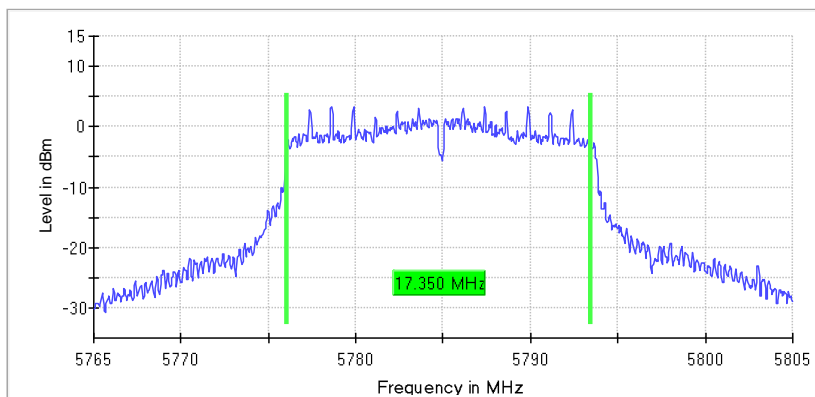


802.11n-HT20

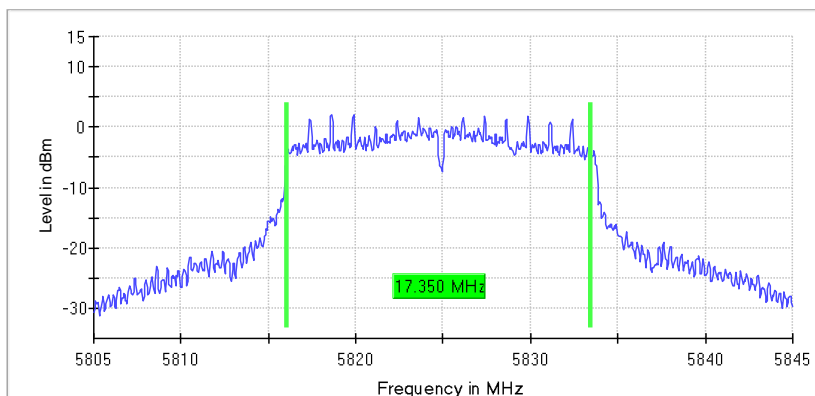
6 dB Bandwidth



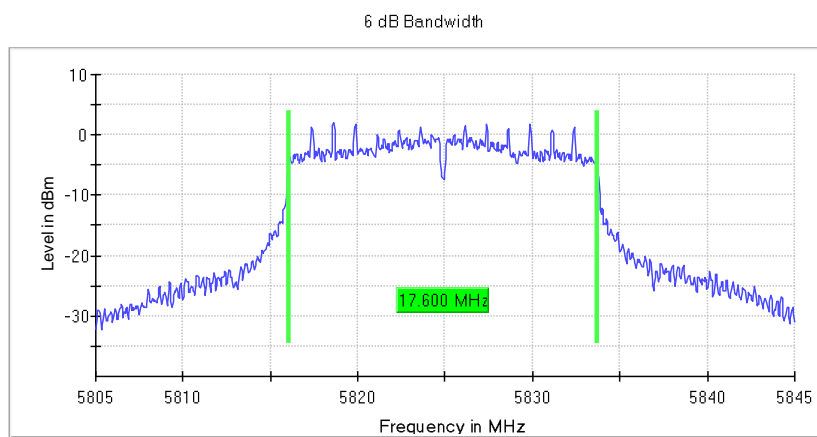
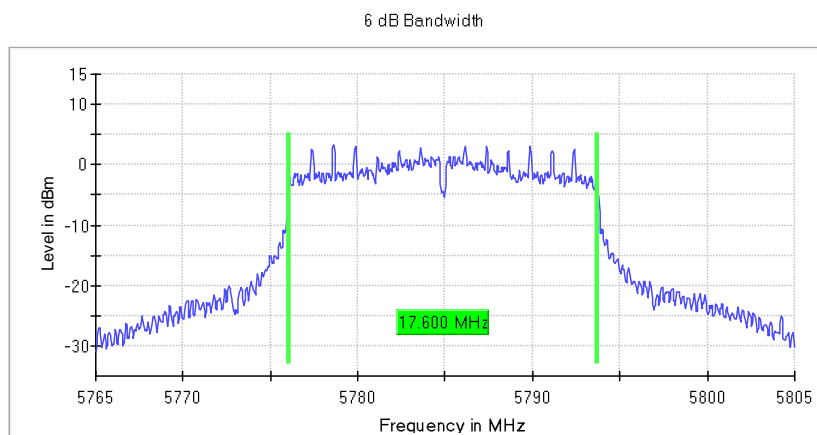
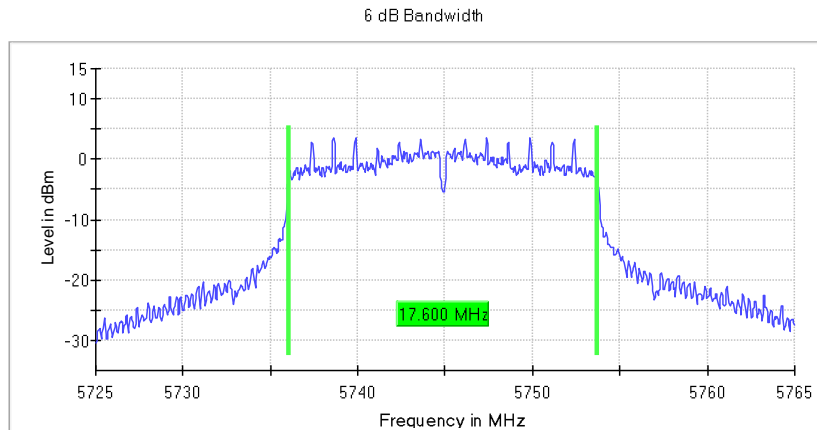
6 dB Bandwidth



