





# FCC PART 15C TEST REPORT

No.I19Z62205-IOT21

for

Client Name: TCL Communication Ltd.

Product Name: HSUPA/HSDPA/UMTS Quad Bands/GSM Quad

Bands/LTE 10 bands mobile phone

Model Name: T770H

With

FCC ID: 2ACCJN038

Hardware Version: 03

Software Version: 3C24

Issued Date: 2020-02-17

#### 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.

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

### Test Laboratory:

#### CTTL-Telecommunication Technology Labs, CAICT

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

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

Email: cttl\_terminals@caict.ac.cn, website: www.caict.ac.cn





## **REPORT HISTORY**

Report Number	Revision	Description	Issue Date
I19Z62205-IOT21	Rev.0	1st edition	2020-02-17





## **CONTENTS**

CONTI	ENIS	3
1.	TEST LATORATORY	5
1.1.	Introduction & Accreditation	5
1.2.	TESTING LOCATION	5
1.3.	TESTINGENVIRONMENT	5
1.1.	PROJECT DATE	5
1.2.	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	8
6.	SUMMARY OF TEST RESULTS	9
6.1.	SUMMARY OF TEST RESULTS	9
6.2.	STATEMENTS	
6.3.	TEST CONDITIONS	9
7.	TEST EQUIPMENTS UTILIZED	10
8.	MEASUREMENT UNCERTAINTY	11
8.1.	Transmitter Output Power	11
8.2.	PEAK POWER SPECTRAL DENSITY	11
8.3.	OCCUPIED 6DB BANDWIDTH	
8.4.	BAND EDGES COMPLIANCE	
8.5.	Spurious Emissions	
8.6.	AC POWER-LINE CONDUCTED EMISSION	11
ANNE	X A: MEASUREMENT RESULTS	12
	MEASUREMENT METHOD	
	MAXIMUM AVERAGE OUTPUT POWER-CONDUCTED	
	PEAK POWER SPECTRAL DENSITY	
A.4. (	Occupied 6dB Bandwidth	17





A.5. Transmitter Spurious Emission	25
A.5.1 Transmitter Spurious Emission - Conducted	25
A.5.2 Transmitter Spurious Emission - Radiated	56
A.6. BAND EDGES COMPLIANCE	69
A6.1 BAND EDGES - CONDUCTED	69
A6.2 BAND EDGES - RADIATED	76
A.7. AC POWERLINE CONDUCTED EMISSION	85
Fig. 95	86
Fig. 96	86
ANNEX B: ACCREDITATION CERTIFICATE	89





## 1. TEST LATORATORY

#### 1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2005 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0, and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (CN0066). The detail accreditation scope can be found on NVLAP website.

1.2. 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(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

1.3. TestingEnvironment

Normal Temperature: -10-55°C Relative Humidity: 20-75%

1.1. Project date

Testing Start Date: 2019-12-23
Testing End Date: 2020-02-14

1.2. Signature

Xie Fangfang

(Prepared this test report)

Zheng Wei

(Reviewed this test report)

Hu Xiaoyu

(Approved this test report)





## 2. CLIENT INFORMATION

## 2.1. Applicant Information

Company Name: TCL Communication Ltd.

Address: 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science

Park, Shatin, NT, Hong Kong

City: Hong Kong

Postal Code:

Country: China

Telephone: 0086-755-36611722

Fax: 0086-755-36612000-81722

#### 2.2. Manufacturer Information

Company Name: TCL Communication Ltd.

5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science

Park, Shatin, NT, Hong Kong

City: Hong Kong

Postal Code: /

Country: China

Telephone: 0086-755-36611722

Fax: 0086-755-36612000-81722





## 3. <u>EQUIPMENT UNDER TEST (EUT) AND ANCILLARY</u>

## **EQUIPMENT(AE)**

### 3.1. About EUT

Description HSUPA/HSDPA/UMTS Quad Bands/GSM Quad Bands/LTE

10 bands mobile phone

Model name T770H

FCC ID 2ACCJN038

WLAN Frequency Range ISM Band: 5725MHz~5850MHz

Type of modulation OFDM Voltage 3.85V

### 3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	<b>HW Version</b>	SW Version
EUT1	/	03	3C2G
EUT2	/	03	3C2G

<sup>\*</sup>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
AE2	battery	/	/
AE3	Travel charger	/	/
AE4	USB Cable	/	/
AE5	USB Cable	/	/

AE2

Model TLp038D1

Manufacturer /

Capacitance 3860 mAh Nominal voltage 3.85V

AE3

Model UC13US Manufacturer PUAN

Length of cable

AE4

Model CDA0000128C1

Manufacturer Juwei Length of cable /

AE5

Model CDA0000128C2 Manufacturer Shenghua

Length of cable /

<sup>\*</sup>AE ID: is used to identify the test sample in the lab internally.





#### 3.4. General Description

Equipment Under Test (EUT) is a model of HSUPA/HSDPA/UMTS Quad Bands/GSM Quad Bands/LTE 10 bands 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 and E:	
FCC Part15	15.205 Restricted bands of operation;	2018
1001 ait15	15.209 Radiated emission limits, general requirements;	2010
	15.407 General technical requirements	
	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	
UNII: KDB 789033 D02	General U-NII Test Procedures New Rules v02r01	2017-12
	Federal Communications Commission Office of	
	Engineering and Technology Laboratory Division	
	GUIDANCE FOR COMPLIANCE MEASUREMENTS ON	
KDB 558074 D01	DIGITAL TRANSMISSION SYSTEM, FREQUENCY	2019
	HOPPING SPREAD SPECTRUM SYSTEM, AND HYBRID	
	SYSTEM DEVICES OPERATING UNDER SECTION	
	15.247 OF THE FCC RULES	

## 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)	1	BR
Peak Power Spectral Density	15.407 (a)	1	BR
Occupied 6dB Bandwidth	15.407 (e)	/	BR
Band Edges Compliance - Conducted& Radiated	15.407 (b)	1	BR
Transmitter Spurious Emission - Conducted	15.407	1	BR
Transmitter Spurious Emission - Radiated	15.407, 15.205, 15.209	/	BR
AC Powerline Conducted Emission	15.107, 15.207	1	BR

Please refer to ANNEX A for detail.

Terms used in Verdict column

Р	Pass, The EUT complies with the essential requirements in the standard.	
NM	Not measured, The test was not measured by CTTL	
BR	Re-use test data from basic model report.	
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/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 WLAN function among the features described in section 3.

#### 6.3. Test Conditions

The Equipment Under Test (EUT) model T770H (FCC ID: 2ACCJN038) is a variant product of T770B (FCC ID: 2ACCJN036), according to the declaration of changes provided by the applicant and FCC KDB publication 484596 D01, spot check measurements were performed on this device, all the test results are derived from test report No. I19Z62229-IOT06. Please refer Annex A for detail spot check verification data and reference data.the spot check test results are consistent with basic model.

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  $26^{\circ}$ C Voltage 3.85V Humidity 44%





## 7. TEST EQUIPMENTS UTILIZED

## **Conducted test system**

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
			Hullibei		i cilou	Due date
1	Vector Signal	FSQ40	200089	Rohde &	1 year	2020-05-15
'	Analyzer	1 3040	200009	Schwarz	i yeai	2020-03-13
	Took Doooliyas	FCCI	400700	Rohde &	4	2020 02 20
2	Test Receiver	ESCI	100766	Schwarz	1 year	2020-02-20
	LICN	ENIV/04.0	404000	Rohde &	4	2020 04 27
3	LISN	ENV216	101200	Schwarz	1 year	2020-04-27
4	Shielding Room	S81	/	ETS-Lindgren	/	/

## Radiated emission test system

	radiated emission test system					
No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibratio n Due date
1	Test Receiver	ESU26	100376	Rohde & Schwarz	1 year	2020-10-30
2	BiLog Antenna	VULB9163	01176	Schwarzbeck	3 years	2020-03-14
3	Dual-Ridge Waveguide Horn Antenna	3117	00139065	ETS-Lindgren	3 years	2020-11-10
4	EMI Antenna	3116	2663	ETS-Lindgren	3 years	2020-06-18
5	Spectrum Analyzer	FSV	101047	Rohde & Schwarz	1 year	2020-05-16





