

FCC PART 15C TEST REPORT FOR CERTIFICATION
On Behalf of

TTE Technology Inc.

WIFI Module

Brand Name	Model No.
TCL	WAE22-DF01-AR

FCC ID: W8UWAE22

Prepared for : TTE Technology Inc.
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Report Number : ACS-F13290
Date of Test : Sep.14~25, 2013
Date of Report : Oct.15, 2013

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FCC ID: W8UWAE22

TEST REPORT CERTIFICATION

Applicant : TTE Technology Inc.
 Manufacturer : HUIZHOU TCL KING HIGH FREQUENCY ELECTRONIC CO., LTD
 EUT Description : WIFI Module
 FCC ID : W8UWAE22

(A) MODEL NO. & BRAND NAME	:	Brand Name	Model No.
		TCL	WAE22-DF01-AR
(B) SERIAL NO.	:	N/A	
(C) TEST VOLTAGE	:	DC 5V	

Tested for comply with:
 FCC Rules and Regulations Part 15 Subpart E: 2012

Test procedure used:
 ANSI C63.10:2009

The device described above is tested by AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. to confirm comply with all the FCC Part 15 Subpart E requirements. The test results are contained in this test report and AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. is assumed full responsibility for the accuracy and completeness of these tests. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC and IC requirements. This report contains data that are not covered by the NVLAP accreditation.

This Report is made under FCC Part 2.1075. No modifications were required during testing to bring this product into compliance.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

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

Date of Test : Sep.14~ 25, 2013 Report of date: Oct.15, 2013

Prepared by : Sherry Zhuo / Assistant
 Reviewed by : Sunny Lu / Assistant Manager

AUDIX 信華科技(深圳)有限公司
 Audix Technology (Shenzhen) Co., Ltd.
 EMC 部門報告專用章

Stamp only for EMC Dept. Report

Signature: David Jin

Approved & Authorized Signer _____
 David Jin / Manager

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION		
Description of Test Item	Standard	Results
Power Line Conducted Emission	FCC Part 15: 15.207 ANSI C63.10: 2009	PASS
Radiated Emission	FCC Part 15: 15.209 ANSI C63.10: 2009	PASS
Band Edge Compliance	FCC Part 15: 15.247 ANSI C63.10: 2009	PASS
26dB Bandwidth Test	FCC Part 15: 15.407(a)	PASS
Output Power Test	FCC Part 15: 15.407(a)	PASS
Power Spectral Density Test	FCC Part 15: 15.407(a)	PASS
Peak Excursion	FCC Part 15: 15.407(a)	PASS
Frequency Stability	FCC Part 15: 15.407(g) ANSI C63.10: 2009	PASS
Antenna requirement	FCC Part 15: 15.203	PASS

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Product Name : WIFI Module

Model Number& Brand Name	Brand Name	Model No.
	TCL	WAE22-DF01-AR

FCC ID : W8UWAE22

Radio : IEEE802.11 a/b/g/n

Operation Frequency : IEEE 802.11a: 5180MHz—5240MHz; 5745MHz—5825MHz
IEEE 802.11b: 2412MHz—2462MHz
IEEE 802.11g: 2412MHz—2462MHz
IEEE802.11nHT20: 2412MHz—2462MHz;5180MHz—5240MHz,
5745MHz—5825MHz
IEEE802.11nHT40: 2422MHz—2452MHz;5190MHz—5230MHz,
5755MHz—5795MHz

Modulation Technology : IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK)
IEEE 802.11a/g: OFDM(64QAM, 16QAM, QPSK, BPSK)
IEEE 802.11n HT20, HT40: OFDM (64QAM, 16QAM, QPSK,BPSK)

Antenna Assembly Gain : 2.4GHz, PCB Antenna, 3.2dBi;
5GHz, PCB Antenna, 3.7dBi;

Applicant : TTE Technology Inc.
555 S. Promenada Ave., Suite 103, Corona, CA 92879, U.S.A.

Manufacturer : HUIZHOU TCL KING HIGH FREQUENCY ELECTRONIC CO.,
LTD
HUA YU RD., NO.75, ZHONGKAI HIGH-TECH DEVELOPMENT
AREA, HUIZHOU, CHINA

Date of Test : Sep.14~25, 2013

Date of Receipt : Sep.12, 2013

Sample Type : Prototype production

2.2. Test Information

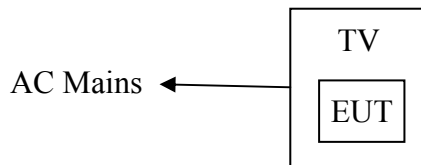
A special test software was used to control EUT work in Continuous TX mode(100% duty cycle), and select test channel, wireless mode and data rate.

This device have two antennas , and those two antennas can not transmit simultaneously in 11a, 11b/g mode. According to exploratory test. Antenna 0 has Max output and radiated emission, so choose Antenna 0 for radiated emission and Band edge test in 11a/b/g mode, test with two antenna transmit simultaneously in 11n mode .

2.3. Tested Supporting System Details

No.	Description	ACS No.	Manufacturer	Model	Serial Number	Approved type
1.	TV	---	TCL	LE50UHDE5692G	N/A	<input type="checkbox"/> FCC ID <input type="checkbox"/> BSMI ID

2.4. Block Diagram of Test Setup



(EUT: WIFI Module)

2.5. Test Facility

Site Description

Name of Firm : Audix Technology (Shenzhen) Co., Ltd.
No. 6, Ke Feng Rd., 52 Block, Shenzhen
Science & Industrial Park, Nantou,
Shenzhen, Guangdong, China

3m Anechoic Chamber : Certificated by FCC, USA
Registration Number: 90454
Valid Date: Feb.22, 2015

3m & 10m Anechoic Chamber : Certificated by FCC, USA
Registration Number: 794232
Valid Date: Oct.31, 2015

EMC Lab. : Certificated by Industry Canada
Registration Number: IC 5183A-1
Valid Date: Jun.13, 2014

: Certificated by DAkkS, Germany
Registration No: D-PL-12151-01-01
Valid Date: Feb.01, 2014

Accredited by NVLAP, USA
NVLAP Code: 200372-0
Valid Date: Mar.31, 2014

2.6. Measurement Uncertainty (95% confidence levels, k=2)

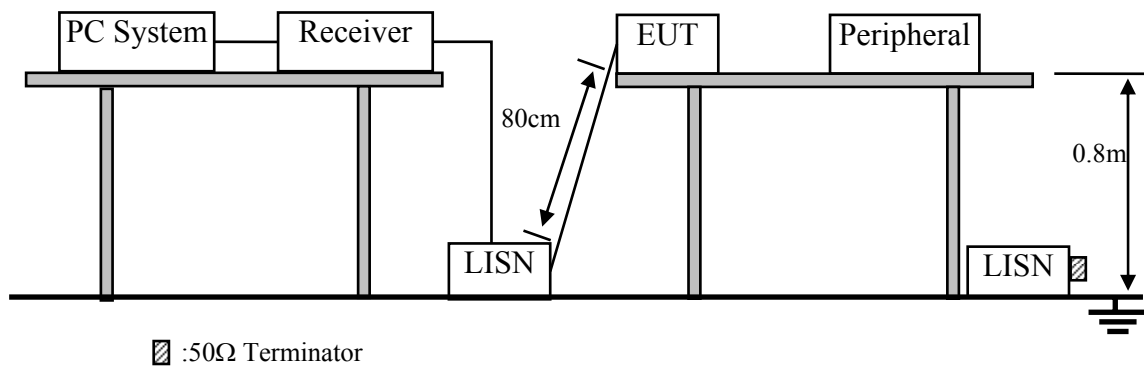
Test Item	Uncertainty
Uncertainty for Conduction emission test in No. 1 Conduction	3.1 dB (150KHz to 30MHz)
Uncertainty for Radiation Emission test in 3m chamber	3.22 dB(30~200MHz, Polarize: H)
	3.23 dB(30~200MHz, Polarize: V)
	3.49 dB(200M~1GHz, Polarize: H)
	3.39 dB(200M~1GHz, Polarize: V)
Uncertainty for Radiation Emission test in 3m chamber (1GHz-18GHz)	5.04 dB (1~6GHz, Distance: 3m)
	5.06 dB (6~18GHz, Distance: 3m)
Uncertainty for Radiated Spurious Emission test in RF chamber	3.57 dB
Uncertainty for Conduction Spurious emission test	2.00 dB
Uncertainty for Output power test	0.73 dB
Uncertainty for Power density test	2.00 dB
Uncertainty for Frequency range test	7×10^{-8}
Uncertainty for Bandwidth test	83 kHz
Uncertainty for DC power test	0.038 %
Uncertainty for test site temperature and humidity	0.6°C
	3%

3. POWER LINE CONDUCTED EMISSION TEST

3.1. Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS10	838693/001	Oct.31, 12	1 Year
2.	L.I.S.N.#1	Rohde & Schwarz	ESH2-Z5	834066/011	Oct.31, 12	1 Year
3.	L.I.S.N.#3	Kyoritsu	KNW-242C	8-1920-1	May.08, 13	1 Year
4.	Terminator	Hubersuhner	50Ω	No.1	May.08, 13	1 Year
5.	Terminator	Hubersuhner	50Ω	No.2	May.08, 13	1 Year
6.	RF Cable	Fujikura	3D-2W	No.1	May.08, 13	1Year
7.	Coaxial Switch	Anritsu	MP59B	M50564	May.08, 13	1 Year
8.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100341	May.08, 13	1 Year

3.2. Block Diagram of Test Setup



3.3. Power Line Conducted Emission Test Limits

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

3.4. Configuration of EUT on Test

The following equipment are installed on Power Line Conducted Emission Test to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

3.4.1. WIFI Module (EUT)

Model Number : WAE22-DF01-AR
Serial Number : N/A

3.4.2. Support Equipment: As Tested Supporting System Details, in Section 2.2.

3.5. Operating Condition of EUT

- 3.5.1. Setup the EUT and simulator as shown as Section 3.2.
- 3.5.2. Turned on the power of all equipment.
- 3.5.3. TV run test software to control EUT work in Tx mode.

3.6. Test Procedure

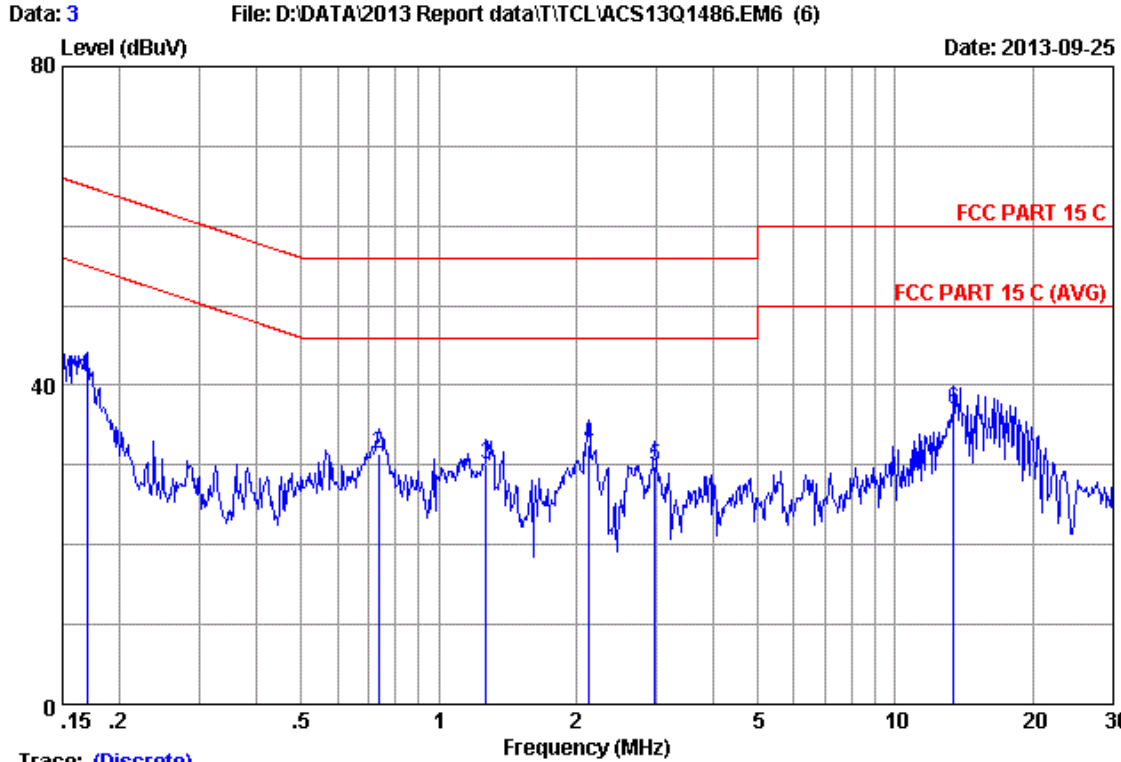
The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#). This provides a 50 ohm coupling impedance for the EUT (Please refer the block diagram of the test setup and photographs). The AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10: 2009 on Conducted Emission Test.

The bandwidth of test receiver (R & S ESHS10) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

3.7. Power Line Conducted Emission Test Results

PASS. (All emissions not reported below are too low against the prescribed limits.)

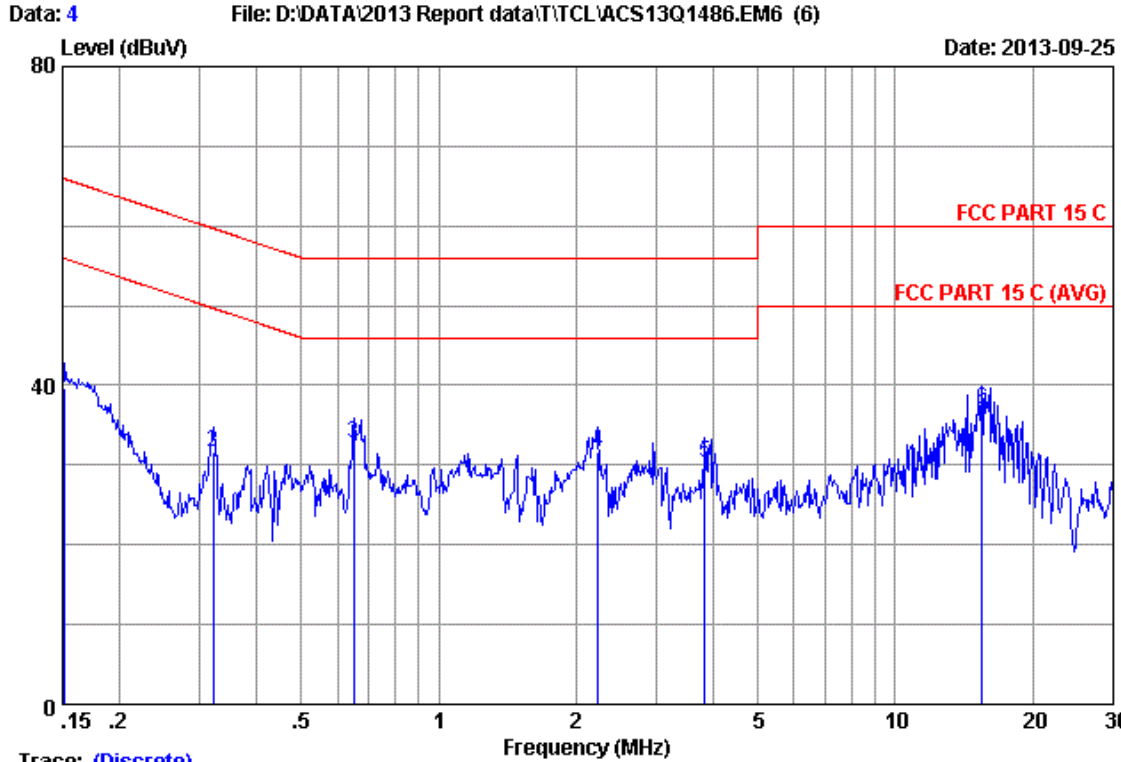


Trace: (Discrete)

Site no :1#conduction Data No :3
 Dis./Ant. **: 2012 ESH2-Z5 LINE
 Limit :FCC PART 15 C
 Env./Ins. :23.5*C/56% Engineer :Kevin
 EUT :WIFI Module
 Power Rating :DC 5V
 Test Mode :Tx Mode
 M/N:WAE22-DF01-AR

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.16944	0.19	0.01	40.88	41.08	64.99	23.91	QP
2	0.73910	0.20	0.03	31.29	31.52	56.00	24.48	QP
3	1.269	0.22	0.03	29.86	30.11	56.00	25.89	QP
4	2.133	0.24	0.04	32.33	32.61	56.00	23.39	QP
5	2.978	0.26	0.05	29.59	29.90	56.00	26.10	QP
6	13.408	0.65	0.11	36.18	36.94	60.00	23.06	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss+Reading.
 2.If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



Trace: (Discrete)

Site no :1#conduction Data No :4
 Dis./Ant. **: 2012 ESH2-Z5 NEUTRAL
 Limit :FCC PART 15 C
 Env./Ins. :23.5*C/56% Engineer :Kevin
 EUT :WIFI Module
 Power Rating :DC 5V
 Test Mode :Tx Mode
 M/N:WAE22-DF01-AR

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.15160	0.21	0.01	39.54	39.76	65.91	26.15	QP
2	0.31999	0.22	0.01	31.48	31.71	59.71	28.00	QP
3	0.65084	0.24	0.03	32.59	32.86	56.00	23.14	QP
4	2.237	0.29	0.04	31.39	31.72	56.00	24.28	QP
5	3.820	0.32	0.06	30.00	30.38	56.00	25.62	QP
6	15.470	0.69	0.12	36.15	36.96	60.00	23.04	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss+Reading.
 2.If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

4. RADIATED EMISSION TEST

4.1. Test Equipment

4.1.1. For frequency range 30MHz~1000MHz (At Anechoic Chamber)

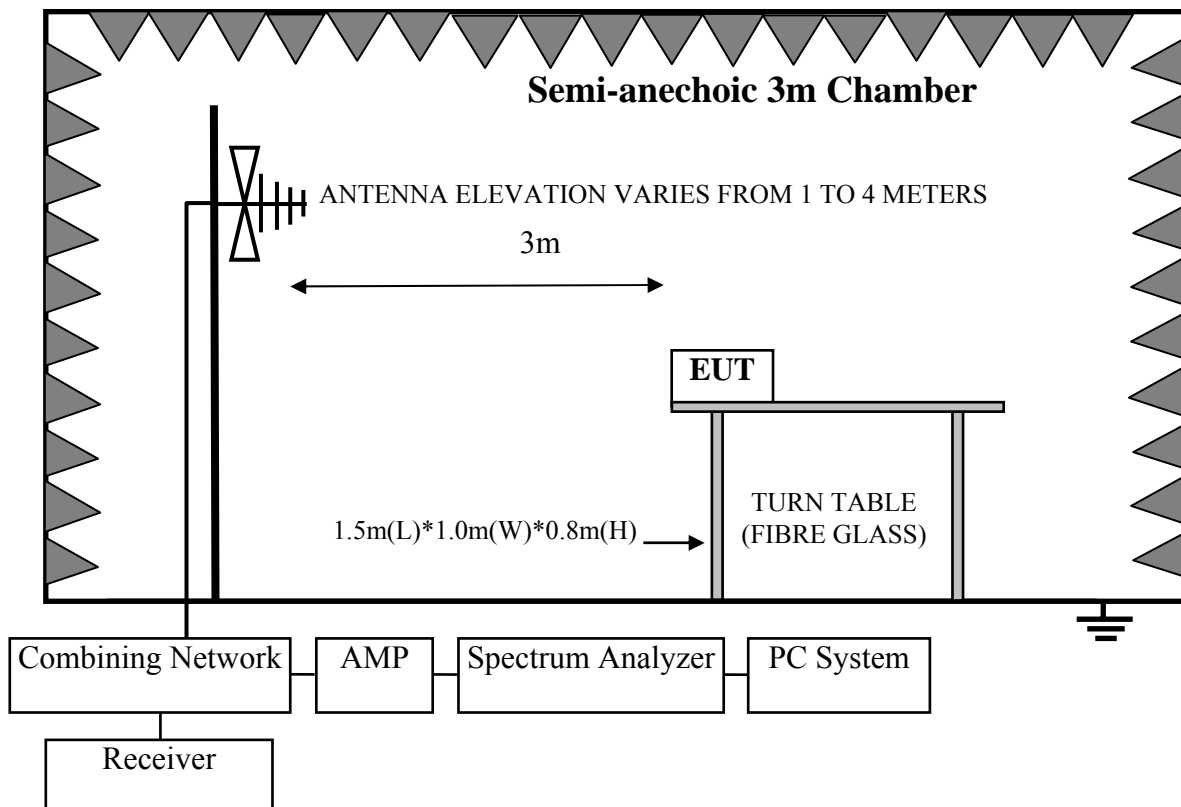
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	3#Chamber	AUDIX	N/A	N/A	Nov.24, 12	1 Year
2	EMI Spectrum	Agilent	E4407B	MY41440292	May.08, 13	1 Year
3	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	May.08, 13	1 Year
4	Amplifier	HP	8447D	2648A04738	May.08, 13	1 Year
5	Bilog Antenna	TESEQ	CBL6112D	35375	May.30, 13	1 Year
6	RF Cable	MIYAZAKI	CFD400-NL	3# Chamber No.1	May.08, 13	1 Year
7	Coaxial Switch	Anritsu	MP59B	M74389	May.08, 13	1 Year

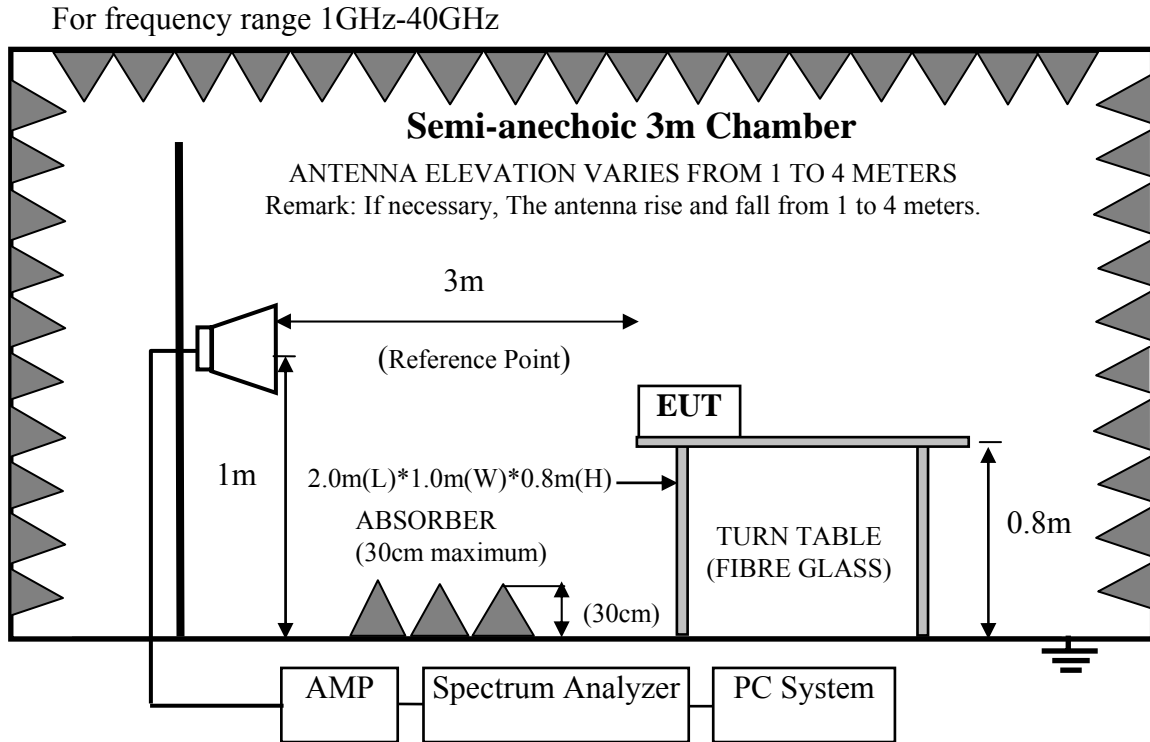
4.1.2. For frequency range 1GHz~40GHz (At Anechoic Chamber)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	Agilent	E4407B	MY41440292	May.08, 13	1 Year
2	Horn Antenna	EMCO	3115	9510-4580	May.28, 13	1 Year
3	Amplifier	Agilent	8449B	3008A00863	May.08, 13	1 Year
4	RF Cable	Hubersuhner	SUCOFLEX106	77980/6	May.08, 13	1 Year
5	RF Cable	Hubersuhner	SUCOFLEX106	77977/6	May.08, 13	1 Year
6	Horn Antenna	EMCO	3116	00060089	Aug.28, 13	1 Year

4.2. Block Diagram of Test Setup

For frequency range 30MHz-1000MHz





4.3. Radiated Emission Limit

For transmitters operating in the 5.15-5.25 GHz; 5.25-5.35GHz; 5.47-5.725GHz band: all emissions outside of those band shall not exceed an EIRP of -27 dBm/MHz.
 Unwanted emissions below 1 GHz and those emissions appearing within 15.205 restricted frequency bands must comply with the general field strength limits set forth in Section 15.209

4.3.1. 15.209 limits

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		µV/m	dB(µV)/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(µV)/m (Peak) 54.0 dB(µV)/m (Average)	

- Remark :
- (1) Emission level $dB\mu V = 20 \log$ Emission level $\mu V/m$
 - (2) The smaller limit shall apply at the cross point between two frequency bands.
 - (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

4.3.2. 15.205 Restricted bands of operation

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)

4.4.EUT Configuration on Test

The configurations of EUT are listed in Section 3.4.

4.5.Operating Condition of EUT

Same as Conducted Emission test that is listed in Section 3.5. except the test set up replaced by Section 4.2.

4.6.Test Procedure

EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna are set on test.

For emissions below 1GHz and those emissions appearing within 15.205 restricted frequency bands use below procedure:

The bandwidth of the EMI test receiver (R&S ESVS10) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's VBW is set at 1MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz

For the emissions above 1GHz and not appearing within 15.205 restricted frequency bands use below procedure:

- (1).The maximum emission at 3m distance was measured and recorded with receive antenna in both vertical and horizontal by rotating the turntable and by lowering the receive antenna.
- (2).The EUT was then removed and replaced with a substitution antenna in the same position and the substitution antenna must have the same polarization with the receive antenna.
- (3). A signal which have the same frequency obtained in step 2 was fed to the substitution, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver, the level of the signal generator was adjusted until the measured field strength level in step 2 was obtained, recorded the level of the signal generator.
- (4).Repeated step 4 with both antenna polarizations
- (5).The spurious emissions is equal to the power supplied by the signal generator and corrections due to the gain of the substitution antenna and the cable loss between the signal generator and the substitution antenna.

4.7.Radiated Emission Test Results

PASS.

All the emissions from 30MHz to 1 GHz were comply with 15.209 limits.

No any emissions above 9GHz located in 15.205 restricted frequency bands

All other emission comply with 15.407 (b)(1) requirements.

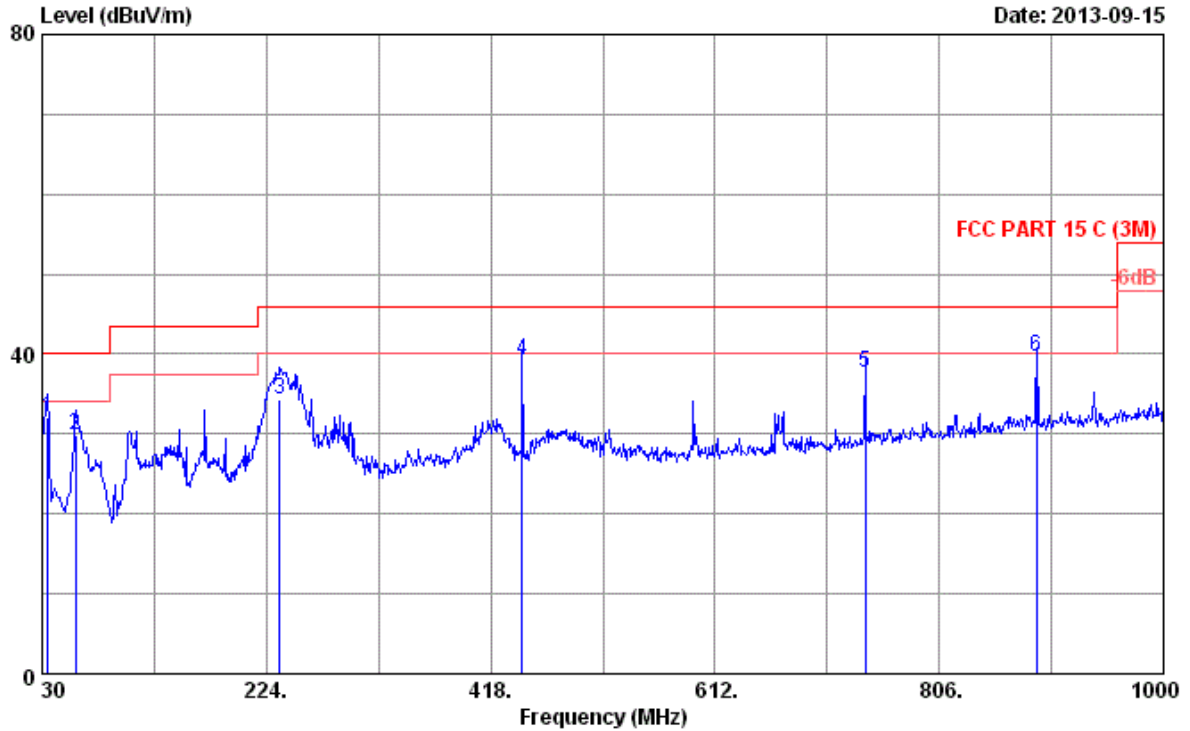
There is No obvious emission between 18GHz-40GHz, So not reported in the report.

Frequency: 30MHz~1GHz

Data: 1

File: E:\2013 Report Data\TTC\ACS13Q1486.EM6 (6)

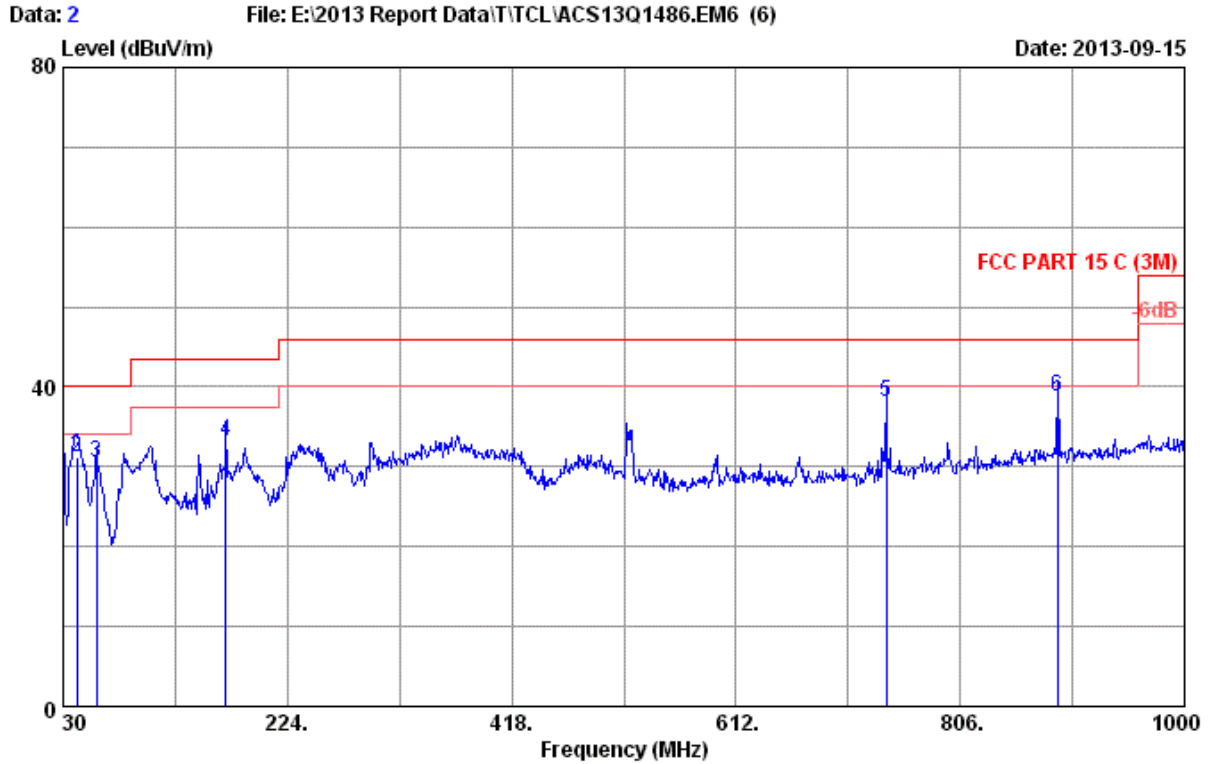
Date: 2013-09-15



Site no. : 3m Chamber Data no. : 1
 Dis. / Ant. : 3m 2013 CBL6112D 35375 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 C (3M)
 Env. / Ins. : 24*C/65% Engineer : Kevin
 EUT : WIFI Module
 Power rating : DC 5V
 Test Mode : Tx Mode
 M/N:WAE22-DF01-AR

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	34.850	17.09	0.92	14.01	32.02	40.00	7.98	QP
2	59.100	6.79	1.23	21.91	29.93	40.00	10.07	QP
3	235.640	11.76	1.93	20.67	34.36	46.00	11.64	QP
4	445.160	17.10	2.59	19.57	39.26	46.00	6.74	QP
5	741.980	20.30	3.44	14.01	37.75	46.00	8.25	QP
6	890.390	21.59	3.89	14.23	39.71	46.00	6.29	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



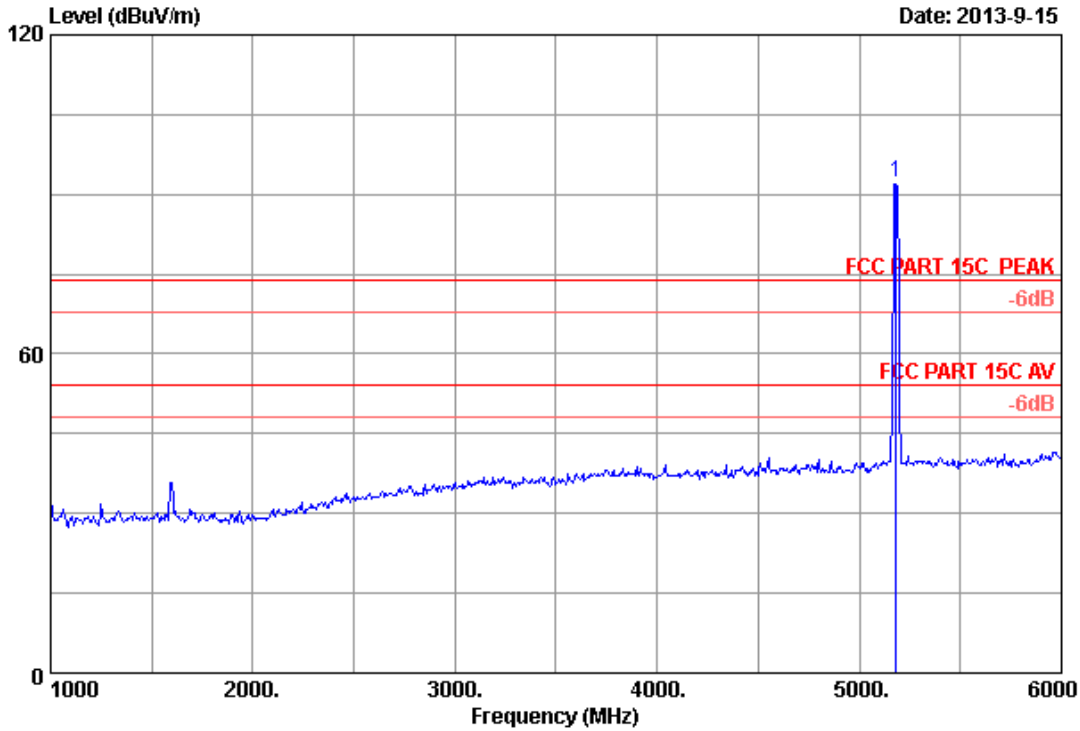
Site no. : 3m Chamber Data no. : 2
 Dis. / Ant. : 3m 2013 CBL6112D 35375 Ant. pol. : VERTICAL
 Limit : FCC PART 15 C (3M)
 Env. / Ins. : 24*C/65% Engineer : Kevin
 EUT : WIFI Module
 Power rating : DC 5V
 Test Mode : Tx Mode
 M/N:WAE22-DF01-AR

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	20.10	0.83	10.22	31.15	40.00	8.85	QP
2	41.640	13.12	1.04	17.04	31.20	40.00	8.80	QP
3	59.100	6.79	1.23	22.44	30.46	40.00	9.54	QP
4	170.650	10.17	1.68	21.45	33.30	43.50	10.20	QP
5	741.980	20.30	3.44	14.26	38.00	46.00	8.00	QP
6	890.390	21.59	3.89	13.36	38.84	46.00	7.16	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency: 1GHz~18GHz

Data: 5 File: G:\2013 report\T\TCL\ACS13Q1486-5.1.EM6 (72) Date: 2013-9-15

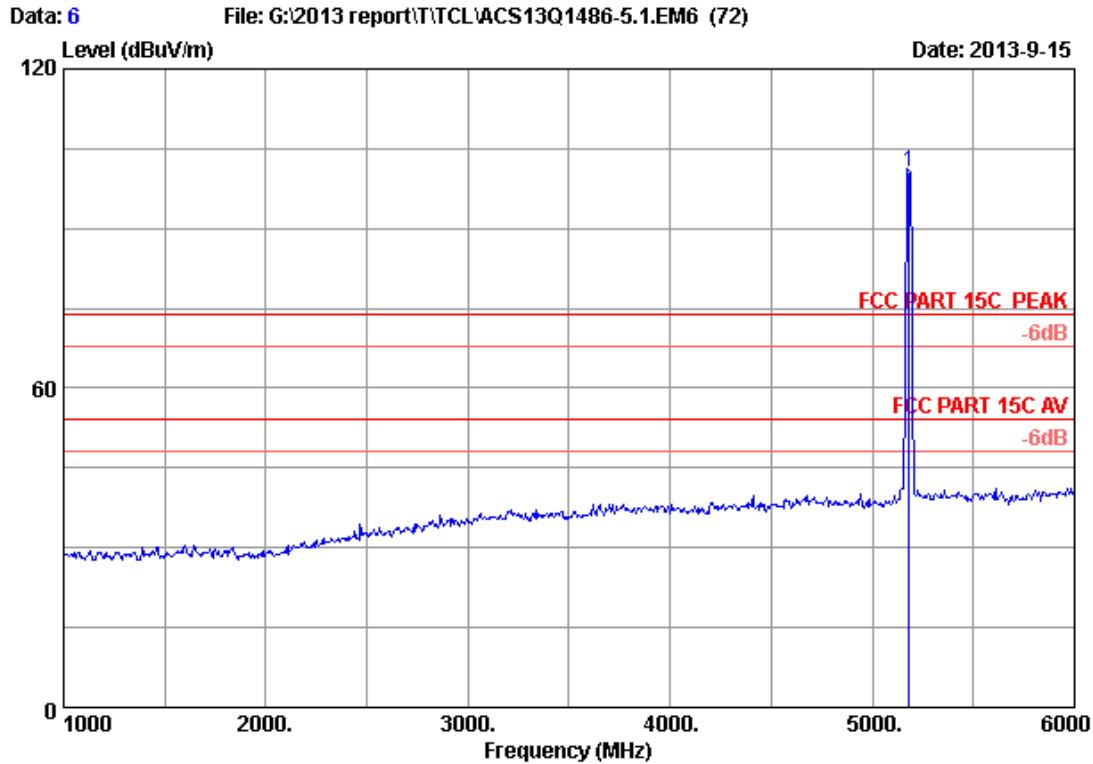


Site no. : 3m Chamber Data no. : 5
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11a CH36 5180MHz Tx
 WAE22-DF01-AR

