



**FCC PART 15
TEST REPORT
No. I17Z60075-SRD15**

for

HMD Global Oy

Smart Phone

TA-1025

With

FCC ID: 2AJOTTA-1025

Hardware Version: 3

Software Version: 000C_3_110

Issued Date: 2017-04-15



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 CTTL.

Test Laboratory:

CTTL, Telecommunication Technology Labs, Academy of Telecommunication Research, MIIT

No. 52, Huayuan Bei Road, Haidian District, Beijing, P.R.China 100191

Tel: +86(0)10-62304633-2512, Fax: +86(0)10-62304633-2504

Email: ctl_terminals@catr.cn, website: www.chinattl.com

©Copyright. All rights reserved by CTTL.



REPORT HISTORY

Report Number	Revision	Description	Issue Date
I17Z60075-SRD15	Rev.0	1st edition	2017-04-15

CONTENTS

CONTENTS	3
1. TEST LATORATORY	8
1.1. TESTING LOCATION.....	8
1.2. TESTING ENVIRONMENT	8
1.3. PROJECT DATA.....	8
1.4. SIGNATURE.....	8
2. CLIENT INFORMATION	9
2.1. APPLICANT INFORMATION.....	9
2.2. MANUFACTURER INFORMATION.....	9
3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT(AE)	10
3.1. ABOUT EUT	10
3.2. INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST	10
3.3. INTERNAL IDENTIFICATION OF AE USED DURING THE TEST	10
3.4. GENERAL DESCRIPTION	11
3.5. INTERPRETATION OF THE TEST ENVIRONMENT	11
4. REFERENCE DOCUMENTS	11
4.1. DOCUMENTS SUPPLIED BY APPLICANT.....	11
4.2. REFERENCE DOCUMENTS FOR TESTING	11
5. LABORATORY ENVIRONMENT	12
6. SUMMARY OF TEST RESULTS	13
6.1. SUMMARY OF TEST RESULTS.....	13
6.2. STATEMENTS.....	13
6.3. TEST CONDITIONS.....	13
7. TEST EQUIPMENTS UTILIZED	14
8. MEASUREMENT UNCERTAINTY	15
8.1. TRANSMITTER OUTPUT POWER.....	15
8.2. PEAK POWER SPECTRAL DENSITY.....	15
8.3. OCCUPIED CHANNEL BANDWIDTH.....	15
8.4. BAND EDGES COMPLIANCE.....	15
8.5. SPURIOUS EMISSIONS.....	15
ANNEX A: MEASUREMENT RESULTS	16
A.1. MEASUREMENT METHOD	16

A.2. MAXIMUM OUTPUT POWER.....	17
A.3. PEAK POWER SPECTRAL DENSITY (CONDUCTED).....	19
A.4. OCCUPIED 26DB BANDWIDTH(CONDUCTED).....	20
FIG. 1 OCCUPIED 26DB BANDWIDTH (802.11A, 5180MHZ).....	21
FIG. 2 OCCUPIED 26DB BANDWIDTH (802.11A, 5200MHZ).....	21
FIG. 3 OCCUPIED 26DB BANDWIDTH (802.11A, 5240MHZ).....	22
FIG. 4 OCCUPIED 26DB BANDWIDTH (802.11A, 5260MHZ).....	22
FIG. 5 OCCUPIED 26DB BANDWIDTH (802.11A, 5280MHZ).....	23
FIG. 6 OCCUPIED 26DB BANDWIDTH (802.11A, 5320MHZ).....	23
FIG. 7 OCCUPIED 26DB BANDWIDTH (802.11A, 5500MHZ).....	24
FIG. 8 OCCUPIED 26DB BANDWIDTH (802.11A, 5580MHZ).....	24
FIG. 9 OCCUPIED 26DB BANDWIDTH (802.11A, 5700MHZ).....	25
FIG. 10 OCCUPIED 26DB BANDWIDTH (802.11N-HT20, 5180MHZ).....	25
FIG. 11 OCCUPIED 26DB BANDWIDTH (802.11N-HT20, 5200MHZ).....	26
FIG. 12 OCCUPIED 26DB BANDWIDTH (802.11N-HT20, 5240MHZ).....	26
FIG. 13 OCCUPIED 26DB BANDWIDTH (802.11N-HT20, 5260MHZ).....	27
FIG. 14 OCCUPIED 26DB BANDWIDTH (802.11N-HT20, 5280MHZ).....	27
FIG. 15 OCCUPIED 26DB BANDWIDTH (802.11N-HT20, 5320MHZ).....	28
FIG. 16 OCCUPIED 26DB BANDWIDTH (802.11N-HT20, 5500MHZ).....	28
FIG. 17 OCCUPIED 26DB BANDWIDTH (802.11N-HT20, 5580MHZ).....	29
FIG. 18 OCCUPIED 26DB BANDWIDTH (802.11N-HT20, 5700MHZ).....	29
FIG. 19 OCCUPIED 26DB BANDWIDTH (802.11N-HT40, 5190MHZ).....	30
FIG. 20 OCCUPIED 26DB BANDWIDTH (802.11N-HT40, 5230MHZ).....	30
FIG. 21 OCCUPIED 26DB BANDWIDTH (802.11N-HT40, 5270MHZ).....	31
FIG. 22 OCCUPIED 26DB BANDWIDTH (802.11N-HT40, 5310MHZ).....	31
FIG. 23 OCCUPIED 26DB BANDWIDTH (802.11N-HT40, 5510MHZ).....	32
FIG. 24 OCCUPIED 26DB BANDWIDTH (802.11N-HT40, 5550MHZ).....	32
FIG. 25 OCCUPIED 26DB BANDWIDTH (802.11N-HT40, 5670MHZ).....	33
A.5. BAND EDGES COMPLIANCE	34
A5.1 BAND EDGES - RADIATED	34
FIG. 26 BAND EDGES (802.11A, 5180MHZ).....	35
FIG. 27 BAND EDGES (802.11A, 5320MHZ).....	35
FIG. 28 BAND EDGES (802.11A, 5500MHZ).....	36
FIG. 29 BAND EDGES (802.11N-HT20, 5180MHZ).....	36
FIG. 30 BAND EDGES (802.11N-HT20, 5320MHZ).....	37
FIG. 31 BAND EDGES (802.11N-HT20, 5500MHZ).....	37
FIG. 32 BAND EDGES (802.11N-HT40, 5190MHZ).....	38
FIG. 33 BAND EDGES (802.11N-HT40, 5310MHZ).....	38
FIG. 34 BAND EDGES (802.11N-HT40, 5510MHZ).....	39
A.6. TRANSMITTER SPURIOUS EMISSION.....	40
FIG. 35 RADIATED SPURIOUS EMISSION (802.11A, CH36, 1 GHz-3 GHz).....	57
FIG. 36 RADIATED SPURIOUS EMISSION (802.11A, CH36, 3 GHz-6 GHz).....	58
FIG. 37 RADIATED SPURIOUS EMISSION (802.11A, CH36, 6 GHz-18 GHz).....	58
FIG. 38 RADIATED SPURIOUS EMISSION (802.11A, CH40, 30 MHz-1 GHz).....	58

FIG. 39	RADIATED SPURIOUS EMISSION (802.11A, CH40, 1 GHz-3 GHz).....	59
FIG. 40	RADIATED SPURIOUS EMISSION (802.11A, CH40, 3 GHz-6 GHz).....	59
FIG. 41	RADIATED SPURIOUS EMISSION (802.11A, CH40, 6 GHz-18 GHz).....	60
FIG. 42	RADIATED SPURIOUS EMISSION (802.11A, CH40, 18 GHz-26.5 GHz).....	60
FIG. 43	RADIATED SPURIOUS EMISSION (802.11A, CH40, 26.5 GHz-40 GHz).....	61
FIG. 44	RADIATED SPURIOUS EMISSION (802.11A, CH48, 1 GHz-3 GHz).....	62
FIG. 45	RADIATED SPURIOUS EMISSION (802.11A, CH48, 3 GHz-6 GHz).....	62
FIG. 46	RADIATED SPURIOUS EMISSION (802.11A, CH48, 6 GHz-18 GHz).....	62
FIG. 47	RADIATED SPURIOUS EMISSION (802.11A, CH52, 1 GHz-3 GHz).....	63
FIG. 48	RADIATED SPURIOUS EMISSION (802.11A, CH52, 3 GHz-6 GHz).....	63
FIG. 49	RADIATED SPURIOUS EMISSION (802.11A, CH52, 6 GHz-18 GHz).....	64
FIG. 50	RADIATED SPURIOUS EMISSION (802.11A, CH56, 30 MHz-1 GHz).....	64
FIG. 51	RADIATED SPURIOUS EMISSION (802.11A, CH56, 1 GHz-3 GHz).....	65
FIG. 52	RADIATED SPURIOUS EMISSION (802.11A, CH56, 3 GHz-6 GHz).....	65
FIG. 53	RADIATED SPURIOUS EMISSION (802.11A, CH56, 6 GHz-18 GHz).....	66
FIG. 54	RADIATED SPURIOUS EMISSION (802.11A, CH56, 18 GHz-26.5 GHz).....	66
FIG. 55	RADIATED SPURIOUS EMISSION (802.11A, CH56, 26.5 GHz-40 GHz).....	67
FIG. 56	RADIATED SPURIOUS EMISSION (802.11A, CH64, 1 GHz-3 GHz).....	67
FIG. 57	RADIATED SPURIOUS EMISSION (802.11A, CH64, 3 GHz-6 GHz).....	68
FIG. 58	RADIATED SPURIOUS EMISSION (802.11A, CH64, 6 GHz-18 GHz).....	69
FIG. 59	RADIATED SPURIOUS EMISSION (802.11A, CH100, 1 GHz-3 GHz).....	69
FIG. 60	RADIATED SPURIOUS EMISSION (802.11A, CH100, 3 GHz-6 GHz).....	69
FIG. 61	RADIATED SPURIOUS EMISSION (802.11A, CH100, 6 GHz-18 GHz).....	70
FIG. 62	RADIATED SPURIOUS EMISSION (802.11A, CH116, 30 MHz-1 GHz).....	71
FIG. 63	RADIATED SPURIOUS EMISSION (802.11A, CH116, 1GHz-3 GHz).....	71
FIG. 64	RADIATED SPURIOUS EMISSION (802.11A, CH116,3GHz-6 GHz).....	72
FIG. 65	RADIATED SPURIOUS EMISSION (802.11A, CH116, 6 GHz-18 GHz).....	72
FIG. 66	RADIATED SPURIOUS EMISSION (802.11A, CH116, 18 GHz-26.5 GHz).....	72
FIG. 67	RADIATED SPURIOUS EMISSION (802.11A, CH116, 26.5 GHz-40 GHz).....	73
FIG. 68	RADIATED SPURIOUS EMISSION (802.11A, CH140, 1 GHz-3 GHz).....	74
FIG. 69	RADIATED SPURIOUS EMISSION (802.11A, CH140, 3 GHz-6 GHz).....	74
FIG. 70	RADIATED SPURIOUS EMISSION (802.11A, CH140, 6 GHz-18 GHz).....	74
FIG. 71	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH36, 1 GHz-3 GHz).....	75
FIG. 72	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH36, 3 GHz-6 GHz).....	75
FIG. 73	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH36, 6 GHz-18 GHz).....	76
FIG. 74	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH40, 30 MHz-1 GHz).....	76
FIG. 75	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH40, 1 GHz-3 GHz).....	77
FIG. 76	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH40, 3 GHz-6 GHz).....	77
FIG. 77	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH40, 6 GHz-18 GHz).....	78
FIG. 78	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH40, 18 GHz-26.5 GHz).....	78
FIG. 79	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH40, 26.5 GHz-40 GHz).....	79
FIG. 80	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH48, 1 GHz-3 GHz).....	80
FIG. 81	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH48, 3 GHz-6 GHz).....	80
FIG. 82	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH48, 6 GHz-18 GHz).....	80

FIG. 83	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH52, 1 GHz-3 GHz).....	81
FIG. 84	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH52, 3 GHz-6 GHz).....	81
FIG. 85	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH52, 6 GHz-18 GHz).....	82
FIG. 86	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH56, 30 MHz-1 GHz).....	82
FIG. 87	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH56, 1 GHz-3 GHz).....	83
FIG. 88	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH56, 3 GHz-6 GHz).....	83
FIG. 89	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH56, 6 GHz-18 GHz).....	84
FIG. 90	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH56, 18 GHz-26.5 GHz).....	84
FIG. 91	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH56, 26.5 GHz-40 GHz).....	85
FIG. 92	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH64, 1 GHz-3 GHz).....	86
FIG. 93	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH64, 3 GHz-6 GHz).....	86
FIG. 94	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH64, 6 GHz-18 GHz).....	87
FIG. 95	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH100, 1 GHz-3 GHz).....	87
FIG. 96	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH100, 3 GHz-6 GHz).....	87
FIG. 97	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH100, 6 GHz-18 GHz).....	88
FIG. 98	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH116, 30 MHz-1 GHz).....	88
FIG. 99	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH116, 1 GHz-3 GHz).....	89
FIG. 100	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH116, 3 GHz-6 GHz).....	89
FIG. 101	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH116, 6 GHz-18 GHz).....	90
FIG. 102	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH116, 18 GHz-26.5 GHz).....	90
FIG. 103	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH116, 26.5 GHz-40 GHz).....	91
FIG. 104	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH140, 1 GHz-3 GHz).....	92
FIG. 105	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH140, 3 GHz-6 GHz).....	92
FIG. 106	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH140, 6 GHz-18 GHz).....	92
FIG. 107	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH38, 30 MHz-1 GHz).....	93
FIG. 108	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH38, 1 GHz-3 GHz).....	94
FIG. 109	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH38, 3 GHz-6 GHz).....	94
FIG. 110	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH38, 6 GHz-18 GHz).....	94
FIG. 111	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH38, 18 GHz-26.5 GHz).....	95
FIG. 112	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH38, 26.5 GHz-40 GHz).....	95
FIG. 113	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH46, 1 GHz-3 GHz).....	96
FIG. 114	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH46, 3 GHz-6 GHz).....	96
FIG. 115	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH46, 6 GHz-18 GHz).....	97
FIG. 116	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH54, 30 MHz-1 GHz).....	97
FIG. 117	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH54, 1 GHz-3 GHz).....	98
FIG. 118	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH54, 3 GHz-6 GHz).....	98
FIG. 119	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH54, 6 GHz-18 GHz).....	99
FIG. 120	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH54, 18 GHz-26.5 GHz).....	99
FIG. 121	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH54, 26.5 GHz-40 GHz).....	100
FIG. 122	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH62, 1 GHz-3 GHz).....	101
FIG. 123	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH62, 3 GHz-6 GHz).....	101
FIG. 124	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH62, 6 GHz-18 GHz).....	102
FIG. 125	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH102, 1 GHz-3 GHz).....	102
FIG. 126	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH102, 3 GHz-6 GHz).....	103

FIG. 127	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH102, 6 GHz-18 GHz)	103
FIG. 128	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH134, 1 GHz-3 GHz).....	104
FIG. 129	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH134, 3 GHz-6 GHz).....	104
FIG. 130	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH134, 6 GHz-18 GHz)	104
A.7.	CONDUCTED EMISSION (150kHz- 30MHz).....	105
FIG. 131	CONDUCTED EMISSION(802.11A, CH40, TX).....	106
FIG. 132	CONDUCTED EMISSION(802.11A, IDLE).....	107
A.9.	99% OCCUPIED BANDWIDTH.....	108
FIG. 133	99% OCCUPIED BANDWIDTH (802.11A, 5180MHz).....	109
FIG. 134	99% OCCUPIED BANDWIDTH (802.11A, 5200MHz).....	109
FIG. 135	99% OCCUPIED BANDWIDTH (802.11A, 5240MHz).....	110
FIG. 136	99% OCCUPIED BANDWIDTH (802.11N-HT20, 5180MHz).....	110
FIG. 137	99% OCCUPIED BANDWIDTH (802.11N-HT20, 5200MHz).....	111
FIG. 138	99% OCCUPIED BANDWIDTH (802.11N-HT20, 5240MHz).....	111
FIG. 139	99% OCCUPIED BANDWIDTH (802.11N-HT40, 5190MHz).....	112
FIG. 140	99% OCCUPIED BANDWIDTH (802.11N-HT40, 5230MHz).....	112
A.10.	FREQUENCY STABILITY	113
A.11.	POWER CONTROL	113

1. TEST LATORATORY

1.1. Testing Location

Conducted testing Location: CTTL(huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing,
P. R. China100191

Radiated testing Location: CTTL(BDA)

Address: No. 18 Jia Kangding Street, BDA District, Beijing, P. R.
China 100191

1.2. Testing Environment

Normal Temperature: 15-35°C

Extreme Temperature: -10/+55°C

Relative Humidity: 20-75%

1.3. Project data

Testing Start Date: 2017-02-20

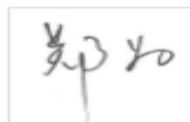
Testing End Date: 2017-04-14

1.4. Signature



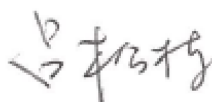
Jiang Xue

(Prepared this test report)



Zheng Wei

(Reviewed this test report)



Lv Songdong

(Approved this test report)



2. CLIENT INFORMATION

2.1. Applicant Information

Company Name: HMD Global Oy
Address: Karaportti 2, 02610 Espoo, Finland
City: Espoo
Postal Code: 201203
Country: Finland
Contact: Mikko Kahlos
Telephone: +358-408036126
Fax: /

2.2. Manufacturer Information

Company Name: HMD Global Oy
Address: Karaportti 2, 02610 Espoo, Finland
City: Espoo
Postal Code: 201203
Country: Finland
Contact: Mikko Kahlos
Telephone: +358-408036126
Fax: /

3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY

EQUIPMENT(AE)

3.1. About EUT

Description	Smart Phone
Model name	TA-1025
FCC ID	2AJOTTA-1025
IC ID	/
WLAN Frequency Range	ISM Bands: -5150MHz~5350MHz -5470MHz~5725MHz -5725MHz~5850MHz
Type of modulation	OFDM
Antenna	Integral Antenna
Voltage	3.84 V DC by Battery

Note: Photographs of EUT are shown in ANNEX C of this test report. Components list, please refer to documents of the manufacturer.

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1	356020080007659/356020080007667	3	000C_3_110
EUT2	356021080001726	3	000C_3_050

*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	SN
AE1	Battery	INBUILT
AE2	Battery	INBUILT
AE3	Travel charger	/
AE4	Travel charger	/
AE5	USB cable	/
AE6	Headset	/

AE1

Model	HE316
Manufacturer	SCUD(FUJIAN) ELECTRONICS CO LTD
Capacitance	3000mAh
Nominal voltage	3.82V

AE2

Model HE317
 Manufacturer SCUD(FUJIAN) ELECTRONICS CO LTD
 Capacitance 3000mAh
 Nominal voltage 3.84V

AE3/AE4

Model FC0102
 Manufacturer Salcomp
 Length of cable /

AE5

Model CUBB01M-FA010-DH
 Manufacturer FOXCONN
 Length of cable 99cm

AE6

Model 5CAB5422B-N01-DG
 Manufacturer FOXCONN
 Length of cable /

*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 Smart Phone with integrated antenna and inbuilt battery.

It has Bluetooth (EDR) function.

It consists of normal options: travel charger, USB cable and Phone.

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

Samples undergoing test were selected by the client.

3.5. Interpretation of the Test Environment

For the test methods, the test environment uncertainty figures correspond to an expansion factor k=2.

Measurement Uncertainty

Parameter	Uncertainty
temperature	0.48°C
humidity	2 %
DC voltages	0.003V

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	2015
ANSI C63.10	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2014
UNII: KDB 789033	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E	2014-06

5. LABORATORY ENVIRONMENT

Conducted RF performance testing is performed in shielding room.