## 8. Measurement Uncertainty

## 8.1. Transmitter Output Power

Measurement Uncertainty: 0.387dB,k=1.96

## 8.2. Peak Power Spectral Density

Measurement Uncertainty: 0.705dB,k=1.96

### 8.3. Occupied 6dB Bandwidth

Measurement Uncertainty: 60.80Hz,k=1.96

## 8.4. Band Edges Compliance

Measurement Uncertainty: 0.62dB,k=1.96

### 8.5. Spurious Emissions

### Conducted (k=1.96)

Frequency Range	Uncertainty(dB)
30MHz ≤ f ≤ 2GHz	1.22
2GHz ≤ f ≤3.6GHz	1.22
3.6GHz ≤ f ≤8GHz	1.22
8GHz ≤ f ≤12.75GHz	1.51
12.75GHz ≤ f ≤26GHz	1.51
26GHz ≤ f ≤40GHz	1.59

### Radiated (k=2)

Frequency Range	Uncertainty(dB)
9kHz-30MHz	/
30MHz ≤ f ≤ 1GHz	5.40
1GHz ≤ f ≤18GHz	4.32
18GHz ≤ f ≤40GHz	5.26

## 8.6. AC Power-line Conducted Emission

Measurement Uncertainty: 3.08dB,k=2



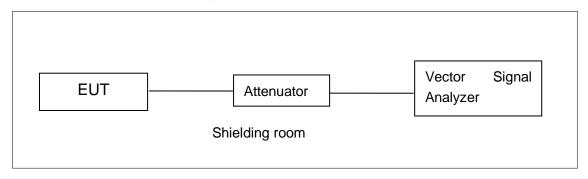


#### ANNEX A: MEASUREMENT RESULTS

#### A.1. Measurement Method

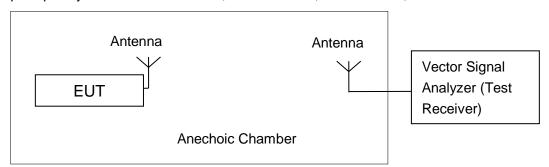
#### A.1.1. Conducted Measurements

- 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 Average Output Power-Conducted

Method of Measurement: See ANSI C63.10-clause 12.3.2.2 Method SA-1

#### **Measurement Limit and Method:**

Standard	Limit (dBm)
FCC CRF Part 15.407(a)	< 30

#### **Measurement Results:**

#### **Measurement Results:**

11a	6	9	12	18	24	36	48	54		
	98.49%	98.48%	98.37%	97.97%	98.48%	98.57%	98.21%	97.82%		
11n-20	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7		
	99.12%	99.16%	99.13%	98.88%	98.53%	97.87%	97.95%	97.79%		
11n-40	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7		
	99.16%	99.19%	98.83%	98.53%	97.63%	97.15%	96.83%	96.54%		
11ac-20	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	
	99.13%	98.98%	99.02%	99.01%	98.67%	98.19%	97.94%	98.26%	97.96%	
11ac-40	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
	99.17%	99.11%	98.92%	98.57%	97.82%	97.13%	96.71%	96.59%	95.96%	95.61%
11ac-80	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
	98.52%	98.23%	97.64%	96.90%	95.34%	94.20%	93.54%	93.12%	91.88%	90.78%

#### 802.11a mode

	Data Rate			
Mode	(Mbps)	5745MHz	5785MHz	5825MHz
	(Miphs)	(Ch149)	(Ch157)	(Ch165)
	6	18.33	17.47	16.34
	9	18.28	/	/
	12	17.35	/	/
802.11a	18	18.19	/	/
002.118	24	17.07	/	/
	36	16.43	/	/
	48	16.39	/	/
	54	16.40	/	/

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





#### 802.11n-HT20 mode

	Data Rate		Test Result (dBm)		
Mode		5745MHz	5785MHz	5825MHz	
	(Index)	(Ch149)	(Ch157)	(Ch165)	
	MCS0	16.62	16.74	16.25	
MC	MCS1	16.13	/	/	
	MCS2	16.11	/	/	
802.11n	MCS3	16.07	/	/	
(20MHz)	MCS4	14.48	/	/	
	MCS5	14.49	/	/	
	MCS6	14.51	/	/	
	MCS7	14.47	/	/	

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

802.11ac-HT20 mode

	Data Rate	Test Result (dBm)		
Mode		5745MHz	5785MHz	5825MHz
	(Index)	(Ch149)	(Ch157)	(Ch165)
	MCS0	16.25	16.72	16.17
	MCS1	15.17	/	/
000 44	MCS2	16.11	/	/
	MCS3	16.08	/	/
802.11ac (20MHz)	MCS4	15.55	/	/
(ZUIVITIZ)	MCS5	15.47	/	/
	MCS6	14.45	/	/
	MCS7	14.32	/	/
	MCS8	13.57	/	/

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

802.11n-HT40 mode

	Data Rate	Test Resul	t (dBm)
Mode		5755MHz	5795MHz
	(Index)	(Ch151)	(Ch159)
	MCS0	16.55	16.45
	MCS1	15.46	/
	MCS2	15.43	/
802.11n	MCS3	15.01	/
(40MHz)	MCS4	14.48	/
	MCS5	14.50	/
	MCS6	12.78	/
	MCS7	12.71	/

The data rate MCS0 is selected as worse condition, and the following cases are performed with . ©Copyright. All rights reserved by CTTL. Page 14 of 89





this condition.

#### 802.11ac-HT40 mode

	Data Rate	Test Resu	It (dBm)
Mode		5755MHz	5795MHz
	(Index)	(Ch151)	(Ch159)
	MCS0	16.16	16.46
	MCS1	15.25	/
	MCS2	15.19	/
	MCS3	15.07	/
802.11ac	MCS4	14.61	/
(40MHz)	MCS5	14.54	/
	MCS6	13.69	/
	MCS7	13.63	/
	MCS8	11.91	/
	MCS9	11.86	1

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

802.11ac-HT80 mode

	Data Bata	Test Result (dBm)
Mode	Mode Data Rate	5775MHz
	(Index)	(Ch155)
	MCS0	14.12
	MCS1	13.78
	MCS2	13.88
802.11ac	MCS3	13.81
	MCS4	13.32
(80MHz)	MCS5	13.28
	MCS6	12.49
	MCS7	12.45
	MCS8	11.59
	MCS9	10.53

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

The spot check is 17.03dBm(11a,ch149,6Mbps).

**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
-------------------------	--------

#### **Measurement Results:**

Mode	Channel	Power Spectral Density ( dBm/500kHz )	Conclusion
	149	7.72	Р
802.11a	157	6.84	Р
	165	7.21	Р
000 11n	149	7.48	Р
802.11n HT20	157	6.95	Р
H120	165	7.26	Р
000 44	149	6.98	Р
802.11ac HT20	157	7.21	Р
П120	165	6.34	Р
802.11n	151	2.97	Р
HT40	159	2.88	Р
802.11ac	151	2.79	Р
HT40	159	3.55	Р
802.11ac HT80	155	-1.39	Р

**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
-------------------------	---------

### **Measurement Result:**

Mode	Channel Occupied 6dB Bandwidt		Channel	B Bandwidth	conclusion
WIOGE	Chaine	( N	1Hz)	Conclusion	
	149	Fig.1	15.65	Р	
802.11a	157	Fig.2	16.35	Р	
	165	Fig.3	15.50	Р	
000 44 =	149	Fig.4	15.95	Р	
802.11n HT20	157	Fig.5	15.95	Р	
H120	165	Fig.6	15.15	Р	
000 1100	149	Fig.7	15.95	Р	
802.11ac HT20	157	Fig.8	15.95	Р	
П120	165	Fig.9	16.50	Р	
802.11n	151	Fig.10	35.92	Р	
HT40	159	Fig.11	35.68	Р	
802.11ac	151	Fig.12	35.92	Р	
HT40	159	Fig.13	35.68	Р	
802.11ac HT80	155	Fig.14	75.20	Р	

Conclusion: PASS
Test graphs as below:





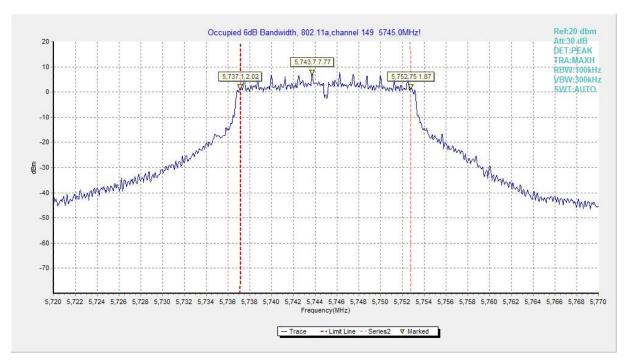


Fig. 1 Occupied 6dB Bandwidth (802.11a, Ch 149)

