



**CENTRE OF TESTING SERVICE
INTERNATIONAL**

OPERATE ACCORDING TO ISO/IEC 17025

FCC ID TEST REPORT

TEST REPORT NUMBER : CGZ3150525-00596-EF



CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, China



TEST REPORT For FCC ID

47 CFR PART 15 OCT, 2014

Report Reference No. CGZ3150525-00596-EF

Date of issue 10 July 2015

Testing Laboratory Name CENTRE OF TESTING SERVICE CO., LTD.

Address A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, China

Testing location/ procedure Full application of Harmonised standards ☒Partial application of Harmonised standards ☐Other standard testing method ☐

Applicant's name Mofi Network Inc.

Address 119 Wanda St Bradford, ON, L3Z-2A6, Canada

Test specification

Standard 47 CFR PART 15 OCT, 2014

Test Report Form No. CTSEMC-1.0

TRF Originator CENTRE OF TESTING SERVICE CO., LTD.

Master TRF Dated 2009-01

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Test item description : Wireless Router

Trade Mark Mofi

Manufacturer /

Model/Type reference MOFI4500-4GxeLTE

Ratings DC 12V by Adapter;

Adapter Input: AC 100-240V, 47/63Hz; Output: DC 12V

Operating Frequency 802.11b/g/n(20M):2412.0 MHz~2462.0 MHz

802.11n(40MHz):2422.0 MHz ~2452.0 MHz

Result Positive

Compiled by:

Kate zhang / Fileadministrators

Supervised by:

Duke yang / Technique principal

Approved by:

Vincent yao / Manager

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FCC ID -- T E S T R E P O R T

Test Report No. : CGZ3150525-00596-EF

10 July 2015
Date of issue

Type / Model..... MOFI4500-4GXeLTE

EUT..... Wireless Router

Applicant..... Mofi Network Inc.

Address..... 119 Wanda St Bradford, ON, L3Z-2A6, Canada

Telephone..... +1-800-586-0345

Fax..... /

Contact..... Ravin Ramkissoon

Manufacturer..... /

Address..... /

Telephone..... /

Fax..... /

Contact..... /

Factory /

Address..... /

Telephone..... /

Fax..... /

Contact..... /

Test Result according to the standards on page 1: PASSED

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.



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1.0 TEST STANDARDS

The tests were performed according to following standards:

- 47 CFR PART 15 OCT, 2014
- ANSI C63.4-2009

2.0 SUMMARY

2.1 GENERAL REMARKS

| | |
|--------------------------------|---------------------|
| Date of receipt of test sample | 25 May 2015 |
| Testing commenced on | 25 May~10 July 2015 |
| Testing concluded on | 10 July 2015 |

2.2 FINAL ASSESSMENT

The FCC requirements pertaining to the technical standards and tested operation modes are

- - fulfilled.
- ☐ - **not** fulfilled.

The equipment under test

- - fulfils the FCC requirements cited on page 1.
- ☐ - **does not** fulfil the FCC requirements cited on page 1.

3.0 EQUIPMENT UNDER TEST

3.1 Power supply system utilised

Power supply voltage : ☒ DC 12V by adapter,
Adapter power supply by AC 120V/60Hz

3.2 Short description of the Equipment under Test (EUT)

Number of tested samples: 1

Serial number: Prototype

3.3 EUT operation mode

The equipment under test was operated during the measurement under the following conditions:

- ☐ - Standby
- ☐ TX- Y position
- ☐ TX- Z position
- TX- X position

802.11b/g/n(20M):TX-X Position Low (2412.0 MHz) , TX-X Position Middle (2437.0 MHz) ,
TX-X Position High (2462.0 MHz)

802.11n(40M): TX-X Position Low (2422.0 MHz) , TX-X Position Middle (2437.0 MHz) ,
TX-X Position High (2452.0 MHz)

Note:Operation mode TX -X position of EUT is the radiated test worst case. So only these test results be recorded in the test report.

3.4 EUT configuration

3.4.1. Description of configuration (EUT)

| | | |
|-----------------------|---|---|
| Description | : | Wireless Router |
| Model Number | : | MOFI4500-4GXeLTE |
| Operation frequency | : | 802.11b/g/n(20M):2412.0 MHz~2462.0 MHz 802.11n(40MHz):2422.0 MHz ~2452.0 MHz |
| WiFi | : | 802.11:b/g/n |
| Modulation Technology | : | DBPSK, DQPSK, CCK, OFDM, 16-QAM, 64QAM |
| Date Rate | : | 802.11b: 11, 5.5, 2, 1 Mbps 802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps 802.11n: 300Mbps |
| Antenna | : | External antenna, met requirement of FCC 15.203 |

3.4.2. Tested Supporting System Details

3.4.2.1. Notebook

| | | |
|--------------|---|-------------------------------------|
| M/N | : | F83VF |
| S/N | : | AEN0AS64740305D |
| Manufacturer | : | ASUS |
| Power Cord | : | Unshielded, Detachable, 1.5m , 3Pin |
| FCC ID | : | By DoC |

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4.0 TEST ENVIRONMENT

4.1 Address of the test laboratory

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

4.2 Test facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L3394

CENTRE OF TESTING SERVICE CO., LTD has been assessed and proved to be in compliance with CNAS-CL01: 2006 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

IC-Registration No.: 8374A

The 3m Alternate Test Site of CENTRE OF TESTING SERVICE CO., LTD has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 8374A on May 22, 2014.

FCC-Registration No.: 971995

CENTRE OF TESTING SERVICE CO., LTD, EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration No. 971995, July 13, 2012.

4.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

| | |
|-----------------------|------------|
| Temperature: | 15~35 ° C |
| | |
| Humidity: | 25~75 % |
| | |
| Atmospheric pressure: | 86~106 kPa |

4.4 Definitions of symbols used in this test report

- - The black square indicates that the listed condition, standard or equipment is applicable for this report.
- - The empty square indicates that the listed condition, standard or equipment is **not** applicable for this report.

4.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the CTS quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

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4.6 Measurement Uncertainty

| Test Item | Frequency Range | Uncertainty | Note |
|-------------------------|-----------------|---------------------|------|
| Conduction disturbance | 150kHz~30MHz | $\pm 1.22\text{dB}$ | (1) |
| Power disturbance | 30MHz~300MHz | $\pm 1.38\text{dB}$ | (1) |
| Radiation emission (3m) | 30MHz~300MHz | $\pm 3.14\text{dB}$ | (1) |
| | 300MHz~1000MHz | $\pm 3.18\text{dB}$ | (1) |
| | 1GHz~26.5GHz | $\pm 3.54\text{dB}$ | (1) |

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

5.0 Summary of standards and results

5.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

| EMISSION | | |
|--|---|---------|
| Description of Test Item | Standard | Results |
| Conducted Emission Test | FCC Part 15 : 15.207 ANSI C63.4-2009 | PASSED |
| 6dB Bandwidth Measurement | FCC Part 15.247(a)(2) ANSI C63.4-2009 | PASSED |
| Peak Power | FCC Part 15.247(b)(3)(4) ANSI C63.4-2009 | PASSED |
| Peak Power Spectral Density | 15.247(e) Power Density ANSI C63.4-2009 | PASSED |
| Band edges measurement | FCC Part 15.247(d) ANSI C63.4-2009 | PASSED |
| Spurious Emissions | FCC Part 15: 15.209 ANSI C63.4-2009 | PASSED |
| Antenna Requirements | FCC Part 15: 15.203 ANSI C63.4-2009 | PASSED |
| N/A is an abbreviation for Not Applicable. | | |

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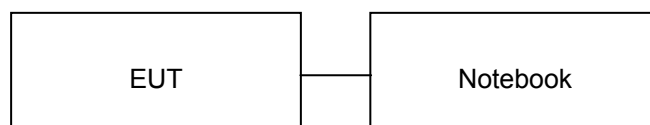
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6.0 Power Line Conducted Emission Test

6.1. Test Equipment

| Conducted Disturbance | | | | | |
|-----------------------|-------------------|-----------------|-----------|------------|-----------|
| Item | Test Equipment | Manufacturer | Model No. | Serial No. | Last Cal. |
| 1 | EMI Test Receiver | ROHDE & SCHWARZ | ESHS10 | 842884/012 | 2014/11 |
| 2 | Artificial Mains | ROHDE & SCHWARZ | ESH3-Z5 | 832479/025 | 2014/11 |
| 3 | Artificial Mains | ROHDE & SCHWARZ | ESH3-Z5 | 832479/026 | 2014/11 |
| 4 | Pulse Limiter | ROHDE & SCHWARZ | ESHSZ2 | 100301 | 2014/11 |
| 5 | EMI Test Software | EZ-EMC | Farad | N/A | N/A |

6.2. Block Diagram of Test Setup



(EUT: Wireless Router)

6.3. Power Line Conducted Emission Test Limits

Standard: FCC Part 15 : 15.207, ANSI C63.4-2009

| Frequency | Maximum RF Line Voltage | |
|-----------------|----------------------------|-------------------------|
| | Quasi-Peak Level dB(μV) | Average Level dB(μV) |
| 150kHz ~ 500kHz | 66 ~ 56* | 56 ~ 46* |
| 500kHz ~ 5MHz | 56 | 46 |
| 5MHz ~ 30MHz | 60 | 50 |

Notes: 1. * Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

6.4. Test Procedure

The XBOX Power connected to the power mains through a line impedance stabilization network (L.I.S.N.#2). This provides a 50 ohm coupling impedance for the EUT. Please refer the block diagram of the test setup and photographs. The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#1). Power on the PC and let it work normally, we use a keyboard test soft ware, let EUT working in test mode, then test it. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC Part 15C on Conducted Emission Test.

6.5. Power Line Conducted Emission Test Results

PASSED.

The frequency range from 150KHz~30MHz is investigated. Please see the following pages.

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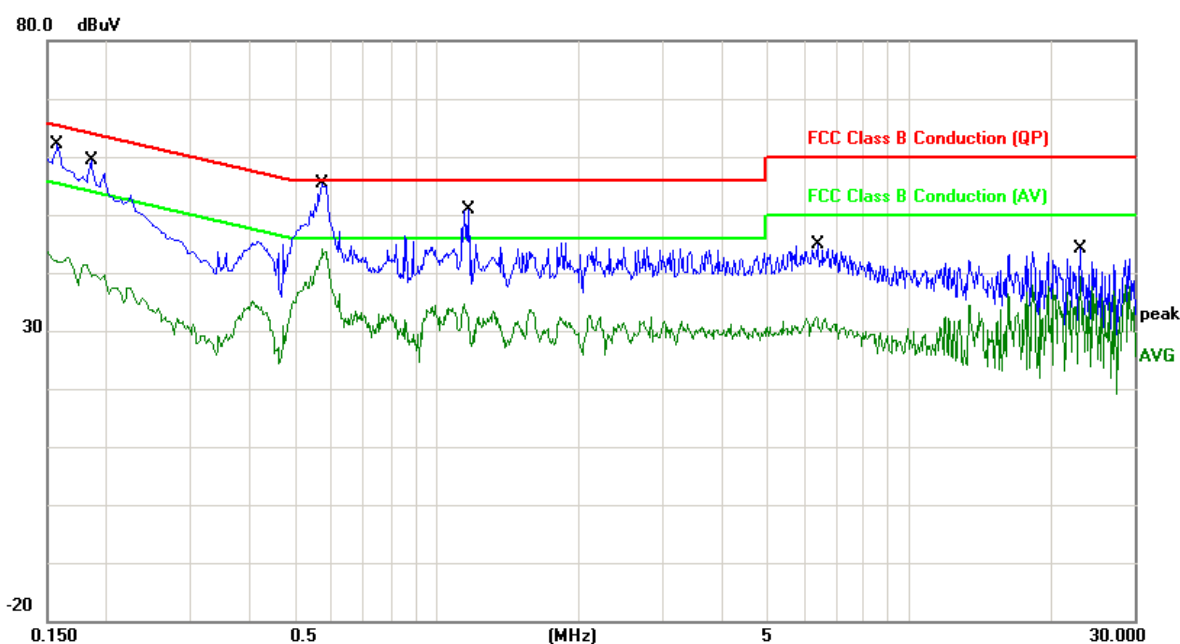
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| | | | |
|------------------|---------------|---------|--|
| Test point: | L | Result: | <input checked="" type="checkbox"/> - passed |
| Frequency range: | 0.15MHz~30MHz | | <input type="checkbox"/> - not passed |

| | |
|---------------------|---|
| EUT | Wireless Router |
| Operating Condition | TX |
| Test Condition | Ambient Temperature: 25°C Humidity: 56% |
| Test Date: | 25 May~24 June 2015 |
| Operator | Duke |
| MODEL NO | MOFI4500-4GxLTE |



| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 0.1580 | 10.82 | 44.04 | 54.86 | 65.56 | -10.70 | QP |
| 2 | 0.1580 | 10.82 | 28.71 | 39.53 | 55.56 | -16.03 | AVG |
| 3 | 0.1860 | 10.83 | 41.72 | 52.55 | 64.21 | -11.66 | QP |
| 4 | 0.1860 | 10.83 | 27.19 | 38.02 | 54.21 | -16.19 | AVG |
| 5 | 0.5740 | 10.91 | 41.59 | 52.50 | 56.00 | -3.50 | QP |
| 6 | 0.5740 | 10.91 | 32.53 | 43.44 | 46.00 | -2.56 | AVG |
| 7 | 1.1700 | 10.91 | 28.02 | 38.93 | 56.00 | -17.07 | QP |
| 8 | 1.1700 | 10.91 | 16.64 | 27.55 | 46.00 | -18.45 | AVG |
| 9 | 6.3980 | 11.13 | 27.41 | 38.54 | 60.00 | -21.46 | QP |
| 10 | 6.3980 | 11.13 | 18.04 | 29.17 | 50.00 | -20.83 | AVG |
| 11 | 23.1299 | 11.11 | 32.47 | 43.58 | 60.00 | -16.42 | QP |
| 12 | 23.1299 | 11.11 | 28.81 | 39.92 | 50.00 | -10.08 | AVG |

Remark: Other frequency mini margin all >6 dB of Limit

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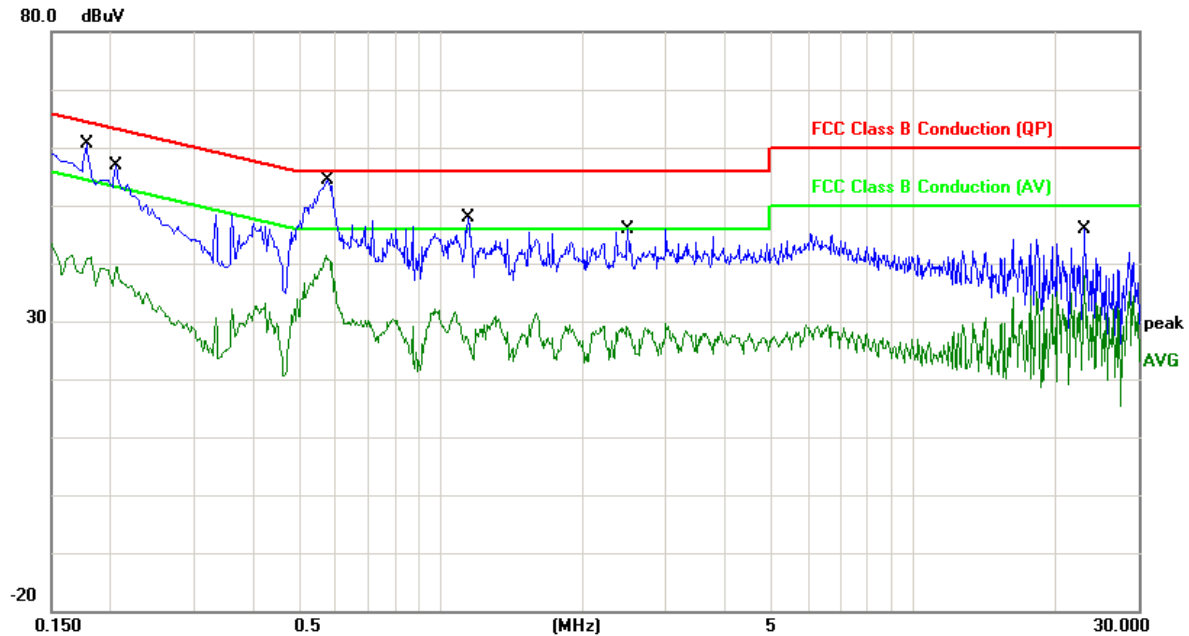
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| | | | |
|------------------|---------------|---------|----------------|
| Test point: | N | Result: | ■ - passed |
| Frequency range: | 0.15MHz~30MHz | | □ - not passed |



| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 0.1780 | 10.81 | 43.34 | 54.15 | 64.58 | -10.43 | QP |
| 2 | 0.1780 | 10.81 | 28.15 | 38.96 | 54.58 | -15.62 | AVG |
| 3 | 0.2060 | 10.82 | 39.86 | 50.68 | 63.37 | -12.69 | QP |
| 4 | 0.2060 | 10.82 | 24.79 | 35.61 | 53.37 | -17.76 | AVG |
| 5 | 0.5780 | 10.90 | 41.13 | 52.03 | 56.00 | -3.97 | QP |
| 6 | 0.5780 | 10.90 | 29.22 | 40.12 | 46.00 | -5.88 | AVG |
| 7 | 1.1460 | 10.90 | 30.95 | 41.85 | 56.00 | -14.15 | QP |
| 8 | 1.1460 | 10.90 | 14.65 | 25.55 | 46.00 | -20.45 | AVG |
| 9 | 2.4980 | 10.95 | 28.88 | 39.83 | 56.00 | -16.17 | QP |
| 10 | 2.4980 | 10.95 | 17.23 | 28.18 | 46.00 | -17.82 | AVG |
| 11 | 23.1300 | 11.06 | 32.94 | 44.00 | 60.00 | -16.00 | QP |
| 12 | 23.1300 | 11.06 | 25.64 | 36.70 | 50.00 | -13.30 | AVG |

Remark: Other frequency mini margin all >6 dB of Limit

Note: Level=Reading+Factor. Margin= Level-Limit

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7.0 6dB BANDWIDTH MEASUREMENT

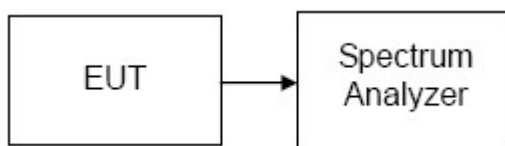
7.1 LIMITS

According to §15.247(a)(2), systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

7.2 MEASUREMENT EQUIPMENT USED

| 20dB Bandwidth | | | | | |
|----------------|-----------------|-----------------|-----------|------------|-----------|
| Item | Test Equipment | Manufacturer | Model No. | Serial No. | Last Cal. |
| 1 | Signal analyzer | ROHDE & SCHWARZ | FSIQ26 | 100311 | 2015/03 |

7.3 TEST CONFIGURATION



7.4 TEST PROCEDURE

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 100kHz, VBW = 300kHz, Span = 1.5 times of bandwidth, Sweep = auto.
4. Mark the peak frequency and -6dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated

7.5 TEST RESULTS

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Chain:a

| Modulation Standard | Channel | Frequency (MHz) | Bandwidth (MHz) | Limit (KHz) | Result |
|---------------------|---------|-----------------|-----------------|-------------|--------|
| 802.11b | Low | 2412 | 9.68 | >500 | PASSED |
| | Middle | 2437 | 9.64 | | PASSED |
| | High | 2462 | 9.68 | | PASSED |
| 802.11g | Low | 2412 | 16.60 | >500 | PASSED |
| | Middle | 2437 | 16.60 | | PASSED |
| | High | 2462 | 16.60 | | PASSED |
| 802.11n(20) | Low | 2412 | 17.80 | >500 | PASSED |
| | Middle | 2437 | 17.75 | | PASSED |
| | High | 2462 | 17.75 | | PASSED |
| 802.11n(40) | Low | 2422 | 36.50 | >500 | PASSED |
| | Middle | 2437 | 36.60 | | PASSED |
| | High | 2452 | 36.60 | | PASSED |

Remark:The Bandwidth is Delta 2 of following the graph. And the Delta 2 is Marker 2 subtract Marker 1.

Chain:b

| Modulation Standard | Channel | Frequency (MHz) | Bandwidth (MHz) | Limit (KHz) | Result |
|---------------------|---------|-----------------|-----------------|-------------|--------|
| 802.11b | Low | 2412 | 9.68 | >500 | PASSED |
| | Middle | 2437 | 9.64 | | PASSED |
| | High | 2462 | 9.68 | | PASSED |
| 802.11g | Low | 2412 | 16.65 | >500 | PASSED |
| | Middle | 2437 | 16.60 | | PASSED |
| | High | 2462 | 16.60 | | PASSED |
| 802.11n(20) | Low | 2412 | 17.75 | >500 | PASSED |
| | Middle | 2437 | 17.65 | | PASSED |
| | High | 2462 | 17.75 | | PASSED |
| 802.11n(40) | Low | 2422 | 36.60 | >500 | PASSED |
| | Middle | 2437 | 36.60 | | PASSED |
| | High | 2452 | 36.60 | | PASSED |

Remark:The Bandwidth is Delta 2 of following the graph. And the Delta 2 is Marker 2 subtract Marker 1.

