



**FCC PART 15C  
TEST REPORT  
No. I18Z60538-IOT07**

**for**

**TCL Communication Ltd.**

**GSM Quad-band/HSPA-UMTS Six-band/LTE 19 band mobile phone**

**With**

**BBB100-5**

**FCC ID: 2ACCJN027**

**Hardware Version:05**

**Software Version: AAW880**

**Issued Date: 2018-04-18**



**Note:**

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## **REPORT HISTORY**

| <b>Report Number</b> | <b>Revision</b> | <b>Description</b> | <b>Issue Date</b> |
|----------------------|-----------------|--------------------|-------------------|
| I18Z60538-IOT07      | Rev.0           | 1st edition        | 2018-04-18        |
|                      |                 |                    |                   |



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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

Location 2:CTTL(Shouxiang)

Address: No. 51 Shouxiang Science Building, Xueyuan Road,  
Haidian District, Beijing, P. R. China100191

### 1.2. Project data

Testing Start Date: 2016-12-28

Testing End Date: 2018-04-17

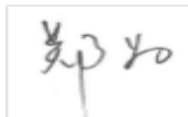
### 1.3. Signature



---

Jiang Xue

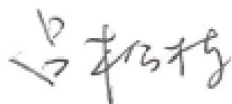
(Prepared this test report)



---

Zheng Wei

(Reviewed this test report)



---

Lv Songdong

(Approved this test report)



## **2. CLIENT INFORMATION**

### **2.1. Applicant Information**

Company Name: TCL Communication Ltd  
Address: 7/F, Block F4, TCL International E City, Zhong Shan Yuan Road,  
Nanshan District, Shenzhen, Guangdong, P.R. China 518052  
City: Shenzhen  
Postal Code: 518052  
Country: China  
Telephone: 0086-755-36611722  
Fax: 0086-75536612000-81722

### **2.2. Manufacturer Information**

Company Name: TCL Communication Ltd  
Address: 7/F, Block F4, TCL International E City, Zhong Shan Yuan Road,  
Nanshan District, Shenzhen, Guangdong, P.R. China 518052  
City: Shenzhen  
Postal Code: 518052  
Country: China  
Telephone: 0086-755-36611722  
Fax: 0086-75536612000-81722



### 3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

#### 3.1. About EUT

|                      |   |
|----------------------|---|
| Description          | GSM Quad-band/HSPA-UMTS Six-band/LTE 19 band mobile phone |
| Model name           | BBB100-5  |
| FCC ID               | 2ACCJN027   |
| WLAN Frequency Range | ISM Band: 5725MHz~5850MHz                                 |
| Number of Channels   | CH149 151 153 155 157 159 161 165                         |
| 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 |
|---------|--|------------|------------|
| EUT1    | /  | 05         | AAW880     |
| EUT2    | 867285030001233/01<br>867285030001241/01 | 05         | AAW880     |

\*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    | battery        | /    | /             |
| AE2    | battery        | /    | /             |
| AE3    | Travel charger | /    | 16TCT-CH-1886 |
| AE4    | Travel charger | /    | 16TCT-CH-1872 |
| AE5    | Travel charger | /    | 16TCT-CH-0005 |
| AE6    | Travel charger | /    | /             |
| AE7    | Travel charger | /    | /             |
| AE8    | USB Cable      | /    | /             |
| AE9    | USB Cable      | /    | /             |

##### AE1

|                 |               |
|-----------------|---------------|
| Model           | BAT-63108-003 |
| SN              | /             |
| Manufacturer    | ATL           |
| Capacitance     | 3440 mAh      |
| Nominal voltage | 3.85V         |

##### AE2

|       |          |
|-------|----------|
| Model | TLp034E1 |
| SN    | /        |



|                 |              |
|-----------------|--------------|
| Manufacturer    | BYD          |
| Capacitance     | 3440 mAh     |
| Nominal voltage | 3.85V        |
| AE3             |              |
| Name            | CBA0060AGHC1 |
| Model           | QC10US       |
| Manufacturer    | BYD          |
| Length of cable | /            |
| AE4             |              |
| Name            | CBA0060ACHC1 |
| Model           | QC10AU       |
| Manufacturer    | BYD          |
| Length of cable | /            |
| AE5             |              |
| Name            | CBA0060AJHC1 |
| Model           | QC10IN       |
| Manufacturer    | BYD          |
| Length of cable | /            |
| AE6             |              |
| Name            | CBA0060AAHC1 |
| Model           | QC10EU       |
| Manufacturer    | BYD          |
| Length of cable | /            |
| AE7             |              |
| Name            | CBA0060ABHC1 |
| Model           | QC10UK       |
| Manufacturer    | BYD          |
| Length of cable | /            |
| AE8             |              |
| Model           | CDA0000105CF |
| Manufacturer    | LUXSHARE     |
| Length of cable | /            |
| AE9             |              |
| Model           | CDA0000108C2 |
| Manufacturer    | SHENGHUA     |
| Length of cable | /            |

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

### 3.4. General Description

Equipment Under Test (EUT) is a GSM Quad-band/HSPA-UMTS Six-band/LTE 19 band 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;   | 2016    |
|                  | 15.247 Operation within the bands 902–928MHz,<br>2400–2483.5 MHz, and 5725–5850 MHz.   |         |
| ANSI C63.10      | Methods of Measurement of Radio-Noise Emissions from<br>Low-Voltage Electrical and Electronic Equipment in the<br>Range of 9 kHz to 40 GHz | 2013    |
| UNII: KDB 789033 | Guidelines for Compliance Testing of Unlicensed National<br>Information Infrastructure (U-NII) Devices - Part 15,<br>Subpart E             | 2014-06 |

## **5. LABORATORY ENVIRONMENT**

Conducted RF performance testing is performed in shielding room.

EMC performance testing is performed in Semi-anechoic chamber.

## 6. SUMMARY OF TEST RESULTS

### 6.1. Summary of Test Results

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

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/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.

This model is a variant product which model name is BBB100-1; all the test results have been derived from test report of BBB100-1, except the result of conducted Band Edges.

### 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 | 2017-06-02       | 2018-06-01           |
| 2   | Test Receiver          | ESCI   | 100948        | Rohde & Schwarz | 2017-06-26       | 2018-06-25           |
| 3   | LISN                   | ENV216 | 101200        | Rohde & Schwarz | 2017-07-04       | 2018-07-03           |
| 4   | Shielding Room         | S81    | /             | ETS-Lindgren    | /                | /                    |

### Radiated emission test system

| No. | Equipment                         | Model    | Serial Number | Manufacturer     | Calibration date | Calibration Due date |
|-----|-----------------------------------|----------|---------------|------------------|------------------|----------------------|
| 1   | Test Receiver                     | ESU26    | 100235        | Rohde & Schwarz  | 2018-03-01       | 2019-02-28           |
| 2   | Loop antenna                      | HFH2-Z2  | 829324/007    | Rohde & Schwarz  | 2017-12-04       | 2018-12-03           |
| 3   | BiLog Antenna                     | VULB9163 | 301           | Schwarzbeck      | 2018-01-04       | 2019-01-03           |
| 4   | Dual-Ridge Waveguide Horn Antenna | 3115     | 6914          | EMCO             | 2017-12-01       | 2018-11-30           |
| 5   | Dual-Ridge Waveguide Horn Antenna | 3116     | 2661          | ETS-Lindgren     | 2017-07-28       | 2020-07-27           |
| 6   | Vector Signal Analyzer            | FSV40    | 101047        | Rohde & Schwarz  | 2017-06-23       | 2018-06-22           |
| 7   | Semi-anechoic chamber             | /        | CT000332-1074 | Frankonia German | /                | /                    |

### Test Software Utilized

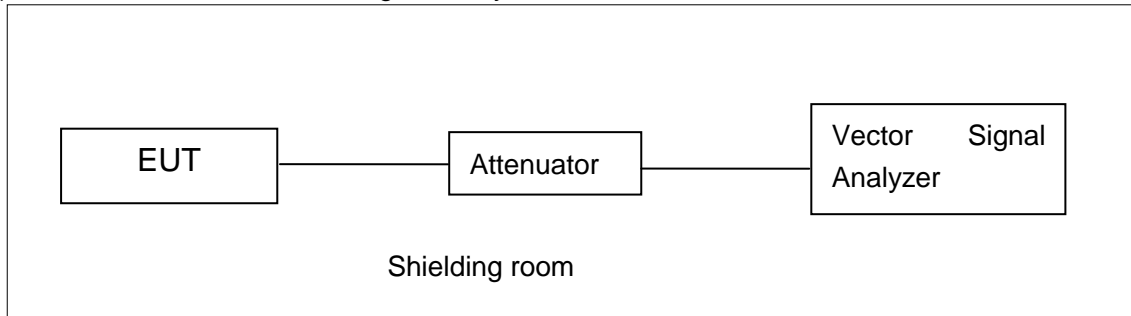
| Test Item                     | Test Software and Version | Software Vendor |
|-------------------------------|---------------------------|-----------------|
| Radiated Continuous Emission  | EMC32 V8.40.0             | R&S             |
| Conducted Continuous Emission | EMC32 V8.52.0             | R&S             |

## 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

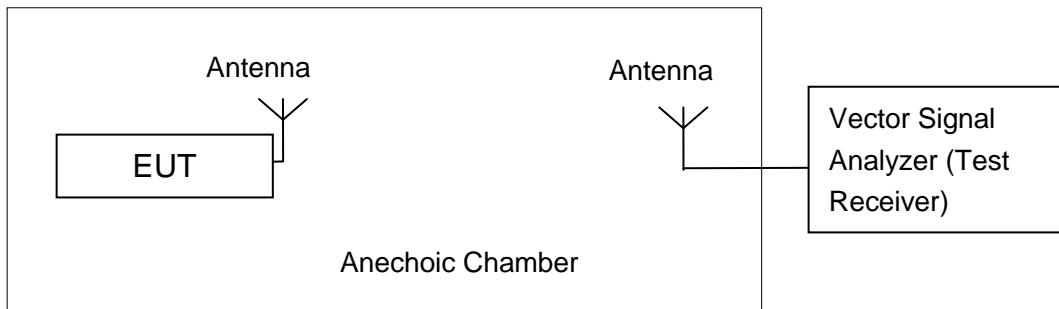


#### A.1.2. Radiated Emission Measurements

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 Antenna Gain

Antenna gain is 0.44 dBi and the value is supplied by the applicant or manufacturer.

### A.2.2. 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                | 22.43             | /               | /               |
|         | 9                | 22.45             | /               | /               |
|         | 12               | 22.09             | /               | /               |
|         | 18               | 22.17             | /               | /               |
|         | 24               | 22.46             | /               | /               |
|         | 36               | 22.59             | 21.75           | 21.73           |
|         | 48               | 22.29             | /               | /               |
|         | 54               | 22.32             | /               | /               |

The data rate 36Mbps 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              | 22.46             | /               | /               |
|                 | MCS1              | 22.51             | /               | /               |
|                 | MCS2              | 22.60             | 21.32           | 21.33           |
|                 | MCS3              | 22.23             | /               | /               |
|                 | MCS4              | 22.24             | /               | /               |
|                 | MCS5              | 22.32             | /               | /               |
|                 | MCS6              | 21.21             | /               | /               |
|                 | MCS7              | 21.25             | /               | /               |

The data rate MCS2 is selected as worse condition, and the following cases are performed with this condition.

**802.11ac-HT20 mode**

| Mode             | Data Rate (Index) | Test Result (dBm) |                 |                 |
|------------------|-------------------|-------------------|-----------------|-----------------|
|                  |                   | 5745MHz (Ch149)   | 5785MHz (Ch157) | 5825MHz (Ch165) |
| 802.11ac (20MHz) | MCS0              | 22.49             | 21.29           | 21.24           |
|                  | MCS1              | 22.33             | /               | /               |
|                  | MCS2              | 22.03             | /               | /               |
|                  | MCS3              | 21.65             | /               | /               |
|                  | MCS4              | 21.46             | /               | /               |
|                  | MCS5              | 21.26             | /               | /               |
|                  | MCS6              | 20.50             | /               | /               |
|                  | MCS7              | 20.23             | /               | /               |
|                  | MCS8              | 19.13             |                 |                 |

The data rate MCS0 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              | 21.91             | /               |
|                 | MCS1              | 21.98             | /               |
|                 | MCS2              | 21.96             | /               |
|                 | MCS3              | 22.29             | 21.45           |
|                 | MCS4              | 21.42             | /               |
|                 | MCS5              | 21.48             | /               |
|                 | MCS6              | 20.28             | /               |
|                 | MCS7              | 20.35             | /               |

The data rate MCS3 is selected as worse condition, and the following cases are performed with this condition.

**802.11ac-HT40 mode**

| Mode             | Data Rate (Index) | Test Result (dBm) |                 |
|------------------|-------------------|-------------------|-----------------|
|                  |                   | 5755MHz (Ch151)   | 5795MHz (Ch159) |
| 802.11ac (40MHz) | MCS0              | 22.57             | 22.09           |
|                  | MCS1              | 22.42             | /               |
|                  | MCS2              | 22.12             | /               |
|                  | MCS3              | 21.70             | /               |
|                  | MCS4              | 21.60             | /               |
|                  | MCS5              | 21.17             | /               |





|  |      |       |   |
|--|------|-------|---|
|  | MCS6 | 20.41 | / |
|  | MCS7 | 20.29 | / |
|  | MCS8 | 19.39 | / |
|  | MCS9 | 19.28 | / |

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

**802.11ac-HT80 mode**

| Mode                | Data Rate<br>(Index) | Test Result (dBm)  |
|---------------------|----------------------|--------------------|
|                     |                      | 5775MHz<br>(Ch155) |
| 802.11ac<br>(80MHz) | MCS0                 | 21.70              |
|                     | MCS1                 | 21.21              |
|                     | MCS2                 | 21.29              |
|                     | MCS3                 | 20.67              |
|                     | MCS4                 | 20.58              |
|                     | MCS5                 | 20.55              |
|                     | MCS6                 | 19.46              |
|                     | MCS7                 | 19.47              |
|                     | MCS8                 | 18.74              |
|                     | MCS9                 | 18.45              |

The data rate MCS0 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 | 14.37             | 13.32           | 13.16           |

**802.11n-HT20 mode**

| Mode           | Test Result (dBm) |                 |                |
|----------------|-------------------|-----------------|----------------|
|                | 5745MHz (Ch149)   | 5785MHz (Ch157) | 5825MHz(Ch165) |
| 802.11n(20MHz) | 14.43             | 13.31           | 13.23          |

**802.11ac-HT20 mode**

| Mode            | Test Result (dBm) |                 |                |
|-----------------|-------------------|-----------------|----------------|
|                 | 5745MHz (Ch149)   | 5785MHz (Ch157) | 5825MHz(Ch165) |
| 802.11ac(20MHz) | 14.41             | 13.35           | 13.27          |

**802.11n-HT40 mode**

| Mode           | Test Result (dBm) |                |
|----------------|-------------------|----------------|
|                | 5755MHz (Ch151)   | 5795MHz(Ch159) |
| 802.11n(40MHz) | 13.72             | 13.18          |

**802.11ac-HT40 mode**

| Mode            | Test Result (dBm) |                |
|-----------------|-------------------|----------------|
|                 | 5755MHz (Ch151)   | 5795MHz(Ch159) |
| 802.11ac(40MHz) | 14.62             | 14.12          |

**802.11ac-HT80 mode**

| Mode            | Test Result (dBm) |
|-----------------|-------------------|
|                 | 5775MHz (Ch155)   |
| 802.11ac(80MHz) | 13.66             |

**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<br>( dBm/500kHz ) | Conclusion |
|------------------|---------|--|------------|
| 802.11a          | 149     | 9.33                                     | P          |
|                  | 157     | 8.08                                     | P          |
|                  | 165     | 7.62                                     | P          |
| 802.11n<br>HT20  | 149     | 7.83                                     | P          |
|                  | 157     | 6.52                                     | P          |
|                  | 165     | 6.68                                     | P          |
| 802.11ac<br>HT20 | 149     | 8.03                                     | P          |
|                  | 157     | 6.78                                     | P          |
|                  | 165     | 7.02                                     | P          |
| 802.11n<br>HT40  | 151     | 4.62                                     | P          |
|                  | 159     | 3.53                                     | P          |
| 802.11ac<br>HT40 | 151     | 5.97                                     | P          |
|                  | 159     | 5.54                                     | P          |
| 802.11ac HT80    | 155     | 1.64                                     | P          |

**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 Bandwidth<br>( kHz) |       | conclusion |
|------------------|---------|----------------------------------|-------|------------|
|                  |         | Fig.                             | Value |            |
| 802.11a          | 149     | Fig.1                            | 16500 | P          |
|                  | 157     | Fig.2                            | 16500 | P          |
|                  | 165     | Fig.3                            | 16500 | P          |
| 802.11n<br>HT20  | 149     | Fig.4                            | 17600 | P          |
|                  | 157     | Fig.5                            | 17600 | P          |
|                  | 165     | Fig.6                            | 17600 | P          |
| 802.11ac<br>HT20 | 149     | Fig.7                            | 17600 | P          |
|                  | 157     | Fig.8                            | 17600 | P          |
|                  | 165     | Fig.9                            | 17600 | P          |
| 802.11n<br>HT40  | 151     | Fig.10                           | 35520 | P          |
|                  | 159     | Fig.11                           | 35200 | P          |
| 802.11ac<br>HT40 | 151     | Fig.12                           | 35200 | P          |
|                  | 159     | Fig.13                           | 35200 | P          |
| 802.11ac HT80    | 155     | Fig.14                           | 75200 | P          |

**Conclusion: PASS**

Test graphs as below:

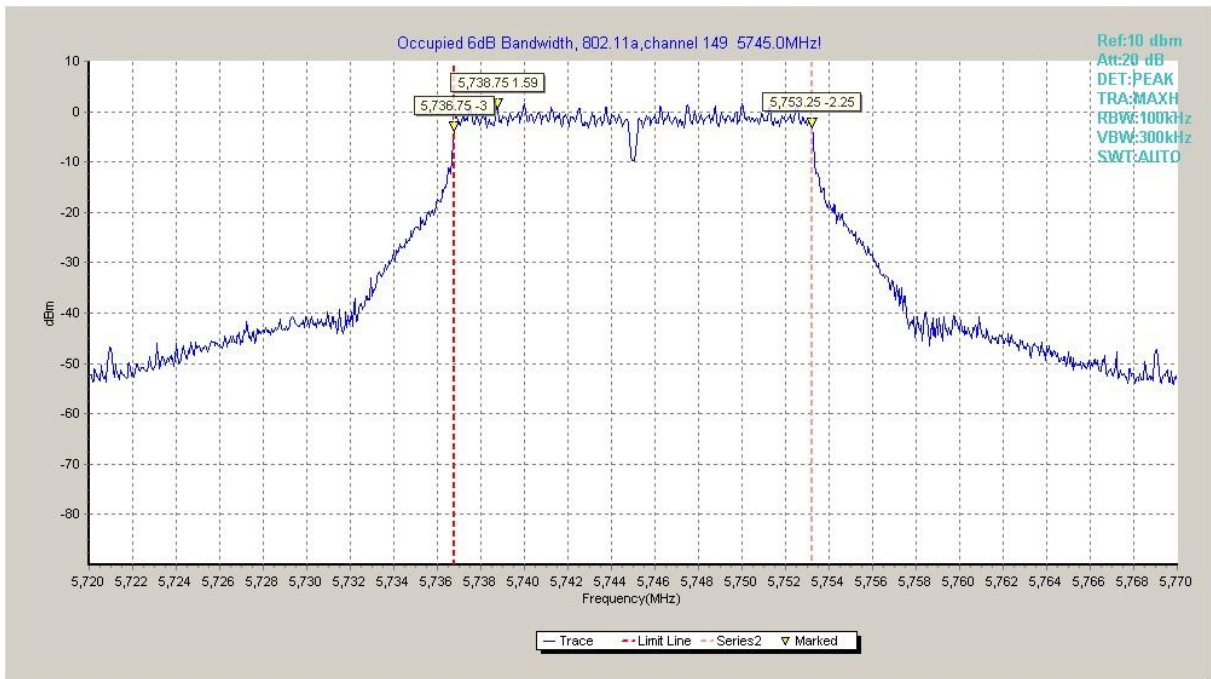


Fig. 1 Occupied 6dB Bandwidth (802.11a, Ch 149)