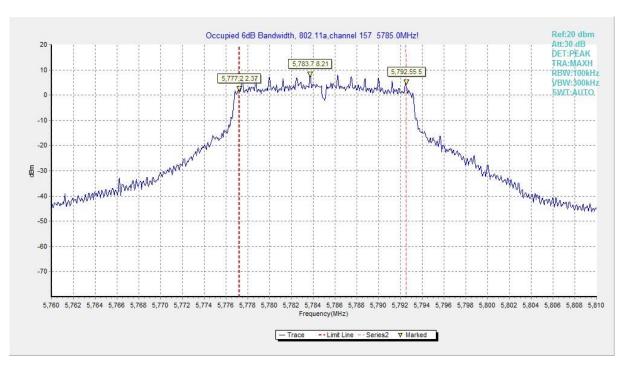


Fig. 2 Occupied 6dB Bandwidth (802.11a, Ch 157)





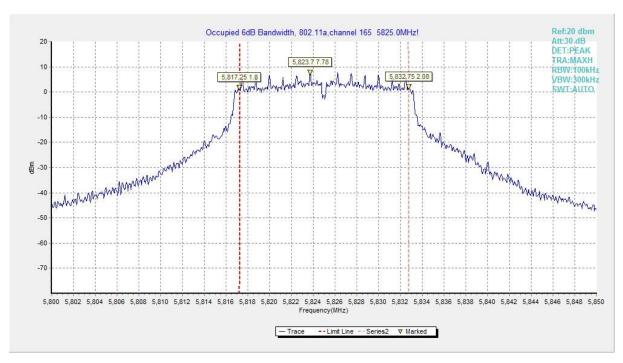


Fig. 3 Occupied 6dB Bandwidth (802.11a, Ch 165)

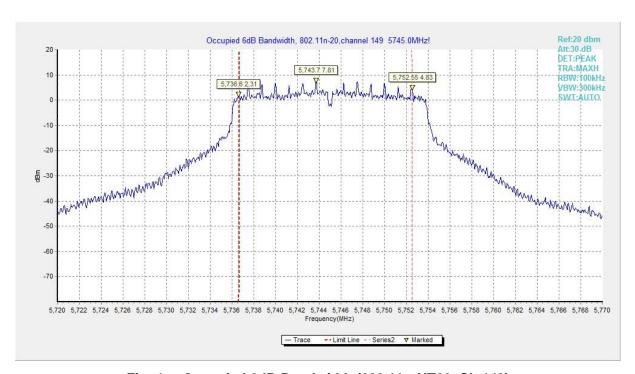


Fig. 4 Occupied 6dB Bandwidth (802.11n-HT20, Ch 149)





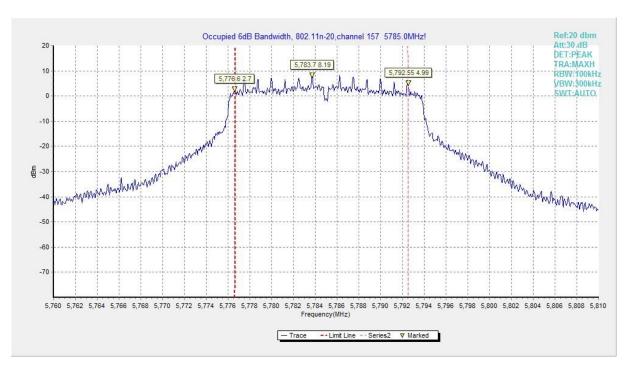


Fig. 5 Occupied 6dB Bandwidth (802.11n-HT20, Ch 157)

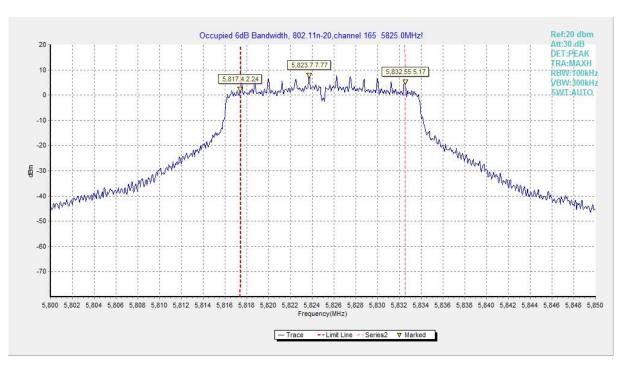


Fig. 6 Occupied 6dB Bandwidth (802.11n-HT20, Ch 165)





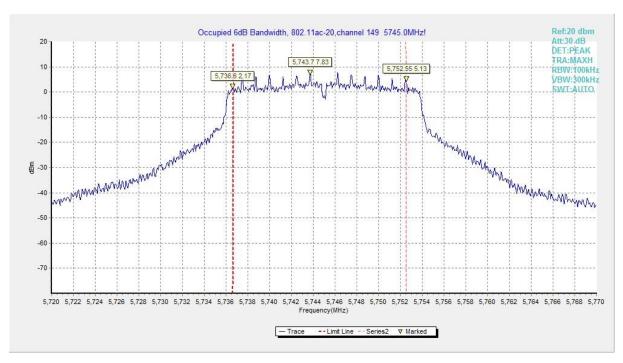


Fig. 7 Occupied 6dB Bandwidth (802.11ac-HT20, Ch 149)



Fig. 8 Occupied 6dB Bandwidth (802.11ac-HT20, Ch 157)





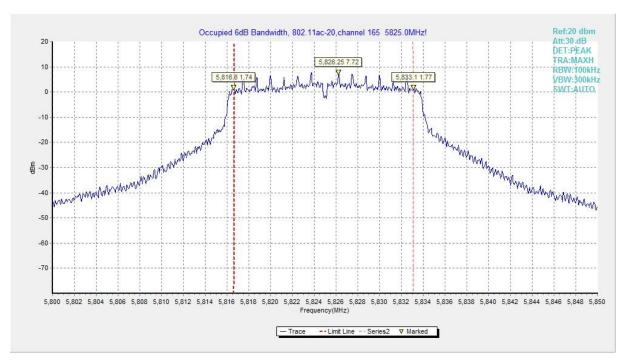


Fig. 9 Occupied 6dB Bandwidth (802.11ac-HT20, Ch 165)

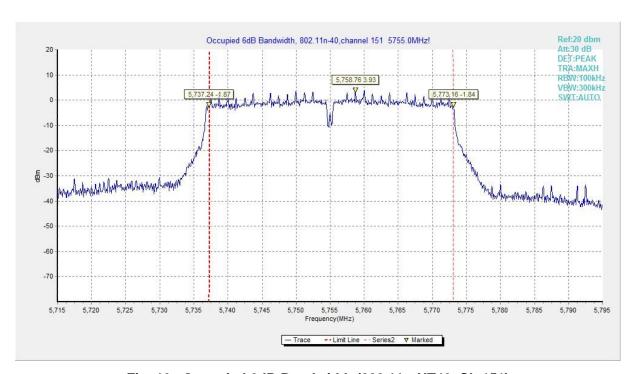


Fig. 10 Occupied 6dB Bandwidth (802.11n-HT40, Ch 151)





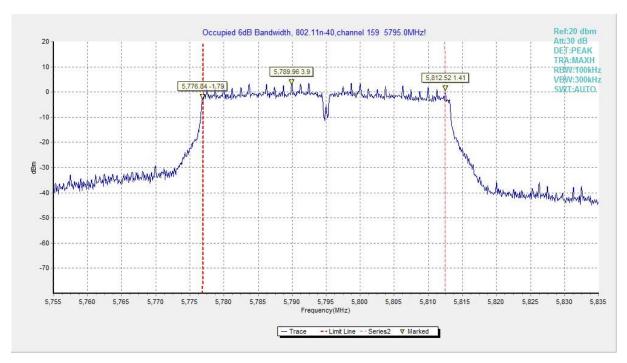


Fig. 11 Occupied 6dB Bandwidth (802.11n-HT40, Ch 159)

