FCC PART 15
TEST REPORT
No. 2013WLN0676

for

Sony Mobile Communications AB

GSM/WCDMA/CDMA2000/LTE FDD Mobile Phone

Type: PM-0400-BV

With

FCC ID: PY7PM-0400

Hardware Version: A

Software Version: 10.2.F.1.33

Issued Date: 2013-05-14

DAkkS Deutsche Akkreditierungsstelle D-PL-12123-01-01

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of TMC Beijing.

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1. TEST LATORATORY

1.1. Testing Location

Company Name:	TMC Beijing, Telecommunication Metrology Center of MIIT
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Postal Code:	100191
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1.2. Testing Environment

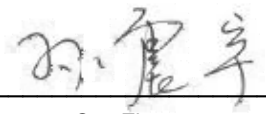
Normal Temperature:	15-30℃
Extreme Temperature:	-20/+55℃
Relative Humidity:	30-60%
Air Pressure	990hPa-1040hPa

Note:The climatic requirements above are general exclude the special requirements for dedicated test environments listed in section 5 and some specific test cases in other parts of this report.

1.3. Project data

Project Leader:	SunZhenyu
Testing Start Date:	2013-03-16
Testing End Date:	2013-05-14

1.4. Signature



Sun Zhenyu

(Prepared this test report)

Gao Hong

(Reviewed this test report)

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2. CLIENT INFORMATION

2.1. Applicant Information

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3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT(AE)

3.1. About EUT

Description	GSM 850/900/1800/1900, GPRS, EDGE, WCDMA FDD Band 1/2/5, HSDPA, HSUPA, LTE FDD Band 1/11/18, CDMA2000 Band Class0/6 Bluetooth EDR & BLE, WLAN (802.11 a/b/g/n), FM, NFC, GPS receiver mobile phone
Type	PM-0400-BV
FCC ID	PY7PM-0400
WLAN Frequency Range	Band1:5150MHz~5250MHz Band2:5250MHz~5350MHz Band3:5470MHz~5725MHz
Type of modulation	OFDM
Number of Channels	Band1:4 Band2:4 Band3:11
GSM Frequency Band	GSM 850/900/1800/1900
UMTS Frequency Band	FDD Band 1 / FDD Band 2 / FDD Band 5
LTE Frequency Band	FDD Band 1 / FDD Band 11 / FDD Band 18
CDMA2000 Band	Band Class 0/6
Antenna	Integral Antenna
MAX Radiated Power	22.98dBm(OFDM)
MAX Conducted Power	22.55dBm(OFDM)
Extreme Temperature	-20/+55°C
Normal Voltage	4.1V
Extreme Low Voltage	3.5V
Extreme High Voltage	4.1V

Note: Photographs of EUT are shown in ANNEX C of this test report. Components list, please refer to documents of the manufacturer; it is also included in the original test record of Telecommunication Metrology Center of MIIT of People's Republic of China.

3.2. Internal Identification of EUT used during the test

EUT ID*	S/N	IMEI	HW Version	SW Version
EUT1	CB5123RQCN	004402450736727	A	10.2.F.1.33
EUT2	CB5123SGQ0	004402450925304	A	10.2.F.1.33

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE used during the test

AE ID*	Description	Type	SN
AE1	Travel Charger	EP880	/
AE2	USB Cable	AI-0401	/
AE3	Battery	AB-0300	/

*AE ID: is used to identify the test sample in the lab internally.

3.4. General Description

The Equipment Under Test (EUT) is a model of GSM/WCDMA/CDMA2000/LTE FDD Mobile Phone with integrated antenna.

The EUT supports GSM 850/900/1800/1900MHz bands, WCDMA FDD bands 1/2/5, LTE FDD bands 1/11/18 and CDMA2000 band class0/6. It also supports GPRS service with multi-slots class 12 and EGPRS service with multi-slots class 12 too. The HSDPA and HSUPA features are also supported.

It has MP3, camera, FM radio, USB memory, GPS receiver, NFC, Mobile High-Definition Link (MHL), Bluetooth (EDR and Bluetooth 4.0), WLAN (802.11 a/b/g/n) and Wi-Fi hotspot functions.

It includes normal option: travel charger, Portable Hands-Free and USB cable.

Manual and specifications of the EUT were provided to fulfil the test.

Samples undergoing test were selected by the client.

4. REFERENCE DOCUMENTS

4.1. Documents supplied by applicant

EUT feature information is supplied by the applicant or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

FCC Part15	Title 47 of the Code of Federal Regulations; Chapter I Part 15 - Radio frequency devices	2012
UNII: KDB 789033	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E	2013

5. LABORATORY ENVIRONMENT

Shielding Room1 (6.0 meters×3.0 meters×2.7 meters) did not exceed following limits along the conducted RF performance testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Ground system resistance	< 0.5 Ω
Uniformity of field strength	Between 0 and 6 dB, from 80MHz to 3000 MHz

Semi-anechoic chamber (10 meters×6.7meters×6.15meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2 M ohm
Ground system resistance	< 0.5 Ω
Normalised site attenuation (NSA)	**< ±**3.5 dB, 3 m distance
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 18GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 MHz

Shielding Room2 (7.30 meters×4.00 meters×3.80 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω
Uniformity of field strength	Between 0 and 6 dB, from 80MHz to 3000 MHz

6. SUMMARY OF TEST RESULTS

6.1. Summary of Test Results

SUMMARY OF MEASUREMENT RESULTS	Sub-clause of Part15	Sub-clause of IC	Verdict
Maximum Output Power	15.407	/	**P**
Power Spectral Density	15.407	/	**P**
Occupied 26dB Bandwidth	15.407	/	**P**
Band edge compliance	15.407	/	**P**
Transmitter spurious emissions radiated	15.407	/	**P**
Receiver spurious emissions radiated	15.407	/	**P**
Spurious emissions radiated < 30 MHz	15.407	/	**P**
Spurious emissions conducted < 30 MHz	15.407	/	**P**
Peak Excursion	15.407	/	**P**

Please refer to **ANNEX A** for detail.

The measurement is made according to KDB 789033.

Terms used in Verdict column

P	Pass, The EUT complies with the essential requirements in the standard.
NM	Not measured, The test was not measured by TMC
NA	Not Applicable, The test was not applicable
F	Fail, The EUT does not comply with the essential requirements in the standard

6.2. Statements

TMC has evaluated the test cases requested by the client/manufacturer as listed in section 6.1 of this report for the EUT specified in section 3 according to the standards or reference documents listed in section 4.1.

Test Conditions

T nom	Normal Temperature
T min	Low Temperature
T max	High Temperature
V nom	Normal Voltage
V min	Low Voltage
V max	High Voltage
H nom	Norm Humidity
A nom	Norm Air Pressure

For this report, all the test case listed above is tested under Normal Temperature and Normal Voltage, and also under norm humidity, the specific conditions as following:

Temperature	T nom	26℃
Voltage	V nom	4.1V(By battery)
Humidity	H nom	44%

Air Pressure	A nom	1010hPa

7. TEST EQUIPMENTS UTILIZED

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date
1	Vector Signal Analyzer	FSQ40	200089	Rohde & Schwarz	2013-07-19
2	Test Receiver	ESS	847151/015	Rohde & Schwarz	2013-10-30
3	LISN	ESH2-Z5	829991/012	Rohde & Schwarz	2013-08-13

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date
1	Test Receiver	ESI40	831564/002	Rohde & Schwarz	2014-02-12
2	BiLog Antenna	3142B	9908-1403	EMCO	2014-03-15
3	Dual-Ridge Waveguide Horn Antenna	3115	9906-5827	EMCO	2013-12-25
4	Dual-Ridge Waveguide Horn Antenna	3116	2661	EMCO	2014-06-30

Anechoic chamber

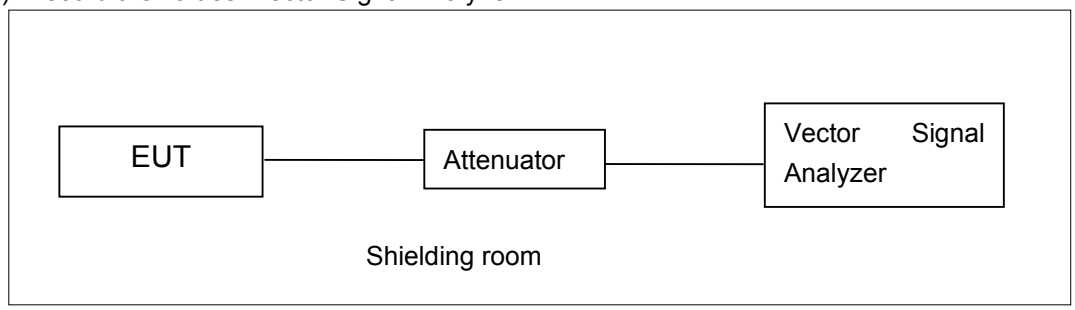
Fully anechoic chamber by Frankonia German.

ANNEX A: MEASUREMENT RESULTS

A.1. Measurement Method

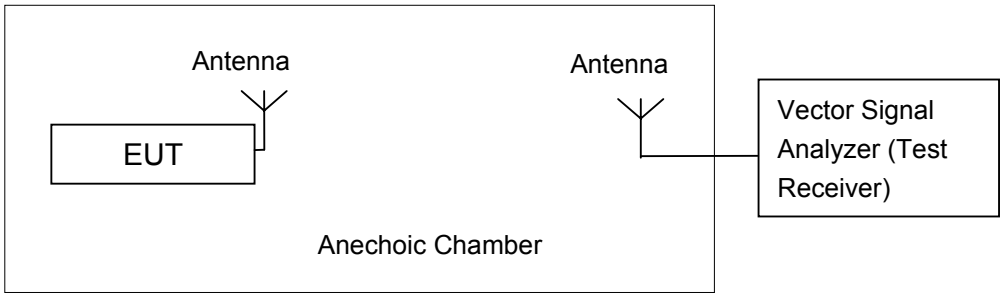
A.1.1. Conducted Measurements

1). Connect the EUT to the test system correctly.
2). Set the EUT to the required work mode.
3). Set the EUT to the required channel.
4). Set the spectrum analyzer to start measurement.
5). Record the values. Vector Signal Analyzer



A.1.2. Radiated Emission Measurements

In the case of radiated emission, the used settings are as follows,
Sweep frequency from 30 MHz to 1GHz, RBW = 100 kHz, VBW = 300 kHz;
Sweep frequency from 1 GHz to 26GHz, RBW = 1MHz, VBW = 10Hz;



The measurement is made according to KDB 789033
The radiated emission test is performed in semi-anechoic chamber. The distance from the EUT to the reference point of measurement antenna is 3m. The test is carried out on both vertical and horizontal polarization and only maximization result of both polarizations is kept. During the test, the turntable is rotated 360° and the measurement antenna is moved from 1m to 4m to get the maximization result.

A.2. Output Power Verification

This test is only for mode verification, and the selected mode will be used for the future measurement.

Measurement Results:

OFDM/a mode	Maximum Conducted Power (dBm)							
data rate (Mbps)	6	9	12	18	24	36	48	54
36 (5180 MHz)	13.23	13.13	13.12	13.10	11.19	11.17	11.15	11.13

OFDM/n-HT20 mode	Maximum Conducted Power (dBm)							
data rate (Index)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
36 (5180 MHz)	10.66	10.58	10.56	10.52	10.51	10.48	10.47	10.47

OFDM/n-HT40 mode	Maximum Conducted Power (dBm)							
data rate (Index)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
38 (5190 MHz)	8.91	8.93	8.94	8.90	8.88	8..86	8.85	8.84

Selected data rate for all measurement:

OFDM /a-mode: 6Mbps

OFDM /n-HT20 mode: MCS0

OFDM /n-HT40 mode: MCS2

A.3. Antenna Gain

The antenna gain of the complete system is calculated by the difference of radiated power and the conducted power of the EUT.

Band 5150MHz to 5350MHz,

Test	Channel			
Tnom,Vnom	Low(5180MHz)	High(5240MHz)	Low(5260MHz)	High(5320MHz)
Conducted Power(dBm)	15.65	16.09	16.68	16.33
Radiated Power(dBm)	18.66	18.08	18.89	17.81
Gain(dBi)	3.01	1.99	2.21	1.48

Band 5470MHz to 5725MHz,

Test	Channel		
Tnom,Vnom	Low(5500MHz)	Middle(5600MHz)	High(5700MHz)
Conducted Power(dBm)	15.49	15.70	15.83
Radiated Power(dBm)	15.96	15.25	15.17
Gain(dBi)	0.47	-0.45	-0.66

Antenna Gain = Radiated value (with radiated sample) - Conducted values (with conducted samples)

A.4. Duty Cycle

Measurement Results:

Duty cycle and correction factor:

Mode	Plot	Duty Cycle (%)	correction factor (dB)
OFDM/a-mode	Fig.1	99.29	0.03
OFDM/n-mode HT20	Fig.2	99.23	0.03
OFDM/n-mode HT40	Fig.3	99.05	0.04

Test graphs as below:

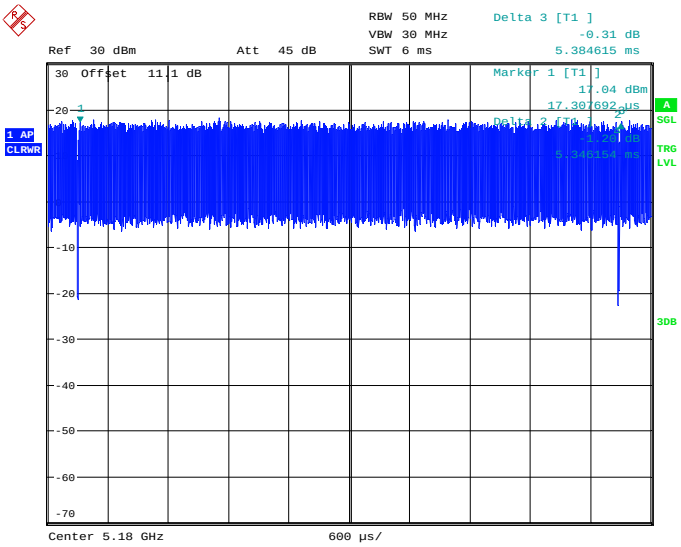


Fig. 1 Duty Cycle (802.11a Mode)

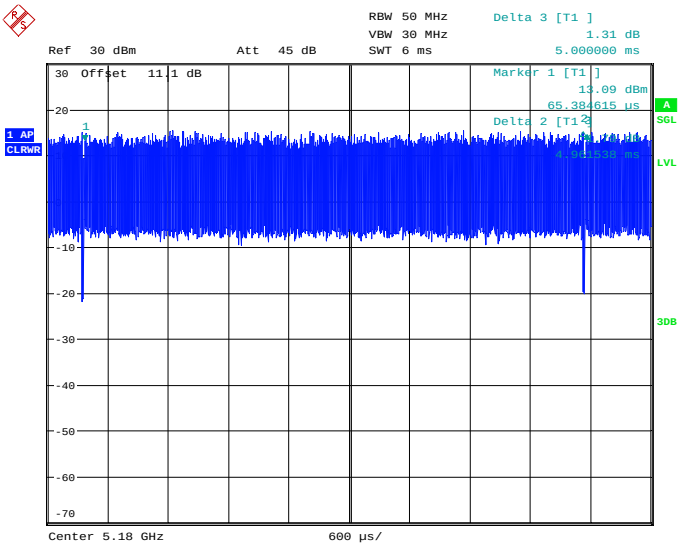


Fig. 2 Duty Cycle (802.11n-HT20 Mode)

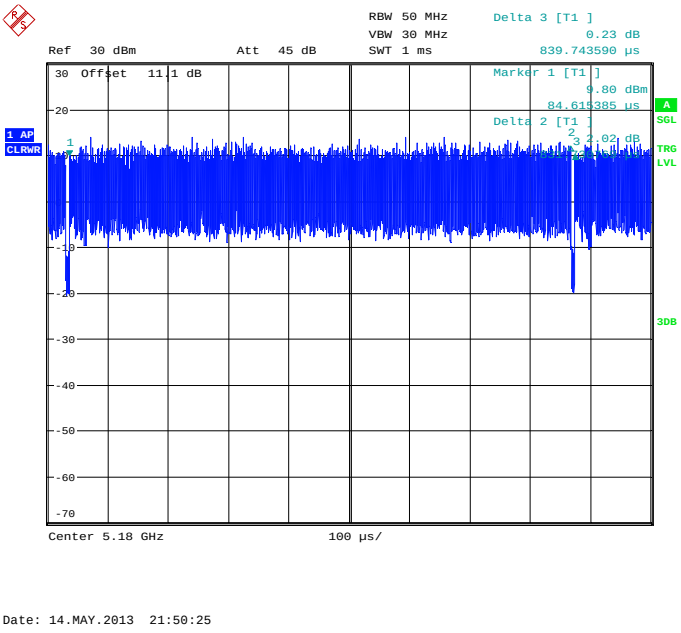


Fig. 3 Duty Cycle (802.11n-HT40 Mode)

A.5. Maximum output Power

Measurement Limit and Method:

Standard	Frequency (MHz)	Limit (dBm)
FCC CRF Part 15.407	5150MHz~5250MHz	17dBm or 4+10logB
	5250MHz~5350MHz	24dBm or 11+10logB
	5470MHz~5725MHz	24dBm or 11+10logB

Limit use the less value, and B is the 26dB bandwidth.

The measurement method SA-1 is made according to KDB 789033

Measurement Uncertainty:

Measurement Uncertainty	0.75dB

Measurement Results:

802.11a mode

Type	Test Result (dBm)			
	5180MHz (Ch36)	5240MHz (Ch48)	5260MHz (Ch52)	5320 MHz (Ch64)
conducted	13.23	13.64	13.68	13.50
radiated	16.24	15.63	15.89	14.98

Type	Test Result (dBm)		
	5500MHz (Ch100)	5600MHz (Ch120)	5700MHz (Ch140)
conducted	13.56	13.25	12.66
radiated	14.03	12.80	12.00

802.11n-HT20 mode

Type	Test Result (dBm)			
	5180MHz (Ch36)	5240MHz (Ch48)	5260MHz (Ch52)	5320 MHz (Ch64)
conducted	10.66	10.34	10.87	10.06
radiated	13.67	12.33	13.08	11.54

Type	Test Result (dBm)		
	5500MHz (Ch100)	5600MHz (Ch120)	5700MHz (Ch140)
conducted	9.92	10.16	9.85
radiated	10.39	9.71	9.19

802.11n-HT40 mode

Type	Test Result (dBm)			
	5190MHz (Ch38)	5230MHz (Ch46)	5270MHz (Ch55)	5310 MHz (Ch63)
conducted	8.94	9.44	9.01	9.11
radiated	11.95	11.43	11.22	10.59

Type	Test Result (dBm)		
	5510MHz (Ch102)	5590MHz (Ch118)	5670MHz (Ch134)
conducted	8.82	8.93	8.64
radiated	9.29	8.48	7.98

Conclusion: PASS

A.6. Peak Power Spectral Density (conducted)

Measurement Limit:

Standard	Frequency (MHz)	Limit (dBm/MHz)
FCC CRF Part 15.407(a)	5150MHz~5250MHz	4
	5250MHz~5350MHz	11
	5470MHz~5725MHz	11

The output power measurement method SA-1 is made according to KDB 789033.

Measurement Uncertainty:

Measurement Uncertainty	0.75dB

Measurement Results:

Mode	Channel	Power Spectral Density (dBm/MHz)	Conclusion
802.11a	5180 MHz	2.75	P
	5240 MHz	2.93	P
	5260 MHz	2.88	P
	5320 MHz	2.64	P
	5500 MHz	2.27	P
	5600 MHz	2.28	P
	5700 MHz	2.02	P
802.11n HT20	5180 MHz	0.78	P
	5240 MHz	0.11	P
	5260 MHz	0.11	P
	5320 MHz	-0.19	P
	5500 MHz	-0.35	P
	5600 MHz	0.18	P
	5700 MHz	0.37	P
802.11n HT40	5190 MHz	-2.80	P
	5230 MHz	-3.14	P
	5270 MHz	-3.08	P
	5310 MHz	-3.12	P
	5510 MHz	-4.09	P
	5590 MHz	-3.23	P
	5670 MHz	-3.95	P

Conclusion: PASS

A.7. Occupied 26dB Bandwidth(conducted)

Measurement Limit:

Standard	Limit (kHz)
FCC 47 CFR Part 15.247 (a)	/

The measurement is made according to KDB 789033.

Measurement Uncertainty:

Measurement Uncertainty	60.80Hz

Measurement Result:

Mode	Channel	Occupied 26dB Bandwidth (kHz)		conclusion
802.11a	5180 MHz	Fig.4	21587	P
	5240 MHz	Fig.5	21394	P
	5260 MHz	Fig.6	20769	P
	5320 MHz	Fig.7	20962	P
	5500 MHz	Fig.8	21058	P
	5600 MHz	Fig.9	21298	P
	5700 MHz	Fig.10	21346	P
802.11n HT20	5180 MHz	Fig.11	20962	P
	5240 MHz	Fig.12	21010	P
	5260 MHz	Fig.13	20769	P
	5320 MHz	Fig.14	20962	P
	5500 MHz	Fig.15	21538	P
	5600 MHz	Fig.16	20962	P
	5700 MHz	Fig.17	20865	P
802.11n HT40	5190 MHz	Fig.18	40304	P
	5230 MHz	Fig.19	39503	P
	5270 MHz	Fig.20	39503	P
	5310 MHz	Fig.21	39824	P
	5510 MHz	Fig.22	39503	P
	5590 MHz	Fig.23	39583	P
	5670 MHz	Fig.24	39503	P

Conclusion: PASS

Test graphs as below:

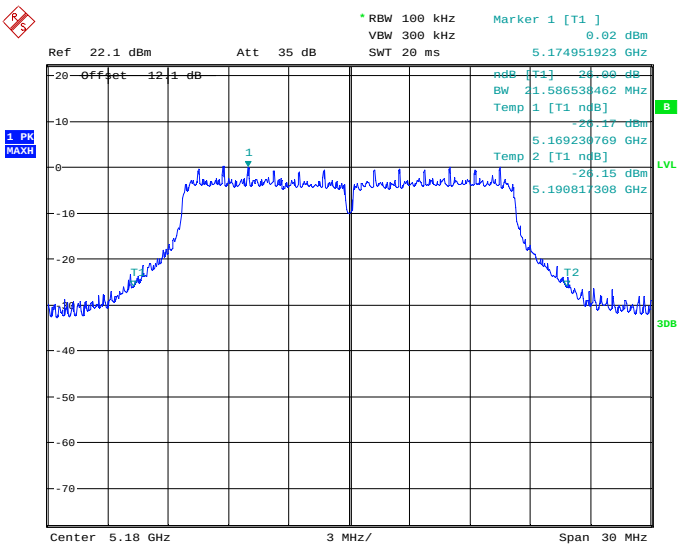


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Fig. 4 Occupied 26dB Bandwidth (802.11a, 5180MHz)

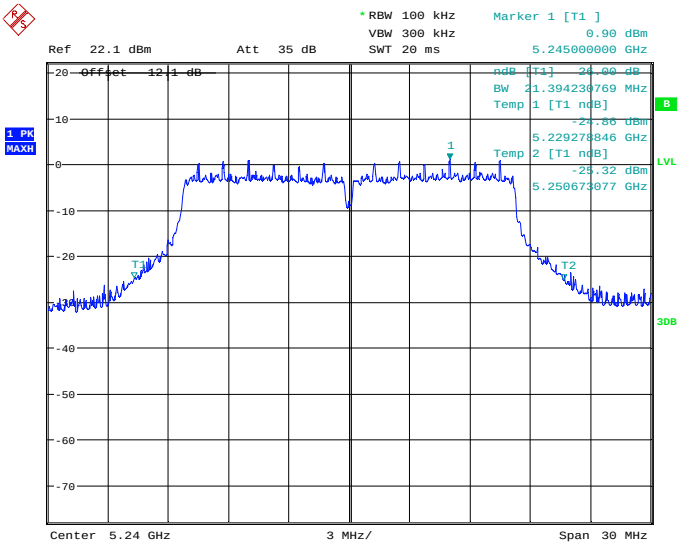

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Fig. 5 Occupied 26dB Bandwidth (802.11a, 5240MHz)

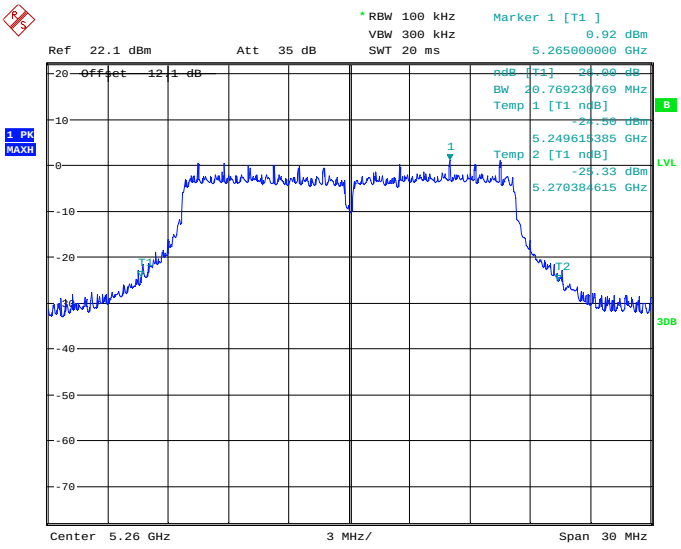

Fig. 6 Occupied 26dB Bandwidth (802.11a, 5260MHz)

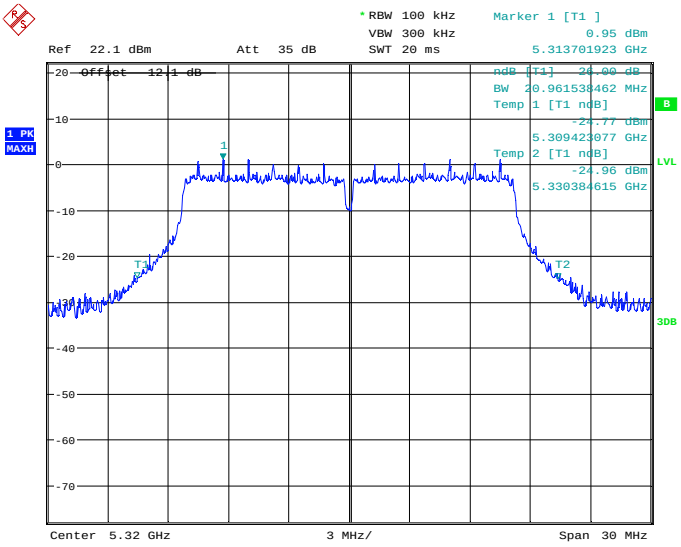

Fig. 7 Occupied 26dB Bandwidth (802.11a, 5320MHz)

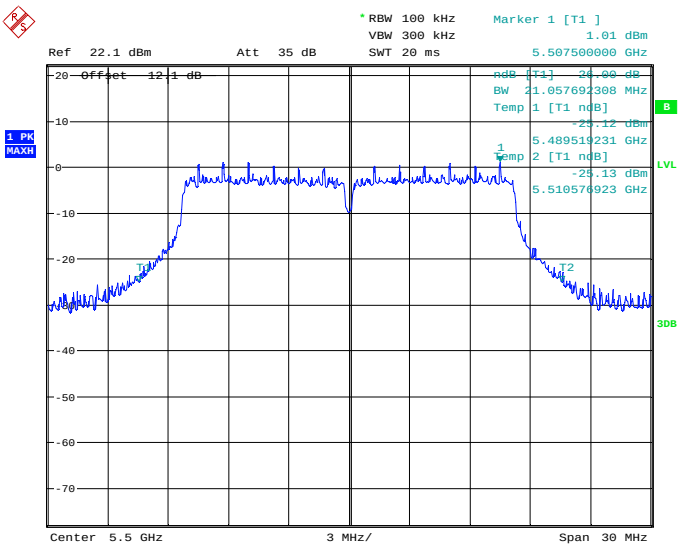

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Fig. 8 Occupied 26dB Bandwidth (802.11a, 5500MHz)

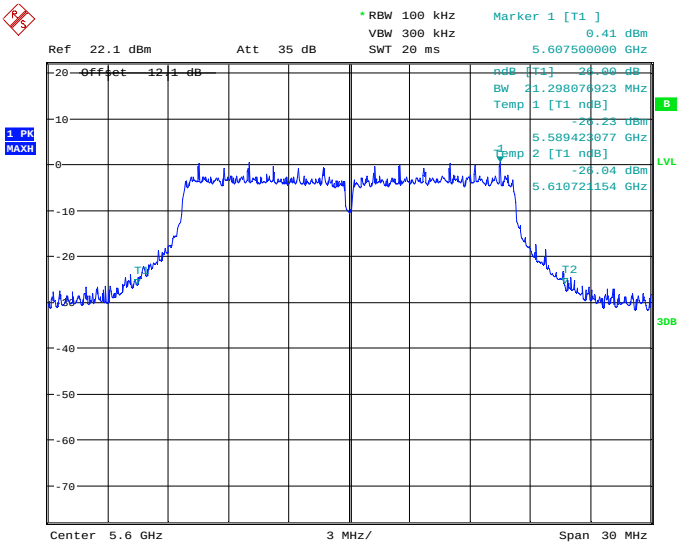

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Fig. 9 Occupied 26dB Bandwidth (802.11a, 5600MHz)

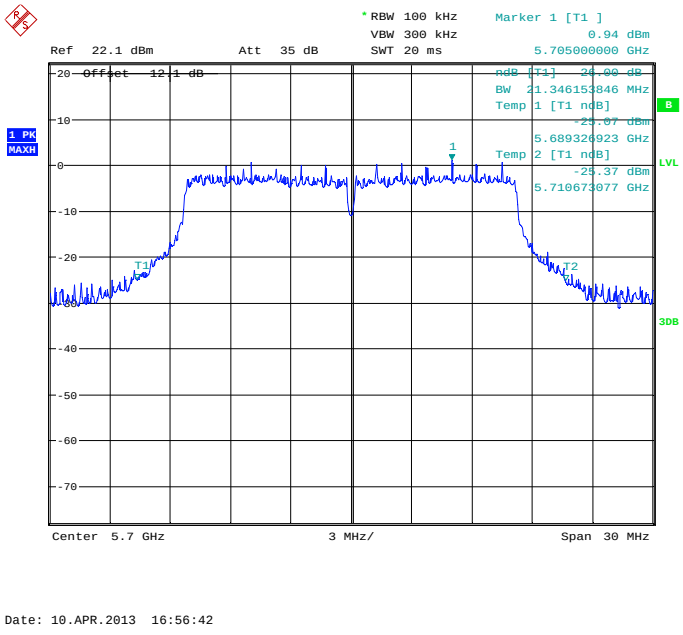

Fig. 10 Occupied 26dB Bandwidth (802.11a, 5700MHz)

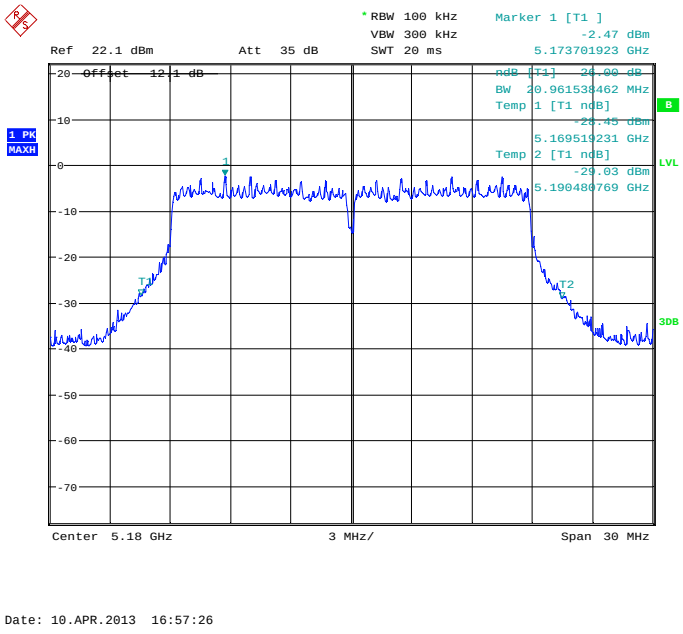

Fig. 11 Occupied 26dB Bandwidth (802.11n-HT20, 5180MHz)

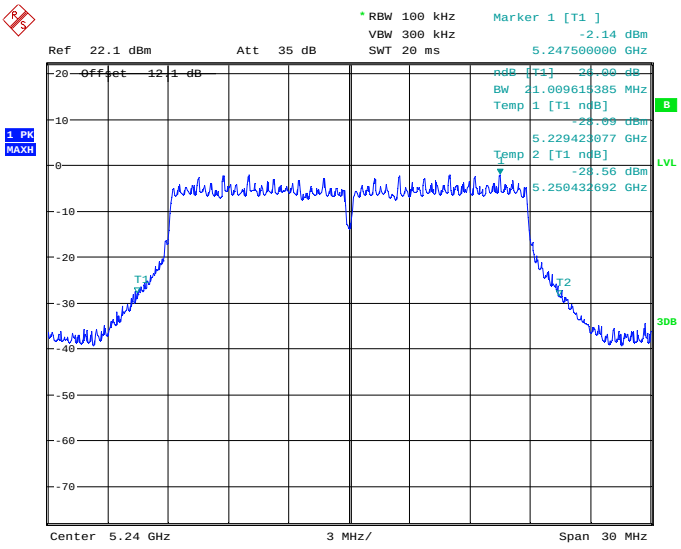

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Fig. 12 Occupied 26dB Bandwidth (802.11n-HT20, 5240MHz)

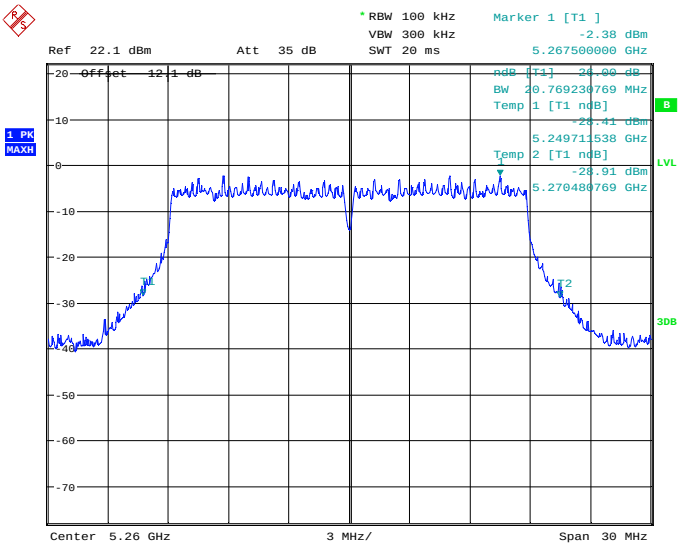

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Fig. 13 Occupied 26dB Bandwidth (802.11n-HT20, 5260MHz)

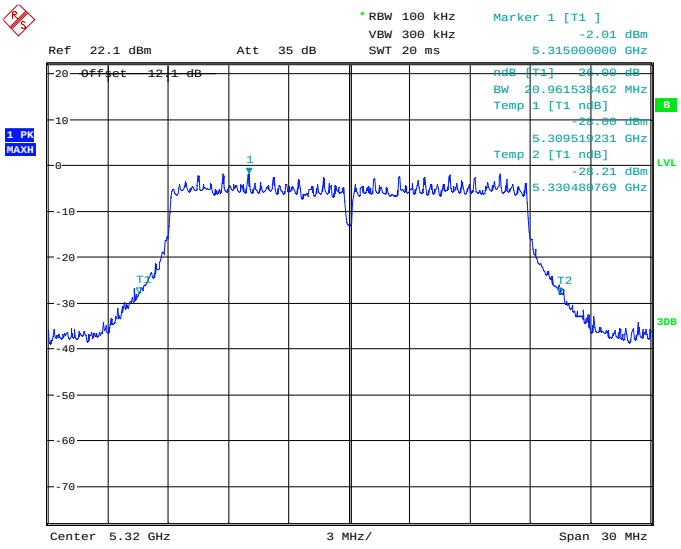

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Fig. 14 Occupied 26dB Bandwidth (802.11n-HT20, 5320MHz)

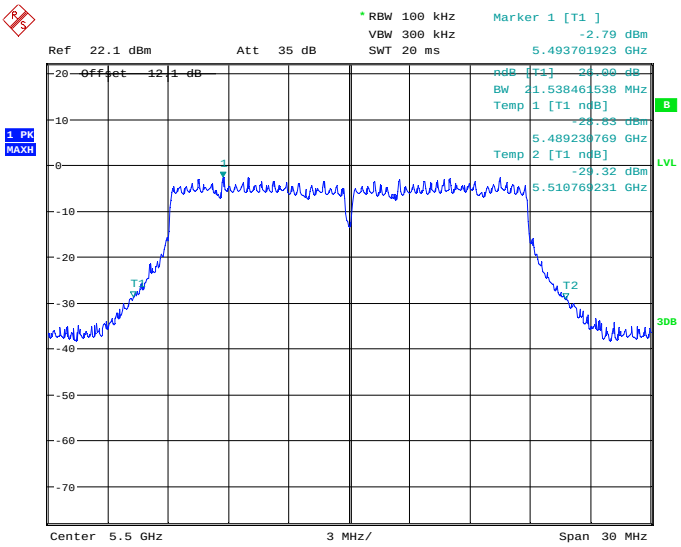

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Fig. 15 Occupied 26dB Bandwidth (802. 11n-HT20, 5500MHz)

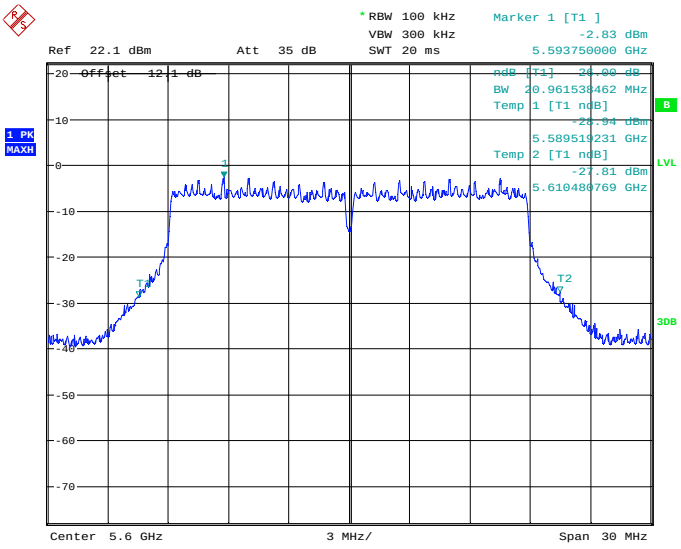

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Fig. 16 Occupied 26dB Bandwidth (802. 11n-HT20, 5600MHz)

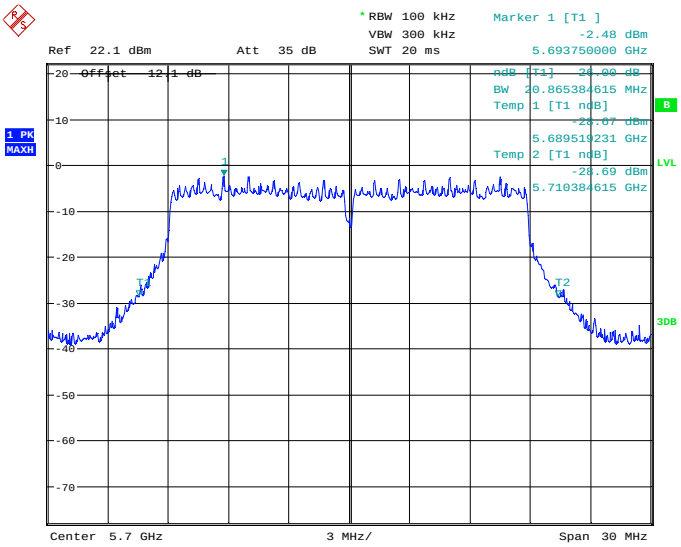

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Fig. 17 Occupied 26dB Bandwidth (802. 11n-HT20, 5700MHz)

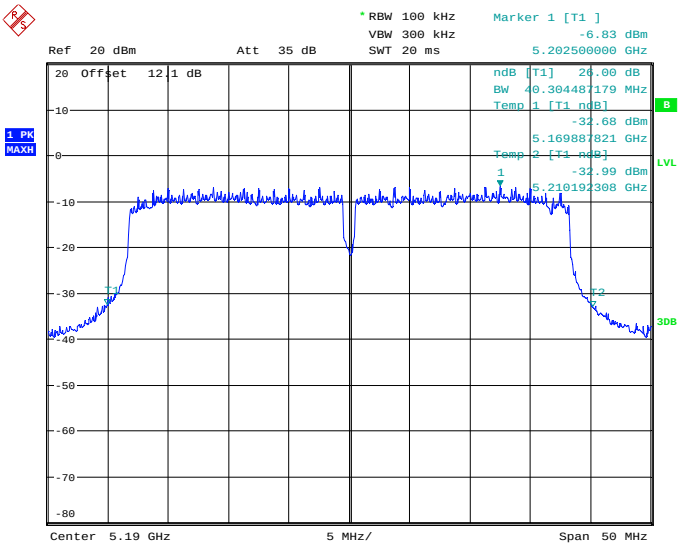


Fig. 18 Occupied 26dB Bandwidth (802.11n-HT40, 5190MHz)

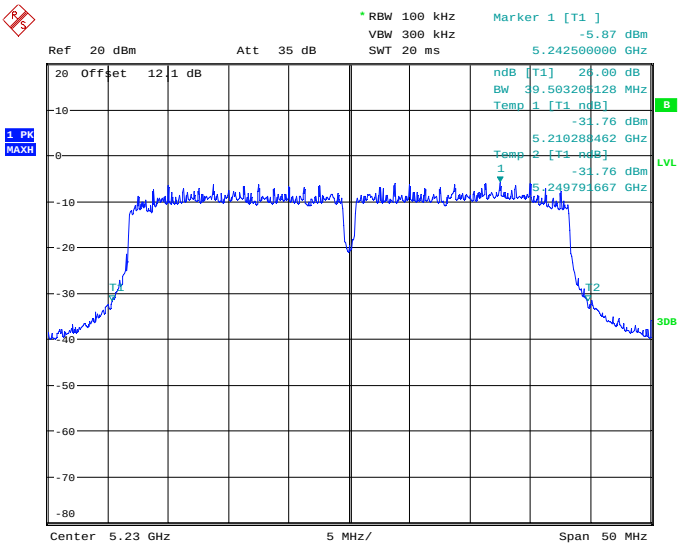


Fig. 19 Occupied 26dB Bandwidth (802.11n-HT40, 5230MHz)