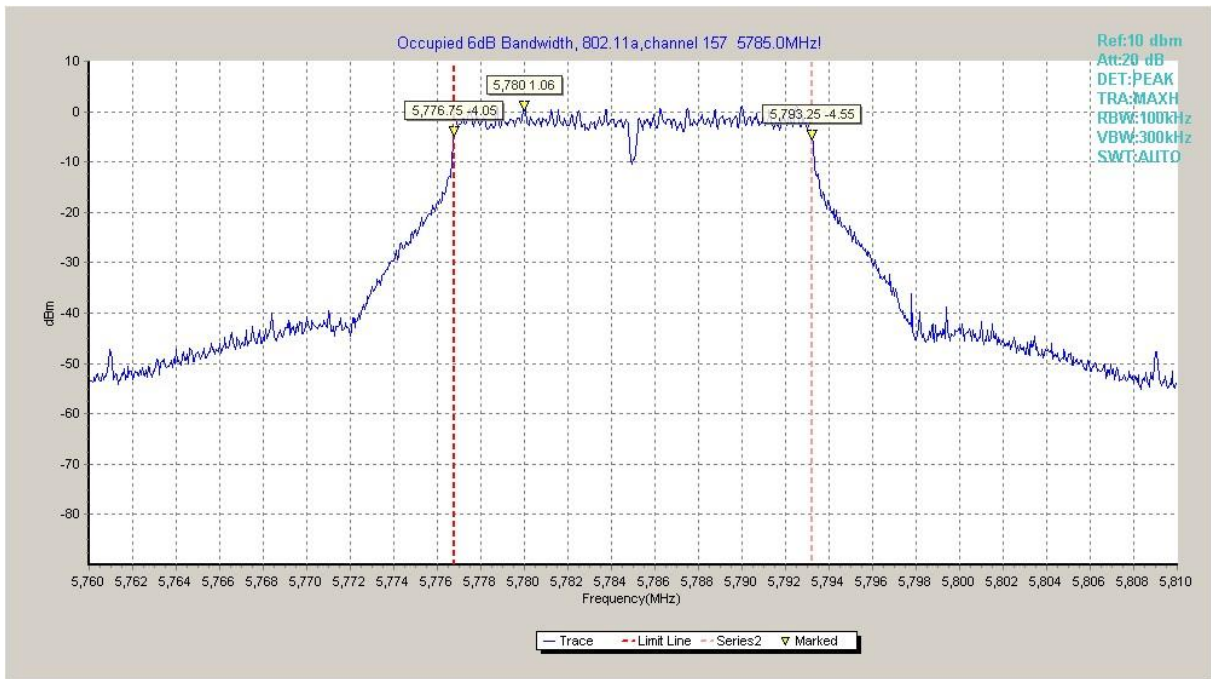


Fig. 2 Occupied 6dB Bandwidth (802.11a, Ch 157)

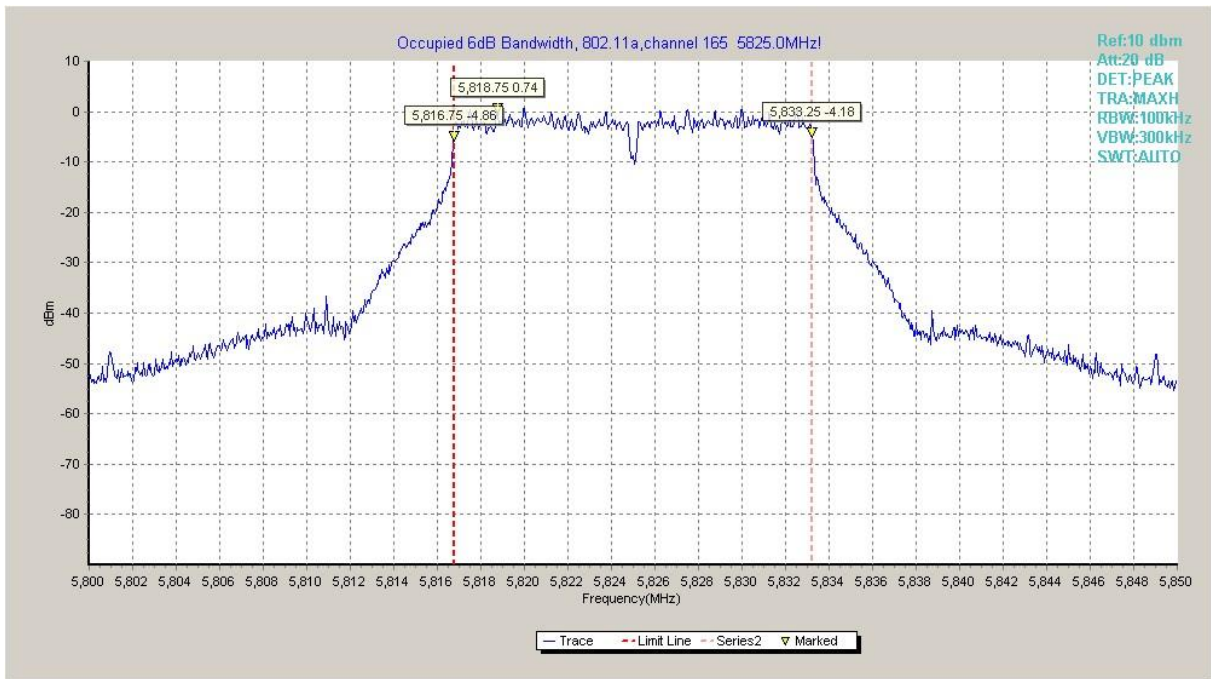


Fig. 3 Occupied 6dB Bandwidth (802.11a, Ch 165)

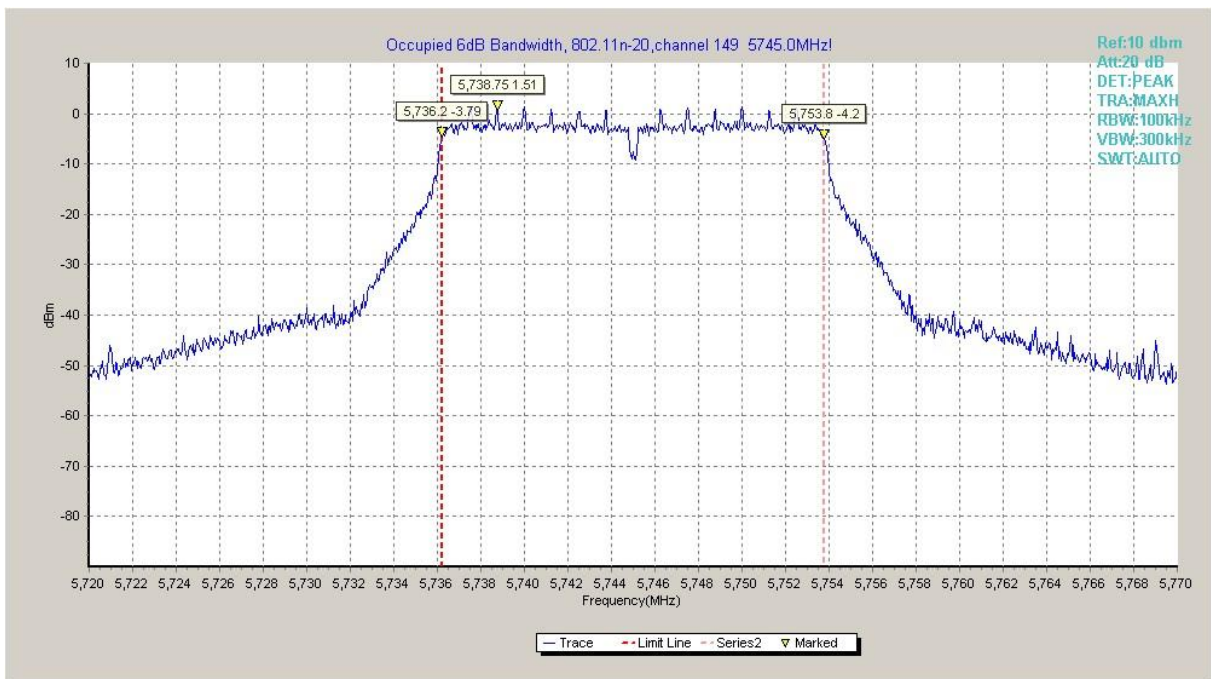


Fig. 4 Occupied 6dB Bandwidth (802.11n-HT20, Ch 149)

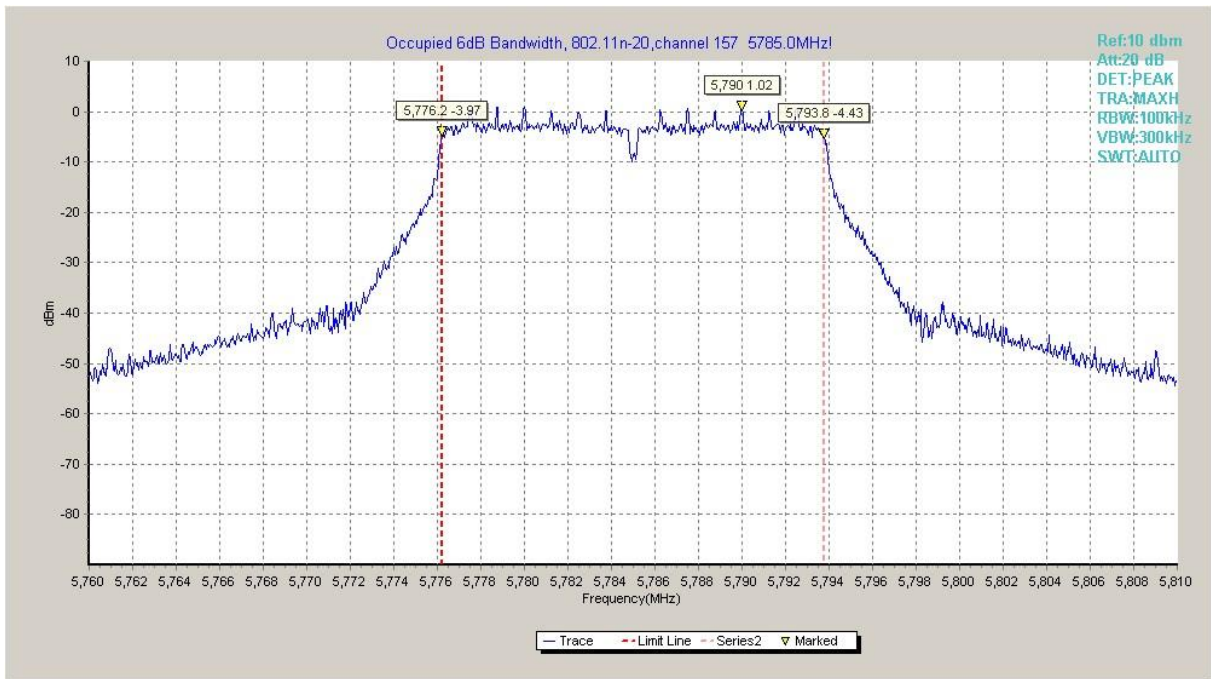
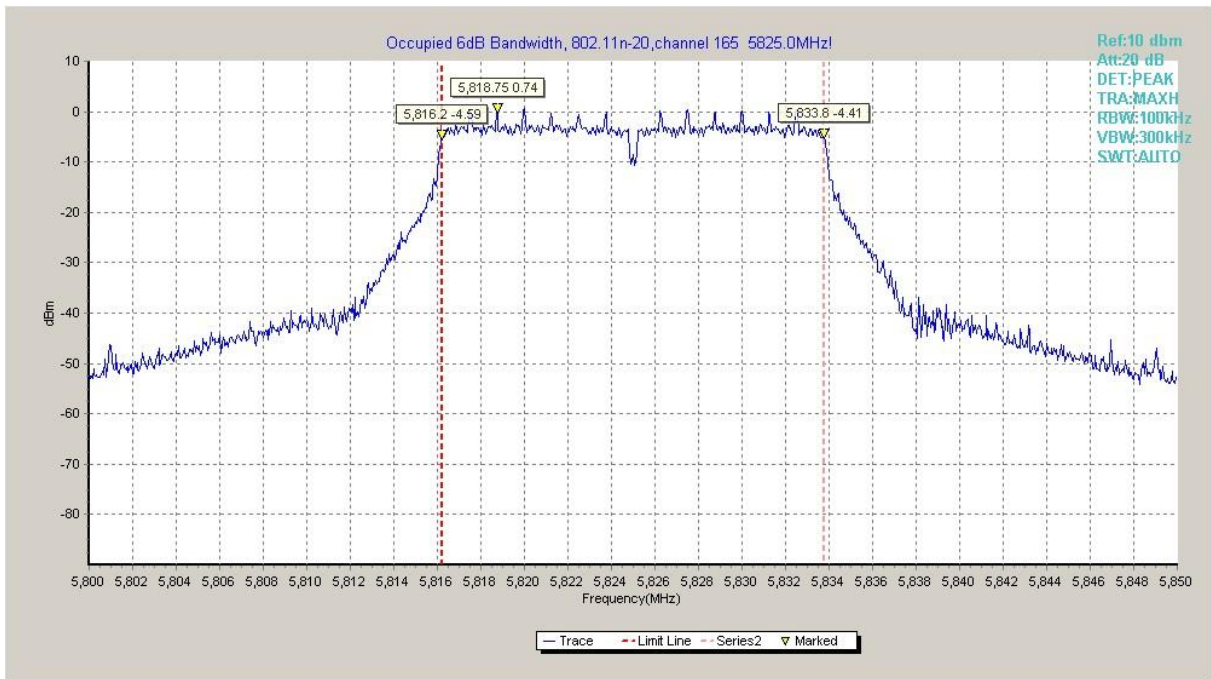
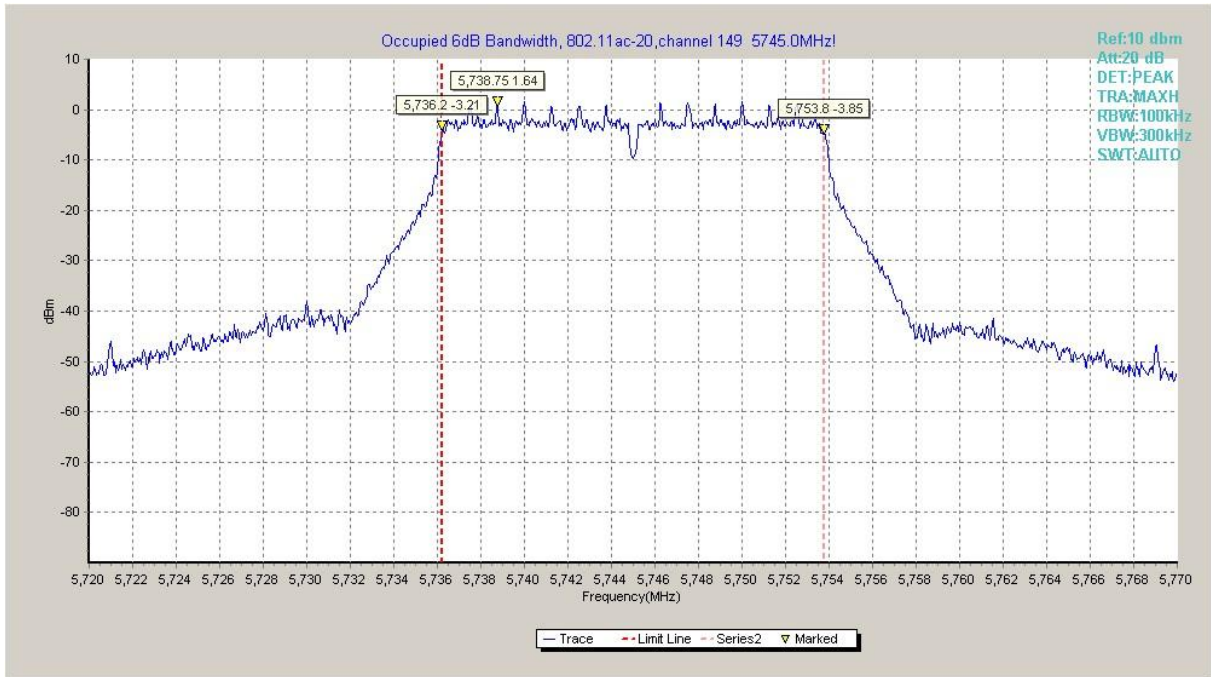


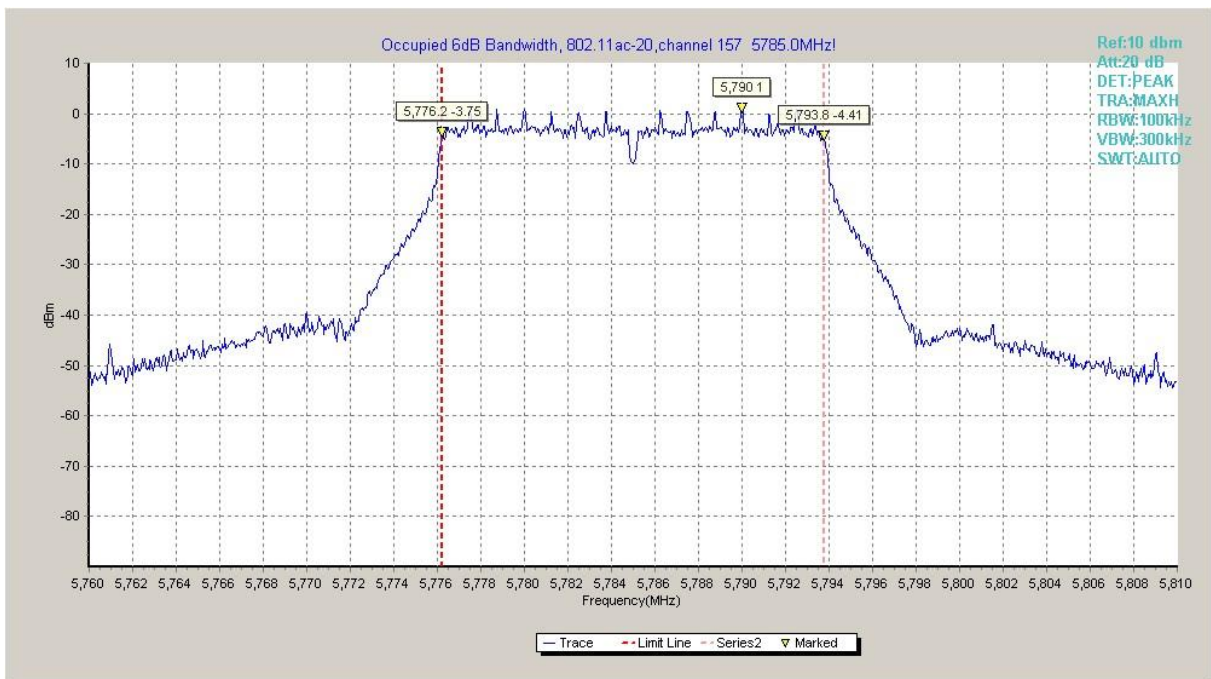
Fig. 5 Occupied 6dB Bandwidth (802.11n-HT20, Ch 157)



