



FCC PART 15C TEST REPORT No. I17Z60687-SRD03

for

TCL Communication Ltd.

LTE / UMTS / GSM mobile phone

50850

With

FCC ID: 2ACCJH077

Hardware Version: PIO1

Software Version: 7JACUD

Issued Date: 2017-05-17



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.

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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.18A, Kangding Street, Beijing Economic-Technology
Development Area, Beijing, P. R. China 100176

1.2. Project data

Testing Start Date: 2017-04-13

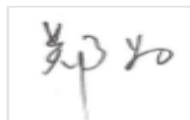
Testing End Date: 2017-05-08

1.3. Signature



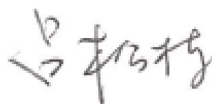
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2. CLIENT INFORMATION

2.1. Applicant Information

Company Name: TCL Communication Ltd.
Address /Post: 5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park,
Pudong Area Shanghai, P.R. China. 201203
Contact Person: Shanghai
Telephone: 201203
Fax: China

2.2. Manufacturer Information

Company Name: TCL Communication Ltd.
Address /Post: 5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park,
Pudong Area Shanghai, P.R. China. 201203
Contact Person: Shanghai
Telephone: 201203
Fax: China

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

3.1. About EUT

Description	LTE / UMTS / GSM mobile phone
Model name	5085O
FCC ID	2ACCJH077
WLAN Frequency Range	ISM Band: 5725MHz~5850MHz
Type of modulation	OFDM
Voltage	3.8V 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; 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*	IMEI	HW Version	SW Version
UT01a	/	PIO1	7JACUD
UT02a	/	PIO1	7JACUD

*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
AE3	Charger /	/
AE11	USB Cable /	/
AE12	USB Cable /	/

AE1

Model	TLp027AJ
SN	CAC2710010CJ
Manufacturer	COSLIGHT
Capacitance	2710 mAh
Nominal voltage	/

AE3

Model	CBA0058AGAD2
Manufacturer	TENPAO
Length of cable	/

AE11

Model	CDA0000078CF
Manufacturer	LUXSHARE
Length of cable	98cm



AE12

Model	CDA0000104CF
Manufacturer	LUXSHARE
Length of cable	98cm

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

3.4. General Description

Equipment Under Test (EUT) is a LTE / UMTS / GSM mobile phone with integrated antenna. It consists of normal options: Battery and Charger.

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;	2015
	Subpart E—Unlicensed National Information Infrastructure Devices	
	Methods of Measurement of Radio-Noise Emissions from	
ANSI C63.10	Low-Voltage Electrical and Electronic Equipment in the	2013
	Range of 9 kHz to 40 GHz	

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 Part15C	Sub-clause of IC	Verdict
Maximum Peak Output Power	15.407 (a)	/	P
Peak Power Spectral Density	15.407 (a)	/	P
Occupied 6dB Bandwidth	15.407(e)	/	P
Band Edges Compliance	15.407 (b)	/	P
Transmitter Spurious Emission - Conducted	15.407,15.205	/	P
Transmitter Spurious Emission - Radiated	15.407, 15.205, 15.209	/	P
AC Powerline Conducted Emission	15.107, 15.207	/	P
99% Occupied Bandwidth	/	/	P
Transmitter Spurious Emission - Radiated < 30MHz	15.407, 15.209	/	P

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	3.8V
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	Test Receiver	ESCI	100344	Rohde & Schwarz	2017-02-16	2018-03-15
3	LISN	ENV216	101200	Rohde & Schwarz	2016-07-11	2017-07-10
4	Shielding Room	S81	/	ETS-Lindgren	/	/

8. 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

9. Measurement Uncertainty

9.1. Transmitter Output Power

Measurement Uncertainty: 0.339dB,k=1.96

9.2. Peak Power Spectral Density

Measurement Uncertainty: 0.705dBm/MHz,k=1.96

9.3. Occupied 6dB Bandwidth

Measurement Uncertainty: 60.80Hz,k=1.96

9.4. Band Edges Compliance

Measurement Uncertainty : 0.62dBm,k=1.96

9.5. 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

9.6. AC Power-line Conducted Emission

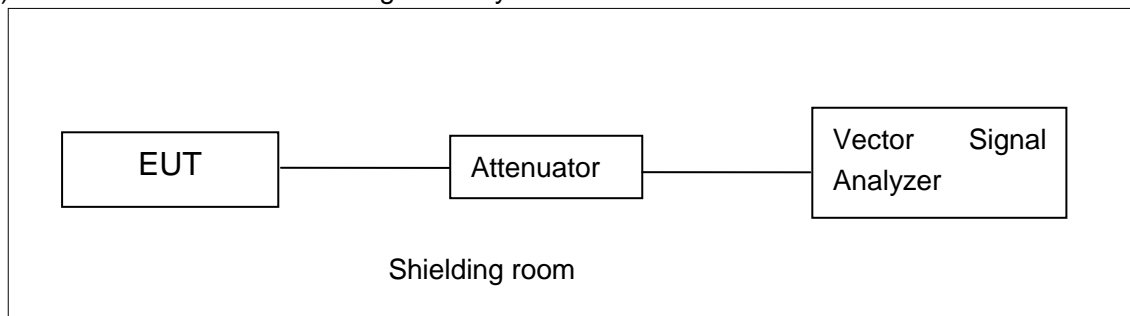
Measurement Uncertainty : 3.38dBm,k=2

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

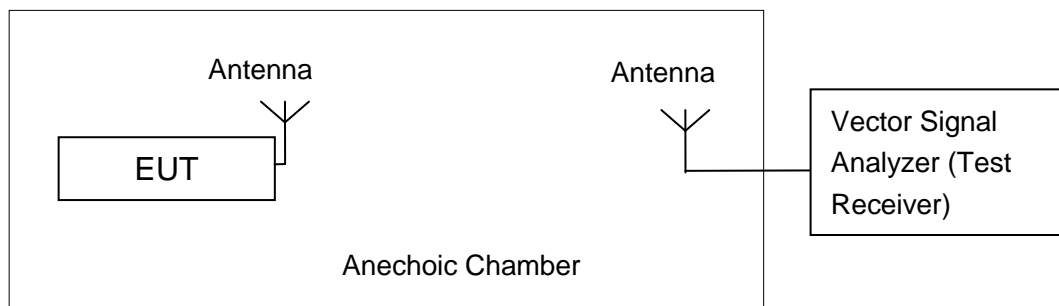


A.1.2. Radiated Emission Measurements

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 C63.10.

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 15.407(a)	< 30

A.2.1. Maximum Peak Output Power-conducted

Measurement Results:

802.11a mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		5745MHz (Ch149)	5785MHz (Ch157)	5825MHz (Ch165)
802.11a	6	21.04	/	/
	9	21.02	/	/
	12	21.29	/	/
	18	21.23	/	/
	24	21.54	/	/
	36	21.52	/	/
	48	21.69	20.57	21.12
	54	21.63	/	/

The data rate 48Mbps is selected as worse condition, and the following cases are performed with this condition.

802.11n-HT20 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		5745MHz (Ch149)	5785MHz (Ch157)	5825MHz (Ch165)
802.11n (20MHz)	MCS0	20.10	/	/
	MCS1	20.14	/	/
	MCS2	20.11	/	/
	MCS3	20.18	/	/
	MCS4	20.05	/	/
	MCS5	20.25	19.54	19.89
	MCS6	20.20	/	/
	MCS7	20.16	/	/

The data rate MCS5 is selected as worse condition, and the following cases are performed with this condition.

802.11n-HT40 mode

Mode	Data Rate (Index)	Test Result (dBm)	
		5755MHz (Ch151)	5795MHz (Ch159)
802.11n (40MHz)	MCS0	20.69	/
	MCS1	20.50	/
	MCS2	20.45	/
	MCS3	20.35	/
	MCS4	20.21	/
	MCS5	20.30	/
	MCS6	20.60	/
	MCS7	20.77	20.31

The data rate MCS7 is selected as worse condition, and the following cases are performed with this condition.

Conclusion: PASS

A.2.3. Maximum Average Output Power-Conducted**Method of Measurement: See ANSI C63.10-clause 12.3.2.2 Method SA-1****802.11a mode**

Mode	Test Result (dBm)		
	5745MHz (Ch149)	5785MHz (Ch157)	5825MHz (Ch165)
802.11a	14.33	14.95	15.47

802.11n-HT20 mode

Mode	Test Result (dBm)		
	5745MHz (Ch149)	5785MHz (Ch157)	5825MHz(Ch165)
802.11n(20MHz)	13.15	13.75	14.26

802.11n-HT40 mode

Mode	Test Result (dBm)	
	5755MHz (Ch151)	5795MHz(Ch159)
802.11n(40MHz)	13.28	14.08

Conclusion: PASS

A.3. Peak Power Spectral Density

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.407(a)	< 30 dBm/500 kHz

The measurement is made according to ANSI C63.10 and KDB789033 D02

Measurement Uncertainty:

Measurement Uncertainty	0.75dB
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Measurement Results:

Mode	Channel	Power Spectral Density (dBm/500kHz)	Conclusion
802.11a	149	9.55	P
	157	9.21	P
	165	9.81	P

Note:802.11a was selected as the worst-case of the test case.

Conclusion: PASS

A.4. Occupied 6dB Bandwidth

Measurement Limit:

Standard	Limit (kHz)
FCC 47 CFR Part 15.407(e)	≥ 500

The measurement is made according to KDB789033 D02 .

Measurement Uncertainty:

Measurement Uncertainty	60.80Hz
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Measurement Result:

Mode	Channel	Occupied 6dB Bandwidth (MHz)		conclusion
802.11a	149	Fig.1	16.15	P
	157	Fig.2	16.00	P
	165	Fig.3	15.95	P
802.11n HT20	149	Fig.4	16.85	P
	157	Fig.5	17.15	P
	165	Fig.6	17.45	P
802.11n HT40	151	Fig.7	35.60	P
	159	Fig.8	35.92	P

Conclusion: PASS

Test graphs as below:

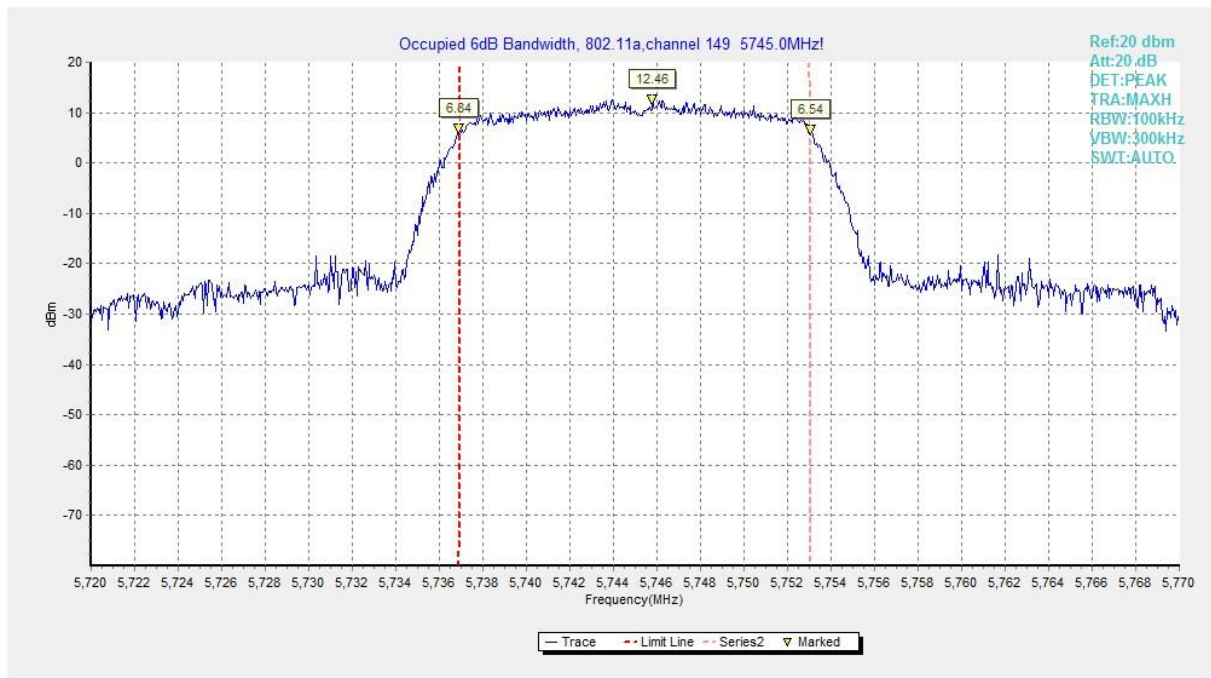


Fig. 1 Occupied 6dB Bandwidth (802.11a, Ch 149)