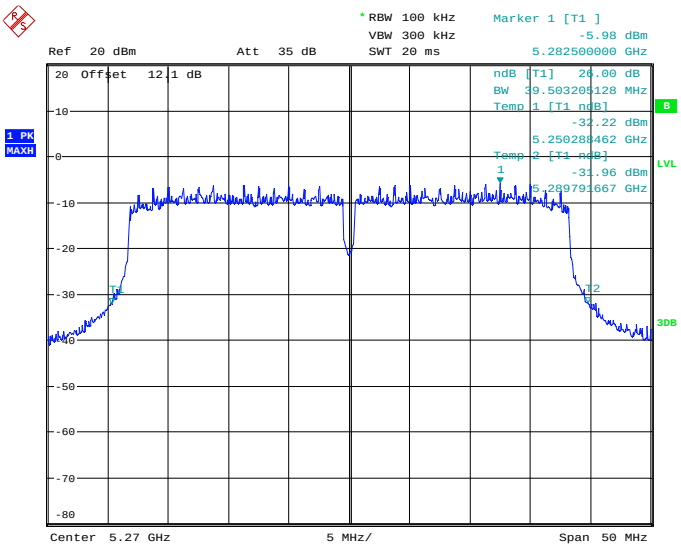


Fig. 20 Occupied 26dB Bandwidth (802.11n-HT40, 5270MHz)

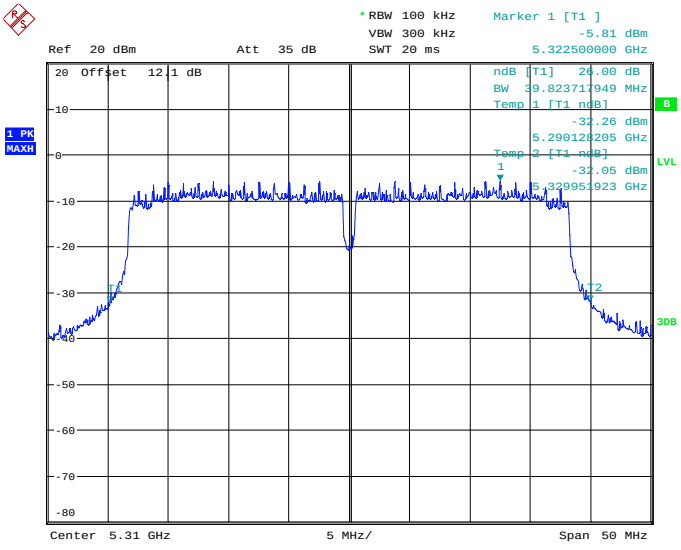
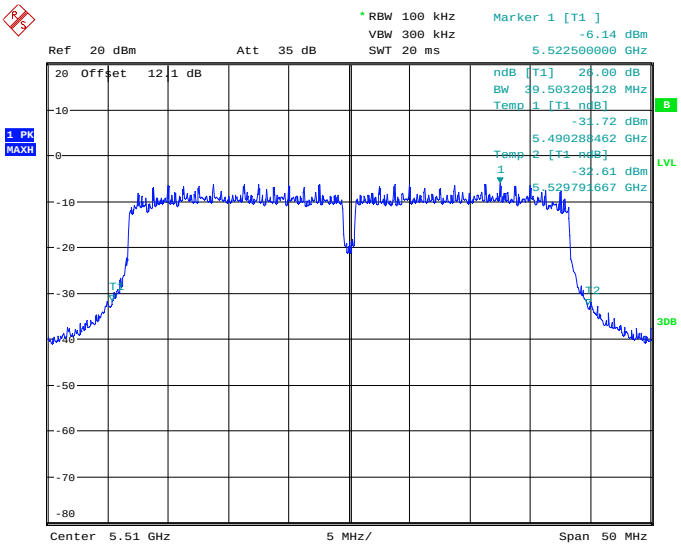
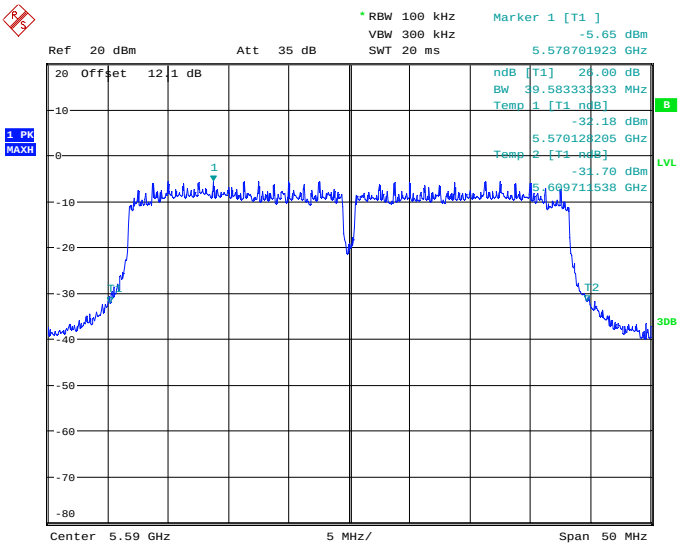


Fig. 21 Occupied 26dB Bandwidth (802.11n-HT40, 5310MHz)



Date: 10.APR.2013 17:16:43

Fig. 22 Occupied 26dB Bandwidth (802. 11n-HT40, 5510MHz)



Date: 10.APR.2013 17:17:32

Fig. 23 Occupied 26dB Bandwidth (802. 11n-HT40, 5590MHz)

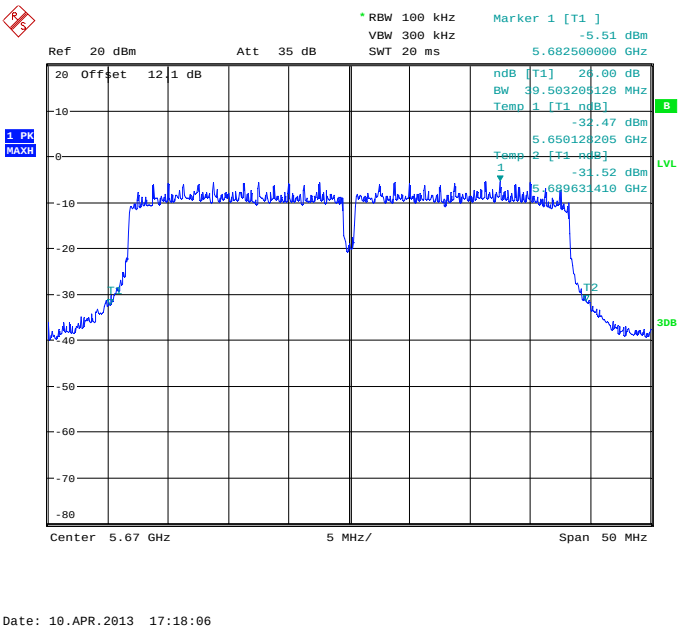


Fig. 24 Occupied 26dB Bandwidth (802. 11n-HT40, 5670MHz)

A.8. Band Edges Compliance

A.8.1 Band Edges - conducted

Measurement Limit:

Standard	Limit (dBc)
FCC 47 CFR Part 15.407	> 20

The measurement is made according to KDB 789033

Measurement Uncertainty:

Measurement Uncertainty	0.75dB

Measurement Result:

Mode	Channel	Test Results	Conclusion
802.11a	5180 MHz	Fig.25	P
	5320 MHz	Fig.26	P
	5500 MHz	Fig.27	P
802.11n HT20	5180 MHz	Fig.28	P
	5320 MHz	Fig.29	P
	5500 MHz	Fig.30	P
802.11n HT40	5190 MHz	Fig.31	P
	5310 MHz	Fig.32	P
	5510 MHz	Fig.33	P

Conclusion: PASS

Test graphs as below:

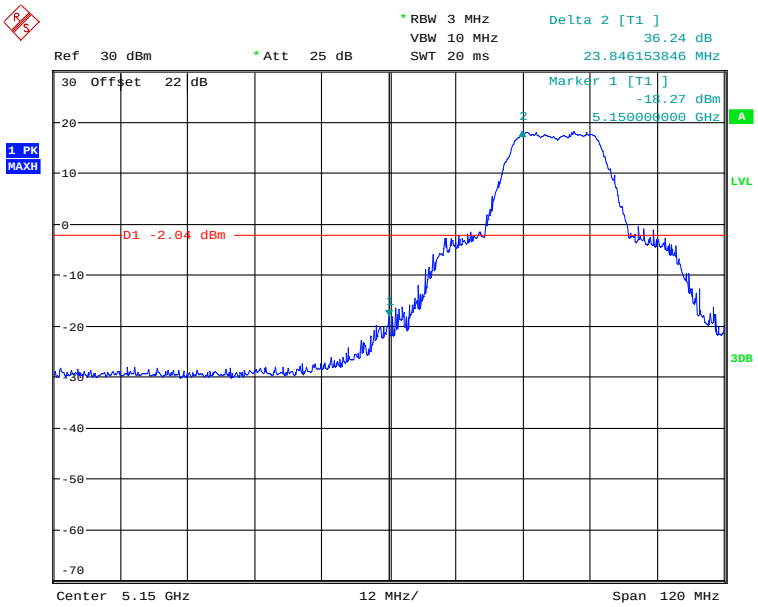


Fig. 25 Band Edges (802.11a, 5180MHz)

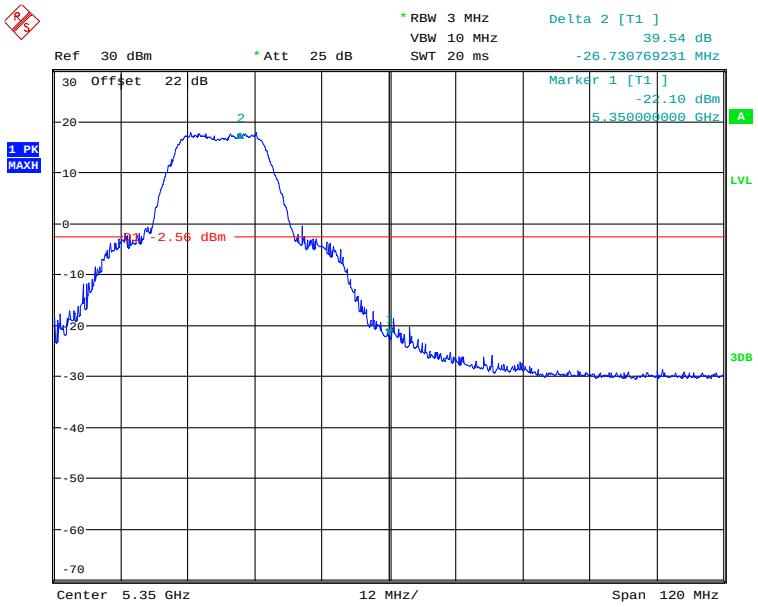
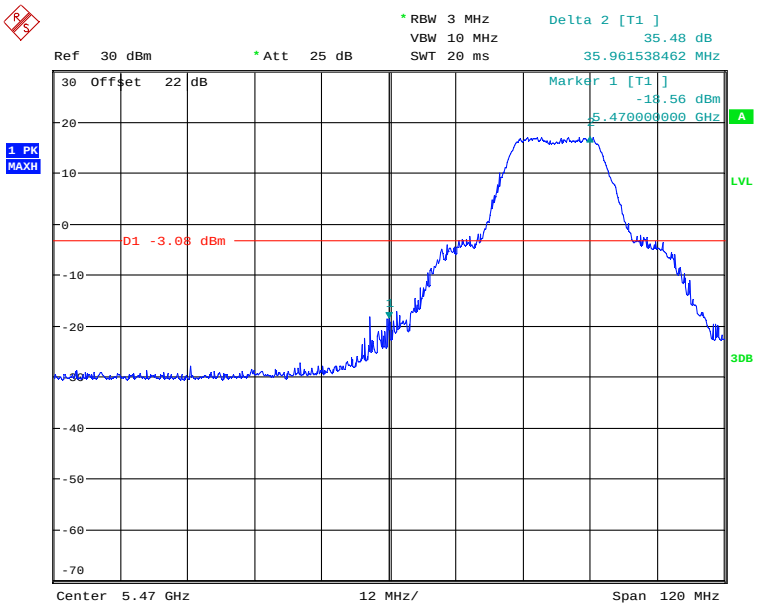
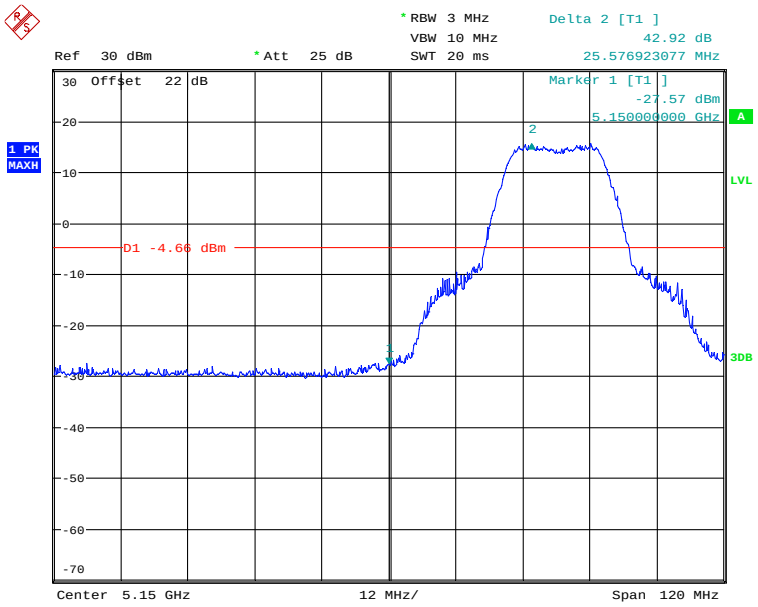


Fig. 26 Band Edges (802.11a, 5320MHz)



Date: 14.MAY.2013 22:06:58

Fig. 27 Band Edges (802.11a, 5500MHz)



Date: 14.MAY.2013 22:08:44

Fig. 28 Band Edges (802.11n-HT20, 5180MHz)

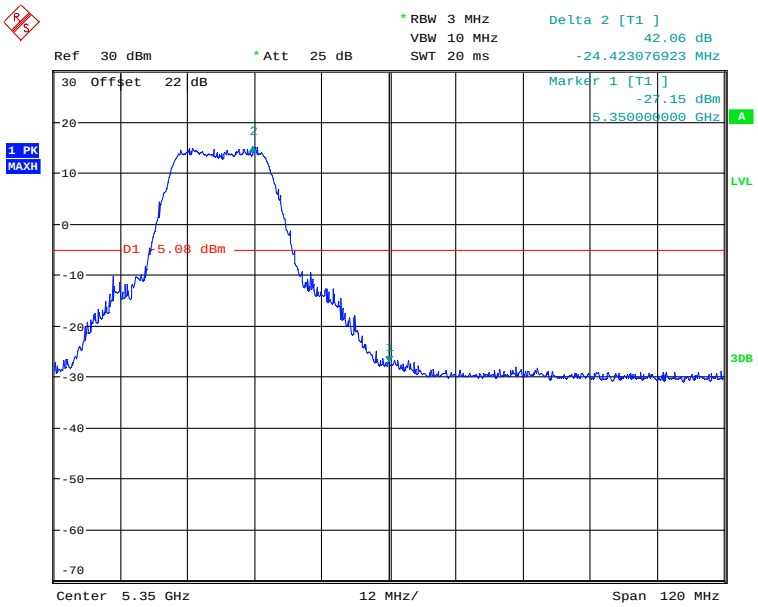


Fig. 29 Band Edges (802.11n-HT20, 5320MHz)

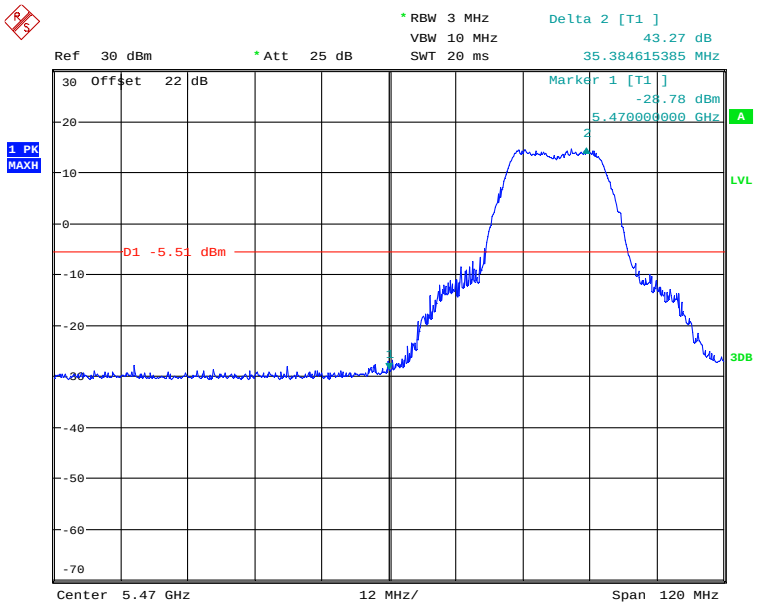


Fig. 30 Band Edges (802.11n-HT20, 5500MHz)

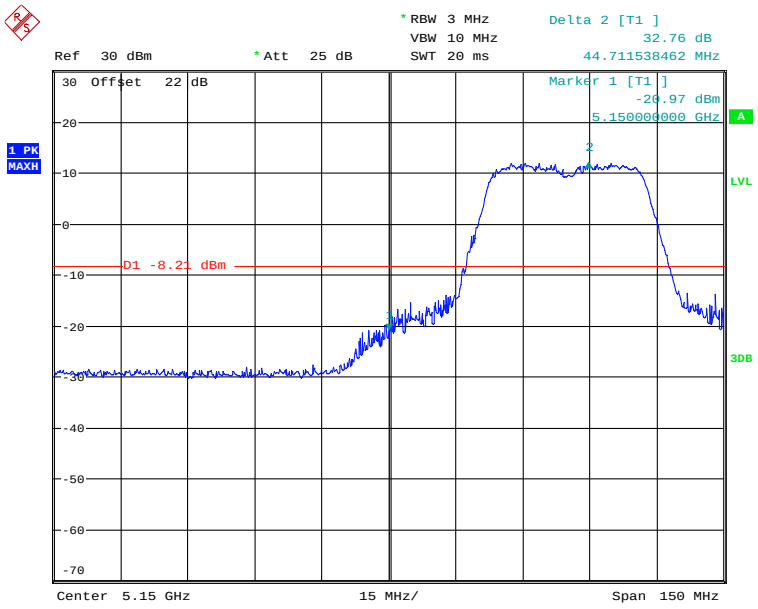


Fig. 31 Band Edges (802.11n-HT40, 5190MHz)

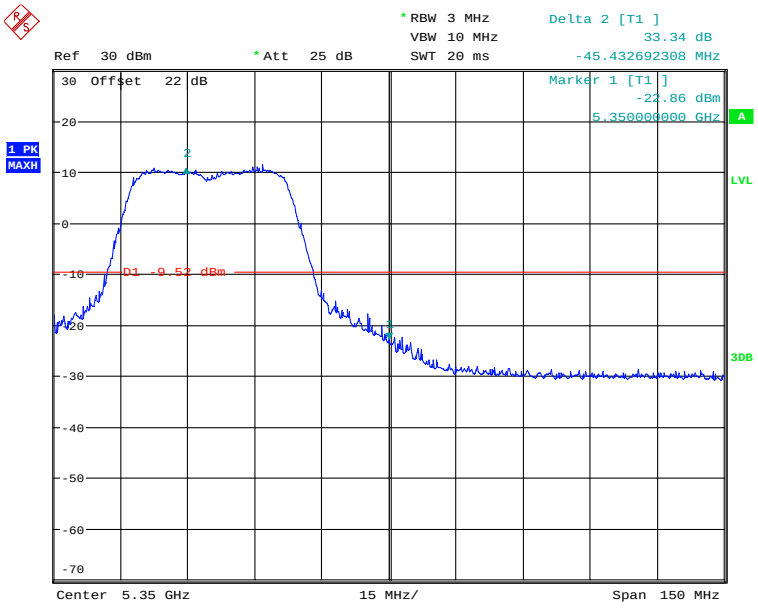


Fig. 32 Band Edges (802.11n-HT40, 5310MHz)

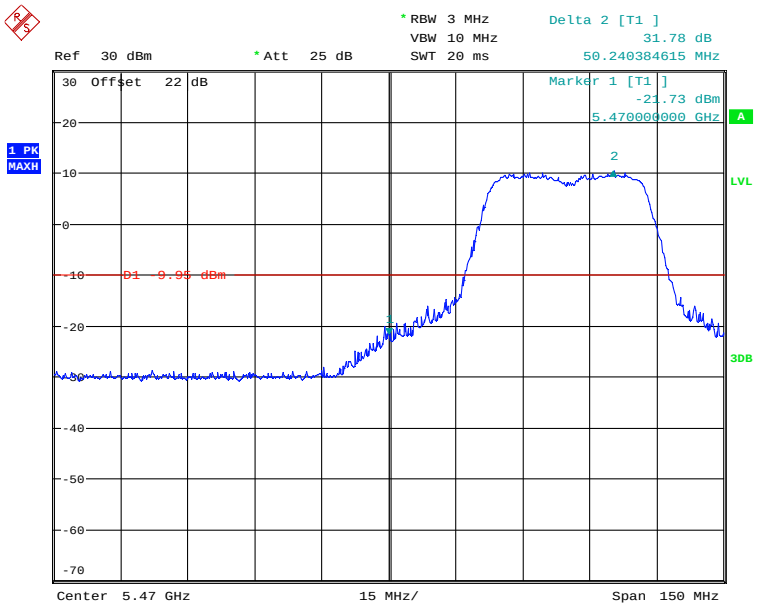


Fig. 33 Band Edges (802.11n-HT40, 5510MHz)

A8.2 Band Edges - radiated

Measurement Limit:

Standard	Limit (dBc)
FCC 47 CFR Part 15.407	> 20

The measurement is made according to KDB 789033

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

Measurement Uncertainty:

Measurement Uncertainty	0.75dB

Measurement Result:

Mode	Channel	Test Results	Conclusion
802.11a	5180 MHz	Fig.34	P
	5320 MHz	Fig.35	P
	5500 MHz	Fig.36	P
802.11n HT20	5180 MHz	Fig.37	P
	5320 MHz	Fig.38	P
	5500 MHz	Fig.39	P
802.11n HT40	5190 MHz	Fig.40	P
	5310 MHz	Fig.41	P
	5510 MHz	Fig.42	P

Conclusion: PASS

Test graphs as below:

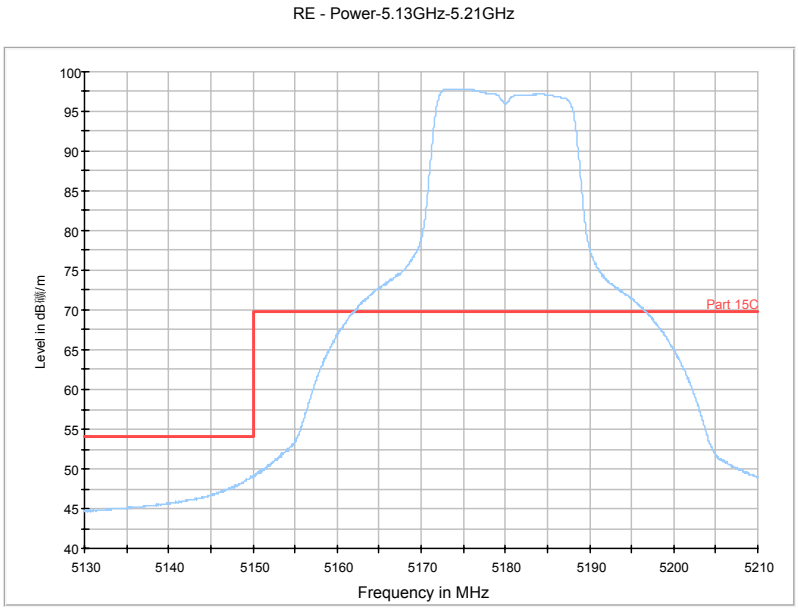


Fig. 34 Band Edges (802.11a, 5180MHz)

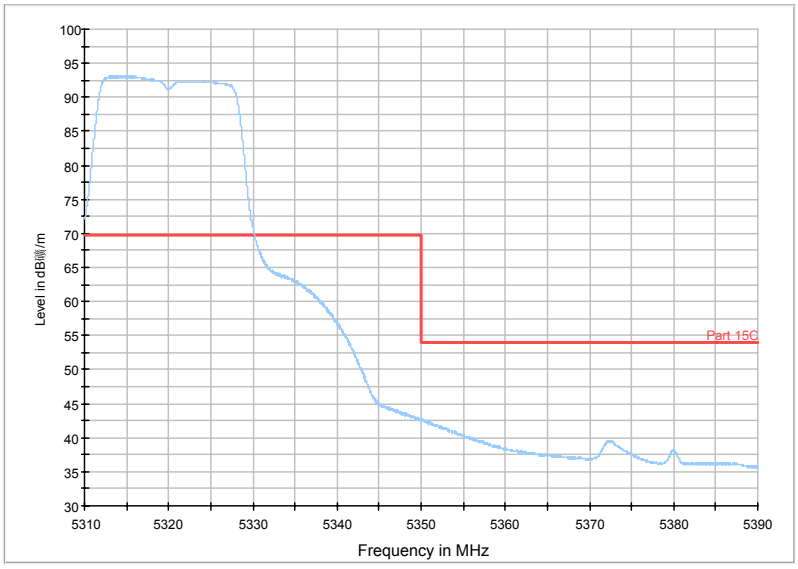


Fig. 35 Band Edges (802.11a, 5320MHz)

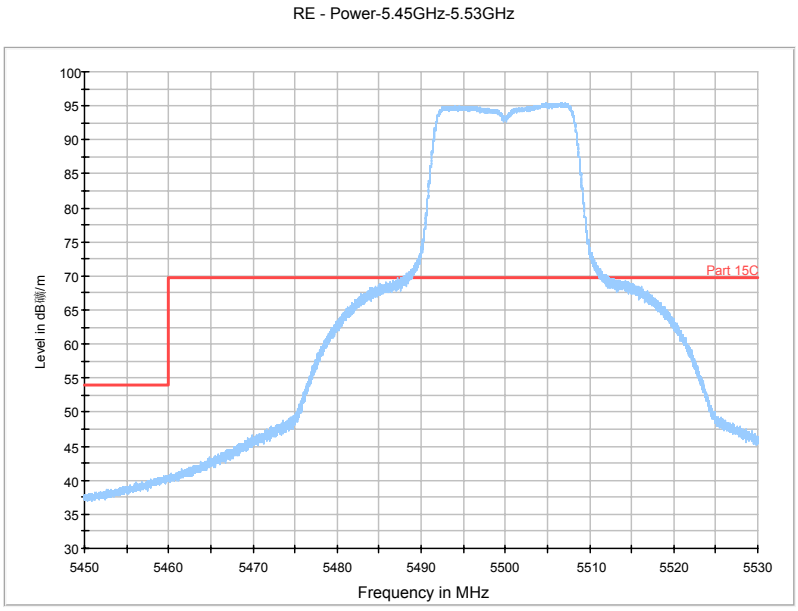


Fig. 36 Band Edges (802.11a, 5550MHz)

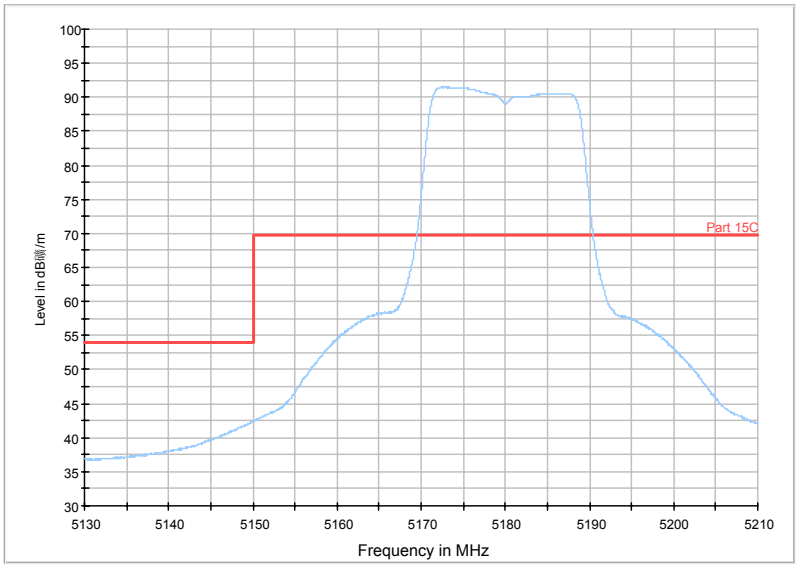


Fig. 37 Band Edges (802.11n-HT20, 5180MHz)

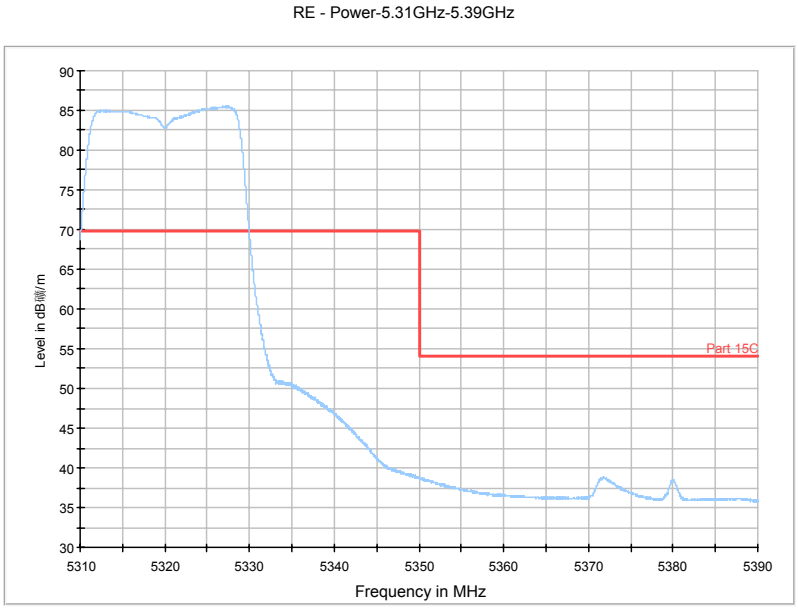


Fig. 38 Band Edges (802.11n-HT20, 5320MHz)

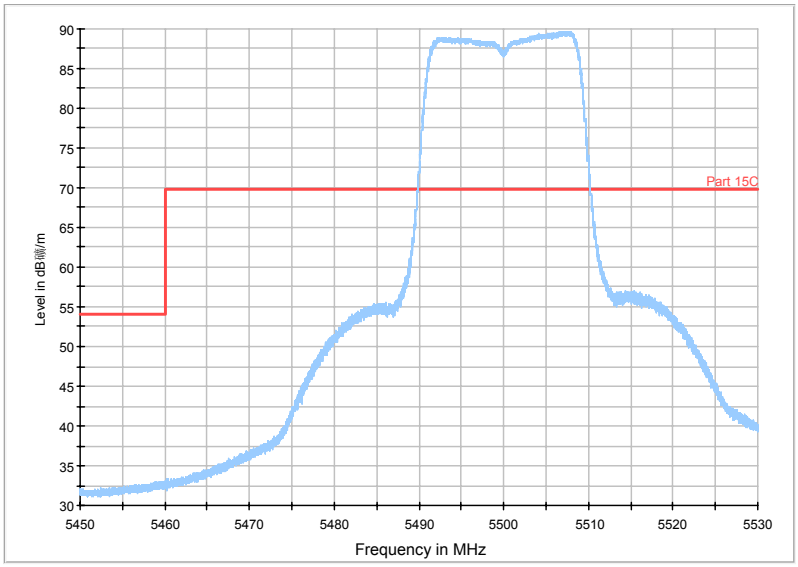


Fig. 39 Band Edges (802.11n-HT20, 5500MHz)

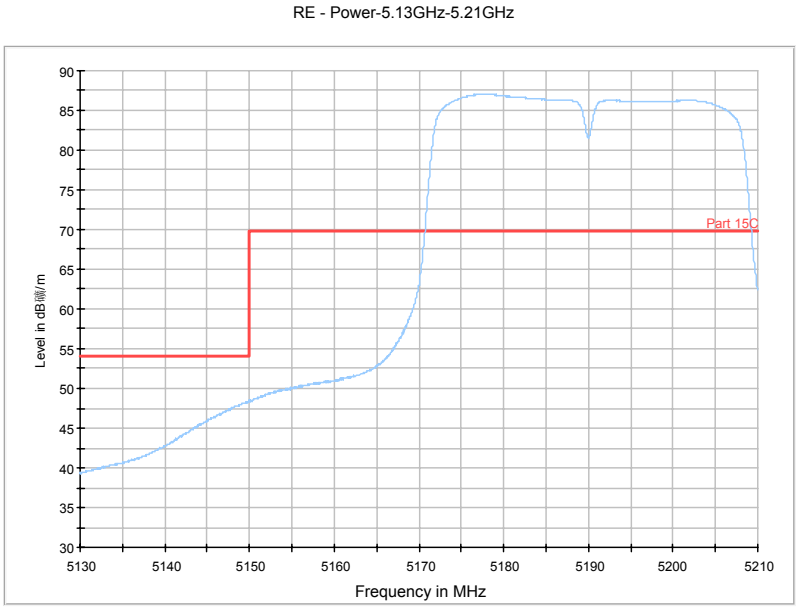


Fig. 40 Band Edges (802.11n-HT40, 5190MHz)

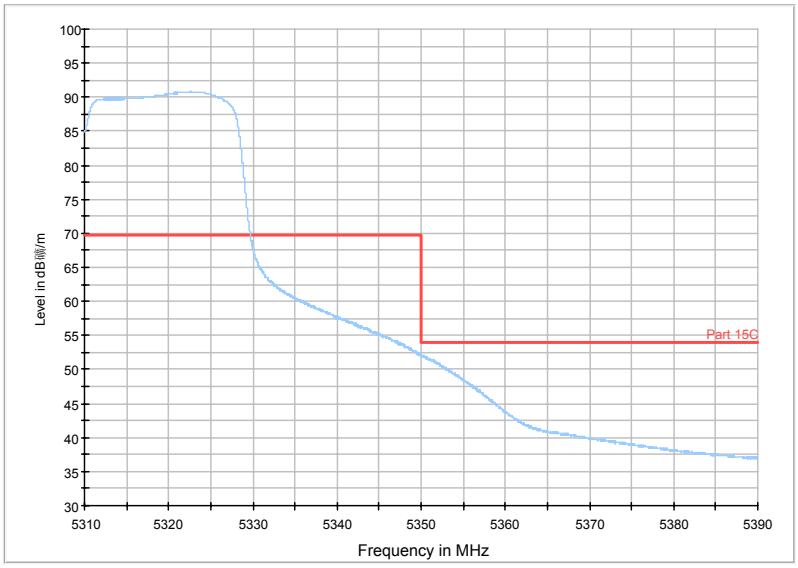


Fig. 41 Band Edges (802.11n-HT40, 5310MHz)

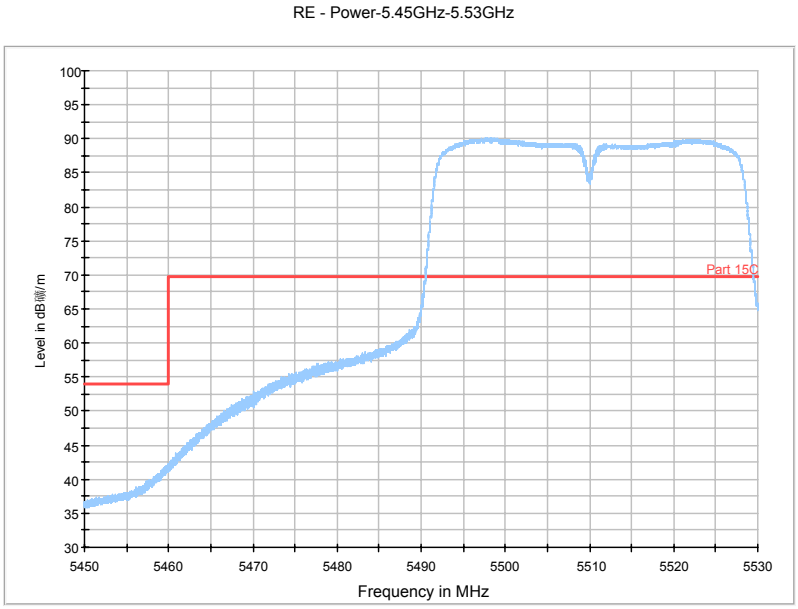


Fig. 42 Band Edges (802.11n-HT40, 5510MHz)

A.9. Transmitter Spurious Emission

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.407	-27 dBm/MHz

The measurement is made according to KDB 789033
In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).
During the test, radiated measurements are performed with 3m test distance. The test result can be converted from field strength fo EIRP, according to the followed formula:
EIRP [dBm] =E [dBμV/m]+20log(d)-104.8
The worst case is listed in the measurement results with the converted unit, which can meet the requirement.

Limit in restricted band:

Frequency of emission (MHz)	Field strength(dBμV/m)	Field strength(dBm/MHz)	Measurement distance(m)
30-88	30.0	-54.8	10
88-216	33.5	-51.3	10
216-960	36.0	-48.8	10
Above 960	54.0	-41.2	3

The limits marked in the plots is smaller than -27dBm/MHz after converting into dBm/MHz unit. All results satisfy the limit means the requirement of the KDB789033 is also met.

Measurement Uncertainty:
Expanded measurement uncertainty for this test item is U =3.9 dB, k=2.

Measurement Results:

Note: All data rate the tests use here is from the worst case of every mode in conducted results.

Worst case: 802.11a channel=48

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P_{Mea} (dBuV/m)	P_{Mea} (dBm/MHz)	Polarization
34139.279	50.8	-33.6	49.7	34.624	-60.576	HORIZONTAL

Note: The worst case choice is based on the data sampled by the software.