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

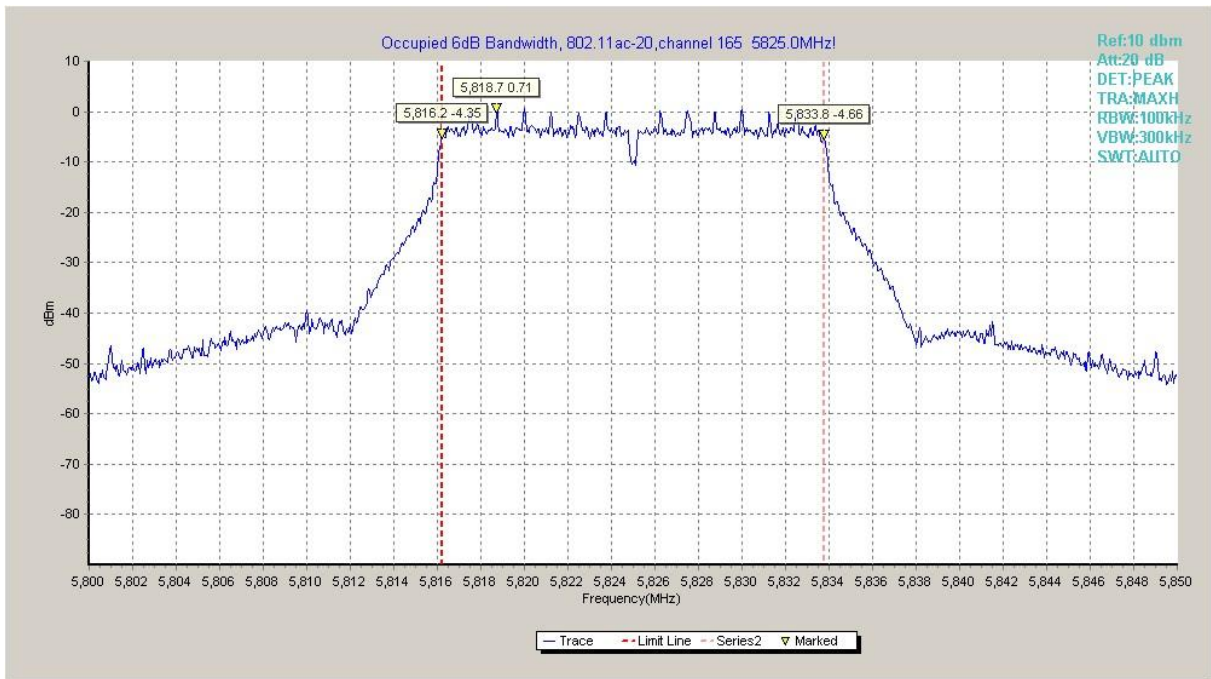


**Fig. 7 Occupied 6dB Bandwidth (802.11ac-HT20, Ch 149)**

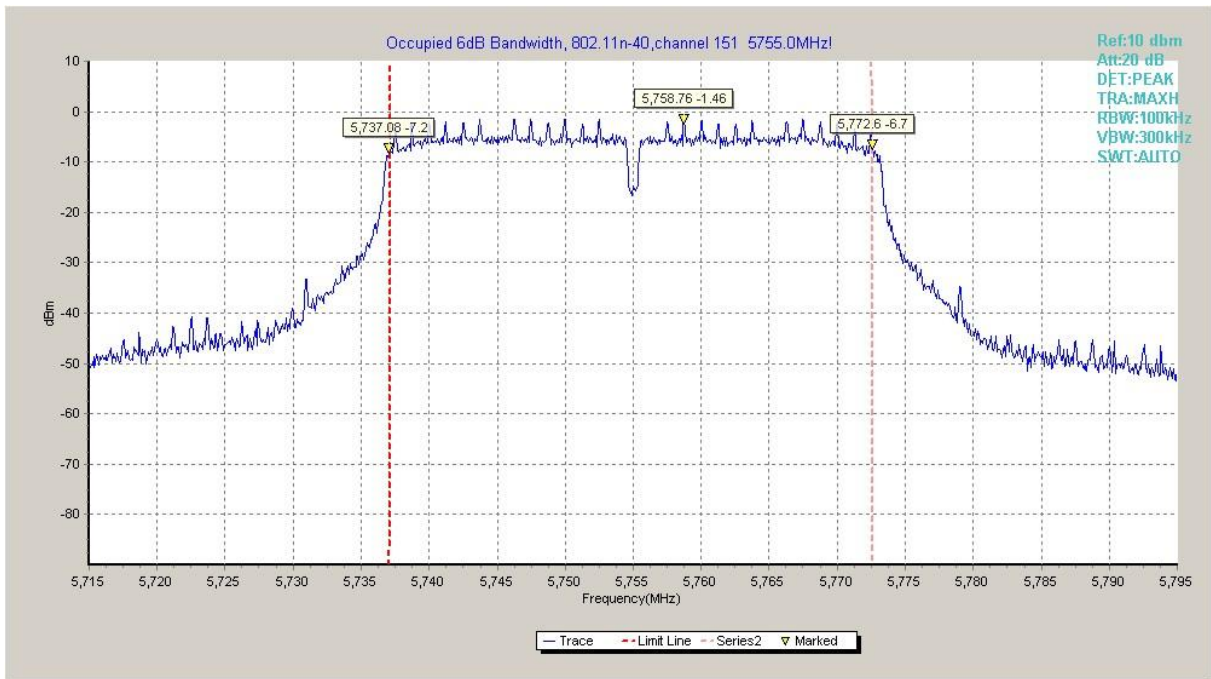


**Fig. 8 Occupied 6dB Bandwidth (802.11ac-HT20, Ch 157)**





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



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

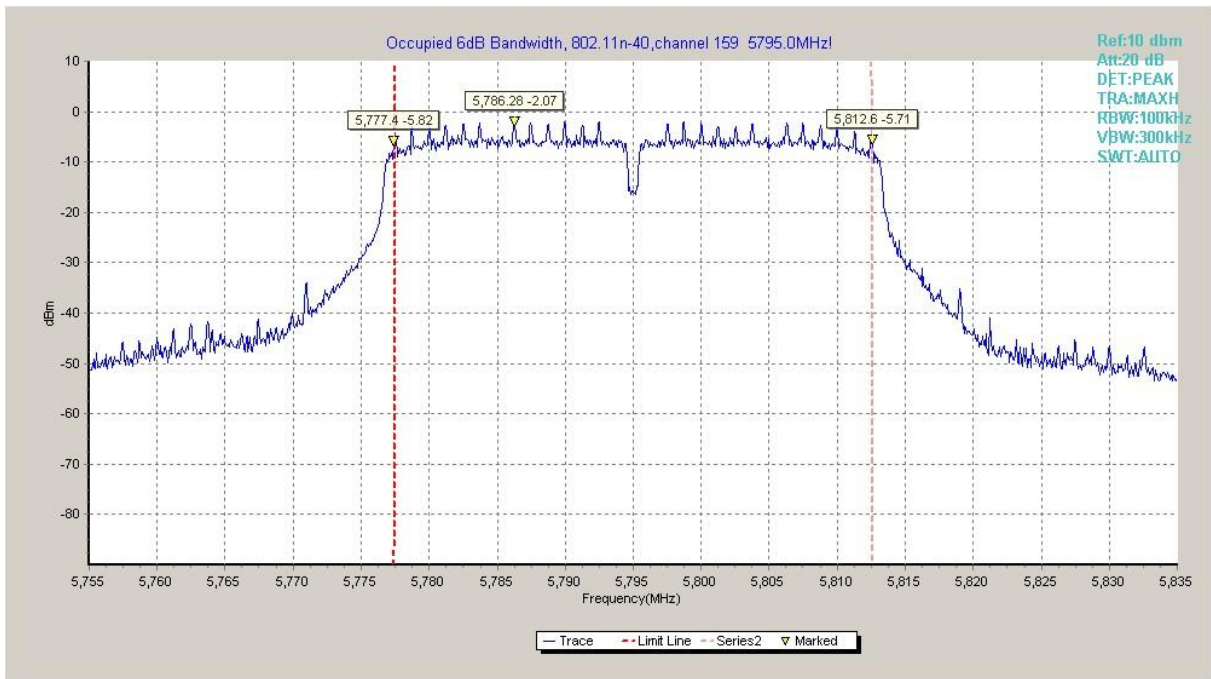


Fig. 11 Occupied 6dB Bandwidth (802.11n-HT40, Ch 159)

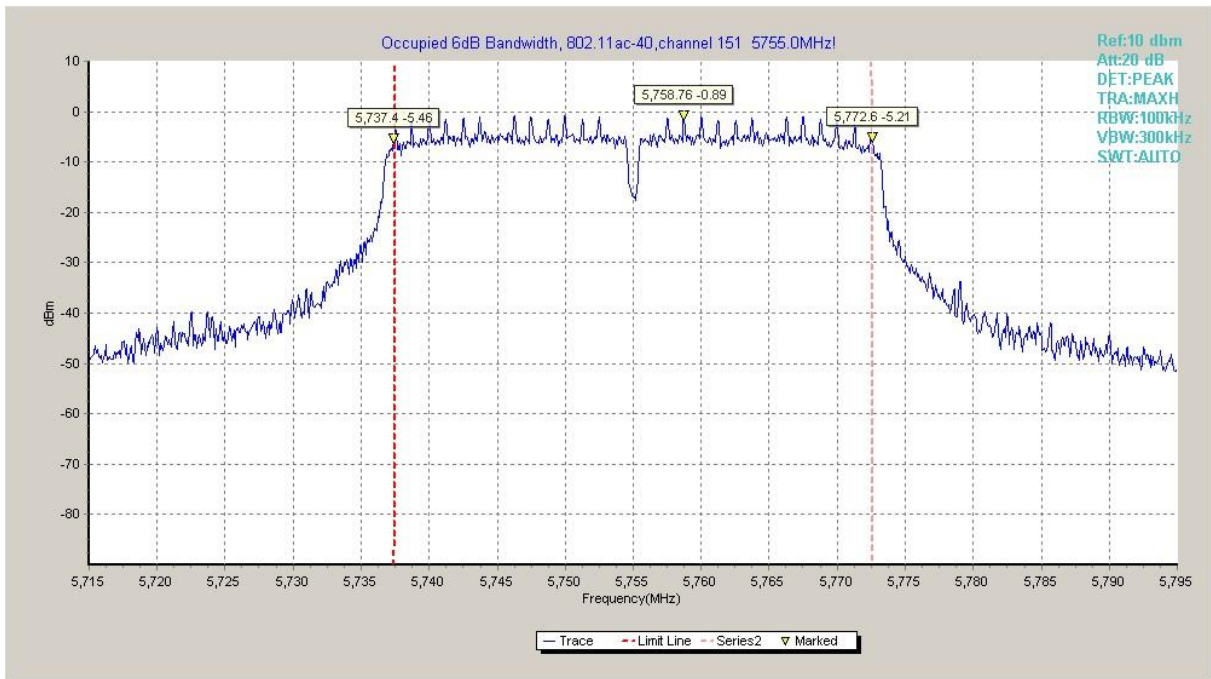
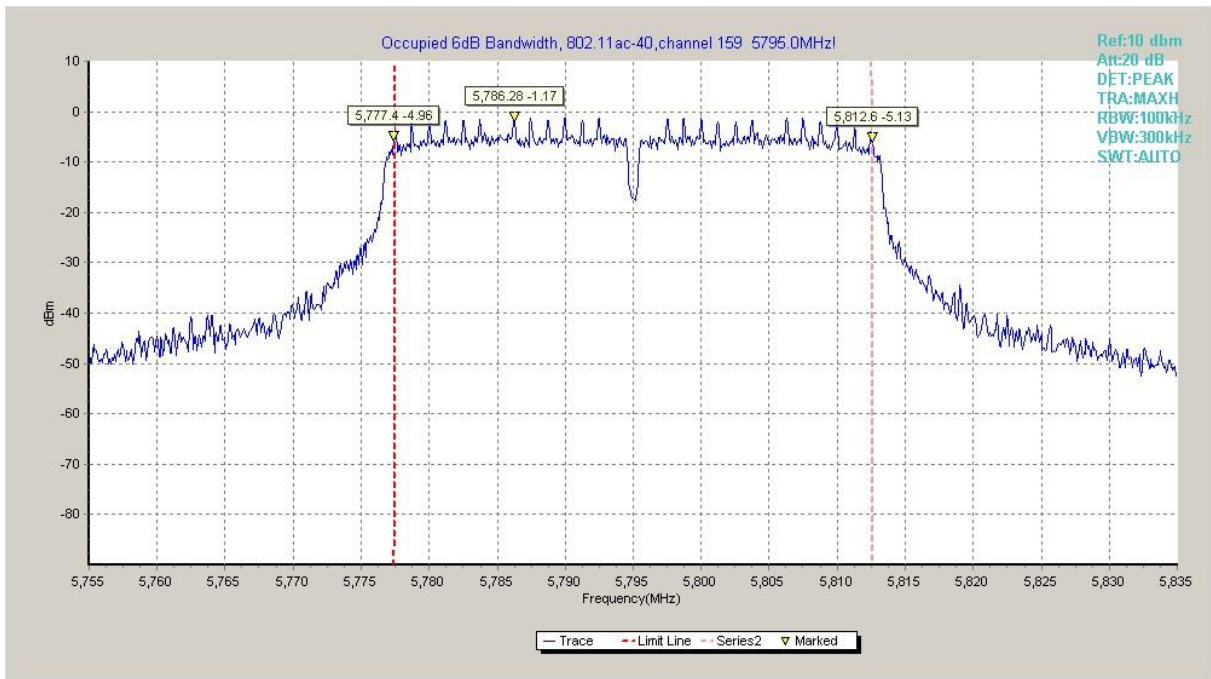
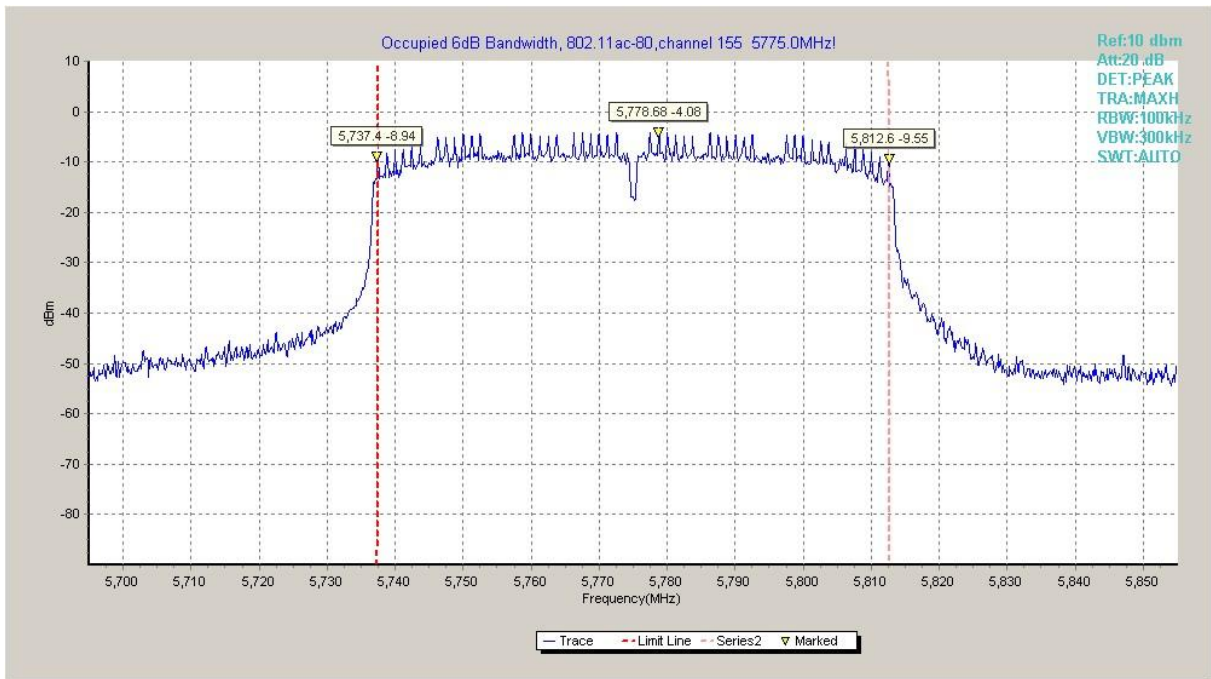


Fig. 12 Occupied 6dB Bandwidth (802.11ac-HT40, Ch 151)



**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 (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.15       | P          |
|         |         | 1 GHz ~ 12 GHz  | Fig.16       | P          |
|         |         | 12 GHz ~ 25 GHz | Fig.17       | P          |
|         |         | 25 GHz ~ 40 GHz | Fig.18       | P          |
|         | 157     | 30 MHz ~ 1 GHz  | Fig.19       | P          |
|         |         | 1 GHz ~ 12 GHz  | Fig.20       | P          |
|         |         | 12 GHz ~ 25 GHz | Fig.21       | P          |
|         |         | 25 GHz ~ 40 GHz | Fig.22       | P          |
|         | 165     | 30 MHz ~ 1 GHz  | Fig.23       | P          |
|         |         | 1 GHz ~ 12 GHz  | Fig.24       | P          |
|         |         | 12 GHz ~ 25 GHz | Fig.25       | P          |
|         |         | 25 GHz ~ 40 GHz | Fig.26       | P          |

**802.11n-HT20 mode**

| MODE            | Channel | Frequency Range | Test Results | Conclusion |
|-----------------|---------|-----------------|--------------|------------|
| 802.11n<br>HT20 | 149     | 30 MHz ~ 1 GHz  | Fig.27       | P          |
|                 |         | 1 GHz ~ 12 GHz  | Fig.28       | P          |
|                 |         | 12 GHz ~ 25 GHz | Fig.29       | P          |
|                 |         | 25 GHz ~ 40 GHz | Fig.30       | P          |
|                 | 157     | 30 MHz ~ 1 GHz  | Fig.31       | P          |
|                 |         | 1 GHz ~ 12 GHz  | Fig.32       | P          |
|                 |         | 12 GHz ~ 25 GHz | Fig.33       | P          |
|                 |         | 25 GHz ~ 40 GHz | Fig.34       | P          |
|                 | 165     | 30 MHz ~ 1 GHz  | Fig.35       | P          |
|                 |         | 1 GHz ~ 12 GHz  | Fig.36       | P          |
|                 |         | 12 GHz ~ 25 GHz | Fig.37       | P          |
|                 |         | 25 GHz ~ 40 GHz | Fig.38       | P          |

**802.11ac-HT20 mode**

| MODE             | Channel | Frequency Range | Test Results | Conclusion |
|------------------|---------|-----------------|--------------|------------|
| 802.11ac<br>HT20 | 149     | 30 MHz ~ 1 GHz  | Fig.39       | P          |
|                  |         | 1 GHz ~ 12 GHz  | Fig.40       | P          |
|                  |         | 12 GHz ~ 25 GHz | Fig.41       | P          |
|                  |         | 25 GHz ~ 40 GHz | Fig.42       | P          |
|                  | 157     | 30 MHz ~ 1 GHz  | Fig.43       | P          |
|                  |         | 1 GHz ~ 12 GHz  | Fig.44       | P          |
|                  |         | 12 GHz ~ 25 GHz | Fig.45       | P          |
|                  |         | 25 GHz ~ 40 GHz | Fig.46       | P          |
|                  | 165     | 30 MHz ~ 1 GHz  | Fig.47       | P          |
|                  |         | 1 GHz ~ 12 GHz  | Fig.48       | P          |
|                  |         | 12 GHz ~ 25 GHz | Fig.49       | P          |
|                  |         | 25 GHz ~ 40 GHz | Fig.50       | P          |

**802.11n-HT40 mode**

| MODE            | Channel | Frequency Range | Test Results | Conclusion |
|-----------------|---------|-----------------|--------------|------------|
| 802.11n<br>HT40 | 151     | 30 MHz ~ 1 GHz  | Fig.51       | P          |
|                 |         | 1 GHz ~ 12 GHz  | Fig.52       | P          |
|                 |         | 12 GHz ~ 25 GHz | Fig.53       | P          |
|                 |         | 25 GHz ~ 40 GHz | Fig.54       | P          |
|                 | 159     | 30 MHz ~ 1 GHz  | Fig.55       | P          |
|                 |         | 1 GHz ~ 12 GHz  | Fig.56       | P          |
|                 |         | 12 GHz ~ 25 GHz | Fig.57       | P          |
|                 |         | 25 GHz ~ 40 GHz | Fig.58       | P          |

**802.11ac-HT40 mode**

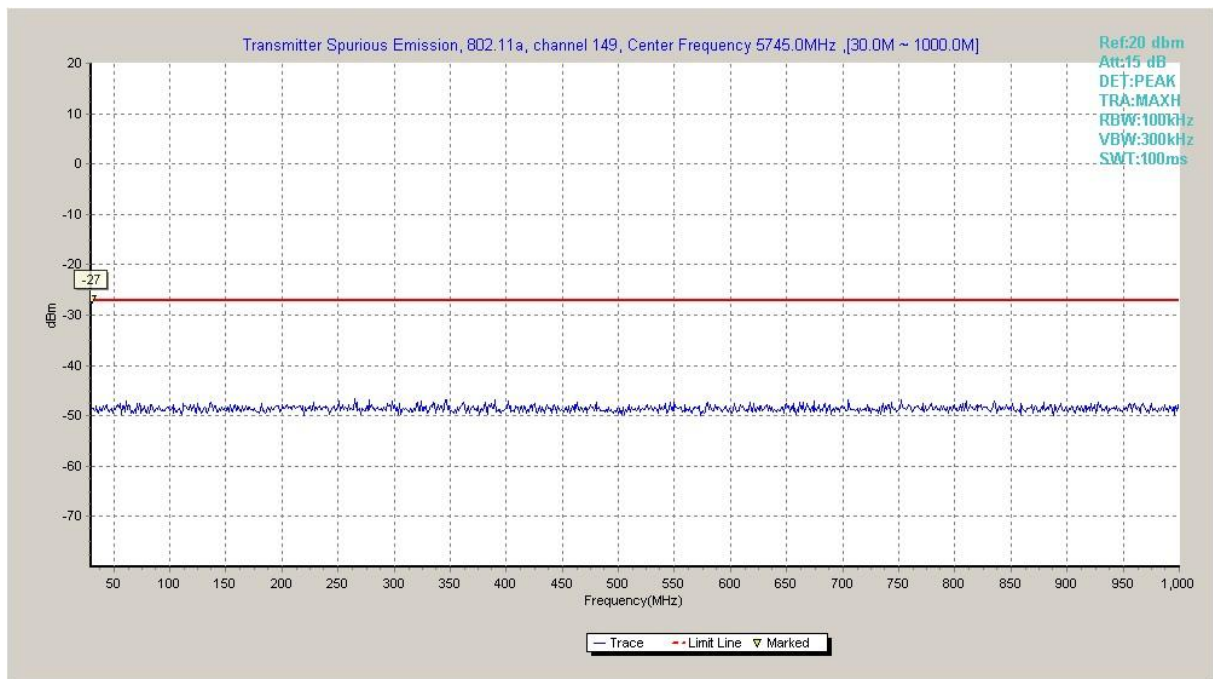
| MODE             | Channel | Frequency Range | Test Results | Conclusion |
|------------------|---------|-----------------|--------------|------------|
| 802.11ac<br>HT40 | 151     | 30 MHz ~ 1 GHz  | Fig.59       | P          |
|                  |         | 1 GHz ~ 12 GHz  | Fig.60       | P    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

