



**FCC PART 15C
TEST REPORT
No. 2013WLN0648**

for

Sony Mobile Communications (China) Co. Ltd

GSM/UMTS/LTE mobile phone

Type: PM-0350-BV

With

FCC ID: PY7PM-0350

Hardware Version: A

Software Version: 12.0.A.1.18

Issued Date: 2013-05-02

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.

Test Laboratory:

TMC Beijing, Telecommunication Metrology Center of Ministry of Industry and Information Technology

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

Tel: +86(0)10-62304633-2561, Fax: +86(0)10-62304633-2504 Email:welcome@emcite.com. www.emcite.com

©Copyright. All rights reserved by TMC Beijing.

CONTENTS

CONTENTS	2
1. TEST LATORATORY	5
1.1. TESTING LOCATION.....	5
1.2. TESTING ENVIRONMENT.....	5
1.3. PROJECT DATA	5
1.4. SIGNATURE	5
2. CLIENT INFORMATION	6
2.1. APPLICANT INFORMATION.....	6
2.2. MANUFACTURER INFORMATION.....	6
3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT(AE)	7
3.1. ABOUT EUT	7
3.2. INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST.....	7
3.3. INTERNAL IDENTIFICATION OF AE USED DURING THE TEST	7
3.4. GENERAL DESCRIPTION	8
4. REFERENCE DOCUMENTS	8
4.1. DOCUMENTS SUPPLIED BY APPLICANT.....	8
4.2. REFERENCE DOCUMENTS FOR TESTING.....	8
5. LABORATORY ENVIRONMENT	9
6. SUMMARY OF TEST RESULTS	10
6.1. SUMMARY OF TEST RESULTS	10
6.2. STATEMENTS.....	10
7. TEST EQUIPMENTS UTILIZED	11
ANNEX A: MEASUREMENT RESULTS	12
A.1. MEASUREMENT METHOD	12
A.2. MAXIMUM PEAK OUTPUT POWER	13
A.2.1. OUTPUT POWER VERIFICATION	13
A.2.2. ANTENNA GAIN.....	14
A.2.3. MAXIMUM PEAK OUTPUT POWER.....	14
A.3. PEAK POWER SPECTRAL DENSITY	14
A.4. OCCUPIED 6DB BANDWIDTH	16
FIG. 1 OCCUPIED 6DB BANDWIDTH (802.11A, CH 149).....	16
FIG. 2 OCCUPIED 6DB BANDWIDTH (802.11A, CH 157).....	17
FIG. 3 OCCUPIED 6DB BANDWIDTH (802.11A, CH 165).....	17
FIG. 4 OCCUPIED 6DB BANDWIDTH (802.11N-HT20, CH 149).....	18
FIG. 5 OCCUPIED 6DB BANDWIDTH (802.11N-HT20, CH 157).....	18
FIG. 6 OCCUPIED 6DB BANDWIDTH (802.11N-HT20, CH 165).....	19
FIG. 7 OCCUPIED 6DB BANDWIDTH (802.11N-HT40, CH 151).....	19

FIG. 8	OCCUPIED 6dB BANDWIDTH (802.11N-HT40, CH 157).....	20
A.5.	TRANSMITTER SPURIOUS EMISSION	21
A.5.1	TRANSMITTER SPURIOUS EMISSION - CONDUCTED	21
FIG. 9	CONDUCTED SPURIOUS EMISSION (802.11A, CH149, CENTER FREQUENCY)	23
FIG. 10	CONDUCTED SPURIOUS EMISSION (802.11A, CH149, 30 MHZ-12 GHZ)	24
FIG. 11	CONDUCTED SPURIOUS EMISSION (802.11A, CH149, 12 GHZ-25 GHZ)	24
FIG. 12	CONDUCTED SPURIOUS EMISSION (802.11A, CH149, 25 GHZ-40 GHZ)	25
FIG. 13	CONDUCTED SPURIOUS EMISSION (802.11A, CH157, CENTER FREQUENCY)	25
FIG. 14	CONDUCTED SPURIOUS EMISSION (802.11A, CH157, 30 MHZ-12 GHZ)	26
FIG. 15	CONDUCTED SPURIOUS EMISSION (802.11A, CH157, 12 GHZ-25 GHZ)	26
FIG. 16	CONDUCTED SPURIOUS EMISSION (802.11A, CH157, 25 GHZ-40 GHZ)	27
FIG. 17	CONDUCTED SPURIOUS EMISSION (802.11A, CH165, CENTER FREQUENCY)	27
FIG. 18	CONDUCTED SPURIOUS EMISSION (802.11A, CH165, 30 MHZ-12 GHZ)	28
FIG. 19	CONDUCTED SPURIOUS EMISSION (802.11A, CH165, 12 GHZ-25 GHZ)	28
FIG. 20	CONDUCTED SPURIOUS EMISSION (802.11A, CH165, 25 GHZ-40 GHZ)	29
FIG. 21	CONDUCTED SPURIOUS EMISSION (802.11N-HT20, CH149, CENTER FREQUENCY)	29
FIG. 22	CONDUCTED SPURIOUS EMISSION (802.11N-HT20, CH149, 30 MHZ-12 GHZ)	30
FIG. 23	CONDUCTED SPURIOUS EMISSION (802.11N-HT20, CH149, 12 GHZ-25 GHZ)	30
FIG. 24	CONDUCTED SPURIOUS EMISSION (802.11N-HT20, CH149, 25 GHZ-40 GHZ)	31
FIG. 25	CONDUCTED SPURIOUS EMISSION (802.11N-HT20, CH157, CENTER FREQUENCY)	31
FIG. 26	CONDUCTED SPURIOUS EMISSION (802.11N-HT20, CH157, 30 MHZ-12 GHZ)	32
FIG. 27	CONDUCTED SPURIOUS EMISSION (802.11N-HT20, CH157, 12 GHZ-25 GHZ)	32
FIG. 28	CONDUCTED SPURIOUS EMISSION (802.11N-HT20, CH157, 25 GHZ-40 GHZ)	33
FIG. 29	CONDUCTED SPURIOUS EMISSION (802.11N-HT20, CH165, CENTER FREQUENCY)	33
FIG. 30	CONDUCTED SPURIOUS EMISSION (802.11N-HT20, CH165, 30 MHZ-12 GHZ)	34
FIG. 31	CONDUCTED SPURIOUS EMISSION (802.11N-HT20, CH165, 12 GHZ-25 GHZ)	34
FIG. 32	CONDUCTED SPURIOUS EMISSION (802.11N-HT20, CH165, 25 GHZ-40 GHZ)	35
FIG. 33	CONDUCTED SPURIOUS EMISSION (802.11N-HT40, CH151, CENTER FREQUENCY)	35
FIG. 34	CONDUCTED SPURIOUS EMISSION (802.11N-HT40, CH151, 30 MHZ-12 GHZ)	36
FIG. 35	CONDUCTED SPURIOUS EMISSION (802.11N-HT40, CH151, 12 GHZ-25 GHZ)	36
FIG. 36	CONDUCTED SPURIOUS EMISSION (802.11N-HT40, CH151, 25 GHZ-40 GHZ)	37
FIG. 37	CONDUCTED SPURIOUS EMISSION (802.11N-HT40, CH159, CENTER FREQUENCY)	37
FIG. 38	CONDUCTED SPURIOUS EMISSION (802.11N-HT40, CH159, 30 MHZ-12 GHZ)	38
FIG. 39	CONDUCTED SPURIOUS EMISSION (802.11N-HT40, CH159, 12 GHZ-25 GHZ)	38
FIG. 40	CONDUCTED SPURIOUS EMISSION (802.11N-HT40, CH151, 25 GHZ-40 GHZ)	39
A.5.2	TRANSMITTER SPURIOUS EMISSION - RADIATED	40
FIG. 41	RADIATED SPURIOUS EMISSION (802.11A, CH149, 30 MHZ-1 GHZ)	43
FIG. 42	RADIATED SPURIOUS EMISSION (802.11A, CH149, 1 GHZ-3 GHZ)	43
FIG. 43	RADIATED SPURIOUS EMISSION (802.11A, CH149, 3 GHZ-6 GHZ)	44
FIG. 44	RADIATED SPURIOUS EMISSION (802.11A, CH149, 6 GHZ-18 GHZ)	44
FIG. 45	RADIATED SPURIOUS EMISSION (802.11A, CH149, 18 GHZ-26.5 GHZ)	45
FIG. 46	RADIATED SPURIOUS EMISSION (802.11A, CH157, 30 MHZ-1 GHZ)	45
FIG. 47	RADIATED SPURIOUS EMISSION (802.11A, CH157, 1 GHZ-3 GHZ)	46
FIG. 48	RADIATED SPURIOUS EMISSION (802.11A, CH157, 3 GHZ-6 GHZ)	46

FIG. 49	RADIATED SPURIOUS EMISSION (802.11A, CH157, 6 GHZ-18 GHZ)	47
FIG. 50	RADIATED SPURIOUS EMISSION (802.11A, CH157, 18 GHZ-26.5 GHZ)	47
FIG. 51	RADIATED SPURIOUS EMISSION (802.11A, CH165, 30 MHZ-1 GHZ)	48
FIG. 52	RADIATED SPURIOUS EMISSION (802.11A, CH165, 1 GHZ-3 GHZ)	48
FIG. 53	RADIATED SPURIOUS EMISSION (802.11A, CH165, 3 GHZ-6 GHZ)	49
FIG. 54	RADIATED SPURIOUS EMISSION (802.11A, CH165, 6 GHZ-18 GHZ)	49
FIG. 55	RADIATED SPURIOUS EMISSION (802.11A, CH165, 18 GHZ-26.5 GHZ)	50
FIG. 56	RADIATED EMISSION: 802.11A, 26.5 GHZ - 40 GHZ	50
FIG. 57	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH149, 30 MHZ-1 GHZ)	51
FIG. 58	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH149, 1 GHZ-3 GHZ)	51
FIG. 59	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH149, 3 GHZ-6 GHZ)	52
FIG. 60	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH149, 6 GHZ-18 GHZ)	52
FIG. 61	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH149, 18 GHZ-26.5 GHZ)	53
FIG. 62	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH157, 30 MHZ-1 GHZ)	53
FIG. 63	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH157, 1 GHZ-3 GHZ)	54
FIG. 64	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH157, 3 GHZ-6 GHZ)	54
FIG. 65	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH157, 6 GHZ-18 GHZ)	55
FIG. 66	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH157, 18 GHZ-26.5 GHZ)	55
FIG. 67	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH165, 30 MHZ-1 GHZ)	56
FIG. 68	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH165, 1 GHZ-3 GHZ)	56
FIG. 69	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH165, 3 GHZ-6 GHZ)	57
FIG. 70	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH165, 6 GHZ-18 GHZ)	57
FIG. 71	RADIATED SPURIOUS EMISSION (802.11N-HT20, CH165, 18 GHZ-26.5 GHZ)	58
FIG. 72	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH151, 30 MHZ-1 GHZ)	58
FIG. 73	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH151, 1 GHZ-3 GHZ)	59
FIG. 74	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH151, 3 GHZ-6 GHZ)	59
FIG. 75	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH151, 6 GHZ-18 GHZ)	60
FIG. 76	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH151, 18 GHZ-26.5 GHZ)	60
FIG. 77	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH159, 30 MHZ-1 GHZ)	61
FIG. 78	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH159, 1 GHZ-3 GHZ)	61
FIG. 79	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH159, 3 GHZ-6 GHZ)	62
FIG. 80	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH159, 6 GHZ-18 GHZ)	62
FIG. 81	RADIATED SPURIOUS EMISSION (802.11N-HT40, CH159, 18 GHZ-26.5 GHZ)	63
FIG. 82	RADIATED EMISSION: 802.11N, 26.5 GHZ - 40 GHZ	63
A.6.	AC POWERLINE CONDUCTED EMISSION	64
FIG. 83	AC POWERLINE CONDUCTED EMISSION-802.11A MODE	65
FIG. 84	AC POWERLINE CONDUCTED EMISSION-IDLE	66
ANNEX B: PHOTOGRAPHS OF THE TEST SET-UP		67
ANNEX C: PHOTOGRAPHS OF THE EUT		68

1. TEST LATORATORY

1.1. Testing Location

Company Name: TMC Beijing, Telecommunication Metrology Center of MIIT
Address: No. 52, Huayuan Bei Road, Haidian District, Beijing, P. R. China
Postal Code: 100191
Telephone: +86-10-62304633-2561
Fax: +86-10-62304633-2504

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: 2013-02-07
Testing End Date: 2013-03-11

1.4. Signature



Sun Zhenyu

(Prepared this test report)



Gao Hong

(Reviewed this test report)



Xiao Li

Deputy Director of the laboratory

(Approved this test report)

2. CLIENT INFORMATION

2.1. Applicant Information

Company Name: Sony Mobile Communications (China) Co. Ltd
Address /Post: Sony Mobile R&D Center, No. 16, Guangshun South Street,
Chaoyang District
City: Beijing
Postal Code: 100102
Country: China
Contact Person: Ma, Gang
Telephone: +86-10-58656312
Fax: +86-10-58659049

2.2. Manufacturer Information

Company Name: Sony Mobile Communications (China) Co. Ltd
Address /Post: Sony Mobile R&D Center, No. 16, Guangshun South Street,
Chaoyang District
City: Beijing
Postal Code: 100102
Country: China
Contact Person: Ma, Gang
Telephone: +86-10-58656312
Fax: +86-10-58659049

3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY

EQUIPMENT(AE)

3.1. About EUT

Description	GSM 850/900/1800/1900, GPRS, EDGE, WCDMA FDD Band 1/5/8, HSDPA, HSUPA, LTE FDD Band 1/3/5/7/8/20, Bluetooth EDR & BLE, WLAN (802.11 a/b/g/n), FM, NFC, GPS receiver mobile phone
Type	PM-0350-BV
FCC ID	PY7PM-0350
WLAN Frequency Range	ISM Band: 5725MHz~5850MHz
Type of modulation	OFDM
Number of Channels	a/n-HT20 mode: 5 n-HT40 mode: 2
GSM Frequency Band	GSM 850/900/1800/1900
UMTS Frequency Band	FDD Band 1 / FDD Band 5 / FDD Band 8
LTE Frequency Band	FDD Band 1 / FDD Band 3 / FDD Band 5 / FDD Band 7 / FDD Band 8 / FDD Band 20
Antenna	Integral Antenna
MAX Radiated Power	20.38dBm(OFDM)
MAX Conducted Power	22.71dBm(OFDM)
Extreme Temperature	-20/+55°C
Normal Voltage	3.7VDC
Extreme Low Voltage	3.5VDC
Extreme High Voltage	4.1VDC

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	CB5123BT7P	004402450767920	A	12.0.A.1.18
EUT2	CB51238N0Y	004402450616044	A	12.0.A.1.18

*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	AC-0400-EU	/
AE2	USB Cable	AI-0401	/

*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/UMTS/LTE mobile phone with integrated antenna and inbuilt Li-Polymer battery.

The EUT supports GSM 850/900/1800/1900MHz bands, WCDMA FDD bands 1/5/8 and LTE FDD bands 1/3/5/7/8/20. It also supports GPRS service with multi-slots class 33 and EGPRS service with multi-slots class 33 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 consists of normal options: Inbuilt li-Polymer battery 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 CFR 47, Part 15, Subpart C:	
	15.205 Restricted bands of operation;	
FCC Part15	15.209 Radiated emission limits, general requirements;	Oct,
	15.247 Operation within the bands 902–928MHz,	2012
	2400–2483.5 MHz, and 5725–5850 MHz.	
	Methods of Measurement of Radio-Noise Emissions from	
ANSI C63.4	Low-Voltage Electrical and Electronic Equipment in the	2009
	Range of 9 kHz to 40 GHz	
	Measurement of Digital Transmission Systems	
KDB558074	Operating under Section 15.247	2012

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 °C, Max. = 30 °C
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 °C, Max. = 30 °C
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 °C, Max. = 30 °C
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 Part15C	Sub-clause of IC	Verdict
Maximum Peak Output Power	15.247 (b)	/	P
Peak Power Spectral Density	15.247 (e)	/	P
Occupied 6dB Bandwidth	15.247 (a)	/	P
Band Edges Compliance	15.247 (b)	/	P
Transmitter Spurious Emission - Conducted	15.247	/	P
Transmitter Spurious Emission - Radiated	15.247, 15.209, 15.209	/	P
AC Powerline Conducted Emission	15.107, 15.207	/	P

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

The measurement is made according to KDB558074 and ANSI C63.4.

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.

This report only deals with the 5.8GHz WLAN functions among the features described in section 3, and the EUT met all requirements of reference document.

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 are tested under Normal Temperature and Normal Voltage, and also under norm humidity, the specific conditions as following:

Temperature	T nom	26°C
Voltage	V nom	3.7V(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

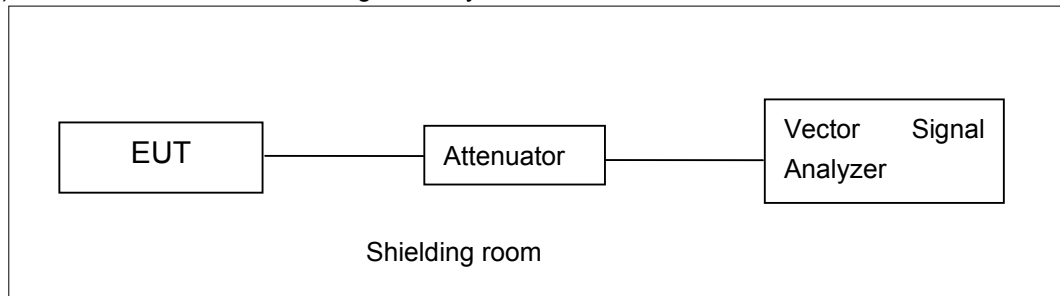
Fully anechoic chamber by Frankonia German.