EMC performance testing is performed in Semi-anechoic chamber.

6. SUMMARY OF TEST RESULTS

6.1. Summary of Test Results

SUMMARY OF MEASUREMENT RESULTS	Sub-clause of Part15E	Sub-clause of IC	Verdict
Maximum Output Power	15.407	/	P
Power Spectral Density	15.407	/	P
Occupied 26dB Bandwidth	15.403	/	P
Band edge compliance	15.407	/	P
Transmitter spurious emissions radiated	15.407	/	P
Spurious emissions radiated < 30 MHz	15.407	/	P
Spurious emissions conducted < 30 MHz	15.407	/	P
Frequency Stability	15.407	/	P
Transmit Power Control	15.407	/	NA

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

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 CTTL
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

CTTL has evaluated the test cases requested by the client/manufacture 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.

This report only deals with the WLAN function among the features described in section 3.

6.3. Test Conditions

For this report, all the test cases are tested under normal temperature and normal voltage, and also under norm humidity, the specific condition is shown as follows:

Temperature	26°C
Voltage	3.84V
Humidity	44%

7. TEST EQUIPMENTS UTILIZED

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration date	Calibration Due date
1	Vector Signal Analyzer	FSQ40	200089	Rohde & Schwarz	2016-06-07	2017-06-06
2	Shielding Room	S81	/	ETS-Lindgren	/	/

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Test Receiver	ESU26	100376	Rohde & Schwarz	1 year	2017-11-30
2	BiLog Antenna	VULB9163	514	Schwarzbeck	3 years	2017-11-24
3	Dual-Ridge Waveguide Horn Antenna	3116	2661	ETS-Lindgren	3 years	2017-06-17
4	Dual-Ridge Waveguide Horn Antenna	3115	6914	ETS-Lindgren	3 years	2017-09-21
5	Vector Signal Analyzer	FSV	101047	Rohde & Schwarz	1 year	2017-06-28
6	Test Receiver	ESCi7	100948	Rohde & Schwarz	1 year	2017-07-05
7	AMN	ESH3-Z5	825562/028	Rohde & Schwarz	1 year	2017-07-06

8. Measurement Uncertainty

8.1. Transmitter Output Power

Measurement Uncertainty: 0.339dB,k=1.96

8.2. Peak Power Spectral Density

Measurement Uncertainty: 0.705dBm/MHz,k=1.96

8.3. Occupied Channel Bandwidth

Measurement Uncertainty: 60.80Hz,k=1.96

8.4. Band Edges Compliance

Measurement Uncertainty : 0.62dBm,k=1.96

8.5. Spurious Emissions

Conducted (k=1.96)

Frequency Range	Uncertainty(dBm)
$30\text{MHz} \leq f \leq 2\text{GHz}$	1.22
$2\text{GHz} \leq f \leq 3.6\text{GHz}$	1.22
$3.6\text{GHz} \leq f \leq 8\text{GHz}$	1.22
$8\text{GHz} \leq f \leq 12.75\text{GHz}$	1.51
$12.75\text{GHz} \leq f \leq 26\text{GHz}$	1.51
$26\text{GHz} \leq f \leq 40\text{GHz}$	1.59

Radiated (k=2)

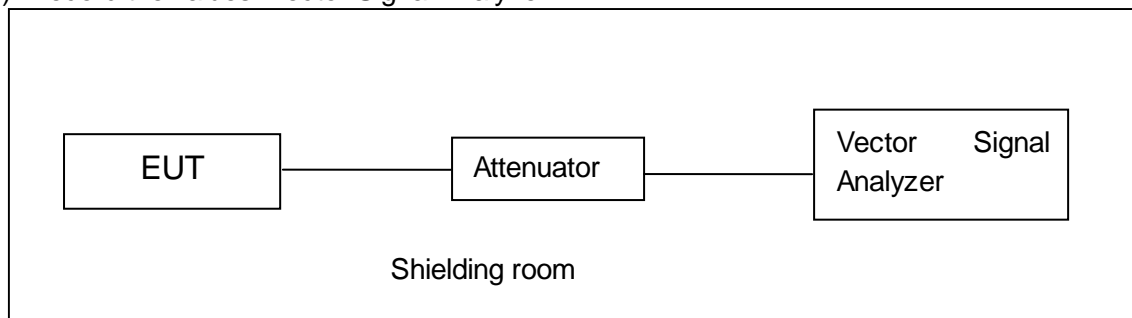
Frequency Range	Uncertainty(dBm)
9kHz-30MHz	
$30\text{MHz} \leq f \leq 1\text{GHz}$	4.86
$1\text{GHz} \leq f \leq 18\text{GHz}$	5.26
$18\text{GHz} \leq f \leq 40\text{GHz}$	5.28

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

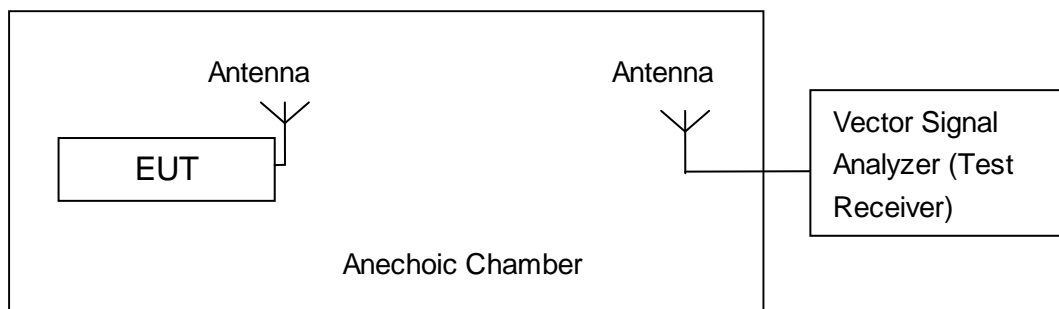


A.1.2. Radiated Emission Measurements

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. Maximum output Power

Measurement Limit and Method:

Standard	Frequency (MHz)	Limit (dBm)
FCC CRF Part 15.407(a)	5150MHz~5250MHz	24dBm
	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 Results:

802.11a mode

Mode	Channel	Test Result (dBm)							
		Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
802.11a	5180MHz (Ch36)	12.63	12.36	12.14	11.61	11.13	10.6	10.06	9.85
	5200MHz (Ch40)	12.39	/	/	/	/	/	/	/
	5240MHz(Ch48)	12.59	/	/	/	/	/	/	/
	5260MHz(Ch52)	12.62	/	/	/	/	/	/	/
	5280MHz(Ch56)	12.63	/	/	/	/	/	/	/
	5320MHz(Ch64)	12.87	/	/	/	/	/	/	/
	5500MHz(Ch100)	12.81	/	/	/	/	/	/	/
	5580MHz(Ch116)	12.80	/	/	/	/	/	/	/
	5700MHz(Ch140)	12.04	/	/	/	/	/	/	/

The data rate 6Mbps is selected as worse condition, and the following cases are performed with this condition.

802.11n-HT20 mode

Mode	Channel	Test Result (dBm)							
		Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11n (HT20)	5180MHz (Ch36)	11.47	11.07	10.73	10.15	9.6	9.15	9	8.73
	5200MHz (Ch40)	11.40	/	/	/	/	/	/	/
	5240MHz(Ch48)	11.53	/	/	/	/	/	/	/
	5260MHz(Ch52)	11.75	/	/	/	/	/	/	/
	5280MHz(Ch56)	11.49	/	/	/	/	/	/	/
	5320MHz(Ch64)	11.98	/	/	/	/	/	/	/
	5500MHz(Ch100)	11.56	/	/	/	/	/	/	/
	5580MHz(Ch116)	11.62	/	/	/	/	/	/	/
	5700MHz(Ch140)	11.14	/	/	/	/	/	/	/

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.



802.11n-HT40 mode

Mode	Channel	Test Result (dBm)							
		Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11n (HT40)	5190MHz (Ch38)	11.07	10.27	9.7	9.02	8.32	7.84	7.62	7.39
	5230MHz(Ch46)	11.05	/	/	/	/	/	/	/
	5270MHz(Ch54)	11.35	/	/	/	/	/	/	/
	5310MHz(Ch62)	11.34	/	/	/	/	/	/	/
	5510MHz(Ch102)	11.44	/	/	/	/	/	/	/
	5550MHz(Ch110)	11.58	/	/	/	/	/	/	/
	5670MHz(Ch134)	11.12	/	/	/	/	/	/	/

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

A.3. Peak Power Spectral Density (conducted)

Measurement Limit:

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

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

Measurement Results:

Mode	Channel	Power Spectral Density (dBm/MHz)	Conclusion
802.11a	5180 MHz	9.08	P
	5200 MHz	9.10	P
	5240 MHz	9.44	P
	5260 MHz	8.96	P
	5280 MHz	9.96	P
	5320 MHz	9.41	P
	5500 MHz	9.76	P
	5580 MHz	8.88	P
802.11n HT20	5180 MHz	8.36	P
	5200 MHz	9.09	P
	5240 MHz	8.39	P
	5260 MHz	8.41	P
	5280 MHz	9.65	P
	5320 MHz	9.60	P
	5500 MHz	9.18	P
	5580 MHz	8.52	P
802.11n HT40	5190 MHz	5.01	P
	5230 MHz	5.31	P
	5270 MHz	6.01	P
	5310 MHz	5.48	P
	5510 MHz	6.03	P
	5550 MHz	4.80	P
	5670 MHz	4.96	P

Conclusion: PASS

A.4. Occupied 26dB Bandwidth(conducted)

Measurement Limit:

Standard	Limit (kHz)
FCC 47 CFR Part 15.403 (i)	/

The measurement is made according to KDB 789033

Measurement Uncertainty:

Measurement Uncertainty	60.80Hz
-------------------------	---------

Measurement Result:

Mode	Channel	Occupied 26dB Bandwidth (kHz)		conclusion
		Fig.	Value	
802.11a	5180 MHz	Fig.1	23.00	P
	5200 MHz	Fig.2	23.00	P
	5240 MHz	Fig.3	23.45	P
	5260 MHz	Fig.4	22.80	P
	5280 MHz	Fig.5	23.00	P
	5320 MHz	Fig.6	22.80	P
	5500 MHz	Fig.7	22.70	P
	5580 MHz	Fig.8	22.70	P
	5700 MHz	Fig.9	22.85	P
802.11n HT20	5180 MHz	Fig.10	23.15	P
	5200 MHz	Fig.11	22.90	P
	5240 MHz	Fig.12	23.30	P
	5260 MHz	Fig.13	22.60	P
	5280 MHz	Fig.14	22.90	P
	5320 MHz	Fig.15	22.80	P
	5500 MHz	Fig.16	22.75	P
	5580 MHz	Fig.17	22.75	P
	5700 MHz	Fig.18	22.95	P
802.11n HT40	5190 MHz	Fig.19	44.32	P
	5230 MHz	Fig.20	43.76	P
	5270 MHz	Fig.21	43.84	P
	5310 MHz	Fig.22	43.76	P
	5510 MHz	Fig.23	42.48	P
	5550 MHz	Fig.24	43.36	P
	5670 MHz	Fig.25	42.88	P

Conclusion: PASS

Test graphs as below:



Fig. 1 Occupied 26dB Bandwidth (802.11a, 5180MHz)

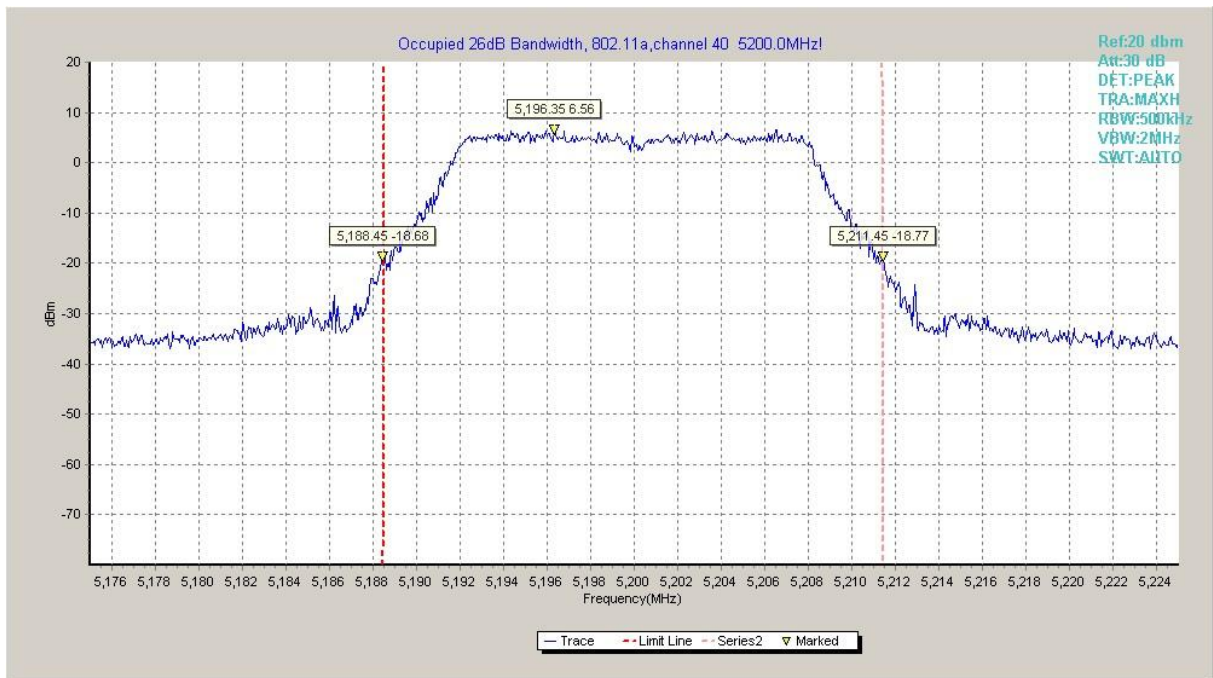


Fig. 2 Occupied 26dB Bandwidth (802.11a, 5200MHz)

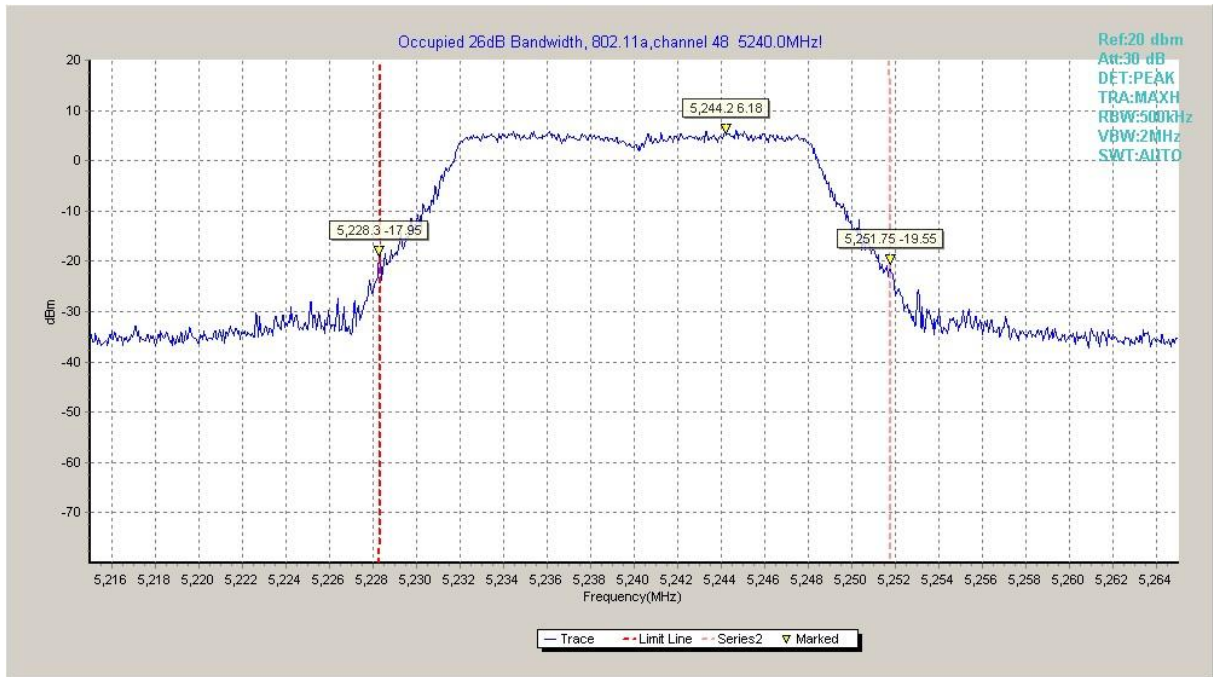


Fig. 3 Occupied 26dB Bandwidth (802.11a, 5240MHz)



Fig. 4 Occupied 26dB Bandwidth (802.11a, 5260MHz)

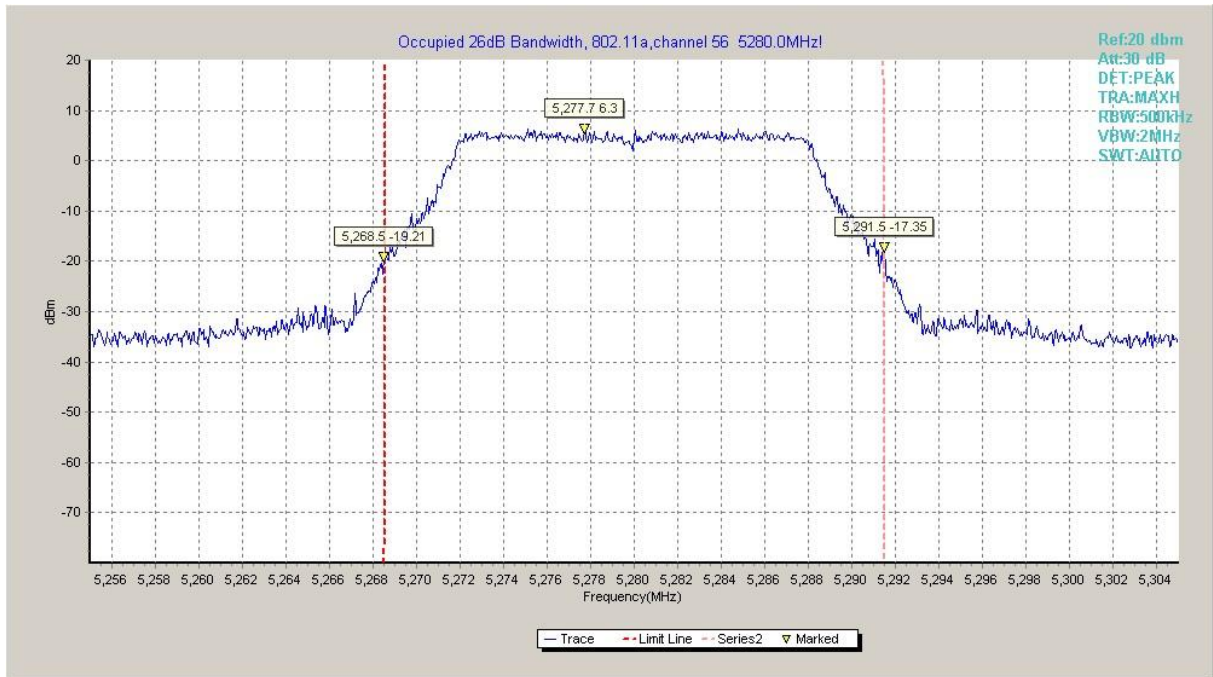


Fig. 5 Occupied 26dB Bandwidth (802.11a, 5280MHz)