802.11a mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11a	36(5180MHz)	30 MHz ~1 GHz	Fig.43	P
		1 GHz ~ 3 GHz	Fig.44	P
		3 GHz ~ 6 GHz	Fig.45	P
		6 GHz ~ 18 GHz	Fig.46	P
		18 GHz ~ 26.5 GHz	Fig.47	P

		26.5 GHz ~ 40 GHz	Fig.48	P
	48(5240MHz)	30 MHz ~1 GHz	Fig.49	P
		1 GHz ~ 3 GHz	Fig.50	P
		3 GHz ~ 6 GHz	Fig.51	P
		6 GHz ~ 18 GHz	Fig.52	P
		18 GHz ~ 26.5 GHz	Fig.53	P
		26.5 GHz ~ 40 GHz	Fig.54	P
	52(5260MHz)	30 MHz ~1 GHz	Fig.55	P
		1 GHz ~ 3 GHz	Fig.56	P
		3 GHz ~ 6 GHz	Fig.57	P
		6 GHz ~ 18 GHz	Fig.58	P
		18 GHz ~ 26.5 GHz	Fig.59	P
		26.5 GHz ~ 40 GHz	Fig.60	P
	64(5320MHz)	30 MHz ~1 GHz	Fig.61	P
		1 GHz ~ 3 GHz	Fig.62	P
		3 GHz ~ 6 GHz	Fig.63	P
		6 GHz ~ 18 GHz	Fig.64	P
		18 GHz ~ 26.5 GHz	Fig.65	P
		26.5 GHz ~ 40 GHz	Fig.66	P

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11a	100(5500MHz)	30 MHz ~1 GHz	Fig.67	P
		1 GHz ~ 3 GHz	Fig.68	P
		3 GHz ~ 6 GHz	Fig.69	P
		6 GHz ~ 18 GHz	Fig.70	P
		18 GHz ~ 26.5 GHz	Fig.71	P
		26.5 GHz ~ 40 GHz	Fig.72	P
	120(5600MHz)	30 MHz ~1 GHz	Fig.73	P
		1 GHz ~ 3 GHz	Fig.74	P
		3 GHz ~ 6 GHz	Fig.75	P
		6 GHz ~ 18 GHz	Fig.76	P
		18 GHz ~ 26.5 GHz	Fig.77	P
		26.5 GHz ~ 40 GHz	Fig.78	P
	140(5700MHz)	30 MHz ~1 GHz	Fig.79	P
		1 GHz ~ 3 GHz	Fig.80	P
		3 GHz ~ 6 GHz	Fig.81	P
		6 GHz ~ 18 GHz	Fig.82	P
		18 GHz ~ 26.5 GHz	Fig.83	P
		26.5 GHz ~ 40 GHz	Fig.84	P

802.11n-HT20 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n HT20	36(5180MHz)	30 MHz ~1 GHz	Fig.85	P
		1 GHz ~ 3 GHz	Fig.86	P
		3 GHz ~ 6 GHz	Fig.87	P
		6 GHz ~ 18 GHz	Fig.88	P
		18 GHz ~ 26.5 GHz	Fig.89	P
		26.5 GHz ~ 40 GHz	Fig.90	P
	48(5240MHz)	30 MHz ~1 GHz	Fig.91	P
		1 GHz ~ 3 GHz	Fig.92	P
		3 GHz ~ 6 GHz	Fig.93	P
		6 GHz ~ 18 GHz	Fig.94	P
		18 GHz ~ 26.5 GHz	Fig.95	P
		26.5 GHz ~ 40 GHz	Fig.96	P
	52(5260MHz)	30 MHz ~1 GHz	Fig.97	P
		1 GHz ~ 3 GHz	Fig.98	P
		3 GHz ~ 6 GHz	Fig.99	P
		6 GHz ~ 18 GHz	Fig.100	P
		18 GHz ~ 26.5 GHz	Fig.101	P
		26.5 GHz ~ 40 GHz	Fig.102	P
	64(5320MHz)	30 MHz ~1 GHz	Fig.103	P
		1 GHz ~ 3 GHz	Fig.104	P
		3 GHz ~ 6 GHz	Fig.105	P
		6 GHz ~ 18 GHz	Fig.106	P
		18 GHz ~ 26.5 GHz	Fig.107	P
		26.5 GHz ~ 40 GHz	Fig.108	P

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n HT20	100(5500MHz)	30 MHz ~1 GHz	Fig.109	P
		1 GHz ~ 3 GHz	Fig.110	P
		3 GHz ~ 6 GHz	Fig.111	P
		6 GHz ~ 18 GHz	Fig.112	P
		18 GHz ~ 26.5 GHz	Fig.113	P
		26.5 GHz ~ 40 GHz	Fig.114	P
	120(5600MHz)	30 MHz ~1 GHz	Fig.115	P
		1 GHz ~ 3 GHz	Fig.116	P
		3 GHz ~ 6 GHz	Fig.117	P
		6 GHz ~ 18 GHz	Fig.118	P
		18 GHz ~ 26.5 GHz	Fig.119	P
		26.5 GHz ~ 40 GHz	Fig.120	P
	140(5700MHz)	30 MHz ~1 GHz	Fig.121	P
		1 GHz ~ 3 GHz	Fig.122	P
		3 GHz ~ 6 GHz	Fig.123	P
		6 GHz ~ 18 GHz	Fig.124	P
		18 GHz ~ 26.5 GHz	Fig.125	P
		26.5 GHz ~ 40 GHz	Fig.126	P

802.11n-HT40 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n HT40	38(5190MHz)	30 MHz ~1 GHz	Fig.127	P
		1 GHz ~ 3 GHz	Fig.128	P
		3 GHz ~ 6 GHz	Fig.129	P
		6 GHz ~ 18 GHz	Fig.130	P
		18 GHz ~ 26.5 GHz	Fig.131	P
		26.5 GHz ~ 40 GHz	Fig.132	P
	46(5230MHz)	30 MHz ~1 GHz	Fig.133	P
		1 GHz ~ 3 GHz	Fig.134	P
		3 GHz ~ 6 GHz	Fig.135	P
		6 GHz ~ 18 GHz	Fig.136	P
		18 GHz ~ 26.5 GHz	Fig.137	P
		26.5 GHz ~ 40 GHz	Fig.138	P
	55(5270MHz)	30 MHz ~1 GHz	Fig.139	P
		1 GHz ~ 3 GHz	Fig.140	P
		3 GHz ~ 6 GHz	Fig.141	P
		6 GHz ~ 18 GHz	Fig.142	P
		18 GHz ~ 26.5 GHz	Fig.143	P
		26.5 GHz ~ 40 GHz	Fig.144	P
	62(5310MHz)	30 MHz ~1 GHz	Fig.145	P
		1 GHz ~ 3 GHz	Fig.146	P
		3 GHz ~ 6 GHz	Fig.147	P
		6 GHz ~ 18 GHz	Fig.148	P
		18 GHz ~ 26.5 GHz	Fig.149	P
		26.5 GHz ~ 40 GHz	Fig.150	P

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n HT40	102(5510MHz)	30 MHz ~1 GHz	Fig.151	P
		1 GHz ~ 3 GHz	Fig.152	P
		3 GHz ~ 6 GHz	Fig.153	P
		6 GHz ~ 18 GHz	Fig.154	P
		18 GHz ~ 26.5 GHz	Fig.155	P
		26.5 GHz ~ 40 GHz	Fig.156	P
	118(5590MHz)	30 MHz ~1 GHz	Fig.157	P
		1 GHz ~ 3 GHz	Fig.158	P
		3 GHz ~ 6 GHz	Fig.159	P
		6 GHz ~ 18 GHz	Fig.160	P
		18 GHz ~ 26.5 GHz	Fig.161	P
		26.5 GHz ~ 40 GHz	Fig.162	P
	134(5670MHz)	30 MHz ~1 GHz	Fig.163	P
		1 GHz ~ 3 GHz	Fig.164	P
		3 GHz ~ 6 GHz	Fig.165	P
		6 GHz ~ 18 GHz	Fig.166	P
		18 GHz ~ 26.5 GHz	Fig.167	P
		26.5 GHz ~ 40 GHz	Fig.168	P

Conclusion: PASS

Test graphs as below:

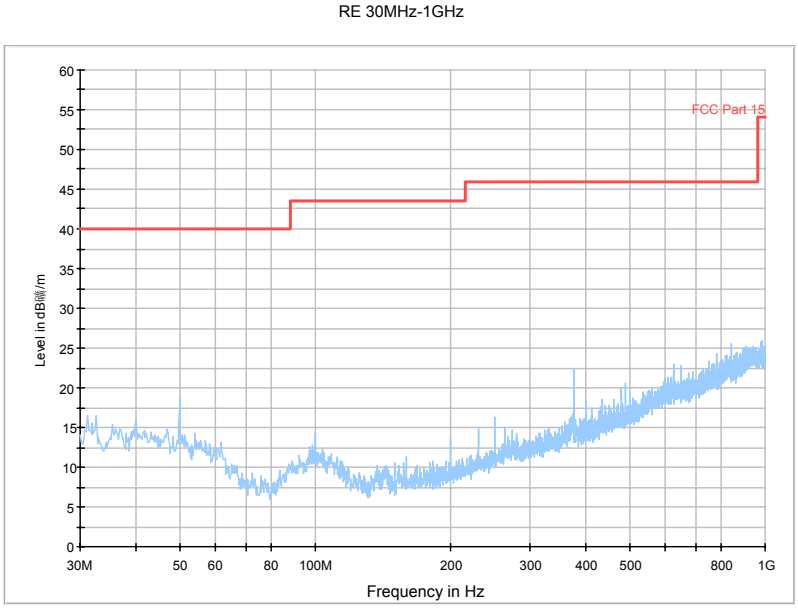


Fig. 43 Radiated Spurious Emission (802.11a, ch36, 30 MHz-1 GHz)

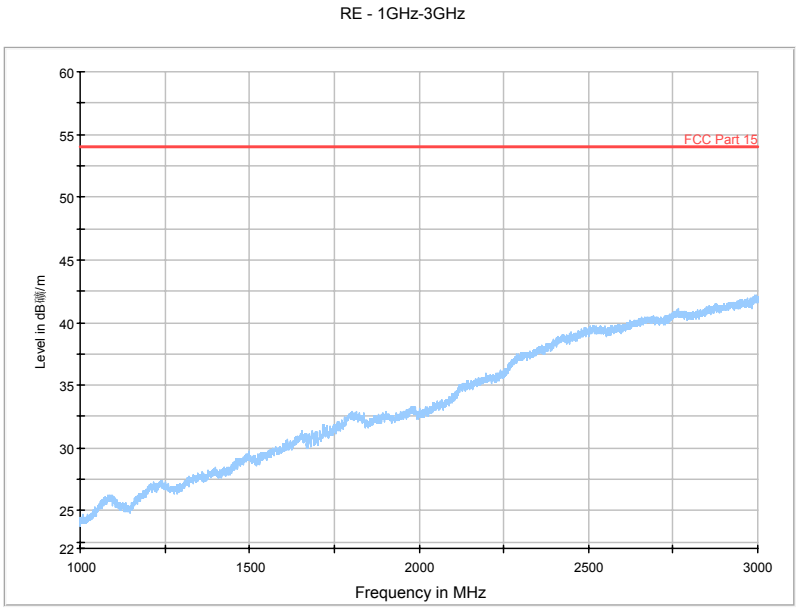


Fig. 44 Radiated Spurious Emission (802.11a, ch36, 1 GHz-3 GHz)

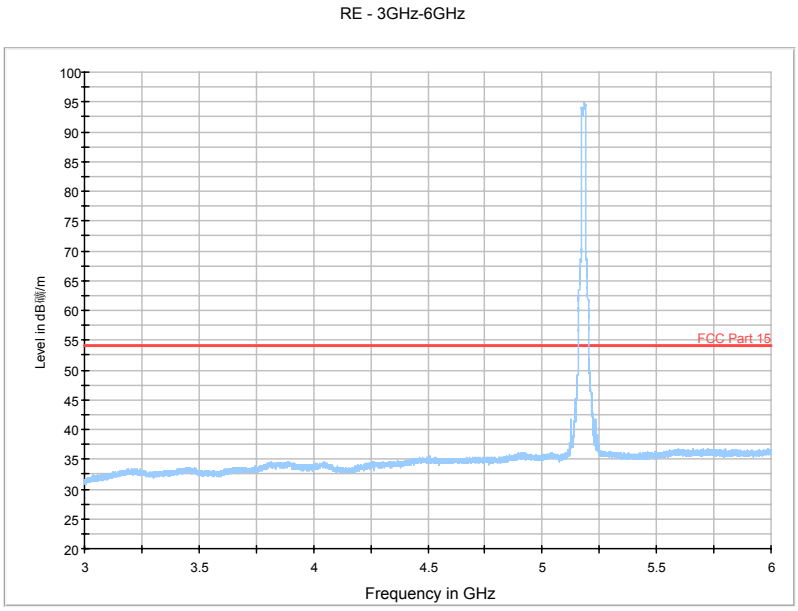


Fig. 45 Radiated Spurious Emission (802.11a, ch36, 3 GHz-6 GHz)

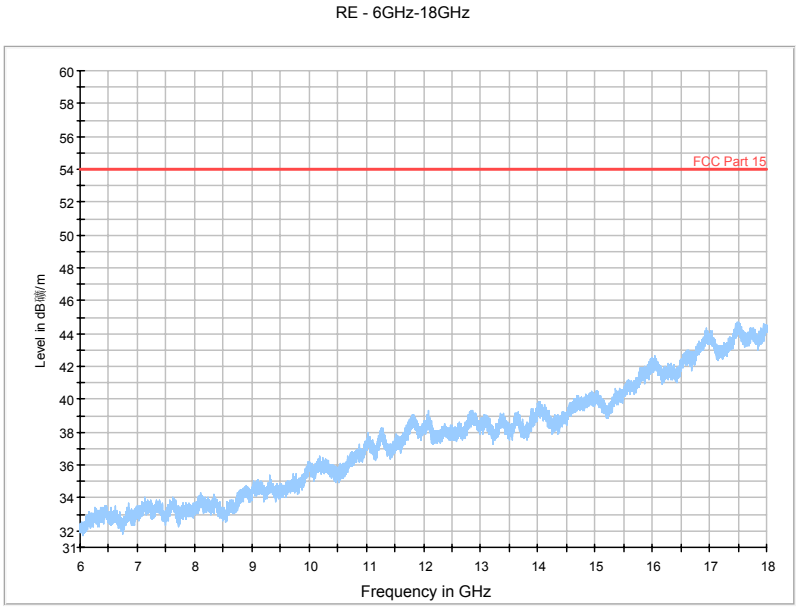


Fig. 46 Radiated Spurious Emission (802.11a, ch36, 6 GHz-18 GHz)

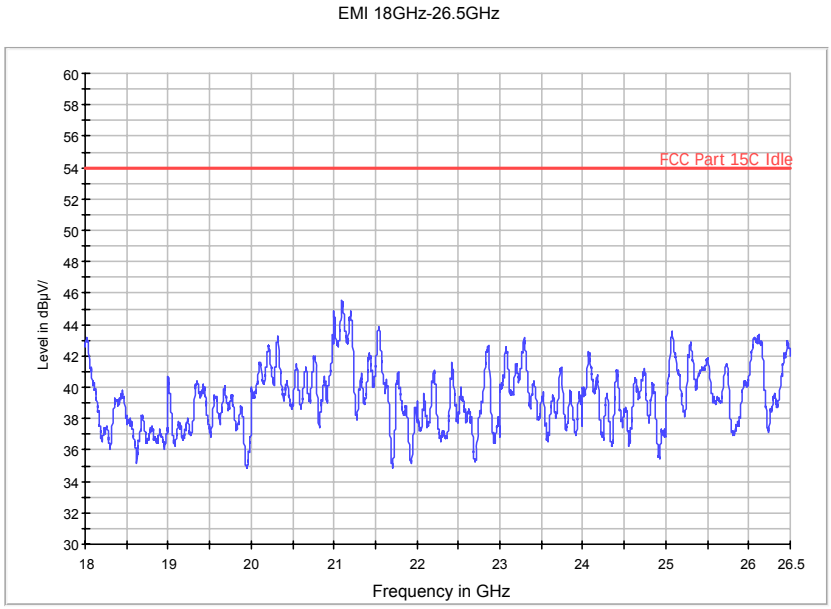


Fig. 47 Radiated Spurious Emission (802.11a, ch36, 18 GHz-26.5 GHz)

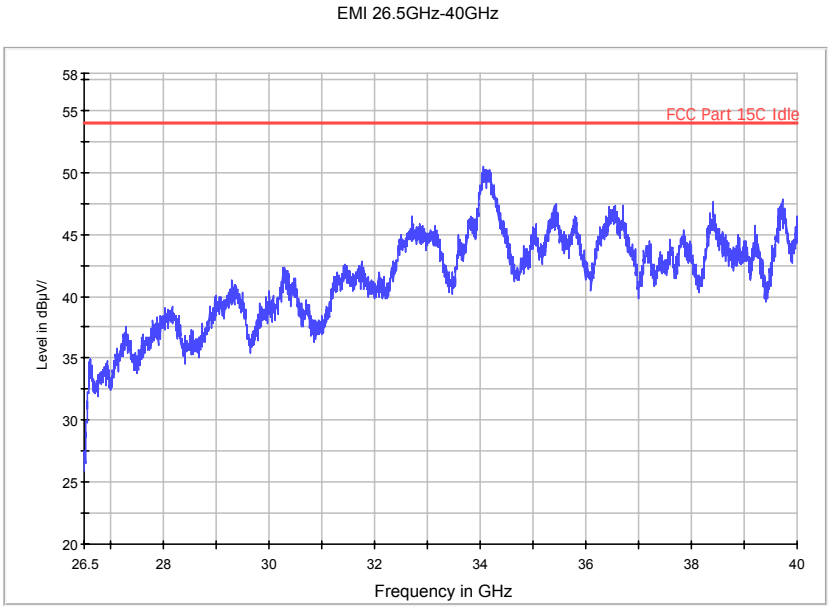


Fig. 48 Radiated Spurious Emission (802.11a, ch36, 26.5 GHz-40 GHz)

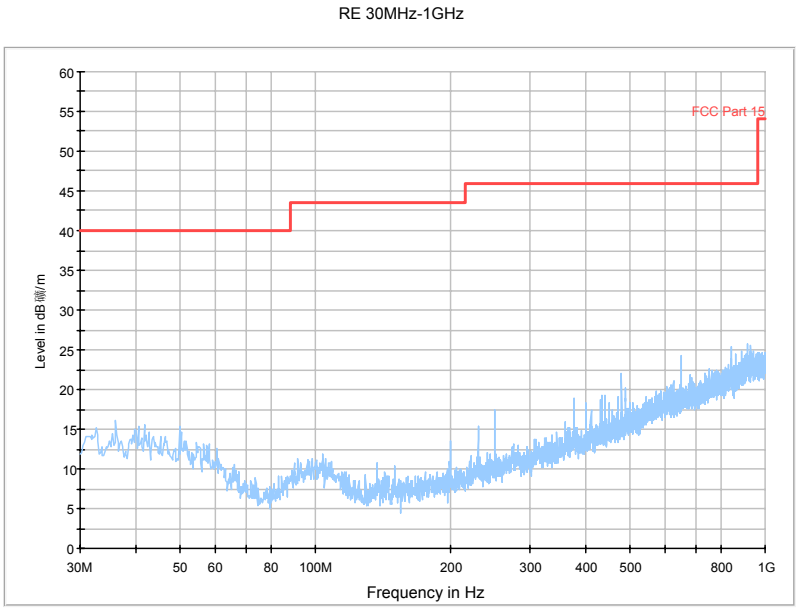


Fig. 49 Radiated Spurious Emission (802.11a, ch48, 30 MHz-1 GHz)

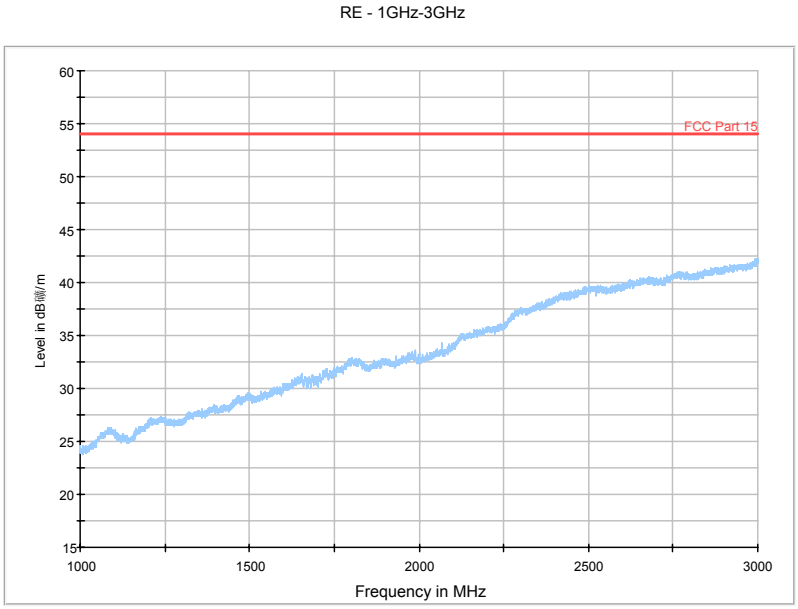


Fig. 50 Radiated Spurious Emission (802.11a, ch48, 1 GHz-3 GHz)

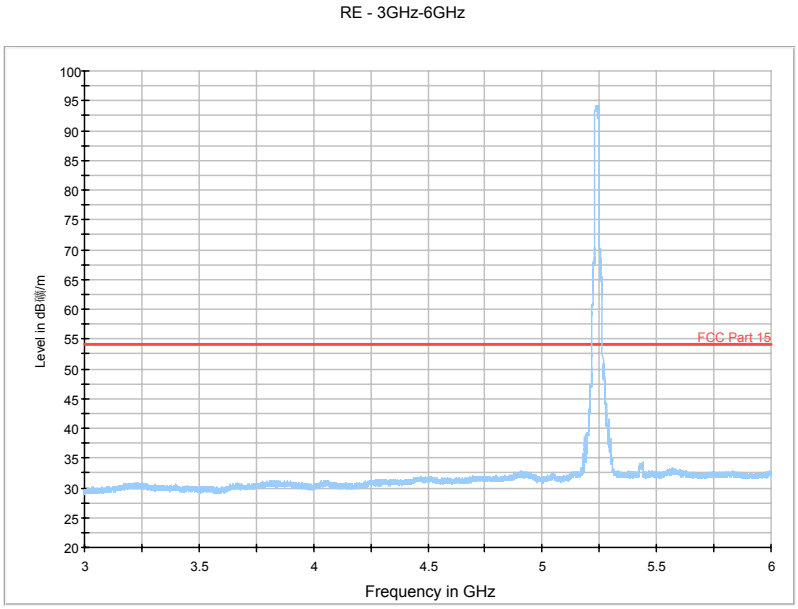


Fig. 51 Radiated Spurious Emission (802.11a, ch48, 3 GHz-6 GHz)

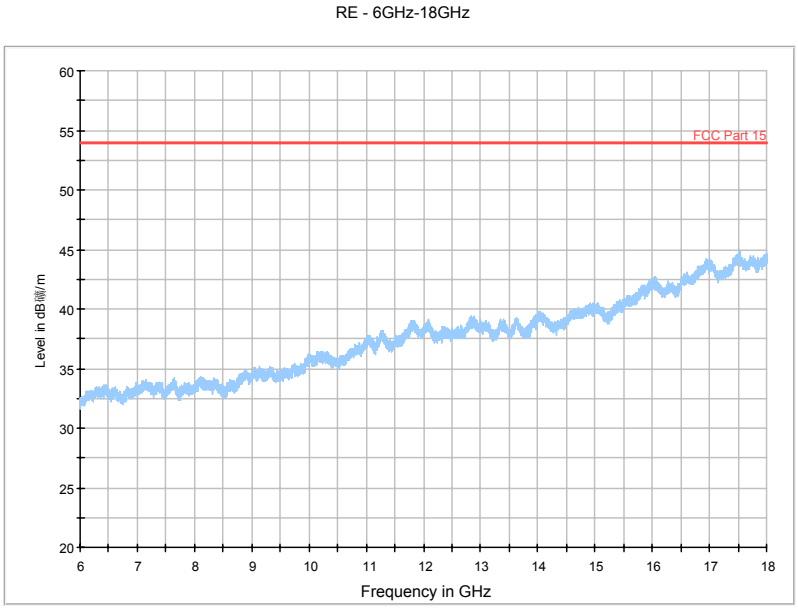


Fig. 52 Radiated Spurious Emission (802.11a, ch48, 6 GHz-18 GHz)

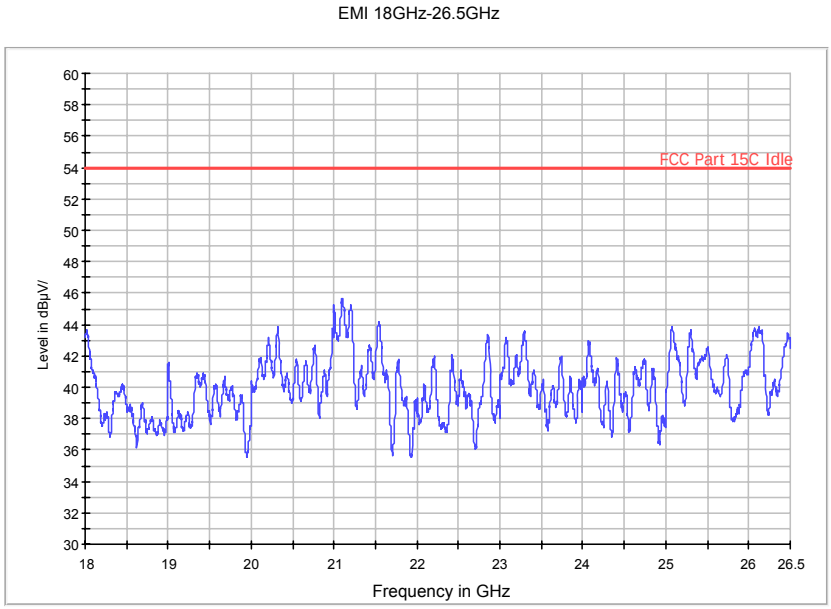


Fig. 53 Radiated Spurious Emission (802.11a, ch48, 18 GHz-26.5 GHz)

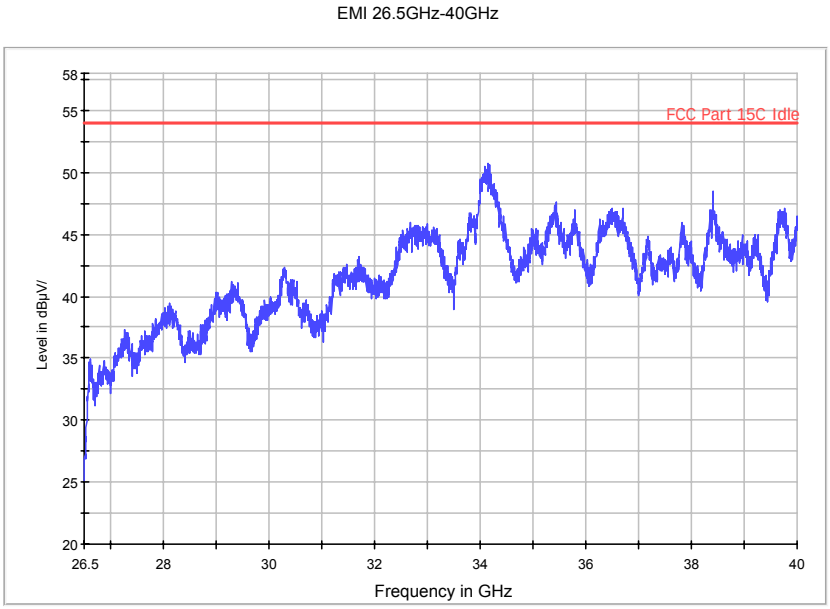


Fig. 54 Radiated Spurious Emission (802.11a, ch48, 26.5 GHz-40 GHz)

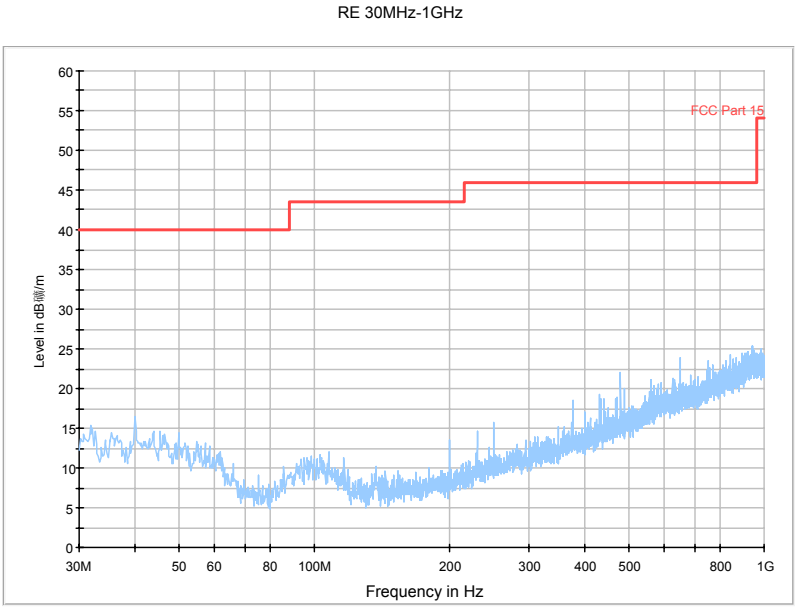


Fig. 55 Radiated Spurious Emission (802.11a, ch52, 30 MHz-1 GHz)

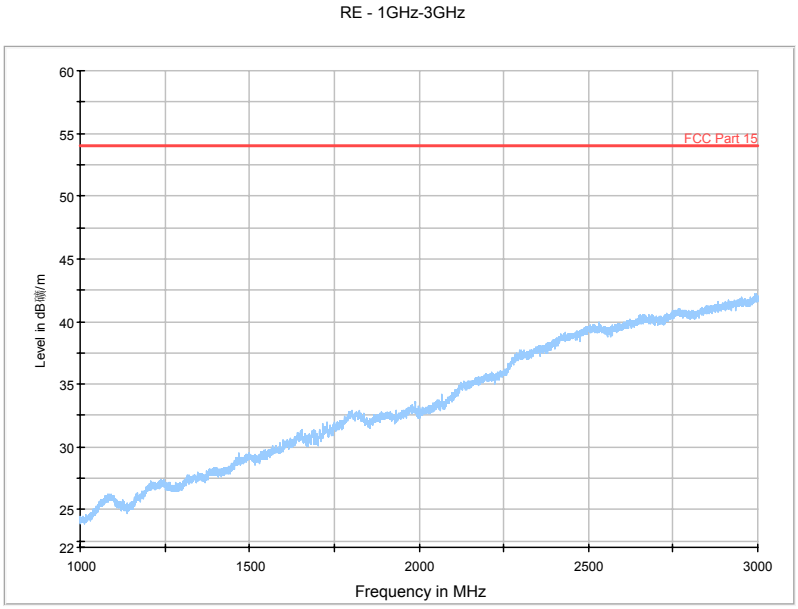


Fig. 56 Radiated Spurious Emission (802.11a, ch52, 1 GHz-3 GHz)

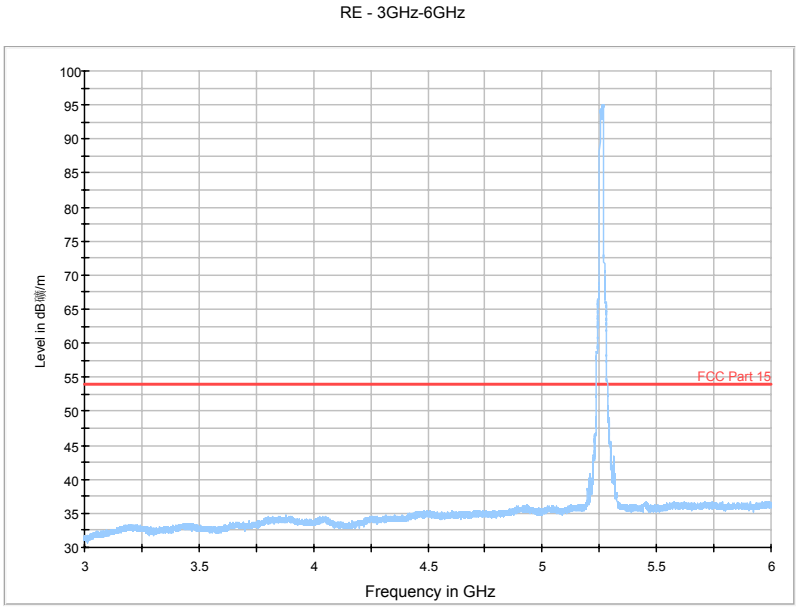


Fig. 57 Radiated Spurious Emission (802.11a, ch52, 3 GHz-6 GHz)

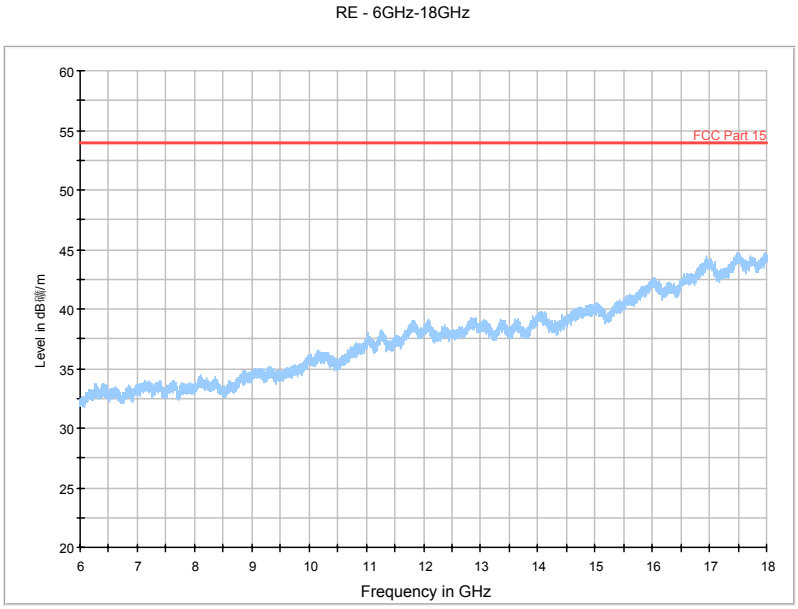


Fig. 58 Radiated Spurious Emission (802.11a, ch52, 6 GHz-18 GHz)

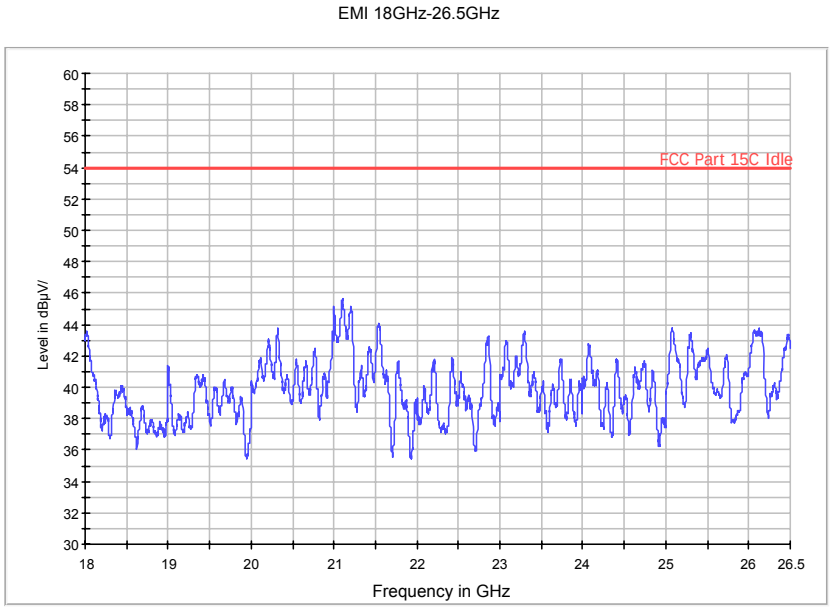


Fig. 59 Radiated Spurious Emission (802.11a, ch52, 18 GHz-26.5 GHz)

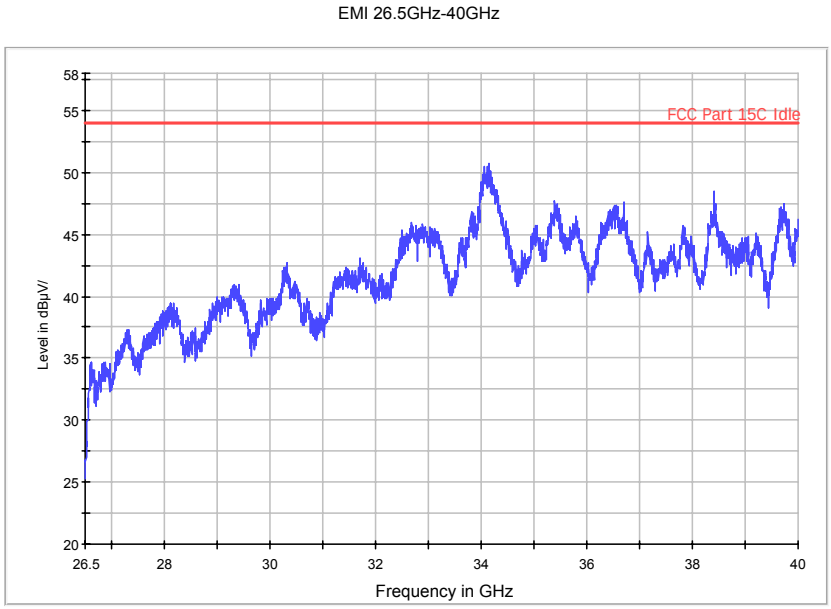


Fig. 60 Radiated Spurious Emission (802.11a, ch52, 26.5 GHz-40 GHz)

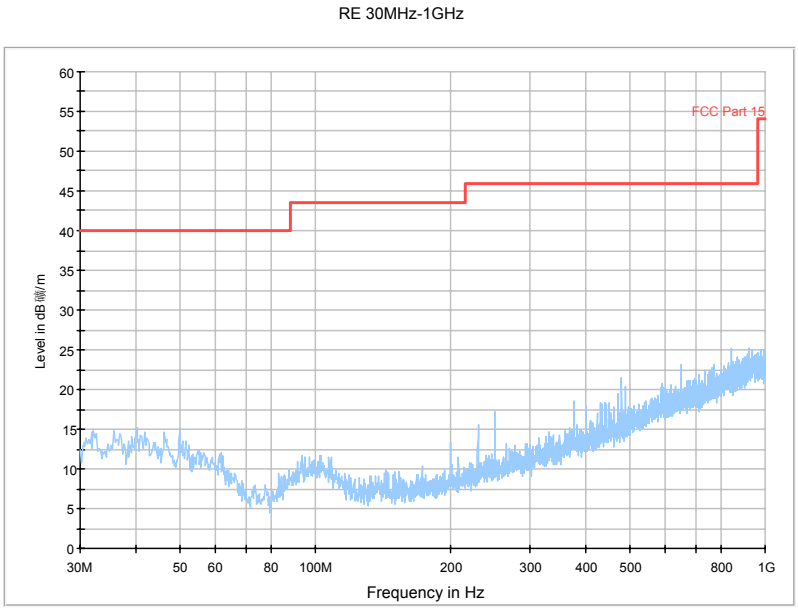


Fig. 61 Radiated Spurious Emission (802.11a, ch64, 30 MHz-1 GHz)

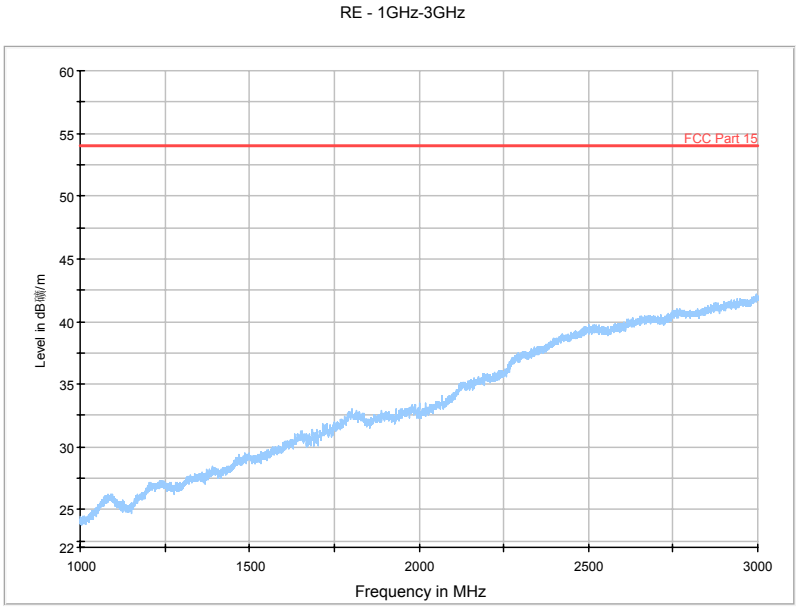


Fig. 62 Radiated Spurious Emission (802.11a, ch64, 1 GHz-3 GHz)

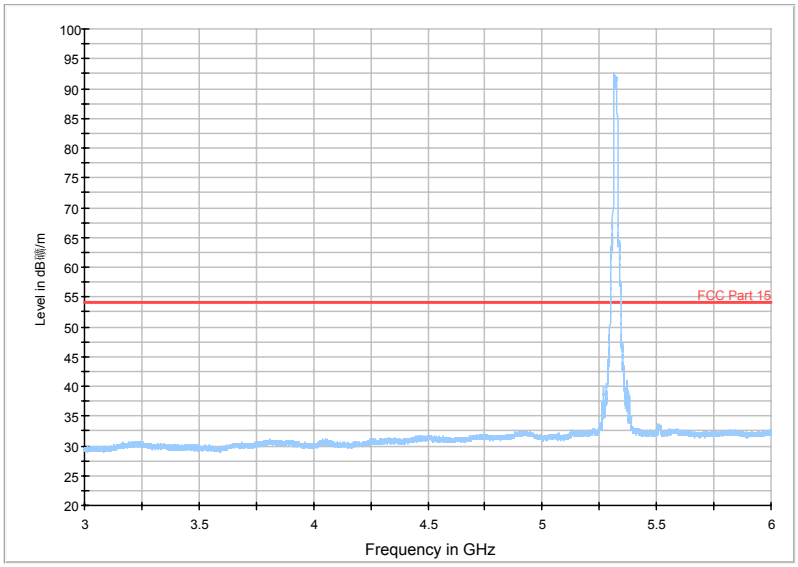


Fig. 63 Radiated Spurious Emission (802.11a, ch64, 3 GHz-6 GHz)

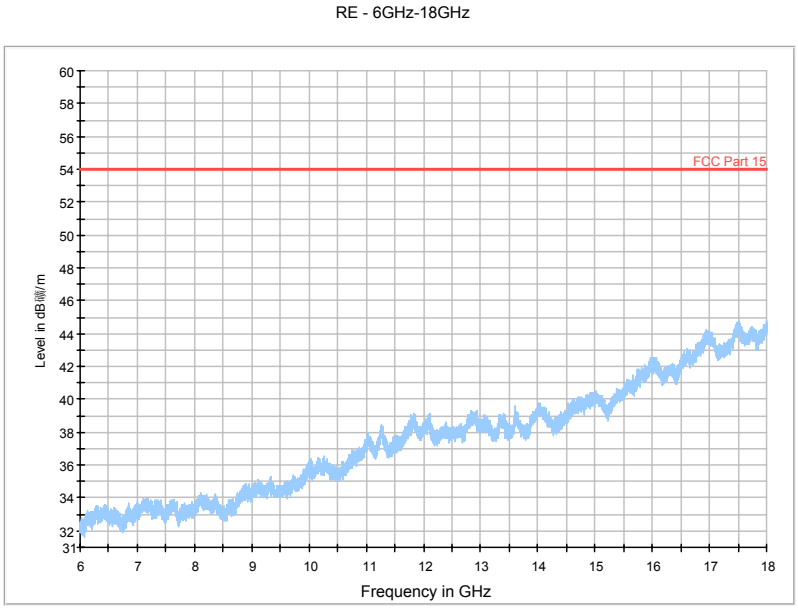


Fig. 64 Radiated Spurious Emission (802.11a, ch64, 6 GHz-18 GHz)

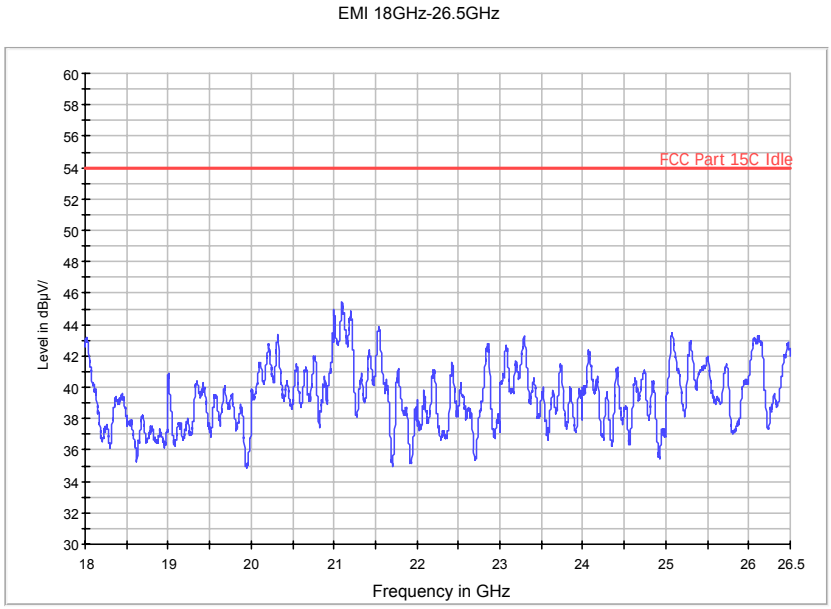


Fig. 65 Radiated Spurious Emission (802.11a, ch64, 18 GHz-26.5 GHz)

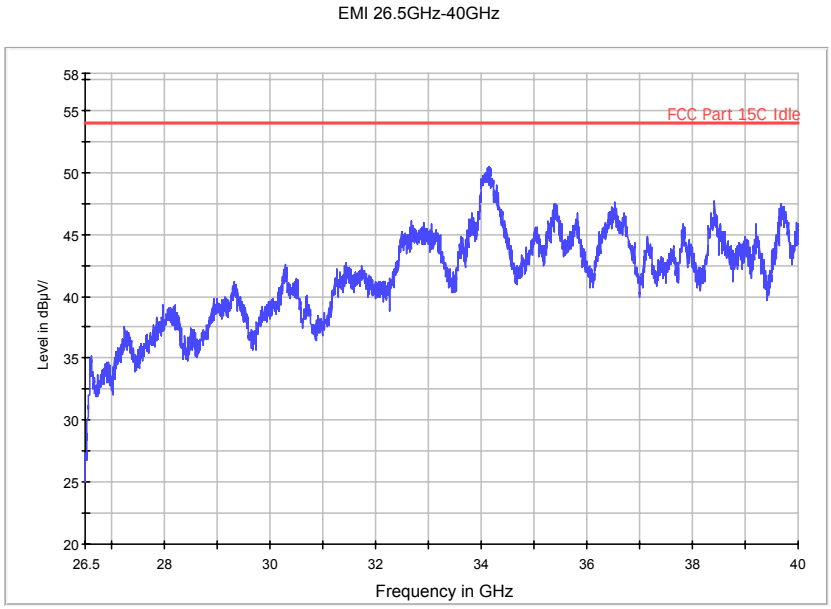


Fig. 66 Radiated Spurious Emission (802.11a, ch64, 26.5 GHz-40 GHz)