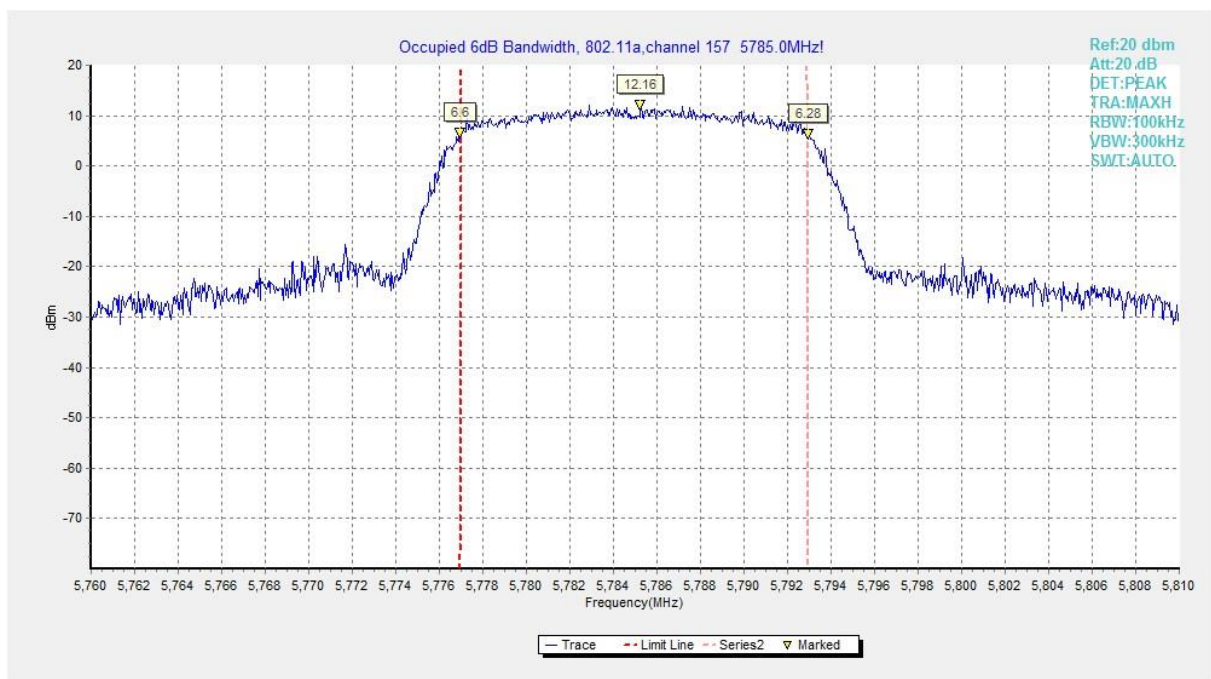


Fig. 2 Occupied 6dB Bandwidth (802.11a, Ch 157)



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

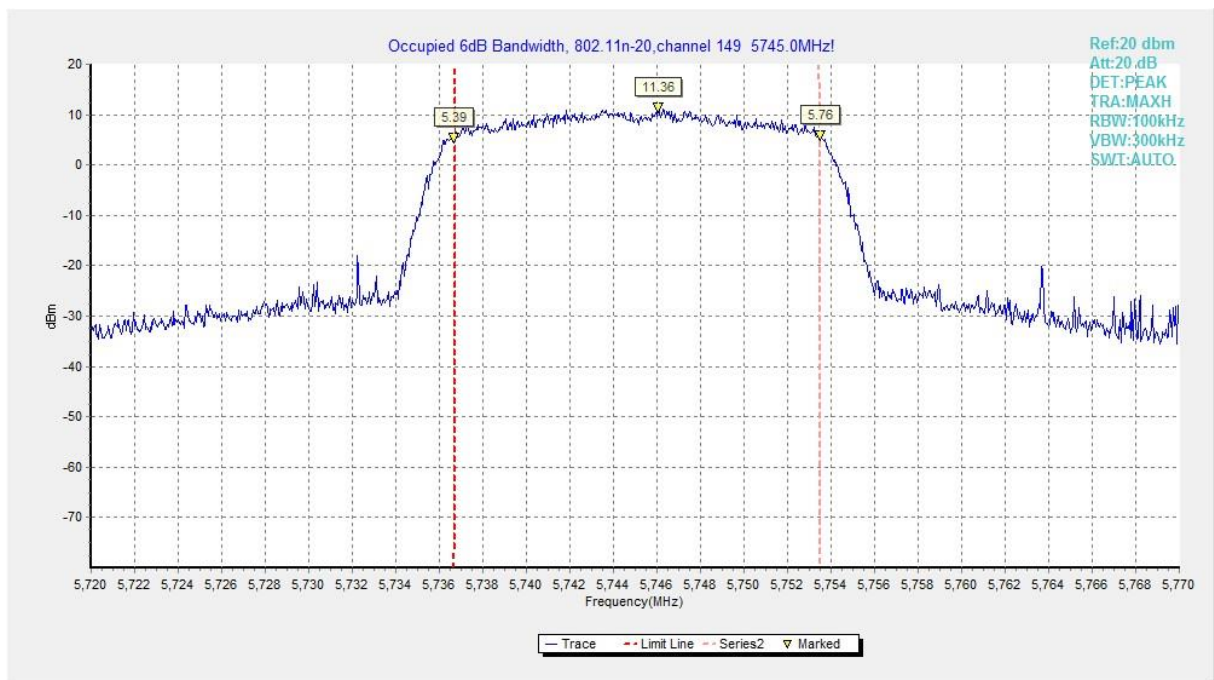


Fig. 4 Occupied 6dB Bandwidth (802.11n-HT20, Ch 149)



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

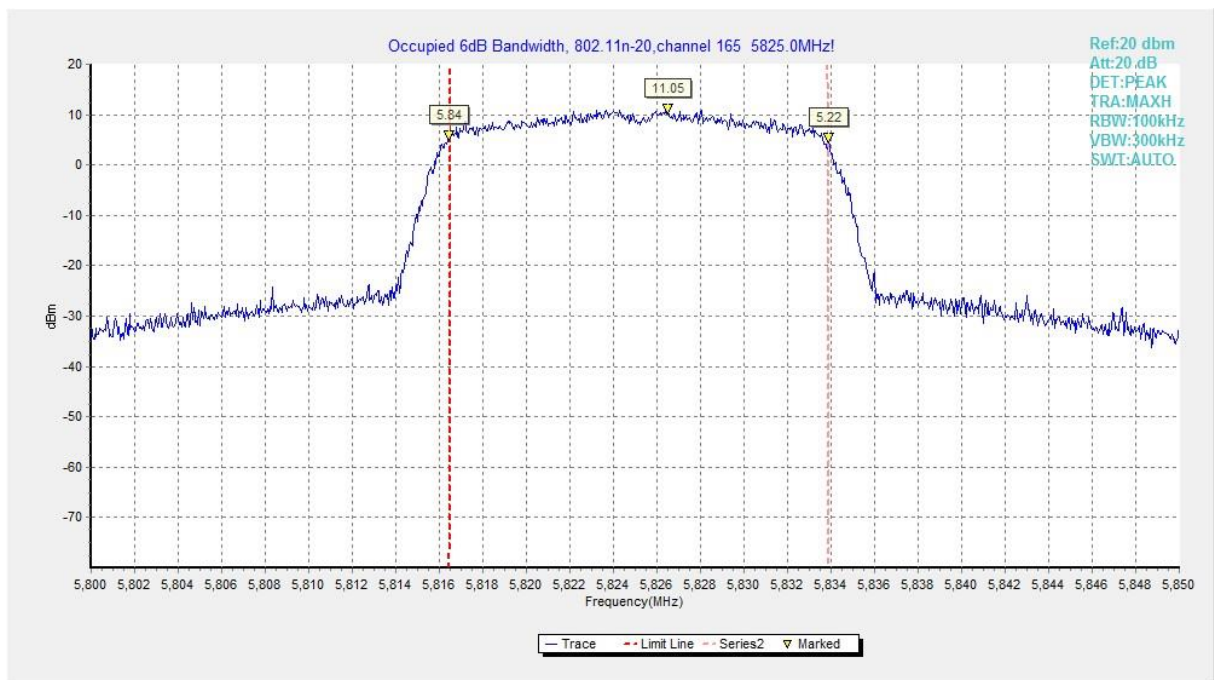


Fig. 6 Occupied 6dB Bandwidth (802.11n-HT20, Ch 165)

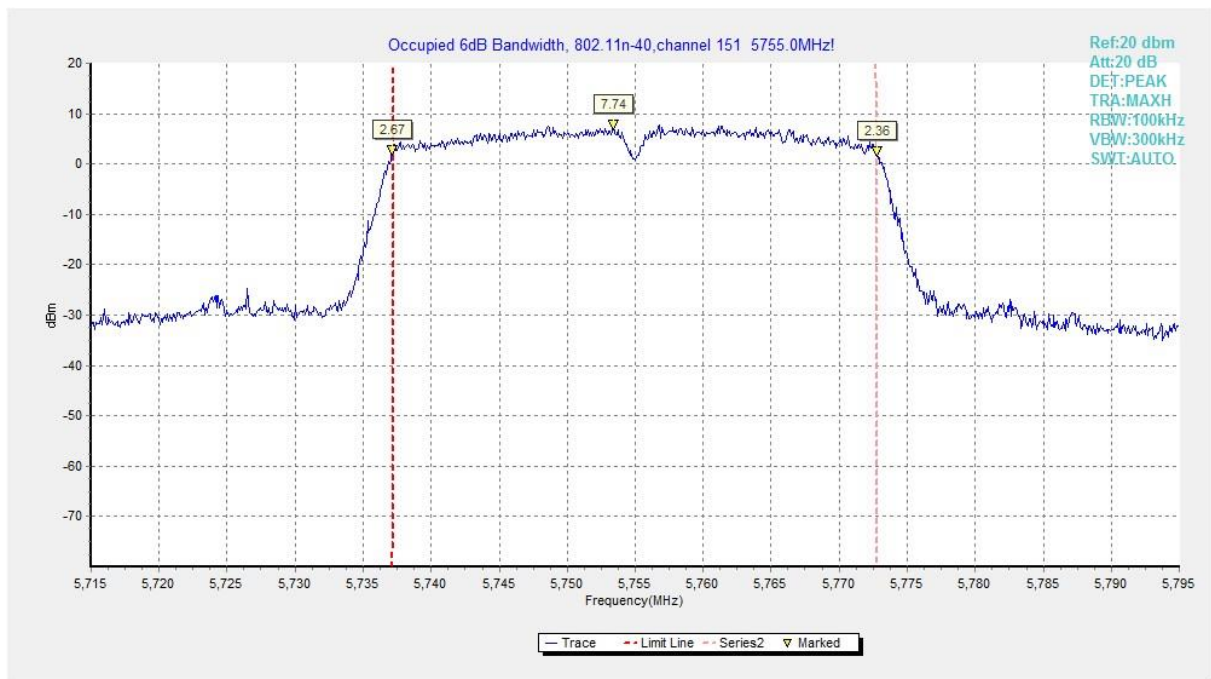


Fig. 7 Occupied 6dB Bandwidth (802.11n-HT40, Ch 151)