6 dB Bandwidth

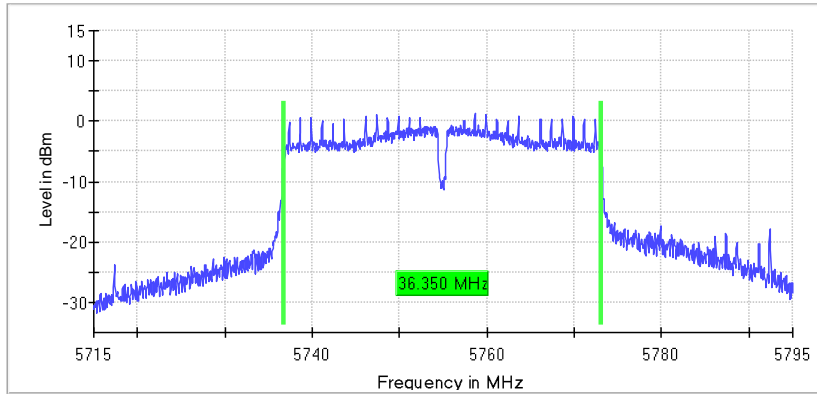


802.11ac20

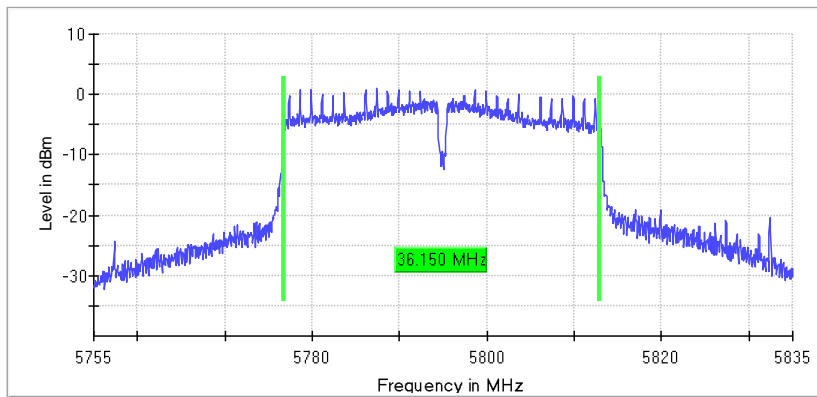


802.11n-HT40

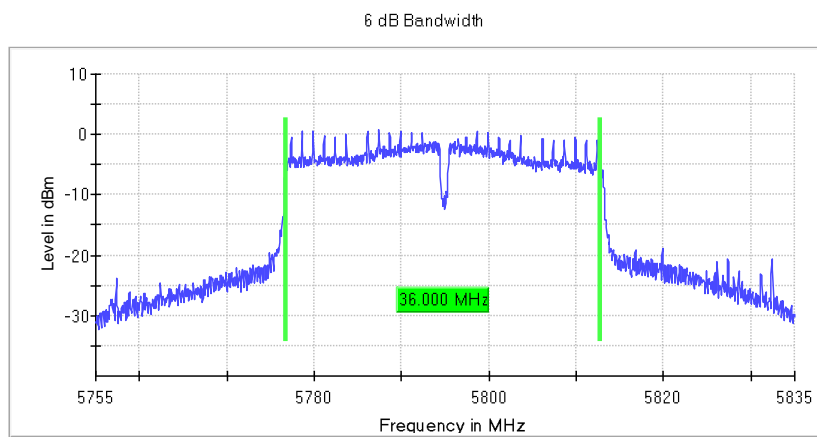
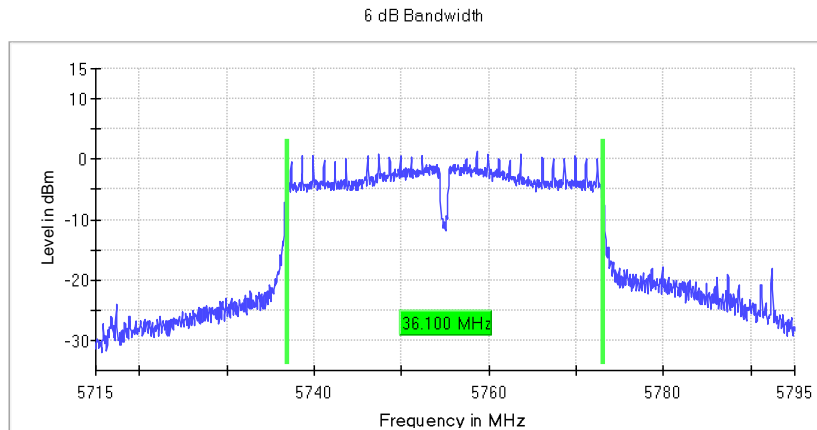
6 dB Bandwidth



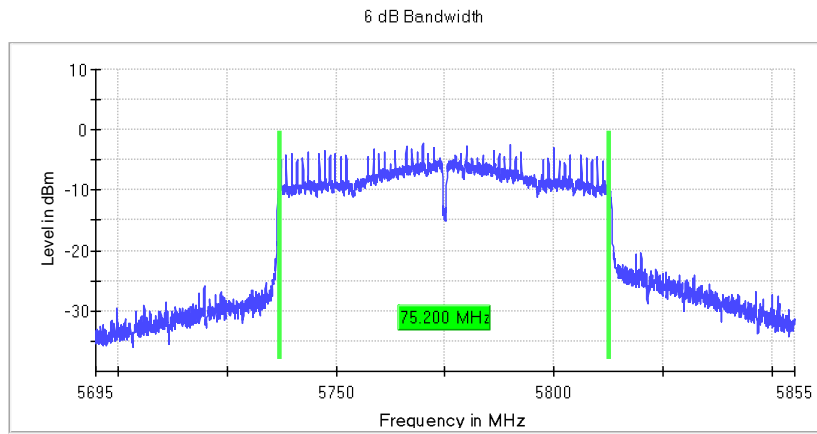
6 dB Bandwidth



802.11ac40



802.11ac80



3. Maximum output power

Note: 23.98dBm=250mW, 30dBm=1000mW.