**802.11ac-HT80 mode**

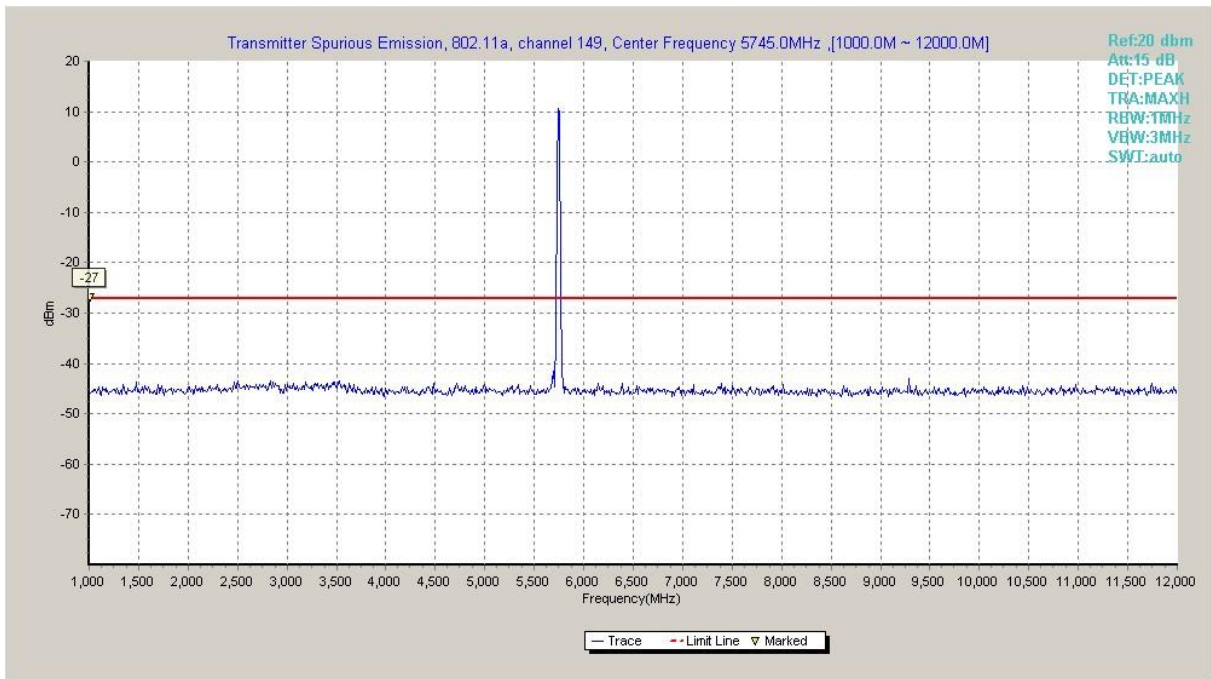
| MODE             | Channel | Frequency Range | Test Results | Conclusion |
|------------------|---------|-----------------|--------------|------------|
| 802.11ac<br>HT80 | 155     | 30 MHz ~ 1 GHz  | Fig.67       | P          |
|                  |         | 1 GHz ~ 12 GHz  | Fig.68       | P          |
|                  |         | 12 GHz ~ 25 GHz | Fig.69       | P          |
|                  |         | 25 GHz ~ 40 GHz | Fig.70       | P          |

**Conclusion: PASS**

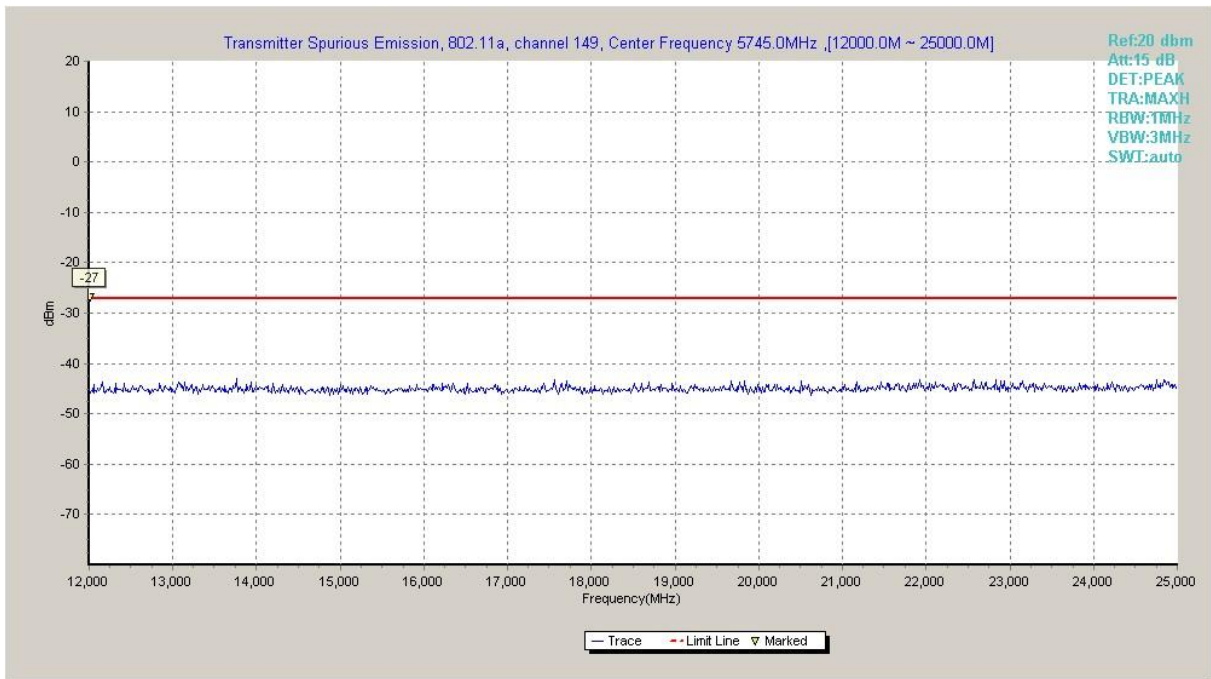
**Test graphs as below:**



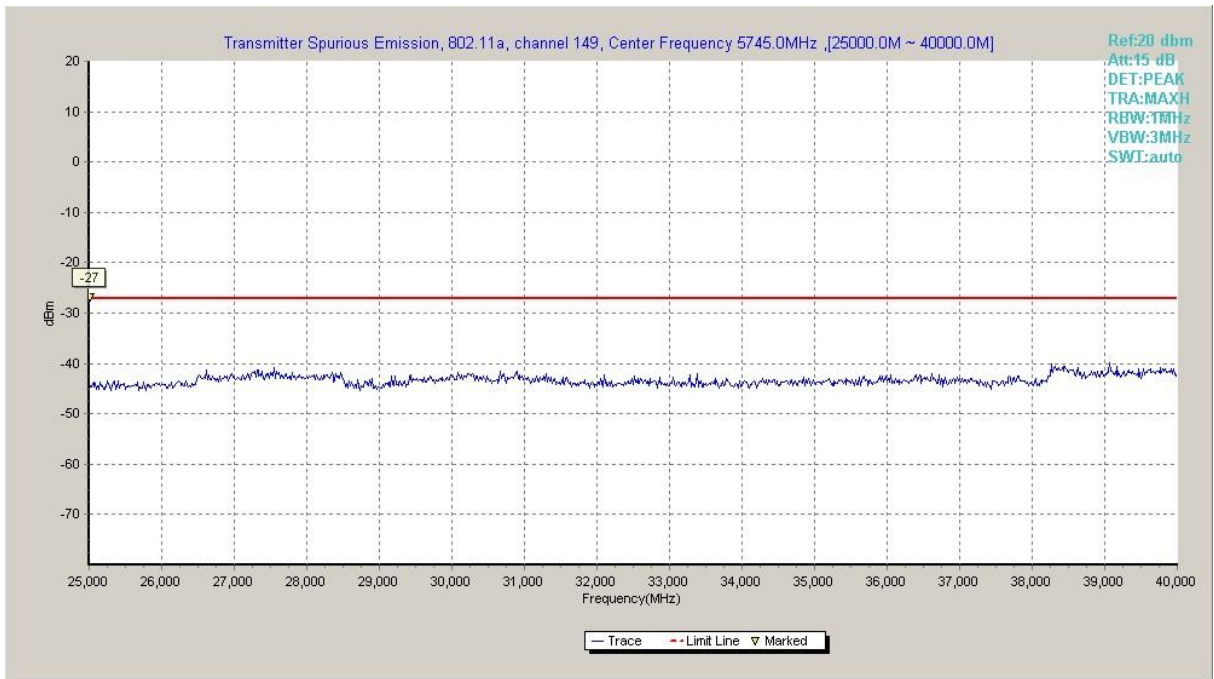
**Fig. 15 Conducted Spurious Emission (802.11a, Ch149, 30 MHz-1 GHz)**



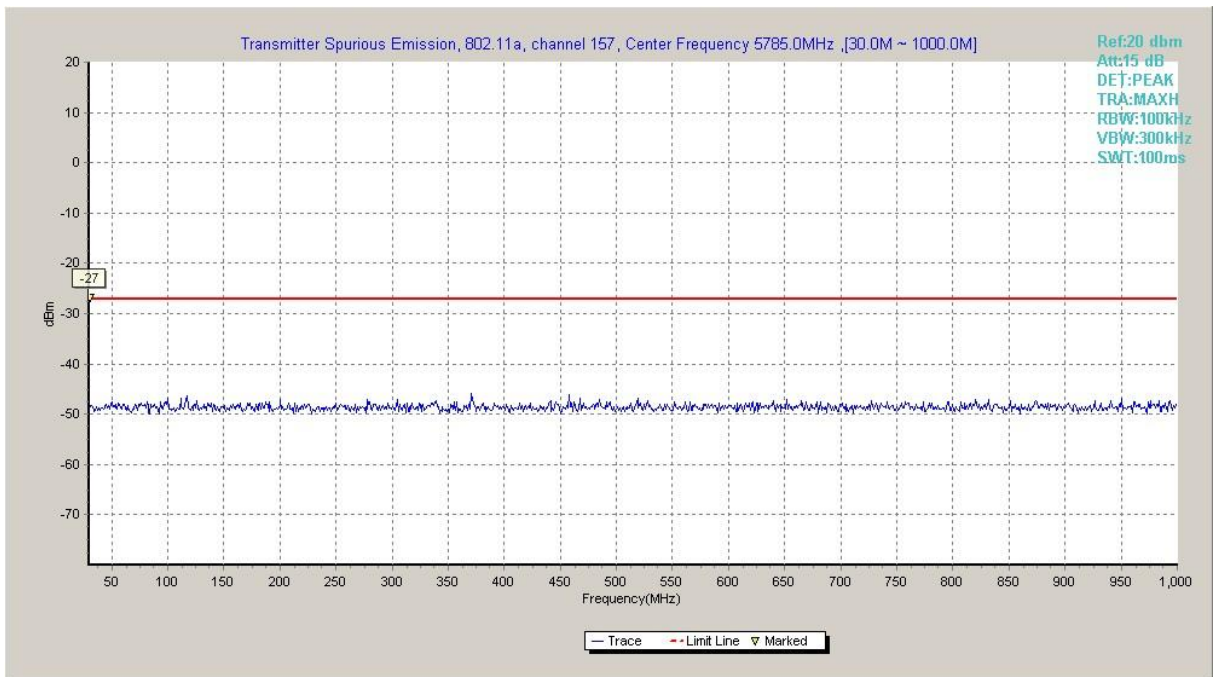
**Fig. 16 Conducted Spurious Emission (802.11a, Ch149, 1 GHz -12 GHz)**



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

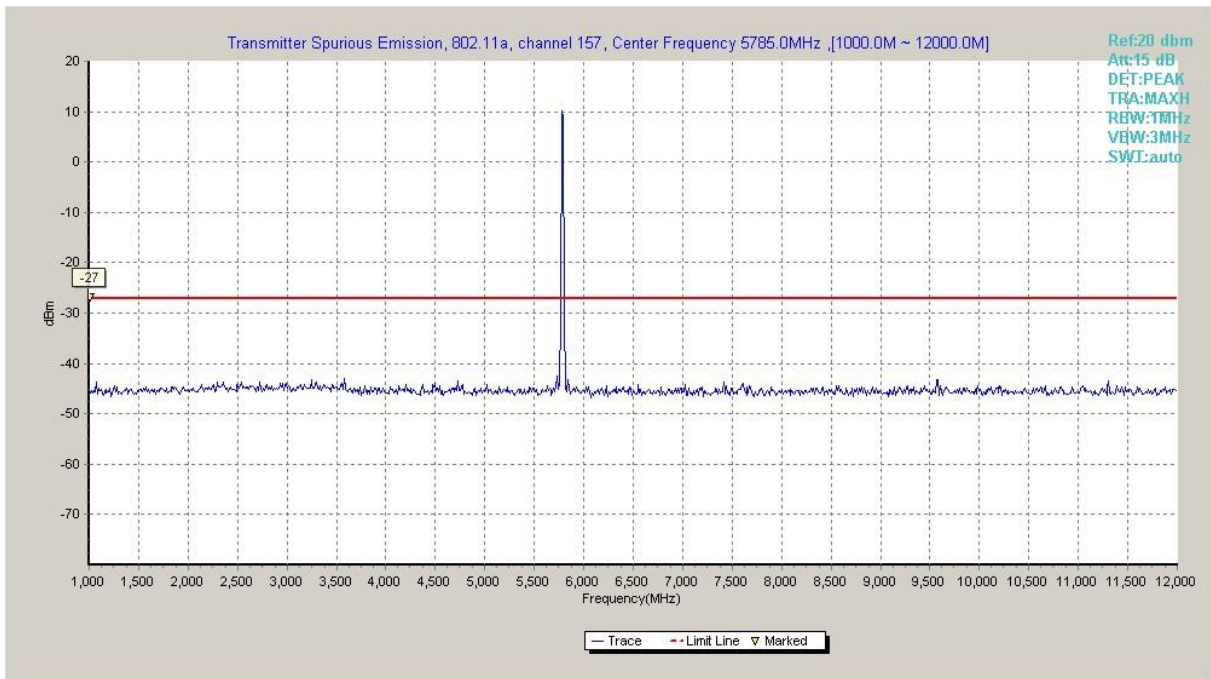


**Fig. 18 Conducted Spurious Emission (802.11a, Ch149, 25 GHz-40 GHz)**

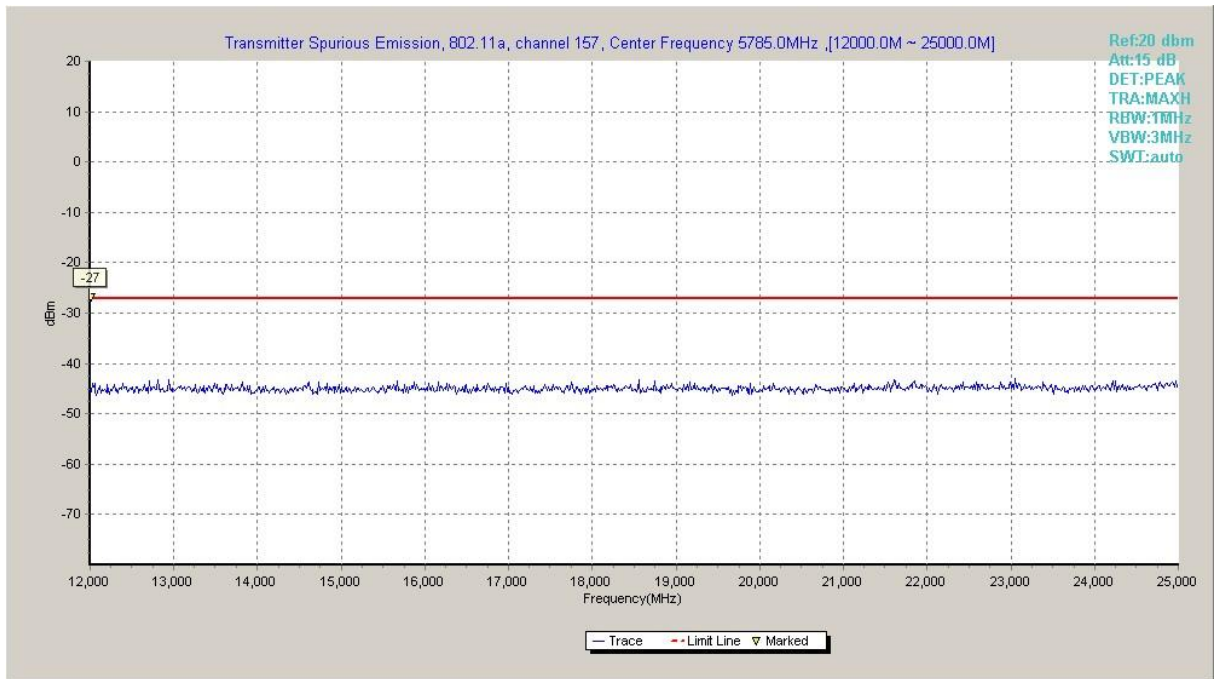


**Fig. 19 Conducted Spurious Emission (802.11a, Ch157, 30 MHz-1 GHz)**

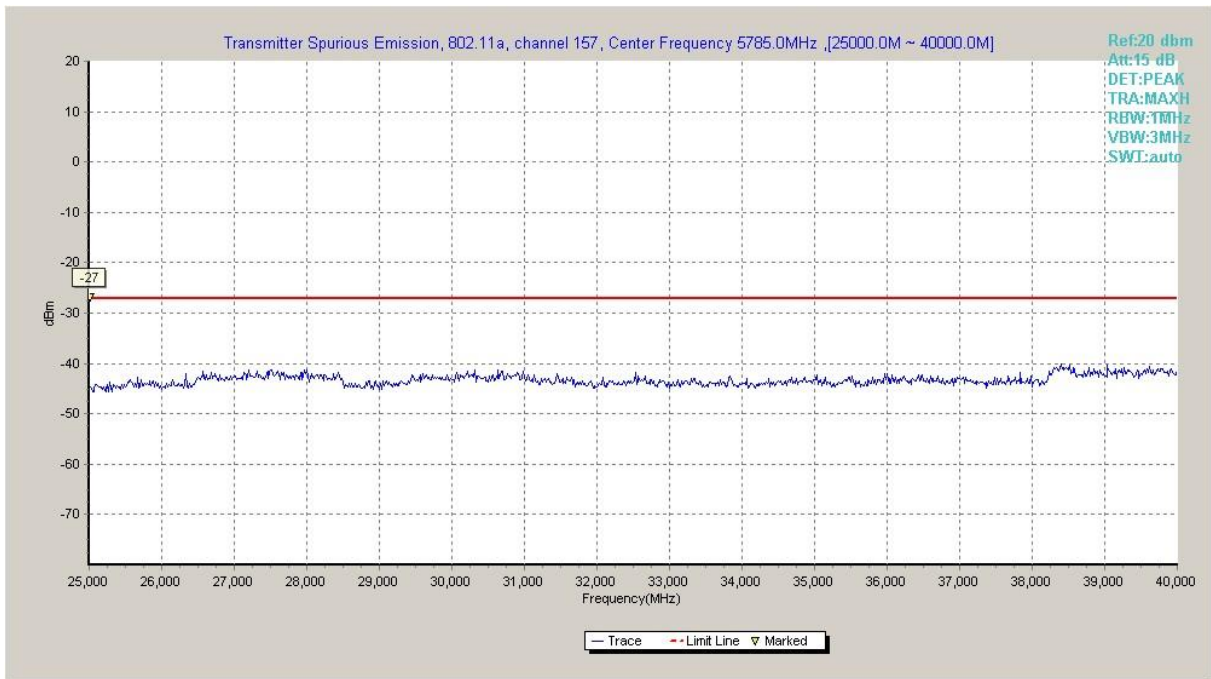




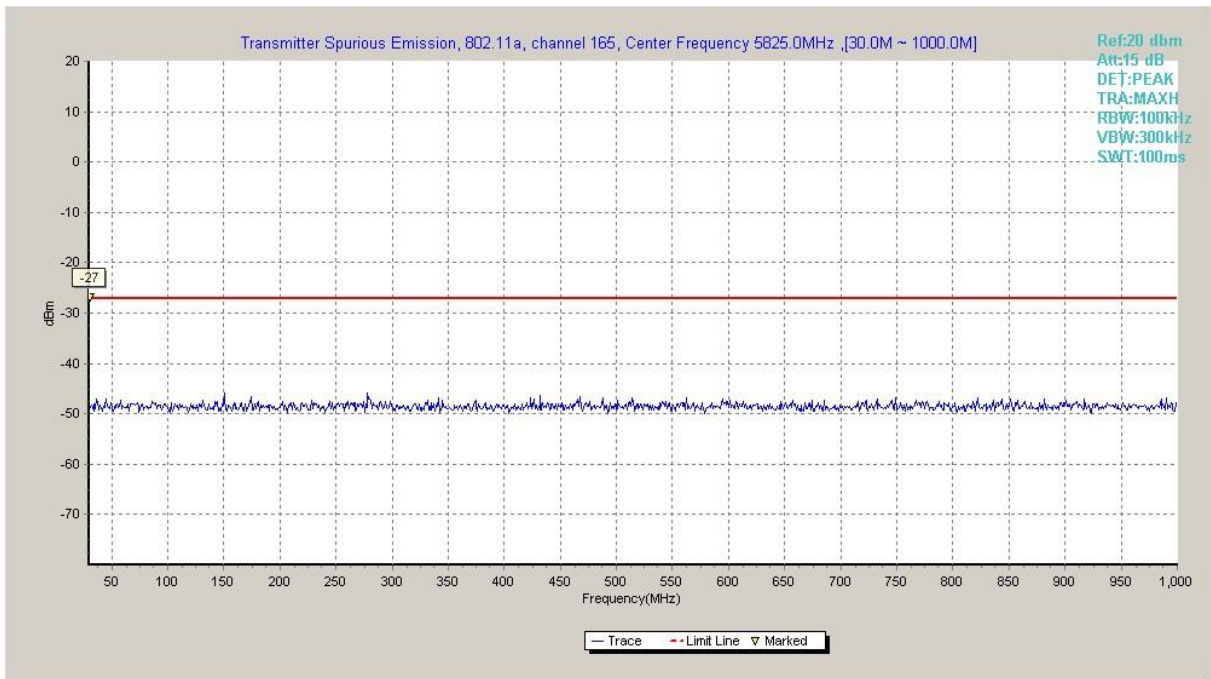
**Fig. 20 Conducted Spurious Emission (802.11a, Ch157, 1 GHz -12 GHz)**