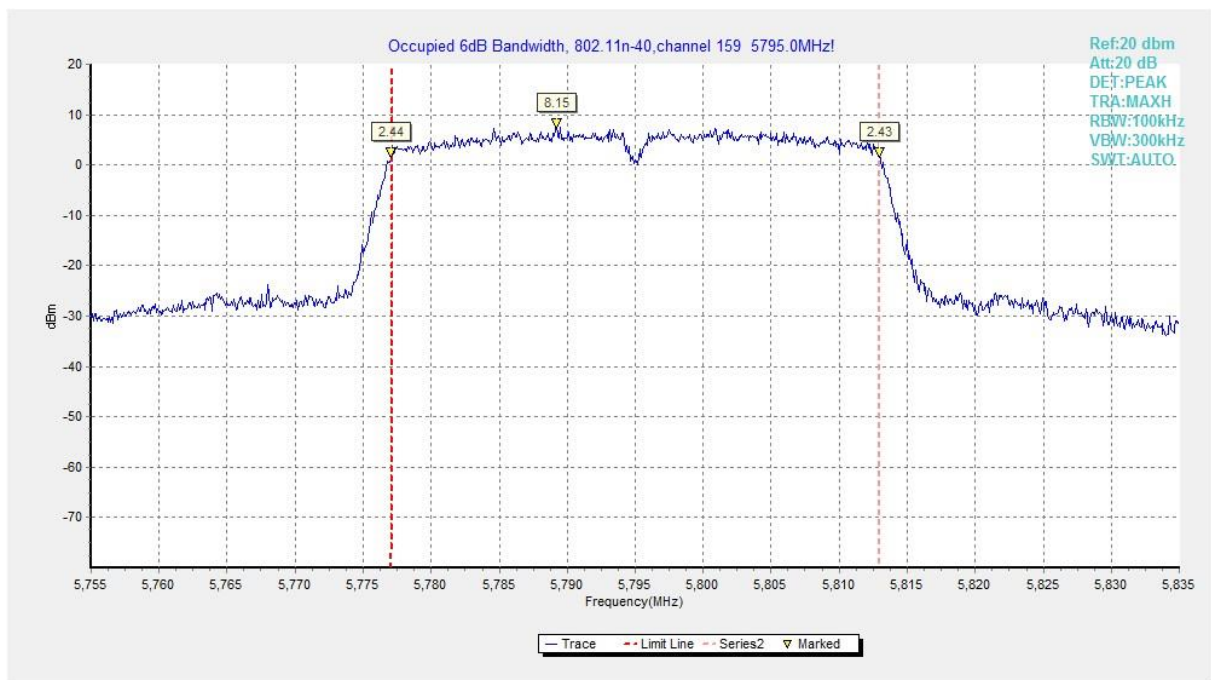


Fig. 8 Occupied 6dB Bandwidth (802.11n-HT40, Ch 159)

A.5. Transmitter Spurious Emission

Measurement Limit:

Standard	Frequency (MHz)	Limit (dBm/MHz)
FCC 47 CFR Part 15.407	5725MHz~5850MHz	< -27

The measurement is made according to ANSI C63.10 .

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(dB)
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	30 MHz ~ 1 GHz	Fig.9	P
		1 GHz ~ 12 GHz	Fig.10	P
		12 GHz ~ 25 GHz	Fig.11	P
		25 GHz ~ 40 GHz	Fig.12	P
	157	30 MHz ~ 1 GHz	Fig.13	P
		1 GHz ~ 12 GHz	Fig.14	P
		12 GHz ~ 25 GHz	Fig.15	P
		25 GHz ~ 40 GHz	Fig.16	P
	165	30 MHz ~ 1 GHz	Fig.17	P
		1 GHz ~ 12 GHz	Fig.18	P
		12 GHz ~ 25 GHz	Fig.19	P
		25 GHz ~ 40 GHz	Fig.20	P

Note:802.11a was selected as the worst-case of the test case.

Conclusion: PASS

Test graphs as below:

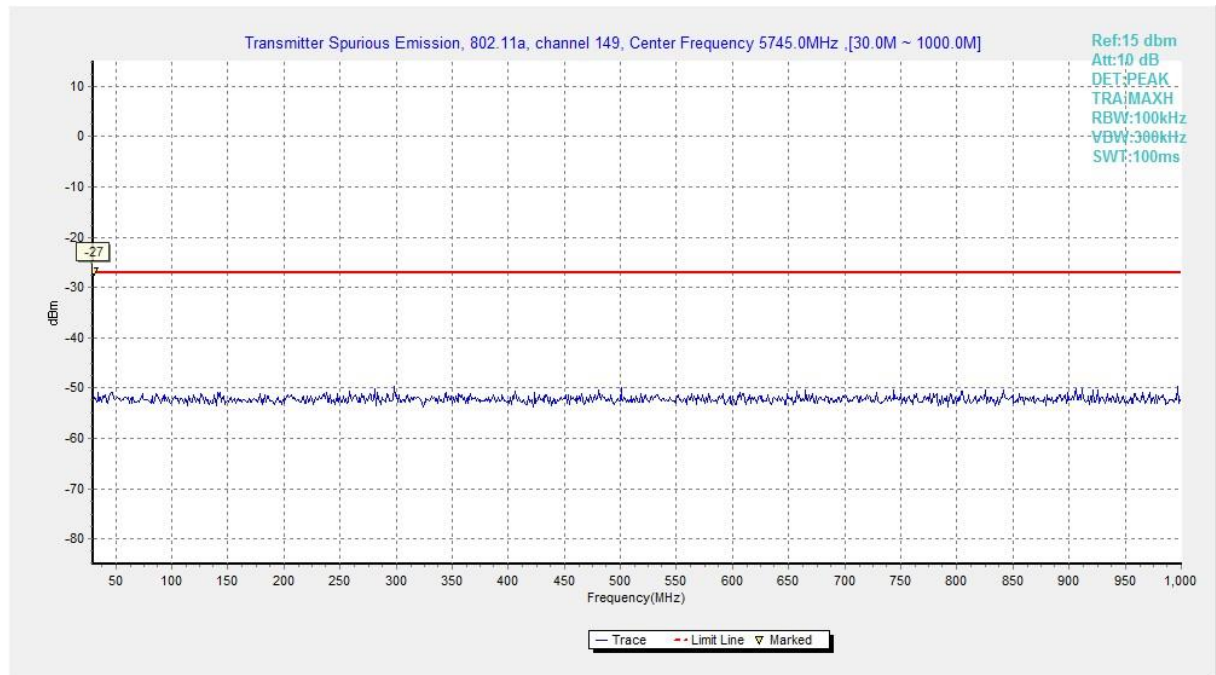


Fig. 9 Conducted Spurious Emission (802.11a, Ch149, 30 MHz-1 GHz)

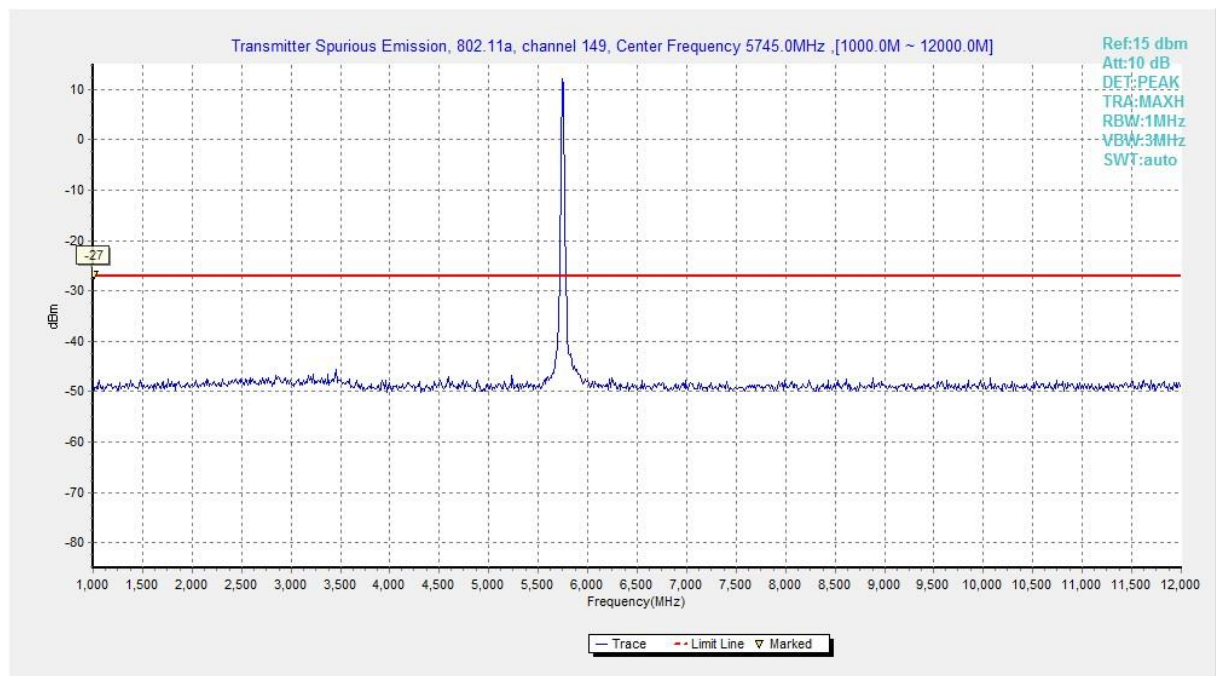


Fig. 10 Conducted Spurious Emission (802.11a, Ch149, 1 GHz -12 GHz)

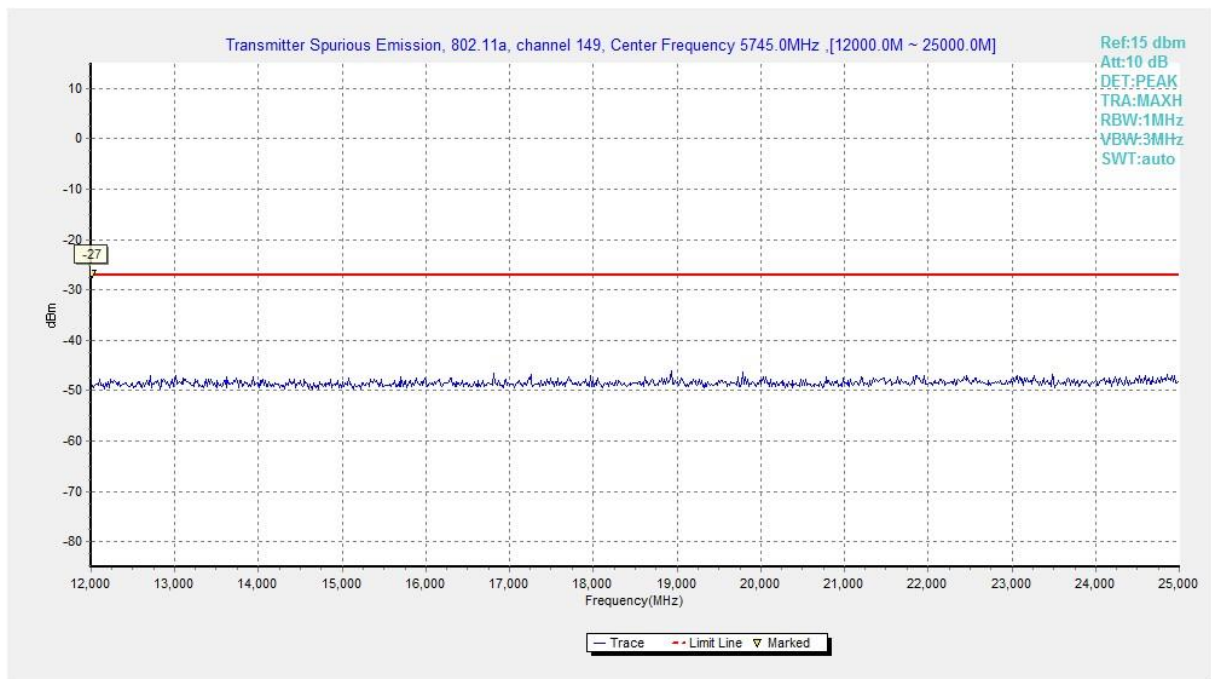


Fig. 11 Conducted Spurious Emission (802.11a, Ch149, 12 GHz-25 GHz)