Channel (mode)	Channel Frequency (MHz)	RF Output Power (dBm)		E.I.R.P. for IC (dBm)	FCC Limit (dBm)	IC E.I.R.P. Limit (dBm)	Result
		FCC	IC				
36 (802.11a)	5180	14.844	14.844	17.844	23.98	22.76	Pass
40 (802.11a)	5200	15.193	15.193	18.193	23.98	22.60	Pass
48 (802.11a)	5240	16.106	16.106	19.106	23.98	22.55	Pass
52 (802.11a)	5260	15.591	15.591	18.591	23.98	30	Pass
56 (802.11a)	5280	15.185	15.185	18.185	23.98	30	Pass
64 (802.11a)	5320	16.615	16.615	19.615	23.98	30	Pass
100 (802.11a)	5500	16.982	16.982	19.982	23.98	30	Pass
120 (802.11a)	5600	16.943	--	--	23.98	--	Pass
140 (802.11a)	5700	16.394	16.394	19.943	23.98	30	Pass
149 (802.11a)	5745	15.667	15.667	19.394	30	36	Pass
157 (802.11a)	5785	15.268	15.268	18.667	30	36	Pass
165 (802.11a)	5825	13.999	13.999	18.268	30	36	Pass

Channel (mode)	Channel Frequency (MHz)	RF Output Power (dBm)		E.I.R.P. of IC (dBm)	FCC Limit (dBm)	IC Limit (dBm)	Result
		FCC	IC				
36 (802.11n-HT20)	5180	14.658	14.658	17.658	23.98	22.81	Pass
40 (802.11n-HT20)	5200	14.920	14.920	17.92	23.98	22.83	Pass
48 (802.11n-HT20)	5240	15.893	15.893	18.893	23.98	22.70	Pass
52 (802.11n-HT20)	5260	15.304	15.304	18.304	23.98	30	Pass
56 (802.11n-HT20)	5280	15.173	15.173	18.173	23.98	30	Pass
64 (802.11n-HT20)	5320	16.538	16.538	19.538	23.98	30	Pass
100 (802.11n-HT20)	5500	16.901	16.901	19.901	23.98	30	Pass
120 (802.11n-HT20)	5600	16.667	--	--	23.98	--	Pass
140 (802.11n-HT20)	5700	16.002	16.002	19.002	23.98	30	Pass
149 (802.11n-HT20)	5745	15.227	15.227	18.227	23.98	30	Pass
157 (802.11n-HT20)	5785	15.267	15.267	18.267	30	36	Pass
165 (802.11n-HT20)	5825	13.536	13.536	16.536	30	36	Pass

Channel (mode)	Channel Frequency (MHz)	RF Output Power (dBm)		E.I.R.P. of IC (dBm)	FCC Limit (dBm)	IC Limit (dBm)	Result
		FCC	IC				
36 (802.11ac20)	5180	14.633	14.633	17.633	23.98	22.83	Pass
40 (802.11ac20)	5200	14.990	14.990	17.99	23.98	22.81	Pass
48 (802.11ac20)	5240	15.915	15.915	18.915	23.98	22.70	Pass
52 (802.11ac20)	5260	15.202	15.202	18.202	23.98	30	Pass
56 (802.11ac20)	5280	15.163	15.163	18.163	23.98	30	Pass
64 (802.11ac20)	5320	16.421	16.421	19.421	23.98	30	Pass
100 (802.11ac20)	5500	17.212	17.212	20.212	23.98	30	Pass
120 (802.11ac20)	5600	16.807	--	--	23.98	--	Pass
140 (802.11ac20)	5700	15.831	15.831	18.831	23.98	30	Pass
149 (802.11ac20)	5745	15.277	15.277	18.277	23.98	30	Pass
157 (802.11ac20)	5785	15.297	15.297	18.297	30	36	Pass
165 (802.11ac20)	5825	13.722	13.722	16.722	30	36	Pass

Channel (mode)	Channel Frequency (MHz)	RF Output Power (dBm)		E.I.R.P. of IC (dBm)	FCC Limit (dBm)	IC Limit (dBm)	Result
		FCC	IC				
38 (802.11n-HT40)	5190	15.185	15.185	18.185	23.98	23.00	Pass
46 (802.11n-HT40)	5230	16.079	16.079	19.079	23.98	23.00	Pass
54 (802.11n-HT40)	5270	15.645	15.645	18.645	23.98	30	Pass
62 (802.11n-HT40)	5310	16.416	16.416	19.416	23.98	30	Pass
102 (802.11n-HT40)	5510	17.279	17.279	20.279	23.98	30	Pass
118 (802.11n-HT40)	5590	16.92	--	--	23.98	--	Pass
134 (802.11n-HT40)	5670	16.296	16.296	19.296	23.98	30	Pass
151 (802.11n-HT40)	5755	15.776	15.776	18.776	30	36	Pass
159 (802.11n-HT40)	5795	15.635	15.635	18.635	30	36	Pass

Channel (mode)	Channel Frequency (MHz)	RF Output Power (dBm)		E.I.R.P. of IC (dBm)	FCC Limit (dBm)	IC Limit (dBm)	Result
		FCC	IC				
38 (802.11ac40)	5190	15.165	15.165	18.165	23.98	23.00	Pass
46 (802.11ac40)	5230	16.299	16.299	19.299	23.98	23.00	Pass
54 (802.11ac40)	5270	15.434	15.434	18.434	23.98	30	Pass
62 (802.11ac40)	5310	16.261	16.261	19.261	23.98	30	Pass
102 (802.11ac40)	5510	17.568	17.568	20.568	23.98	30	Pass
118 (802.11ac40)	5590	16.824	--	--	23.98	--	Pass
134 (802.11ac40)	5670	16.518	16.518	19.518	23.98	30	Pass
151 (802.11ac40)	5755	15.747	15.747	18.747	30	36	Pass
159 (802.11ac40)	5795	15.533	15.533	18.533	30	36	Pass