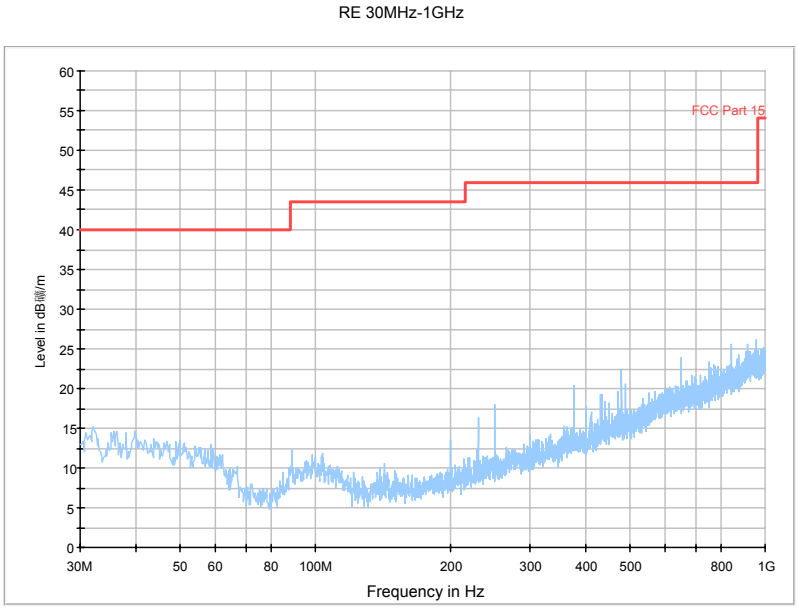


Fig. 67 Radiated Spurious Emission (802.11a, ch100, 30 MHz-1 GHz)

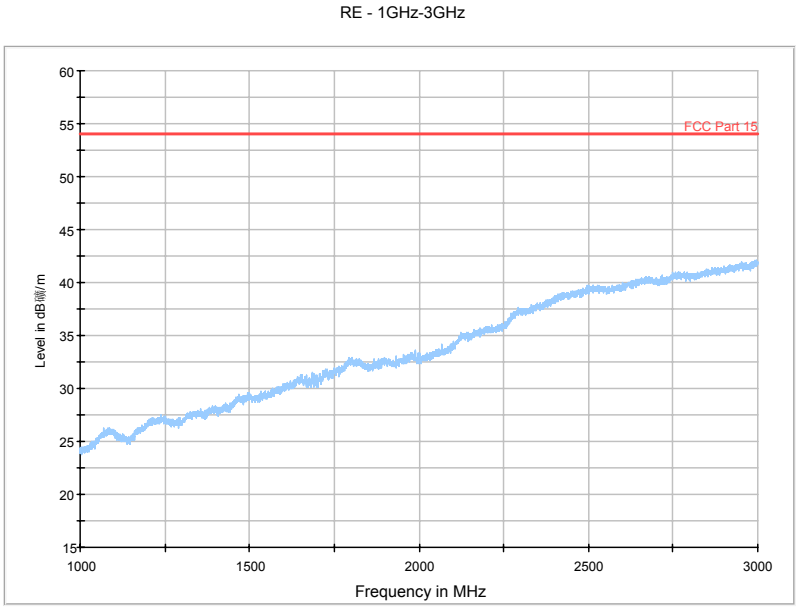


Fig. 68 Radiated Spurious Emission (802.11a, ch100, 1 GHz-3 GHz)

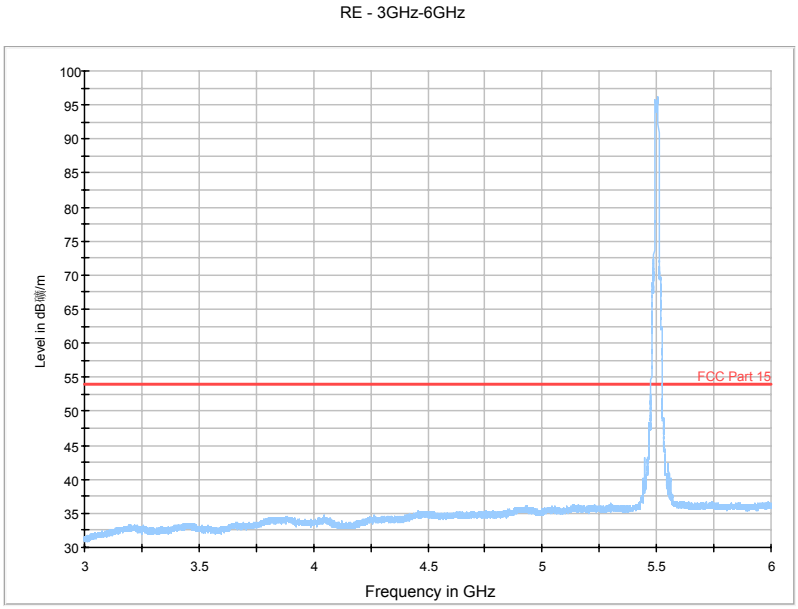


Fig. 69 Radiated Spurious Emission (802.11a, ch100, 3 GHz-6 GHz)

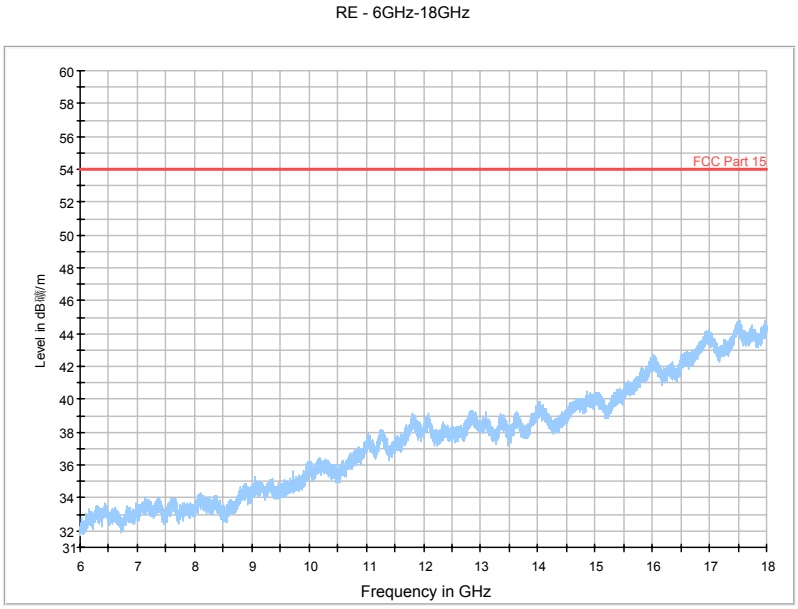


Fig. 70 Radiated Spurious Emission (802.11a, ch100, 6 GHz-18 GHz)

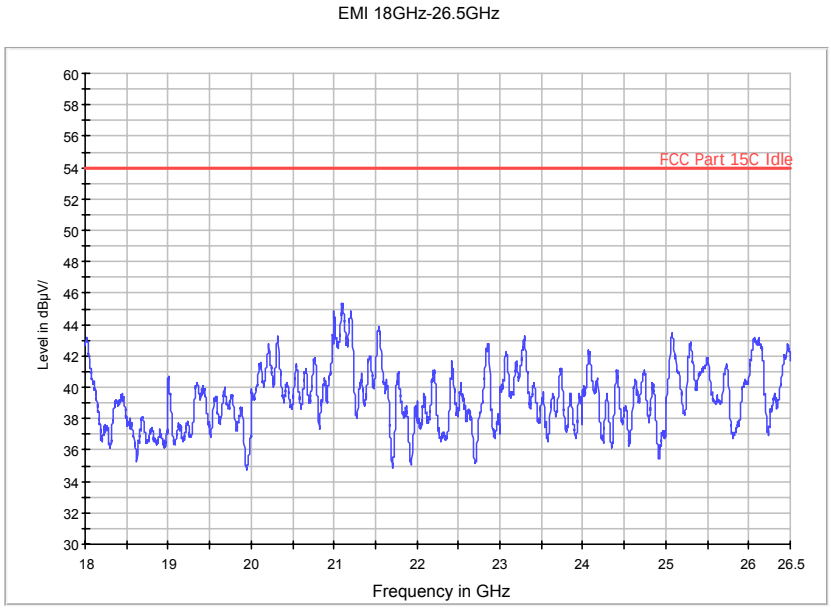


Fig. 71 Radiated Spurious Emission (802.11a, ch100, 18 GHz-26.5 GHz)

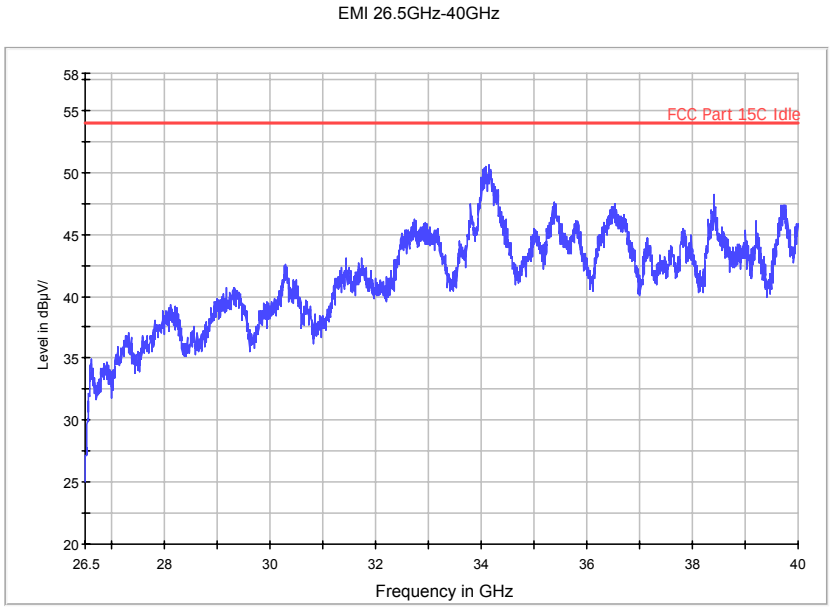


Fig. 72 Radiated Spurious Emission (802.11a, ch100, 26.5 GHz-40 GHz)

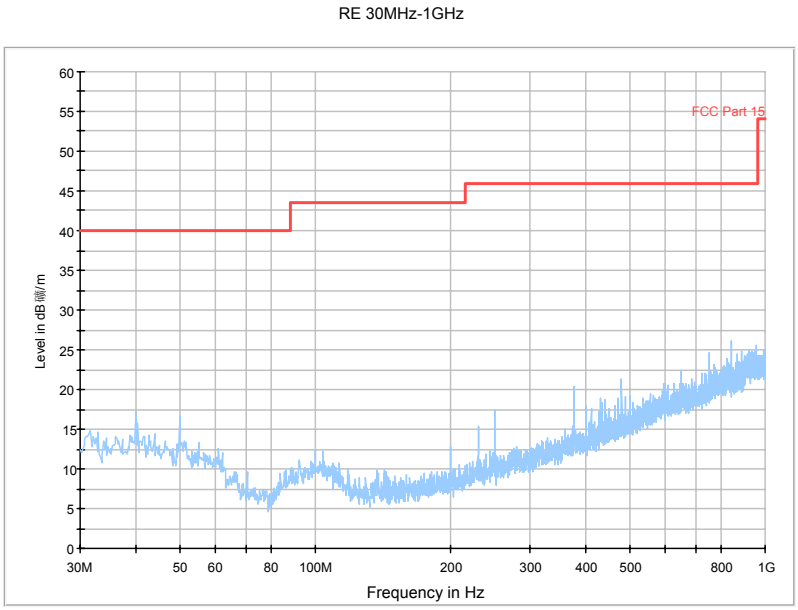


Fig. 73 Radiated Spurious Emission (802.11a, ch120, 30 MHz-1 GHz)

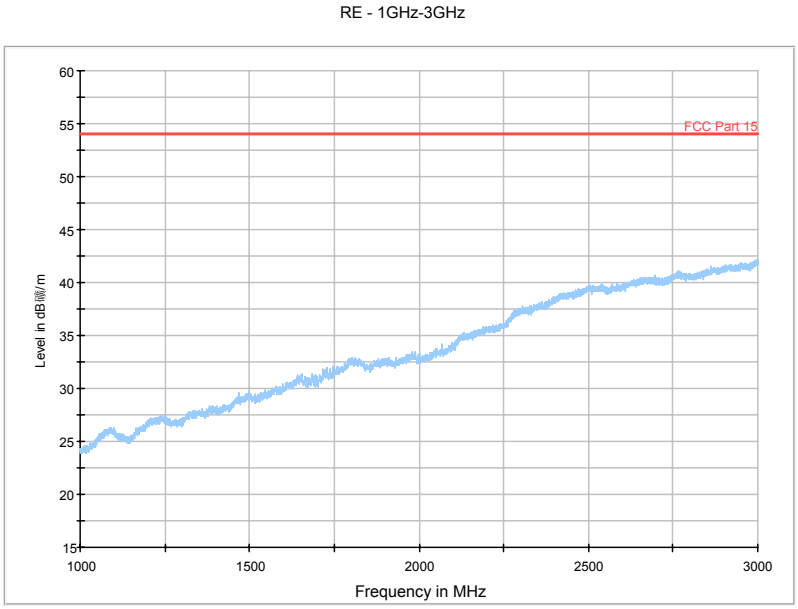


Fig. 74 Radiated Spurious Emission (802.11a, ch120, 1 GHz-3 GHz)

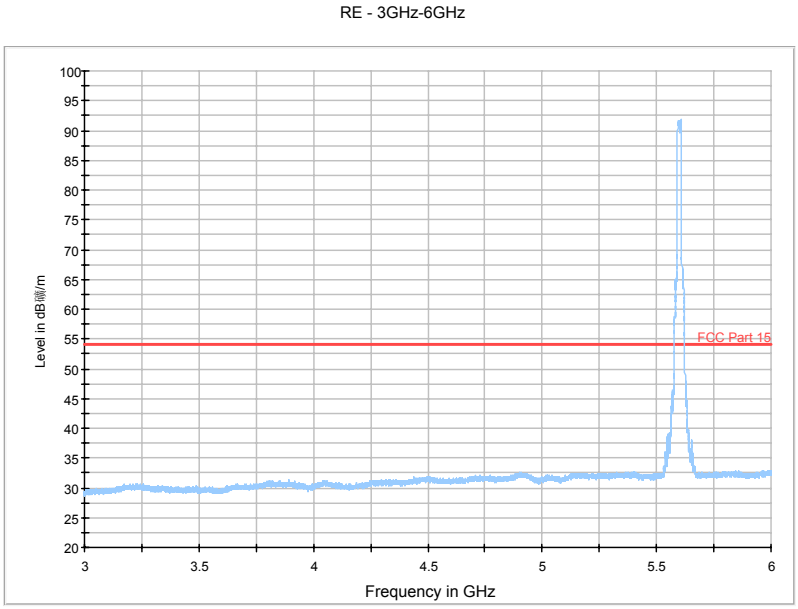


Fig. 75 Radiated Spurious Emission (802.11a, ch120, 3 GHz-6 GHz)

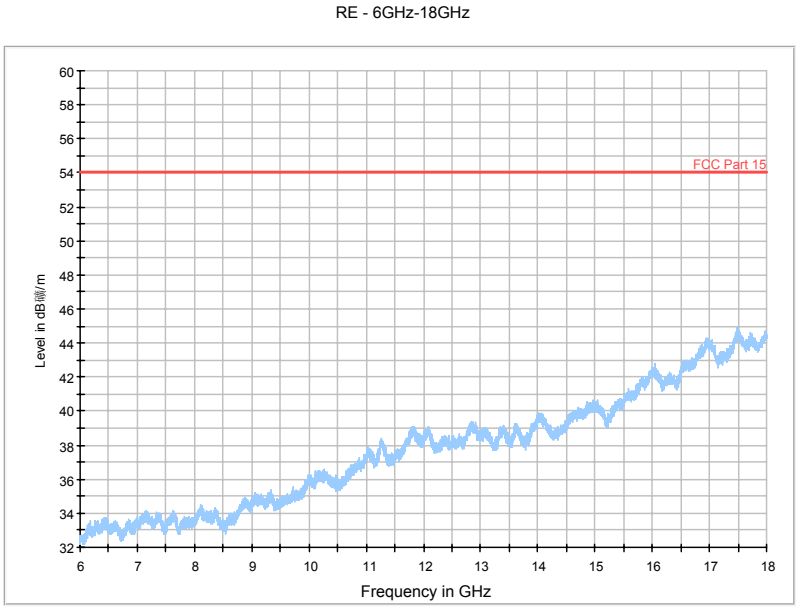


Fig. 76 Radiated Spurious Emission (802.11a, ch120, 6 GHz-18 GHz)

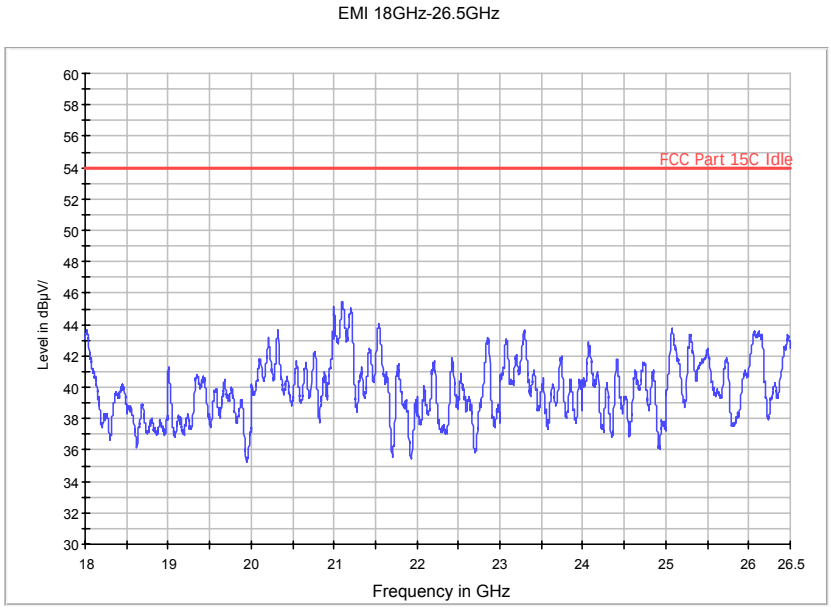


Fig. 77 Radiated Spurious Emission (802.11a, ch120, 18 GHz-26.5 GHz)

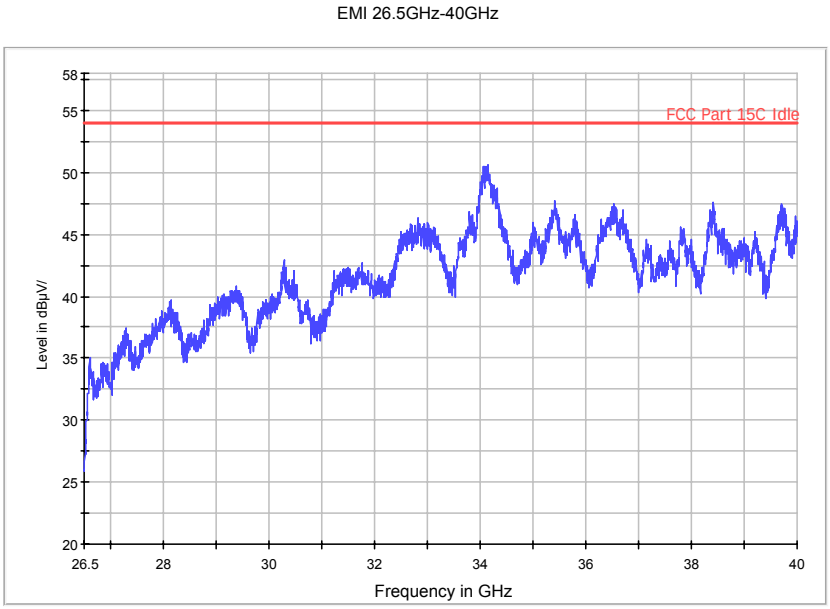


Fig. 78 Radiated Spurious Emission (802.11a, ch120, 26.5 GHz-40 GHz)

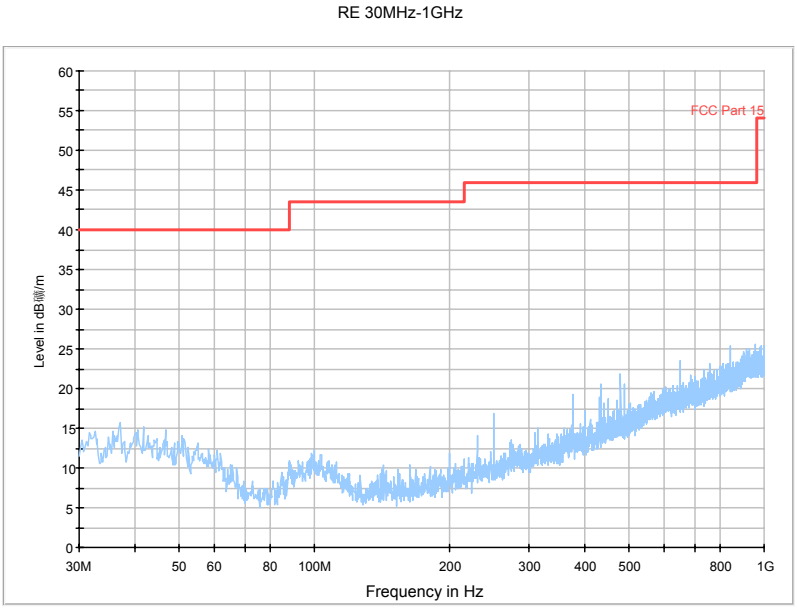


Fig. 79 Radiated Spurious Emission (802.11a, ch140, 30 MHz-1 GHz)

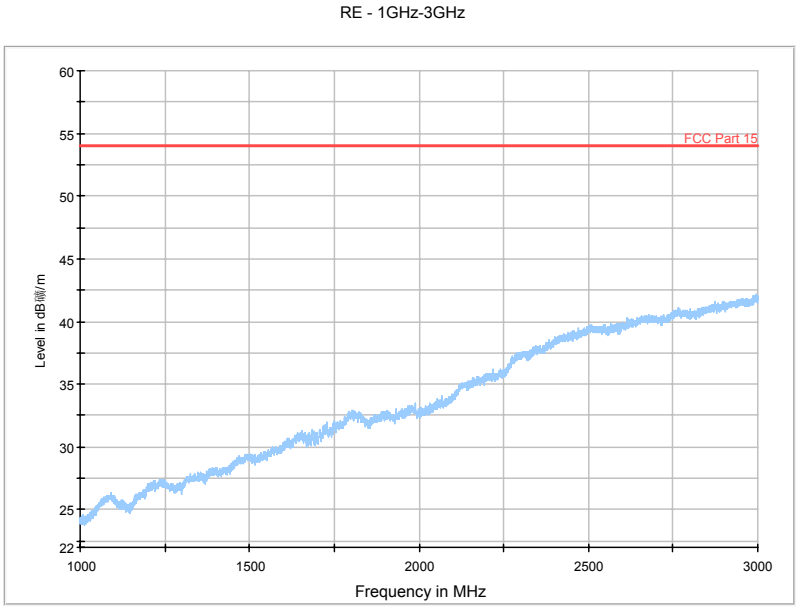


Fig. 80 Radiated Spurious Emission (802.11a, ch140, 1 GHz-3 GHz)

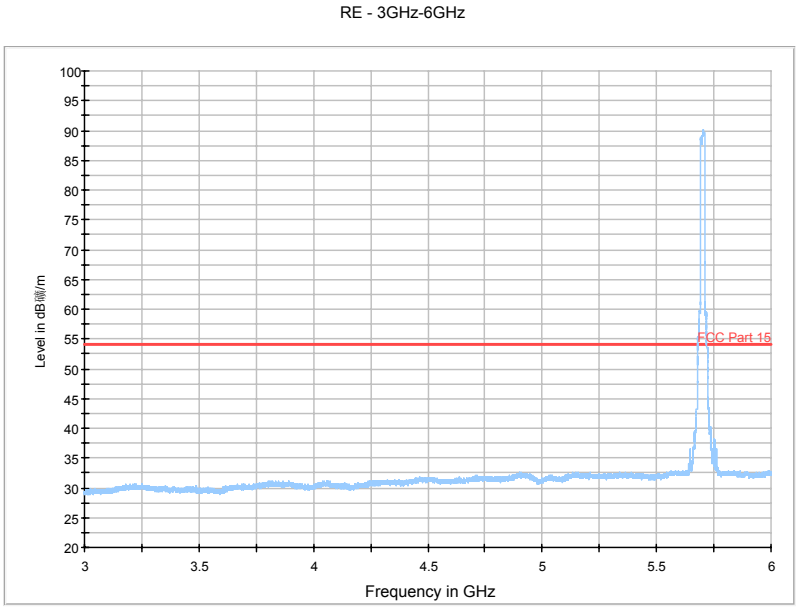


Fig. 81 Radiated Spurious Emission (802.11a, ch140, 3 GHz-6 GHz)

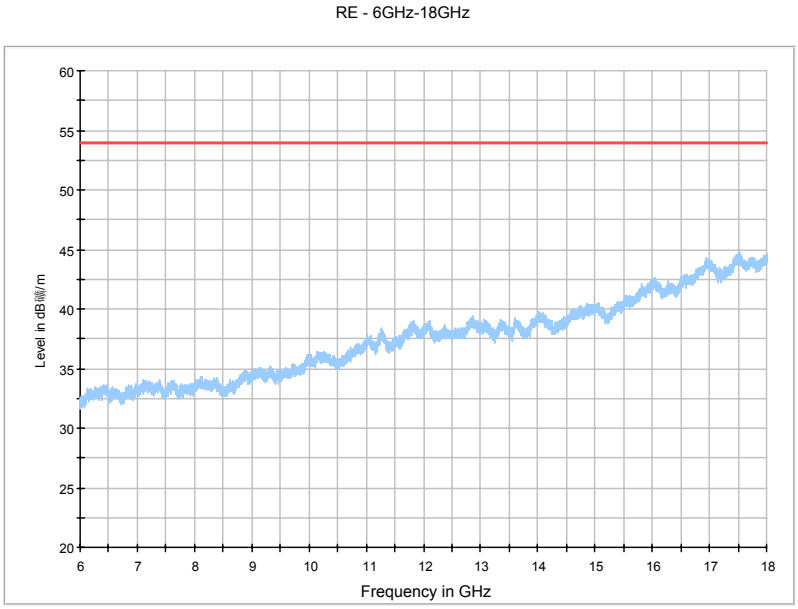


Fig. 82 Radiated Spurious Emission (802.11a, ch140, 6 GHz-18 GHz)

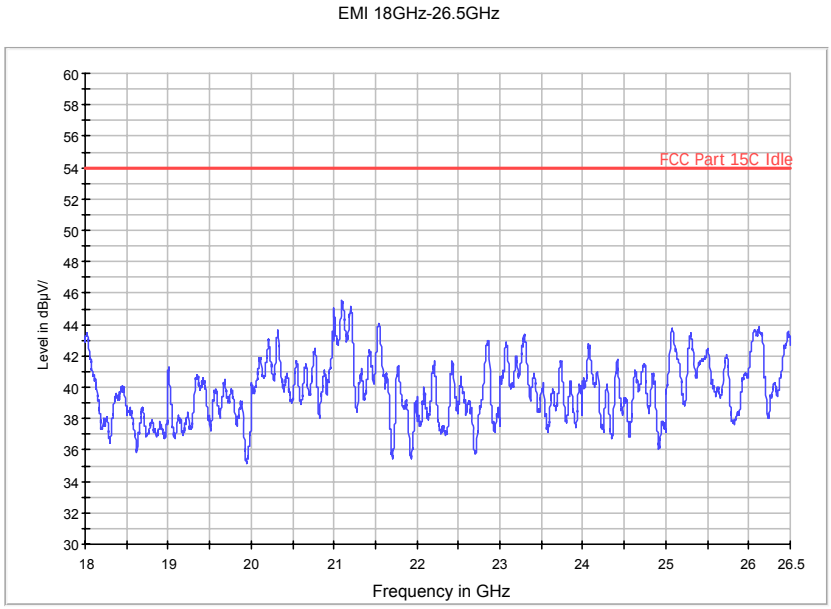


Fig. 83 Radiated Spurious Emission (802.11a, ch140, 18 GHz-26.5 GHz)

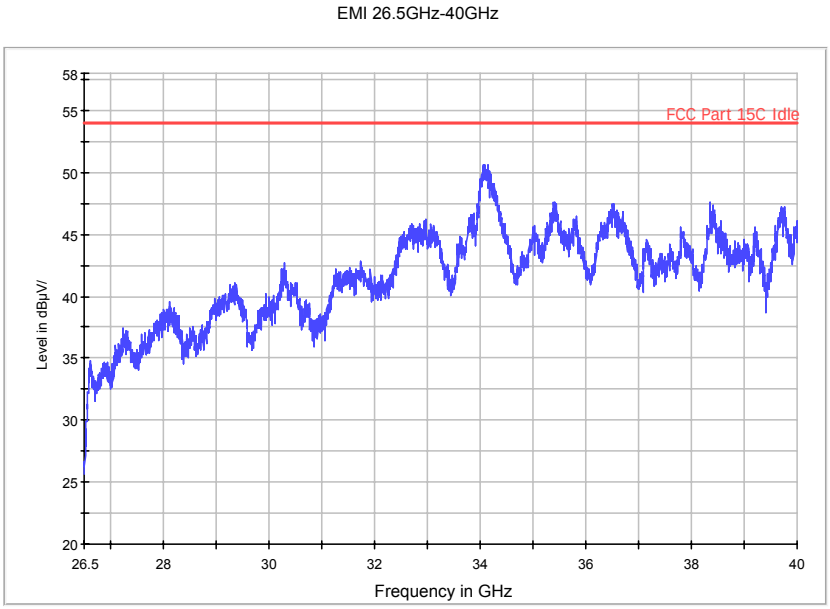


Fig. 84 Radiated Spurious Emission (802.11a, ch140, 26.5 GHz-40 GHz)

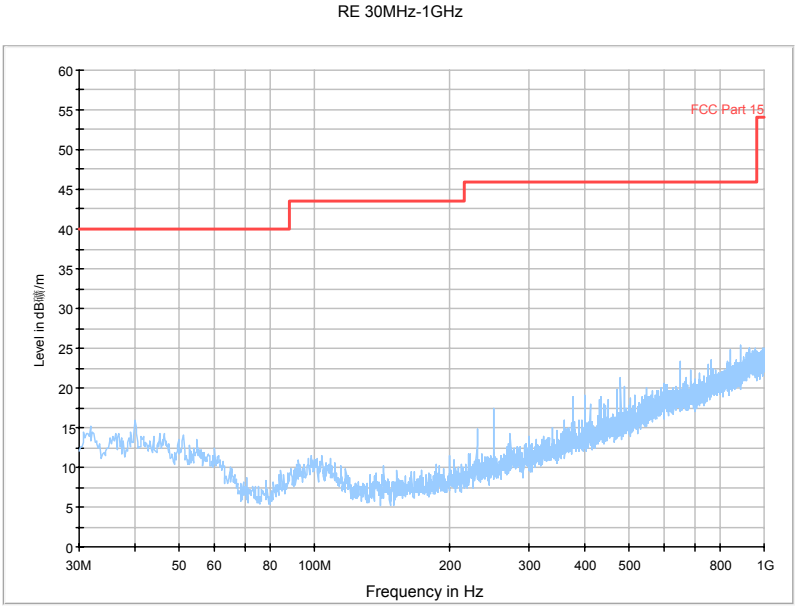


Fig. 85 Radiated Spurious Emission (802.11n-HT20, ch36, 30 MHz-1 GHz)

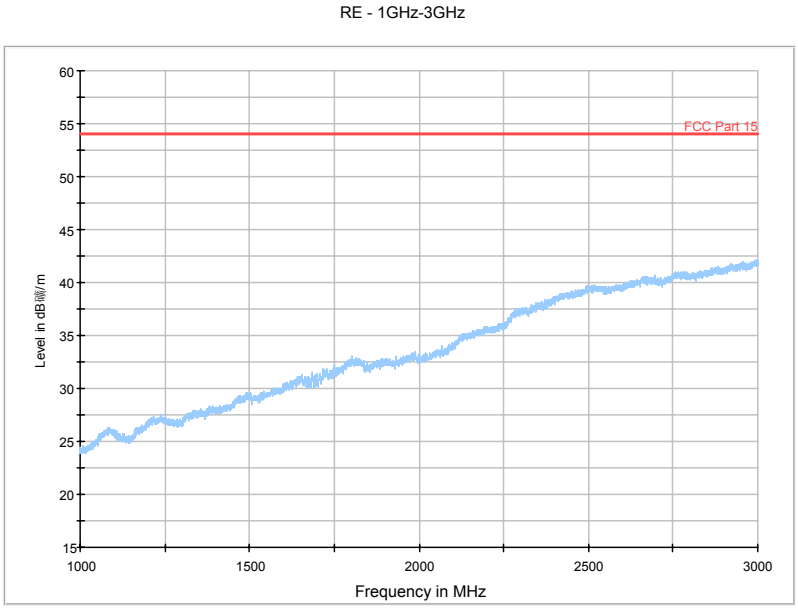


Fig. 86 Radiated Spurious Emission (802.11n-HT20, ch36, 1 GHz-3 GHz)

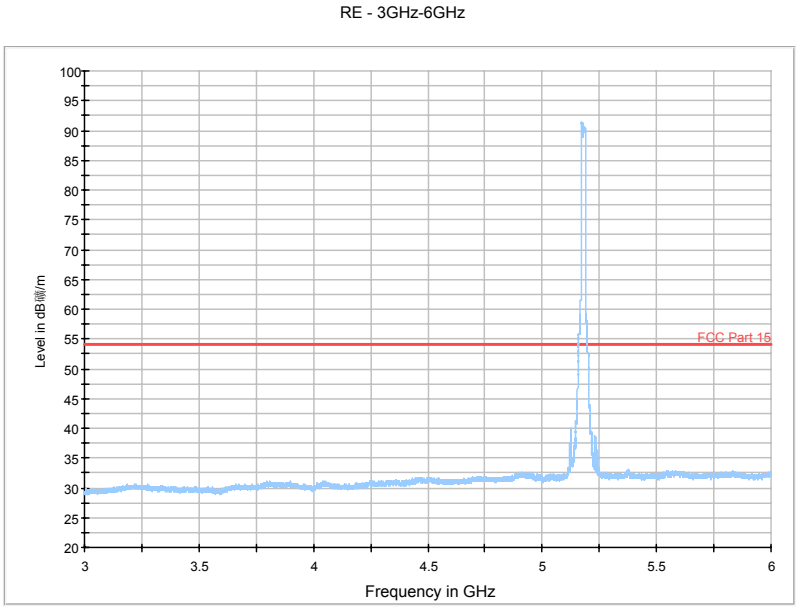


Fig. 87 Radiated Spurious Emission (802.11n-HT20, ch36, 3 GHz-6 GHz)

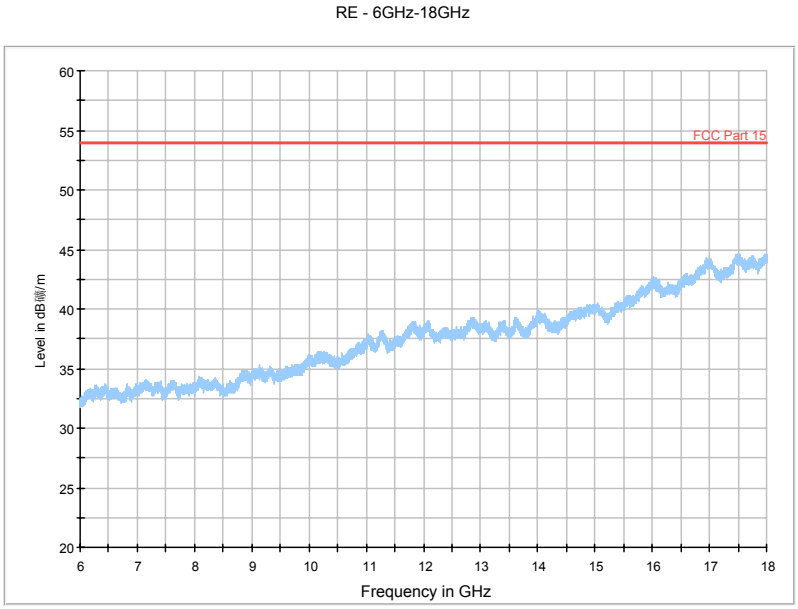


Fig. 88 Radiated Spurious Emission (802.11n-HT20, ch36, 6 GHz-18 GHz)

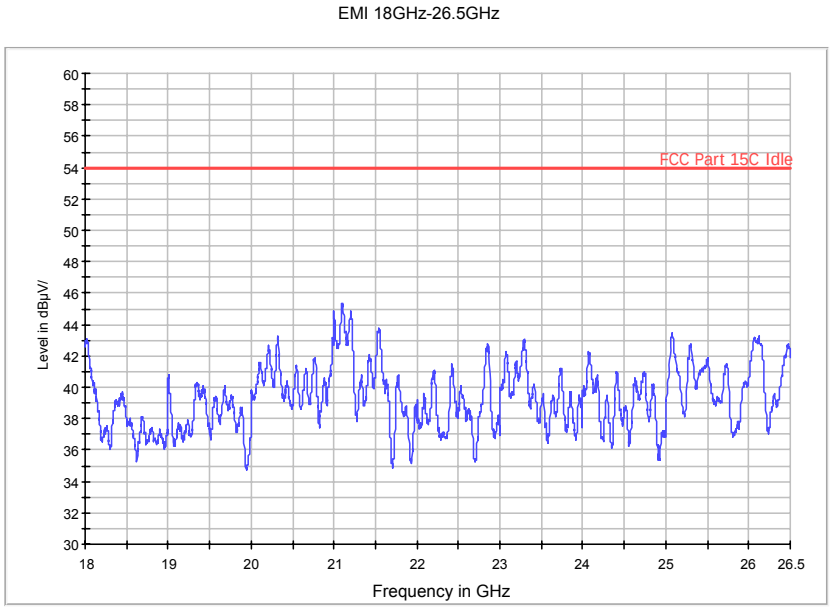


Fig. 89 Radiated Spurious Emission (802.11n-HT20, ch36, 18 GHz-26.5 GHz)

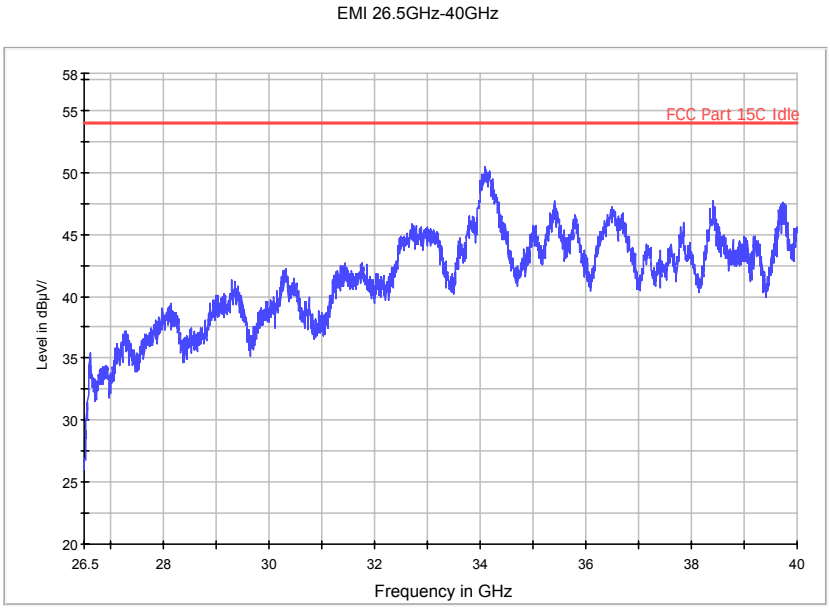


Fig. 90 Radiated Spurious Emission (802.11n-HT20, ch36, 26.5 GHz-40 GHz)

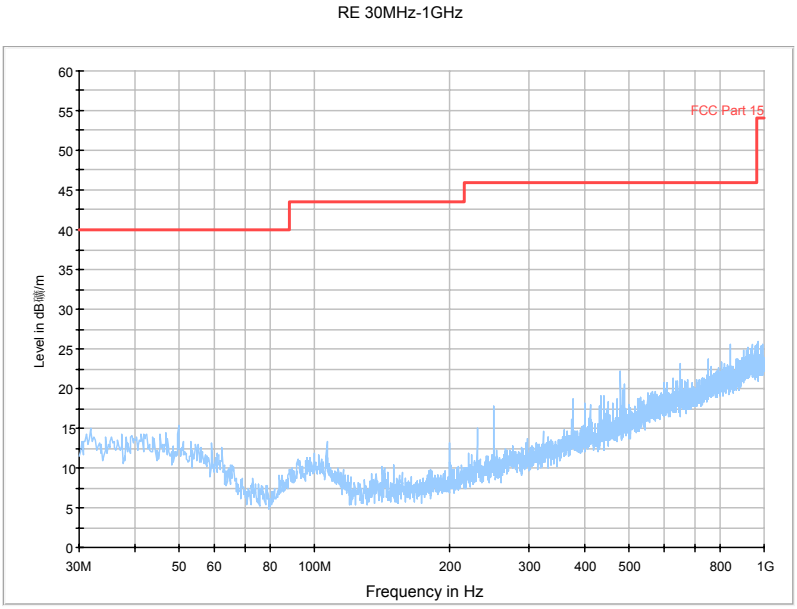


Fig. 91 Radiated Spurious Emission (802.11n-HT20, ch48, 30 MHz-1 GHz)