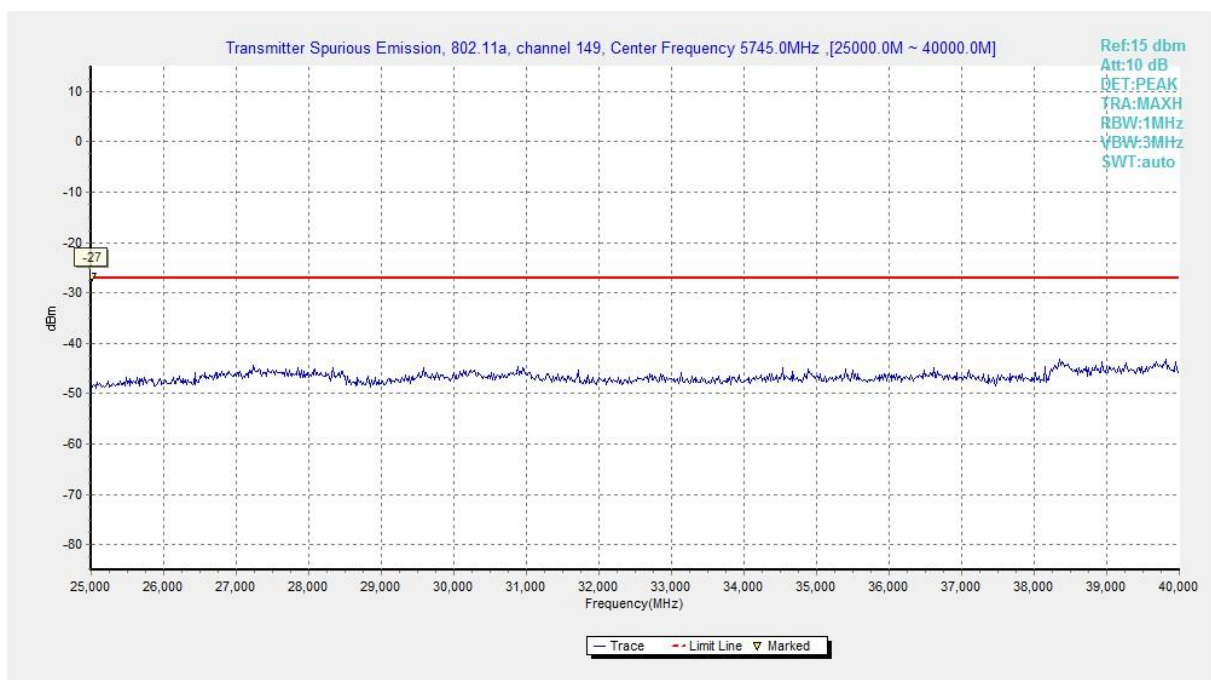


Fig. 12 Conducted Spurious Emission (802.11a, Ch149, 25 GHz-40 GHz)

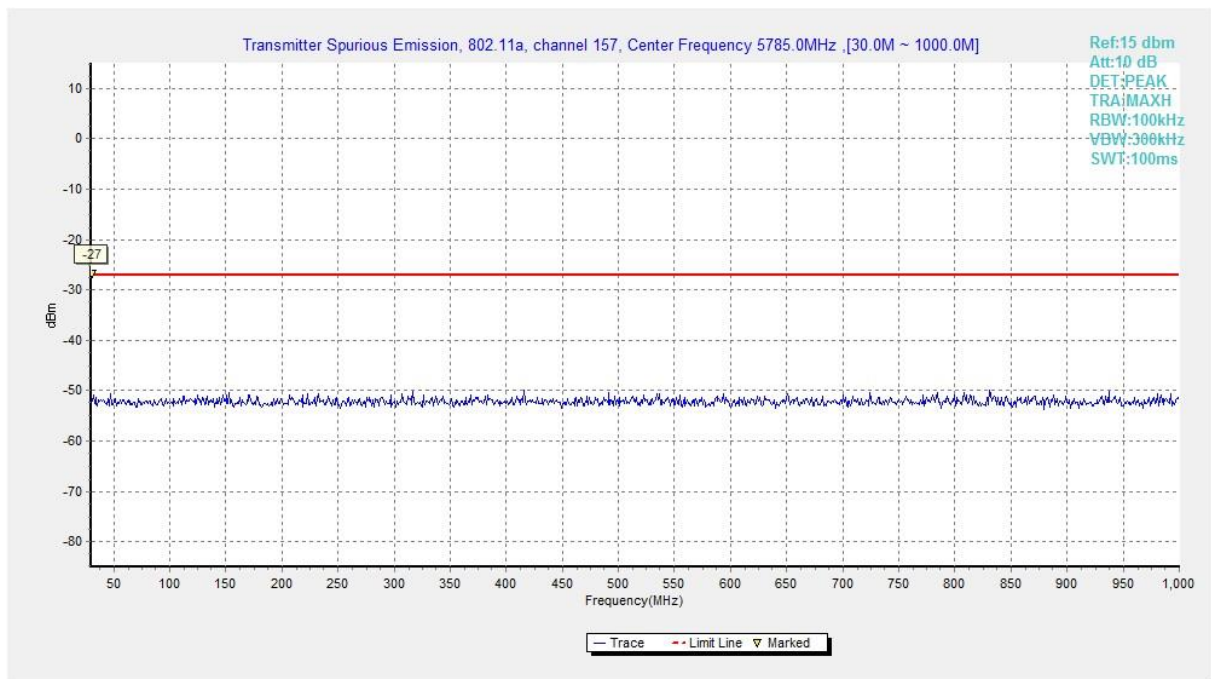


Fig. 13 Conducted Spurious Emission (802.11a, Ch157, 30 MHz-1 GHz)

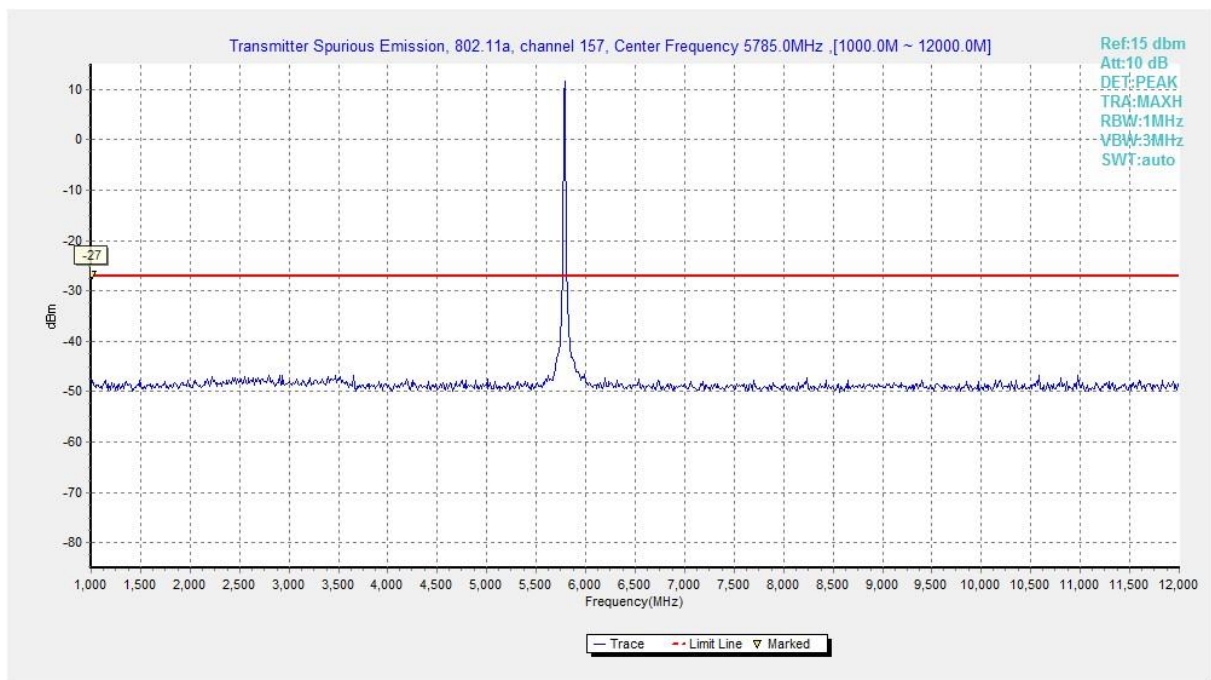


Fig. 14 Conducted Spurious Emission (802.11a, Ch157, 1 GHz -12 GHz)

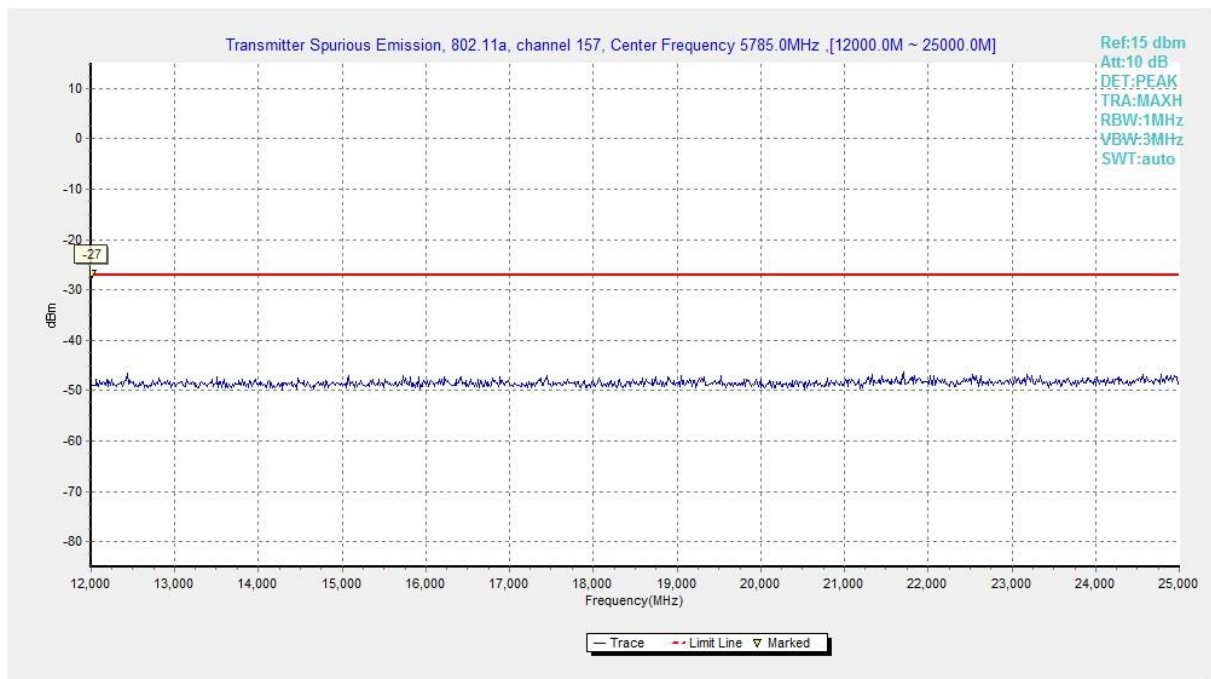


Fig. 15 Conducted Spurious Emission (802.11a, Ch157, 12 GHz-25 GHz)