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

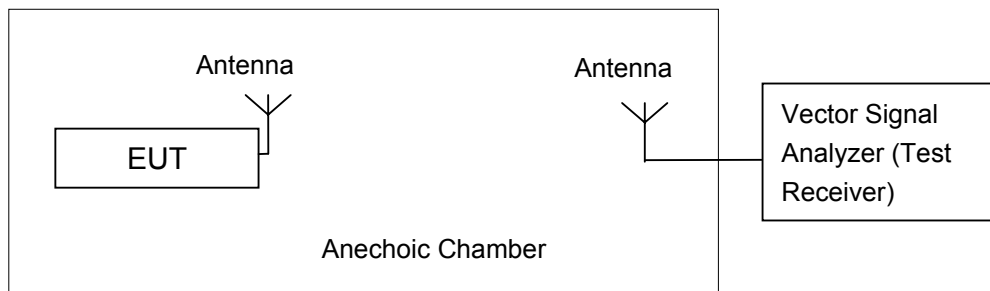


A.1.2. Radiated Emission Measurements

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 ANSI C63.4 and KDB558074

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 Peak Output Power

Measurement Limit and Method:

Standard	Limit (dBm)
FCC CRF Part 15.247(b)	< 30

The measurement is made according to ANSI C63.4 and KDB558074

Measurement Uncertainty:

Measurement Uncertainty	0.75dB
-------------------------	--------

A.2.1. 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
149 (5745 MHz)	13.01	13.00	12.94	12.98	12.90	12.96	12.84	12.89

OFDM/n-HT20 mode	Maximum Conducted Power (dBm)							
data rate (Mbps)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
149 (5745 MHz)	13.14	13.11	12.99	13.00	12.98	12.89	12.90	12.88

OFDM/n-HT40 mode	Maximum Conducted Power (dBm)							
data rate (Index)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
151 (5755 MHz)	9.64	9.37	9.17	9.11	9.01	9.02	8.93	8.88

Selected data rate for all measurement:

OFDM /a-mode: 6Mbps

OFDM /n-HT20 mode: MCS0

OFDM /n-HT40 mode: MCS0

A.2.2. Antenna Gain

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

Test	Channel		
	149	157	165
Tnom,Vnom	149	157	165
Conducted Power(dBm)	16.77	15.93	16.42
Radiated Power(dBm)	12.62	13.74	12.25
Gain(dBi)	-4.15	-2.19	-4.17

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

A.2.3. Maximum Peak Output Power

Measurement Results:

802.11a

Mode	Test Result (dBm)					
	5745 MHz (Ch149)		5785 MHz (Ch157)		5825 MHz (Ch165)	
	Conducted	Radiated	Conducted	Radiated	Conducted	Radiated
802.11a	20.94	16.79	20.10	17.91	20.83	16.66

802.11n-HT20

Mode	Test Result (dBm)					
	5745 MHz (Ch149)		5785 MHz (Ch157)		5825 MHz (Ch165)	
	Conducted	Radiated	Conducted	Radiated	Conducted	Radiated
802.11n-HT20	20.90	16.75	19.56	17.37	20.88	16.71

802.11n-HT40

Mode	Test Result (dBm)			
	5755 MHz (Ch151)		5795 MHz (Ch159)	
	Conducted	Radiated	Conducted	Radiated
802.11n-HT40	22.71	18.56	22.57	20.38

Conclusion: PASS

A.3. Peak Power Spectral Density

Measurement Limit:

Standard	Limit
FCC CRF Part 15.247(e)	< 8 dBm/3 kHz

The measurement is made according to ANSI C63.4 and KDB558074

Measurement Uncertainty:

Measurement Uncertainty	0.75dB
-------------------------	--------

Measurement Results:

Mode	Channel	Power Spectral Density (dBm/3 kHz)	Conclusion
802.11a	149	-14.80	P
	157	-15.60	P
	165	-14.82	P
802.11n HT20	149	-14.76	P
	157	-15.66	P
	165	-15.25	P
802.11n HT40	151	-18.64	P
	159	-18.92	P

Conclusion: PASS

A.4. Occupied 6dB Bandwidth

Measurement Limit:

Standard	Limit (kHz)
FCC 47 CFR Part 15.247 (a)	≥ 500

The measurement is made according to ANSI C63.4 and KDB558074

Measurement Uncertainty:

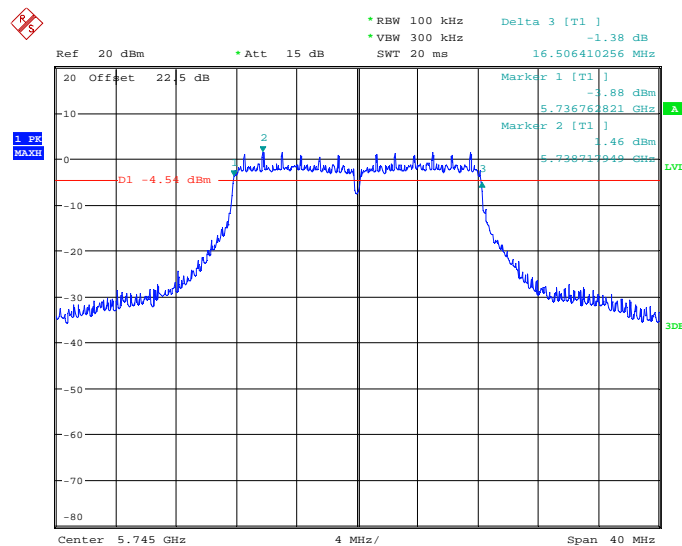
Measurement Uncertainty	60.80Hz
-------------------------	---------

Measurement Result:

Mode	Channel	Occupied 6dB Bandwidth (kHz)		conclusion
802.11a	149	Fig.1	16506	P
	157	Fig.2	16410	P
	165	Fig.3	16474	P
802.11n HT20	149	Fig.4	17628	P
	157	Fig.5	17628	P
	165	Fig.6	17692	P
802.11n HT40	151	Fig.7	35385	P
	159	Fig.8	35385	P

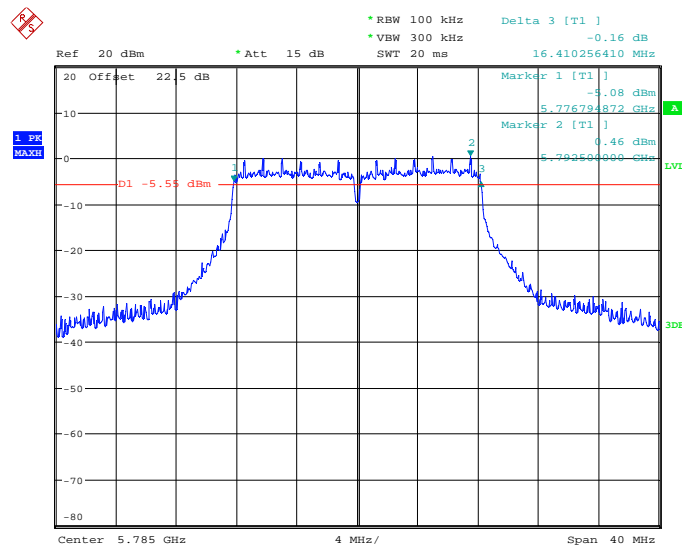
Conclusion: PASS

Test graphs as below:



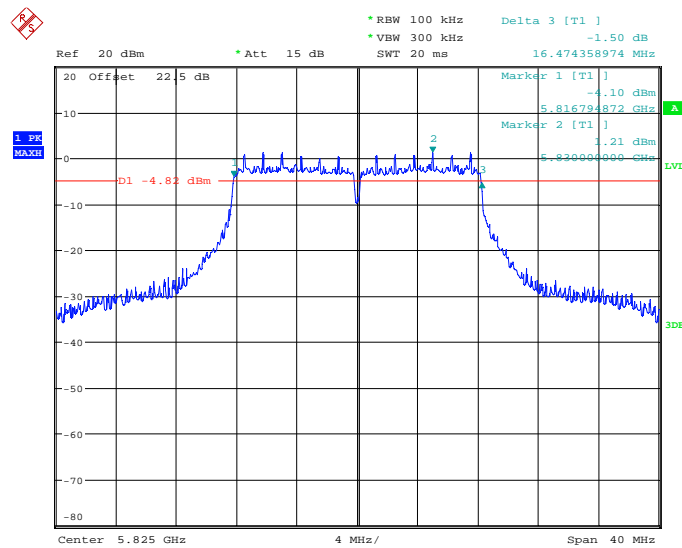
Date: 9.MAR.2013 15:34:43

Fig. 1 Occupied 6dB Bandwidth (802.11a, Ch 149)



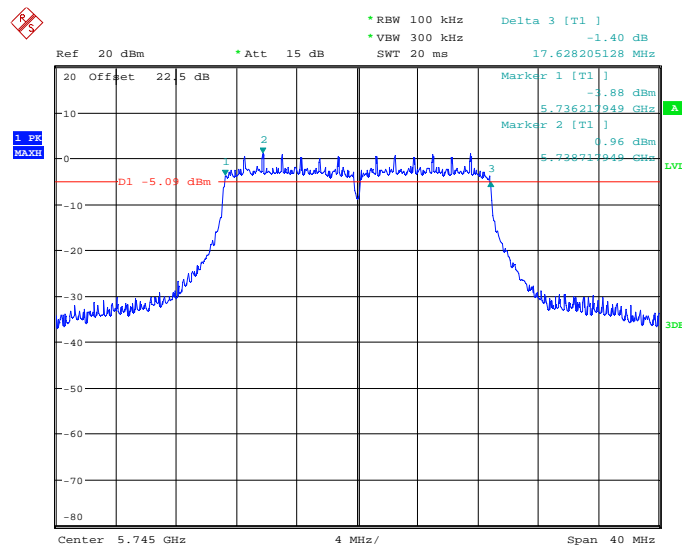
Date: 9.MAR.2013 15:37:05

Fig. 2 Occupied 6dB Bandwidth (802.11a, Ch 157)



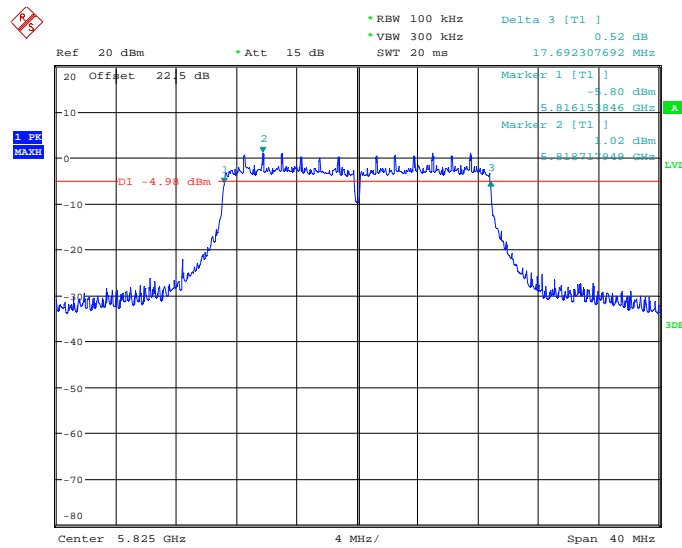
Date: 9.MAR.2013 15:38:22

Fig. 3 Occupied 6dB Bandwidth (802.11a, Ch 165)



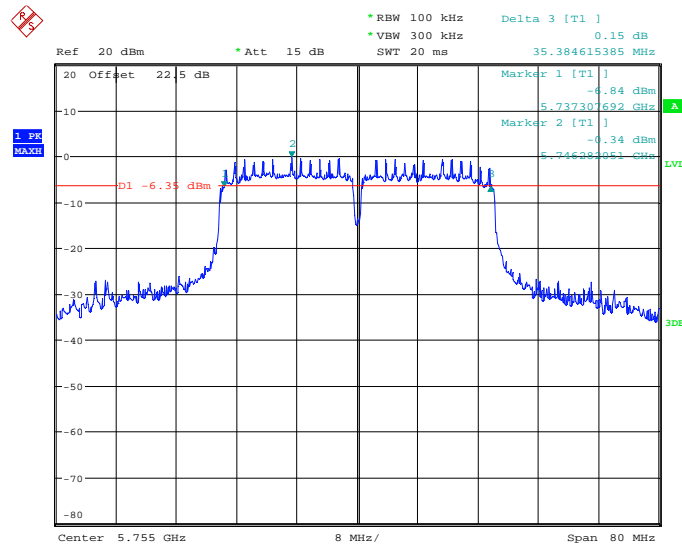
Date: 9.MAR.2013 15:40:26

Fig. 4 Occupied 6dB Bandwidth (802.11n-HT20, Ch 149)



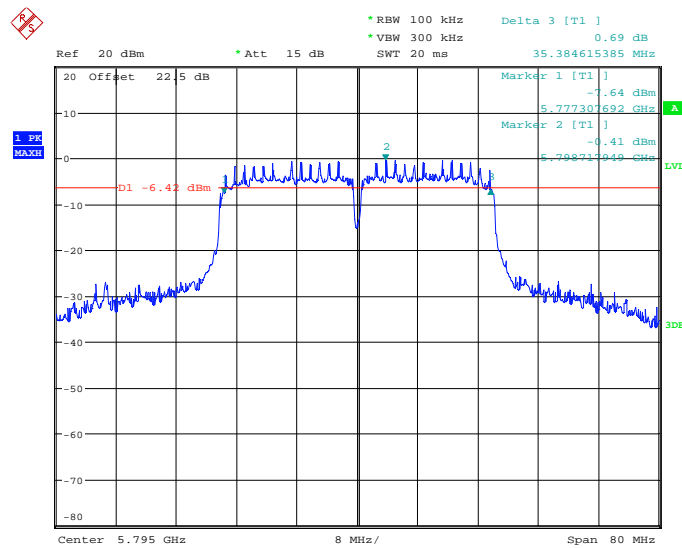
Date: 9.MAR.2013 15:43:03

Fig. 5 Occupied 6dB Bandwidth (802.11n-HT20, Ch 157)



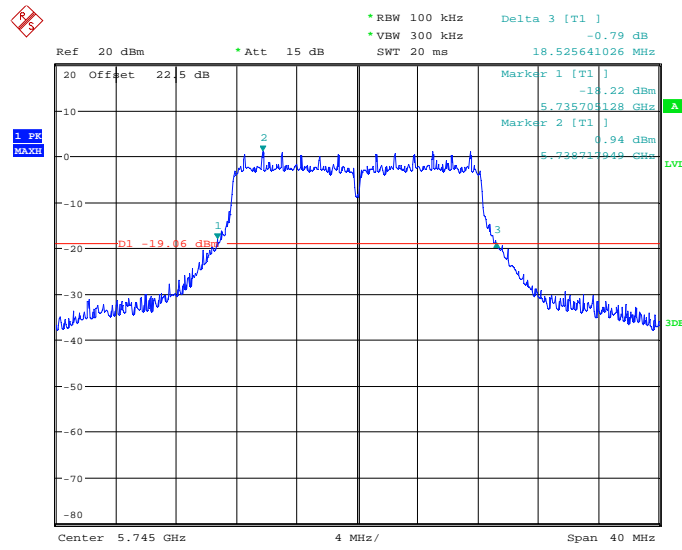
Date: 9.MAR.2013 15:44:54

Fig. 6 Occupied 6dB Bandwidth (802.11n-HT20, Ch 165)



Date: 9.MAR.2013 15:46:47

Fig. 7 Occupied 6dB Bandwidth (802.11n-HT40, Ch 151)



Date: 9.MAR.2013 15:49:32

Fig. 8 Occupied 6dB Bandwidth (802.11n-HT40, Ch 157)

A.5. Transmitter Spurious Emission

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247 (d)	20dB below peak output power in 100 kHz bandwidth

The measurement is made according to ANSI C63.4 and KDB558074

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)).

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Measurement Uncertainty:

Frequency Range	Uncertainty
30MHz ≤ f ≤ 2GHz	0.63
2GHz ≤ f ≤ 3.6GHz	0.82
3.6GHz ≤ f ≤ 8GHz	1.55
8GHz ≤ f ≤ 20GHz	1.86
20GHz ≤ f ≤ 22GHz	1.90
22GHz ≤ f ≤ 26GHz	2.20

A.5.1 Transmitter Spurious Emission - Conducted

Measurement Results:

802.11a mode

MODE	Channel	Frequency Range	Test Results	Conclusion
802.11a	149	5.745 GHz	Fig.9	P
		30 MHz ~ 12 GHz	Fig.10	P
		12 GHz ~ 25 GHz	Fig.11	P
		25 GHz ~ 40 GHz	Fig.12	P
	157	5.785 GHz	Fig.13	P
		30 MHz ~ 12 GHz	Fig.14	P
		12 GHz ~ 25 GHz	Fig.15	P
		25 GHz ~ 40 GHz	Fig.16	P
	165	5.825 GHz	Fig.17	P
		30 MHz ~ 12 GHz	Fig.18	P
		12 GHz ~ 25 GHz	Fig.19	P
		25 GHz ~ 40 GHz	Fig.20	P

802.11n-HT20 mode

MODE	Channel	Frequency Range	Test Results	Conclusion
802.11n HT20	149	5.745 GHz	Fig.21	P
		30 MHz ~ 12 GHz	Fig.22	P
		12 GHz ~ 25 GHz	Fig.23	P
		25 GHz ~ 40 GHz	Fig.24	P
	157	5.785 GHz	Fig.25	P
		30 MHz ~ 12 GHz	Fig.26	P
		12 GHz ~ 25 GHz	Fig.27	P
		25 GHz ~ 40 GHz	Fig.28	P
	165	5.825 GHz	Fig.29	P
		30 MHz ~ 12 GHz	Fig.30	P
		12 GHz ~ 25 GHz	Fig.31	P
		25 GHz ~ 40 GHz	Fig.32	P

802.11n-HT20 mode

MODE	Channel	Frequency Range	Test Results	Conclusion
802.11n (40MHz)	151	5.755 GHz	Fig.33	P
		30 MHz ~ 12 GHz	Fig.34	P
		12 GHz ~ 25 GHz	Fig.35	P
		25 GHz ~ 40 GHz	Fig.36	P
	159	5.795 GHz	Fig.37	P
		30 MHz ~ 12 GHz	Fig.38	P
		12 GHz ~ 25 GHz	Fig.39	P
		25 GHz ~ 40 GHz	Fig.40	P

Conclusion: PASS

The worse case is listed as follows,

802.11a

Channel	Worse case results	Frequency(MHz)	Amplitude of emission(dBm)	Limit(dBm)	Margin (dB)
149	Fig.12	39302.885	-33.91	-19.12	14.79
157	Fig.16	38365.385	-32.71	-19.85	12.86
165	Fig.20	38413.462	-33.69	-19.09	14.60

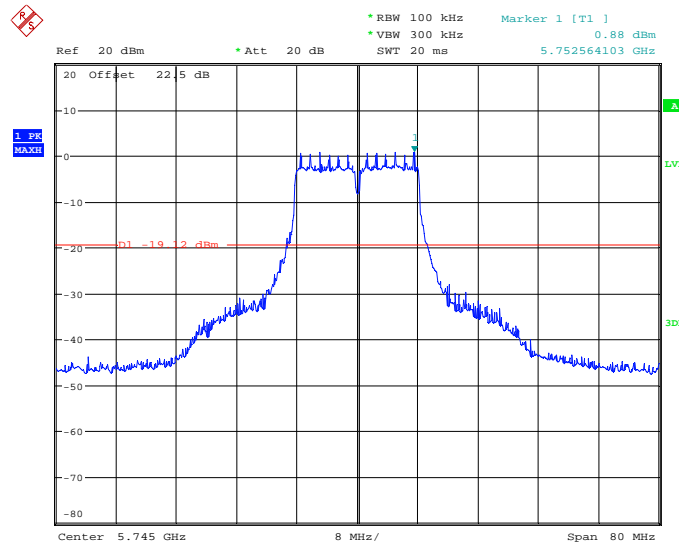
802.11n-20M

Channel	Worse case results	Frequency(MHz)	Amplitude of emission(dBm)	Limit(dBm)	Margin (dB)
149	Fig.24	38413.462	-32.85	-19.27	13.58
157	Fig.28	38413.462	-34.21	-19.77	14.44
165	Fig.32	38365.385	-33.36	-18.82	14.54

802.11n-40M

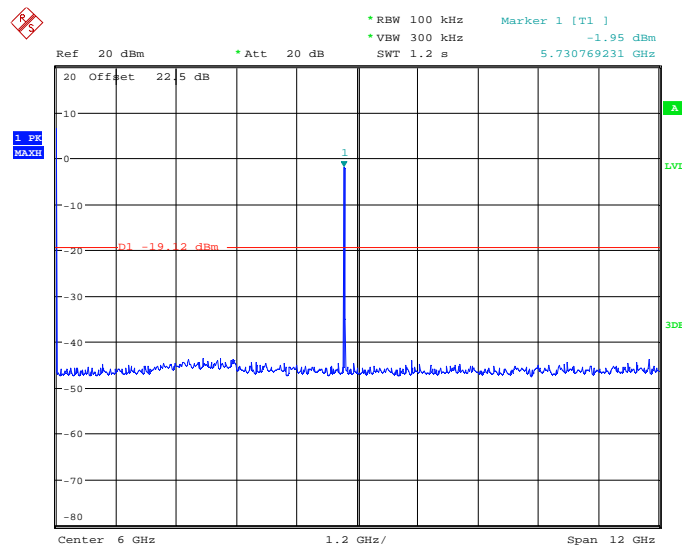
Channel	Worse case results	Frequency(MHz)	Amplitude of emission(dBm)	Limit(dBm)	Margin (dB)
151	Fig.36	38365.385	-33.57	-20.37	13.20
159	Fig.40	38437.500	-33.57	-20.49	13.08

Test graphs as below:



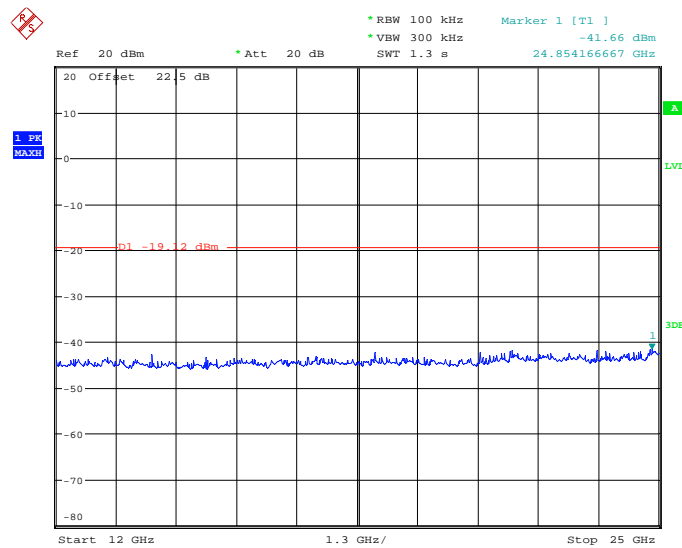
Date: 9.MAR.2013 16:10:54

Fig. 9 Conducted Spurious Emission (802.11a, Ch149, Center Frequency)



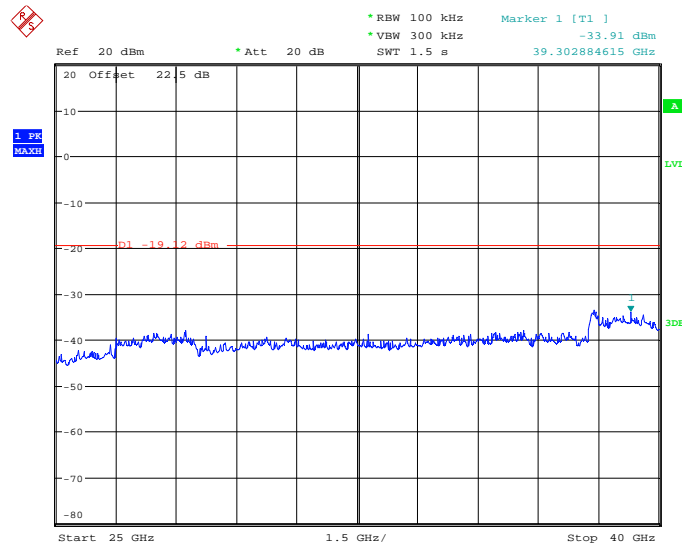
Date: 9.MAR.2013 16:11:43

Fig. 10 Conducted Spurious Emission (802.11a, Ch149, 30 MHz-12 GHz)



