



**FCC PART 15C
TESTREPORT
No. I14Z48893-SRD01**

for

TCT Mobile Limited

HSDPA/HSUPA/HSPA+/UMTS quad band /GSM quad band/LTE 5

band mobile phone

MODEL NAME: 7043A

with

FCC ID: RAD530

Hardware Version: PIO

Software Version: 3H2G

Issued Date: 2015-01-20



Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

Test Laboratory:

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REPORT HISTORY

| Report Number | Revision | Description | Issue Date |
|----------------------|-----------------|--------------------|-------------------|
| I14Z48893-SRD01 | Rev.0 | 1st edition | 2015-01-20 |
| | | | |



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1. Test Laboratory

1.1. Testing Location

Location 1: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

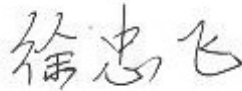
1.2. Testing Environment

Normal Temperature: 15-35°C
Extreme Temperature: -20/+55°C
Relative Humidity: 20-75%

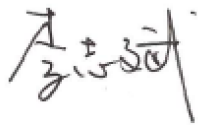
1.3. Project data

Testing Start Date: 2015-12-11
Testing End Date: 2015-12-24

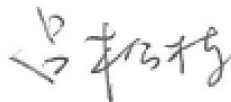
1.4. Signature



Xu Zhongfei
(Prepared this test report)



Li Zhibin
(Reviewed this test report)



Lv Songdong
(Approved this test report)



2. Client Information

2.1. Applicant Information

Company Name: TCT Mobile Limited
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Postal Code: 201203
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2.2. Manufacturer Information

Company Name: TCT Mobile Limited
Address: 5F, E building, No. 232, Liang Jing Road ZhangJiang High-Tech Park,
Pudong Area Shanghai, P.R. China. 201203
City: Shanghai
Postal Code: 201203
Country: China
Telephone: 0086-21-6146089
Fax: 0086-21-61460602



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

3.1. About EUT

| | |
|---------------------|---|
| Description | HSDPA/HSUPA/HSPA+/UMTS quad band /GSM quad band/LTE 5 band mobile phone |
| Model name | 7043A |
| FCC ID | RAD530 |
| IC ID | / |
| With WLAN Function | Yes |
| Frequency Range | ISM 2400MHz~2483.5MHz |
| Type of Modulation | DSSS/CCK/OFDM |
| Number of Channels | 11 |
| Antenna | Integral Antenna |
| MAX Conducted Power | 22.57dBm(CCK) |
| Power Supply | 3.9V DC by Battery |

3.2. Internal Identification of EUT

| EUT ID* | SN or IMEI | HW Version | SW Version |
|----------------|-------------------|-------------------|-------------------|
| UT01a | / | PIO | 3H2G |
| UT02a | / | PIO | 3H2G |

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

3.3. Internal Identification of AE

| AE ID* | Description | SN |
|---------------|--------------------|-----------|
| AE1 | Battery | --- |
| AE2 | Battery | --- |

AE1

| | |
|-----------------|--------------|
| Commercial name | Battery |
| Type | CAB2000010C1 |
| Manufacturer | BYD |
| Length of cable | / |

AE2

| | |
|-----------------|--------------|
| Commercial name | Battery |
| Type | CAB2000013C2 |
| Manufacturer | SCUD |
| Length of cable | / |

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

3.4. General Description

The Equipment under Test (EUT) is a model of HSDPA/HSUPA/HSPA+/UMTS quad bands /GSM quad bands/LTE 5 bands mobile phone with integrated antenna and inbuilt battery.

It has Bluetooth (EDR) function.

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

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

Samples undergoing test were selected by the client.

3.5. Interpretation of the Test Environment

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

Measurement Uncertainty

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

4. Reference Documents

4.1. Documents supplied by applicant

EUT feature information is supplied by the applicant or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

| Reference | Title | Version |
|------------------|--|----------------|
| FCC Part15 | FCC CFR 47, Part 15, Subpart C: 15.205 Restricted bands of operation; 15.209 Radiated emission limits, general requirements; 15.247 Operation within the bands 902-928MHz, 2400-2483.5 MHz, and 5725-5850 MHz. | 2014 |
| ANSI C63.10 | American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices | 2013 |

5. Test Results

5.1. Summary of Test Results

| SUMMARY OF MEASUREMENT RESULTS | Sub-clause of Part15C | Sub-clause of IC | Verdict |
|---|------------------------|------------------|----------|
| Maximum Peak Output Power | 15.247 (b) | / | P |
| Peak Power Spectral Density | 15.247 (e) | / | P |
| Occupied 6dB Bandwidth | 15.247 (a) | / | P |
| Band Edges Compliance | 15.247 (d) | / | P |
| Transmitter Spurious Emission - Conducted | 15.247 (d) | / | P |
| Transmitter Spurious Emission - Radiated | 15.247, 15.205, 15.209 | / | P |
| AC Powerline Conducted Emission | 15.107, 15.207 | / | 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. |
| NP | Not Perform, The test was not performed by CTTL |
| NA | Not Applicable, The test was not applicable |
| F | Fail, The EUT does not comply with the essential requirements in the standard |
| F | Fail, The EUT does not comply with the essential requirements in the standard |

5.2. Statements

The test cases as listed in section 5.1 of this report for the EUT specified in section 3 was performed by CTTL and according to the standards or reference documents listed in section 4.2 The EUT met all requirements of the standards or reference documents, and only the WLAN function was tested in this report.

This model is a variant product which market name is 5042W; all the test result has been derived from test report of 5042W.

5.3. Test Conditions

| | |
|-------|--------------------|
| T nom | Normal Temperature |
| T min | Low Temperature |
| T max | High Temperature |
| V nom | Normal Voltage |

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

| | | |
|-------------|-------|------------------|
| Temperature | T nom | 26°C |
| Voltage | V nom | 3.9V(By battery) |
| Humidity | H nom | 44% |

6. Test Facilities Utilized

Conducted test system

| No. | Equipment | Model | Serial Number | Manufacturer | Calibration date | Calibration Due date |
|-----|------------------------|---------|---------------|-----------------|------------------|----------------------|
| 1 | Vector Signal Analyzer | FSQ40 | 200089 | Rohde & Schwarz | 2014-07-08 | 2015-07-07 |
| 2 | Test Receiver | ESS | 847151/015 | Rohde & Schwarz | 2014-11-29 | 2015-11-28 |
| 3 | LISN | ESH2-Z5 | 829991/012 | Rohde & Schwarz | 2014-4-15 | 2015-4-14 |
| 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 | 100376 | Rohde & Schwarz | 2014-11-6 | 2015-11-5 |
| 2 | BiLog Antenna | VULB9163 | 9163-514 | Schwarzbeck | 2012-11-11 | 2015-11-10 |
| 3 | Dual-Ridge Waveguide Horn Antenna | 3117 | 00119024 | ETS-Lindgren | 2014-4-20 | 2017-4-19 |
| 4 | Dual-Ridge Waveguide Horn Antenna | 3116 | 2661 | EMCO | 2014-7-1 | 2017-06-30 |
| 5 | Loop antenna | HFH2-Z2 | 829324/007 | Rohde & Schwarz | 2012-12-21 | 2015-12-20 |
| 6 | Semi-anechoic chamber | / | CT000332-1074 | Frankonia German | / | / |

ANNEX A: Detailed Test Results

A.1. Measurement Method

A.1.1. Conducted Measurements

Connect the EUT to the test system as Fig.A.1.1.1 shows.

Set the EUT to the required work mode.

Set the EUT to the required channel.

Set the Vector Signal Analyzer and start measurement.