	Ant.	Cable	Amp.	Emission				
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1 5180.000	33.49	8.95	35.70	85.51	92.25	74.00	-18.25	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

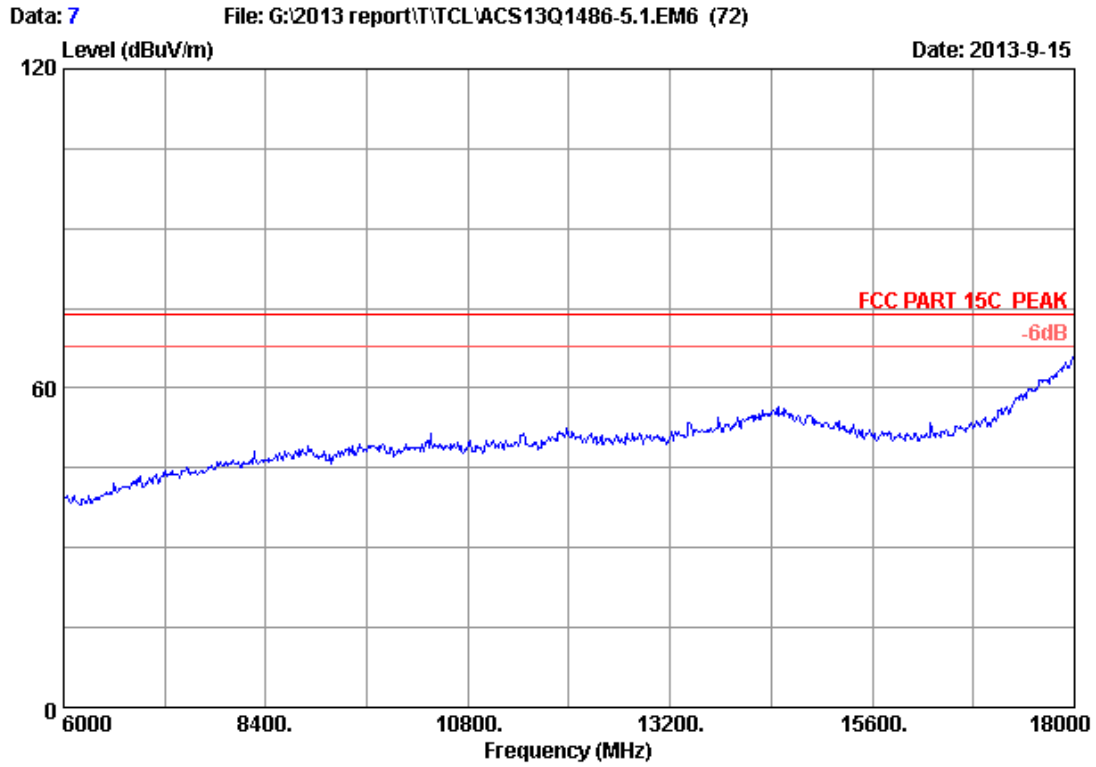


Site no. : 3m Chamber Data no. : 6
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11a CH36 5180MHz Tx
 WAE22-DF01-AR

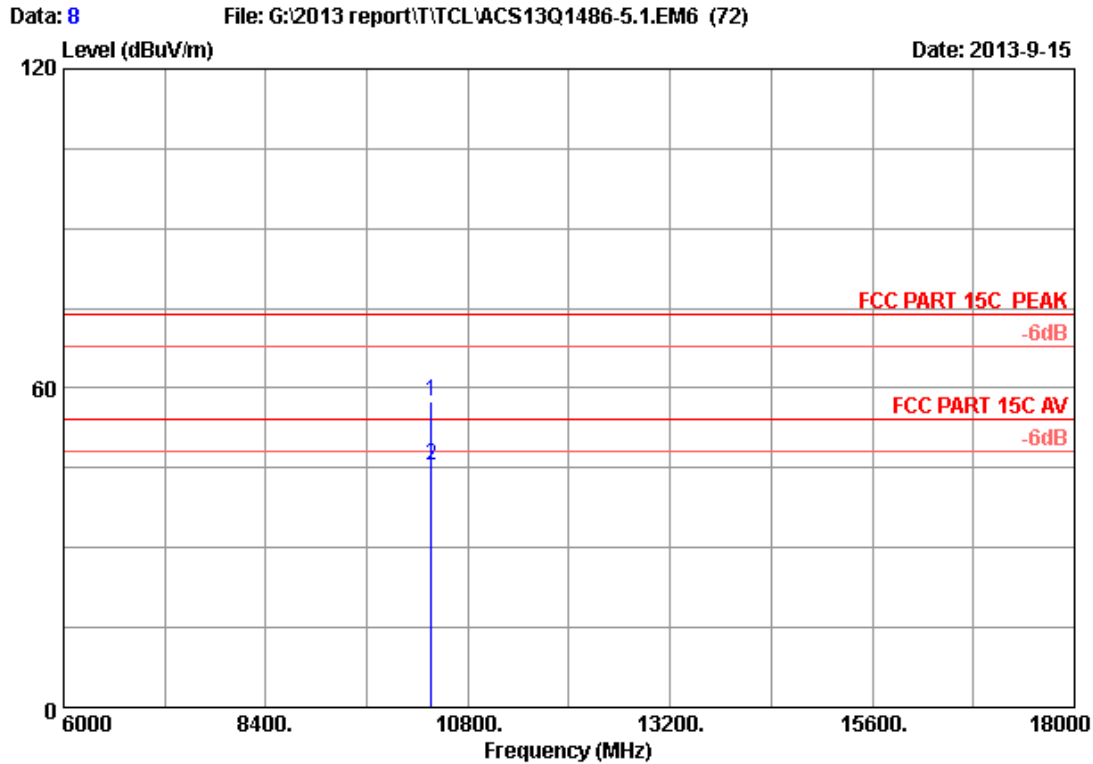
	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	33.49	8.95	35.70	93.80	100.54	74.00	-26.54	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 7
Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23°C/54% Engineer : leo-Li
EUT : WIFI Module
Power supply : DC 5V
Test mode : IEEE802.11a CH36 5180MHz Tx
WAE22-DF01-AR

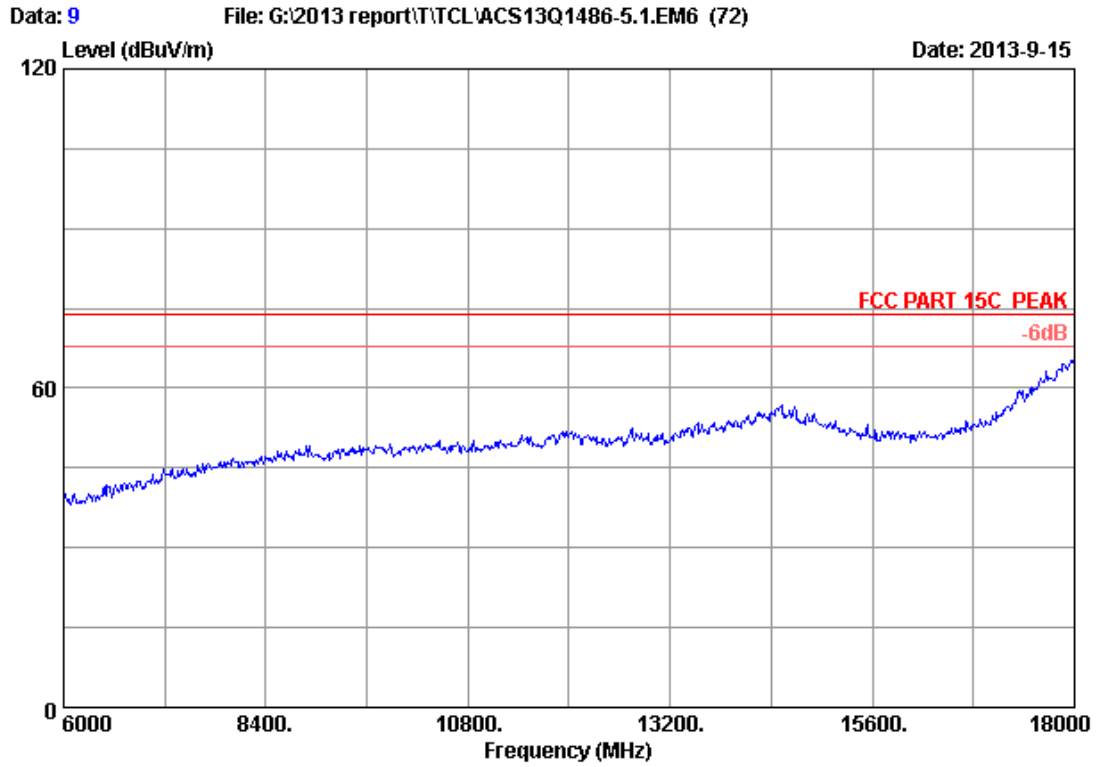


Site no. : 3m Chamber Data no. : 8
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11a CH36 5180MHz Tx
 WAE22-DF01-AR

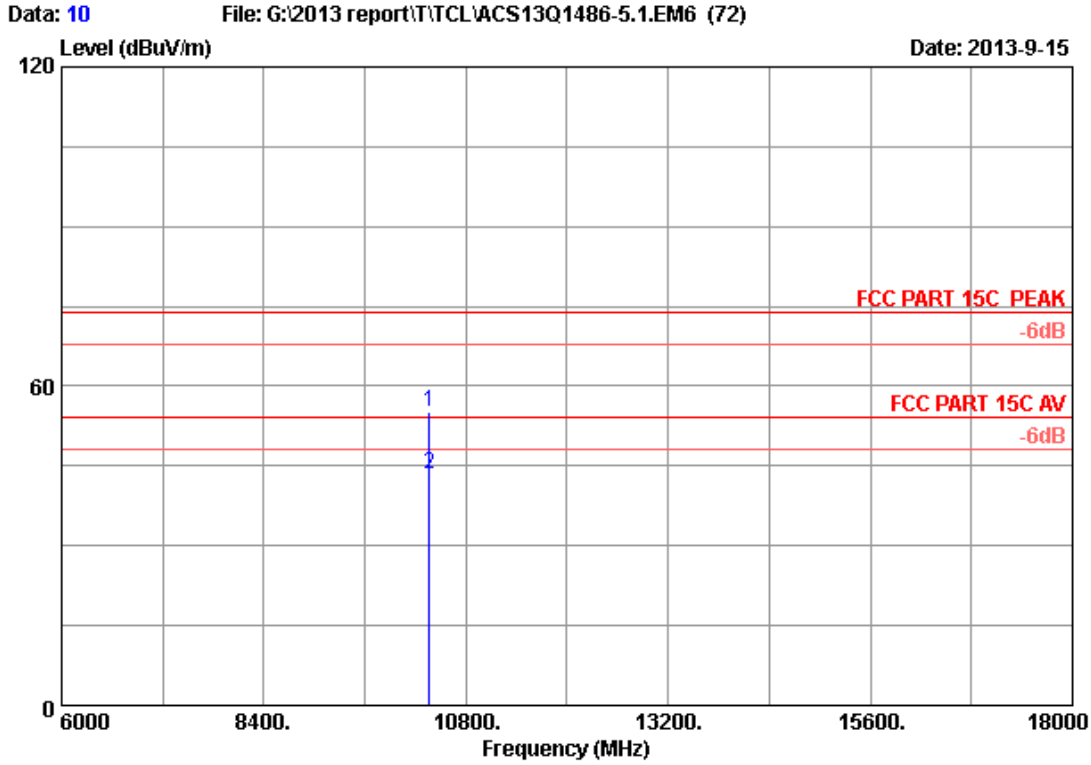
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	10360.000	38.14	12.64	35.45	42.02	57.35	74.00	16.65	Peak
2	10360.000	38.14	12.64	35.45	30.20	45.53	54.00	8.47	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 9
Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23°C/54% Engineer : leo-Li
EUT : WIFI Module
Power supply : DC 5V
Test mode : IEEE802.11a CH36 5180MHz Tx
WAE22-DF01-AR

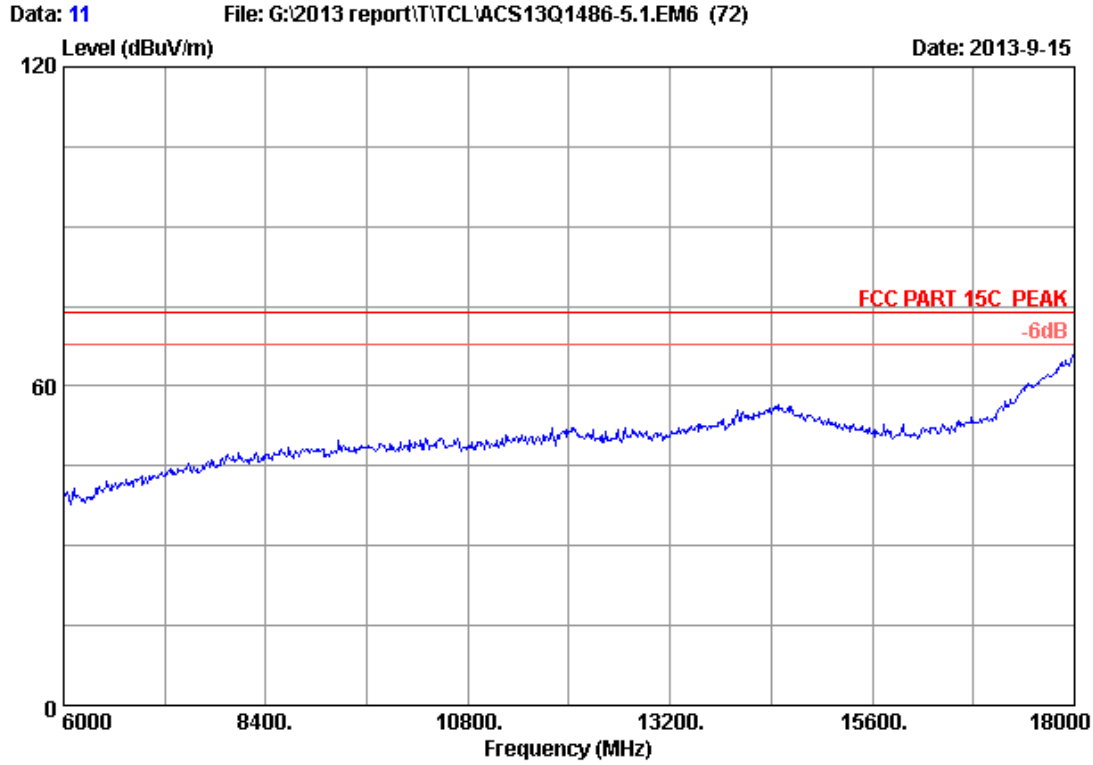


Site no. : 3m Chamber Data no. : 10
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11a CH36 5180MHz Tx
 WAE22-DF01-AR

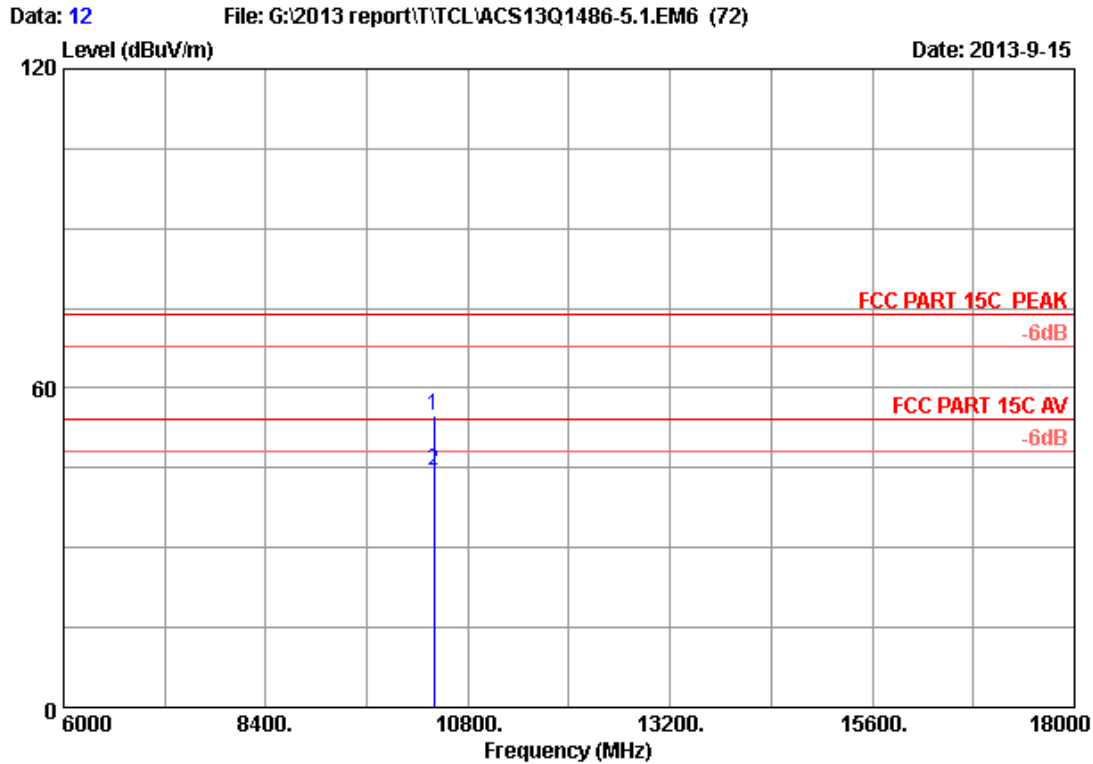
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	10360.000	38.14	12.64	35.45	39.83	55.16	74.00	18.84	Peak
2	10360.000	38.14	12.64	35.45	28.06	43.39	54.00	10.61	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 11
Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23°C/54% Engineer : leo-Li
EUT : WIFI Module
Power supply : DC 5V
Test mode : IEEE802.11a CH40 5200MHz Tx
WAE22-DF01-AR

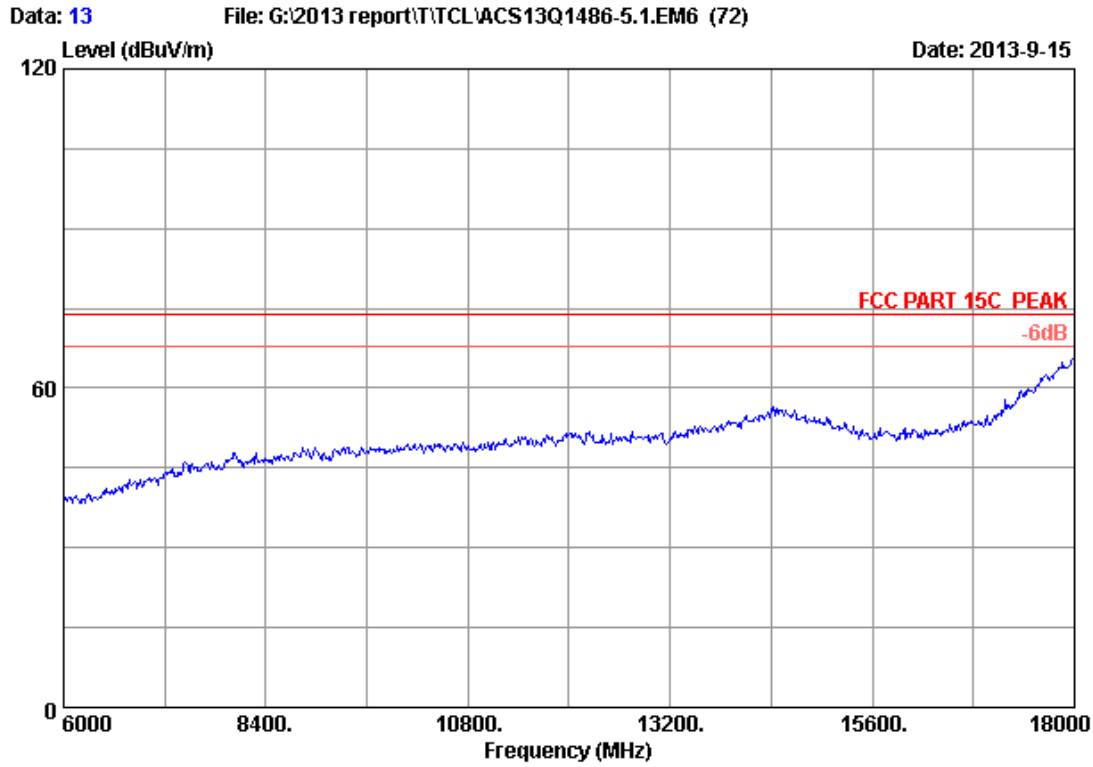


Site no. : 3m Chamber Data no. : 12
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11a CH40 5200MHz Tx
 WAE22-DF01-AR

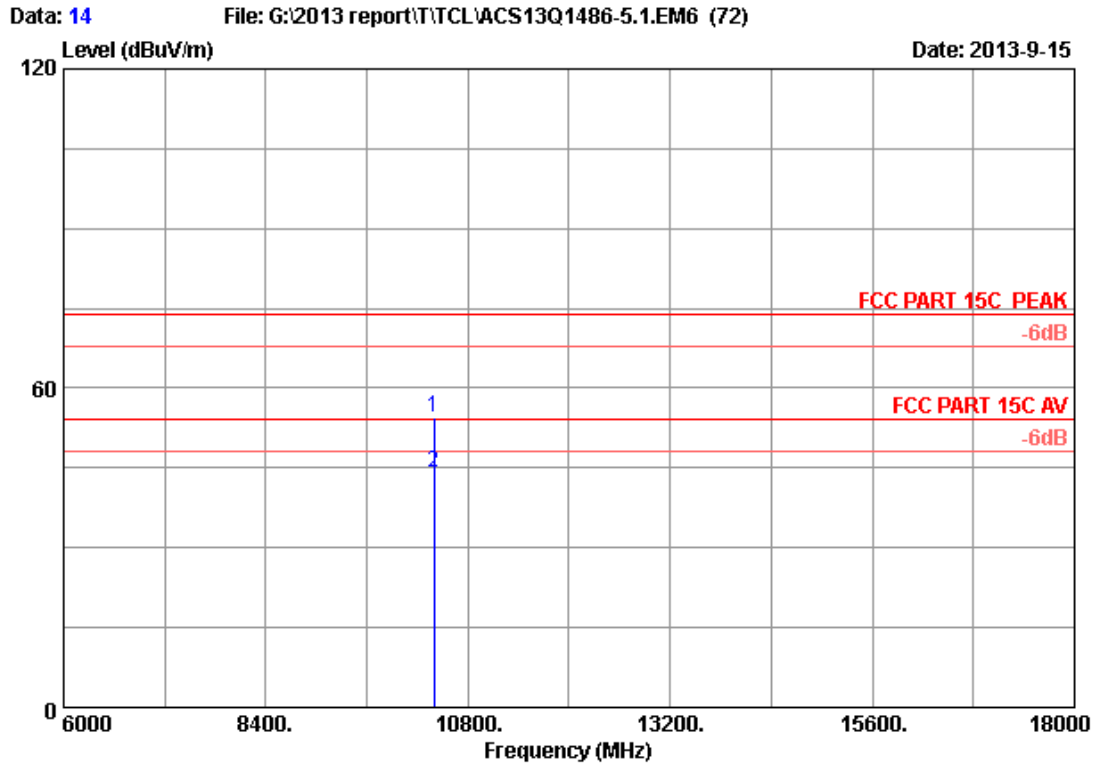
	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	38.16	12.66	35.44	39.52	54.90	74.00	19.10	Peak
2	38.16	12.66	35.44	29.11	44.49	54.00	9.51	Average

Remarks:

- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.



Site no.	: 3m Chamber	Data no.	: 13
Dis. / Ant.	: 3m 2013 3115 (4580)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: leo-Li
EUT	: WIFI Module		
Power supply	: DC 5V		
Test mode	: IEEE802.11a CH40 5200MHz Tx		
	: WAE22-DF01-AR		

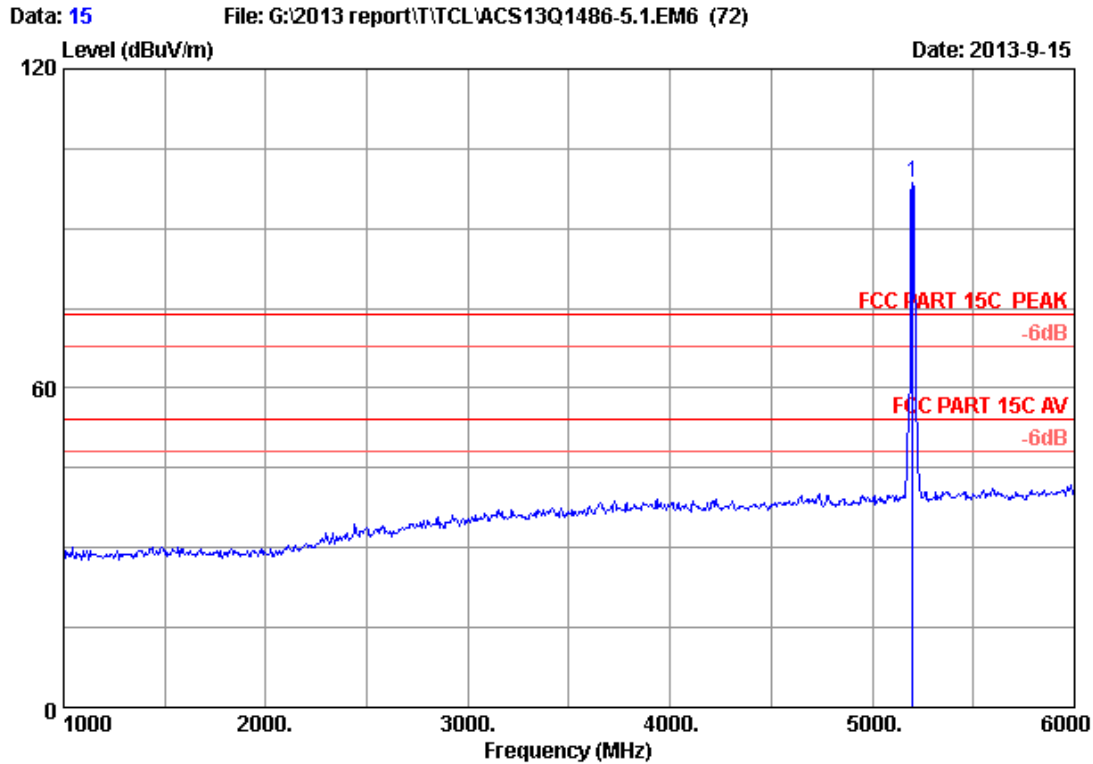


Site no. : 3m Chamber Data no. : 14
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11a CH40 5200MHz Tx
 WAE22-DF01-AR

	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	38.16	12.66	35.44	39.06	54.44	74.00	19.56	Peak
2	38.16	12.66	35.44	28.60	43.98	54.00	10.02	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

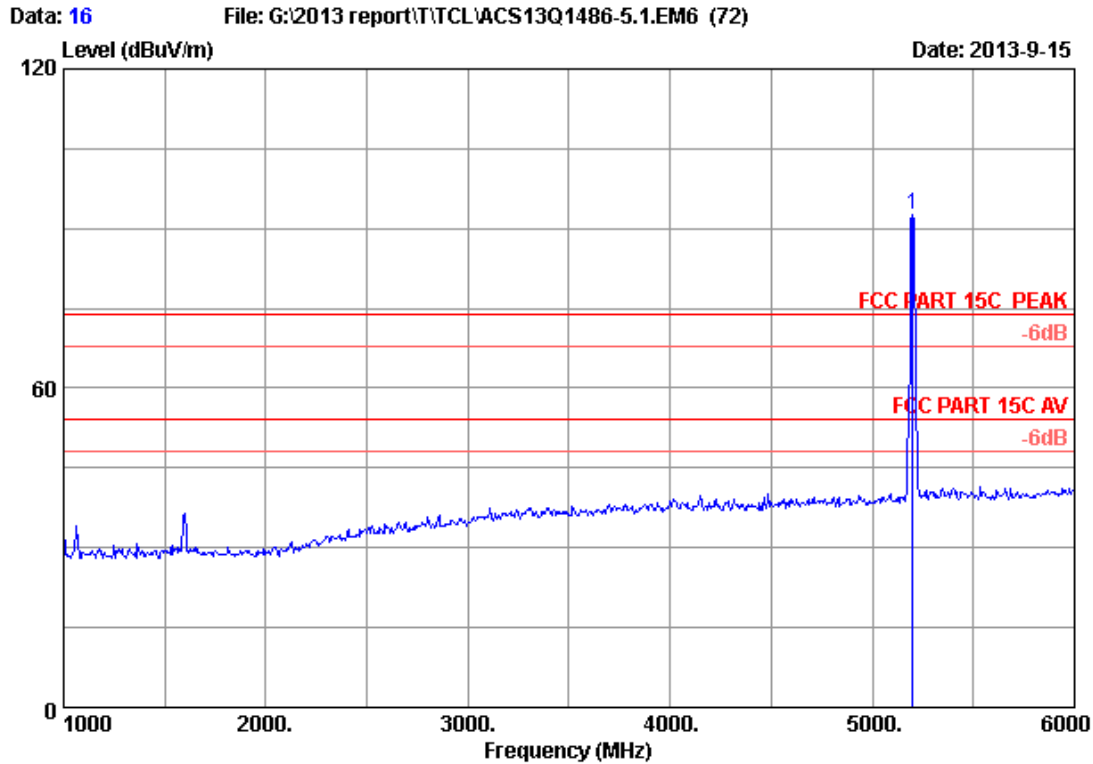


Site no. : 3m Chamber Data no. : 15
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11a CH40 5200MHz Tx
 WAE22-DF01-AR

	Ant. Factor	Cable loss	Amp. Factor	Reading	Emission Level	Limits	Margin	Remark
Freq. (MHz)	(dB/m)	(dB)	(dB)	(dBUV)	(dBUV/m)	(dBUV/m)	(dB)	
1 5200.000	33.52	8.97	35.70	91.90	98.69	74.00	-24.69	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

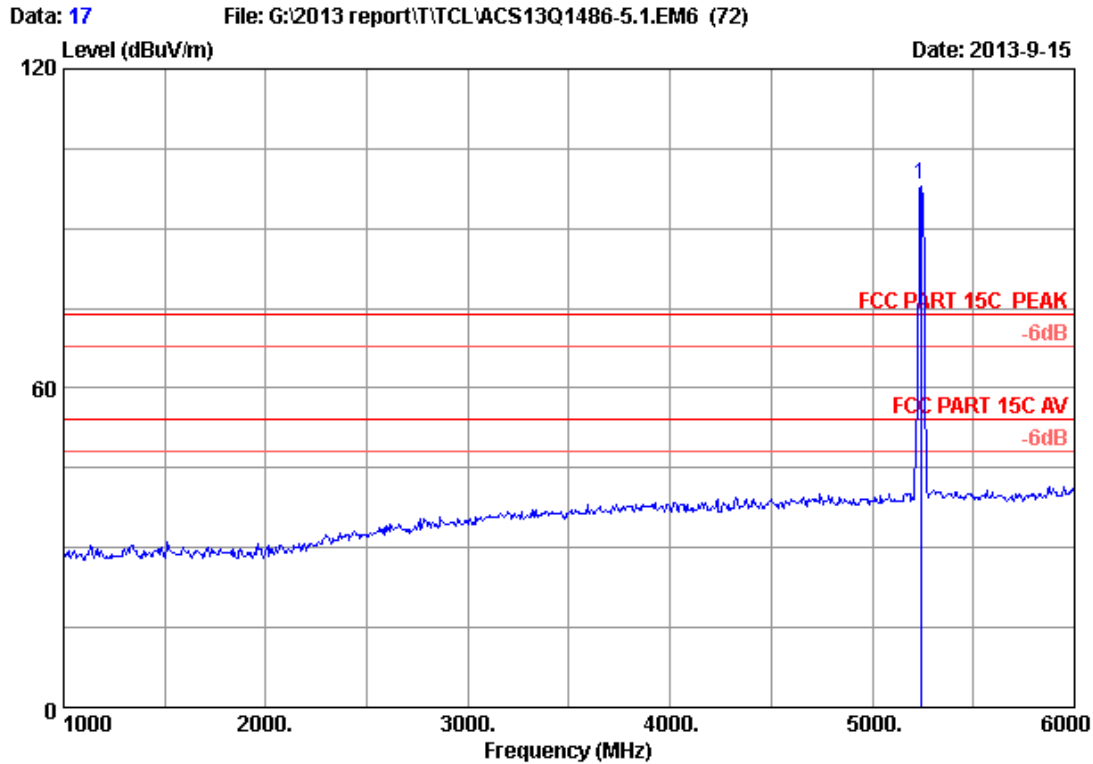


Site no. : 3m Chamber Data no. : 16
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11a CH40 5200MHz Tx
 WAE22-DF01-AR

	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	33.52	8.97	35.70	85.85	92.64	74.00	-18.64	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

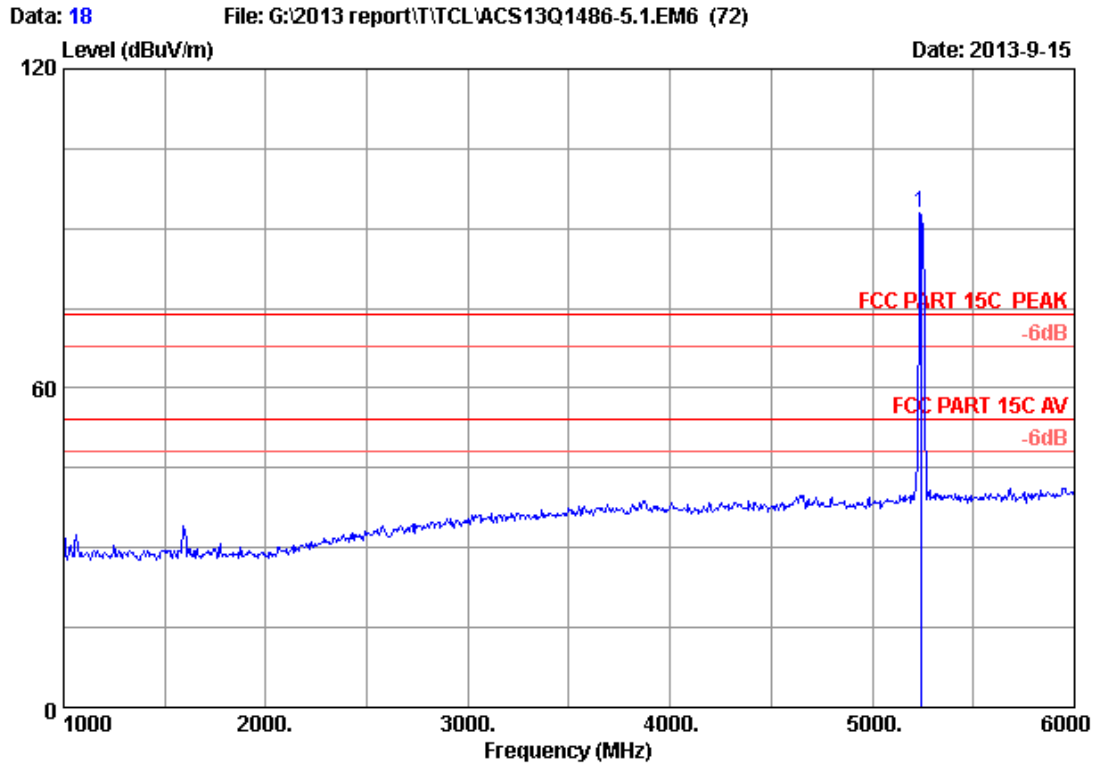


Site no. : 3m Chamber Data no. : 17
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11a CH48 5240MHz Tx
 WAE22-DF01-AR

	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	33.58	9.02	35.70	91.34	98.24	74.00	-24.24	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

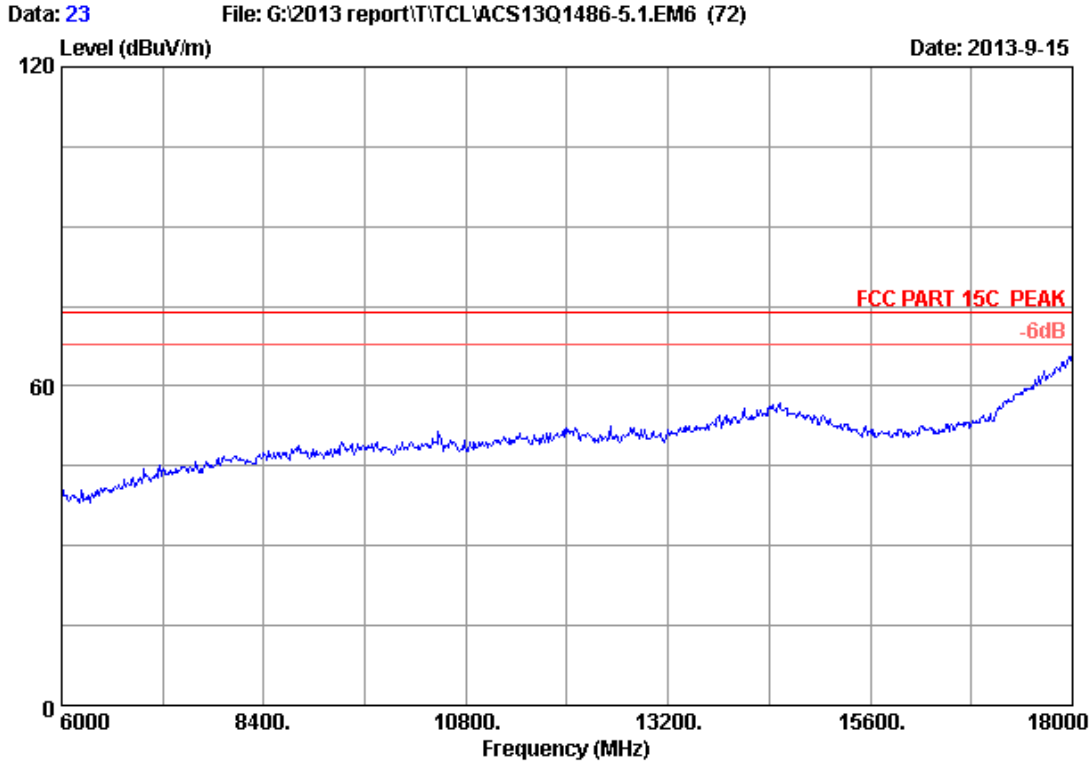


Site no. : 3m Chamber Data no. : 18
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11a CH48 5240MHz Tx
 WAE22-DF01-AR