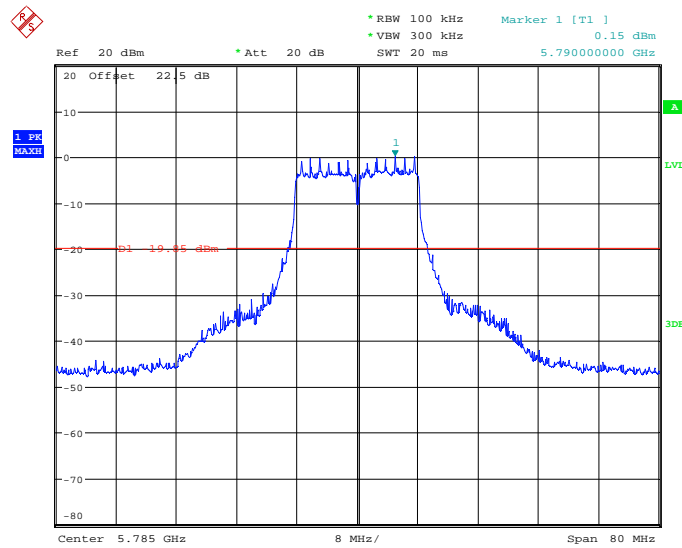
Date: 9.MAR.2013 16:15:50

Fig. 11 Conducted Spurious Emission (802.11a, Ch149, 12 GHz-25 GHz)



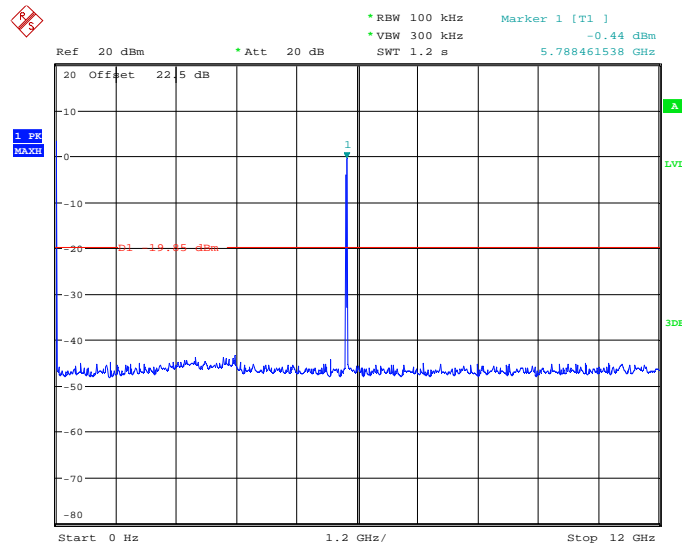
Date: 9.MAR.2013 16:16:11

Fig. 12 Conducted Spurious Emission (802.11a, Ch149, 25 GHz-40 GHz)



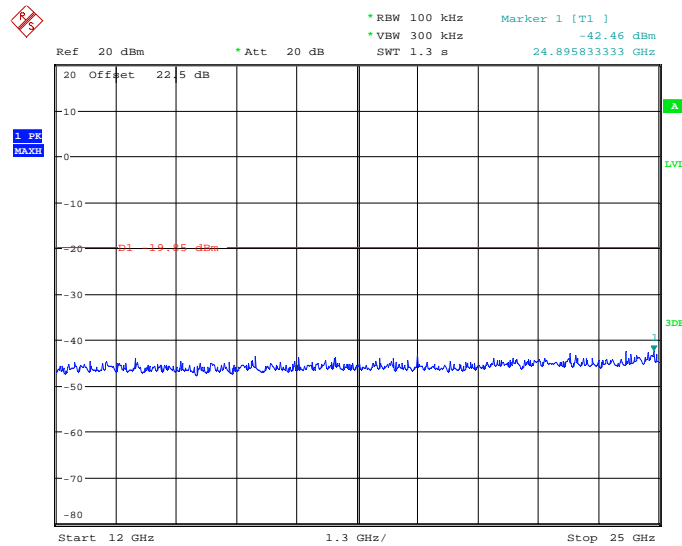
Date: 9.MAR.2013 16:17:06

Fig. 13 Conducted Spurious Emission (802.11a, Ch157, Center Frequency)



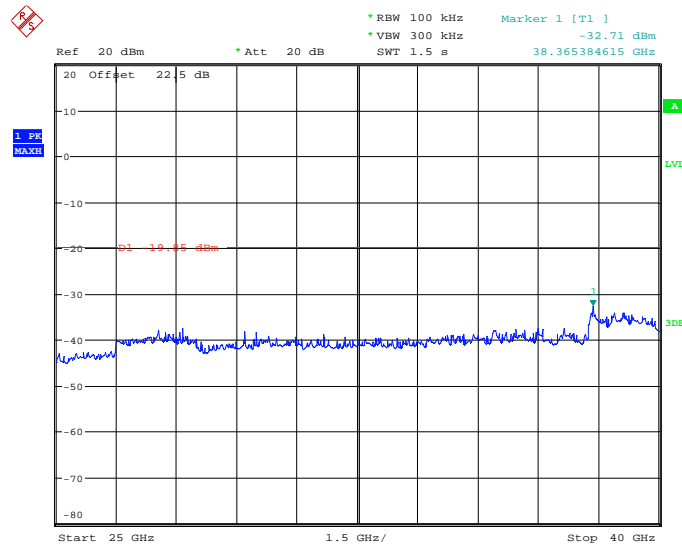
Date: 9.MAR.2013 16:17:30

Fig. 14 Conducted Spurious Emission (802.11a, Ch157, 30 MHz-12 GHz)



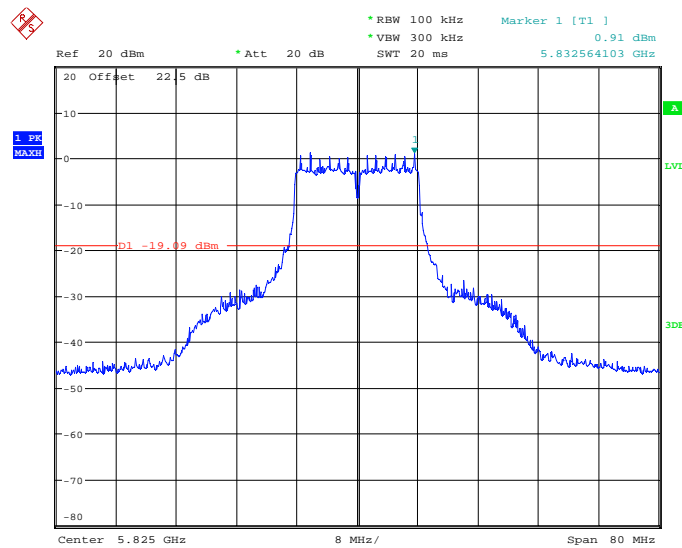
Date: 9.MAR.2013 16:17:46

Fig. 15 Conducted Spurious Emission (802.11a, Ch157, 12 GHz-25 GHz)



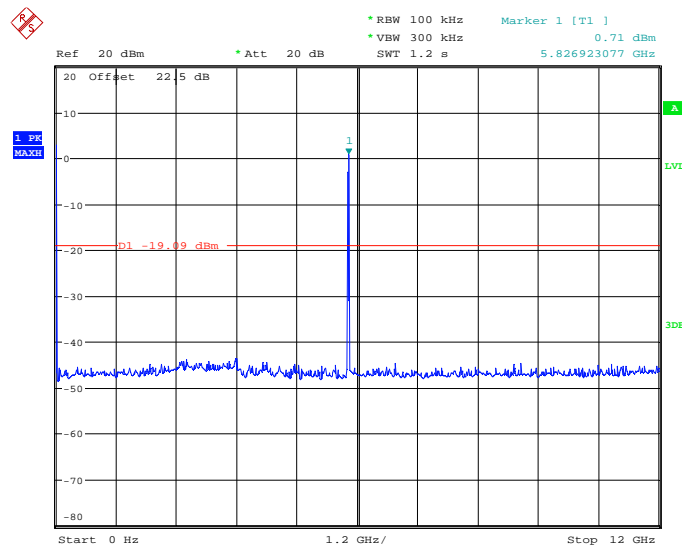
Date: 9.MAR.2013 16:18:10

Fig. 16 Conducted Spurious Emission (802.11a, Ch157, 25 GHz-40 GHz)



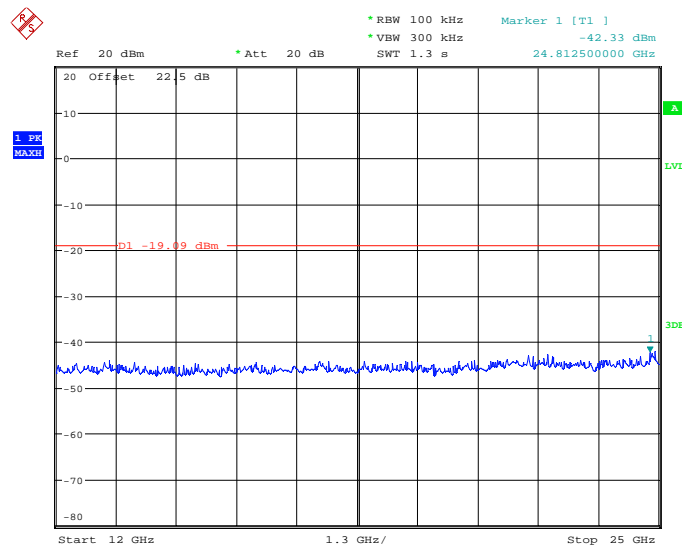
Date: 9.MAR.2013 16:19:23

Fig. 17 Conducted Spurious Emission (802.11a, Ch165, Center Frequency)



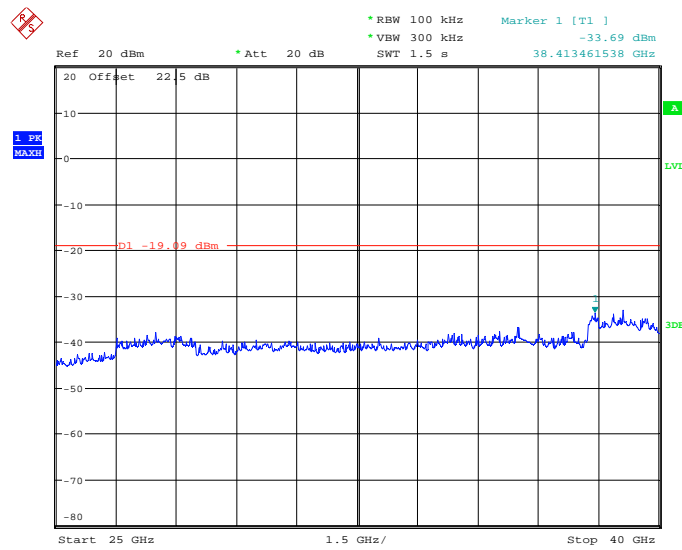
Date: 9.MAR.2013 16:19:40

Fig. 18 Conducted Spurious Emission (802.11a, Ch165, 30 MHz-12 GHz)



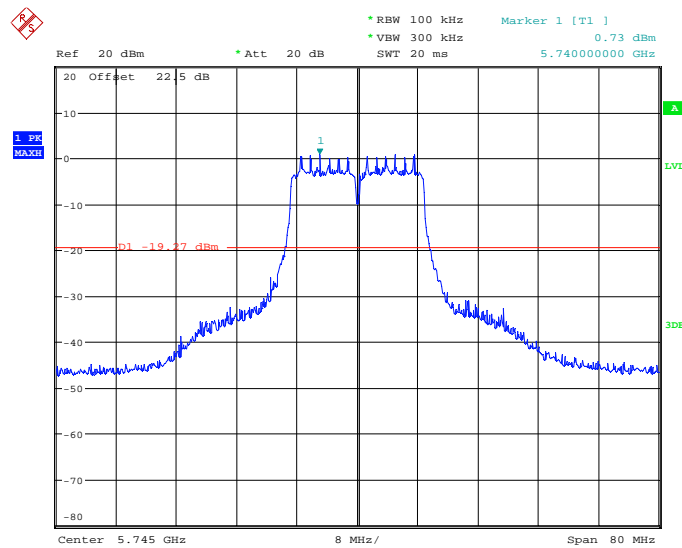
Date: 9.MAR.2013 16:20:00

Fig. 19 Conducted Spurious Emission (802.11a, Ch165, 12 GHz-25 GHz)



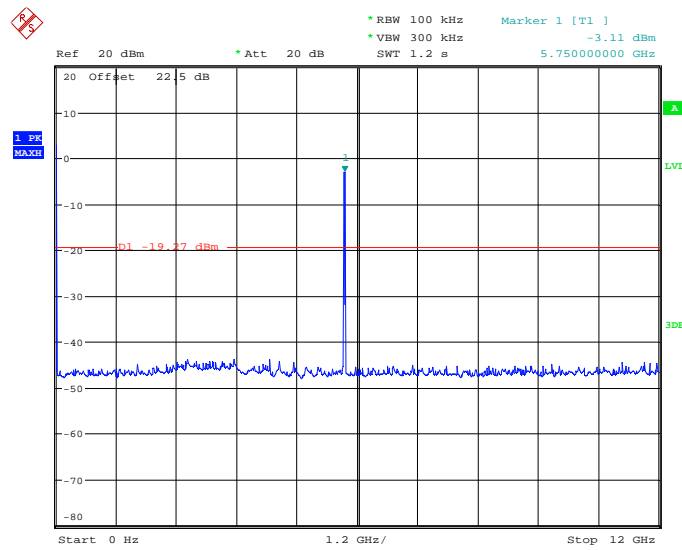
Date: 9.MAR.2013 16:20:19

Fig. 20 Conducted Spurious Emission (802.11a, Ch165, 25 GHz-40 GHz)



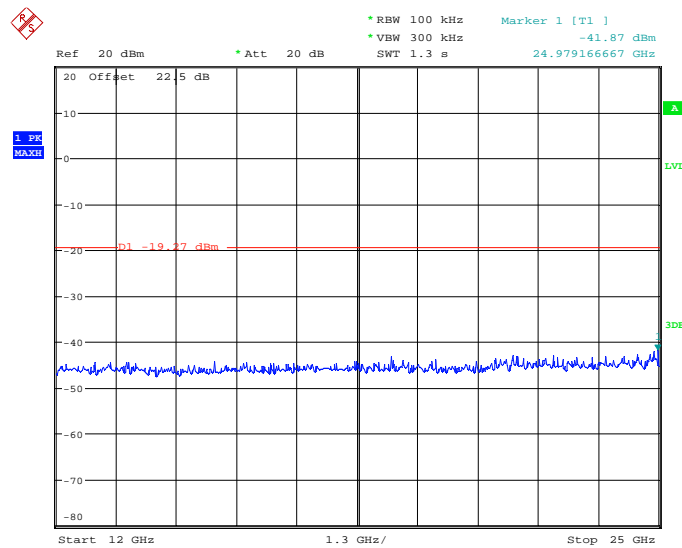
Date: 9.MAR.2013 16:45:33

Fig. 21 Conducted Spurious Emission (802.11n-HT20, Ch149, Center Frequency)



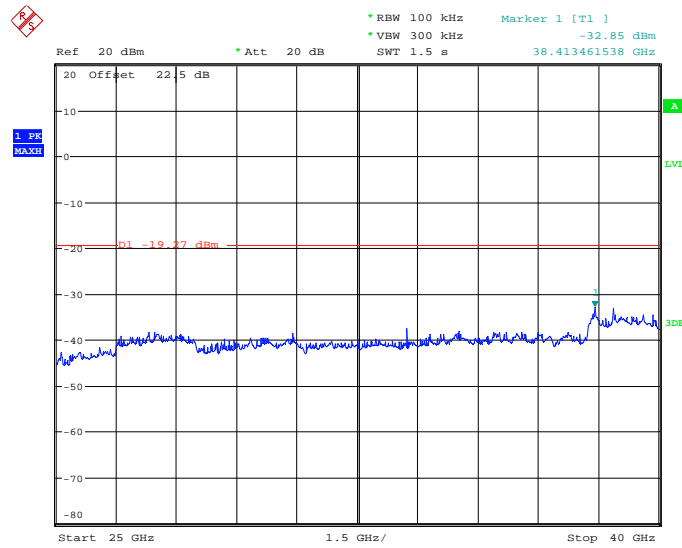
Date: 9.MAR.2013 16:45:58

Fig. 22 Conducted Spurious Emission (802.11n-HT20, Ch149, 30 MHz-12 GHz)



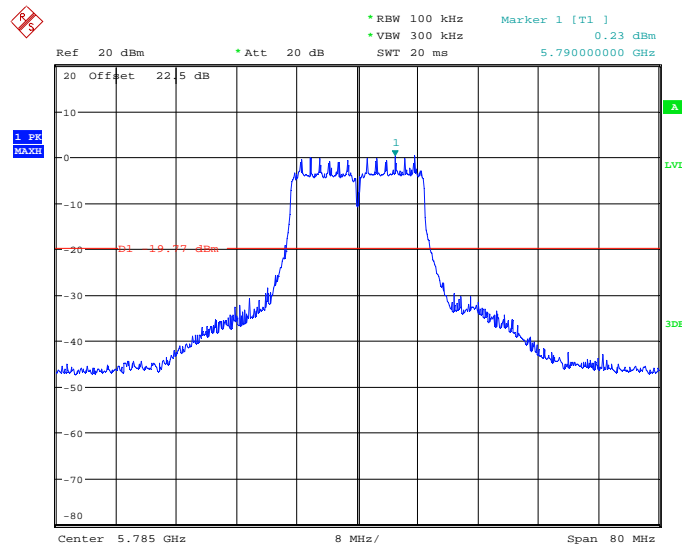
Date: 9.MAR.2013 16:46:15

Fig. 23 Conducted Spurious Emission (802.11n-HT20, Ch149, 12 GHz-25 GHz)



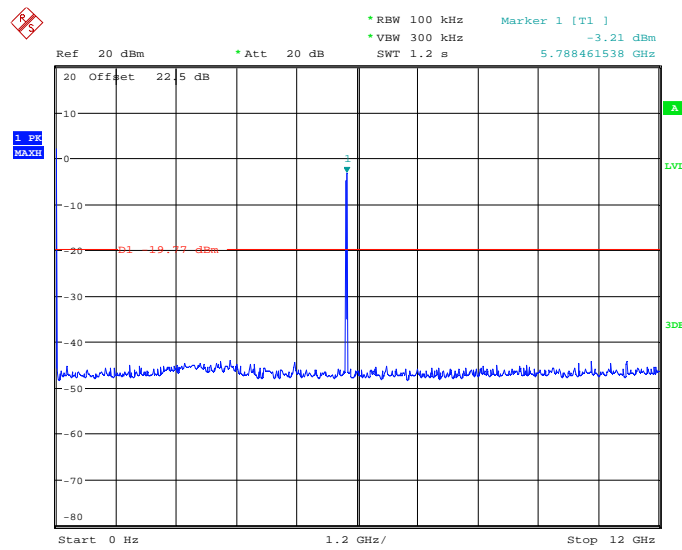
Date: 9.MAR.2013 16:46:36

Fig. 24 Conducted Spurious Emission (802.11n-HT20, Ch149, 25 GHz-40 GHz)



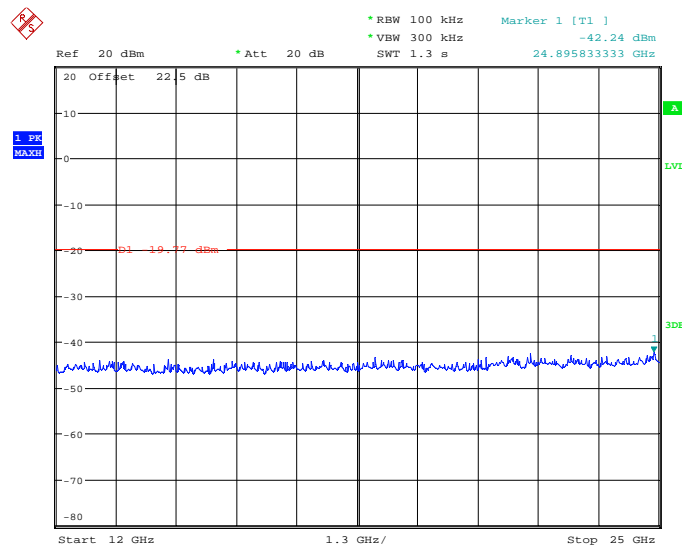
Date: 9.MAR.2013 16:47:33

Fig. 25 Conducted Spurious Emission (802.11n-HT20, Ch157, Center Frequency)