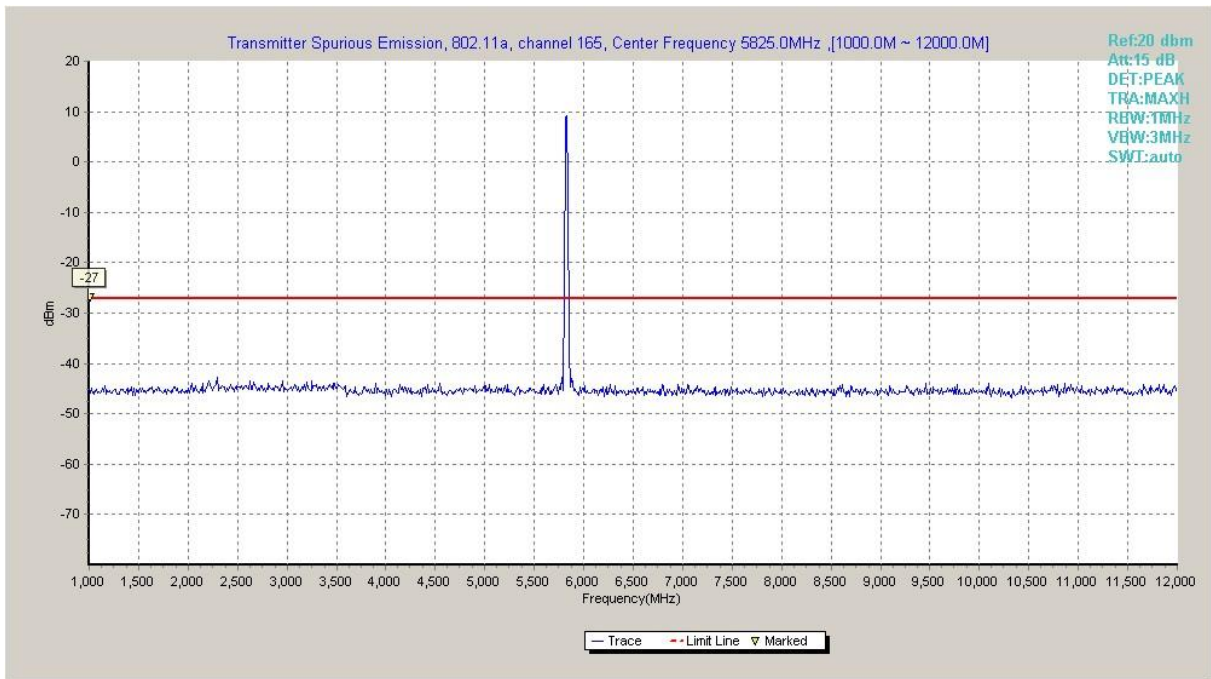
**Fig. 21 Conducted Spurious Emission (802.11a, Ch157, 12 GHz-25 GHz)**



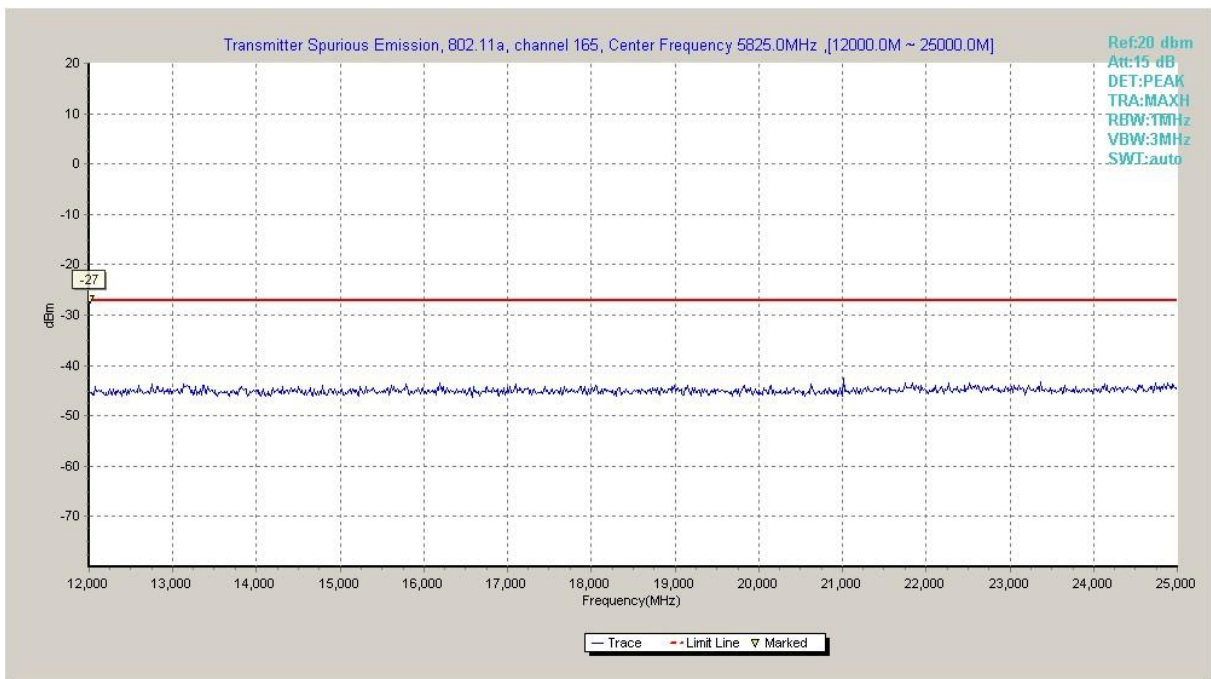
**Fig. 22 Conducted Spurious Emission (802.11a, Ch157, 25 GHz-40 GHz)**



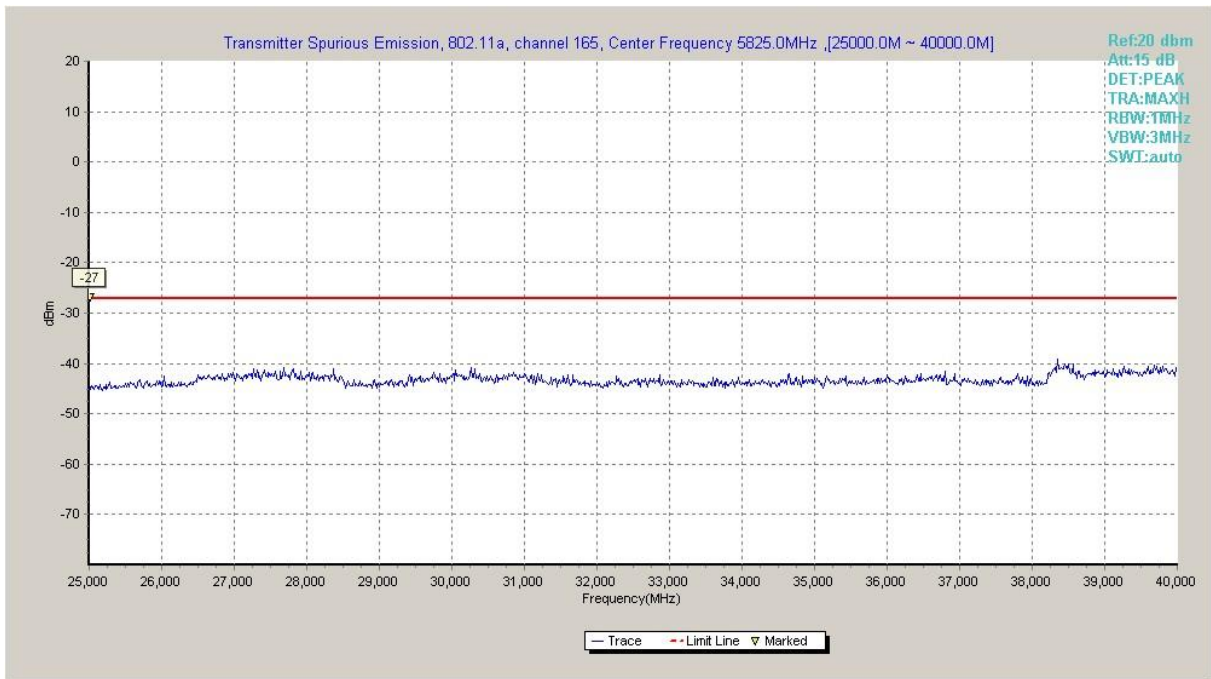
**Fig. 23 Conducted Spurious Emission (802.11a, Ch165, 30 MHz-1 GHz)**



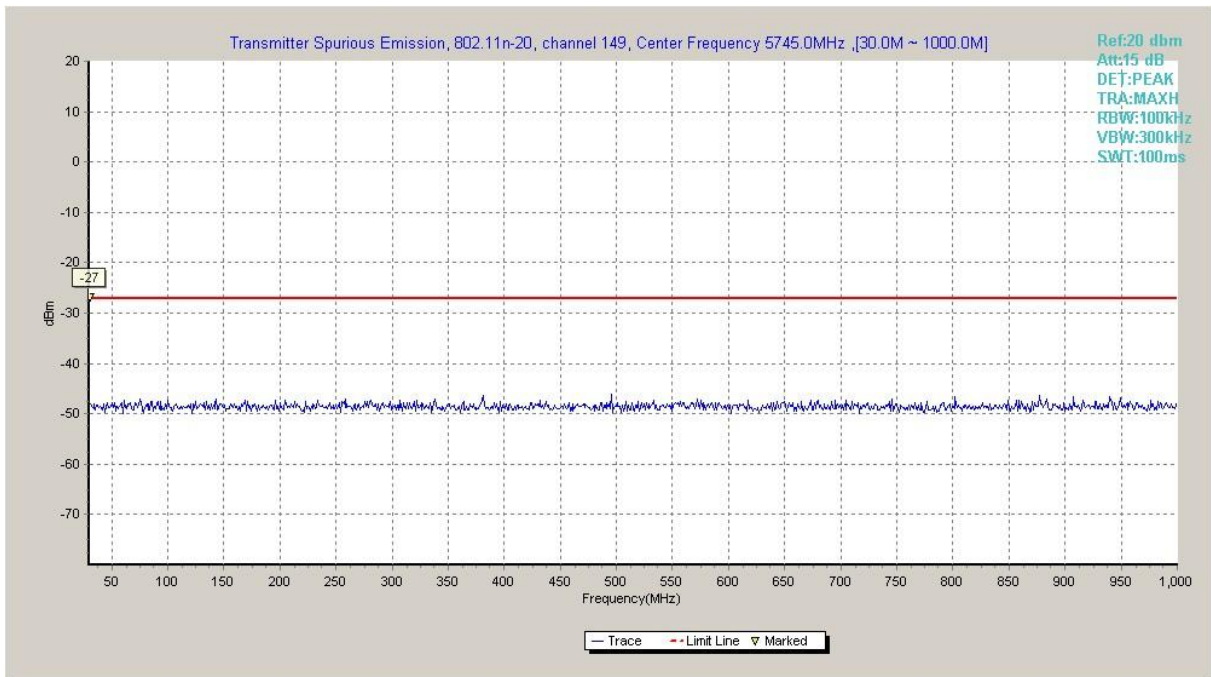
**Fig. 24 Conducted Spurious Emission (802.11a, Ch165, 1 GHz -12 GHz)**



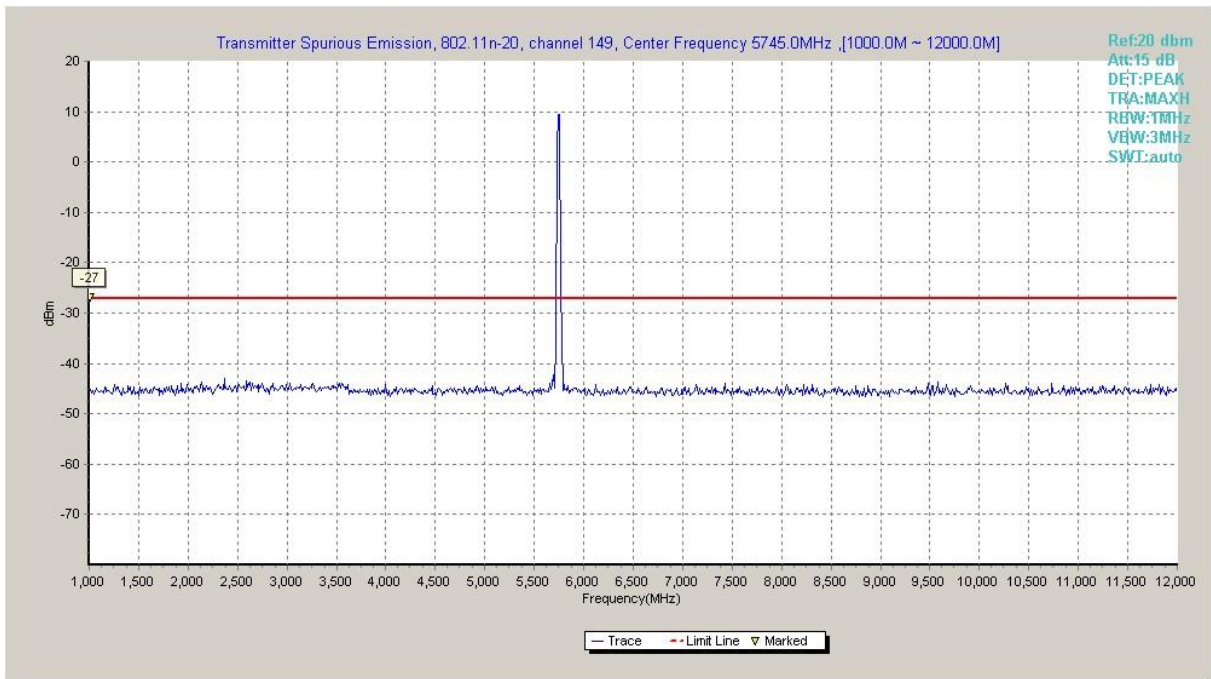
**Fig. 25 Conducted Spurious Emission (802.11a, Ch165, 12 GHz-25 GHz)**



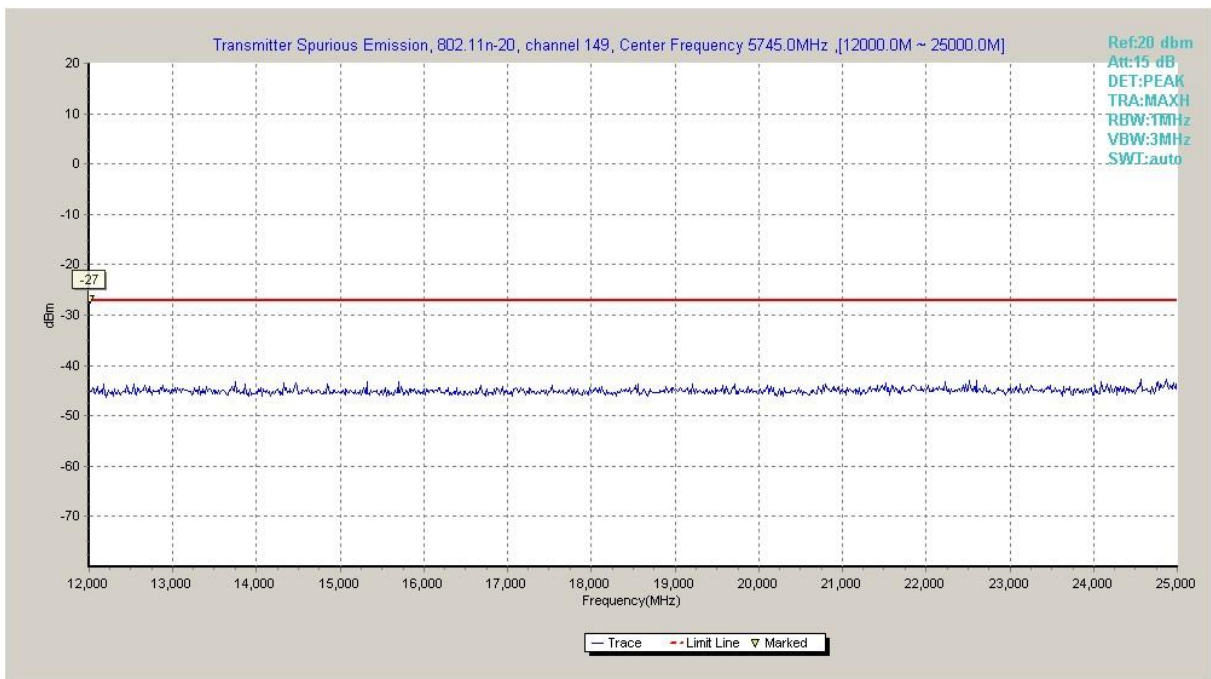
**Fig. 26 Conducted Spurious Emission (802.11a, Ch165, 25 GHz-40 GHz)**



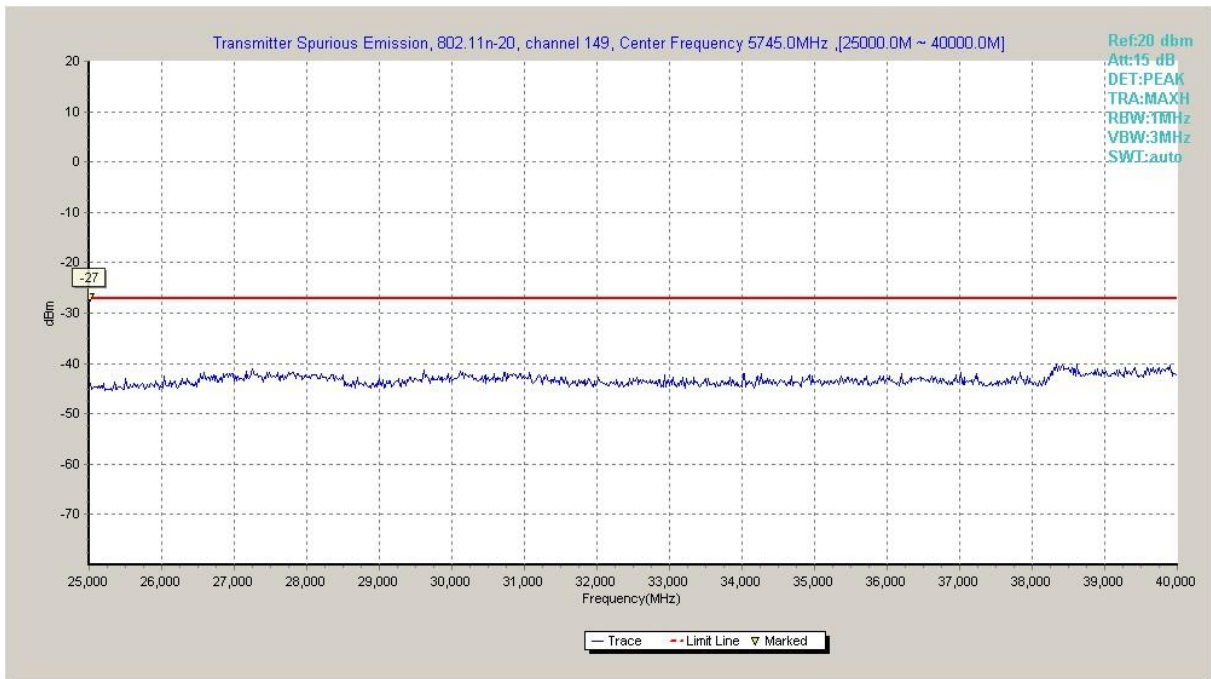
**Fig. 27 Conducted Spurious Emission (802.11n-HT20, Ch149, 30 MHz-1 GHz)**