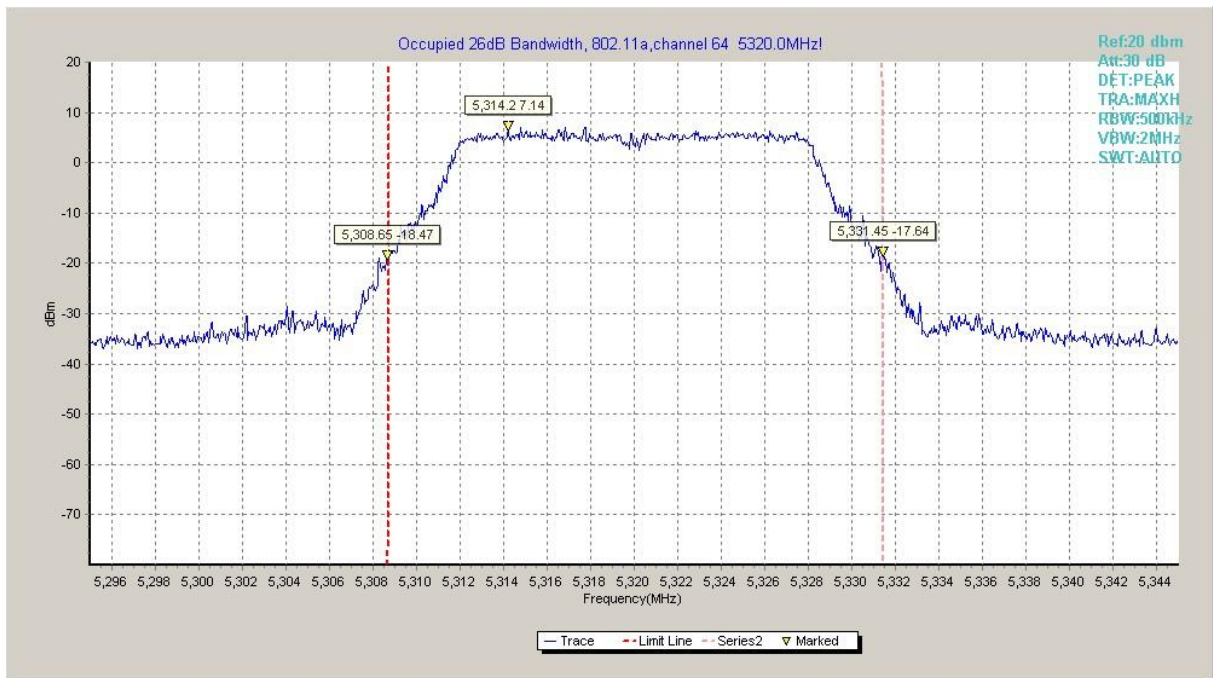


Fig. 6 Occupied 26dB Bandwidth (802.11a, 5320MHz)



Fig. 7 Occupied 26dB Bandwidth (802.11a, 5500MHz)

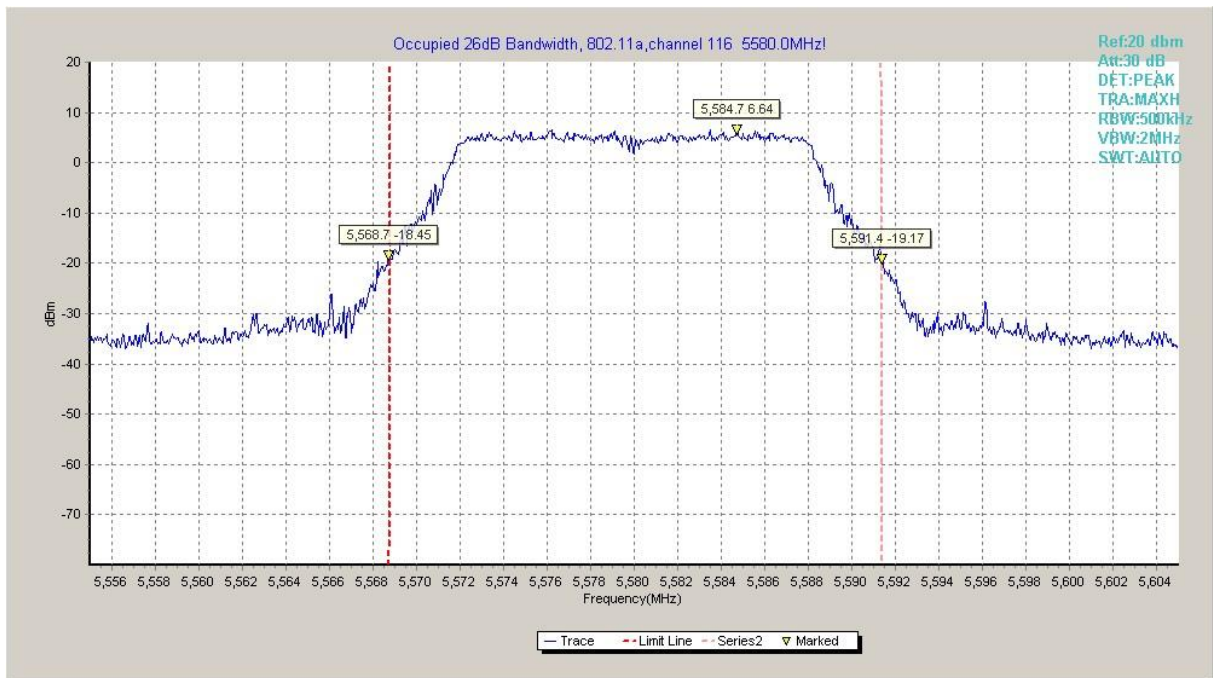


Fig. 8 Occupied 26dB Bandwidth (802.11a, 5580MHz)

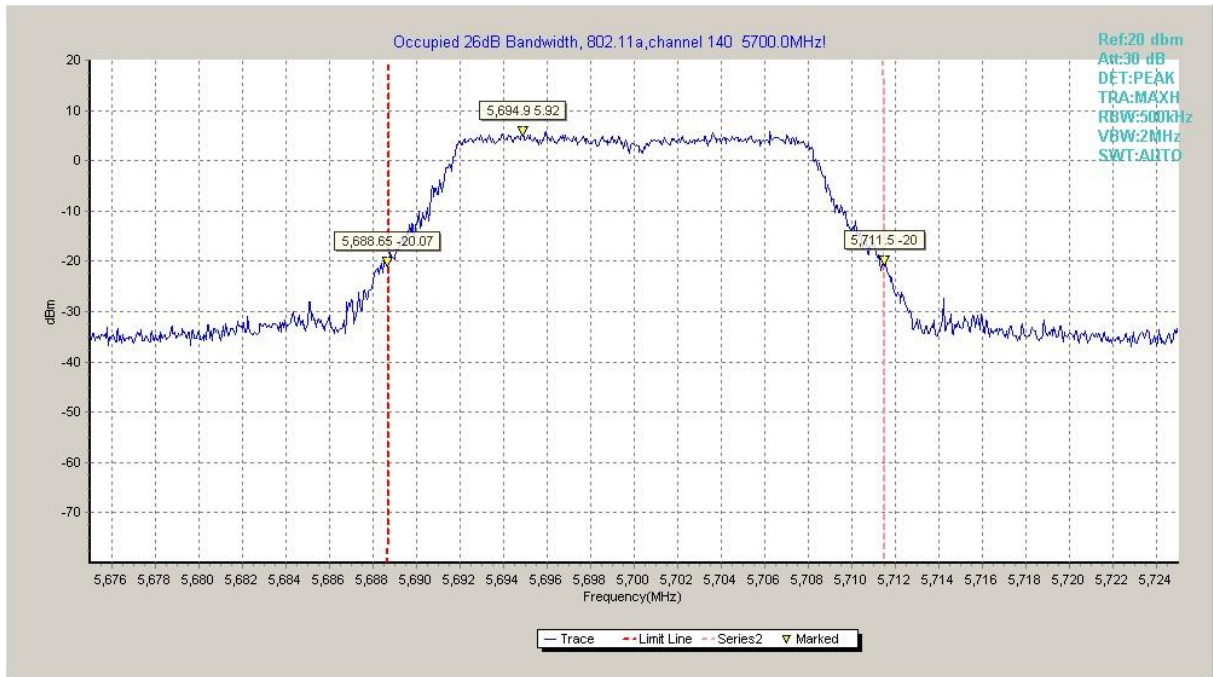


Fig. 9 Occupied 26dB Bandwidth (802.11a, 5700MHz)



Fig. 10 Occupied 26dB Bandwidth (802.11n-HT20, 5180MHz)

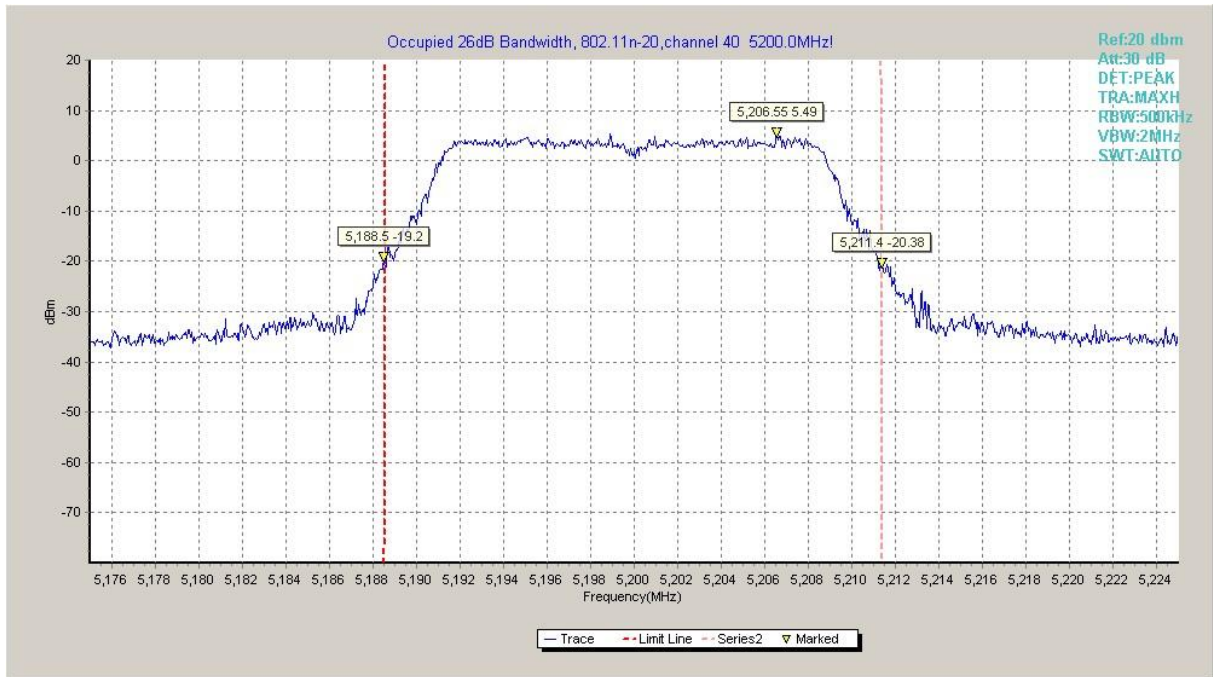


Fig. 11 Occupied 26dB Bandwidth (802.11n-HT20, 5200MHz)

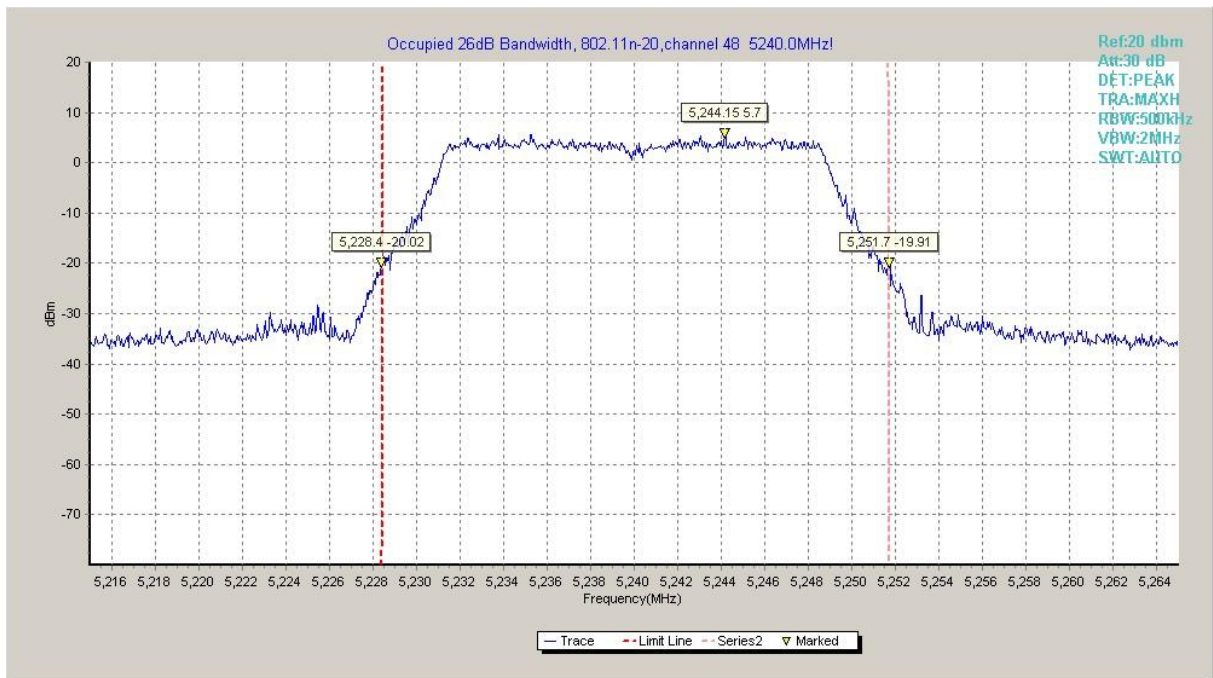


Fig. 12 Occupied 26dB Bandwidth (802.11n-HT20, 5240MHz)

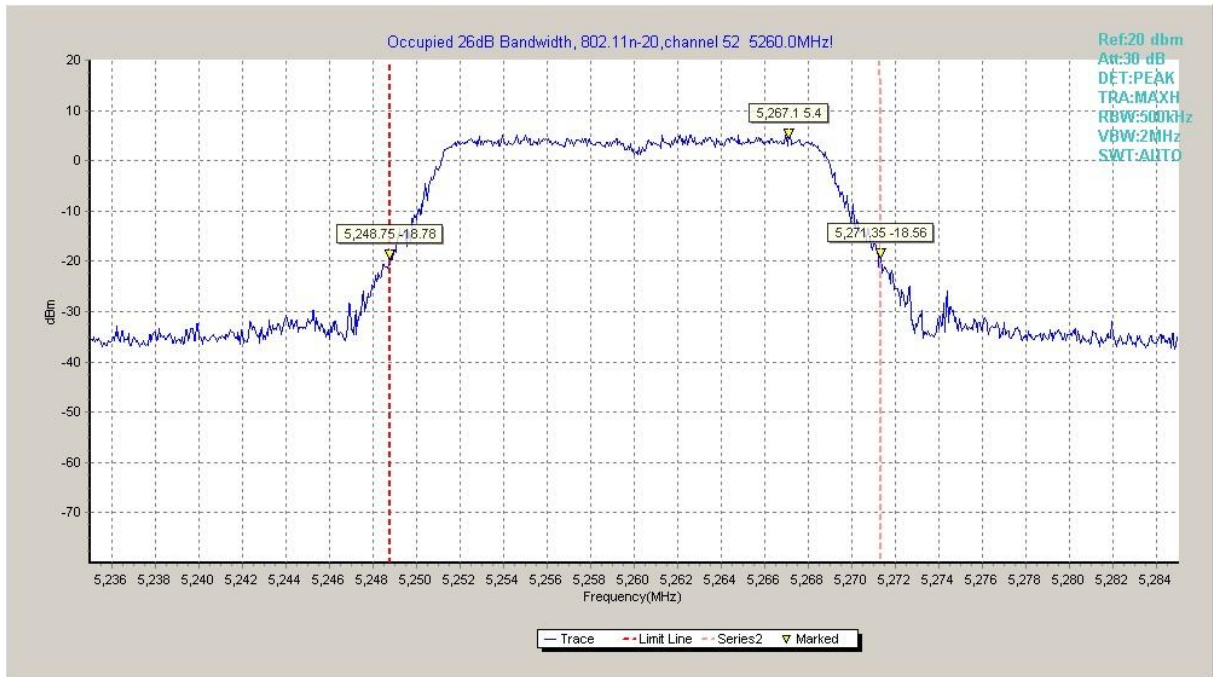


Fig. 13 Occupied 26dB Bandwidth (802.11n-HT20, 5260MHz)

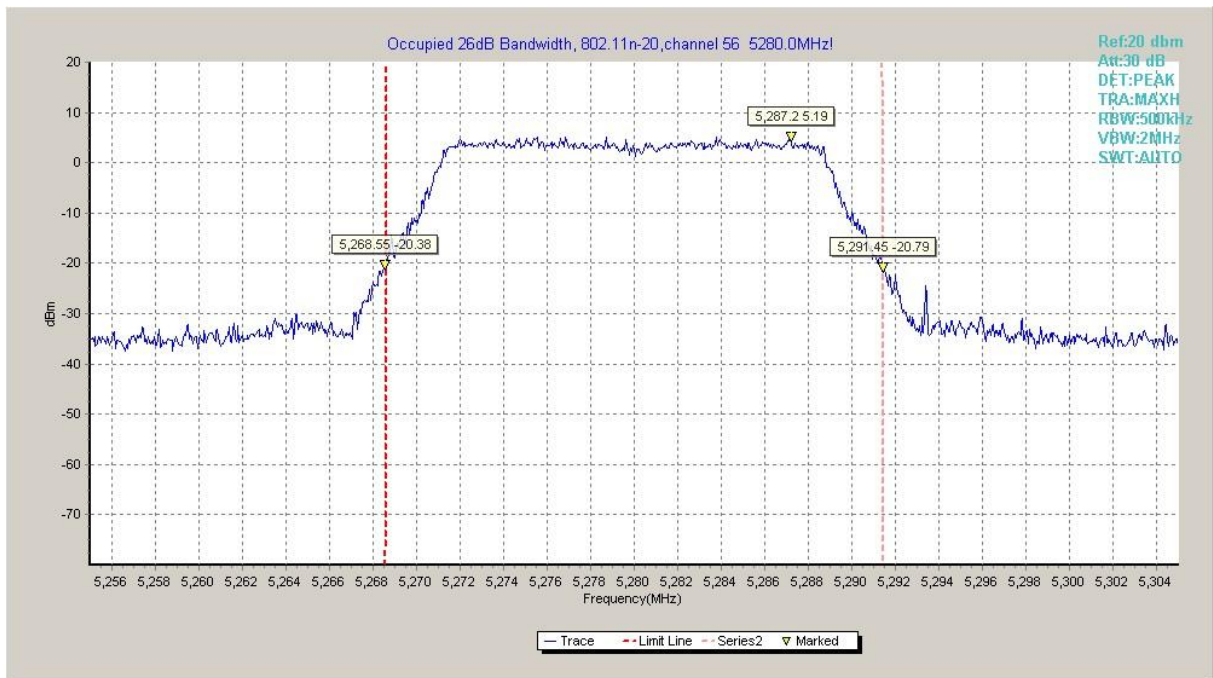


Fig. 14 Occupied 26dB Bandwidth (802.11n-HT20, 5280MHz)