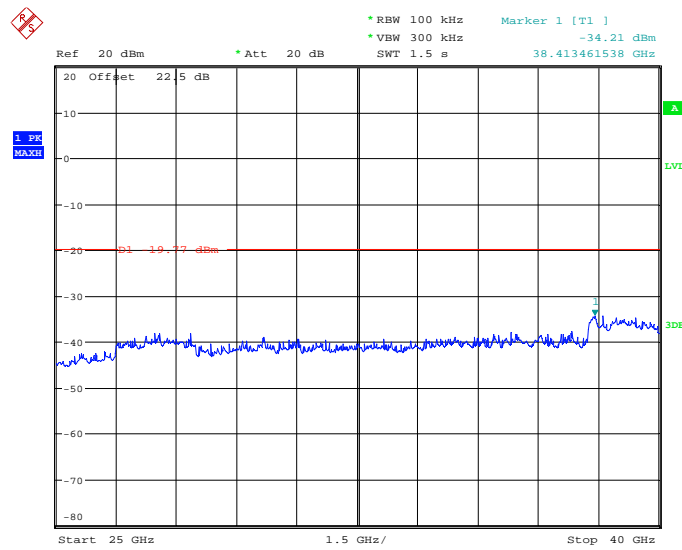
Date: 9.MAR.2013 16:47:57

Fig. 26 Conducted Spurious Emission (802.11n-HT20, Ch157, 30 MHz-12 GHz)



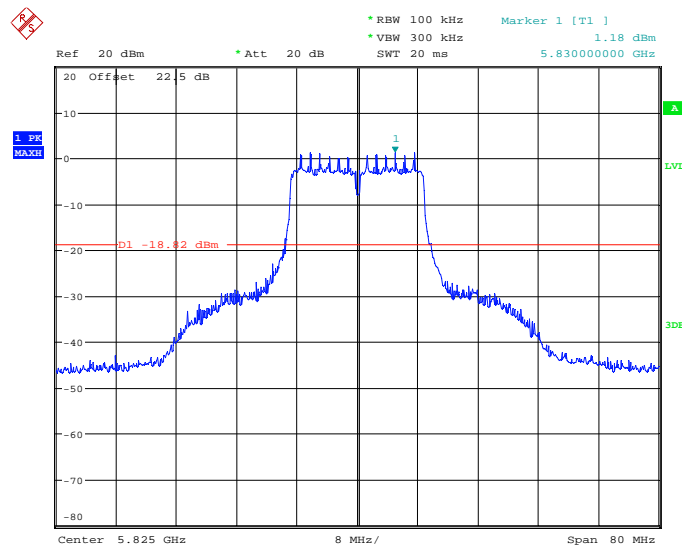
Date: 9.MAR.2013 16:48:26

Fig. 27 Conducted Spurious Emission (802.11n-HT20, Ch157, 12 GHz-25 GHz)



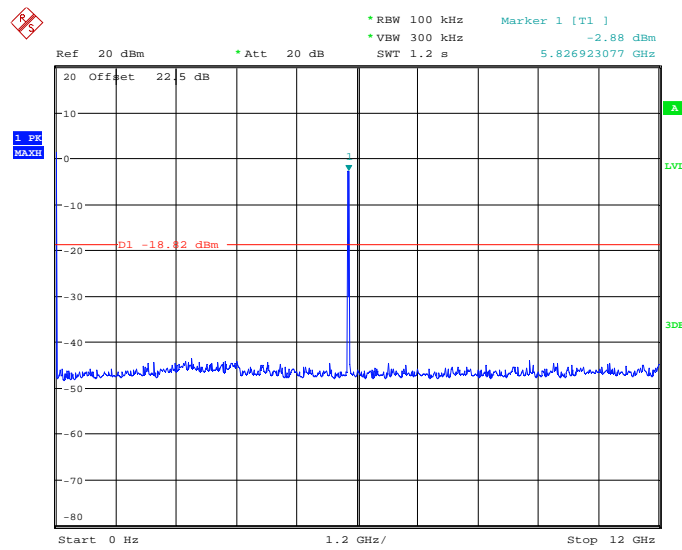
Date: 9.MAR.2013 16:48:42

Fig. 28 Conducted Spurious Emission (802.11n-HT20, Ch157, 25 GHz-40 GHz)



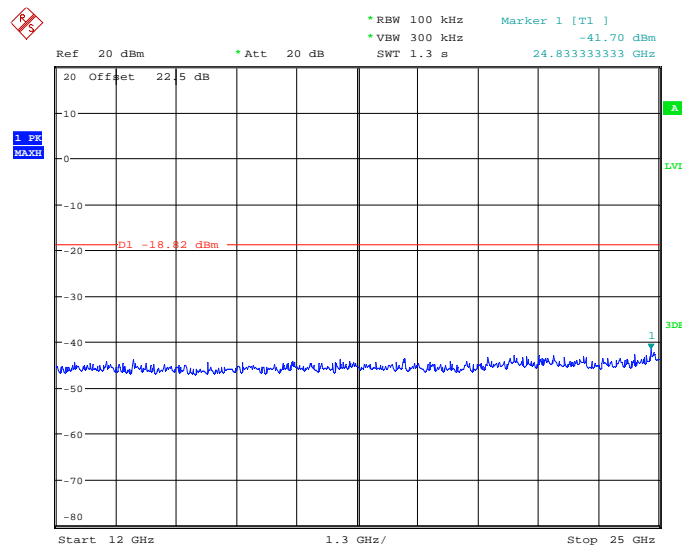
Date: 9.MAR.2013 16:49:50

Fig. 29 Conducted Spurious Emission (802.11n-HT20, Ch165, Center Frequency)



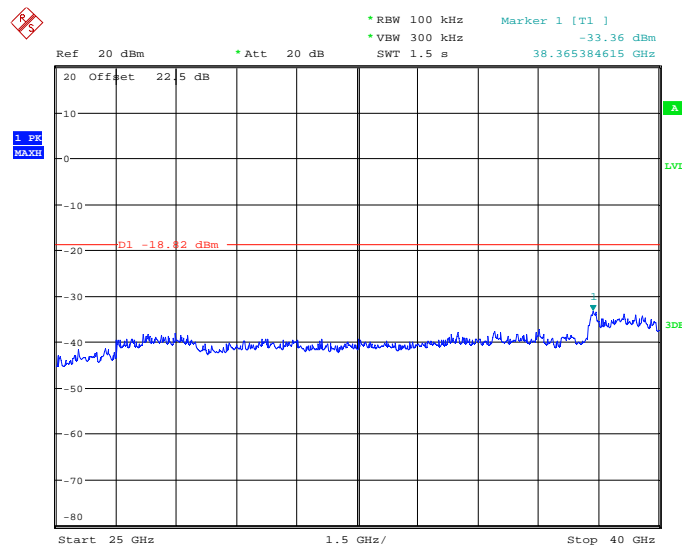
Date: 9.MAR.2013 16:50:06

Fig. 30 Conducted Spurious Emission (802.11n-HT20, Ch165, 30 MHz-12 GHz)



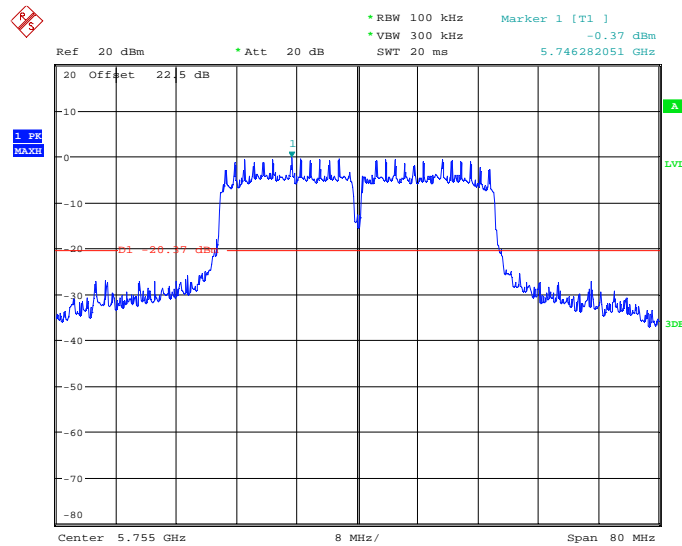
Date: 9.MAR.2013 16:50:33

Fig. 31 Conducted Spurious Emission (802.11n-HT20, Ch165, 12 GHz-25 GHz)



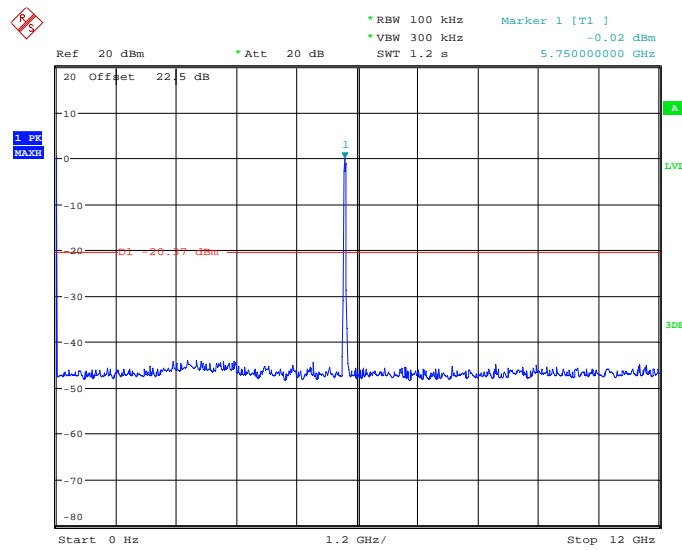
Date: 9.MAR.2013 16:51:02

Fig. 32 Conducted Spurious Emission (802.11n-HT20, Ch165, 25 GHz-40 GHz)



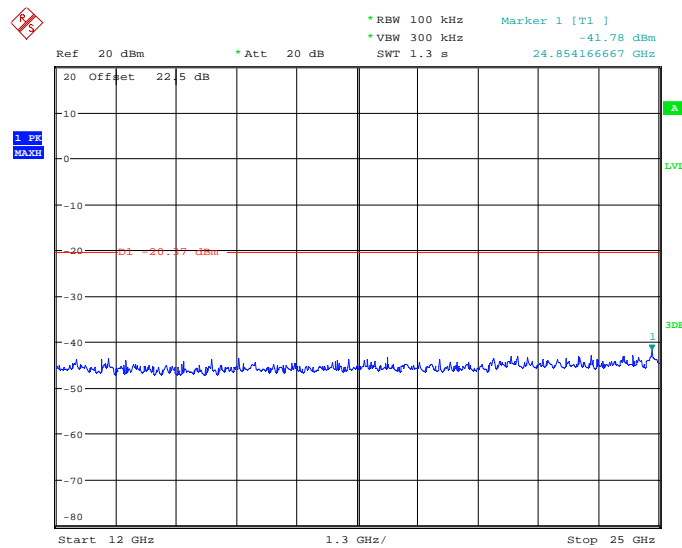
Date: 9.MAR.2013 16:52:07

Fig. 33 Conducted Spurious Emission (802.11n-HT40, Ch151, Center Frequency)



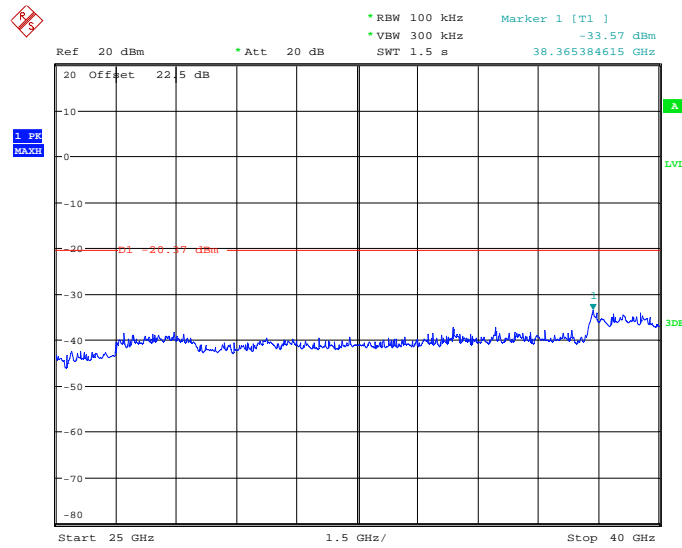
Date: 9.MAR.2013 16:52:23

Fig. 34 Conducted Spurious Emission (802.11n-HT40, Ch151, 30 MHz-12 GHz)



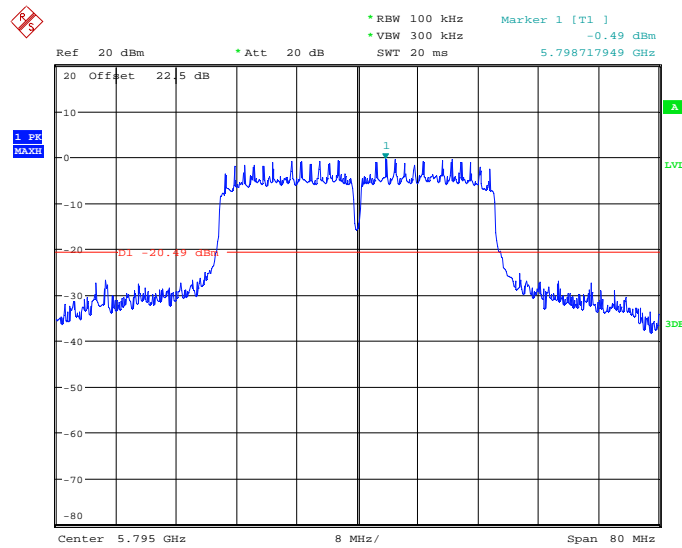
Date: 9.MAR.2013 16:52:46

Fig. 35 Conducted Spurious Emission (802.11n-HT40, Ch151, 12 GHz-25 GHz)



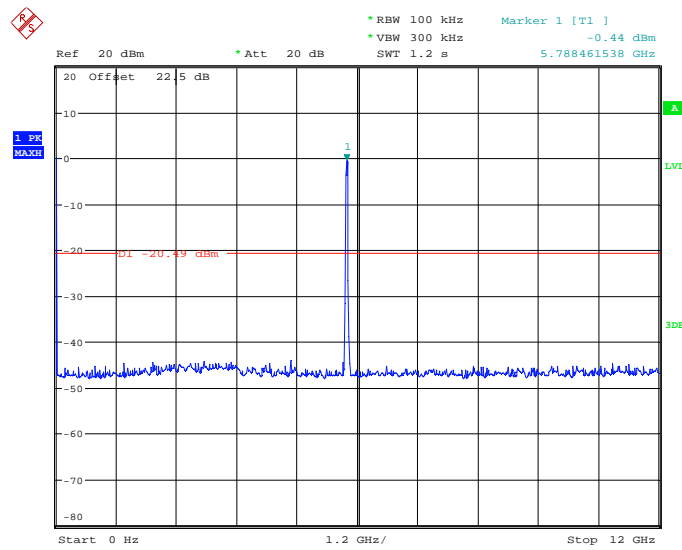
Date: 9.MAR.2013 16:53:08

Fig. 36 Conducted Spurious Emission (802.11n-HT40, Ch151, 25 GHz-40 GHz)



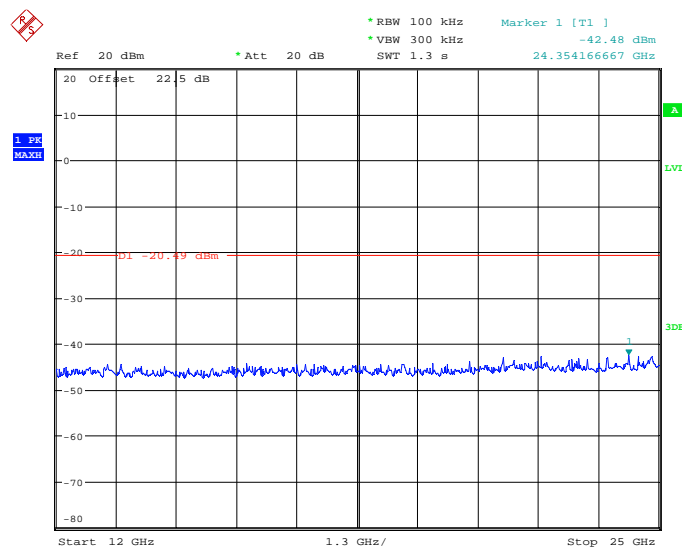
Date: 9.MAR.2013 16:56:12

Fig. 37 Conducted Spurious Emission (802.11n-HT40, Ch159, Center Frequency)



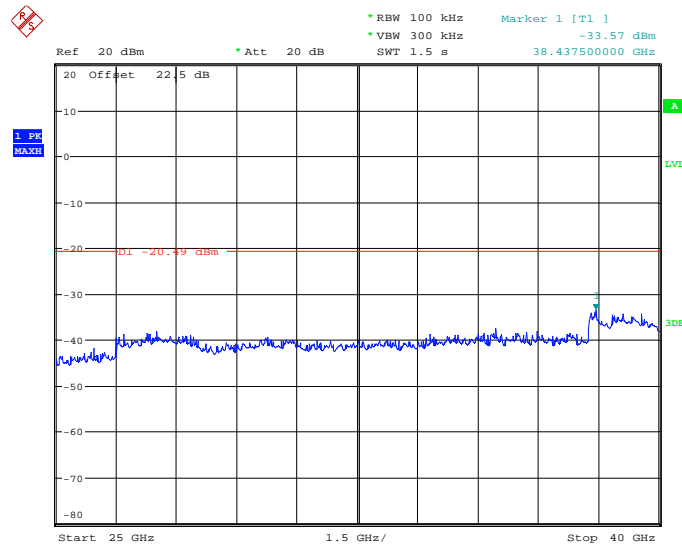
Date: 9.MAR.2013 16:56:33

Fig. 38 Conducted Spurious Emission (802.11n-HT40, Ch159, 30 MHz-12 GHz)



Date: 9.MAR.2013 16:56:50

Fig. 39 Conducted Spurious Emission (802.11n-HT40, Ch159, 12 GHz-25 GHz)



Date: 9.MAR.2013 16:57:08

Fig. 40 Conducted Spurious Emission (802.11n-HT40, Ch151, 25 GHz-40 GHz)

A.5.2 Transmitter Spurious Emission - Radiated

Limit in restricted band:

Measurement Results:

802.11a mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11a	149	30 MHz ~1 GHz	Fig.41	P
		1 GHz ~ 3 GHz	Fig.42	P
		3 GHz ~ 6 GHz	Fig.43	P
		6 GHz ~ 18 GHz	Fig.44	P
		18 GHz ~ 26.5 GHz	Fig.45	P
	157	30 MHz ~1 GHz	Fig.46	P
		1 GHz ~ 3 GHz	Fig.47	P
		3 GHz ~ 6 GHz	Fig.48	P
		6 GHz ~ 18 GHz	Fig.49	P
		18 GHz ~ 26.5 GHz	Fig.50	P
	165	30 MHz ~1 GHz	Fig.51	P
		1 GHz ~ 3 GHz	Fig.52	P
		3 GHz ~ 6 GHz	Fig.53	P
		6 GHz ~ 18 GHz	Fig.54	P
		18 GHz ~ 26.5 GHz	Fig.55	P
/	All channels	18 GHz~ 26 GHz	Fig.56	P

802.11n-HT20 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT20)	149	30 MHz ~1 GHz	Fig.57	P
		1 GHz ~ 3 GHz	Fig.58	P
		3 GHz ~ 6 GHz	Fig.59	P
		6 GHz ~ 18 GHz	Fig.60	P
		18 GHz ~ 26.5 GHz	Fig.61	P
	157	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
	165	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

802.11n-HT40 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT40)	151	30 MHz ~1 GHz	Fig.72	P
		1 GHz ~ 3 GHz	Fig.73	P
		3 GHz ~ 6 GHz	Fig.74	P
		6 GHz ~ 18 GHz	Fig.75	P
		18 GHz ~ 26.5 GHz	Fig.76	P
	159	30 MHz ~1 GHz	Fig.77	P
		1 GHz ~ 3 GHz	Fig.78	P
		3 GHz ~ 6 GHz	Fig.79	P
		6 GHz ~ 18 GHz	Fig.80	P
		18 GHz ~ 26.5 GHz	Fig.81	P
/	All channels	18 GHz~ 26 GHz	Fig.82	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:

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

802.11a

The worst case is measured in channel 165

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
21186.373	49.4	-34.4	46.1	37.722	VERTICAL
21184.369	49.3	-34.4	46.1	37.629	VERTICAL
21192.385	49.3	-34.4	46.1	37.582	HORIZONTAL
21182.365	49.3	-34.4	46.1	37.579	HORIZONTAL
21194.389	49.3	-34.4	46.1	37.572	VERTICAL
21188.377	49.3	-34.4	46.1	37.557	HORIZONTAL

802.11n-HT20

The worst case is measured in channel 165

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
21192.385	49.3	-34.4	46.1	37.641	HORIZONTAL
21186.373	49.3	-34.4	46.1	37.612	HORIZONTAL
21184.369	49.3	-34.4	46.1	37.584	HORIZONTAL
21190.381	49.3	-34.4	46.1	37.569	HORIZONTAL
21188.377	49.2	-34.4	46.1	37.482	HORIZONTAL
21180.361	49.2	-34.4	46.1	37.469	VERTICAL

802.11n-HT40

The worst case is measured in channel 159

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
21186.37275	49.4	-34.4	46.1	37.656	HORIZONTAL
21184.36874	49.4	-34.4	46.1	37.651	VERTICAL
21182.36473	49.3	-34.4	46.1	37.639	HORIZONTAL
21192.38477	49.3	-34.4	46.1	37.575	VERTICAL
21180.36072	49.3	-34.4	46.1	37.566	HORIZONTAL
21196.39279	49.3	-34.4	46.1	37.555	VERTICAL

Test graphs as below:

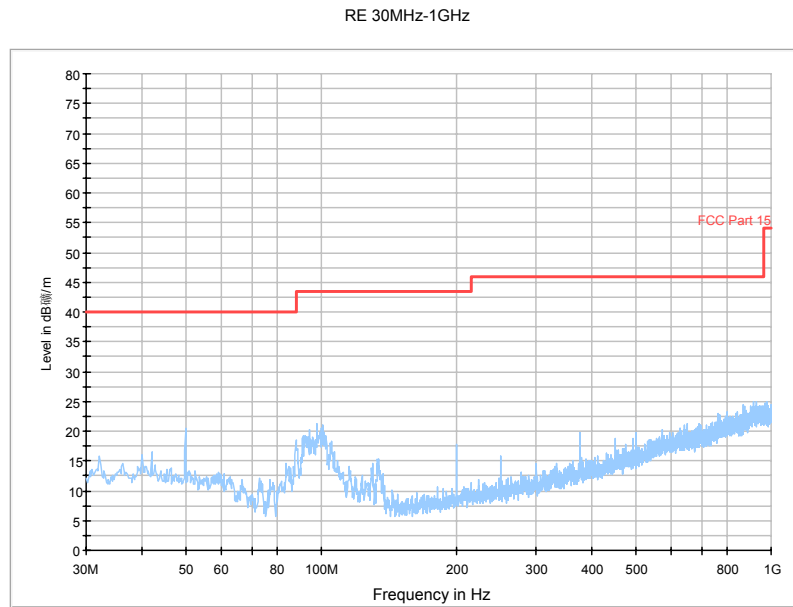


Fig. 41 Radiated Spurious Emission (802.11a, Ch149, 30 MHz-1 GHz)

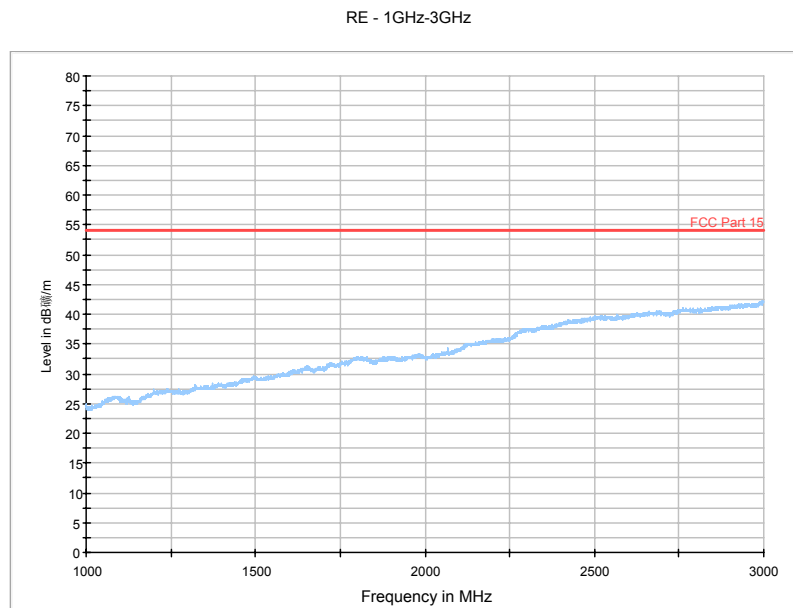


Fig. 42 Radiated Spurious Emission (802.11a, Ch149, 1 GHz-3 GHz)

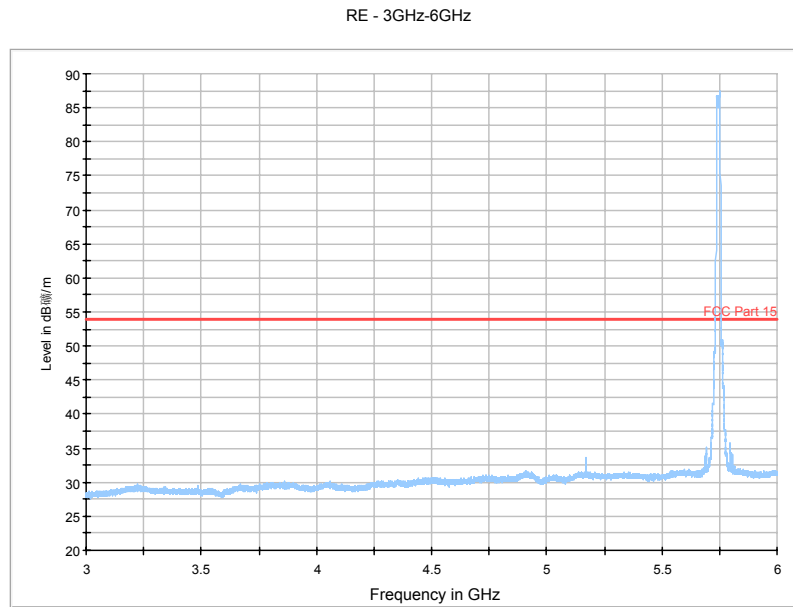


Fig. 43 Radiated Spurious Emission (802.11a, Ch149, 3 GHz-6 GHz)

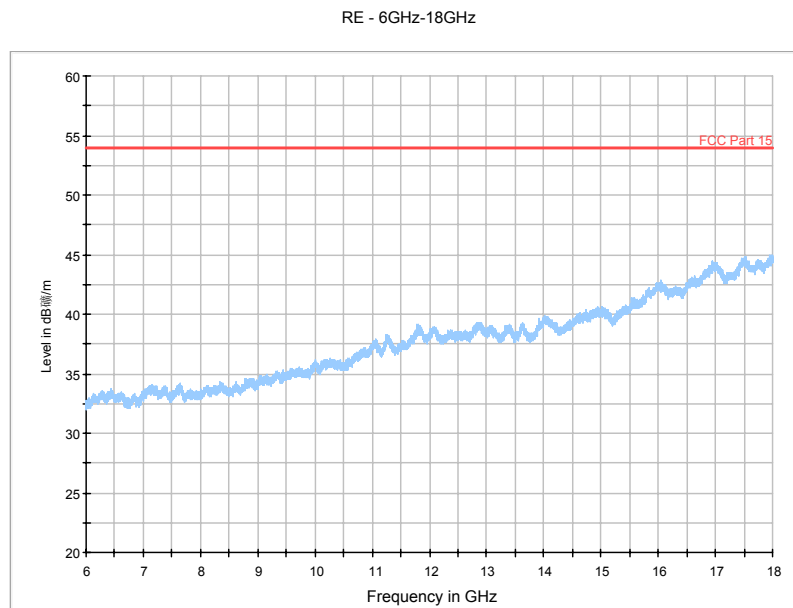


Fig. 44 Radiated Spurious Emission (802.11a, Ch149, 6 GHz-18 GHz)

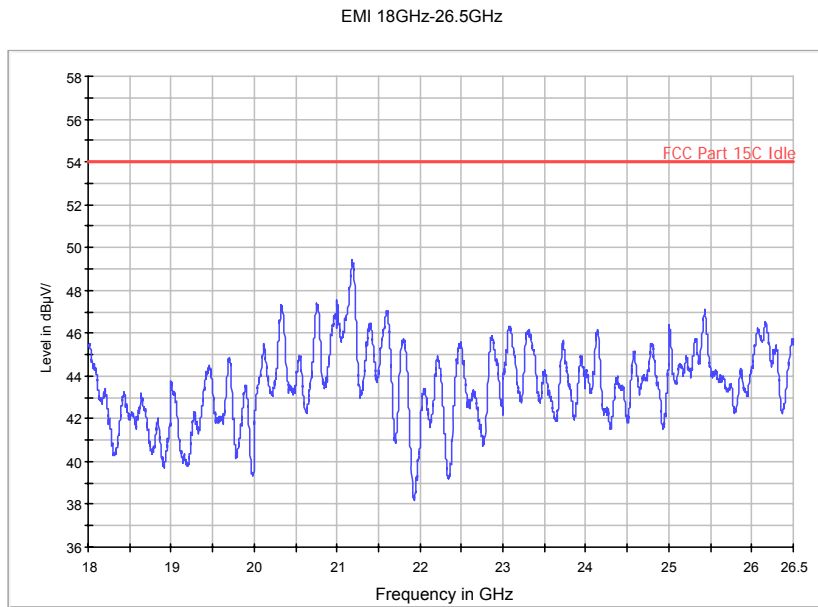


Fig. 45 Radiated Spurious Emission (802.11a, Ch149, 18 GHz-26.5 GHz)

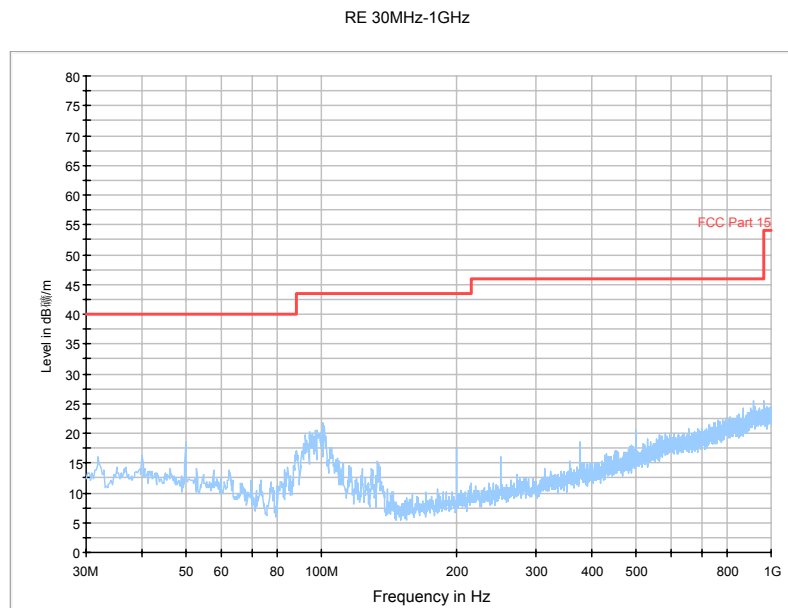


Fig. 46 Radiated Spurious Emission (802.11a, Ch157, 30 MHz-1 GHz)

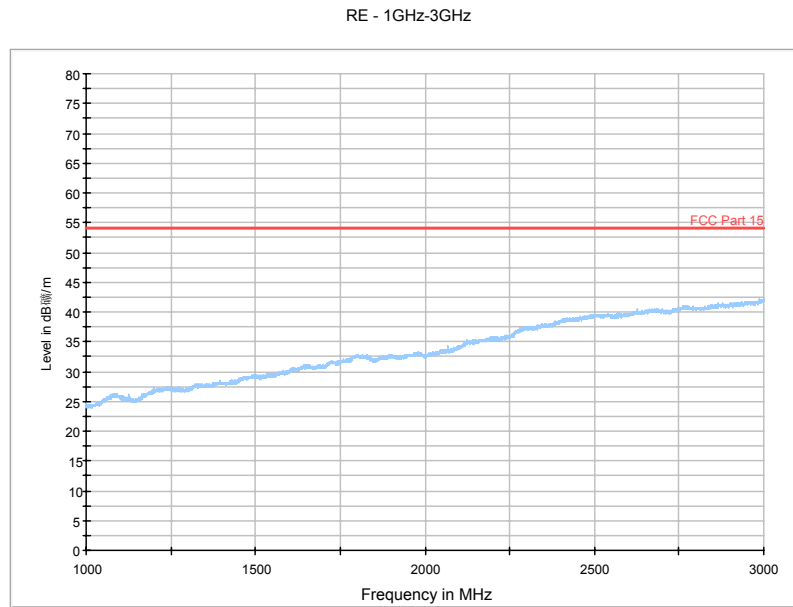


Fig. 47 Radiated Spurious Emission (802.11a, Ch157, 1 GHz-3 GHz)

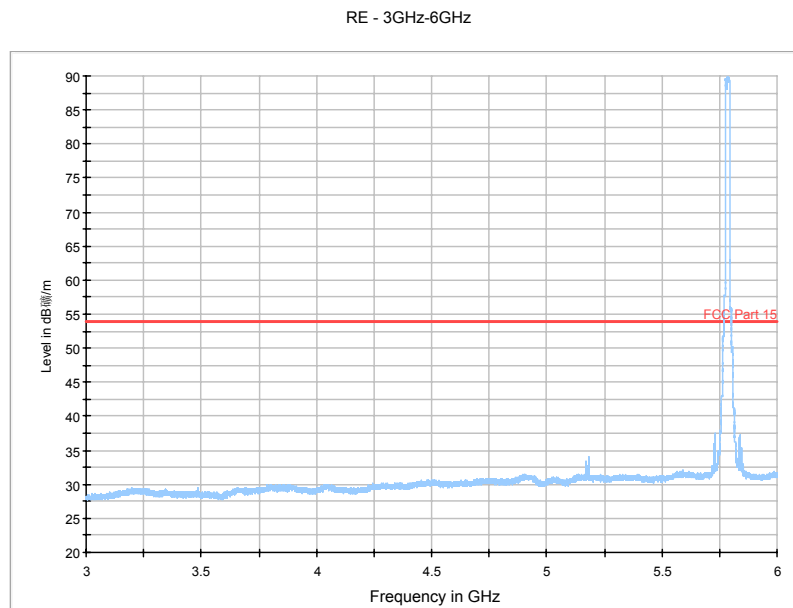


Fig. 48 Radiated Spurious Emission (802.11a, Ch157, 3 GHz-6 GHz)

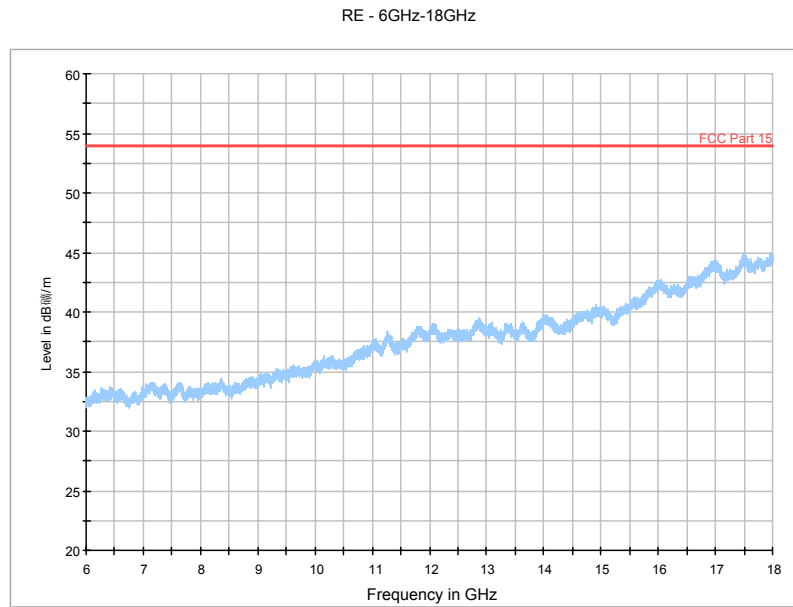


Fig. 49 Radiated Spurious Emission (802.11a, Ch157, 6 GHz-18 GHz)

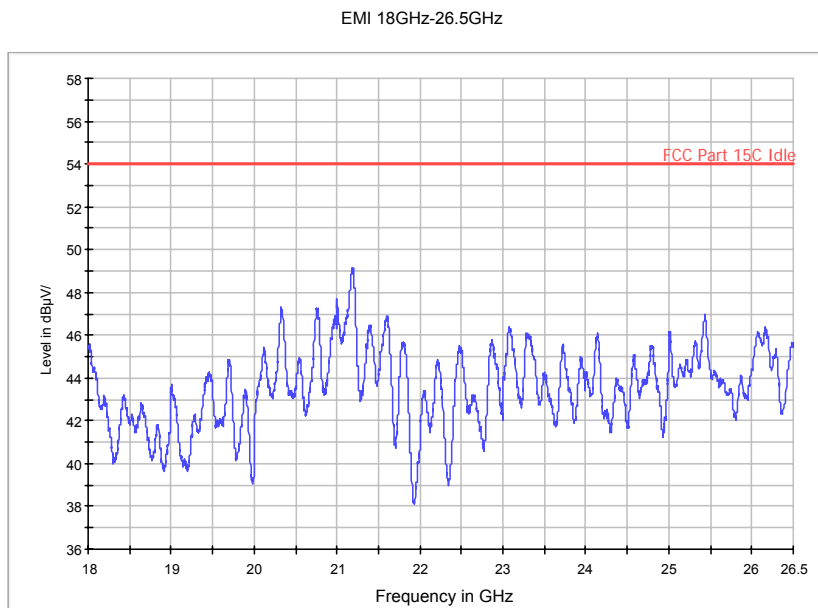


Fig. 50 Radiated Spurious Emission (802.11a, Ch157, 18 GHz-26.5 GHz)

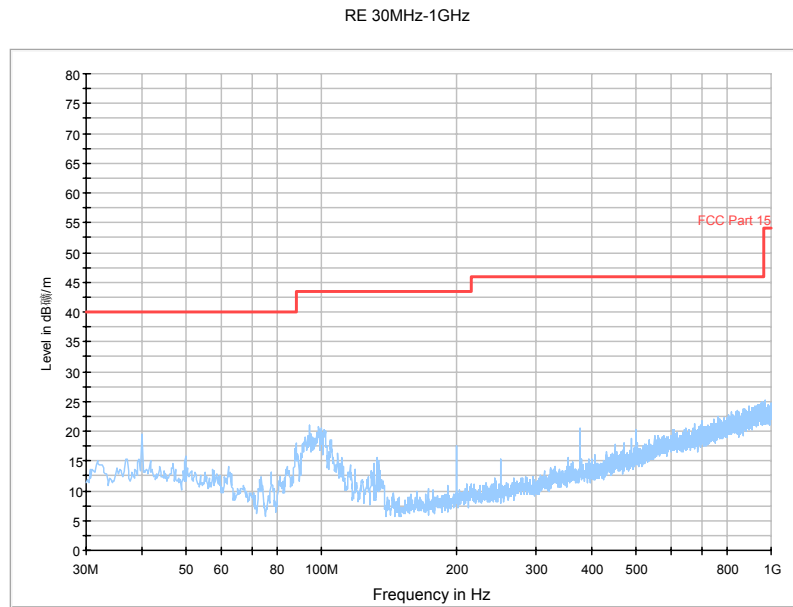


Fig. 51 Radiated Spurious Emission (802.11a, Ch165, 30 MHz-1 GHz)

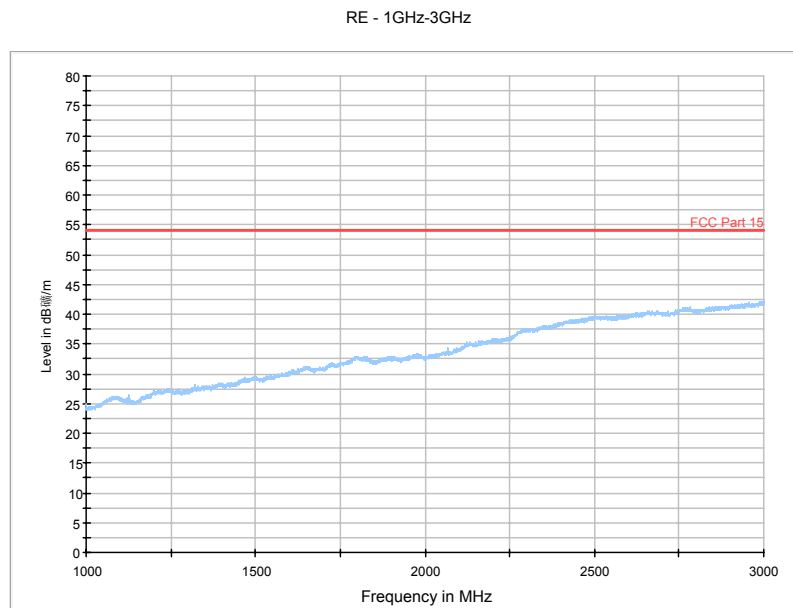


Fig. 52 Radiated Spurious Emission (802.11a, Ch165, 1 GHz-3 GHz)