Record the values. Vector Signal Analyzer

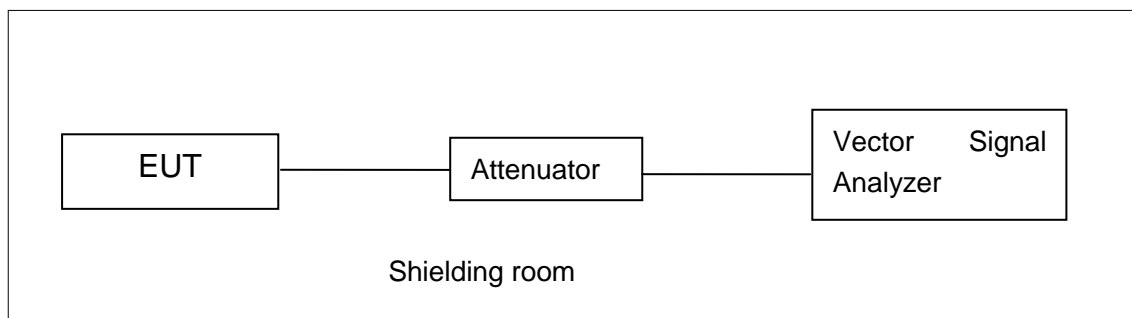


Fig.A.1.1.1: Test Setup Diagram for Conducted Measurements

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;

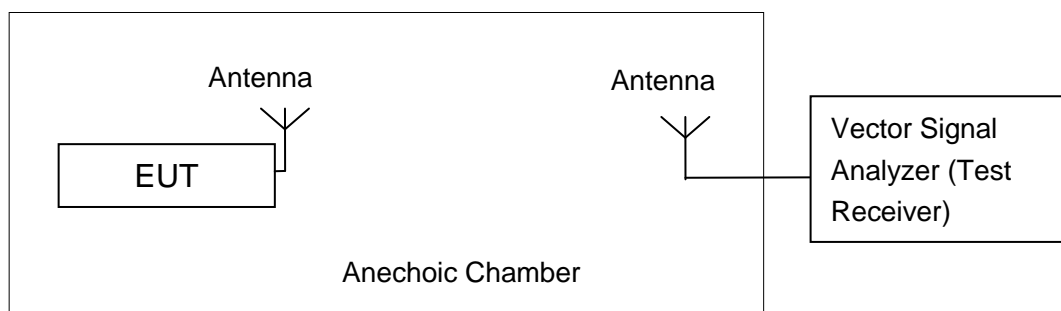


Fig.A.1.2.1: Test Setup Diagram for Radiated Measurements

A.2. Maximum Output Power

Method of Measurement: See ANSI C63.10-2013-clause 11.9.1.2

- a) Set the RBW = 1 MHz.
- b) Set the VBW = 3 MHz.
- c) Set the span $\geq [1.5 \times \text{DTS bandwidth}]$.
- d) Detector = peak.
- e) Sweep time = auto couple.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges (for some instruments, this may require a manual override to select the peak detector).

Measurement Limit:

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

EUT ID: EUT2

A.2.1. Peak Output Power-conducted

Measurement Results:

802.11b/g mode

| Mode | Data Rate (Mbps) | Test Result (dBm) | | |
|---------|------------------|-------------------|---------------|-----------------|
| | | 2412MHz (Ch1) | 2437MHz (Ch6) | 2462 MHz (Ch11) |
| 802.11b | 1 | 19.45 | / | / |
| | 2 | 19.65 | / | / |
| | 5.5 | 21.02 | / | / |
| | 11 | 22.57 | 21.72 | 17.35 |
| 802.11g | 6 | 22.24 | / | / |
| | 9 | 22.25 | / | / |
| | 12 | 21.98 | / | / |
| | 18 | 21.95 | / | / |
| | 24 | 22.44 | / | / |
| | 36 | 22.46 | / | / |
| | 48 | 22.48 | / | / |
| | 54 | 22.50 | 22.54 | 20.95 |

The data rate 11Mbps and 54Mbps are selected as worse condition, and the following cases are performed with this condition.

802.11n-HT20 mode

| Mode | Data Rate (Index) | Test Result (dBm) | | |
|-----------------|-------------------|-------------------|---------------|-----------------|
| | | 2412MHz (Ch1) | 2437MHz (Ch6) | 2462 MHz (Ch11) |
| 802.11n (20MHz) | MCS0 | 20.29 | / | / |
| | MCS1 | 19.97 | / | / |
| | MCS2 | 19.98 | / | / |
| | MCS3 | 20.42 | / | / |
| | MCS4 | 20.32 | / | / |
| | MCS5 | 20.29 | / | / |
| | MCS6 | 20.38 | / | / |
| | MCS7 | 20.43 | 20.53 | 18.90 |

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

Conclusion: Pass

A.2.2. Average Output Power-conducted

Method of Measurement: See ANSI C63.10-2013-clause 11.9.2.2.2

The procedure for this method is as follows:

- a) Set span = 80MHz.
- b) Set RBW = 1MHz.
- c) Set VBW = 3MHz
- d) Number of points in sweep = 625
- e) Sweep time = auto.
- f) Detector = RMS.
- g) The trigger shall be set to "free run."
- h) Trace average 100 traces in power averaging (rms) mode.
- i) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function, with band limits set equal to the OBW band edges.

802.11b/g mode

| Mode | Test Result (dBm) | | |
|---------|-------------------|---------------|-----------------|
| | 2412MHz (Ch1) | 2437MHz (Ch6) | 2462 MHz (Ch11) |
| 802.11b | 15.79 | 14.96 | 13.62 |
| 802.11g | 13.16 | 13.62 | 12.87 |

802.11n-HT20 mode

| Mode | Test Result (dBm) | | |
|-----------------|-------------------|---------------|-----------------|
| | 2412MHz (Ch1) | 2437MHz (Ch6) | 2462 MHz (Ch11) |
| 802.11n (20MHz) | 11.09 | 11.49 | 10.73 |

Conclusion: Pass

A.3. Peak Power Spectral Density

Method of Measurement: See ANSI C63.10-2013-clause 11.10.2

- a) Set analyzer center frequency to DTS channel center frequency.
- b) Set the span to 1.5 times the DTS bandwidth.
- c) Set the RBW to RBW = 3 kHz.
- d) Set the VBW = 10 kHz.
- e) Detector = peak.
- f) Sweep time = auto couple.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the maximum amplitude level within the RBW.

Measurement Limit:

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

Measurement Results:

802.11b/g mode

| Mode | Channel | Power Spectral Density (dBm/3 kHz) | | Conclusion |
|---------|---------|---|--------|------------|
| 802.11b | 1 | Fig.A.3.1 | -3.46 | P |
| | 6 | Fig.A.3.2 | -4.40 | P |
| | 11 | Fig.A.3.3 | -5.32 | P |
| 802.11g | 1 | Fig.A.3.4 | -12.81 | P |
| | 6 | Fig.A.3.5 | -13.89 | P |
| | 11 | Fig.A.3.6 | -13.37 | P |

802.11n-HT20 mode

| Mode | Channel | Power Spectral Density (dBm/3 kHz) | | Conclusion |
|-------------------|---------|---|--------|------------|
| 802.11n (HT20) | 1 | Fig.A.3.7 | -15.49 | P |
| | 6 | Fig.A.3.8 | -13.47 | P |
| | 11 | Fig.A.3.9 | -16.07 | P |

Conclusion: Pass

Test graphs as below:

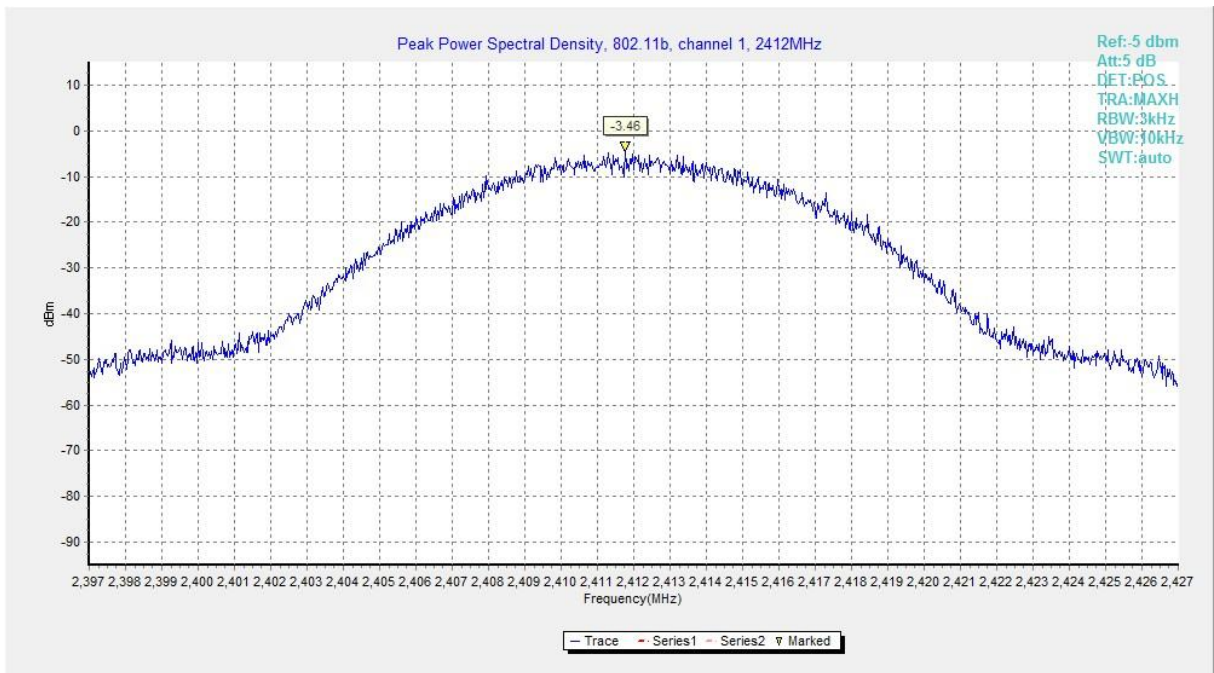


Fig.A.3.1 Power Spectral Density(802.11b,Ch1)