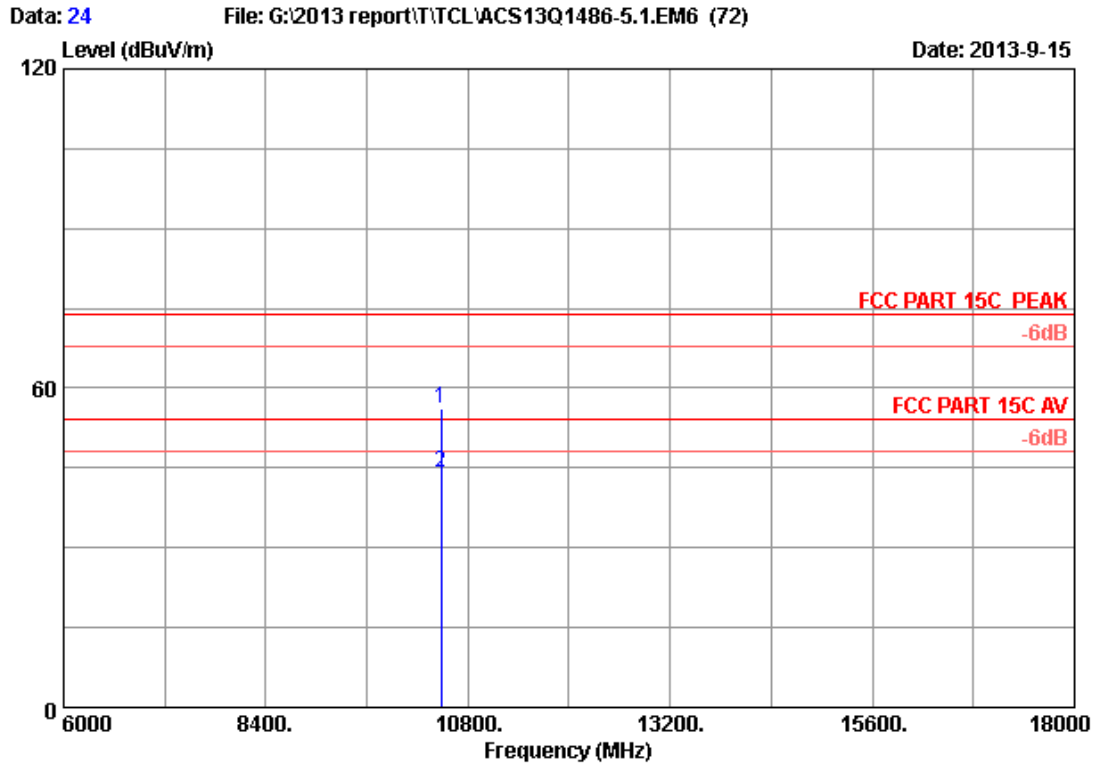
	Ant. Factor	Cable loss	Amp. Factor	Reading	Emission Level	Limits	Margin	Remark
Freq. (MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1 5240.000	33.58	9.02	35.70	86.05	92.95	74.00	-18.95	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 23
Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54% Engineer : leo-Li
EUT : WIFI Module
Power supply : DC 5V
Test mode : IEEE802.11a CH48 5240MHz Tx
WAE22-DF01-AR

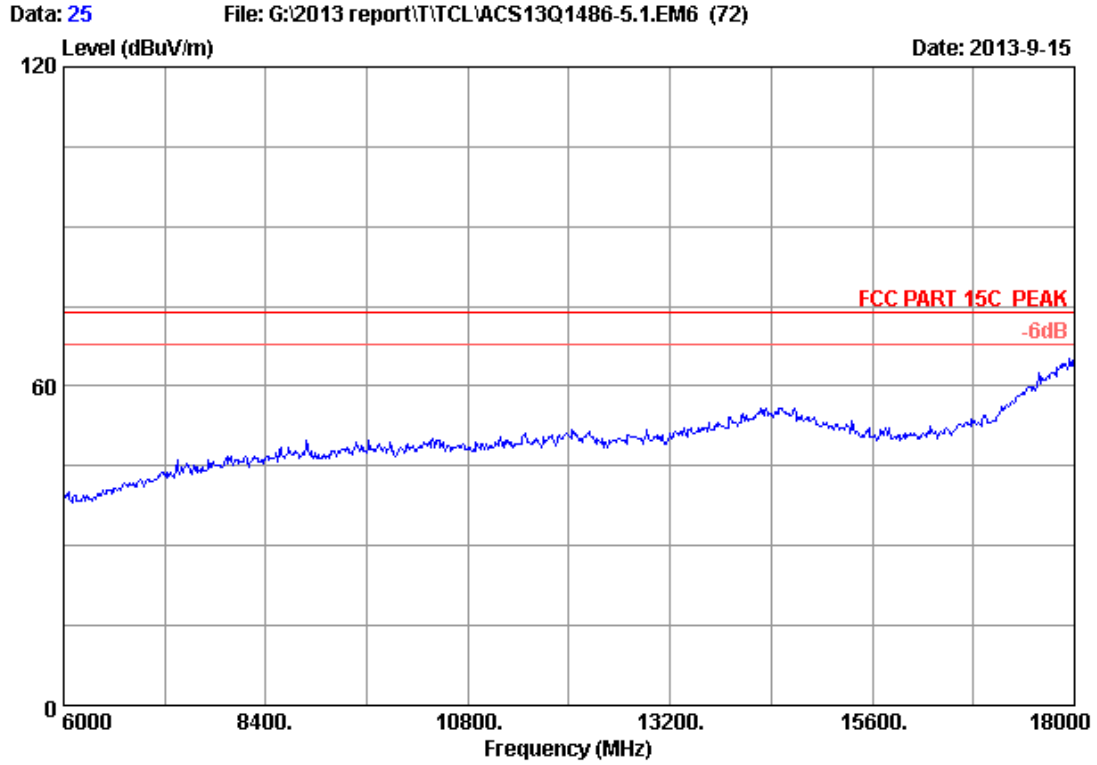


Site no. : 3m Chamber Data no. : 24
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11a CH48 5240MHz Tx
 WAE22-DF01-AR

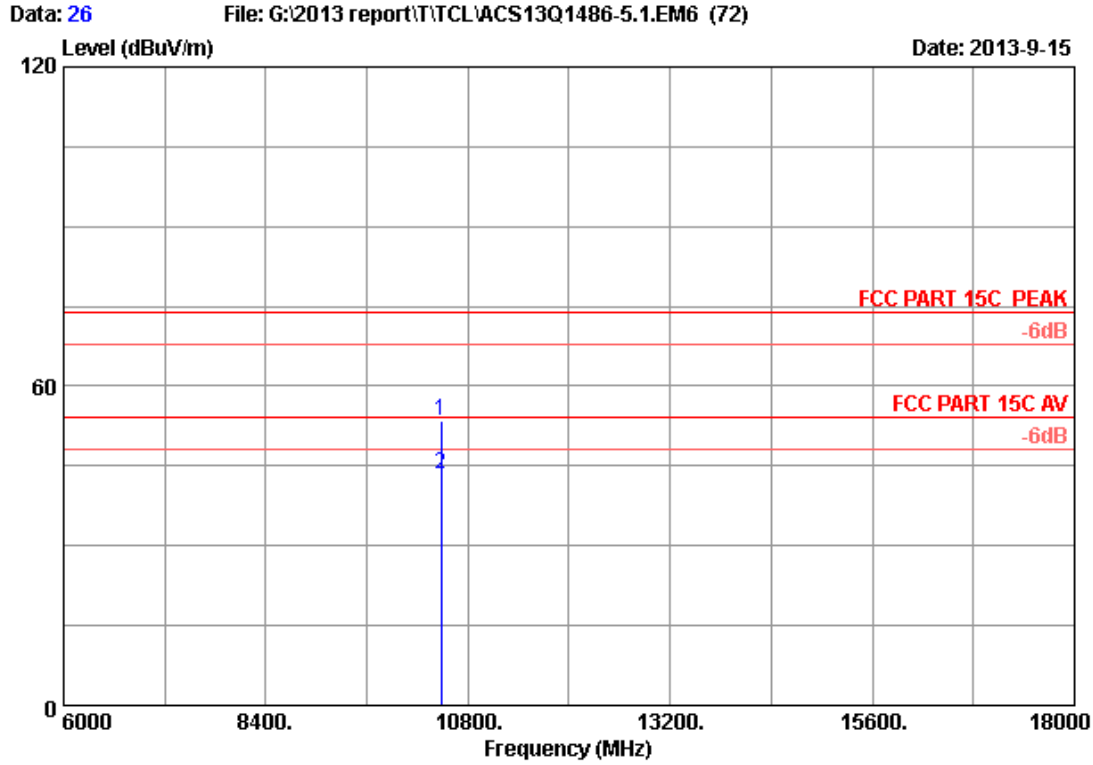
	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	38.19	12.70	35.43	40.80	56.26	74.00	17.74	Peak
2	38.19	12.70	35.43	28.62	44.08	54.00	9.92	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



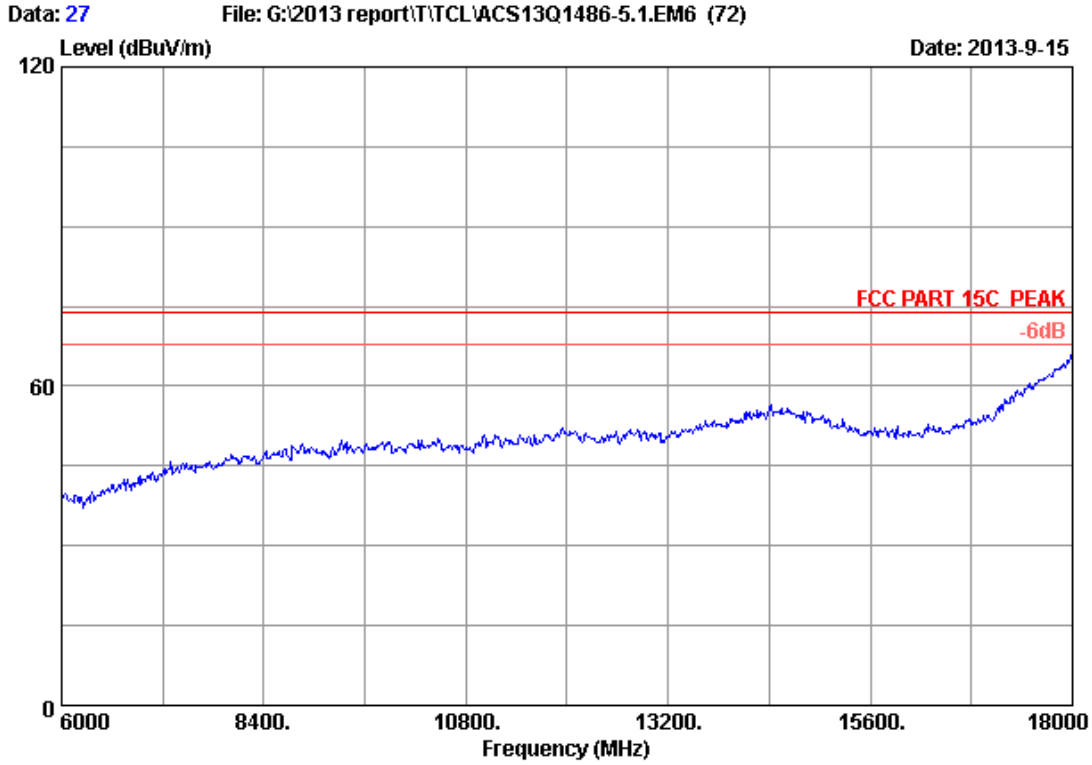
Site no. : 3m Chamber Data no. : 25
Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54% Engineer : leo-Li
EUT : WIFI Module
Power supply : DC 5V
Test mode : IEEE802.11a CH48 5240MHz Tx
WAE22-DF01-AR



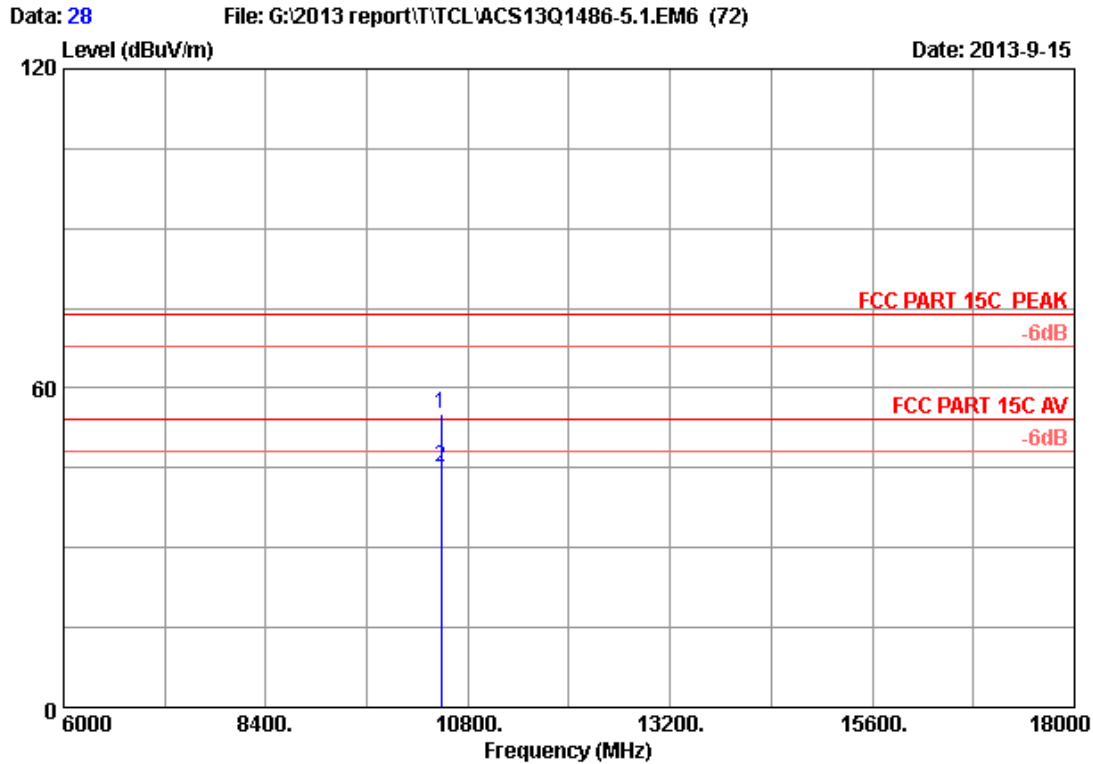
Site no. : 3m Chamber Data no. : 26
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11a CH48 5240MHz Tx
 WAE22-DF01-AR

	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	38.19	12.70	35.43	37.92	53.38	74.00	20.62	Peak
2	38.19	12.70	35.43	28.02	43.48	54.00	10.52	Average

Remarks:
 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 27
Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23°C/54% Engineer : leo-Li
EUT : WIFI Module
Power supply : DC 5V
Test mode : IEEE802.11nHT20 CH48 5240MHz Tx
WAE22-DF01-AR

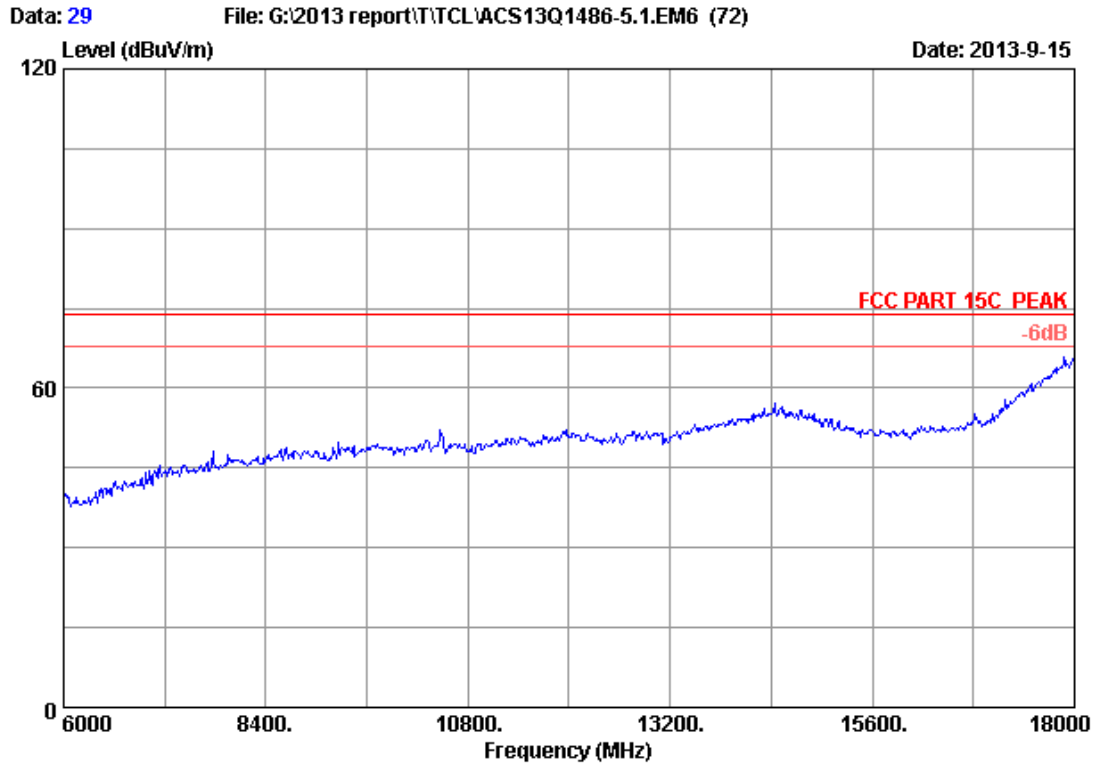


Site no. : 3m Chamber Data no. : 28
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT20 CH48 5240MHz Tx
 WAE22-DF01-AR

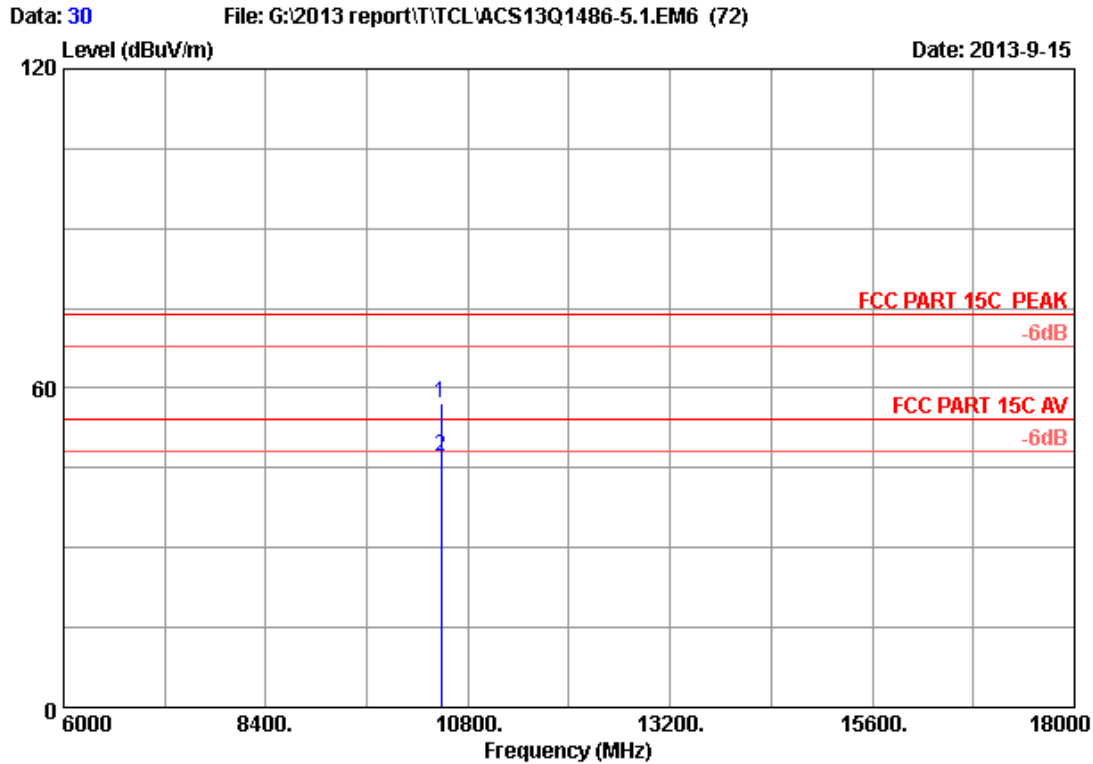
	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	38.19	12.70	35.43	39.70	55.16	74.00	18.84	Peak
2	38.19	12.70	35.43	29.62	45.08	54.00	8.92	Average

Remarks:

- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 29
Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23°C/54% Engineer : leo-Li
EUT : WIFI Module
Power supply : DC 5V
Test mode : IEEE802.11nHT20 CH48 5240MHz Tx
WAE22-DF01-AR

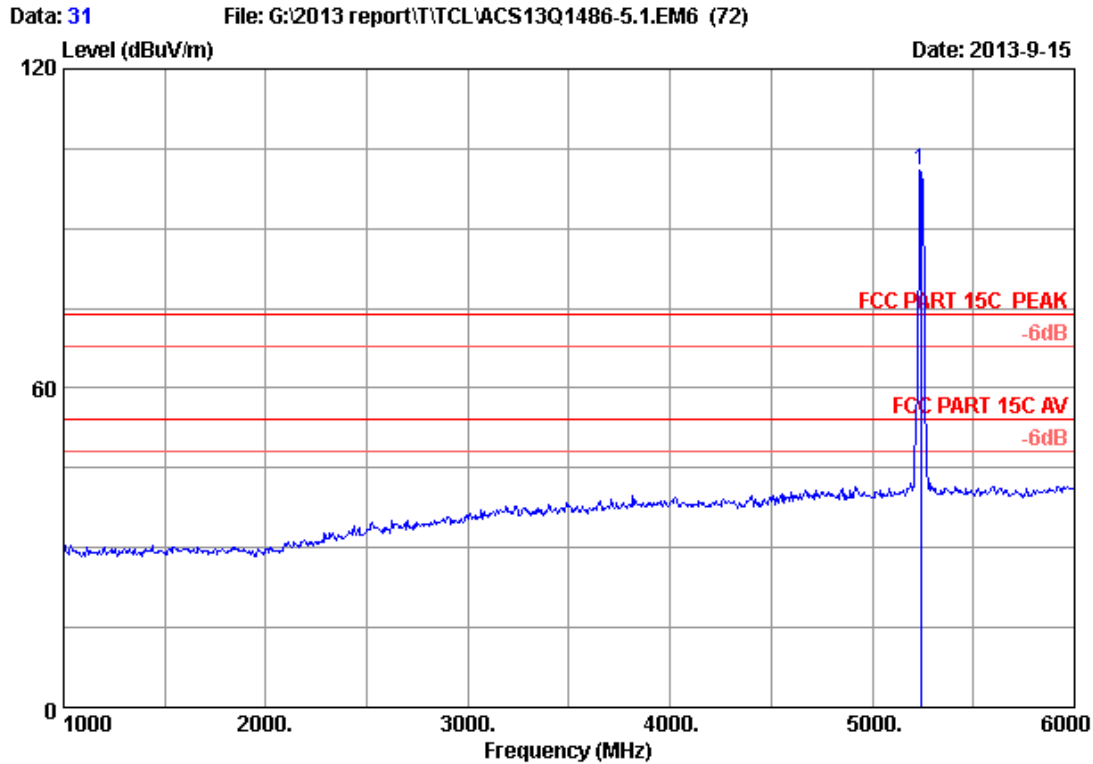


Site no. : 3m Chamber Data no. : 30
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT20 CH48 5240MHz Tx
 WAE22-DF01-AR

	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	38.19	12.70	35.43	41.58	57.04	74.00	16.96	Peak
2	38.19	12.70	35.43	31.53	46.99	54.00	7.01	Average

Remarks:

- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.

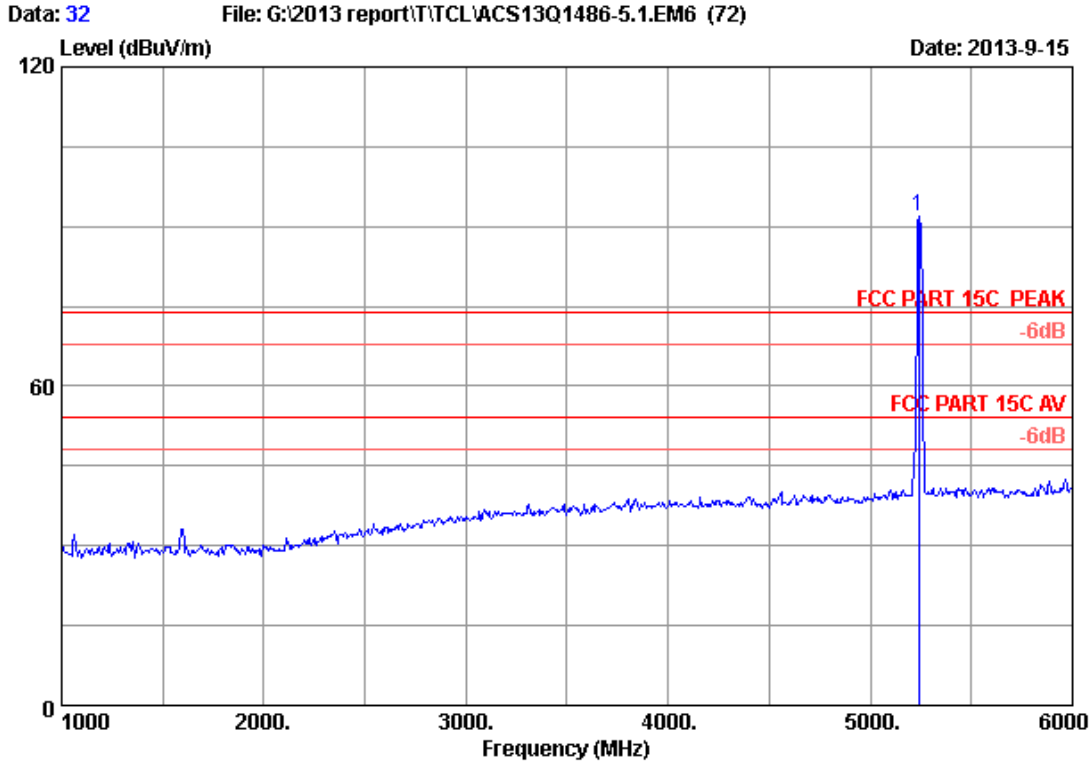


Site no. : 3m Chamber Data no. : 31
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT20 CH48 5240MHz Tx
 WAE22-DF01-AR

	Ant. Factor	Cable loss	Amp. Factor	Reading	Emission Level	Limits	Margin	Remark
Freq. (MHz)	(dB/m)	(dB)	(dB)	(dBUV)	(dBUV/m)	(dBUV/m)	(dB)	
1 5240.000	33.58	9.02	35.70	94.10	101.00	74.00	-27.00	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

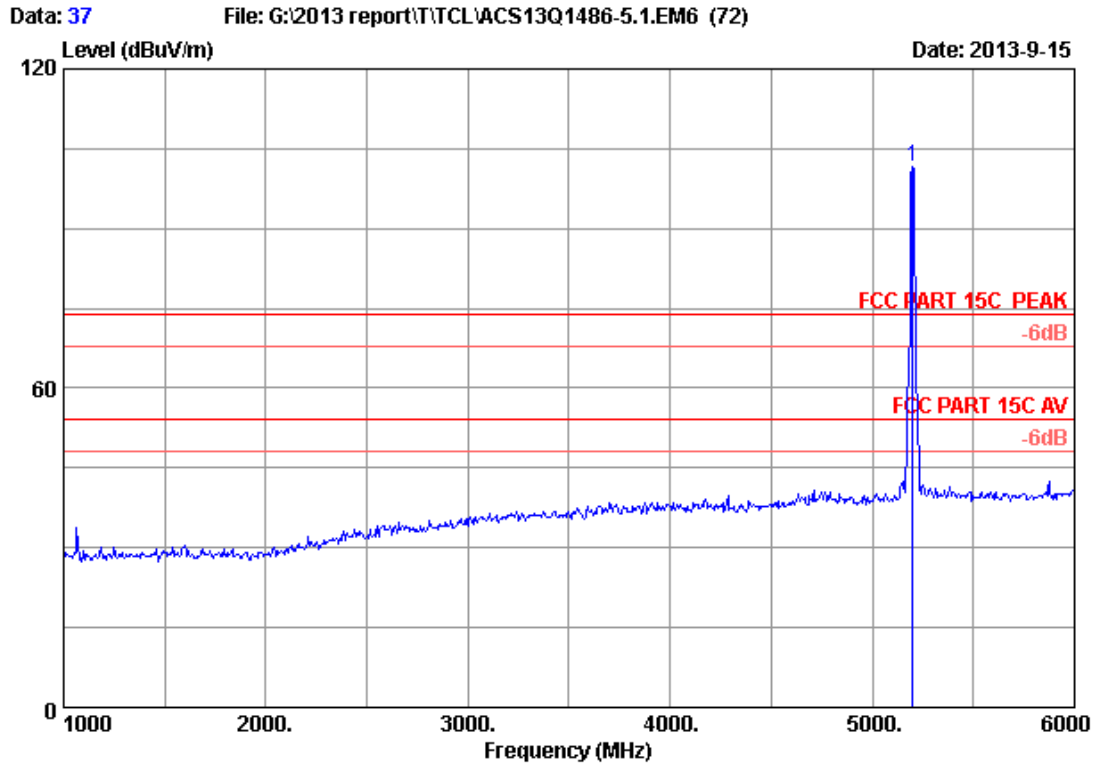


Site no. : 3m Chamber Data no. : 32
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT20 CH48 5240MHz Tx
 WAE22-DF01-AR

	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	33.58	9.02	35.70	85.03	91.93	74.00	-17.93	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

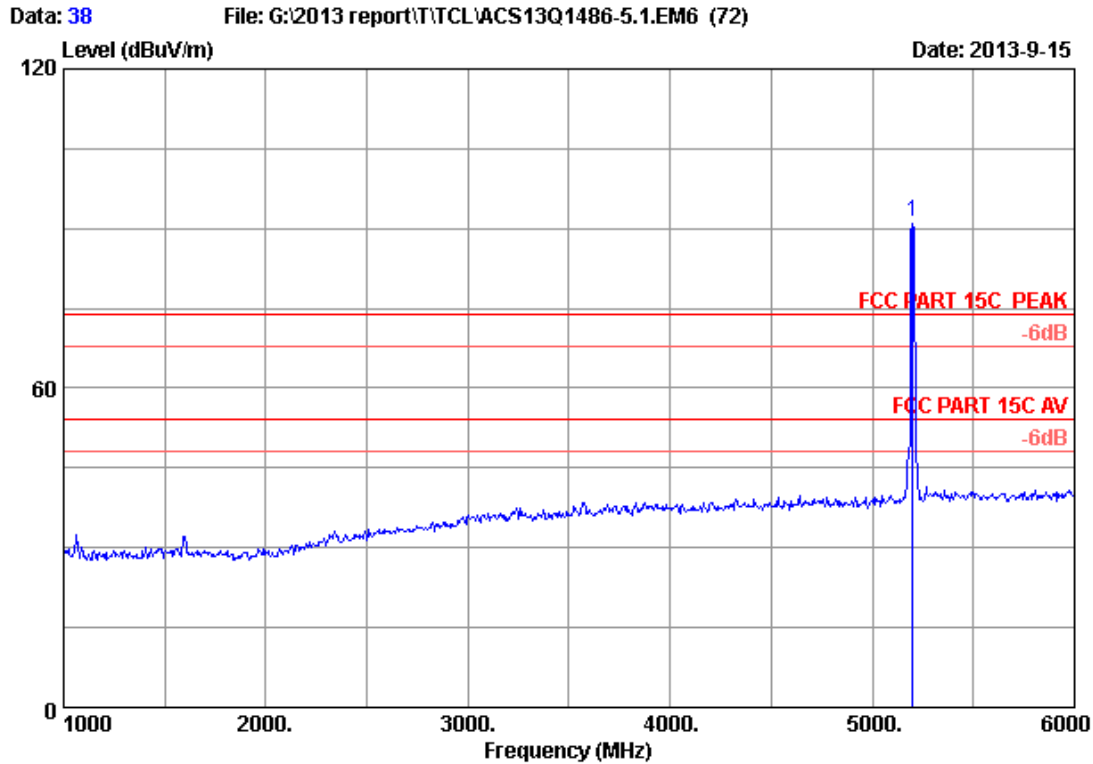


Site no. : 3m Chamber Data no. : 37
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT20 CH40 5200MHz Tx
 WAE22-DF01-AR

	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	33.52	8.97	35.70	94.87	101.66	74.00	-27.66	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

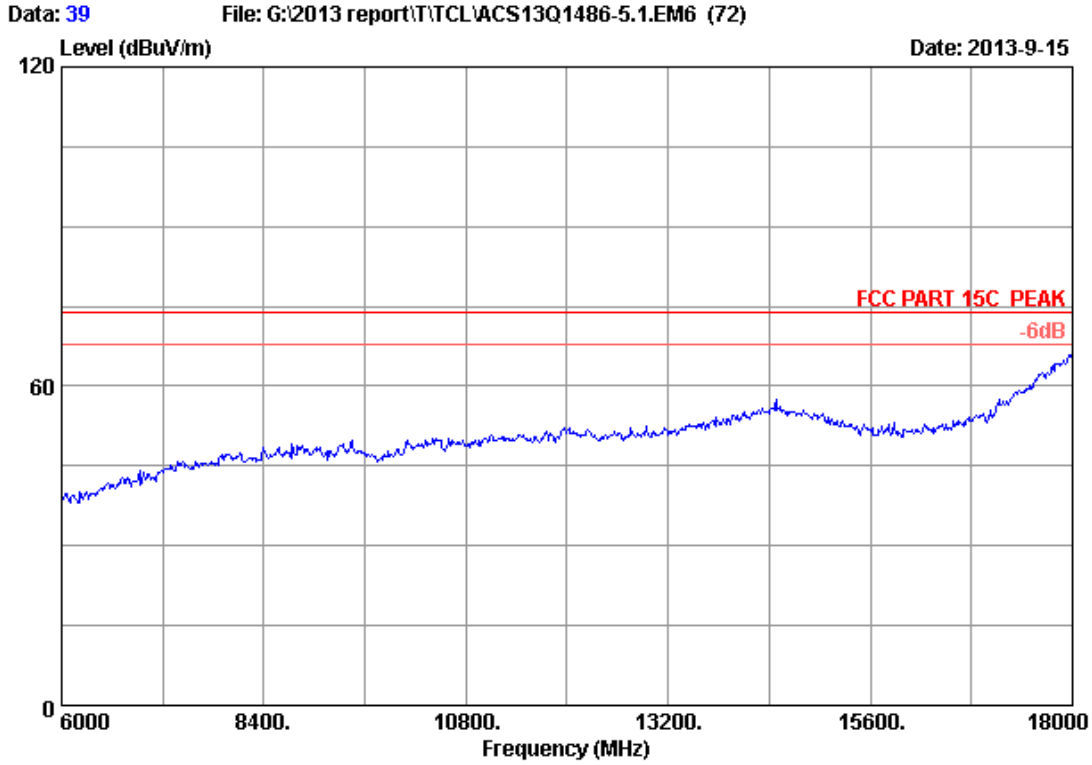


Site no. : 3m Chamber Data no. : 38
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT20 CH40 5200MHz Tx
 WAE22-DF01-AR

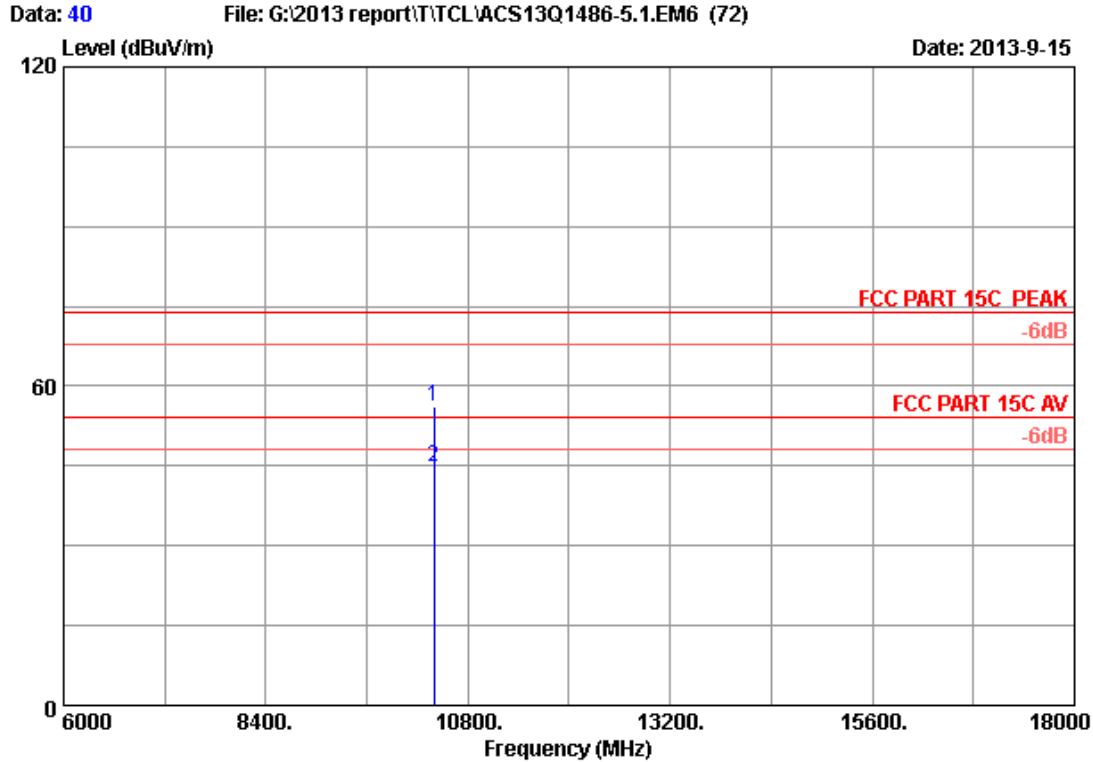
	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	33.52	8.97	35.70	84.37	91.16	74.00	-17.16	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 39
Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23°C/54% Engineer : leo-Li
EUT : WIFI Module
Power supply : DC 5V
Test mode : IEEE802.11nHT20 CH40 5200MHz Tx
WAE22-DF01-AR

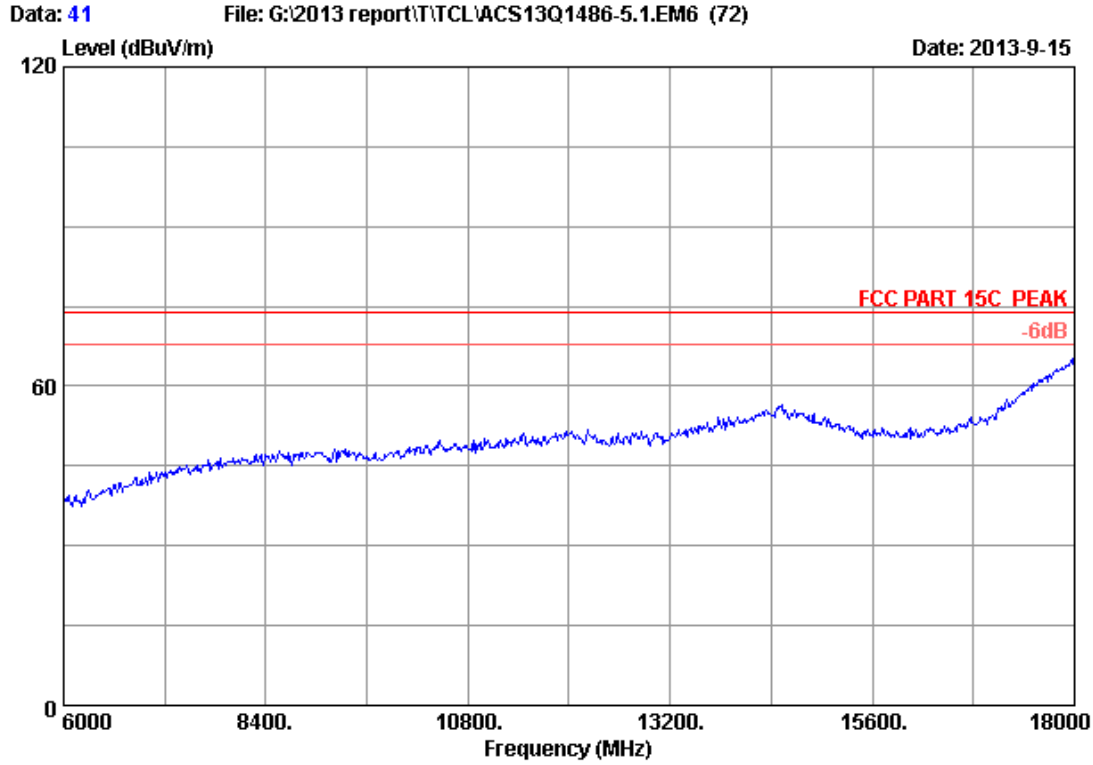


Site no. : 3m Chamber Data no. : 40
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT20 CH40 5200MHz Tx
 WAE22-DF01-AR