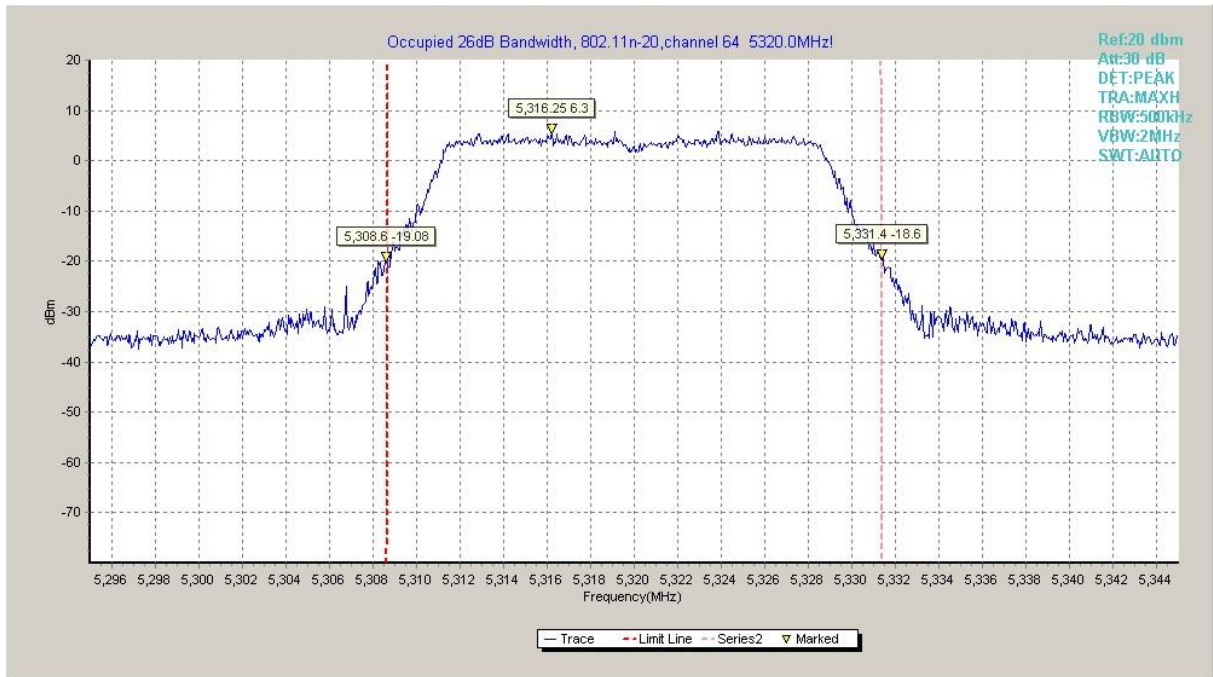


Fig. 15 Occupied 26dB Bandwidth (802.11n-HT20, 5320MHz)

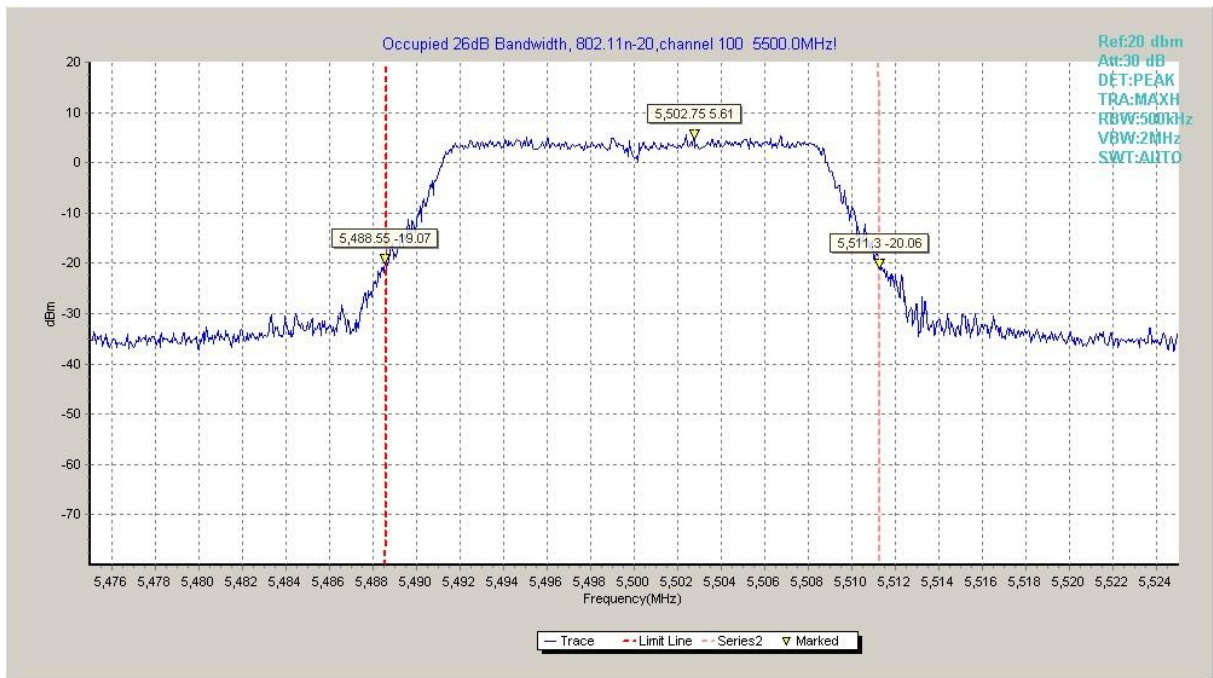


Fig. 16 Occupied 26dB Bandwidth (802.11n-HT20, 5500MHz)

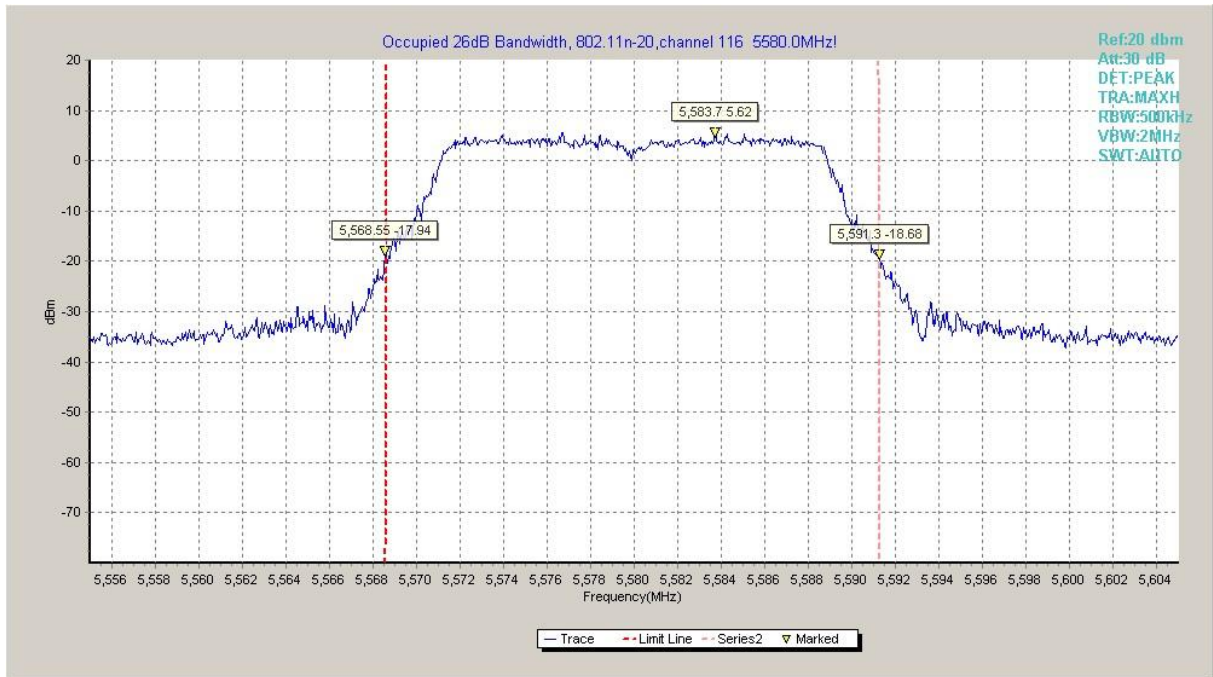


Fig. 17 Occupied 26dB Bandwidth (802. 11n-HT20, 5580MHz)

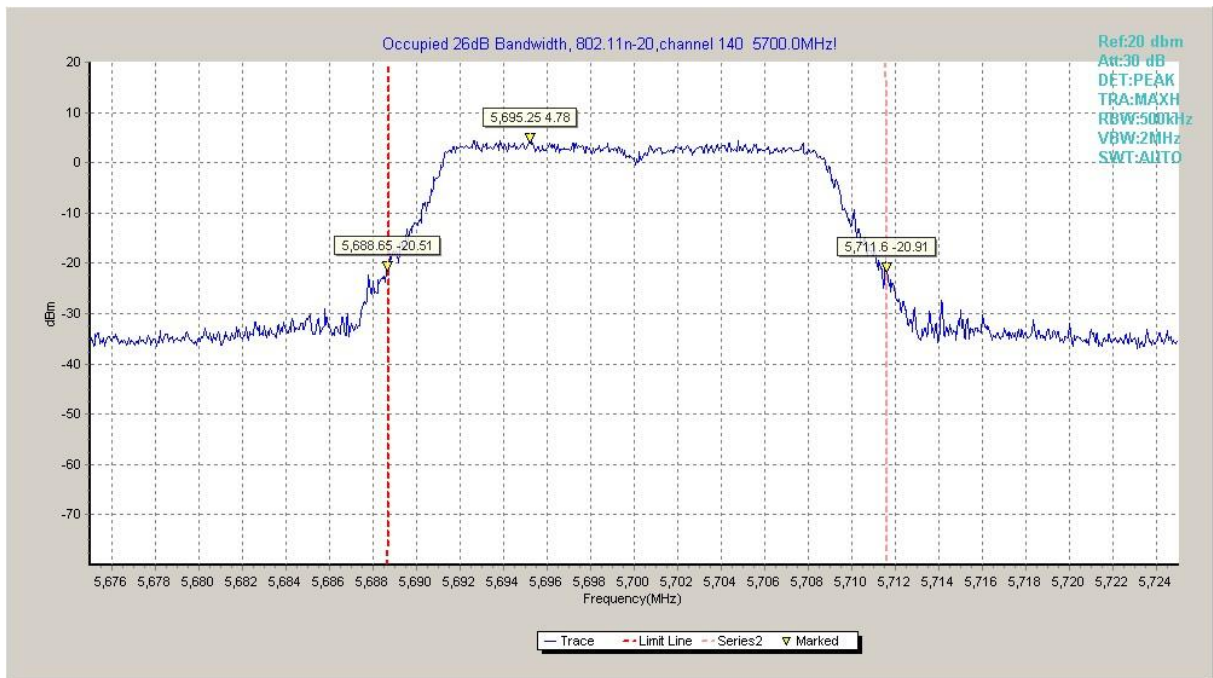


Fig. 18 Occupied 26dB Bandwidth (802. 11n-HT20, 5700MHz)

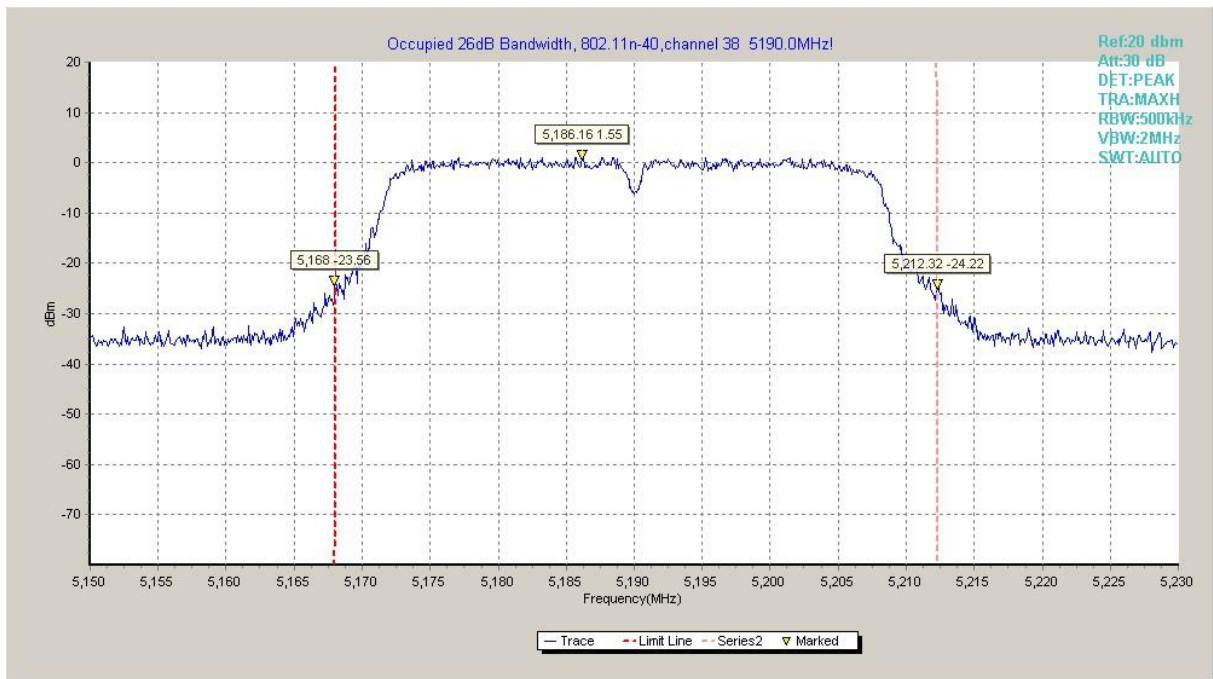


Fig. 19 Occupied 26dB Bandwidth (802.11n-HT40, 5190MHz)

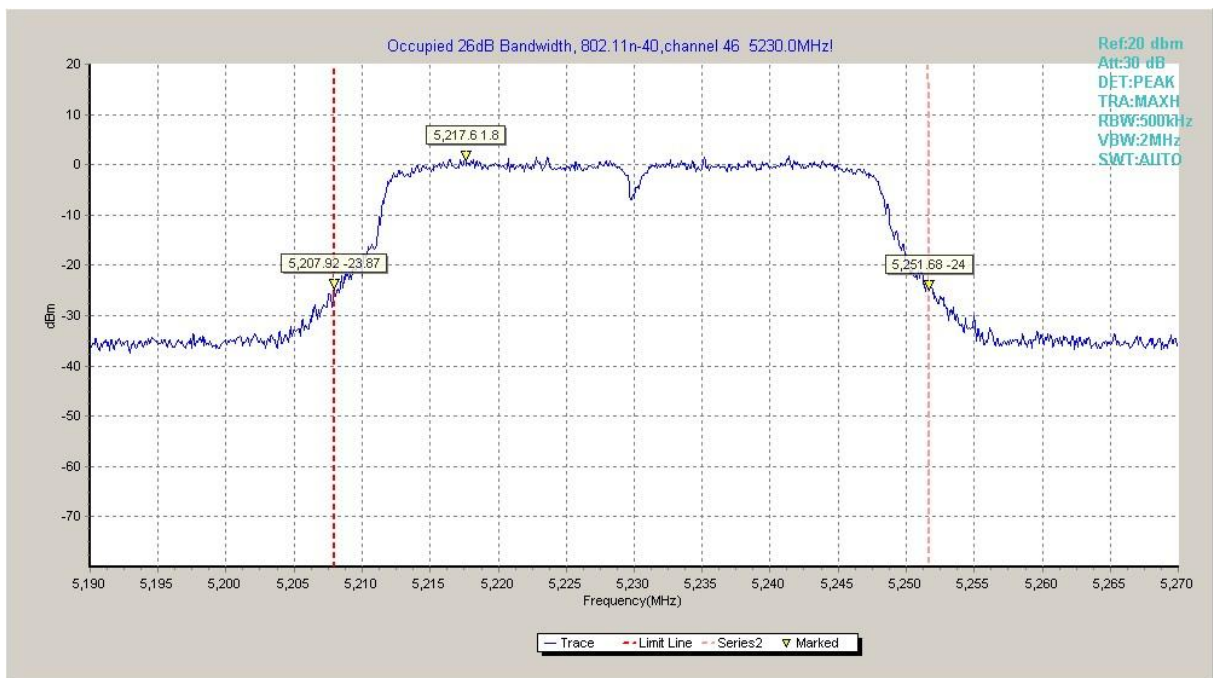


Fig. 20 Occupied 26dB Bandwidth (802.11n-HT40, 5230MHz)

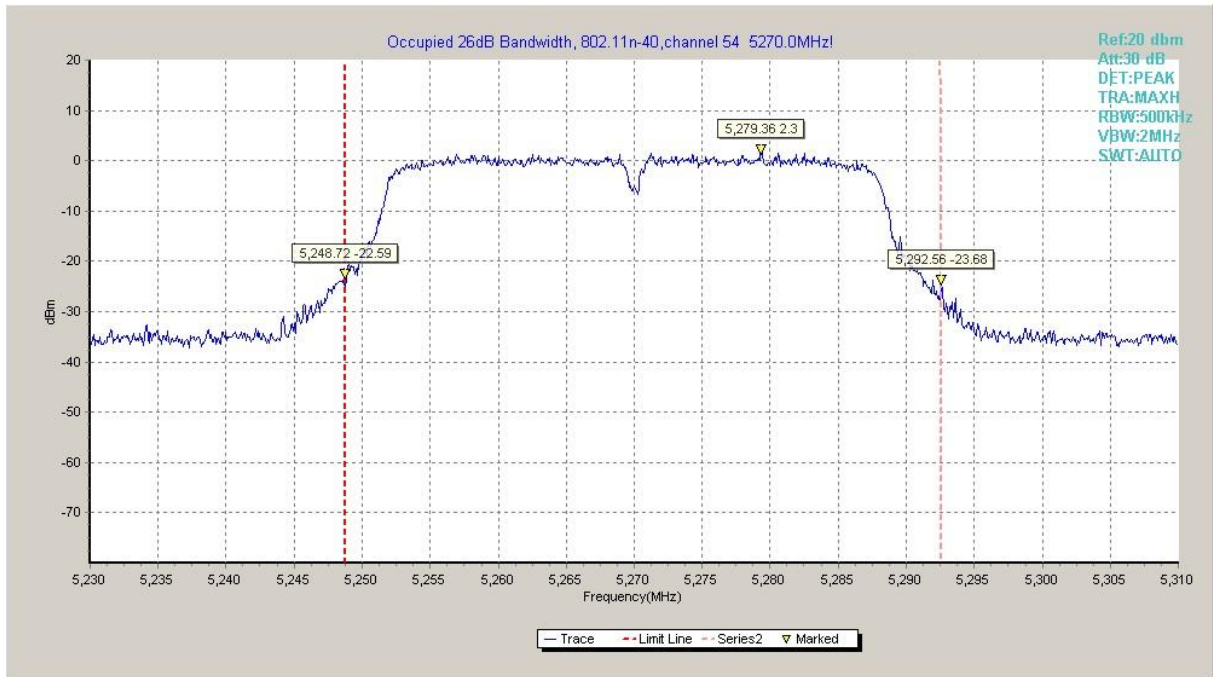


Fig. 21 Occupied 26dB Bandwidth (802.11n-HT40, 5270MHz)