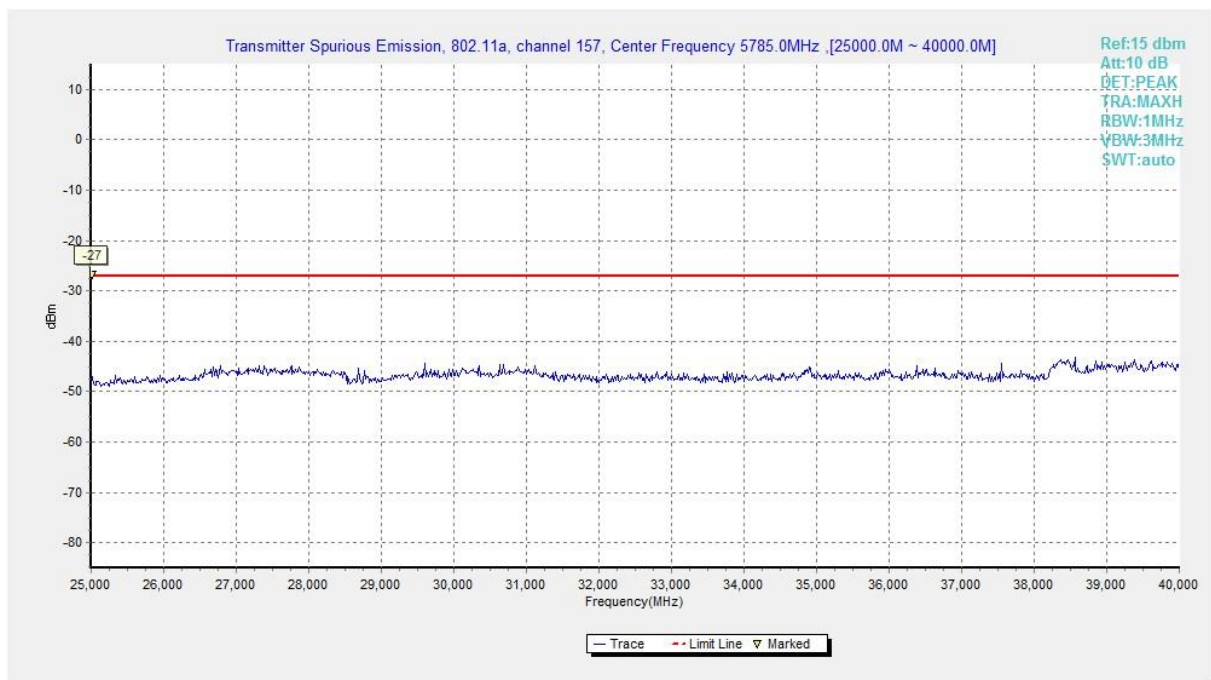


Fig. 16 Conducted Spurious Emission (802.11a, Ch157, 25 GHz-40 GHz)

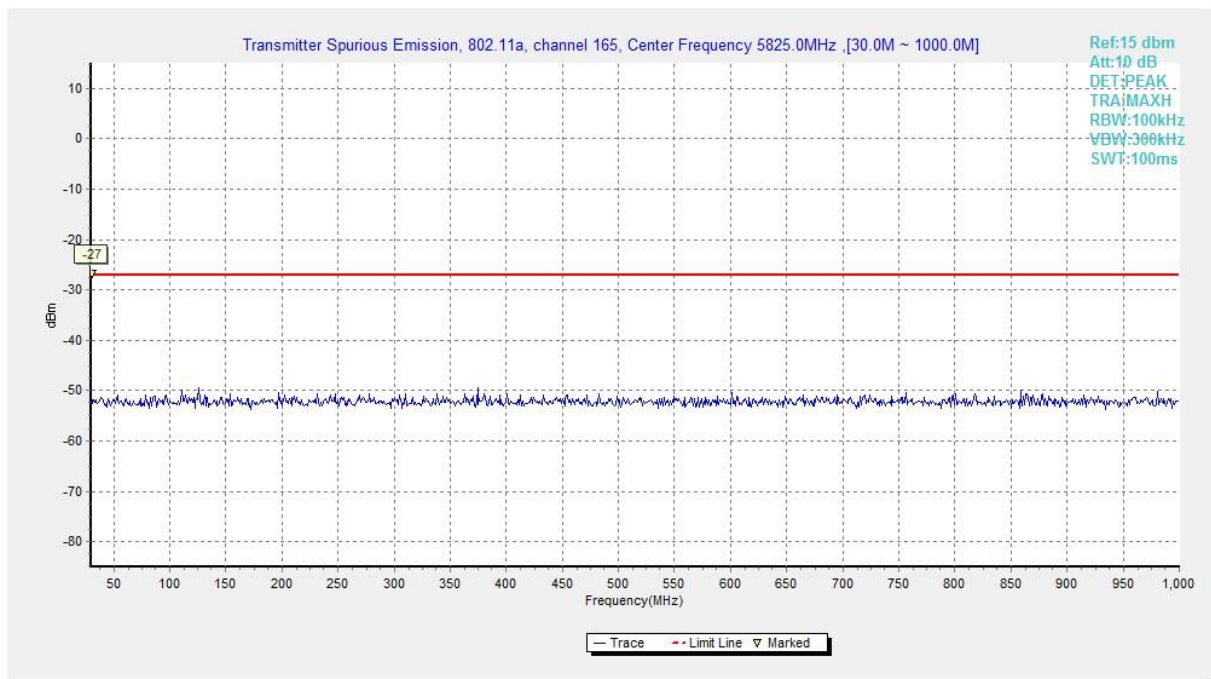


Fig. 17 Conducted Spurious Emission (802.11a, Ch165, 30 MHz-1 GHz)

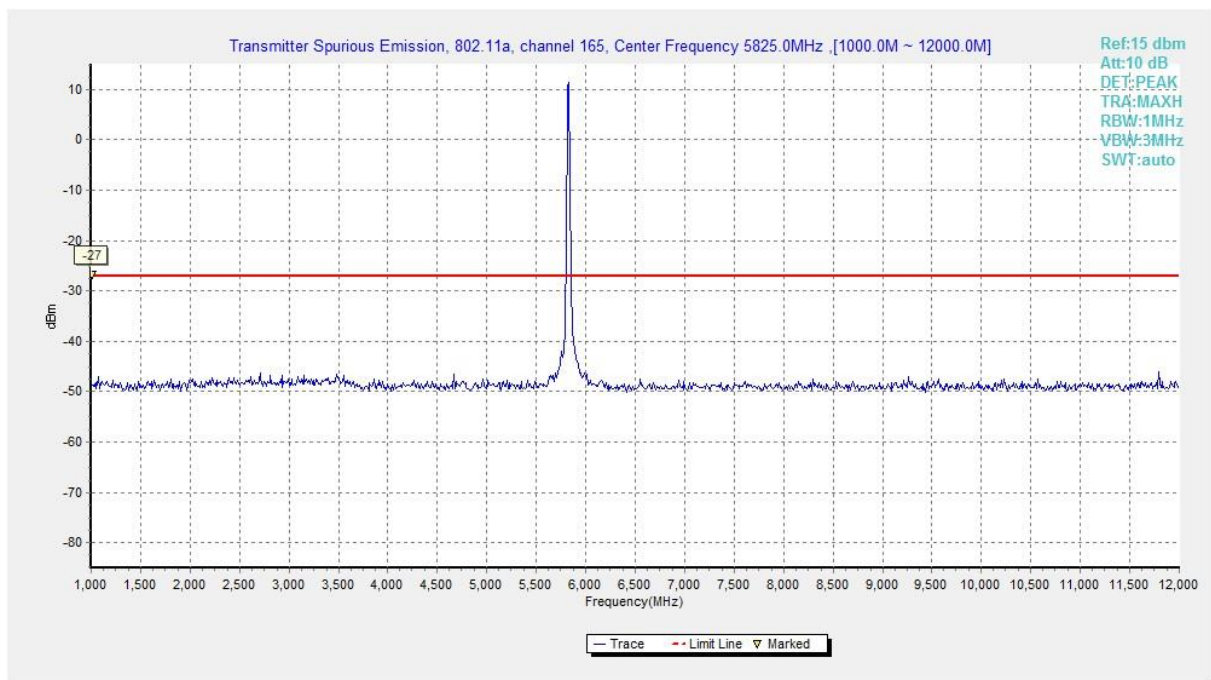


Fig. 18 Conducted Spurious Emission (802.11a, Ch165, 1 GHz -12 GHz)

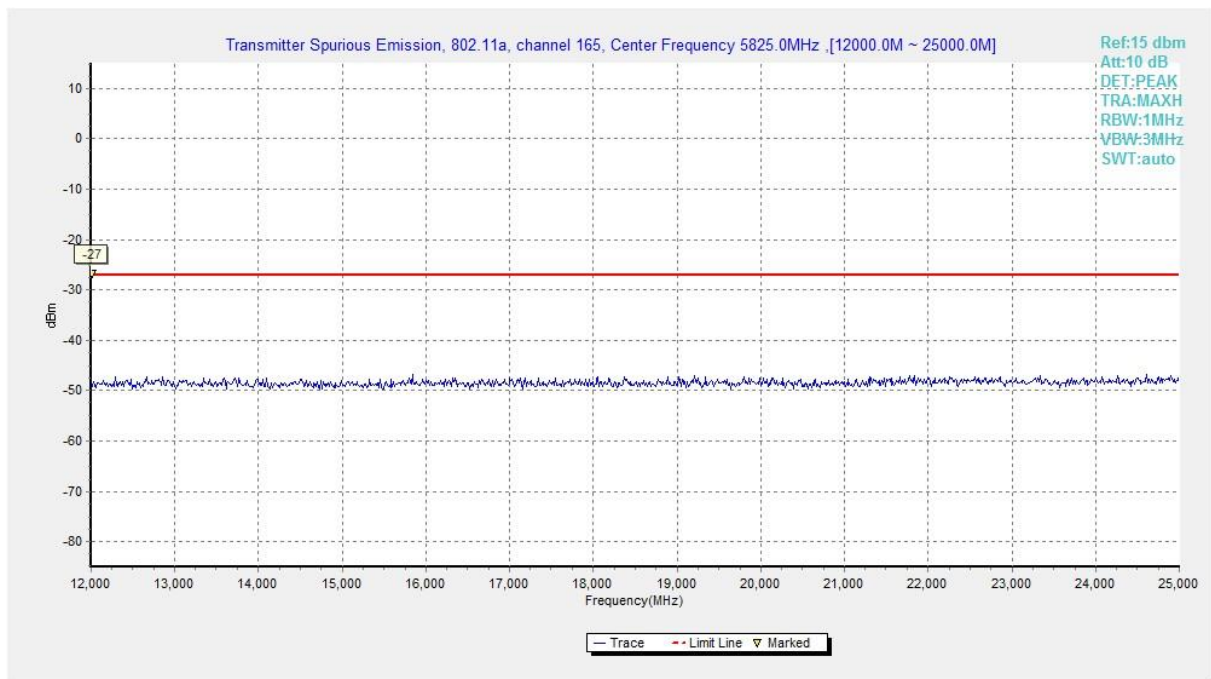


Fig. 19 Conducted Spurious Emission (802.11a, Ch165, 12 GHz-25 GHz)