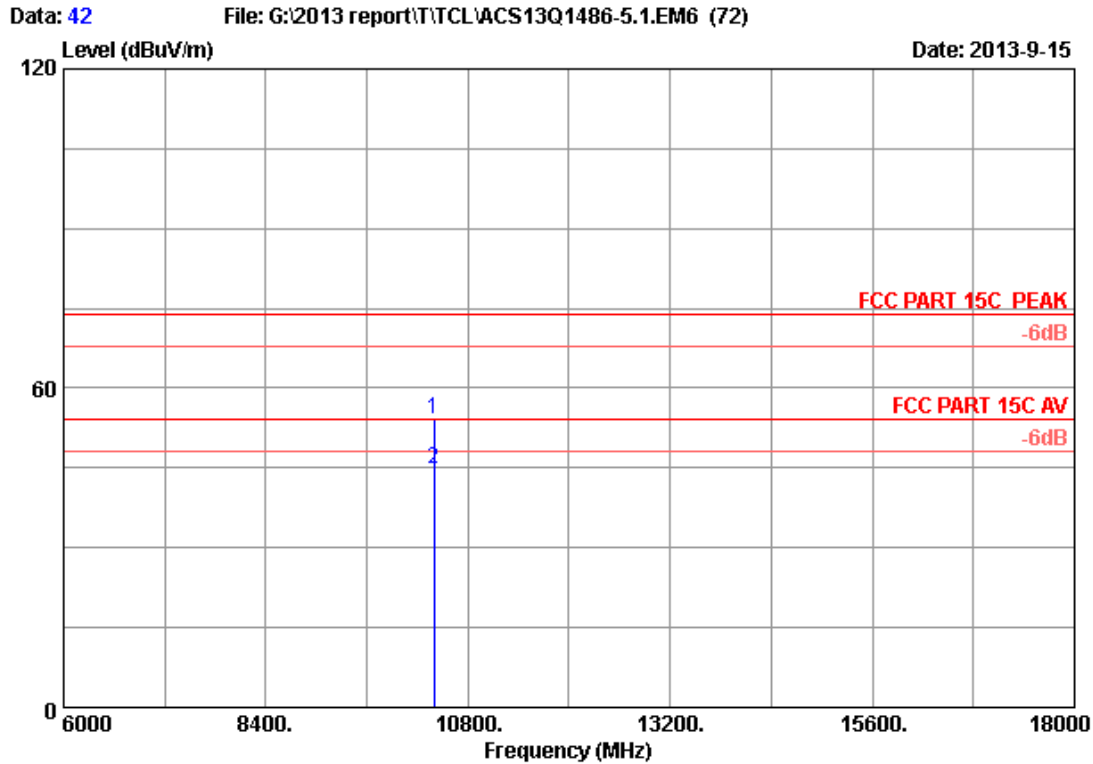
	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	38.16	12.66	35.44	40.69	56.07	74.00	17.93	Peak
2	38.16	12.66	35.44	29.56	44.94	54.00	9.06	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 41
Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23°C/54% Engineer : leo-Li
EUT : WIFI Module
Power supply : DC 5V
Test mode : IEEE802.11nHT20 CH40 5200MHz Tx
WAE22-DF01-AR

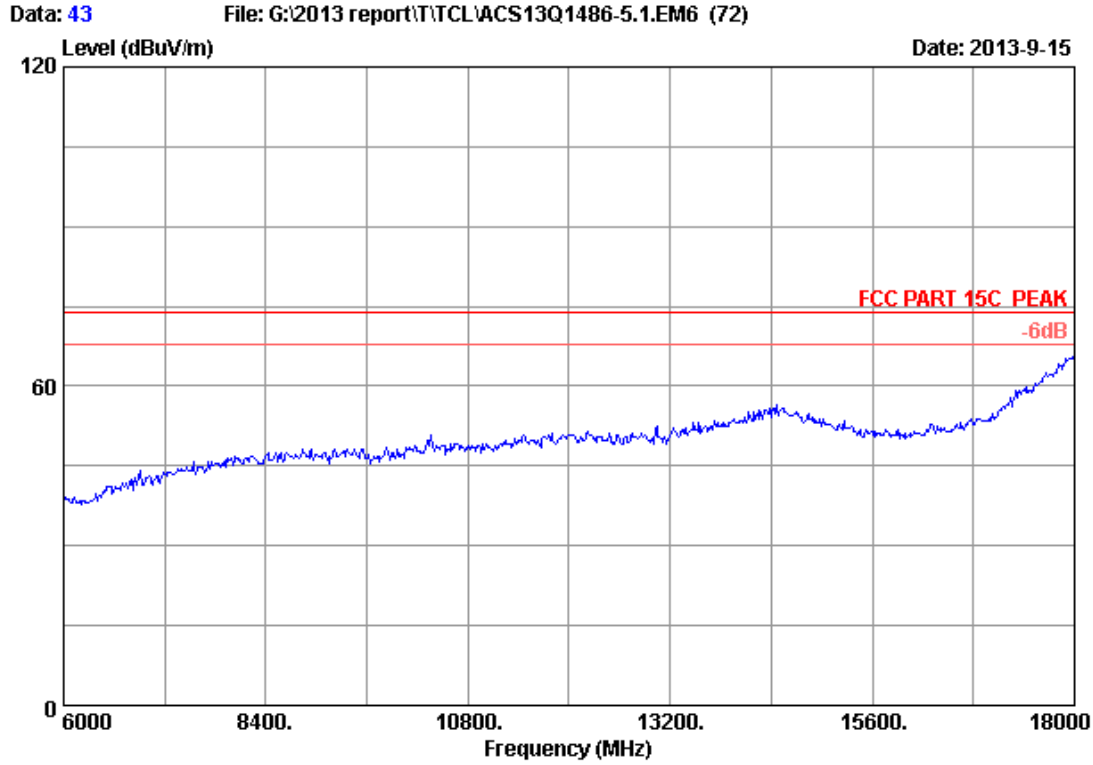


Site no. : 3m Chamber Data no. : 42
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT20 CH40 5200MHz Tx
 WAE22-DF01-AR

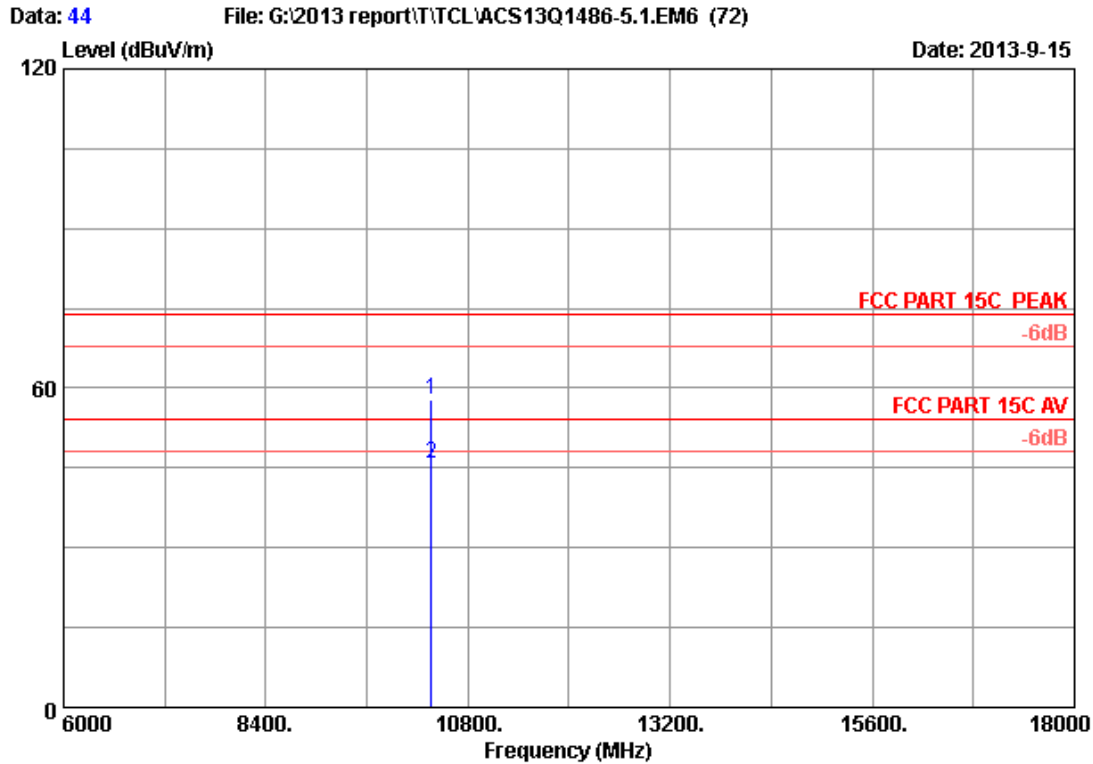
	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	38.16	12.66	35.44	38.66	54.04	74.00	19.96	Peak
2	38.16	12.66	35.44	29.45	44.83	54.00	9.17	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 43
Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23°C/54% Engineer : leo-Li
EUT : WIFI Module
Power supply : DC 5V
Test mode : IEEE802.11nHT20 CH36 5180MHz Tx
WAE22-DF01-AR

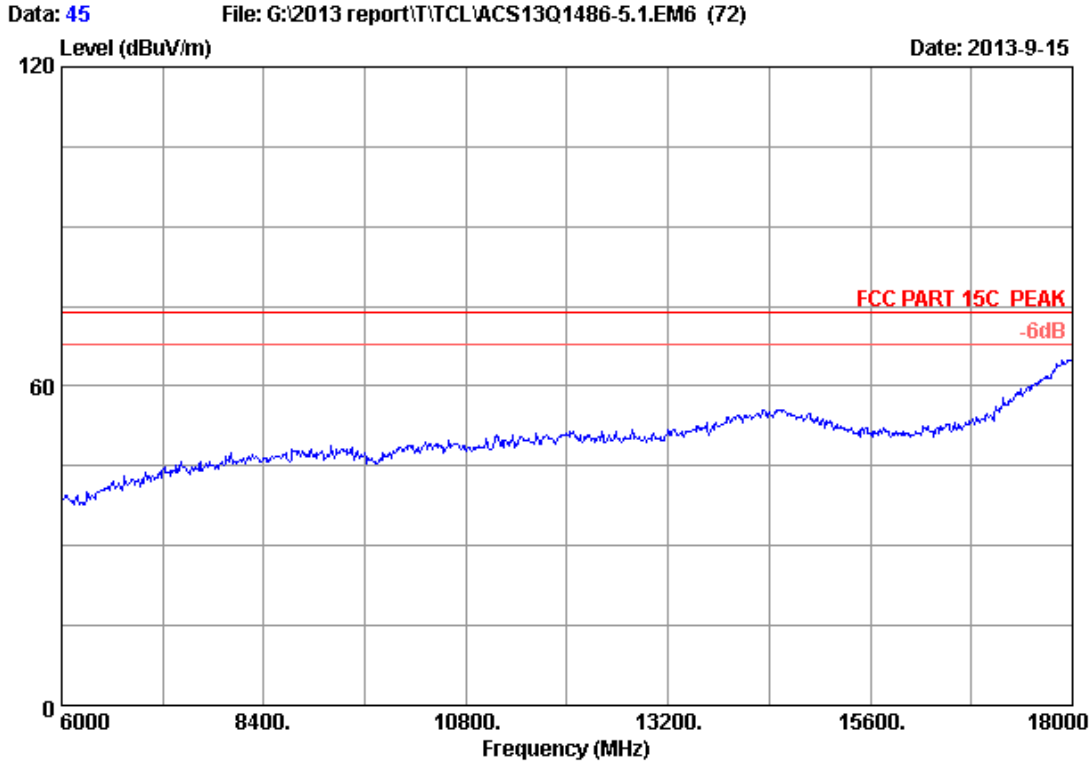


Site no. : 3m Chamber Data no. : 44
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT20 CH36 5180MHz Tx
 WAE22-DF01-AR

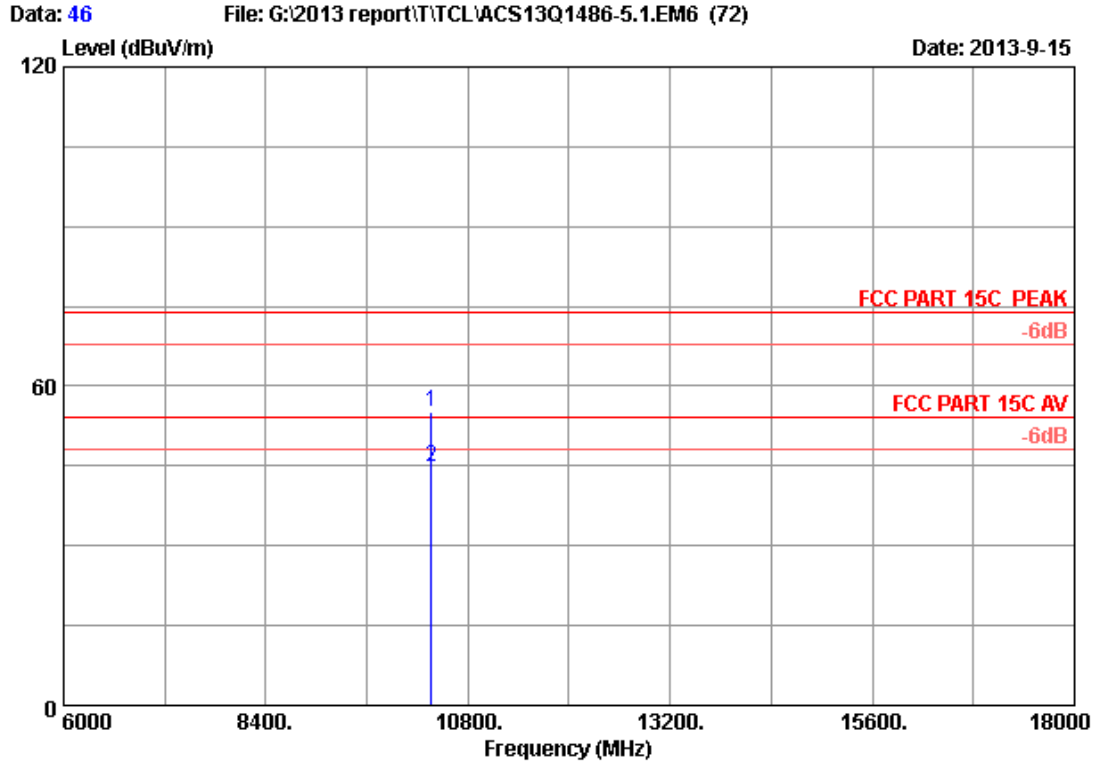
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	10360.000	38.14	12.64	35.45	42.38	57.71	74.00	16.29	Peak
2	10360.000	38.14	12.64	35.45	30.52	45.85	54.00	8.15	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 45
Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23°C/54% Engineer : leo-Li
EUT : WIFI Module
Power supply : DC 5V
Test mode : IEEE802.11nHT20 CH36 5180MHz Tx
WAE22-DF01-AR

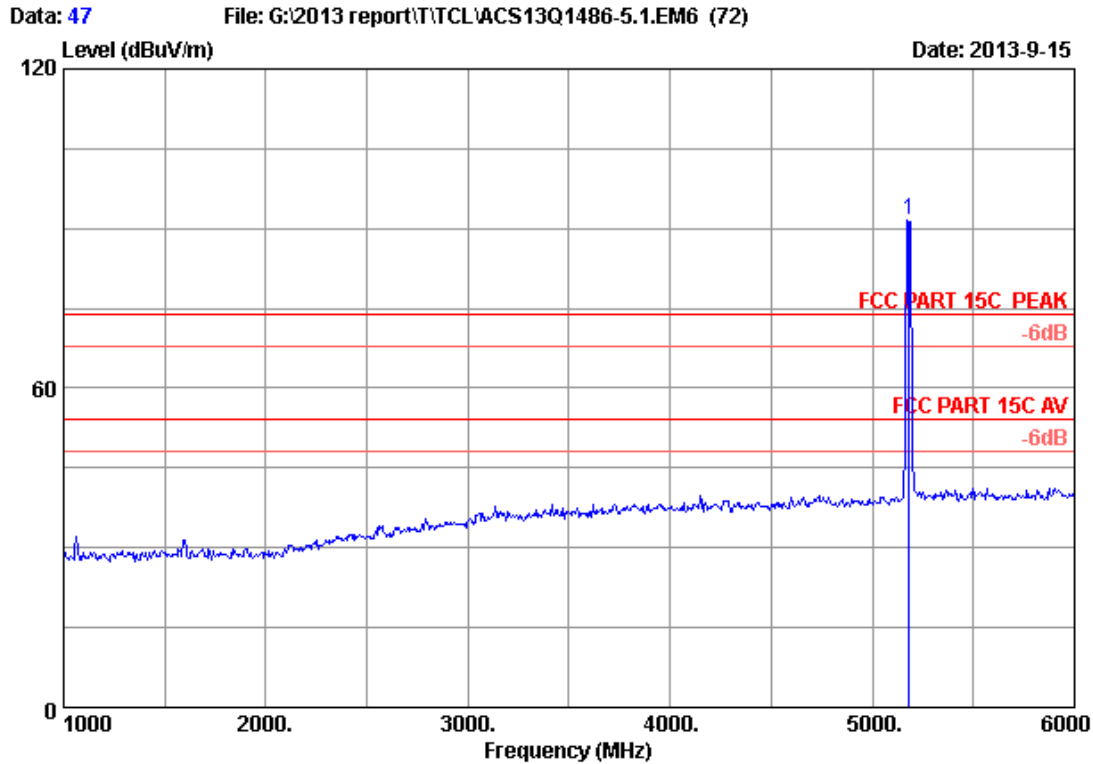


Site no. : 3m Chamber Data no. : 46
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT20 CH36 5180MHz Tx
 WAE22-DF01-AR

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	10360.000	38.14	12.64	35.45	39.67	55.00	74.00	19.00	Peak
2	10360.000	38.14	12.64	35.45	29.32	44.65	54.00	9.35	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

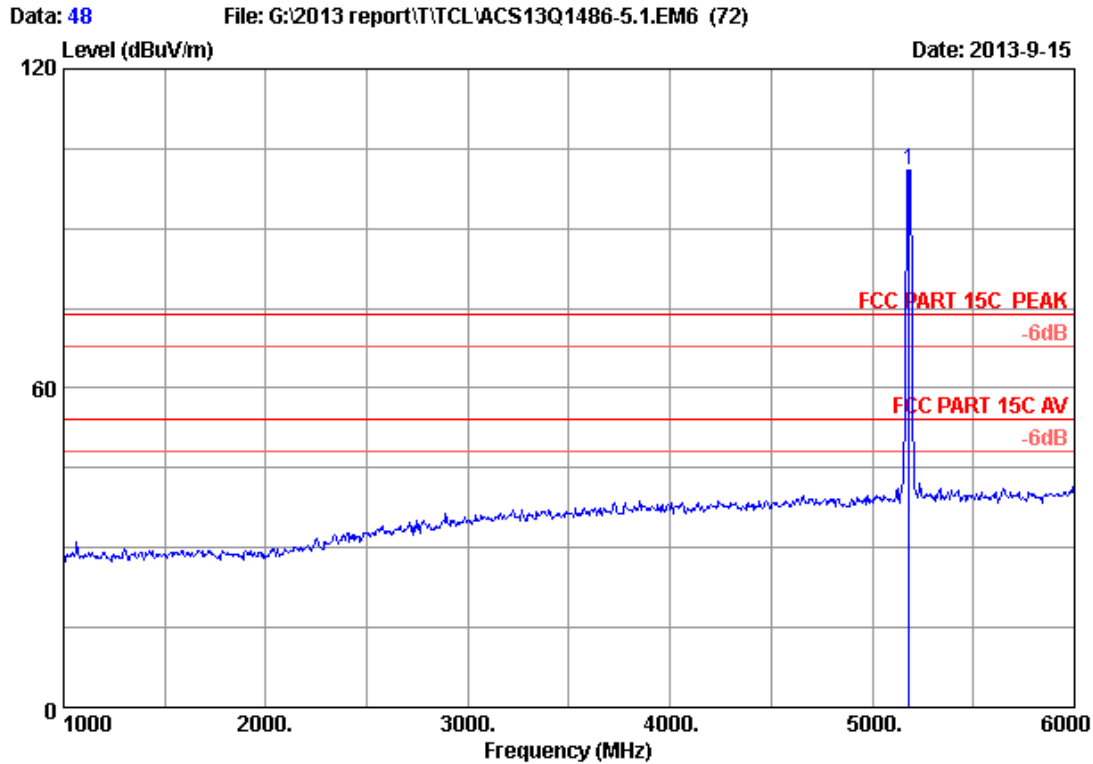


Site no. : 3m Chamber Data no. : 47
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT20 CH36 5180MHz Tx
 WAE22-DF01-AR

	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	33.49	8.95	35.70	84.89	91.63	74.00	-17.63	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

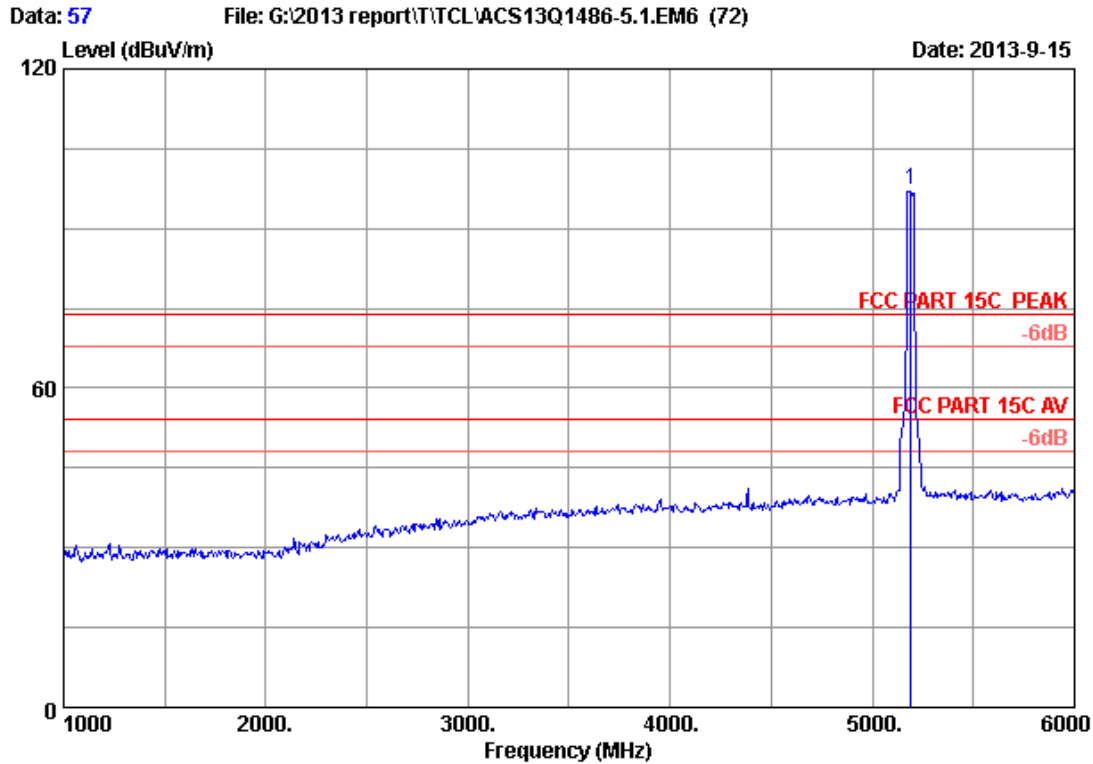


Site no. : 3m Chamber Data no. : 48
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT20 CH36 5180MHz Tx
 WAE22-DF01-AR

	Ant. Factor	Cable loss	Amp. Factor	Reading	Emission Level	Limits	Margin	Remark
Freq. (MHz)	(dB/m)	(dB)	(dB)	(dBUV)	(dBUV/m)	(dBUV/m)	(dB)	
1 5180.000	33.49	8.95	35.70	94.35	101.09	74.00	-27.09	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

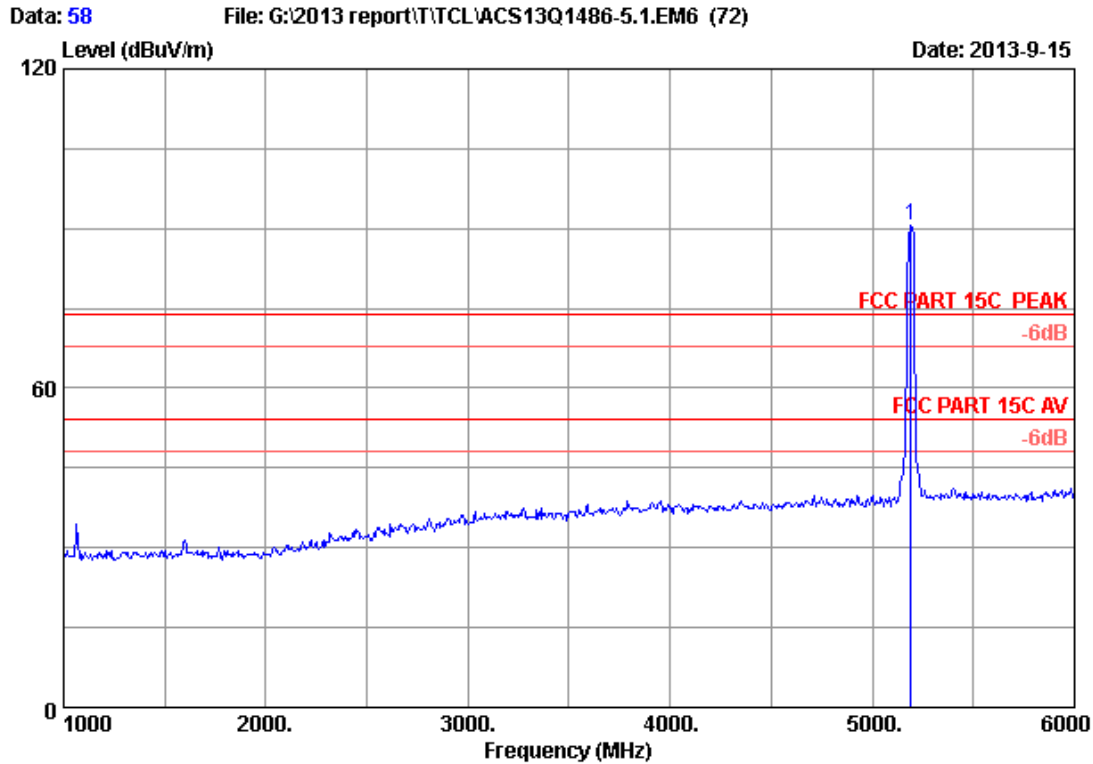


Site no. : 3m Chamber Data no. : 57
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT40 CH39 5190MHz Tx
 WAE22-DF01-AR

	Ant. Factor	Cable loss	Amp. Factor	Reading	Emission Level	Limits	Margin	Remark
Freq. (MHz)	(dB/m)	(dB)	(dB)	(dBUV)	(dBUV/m)	(dBUV/m)	(dB)	
1 5190.000	33.50	8.96	35.70	90.54	97.30	74.00	-23.30	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

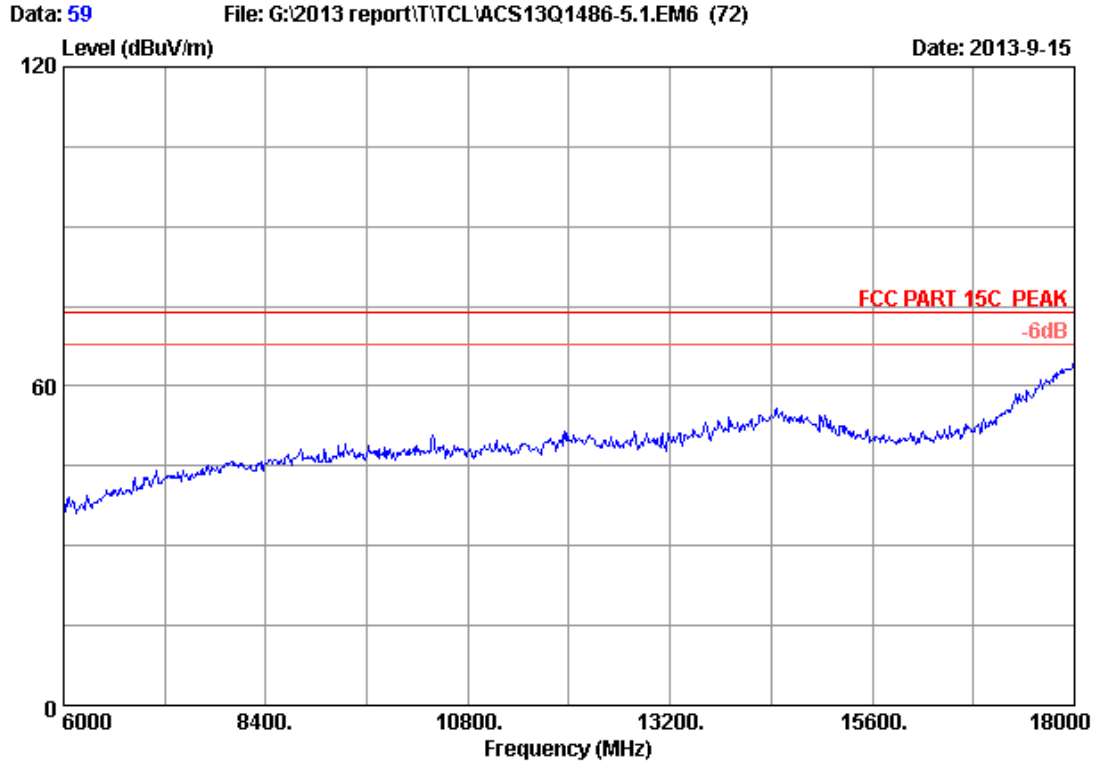


Site no. : 3m Chamber Data no. : 58
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT40 CH39 5190MHz Tx
 WAE22-DF01-AR

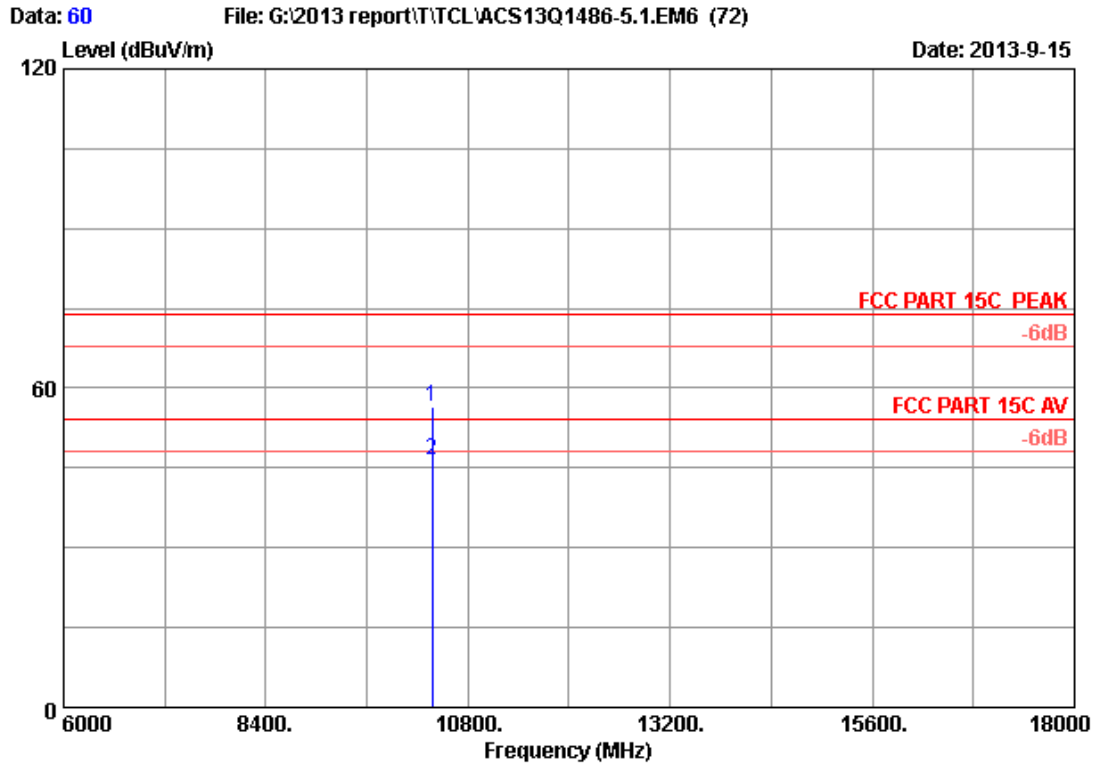
	Ant. Factor	Cable loss	Amp. Factor	Reading	Emission Level	Limits	Margin	Remark
Freq. (MHz)	(dB/m)	(dB)	(dB)	(dBUV)	(dBUV/m)	(dBUV/m)	(dB)	
1 5190.000	33.50	8.96	35.70	83.66	90.42	74.00	-16.42	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 59
Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54% Engineer : leo-Li
EUT : WIFI Module
Power supply : DC 5V
Test mode : IEEE802.11nHT40 CH39 5190MHz Tx
WAE22-DF01-AR

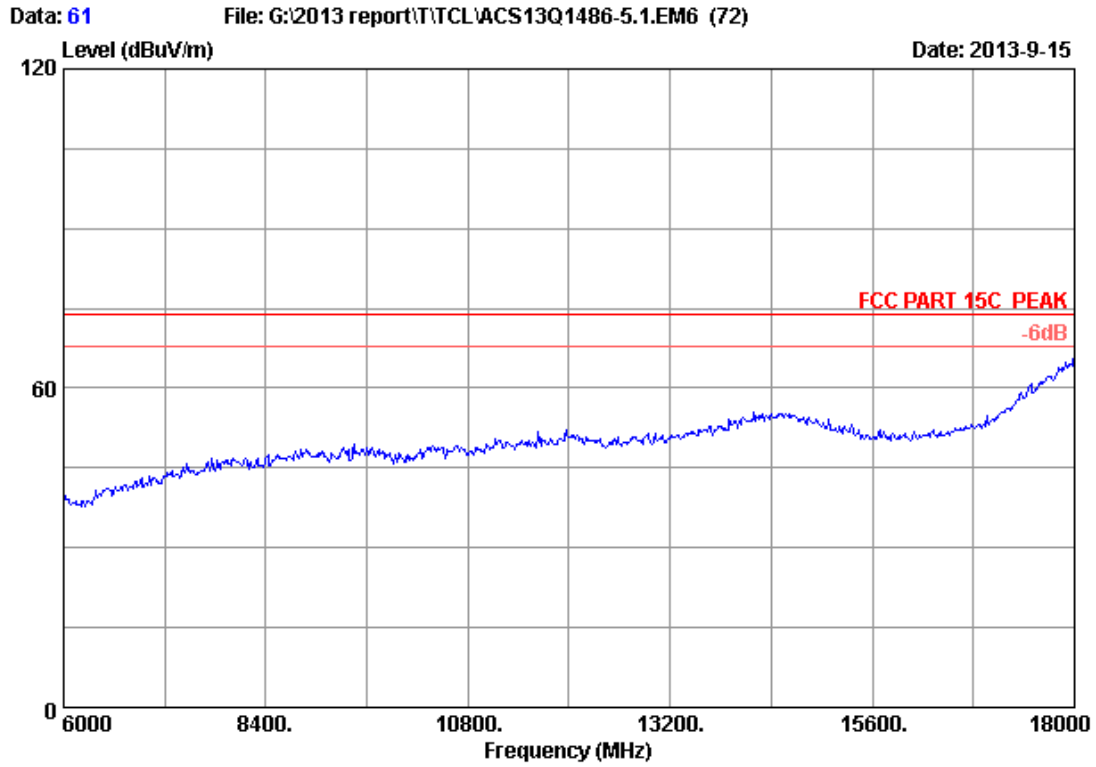


Site no. : 3m Chamber Data no. : 60
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT40 CH39 5190MHz Tx
 WAE22-DF01-AR

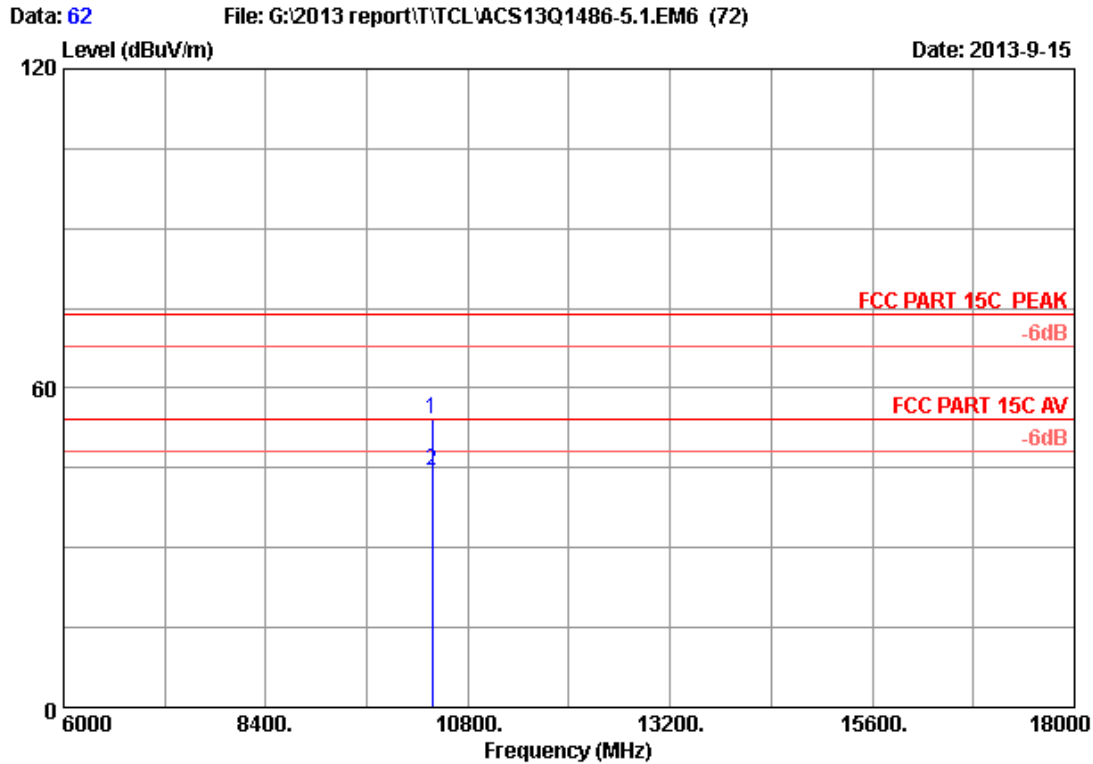
	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	38.15	12.65	35.44	41.13	56.49	74.00	17.51	Peak
2	38.15	12.65	35.44	31.02	46.38	54.00	7.62	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 61
Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54% Engineer : leo-Li
EUT : WIFI Module
Power supply : DC 5V
Test mode : IEEE802.11nHT40 CH39 5190MHz Tx
WAE22-DF01-AR