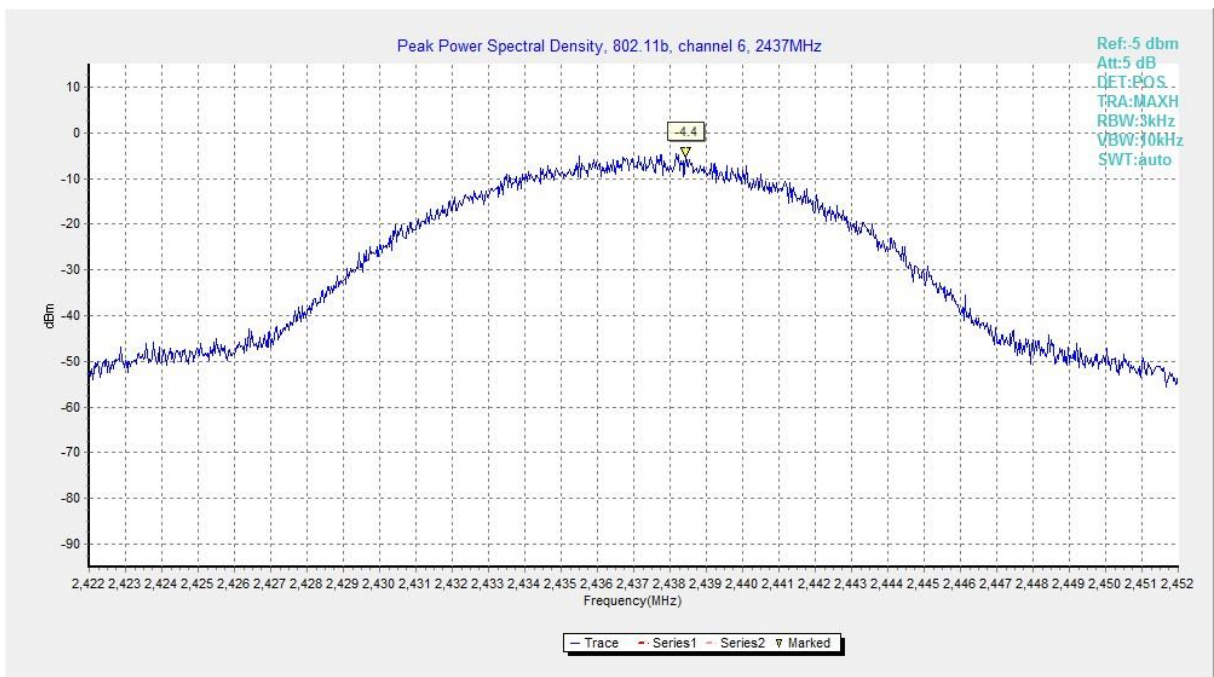


Fig.A.3.2 Power Spectral Density (802.11b, Ch 6)

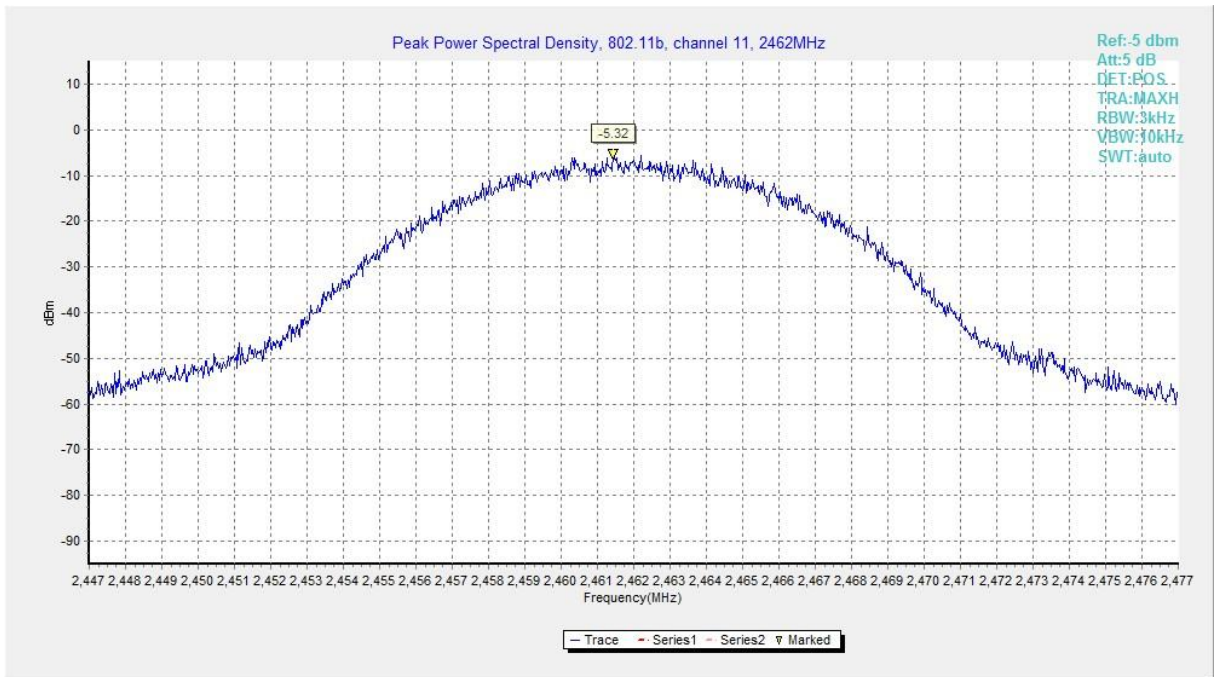


Fig.A.3.3 Power Spectral Density (802.11b, Ch 11)

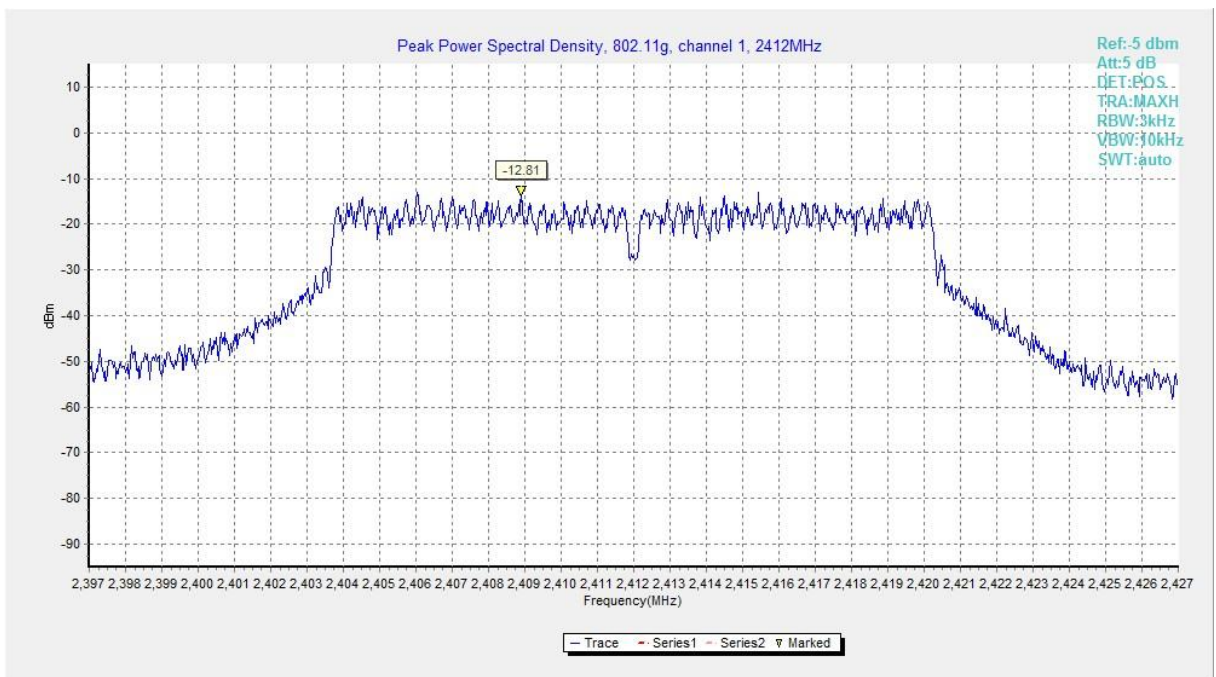


Fig.A.3.4 Power Spectral Density (802.11g, Ch 1)