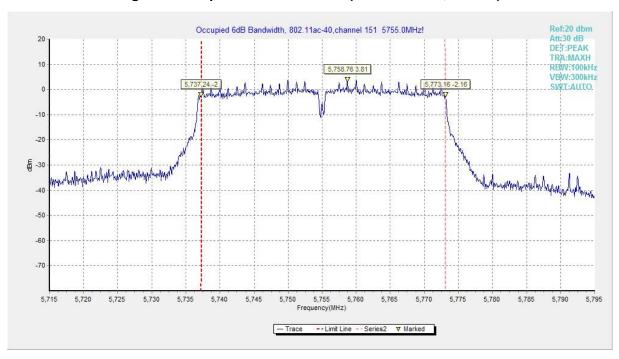


Fig. 12 Occupied 6dB Bandwidth (802.11ac-HT40, Ch 151)





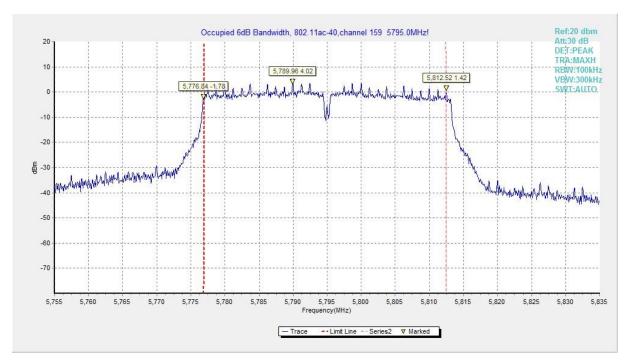


Fig. 13 Occupied 6dB Bandwidth (802.11ac-HT40, Ch 159)

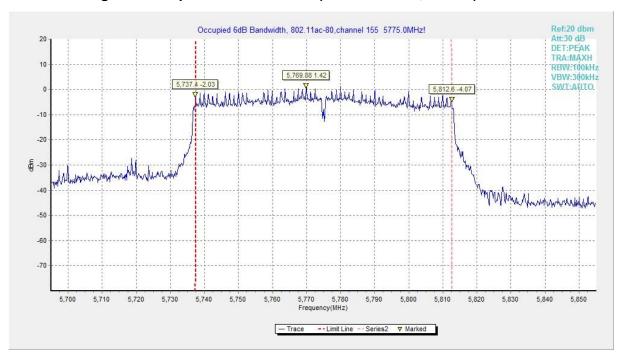


Fig. 14 Occupied 6dB Bandwidth (802.11ac-HT80, Ch 155)





## 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	Field strength(uV/m)	Field strength(dBuV/m)
(MHz)		
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
		30 MHz ~ 1 GHz	Fig.15	Р
	149	1 GHz ~ 12 GHz	Fig.16	Р
	149	12 GHz ~ 25 GHz	Fig.17	Р
		25 GHz ~ 40 GHz	Fig.18	Р
		30 MHz ~ 1 GHz	Fig.19	Р
802.11a	157	1 GHz ~ 12 GHz	Fig.20	Р
002.11a		12 GHz ~ 25 GHz	Fig.21	Р
		25 GHz ~ 40 GHz	Fig.22	Р
	405	30 MHz ~ 1 GHz	Fig.23	Р
165		1 GHz ~ 12 GHz	Fig.24	Р
	100	12 GHz ~ 25 GHz	Fig.25	Р
		25 GHz ~ 40 GHz	Fig.26	Р





### 802.11n-HT20 mode

MODE	Channel	Frequency Range	Test Results	Conclusion
		30 MHz ~ 1 GHz	Fig.27	Р
	149	1 GHz ~ 12 GHz	Fig.28	Р
	149	12 GHz ~ 25 GHz	Fig.29	Р
		25 GHz ~ 40 GHz	Fig.30	Р
		30 MHz ~ 1 GHz	Fig.31	Р
802.11n	157	1 GHz ~ 12 GHz	Fig.32	Р
HT20	157	12 GHz ~ 25 GHz	Fig.33	Р
		25 GHz ~ 40 GHz	Fig.34	Р
	405	30 MHz ~ 1 GHz	Fig.35	Р
165		1 GHz ~ 12 GHz	Fig.36	Р
	105	12 GHz ~ 25 GHz	Fig.37	Р
		25 GHz ~ 40 GHz	Fig.38	Р

### 802.11ac-HT20 mode

MODE	Channel	Frequency Range	Test Results	Conclusion
		30 MHz ~ 1 GHz	Fig.39	Р
	149	1 GHz ~ 12 GHz	Fig.40	Р
	149	12 GHz ~ 25 GHz	Fig.41	Р
		25 GHz ~ 40 GHz	Fig.42	Р
		30 MHz ~ 1 GHz	Fig.43	Р
802.11ac	457	1 GHz ~ 12 GHz	Fig.44	Р
HT20	157	12 GHz ~ 25 GHz	Fig.45	Р
		25 GHz ~ 40 GHz	Fig.46	Р
	405	30 MHz ~ 1 GHz	Fig.47	Р
165		1 GHz ~ 12 GHz	Fig.48	Р
	105	12 GHz ~ 25 GHz	Fig.49	Р
		25 GHz ~ 40 GHz	Fig.50	Р

## 802.11n-HT40 mode

MODE	Channel	Frequency Range	Test Results	Conclusion
		30 MHz ~ 1 GHz	Fig.51	Р
	151	1 GHz ~ 12 GHz	Fig.52	Р
	02.11n	12 GHz ~ 25 GHz	Fig.53	Р
802.11n		25 GHz ~ 40 GHz	Fig.54	Р
HT40		30 MHz ~ 1 GHz	Fig.55	Р
159	1 GHz ~ 12 GHz	Fig.56	Р	
	12 GHz ~ 25 GHz	Fig.57	Р	
		25 GHz ~ 40 GHz	Fig.58	Р





#### 802.11ac-HT40 mode

MODE	Channel	Frequency Range	Test Results	Conclusion
		30 MHz ~ 1 GHz	Fig.59	Р
	151	1 GHz ~ 12 GHz	Fig.60	Р
	802.11ac HT40	12 GHz ~ 25 GHz	Fig.61	Р
802.11ac		25 GHz ~ 40 GHz	Fig.62	Р
HT40		30 MHz ~ 1 GHz	Fig.63	Р
		1 GHz ~ 12 GHz	Fig.64	Р
159	12 GHz ~ 25 GHz	Fig.65	Р	
		25 GHz ~ 40 GHz	Fig.66	Р

#### 802.11ac-HT80 mode

MODE	Channel	Frequency Range	Test Results	Conclusion
	30 MHz ~ 1 GHz	Fig.67	Р	
802.11ac	155	1 GHz ~ 12 GHz	Fig.68	Р
HT80	155	12 GHz ~ 25 GHz	Fig.69	Р
	25 GHz ~ 40 GHz	Fig.70	Р	

Conclusion: PASS
Test graphs as below:

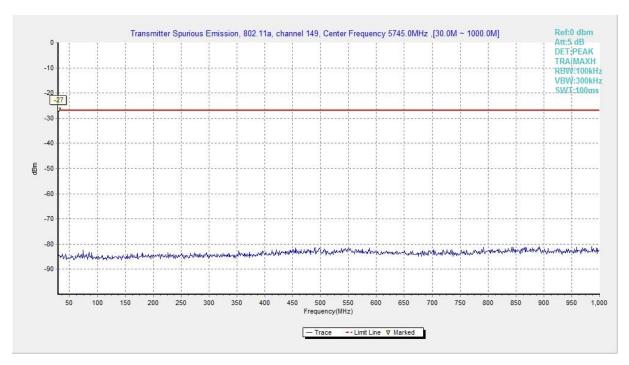


Fig. 15 Conducted Spurious Emission (802.11a, Ch149, 30 MHz-1 GHz)





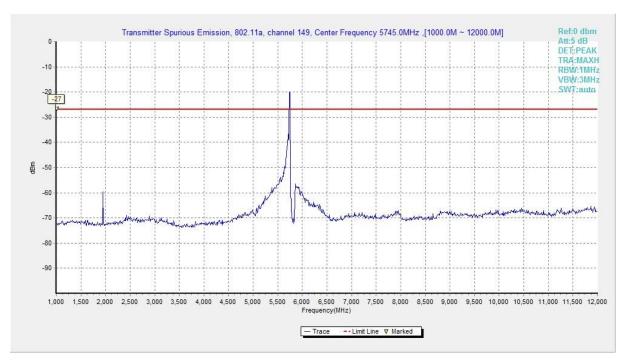


Fig. 16 Conducted Spurious Emission (802.11a, Ch149, 1 GHz -12 GHz)