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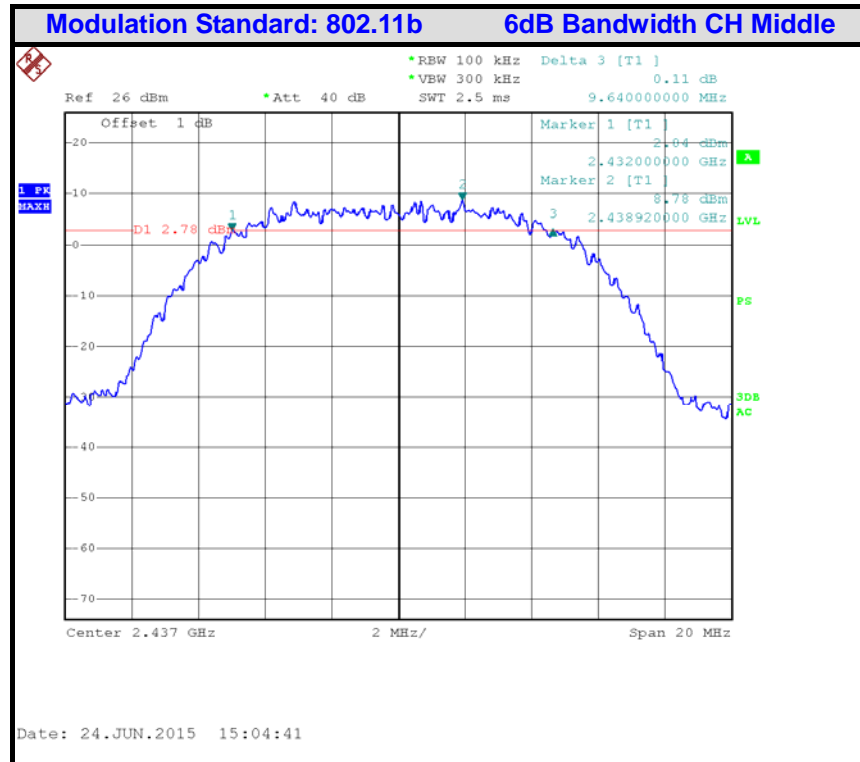
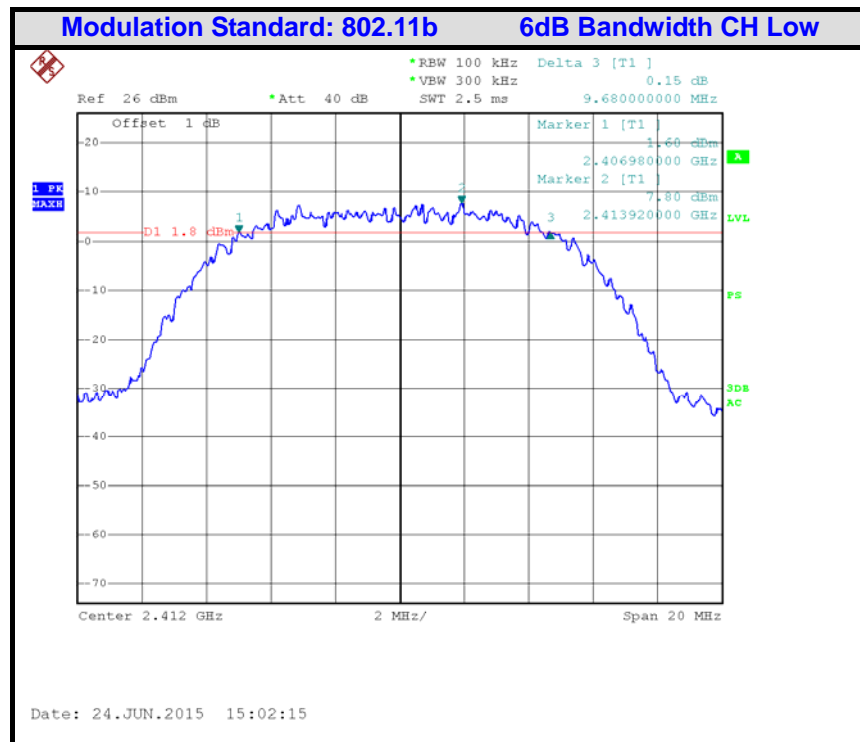
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Test Plot