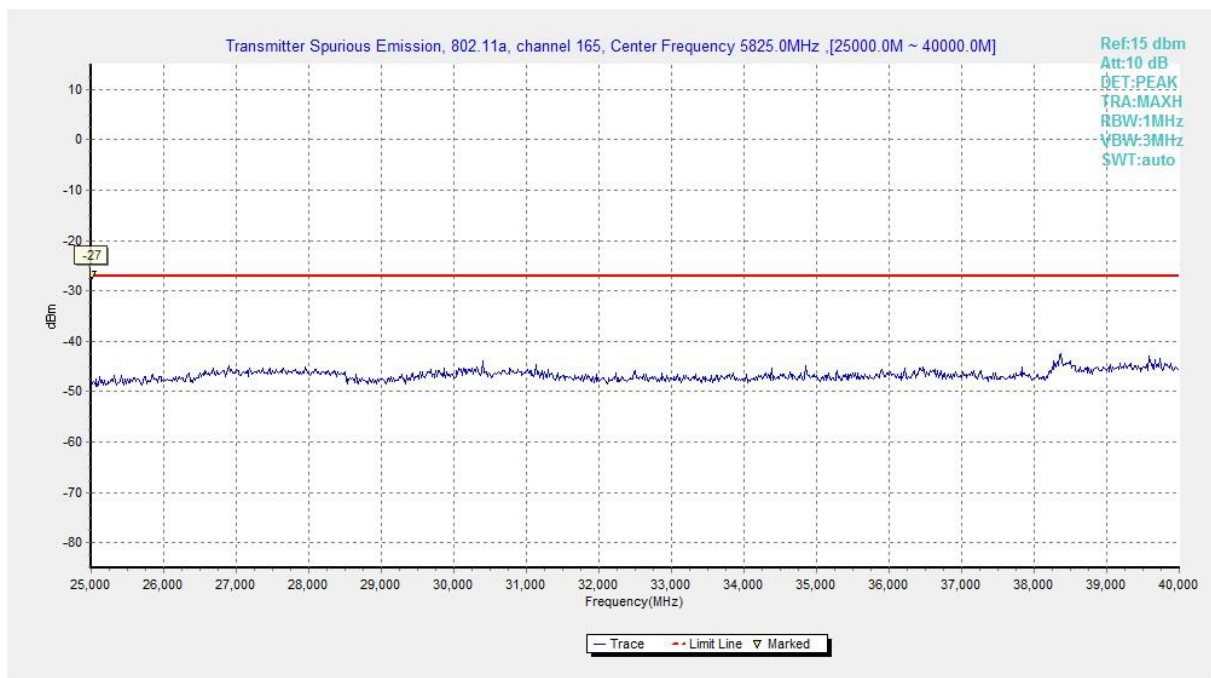


Fig. 20 Conducted Spurious Emission (802.11a, Ch165, 25 GHz-40 GHz)

A.5.2 Transmitter Spurious Emission - Radiated

Measurement Uncertainty:

Frequency Range	Uncertainty(dB)
$f \leq 1\text{GHz}$	3.9
$f > 1\text{GHz}$	4.3

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.

Average:

Measurement Results:

802.11a

Ch149

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
5724.000	45.4	-33.0	34.9	43.42	V
5724.800	46.4	-33.0	34.9	44.49	H
11490.200	35.3	-30.4	38.7	26.99	V
17234.400	39.3	-25.8	41.2	23.86	H
17802.000	40.3	-23.1	41.0	22.50	V
17886.700	39.3	-24.0	40.9	22.46	H

Ch157

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
5705.200	37.3	-32.8	34.9	35.16	H
5865.200	38.1	-32.2	35.1	35.14	H
11570.500	35.2	-30.5	38.8	26.84	V
17354.300	38.8	-25.6	41.2	23.28	V
17802.000	40.2	-23.1	41.0	22.31	H
17886.700	39.2	-24.0	40.9	22.36	V

Ch165

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
5850.000	38.7	-32.2	35.1	35.84	V
5905.200	38.6	-32.1	35.2	35.56	V
11649.700	35.2	-30.2	38.9	26.48	H
17474.200	40.0	-25.2	41.2	24.05	H
17802.000	40.3	-23.1	41.0	22.41	V
17883.400	39.3	-24.0	40.9	22.44	V

802.11n-HT20

Ch149

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5724.200	47.2	-33.0	34.9	45.22	H
5724.830	48.3	-33.0	34.9	46.42	V
11495.700	35.3	-30.4	38.7	27.02	H
17237.700	38.2	-25.8	41.2	22.83	V
17805.300	40.1	-23.1	41.0	22.25	H
17887.800	39.3	-24.0	40.9	22.43	H

Ch157

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5722.400	37.6	-32.9	34.9	35.63	V
5936.800	38.4	-31.8	35.2	34.96	V
11570.500	34.9	-30.5	38.8	26.61	H
17360.900	39.7	-25.6	41.2	24.10	H
17803.100	40.3	-23.1	41.0	22.41	V
17886.700	39.3	-24.0	40.9	22.39	H

Ch165

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5850.080	39.5	-32.2	35.1	36.57	H
5854.820	39.0	-32.2	35.1	36.11	V
11649.700	35.1	-30.2	38.9	26.42	H
17475.300	38.3	-25.2	41.2	22.30	V
17809.700	40.3	-23.0	41.0	22.39	H
17880.100	39.4	-23.9	40.9	22.45	V

802.11n-HT40

Ch151

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5724.820	51.9	-33.0	34.9	49.95	H
5722.030	50.6	-32.9	34.9	48.65	V
11510.000	34.9	-30.4	38.7	26.64	H
17265.200	38.1	-25.9	41.2	22.80	V
17795.400	40.1	-23.2	41.0	22.40	H
17885.600	39.4	-24.0	40.9	22.53	V

Ch159

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5850.000	38.2	-32.2	35.1	35.32	V
5857.200	38.0	-32.2	35.1	35.10	H

11629.900	34.4	-30.4	38.9	25.86	V
17444.500	38.2	-25.2	41.2	22.28	H
17807.500	40.3	-23.0	41.0	22.37	V
17877.900	39.3	-23.9	40.9	22.29	H

Peak:

802.11a

Ch149

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5723.416	66.5	-32.9	34.9	64.54	V
5724.750	69.7	-33.0	34.9	67.75	H
11490.200	47.2	-30.4	38.7	38.93	V
17044.650	52.8	-25.5	41.4	36.93	H
17230.550	52.2	-25.8	41.2	36.81	V
17821.250	53.1	-23.2	40.9	35.27	H

Ch157

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5749.800	50.6	-32.9	34.9	48.58	H
3819.000	51.4	-33.7	33.8	51.30	H
11569.950	47.0	-30.5	38.8	38.66	V
17355.400	53.7	-25.6	41.2	38.11	V
17741.500	52.9	-24.1	41.0	36.04	H
17815.750	53.0	-23.1	40.9	35.16	V

Ch165

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5850.020	55.3	-32.2	35.1	52.45	V
5852.182	54.0	-32.2	35.1	51.14	V
11650.250	46.1	-30.2	38.9	37.40	H
17470.350	53.4	-25.2	41.2	37.38	H
17743.700	52.4	-24.1	41.0	35.51	V
17828.950	52.8	-23.3	40.9	35.09	V

802.11n-HT20

Ch149

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5723.600	71.1	-32.9	34.9	69.14	H
5722.900	70.2	-32.9	34.9	68.26	V
11490.200	46.6	-30.4	38.7	38.33	H
16269.700	52.4	-25.4	40.6	37.08	V
17241.550	53.9	-25.8	41.2	38.56	H

17848.750	53.3	-23.5	40.9	35.88	H
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Ch157

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
4656.200	49.8	-33.0	34.5	48.27	V
5911.200	51.3	-32.1	35.2	48.21	V
11569.950	46.5	-30.5	38.8	38.14	H
16551.850	51.7	-25.9	41.2	36.49	H
17360.900	52.7	-25.6	41.2	37.12	V
17824.550	52.8	-23.2	40.9	35.09	H

Ch165

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5850.020	59.1	-32.2	35.1	56.21	H
5850.296	55.8	-32.2	35.1	52.97	V
11650.250	47.2	-30.2	38.9	38.47	H
17476.400	52.3	-25.3	41.2	36.37	V
17714.550	52.3	-24.5	41.0	35.81	H
17783.300	53.2	-23.4	41.0	35.69	V

802.11n-HT40
Ch151

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5724.926	70.1	-33.0	34.9	68.13	H
5723.738	70.6	-33.0	34.9	68.65	V
11510.000	46.6	-30.4	38.7	38.35	H
16571.100	51.5	-25.9	41.2	36.19	V
17269.600	51.3	-25.9	41.2	35.99	H
17804.200	53.6	-23.1	41.0	35.71	V

Ch159

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
5850.572	52.8	-32.2	35.1	49.90	V
5859.260	53.5	-32.2	35.1	50.58	H
11629.900	46.3	-30.4	38.9	37.81	V
17445.050	49.8	-25.2	41.2	33.88	H
17787.700	53.4	-23.3	41.0	35.80	V
17875.700	54.2	-23.9	40.9	37.22	H

A.6. Band Edges Compliance

A6.1 Band Edges - conducted

Measurement Limit:

Standard	Frequency (MHz)	Limit (dBm/MHz)
FCC 47 CFR Part 15.407 (b) (4)	5715MHz~5860MHz	< -17
	Below 5715MHz, Above5860MHz	< -27

The measurement is made according to KDB 789033 D02

Measurement Uncertainty:

Measurement Uncertainty	0.75dB
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Measurement Result:

Mode	Channel	Test Results	Conclusion
802.11n HT40	5755 MHz	Fig.21	P
	5795 MHz	Fig.22	P

Note: 802.11n HT40 was selected as the worst-case of the test case.

Conclusion: PASS

Test graphs as below:

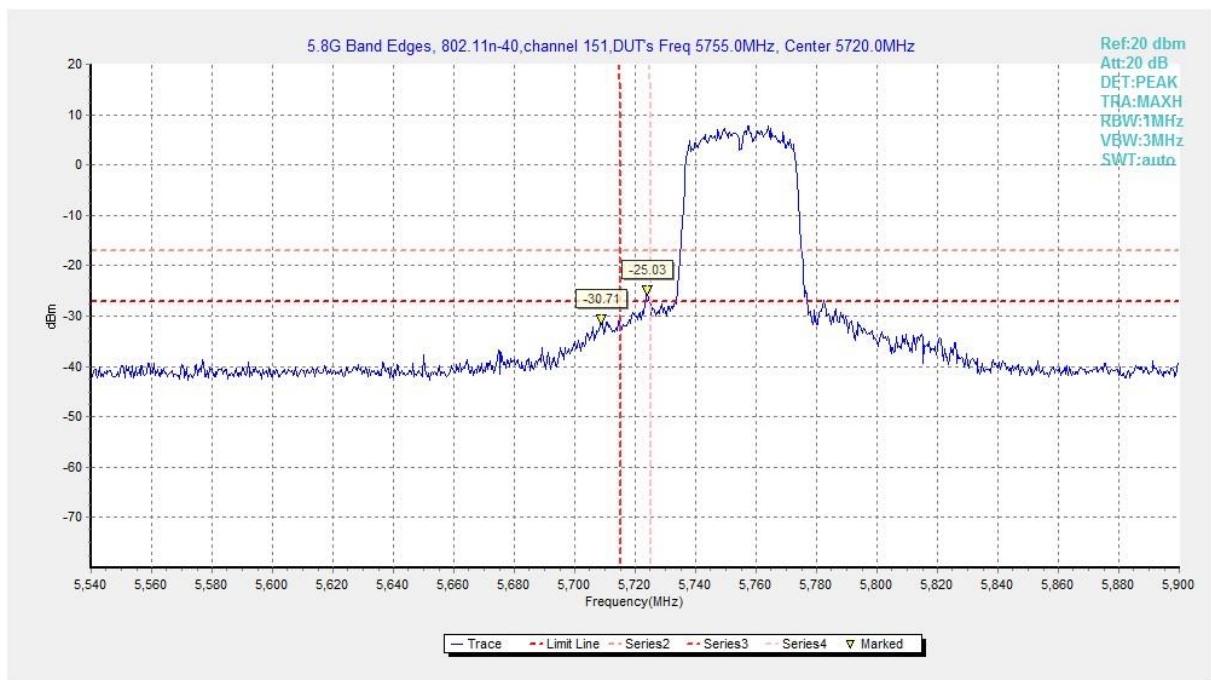


Fig. 21 Band Edges (802.11n-HT40, 5755MHz)