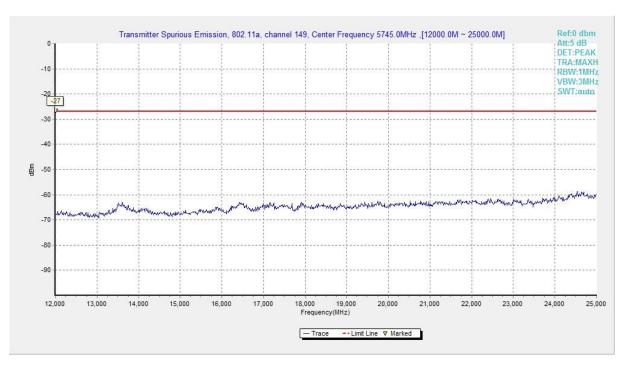


Fig. 17 Conducted Spurious Emission (802.11a, Ch149, 12 GHz-25 GHz)





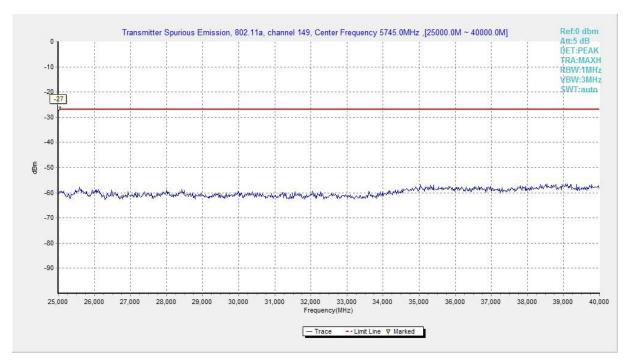


Fig. 18 Conducted Spurious Emission (802.11a, Ch149, 25 GHz-40 GHz)

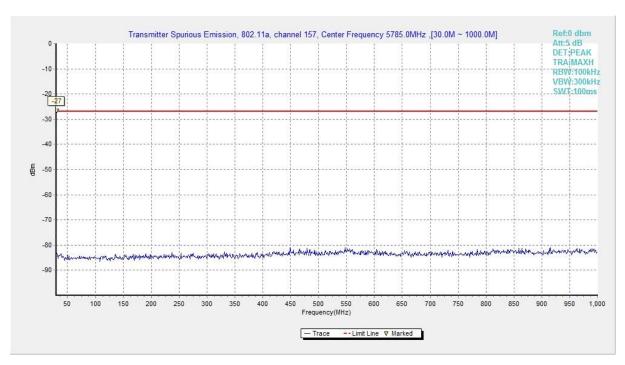


Fig. 19 Conducted Spurious Emission (802.11a, Ch157, 30 MHz-1 GHz)





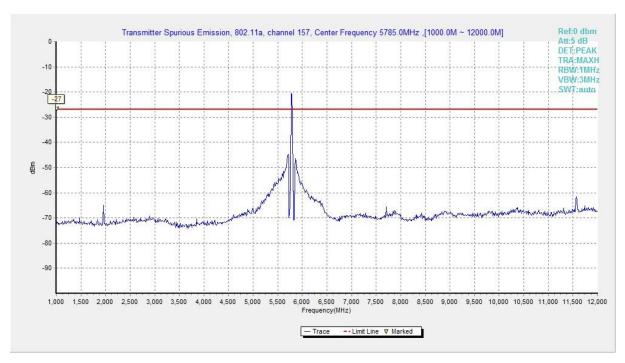


Fig. 20 Conducted Spurious Emission (802.11a, Ch157, 1 GHz -12 GHz)

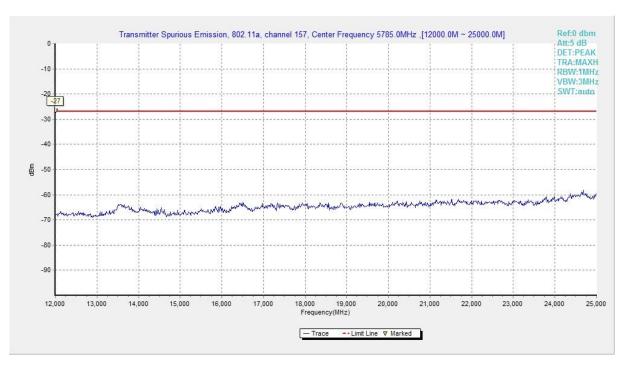


Fig. 21 Conducted Spurious Emission (802.11a, Ch157, 12 GHz-25 GHz)





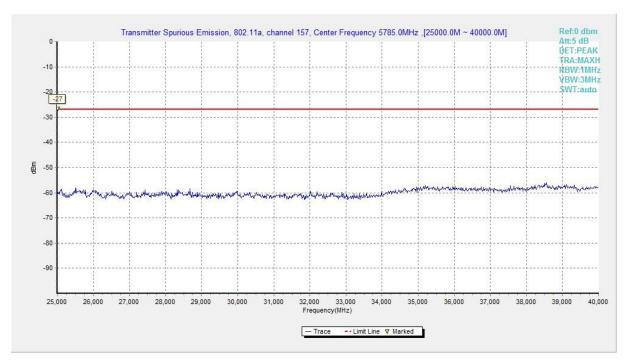


Fig. 22 Conducted Spurious Emission (802.11a, Ch157, 25 GHz-40 GHz)

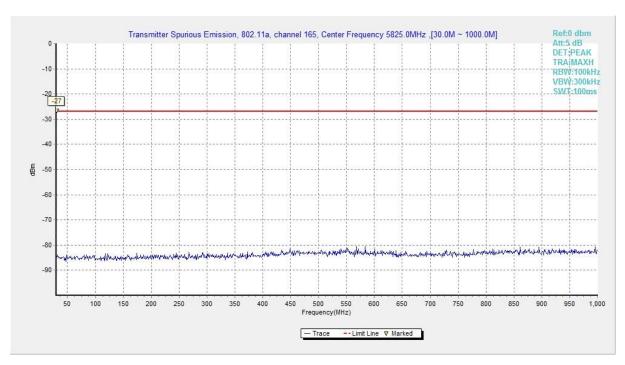


Fig. 23 Conducted Spurious Emission (802.11a, Ch165, 30 MHz-1 GHz)





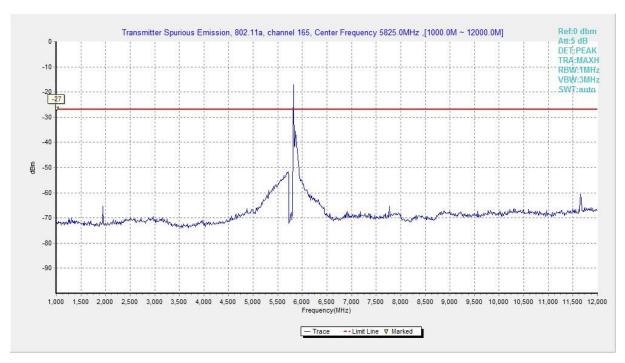


Fig. 24 Conducted Spurious Emission (802.11a, Ch165, 1 GHz -12 GHz)

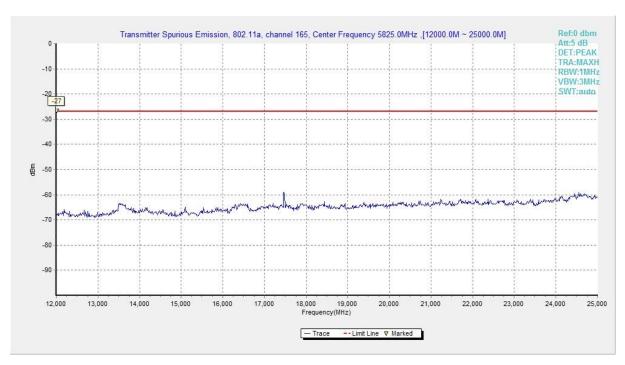


Fig. 25 Conducted Spurious Emission (802.11a, Ch165, 12 GHz-25 GHz)