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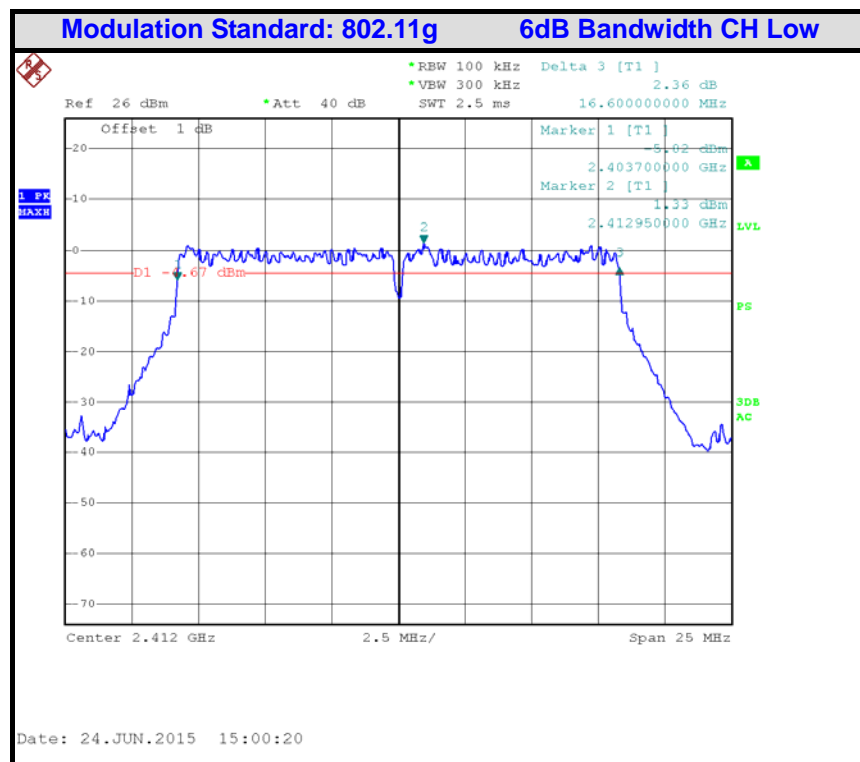
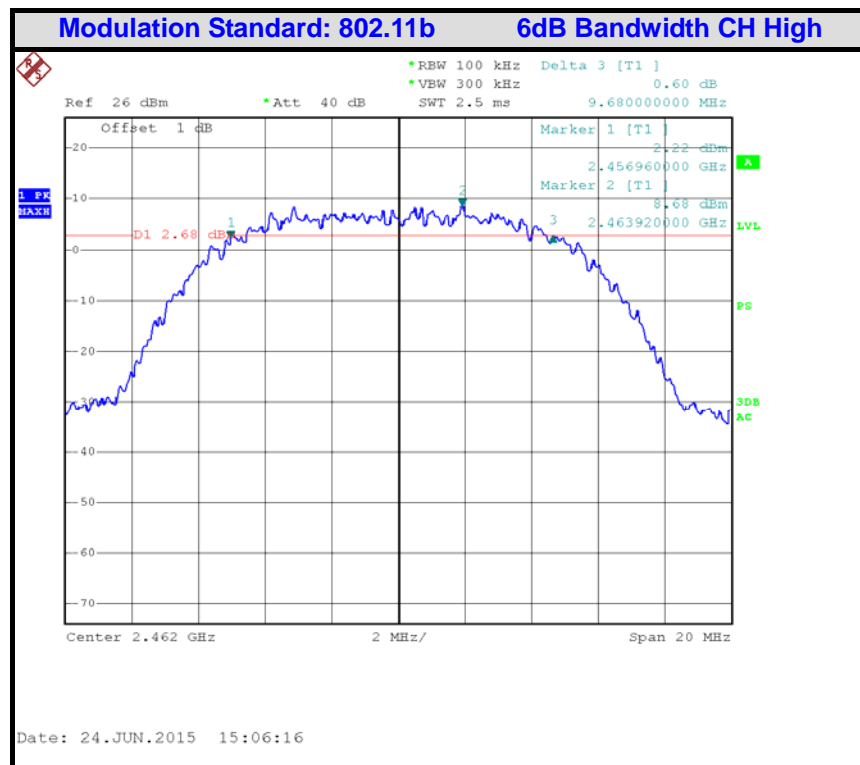
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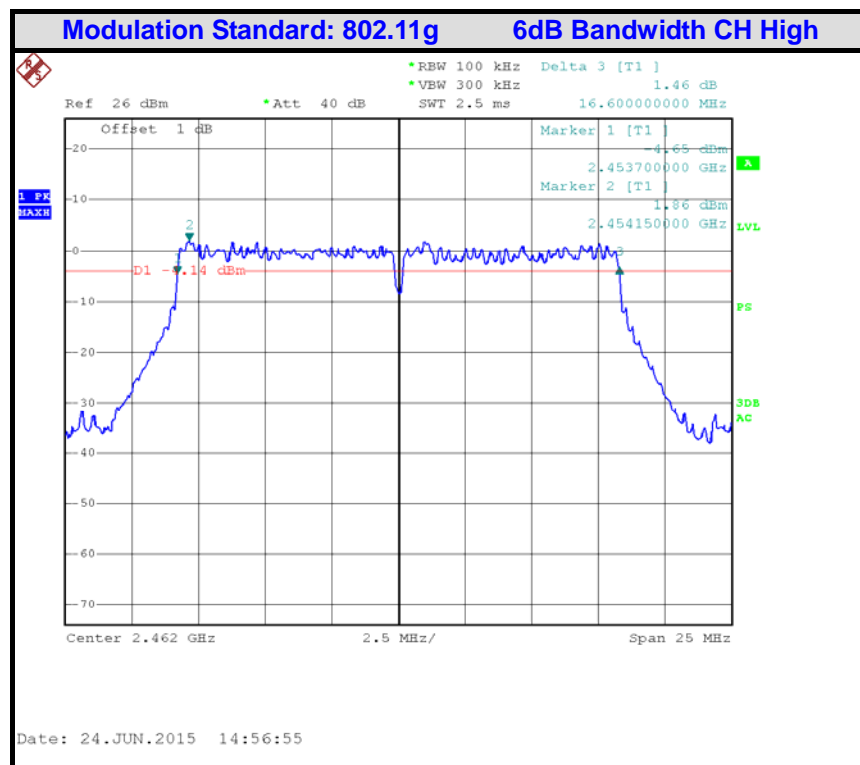
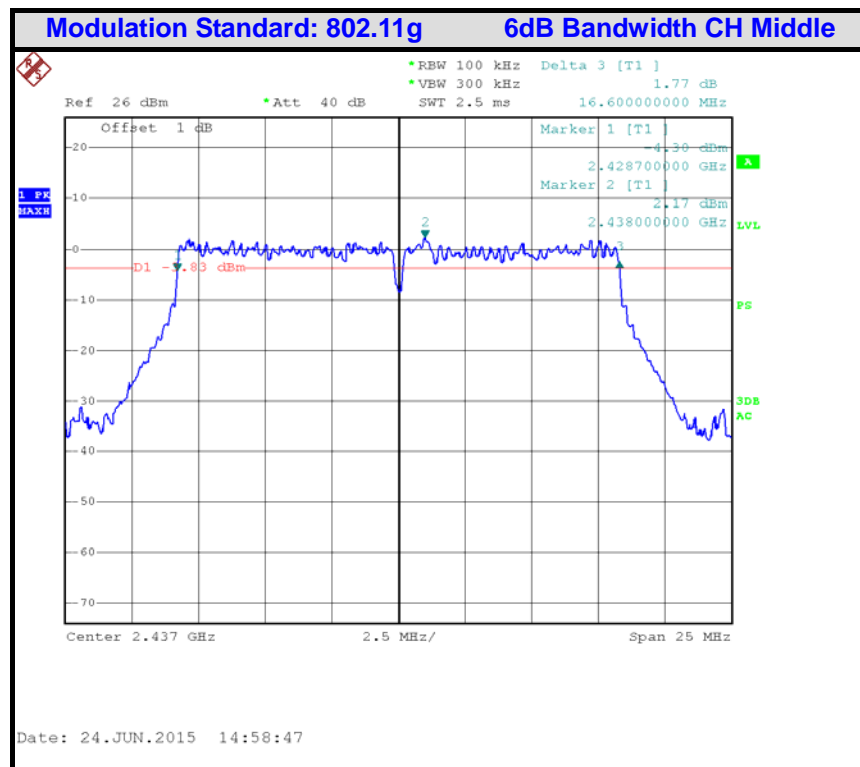
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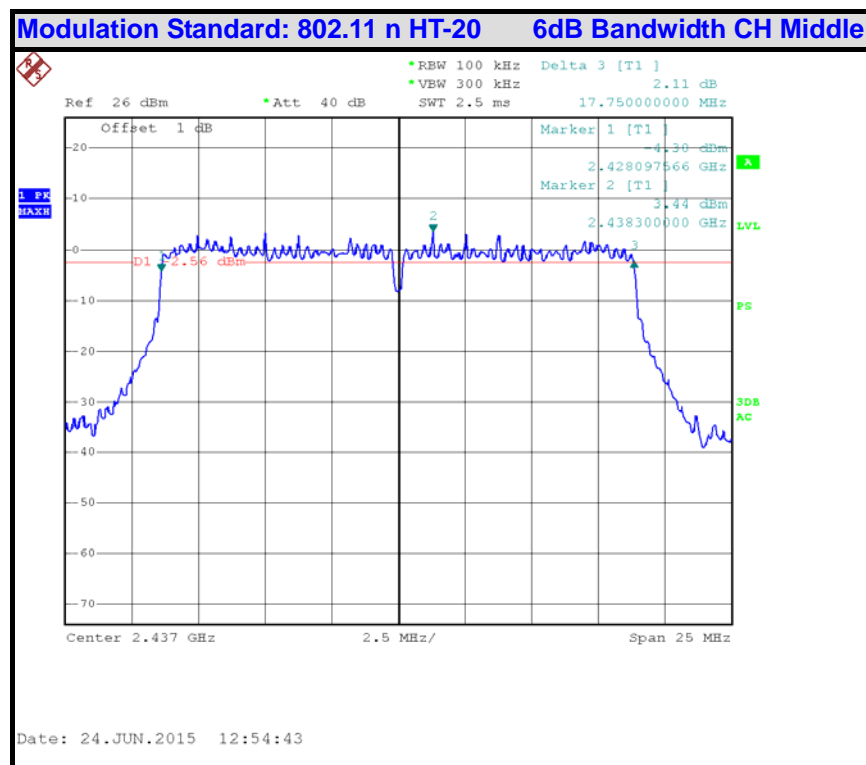
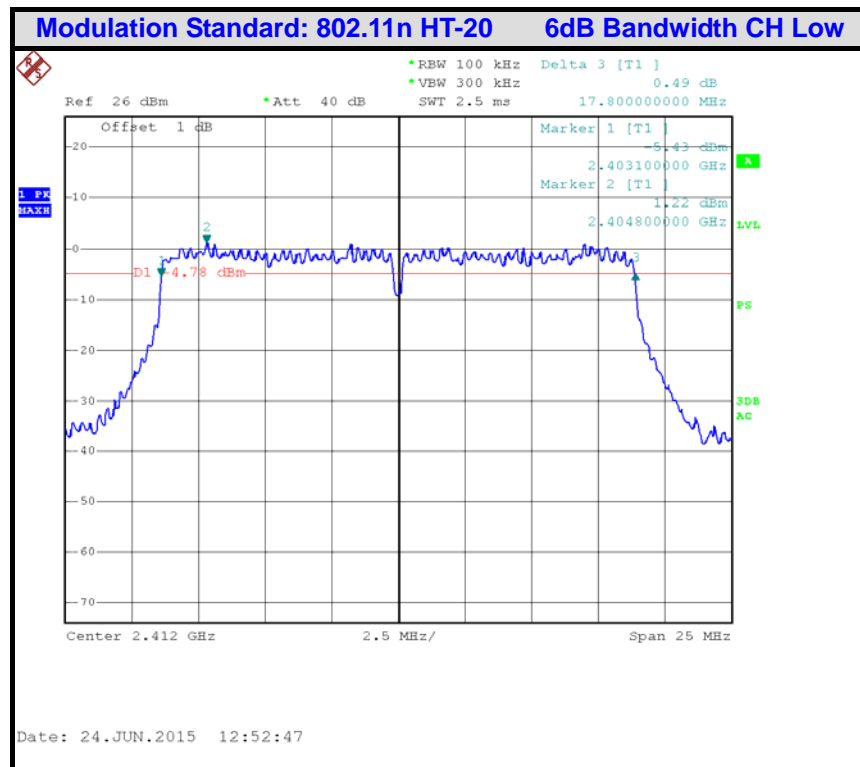
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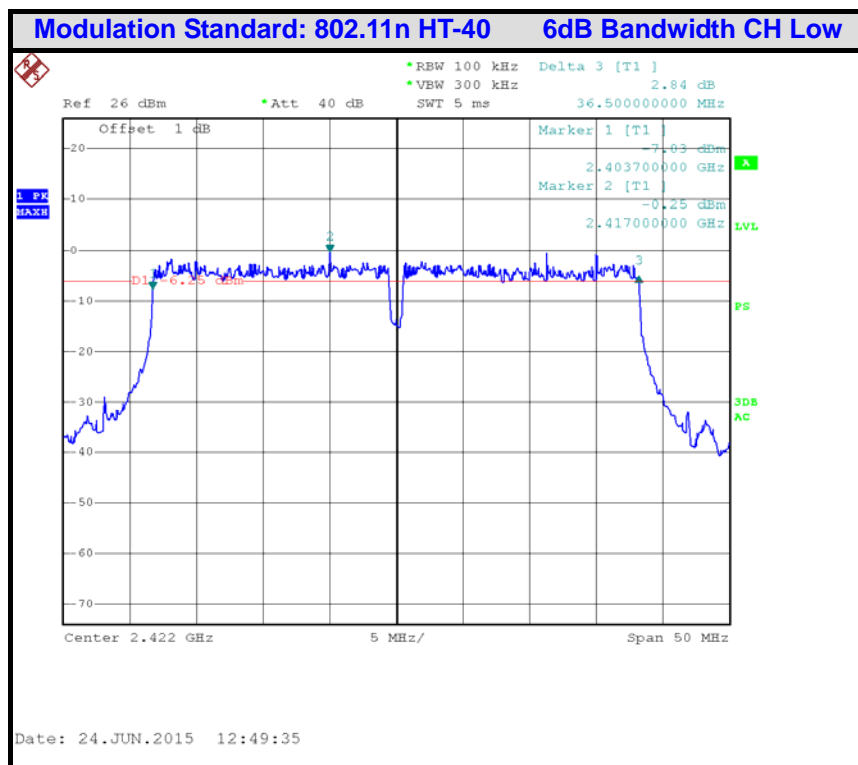
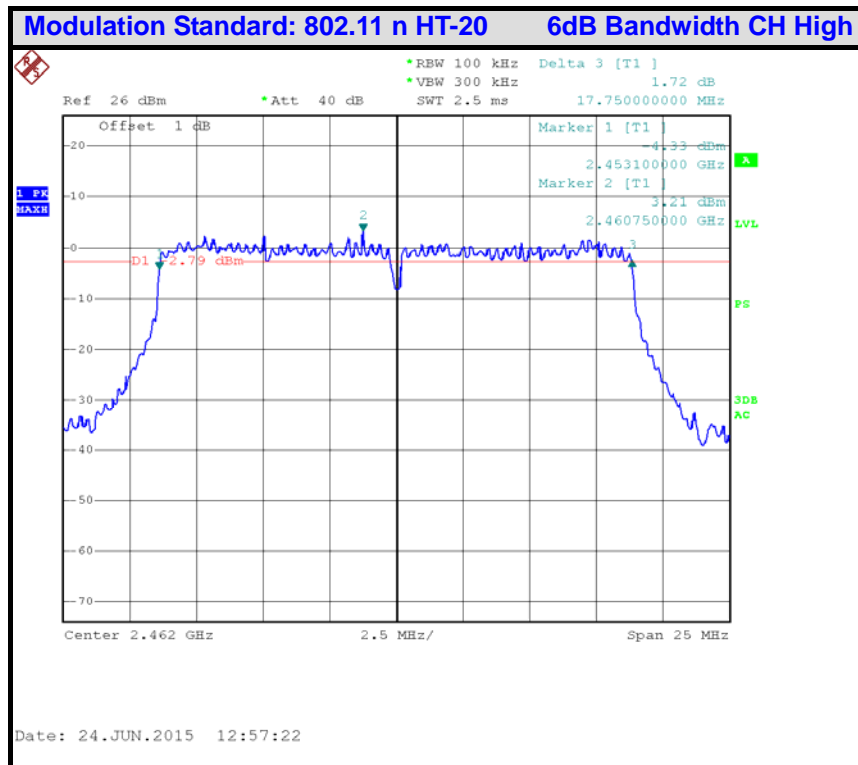
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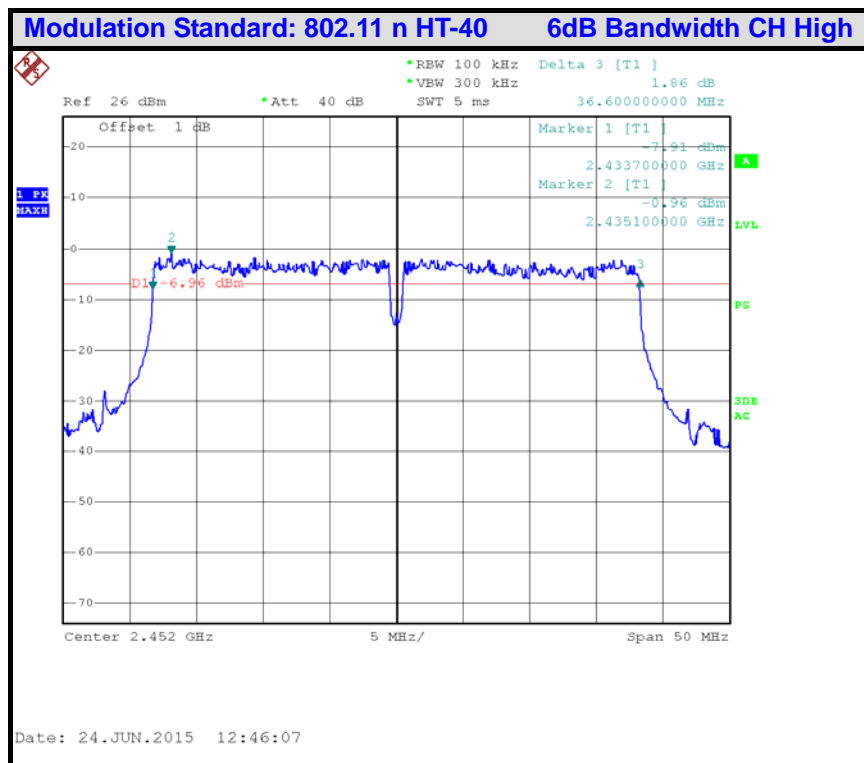
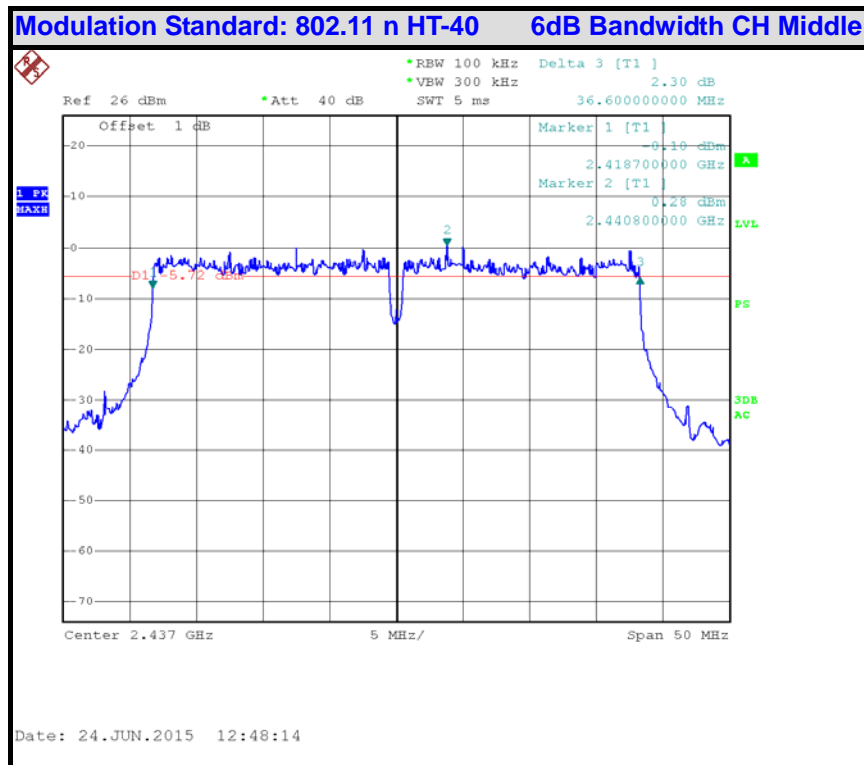
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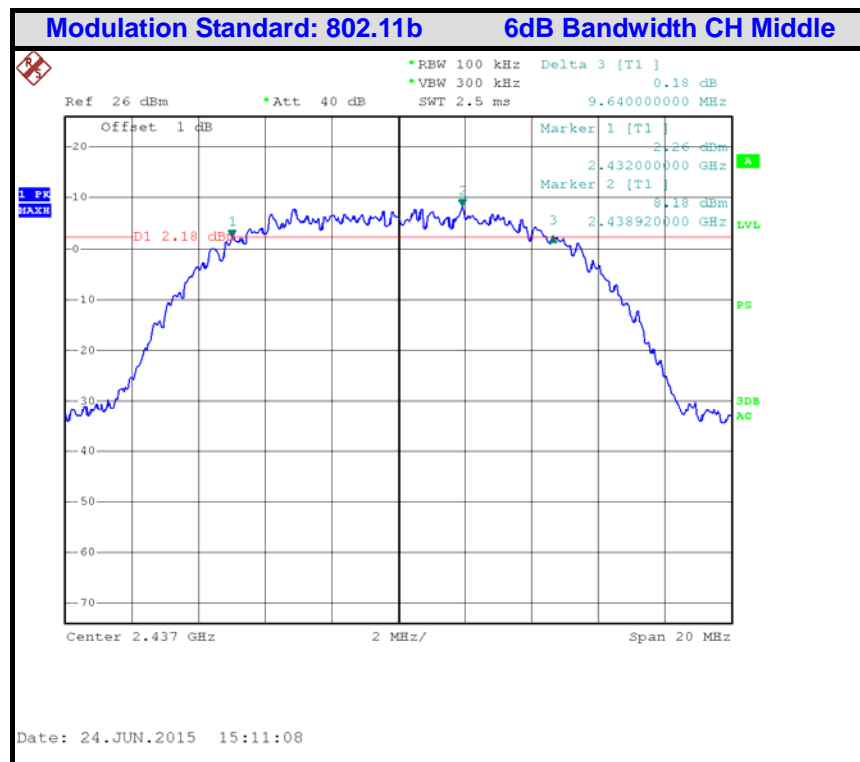
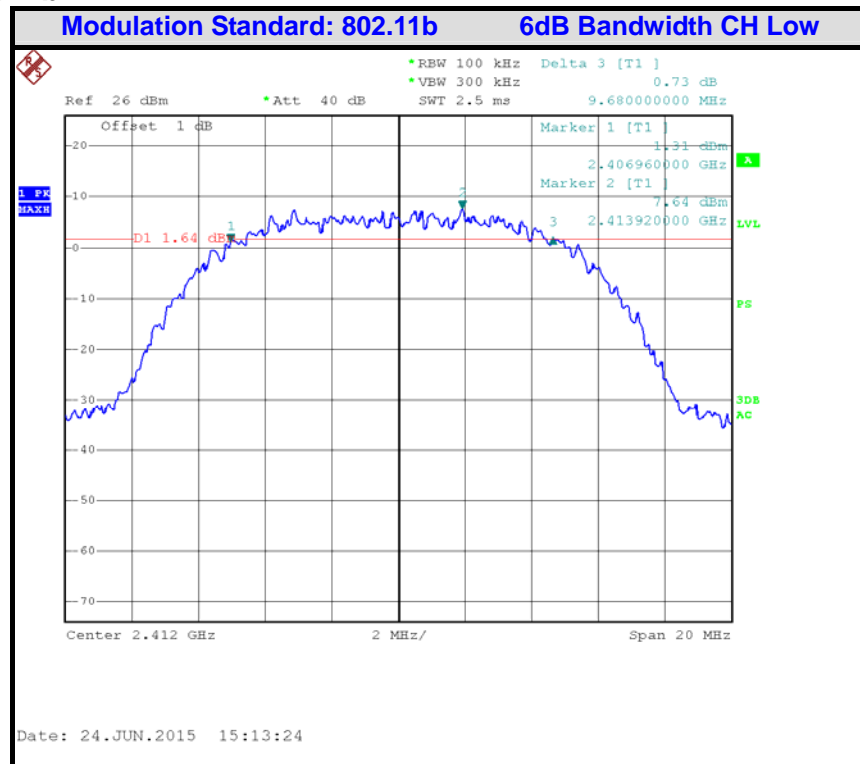
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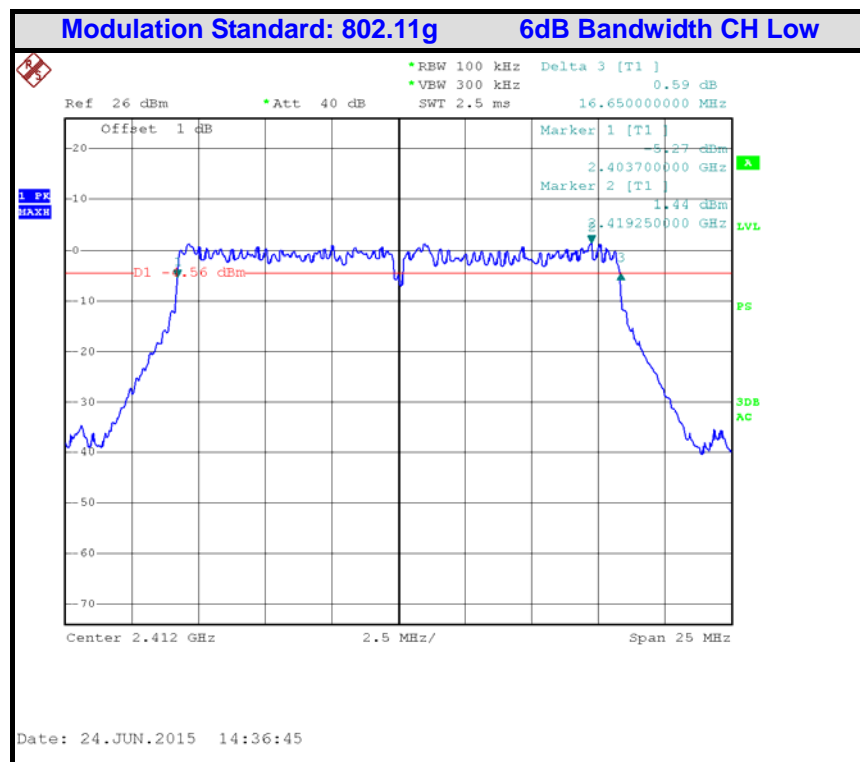
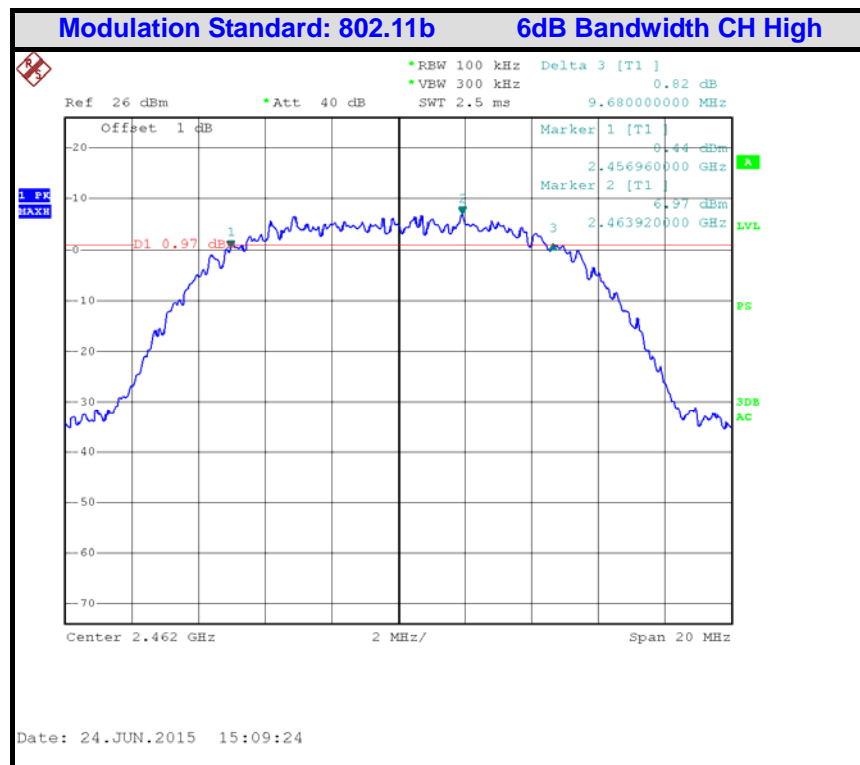
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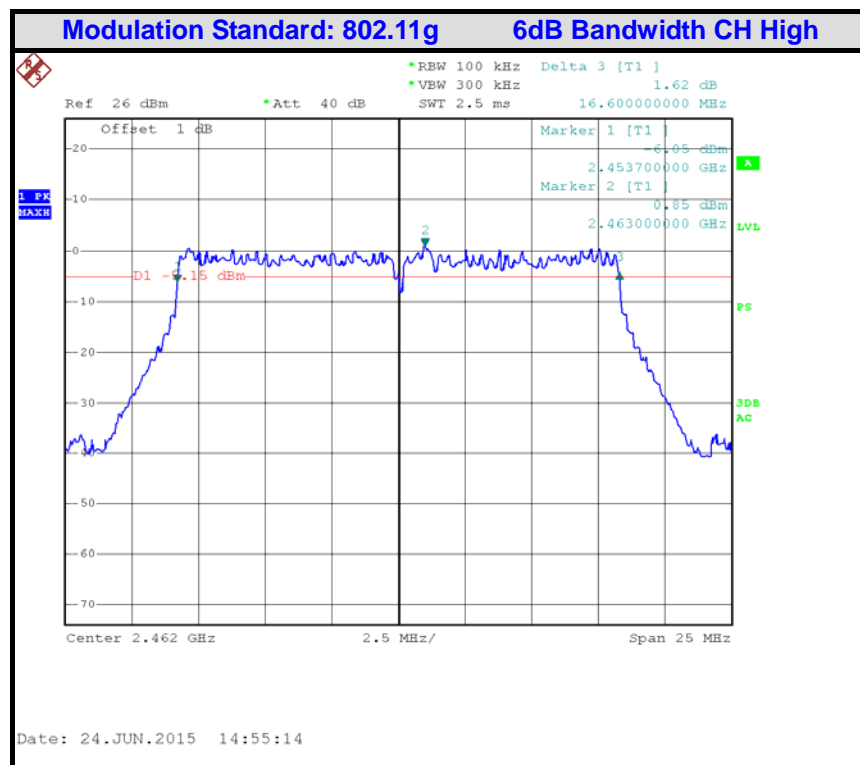
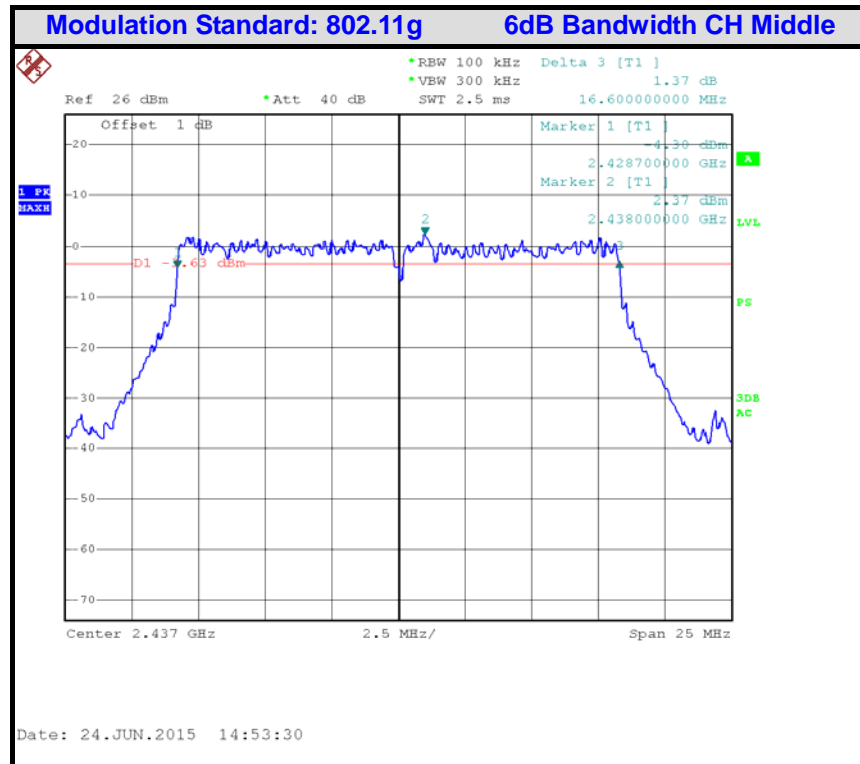
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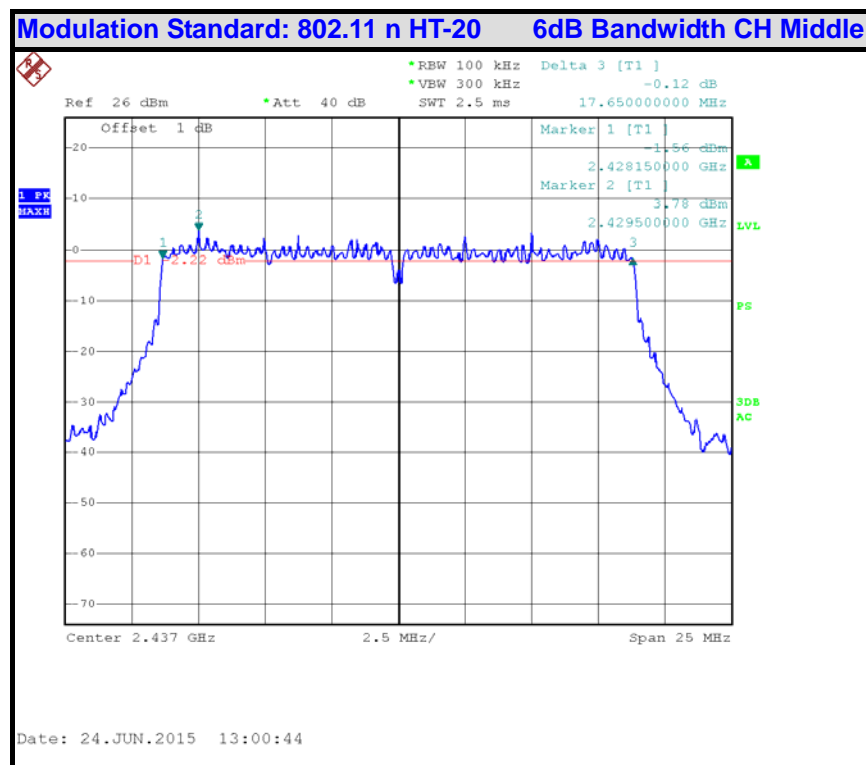
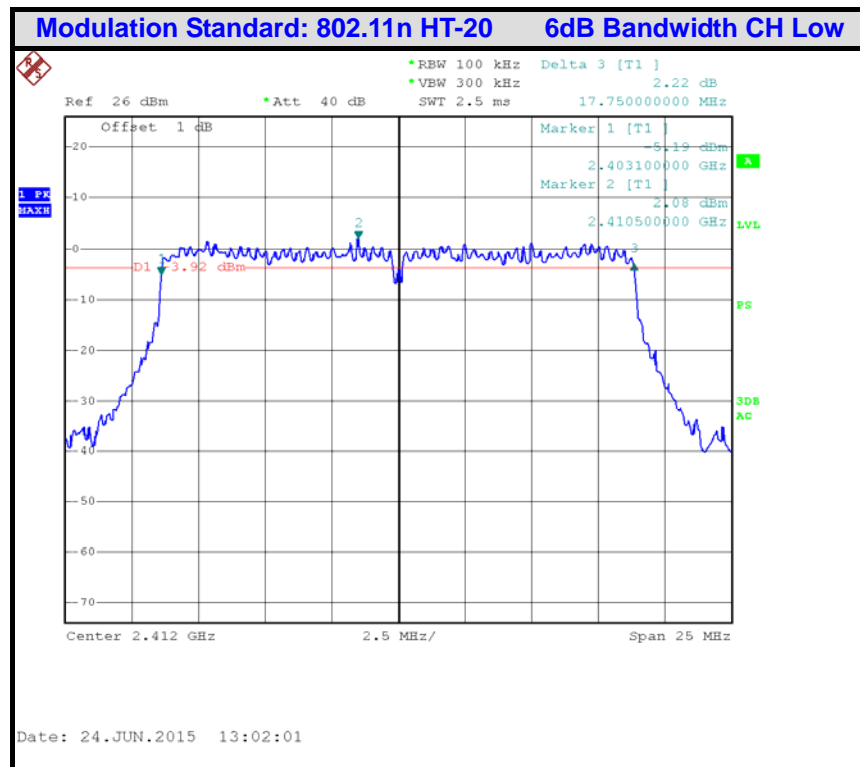
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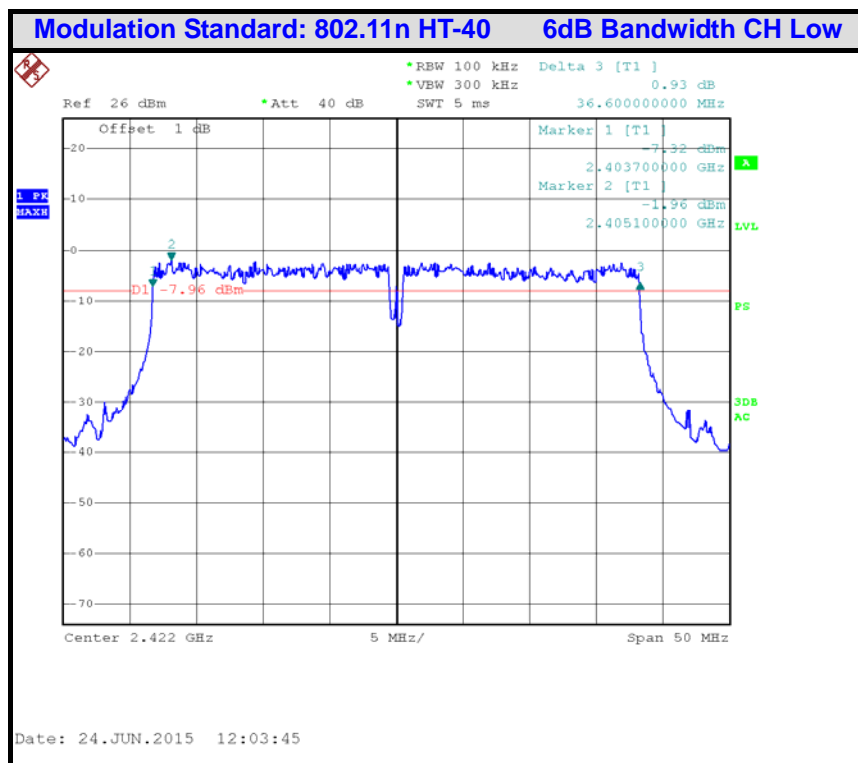
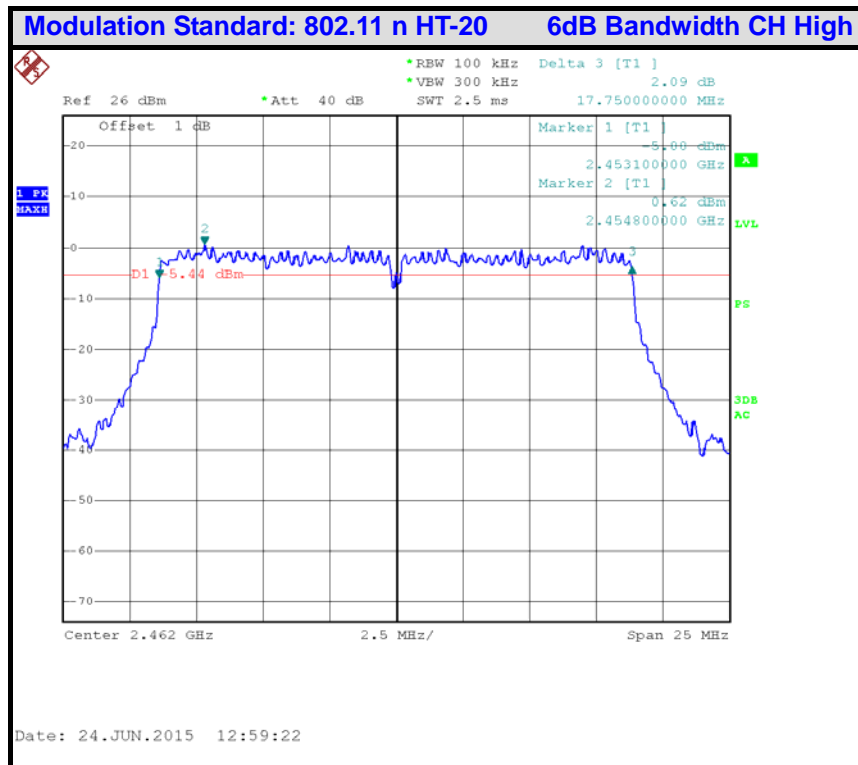
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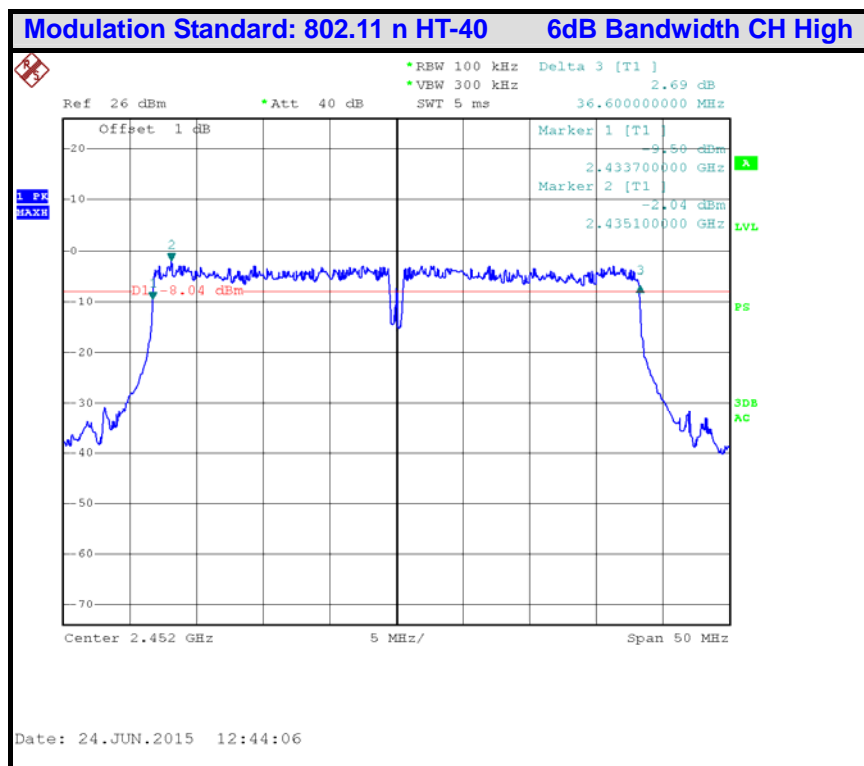
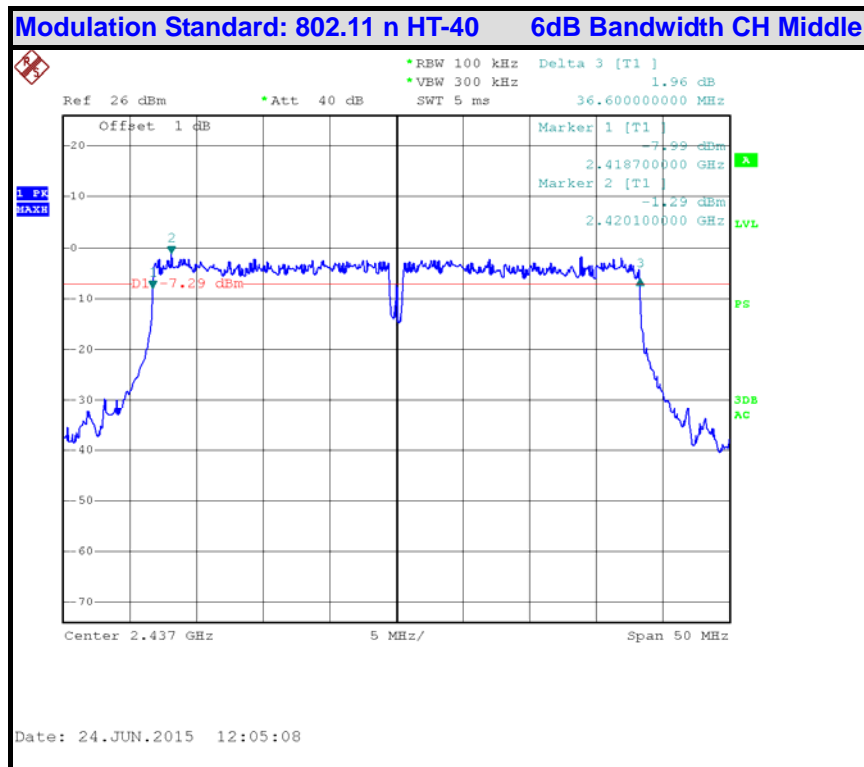
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8.0 PEAK POWER