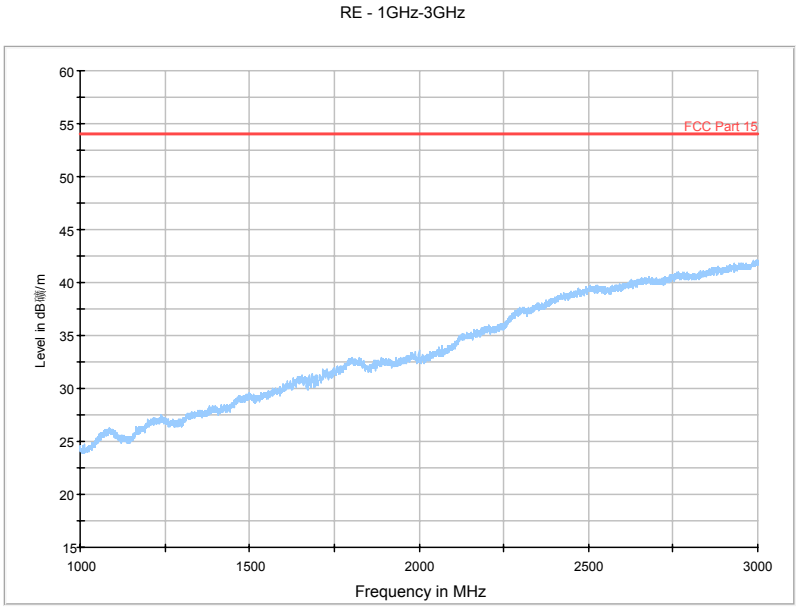


Fig. 92 Radiated Spurious Emission (802.11n-HT20, ch48, 1 GHz-3 GHz)

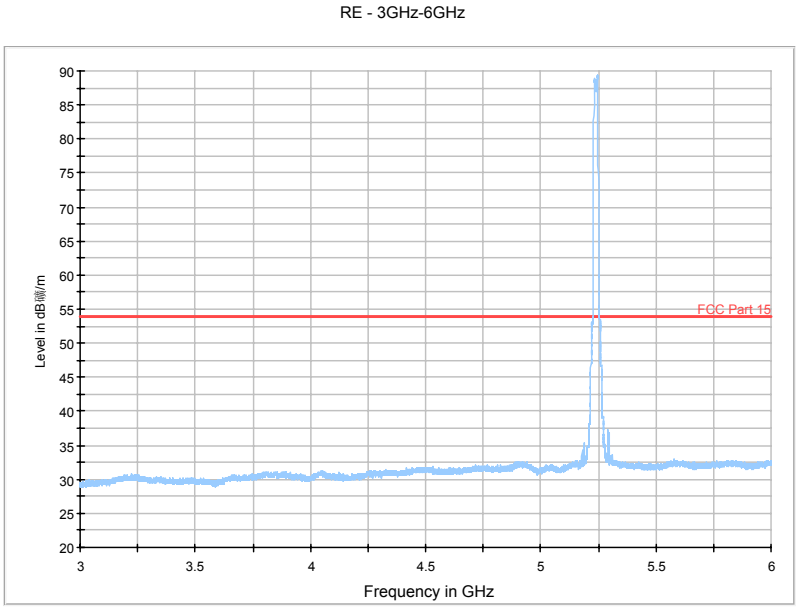


Fig. 93 Radiated Spurious Emission (802.11n-HT20, ch48, 3 GHz-6 GHz)

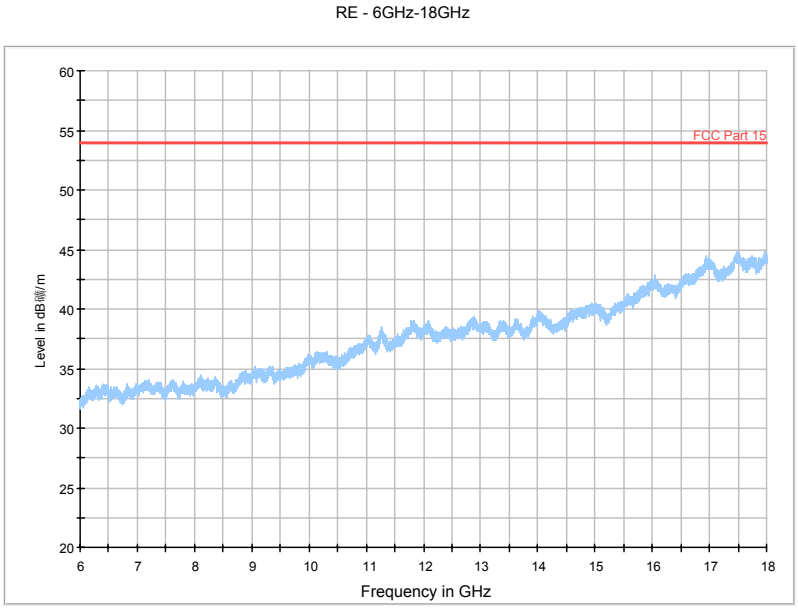


Fig. 94 Radiated Spurious Emission (802.11n-HT20, ch48, 6 GHz-18 GHz)

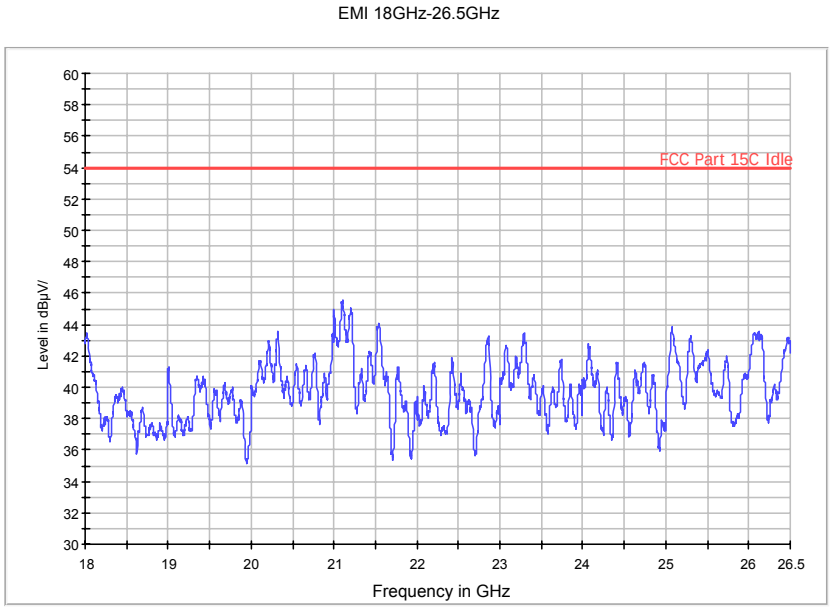


Fig. 95 Radiated Spurious Emission (802.11n-HT20, ch48, 18 GHz-26.5 GHz)

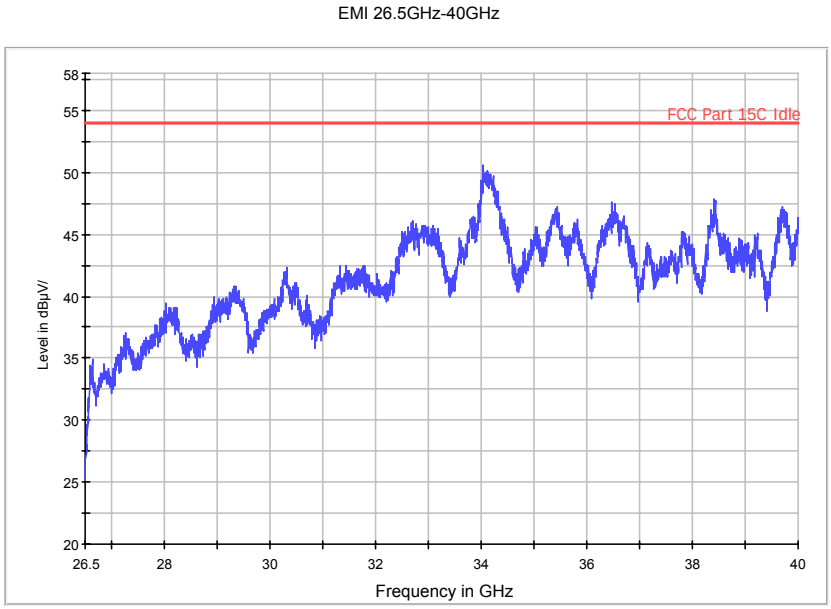


Fig. 96 Radiated Spurious Emission (802.11n-HT20, ch48, 26.5 GHz-40 GHz)

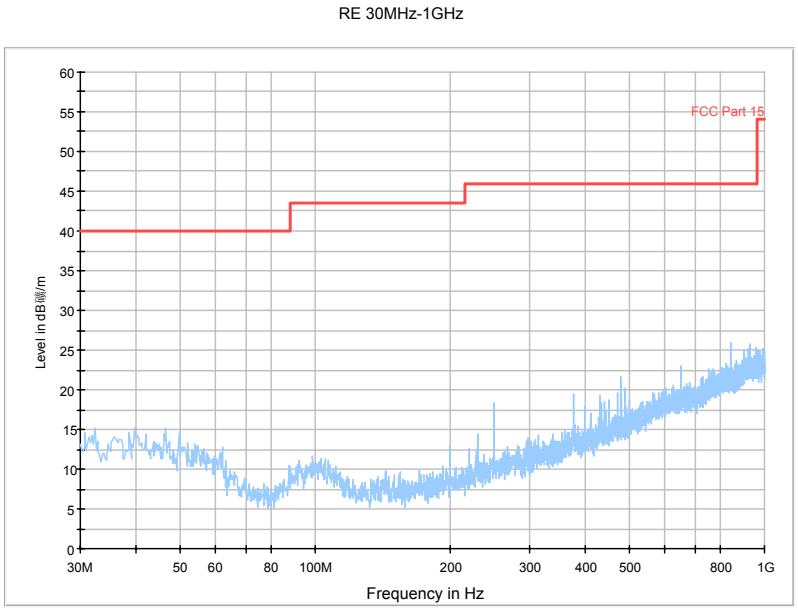


Fig. 97 Radiated Spurious Emission (802.11n-HT20, ch52, 30 MHz-1 GHz)

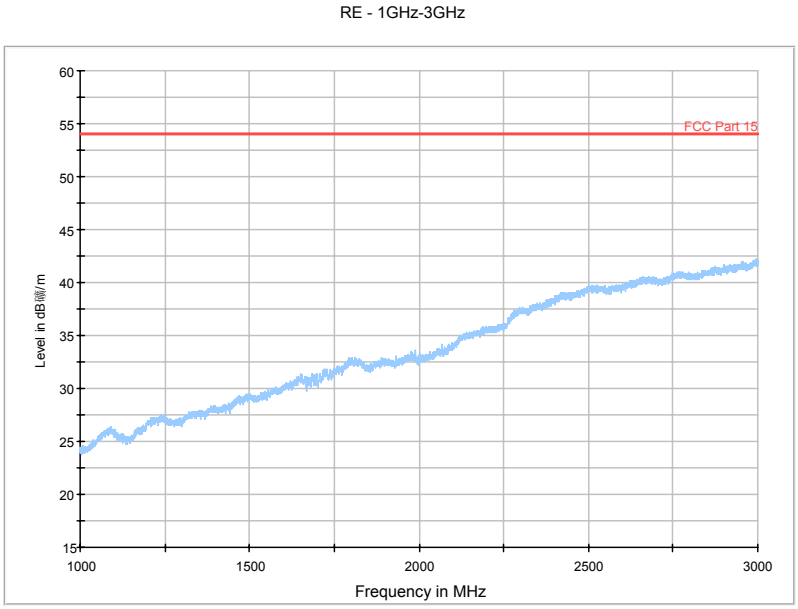


Fig. 98 Radiated Spurious Emission (802.11n-HT20, ch52, 1 GHz-3 GHz)

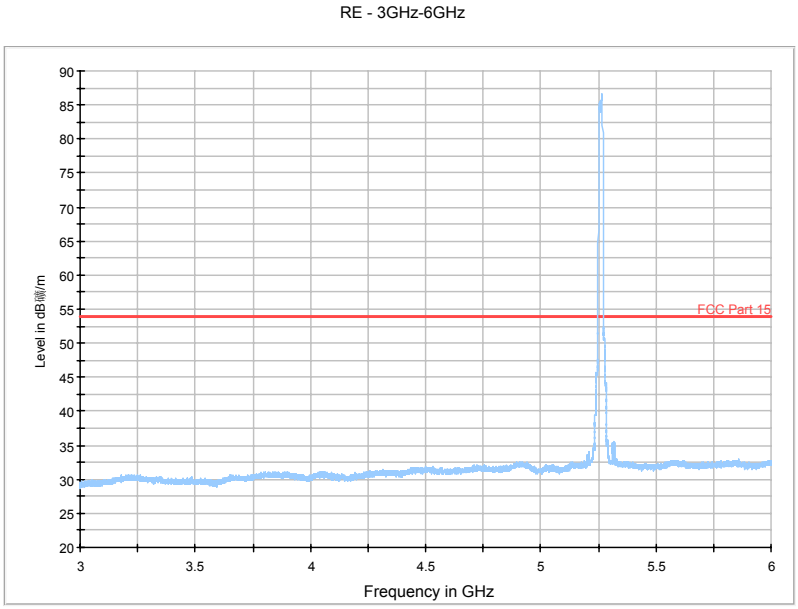


Fig. 99 Radiated Spurious Emission (802.11n-HT20, ch52, 3 GHz-6 GHz)

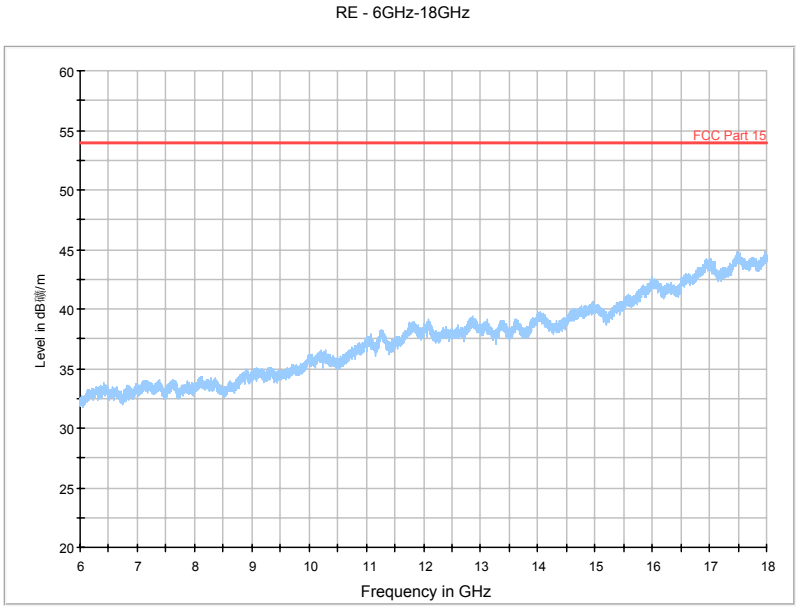


Fig. 100 Radiated Spurious Emission (802.11n-HT20, ch52, 6 GHz-18 GHz)

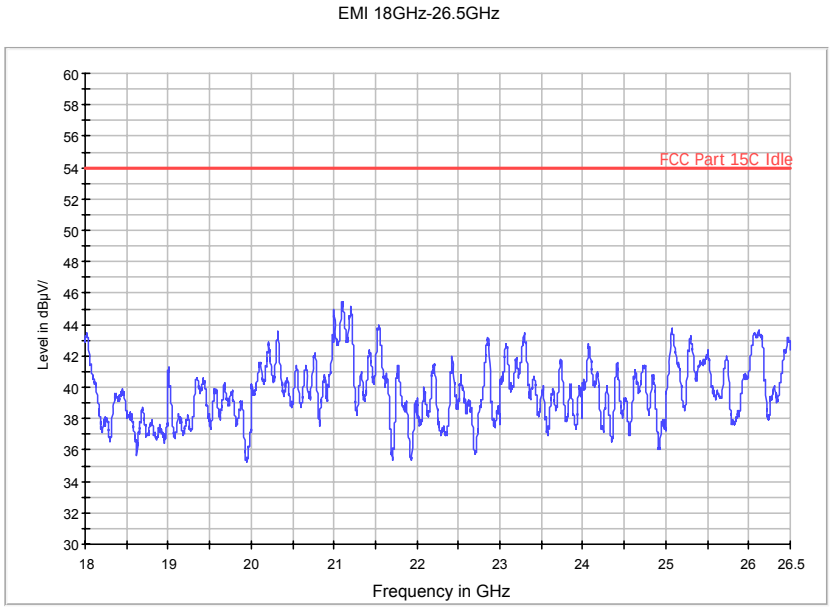


Fig. 101 Radiated Spurious Emission (802.11n-HT20, ch52, 18 GHz-26.5 GHz)

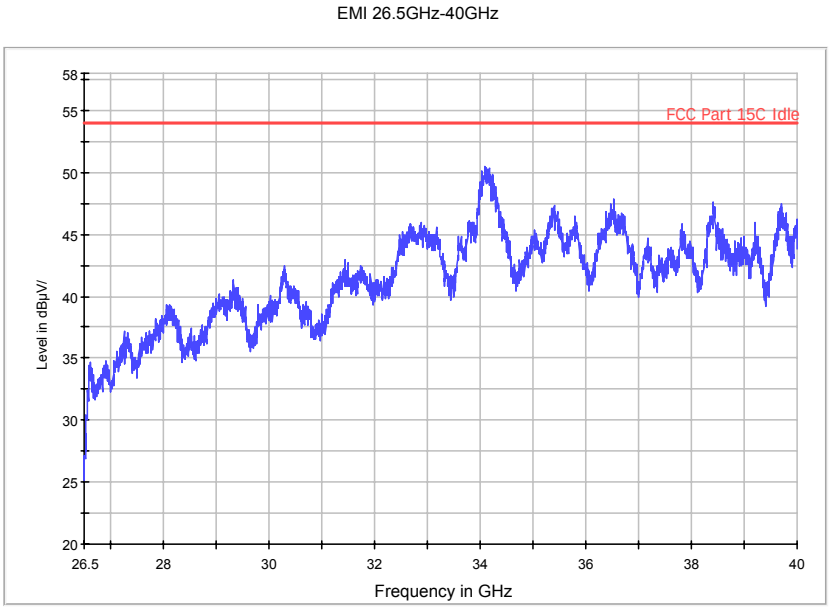


Fig. 102 Radiated Spurious Emission (802.11n-HT20, ch52, 26.5 GHz-40 GHz)

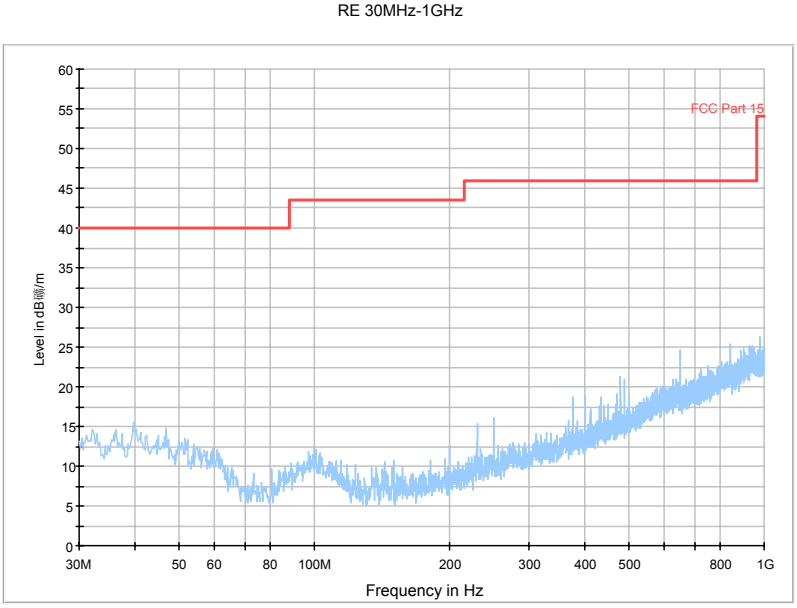


Fig. 103 Radiated Spurious Emission (802.11n-HT20, ch64, 30 MHz-1 GHz)

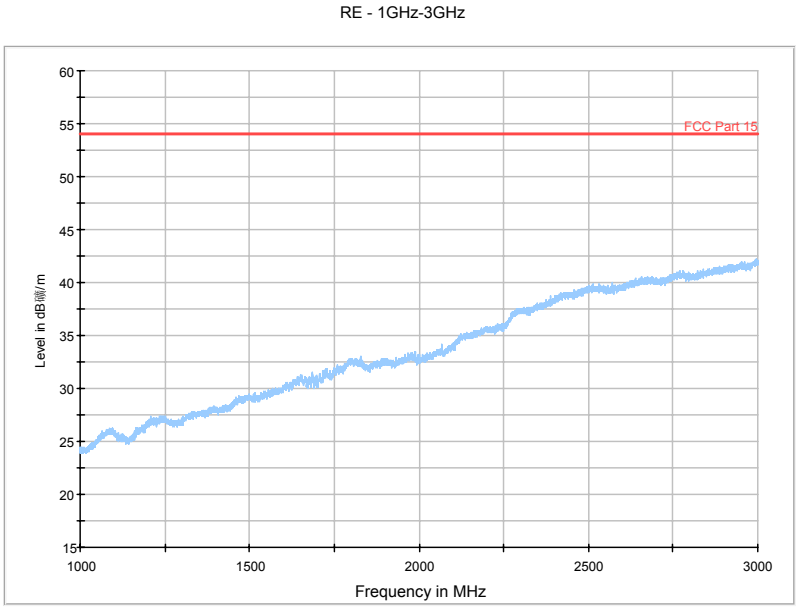


Fig. 104 Radiated Spurious Emission (802.11n-HT20, ch64, 1 GHz-3 GHz)

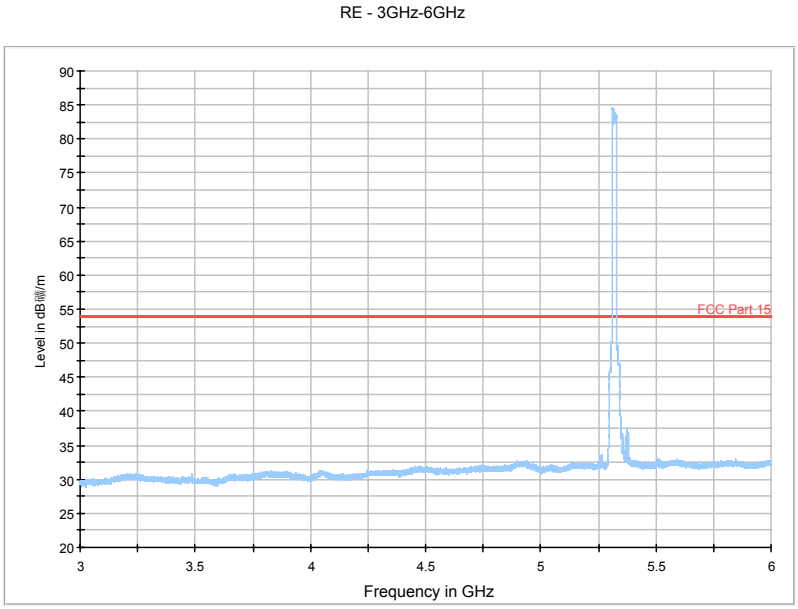


Fig. 105 Radiated Spurious Emission (802.11n-HT20, ch64, 3 GHz-6 GHz)

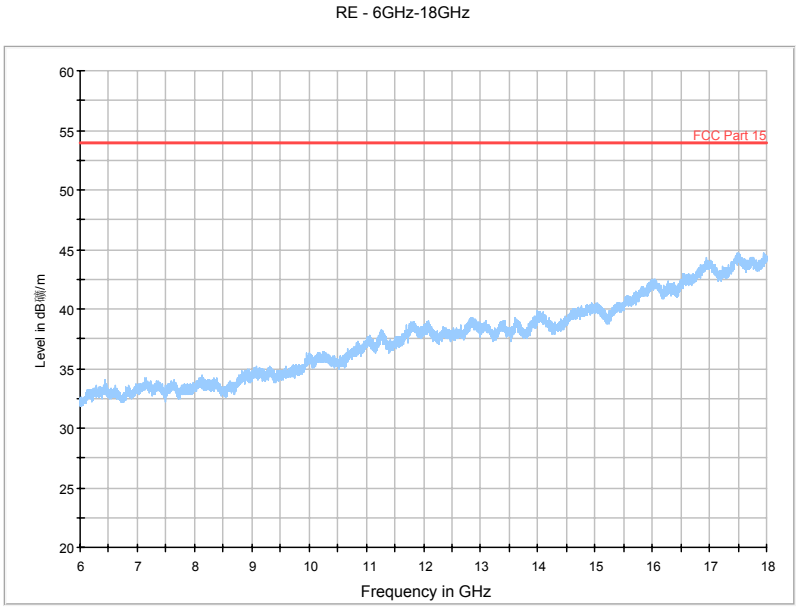


Fig. 106 Radiated Spurious Emission (802.11n-HT20, ch64, 6 GHz-18 GHz)

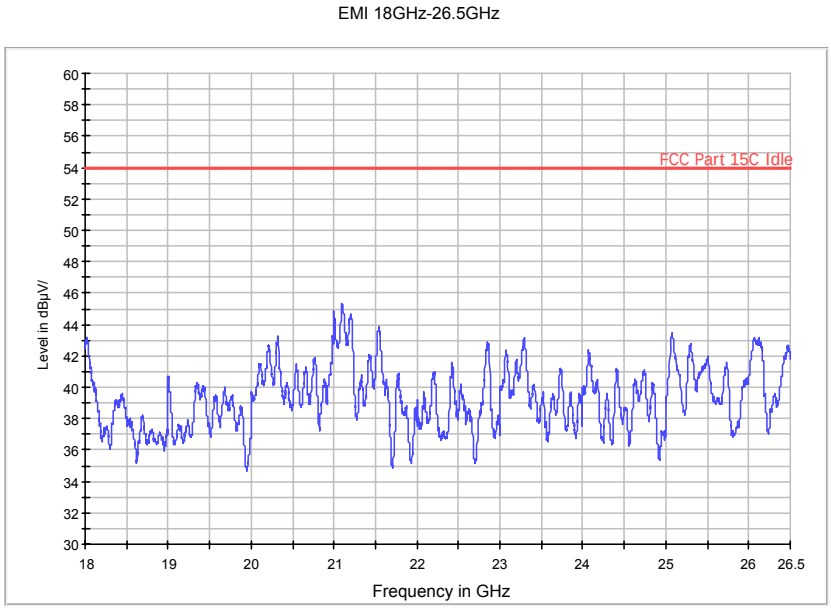


Fig. 107 Radiated Spurious Emission (802.11n-HT20, ch64, 18 GHz-26.5 GHz)

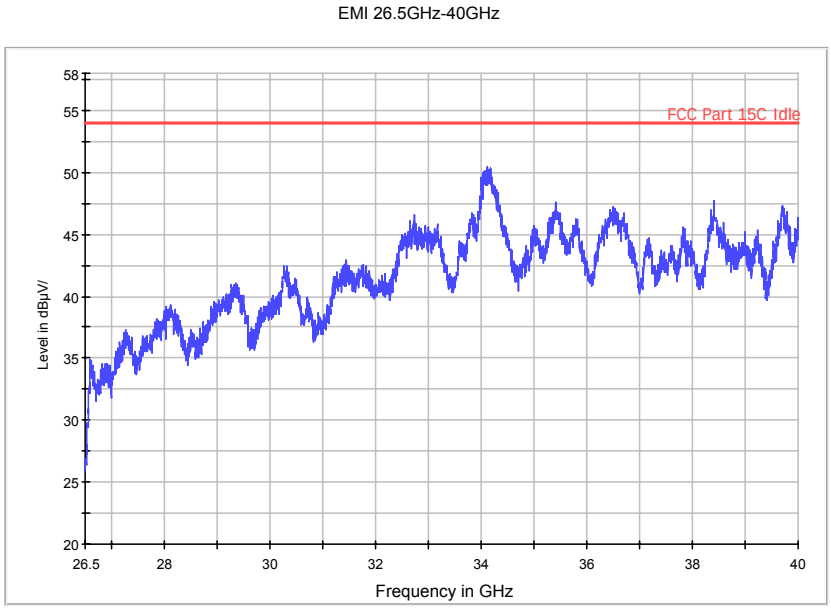


Fig. 108 Radiated Spurious Emission (802.11n-HT20, ch64, 26.5 GHz-40 GHz)

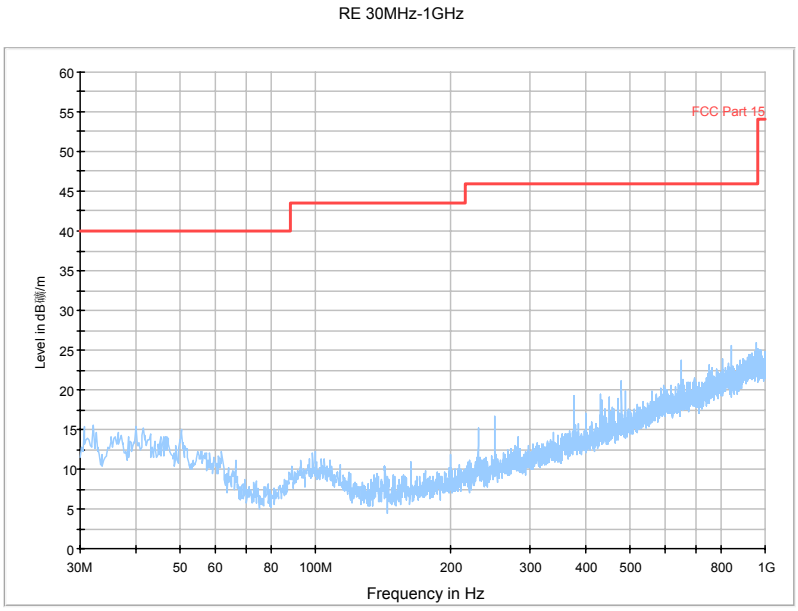


Fig. 109 Radiated Spurious Emission (802.11n-HT20, ch100, 30 MHz-1 GHz)

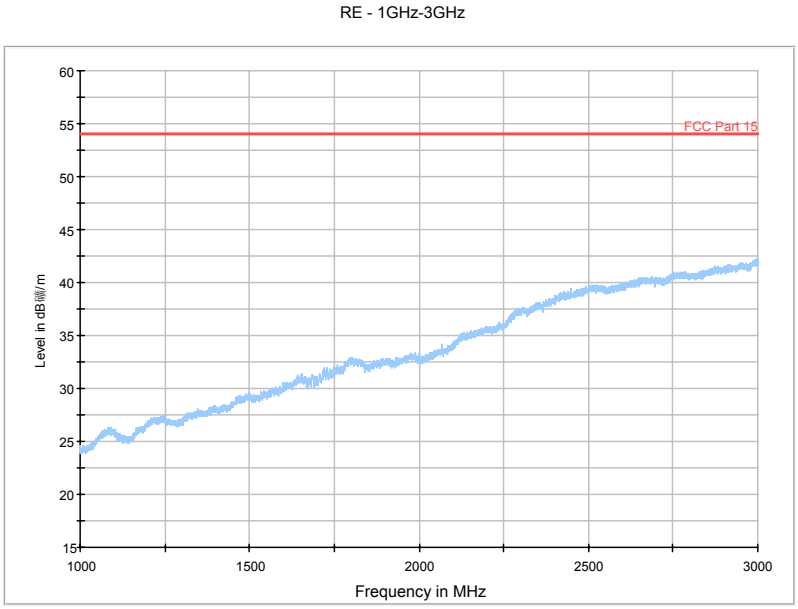


Fig. 110 Radiated Spurious Emission (802.11n-HT20, ch100, 1 GHz-3 GHz)

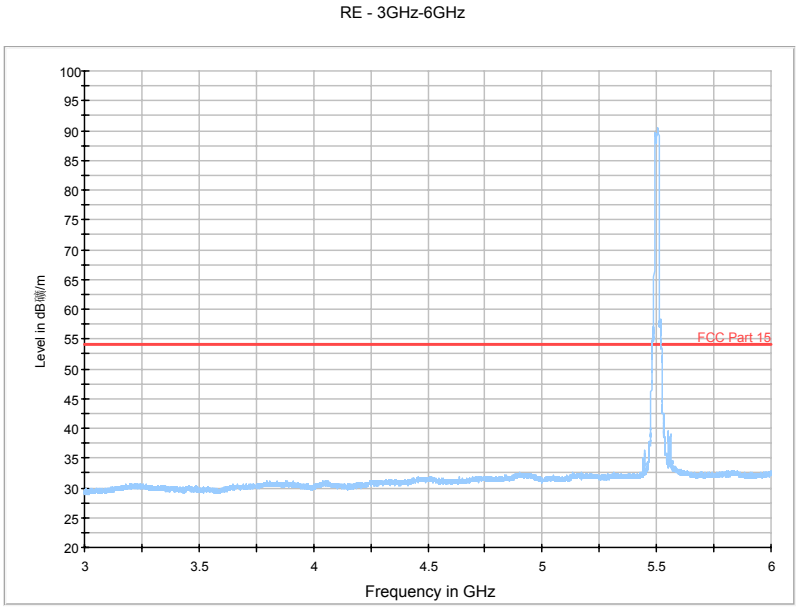


Fig. 111 Radiated Spurious Emission (802.11n-HT20, ch100, 3 GHz-6 GHz)

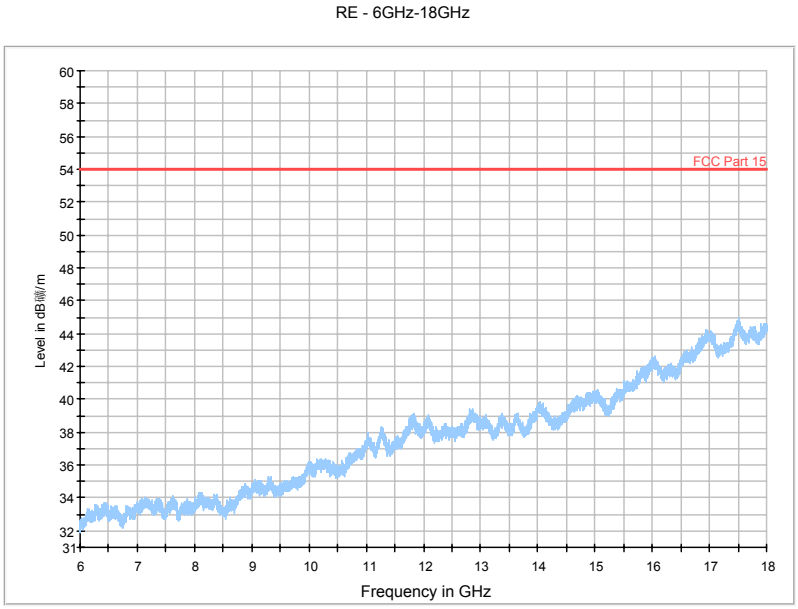


Fig. 112 Radiated Spurious Emission (802.11n-HT20, ch100, 6 GHz-18 GHz)

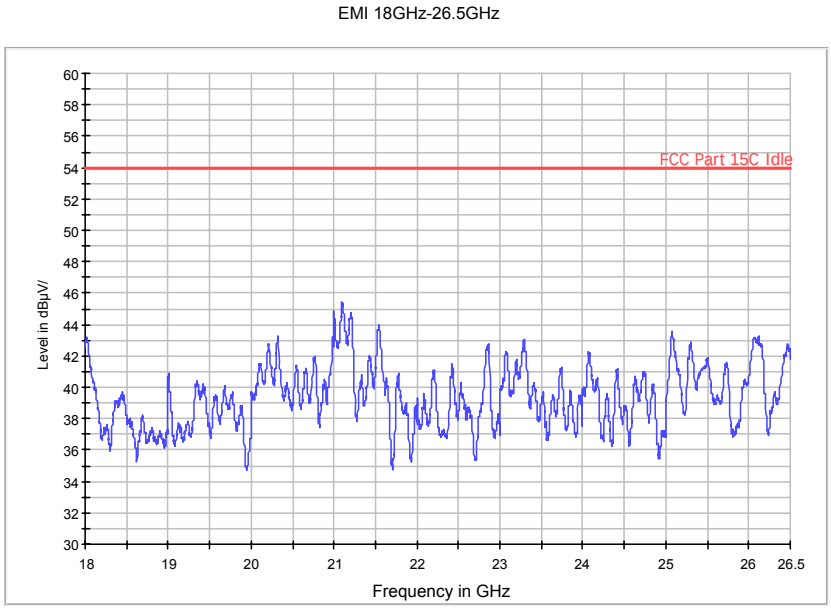


Fig. 113 Radiated Spurious Emission (802.11n-HT20, ch100, 18 GHz-26.5 GHz)

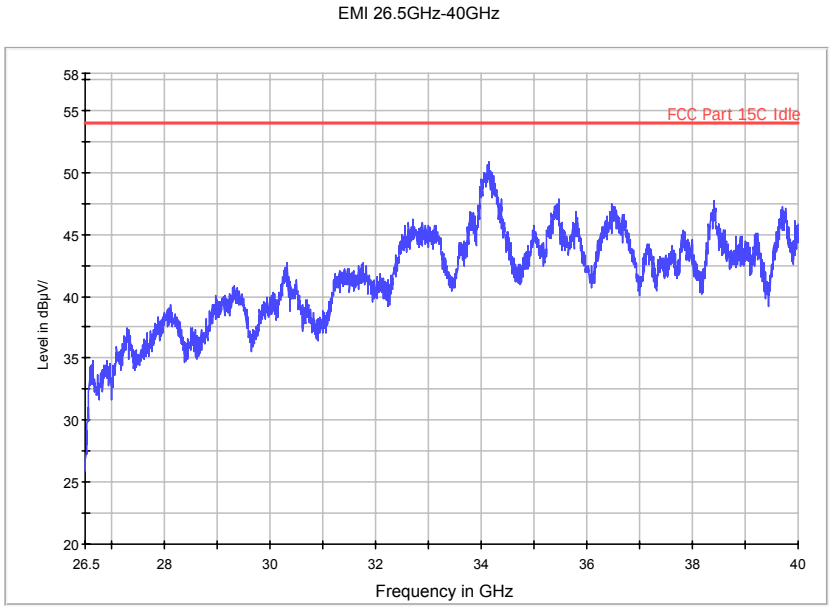


Fig. 114 Radiated Spurious Emission (802.11n-HT20, ch100, 26.5 GHz-40 GHz)

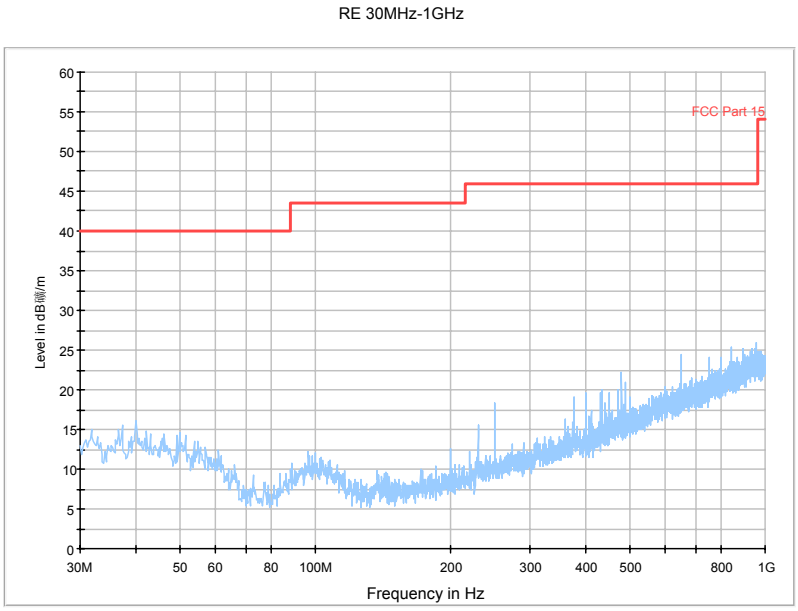


Fig. 115 Radiated Spurious Emission (802.11n-HT20, ch120, 30 MHz-1 GHz)

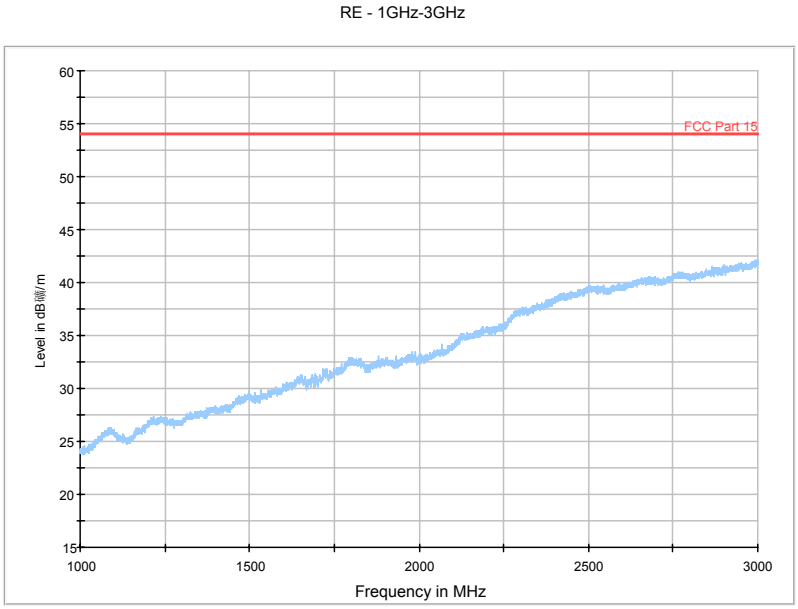


Fig. 116 Radiated Spurious Emission (802.11n-HT20, ch120, 1 GHz-3 GHz)

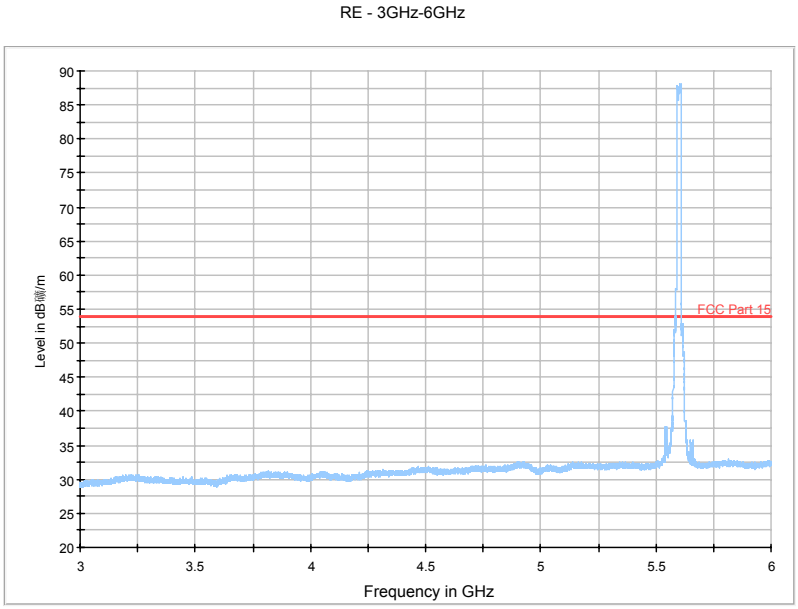


Fig. 117 Radiated Spurious Emission (802.11n-HT20, ch120, 3 GHz-6 GHz)