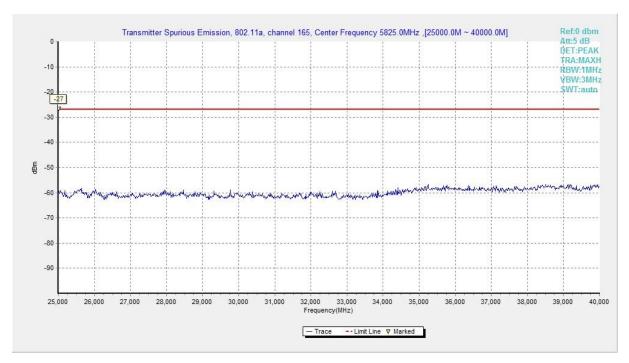


Fig. 26 Conducted Spurious Emission (802.11a, Ch165, 25 GHz-40 GHz)

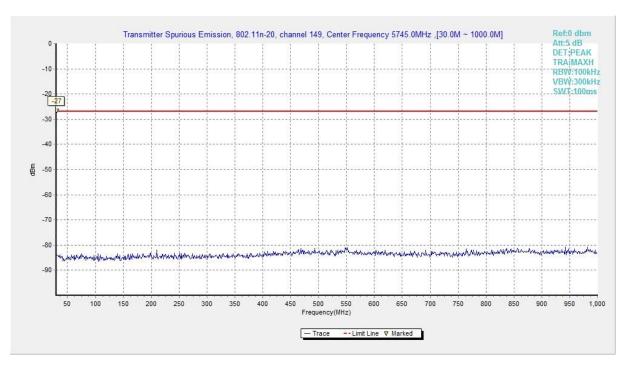


Fig. 27 Conducted Spurious Emission (802.11n-HT20, Ch149, 30 MHz-1 GHz)





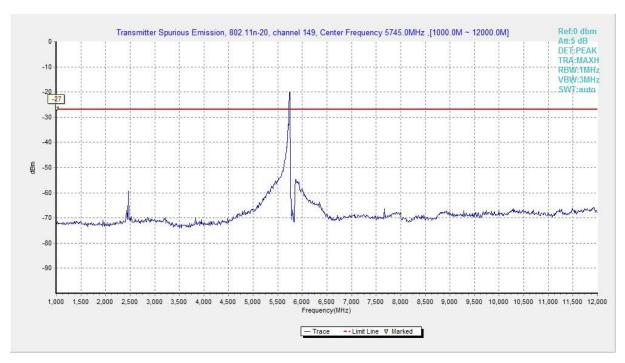


Fig. 28 Conducted Spurious Emission (802.11n-HT20, Ch149, 1 GHz -12 GHz)

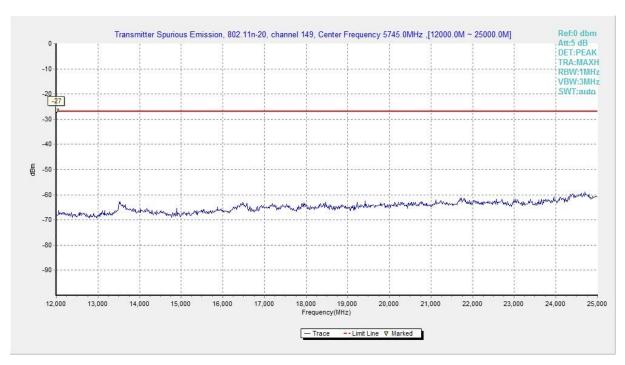


Fig. 29 Conducted Spurious Emission (802.11n-HT20, Ch149, 12 GHz-25 GHz)





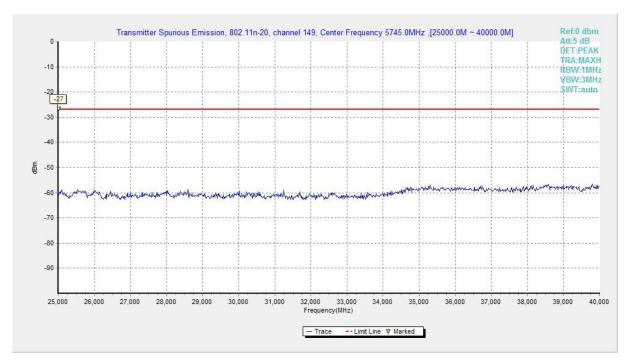


Fig. 30 Conducted Spurious Emission (802.11n-HT20, Ch149, 25 GHz-40 GHz)

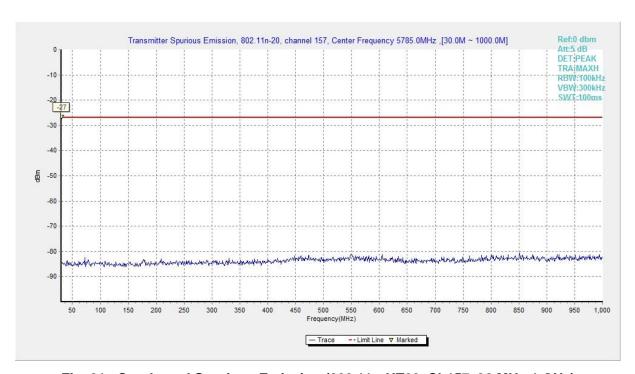


Fig. 31 Conducted Spurious Emission (802.11n-HT20, Ch157, 30 MHz-1 GHz)





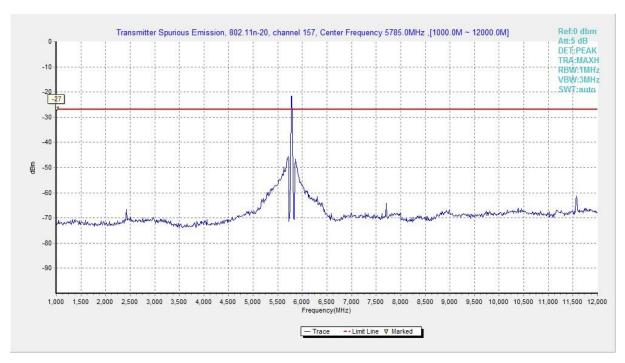


Fig. 32 Conducted Spurious Emission (802.11n-HT20, Ch157, 1 GHz -12 GHz)

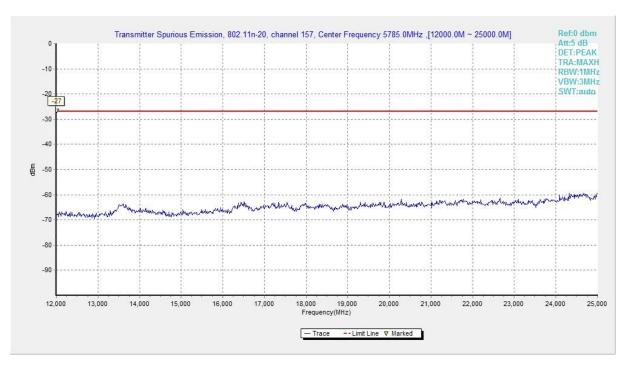


Fig. 33 Conducted Spurious Emission (802.11n-HT20, Ch157, 12 GHz-25 GHz)





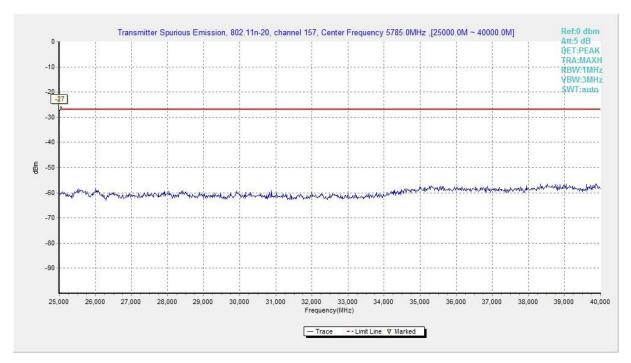


Fig. 34 Conducted Spurious Emission (802.11n-HT20, Ch157, 25 GHz-40 GHz)