8.1 LIMIT

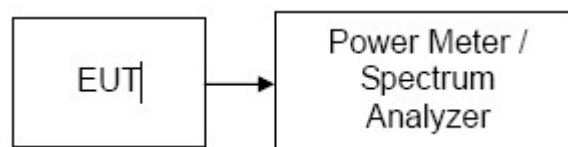
The maximum peak output power of the intentional radiator shall not exceed the following:

1. According to §15.247(b)(3), for systems using digital modulation in the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz: 1 Watt.
2. According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

8.2 MEASUREMENT EQUIPMENT USED

| Peak Power | | | | | |
|------------|-----------------|-----------------|-----------|------------|-----------|
| Item | Test Equipment | Manufacturer | Model No. | Serial No. | Last Cal. |
| 1 | Signal analyzer | ROHDE & SCHWARZ | FSIQ26 | 100311 | 2015/03 |
| 2 | Power meter | ROHDE & SCHWARZ | NRVS | 842856/049 | 2015/03 |

8.3 TEST CONDIGURATION



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8.4 TEST PROCEDURE

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz.
3. Set VBW \geq 3 MHz.
4. Use sample detector mode if bin width (i.e., span/number of points in spectrum display) $<$ 0.5 RBW. Otherwise use peak detector mode.
5. Use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at full control power for entire sweep of every sweep. If the device transmits continuously, with no off intervals or reduced power intervals, the trigger may be set to "free run".
6. Trace average 100 traces in power averaging mode.
7. Compute power by integrating the spectrum across the 26 dB EBW of the signal. The integration can be performed using the spectrum analyzer's band power measurement function with band limits set equal to the EBW band edges or by summing power levels in each 1 MHz band in linear power terms. The 1 MHz band power levels to be summed can be obtained by averaging, in linear power terms, power levels in each frequency bin across the 1 MHz.

8.5 TEST RESULTS

Passed Test Data

| Modulation Standard | Channel | Frequency (MHz) | Output Power (dBm) | | | Limit (dBm) | Result |
|---|---------|-----------------|--------------------|---------|-------|-------------|--------|
| | | | Chain a | Chain b | Mix | | |
| 802.11b: 5.5Mbps (Worst Case) | Low | 2412 | 23.26 | 23.24 | 26.27 | 30dBm | PASSED |
| | Middle | 2437 | 23.03 | 23.31 | 26.19 | | PASSED |
| | High | 2462 | 23.03 | 23.05 | 26.06 | | PASSED |
| 802.11g: 54Mbps (Worst Case) | Low | 2412 | 22.83 | 23.27 | 26.08 | 30dBm | PASSED |
| | Middle | 2437 | 23.78 | 23.79 | 26.80 | | PASSED |
| | High | 2462 | 23.56 | 22.42 | 26.05 | | PASSED |
| 802.11n(20): 300Mbps (Worst Case) | Low | 2412 | 22.65 | 23.06 | 25.88 | 30dBm | PASSED |
| | Middle | 2437 | 23.57 | 23.59 | 26.60 | | PASSED |
| | High | 2462 | 23.47 | 22.20 | 25.90 | | PASSED |
| 802.11n(40): 300Mbps (Worst Case) | Low | 2422 | 22.49 | 23.28 | 25.92 | 30dBm | PASSED |
| | Middle | 2437 | 22.30 | 22.57 | 25.46 | | PASSED |
| | High | 2452 | 22.03 | 22.32 | 25.20 | | PASSED |