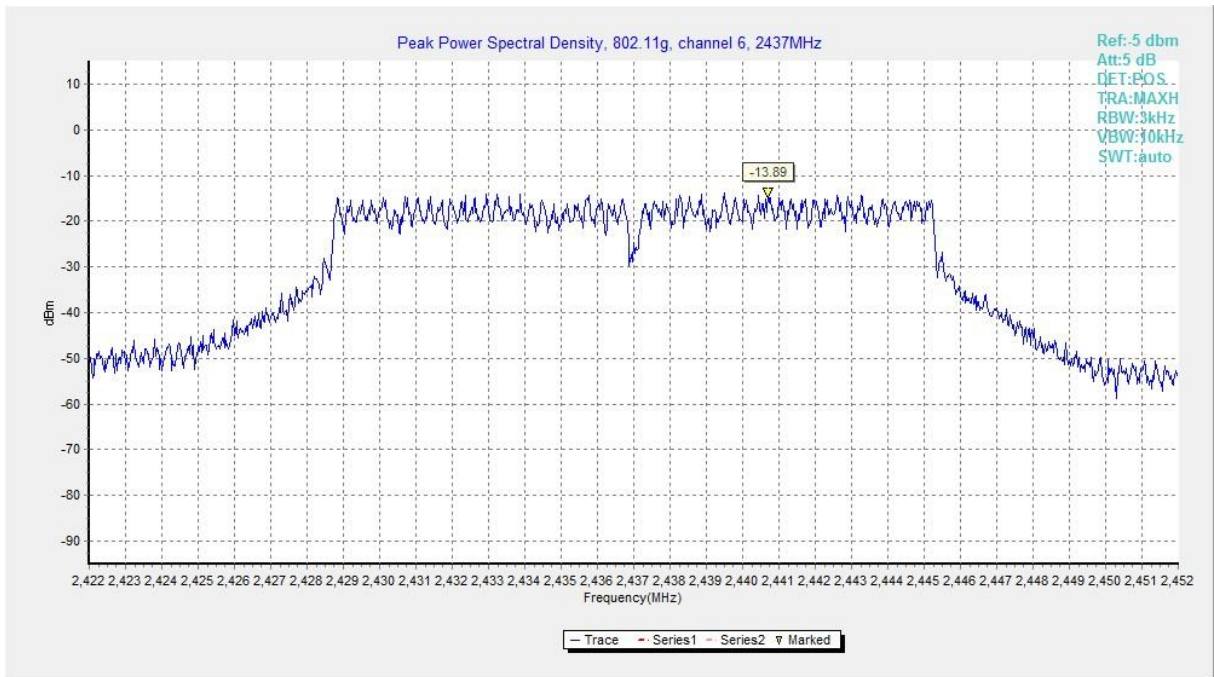


Fig.A.3.5 Power Spectral Density (802.11g, Ch 6)

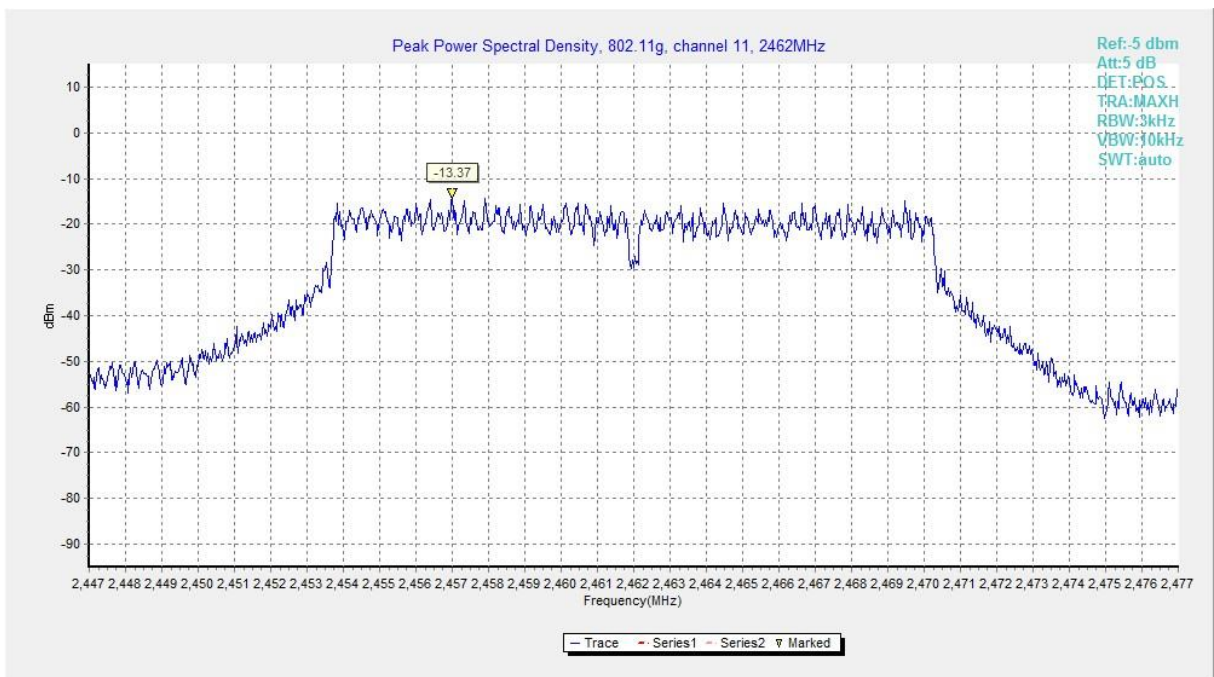


Fig.A.3.6 Power Spectral Density (802.11g, Ch 11)

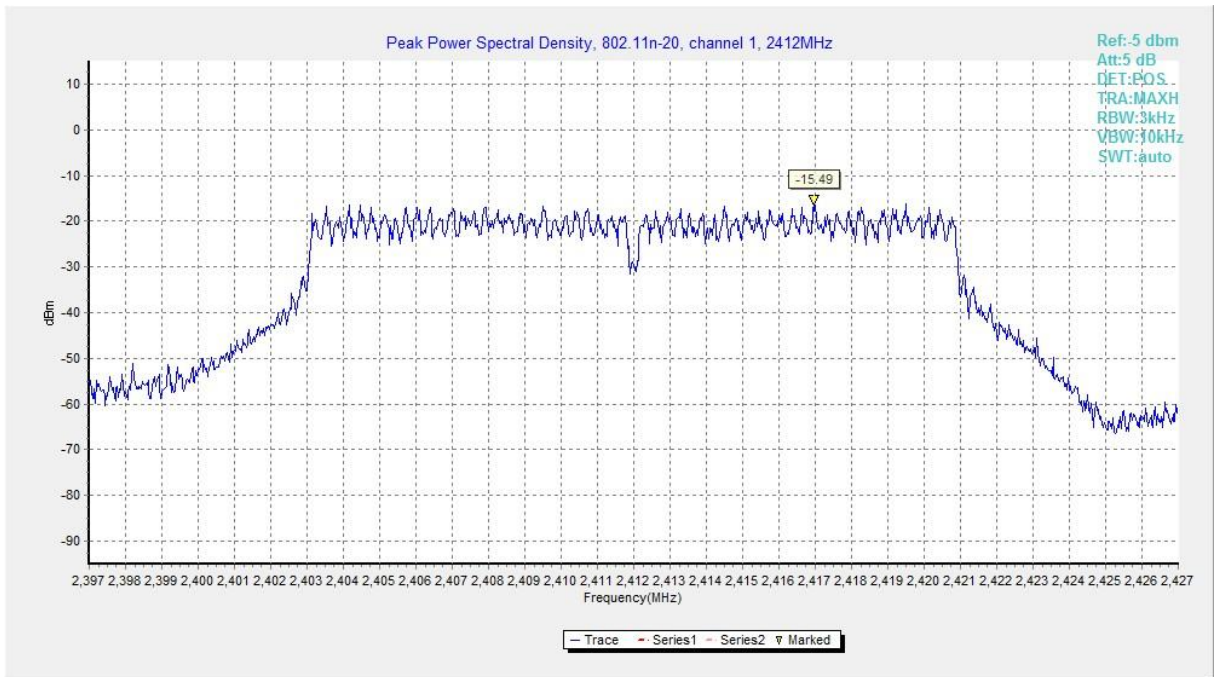


Fig.A.3.7 Power Spectral Density (802.11n-HT20, Ch 1)