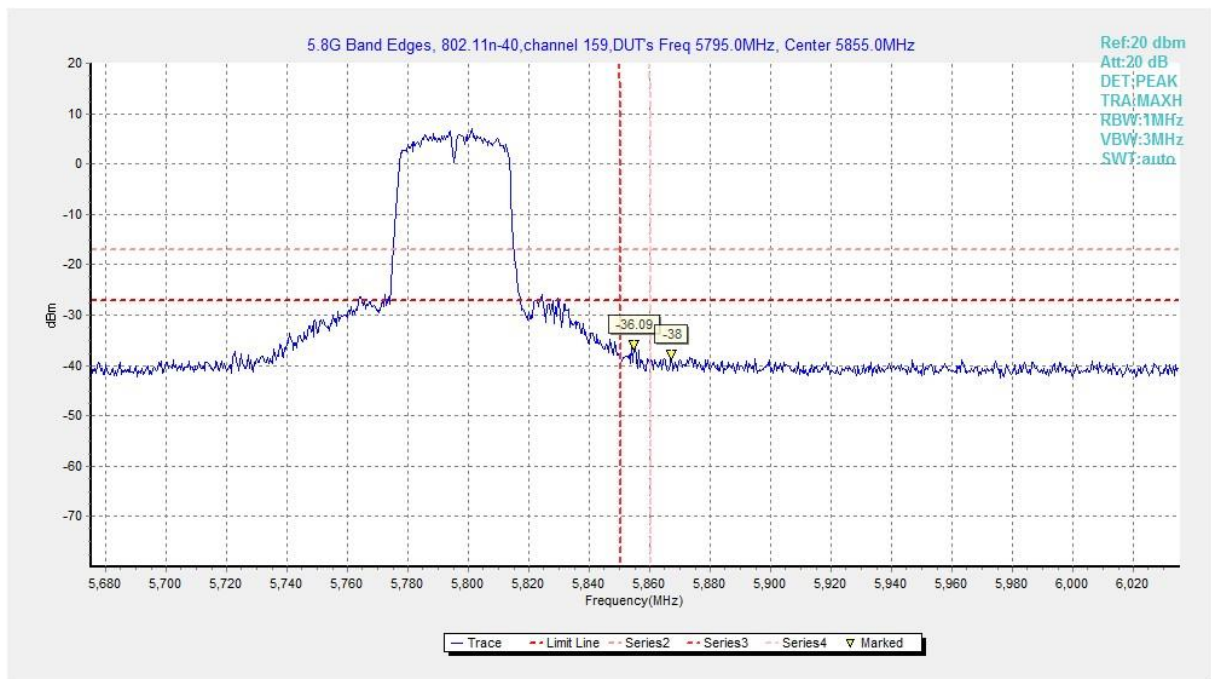


Fig. 22 Band Edges (802.11n-HT40, 5795MHz)

A6.2 Band Edges - Radiated

Measurement Limit:

Standard	Limit (dB μ V/m)	
FCC 47 CFR Part 15.209	Peak	74
	Average	54

The measurement is made according to KDB 789033 D02

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 Result:

Mode	Channel	Test Results	Conclusion
802.11a	5745 MHz	Fig.23	P
	5825 MHz	Fig.24	P
802.11n HT20	5745 MHz	Fig.25	P
	5825 MHz	Fig.26	P
802.11n HT40	5755 MHz	Fig.27	P
	5795 MHz	Fig.28	P

Conclusion: PASS

Test graphs as below:

RE - Power-5.650GHz-5.765GHz

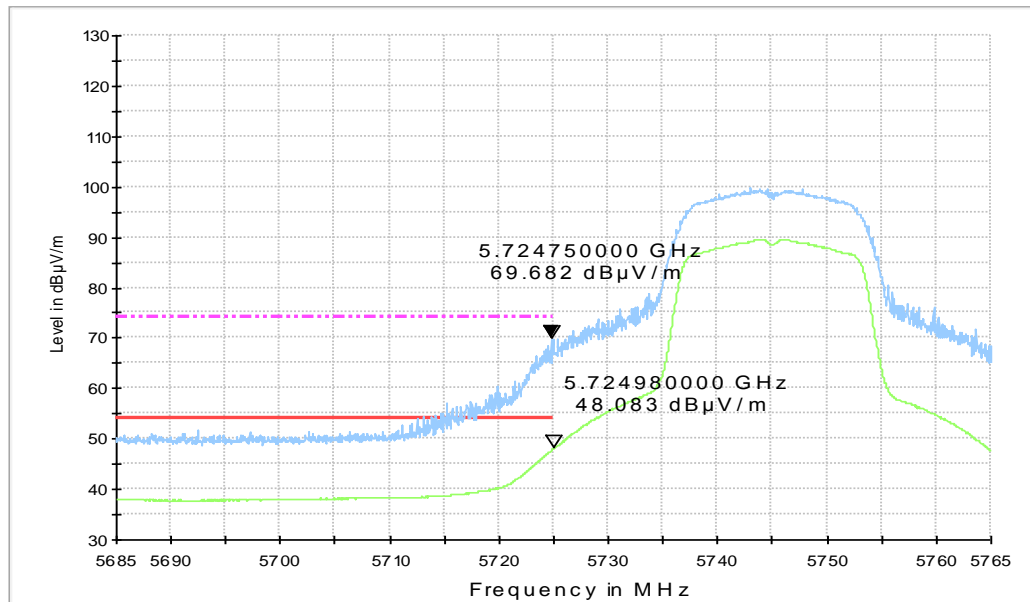


Fig. 23 Band Edges (802.11a, 5745MHz)

RE - Power-5.810GHz-5.925GHz

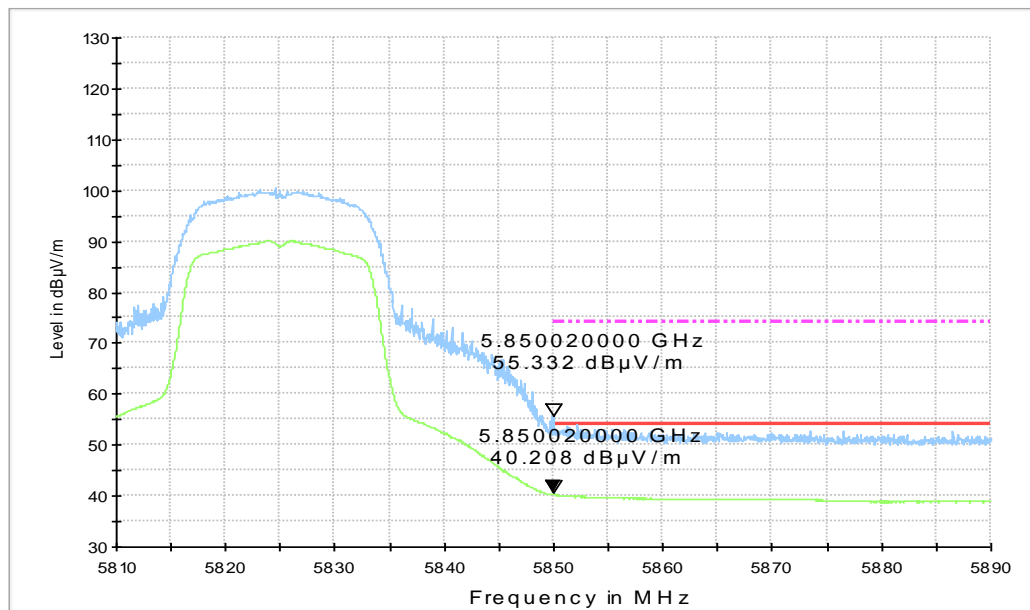


Fig. 24 Band Edges (802.11a, 5825MHz)

RE - Power-5.650GHz-5.765GHz

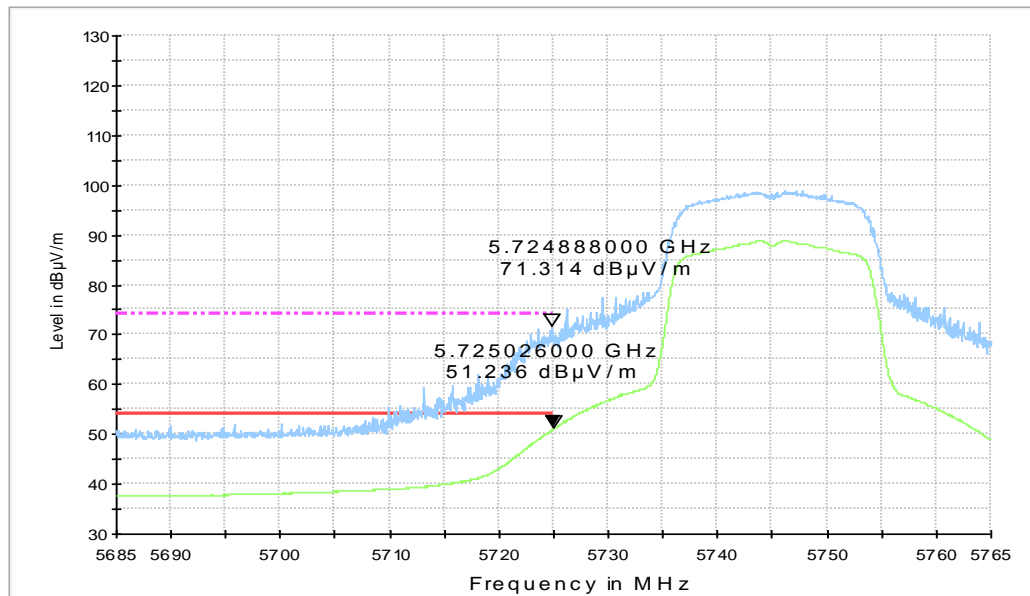


Fig. 25 Band Edges (802.11n-HT20, 5745MHz)