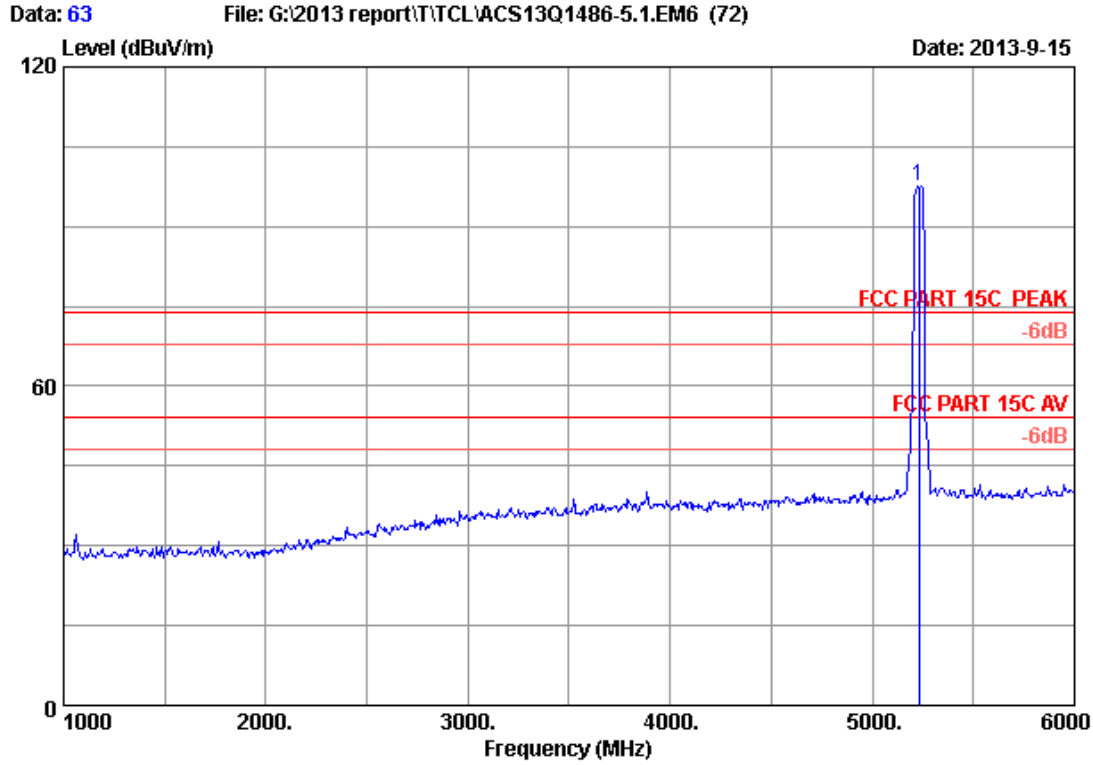


Site no. : 3m Chamber Data no. : 62
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT40 CH39 5190MHz Tx
 WAE22-DF01-AR

	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	38.15	12.65	35.44	38.92	54.28	74.00	19.72	Peak
2	38.15	12.65	35.44	28.96	44.32	54.00	9.68	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

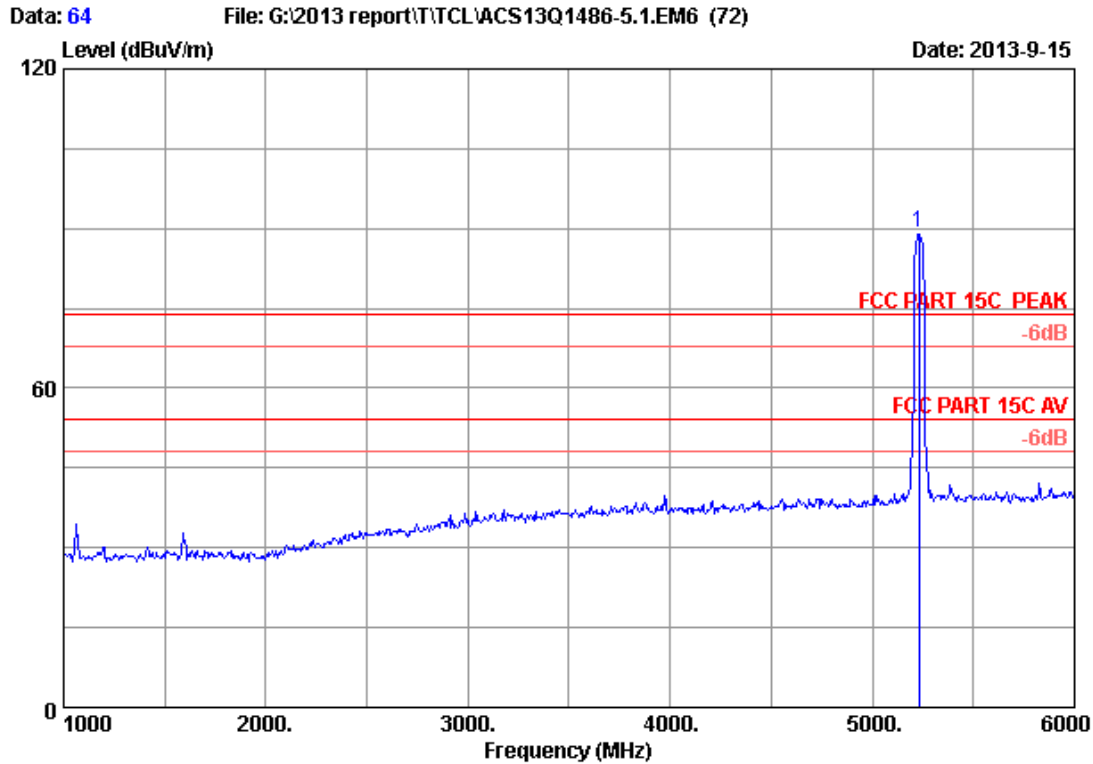


Site no. : 3m Chamber Data no. : 63
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT40 CH46 5230MHz Tx
 WAE22-DF01-AR

	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	33.57	9.01	35.70	90.85	97.73	74.00	-23.73	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

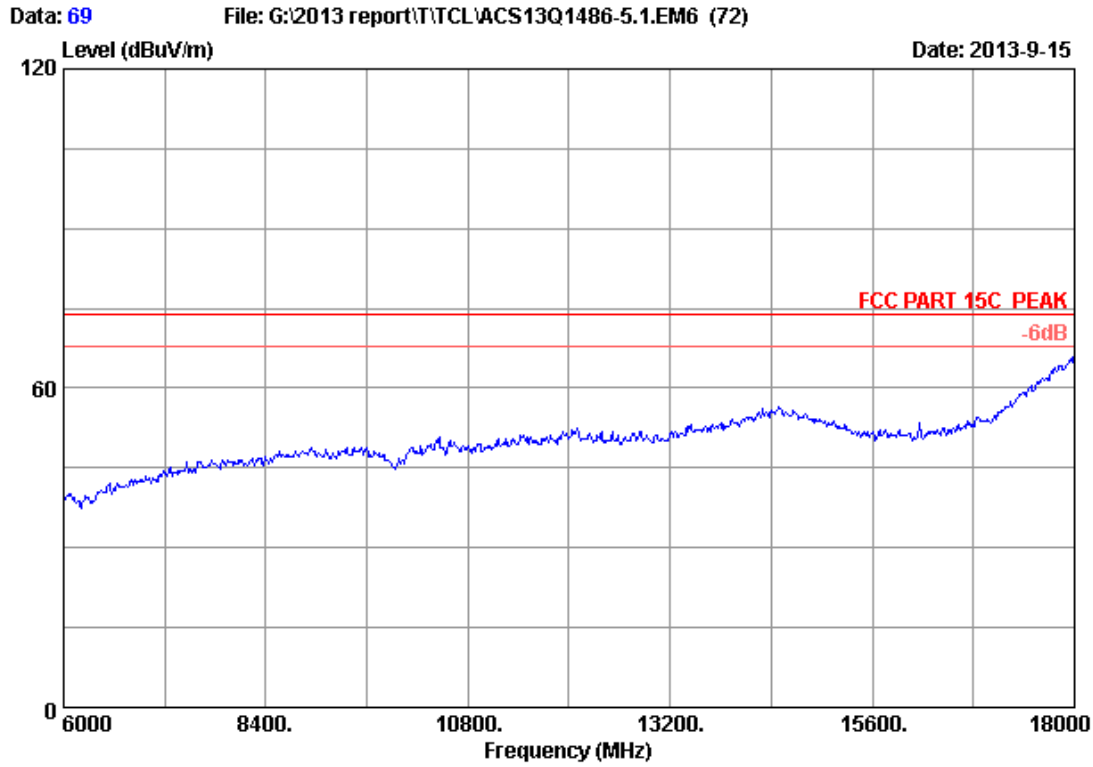


Site no. : 3m Chamber Data no. : 64
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT40 CH46 5230MHz Tx
 WAE22-DF01-AR

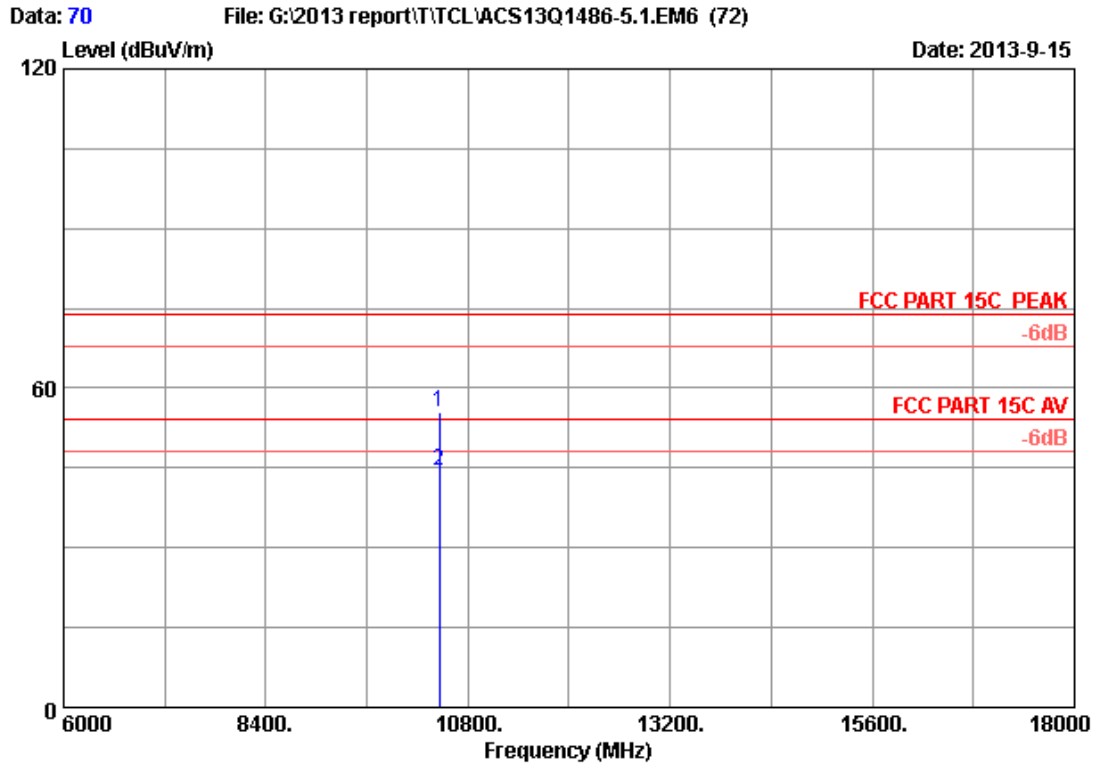
	Ant. Factor	Cable loss	Amp. Factor	Reading	Emission Level	Limits	Margin	Remark
Freq. (MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1 5230.000	33.57	9.01	35.70	82.20	89.08	74.00	-15.08	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 69
Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23°C/54% Engineer : leo-Li
EUT : WIFI Module
Power supply : DC 5V
Test mode : IEEE802.11nHT40 CH46 5230MHz Tx
WAE22-DF01-AR

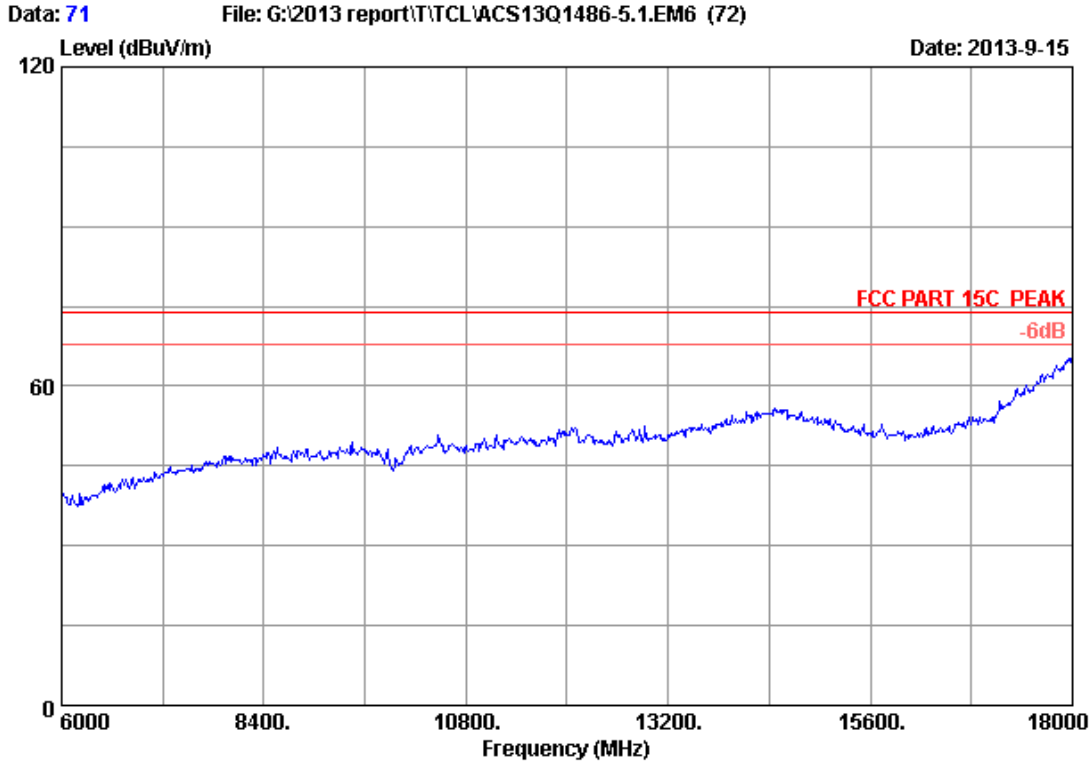


Site no. : 3m Chamber Data no. : 70
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT40 CH46 5230MHz Tx
 WAE22-DF01-AR

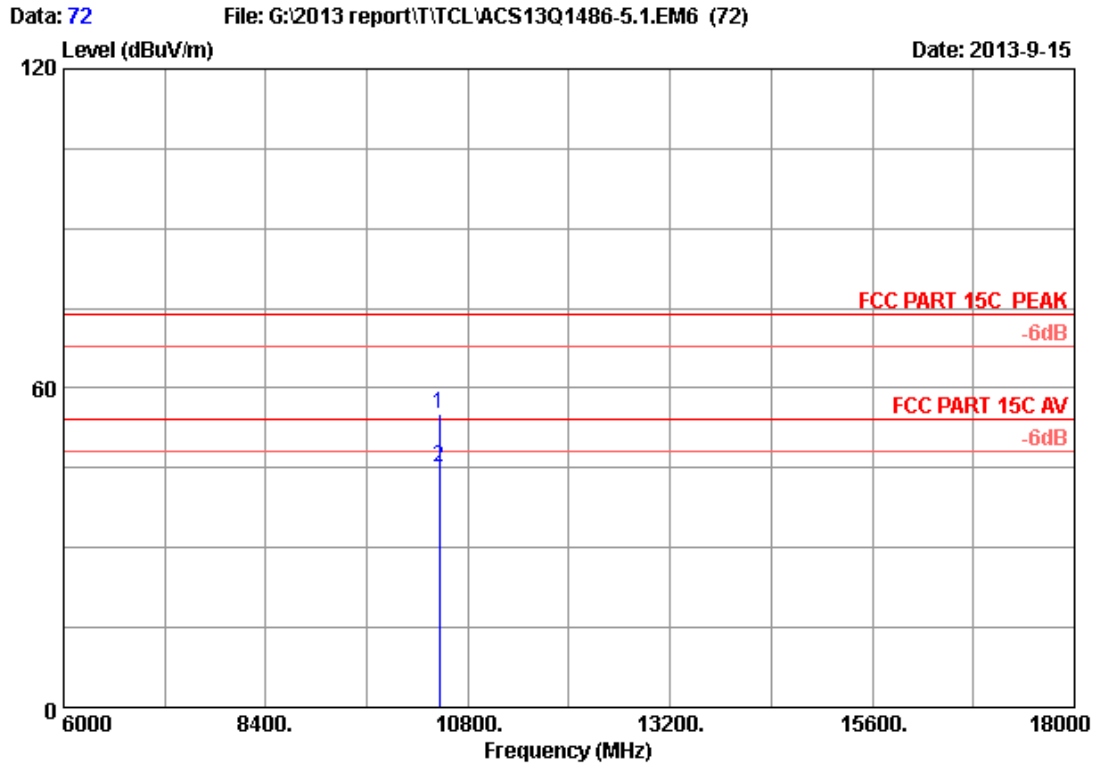
	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	38.18	12.69	35.43	40.09	55.53	74.00	18.47	Peak
2	38.18	12.69	35.43	28.86	44.30	54.00	9.70	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 71
Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54% Engineer : leo-Li
EUT : WIFI Module
Power supply : DC 5V
Test mode : IEEE802.11nHT40 CH46 5230MHz Tx
WAE22-DF01-AR



Site no. : 3m Chamber Data no. : 72
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT40 CH46 5230MHz Tx
 WAE22-DF01-AR

	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	38.18	12.69	35.43	39.78	55.22	74.00	18.78	Peak
2	38.18	12.69	35.43	29.83	45.27	54.00	8.73	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

5. BAND EDGE COMPLIANCE TEST

5.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4446A	US44300459	May.08, 13	1 Year
2.	Amp	HP	8449B	3008A08495	May.08, 13	1 Year
3.	Horn Antenna	EMCO	3115	9510-4580	May.28, 13	1 Year
4.	HF Cable	Hubersuhne	Sucoflex104	-	May.08, 13	1 Year

5.2. Limit

All the lower and upper band-edges emissions appearing within restricted frequency bands shall not exceed the limits shown in 15.209, all the emissions outside operation frequency band shall comply with 15.407(b)(1) requirement.

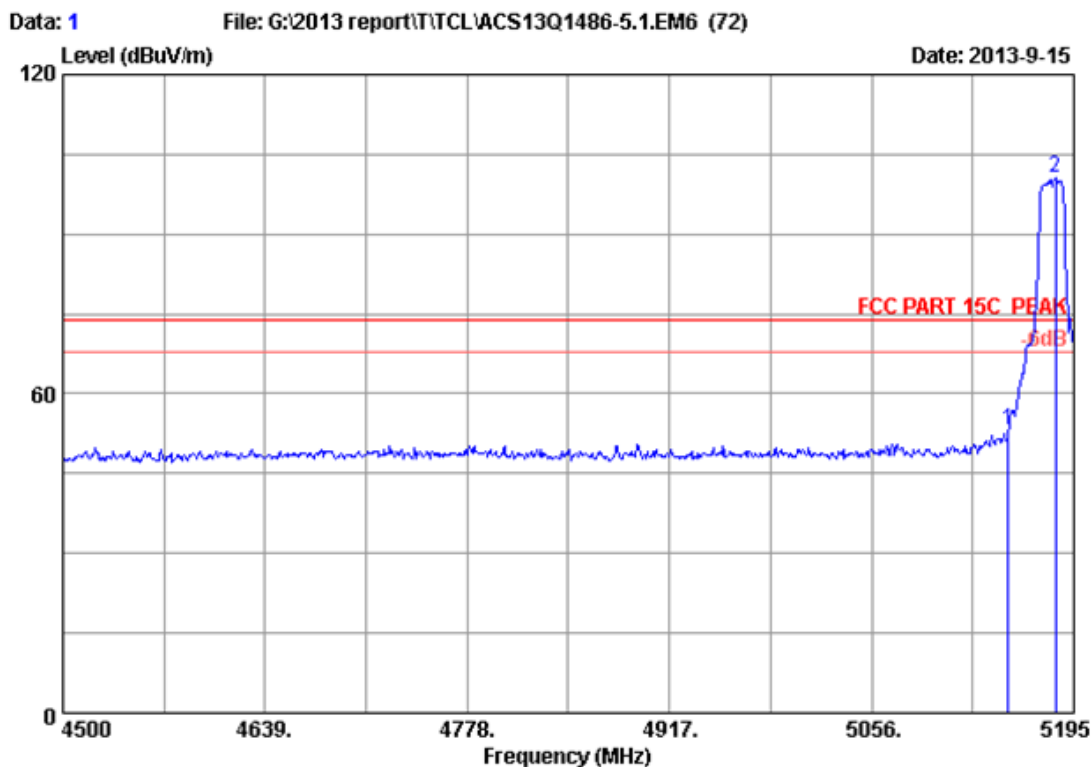
5.3. Test Procedure

1. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.
2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
 - (a) PEAK: RBW=1MHz; VBW=3MHz; Sweep=AUTO
 - (b) AVERAGE: RBW=1MHz; VBW=10Hz; Sweep=AUTO
5. The maximum emission at 3m distance was measured and recorded with receive antenna in both vertical and horizontal by rotating the turntable and by lowering the receive antenna.
6. The EUT was then removed and replaced with a substitution antenna in the same position and the substitution antenna must have the same polarization with the receive antenna.
7. A signal which have the same frequency obtained in step 2 was fed to the substitution, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver, the level of the signal generator was adjusted until the measured field strength level in step 2 was obtained, recorded the level of the signal generator.
8. Repeated step 4 with both antenna polarizations

9. The spurious emissions is equal to the power supplied by the signal generator and corrections due to the gain of the substitution antenna and the cable loss between the signal generator and the substitution antenna.

5.4. Test Results

Pass (The testing data was attached in the next pages.)

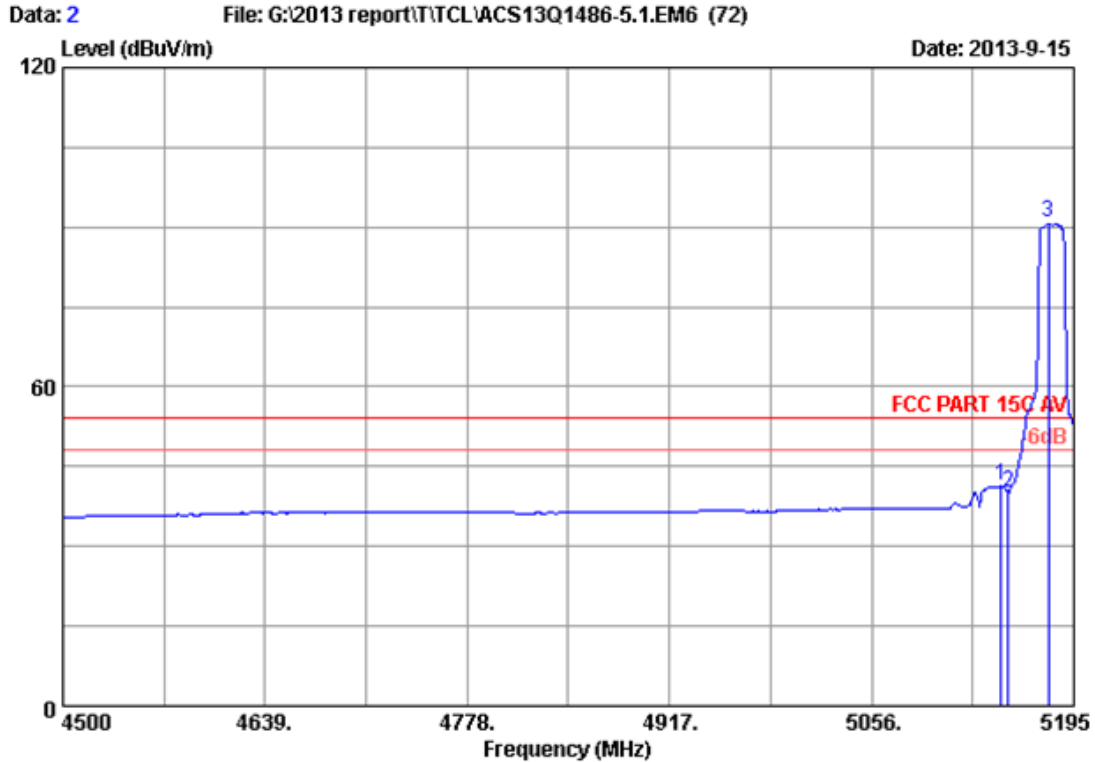


Site no. : 3m Chamber Data no. : 1
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11a CH36 5180MHz Tx
 WAE22-DF01-AR

	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	33.44	8.92	35.70	46.35	53.01	74.00	20.99	Peak
2	33.49	8.96	35.70	93.89	100.64	74.00	-26.64	Peak

Remarks:

- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.

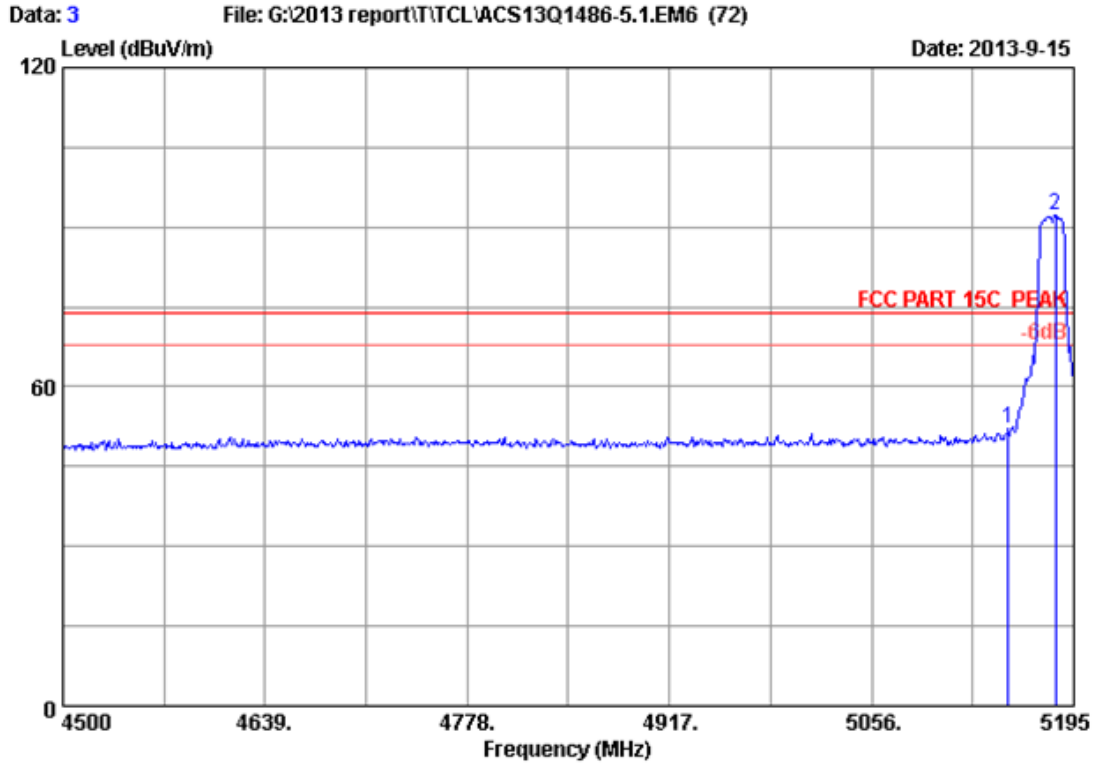


Site no. : 3m Chamber Data no. : 2
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11a CH36 5180MHz Tx
 WAE22-DF01-AR

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	5144.960	33.43	8.92	35.70	34.84	41.49	54.00	12.51	Average
2	5150.000	33.44	8.92	35.70	33.47	40.13	54.00	13.87	Average
3	5177.625	33.48	8.95	35.70	84.06	90.79	54.00	-36.79	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

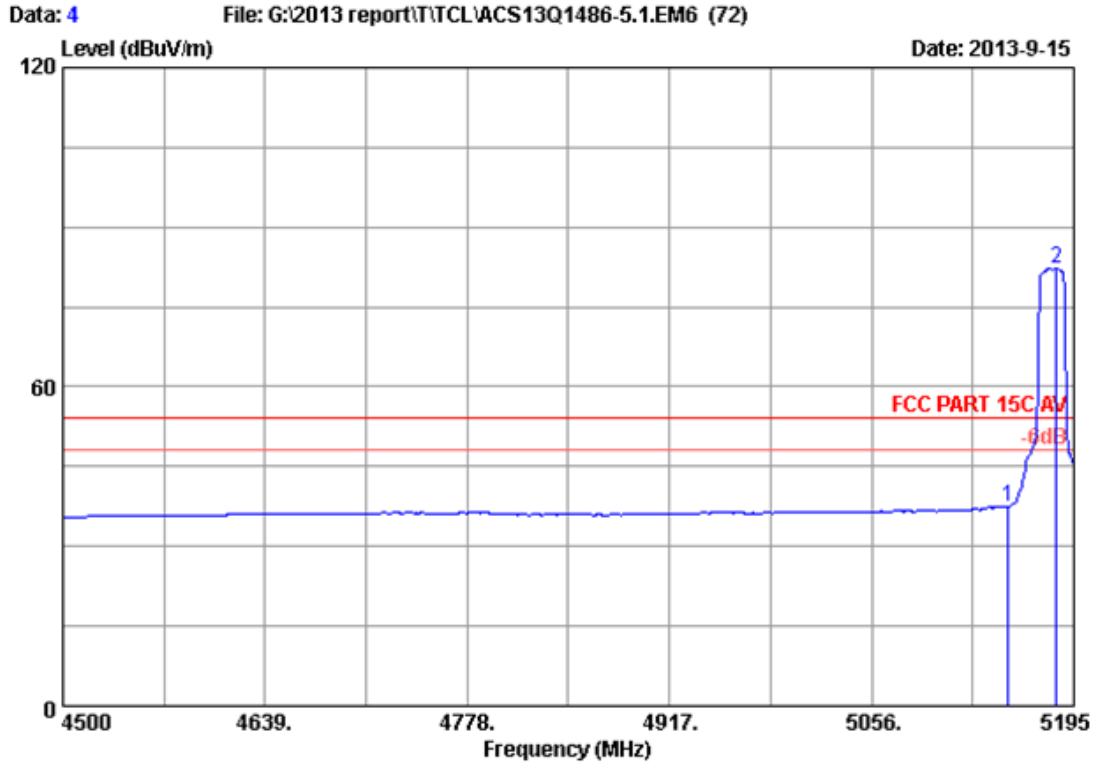


Site no. : 3m Chamber Data no. : 3
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11a CH36 5180MHz Tx
 WAE22-DF01-AR

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	5150.000	33.44	8.92	35.70	45.57	52.23	74.00	21.77	Peak
2	5182.490	33.49	8.96	35.70	85.53	92.28	74.00	-18.28	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

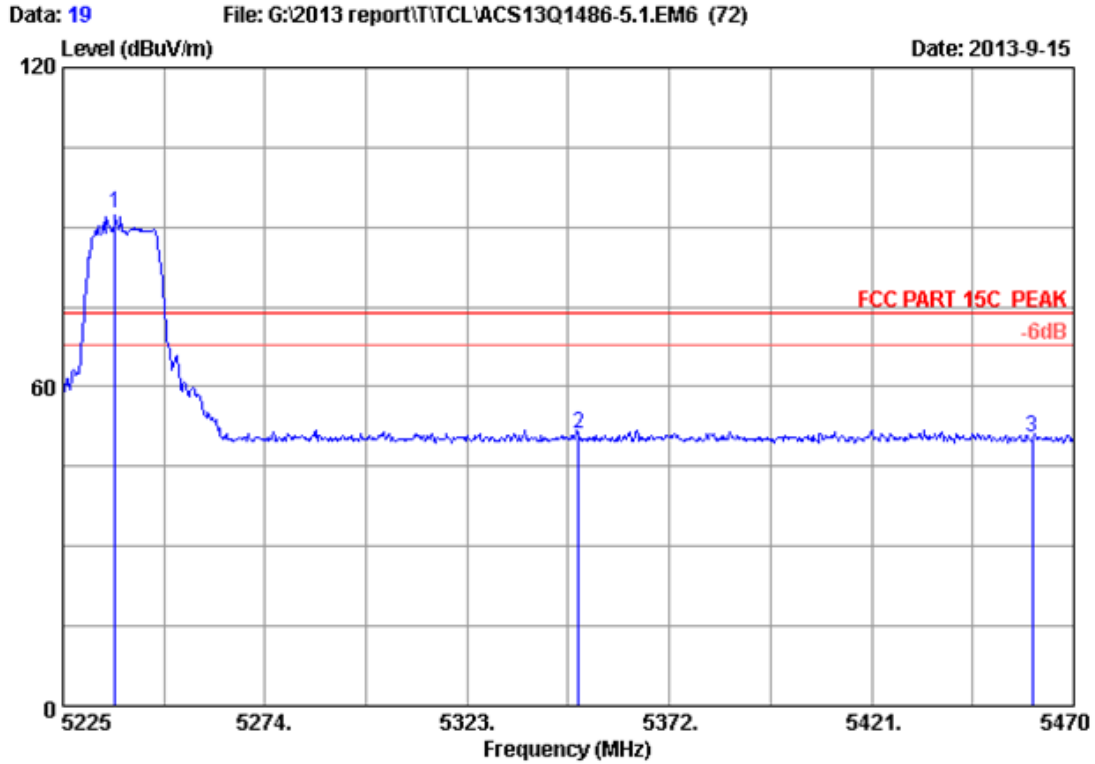


Site no. : 3m Chamber Data no. : 4
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11a CH36 5180MHz Tx
 WAE22-DF01-AR

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5150.000	33.44	8.92	35.70	30.88	37.54	54.00	16.46	Average
2	5183.185	33.49	8.96	35.70	75.60	82.35	54.00	-28.35	Average

Remarks:

- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.