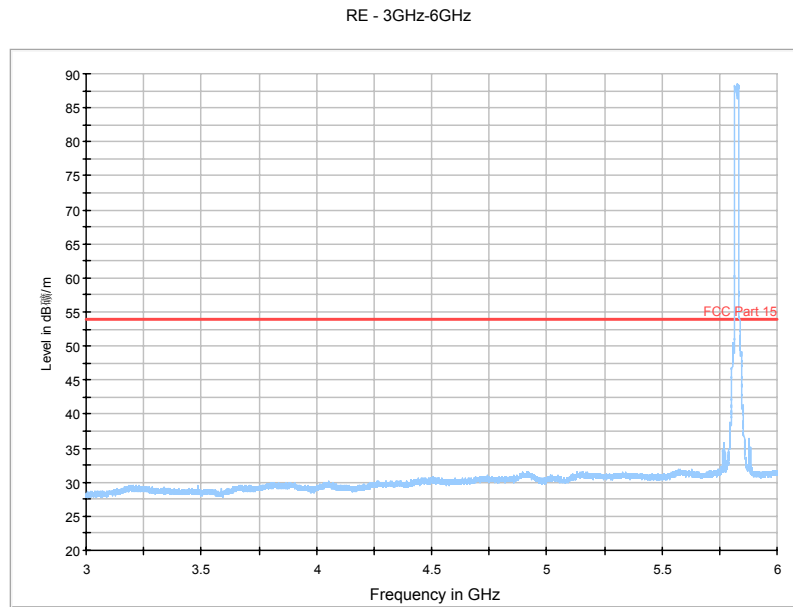


Fig. 53 Radiated Spurious Emission (802.11a, Ch165, 3 GHz-6 GHz)

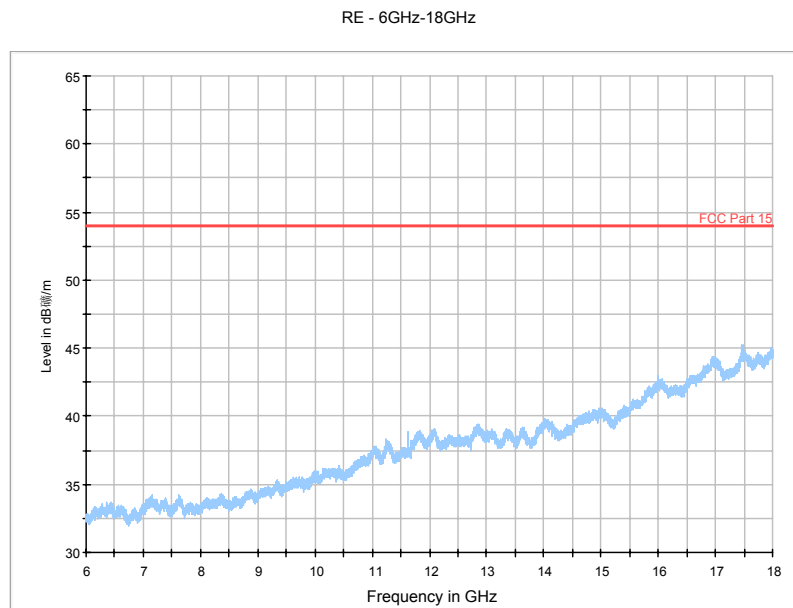


Fig. 54 Radiated Spurious Emission (802.11a, Ch165, 6 GHz-18 GHz)

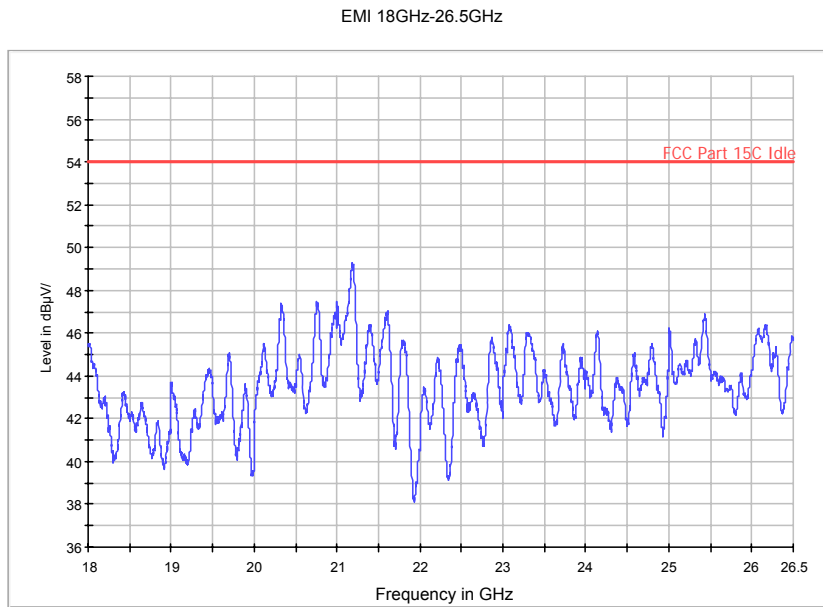


Fig. 55 Radiated Spurious Emission (802.11a, Ch165, 18 GHz-26.5 GHz)

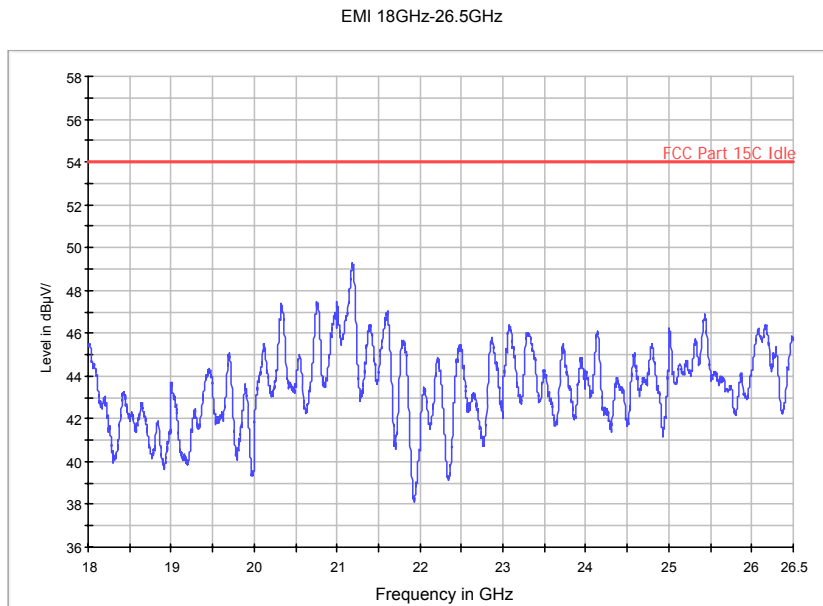


Fig. 56 Radiated emission: 802.11a, 26.5 GHz - 40 GHz

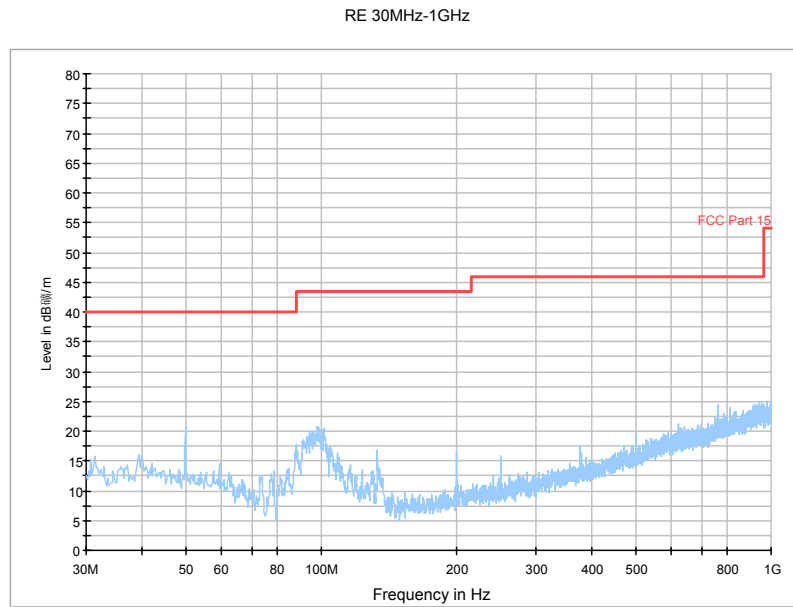


Fig. 57 Radiated Spurious Emission (802.11n-HT20, Ch149, 30 MHz-1 GHz)

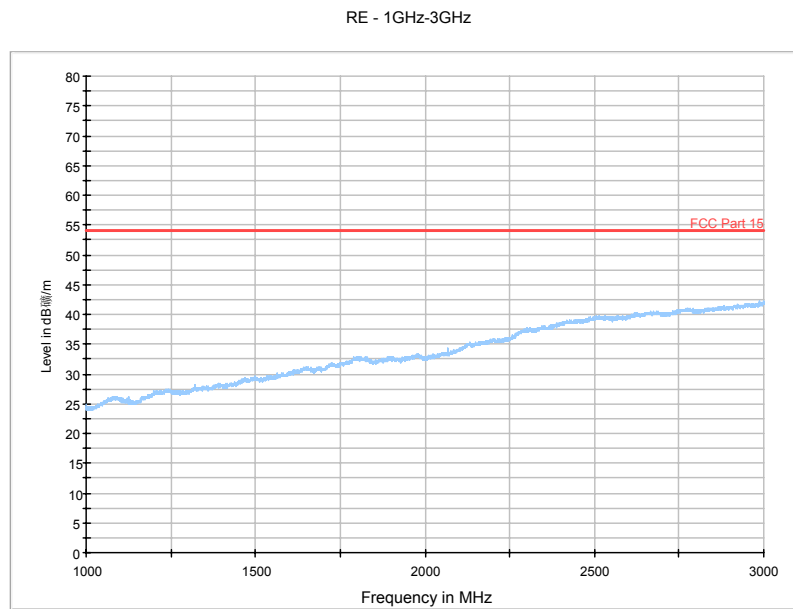


Fig. 58 Radiated Spurious Emission (802.11n-HT20, Ch149, 1 GHz-3 GHz)

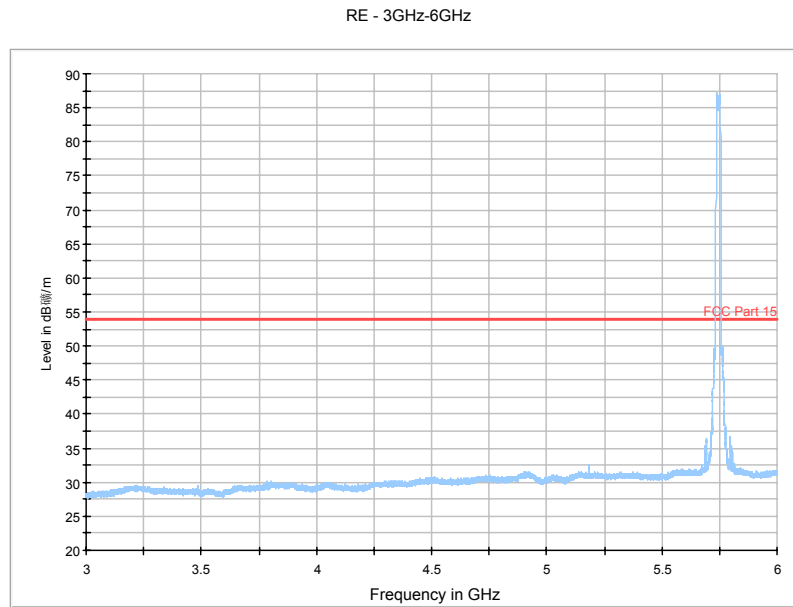


Fig. 59 Radiated Spurious Emission (802.11n-HT20, Ch149, 3 GHz-6 GHz)

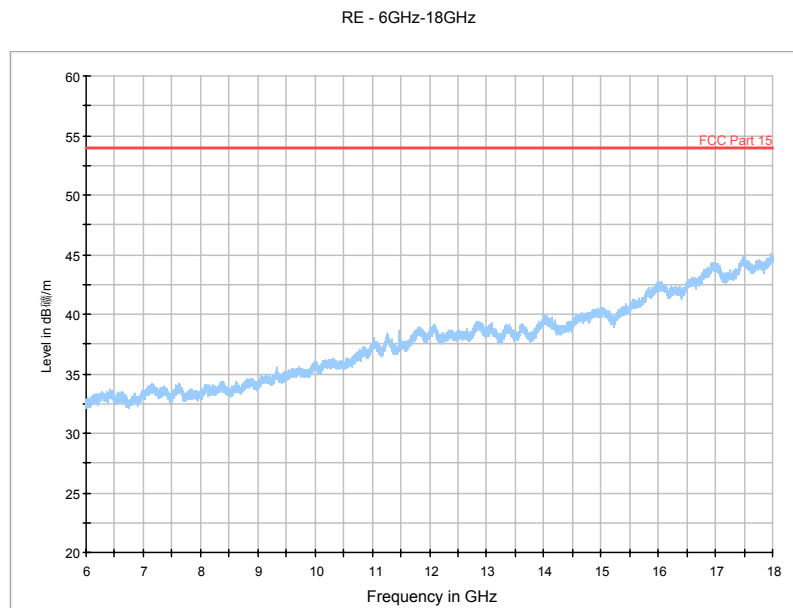


Fig. 60 Radiated Spurious Emission (802.11n-HT20, Ch149, 6 GHz-18 GHz)

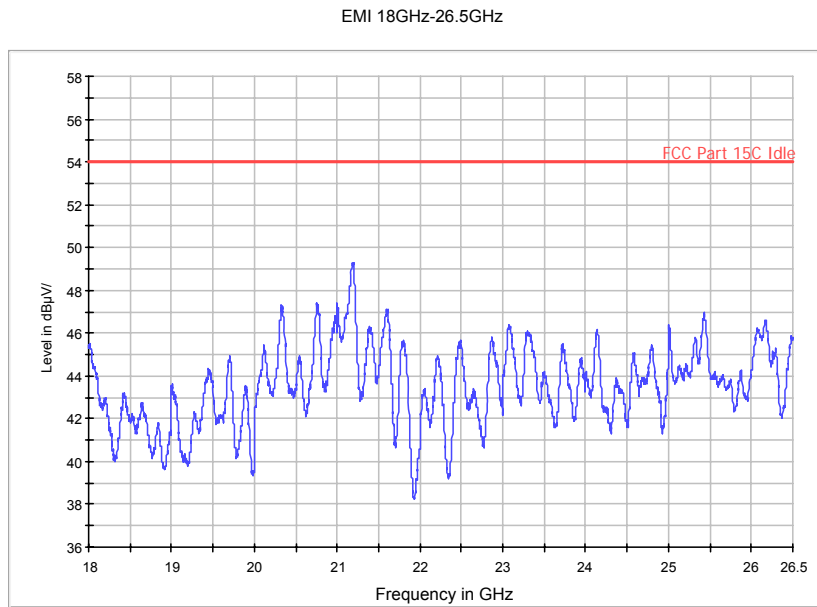


Fig. 61 Radiated Spurious Emission (802.11n-HT20, Ch149, 18 GHz-26.5 GHz)

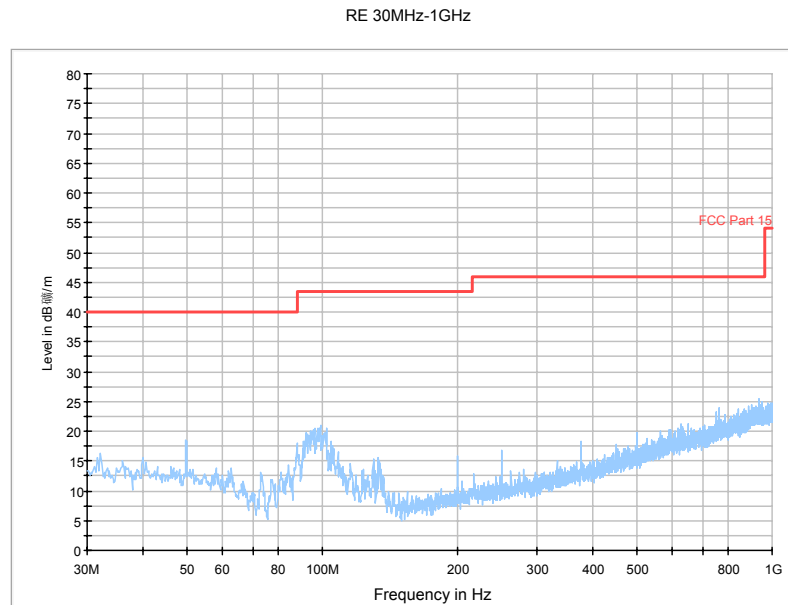


Fig. 62 Radiated Spurious Emission (802.11n-HT20, Ch157, 30 MHz-1 GHz)

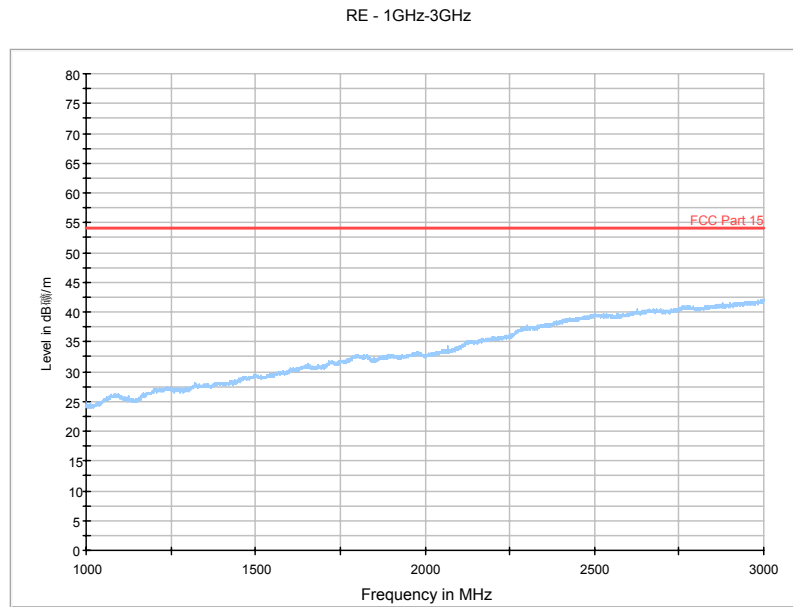


Fig. 63 Radiated Spurious Emission (802.11n-HT20, Ch157, 1 GHz-3 GHz)

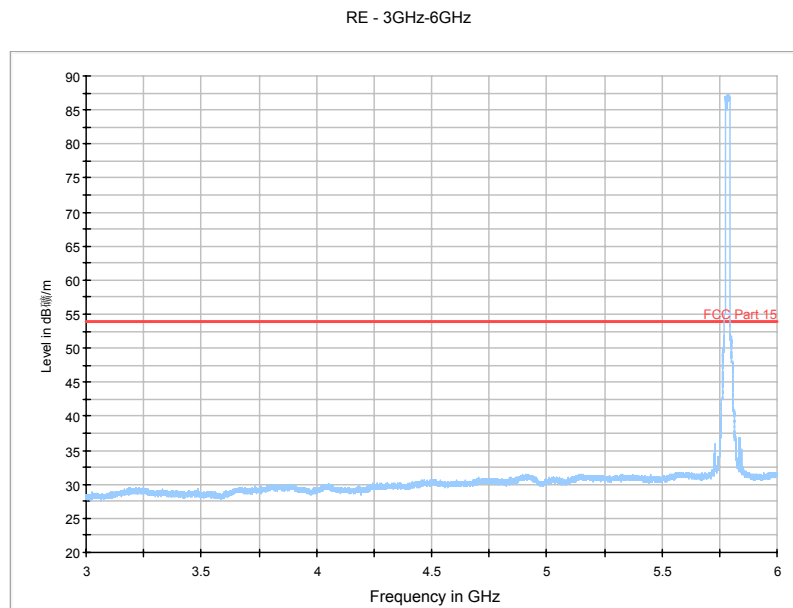


Fig. 64 Radiated Spurious Emission (802.11n-HT20, Ch157, 3 GHz-6 GHz)