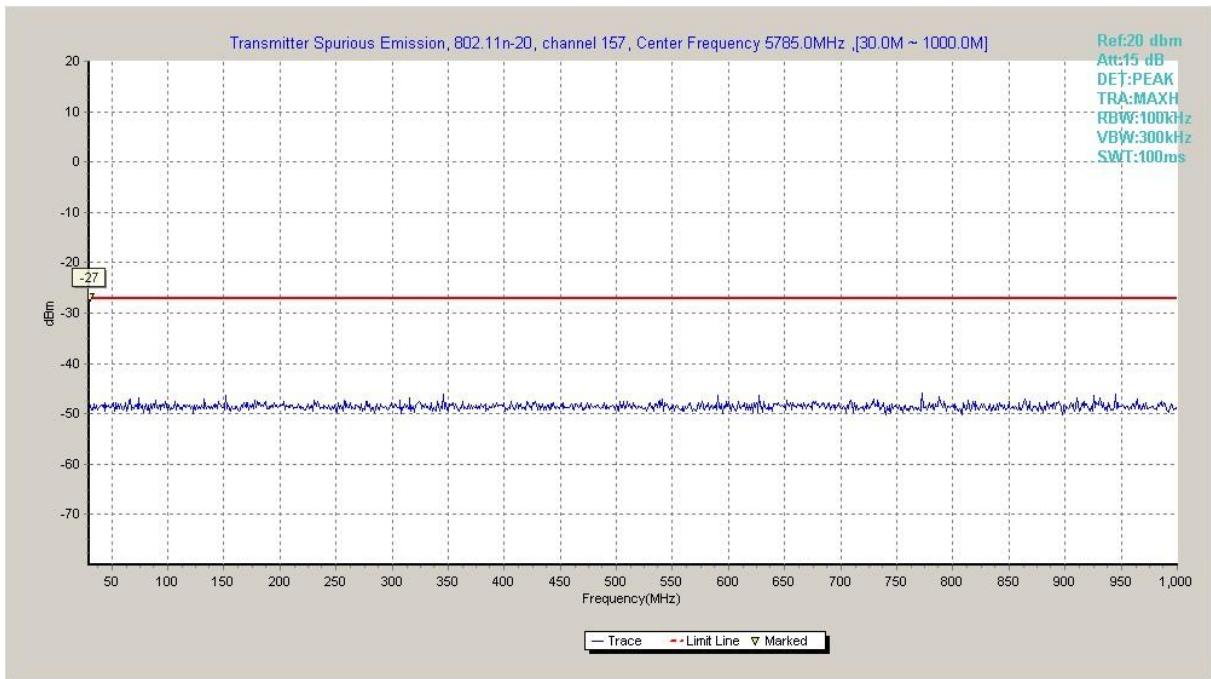
**Fig. 28 Conducted Spurious Emission (802.11n-HT20, Ch149, 1 GHz -12 GHz)**



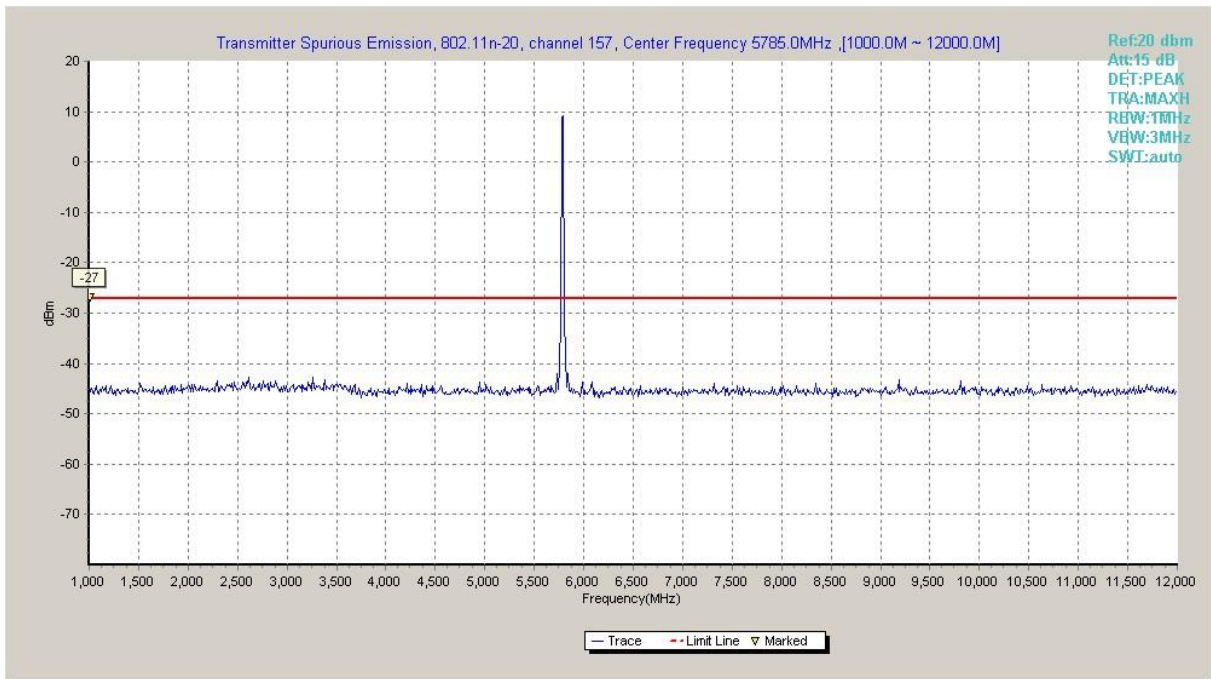
**Fig. 29 Conducted Spurious Emission (802.11n-HT20, Ch149, 12 GHz-25 GHz)**



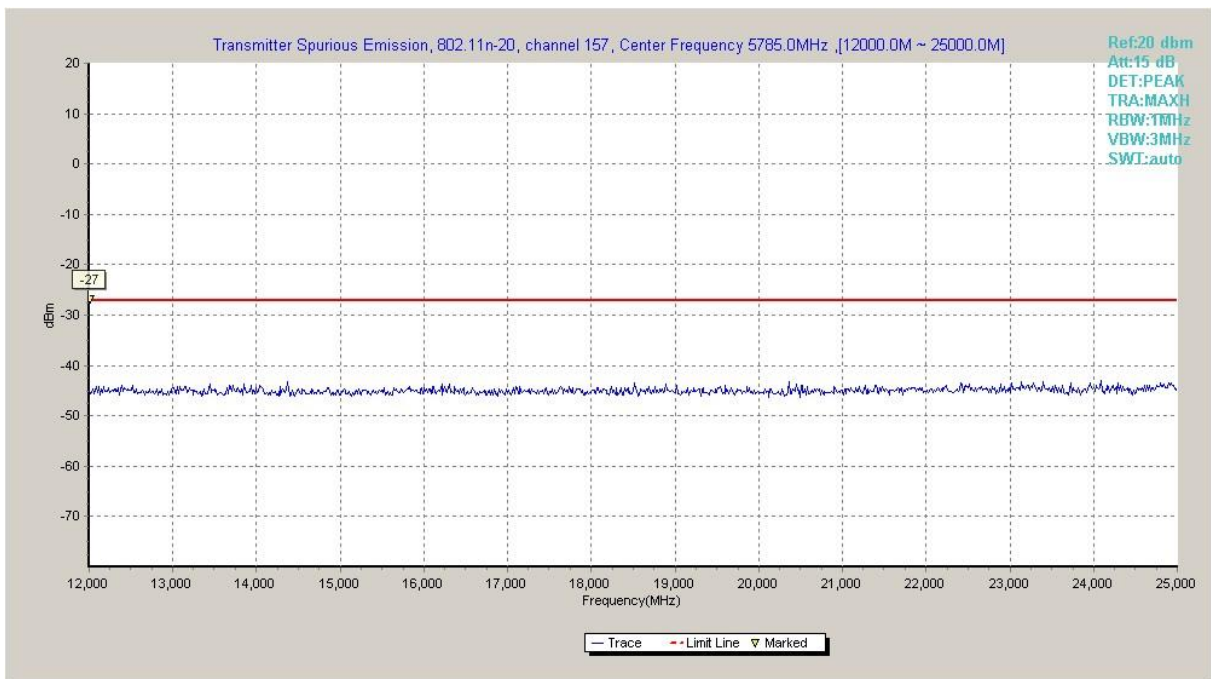
**Fig. 30 Conducted Spurious Emission (802.11n-HT20, Ch149, 25 GHz-40 GHz)**



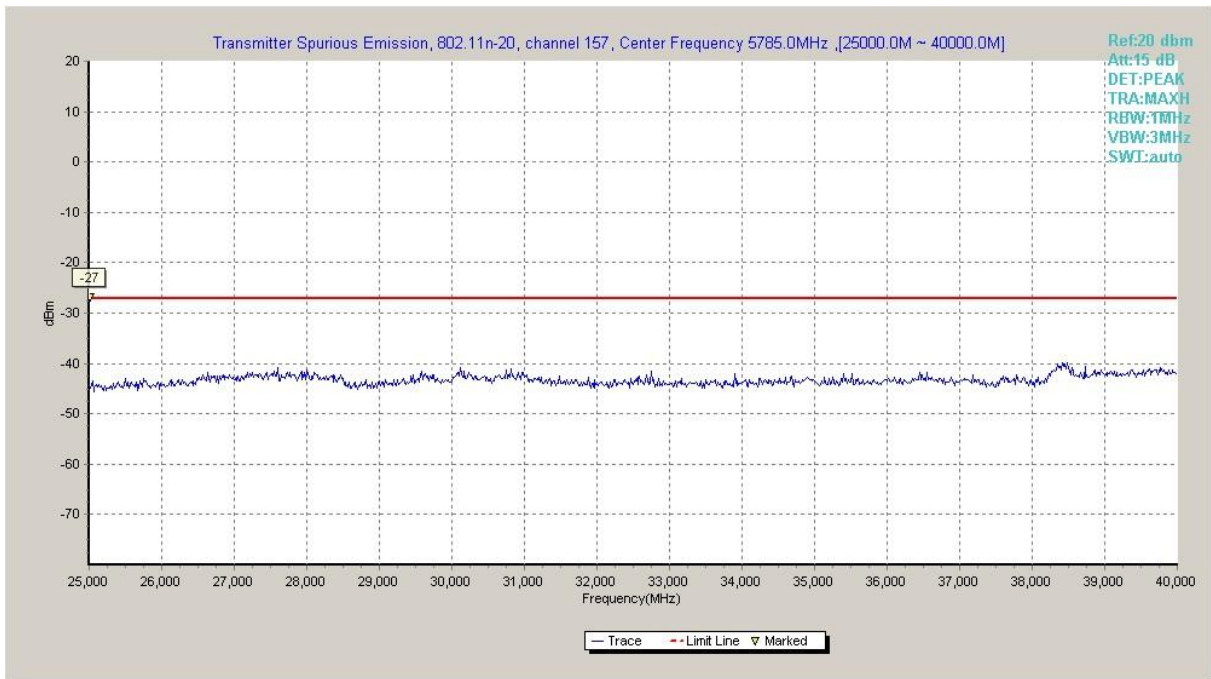
**Fig. 31 Conducted Spurious Emission (802.11n-HT20, Ch157, 30 MHz-1 GHz)**



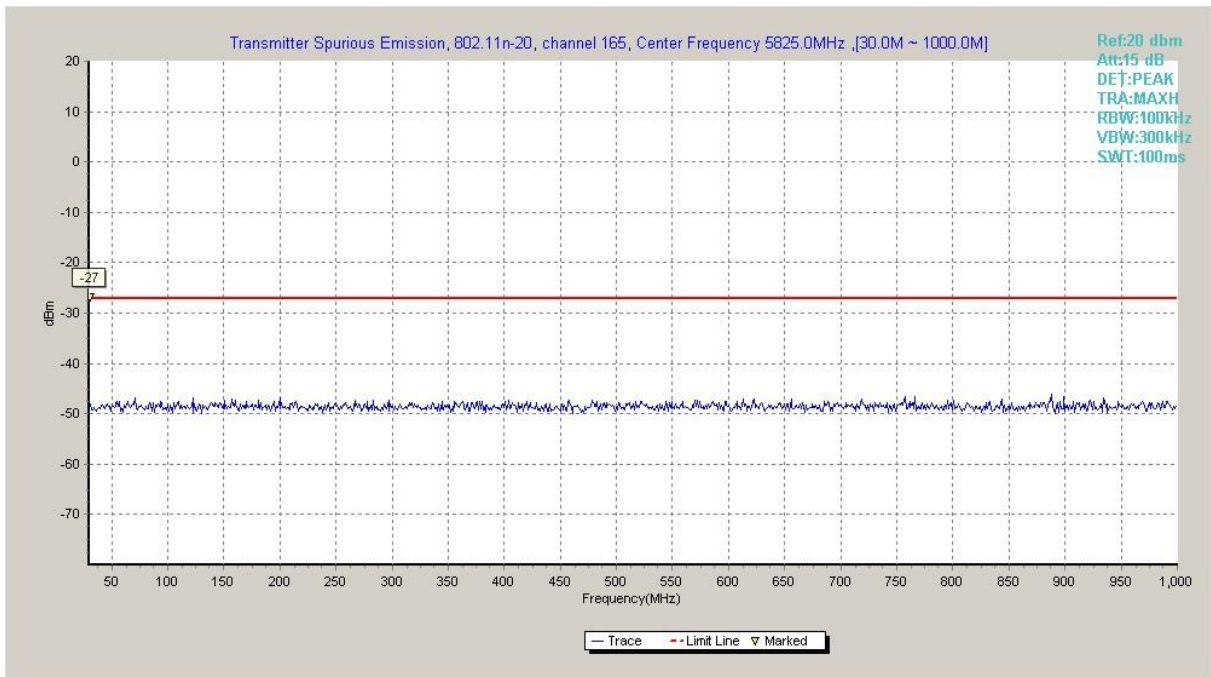
**Fig. 32 Conducted Spurious Emission (802.11n-HT20, Ch157, 1 GHz -12 GHz)**



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

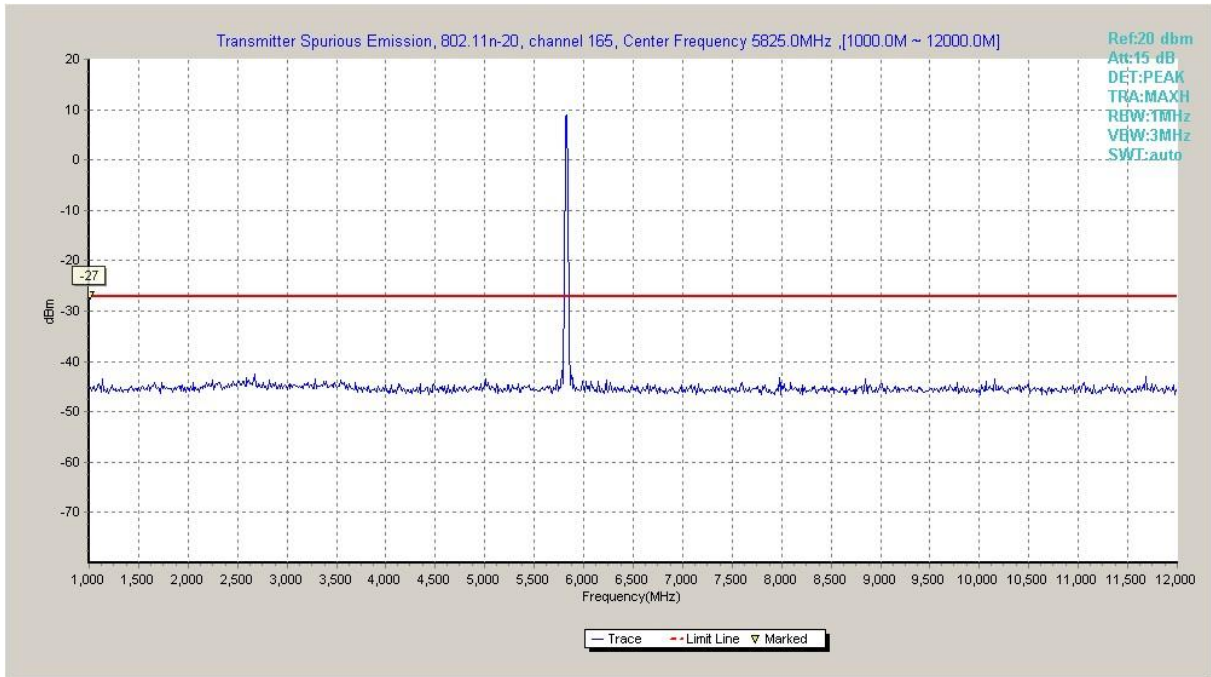


**Fig. 34 Conducted Spurious Emission (802.11n-HT20, Ch157, 25 GHz-40 GHz)**

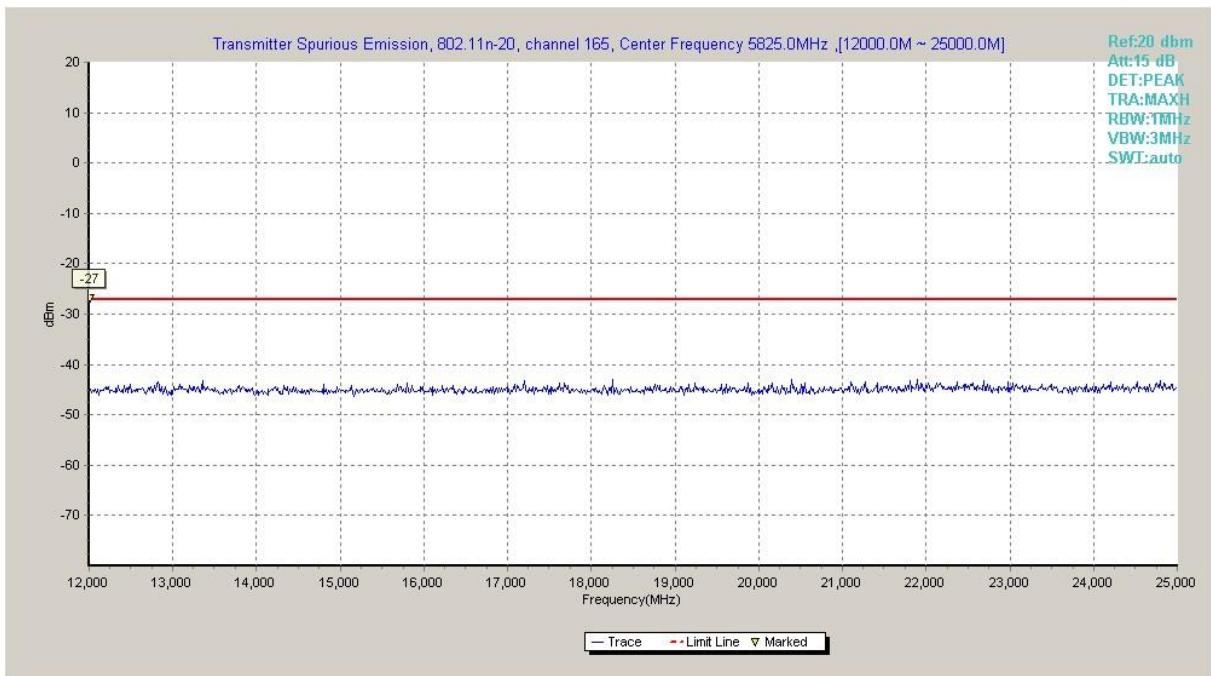




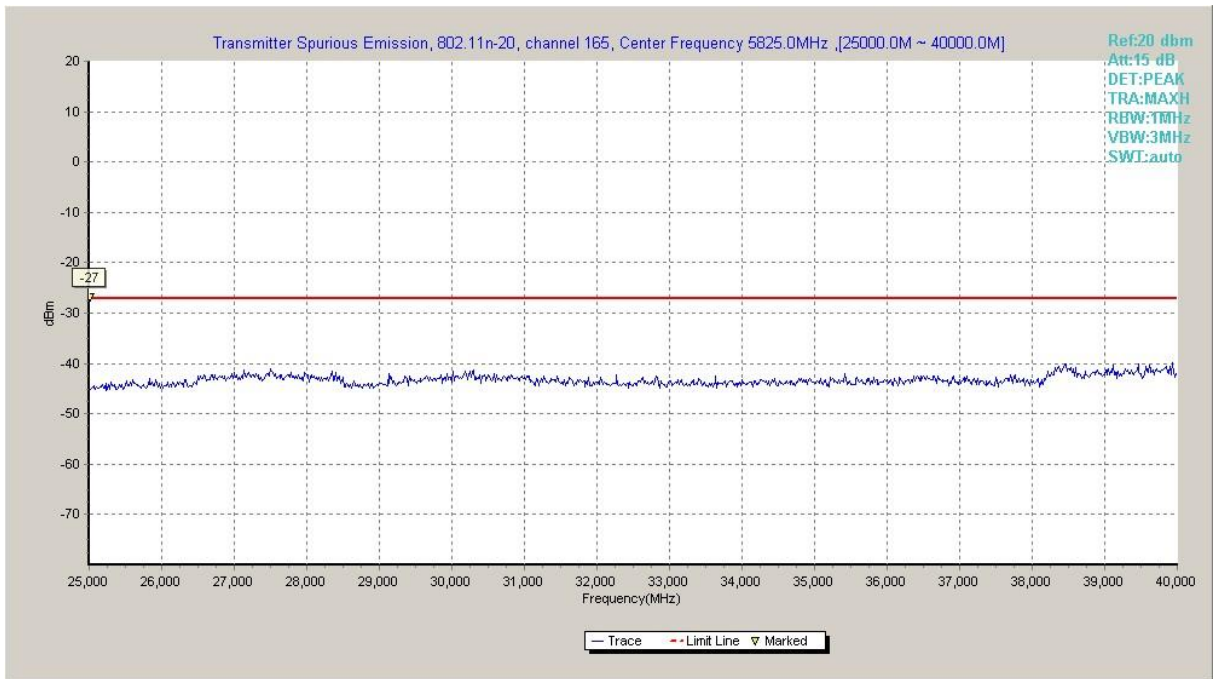
**Fig. 35 Conducted Spurious Emission (802.11n-HT20, Ch165, 30 MHz-1 GHz)**