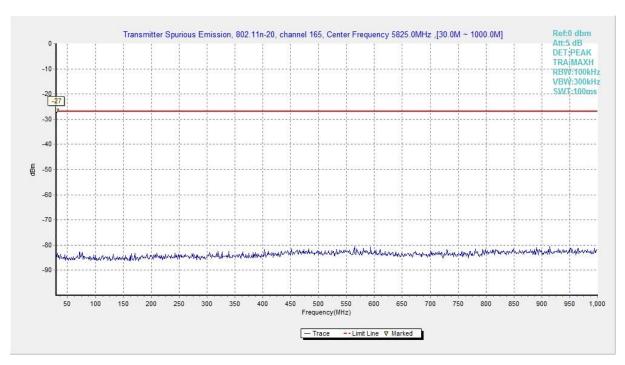


Fig. 35 Conducted Spurious Emission (802.11n-HT20, Ch165, 30 MHz-1 GHz)





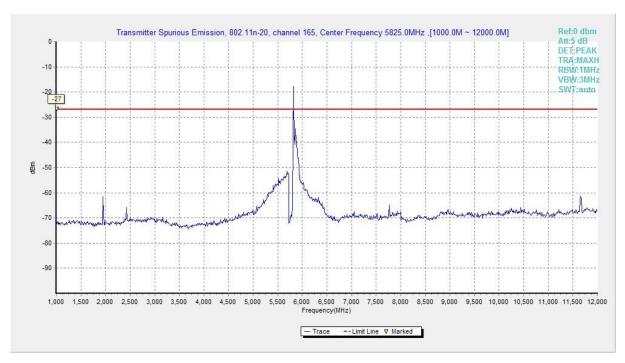


Fig. 36 Conducted Spurious Emission (802.11n-HT20, Ch165, 1 GHz -12 GHz)

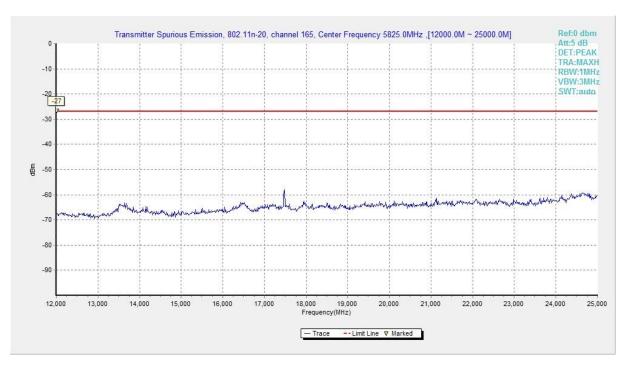


Fig. 37 Conducted Spurious Emission (802.11n-HT20, Ch165, 12 GHz-25 GHz)





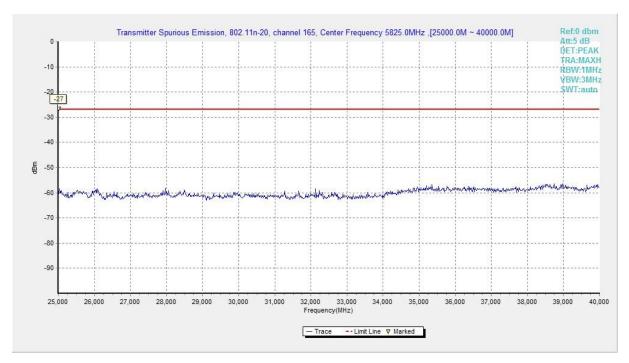


Fig. 38 Conducted Spurious Emission (802.11n-HT20, Ch165, 25 GHz-40 GHz)

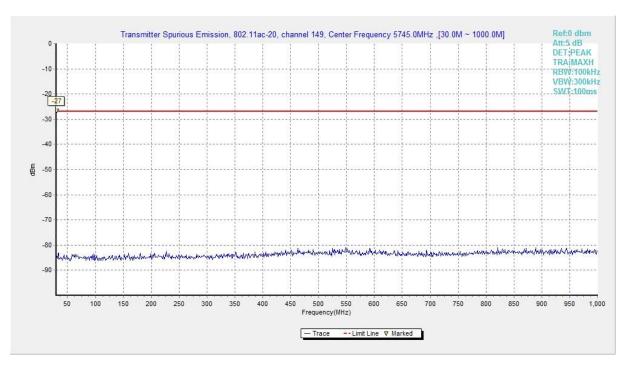


Fig. 39 Conducted Spurious Emission (802.11ac-HT20, Ch149, 30 MHz-1 GHz)





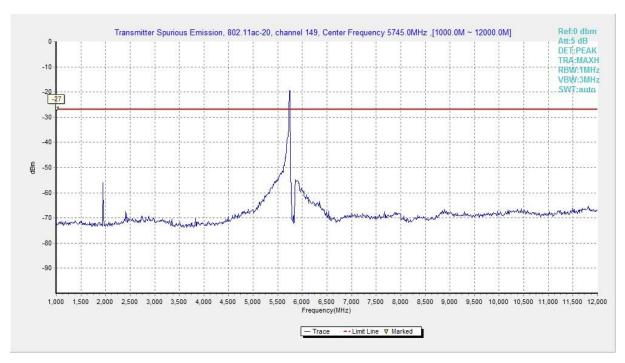


Fig. 40 Conducted Spurious Emission (802.11ac-HT20, Ch149, 1 GHz -12 GHz)

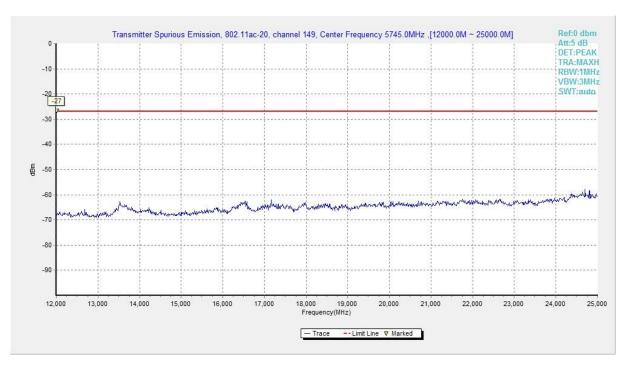


Fig. 41 Conducted Spurious Emission (802.11ac-HT20, Ch149, 12 GHz-25 GHz)





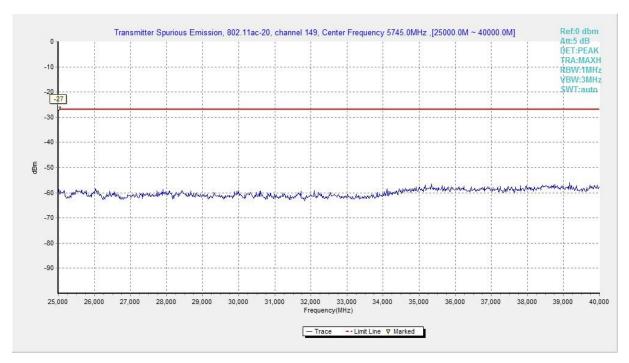


Fig. 42 Conducted Spurious Emission (802.11ac-HT20, Ch149, 25 GHz-40 GHz)

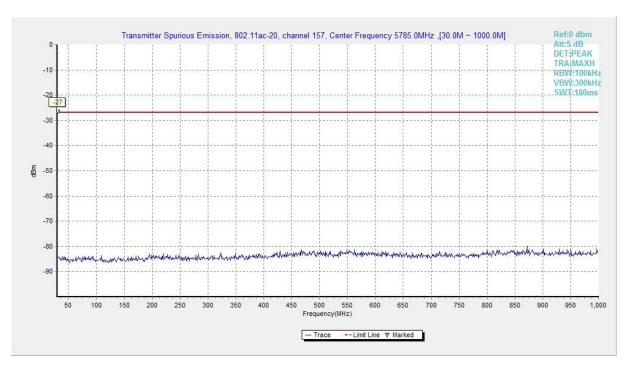


Fig. 43 Conducted Spurious Emission (802.11ac-HT20, Ch157, 30 MHz-1 GHz)





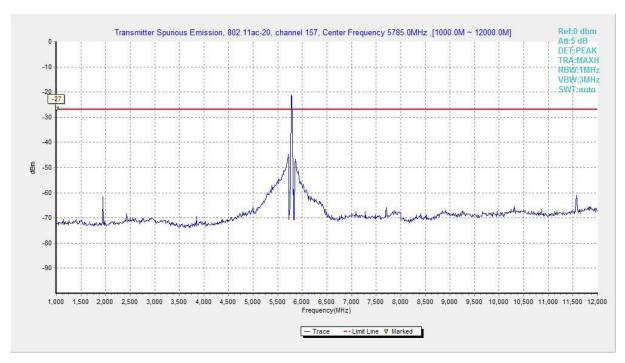


Fig. 44 Conducted Spurious Emission (802.11ac-HT20, Ch157, 1 GHz -12 GHz)