Channel (mode)	Channel Frequency (MHz)	RF Output Power (dBm)		E.I.R.P. of IC (dBm)	FCC Limit (dBm)	IC Limit (dBm)	Result
		FCC	IC				
42 (802.11ac80)	5210	15.221	15.221	18.221	23.98	23.00	Pass
58 (802.11ac80)	5290	15.296	15.296	18.296	23.98	30	Pass
106 (802.11ac80)	5530	16.627	16.627	19.627	23.98	30	Pass
155 (802.11ac80)	5775	14.912	14.912	17.912	30	36	Pass

4. Power Spectral Density

4.1 Test Datas

Channel (mode)	Channel Frequency (MHz)	Power Spectral Density (dBm/MHz)		FCC Limit (dBm/MHz)	IC Limit (dBm/MHz ^{**})	Result
		FCC	IC*			
36 (802.11a)	5180	3.671	3.671	11	10	Pass
40 (802.11a)	5200	3.770	3.770	11	10	Pass
48 (802.11a)	5240	4.667	4.667	11	10	Pass
52 (802.11a)	5260	3.660	3.660	11	11	Pass
56 (802.11a)	5280	3.384	3.384	11	11	Pass
64 (802.11a)	5320	4.861	4.861	11	11	Pass
100 (802.11a)	5500	5.728	5.728	11	11	Pass
120 (802.11a)	5600	5.435	--	11	--	Pass
140 (802.11a)	5700	4.440	4.440	11	11	Pass

*The measurement power spectral density for U-NII-1 band is the e.i.r.p. spectral density, for U-NII-2A/2C/3 is the conducted spectral density.

**For U-NII-1 band the limit is the e.i.r.p. spectral density, for U-NII-2A/2C/3 is the conducted spectral density.

Channel (mode)	Channel Frequency (MHz)	Power Spectral Density	Limit (dBm/500KHz)	Result
		dBm/500KHz		
149 (802.11a)	5745	1.451	30	Pass
157 (802.11a)	5785	1.034	30	Pass
165 (802.11a)	5825	-0.187	30	Pass

Channel (mode)	Channel Frequency (MHz)	Power Spectral Density (dBm/MHz)		FCC Limit (dBm/MHz)	IC Limit (dBm/MHz ^{**})	Result
		FCC	IC*			
36 (802.11n-HT20)	5180	3.232	3.232	11	10	Pass
40 (802.11n-HT20)	5200	3.249	3.249	11	10	Pass
48 (802.11n-HT20)	5240	4.163	4.163	11	10	Pass
52 (802.11n-HT20)	5260	3.460	3.460	11	11	Pass
56 (802.11n-HT20)	5280	3.174	3.174	11	11	Pass
64 (802.11n-HT20)	5320	4.321	4.321	11	11	Pass
100 (802.11n-HT20)	5500	5.051	5.051	11	11	Pass
120 (802.11n-HT20)	5600	4.787	--	11	--	Pass
140 (802.11n-HT20)	5700	4.004	4.004	11	11	Pass

*The measurement power spectral density for U-NII-1 band is the e.i.r.p. spectral density, for U-NII-2A/2C/3 is the conducted spectral density.

**For U-NII-1 band the limit is the e.i.r.p. spectral density, for U-NII-2A/2C/3 is the conducted spectral density.

Channel (mode)	Channel Frequency (MHz)	Power Spectral Density	Limit (dBm/500KHz)	Result
		dBm/500KHz		
149 (802.11n-HT20)	5745	0.918	30	Pass
157 (802.11n-HT20)	5785	0.700	30	Pass
165 (802.11n-HT20)	5825	-0.901	30	Pass

Channel (mode)	Channel Frequency (MHz)	Power Spectral Density (dBm/MHz)		FCC Limit (dBm/MHz)	IC Limit (dBm/MHz**)	Result
		FCC	IC*			
36 (802.11ac20)	5180	3.258	3.258	11	10	Pass
40 (802.11ac20)	5200	3.416	3.416	11	10	Pass
48 (802.11ac20)	5240	4.258	4.258	11	10	Pass
52 (802.11ac20)	5260	1.435	1.435	11	11	Pass
56 (802.11ac20)	5280	1.142	1.142	11	11	Pass
64 (802.11ac20)	5320	2.481	2.481	11	11	Pass
100 (802.11ac20)	5500	3.590	3.590	11	11	Pass
120 (802.11ac20)	5600	3.359	--	11	--	Pass
140 (802.11ac20)	5700	2.145	2.145	11	11	Pass

*The measurement power spectral density for U-NII-1 band is the e.i.r.p. spectral density, for U-NII-2A/2C/3 is the conducted spectral density.

**For U-NII-1 band the limit is the e.i.r.p. spectral density, for U-NII-2A/2C/3 is the conducted spectral density.

Channel (mode)	Channel Frequency (MHz)	Power Spectral Density	Limit (dBm/500KHz)	Result
		dBm/500KHz		
149 (802.11ac20)	5745	0.878	30	Pass
157 (802.11ac20)	5785	0.451	30	Pass
165 (802.11ac20)	5825	-0.919	30	Pass

Channel (mode)	Channel Frequency (MHz)	Power Spectral Density (dBm/MHz)		FCC Limit (dBm/MHz)	IC Limit (dBm/MHz**)	Result
		FCC	IC*			
38 (802.11n-HT40)	5190	-1.839	-1.839	11	10	Pass
46 (802.11n-HT40)	5230	1.347	1.347	11	10	Pass
54 (802.11n-HT40)	5270	0.253	0.253	11	10	Pass
62 (802.11n-HT40)	5310	0.923	0.923	11	11	Pass
102 (802.11n-HT40)	5510	2.335	2.335	11	11	Pass
118 (802.11n-HT40)	5590	1.877	--	11	--	Pass
134 (802.11n-HT40)	5670	0.953	0.953	11	11	Pass

*The measurement power spectral density for U-NII-1 band is the e.i.r.p. spectral density, for U-NII-2A/2C/3 is the conducted spectral density.