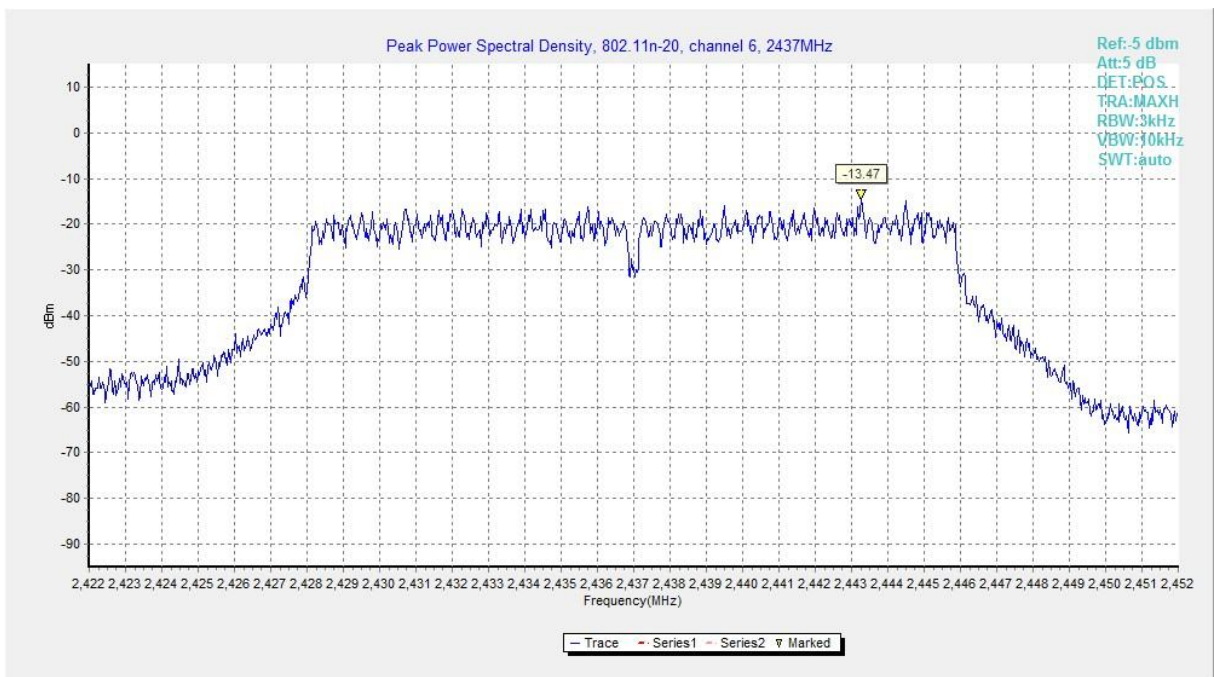


Fig.A.3.8 Power Spectral Density (802.11n-HT20, Ch 6)

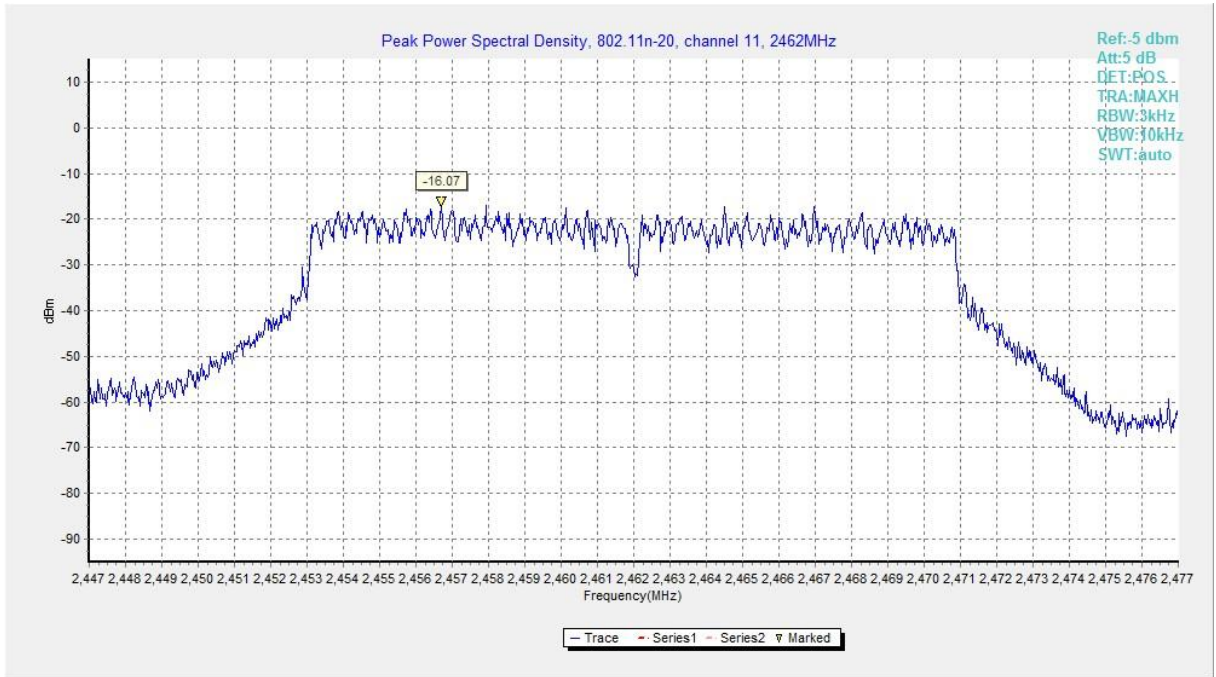


Fig.A.3.9 Power Spectral Density (802.11n-HT20, Ch 11)

A.4. DTS 6-dB Signal Bandwidth

Method of Measurement: See ANSI C63.10-2013 section 11.8.1.

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) = 300 kHz.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Measurement Limit:

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

EUT ID: EUT2

Measurement Result:

802.11b/g mode

| Mode | Channel | Occupied 6dB Bandwidth (kHz) | | conclusion |
|---------|---------|-------------------------------|-------|------------|
| 802.11b | 1 | Fig.A.4.1 | 7350 | P |
| | 6 | Fig.A.4.2 | 7500 | P |
| | 11 | Fig.A.4.3 | 6950 | P |
| 802.11g | 1 | Fig.A.4.4 | 16350 | P |
| | 6 | Fig.A.4.5 | 16350 | P |
| | 11 | Fig.A.4.6 | 16300 | P |

802.11n-HT20 mode

| Mode | Channel | Occupied 6dB Bandwidth (kHz) | | conclusion |
|-------------------|---------|-------------------------------|-------|------------|
| 802.11n (HT20) | 1 | Fig.A.4.7 | 17600 | P |
| | 6 | Fig.A.4.8 | 17600 | P |
| | 11 | Fig.A.4.9 | 17550 | P |

Conclusion: Pass

Test graphs as below:

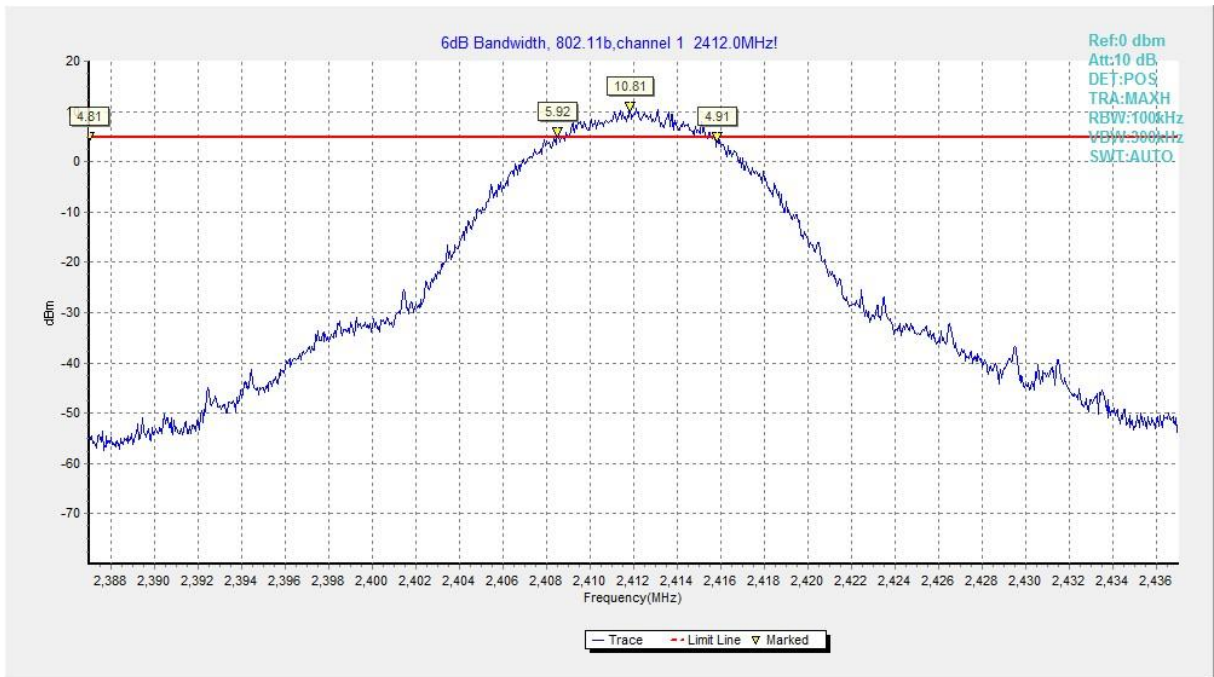


Fig.A.4.1 Occupied 6dB Bandwidth(802.11b,Ch 1)

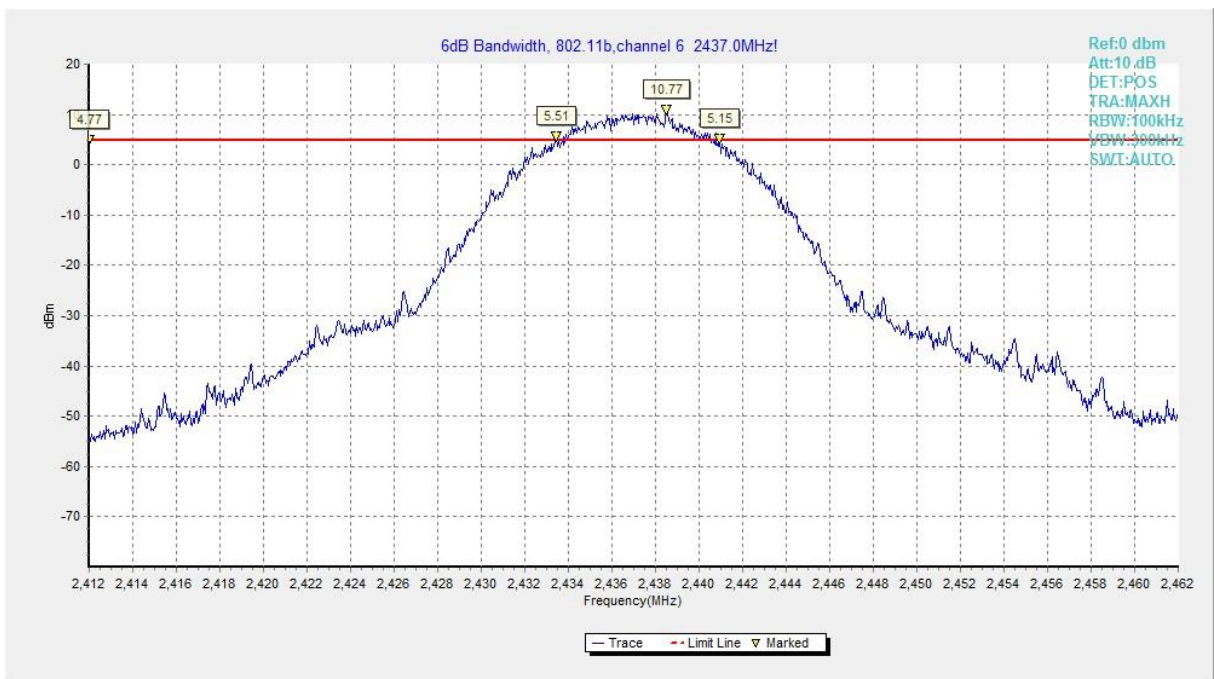


Fig.A.4.2 Occupied 6dB Bandwidth (802.11b, Ch 6)

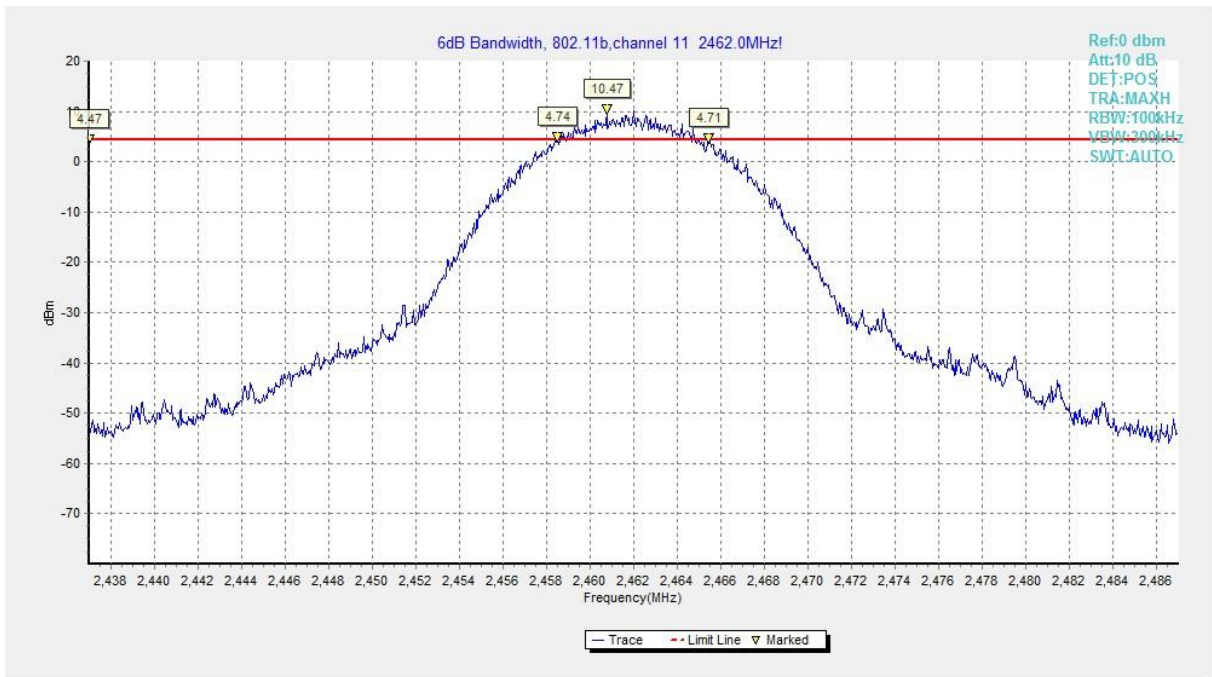


Fig.A.4.3 Occupied 6dB Bandwidth (802.11b, Ch 11)