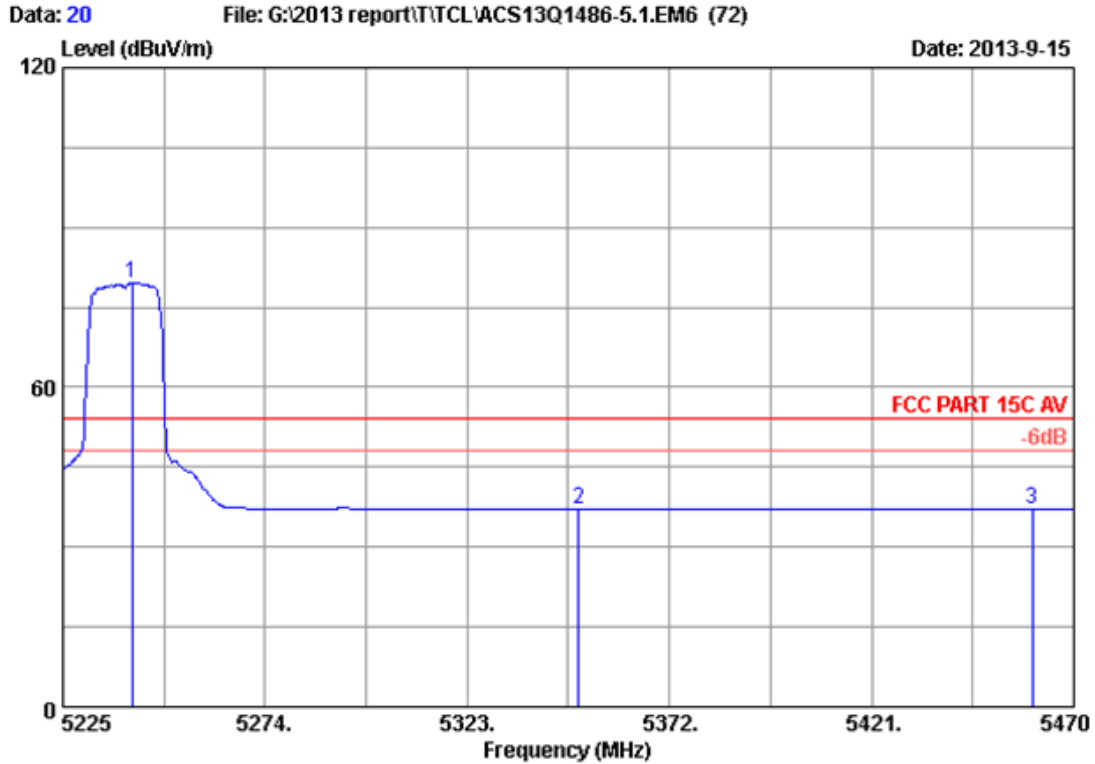


Site no. : 3m Chamber Data no. : 19
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11a CH48 5240MHz Tx
 WAE22-DF01-AR

	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	33.58	9.01	35.70	85.66	92.55	74.00	-18.55	Peak
2	33.76	9.13	35.70	43.98	51.17	74.00	22.83	Peak
3	33.94	9.25	35.70	42.83	50.32	74.00	23.68	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

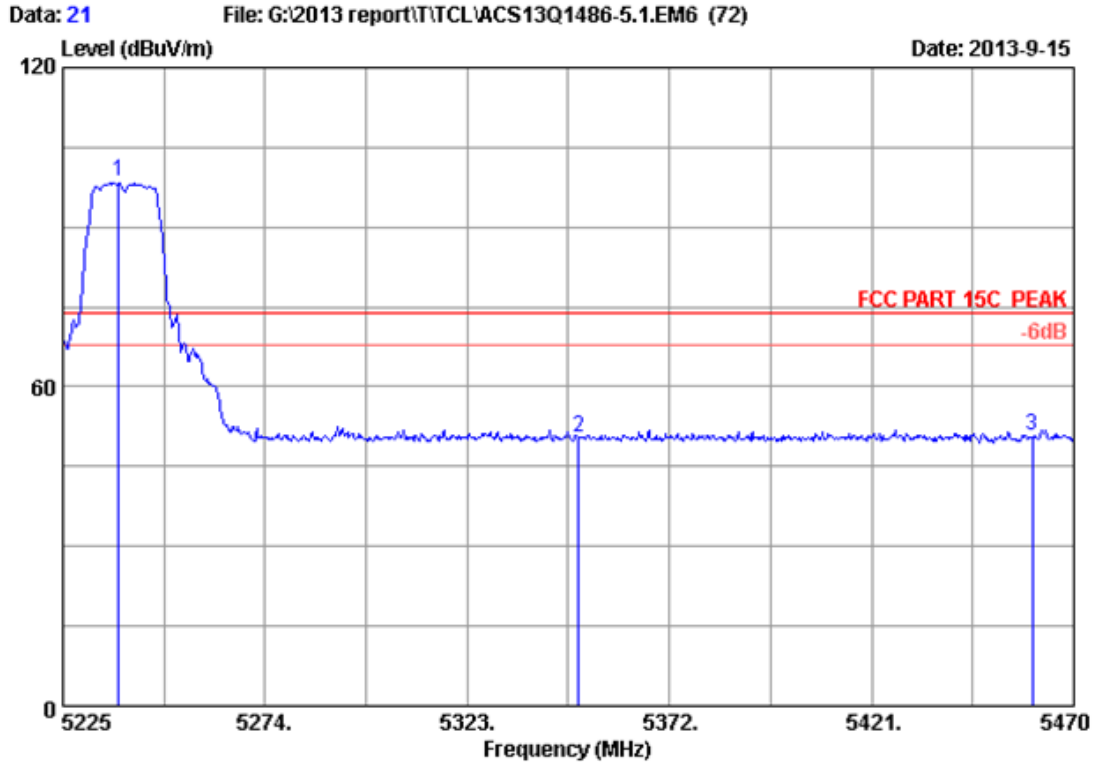


Site no. : 3m Chamber Data no. : 20
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11a CH48 5240MHz Tx
 WAE22-DF01-AR

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	5241.660	33.59	9.02	35.70	72.74	79.65	54.00	-25.65	Average
2	5350.000	33.76	9.13	35.70	30.07	37.26	54.00	16.74	Average
3	5460.000	33.94	9.25	35.70	29.78	37.27	54.00	16.73	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

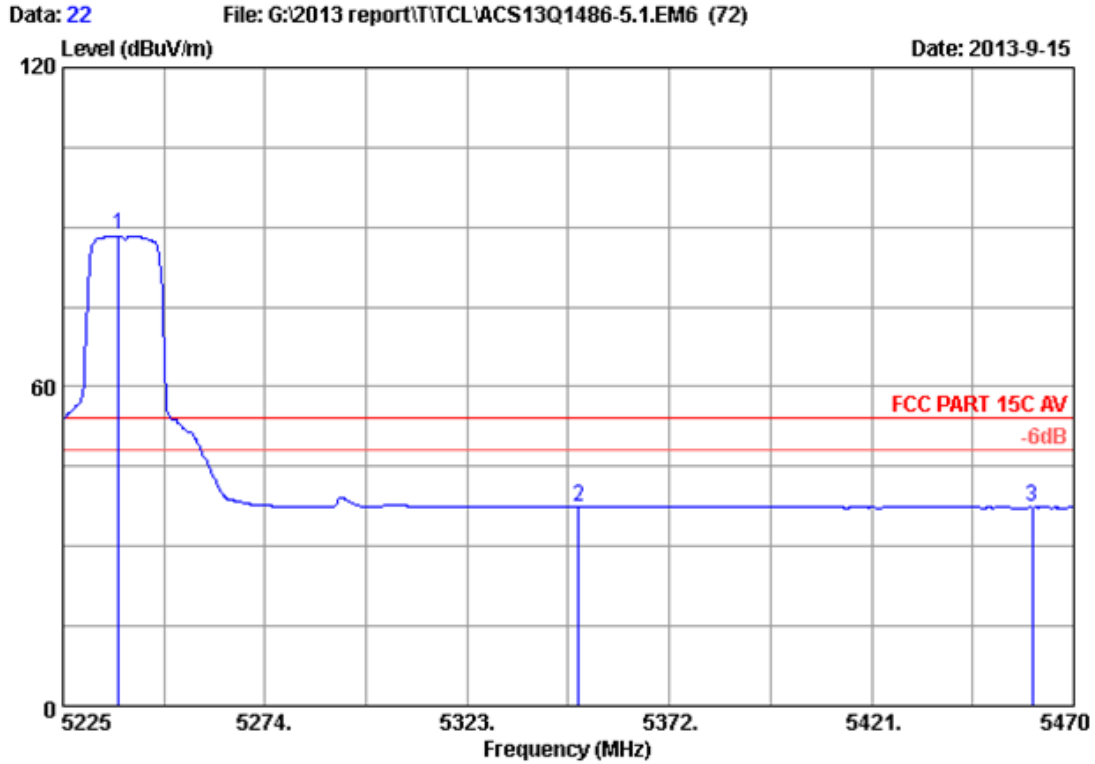


Site no. : 3m Chamber Data no. : 21
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11a CH48 5240MHz Tx
 WAE22-DF01-AR

	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Emission Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	33.58	9.01	35.70	91.62	98.51	74.00	-24.51	Peak
2	33.76	9.13	35.70	43.38	50.57	74.00	23.43	Peak
3	33.94	9.25	35.70	43.22	50.71	74.00	23.29	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

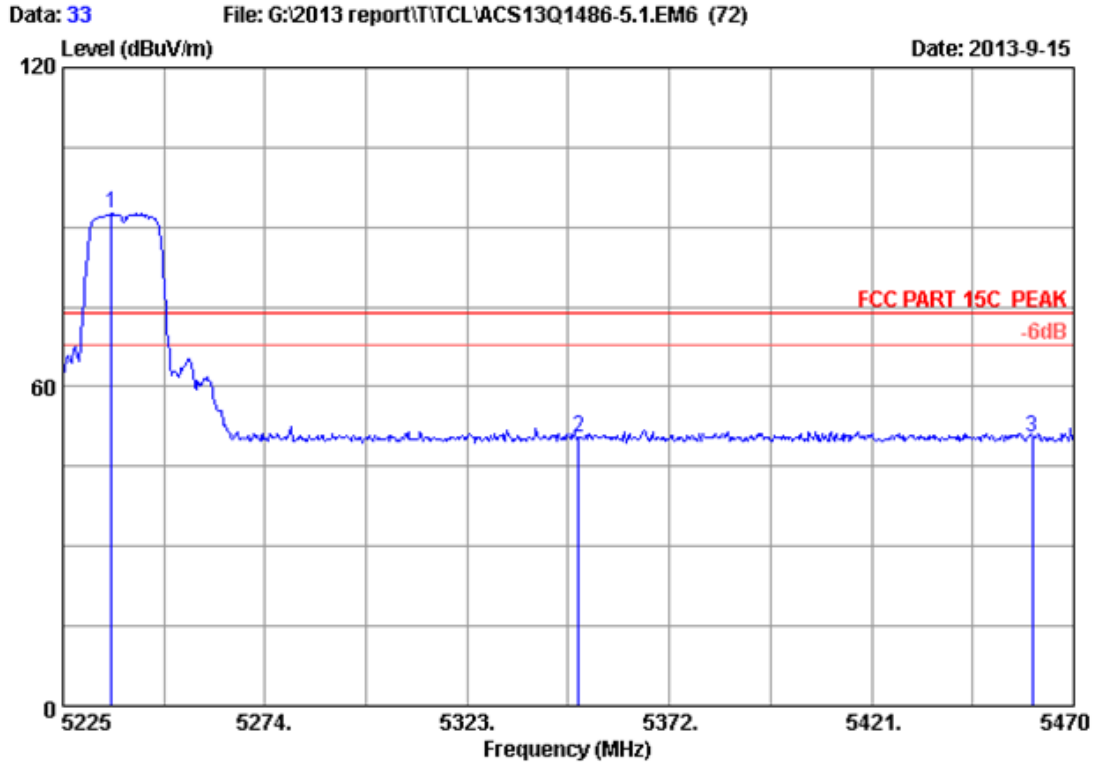


Site no. : 3m Chamber Data no. : 22
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11a CH48 5240MHz Tx
 WAE22-DF01-AR

	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	33.58	9.01	35.70	81.69	88.58	54.00	-34.58	Average
2	33.76	9.13	35.70	30.27	37.46	54.00	16.54	Average
3	33.94	9.25	35.70	29.94	37.43	54.00	16.57	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

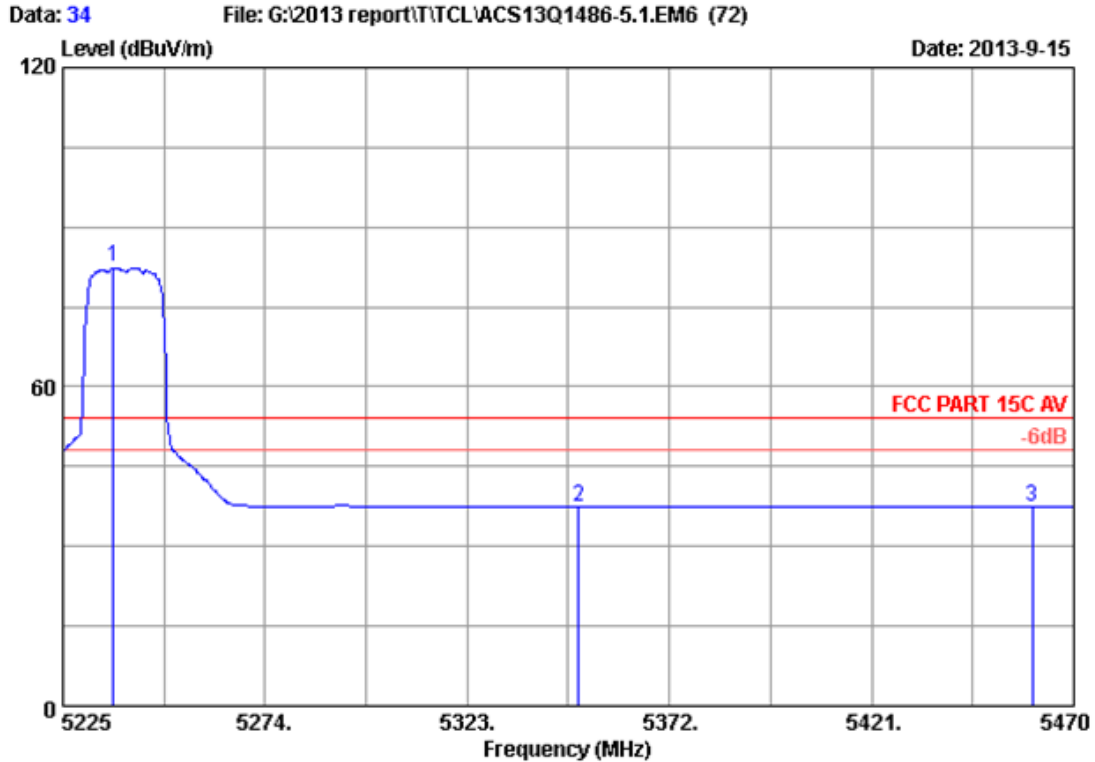


Site no. : 3m Chamber Data no. : 33
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT20 CH48 5240MHz Tx
 WAE22-DF01-AR

	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	33.58	9.01	35.70	85.79	92.68	74.00	-18.68	Peak
2	33.76	9.13	35.70	43.39	50.58	74.00	23.42	Peak
3	33.94	9.25	35.70	43.08	50.57	74.00	23.43	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

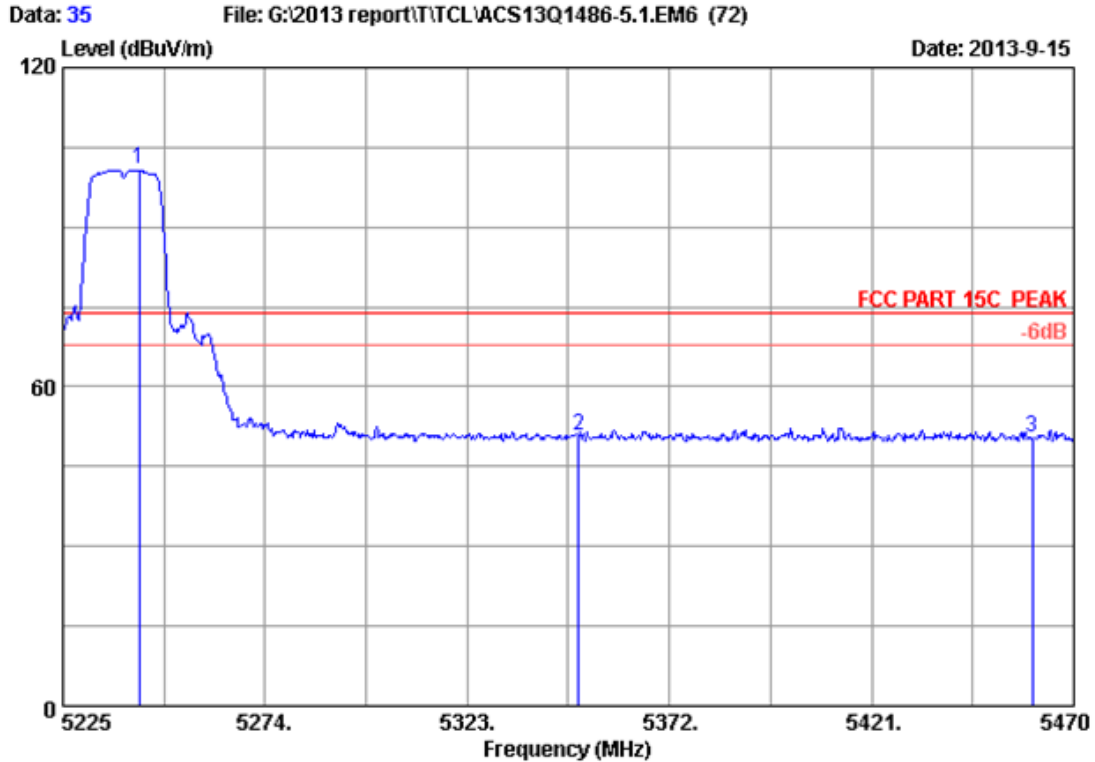


Site no. : 3m Chamber Data no. : 34
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT20 CH48 5240MHz Tx
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	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	33.58	9.01	35.70	75.59	82.48	54.00	-28.48	Average
2	33.76	9.13	35.70	30.36	37.55	54.00	16.45	Average
3	33.94	9.25	35.70	30.06	37.55	54.00	16.45	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

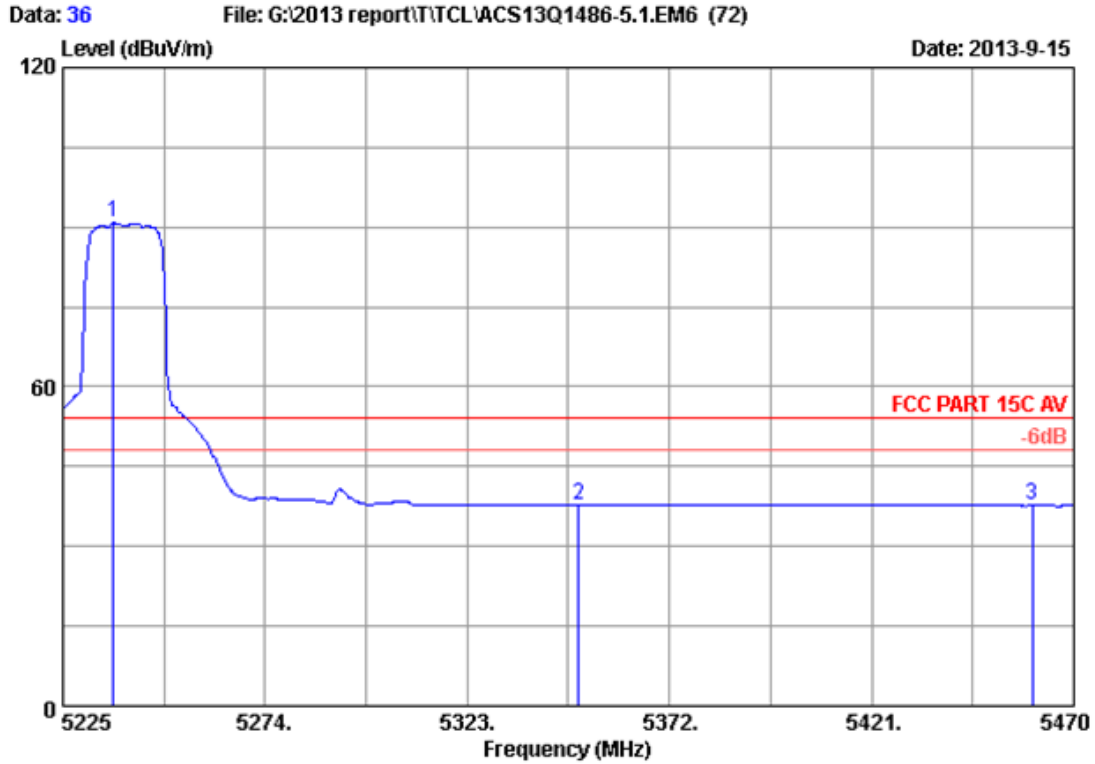


Site no. : 3m Chamber Data no. : 35
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT20 CH48 5240MHz Tx
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	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	33.59	9.02	35.70	94.04	100.95	74.00	-26.95	Peak
2	33.76	9.13	35.70	43.53	50.72	74.00	23.28	Peak
3	33.94	9.25	35.70	42.93	50.42	74.00	23.58	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

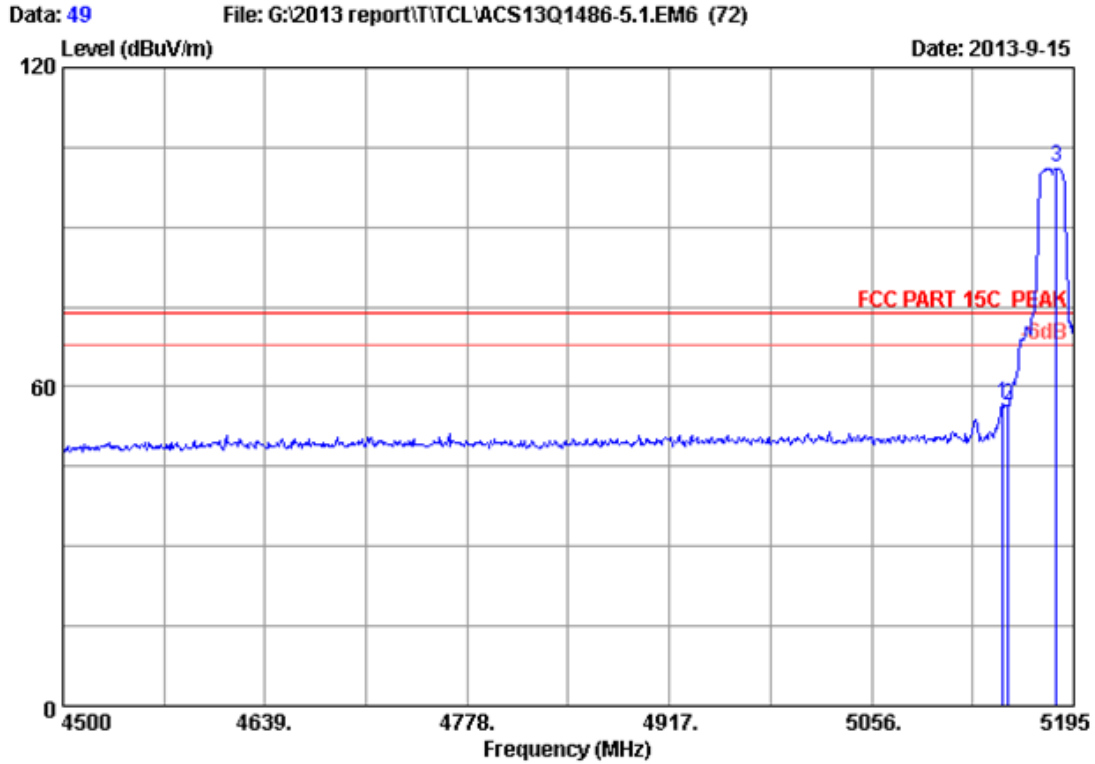


Site no. : 3m Chamber Data no. : 36
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT20 CH48 5240MHz Tx
 WAE22-DF01-AR

	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	33.58	9.01	35.70	84.05	90.94	54.00	-36.94	Average
2	33.76	9.13	35.70	30.67	37.86	54.00	16.14	Average
3	33.94	9.25	35.70	30.32	37.81	54.00	16.19	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

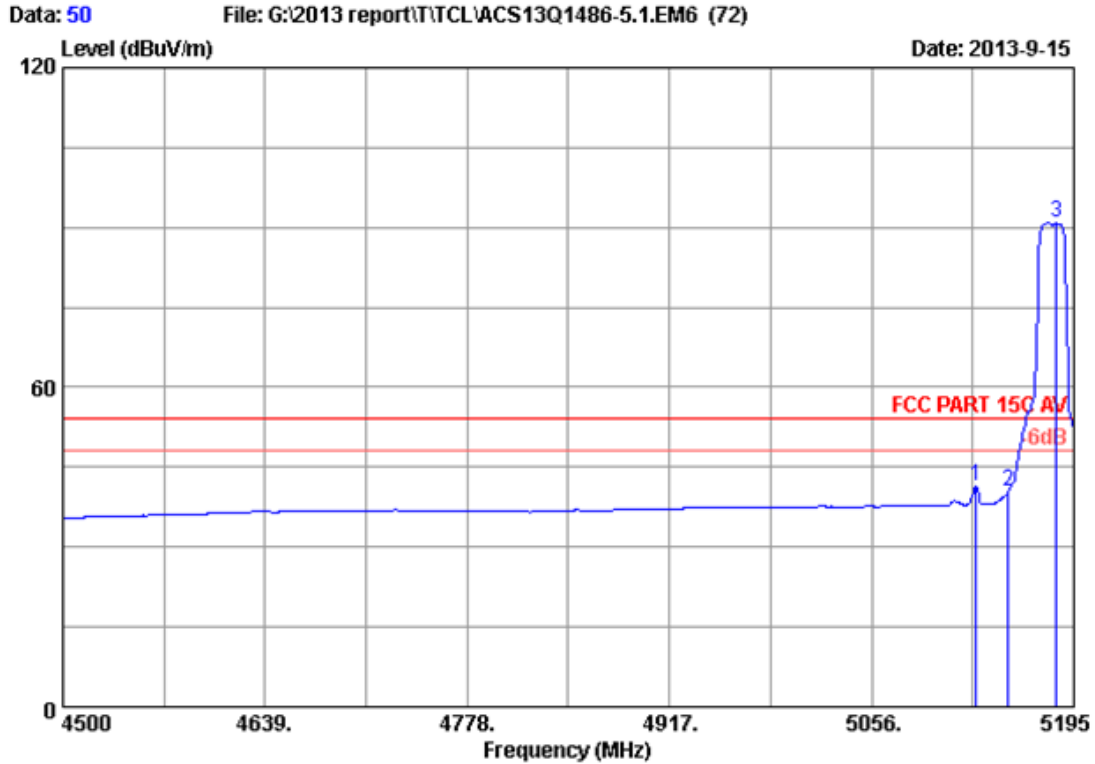


Site no. : 3m Chamber Data no. : 49
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT20 CH36 5180MHz Tx
 WAE22-DF01-AR

	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	33.43	8.92	35.70	50.25	56.90	74.00	17.10	Peak
2	33.44	8.92	35.70	49.90	56.56	74.00	17.44	Peak
3	33.49	8.96	35.70	94.52	101.27	74.00	-27.27	Peak

Remarks:

- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.

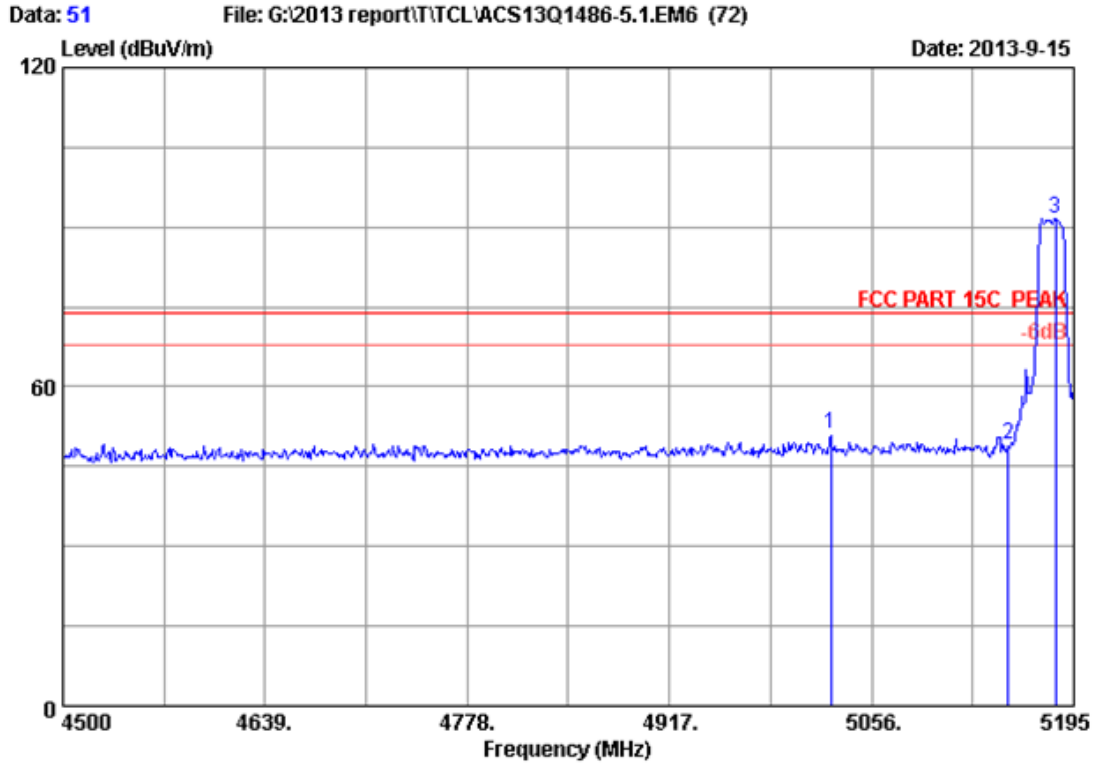


Site no. : 3m Chamber Data no. : 50
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT20 CH36 5180MHz Tx
 WAE22-DF01-AR

	Ant. Factor	Cable loss	Amp. Factor	Reading	Emission Level	Limits	Margin	Remark
Freq. (MHz)	(dB/m)	(dB)	(dB)	(dBUV)	(dBUV/m)	(dBUV/m)	(dB)	
1 5127.585	33.40	8.90	35.70	34.86	41.46	54.00	12.54	Average
2 5150.000	33.44	8.92	35.70	33.88	40.54	54.00	13.46	Average
3 5183.185	33.49	8.96	35.70	84.28	91.03	54.00	-37.03	Average

Remarks:

- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.

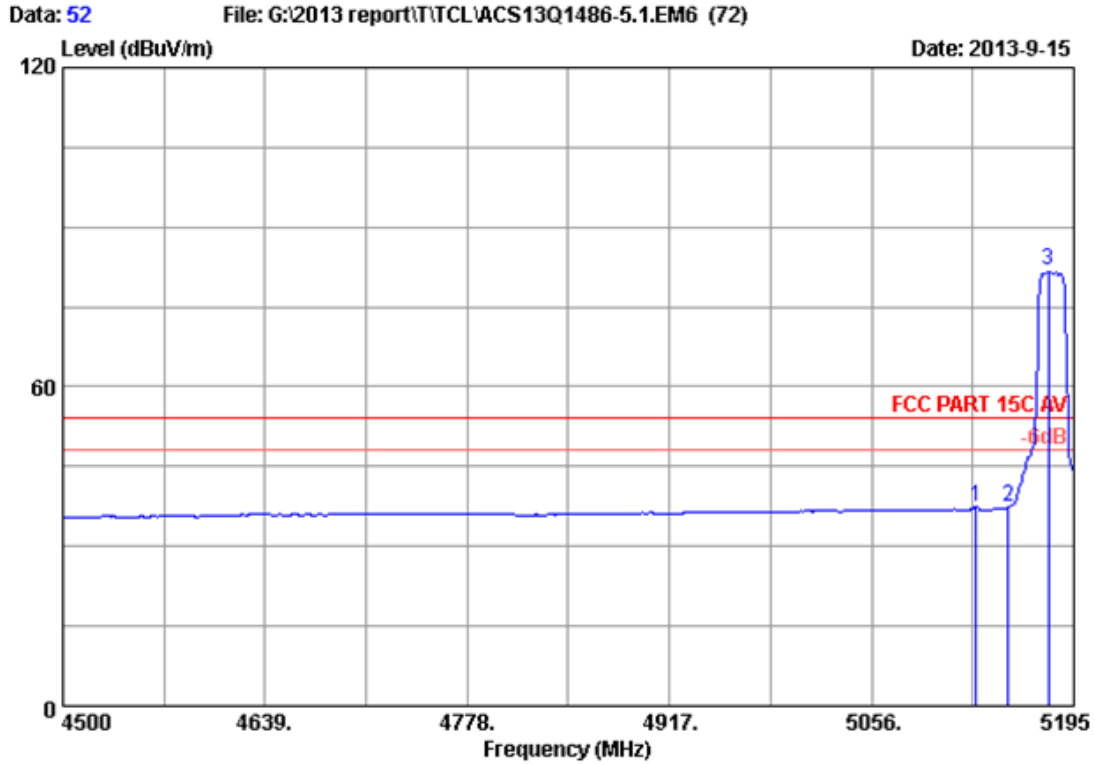


Site no. : 3m Chamber Data no. : 51
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT20 CH36 5180MHz Tx
 WAE22-DF01-AR

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5028.200	33.25	8.79	35.70	44.68	51.02	74.00	22.98	Peak
2	5150.000	33.44	8.92	35.70	42.46	49.12	74.00	24.88	Peak
3	5182.490	33.49	8.96	35.70	84.94	91.69	74.00	-17.69	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

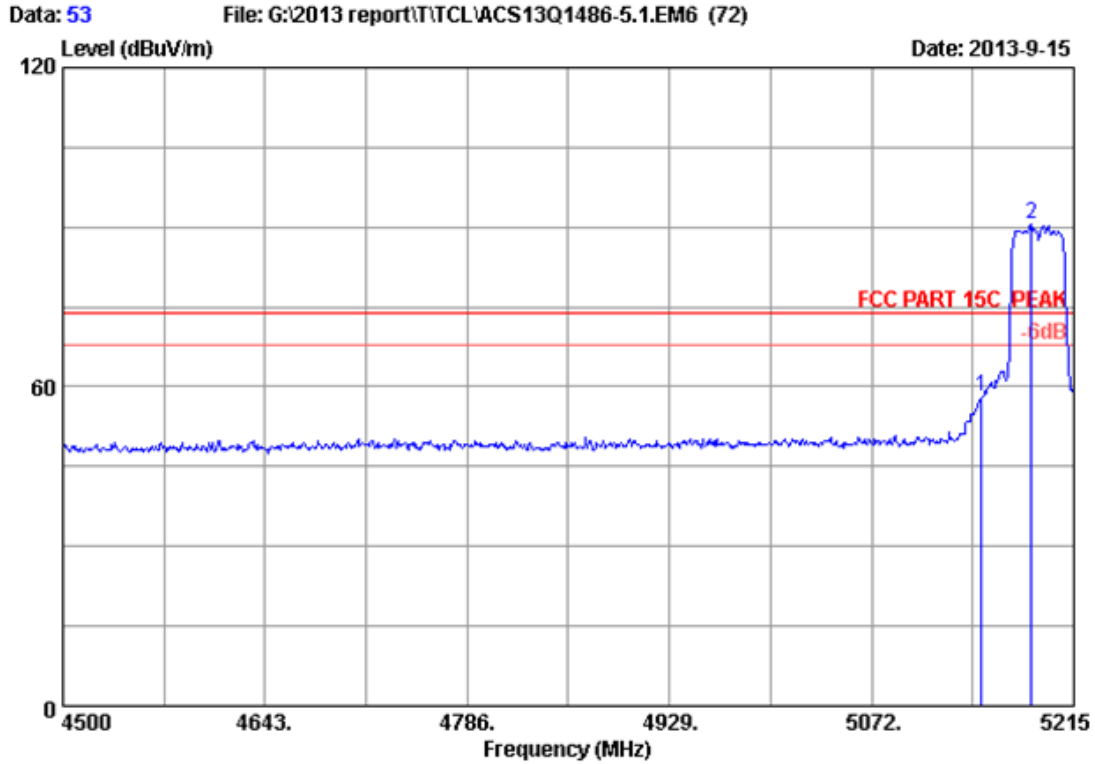


Site no. : 3m Chamber Data no. : 52
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT20 CH36 5180MHz Tx
 WAE22-DF01-AR

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5127.585	33.40	8.90	35.70	30.94	37.54	54.00	16.46	Average
2	5150.000	33.44	8.92	35.70	30.87	37.53	54.00	16.47	Average
3	5177.625	33.48	8.95	35.70	75.04	81.77	54.00	-27.77	Average

Remarks:

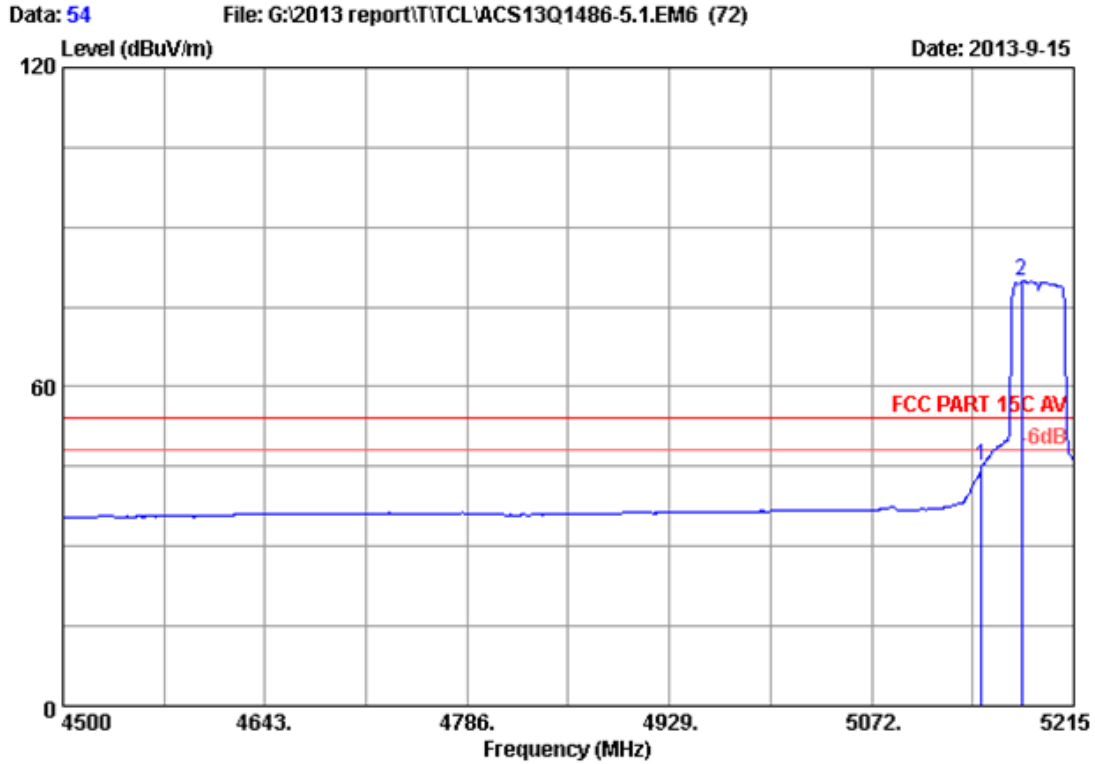
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 53
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT40 CH39 5190MHz Tx
 WAE22-DF01-AR

	Ant. Factor	Cable loss	Amp. Factor	Reading	Emission Level	Limits	Margin	Remark
Freq. (MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1 5150.000	33.44	8.92	35.70	51.44	58.10	74.00	15.90	Peak
2 5184.970	33.50	8.96	35.70	83.95	90.71	74.00	-16.71	Peak

Remarks:
 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

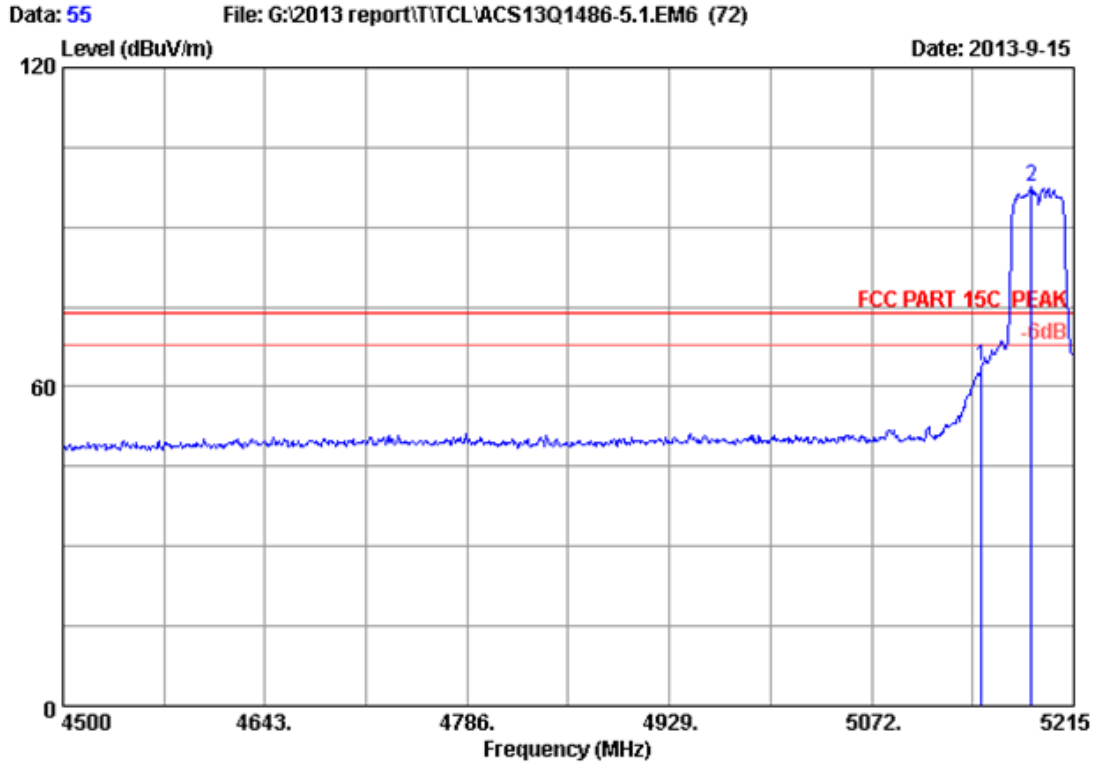


Site no. : 3m Chamber Data no. : 54
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT40 CH39 5190MHz Tx
 WAE22-DF01-AR

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5150.000	33.44	8.92	35.70	38.40	45.06	54.00	8.94	Average
2	5177.820	33.48	8.95	35.70	73.22	79.95	54.00	-25.95	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

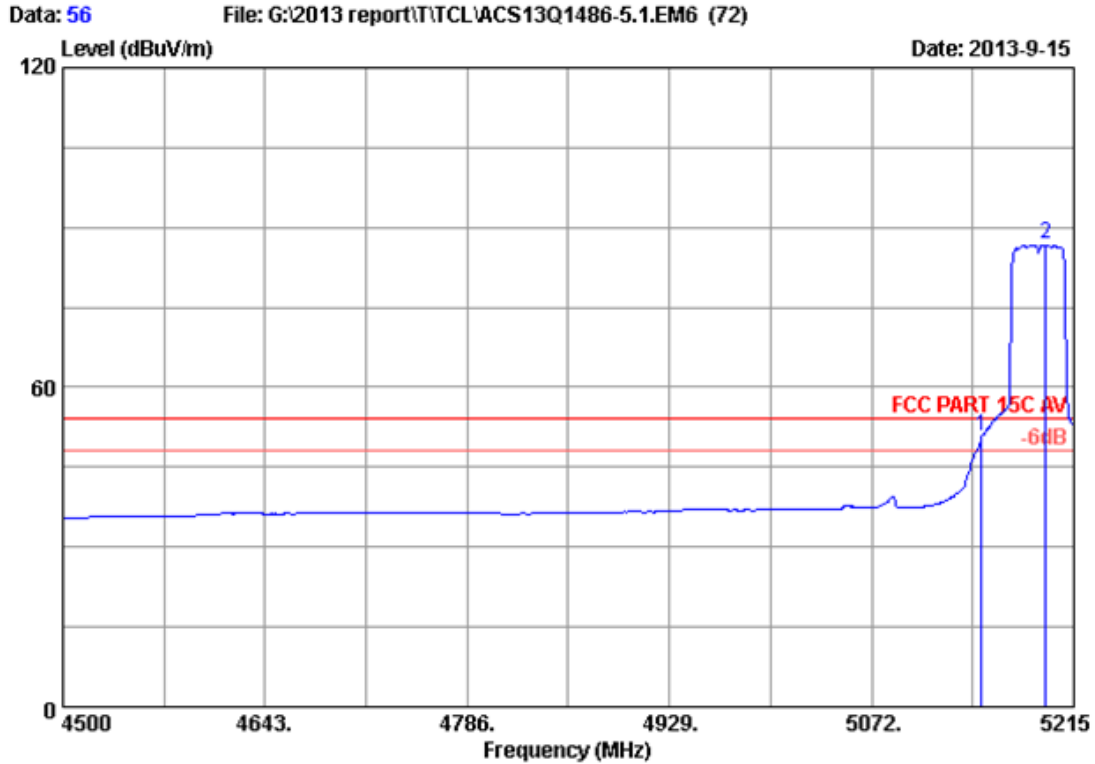


Site no. : 3m Chamber Data no. : 55
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT40 CH39 5190MHz Tx
 WAE22-DF01-AR