**For U-NII-1 band the limit is the e.i.r.p. spectral density, for U-NII-2A/2C/3 is the conducted spectral density.

Channel (mode)	Channel Frequency (MHz)	Power Spectral Density	Limit (dBm/500KHz)	Result
		dBm/500KHz		
151 (802.11n-HT40)	5755	-2.062	30	Pass
159 (802.11n-HT40)	5795	-2.416	30	Pass

Channel (mode)	Channel Frequency (MHz)	Power Spectral Density (dBm/MHz)		FCC Limit (dBm/MHz)	IC Limit (dBm/MHz**)	Result
		FCC	IC*			
38 (802.11ac40)	5190	0.491	0.491	11	10	Pass
46 (802.11ac40)	5230	1.296	1.296	11	10	Pass
54 (802.11ac40)	5270	0.151	0.151	11	10	Pass
62 (802.11ac40)	5310	0.773	0.773	11	11	Pass
102 (802.11ac40)	5510	-0.109	-0.109	11	11	Pass
118 (802.11ac40)	5590	-0.323	--	11	--	Pass
134 (802.11ac40)	5670	-1.434	-1.434	11	11	Pass

*The measurement power spectral density for U-NII-1 band is the e.i.r.p. spectral density, for U-NII-2A/2C/3 is the conducted spectral density.

**For U-NII-1 band the limit is the e.i.r.p. spectral density, for U-NII-2A/2C/3 is the conducted spectral density.

Channel (mode)	Channel Frequency (MHz)	Power Spectral Density	Limit (dBm/500KHz)	Result
		dBm/500KHz		
151 (802.11ac40)	5755	-2.174	30	Pass
159 (802.11ac40)	5795	-2.556	30	Pass

Channel (mode)	Channel Frequency (MHz)	Power Spectral Density (dBm/MHz)		FCC Limit (dBm/MHz)	IC Limit (dBm/MHz**)	Result
		FCC	IC*			
42 (802.11ac80)	5210	-3.093	-3.093	11	10	Pass
58 (802.11ac80)	5290	-3.676	-3.676	11	10	Pass
106 (802.11ac80)	5530	-1.287	-1.287	11	10	Pass

*The measurement power spectral density for U-NII-1 band is the e.i.r.p. spectral density, for U-NII-2A/2C/3 is the conducted spectral density.

**For U-NII-1 band the limit is the e.i.r.p. spectral density, for U-NII-2A/2C/3 is the conducted spectral density.

Channel (mode)	Channel Frequency (MHz)	Power Spectral Density	Limit (dBm/500KHz)	Result
		dBm/500KHz		
155 (802.11ac80)	5775	-6.617	30	Pass

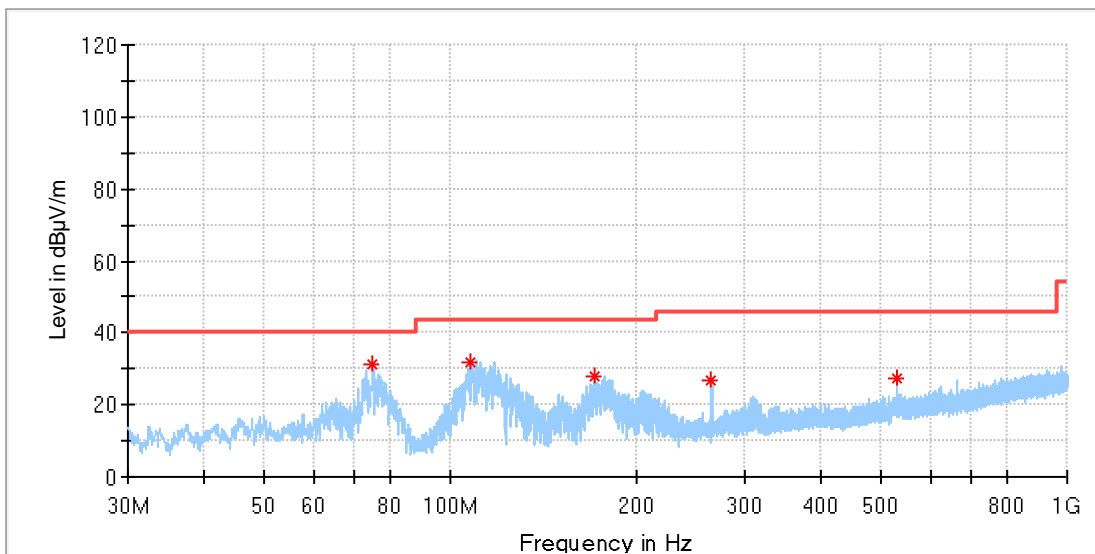
5. Transmitter Spurious Emissions

Note: 1, Testing is carried out with frequency rang 9kHz to the tenth harmonics.
 2, The margin is greater than 20 dB are not shown in this Appendix.

5.1 Transmitter Spurious Emissions, Below 1GHz

EUT Information

EUT Name:	BT & WLAN Module
Model:	BTWDB01
TestMode:	WIFI 5G_11a_Ch36
Test Voltage::	DC 3.3V
Remark:	Temp 24 Humi:47%
Test Standard:	FCC 15.407
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