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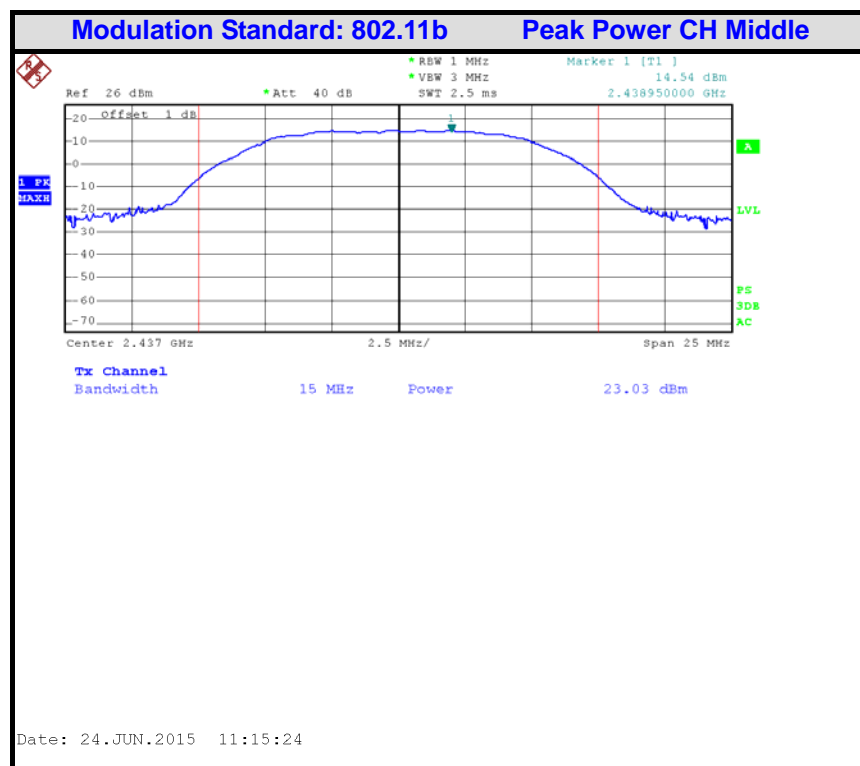
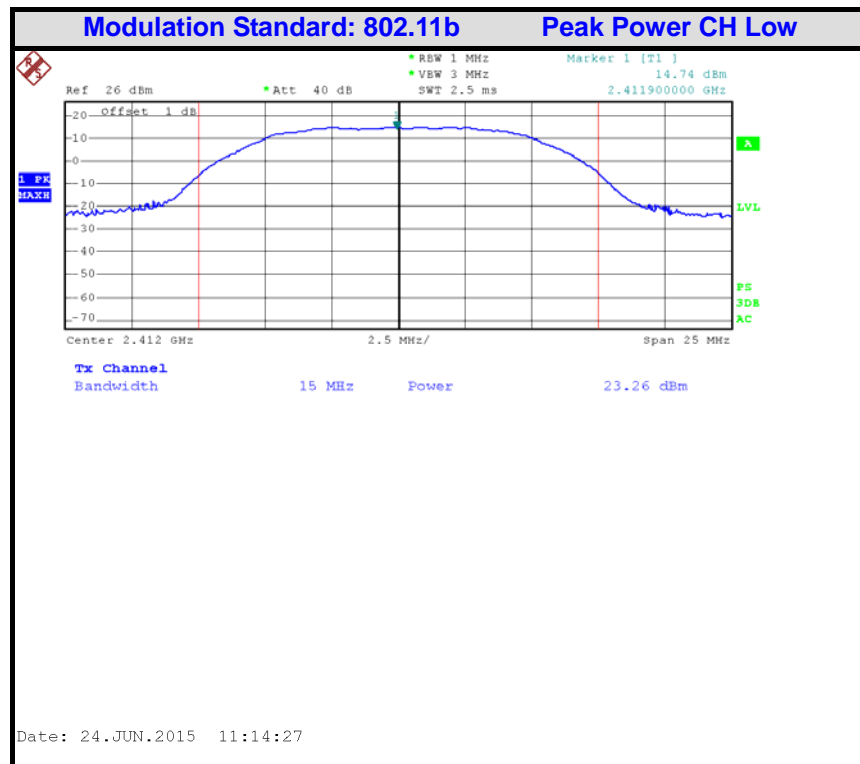
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Test Plot
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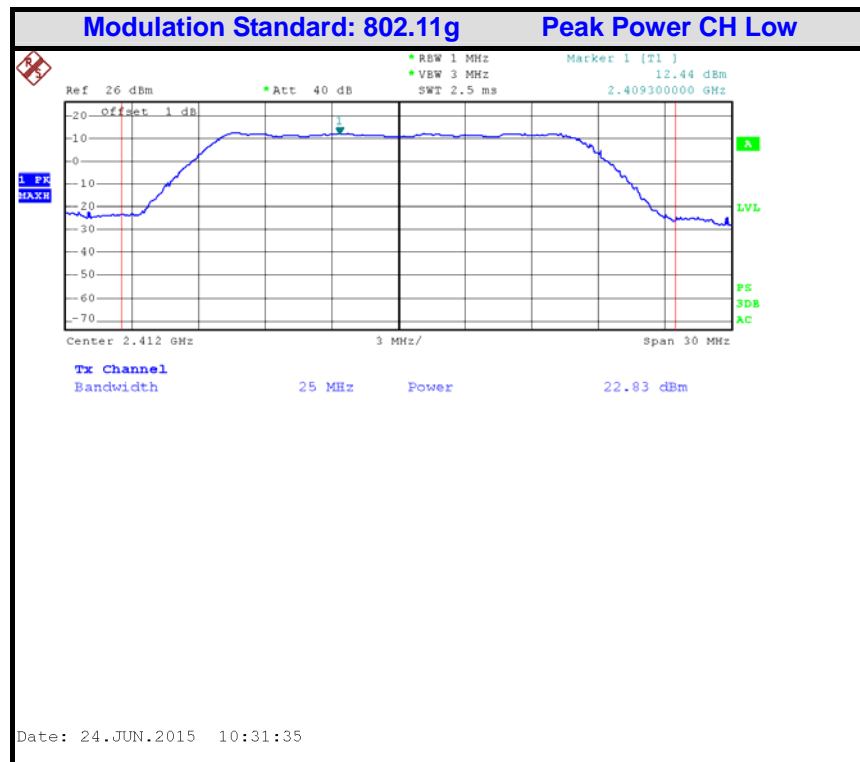
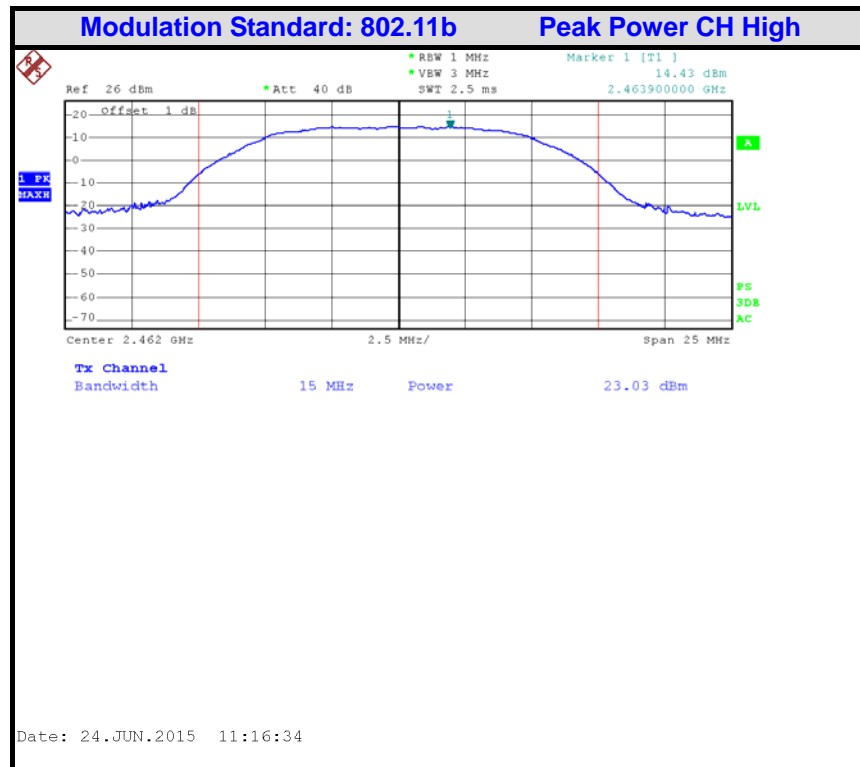
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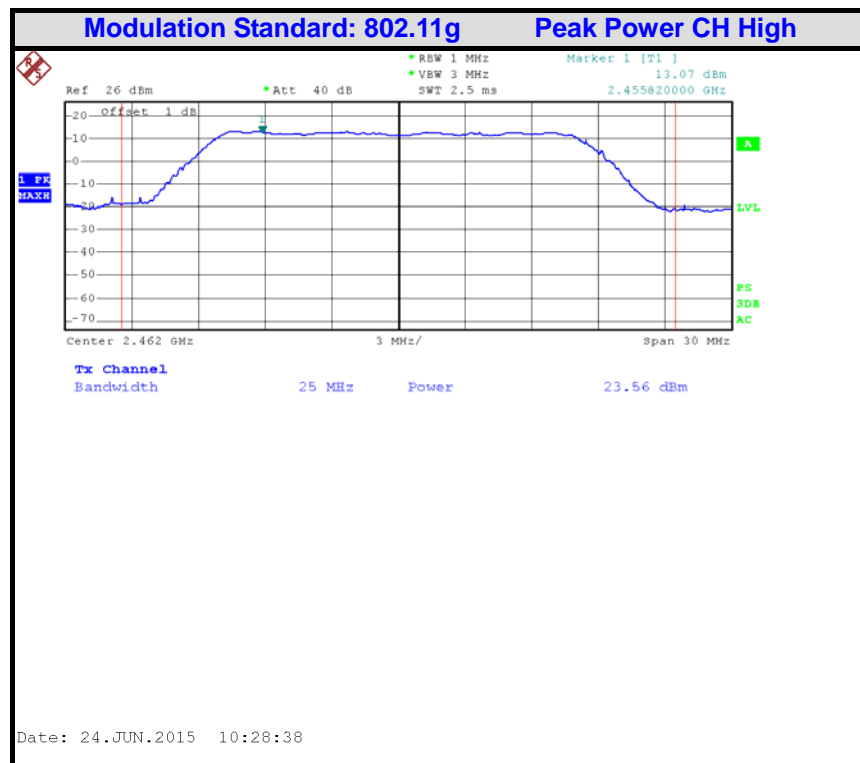
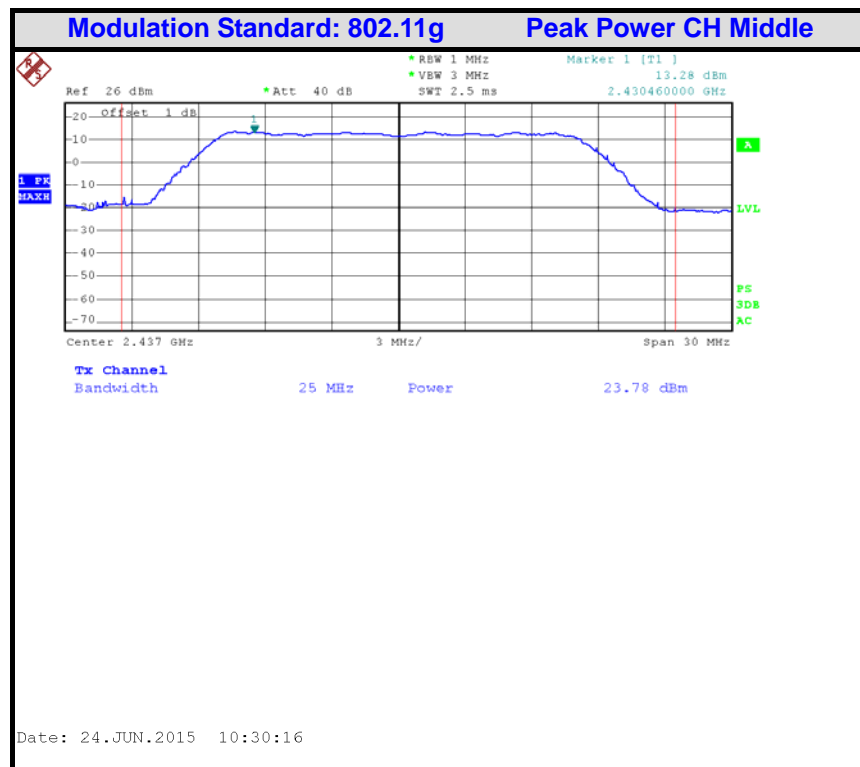
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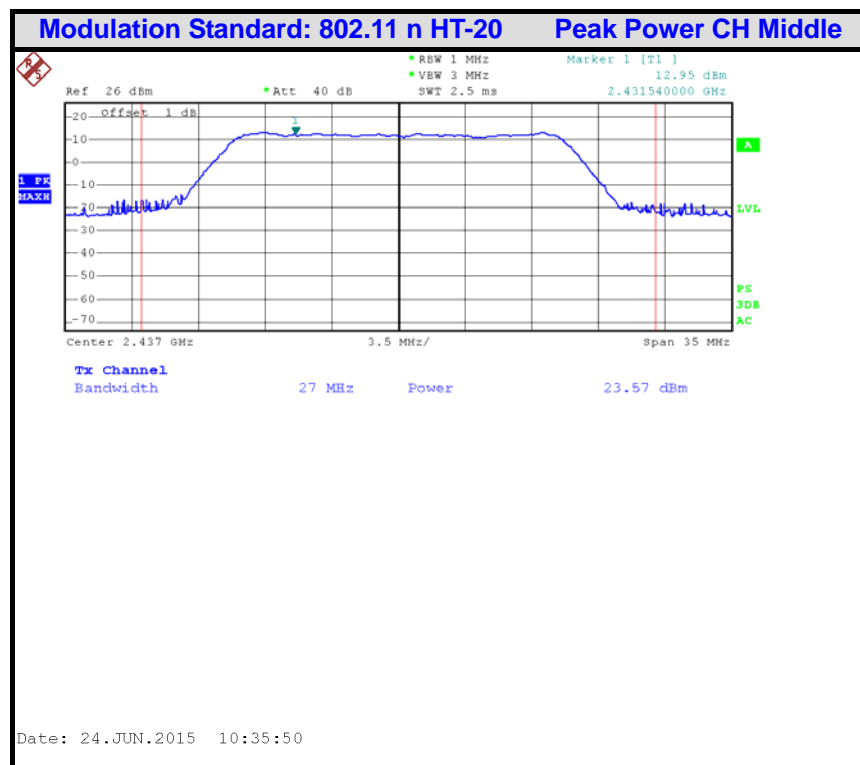
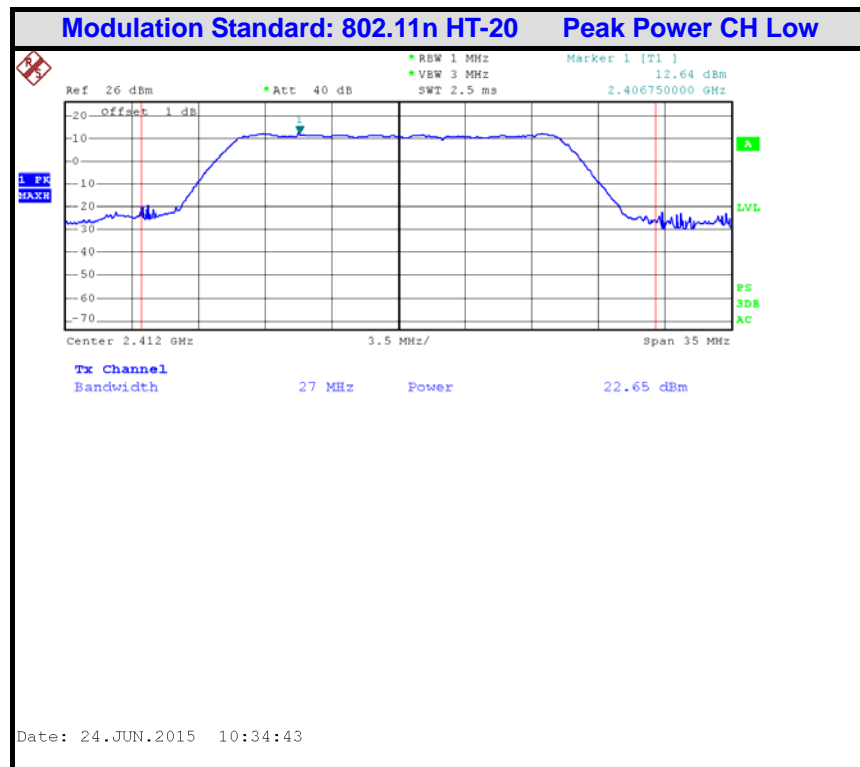
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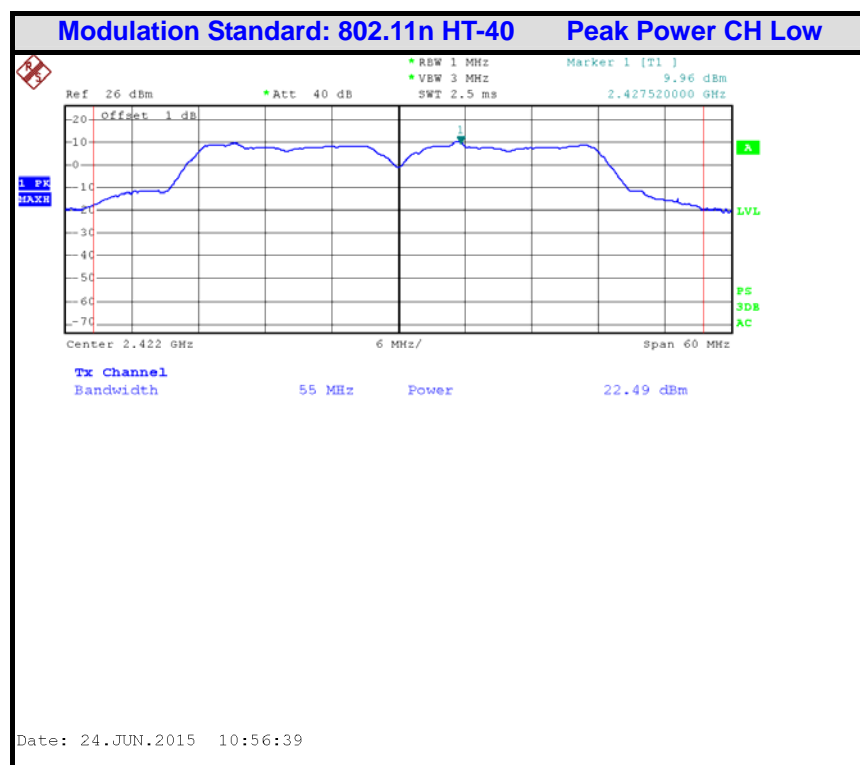
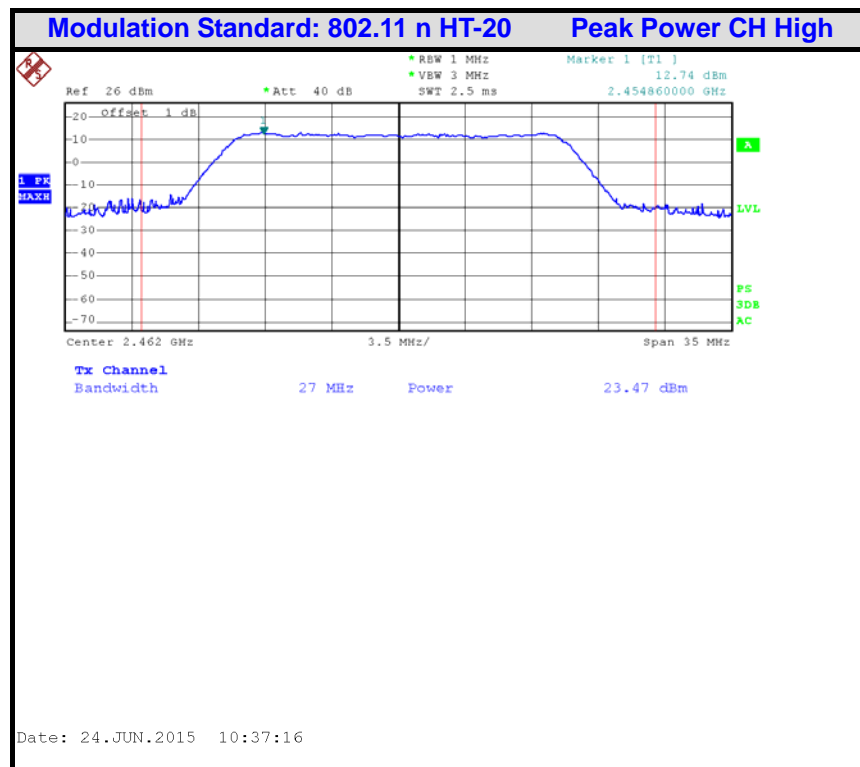
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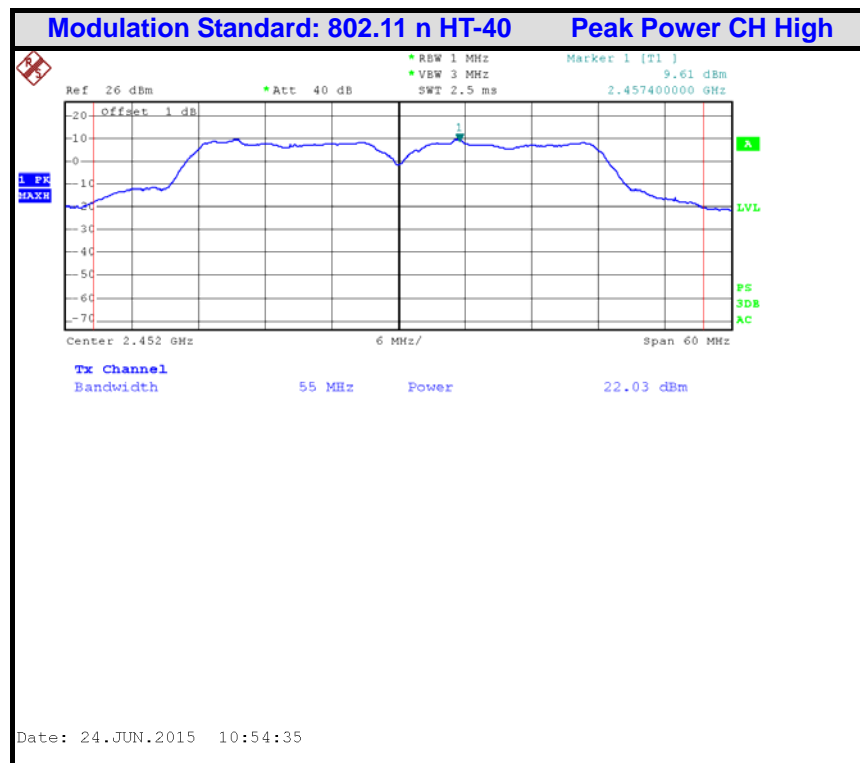
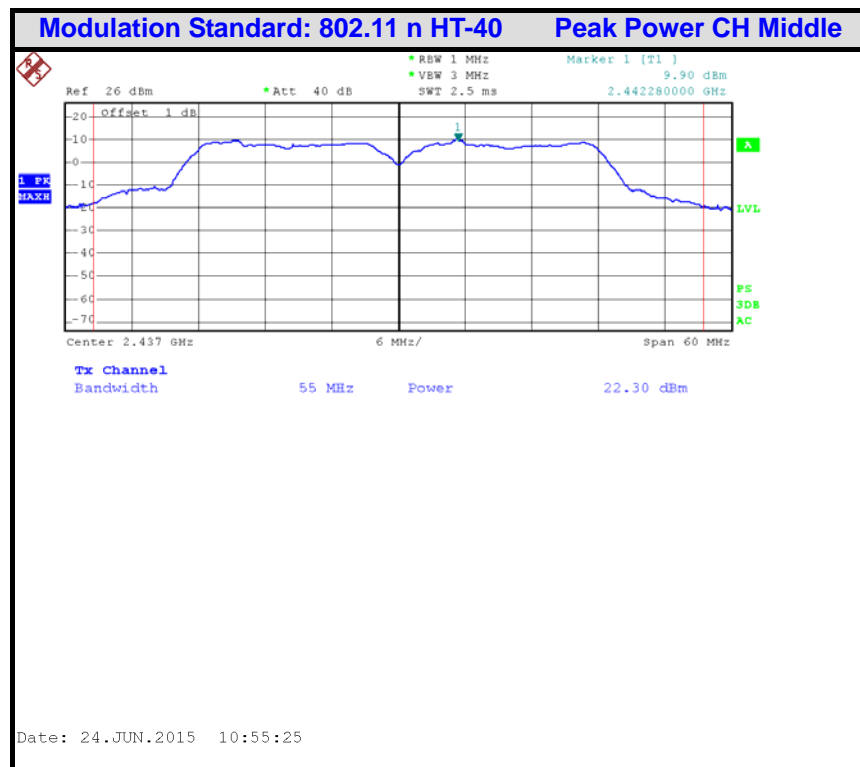
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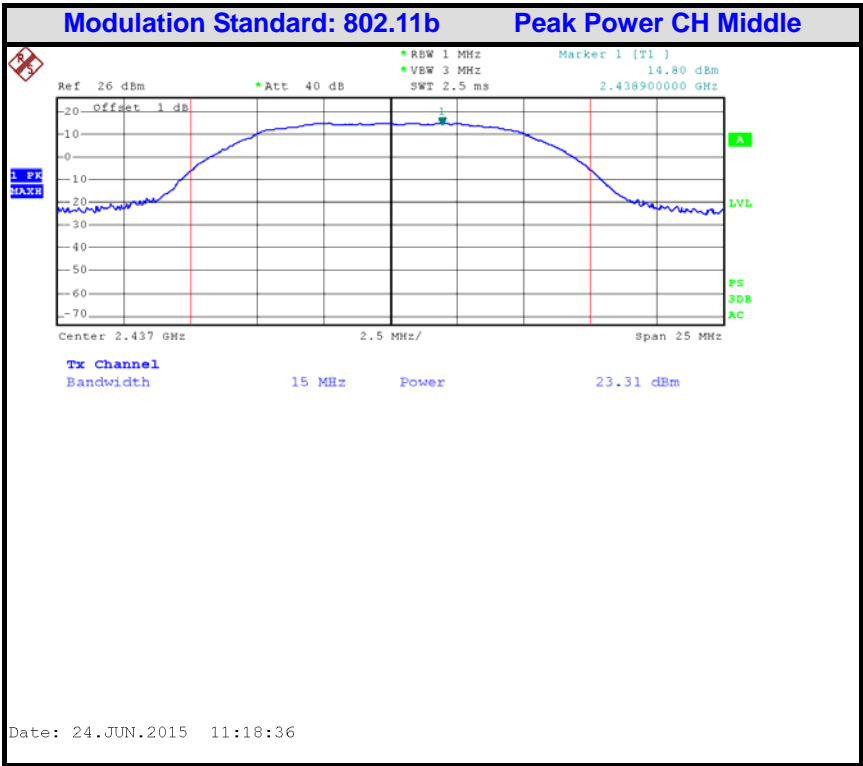
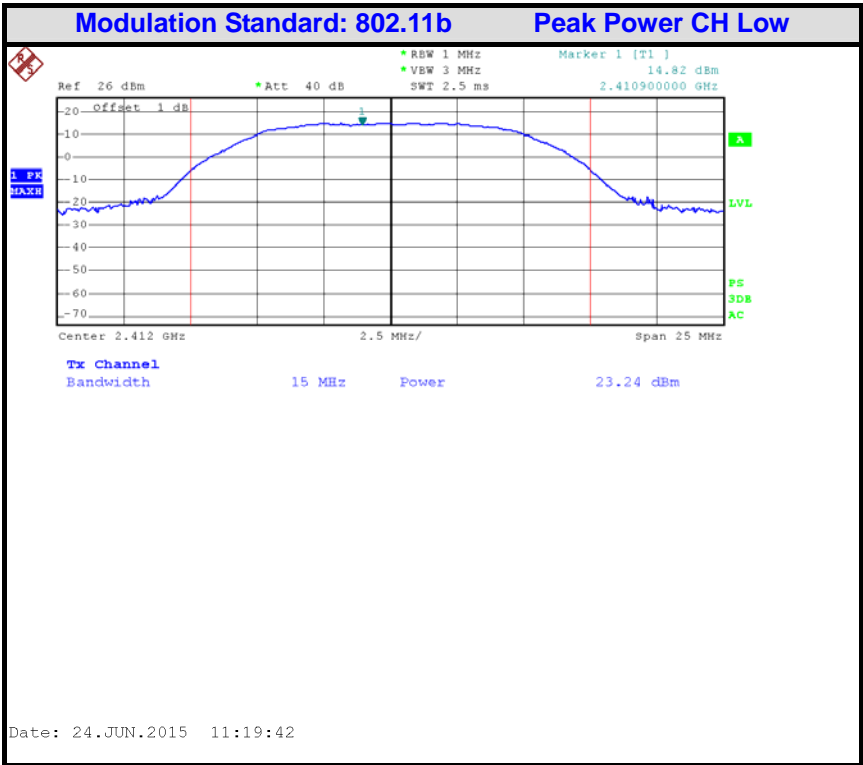
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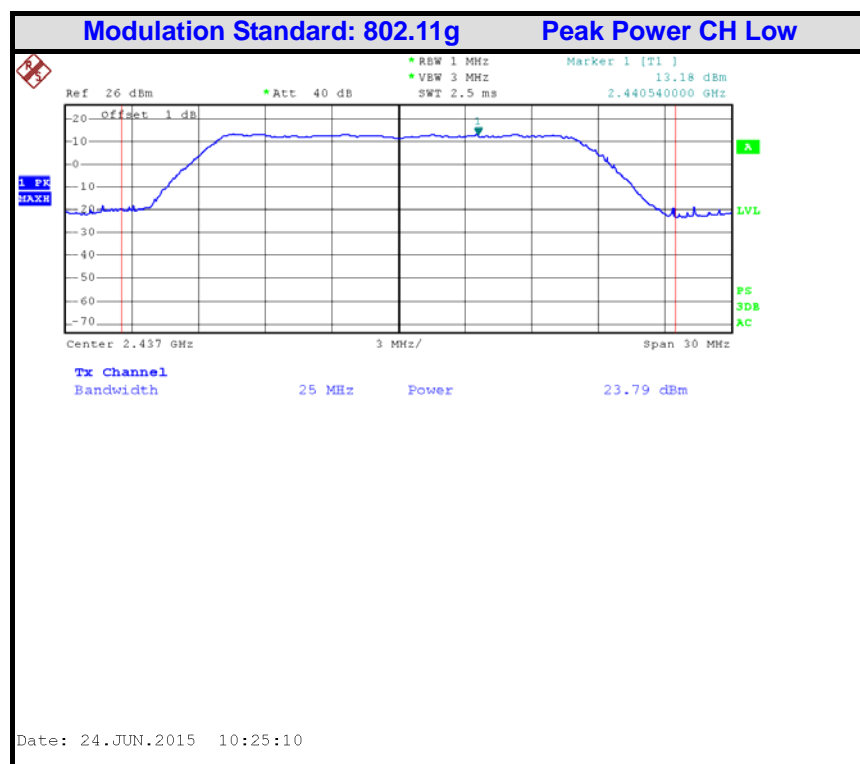
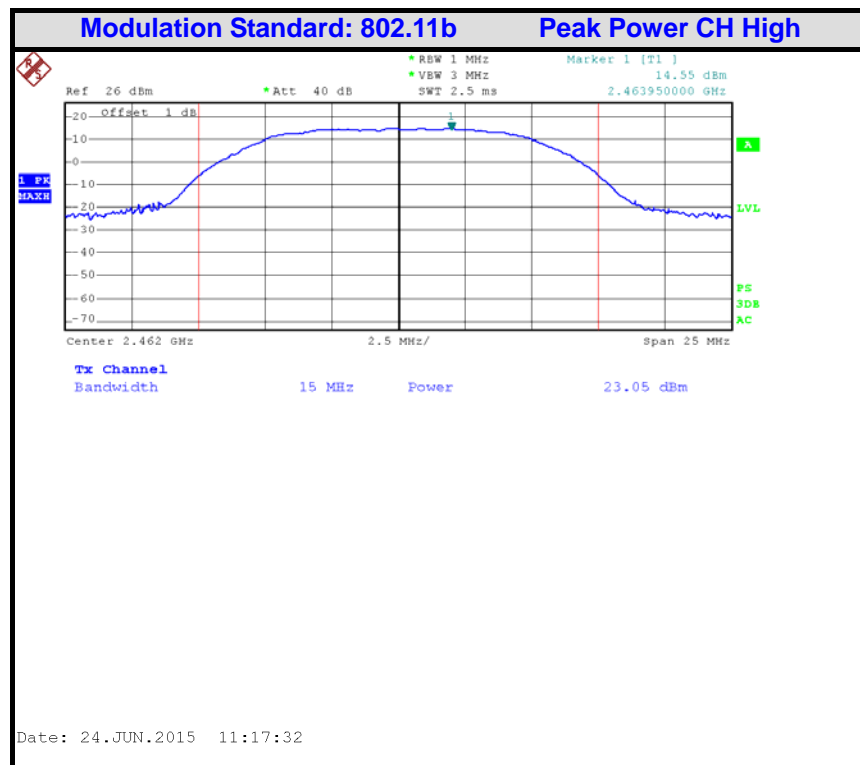
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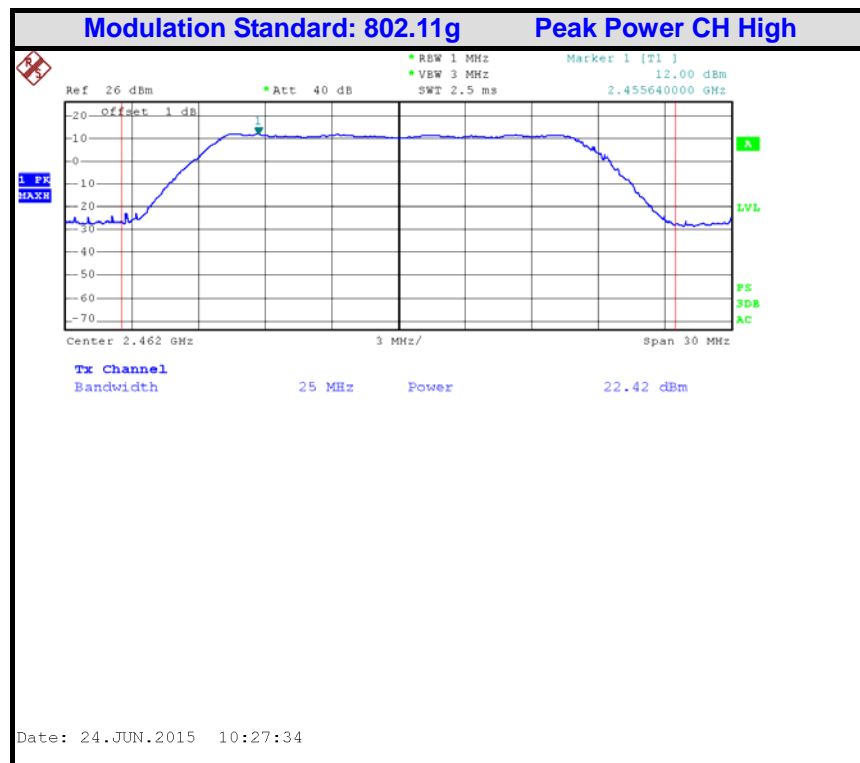
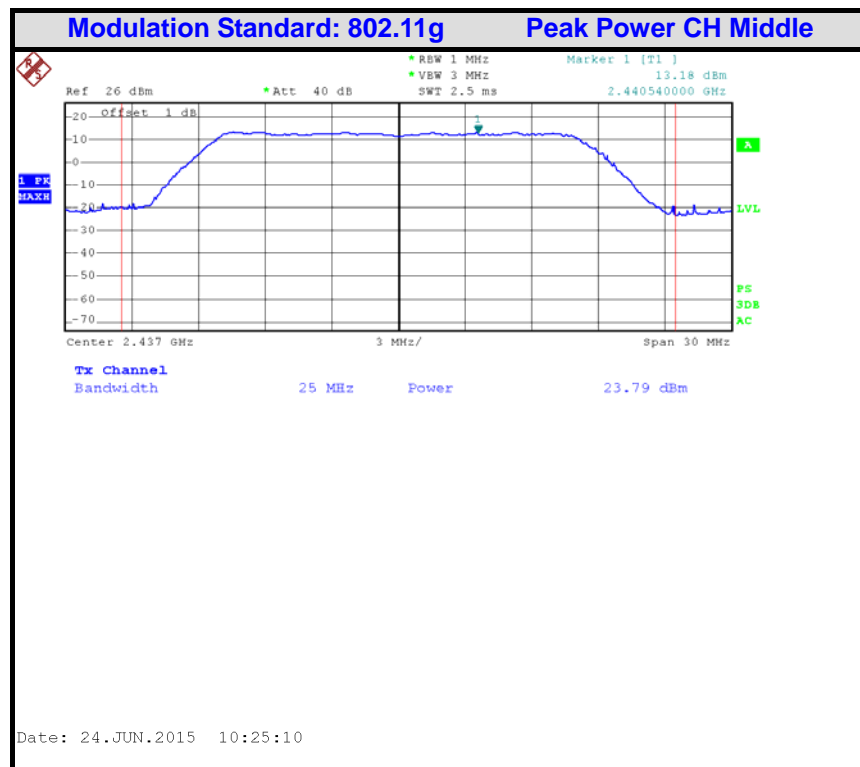
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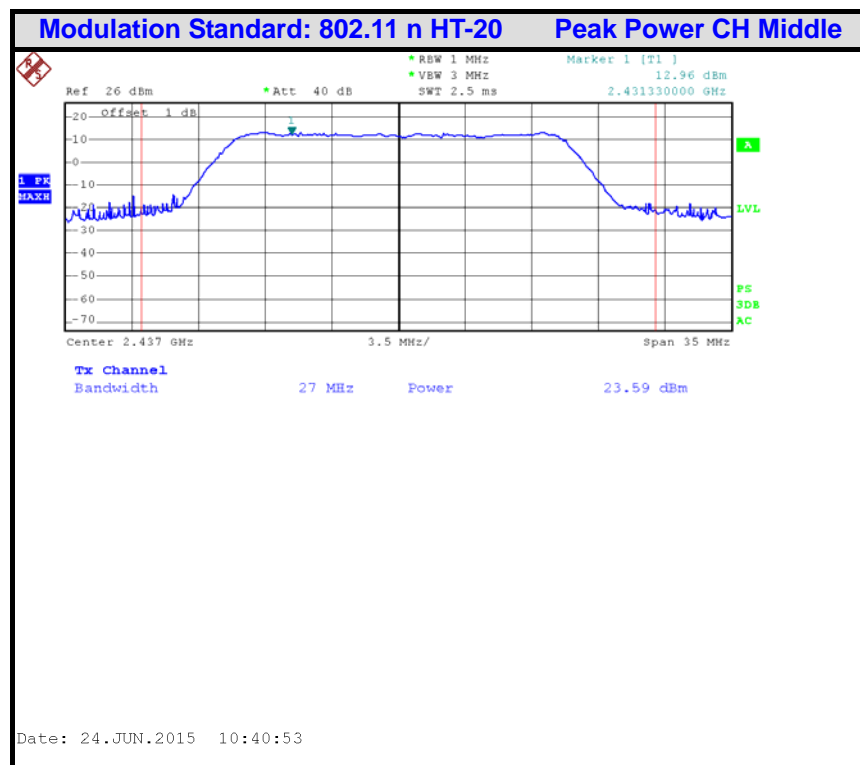
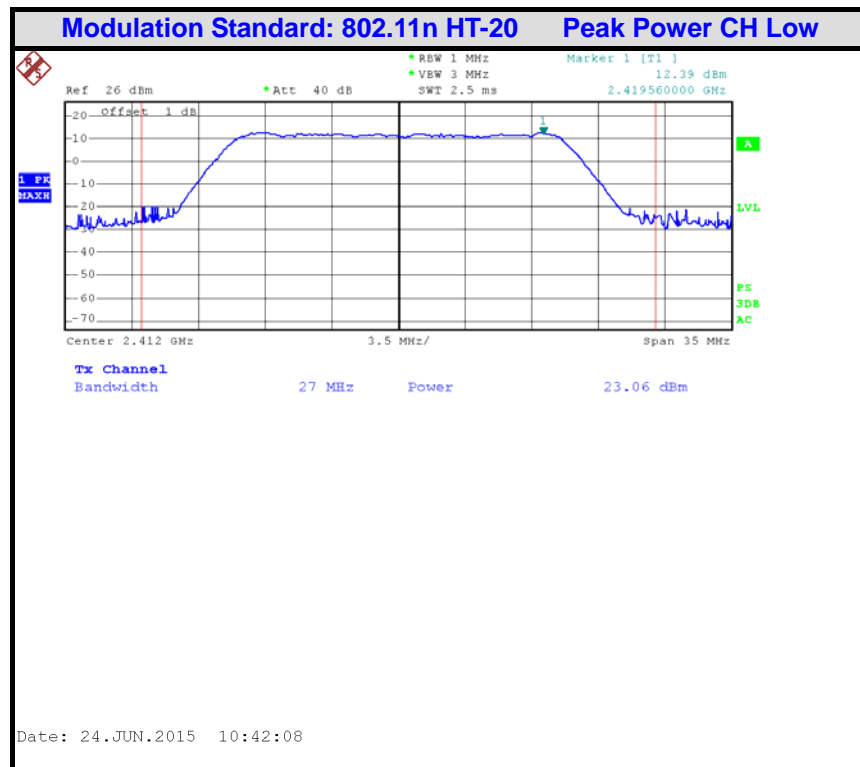
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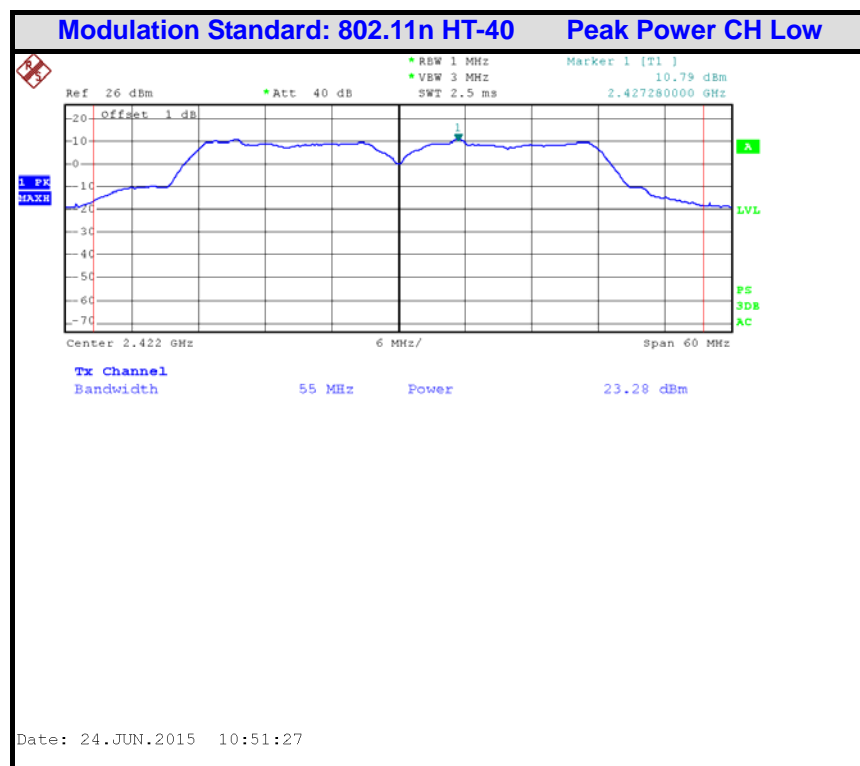
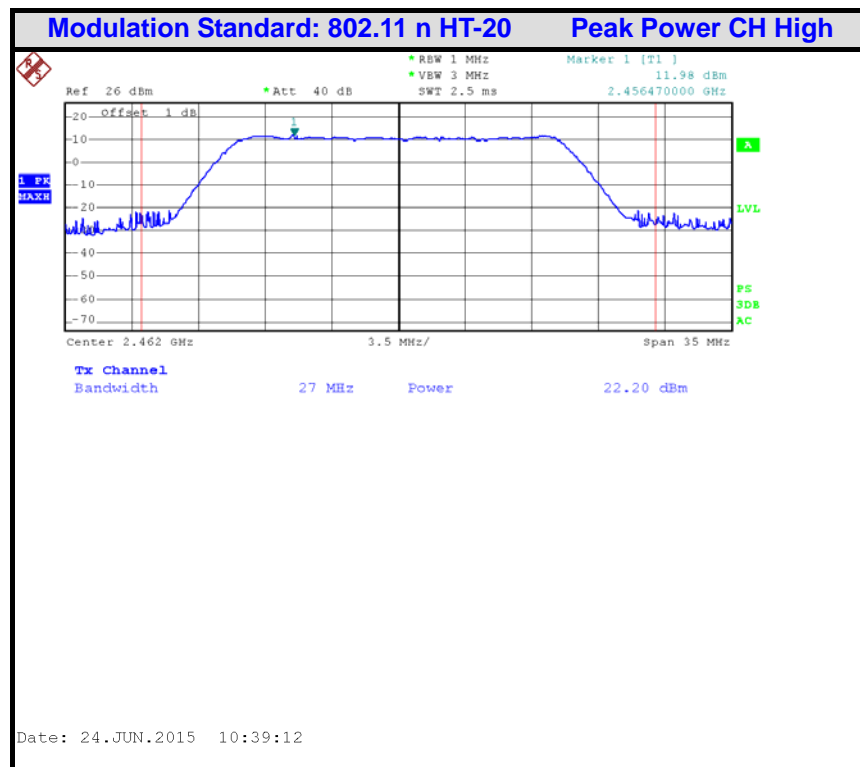
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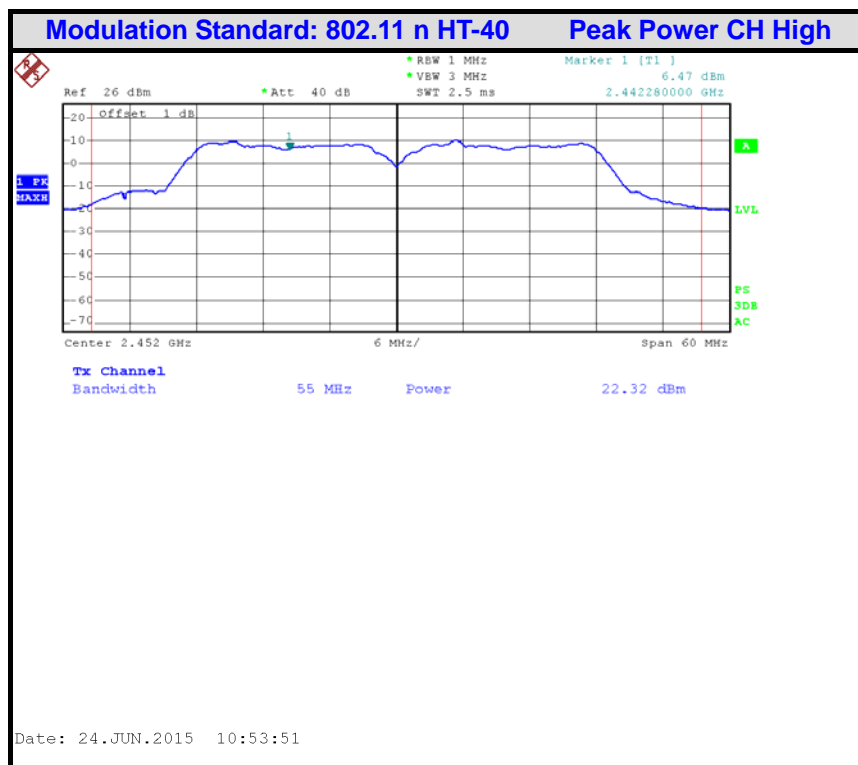
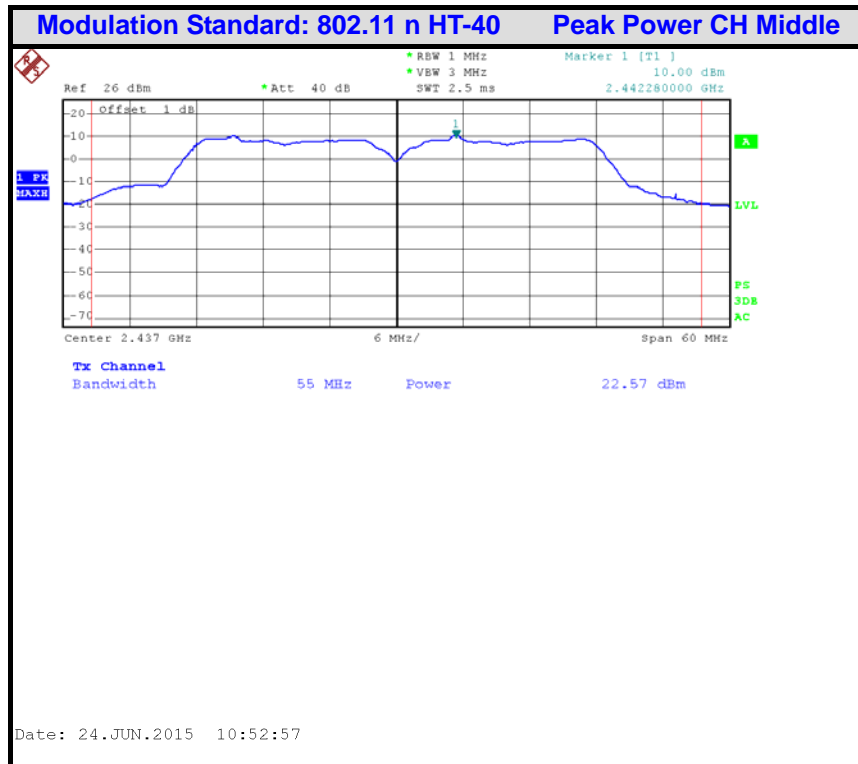
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9.0 PEAK POWER SPECTRAL DENSITY