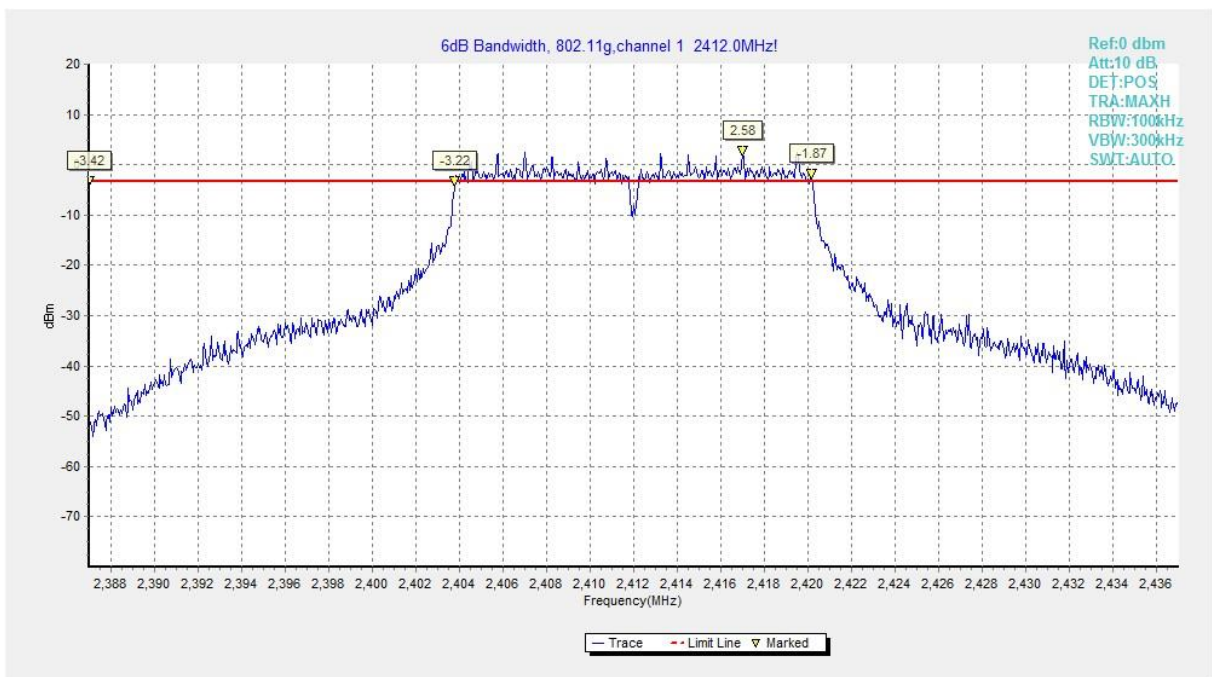


Fig.A.4.4 Occupied 6dB Bandwidth (802.11g, Ch 1)

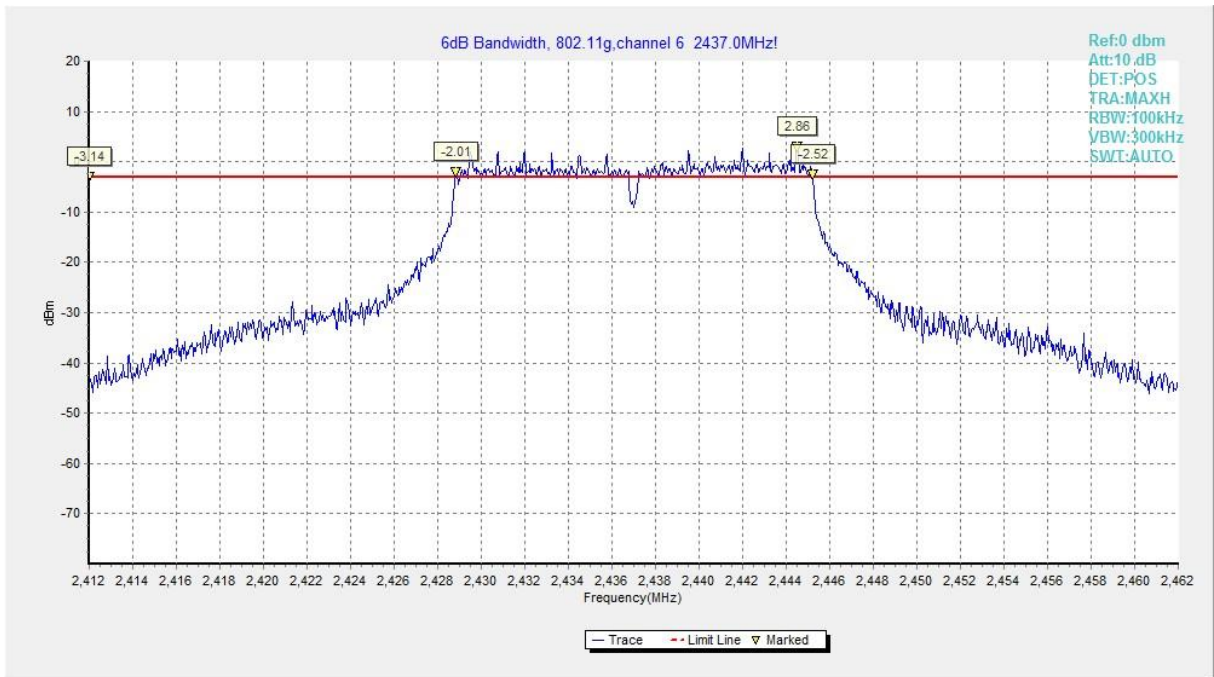


Fig.A.4.5 Occupied 6dB Bandwidth (802.11g, Ch 6)

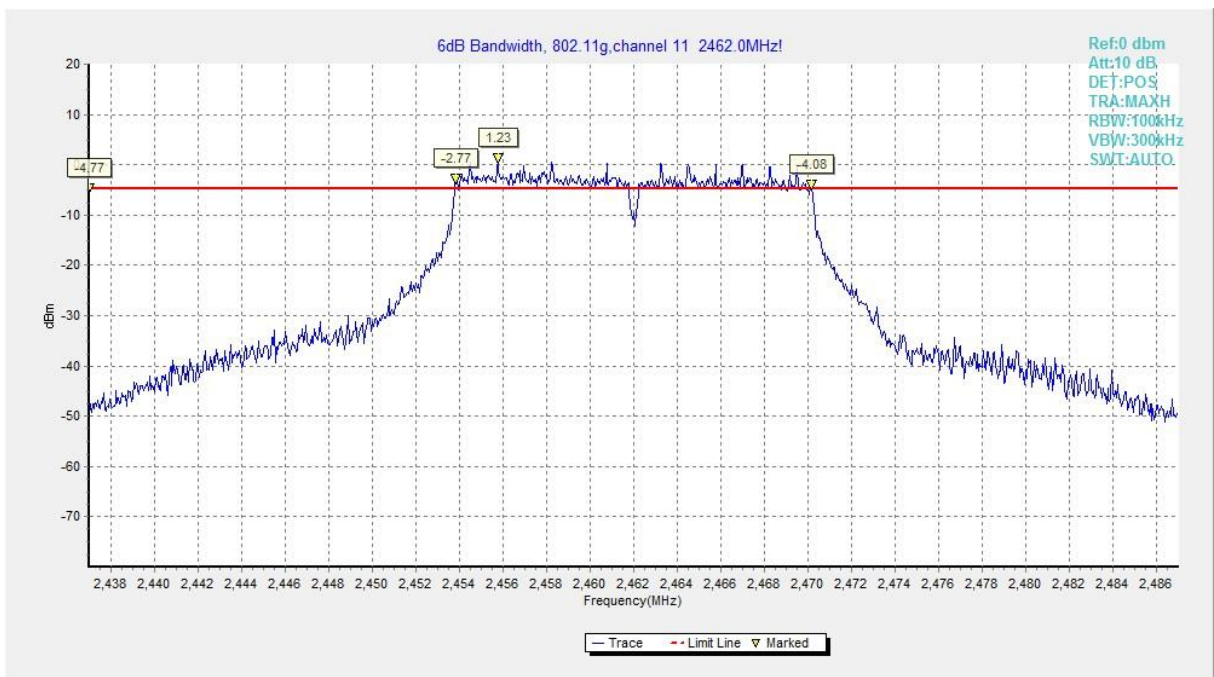


Fig.A.4.6 Occupied 6dB Bandwidth (802.11g, Ch 11)