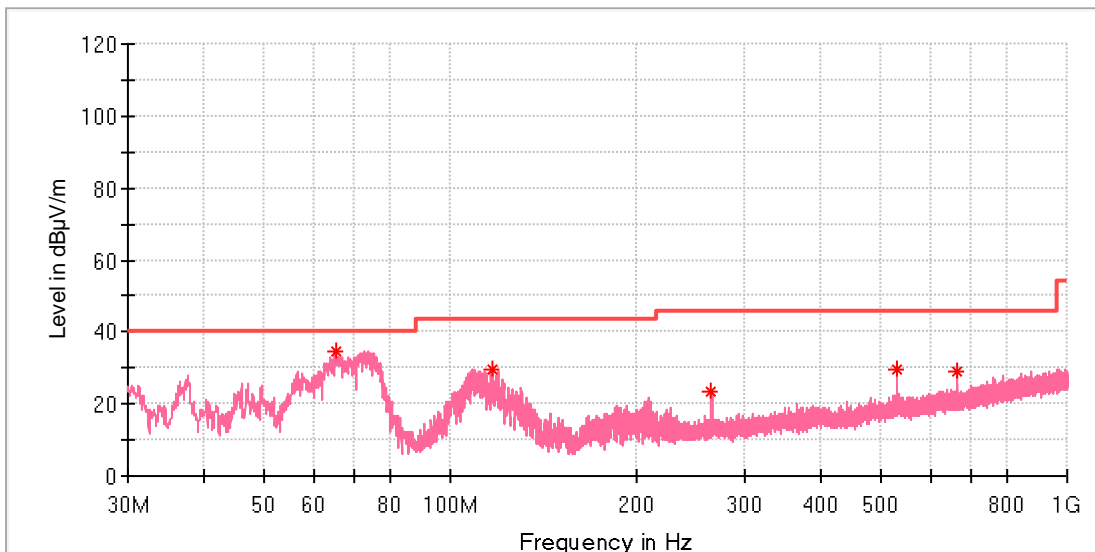


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
74.862500	31.02	40.00	8.98	100.0	H	205.0	-23.4
107.648500	31.76	43.50	11.74	100.0	H	238.0	-18.9
171.280500	28.14	43.50	15.36	100.0	H	350.0	-21.1
265.225000	26.86	46.00	19.14	100.0	H	258.0	-17.0
530.520000	27.34	46.00	18.66	100.0	H	222.0	-11.3

EUT Information

EUT Name:	BT & WLAN Module
Model:	BTWDB01
TestMode:	WIFI 5G_11a_Ch36
Test Voltage::	DC 3.3V
Remark:	Temp 24 Humi:47%
Test Standard:	FCC 15.407
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

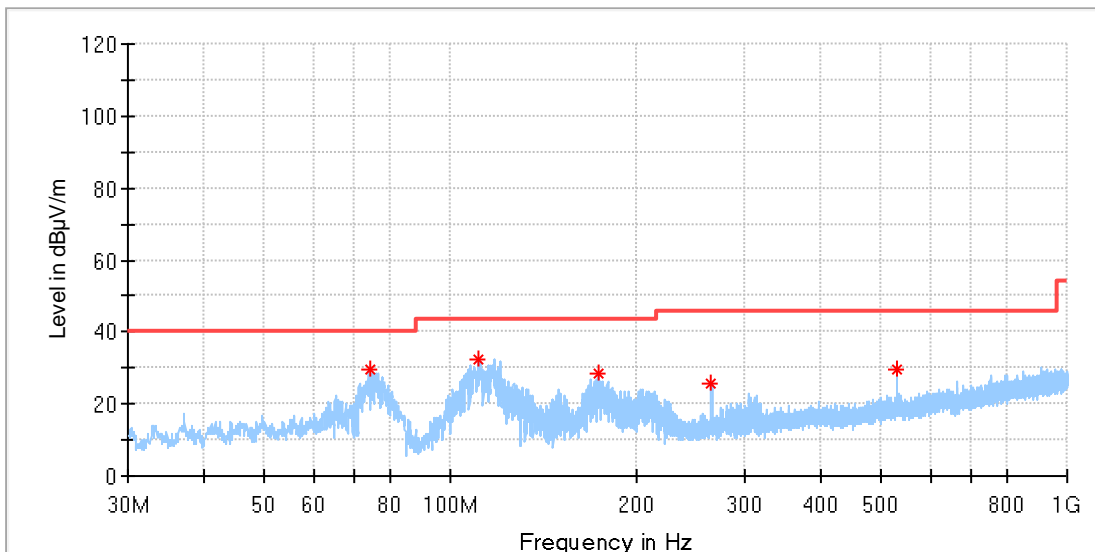


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
65.114000	34.69	40.00	5.31	100.0	V	273.0	-20.1
117.106000	29.83	43.50	13.67	100.0	V	290.0	-20.2
265.225000	23.39	46.00	22.61	100.0	V	340.0	-17.0
530.520000	29.44	46.00	16.56	100.0	V	66.0	-11.3
663.119000	28.81	46.00	17.19	100.0	V	42.0	-8.8

EUT Information

EUT Name:	BT & WLAN Module
Model:	BTWDB01
TestMode:	WIFI 5G_11a_Ch165
Test Voltage::	DC 3.3V
Remark:	Temp 24 Humi:47%
Test Standard:	FCC 15.407
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