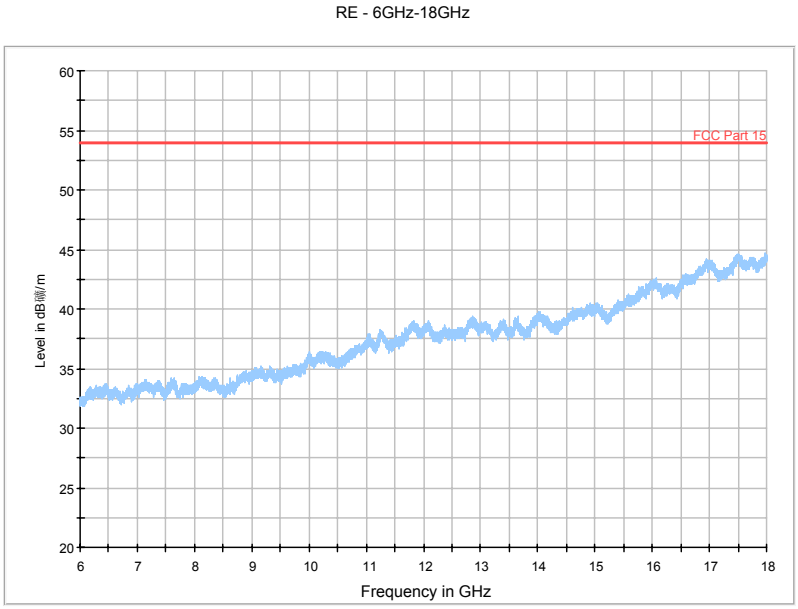


Fig. 118 Radiated Spurious Emission (802.11n-HT20, ch120, 6 GHz-18 GHz)

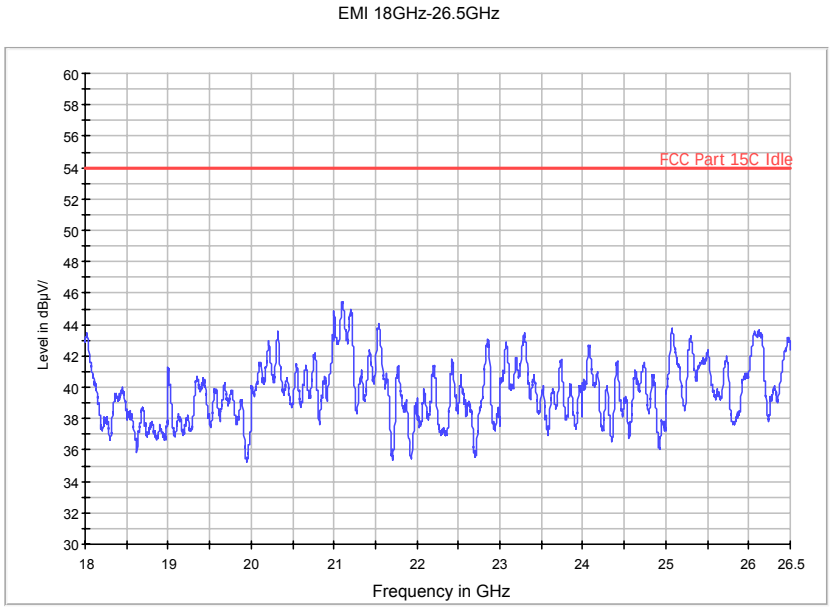


Fig. 119 Radiated Spurious Emission (802.11n-HT20, ch120, 18 GHz-26.5 GHz)

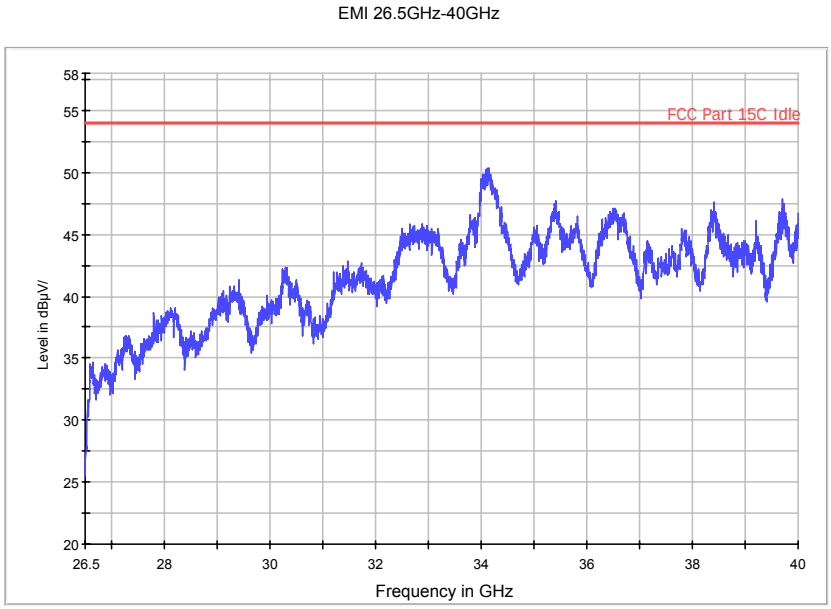


Fig. 120 Radiated Spurious Emission (802.11n-HT20, ch120, 26.5 GHz-40 GHz)

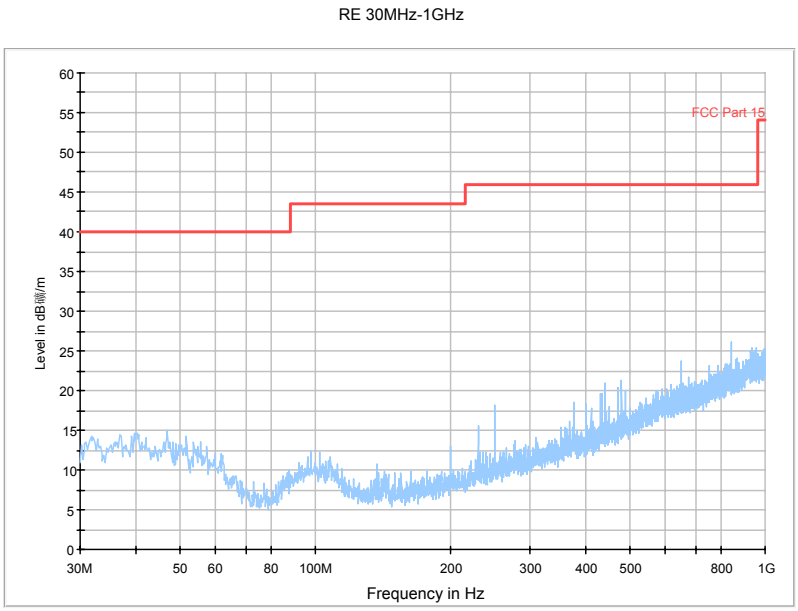


Fig. 121 Radiated Spurious Emission (802.11n-HT20, ch140, 30 MHz-1 GHz)

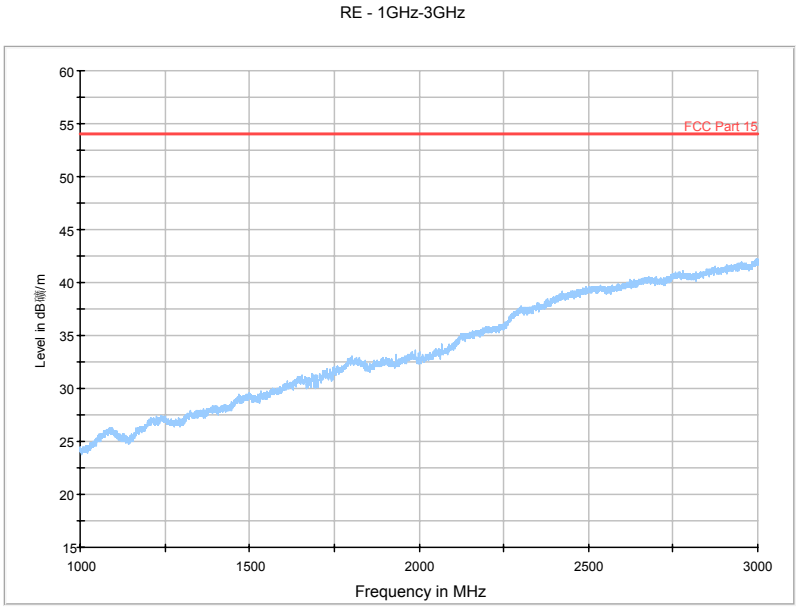


Fig. 122 Radiated Spurious Emission (802.11n-HT20, ch140, 1 GHz-3 GHz)

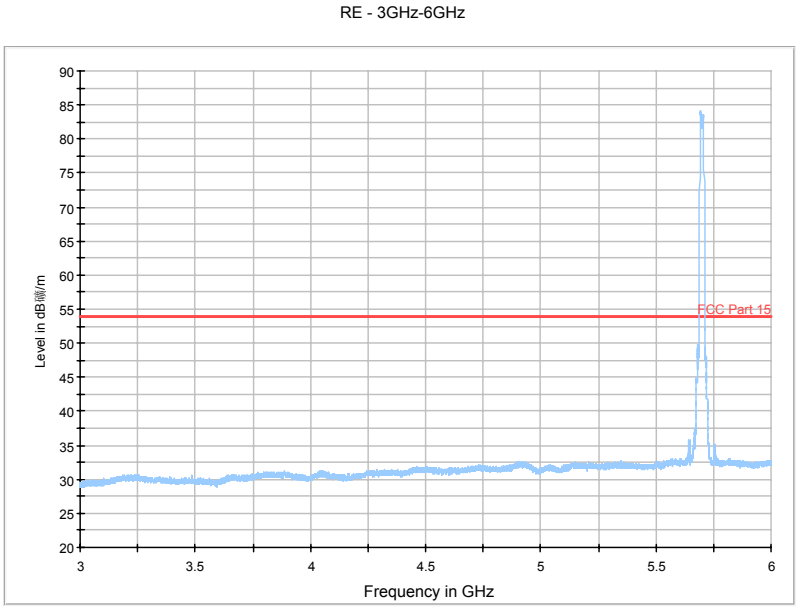


Fig. 123 Radiated Spurious Emission (802.11n-HT20, ch140, 3 GHz-6 GHz)

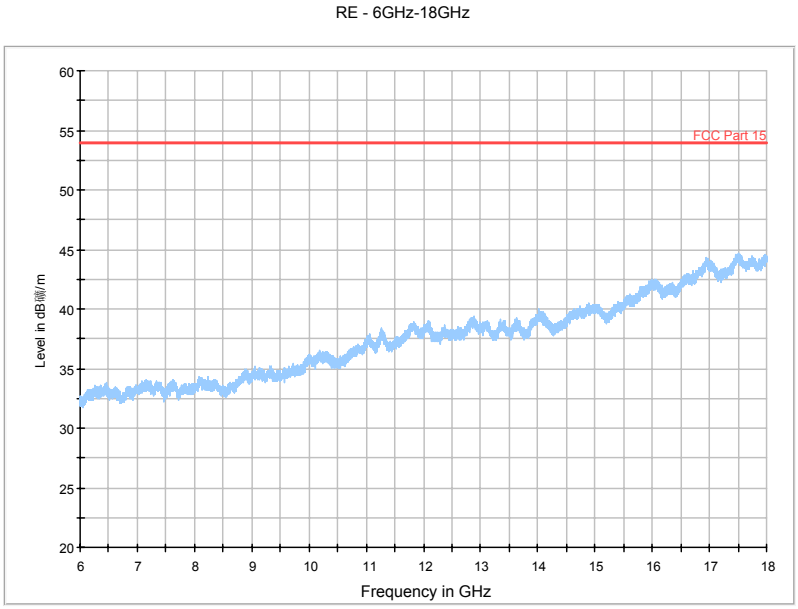


Fig. 124 Radiated Spurious Emission (802.11n-HT20, ch140, 6 GHz-18 GHz)

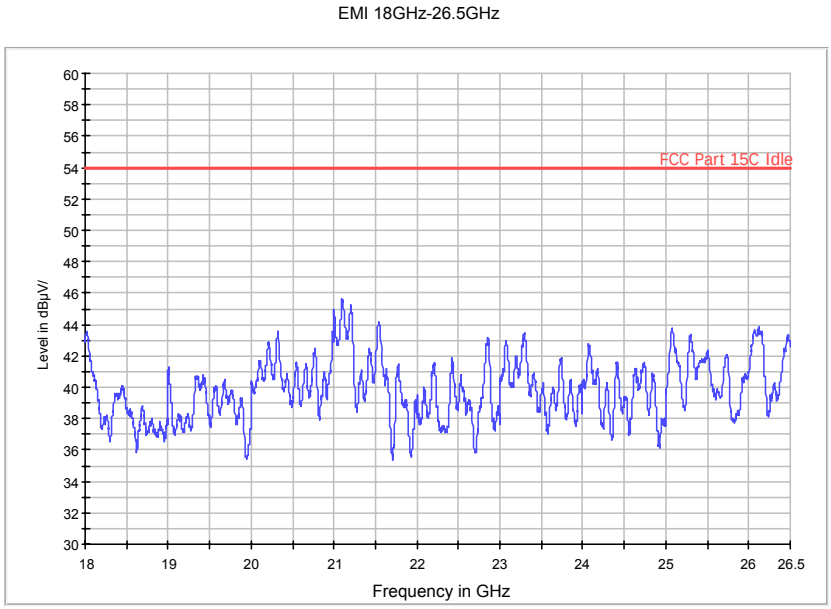


Fig. 125 Radiated Spurious Emission (802.11n-HT20, ch140, 18 GHz-26.5 GHz)

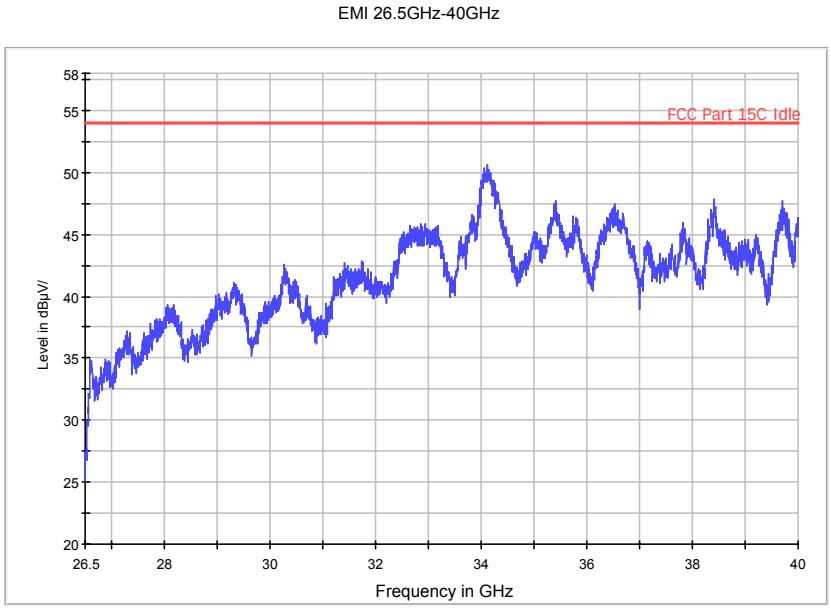


Fig. 126 Radiated Spurious Emission (802.11n-HT20, ch140, 26.5 GHz-40 GHz)

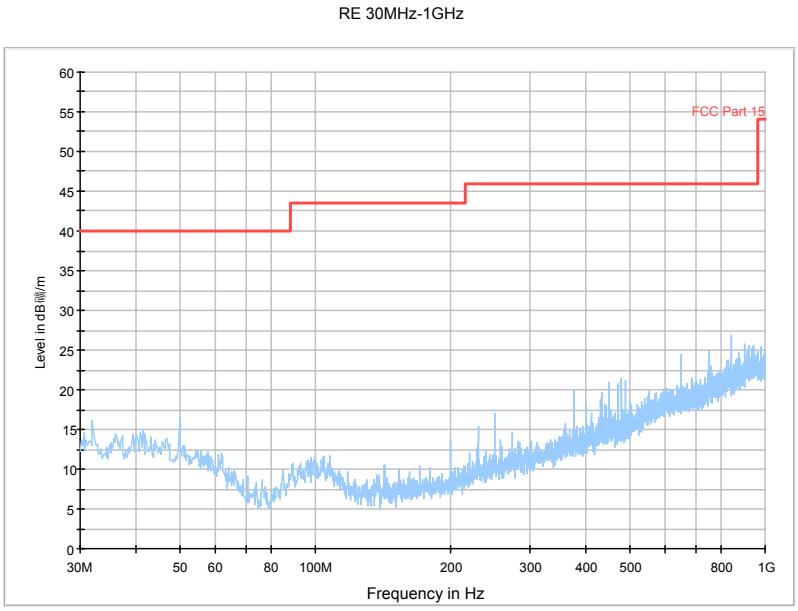


Fig. 127 Radiated Spurious Emission (802.11n-HT40, ch38, 30 MHz-1 GHz)

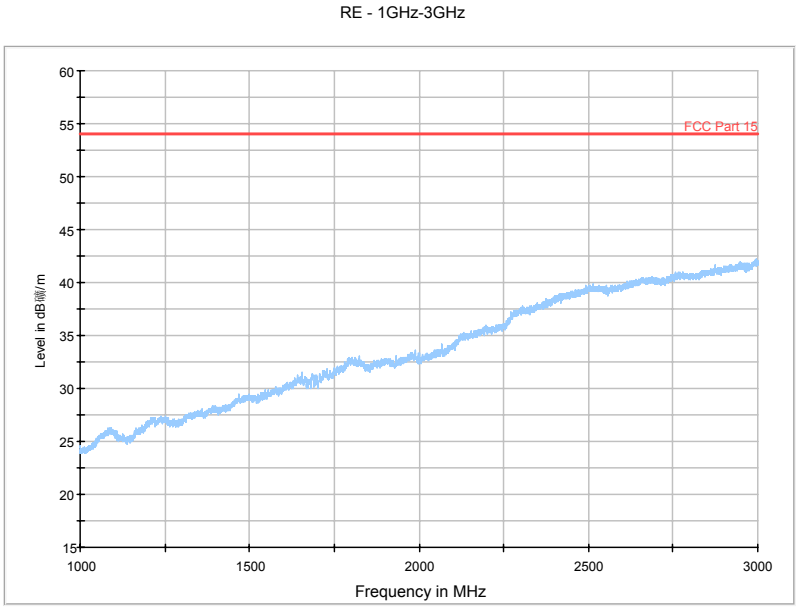


Fig. 128 Radiated Spurious Emission (802.11n-HT40, ch38, 1 GHz-3 GHz)

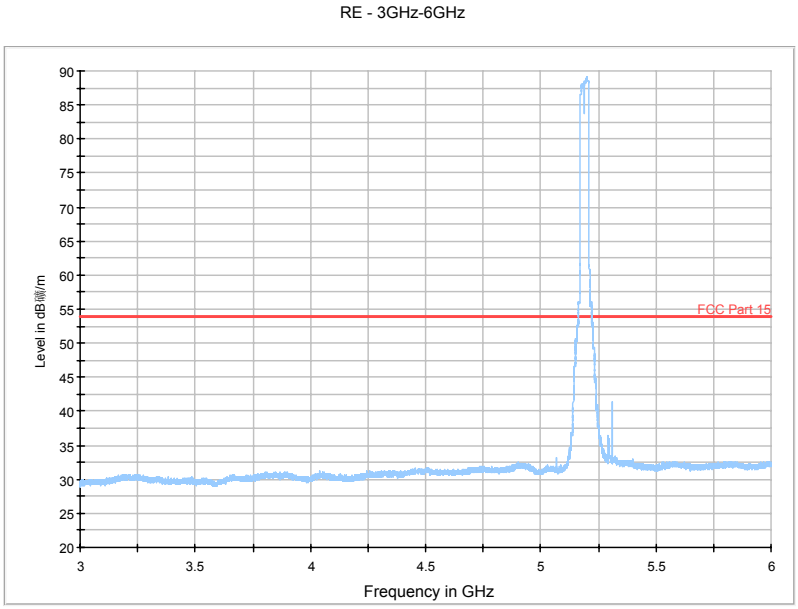


Fig. 129 Radiated Spurious Emission (802.11n-HT40, ch38, 3 GHz-6 GHz)

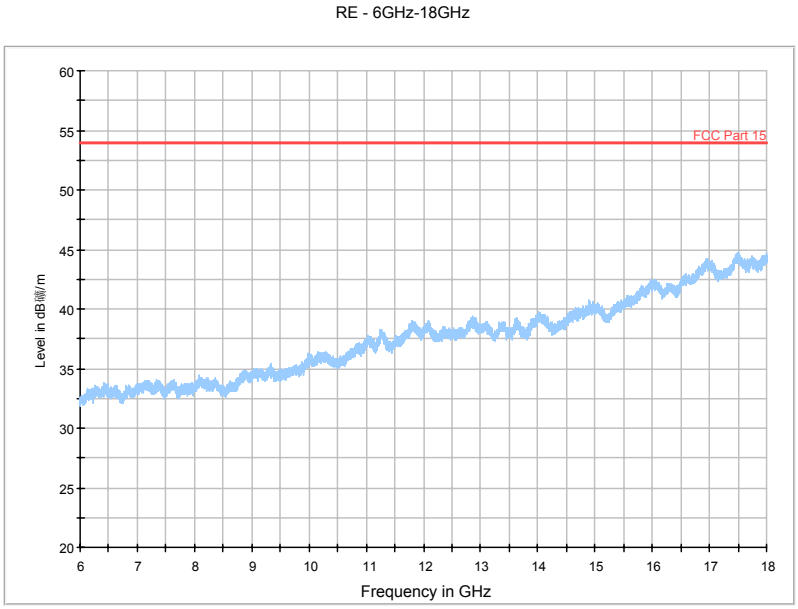


Fig. 130 Radiated Spurious Emission (802.11n-HT40, ch38, 6 GHz-18 GHz)

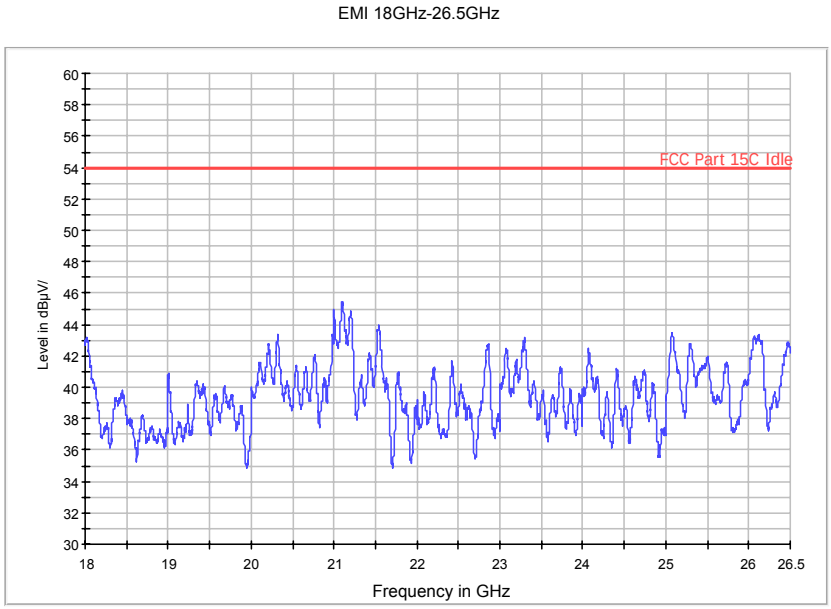


Fig. 131 Radiated Spurious Emission (802.11n-HT40, ch38, 18 GHz-26.5 GHz)

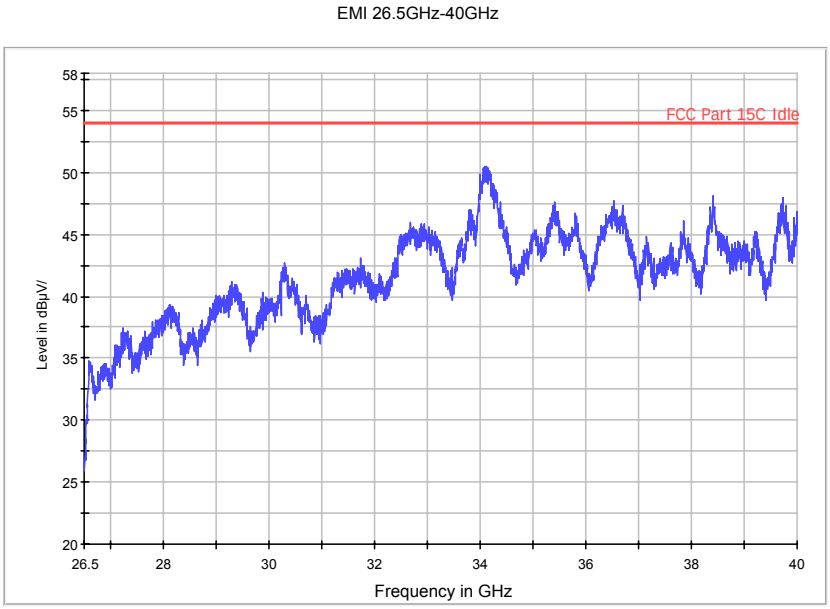


Fig. 132 Radiated Spurious Emission (802.11n-HT40, ch38, 26.5 GHz-40 GHz)

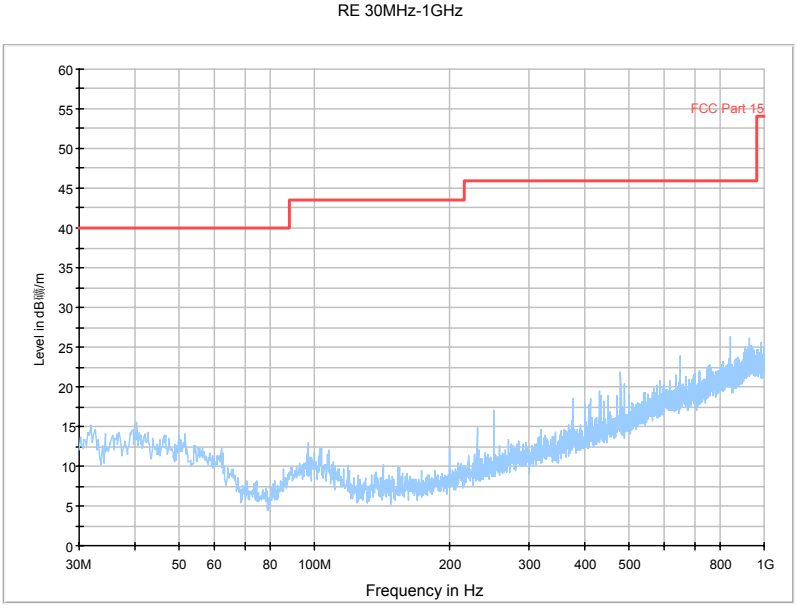


Fig. 133 Radiated Spurious Emission (802.11n-HT40, ch46, 30 MHz-1 GHz)

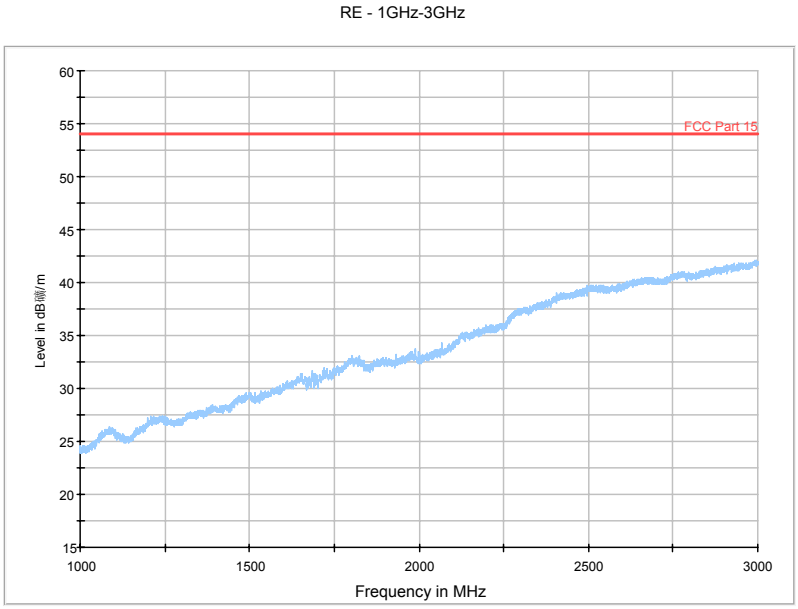


Fig. 134 Radiated Spurious Emission (802.11n-HT40, ch46, 1 GHz-3 GHz)

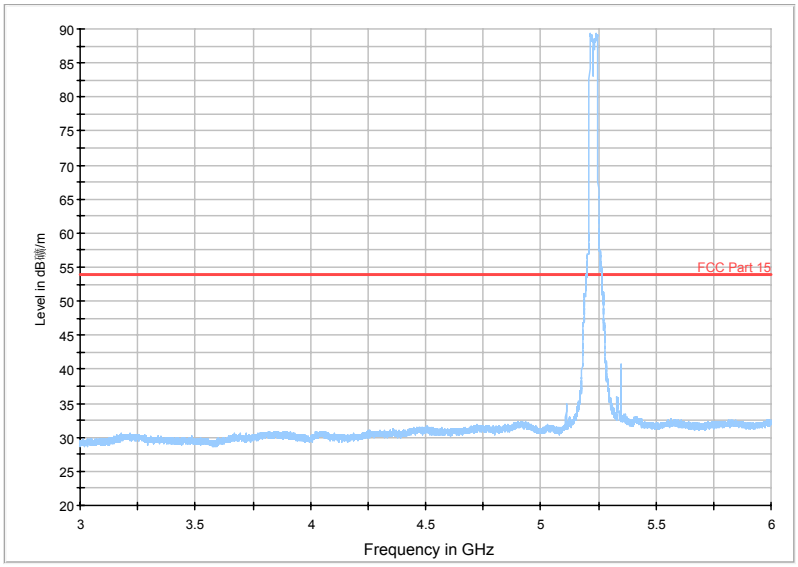


Fig. 135 Radiated Spurious Emission (802.11n-HT40, ch46, 3 GHz-6 GHz)

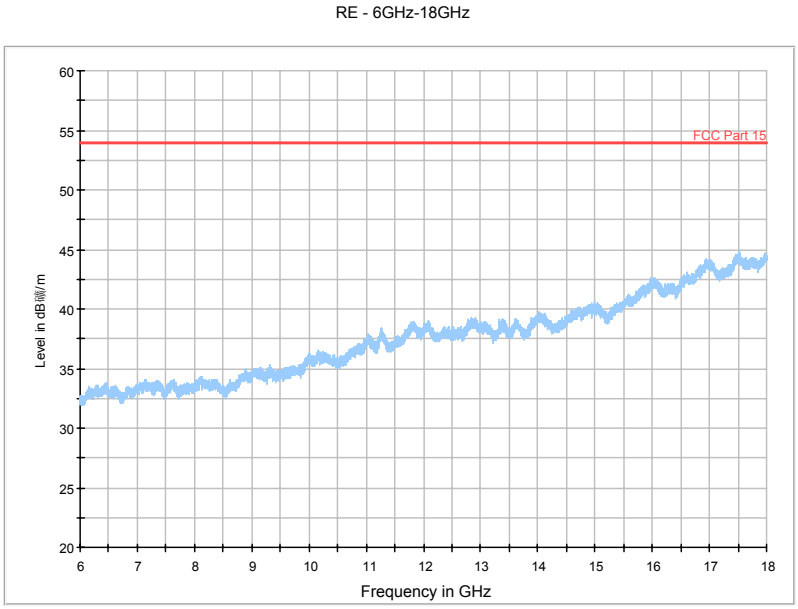


Fig. 136 Radiated Spurious Emission (802.11n-HT40, ch46, 6 GHz-18 GHz)

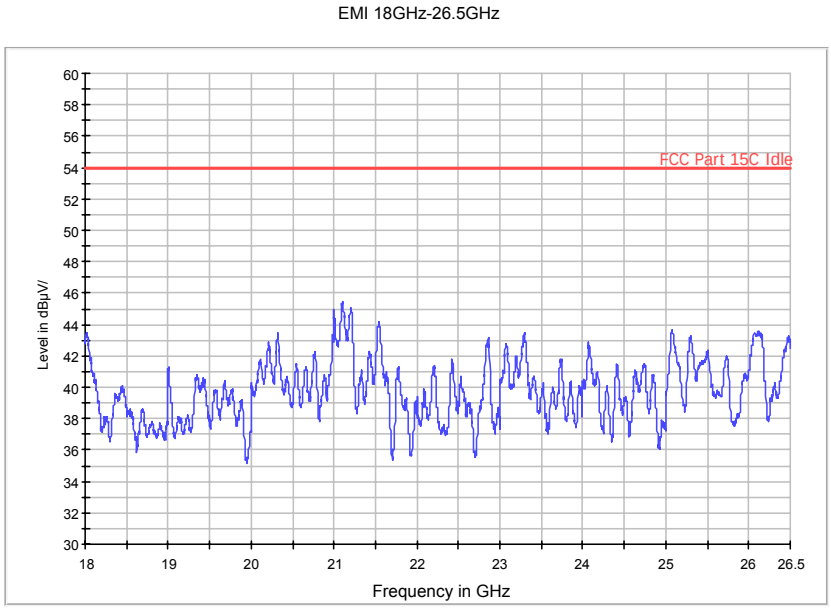


Fig. 137 Radiated Spurious Emission (802.11n-HT40, ch46, 18 GHz-26.5 GHz)

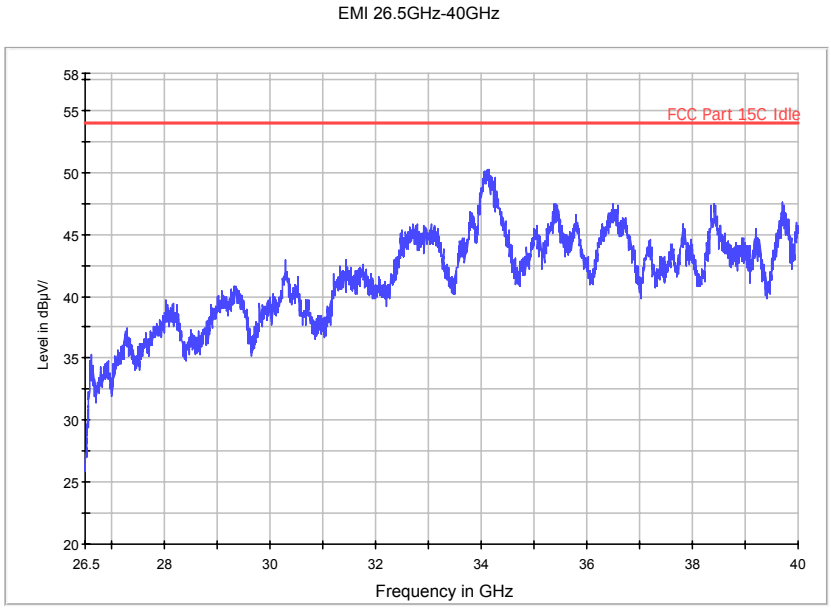


Fig. 138 Radiated Spurious Emission (802.11n-HT40, ch46, 26.5 GHz-40 GHz)

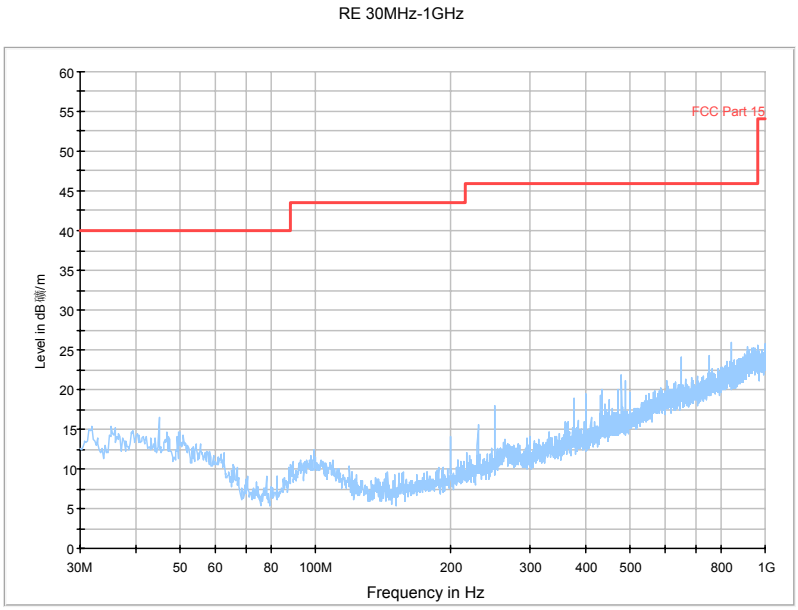


Fig. 139 Radiated Spurious Emission (802.11n-HT40, ch54, 30 MHz-1 GHz)

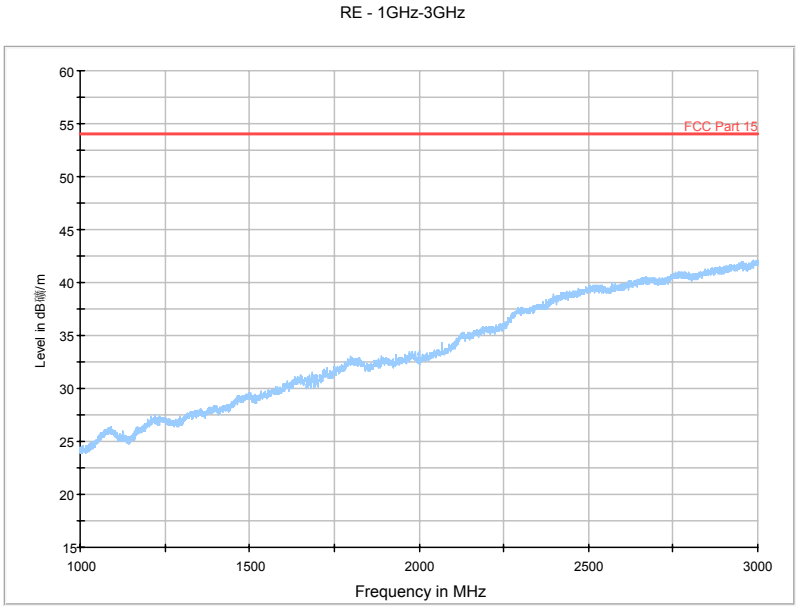


Fig. 140 Radiated Spurious Emission (802.11n-HT40, ch54, 1 GHz-3 GHz)

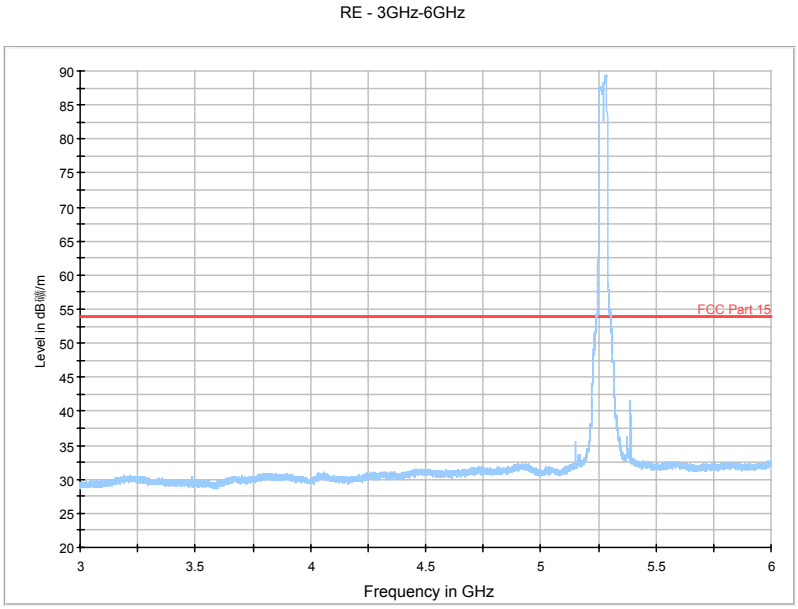


Fig. 141 Radiated Spurious Emission (802.11n-HT40, ch54, 3 GHz-6 GHz)

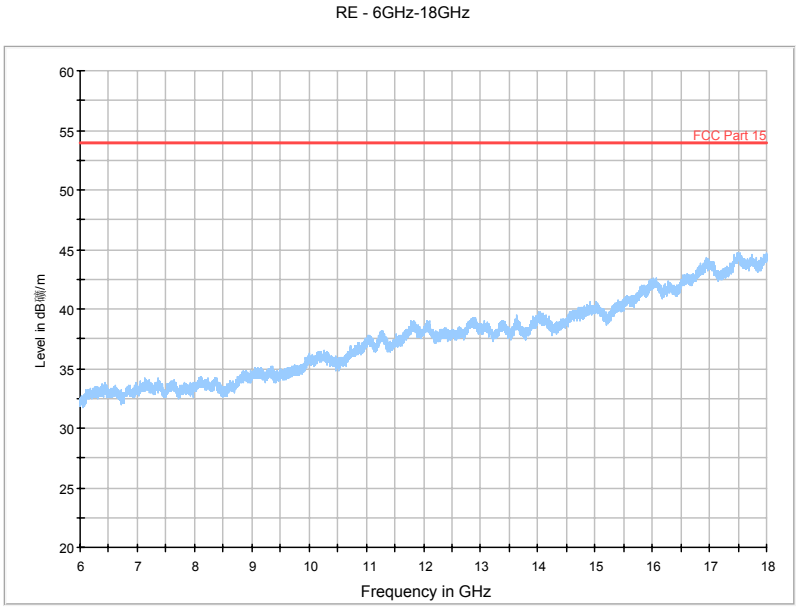


Fig. 142 Radiated Spurious Emission (802.11n-HT40, ch54, 6 GHz-18 GHz)

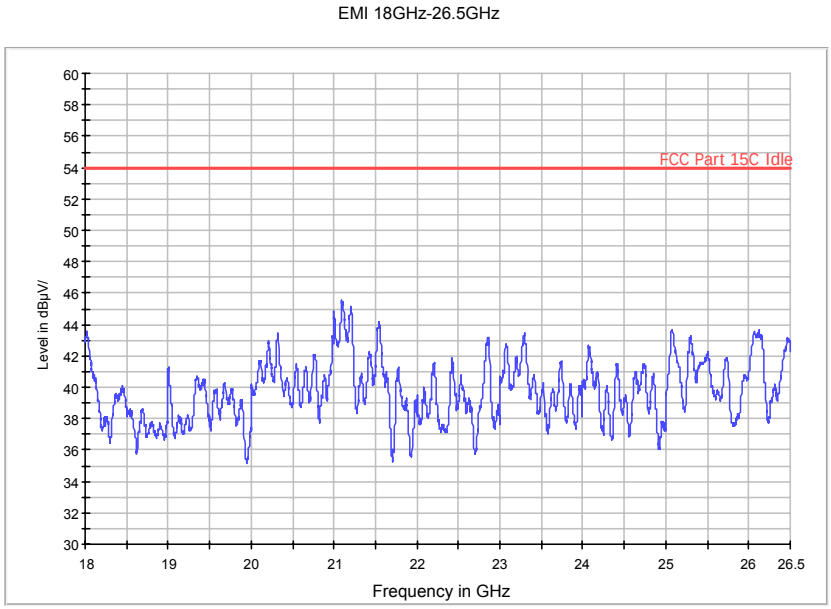


Fig. 143 Radiated Spurious Emission (802.11n-HT40, ch54, 18 GHz-26.5 GHz)