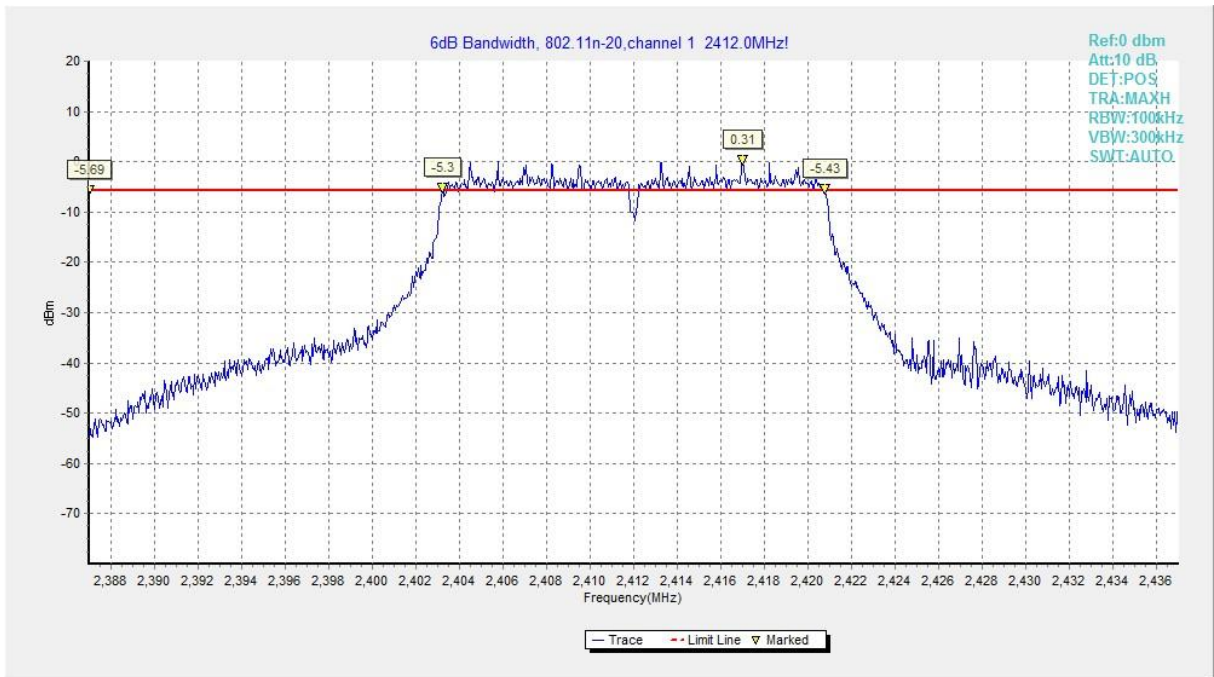


Fig.A.4.7 Occupied 6dB Bandwidth (802.11n-20MHz, Ch 1)

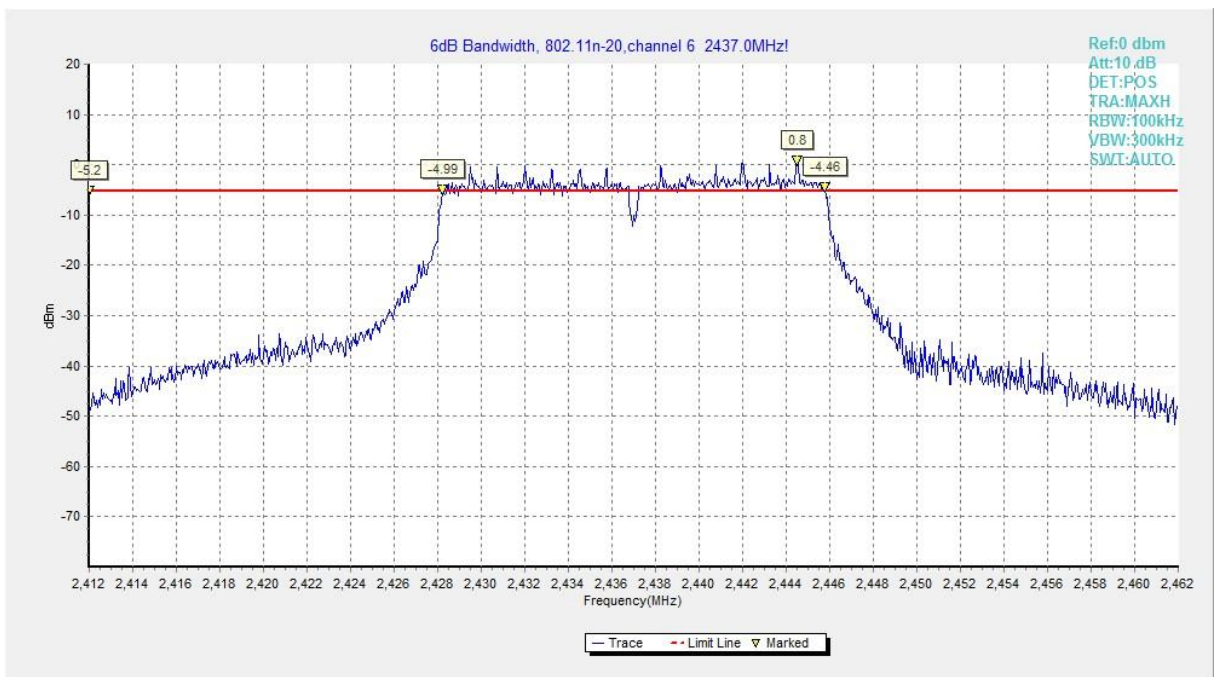


Fig.A.4.8 Occupied 6dB Bandwidth (802.11n-HT20, Ch 6)

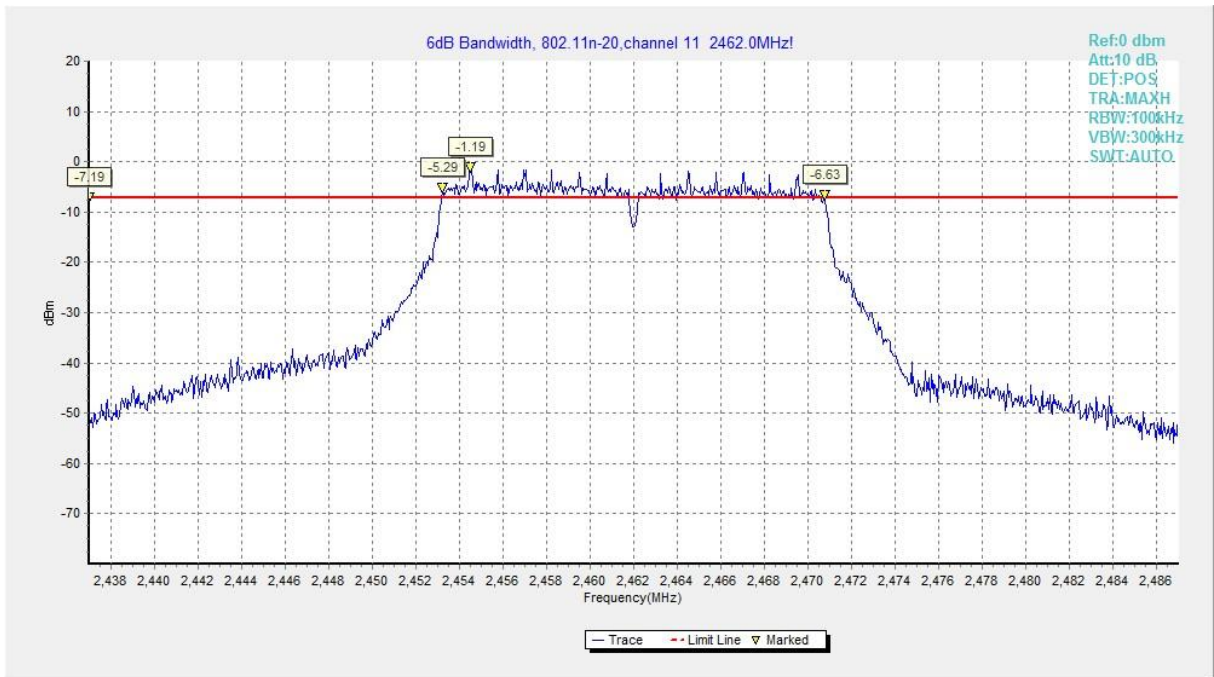


Fig.A.4.9 Occupied 6dB Bandwidth (802.11n-HT20, Ch 11)