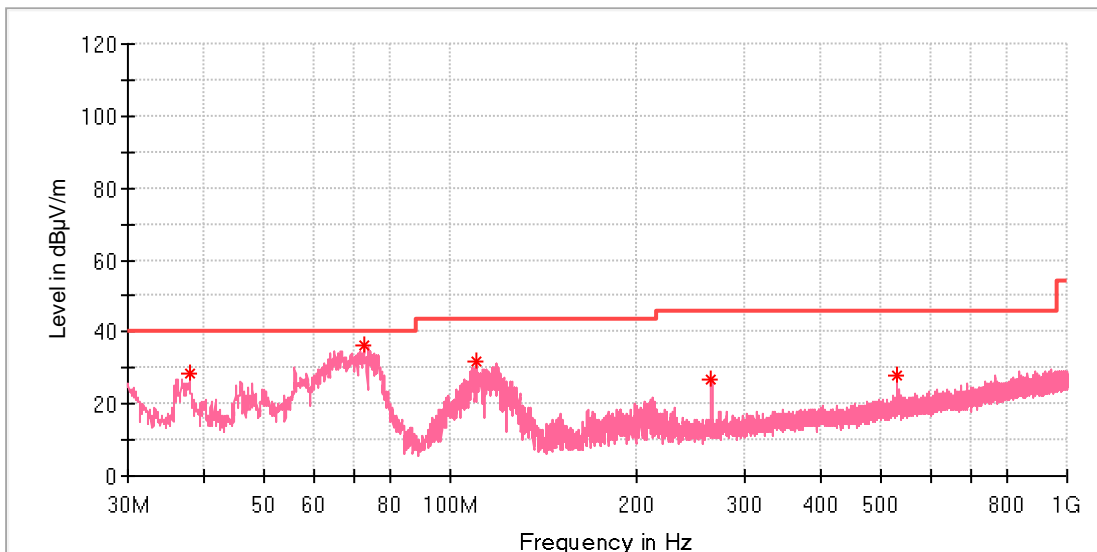


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
73.892500	29.54	40.00	10.46	100.0	H	213.0	-23.1
111.092000	32.37	43.50	11.13	100.0	H	213.0	-19.2
173.948000	28.50	43.50	15.00	100.0	H	331.0	-20.9
265.225000	25.82	46.00	20.18	100.0	H	289.0	-17.0
530.520000	29.80	46.00	16.20	100.0	H	341.0	-11.3

EUT Information

EUT Name:	BT & WLAN Module
Model:	BTWDB01
TestMode:	WIFI 5G_11a_Ch165
Test Voltage::	DC 3.3V
Remark:	Temp 24 Humi:47%
Test Standard:	FCC 15.407
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
37.808500	28.71	40.00	11.29	100.0	V	215.0	-20.9
72.437500	36.45	40.00	3.55	100.0	V	274.0	-22.6
110.461500	31.62	43.50	11.88	100.0	V	340.0	-19.1
265.225000	26.61	46.00	19.39	100.0	V	333.0	-17.0
530.520000	28.11	46.00	17.89	100.0	V	32.0	-11.3

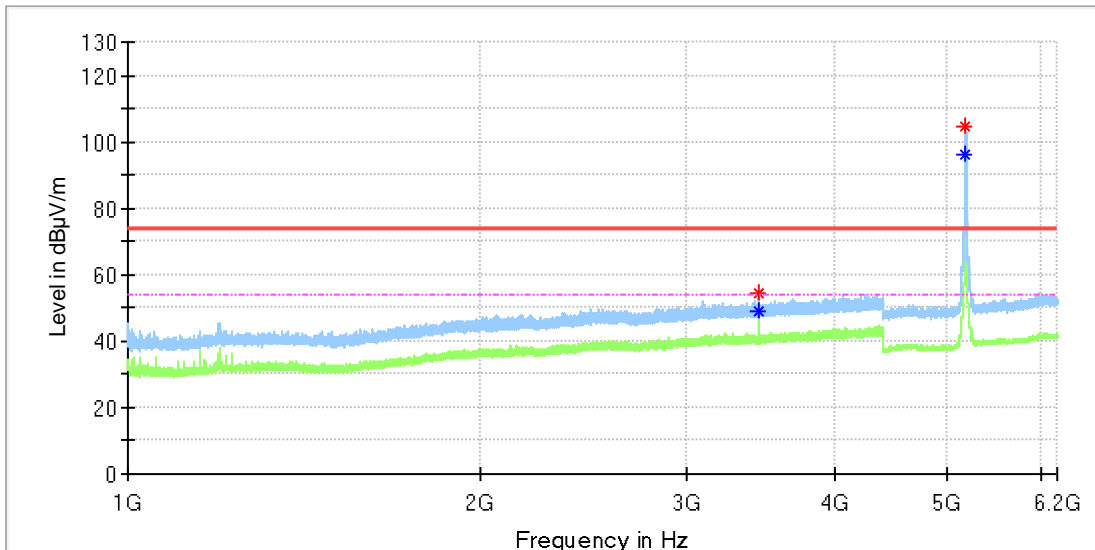
5.2 Transmitter Spurious Emissions, 1GHz-18GHz

Note: The highest waveform in the figure is Wi-Fi Fundamental.

U-NII-1 Band:

EUT Information

EUT Name:	BT & WLAN Module
Model:	BTWDB01
Test Mode:	WIFI 5G_11a_Ch36
Test Voltage::	DC 3.3V
Remark:	Temp 24 Humi:47%
Test Standard:	FCC 15.407
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

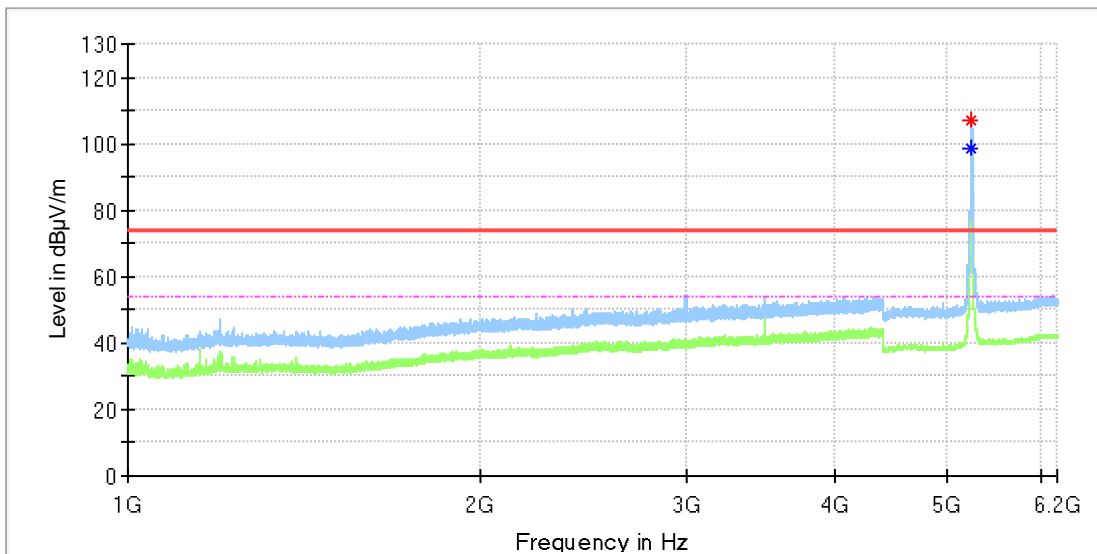


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3453.440000	54.54	---	74.00	19.46	100.0	H	162.0	8.8
3453.440000	---	49.27	54.00	4.73	100.0	H	162.0	8.8
5179.000000	---	96.07			100.0	H	270.0	12.6
5181.500000	104.85	---			100.0	H	270.0	12.6