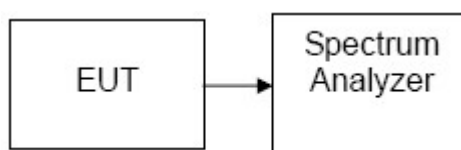
9.1 LIMIT

1. For direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.
2. The direct sequence operating of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section

9.2 MEASUREMENT EQUIPMENT USED

| Peak Power Spectral Density | | | | | |
|-----------------------------|-----------------|-----------------|-----------|------------|-----------|
| Item | Test Equipment | Manufacturer | Model No. | Serial No. | Last Cal. |
| 1 | Signal analyzer | ROHDE & SCHWARZ | FSIQ26 | 100311 | 2015/03 |

9.3 TEST CONFIGURATION



9.4 TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 10kHz, VBW = 30kHz, Span = 1.5 times the bandwidth, Sweep=Auto couple
4. Record the max. reading.
5. Repeat the above procedure until the measurements for all frequencies are completed.

9.5 TEST RESULTS

PASSED

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Test Data

| Modulation Standard | Channel | Frequency (MHz) | PPSD (dBm) | | | Limit (dBm) | Result |
|---|---------|-----------------|------------|---------|-------|-------------|--------|
| | | | Chain a | Chain b | Mix | | |
| 802.11b: 5.5Mbps (Worst Case) | Low | 2412 | -0.57 | -2.31 | 1.66 | 8 | PASSED |
| | Middle | 2437 | -0.48 | -1.26 | 2.16 | | PASSED |
| | High | 2462 | -0.77 | -2.46 | 1.48 | | PASSED |
| 802.11g: 54Mbps (Worst Case) | Low | 2412 | -8.72 | -7.76 | -5.20 | 8 | PASSED |
| | Middle | 2437 | -7.57 | -7.55 | -4.55 | | PASSED |
| | High | 2462 | -7.64 | -8.29 | -4.94 | | PASSED |
| 802.11n(20): 300Mbps (Worst Case) | Low | 2412 | -7.26 | -6.91 | -4.07 | 8 | PASSED |
| | Middle | 2437 | -6.01 | -5.83 | -2.91 | | PASSED |
| | High | 2462 | -6.43 | -7.74 | -4.03 | | PASSED |
| 802.11n(40): 300Mbps (Worst Case) | Low | 2422 | -10.03 | -9.32 | -6.65 | 8 | PASSED |
| | Middle | 2437 | -9.24 | -9.61 | -6.41 | | PASSED |
| | High | 2452 | -9.16 | -10.59 | -6.81 | | PASSED |

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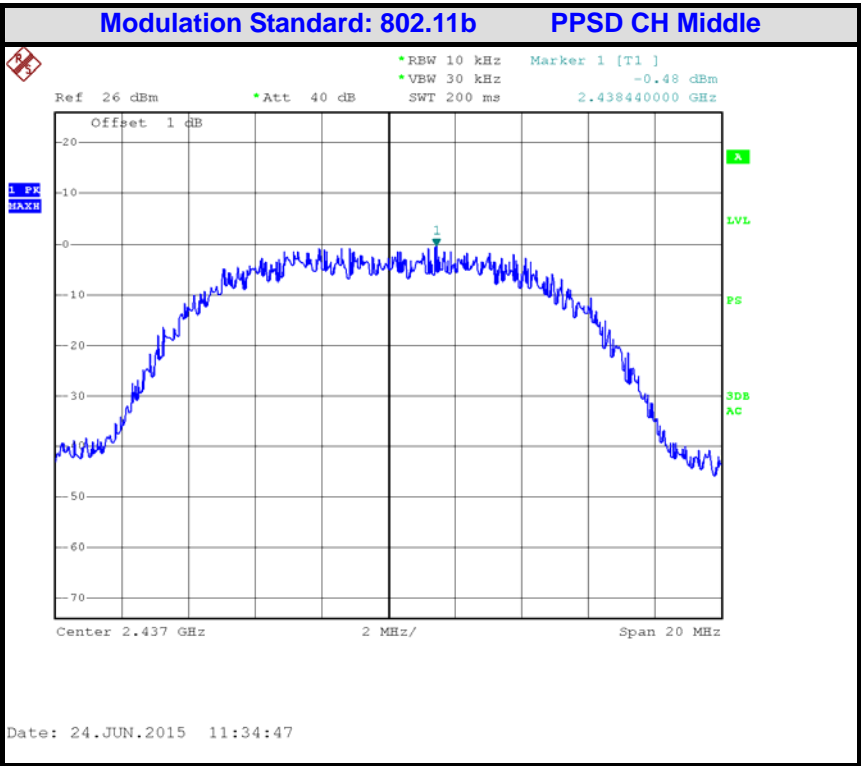
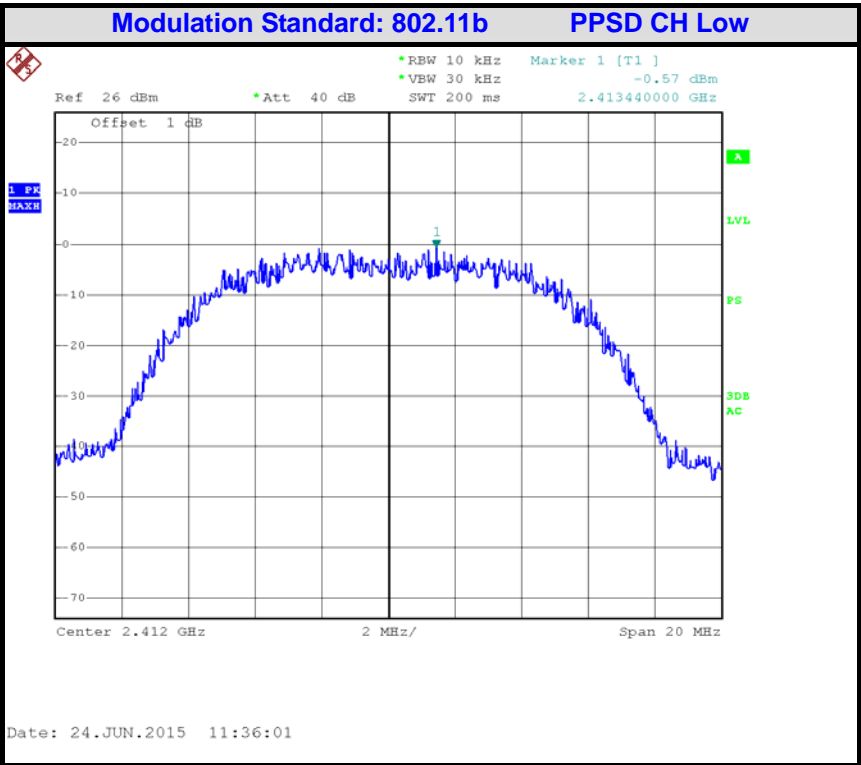
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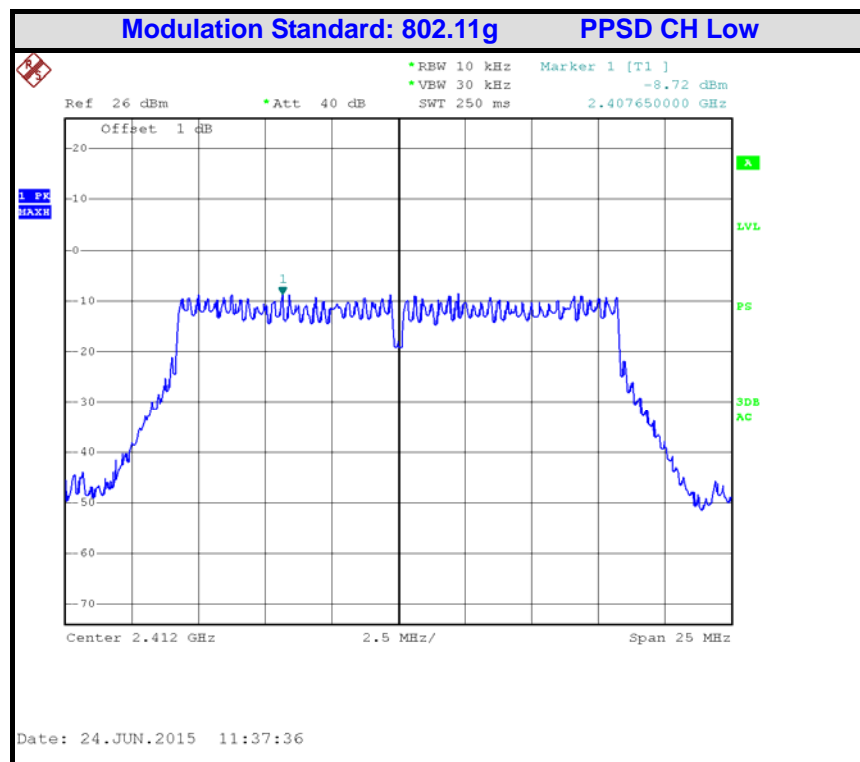
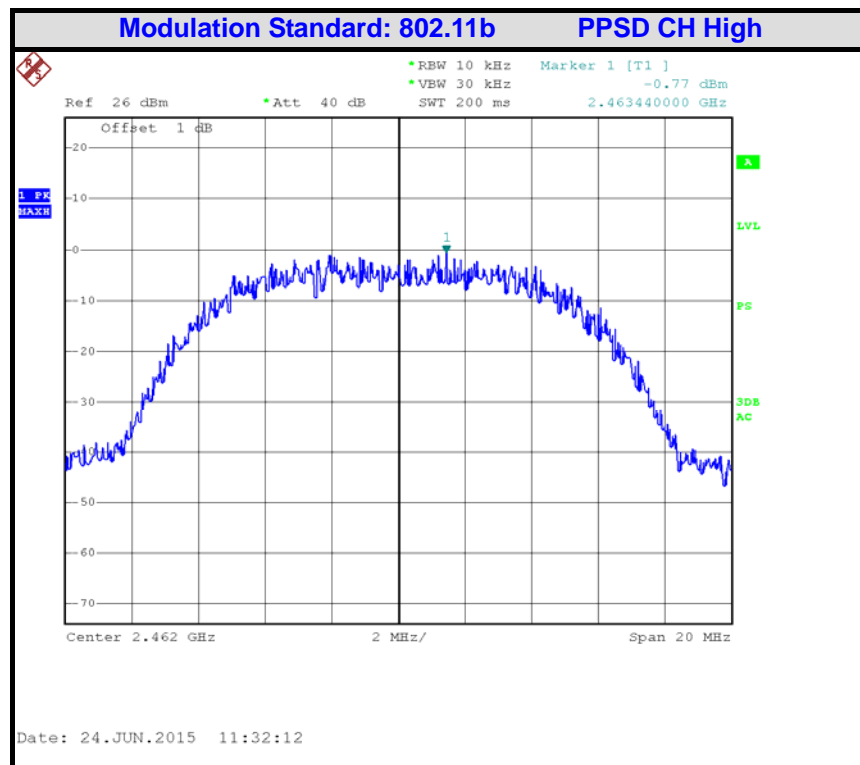
Test Plot
Chain:a