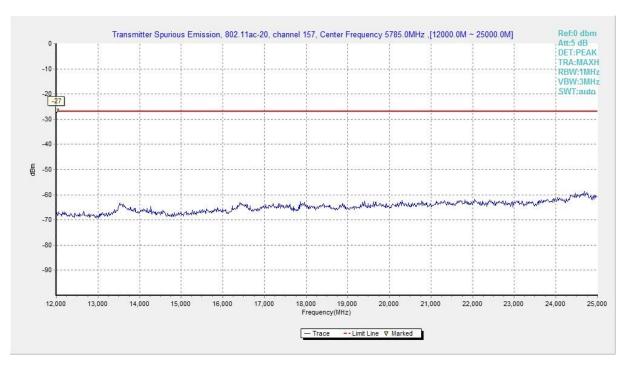


Fig. 45 Conducted Spurious Emission (802.11ac-HT20, Ch157, 12 GHz-25 GHz)





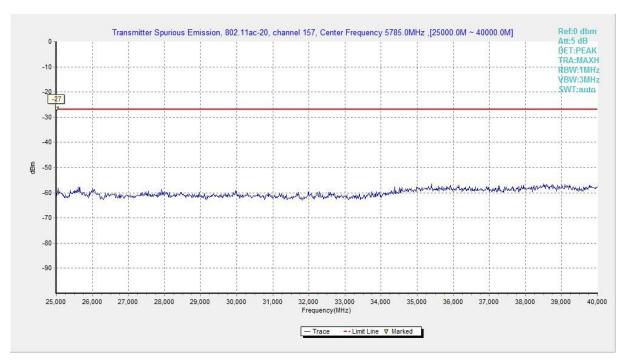


Fig. 46 Conducted Spurious Emission (802.11ac-HT20, Ch157, 25 GHz-40 GHz)

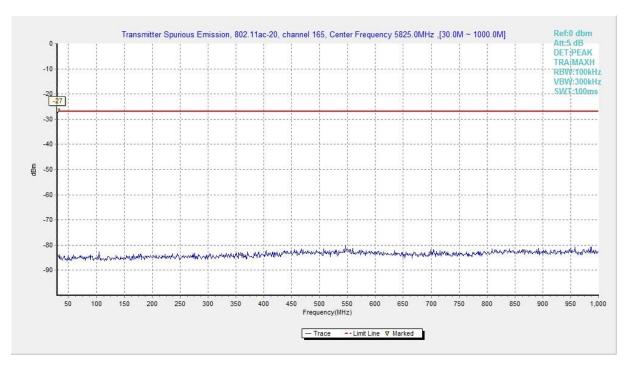


Fig. 47 Conducted Spurious Emission (802.11ac-HT20, Ch165, 30 MHz-1 GHz)





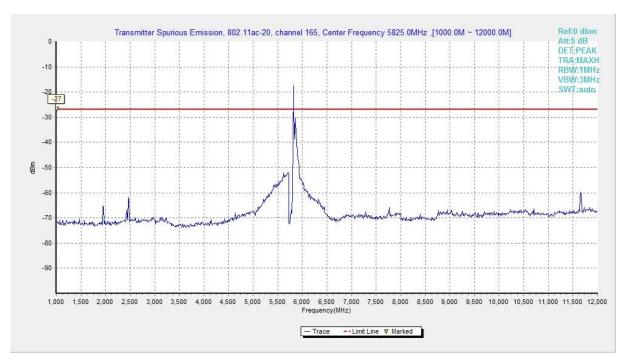


Fig. 48 Conducted Spurious Emission (802.11ac-HT20, Ch165, 1 GHz -12 GHz)

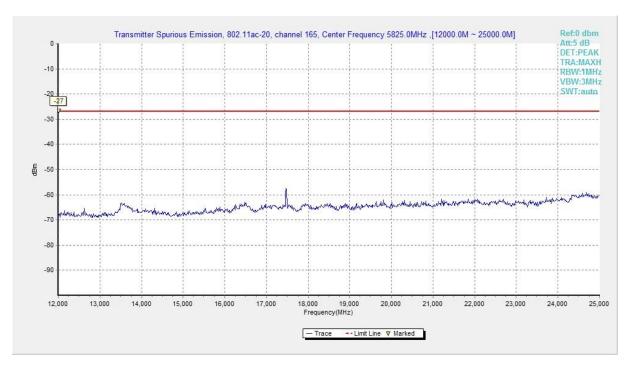


Fig. 49 Conducted Spurious Emission (802.11ac-HT20, Ch165, 12 GHz-25 GHz)





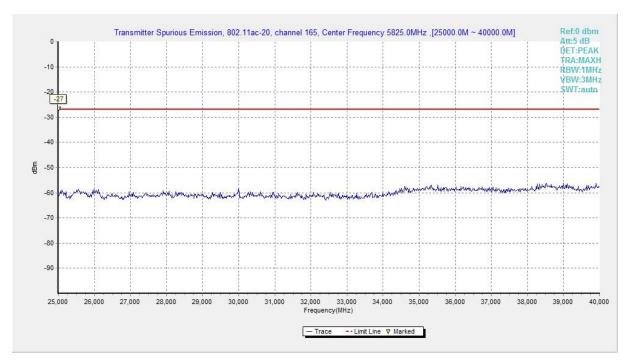


Fig. 50 Conducted Spurious Emission (802.11ac-HT20, Ch165, 25 GHz-40 GHz)

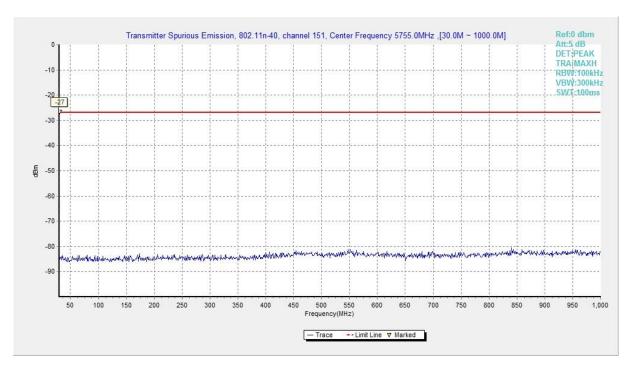


Fig. 51 Conducted Spurious Emission (802.11n-HT40, Ch151, 30 MHz-1 GHz)





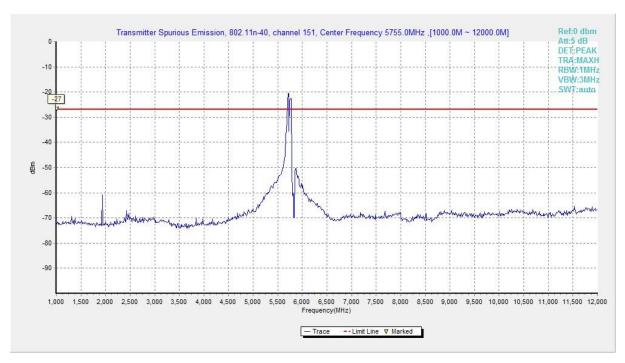


Fig. 52 Conducted Spurious Emission (802.11n-HT40, Ch151, 1 GHz -12 GHz)

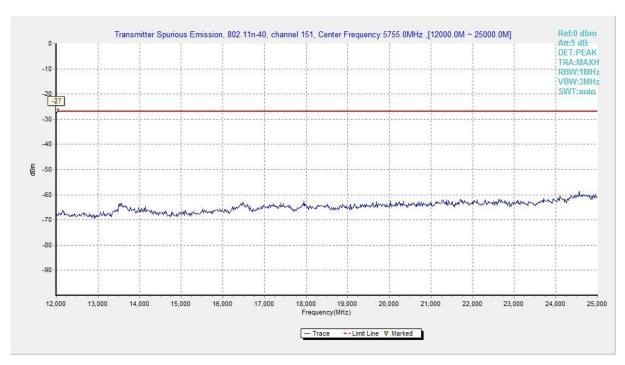


Fig. 53 Conducted Spurious Emission (802.11n-HT40, Ch151, 12 GHz-25 GHz)