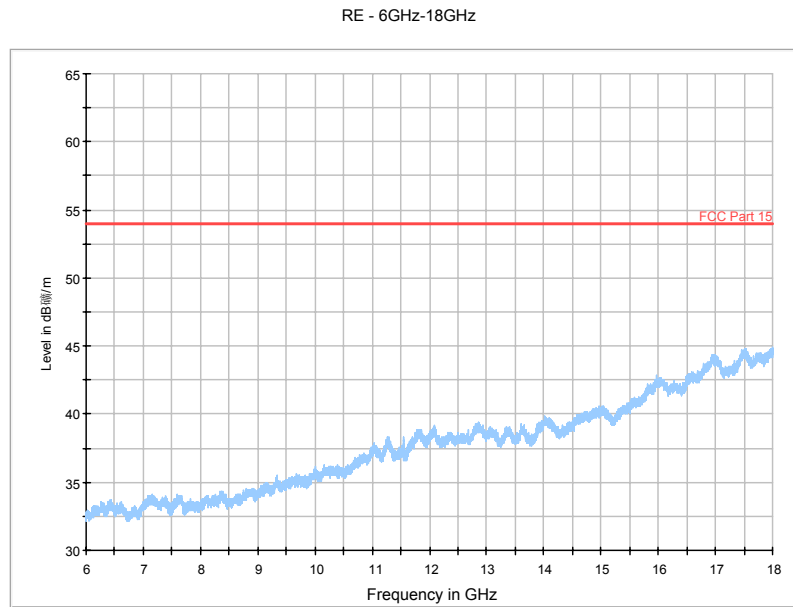


Fig. 65 Radiated Spurious Emission (802.11n-HT20, Ch157, 6 GHz-18 GHz)

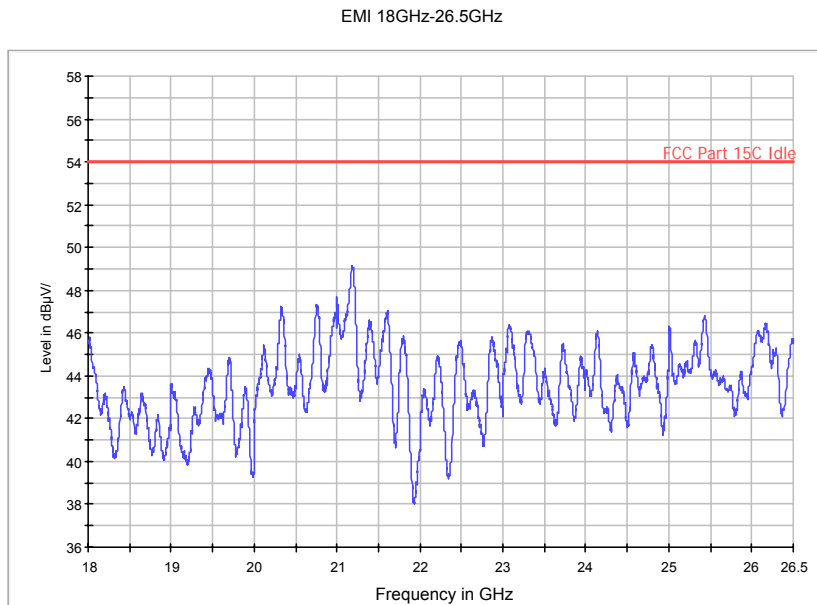


Fig. 66 Radiated Spurious Emission (802.11n-HT20, Ch157, 18 GHz-26.5 GHz)

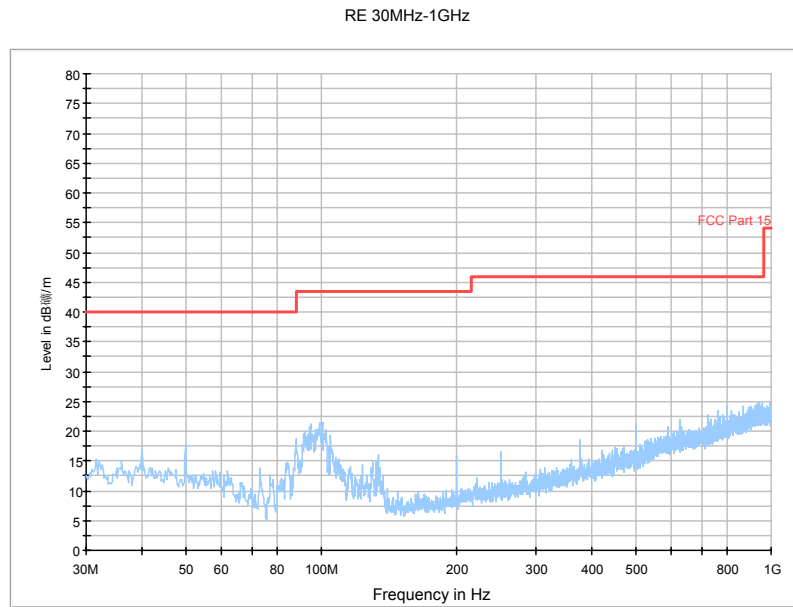


Fig. 67 Radiated Spurious Emission (802.11n-HT20, Ch165, 30 MHz-1 GHz)

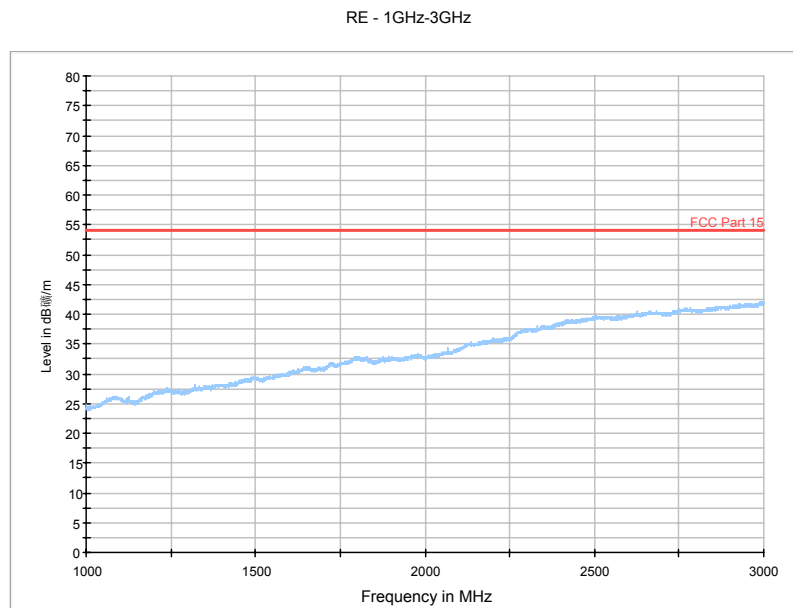


Fig. 68 Radiated Spurious Emission (802.11n-HT20, Ch165, 1 GHz-3 GHz)

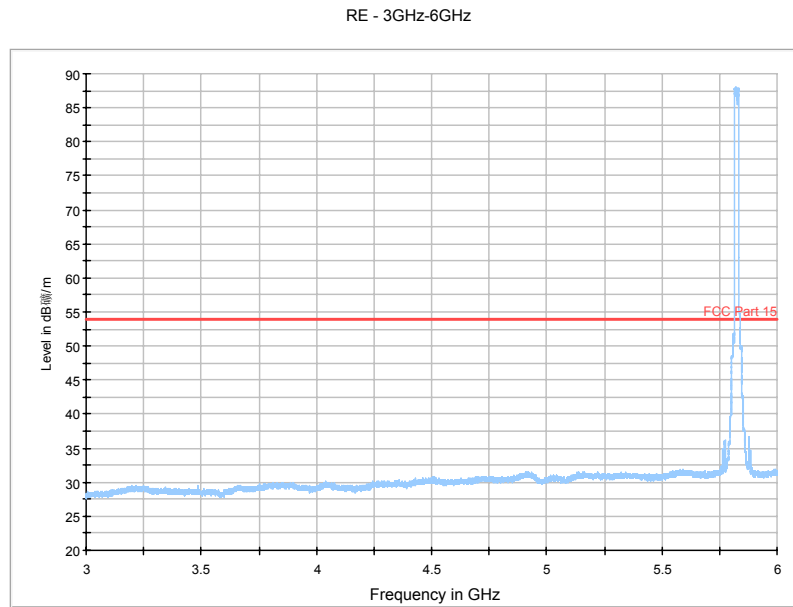


Fig. 69 Radiated Spurious Emission (802.11n-HT20, Ch165, 3 GHz-6 GHz)

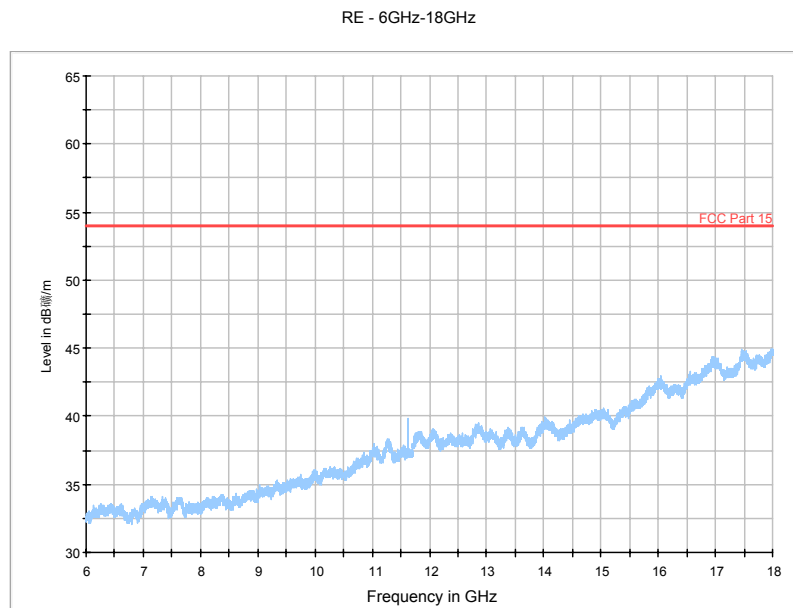


Fig. 70 Radiated Spurious Emission (802.11n-HT20, Ch165, 6 GHz-18 GHz)

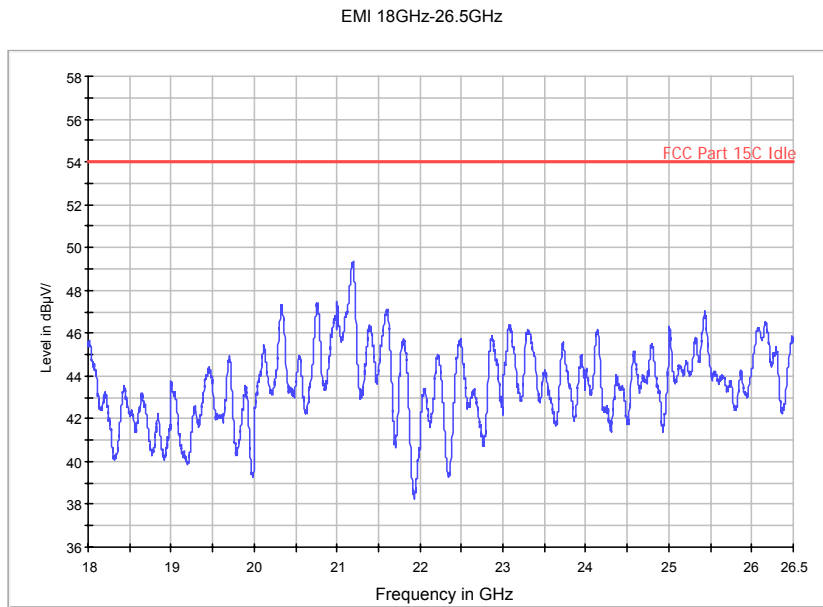


Fig. 71 Radiated Spurious Emission (802.11n-HT20, Ch165, 18 GHz-26.5 GHz)

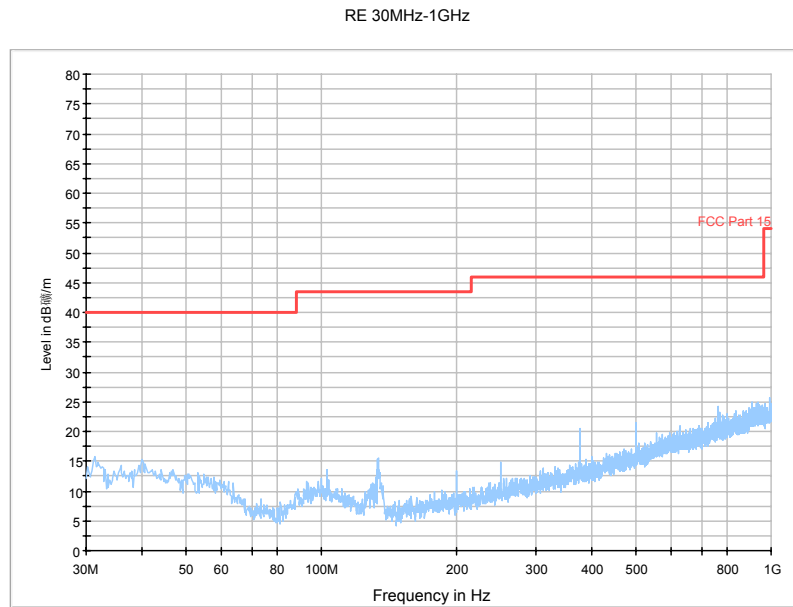


Fig. 72 Radiated Spurious Emission (802.11n-HT40, Ch151, 30 MHz-1 GHz)

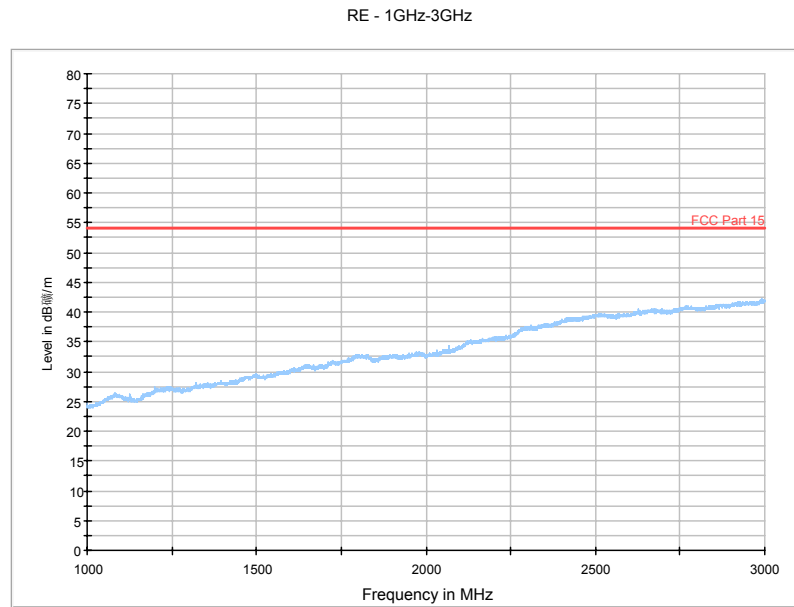


Fig. 73 Radiated Spurious Emission (802.11n-HT40, Ch151, 1 GHz-3 GHz)

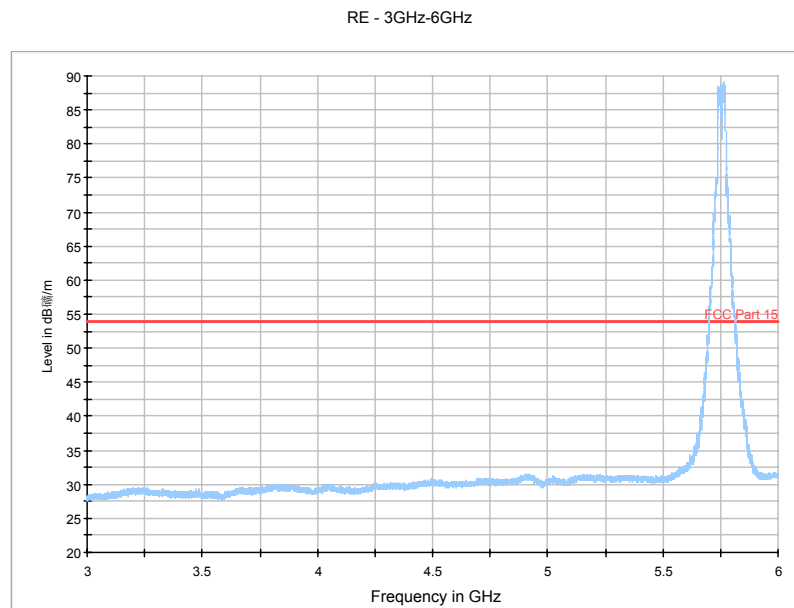


Fig. 74 Radiated Spurious Emission (802.11n-HT40, Ch151, 3 GHz-6 GHz)

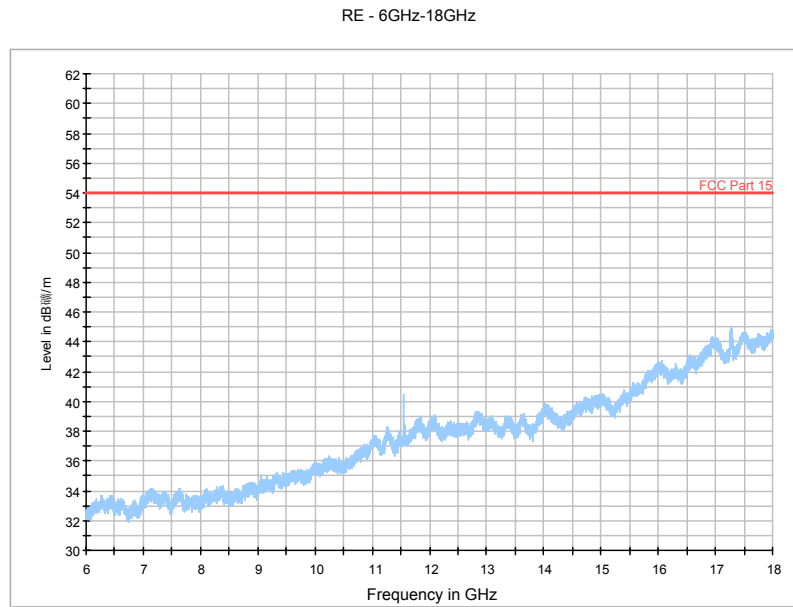


Fig. 75 Radiated Spurious Emission (802.11n-HT40, Ch151, 6 GHz-18 GHz)

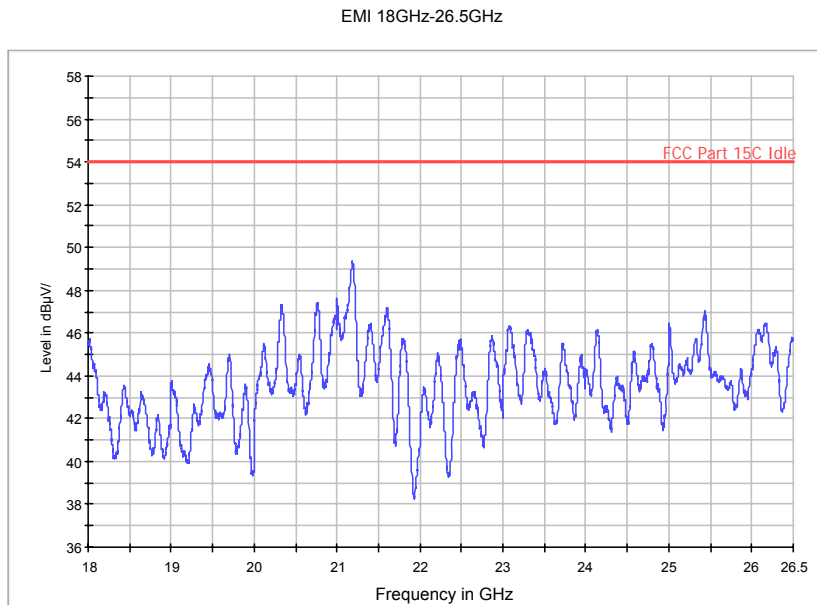


Fig. 76 Radiated Spurious Emission (802.11n-HT40, Ch151, 18 GHz-26.5 GHz)

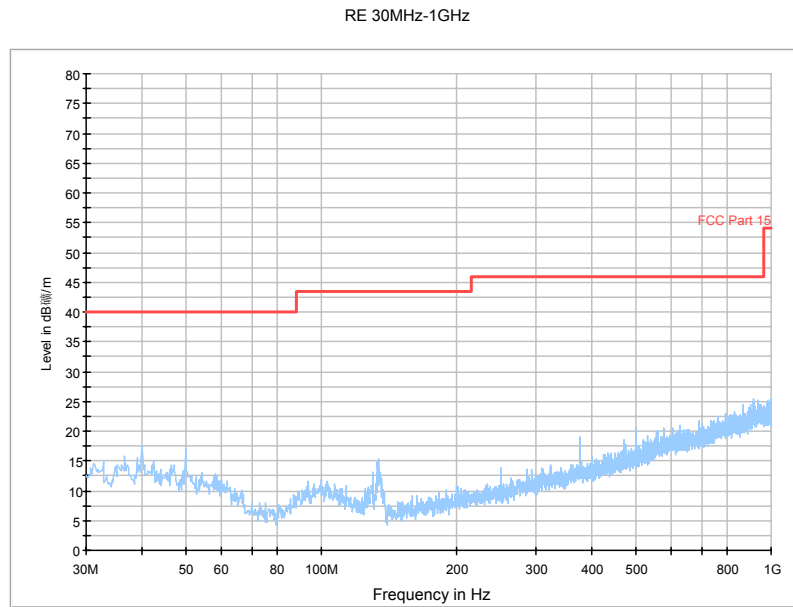


Fig. 77 Radiated Spurious Emission (802.11n-HT40, Ch159, 30 MHz-1 GHz)