EUT Information

EUT Name:	BT & WLAN Module
Model:	BTWDB01
Test Mode:	WIFI 5G_11a_Ch48
Test Voltage::	DC 3.3V
Remark:	Temp 23 Humi:45%
Test Standard:	FCC 15.407
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

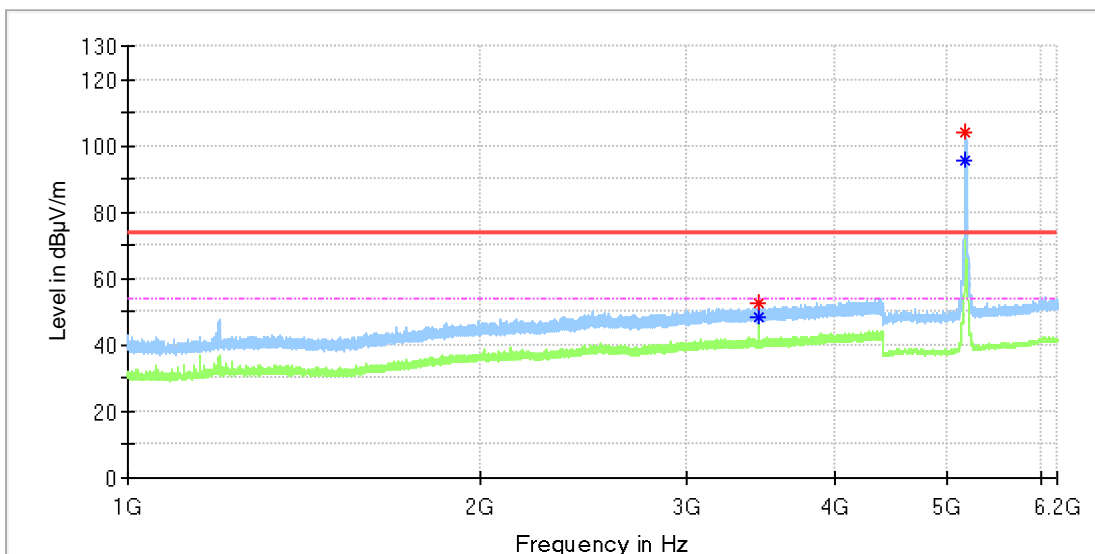
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
5238.500000	107.31	---			100.0	H	283.0	12.8
5239.000000	---	98.37			100.0	H	269.0	12.8

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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EUT Information

EUT Name:	BT & WLAN Module
Model:	BTWDB01
TestMode:	WIFI 5G_11n20_Ch36
Test Voltage::	DC 3.3V
Remark:	Temp 24 Humi:47%
Test Standard:	FCC 15.407
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

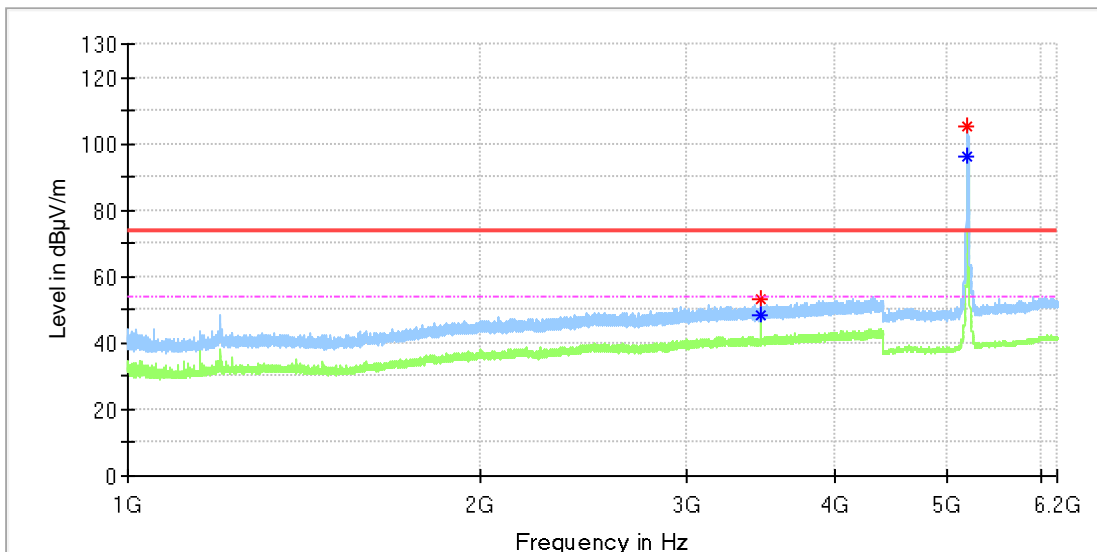
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3453.100000	---	48.62	54.00	5.38	100.0	H	142.0	8.8
3453.440000	52.84	---	74.00	21.16	100.0	H	142.0	8.8
5178.500000	---	95.24			100.0	H	273.0	12.6
5181.000000	103.99	---			100.0	H	273.0	12.6

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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EUT Information

EUT Name:	BT & WLAN Module
Model:	BTWDB01
TestMode:	WIFI 5G_11n20_Ch40
Test Voltage::	DC 3.3V
Remark:	Temp 24 Humi:47%
Test Standard:	FCC 15.407
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3466.700000	---	48.61	54.00	5.40	100.0	H	160.0	8.9
3467.040000	53.26	---	74.00	20.74	100.0	H	160.0	8.9
5199.000000	---	96.21			100.0	H	265.0	12.6
5200.500000	104.98	---			100.0	H	265.0	12.6

Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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