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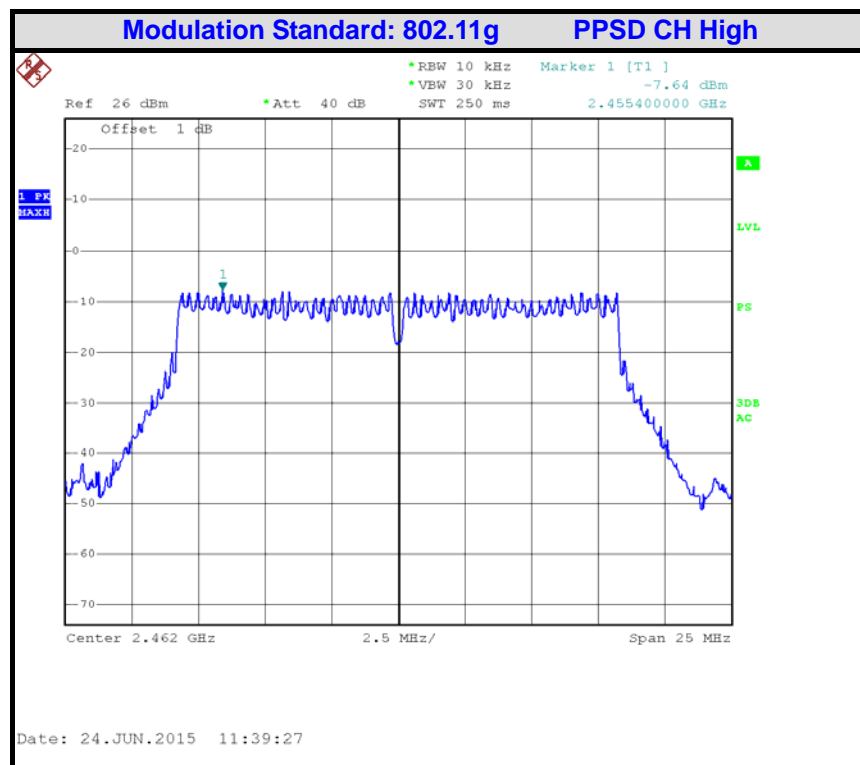
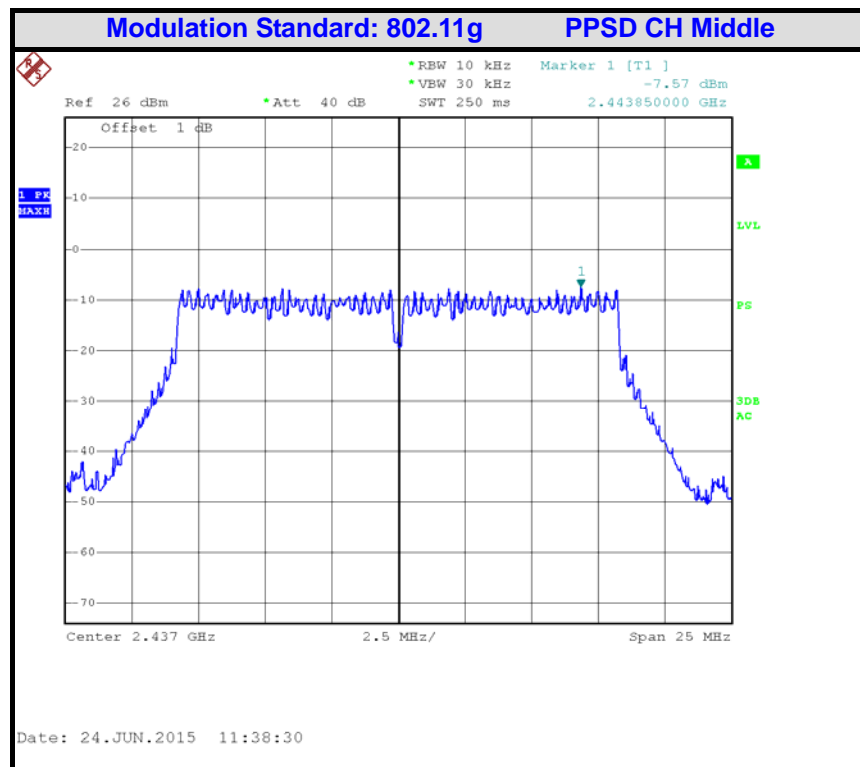
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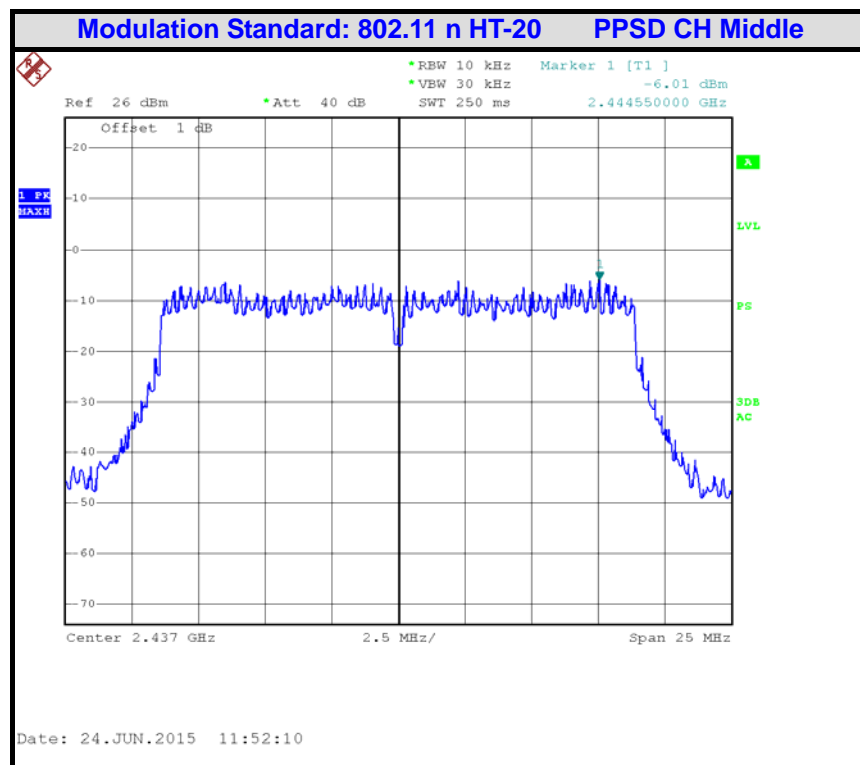
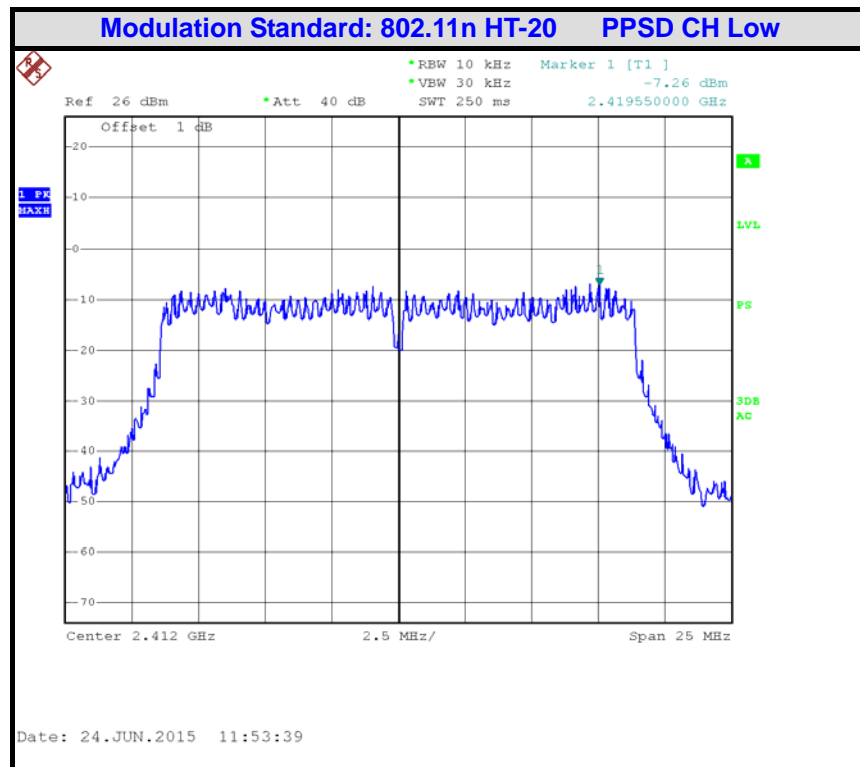
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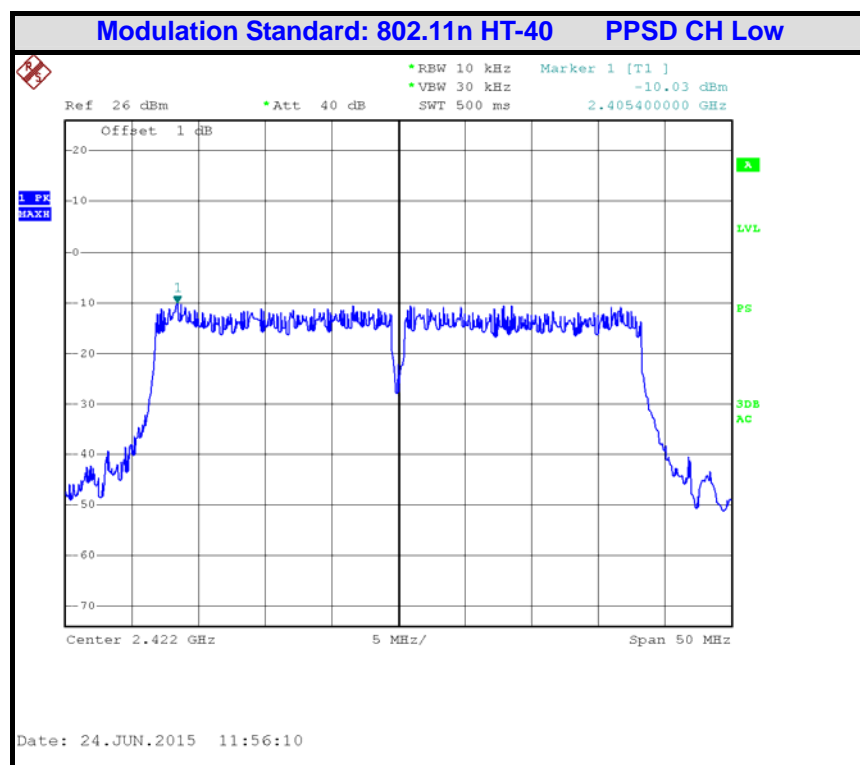
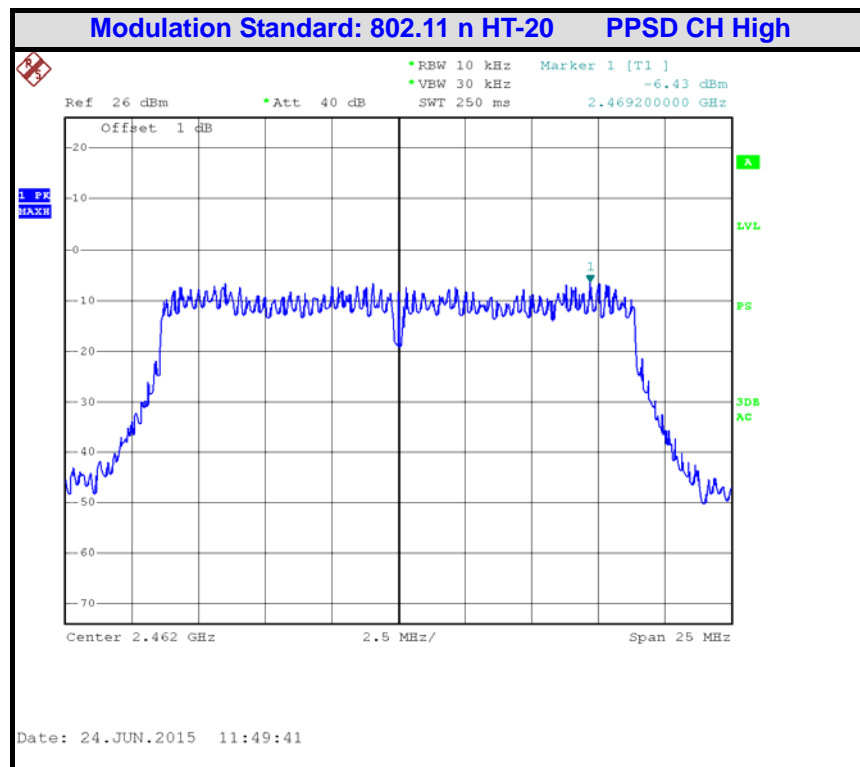
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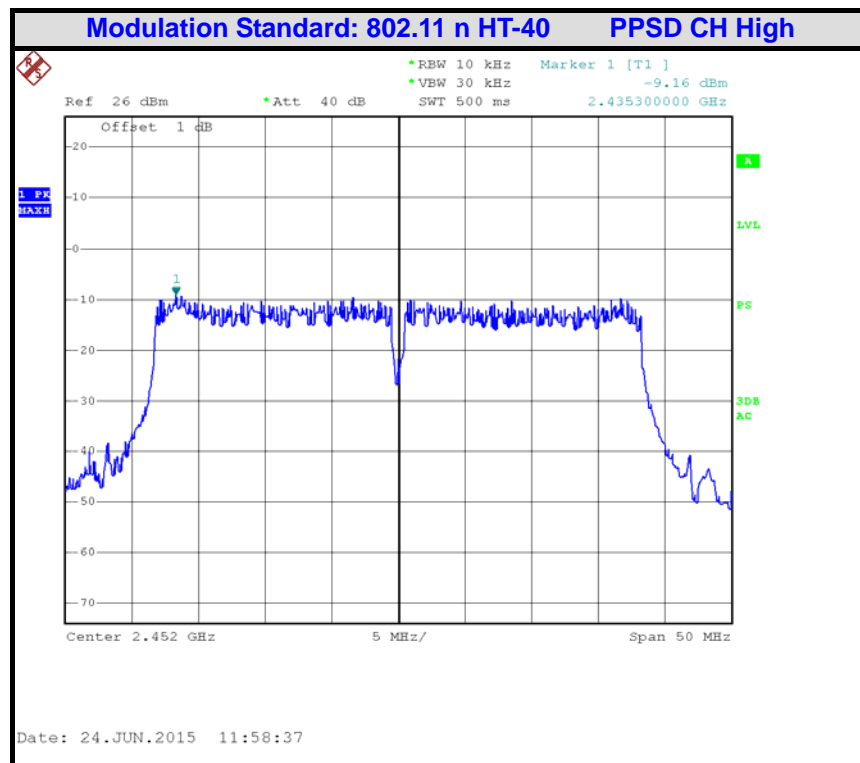
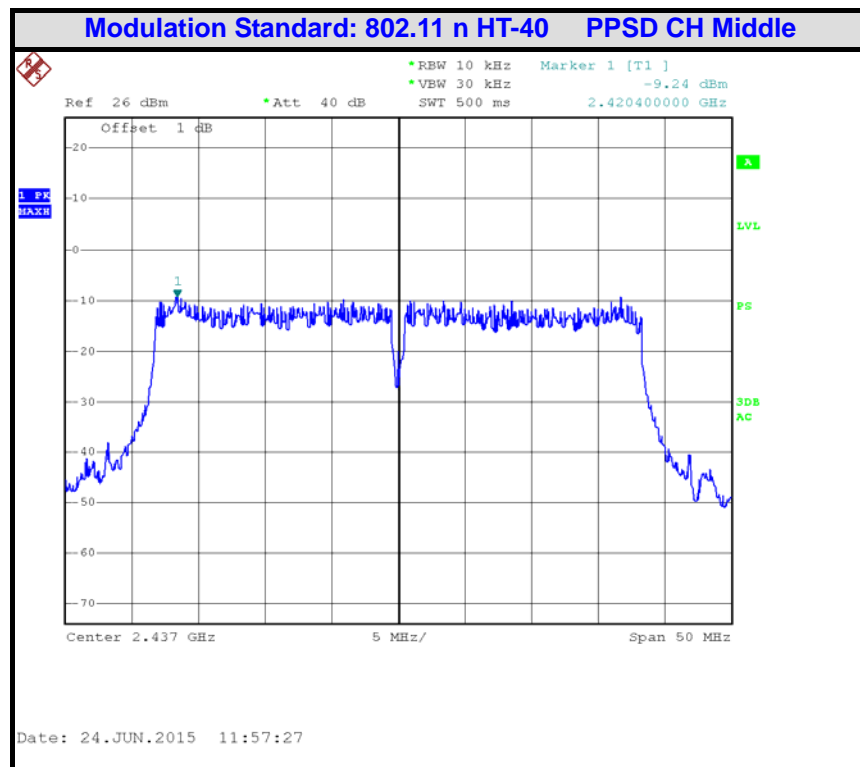
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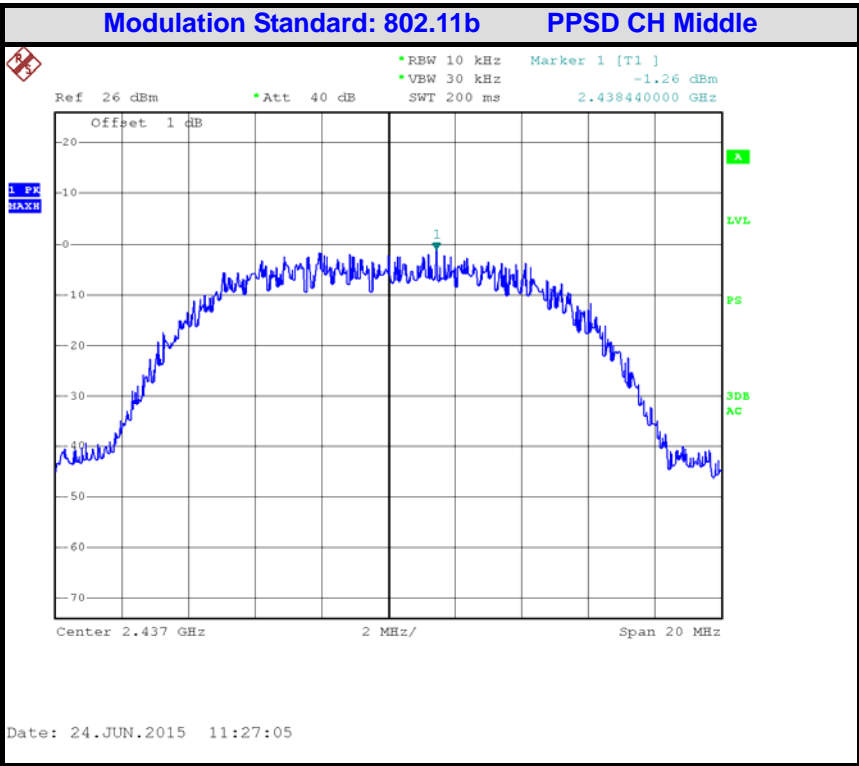
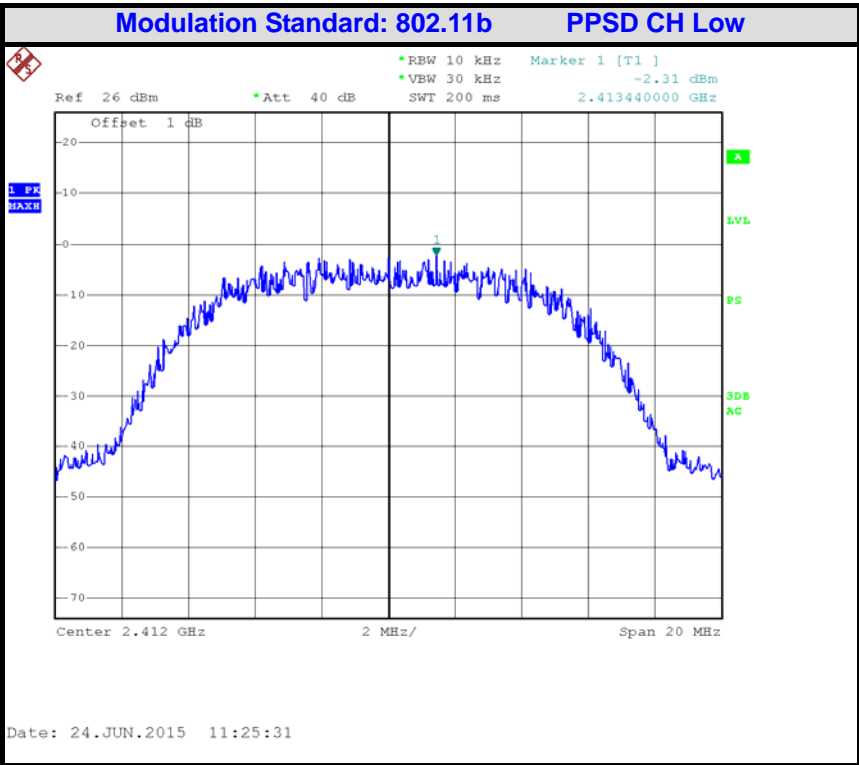
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Chain:b