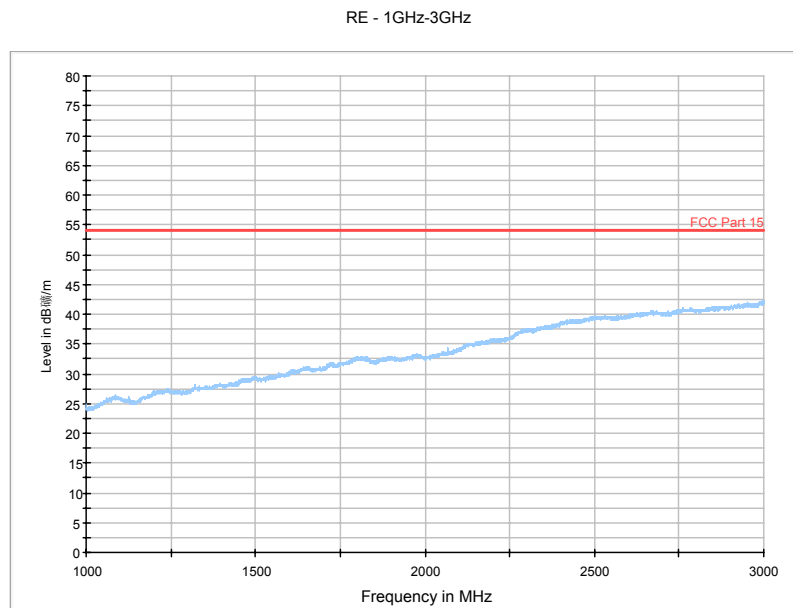


Fig. 78 Radiated Spurious Emission (802.11n-HT40, Ch159, 1 GHz-3 GHz)

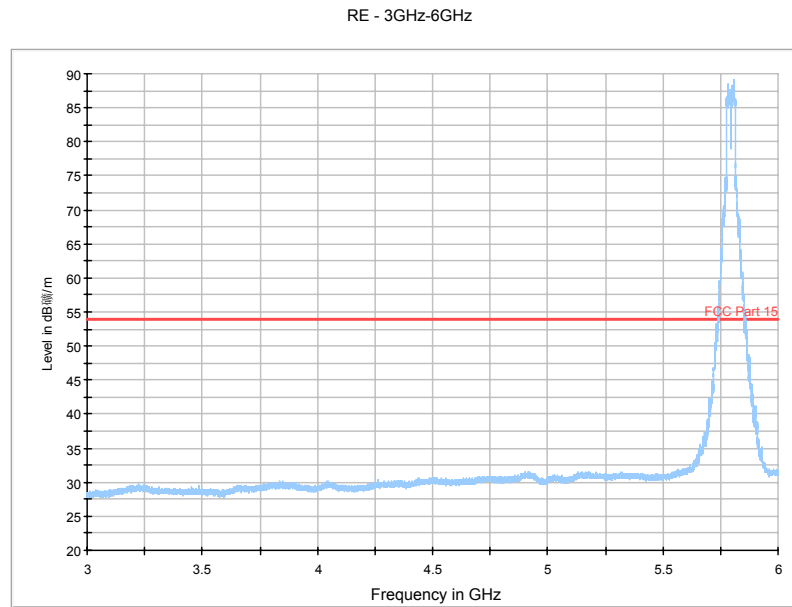


Fig. 79 Radiated Spurious Emission (802.11n-HT40, Ch159, 3 GHz-6 GHz)

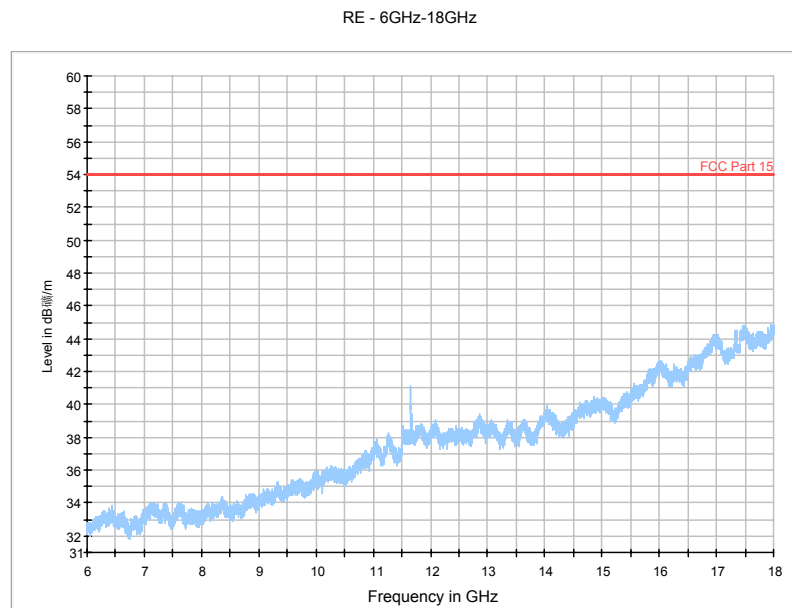


Fig. 80 Radiated Spurious Emission (802.11n-HT40, Ch159, 6 GHz-18 GHz)

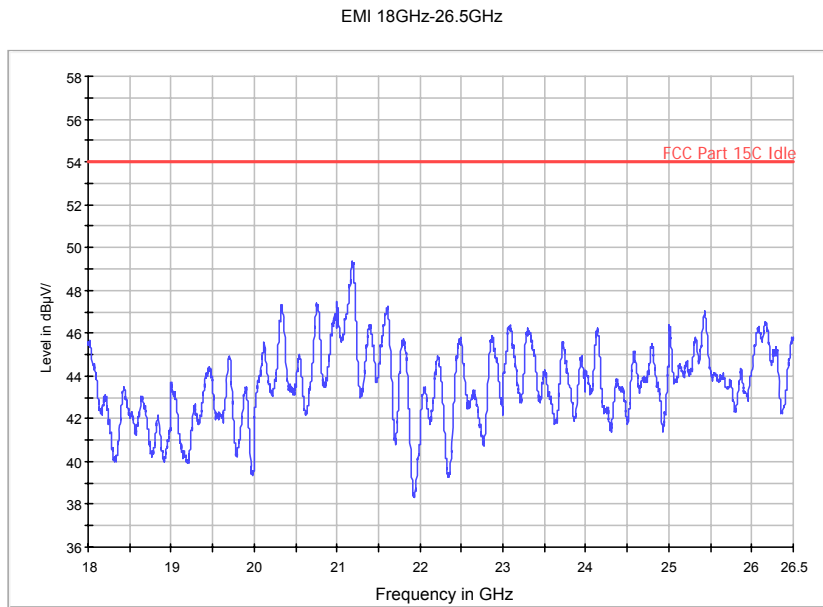


Fig. 81 Radiated Spurious Emission (802.11n-HT40, Ch159, 18 GHz-26.5 GHz)

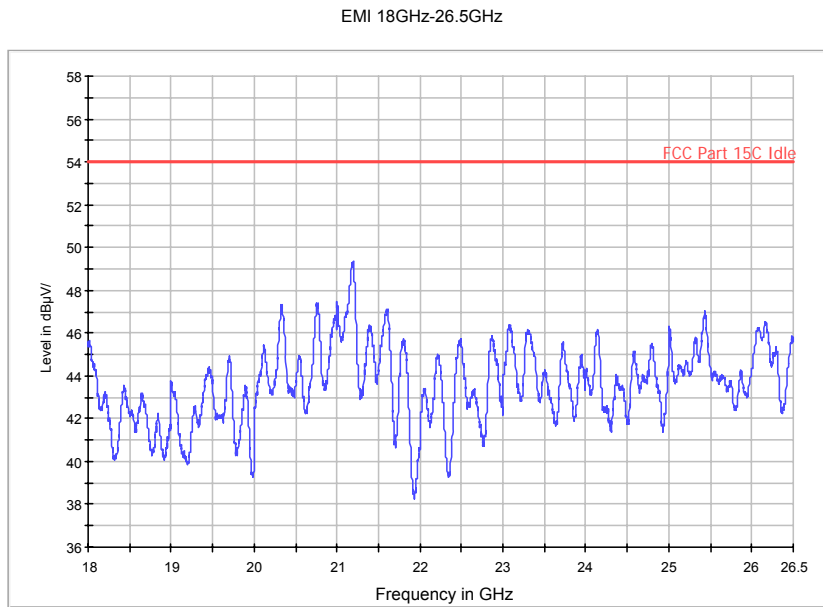


Fig. 82 Radiated emission: 802.11n, 26.5 GHz - 40 GHz

A.6. AC Powerline Conducted Emission

Test Condition:

Voltage (V)	Frequency (Hz)
110	60

Measurement uncertainty:

Expanded measurement uncertainty for this test item is U =3.2dB, k=2.

Measurement Result and limit:

WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dB μ V)	Result (dB μ V)		Conclusion
		With charger		
		11a mode	Idle	
0.15 to 0.5	66 to 56	Fig. 83	Fig. 84	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 (dB μ V)	Result (dB μ V)		Conclusion
		With charger		
		11a mode	Idle	
0.15 to 0.5	56 to 46	Fig.83	Fig.84	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 ANSI C63.4 and KDB558074

Conclusion: PASS

Test graphs as below:

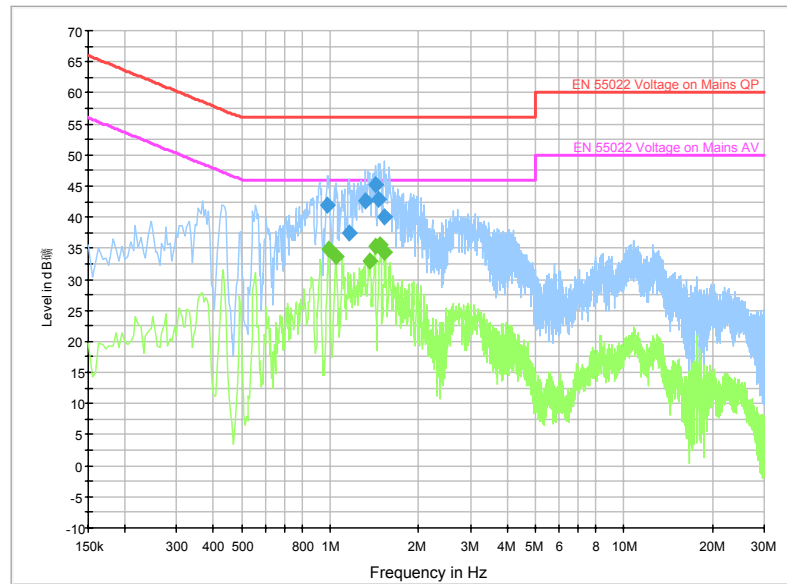


Fig. 83 AC Powerline Conducted Emission-802.11a mode

Final Result 1

Frequency (MHz)	Limit (dB μ V)	PE	Line	Transd (dB)	Margin (dB)	Limit (dB μ V)
0.978000	42.0	GND	N	10.0	14.0	56.0
1.162500	37.3	GND	N	10.0	18.7	56.0
1.315500	42.6	GND	L1	10.0	13.4	56.0
1.419000	45.3	GND	L1	10.0	10.7	56.0
1.464000	42.8	GND	N	10.0	13.2	56.0
1.531500	40.0	GND	N	10.0	16.0	56.0

Final Result 2

Frequency (MHz)	Limit (dB μ V)	PE	Line	Transd (dB)	Margin (dB)	Limit (dB μ V)
0.982500	34.8	GND	L1	10.0	11.2	46.0
1.041000	33.6	GND	L1	10.0	12.4	46.0
1.356000	32.9	GND	L1	10.0	13.1	46.0
1.419000	35.3	GND	L1	10.0	10.7	46.0
1.477500	35.6	GND	L1	10.0	10.4	46.0
1.536000	34.3	GND	L1	10.0	11.7	46.0

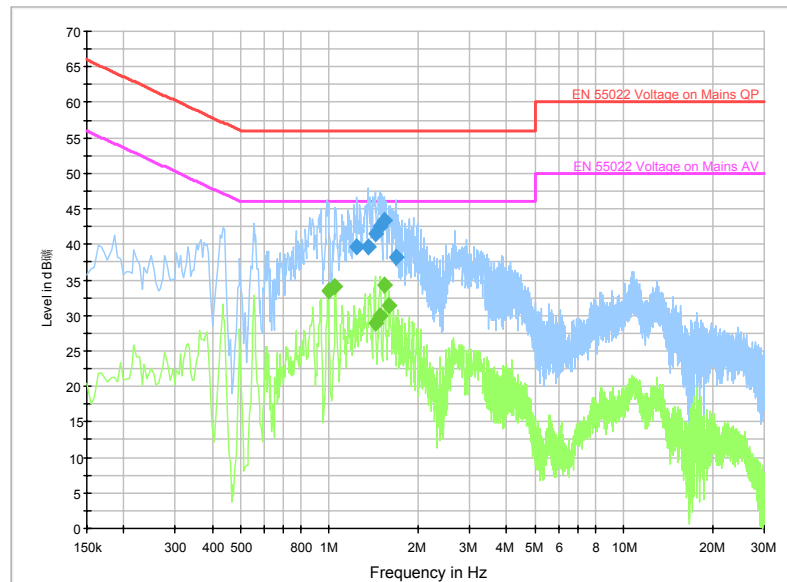


Fig. 84 AC Powerline Conducted Emission-Idle

Final Result1

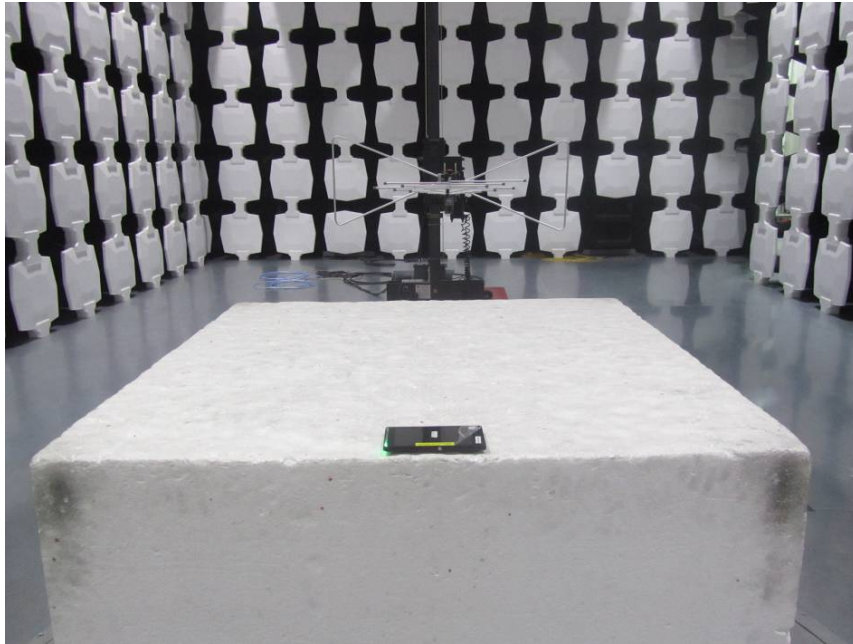
Frequency (MHz)	Limit (dBµV)	PE	Line	Transd (dB)	Margin (dB)	Limit (dBµV)
1.243500	39.7	GND	L1	10.0	16.3	56.0
1.356000	39.7	GND	N	10.0	16.3	56.0
1.432500	41.4	GND	L1	10.0	14.6	56.0
1.491000	42.5	GND	L1	10.0	13.5	56.0
1.540500	43.4	GND	L1	10.0	12.6	56.0
1.680000	38.1	GND	L1	10.0	17.9	56.0

Final Result2

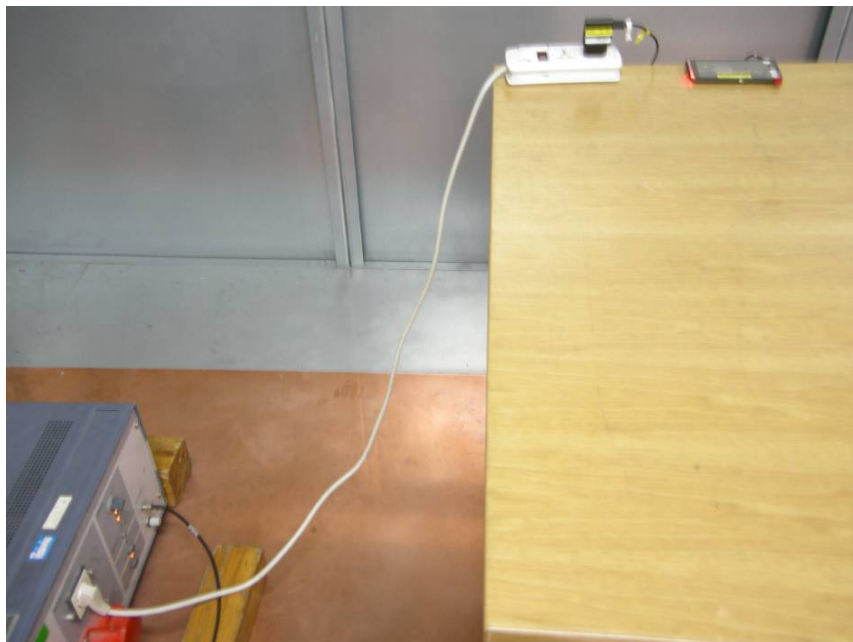
Frequency (MHz)	Limit (dBµV)	PE	Line	Transd (dB)	Margin (dB)	Limit (dBµV)
0.991500	33.5	GND	L1	10.0	12.5	46.0
1.045500	34.1	GND	L1	10.0	11.9	46.0
1.432500	28.9	GND	L1	10.0	17.1	46.0
1.491000	29.8	GND	L1	10.0	16.2	46.0
1.540500	34.2	GND	L1	10.0	11.8	46.0
1.599000	31.4	GND	L1	10.0	14.6	46.0

ANNEX B: PHOTOGRAPHS OF THE TEST SET-UP

Layout of Radiated Spurious Emission Test



Layout of AC Powerline Conducted Emission



ANNEX C: PHOTOGRAPHS OF THE EUT

External Photo



EUT Photo



EUT Photo



Back Label of Mobile Phone



Back Label of Mobile Phone



Battery



USB Cable

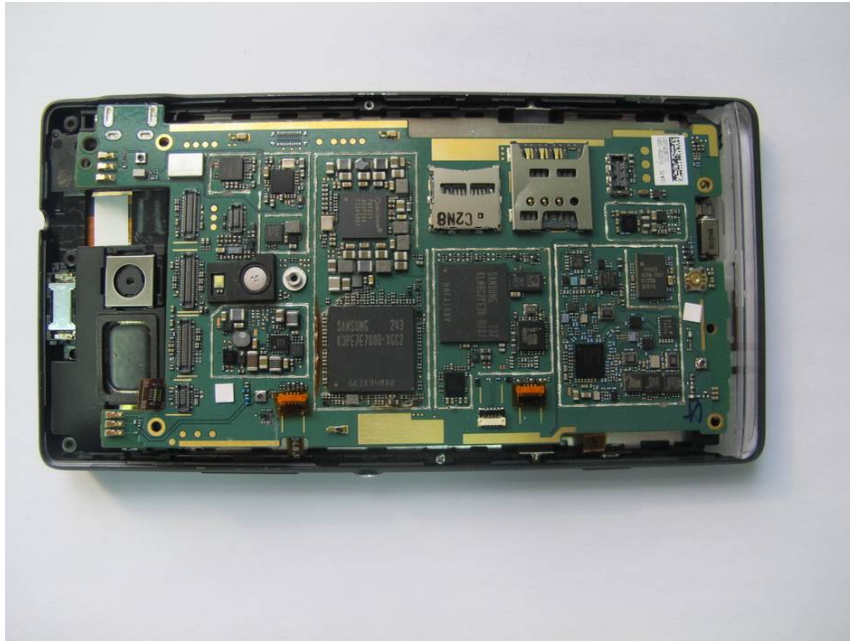
Internal Photo



EUT Disassembly



EUT Disassembly



EUT Disassembly



EUT Disassembly

***** END OF REPORT BODY *****