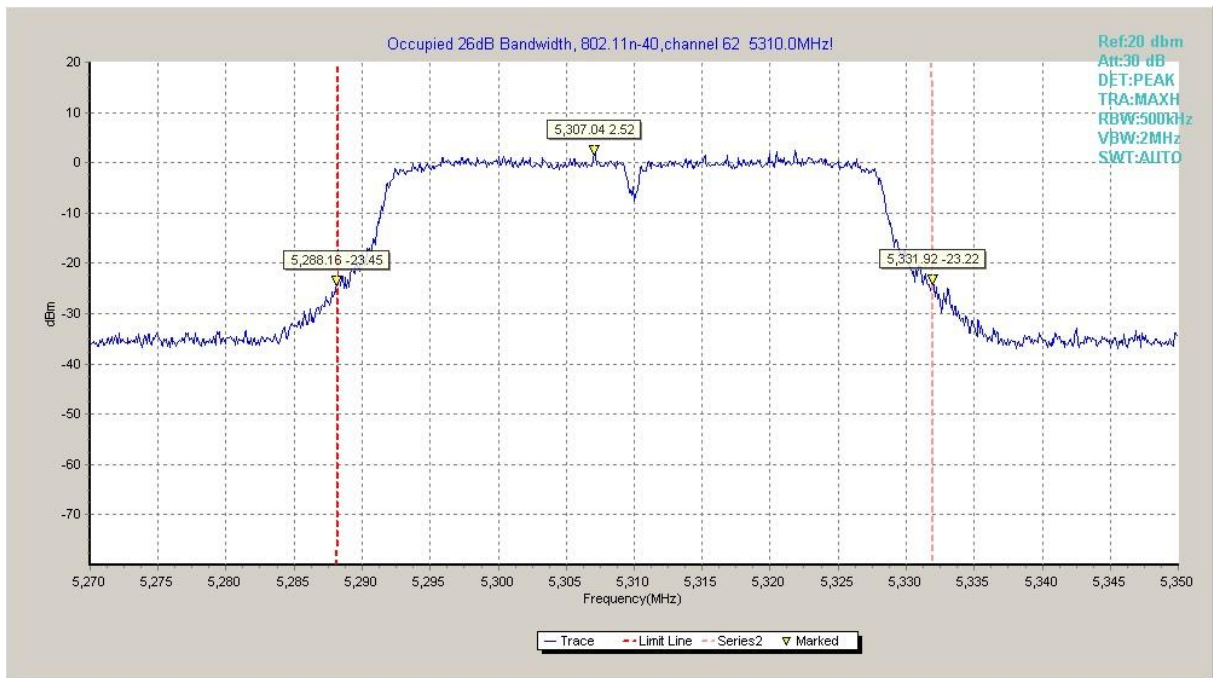


Fig. 22 Occupied 26dB Bandwidth (802.11n-HT40, 5310MHz)

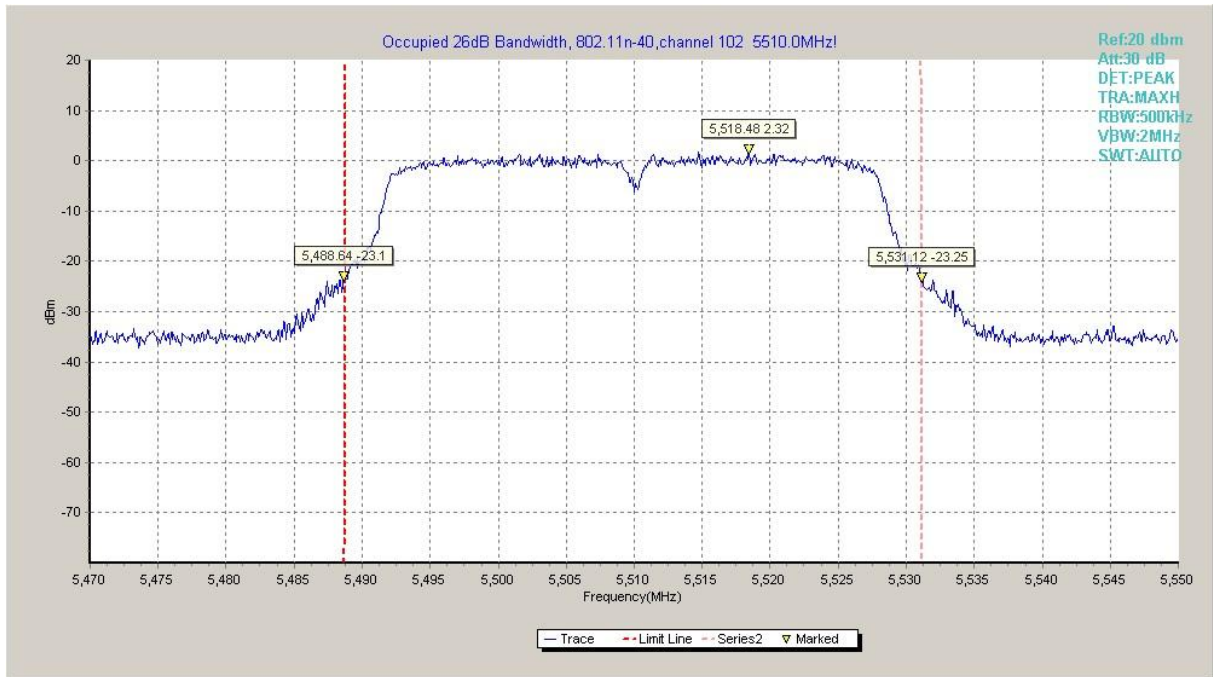


Fig. 23 Occupied 26dB Bandwidth (802. 11n-HT40, 5510MHz)

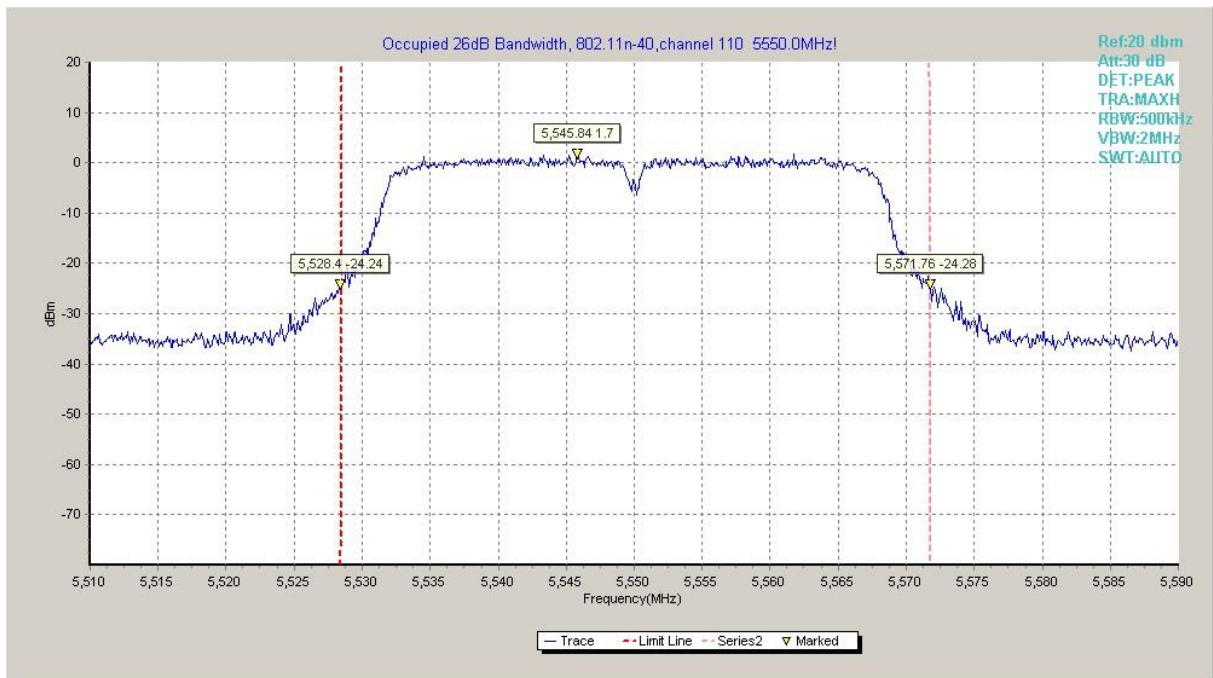


Fig. 24 Occupied 26dB Bandwidth (802. 11n-HT40, 5550MHz)

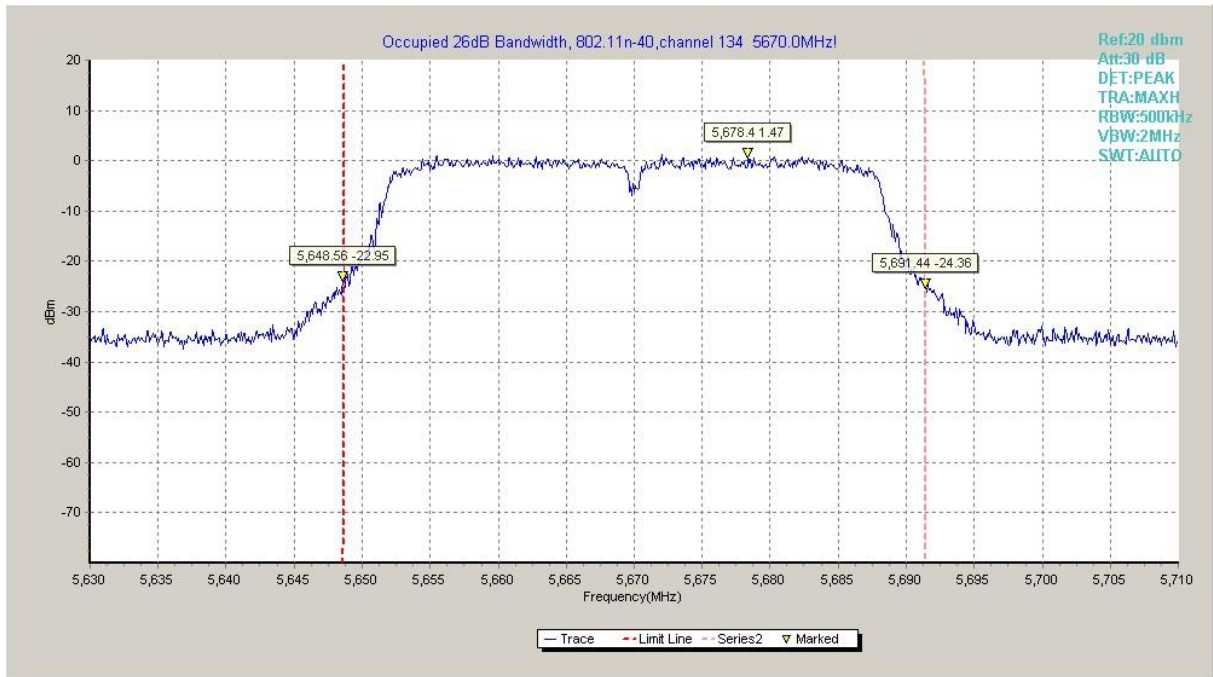


Fig. 25 Occupied 26dB Bandwidth (802.11n-HT40, 5670MHz)

A.5. Band Edges Compliance

A5.1 Band Edges - Radiated

Measurement Limit:

Standard	Limit (dB μ V/m)	
	FCC 47 CFR Part 15.209	Peak
Average		54

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.26	P
	5320 MHz	Fig.27	P
	5500 MHz	Fig.28	P
802.11n HT20	5180 MHz	Fig.29	P
	5320 MHz	Fig.30	P
	5500 MHz	Fig.31	P
802.11n HT40	5190 MHz	Fig.32	P
	5310 MHz	Fig.33	P
	5510 MHz	Fig.34	P

Conclusion: PASS

Test graphs as below:

RE - Power-5.125GHz-5.175GHz

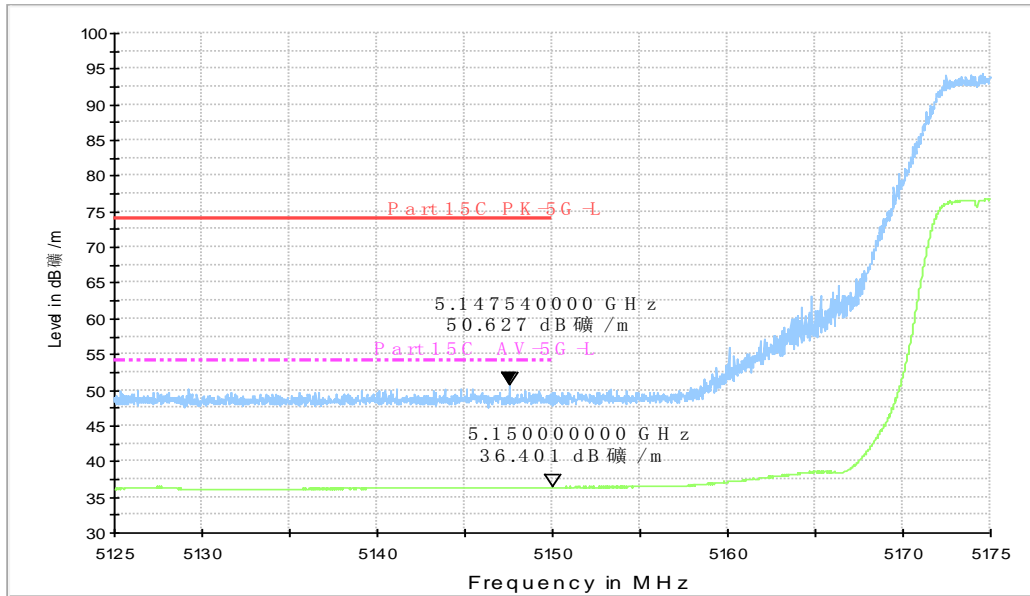


Fig. 26 Band Edges (802.11a, 5180MHz)

RE - Power-5.325GHz-5.375GHz

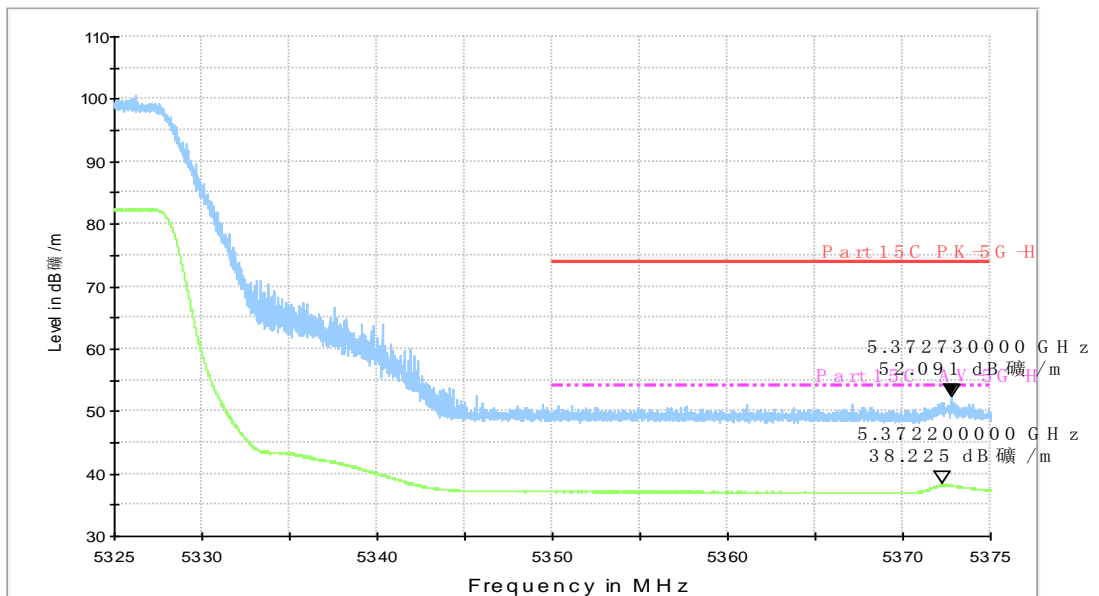


Fig. 27 Band Edges (802.11a, 5320MHz)

RE - Power-5.45GHz-5.50GHz

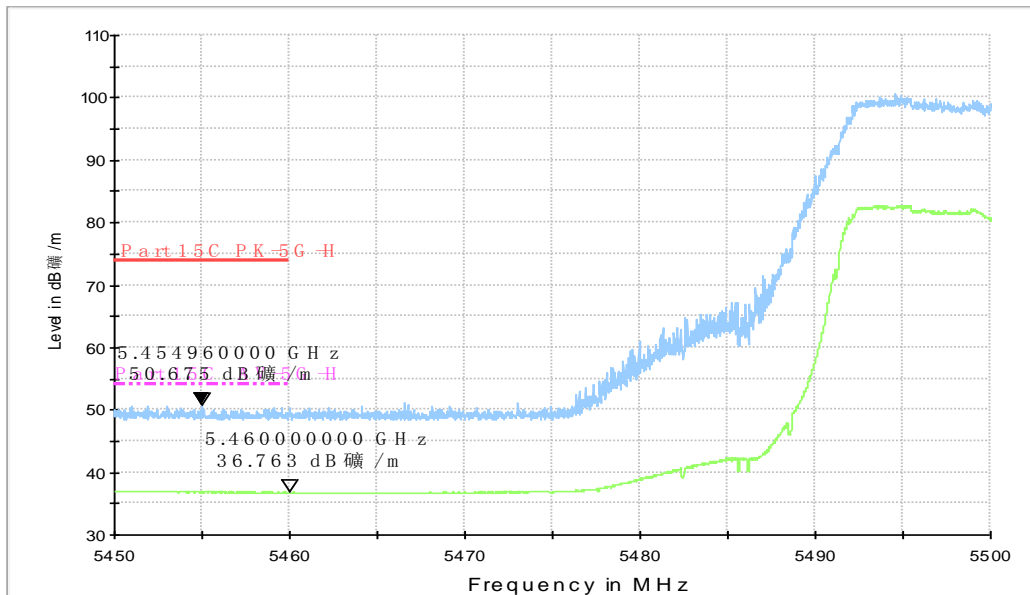


Fig. 28 Band Edges (802.11a, 5500MHz)

RE - Power-5.125GHz-5.175GHz

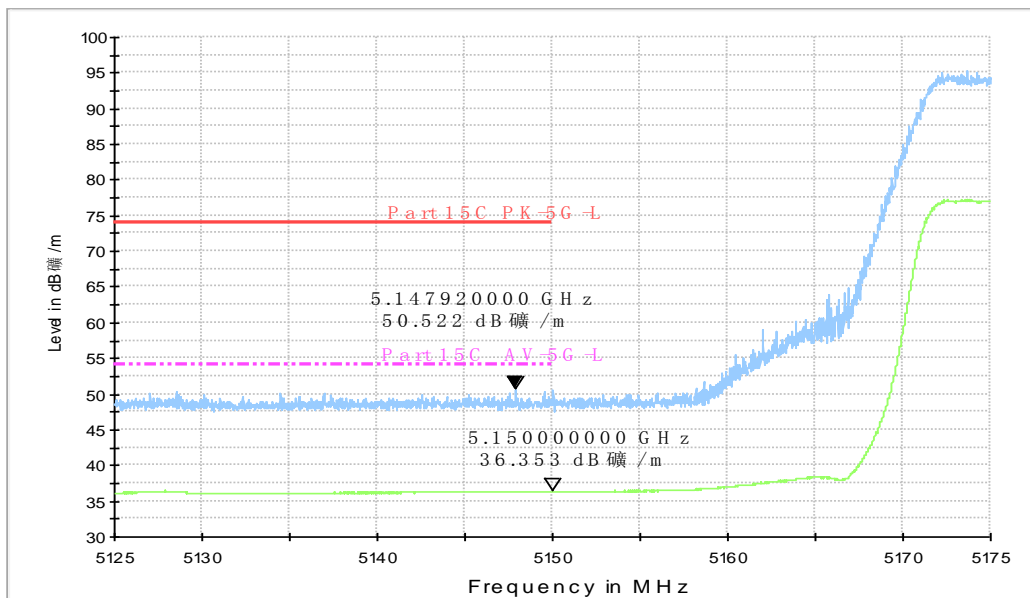


Fig. 29 Band Edges (802.11n-HT20, 5180MHz)