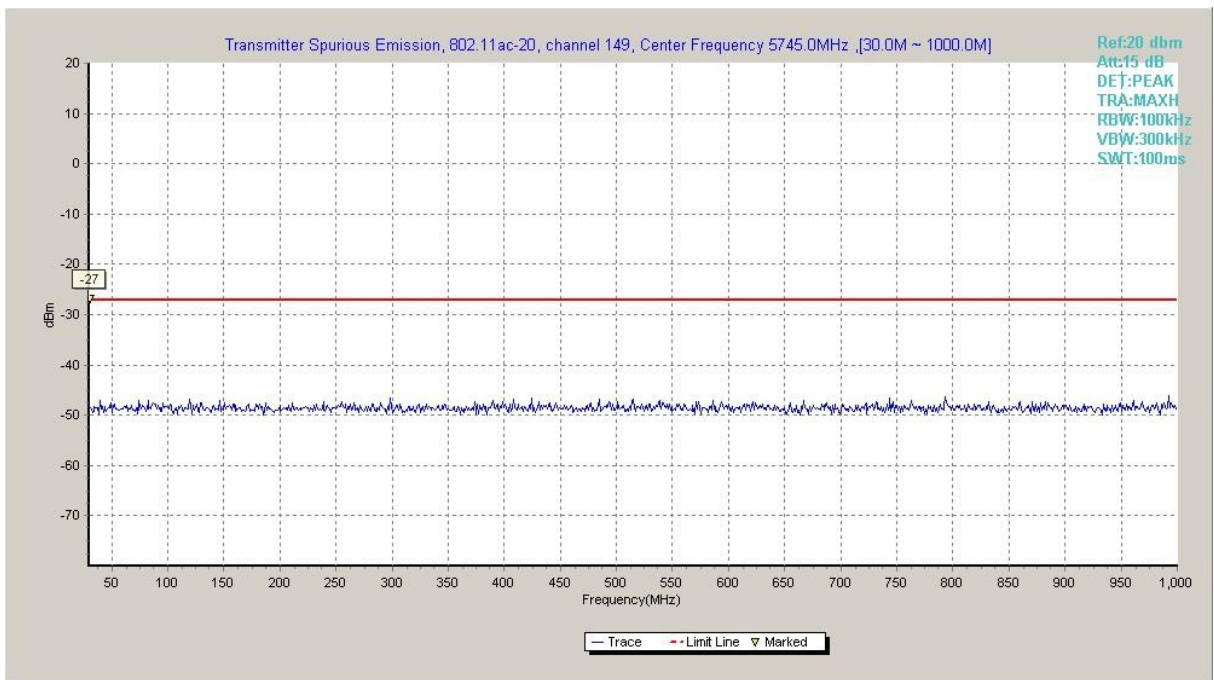
**Fig. 36 Conducted Spurious Emission (802.11n-HT20, Ch165, 1 GHz -12 GHz)**



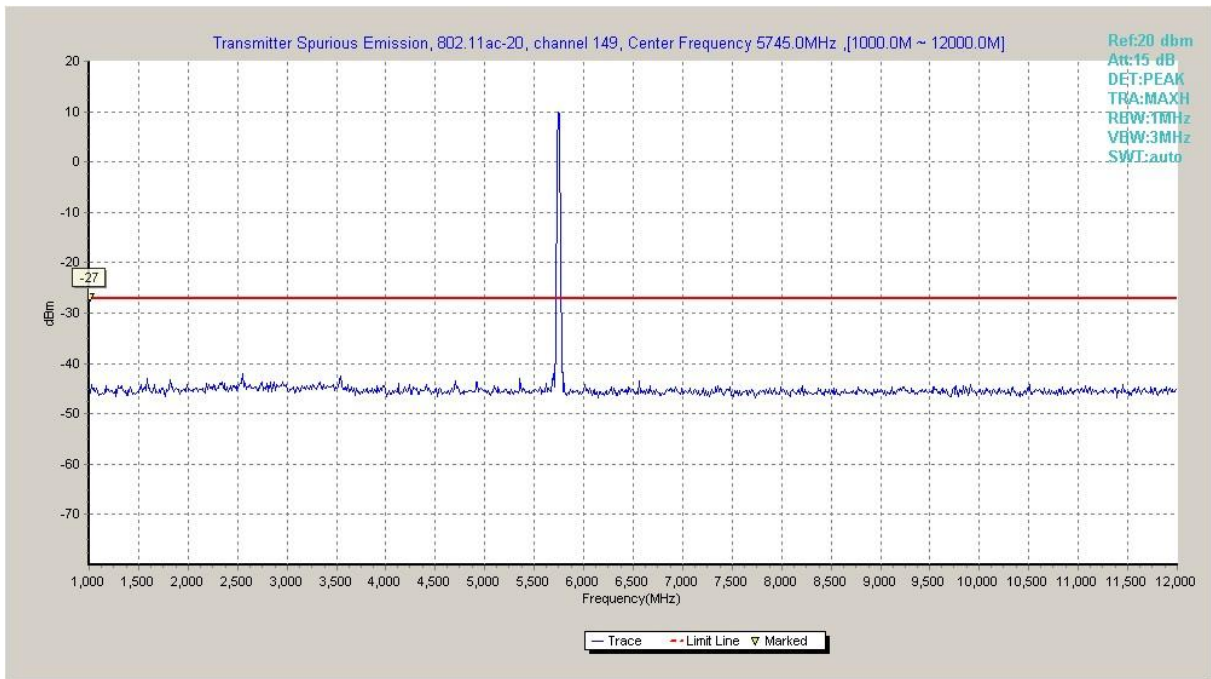
**Fig. 37 Conducted Spurious Emission (802.11n-HT20, Ch165, 12 GHz-25 GHz)**



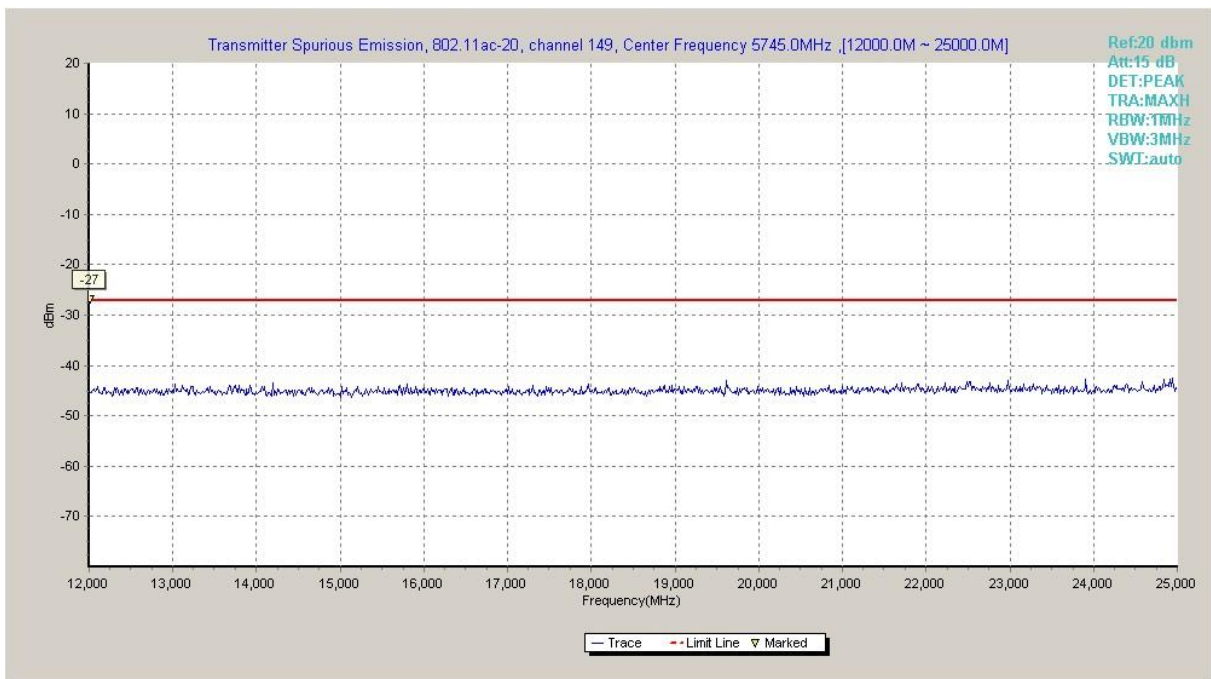
**Fig. 38 Conducted Spurious Emission (802.11ac-HT20, Ch165, 25 GHz-40 GHz)**



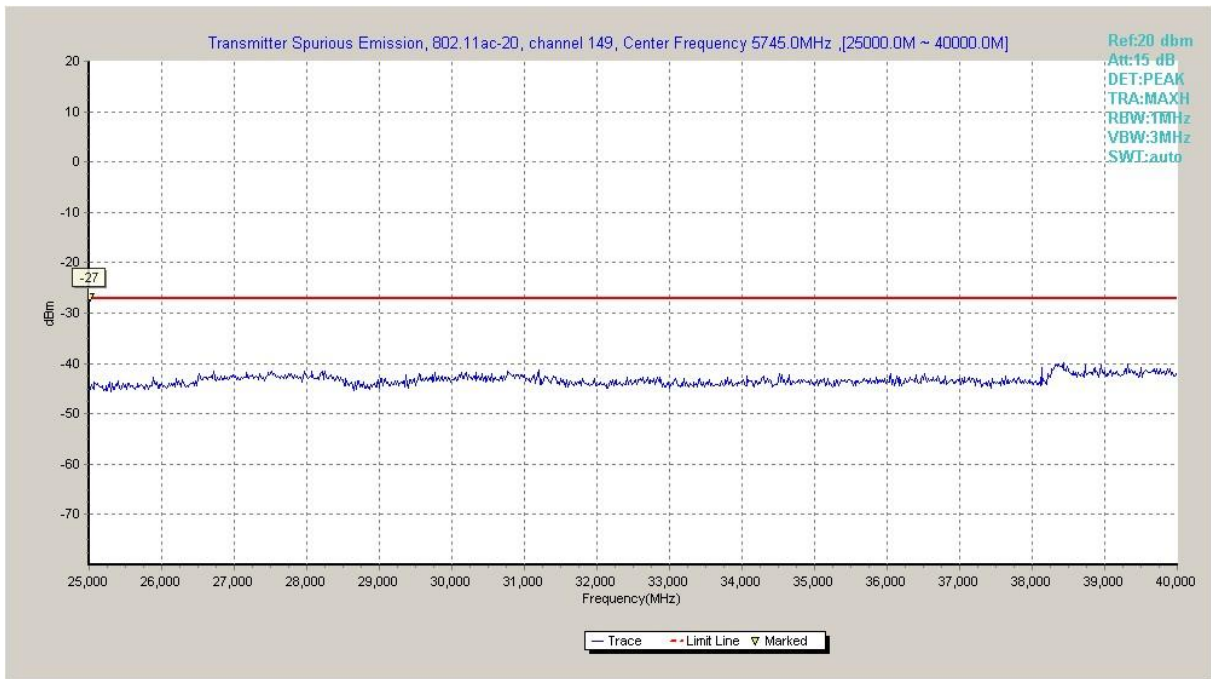
**Fig. 39 Conducted Spurious Emission (802.11ac-HT20, Ch149, 30 MHz-1 GHz)**



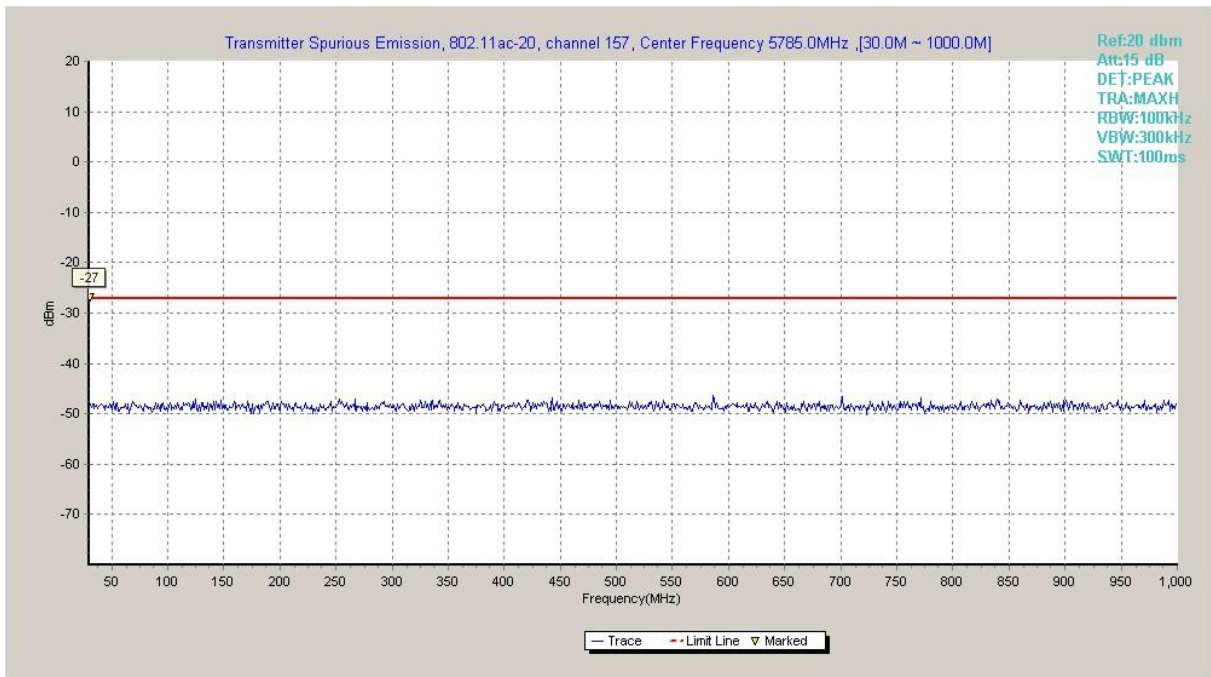
**Fig. 40 Conducted Spurious Emission (802.11ac-HT20, Ch149, 1 GHz -12 GHz)**



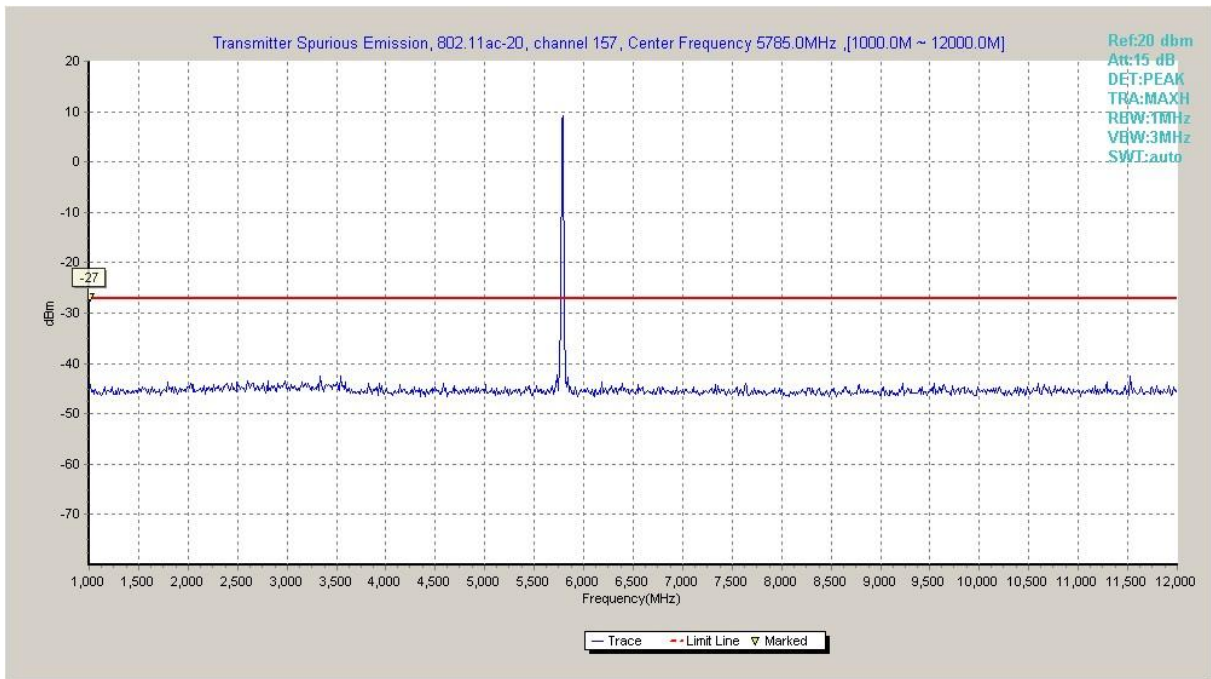
**Fig. 41 Conducted Spurious Emission (802.11ac-HT20, Ch149, 12 GHz-25 GHz)**



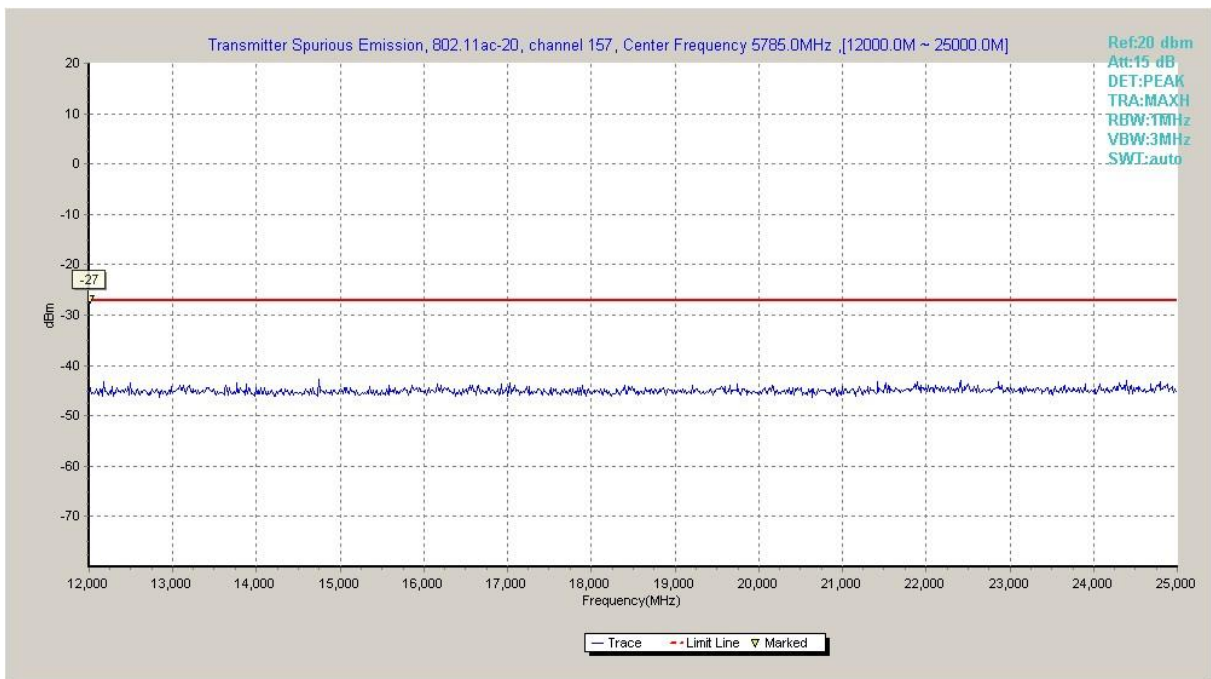
**Fig. 42 Conducted Spurious Emission (802.11ac-HT20, Ch149, 25 GHz-40 GHz)**