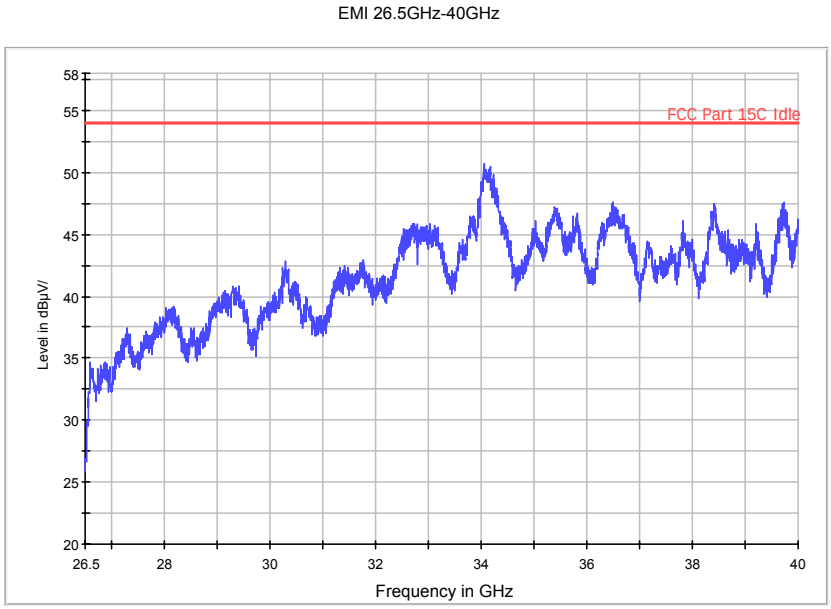


Fig. 144 Radiated Spurious Emission (802.11n-HT40, ch54, 26.5 GHz-40 GHz)

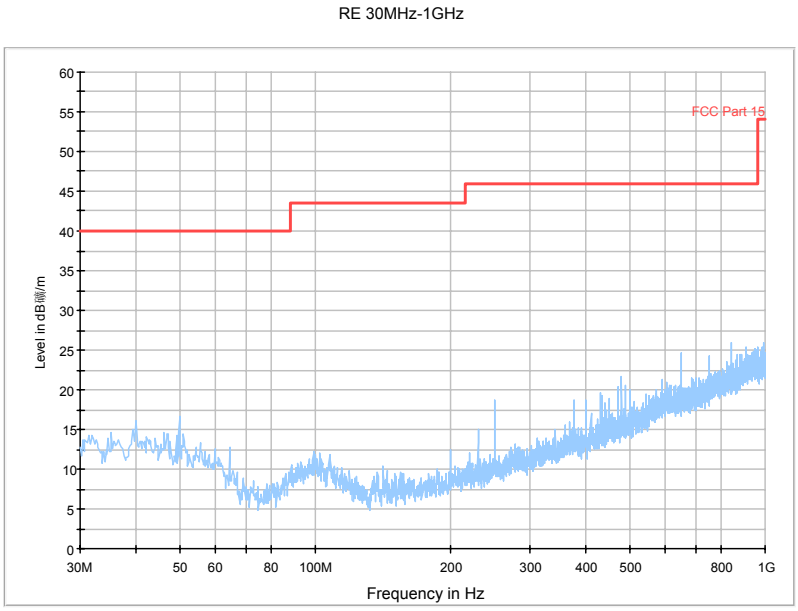


Fig. 145 Radiated Spurious Emission (802.11n-HT40, ch62, 30 MHz-1 GHz)

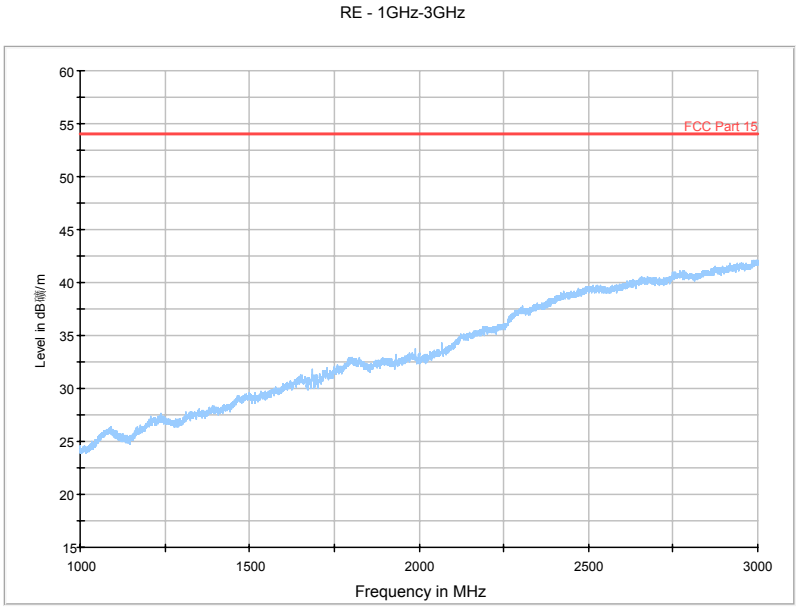


Fig. 146 Radiated Spurious Emission (802.11n-HT40, ch62, 1 GHz-3 GHz)

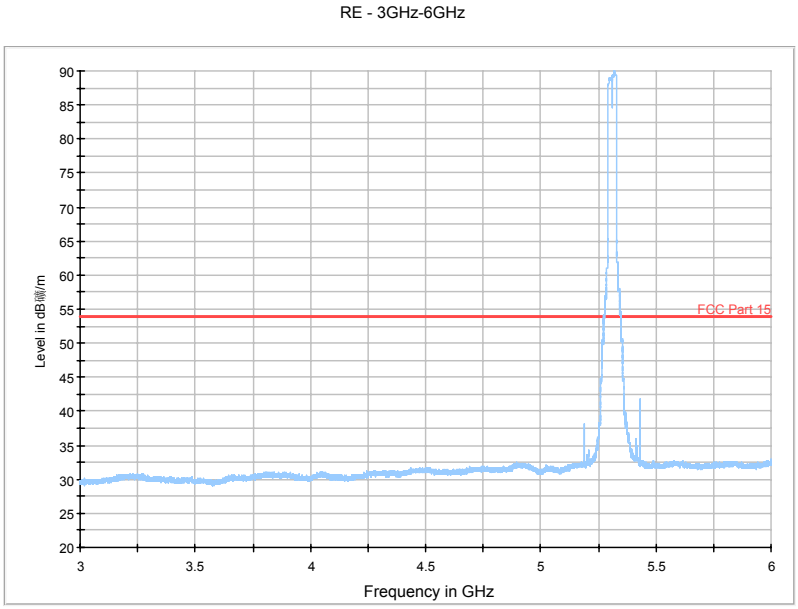


Fig. 147 Radiated Spurious Emission (802.11n-HT40, ch62, 3 GHz-6 GHz)

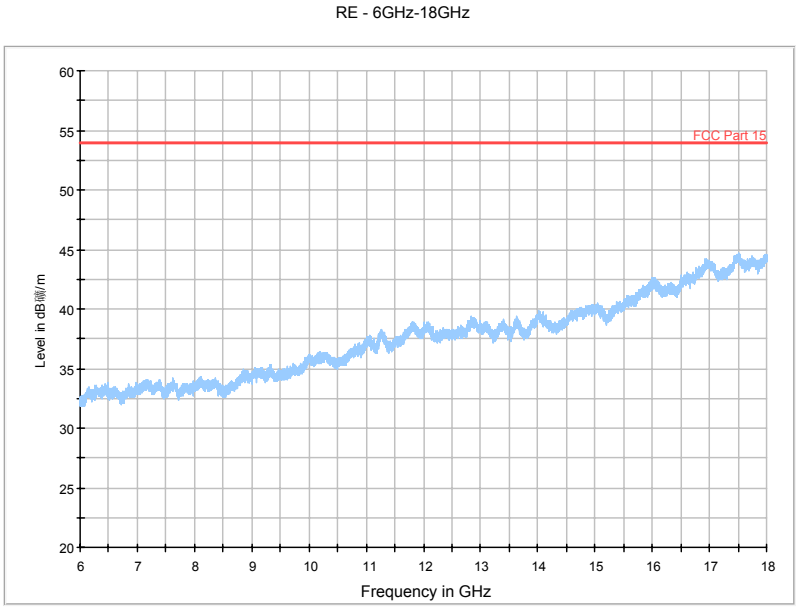


Fig. 148 Radiated Spurious Emission (802.11n-HT40, ch62, 6 GHz-18 GHz)

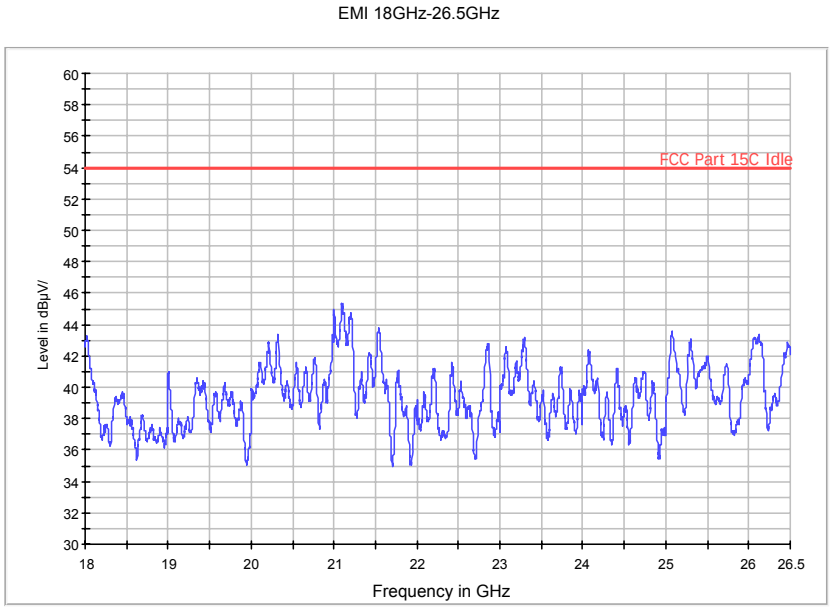


Fig. 149 Radiated Spurious Emission (802.11n-HT40, ch62, 18 GHz-26.5 GHz)

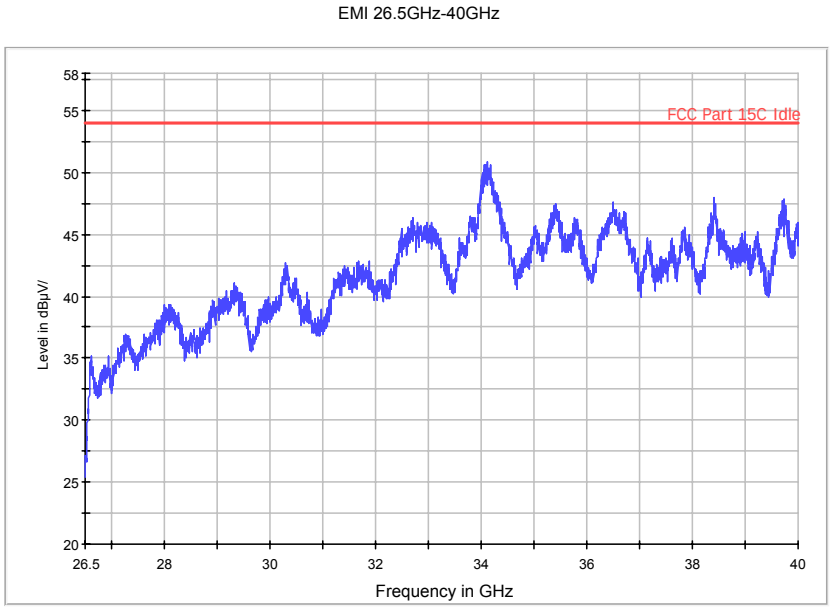


Fig. 150 Radiated Spurious Emission (802.11n-HT40, ch62, 26.5 GHz-40 GHz)

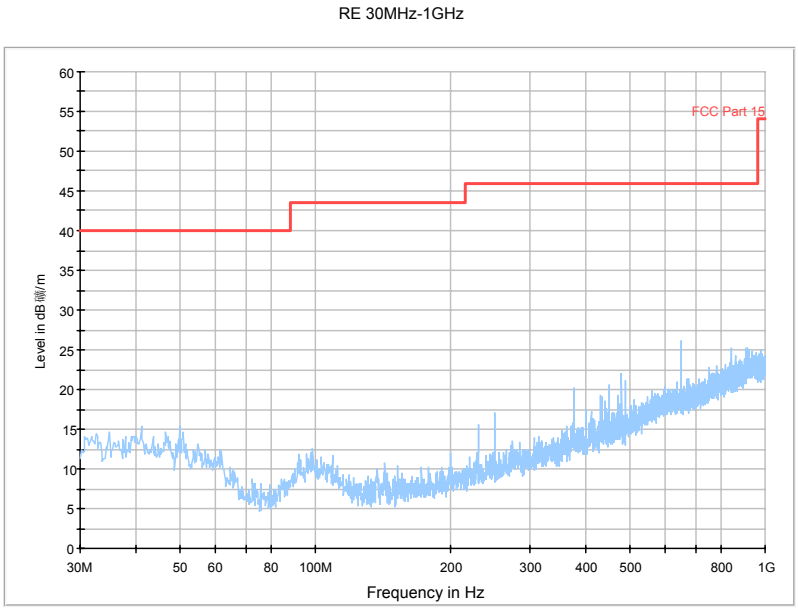


Fig. 151 Radiated Spurious Emission (802.11n-HT40, ch102, 30 MHz-1 GHz)

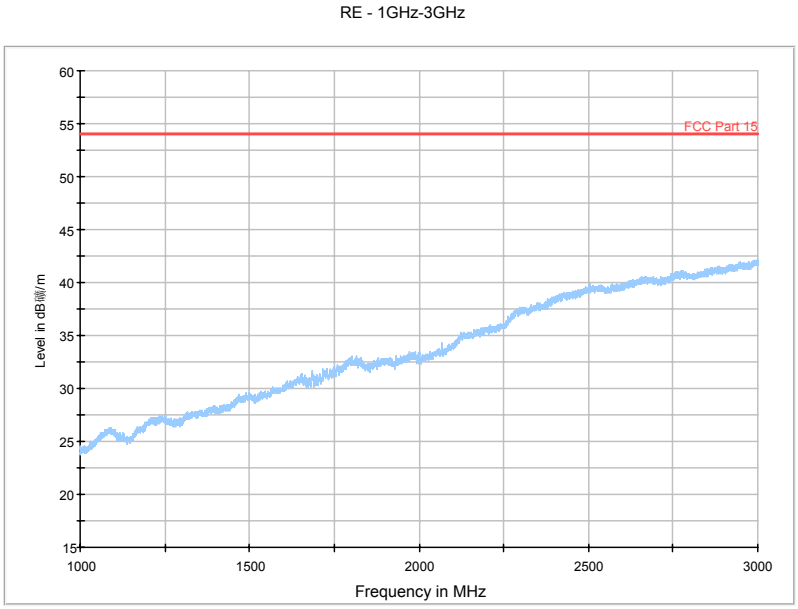


Fig. 152 Radiated Spurious Emission (802.11n-HT40, ch102, 1 GHz-3 GHz)

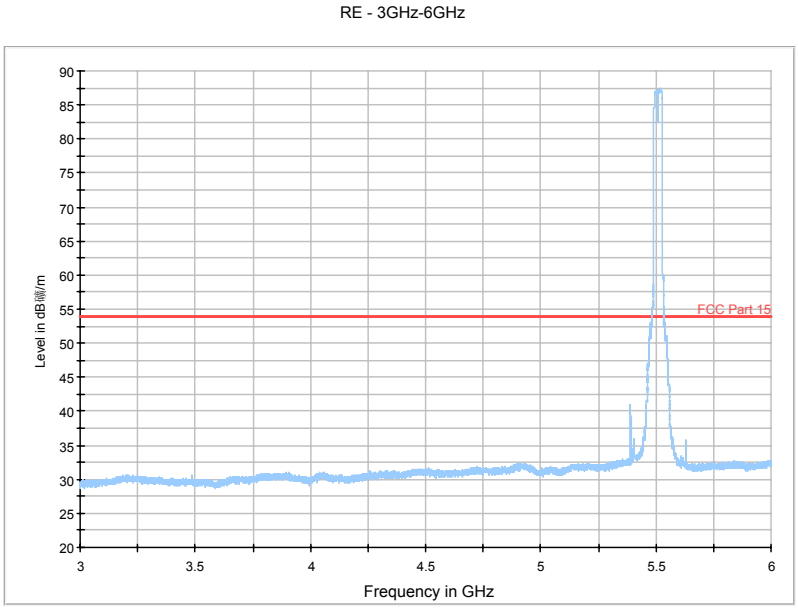


Fig. 153 Radiated Spurious Emission (802.11n-HT40, ch102, 3 GHz-6 GHz)

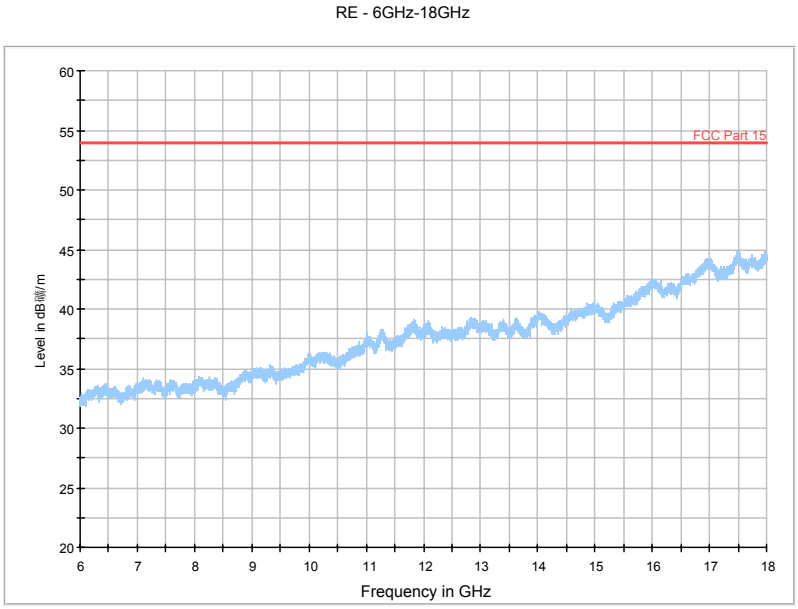


Fig. 154 Radiated Spurious Emission (802.11n-HT40, ch102, 6 GHz-18 GHz)

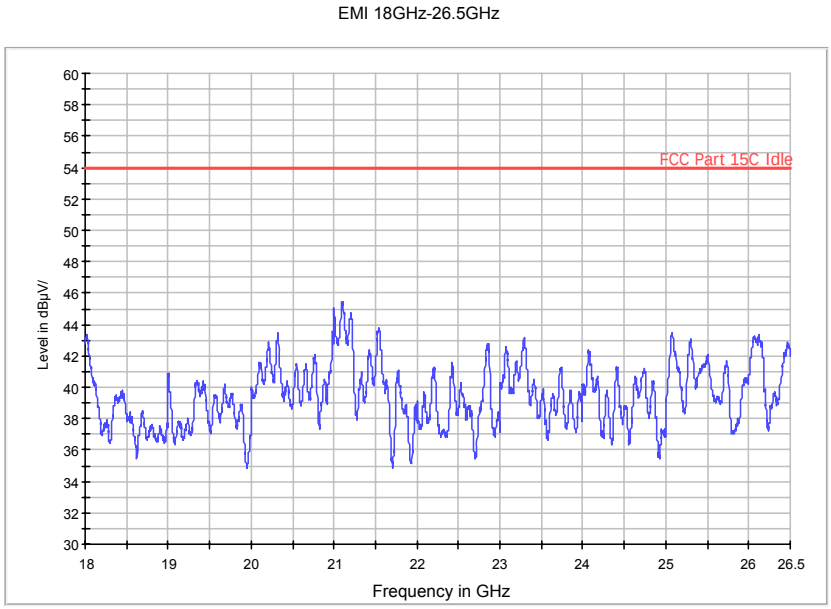


Fig. 155 Radiated Spurious Emission (802.11n-HT40, ch102, 18 GHz-26.5 GHz)

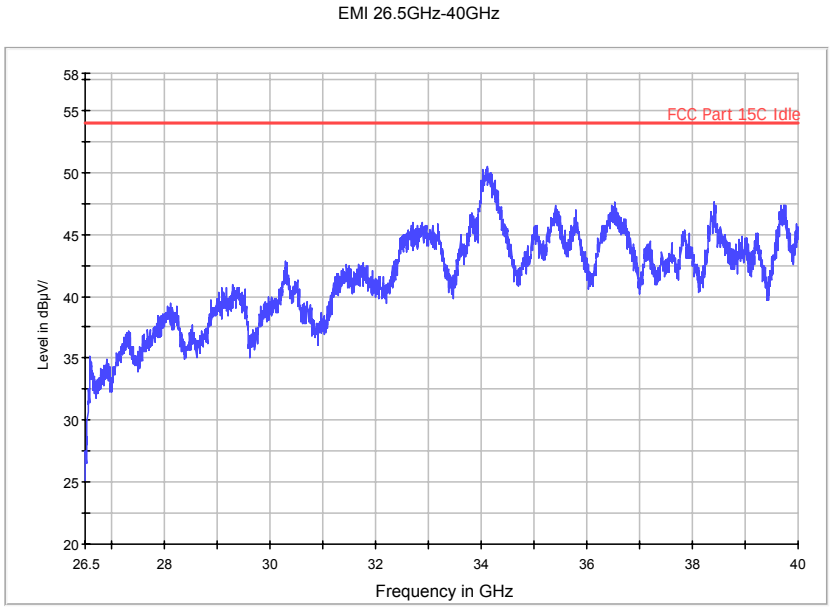


Fig. 156 Radiated Spurious Emission (802.11n-HT40, ch102, 26.5 GHz-40 GHz)

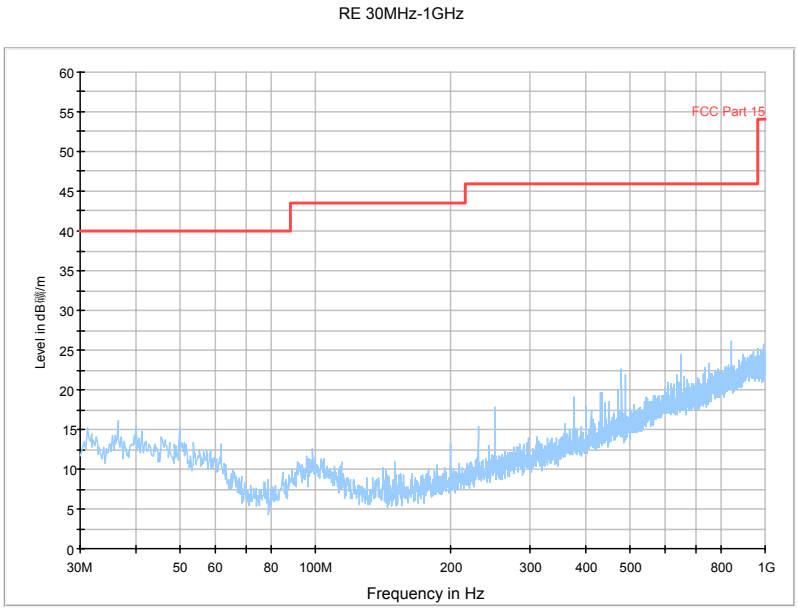


Fig. 157 Radiated Spurious Emission (802.11n-HT40, ch118, 30 MHz-1 GHz)

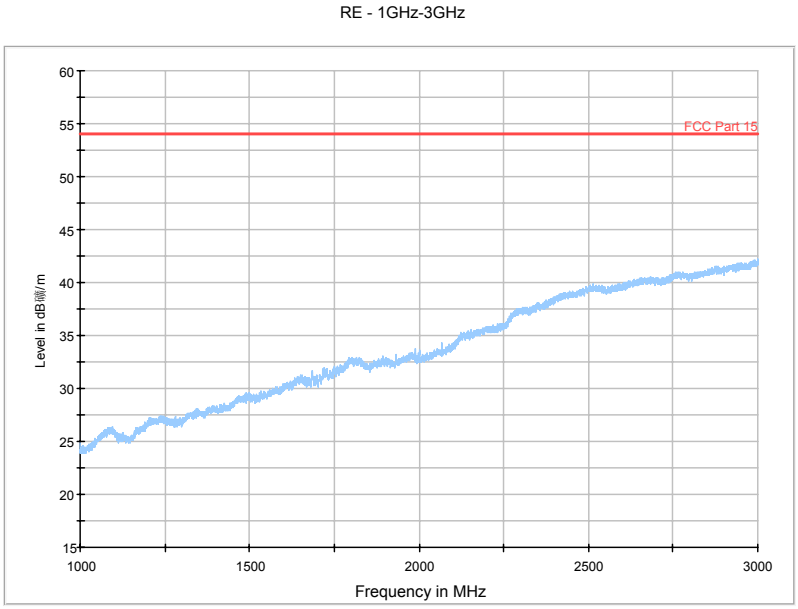


Fig. 158 Radiated Spurious Emission (802.11n-HT40, ch118, 1 GHz-3 GHz)

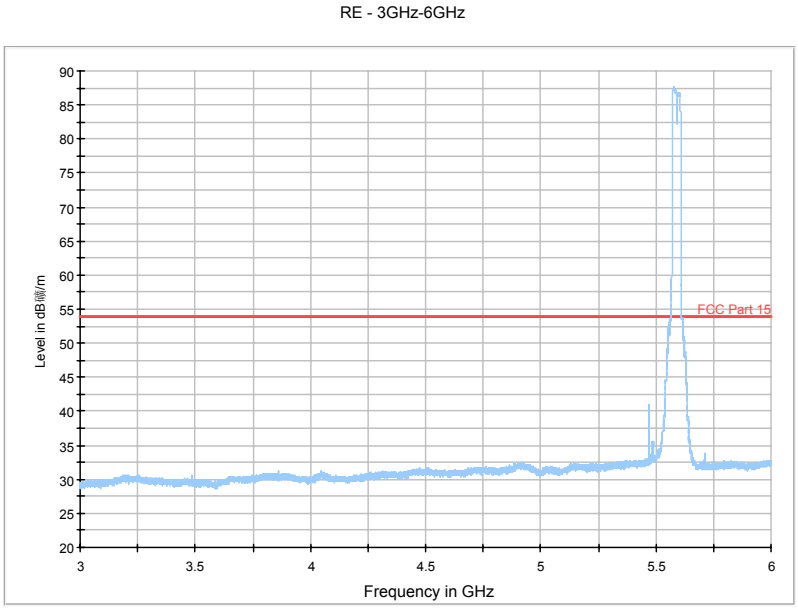


Fig. 159 Radiated Spurious Emission (802.11n-HT40, ch118, 3 GHz-6 GHz)

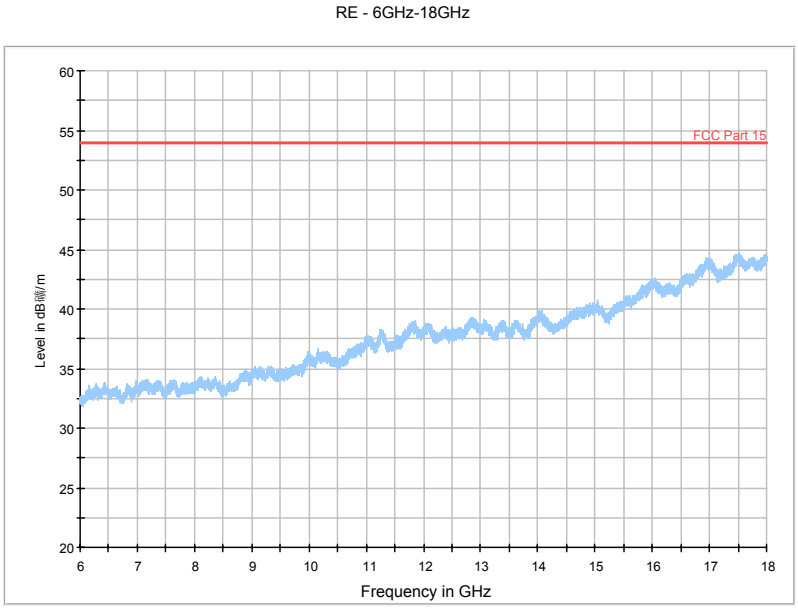


Fig. 160 Radiated Spurious Emission (802.11n-HT40, ch118, 6 GHz-18 GHz)

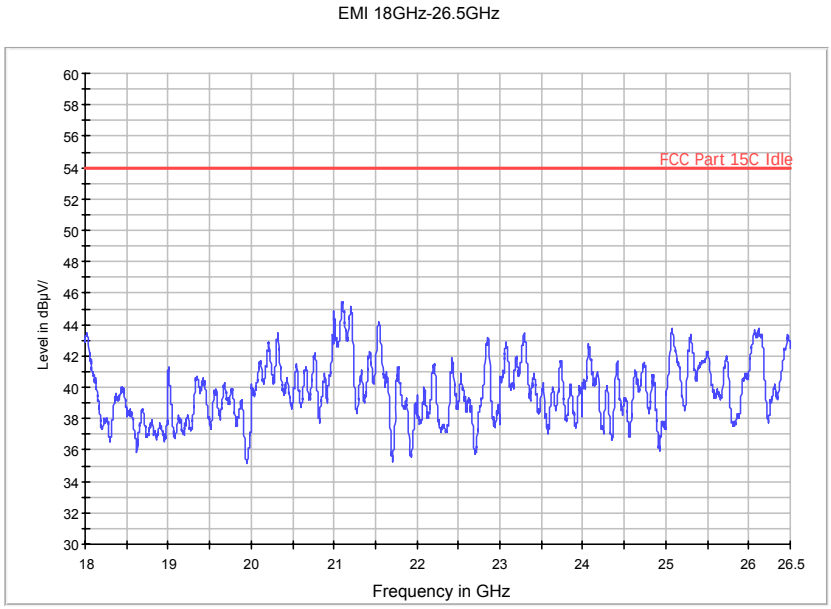


Fig. 161 Radiated Spurious Emission (802.11n-HT40, ch118, 18 GHz-26.5 GHz)

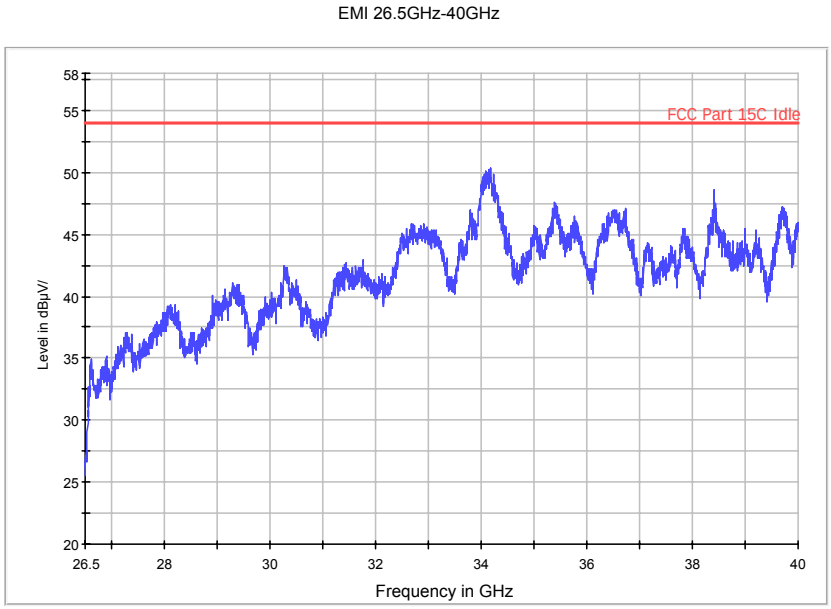


Fig. 162 Radiated Spurious Emission (802.11n-HT40, ch118, 26.5 GHz-40 GHz)

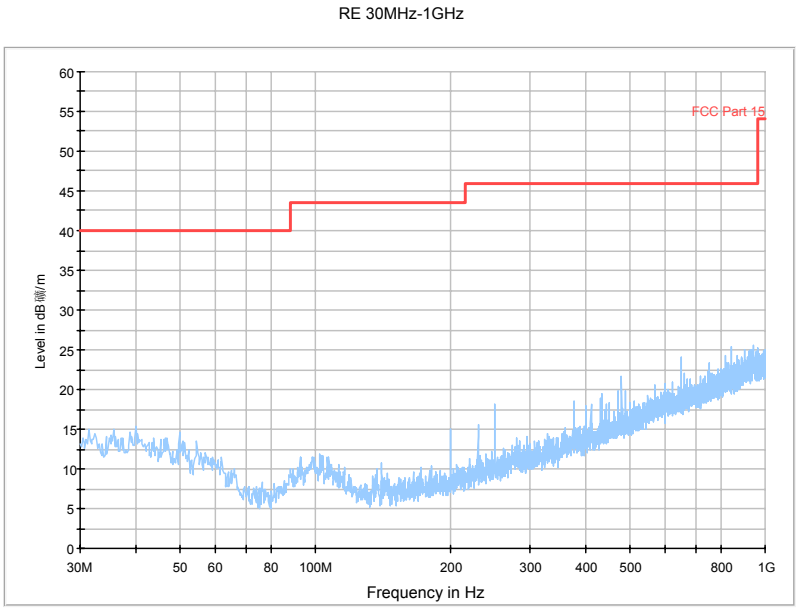


Fig. 163 Radiated Spurious Emission (802.11n-HT40, ch134, 30 MHz-1 GHz)

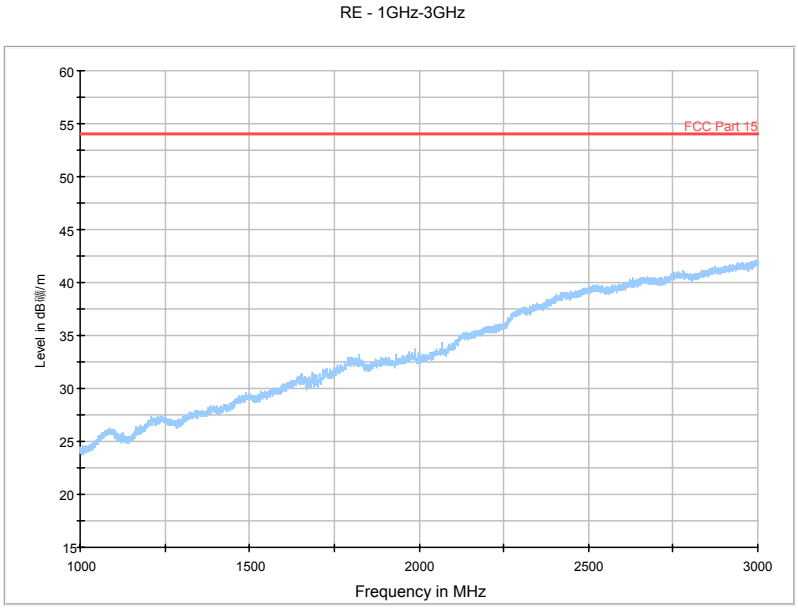


Fig. 164 Radiated Spurious Emission (802.11n-HT40, ch134, 1 GHz-3 GHz)

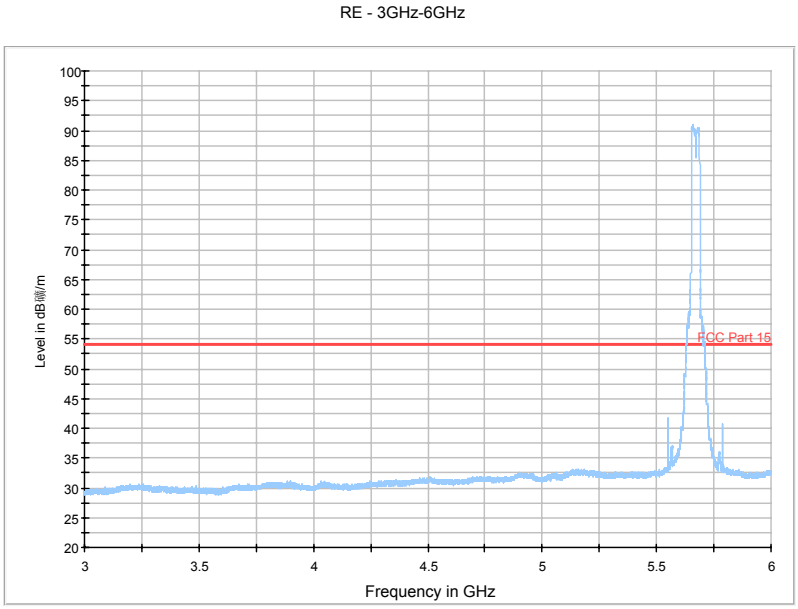


Fig. 165 Radiated Spurious Emission (802.11n-HT40, ch134, 3 GHz-6 GHz)

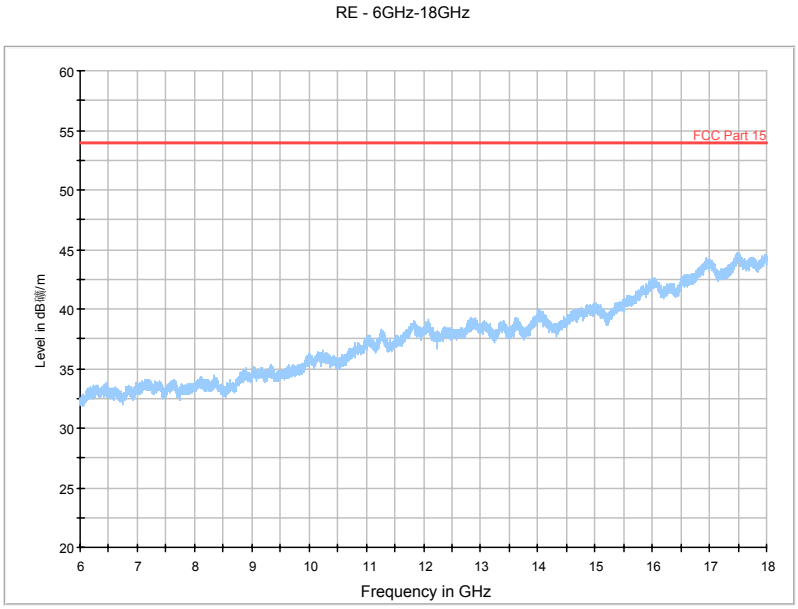


Fig. 166 Radiated Spurious Emission (802.11n-HT40, ch134, 6 GHz-18 GHz)

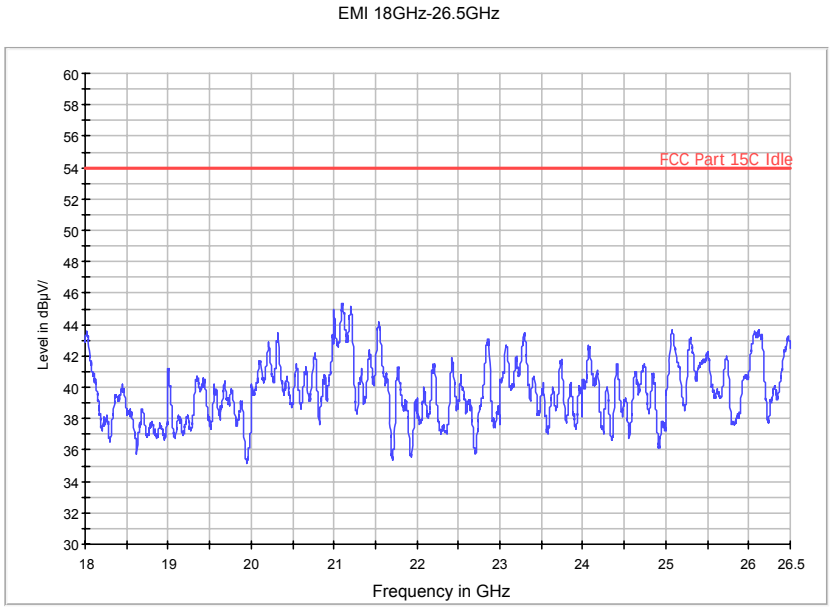


Fig. 167 Radiated Spurious Emission (802.11n-HT40, ch134, 18 GHz-26.5 GHz)

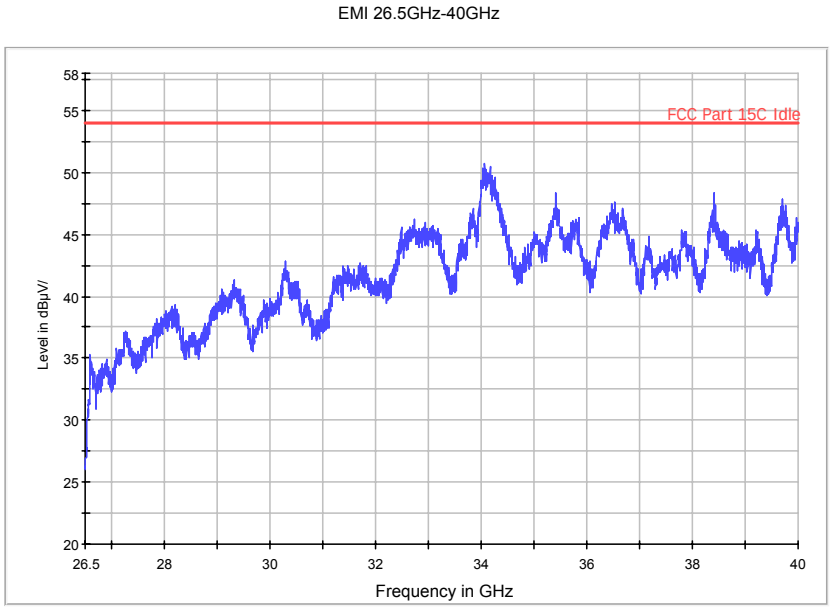


Fig. 168 Radiated Spurious Emission (802.11n-HT40, ch134, 26.5 GHz-40 GHz)

A.10. RX Spurious Emissions Radiated < 30MHz

Measurement Limit:

Frequency (MHz)	Field strength(dBμV/m)	Measurement distance(m)
30 - 88	30.0	10
88 - 216	33.5	10
216 - 960	36.0	10
Above 960	54.0	3

Measurement Results:

Mode	Channel	Frequency Range	Test Results	Conclusion
IDLE	64(5320MHz)	9 kHz ~30 MHz	Fig.169	P

Conclusion: PASS

Test graphs as below:

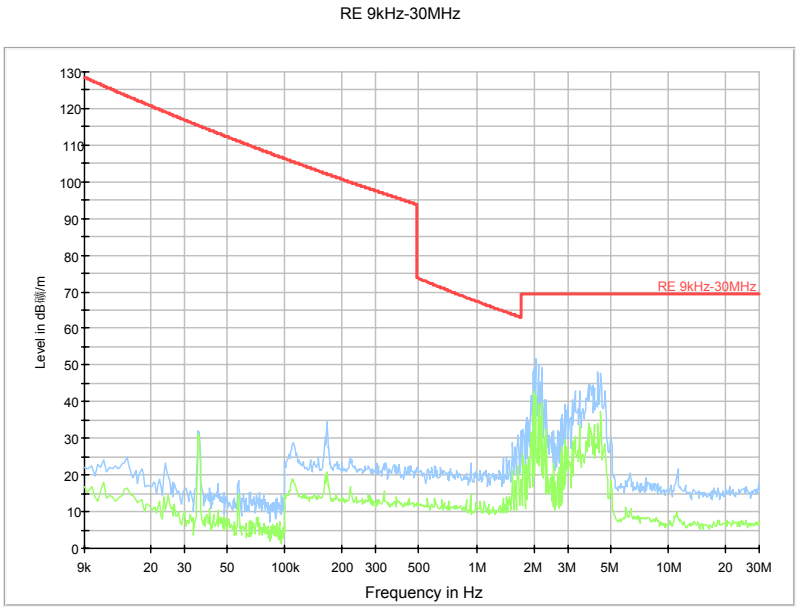


Fig. 169 RX Radiated Spurious Emission

A.11. Spurious Emissions Radiated < 30MHz

Measurement Limit:

Frequency (MHz)	Field strength(dBμV/m)	Measurement distance(m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

The measurement is made according to KDB 789033

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

Measurement Results:

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11a	64(5320MHz)	9 kHz ~30 MHz	Fig.170	P
802.11n-HT20	64(5320MHz)	9 kHz ~30 MHz	Fig.171	P
802.11n-HT40	62(5310MHz)	9 kHz ~30 MHz	Fig.172	P

Conclusion: PASS

Test graphs as below:

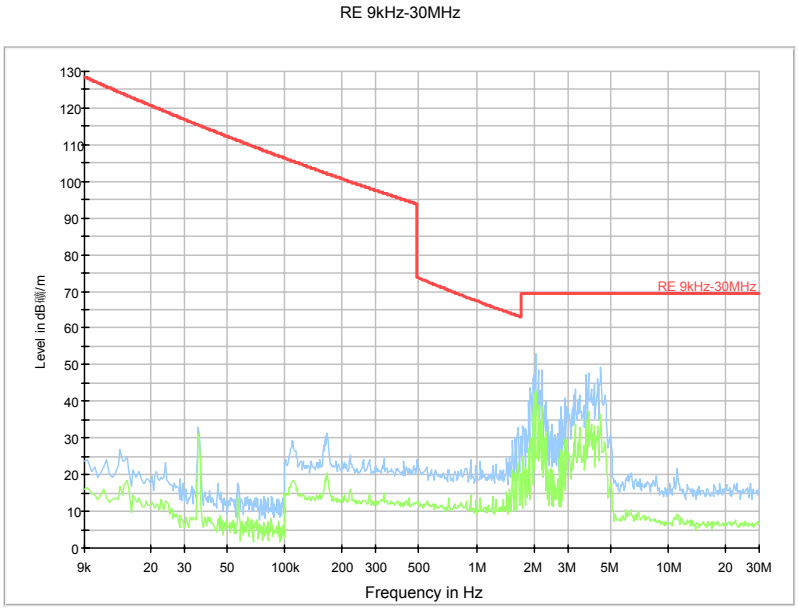


Fig. 170 Radiated Spurious Emission (802.11a, ch64, 9 kHz ~30 MHz)

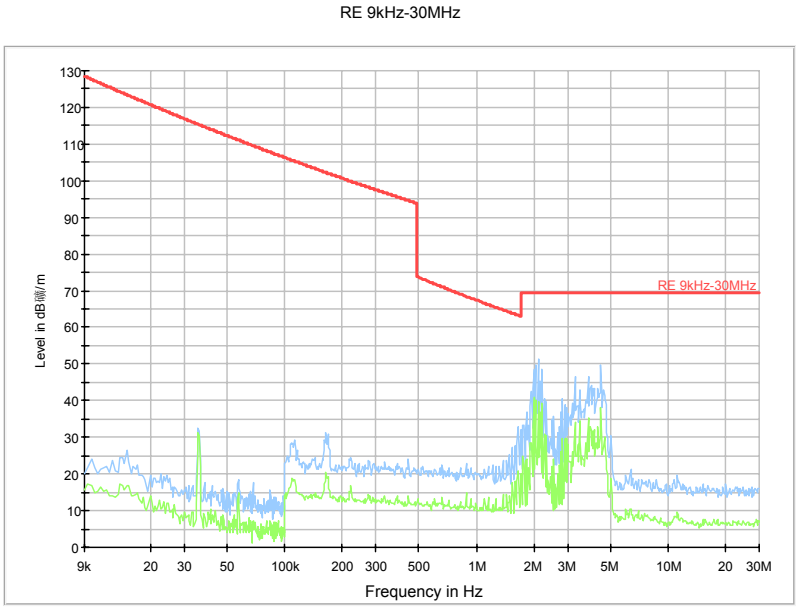


Fig. 171 Radiated Spurious Emission (802.11n-HT20, ch64, 9 kHz ~30 MHz)

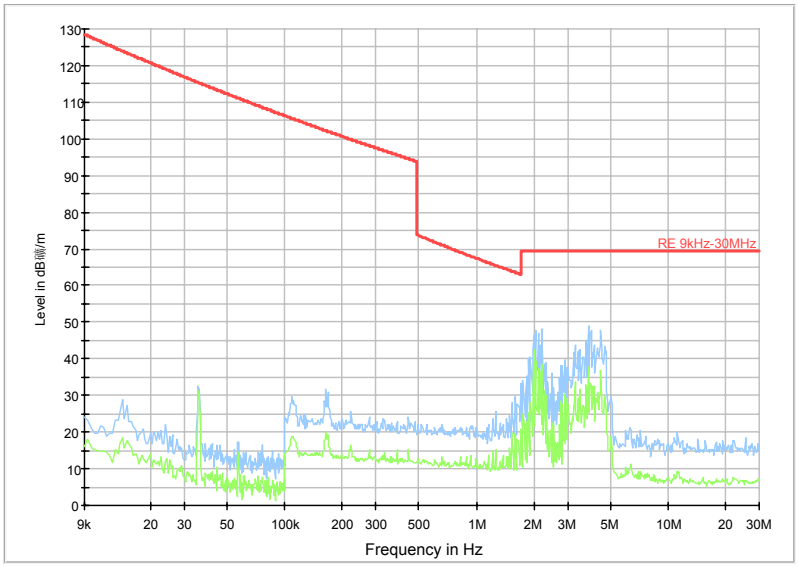


Fig. 172 Radiated Spurious Emission (802.11n-HT40, ch62, 9 kHz ~30 MHz)

A.12. Spurious Emission Conducted < 30MHz

Test Condition:

Voltage（V）	Frequency（Hz）
110	60

Measurement Result and limit:

WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV)		Conclusion
		With charger		
		11a mode	Idle	
0.15 to 0.5	66 to 56	Fig. 170	Fig. 171	P
0.5 to 5	56			
5 to 30	60			
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

WLAN (Average Limit)

Frequency range (MHz)	Average Limit (dBμV)	Result (dBμV)		Conclusion
		With charger		
		11a mode	Idle	
0.15 to 0.5	56 to 46	Fig.173	Fig.174	P
0.5 to 5	46			
5 to 30	50			
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

The measurement is made according to KDB 789033

Conclusion: PASS

Test graphs as below:

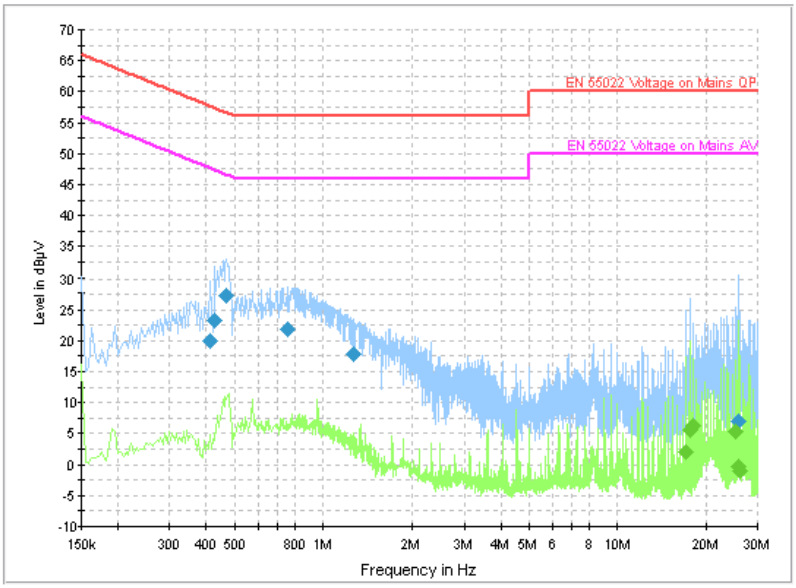


Fig. 173 Conducted Spurious Emission(802.11a, ch64, TX)

Measurement Result:

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.411000	20.0	GND	L1	10.0	37.6	57.6
0.429000	23.2	GND	L1	10.0	34.1	57.3
0.469500	27.2	GND	L1	10.0	29.3	56.5
0.757500	22.0	GND	L1	10.0	34.0	56.0
1.266000	17.9	GND	L1	10.0	38.1	56.0
25.696500	7.0	GND	L1	9.4	53.0	60.0

Measurement Result:

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
17.146500	2.1	GND	L1	9.7	47.9	50.0
17.610000	5.5	GND	L1	9.7	44.5	50.0
18.073500	6.2	GND	L1	9.7	43.8	50.0
25.228500	5.4	GND	L1	9.4	44.6	50.0
25.696500	-0.3	GND	L1	9.4	50.3	50.0
26.277000	-1.1	GND	L1	9.4	51.1	50.0

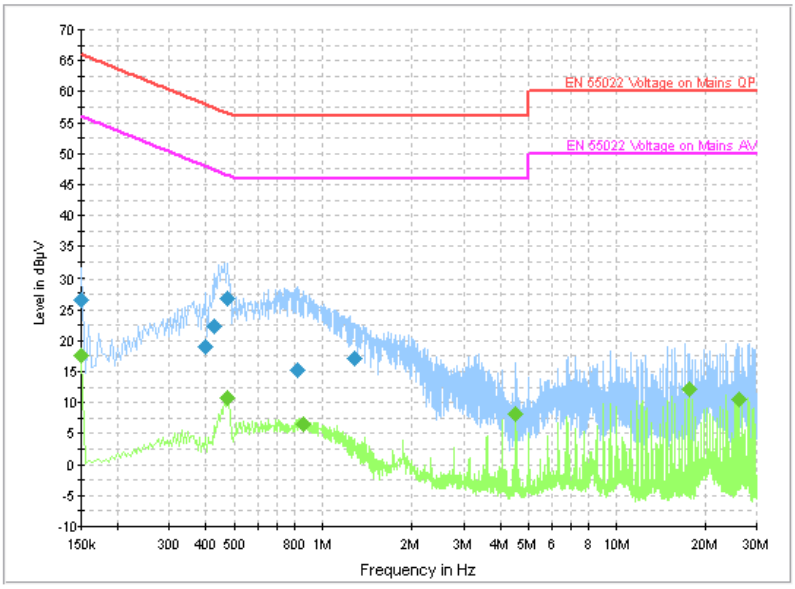


Fig. 174 Conducted Spurious Emission(802.11a, ch64, IDLE)

Measurement Result:

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	26.5	GND	L1	10.0	39.5	66.0
0.397500	18.9	GND	L1	10.0	39.0	57.9
0.424500	22.4	GND	L1	10.0	34.9	57.4
0.474000	26.8	GND	L1	10.0	29.6	56.4
0.825000	15.3	GND	N	10.0	40.7	56.0
1.293000	17.1	GND	L1	10.0	38.9	56.0

Measurement Result:

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	17.6	GND	L1	10.0	38.4	56.0
0.474000	10.7	GND	L1	10.0	35.8	46.4
0.865500	6.5	GND	L1	10.0	39.5	46.0
4.528500	8.1	GND	L1	10.0	37.9	46.0
17.583000	12.3	GND	L1	9.7	37.7	50.0
26.223000	10.6	GND	L1	9.4	39.4	50.0

A.13.Peak Excursion

Measurement Limit:

Standard	Limit (dB)
FCC 47 CFR Part 15.407	13

The measurement is made according to KDB 789033, the method SA-1 is used for PPSD measurement.

Measurement Uncertainty:

Measurement Uncertainty	0.75 dB

Measurement Result:

11a mode

Type	Peak Excursion							
	5180MHz (Ch36)		5240MHz (Ch48)		5260MHz (Ch52)		5320 MHz (Ch64)	
Peak (dBm)	Fig.175	12.53	Fig.176	12.33	Fig.177	12.06	Fig.178	12.41
Average(dBm)	/	2.75	/	2.93	/	2.88	/	2.64
Result (dB)	9.78		9.40		9.18		9.67	

Type	Test Result (dBm)					
	5500MHz (Ch100)		5600MHz (Ch120)		5700MHz (Ch140)	
Peak (dBm)	Fig.179	11.76	Fig.180	11.61	Fig.181	11.02
Average(dBm)	/	2.27	/	2.28	/	2.02
Result (dB)	9.49		9.33		9.00	

11n-HT20 mode

Type	Peak Excursion							
	5180MHz (Ch36)		5240MHz (Ch48)		5260MHz (Ch52)		5320 MHz (Ch64)	
Peak (dBm)	Fig.182	9.41	Fig.183	8.67	Fig.184	9.20	Fig.185	9.09
Average(dBm)	/	0.78	/	0.11	/	0.11	/	-0.19
Result (dB)	8.63		8.56		8.59		0.78	

Type	Test Result (dBm)					
	5500MHz (Ch100)		5600MHz (Ch120)		5700MHz (Ch140)	
Peak (dBm)	Fig.186	8.84	Fig.187	8.89	Fig.188	8.29
Average(dBm)	/	-0.35	/	0.18	/	0.37
Result (dB)	9.19		8.71		7.92	

11n-HT40 mode

Type	Peak Excursion							
	5190MHz (Ch38)		5230MHz (Ch46)		5270MHz (Ch54)		5310 MHz (Ch62)	
Peak (dBm)	Fig.189	6.09	Fig.190	6.17	Fig.191	6.29	Fig.192	6.22
Average(dBm)	/	-2.80	/	-3.14	/	-3.08	/	-3.12
Result (dB)	8.89		9.31		9.37		9.34	

Type	Test Result (dBm)					
	5510MHz (Ch102)		5590MHz (Ch118)		5670MHz (Ch134)	
Peak (dBm)	Fig.193	5.38	Fig.194	6.33	Fig.195	6.71
Average(dBm)	/	-4.09	/	-3.23	/	-3.95
Result (dB)	9.47		9.56		10.66	

Conclusion: PASS

Test graphs as below:

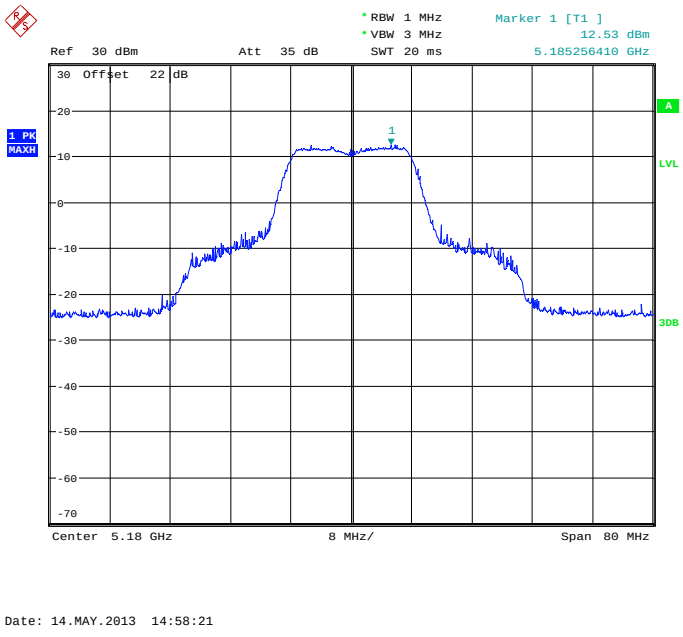


Fig. 175 Peak Excursions (802.11a, ch36, peak)

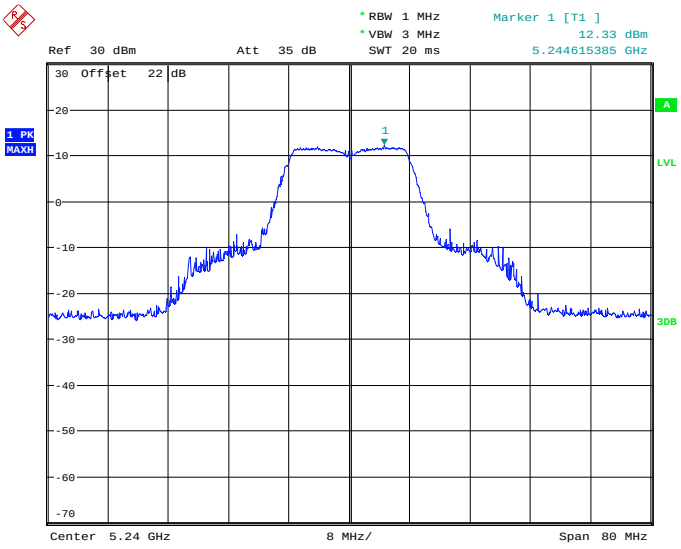


Fig. 176 Peak Excursions (802.11a, ch48, peak)

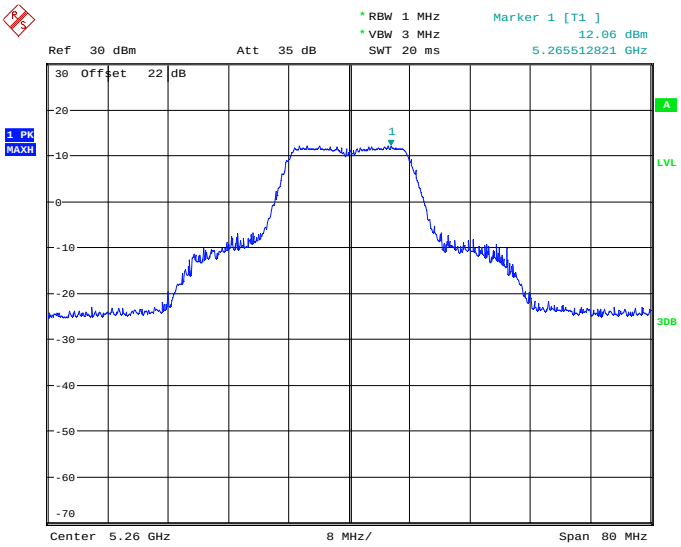


Fig. 177 Peak Excursions (802.11a, ch52, peak)

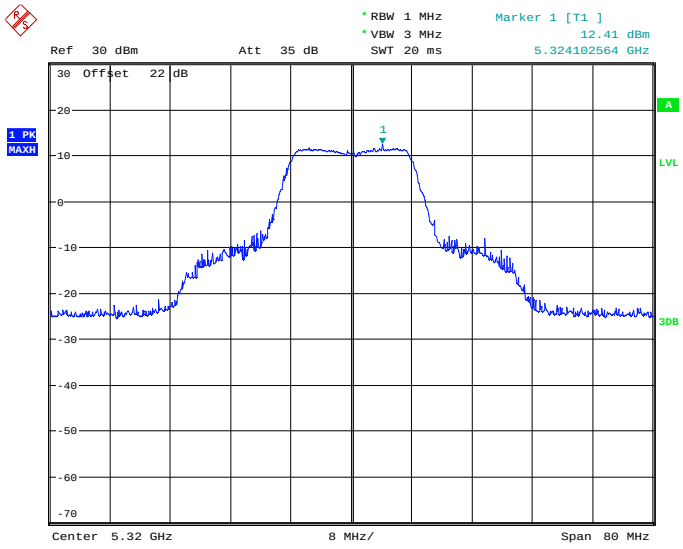


Fig. 178 Peak Excursions (802.11a, ch64, peak)

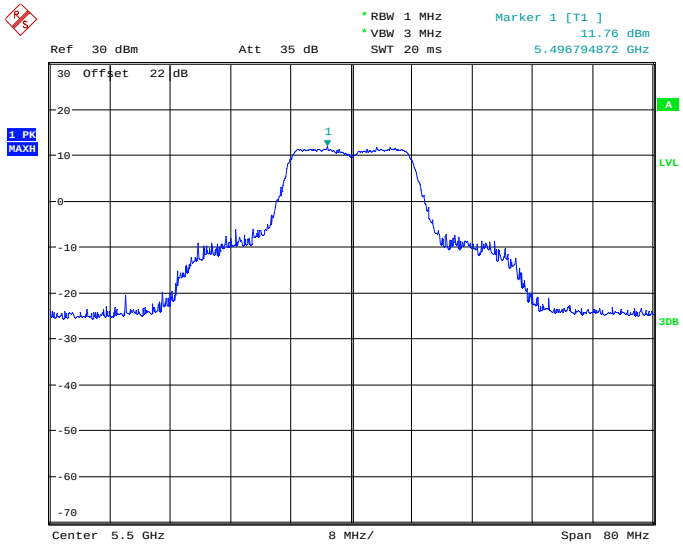


Fig. 179 Peak Excursions (802.11a, ch100, peak)

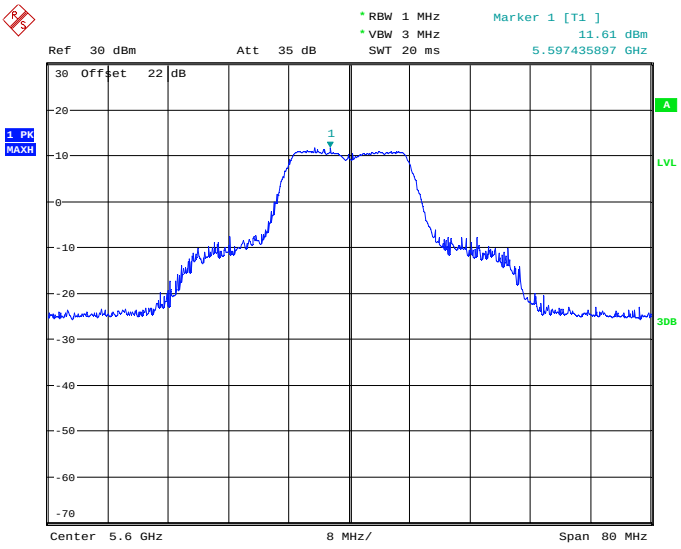


Fig. 180 Peak Excursions (802.11a, ch120, peak)

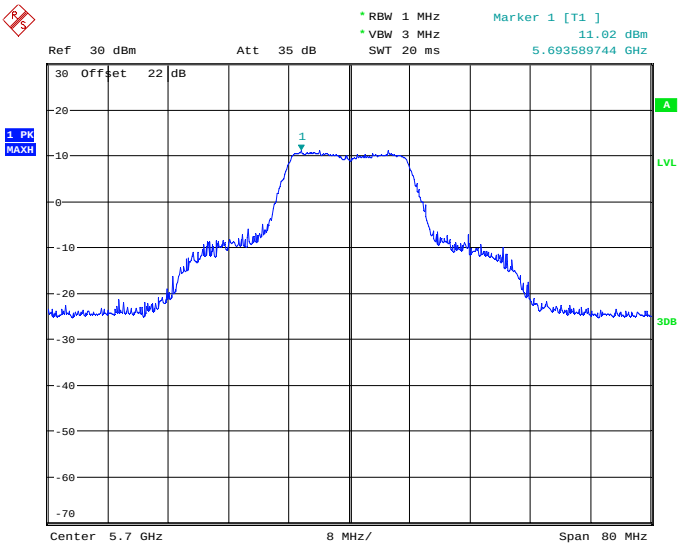


Fig. 181 Peak Excursions (802.11a, ch140, peak)

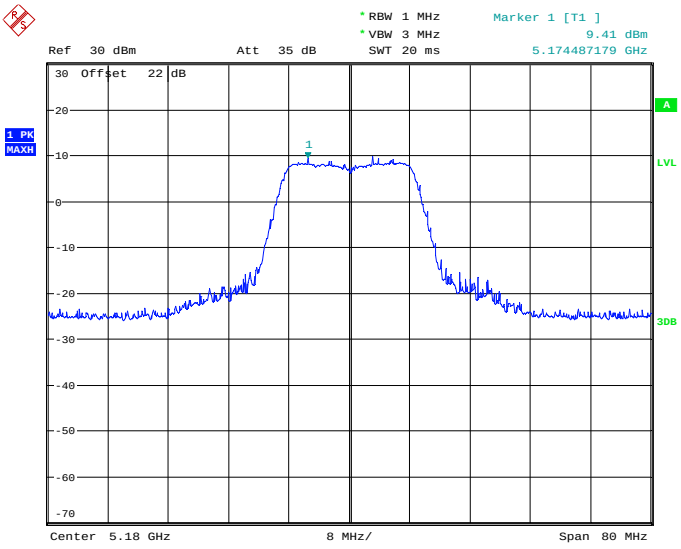


Fig. 182 Peak Excursions (802.11n-HT20, ch36, peak)

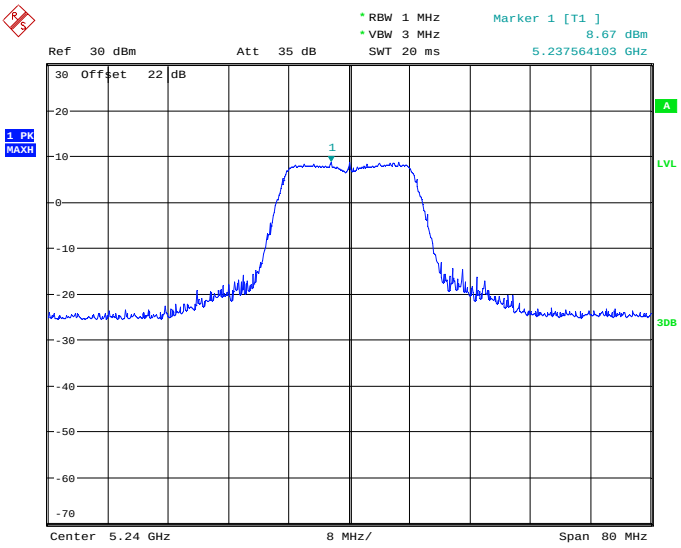


Fig. 183 Peak Excursions (802.11n-HT20, ch48, peak)

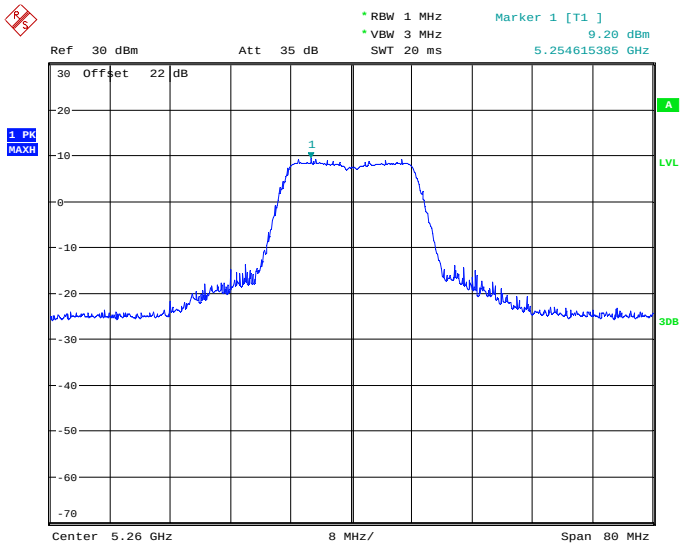


Fig. 184 Peak Excursions (802.11n-HT20, ch52, peak)

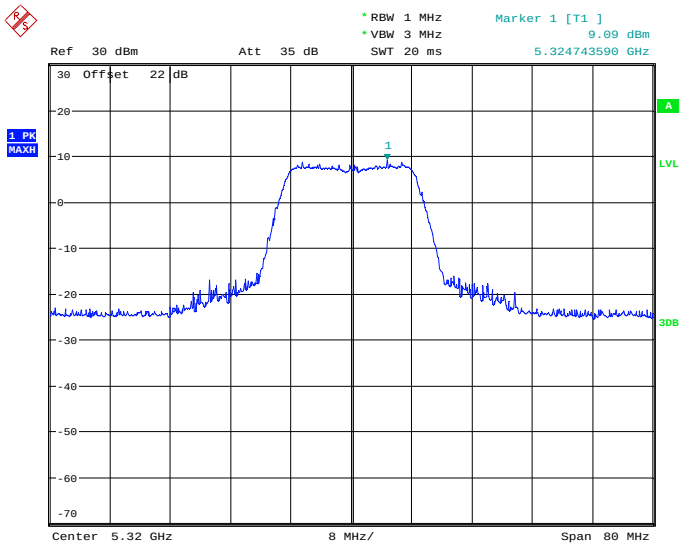


Fig. 185 Peak Excursions (802.11n-HT20, ch64, peak)

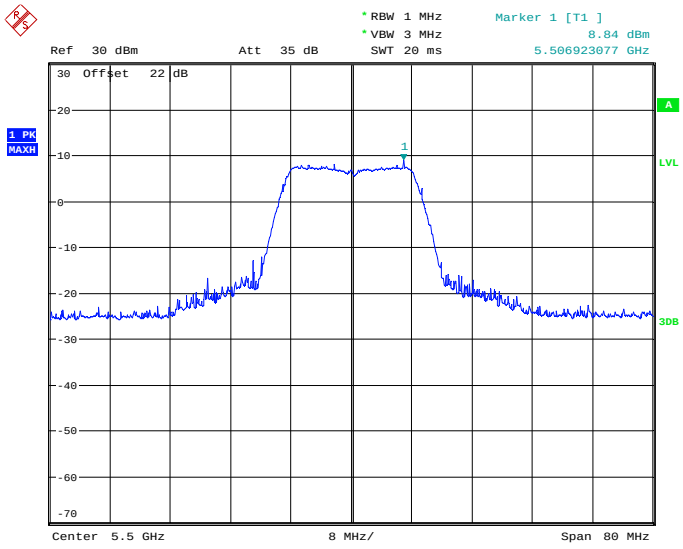


Fig. 186 Peak Excursions (802.11n-HT20, ch100, peak)

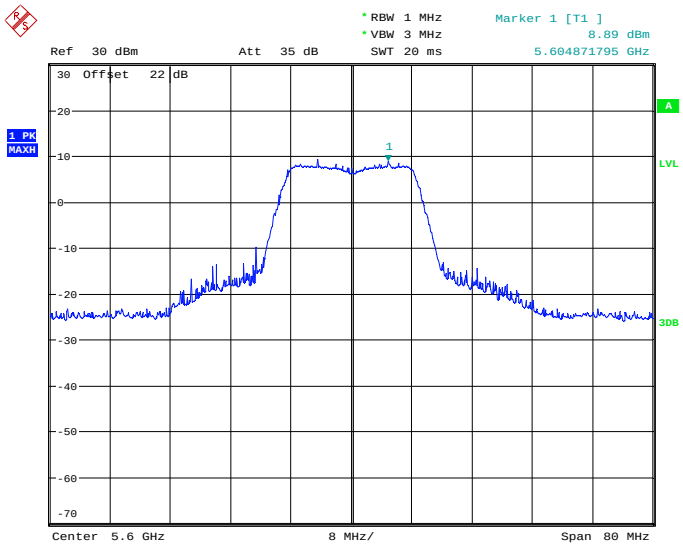


Fig. 187 Peak Excursions (802.11n-HT20, ch120, peak)

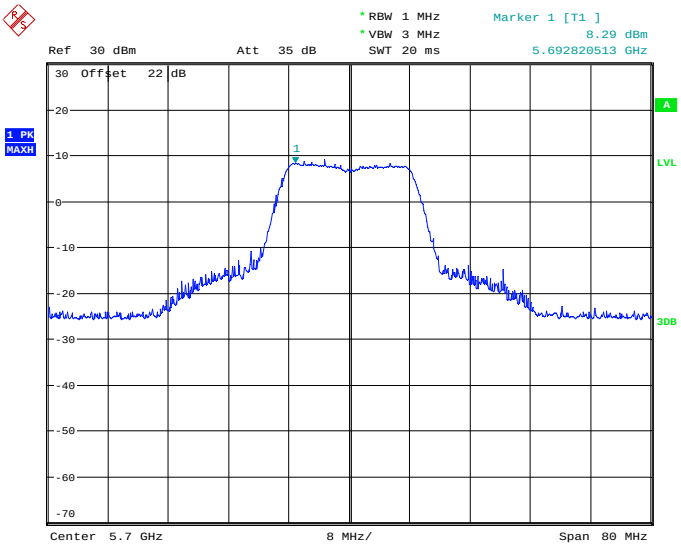


Fig. 188 Peak Excursions (802.11n-HT20, ch140, peak)

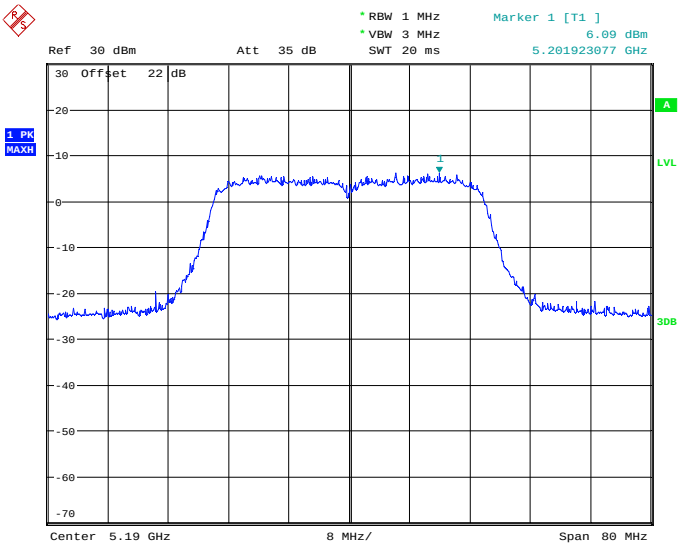


Fig. 189 Peak Excursions (802.11n-HT40, ch38, peak)

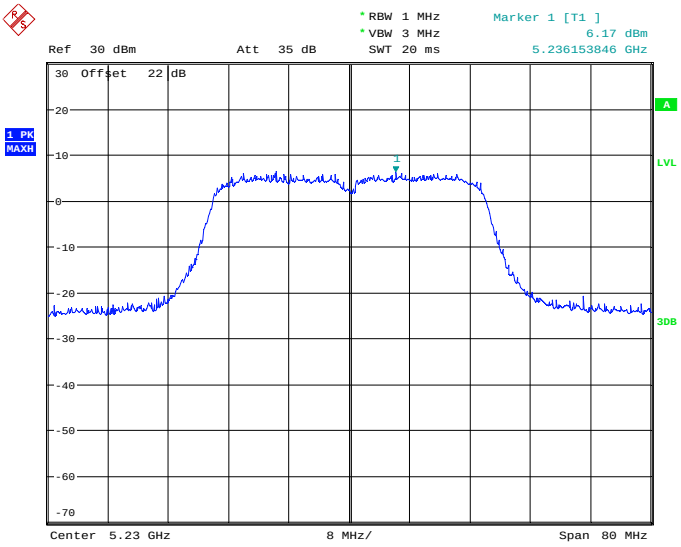


Fig. 190 Peak Excursions (802.11n-HT40, ch46, peak)

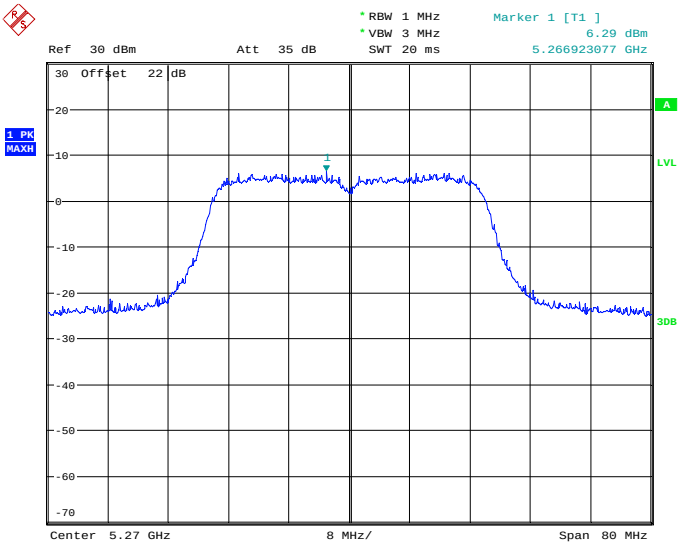


Fig. 191 Peak Excursions (802.11n-HT40, ch54, peak)

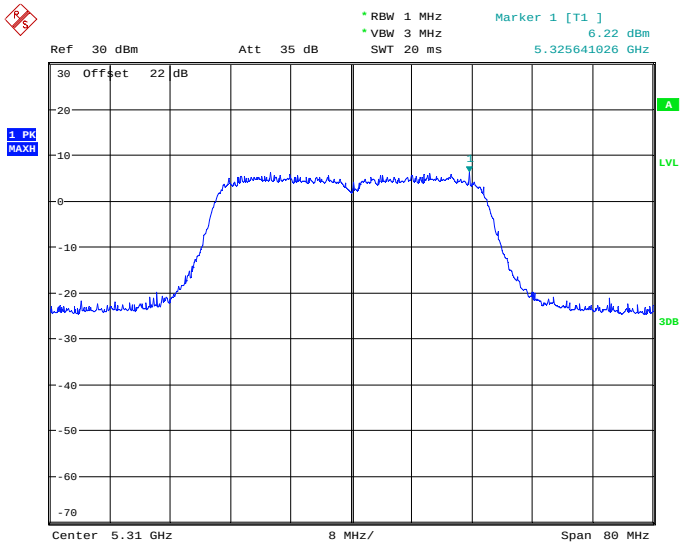


Fig. 192 Peak Excursions (802.11n-HT40, ch62, peak)

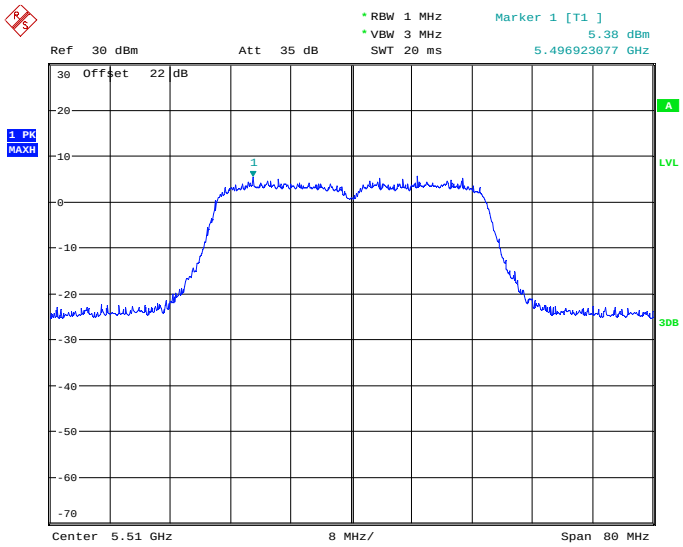


Fig. 193 Peak Excursions (802.11n-HT40, ch102, peak)

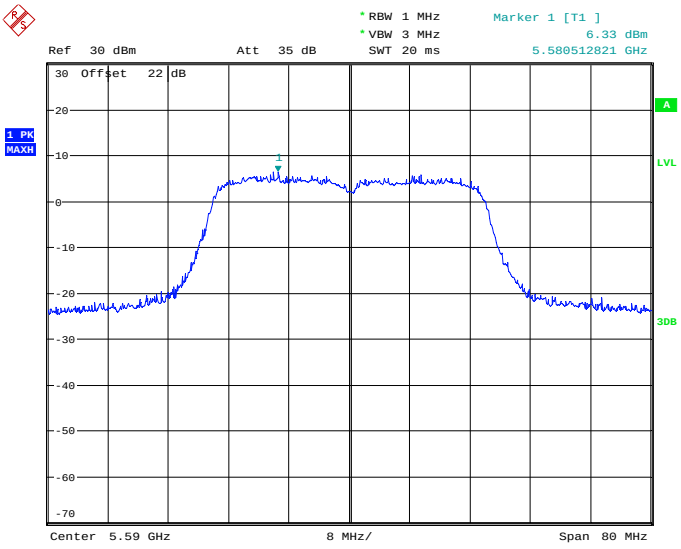


Fig. 194 Peak Excursions (802.11n-HT40, ch118, peak)

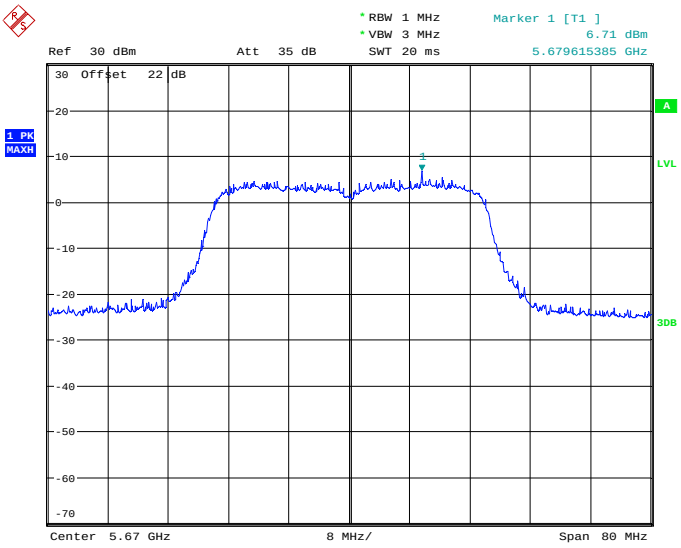


Fig. 195 Peak Excursions (802.11n-HT40, ch134, peak)

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