RE - Power-5.325GHz-5.375GHz

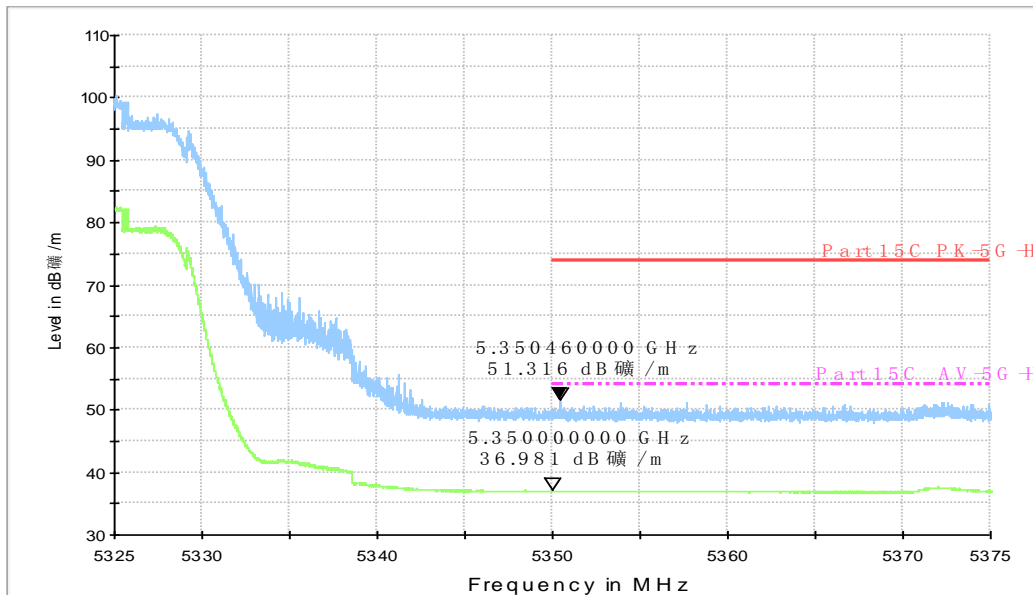


Fig. 30 Band Edges (802.11n-HT20, 5320MHz)

RE - Power-5.45GHz-5.50GHz

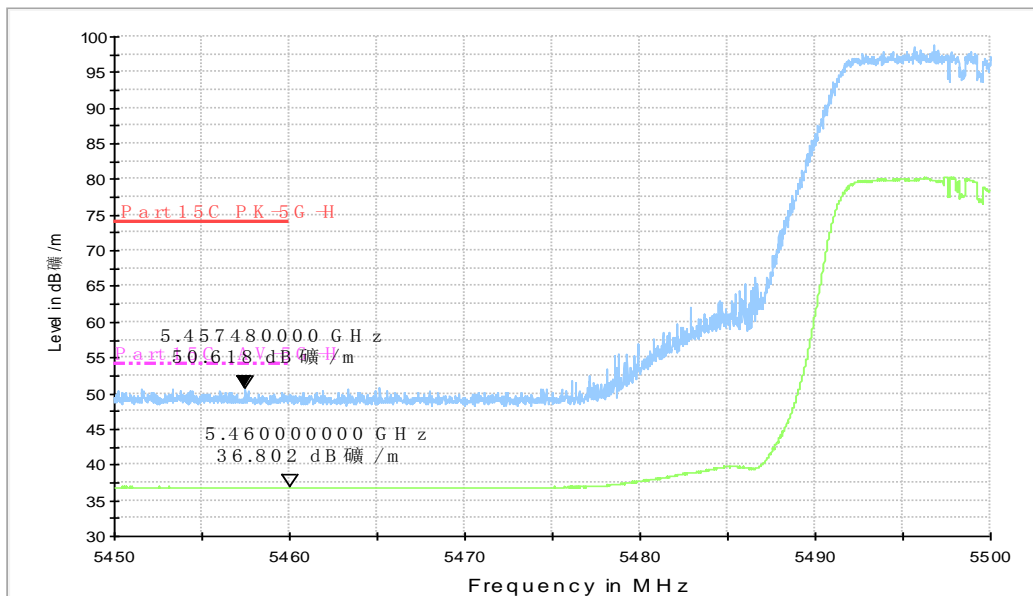


Fig. 31 Band Edges (802.11n-HT20, 5500MHz)

RE - Power-5.125GHz-5.175GHz

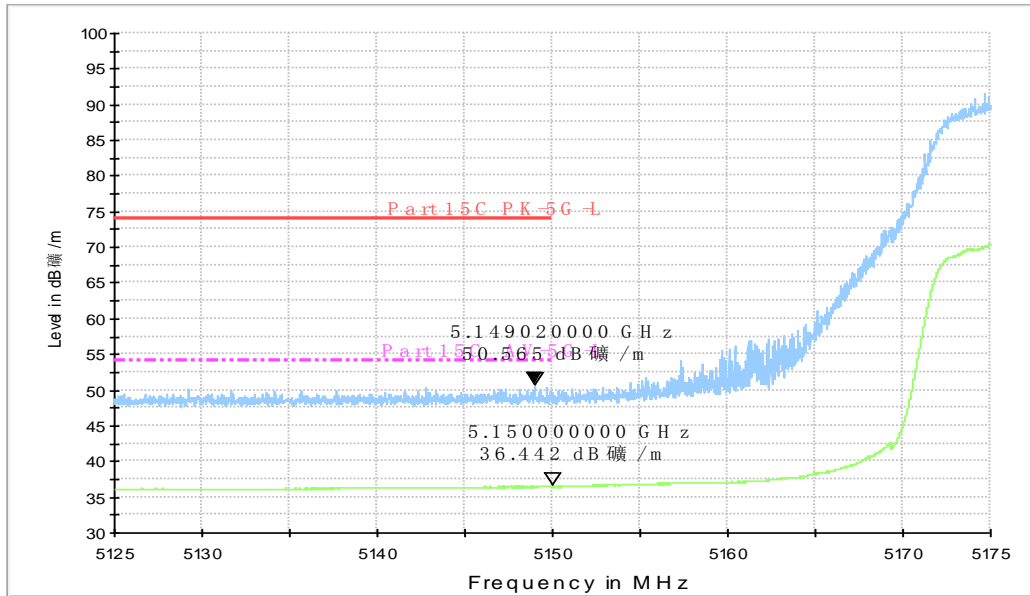


Fig. 32 Band Edges (802.11n-HT40, 5190MHz)

RE - Power-5.325GHz-5.375GHz

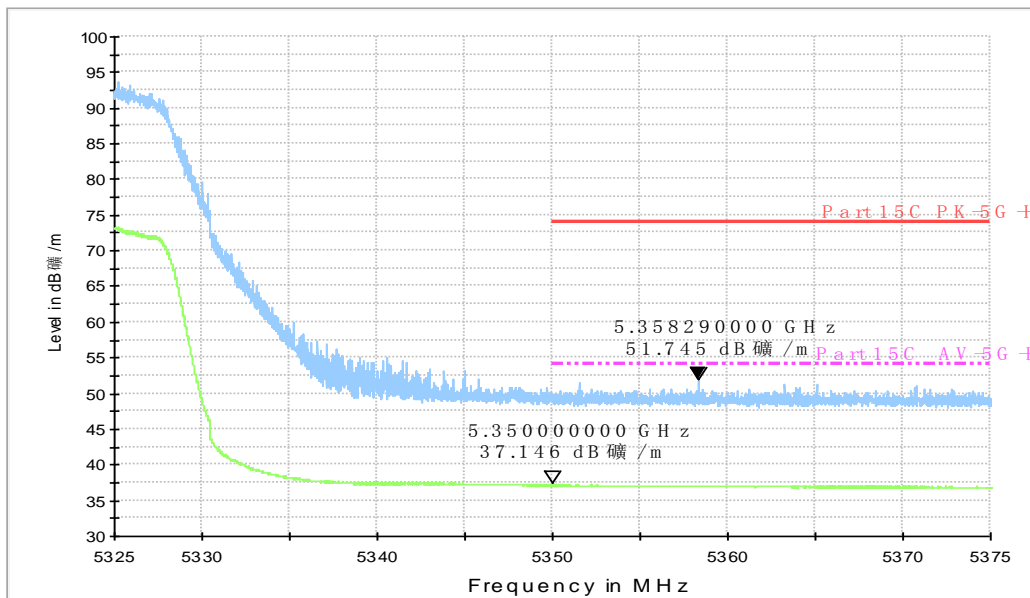


Fig. 33 Band Edges (802.11n-HT40, 5310MHz)

RE - Power-5.45GHz-5.50GHz

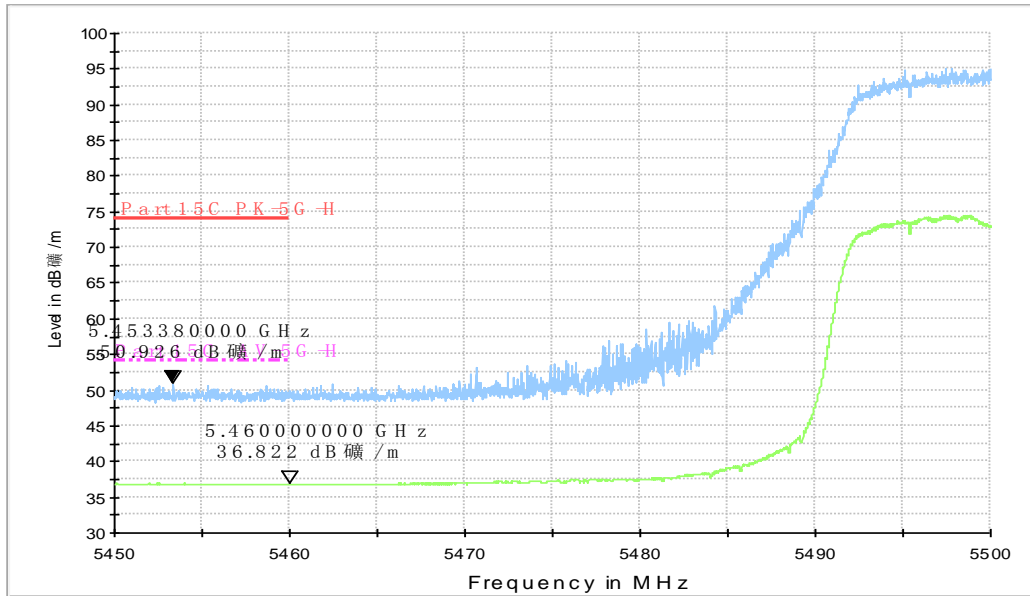


Fig. 34 Band Edges (802.11n-HT40, 5510MHz)

A.6. 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)).

Limit in restricted band:

Frequency of emission (MHz)	Field strength(dB μ V/m)	Measurement distance(m)
30-88	40.0	3
88-216	43.5	3
216-960	46.0	3
Above 960	54.0	3

Note: for frequency range below 960MHz, the limit in 15.209 is defined in 10m test distance. The limit used above is calculated from 10m to 3m

Measurement uncertainty:

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

Measurement Results:

802.11a mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11a	36(5180MHz)	1 GHz ~ 3 GHz	Fig.35	P
		3 GHz ~ 6 GHz	Fig.36	P
		6 GHz ~ 18 GHz	Fig.37	P
	40(5200MHz)	30 MHz ~1 GHz	Fig.38	P
		1 GHz ~ 3 GHz	Fig.39	P
		3 GHz ~ 6 GHz	Fig.40	P
		6 GHz ~ 18 GHz	Fig.41	P
		18 GHz ~ 26.5 GHz	Fig.42	P
		26.5 GHz ~ 40 GHz	Fig.43	P
	48(5240MHz)	1 GHz ~ 3 GHz	Fig.44	P
		3 GHz ~ 6 GHz	Fig.45	P
		6 GHz ~ 18 GHz	Fig.46	P
	52(5260MHz)	1 GHz ~ 3 GHz	Fig.47	P
		3 GHz ~ 6 GHz	Fig.48	P
		6 GHz ~ 18 GHz	Fig.49	P
	56(5280MHz)	30 MHz ~1 GHz	Fig.50	P
		1 GHz ~ 3 GHz	Fig.51	P
		3 GHz ~ 6 GHz	Fig.52	P
		6 GHz ~ 18 GHz	Fig.53	P
		18 GHz ~ 26.5 GHz	Fig.54	P
		26.5 GHz ~ 40 GHz	Fig.55	P
	64(5320MHz)	1 GHz ~ 3 GHz	Fig.56	P
		3 GHz ~ 6 GHz	Fig.57	P
		6 GHz ~ 18 GHz	Fig.58	P
	100(5500MHz)	1 GHz ~ 3 GHz	Fig.59	P
		3 GHz ~ 6 GHz	Fig.60	P
		6 GHz ~ 18 GHz	Fig.61	P
	120(5600MHz)	30 MHz ~1 GHz	Fig.62	P
		1 GHz ~ 3 GHz	Fig.63	P
		3 GHz ~ 6 GHz	Fig.64	P
		6 GHz ~ 18 GHz	Fig.65	P
		18 GHz ~ 26.5 GHz	Fig.66	P
		26.5 GHz ~ 40 GHz	Fig.67	P
	140(5700MHz)	1 GHz ~ 3 GHz	Fig.68	P
		3 GHz ~ 6 GHz	Fig.69	P
		6 GHz ~ 18 GHz	Fig.70	P

802.11n-HT20 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n -HT20	36(5180MHz)	1 GHz ~ 3 GHz	Fig.71	P
		3 GHz ~ 6 GHz	Fig.72	P
		6 GHz ~ 18 GHz	Fig.73	P
	40(5200MHz)	30 MHz ~1 GHz	Fig.74	P
		1 GHz ~ 3 GHz	Fig.75	P
		3 GHz ~ 6 GHz	Fig.76	P
		6 GHz ~ 18 GHz	Fig.77	P
		18 GHz ~ 26.5 GHz	Fig.78	P
		26.5 GHz ~ 40 GHz	Fig.79	P
	48(5240MHz)	1 GHz ~ 3 GHz	Fig.80	P
		3 GHz ~ 6 GHz	Fig.81	P
		6 GHz ~ 18 GHz	Fig.82	P
	52(5260MHz)	1 GHz ~ 3 GHz	Fig.83	P
		3 GHz ~ 6 GHz	Fig.84	P
		6 GHz ~ 18 GHz	Fig.85	P
	56(5280MHz)	30 MHz ~1 GHz	Fig.86	P
		1 GHz ~ 3 GHz	Fig.87	P
		3 GHz ~ 6 GHz	Fig.88	P
		6 GHz ~ 18 GHz	Fig.89	P
		18 GHz ~ 26.5 GHz	Fig.90	P
		26.5 GHz ~ 40 GHz	Fig.91	P
	64(5320MHz)	1 GHz ~ 3 GHz	Fig.92	P
		3 GHz ~ 6 GHz	Fig.93	P
		6 GHz ~ 18 GHz	Fig.94	P
	100(5500MHz)	1 GHz ~ 3 GHz	Fig.95	P
		3 GHz ~ 6 GHz	Fig.96	P
		6 GHz ~ 18 GHz	Fig.97	P
	116(5580MHz)	30 MHz ~1 GHz	Fig.98	P
		1 GHz ~ 3 GHz	Fig.99	P
		3 GHz ~ 6 GHz	Fig.100	P
6 GHz ~ 18 GHz		Fig.101	P	
18 GHz ~ 26.5 GHz		Fig.102	P	
26.5 GHz ~ 40 GHz		Fig.103	P	
140(5700MHz)	1 GHz ~ 3 GHz	Fig.104	P	
	3 GHz ~ 6 GHz	Fig.105	P	
	6 GHz ~ 18 GHz	Fig.106	P	

802.11n-HT40 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n HT40	38(5190MHz)	30 MHz ~1 GHz	Fig.107	P
		1 GHz ~ 3 GHz	Fig.108	P
		3 GHz ~ 6 GHz	Fig.109	P
		6 GHz ~ 18 GHz	Fig.110	P
		18 GHz ~ 26.5 GHz	Fig.111	P
		26.5 GHz ~ 40 GHz	Fig.112	P
	46(5230MHz)	1 GHz ~ 3 GHz	Fig.113	P
		3 GHz ~ 6 GHz	Fig.114	P
		6 GHz ~ 18 GHz	Fig.115	P
	54(5270MHz)	30 MHz ~1 GHz	Fig.116	P
		1 GHz ~ 3 GHz	Fig.117	P
		3 GHz ~ 6 GHz	Fig.118	P
		6 GHz ~ 18 GHz	Fig.119	P
		18 GHz ~ 26.5 GHz	Fig.120	P
		26.5 GHz ~ 40 GHz	Fig.121	P
	62(5310MHz)	1 GHz ~ 3 GHz	Fig.122	P
		3 GHz ~ 6 GHz	Fig.123	P
		6 GHz ~ 18 GHz	Fig.124	P
	102(5510MHz)	1 GHz ~ 3 GHz	Fig.125	P
		3 GHz ~ 6 GHz	Fig.126	P
		6 GHz ~ 18 GHz	Fig.127	P
	134(5670MHz)	1 GHz ~ 3 GHz	Fig.128	P
		3 GHz ~ 6 GHz	Fig.129	P
		6 GHz ~ 18 GHz	Fig.130	P

Conclusion: PASS

Note:

A "reference path loss" is established and the A_{Rpl} is the attenuation of "reference path loss", and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

P_{Mea} is the field strength recorded from the instrument.