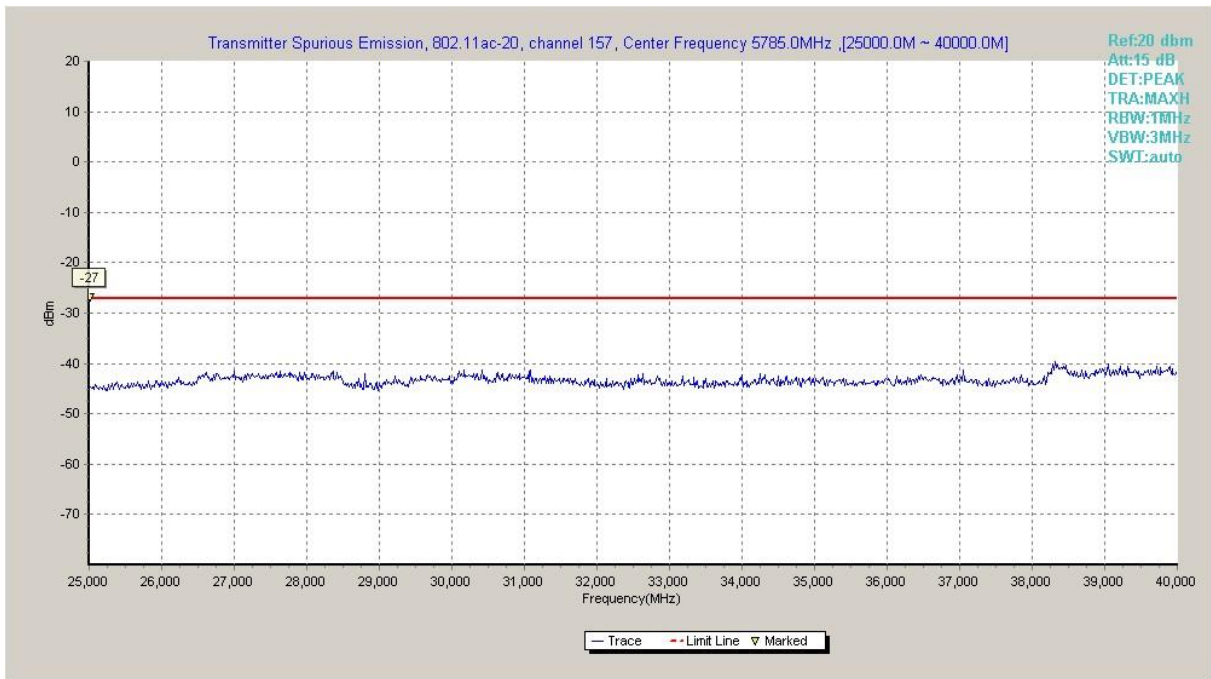
**Fig. 43 Conducted Spurious Emission (802.11ac-HT20, Ch157, 30 MHz-1 GHz)**



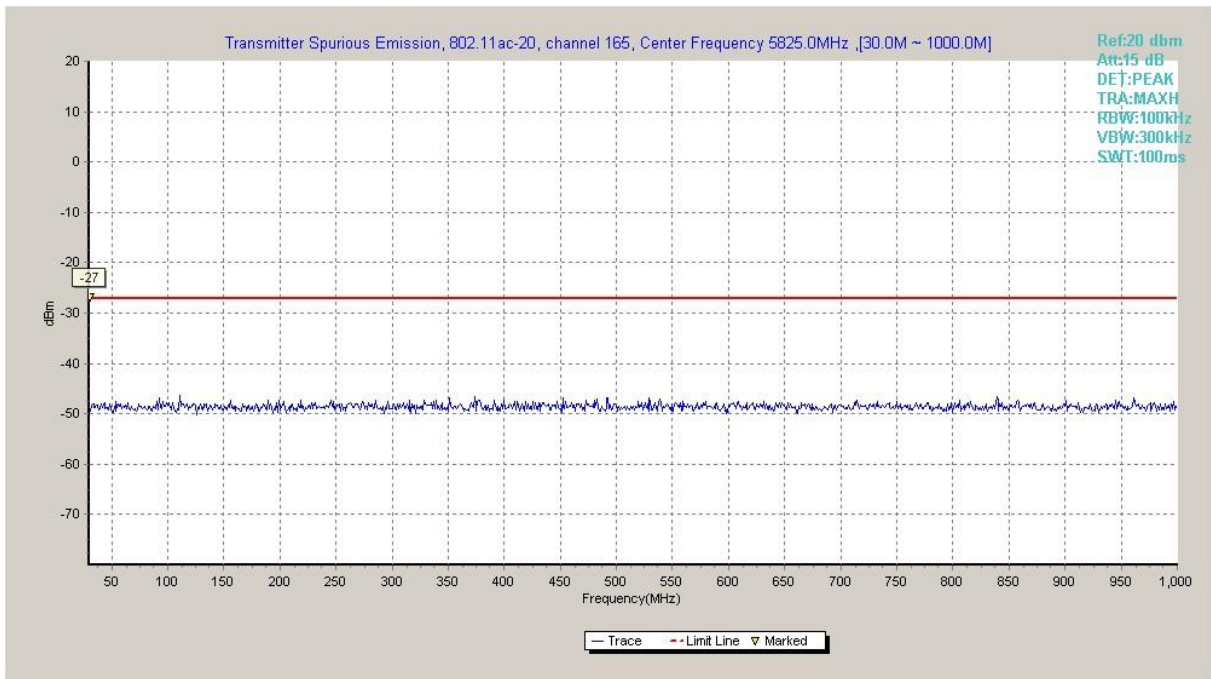
**Fig. 44 Conducted Spurious Emission (802.11ac-HT20, Ch157, 1 GHz -12 GHz)**



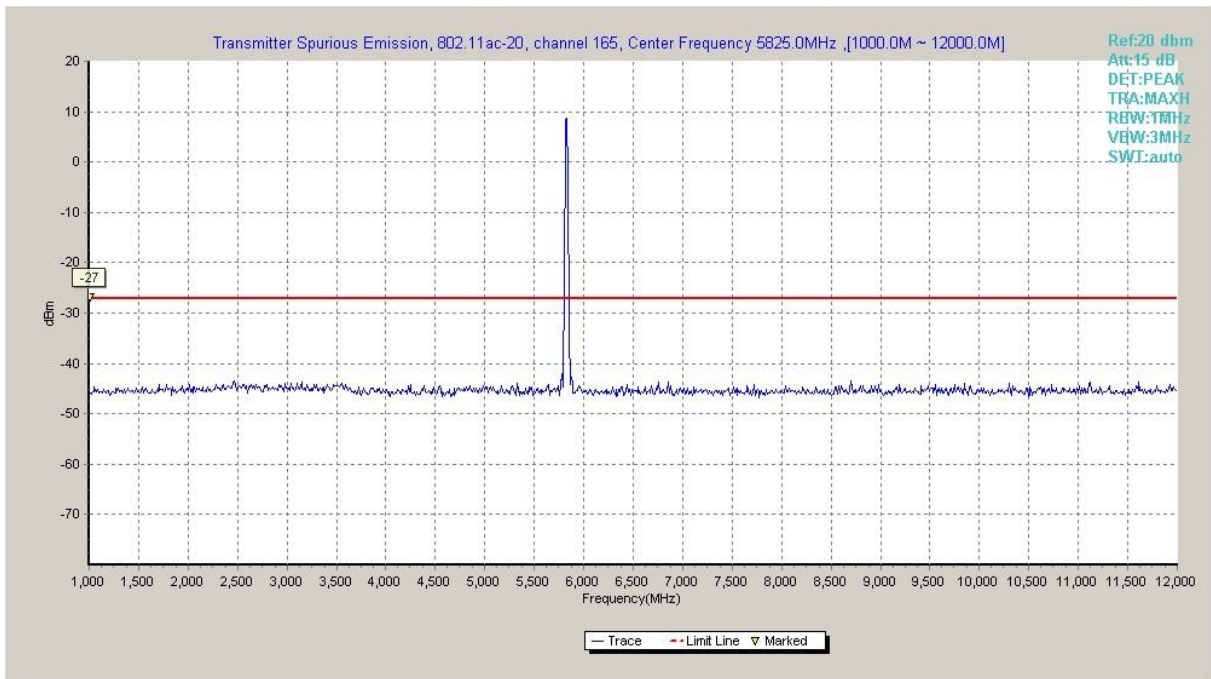
**Fig. 45 Conducted Spurious Emission (802.11ac-HT20, Ch157, 12 GHz-25 GHz)**



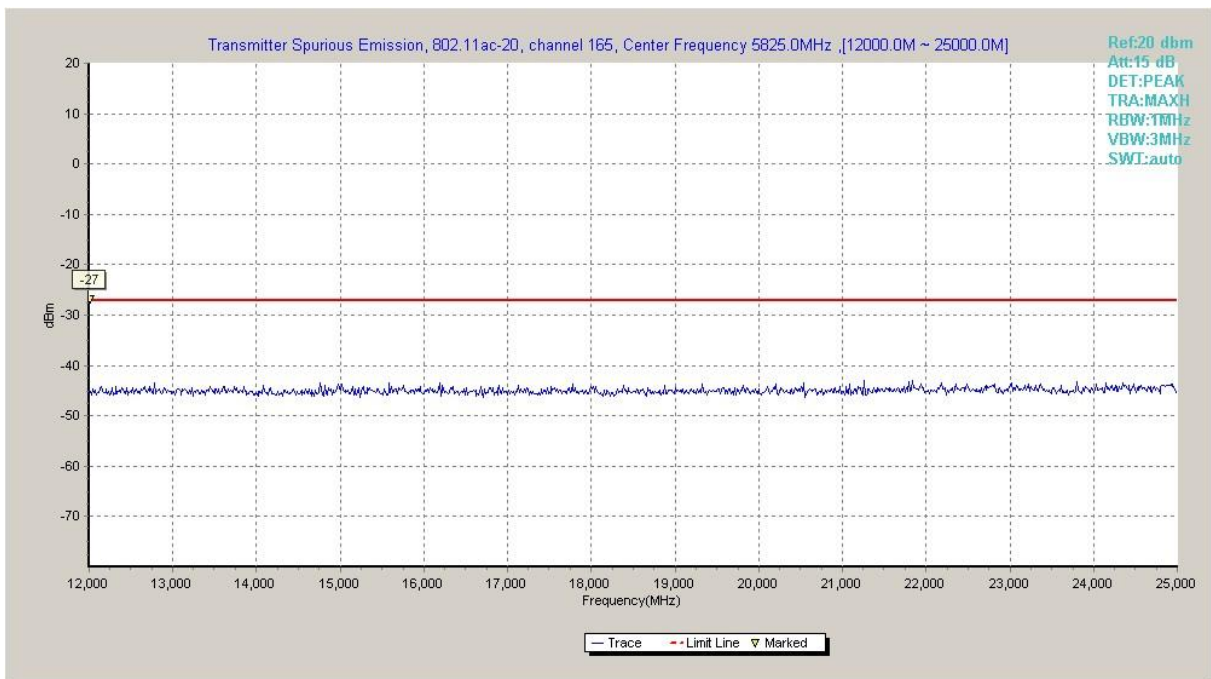
**Fig. 46 Conducted Spurious Emission (802.11ac-HT20, Ch157, 25 GHz-40 GHz)**



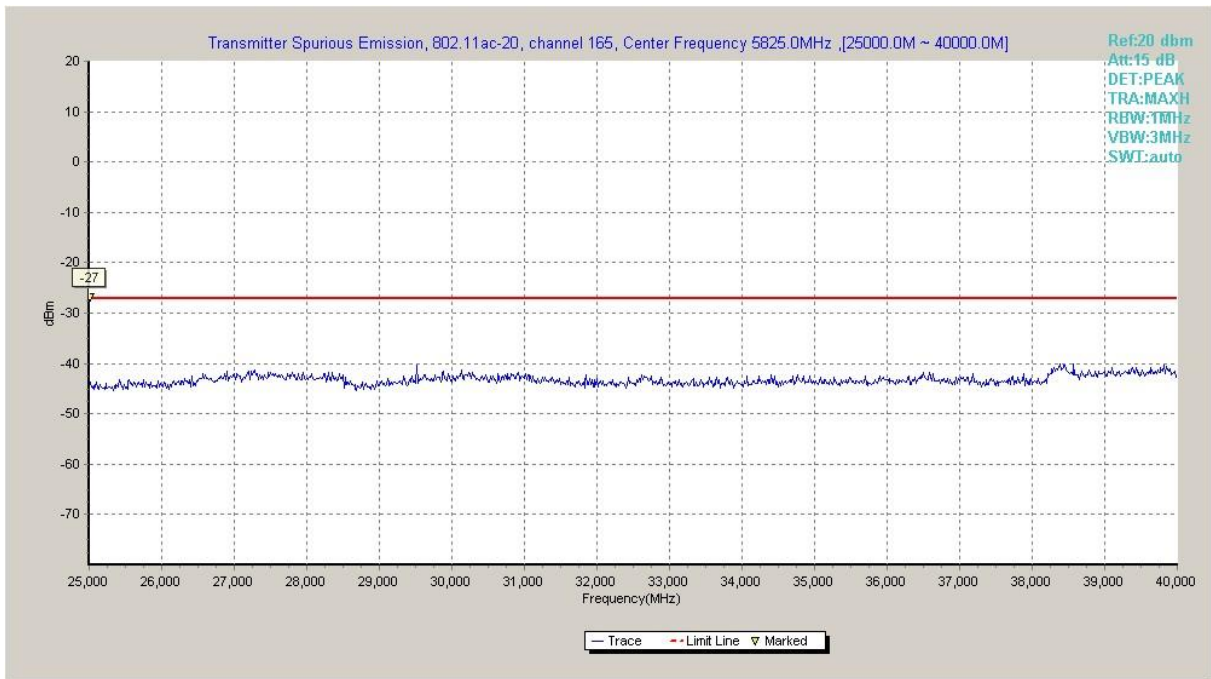
**Fig. 47 Conducted Spurious Emission (802.11ac-HT20, Ch165, 30 MHz-1 GHz)**



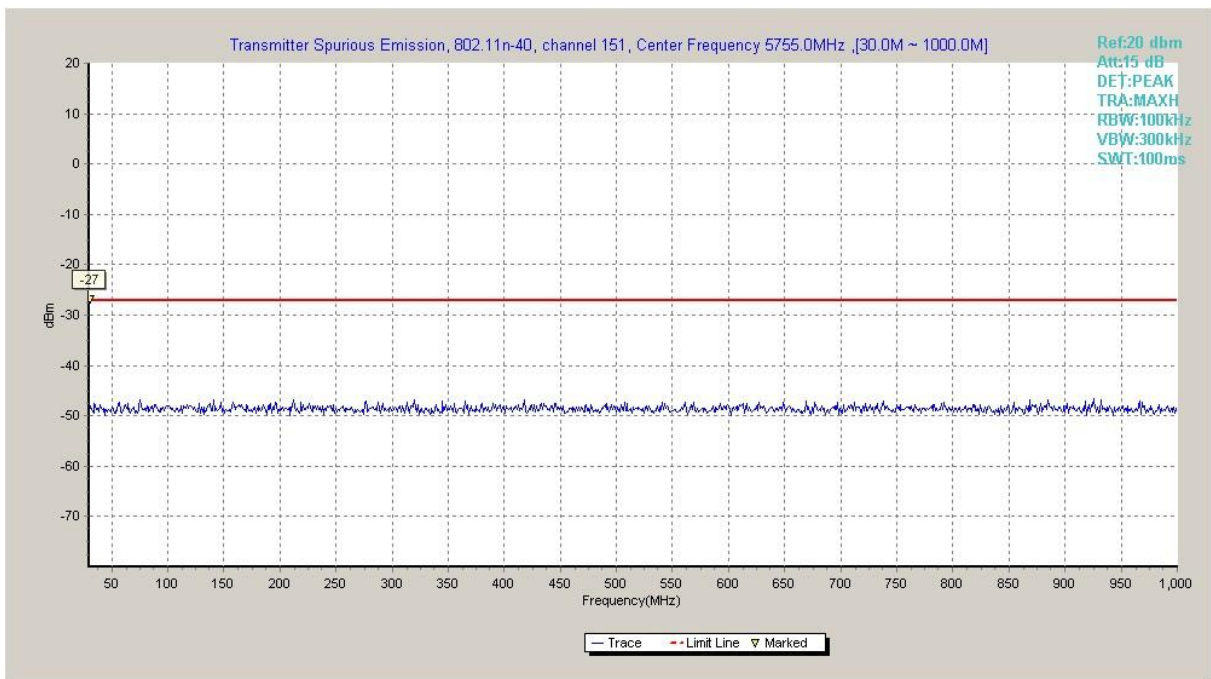
**Fig. 48 Conducted Spurious Emission (802.11ac-HT20, Ch165, 1 GHz -12 GHz)**



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

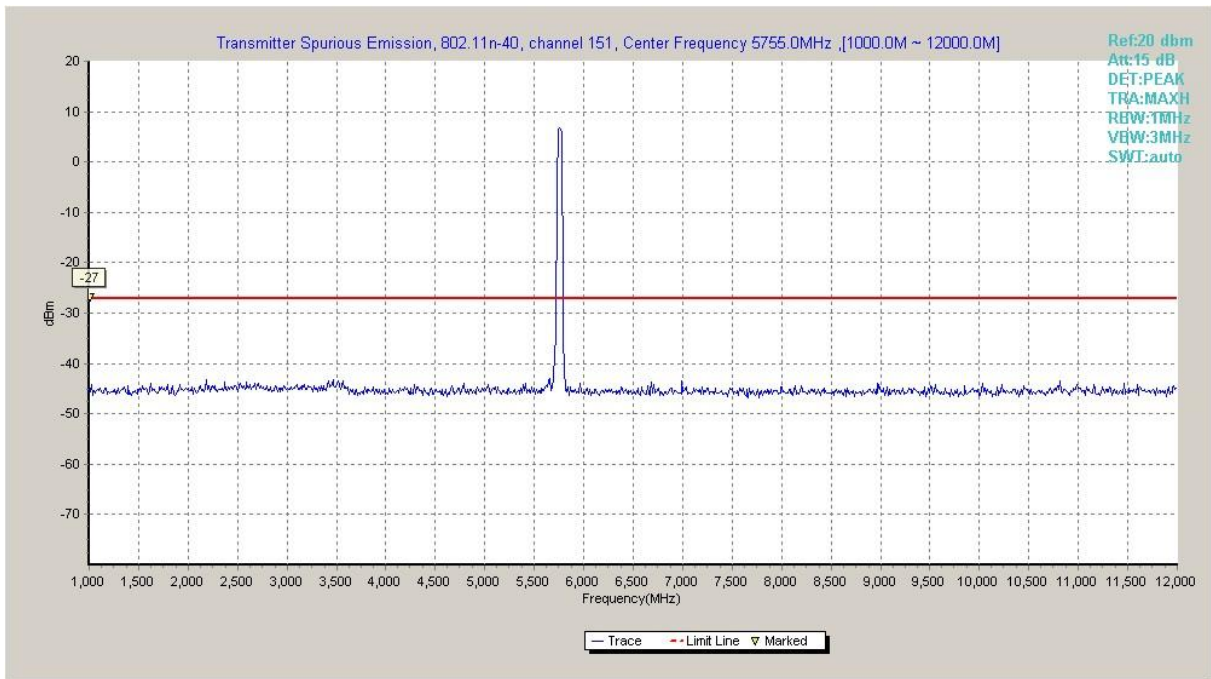


**Fig. 50 Conducted Spurious Emission (802.11ac-HT20, Ch165, 25 GHz-40 GHz)**

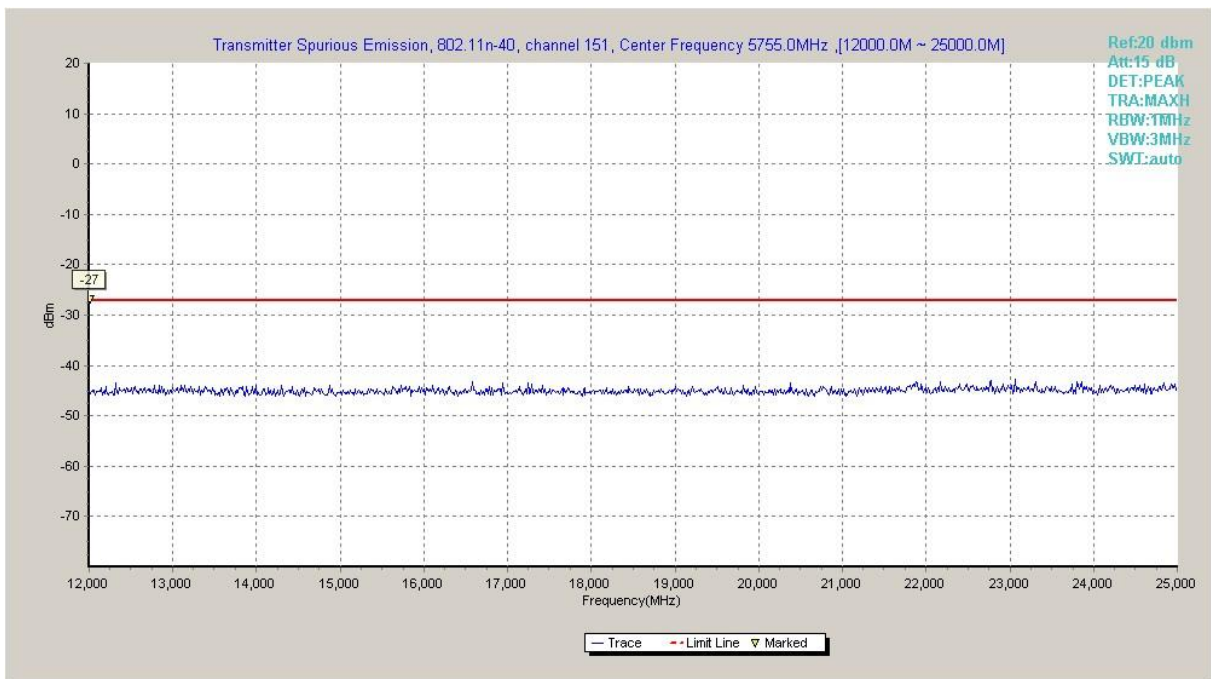


**Fig. 51 Conducted Spurious Emission (802.11n-HT40, Ch151, 30 MHz-1 GHz)**





**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)**