	Ant. Factor	Cable loss	Amp. Factor	Reading	Emission Level	Limits	Margin	Remark
Freq. (MHz)	(dB/m)	(dB)	(dB)	(dBUV)	(dBUV/m)	(dBUV/m)	(dB)	
1 5150.000	33.44	8.92	35.70	57.25	63.91	74.00	10.09	Peak
2 5184.970	33.50	8.96	35.70	90.98	97.74	74.00	-23.74	Peak

Remarks:

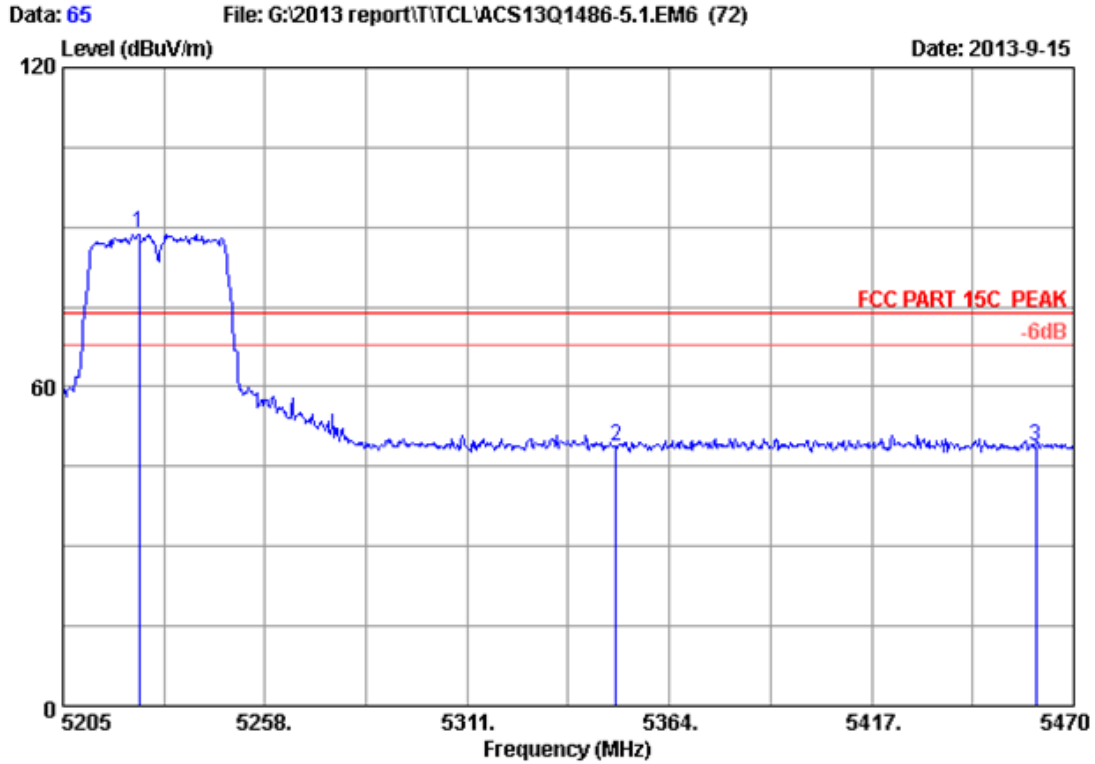
- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 56
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT40 CH39 5190MHz Tx
 WAE22-DF01-AR

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	5150.000	33.44	8.92	35.70	44.09	50.75	54.00	3.25	Average
2	5194.980	33.51	8.97	35.70	80.06	86.84	54.00	-32.84	Average

Remarks:
 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

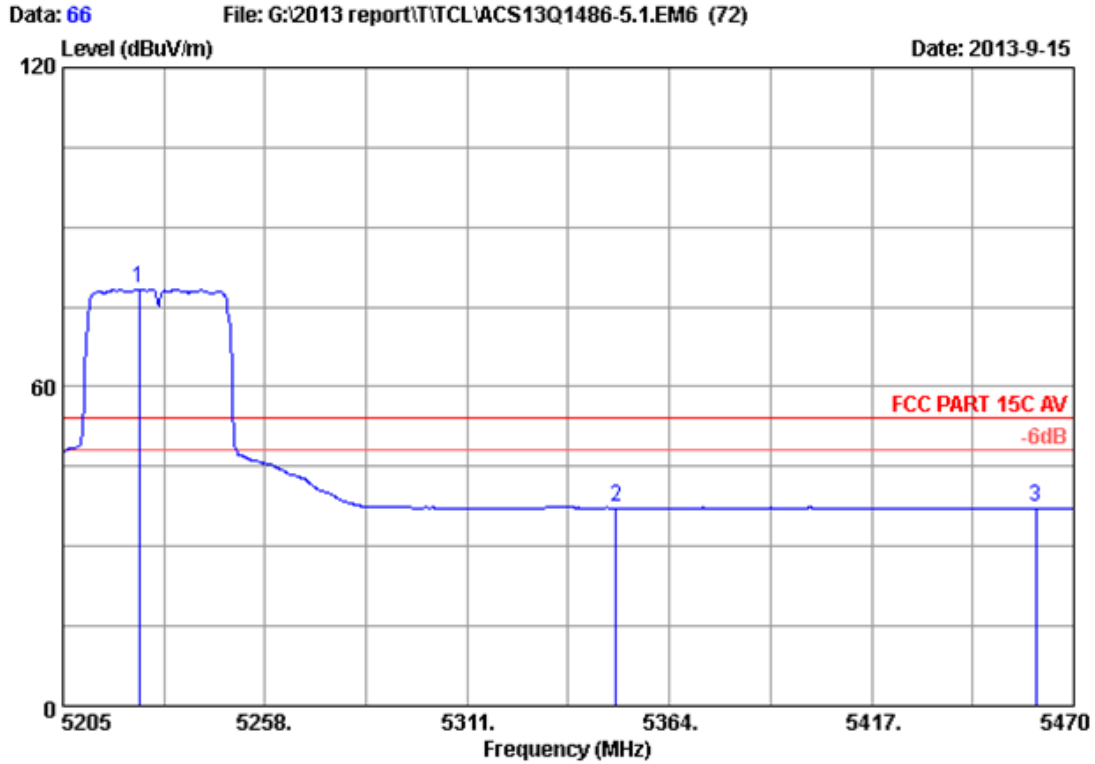


Site no. : 3m Chamber Data no. : 65
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT40 CH46 5230MHz Tx
 WAE22-DF01-AR

	Ant. Factor	Cable loss	Amp. Factor	Reading	Emission Level	Limits	Margin	Remark
Freq. (MHz)	(dB/m)	(dB)	(dB)	(dBUV)	(dBUV/m)	(dBUV/m)	(dB)	
1 5224.875	33.56	9.00	35.70	82.03	88.89	74.00	-14.89	Peak
2 5350.000	33.76	9.13	35.70	41.65	48.84	74.00	25.16	Peak
3 5460.000	33.94	9.25	35.70	41.30	48.79	74.00	25.21	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

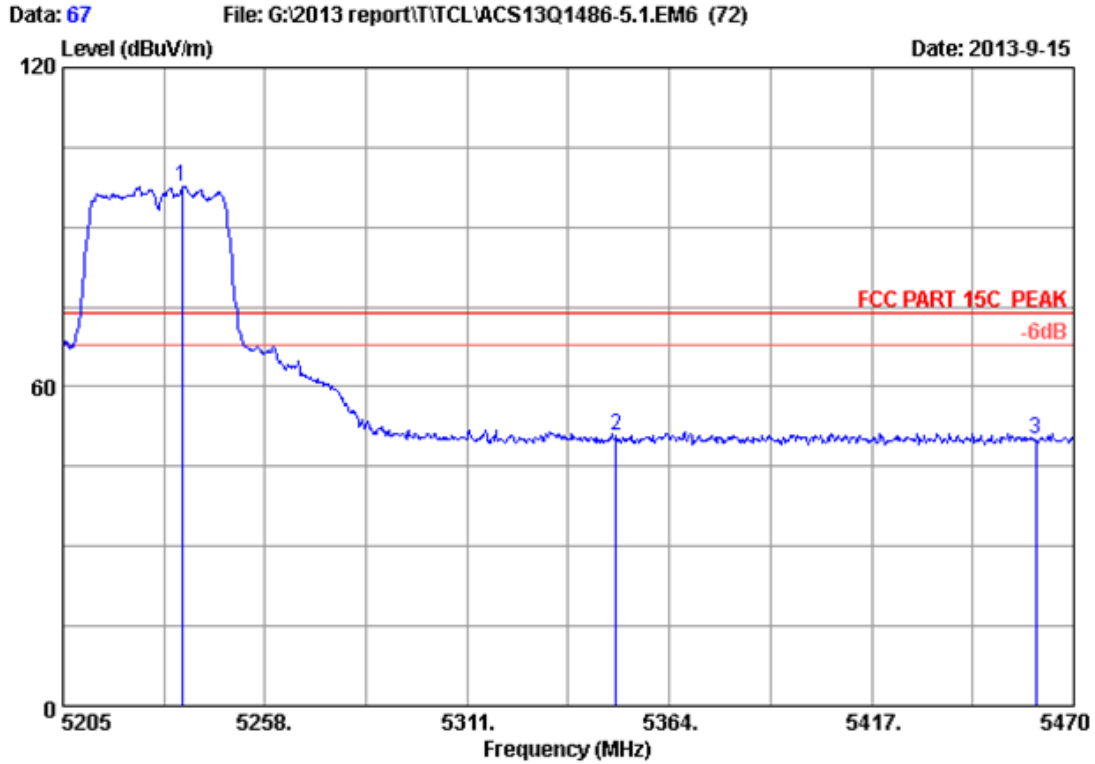


Site no. : 3m Chamber Data no. : 66
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT40 CH46 5230MHz Tx
 WAE22-DF01-AR

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5224.875	33.56	9.00	35.70	71.58	78.44	54.00	-24.44	Average
2	5350.000	33.76	9.13	35.70	30.21	37.40	54.00	16.60	Average
3	5460.000	33.94	9.25	35.70	29.82	37.31	54.00	16.69	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

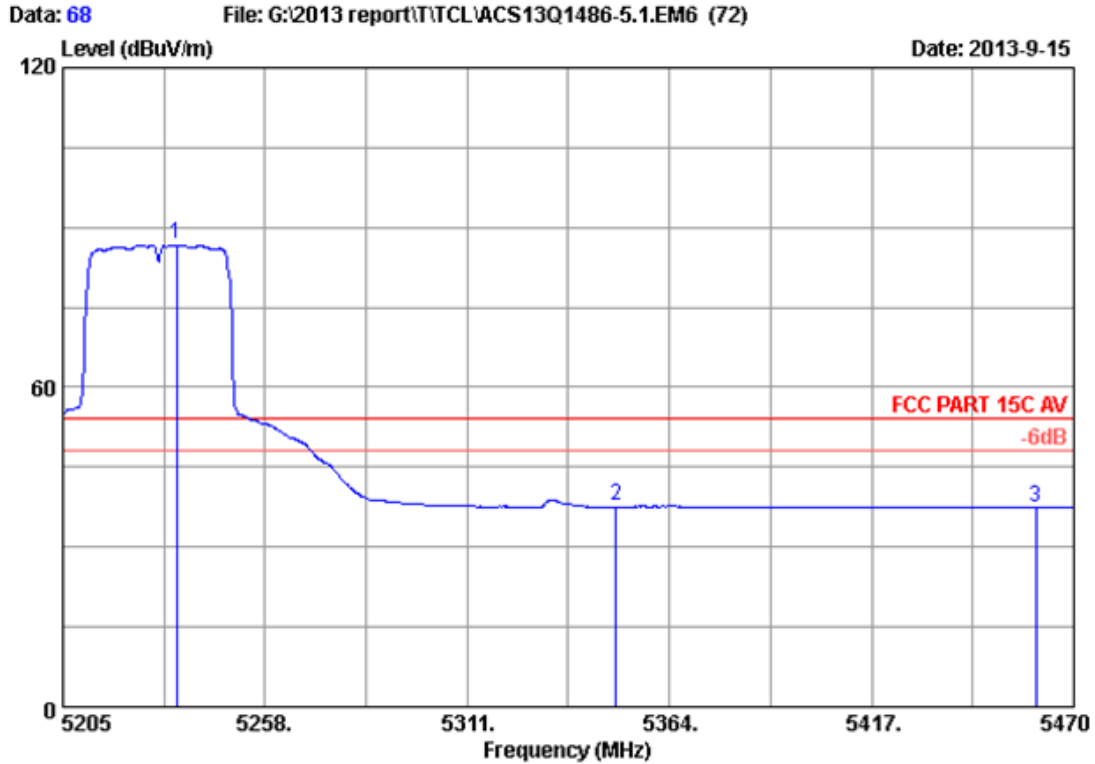


Site no. : 3m Chamber Data no. : 67
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT40 CH46 5230MHz Tx
 WAE22-DF01-AR

	Ant. Factor	Cable loss	Amp. Factor	Reading	Emission Level	Limits	Margin	Remark
Freq. (MHz)	(dB/m)	(dB)	(dB)	(dBUV)	(dBUV/m)	(dBUV/m)	(dB)	
1 5236.270	33.58	9.01	35.70	90.86	97.75	74.00	-23.75	Peak
2 5350.000	33.76	9.13	35.70	43.78	50.97	74.00	23.03	Peak
3 5460.000	33.94	9.25	35.70	42.79	50.28	74.00	23.72	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 68
 Dis. / Ant. : 3m 2013 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23°C/54% Engineer : leo-Li
 EUT : WIFI Module
 Power supply : DC 5V
 Test mode : IEEE802.11nHT40 CH46 5230MHz Tx
 WAE22-DF01-AR

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	5234.680	33.58	9.01	35.70	79.95	86.84	54.00	-32.84	Average
2	5350.000	33.76	9.13	35.70	30.48	37.67	54.00	16.33	Average
3	5460.000	33.94	9.25	35.70	30.09	37.58	54.00	16.42	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

6. 20dB & 26dB Bandwidth Test

6.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Oct.31, 12	1 Year
2.	Horn Antenna	EMCO	3115	9510-4580	May.28, 13	1 Year
3.	HF Cable	Hubersuhner	Sucoflex104	-	May.08, 13	1 Year

6.2. Limit

No limit

6.3. Test Procedure

The transmitter output was connected to a spectrum analyzer, The bandwidth of the fundamental frequency was measured by spectrum analyzer with 300kHz RBW and 1 MHz VBW. The 26dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 26dB.

6.4. Test Results

20dB bandwidth

EUT: WIFI Module		
M/N: WAE22-DF01-AR		
Test date: 2013-09-14	Pressure: 101.1±1.0 kpa	Humidity:52.7±3.0%
Tested by: Kevin_Hu	Test site: RF site	Temperature:21.4±0.6 °C

Cable loss: 1 dB		Attenuator loss: 20 dB		
Test Mode	Frequency (MHz)	20dB bandwidth (MHz)		Limit (KHz)
		Chain 0	Chain 1	
11a	5180	18.28	18.15	N/A
	5200	18.42	18.33	N/A
	5240	18.45	18.28	N/A
11n HT20	5180	18.77	18.92	N/A
	5200	18.95	18.8	N/A
	5240	18.86	18.81	N/A
11n HT40	5190	37.80	38.59	N/A
	5230	38.14	38.28	N/A
Conclusion : PASS				

26dB bandwidth

EUT:WIFI Module		
M/N:WAE22-DF01-AR		
Test date: 2013-09-14	Pressure: 101.2±1.0 kpa	Humidity:52.6±3.0%
Tested by: Kevin_Hu	Test site: RF site	Temperature:23.4±0.6 °C

Cable loss: 1 dB		Attenuator loss: 20 dB		
Test Mode	Frequency (MHz)	26dB bandwidth (MHz)		Limit (KHz)
		Chain 0	Chain 1	
11a	5180	21.17	20.98	N/A
	5200	19.29	19.96	N/A
	5240	19.23	19.55	N/A
11n HT20	5180	19.67	19.82	N/A
	5200	20.14	20.19	N/A
	5240	19.86	19.93	N/A
11n HT40	5190	40.05	40.5	N/A
	5230	39.8	40.07	N/A
Conclusion : PASS				

20dB bandwidth:

ANT 0

11a

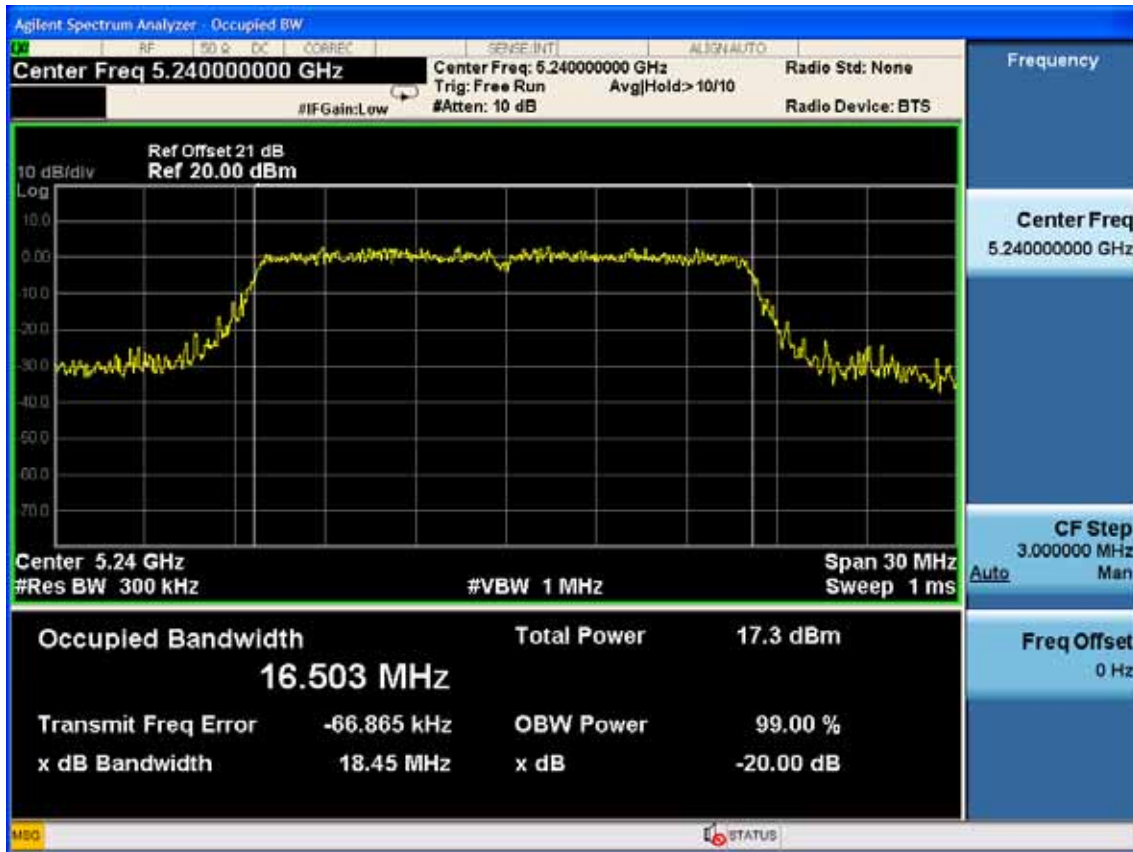
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5200MHz

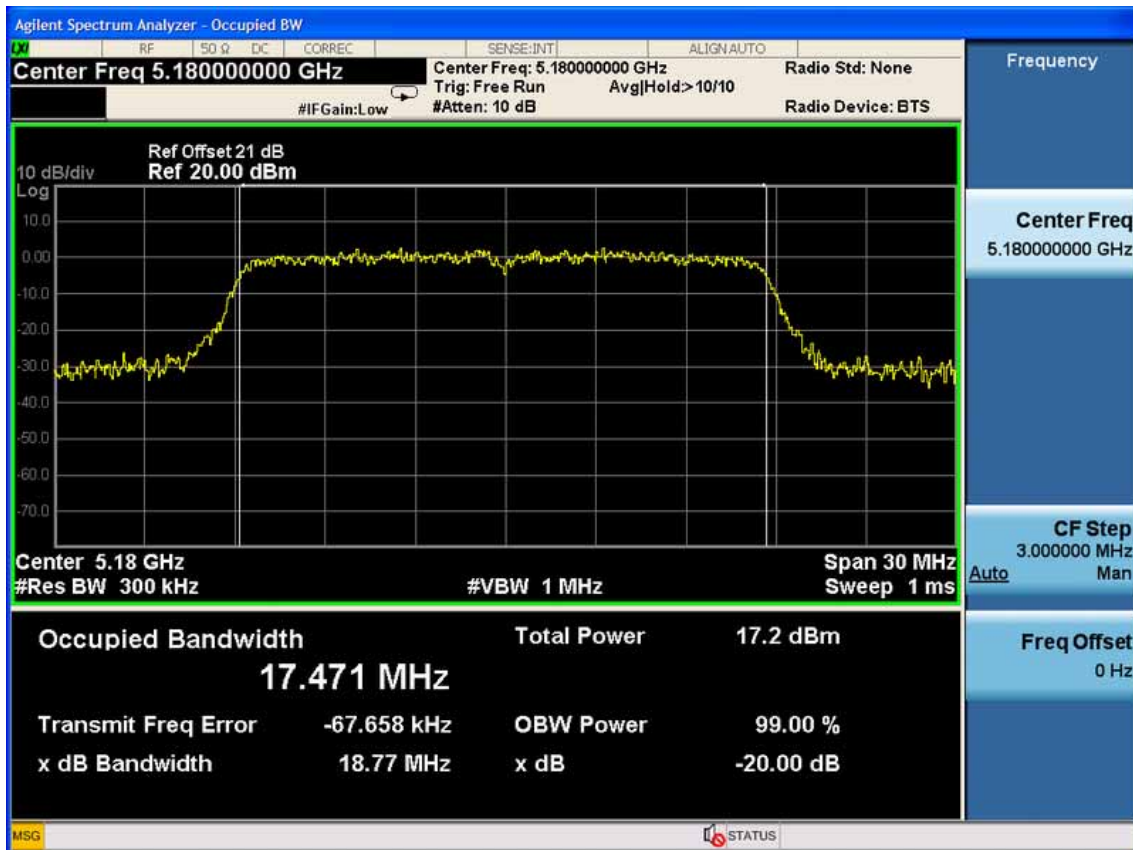


5240MHz

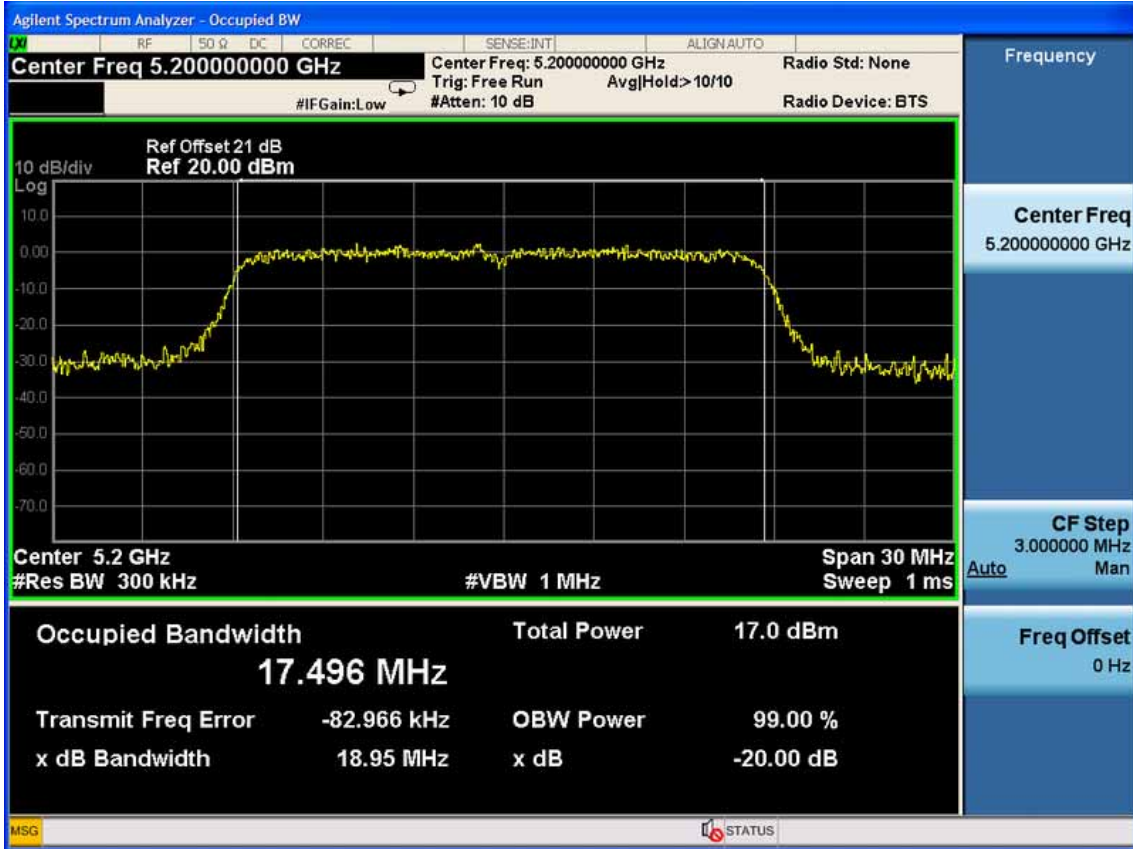


HT20

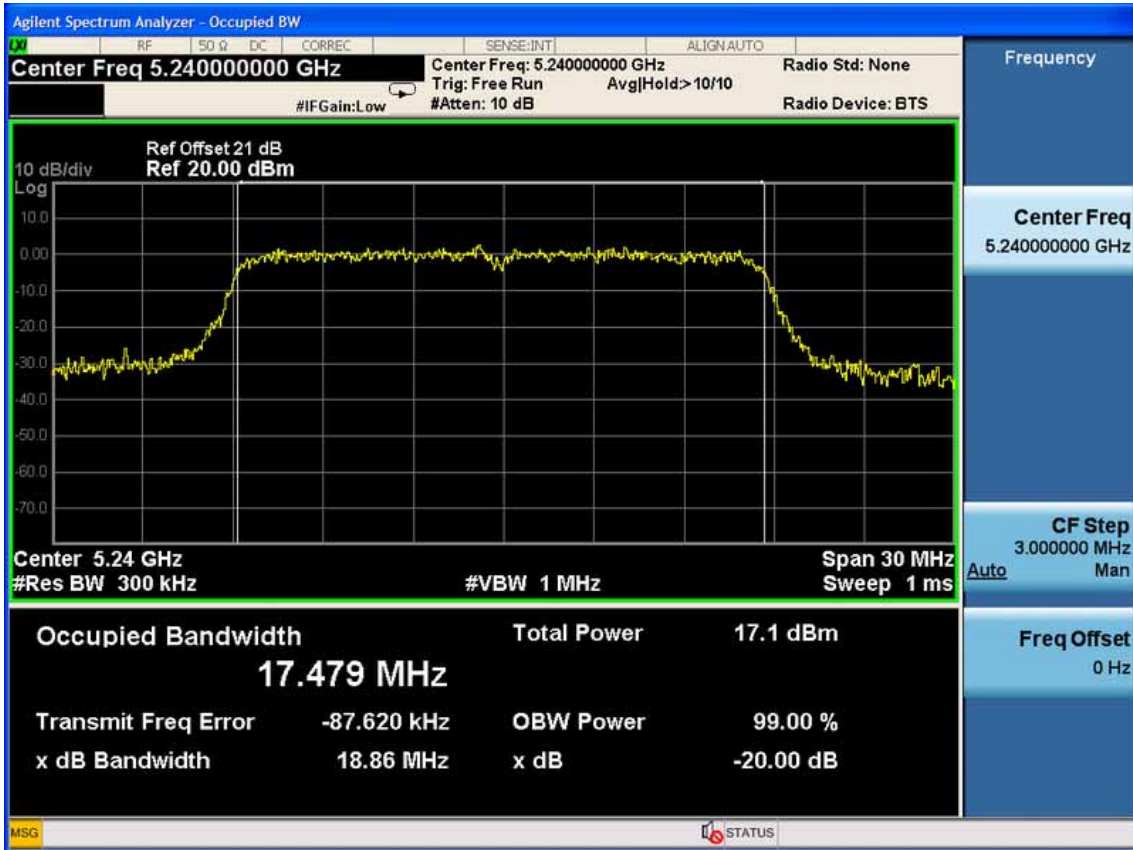
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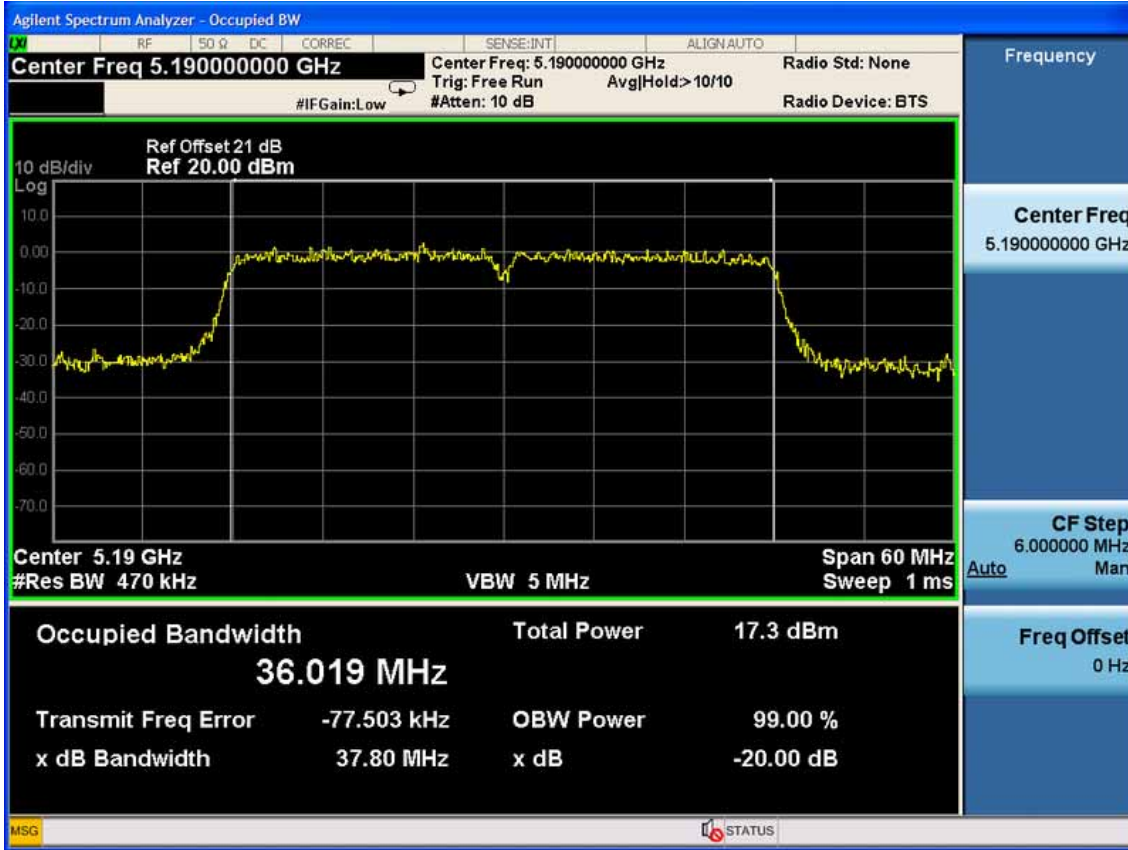
5210MHz



5240MHz



HT40
5190MHz



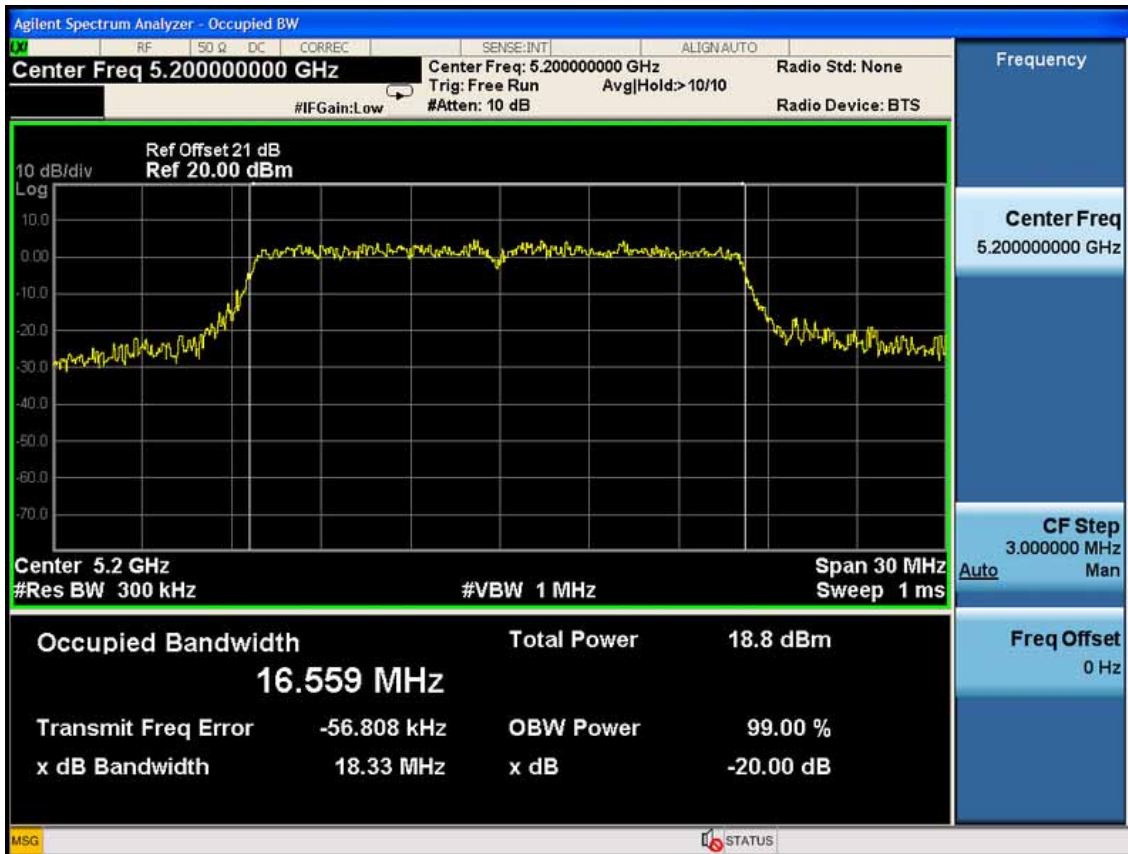
5230MHz



ANT 1
11a
5180MHz



5200MHz

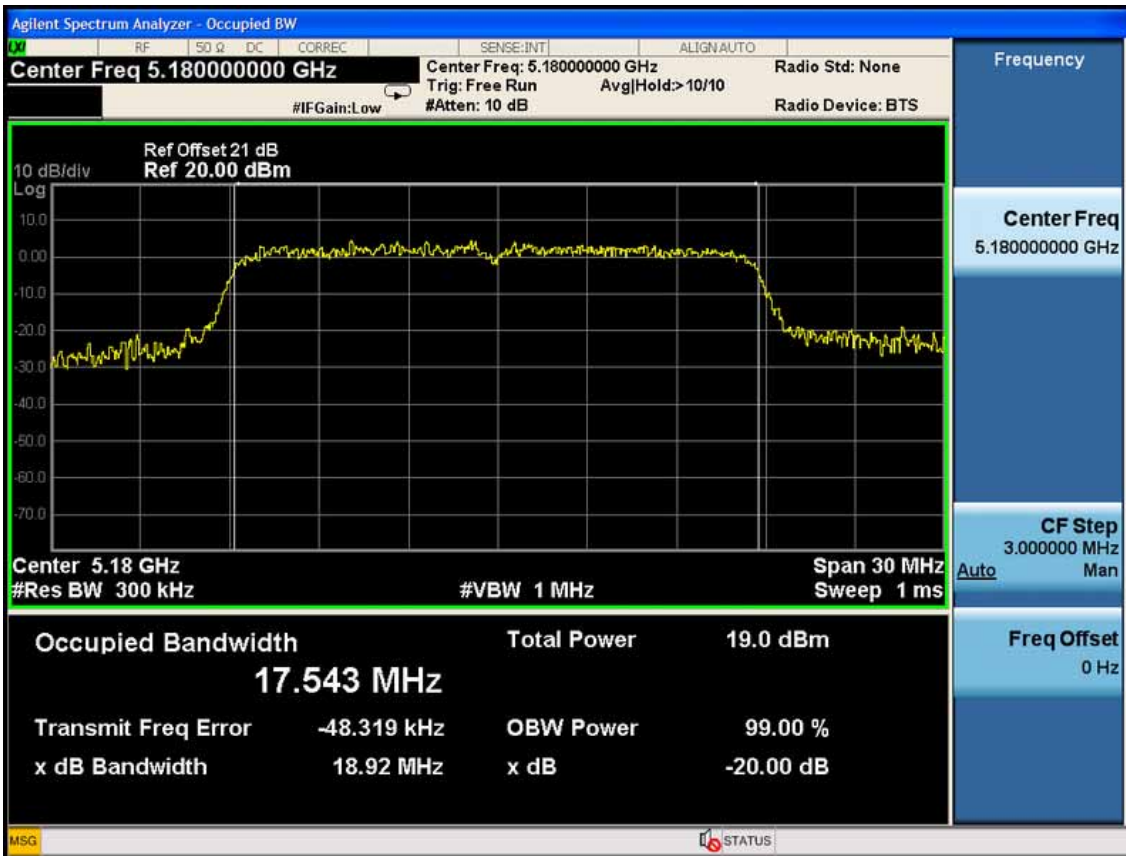


5240MHz

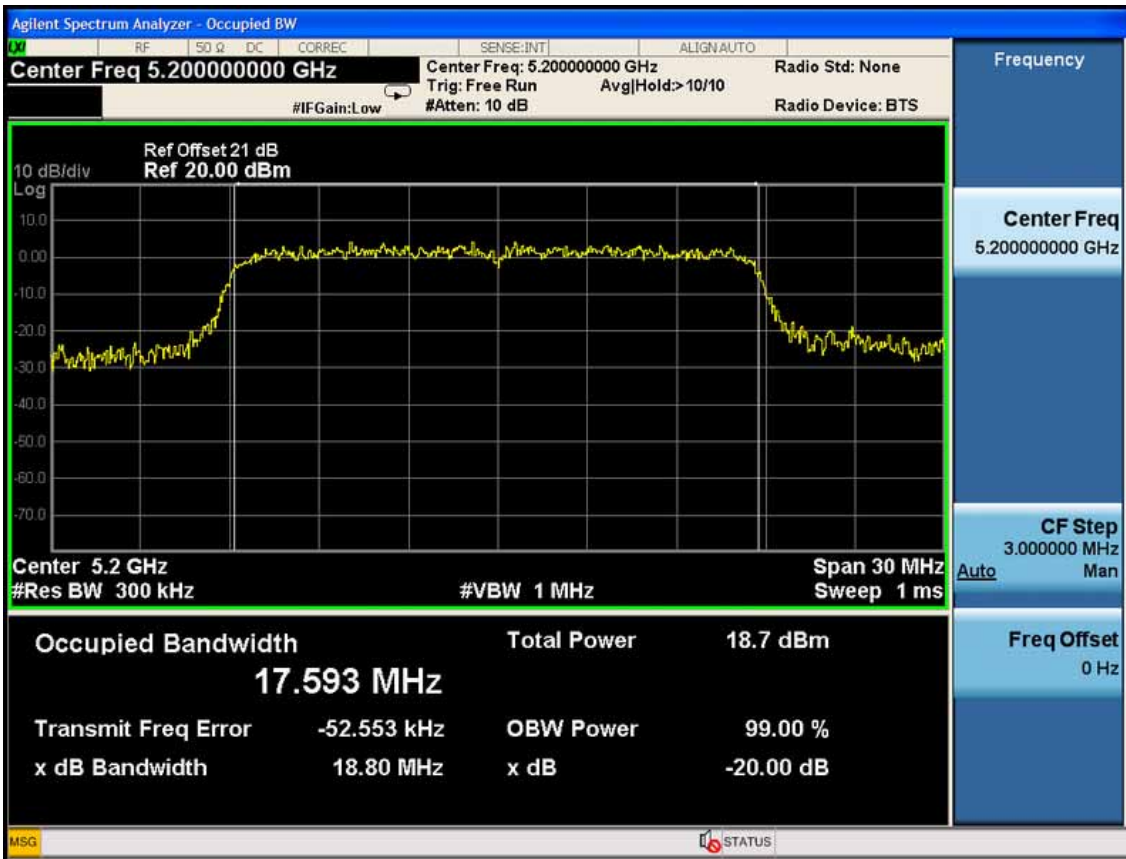


11n HT20

5180MHz



5200MHz



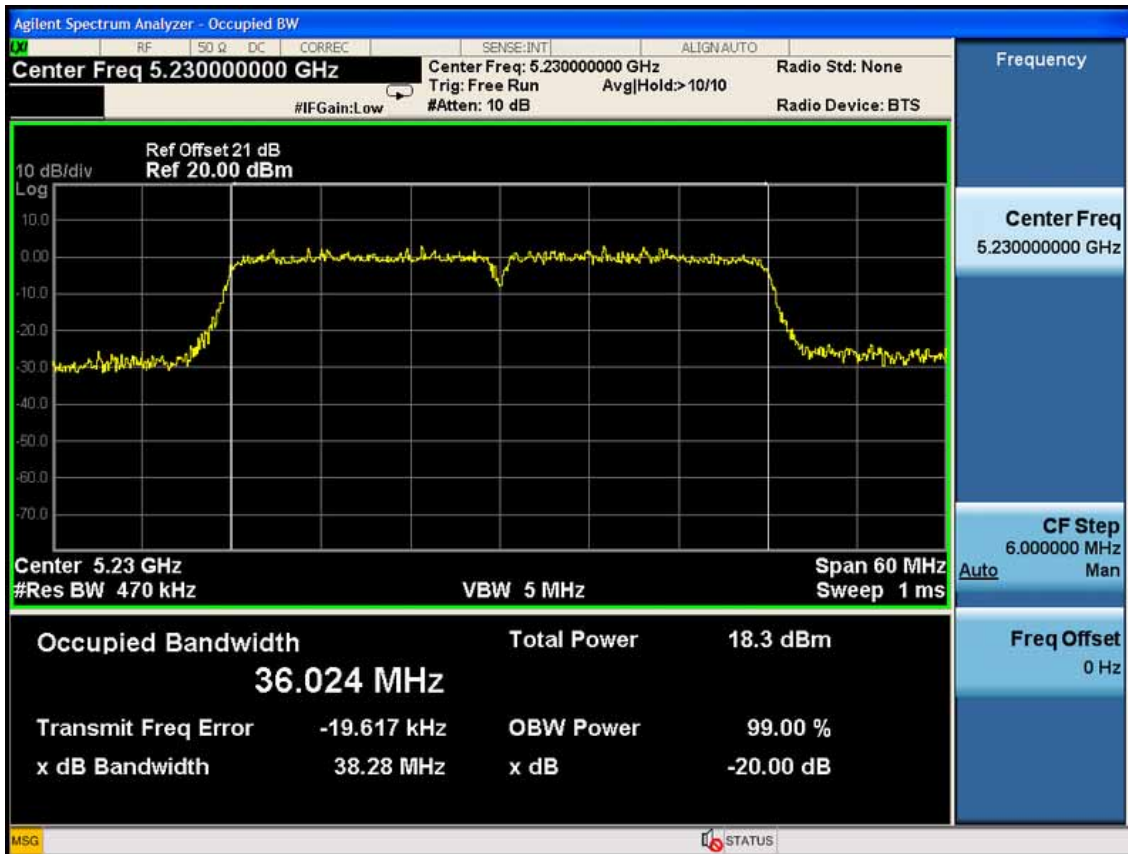
5240MHz



11n HT40
5190MHz



5230MHz



26dB bandwidth:

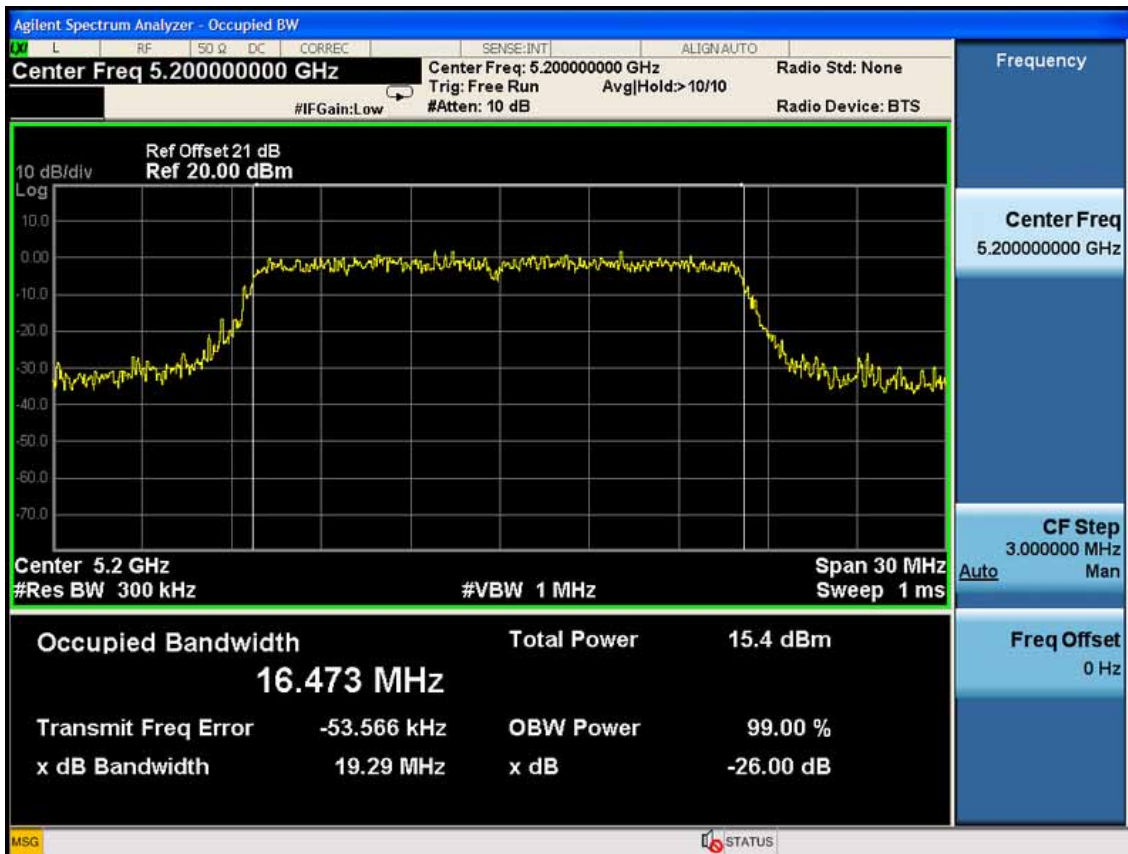
ANT 0

11a

5180MHz



5200MHz

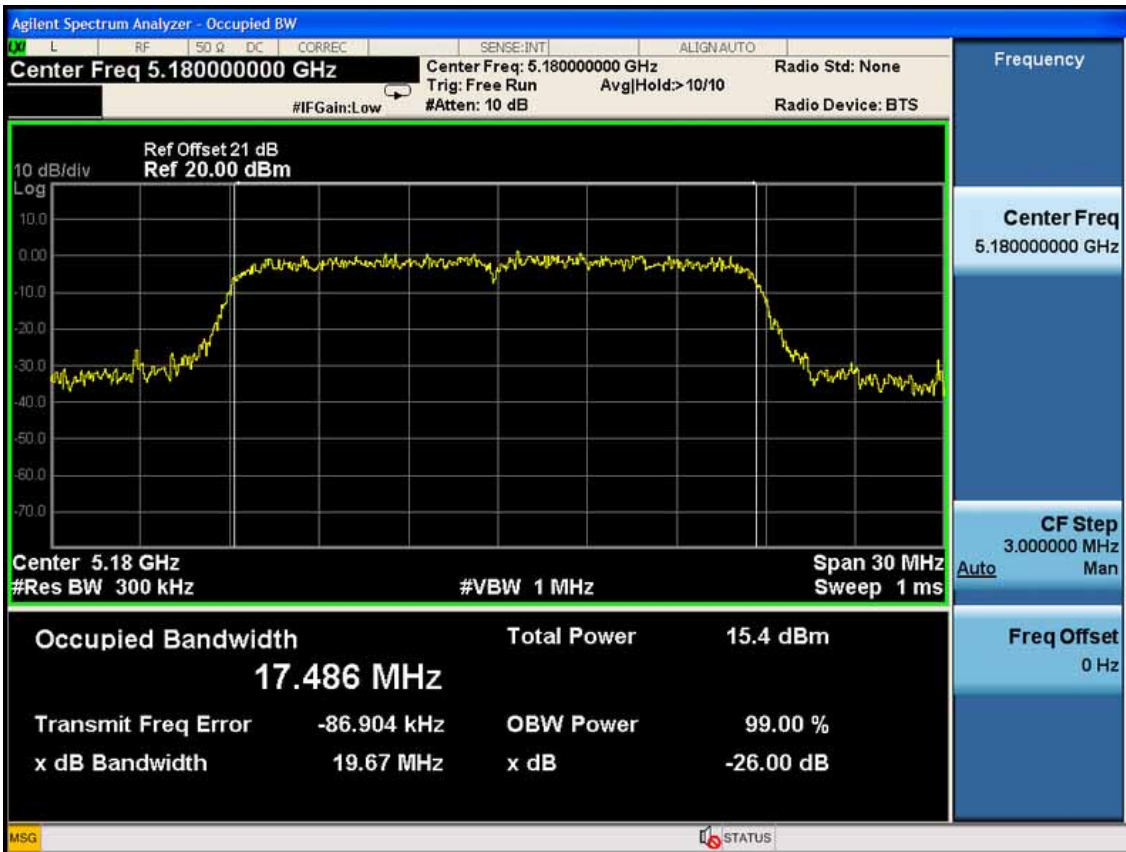


5240MHz

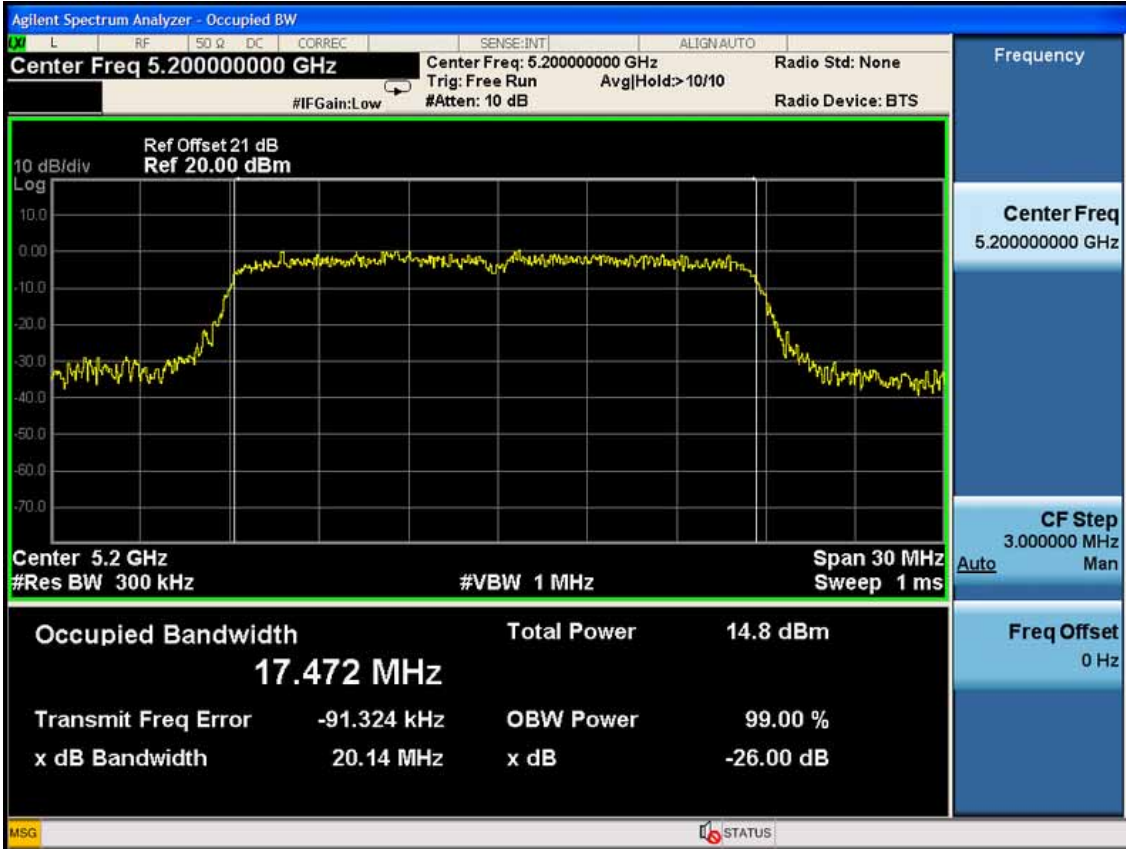


11n HT20

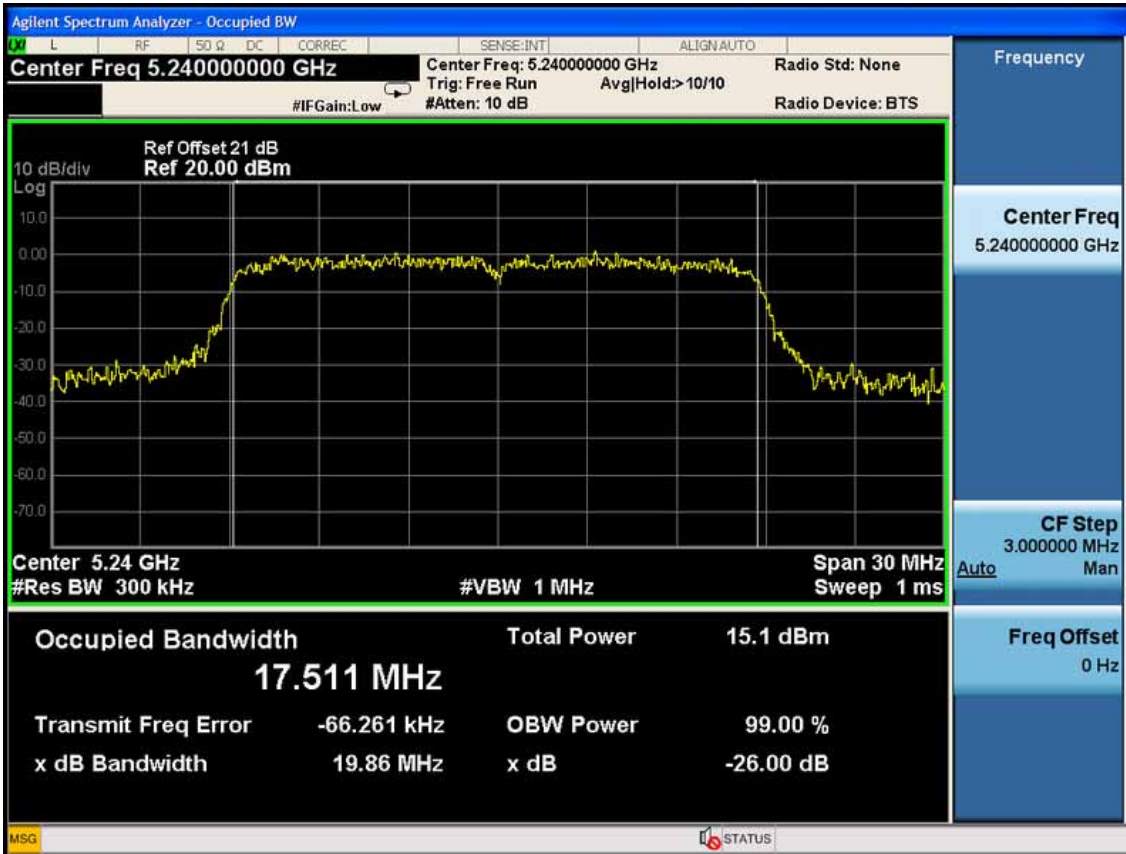
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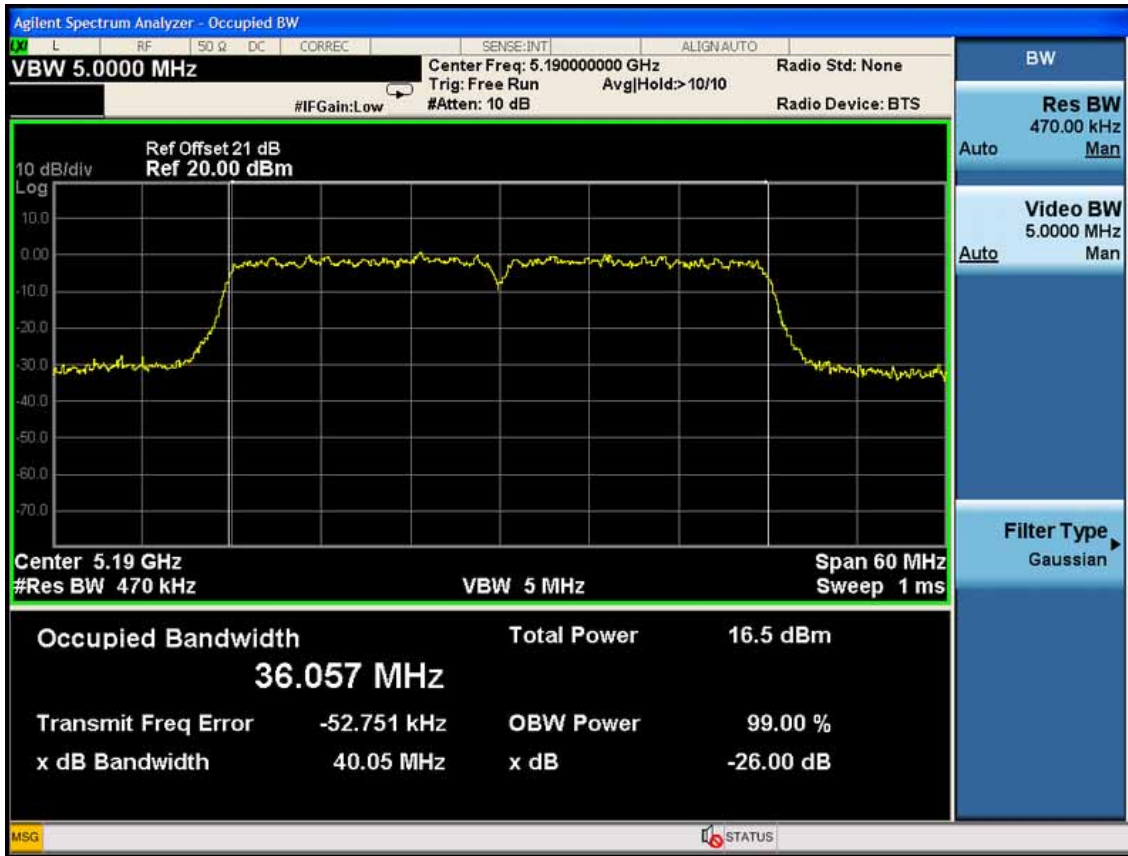
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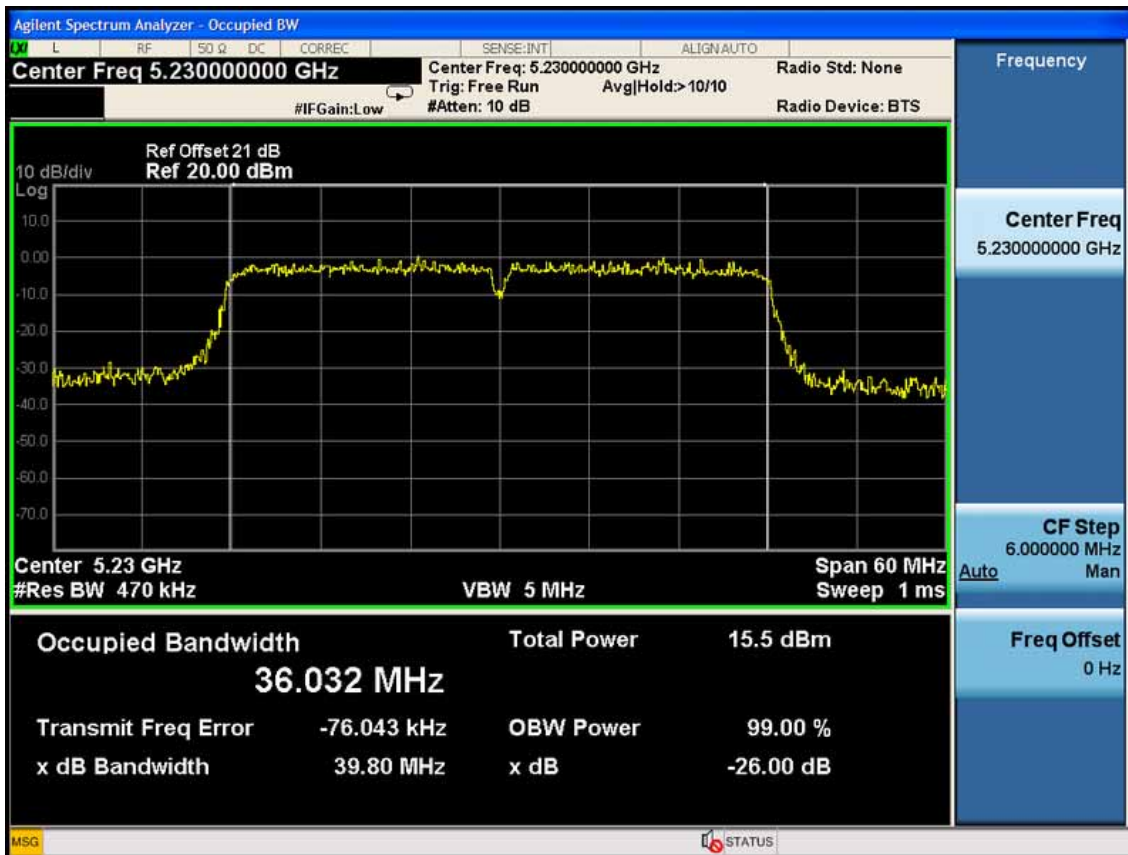
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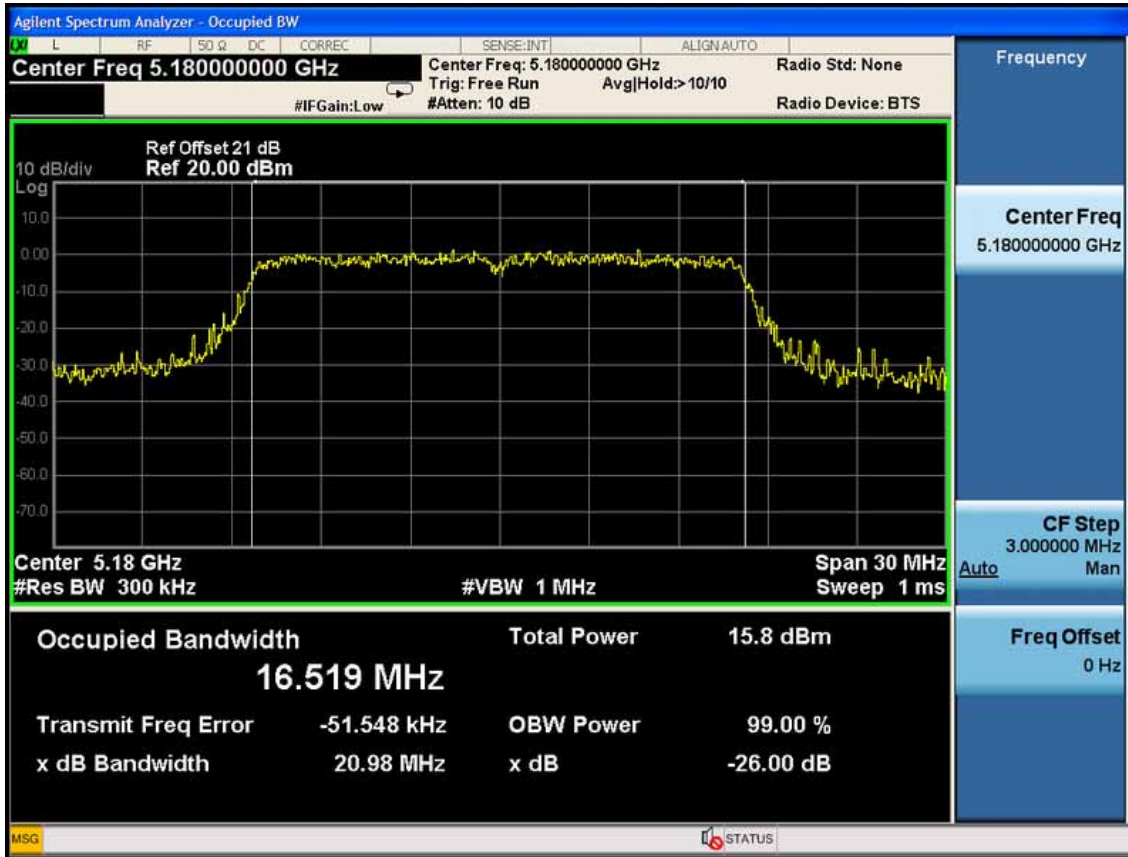
11n HT40
5190MHz



5230MHz



ANT 1
11a
5180MHz



5200MHz

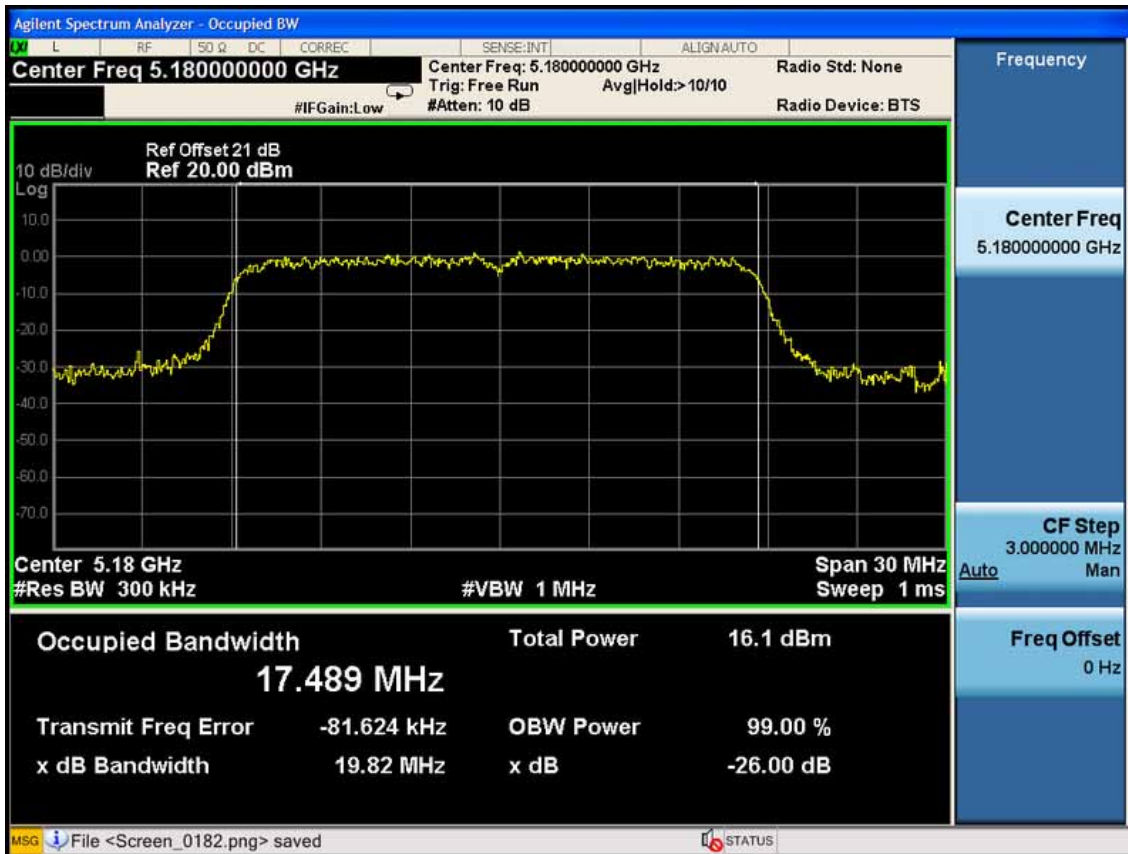


5240MHz

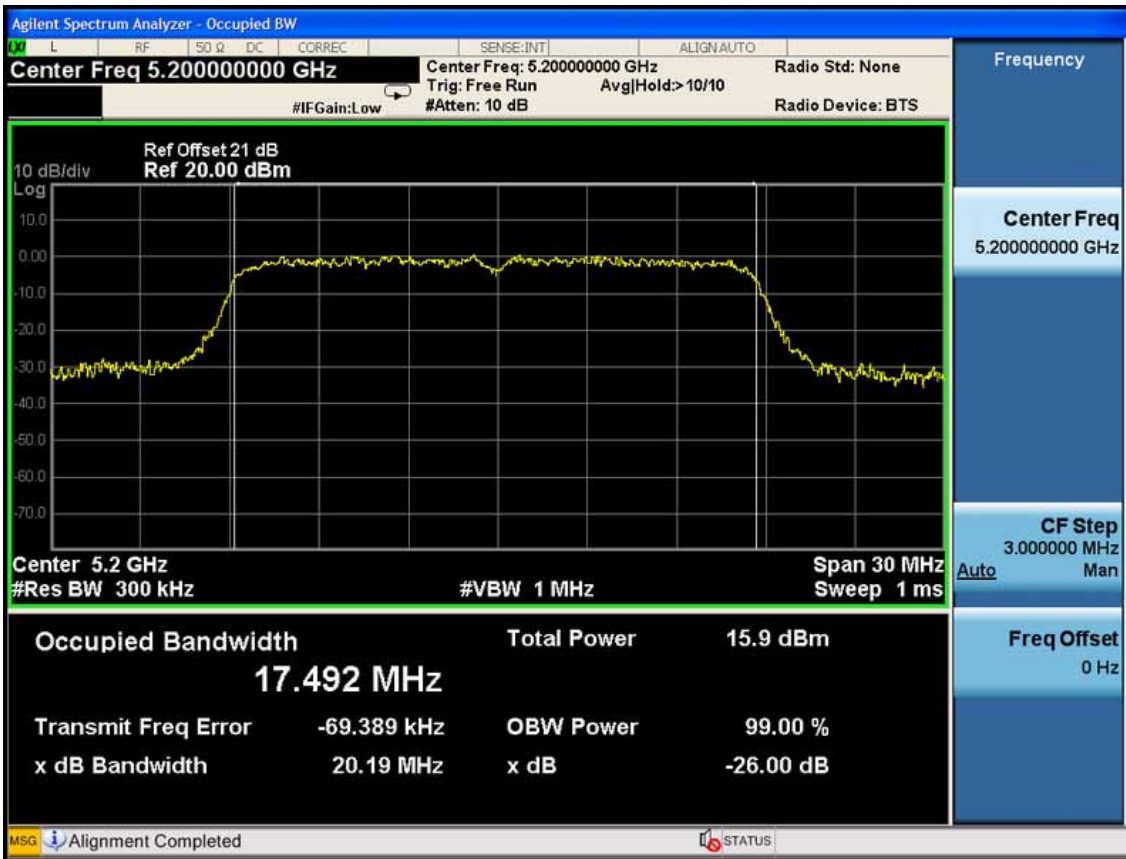


11n HT20

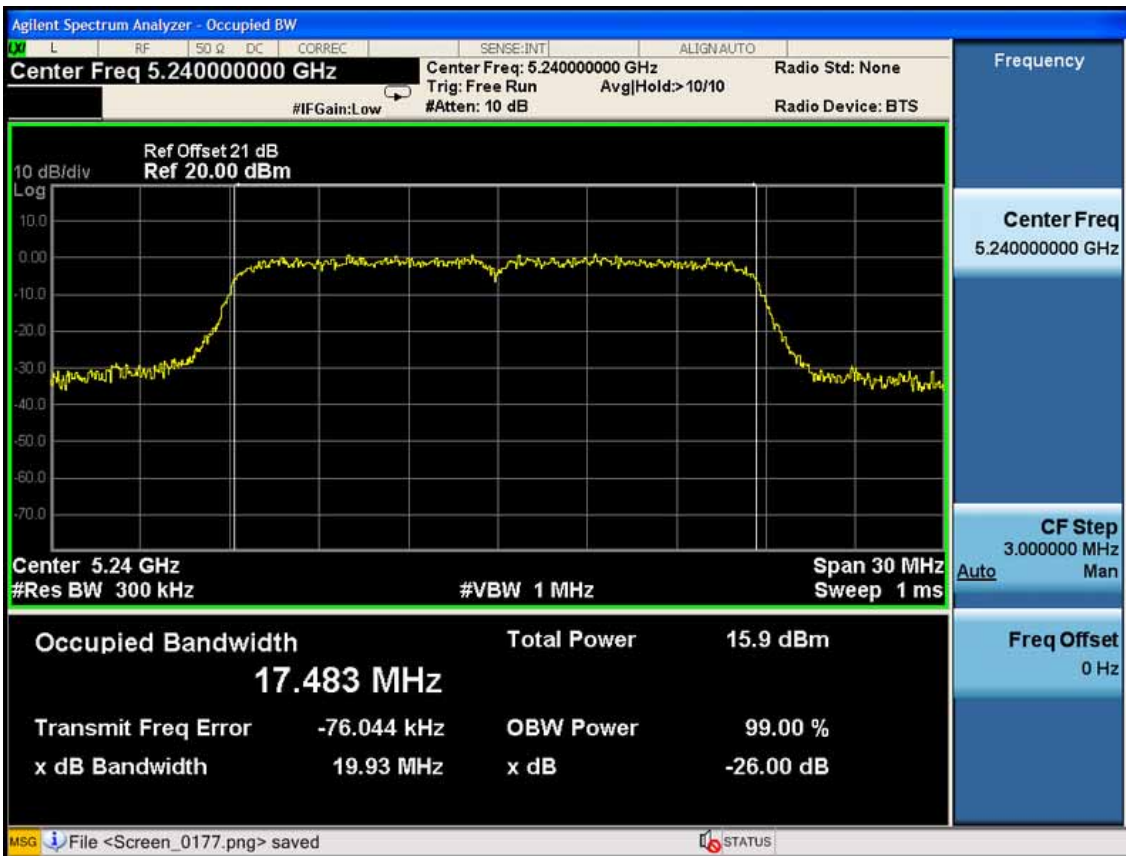
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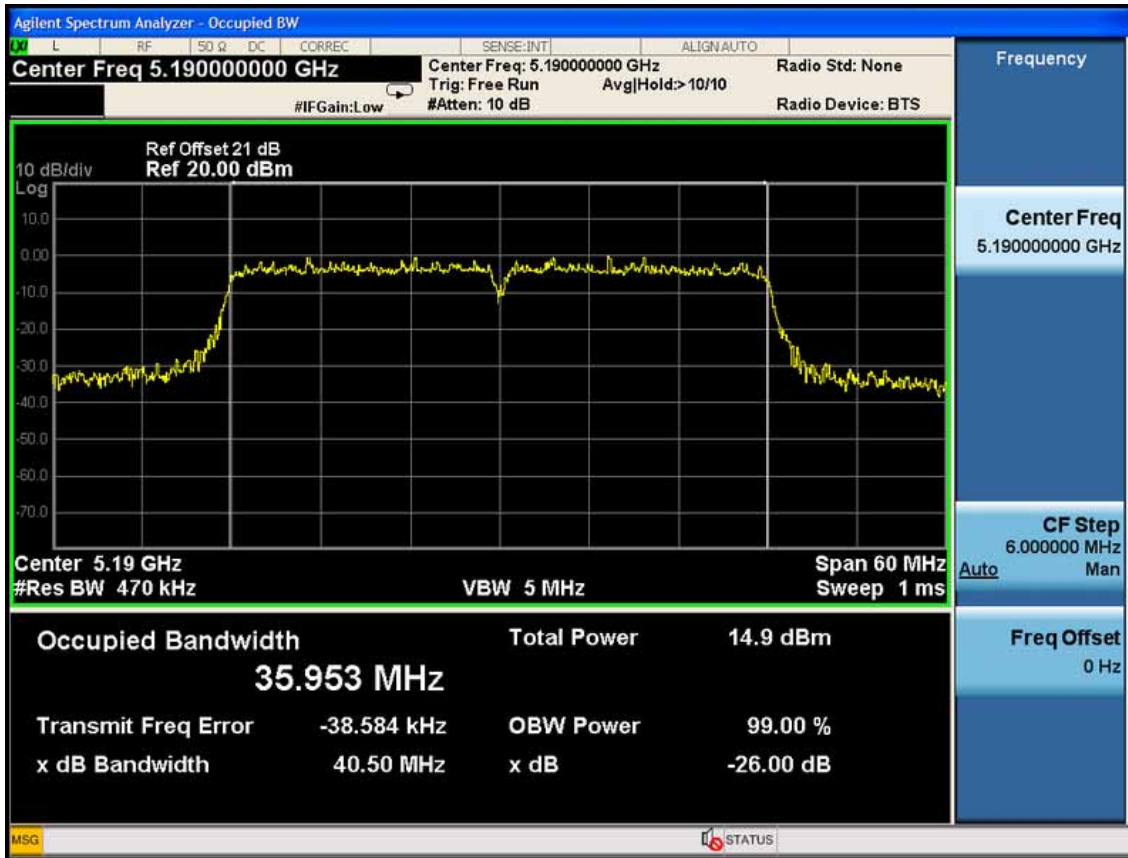
5200MHz



5240MHz



11n HT40
5190MHz



5230MHz