The measurement results are obtained as described below:

$$\text{Result} = P_{Mea} + A_{Rpl} = P_{Mea} + \text{Cable Loss} + \text{Antenna Factor}$$

AVERAGE Results:

802.11a

Channel 36

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5139.600	35.5	-33.1	34.4	34.12	54.0	18.5	H
5148.300	35.6	-33.0	34.4	34.09	54.0	18.4	H
10360.000	34.0	-29.8	37.9	25.85	54.0	20.0	H
15540.000	36.1	-26.3	40.1	22.29	54.0	17.9	H
17807.500	40.3	-23.0	41.0	22.33	54.0	13.7	H
17805.300	40.2	-23.1	41.0	22.33	54.0	13.8	H

Channel 40

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5148.000	35.8	-33.0	34.4	34.34	54.0	18.2	H
5252.700	36.4	-32.4	34.4	34.39	54.0	17.6	H
10400.000	34.2	-29.6	38.0	25.83	54.0	19.8	H
15600.000	36.8	-26.4	40.1	23.02	54.0	17.2	H
17806.400	40.3	-23.0	41.0	22.35	54.0	13.7	H
17808.600	40.3	-23.0	41.0	22.31	54.0	13.7	H

Channel 48

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5187.300	36.2	-32.4	34.4	34.18	54.0	17.8	H
5292.600	36.8	-32.1	34.5	34.47	54.0	17.2	H
10480.000	33.0	-30.6	38.1	25.59	54.0	21.0	H
15720.000	36.1	-26.4	40.2	22.25	54.0	17.9	H
17808.600	40.3	-23.0	41.0	22.36	54.0	13.7	H
17805.300	40.3	-23.1	41.0	22.39	54.0	13.7	H

Channel 52

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5206.800	36.3	-32.5	34.4	34.34	54.0	17.7	H
5312.700	37.1	-32.0	34.5	34.63	54.0	16.9	H

10520.000	33.0	-30.9	38.1	25.84	54.0	21.0	H
15780.000	35.8	-26.3	40.2	21.88	54.0	18.2	H
17805.300	40.3	-23.1	41.0	22.41	54.0	13.7	H
17808.600	40.3	-23.0	41.0	22.35	54.0	13.7	H

Channel 56

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5227.800	36.3	-32.5	34.4	34.43	54.0	17.7	H
5332.800	37.1	-31.9	34.5	34.41	54.0	16.9	H
10560.000	33.8	-30.2	38.1	25.88	54.0	20.2	H
15840.000	36.9	-26.2	40.3	22.85	54.0	17.1	H
17807.500	40.4	-23.0	41.0	22.47	54.0	13.6	H
17809.700	40.4	-23.0	41.0	22.44	54.0	13.6	H

Channel 64

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5350.800	36.5	-31.9	34.6	33.80	54.0	17.5	H
5372.700	37.4	-32.0	34.6	34.79	54.0	16.6	H
10640.000	34.0	-29.3	38.2	25.12	54.0	20.0	H
15960.000	37.0	-25.8	40.5	22.36	54.0	17.0	H
17809.700	40.4	-23.0	41.0	22.40	54.0	13.6	H
17808.600	40.3	-23.0	41.0	22.37	54.0	13.7	H

Channel 100

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5452.800	36.3	-32.0	34.7	33.53	54.0	17.7	H
5454.300	36.3	-32.0	34.7	33.59	54.0	17.7	H
11000.000	34.1	-30.2	38.2	26.06	54.0	19.9	H
16500.000	37.4	-26.0	41.1	22.30	54.0	16.6	H
17822.900	40.1	-23.2	40.9	22.35	54.0	13.9	H
17806.400	40.5	-23.0	41.0	22.56	54.0	13.5	H

Channel 120

Frequency (MHz)	Meas. Result	Cable loss	Antenna Factor	Receiver Reading	Limit (dBμV/m)	Margin (dB)	Antenna Pol.
-----------------	--------------	------------	----------------	------------------	----------------	-------------	--------------

	(dBμV/m)	(dB)	(dB/m)	(dBμV)			(H/V)
5547.900	38.3	-32.5	34.8	35.95	54.0	15.7	H
5652.000	38.1	-32.5	34.9	35.77	54.0	15.9	H
11200.000	34.4	-30.1	38.4	26.12	54.0	19.6	H
16800.000	37.6	-26.2	41.5	22.26	54.0	16.4	H
17805.300	40.4	-23.1	41.0	22.50	54.0	13.6	H
17809.700	40.4	-23.0	41.0	22.45	54.0	13.6	H

Channel 140

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5727.000	36.1	-33.0	34.9	34.18	54.0	17.9	5727.000
5737.800	36.0	-32.9	34.9	34.05	54.0	18.0	5737.800
11400.000	34.5	-30.2	38.6	26.09	54.0	19.6	11400.000
17100.000	38.1	-25.5	41.3	22.30	54.0	15.9	17100.000
17810.800	40.4	-23.0	41.0	22.46	54.0	13.6	17810.800
17798.700	40.3	-23.2	41.0	22.46	54.0	13.7	17798.700

802.11n-HT20

Channel 36

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5128.500	35.5	-33.2	34.4	34.27	54.0	18.5	H
5148.000	35.6	-33.0	34.4	34.09	54.0	18.4	H
10360.000	34.0	-29.8	37.9	25.89	54.0	20.0	H
15540.000	36.5	-26.3	40.1	22.76	54.0	17.5	H
17809.700	40.3	-23.0	41.0	22.36	54.0	13.7	H
17804.200	40.3	-23.1	41.0	22.43	54.0	13.7	H

Channel 40

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5174.100	35.9	-32.6	34.4	34.06	54.0	18.1	H
5252.100	36.4	-32.4	34.4	34.36	54.0	17.6	H
10400.000	34.3	-29.6	38.0	25.95	54.0	19.7	H
15600.000	36.1	-26.4	40.1	22.30	54.0	17.9	H
17808.600	40.3	-23.0	41.0	22.35	54.0	13.7	H

17807.500	40.3	-23.0	41.0	22.34	54.0	13.7	H
-----------	------	-------	------	-------	------	------	---

Channel 48

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5188.500	36.3	-32.4	34.4	34.36	54.0	17.7	H
5292.000	36.9	-32.1	34.5	34.52	54.0	17.1	H
10480.000	33.1	-30.6	38.1	25.67	54.0	20.9	H
15720.000	36.0	-26.4	40.2	22.21	54.0	18.0	H
17809.700	40.3	-23.0	41.0	22.31	54.0	13.7	H
17807.500	40.3	-23.0	41.0	22.34	54.0	13.7	H

Channel 52

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5208.600	36.4	-32.5	34.4	34.50	54.0	17.6	H
5312.100	37.0	-32.0	34.5	34.49	54.0	17.0	H
10520.000	33.2	-30.9	38.1	25.97	54.0	20.8	H
15780.000	35.8	-26.3	40.2	21.94	54.0	18.2	H
17809.700	40.3	-23.0	41.0	22.39	54.0	13.7	H
17807.500	40.3	-23.0	41.0	22.36	54.0	13.7	H

Channel 56

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5228.400	36.3	-32.5	34.4	34.35	54.0	17.7	H
5332.800	37.0	-31.9	34.5	34.33	54.0	17.0	H
10560.000	33.8	-30.2	38.1	25.83	54.0	20.2	H
15840.000	36.9	-26.2	40.3	22.81	54.0	17.1	H
17808.600	40.4	-23.0	41.0	22.50	54.0	13.6	H
17807.500	40.4	-23.0	41.0	22.43	54.0	13.6	H

Channel 64

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5372.100	37.1	-32.0	34.6	34.54	54.0	16.9	H
5386.800	36.2	-32.1	34.6	33.61	54.0	17.8	H

10640.000	34.0	-29.3	38.2	25.14	54.0	20.0	H
15960.000	37.9	-25.8	40.5	23.27	54.0	16.1	H
17809.700	40.4	-23.0	41.0	22.42	54.0	13.6	H
17802.000	40.4	-23.1	41.0	22.53	54.0	13.6	H

Channel 100

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5451.900	36.3	-32.0	34.7	33.54	54.0	17.7	H
5457.000	36.2	-32.0	34.7	33.46	54.0	17.8	H
11000.000	34.1	-30.2	38.2	26.06	54.0	19.9	H
16500.000	37.4	-26.0	41.1	22.30	54.0	16.6	H
17811.900	40.4	-23.0	41.0	22.46	54.0	13.6	H
17798.700	40.3	-23.2	41.0	22.46	54.0	13.7	H

Channel 120

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5547.600	36.7	-32.5	34.8	34.38	54.0	17.3	H
5652.000	36.7	-32.5	34.9	34.34	54.0	17.3	H
11200.000	34.4	-30.1	38.4	26.12	54.0	19.6	H
16800.000	37.6	-26.2	41.5	22.26	54.0	16.4	H
17762.400	39.7	-23.8	41.0	22.43	54.0	14.3	H
17811.900	40.4	-23.0	41.0	22.46	54.0	13.6	H

Channel 140

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5728.800	36.0	-33.0	34.9	34.14	54.0	18.0	H
5746.800	36.1	-32.9	34.9	34.09	54.0	17.9	H
11400.000	34.5	-30.2	38.6	26.09	54.0	19.6	H
17100.000	38.1	-25.5	41.3	22.30	54.0	15.9	H
17807.500	40.4	-23.0	41.0	22.47	54.0	13.6	H
17809.720	40.4	-23.0	41.0	22.46	54.0	13.6	H

802.11n-HT40

Channel 38

Frequency	Meas.	Cable	Antenna	Receiver	Limit	Margin	Antenna
-----------	-------	-------	---------	----------	-------	--------	---------

(MHz)	Result (dBμV/m)	loss (dB)	Factor (dB/m)	Reading (dBμV)	(dBμV/m)	(dB)	Pol. (H/V)
5138.400	35.5	-33.1	34.4	34.17	54.0	18.5	H
5149.200	35.7	-32.9	34.4	34.19	54.0	18.3	H
10380.000	34.4	-29.7	38.0	26.13	54.0	19.6	H
15570.000	36.7	-26.3	40.1	22.89	54.0	17.3	H
17809.700	40.3	-23.0	41.0	22.37	54.0	13.7	H
17806.400	40.3	-23.0	41.0	22.39	54.0	13.7	H

Channel 46

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5185.200	36.1	-32.5	34.4	34.16	54.0	17.9	H
5262.900	36.6	-32.3	34.4	34.50	54.0	17.4	H
10460.000	33.3	-30.4	38.1	25.59	54.0	20.7	H
15690.000	36.3	-26.4	40.2	22.50	54.0	17.7	H
17807.500	40.4	-23.0	41.0	22.47	54.0	13.6	H
17810.800	40.3	-23.0	41.0	22.39	54.0	13.7	H

Channel 54

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5188.200	36.0	-32.4	34.4	34.00	54.0	18.0	H
5373.000	36.5	-32.0	34.6	33.91	54.0	17.5	H
10540.000	33.6	-30.5	38.1	25.99	54.0	20.4	H
15810.000	36.7	-26.3	40.3	22.74	54.0	17.3	H
17805.300	40.5	-23.1	41.0	22.58	54.0	13.5	H
17822.900	40.3	-23.2	40.9	22.50	54.0	13.7	H

Channel 62

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5367.600	36.3	-32.0	34.6	33.64	54.0	17.7	H
5450.700	36.3	-32.0	34.7	33.53	54.0	17.7	H
10620.000	34.5	-29.2	38.1	25.51	54.0	19.5	H
15930.000	37.0	-25.9	40.4	22.49	54.0	17.0	H
17763.500	39.7	-23.7	41.0	22.44	54.0	14.3	H
17809.700	40.4	-23.0	41.0	22.48	54.0	13.6	H

Channel 102

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5451.900	36.3	-32.0	34.7	33.53	54.0	17.7	H
5455.200	36.2	-32.0	34.7	33.51	54.0	17.8	H
11020.000	34.2	-30.4	38.2	26.40	54.0	19.8	H
16530.000	37.4	-26.0	41.1	22.25	54.0	16.6	H
17793.200	40.1	-23.3	41.0	22.40	54.0	13.9	H
17810.800	40.4	-23.0	41.0	22.46	54.0	13.6	H

Channel 134

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5738.700	36.1	-32.9	34.9	34.09	54.0	17.9	H
5743.200	36.1	-32.9	34.9	34.09	54.0	17.9	H
11340.000	34.5	-30.3	38.5	26.26	54.0	19.5	H
17010.000	38.3	-25.6	41.4	22.54	54.0	15.7	H
17798.700	40.3	-23.2	41.0	22.46	54.0	13.7	H
17818.500	40.2	-23.1	40.9	22.34	54.0	13.8	H

PEAK Results:

802.11a

Channel 36

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5143.800	50.2	-33.0	34.4	48.78	74.0	23.8	H
5147.540	50.6	-33.0	34.4	49.16	74.0	23.4	H
17828.400	53.3	-23.3	40.9	35.58	74.0	20.7	H
17816.400	53.0	-23.1	40.9	35.13	74.0	21.0	V
17794.200	52.9	-23.2	41.0	35.21	74.0	21.1	H
17745.000	52.9	-24.0	41.0	35.93	74.0	21.1	H

Channel 40

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5148.900	48.5	-33.0	34.4	47.01	74.0	25.5	H

5252.100	49.2	-32.4	34.4	47.16	74.0	24.8	H
17831.400	54.4	-23.3	40.9	36.79	74.0	19.6	H
17902.800	53.3	-24.2	40.9	36.71	74.0	20.7	V
17810.400	53.0	-23.0	41.0	35.01	74.0	21.0	H
17802.600	52.9	-23.1	41.0	35.00	74.0	21.1	H

Channel 48

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5208.600	49.3	-32.5	34.4	47.40	74.0	24.7	H
5287.500	49.6	-32.1	34.5	47.25	74.0	24.4	H
17852.400	53.6	-23.6	40.9	36.30	74.0	20.4	H
17821.800	53.2	-23.2	40.9	35.38	74.0	20.8	V
17793.600	53.1	-23.3	41.0	35.39	74.0	20.9	V
17798.400	53.1	-23.2	41.0	35.29	74.0	20.9	H

Channel 52

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5202.300	49.8	-32.5	34.4	47.83	74.0	24.2	H
5308.500	50.3	-32.0	34.5	47.82	74.0	23.7	H
17805.000	53.1	-23.1	41.0	35.17	74.0	20.9	V
17799.600	52.9	-23.2	41.0	35.05	74.0	21.1	V
17806.200	52.8	-23.0	41.0	34.90	74.0	21.2	V
17813.400	52.7	-23.0	40.9	34.83	74.0	21.3	V

Channel 56

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5248.200	50.7	-32.4	34.4	48.69	74.0	23.4	H
5352.600	50.1	-31.9	34.6	47.45	74.0	23.9	H
17837.400	52.7	-23.4	40.9	35.10	74.0	21.3	V
17806.200	52.6	-23.0	41.0	34.66	74.0	21.4	V
17898.600	52.3	-24.2	40.9	35.63	74.0	21.7	V
17925.000	52.2	-24.5	40.9	35.87	74.0	21.8	H

Channel 64

Frequency	Meas.	Cable	Antenna	Receiver	Limit	Margin	Antenna
-----------	-------	-------	---------	----------	-------	--------	---------

(MHz)	Result (dBμV/m)	loss (dB)	Factor (dB/m)	Reading (dBμV)	(dBμV/m)	(dB)	Pol. (H/V)
5367.080	51.1	-32.0	34.6	48.48	74.0	22.9	H
5372.730	52.1	-32.0	34.6	49.49	74.0	21.9	H
17802.000	53.1	-23.1	41.0	35.21	74.0	20.9	H
17797.200	52.9	-23.2	41.0	35.15	74.0	21.1	V
17809.200	52.5	-23.0	41.0	34.51	74.0	21.5	V
17887.200	52.4	-24.0	40.9	35.52	74.0	21.6	V

Channel 100

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5454.960	50.7	-32.0	34.7	47.95	74.0	23.3	H
5460.000	50.2	-32.0	34.7	47.51	74.0	23.8	H
17778.000	52.8	-23.5	41.0	35.37	74.0	21.2	V
17790.600	52.7	-23.3	41.0	35.04	74.0	21.3	V
17820.000	52.6	-23.1	40.9	34.78	74.0	21.4	V
17796.000	52.6	-23.2	41.0	34.82	74.0	21.4	H

Channel 120

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5547.450	52.8	-32.5	34.8	50.46	74.0	21.2	H
5652.600	52.0	-32.5	34.9	49.71	74.0	22.0	H
17744.400	52.7	-24.1	41.0	35.73	74.0	21.3	H
17807.400	52.7	-23.0	41.0	34.72	74.0	21.3	V
17814.600	52.6	-23.1	40.9	34.72	74.0	21.4	H
17817.000	52.5	-23.1	40.9	34.65	74.0	21.5	H

Channel 140

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5726.320	52.3	-33.0	34.9	50.38	74.0	21.7	H
5744.900	51.6	-32.9	34.9	49.56	74.0	22.4	H
17791.800	53.6	-23.3	41.0	35.90	74.0	20.4	H
17798.400	53.1	-23.2	41.0	35.32	74.0	20.9	H
17802.600	52.9	-23.1	41.0	35.02	74.0	21.1	H

17795.400	52.6	-23.2	41.0	34.89	74.0	21.4	V
-----------	------	-------	------	-------	------	------	---

802.11n-HT20

Channel 36

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5147.920	50.5	-33.0	34.4	49.05	74.0	23.5	H
5149.500	50.4	-32.9	34.4	48.93	74.0	23.6	H
17818.200	52.8	-23.1	40.9	35.01	74.0	21.2	V
17779.200	52.6	-23.5	41.0	35.12	74.0	21.4	H
17820.000	52.5	-23.1	40.9	34.71	74.0	21.5	V
17805.600	52.4	-23.1	41.0	34.54	74.0	21.6	H

Channel 40

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5128.650	48.8	-33.2	34.4	47.53	74.0	25.2	H
5260.800	49.1	-32.3	34.4	46.99	74.0	24.9	H
17762.400	52.9	-23.8	41.0	35.70	74.0	21.1	H
17824.200	52.7	-23.2	40.9	34.96	74.0	21.3	H
17826.600	52.6	-23.2	40.9	34.92	74.0	21.4	H
17935.800	52.6	-24.7	40.9	36.43	74.0	21.4	V

Channel 48

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5185.100	50.1	-32.5	34.4	48.17	74.0	23.9	H
5293.050	48.7	-32.1	34.5	46.36	74.0	25.3	H
17808.000	53.9	-23.0	41.0	35.99	74.0	20.1	V
17790.600	52.8	-23.3	41.0	35.11	74.0	21.2	H
17796.000	52.7	-23.2	41.0	35.00	74.0	21.3	V
17764.200	52.7	-23.7	41.0	35.43	74.0	21.3	V

Channel 52

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5151.300	49.7	-32.9	34.4	48.17	74.0	24.3	H

5313.300	50.3	-32.0	34.5	47.82	74.0	23.7	H
17777.400	53.0	-23.5	41.0	35.58	74.0	21.0	H
17819.400	52.6	-23.1	40.9	34.78	74.0	21.4	V
17807.400	52.5	-23.0	41.0	34.57	74.0	21.5	V
17879.400	52.5	-23.9	40.9	35.50	74.0	21.5	V

Channel 56

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5203.200	50.5	-32.5	34.4	48.54	74.0	23.5	H
5321.100	49.5	-31.9	34.5	46.90	74.0	24.5	H
17777.400	53.0	-23.5	41.0	35.58	74.0	21.0	V
17819.400	52.6	-23.1	40.9	34.78	74.0	21.4	H
17807.400	52.5	-23.0	41.0	34.57	74.0	21.5	V
17879.400	52.5	-23.9	40.9	35.50	74.0	21.5	H

Channel 64

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5350.460	51.3	-31.9	34.6	48.62	74.0	22.7	H
5372.590	51.3	-32.0	34.6	48.66	74.0	22.7	H
17800.200	53.3	-23.1	41.0	35.44	74.0	20.7	V
17811.600	53.2	-23.0	41.0	35.28	74.0	20.8	V
17835.600	52.9	-23.3	40.9	35.30	74.0	21.1	H
17798.400	52.8	-23.2	41.0	34.99	74.0	21.2	H

Channel 100

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5451.560	50.6	-32.0	34.7	47.81	74.0	23.4	H
5457.480	50.6	-32.0	34.7	47.90	74.0	23.4	H
17790.600	53.1	-23.3	41.0	35.43	74.0	20.9	V
17824.200	52.9	-23.2	40.9	35.11	74.0	21.1	V
17796.600	52.8	-23.2	41.0	35.06	74.0	21.2	H
17898.600	52.7	-24.2	40.9	36.00	74.0	21.3	H

Channel 120

Frequency	Meas.	Cable	Antenna	Receiver	Limit	Margin	Antenna
-----------	-------	-------	---------	----------	-------	--------	---------

(MHz)	Result (dBμV/m)	loss (dB)	Factor (dB/m)	Reading (dBμV)	(dBμV/m)	(dB)	Pol. (H/V)
5505.600	50.4	-32.3	34.8	47.92	74.0	23.6	H
5661.600	49.6	-32.5	34.9	47.21	74.0	24.4	H
17804.400	53.2	-23.1	41.0	35.35	74.0	20.8	V
17781.000	52.6	-23.5	41.0	35.08	74.0	21.4	H
17811.000	52.6	-23.0	41.0	34.65	74.0	21.4	V
17821.800	52.5	-23.2	40.9	34.74	74.0	21.5	H

Channel 140

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5732.700	51.1	-33.0	34.9	49.15	74.0	22.9	H
5740.020	51.0	-32.9	34.9	49.00	74.0	23.0	H
17783.400	52.6	-23.4	41.0	35.07	74.0	21.4	V
17896.200	52.4	-24.2	40.9	35.72	74.0	21.6	H
17806.200	52.4	-23.0	41.0	34.51	74.0	21.6	V
17826.600	52.3	-23.2	40.9	34.63	74.0	21.7	H

802.11n-HT40

Channel 38

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5142.800	50.5	-33.0	34.4	49.05	74.0	23.5	H
5149.020	50.6	-33.0	34.4	49.08	74.0	23.4	H
17799.000	53.8	-23.2	41.0	36.04	74.0	20.2	H
17880.600	53.3	-23.9	40.9	36.36	74.0	20.7	V
17889.600	53.2	-24.1	40.9	36.43	74.0	20.8	H
17795.400	53.1	-23.2	41.0	35.31	74.0	20.9	H