RE - Power-5.810GHz-5.925GHz

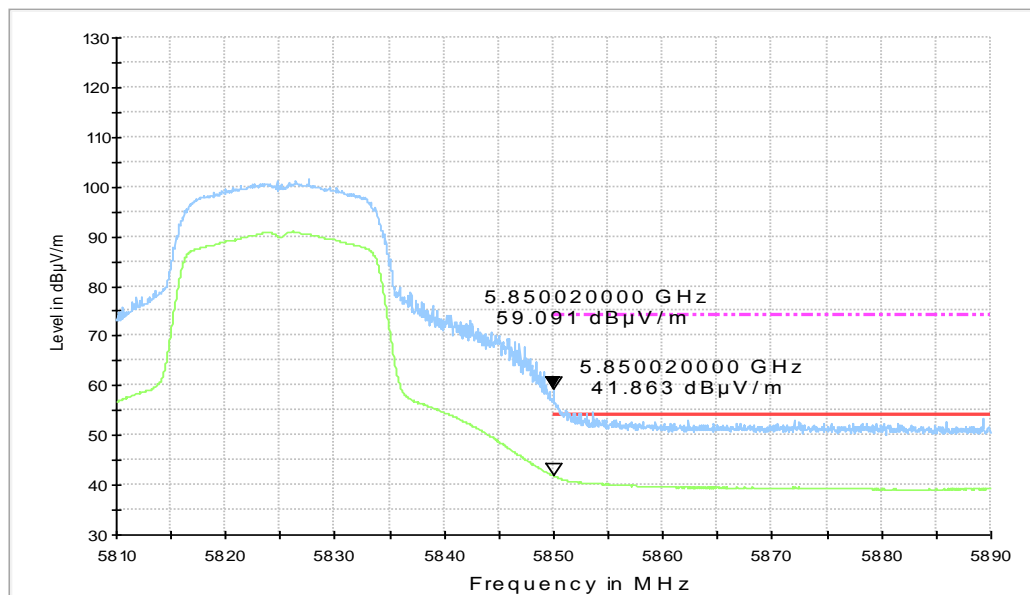


Fig. 26 Band Edges (802.11n-HT20, 5825MHz)

RE - Power-5.650GHz-5.765GHz

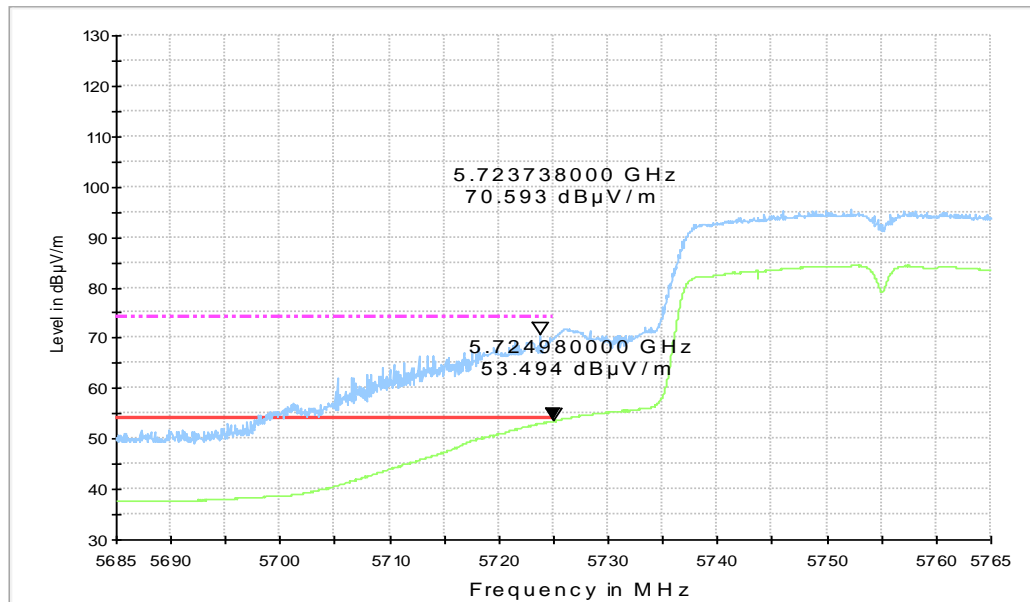


Fig. 27 Band Edges (802.11n-HT40, 5755MHz)

RE - Power-5.810GHz-5.925GHz

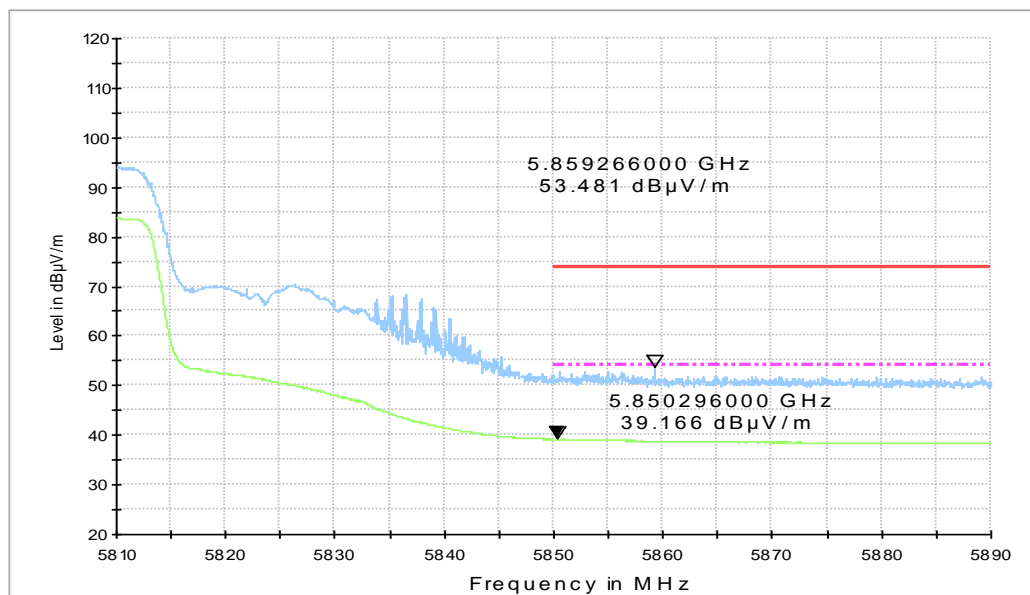


Fig. 28 Band Edges (802.11n-HT40, 5795MHz)

A.7. AC Powerline Conducted Emission

Test Condition:

Voltage (V)	Frequency (Hz)
110	60

Measurement uncertainty:

Expanded measurement uncertainty for this test item is $U = 3.2\text{dB}$, $k=2$.

Measurement Result and limit:

WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV)		Conclusion
		With charger		
		802.11a	Idle	
0.15 to 0.5	66 to 56	Fig.29	Fig.30	P
0.5 to 5	56			
5 to 30	60			
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

WLAN (Average Limit)

Frequency range (MHz)	Average Limit (dBμV)	Result (dBμV)		Conclusion
		With charger		
		802.11a	Idle	
0.15 to 0.5	56 to 46	Fig.29	Fig.30	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 C63.10 .

Conclusion: PASS

Test graphs as below:

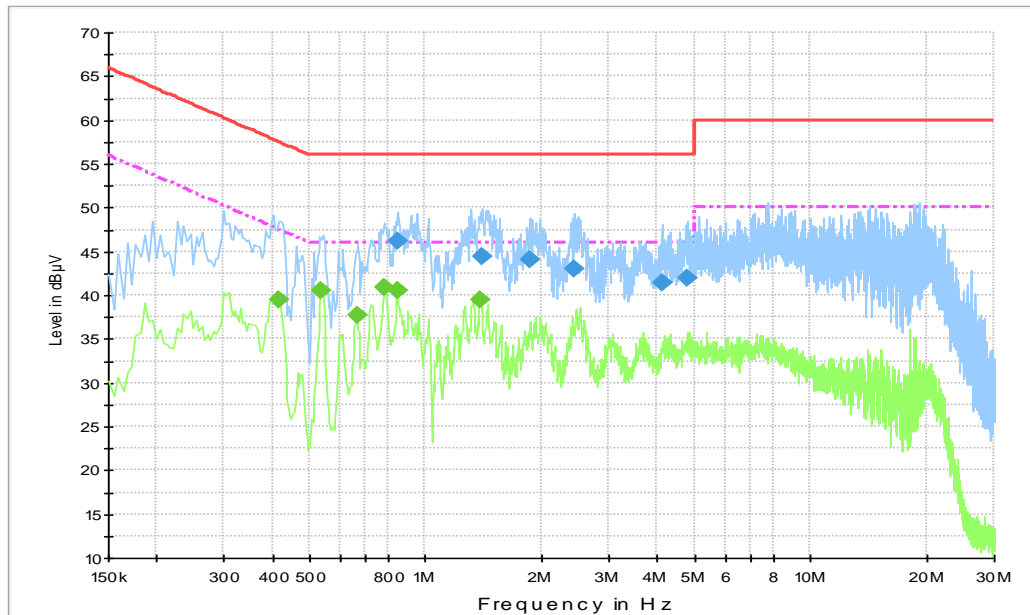


Fig. 29 AC Powerline Conducted Emission-802.11a

Final Result 1:

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.843000	46.3	GND	L1	10.2	9.7	56.0
1.405500	44.5	GND	L1	10.2	11.5	56.0
1.860000	44.1	GND	L1	10.3	11.9	56.0
2.431500	43.1	GND	L1	10.3	12.9	56.0
4.105500	41.5	GND	L1	10.4	14.5	56.0
4.807500	41.9	GND	L1	10.4	14.1	56.0

Final Result 2:

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.415500	39.6	GND	L1	10.2	8.0	47.5
0.537000	40.6	GND	L1	10.2	5.4	46.0
0.663000	37.6	GND	L1	10.2	8.4	46.0
0.784500	40.8	GND	L1	10.2	5.2	46.0
0.847500	40.5	GND	L1	10.2	5.5	46.0
1.383000	39.5	GND	L1	10.2	6.5	46.0

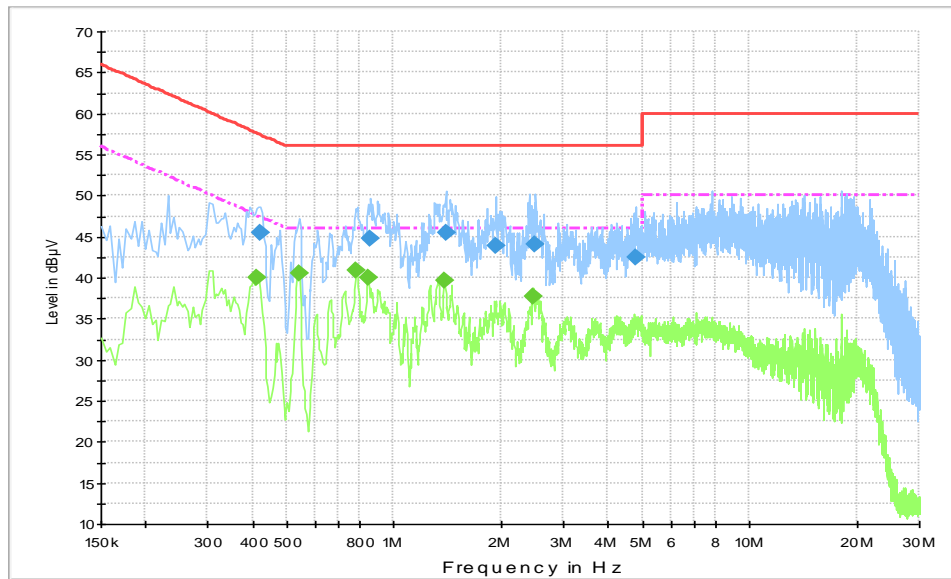


Fig. 30 AC Powerline Conducted Emission-Idle

Final Result 1:

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.420000	45.5	GND	L1	10.2	11.9	57.4
0.861000	44.7	GND	L1	10.2	11.3	56.0
1.396500	45.5	GND	L1	10.2	10.5	56.0
1.941000	43.9	GND	L1	10.3	12.1	56.0
2.503500	44.1	GND	L1	10.3	11.9	56.0
4.807500	42.4	GND	L1	10.4	13.6	56.0

Final Result 2:

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.411000	39.9	GND	L1	10.2	7.7	47.6
0.541500	40.5	GND	L1	10.2	5.5	46.0
0.784500	40.8	GND	L1	10.2	5.2	46.0
0.843000	40.1	GND	L1	10.2	5.9	46.0
1.383000	39.6	GND	L1	10.2	6.4	46.0
2.454000	37.7	GND	L1	10.3	8.3	46.0

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