Channel 46

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5189.100	49.0	-32.5	34.4	47.02	74.0	25.0	H
5263.500	50.5	-32.3	34.4	48.38	74.0	23.5	H
17801.400	53.1	-23.1	41.0	35.30	74.0	20.9	V
17813.400	52.8	-23.0	40.9	34.86	74.0	21.2	V
17802.000	52.7	-23.1	41.0	34.86	74.0	21.3	V

17816.400	52.4	-23.1	40.9	34.58	74.0	21.6	H
-----------	------	-------	------	-------	------	------	---

Channel 54

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5212.800	49.8	-32.5	34.4	47.85	74.0	24.2	H
5368.800	49.4	-32.0	34.6	46.81	74.0	24.6	H
17817.000	54.2	-23.1	40.9	36.34	74.0	19.8	V
17802.000	52.8	-23.1	41.0	34.98	74.0	21.2	H
17823.600	52.5	-23.2	40.9	34.70	74.0	21.5	H
17796.600	52.4	-23.2	41.0	34.60	74.0	21.6	H

Channel 62

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5351.500	51.6	-31.9	34.6	48.94	74.0	22.4	H
5358.290	51.7	-31.9	34.6	49.08	74.0	22.3	H
17814.600	53.0	-23.1	40.9	35.16	74.0	21.0	V
17796.000	52.7	-23.2	41.0	34.91	74.0	21.3	H
17804.400	52.6	-23.1	41.0	34.68	74.0	21.4	V
17794.200	52.5	-23.2	41.0	34.79	74.0	21.5	V

Channel 102

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5453.380	50.9	-32.0	34.7	48.19	74.0	23.1	H
5458.700	50.6	-32.0	34.7	47.89	74.0	23.4	H
17808.600	53.2	-23.0	41.0	35.23	74.0	20.8	V
17802.600	53.1	-23.1	41.0	35.21	74.0	20.9	V
17937.000	52.7	-24.7	40.9	36.58	74.0	21.3	V
17787.600	52.6	-23.4	41.0	35.02	74.0	21.4	V

Channel 134

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5725.296	50.3	-33.0	34.9	48.37	74.0	23.7	H
5736.848	50.3	-32.9	34.9	48.33	74.0	23.7	H

17814.000	53.5	-23.1	40.9	35.62	74.0	20.5	H
17817.000	53.3	-23.1	40.9	35.48	74.0	20.7	V
17811.600	53.2	-23.0	41.0	35.28	74.0	20.8	V
17787.600	53.1	-23.4	41.0	35.47	74.0	20.9	H

Test graphs as below:

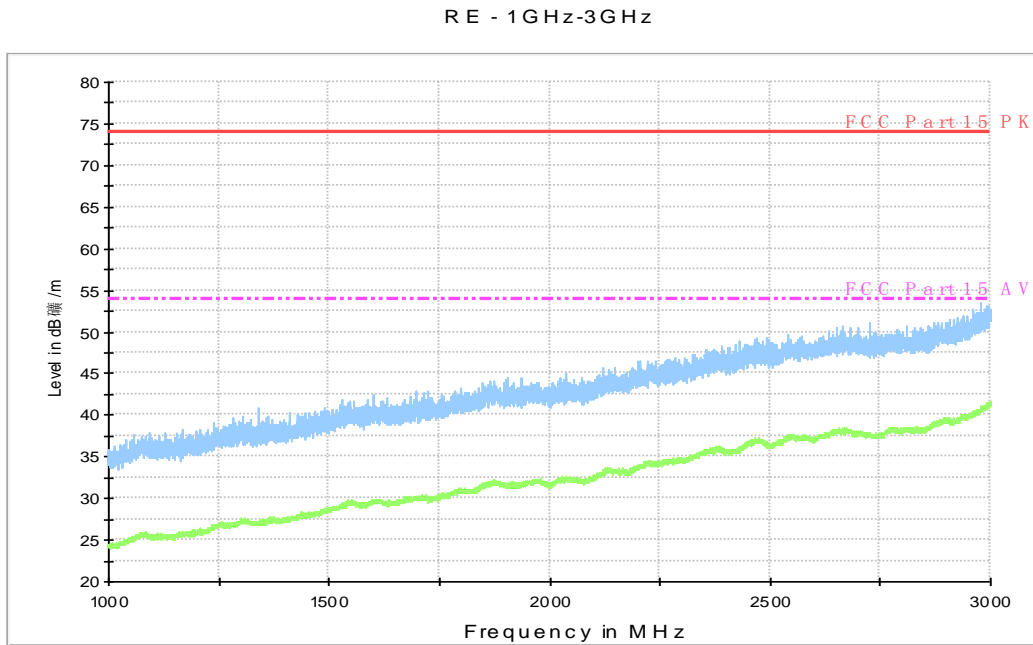


Fig. 35 Radiated Spurious Emission (802.11a, ch36, 1 GHz-3 GHz)

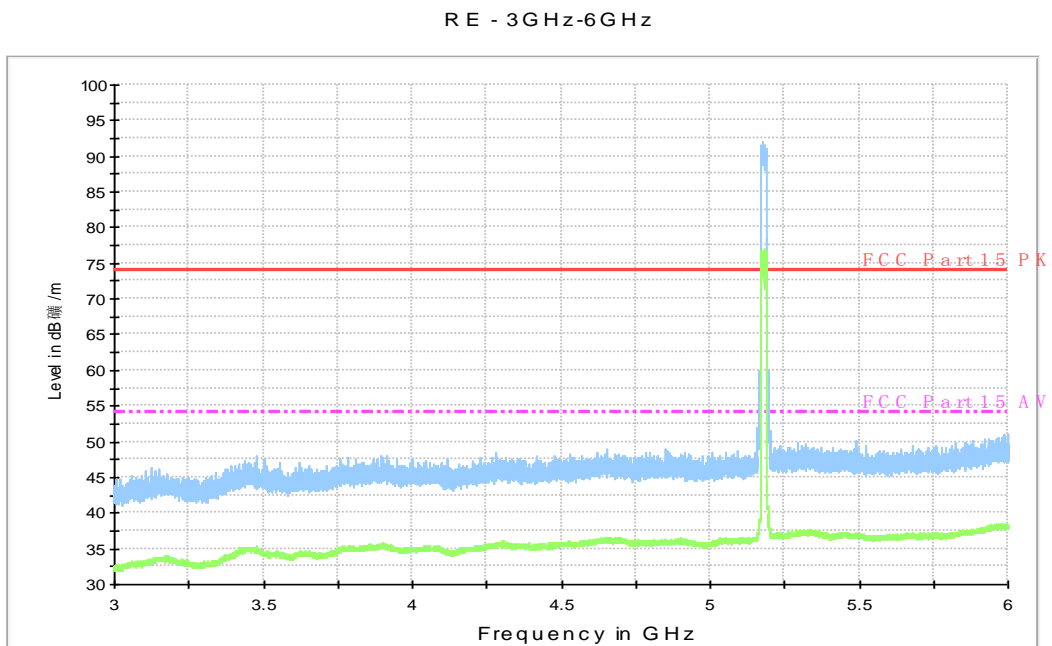


Fig. 36 Radiated Spurious Emission (802.11a, ch36, 3 GHz-6 GHz)

RE - 6GHz-18GHz

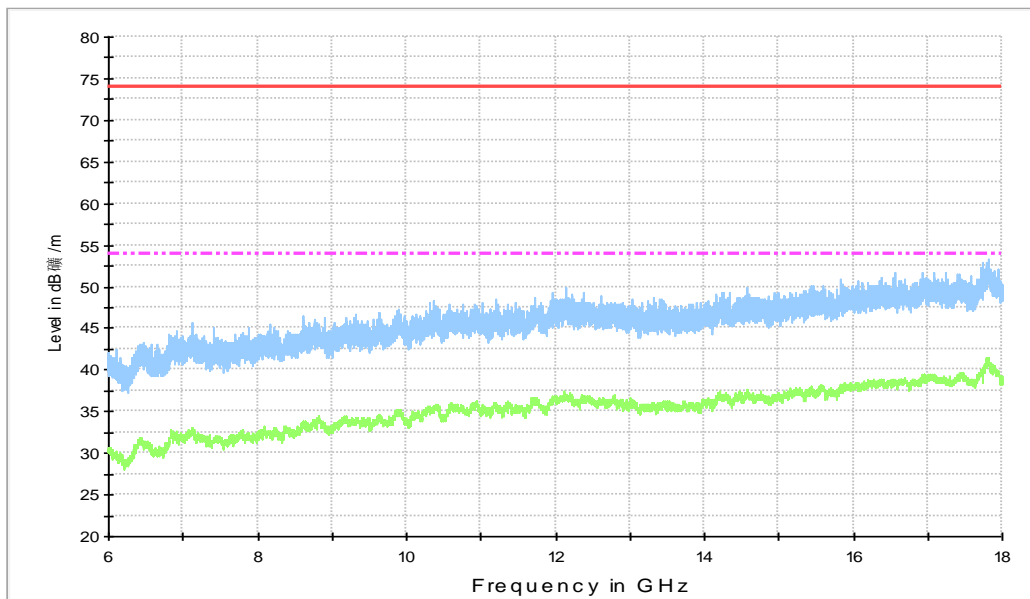


Fig. 37 Radiated Spurious Emission (802.11a, ch36, 6 GHz-18 GHz)

RE 30MHz-1GHz

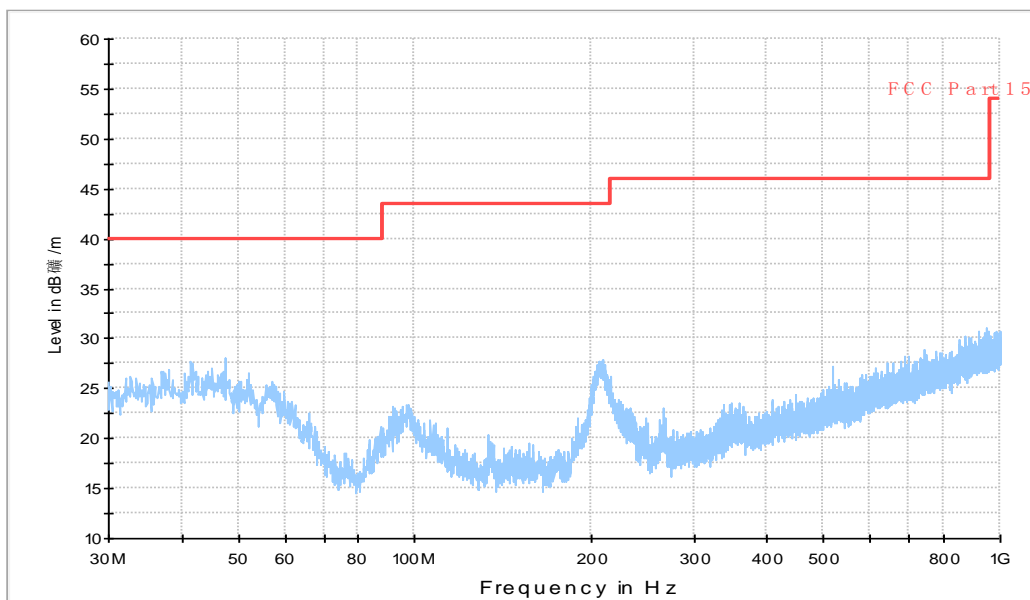


Fig. 38 Radiated Spurious Emission (802.11a, ch40, 30 MHz-1 GHz)

RE - 1GHz-3GHz

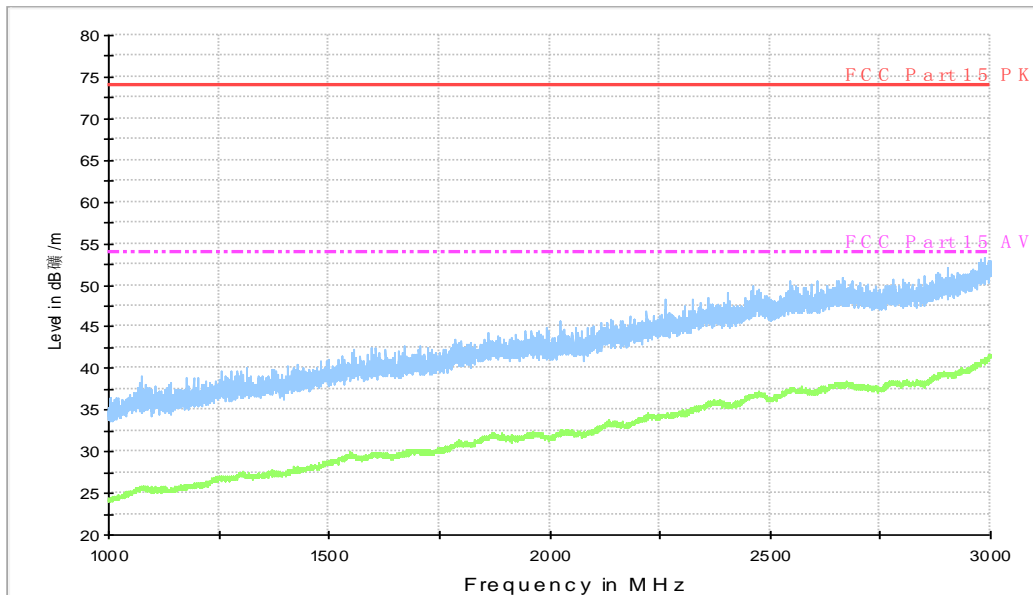


Fig. 39 Radiated Spurious Emission (802.11a, ch40, 1 GHz-3 GHz)

RE - 3GHz-6GHz

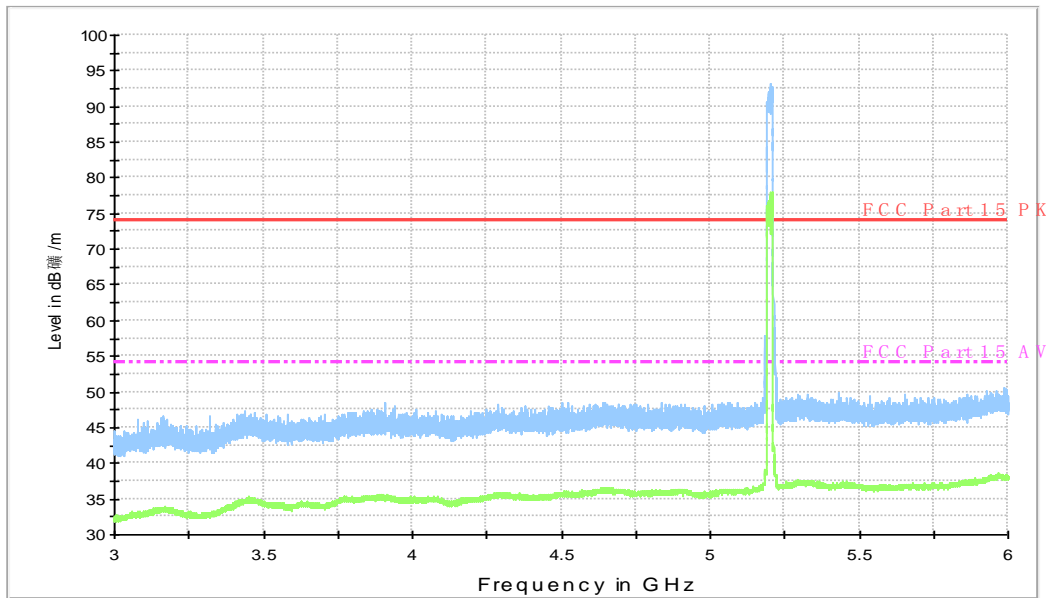


Fig. 40 Radiated Spurious Emission (802.11a, ch40, 3 GHz-6 GHz)

RE - 6GHz-18GHz

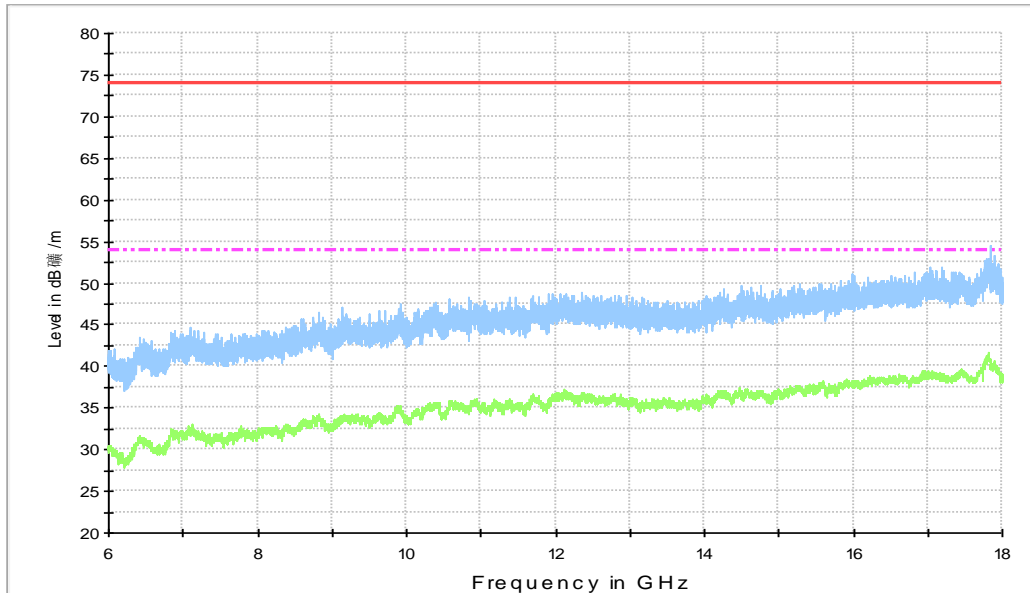


Fig. 41 Radiated Spurious Emission (802.11a, ch40, 6 GHz-18 GHz)

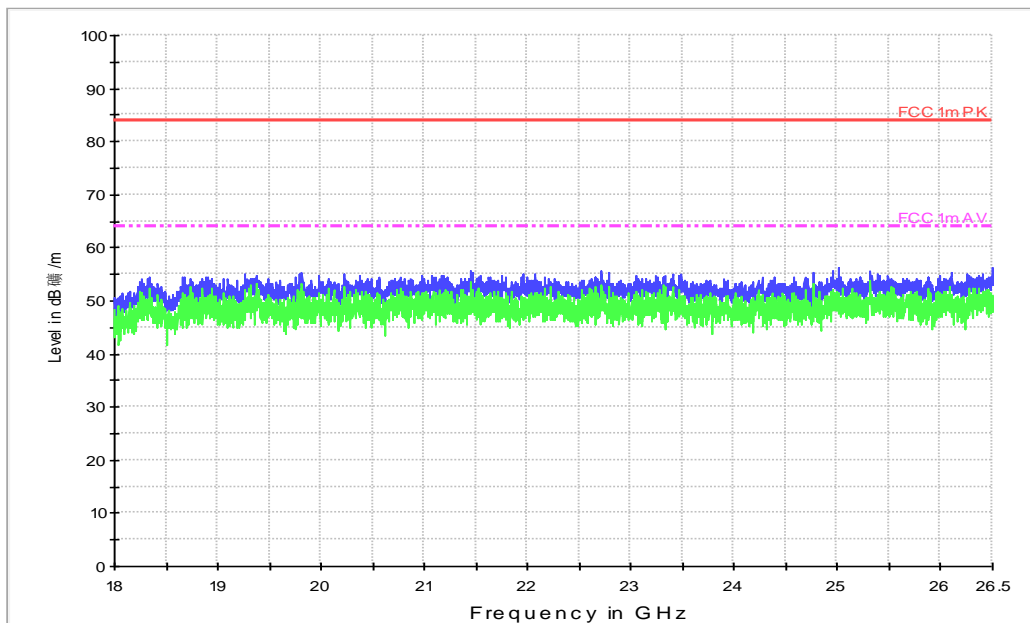


Fig. 42 Radiated Spurious Emission (802.11a, ch40, 18 GHz-26.5 GHz)