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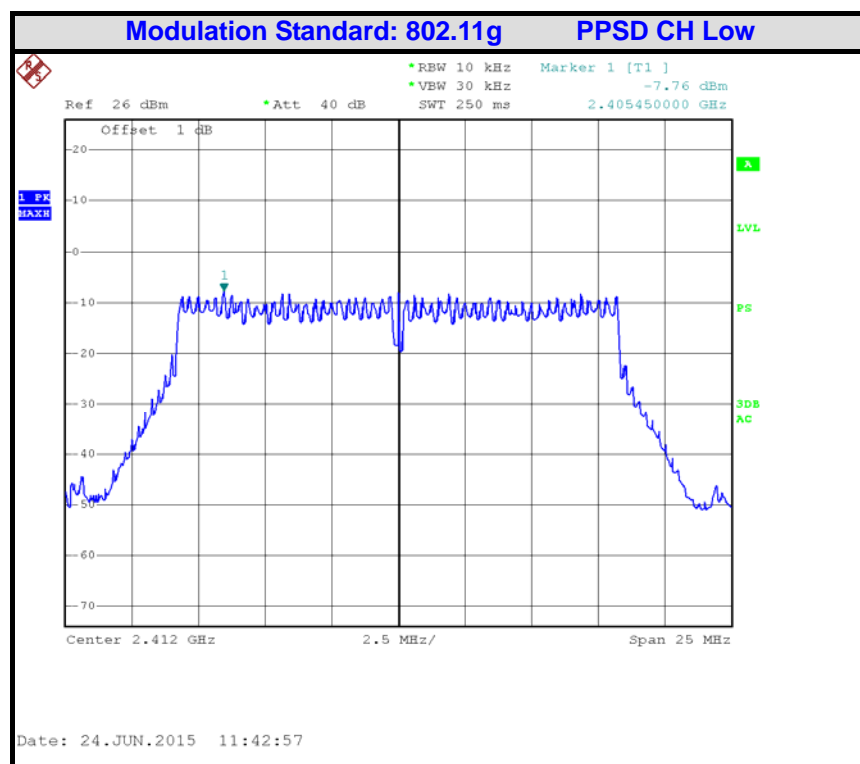
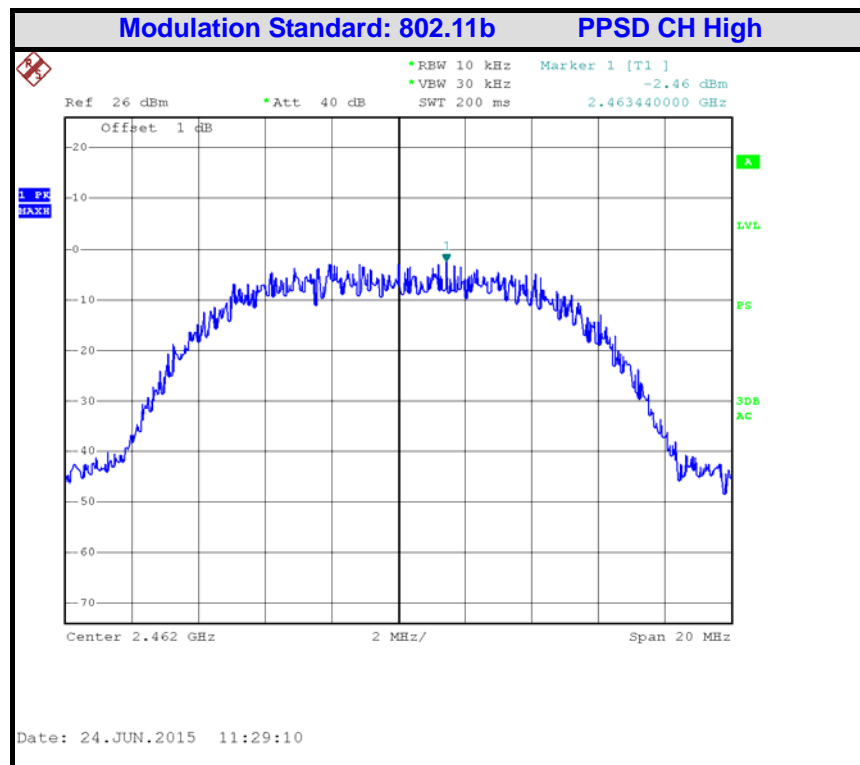
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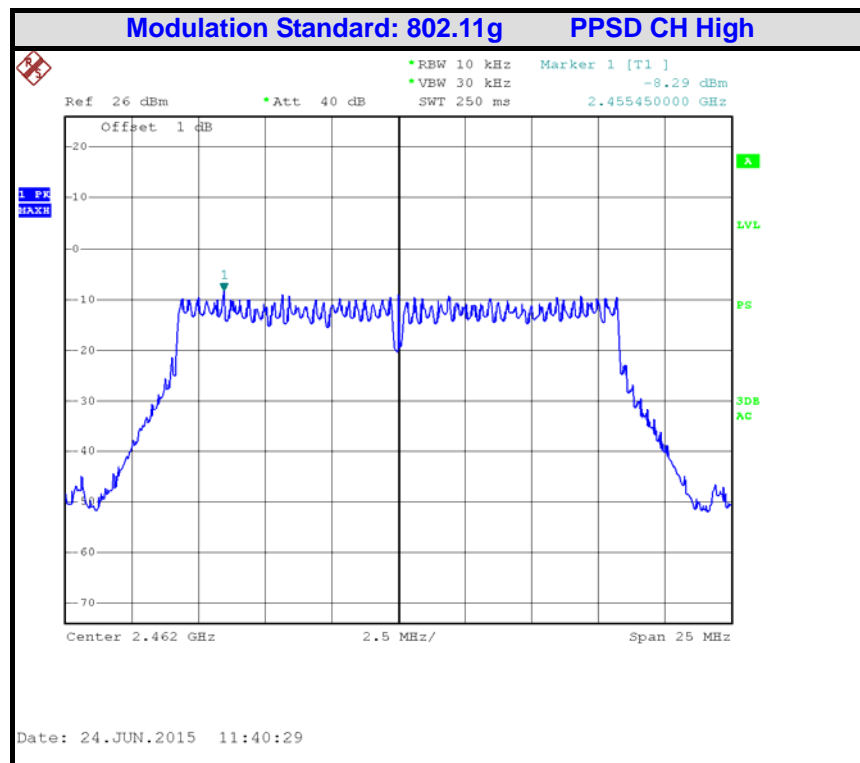
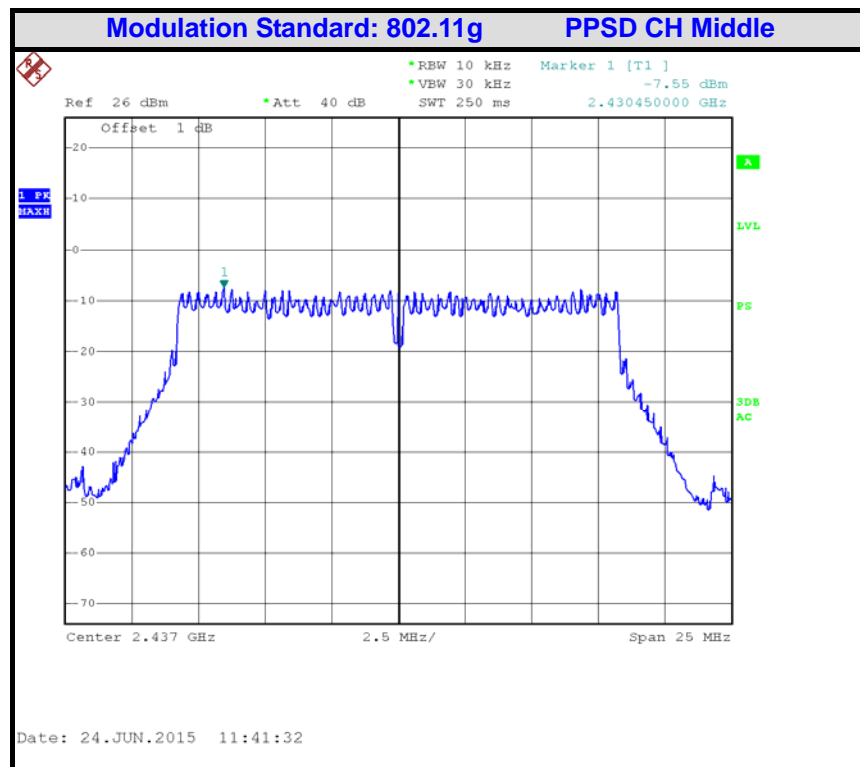
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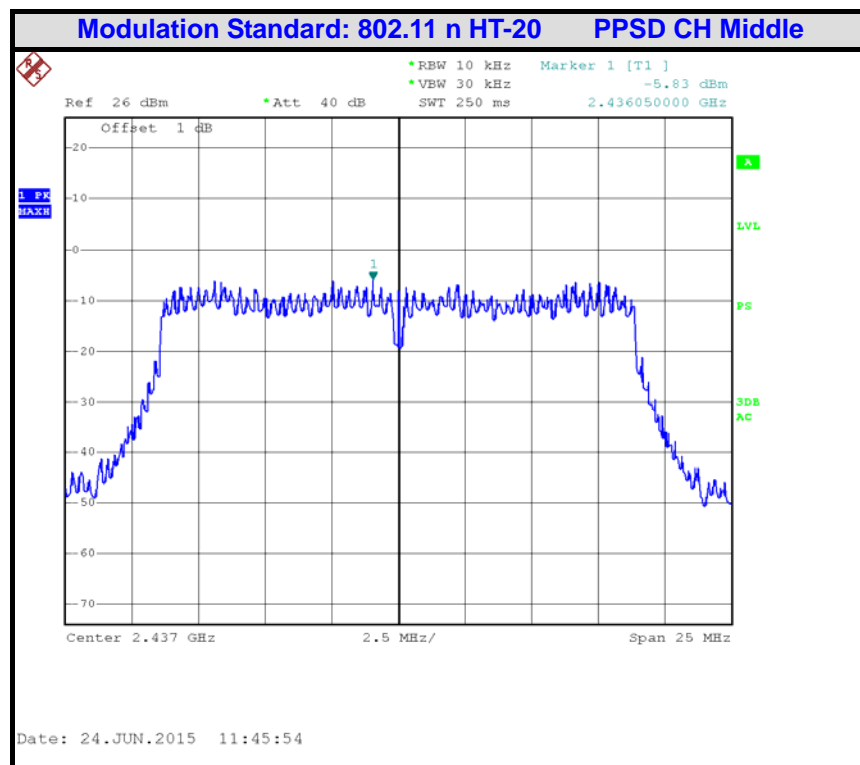
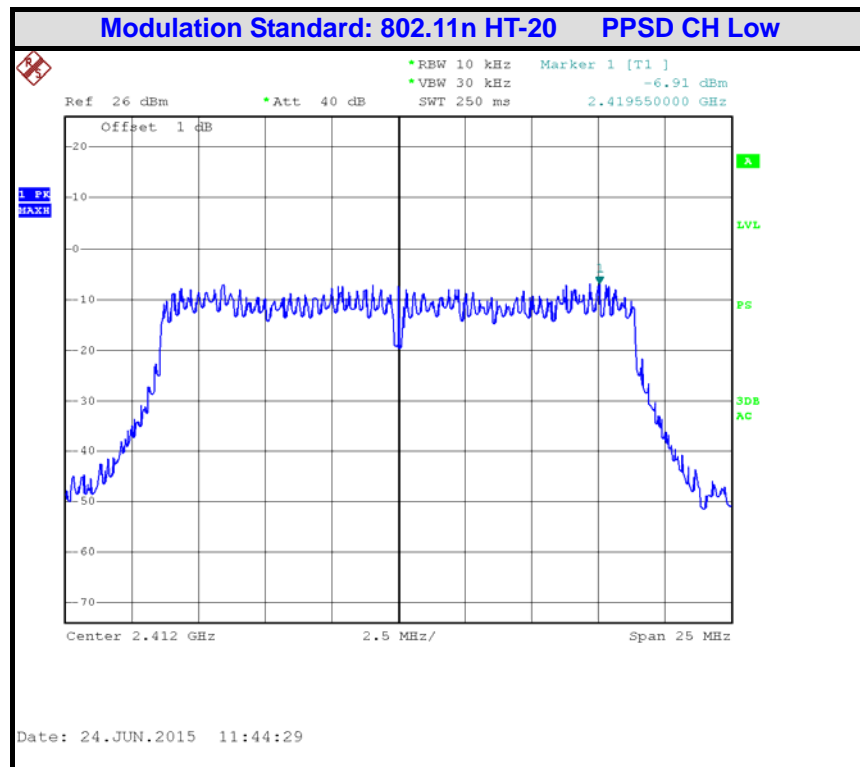
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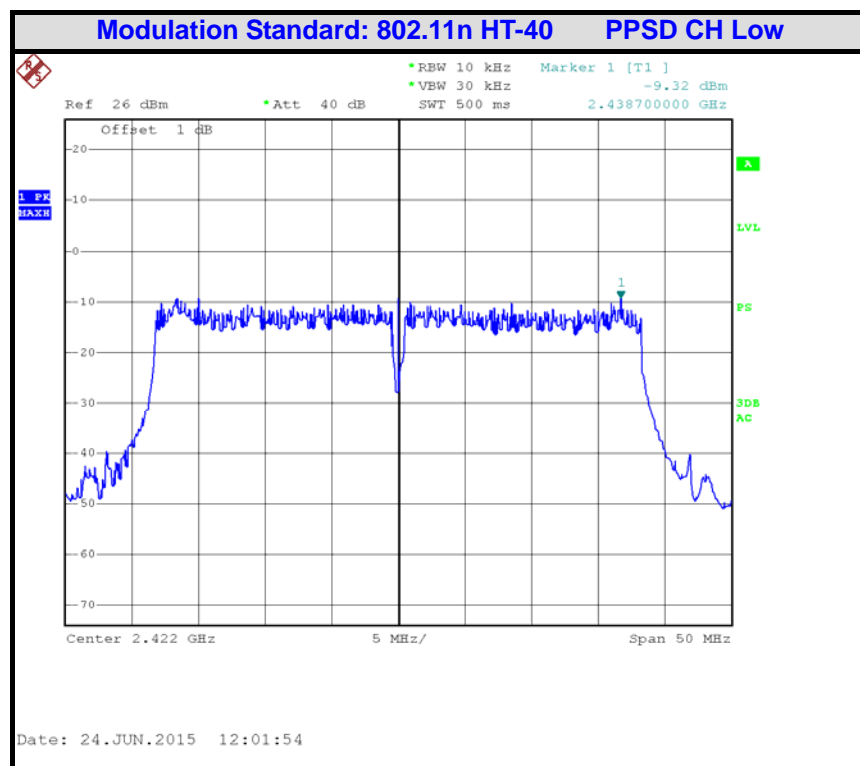
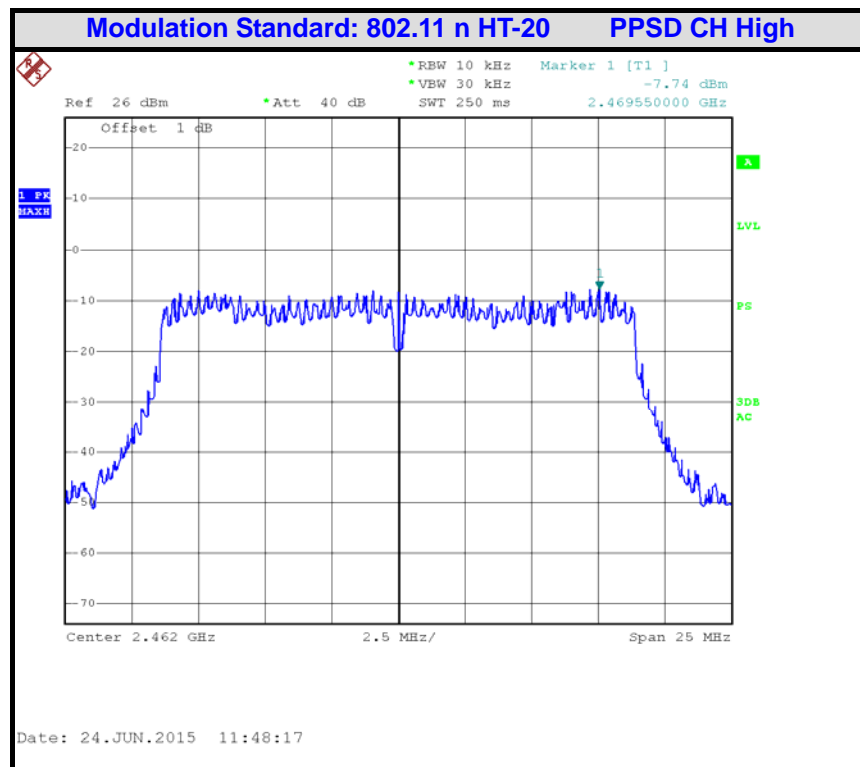
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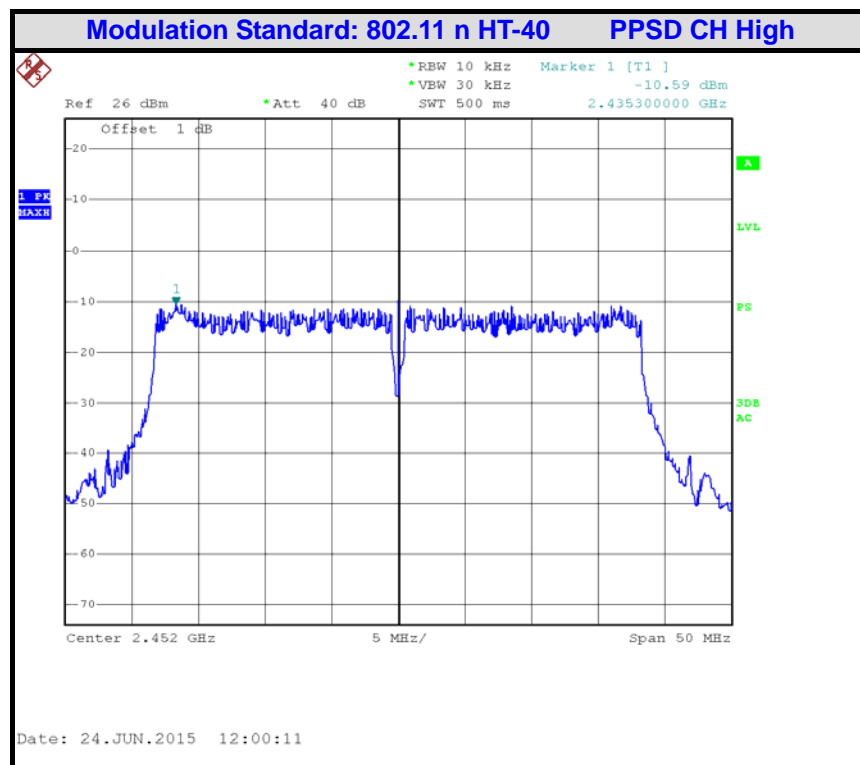
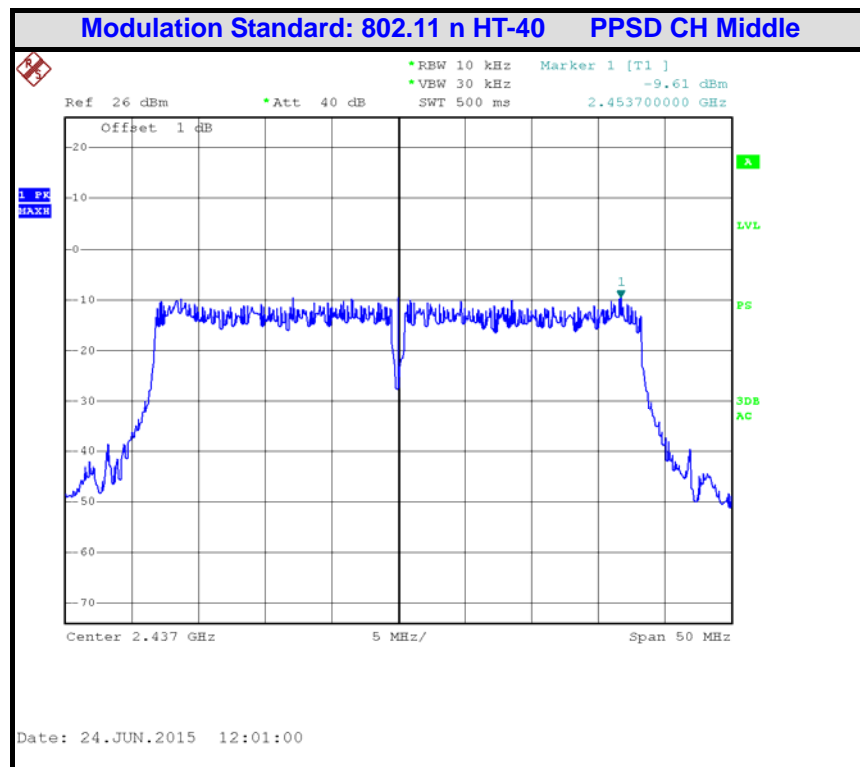
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10.0 BAND EDGES MEASUREMENT

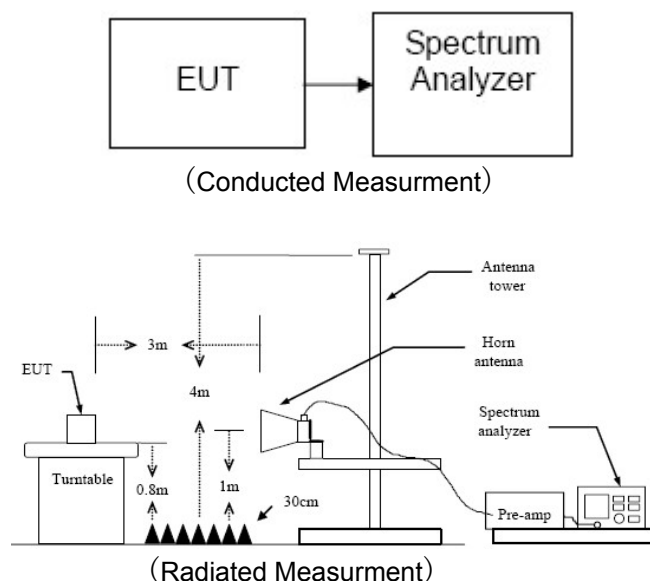
10.1 LIMIT

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. 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 Section 15.205(c)).

10.2 MEASUREMENT EQUIPMENT USED

| Radiated disturbance (electric field) | | | | | |
|---------------------------------------|-------------------|-----------------|------------|------------|-----------|
| Item | Test Equipment | Manufacturer | Model No. | Serial No. | Last Cal. |
| 1 | EMI Test Receiver | ROHDE & SCHWARZ | ESCI | 100868 | 2014/11 |
| 2 | Biconical Antenna | ROHDE & SCHWARZ | HK116 | 100221 | 2015/03 |
| 3 | Log per Antenna | ROHDE & SCHWARZ | HL223 | 100226 | 2015/03 |
| 4 | Log per Antenna | ROHDE & SCHWARZ | HL050 | 100186 | 2015/03 |
| 5 | Signal analyzer | ROHDE & SCHWARZ | FSIQ26 | 100311 | 2015/03 |
| 6 | Loop Antenna | A.R.A | PLA-1030/B | 1030 | 2014/11 |
| 7 | EMI Test Software | EZ-EMC | Farad | N/A | N/A |

10.3 Test Configuration



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10.4 TEST PROCEDURE**Conducted Measurement:**

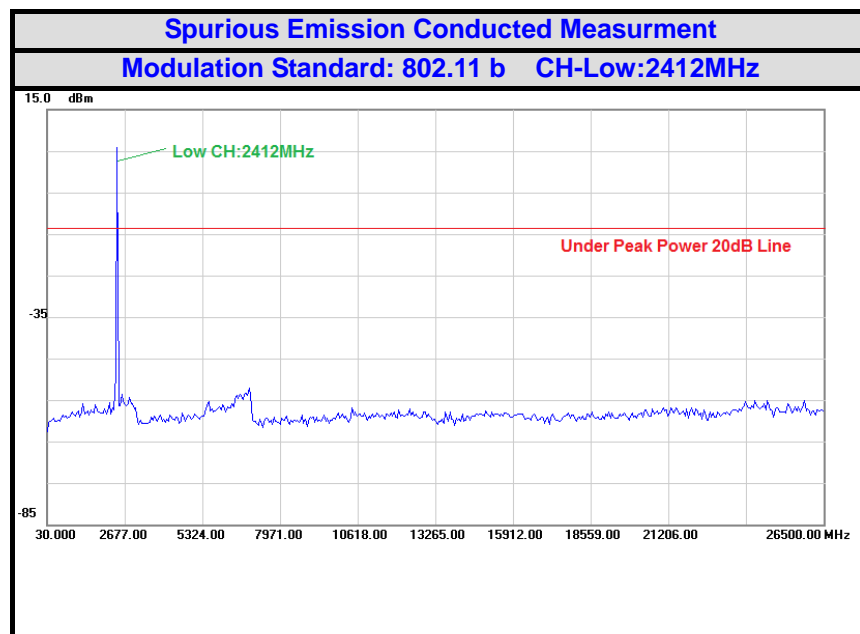
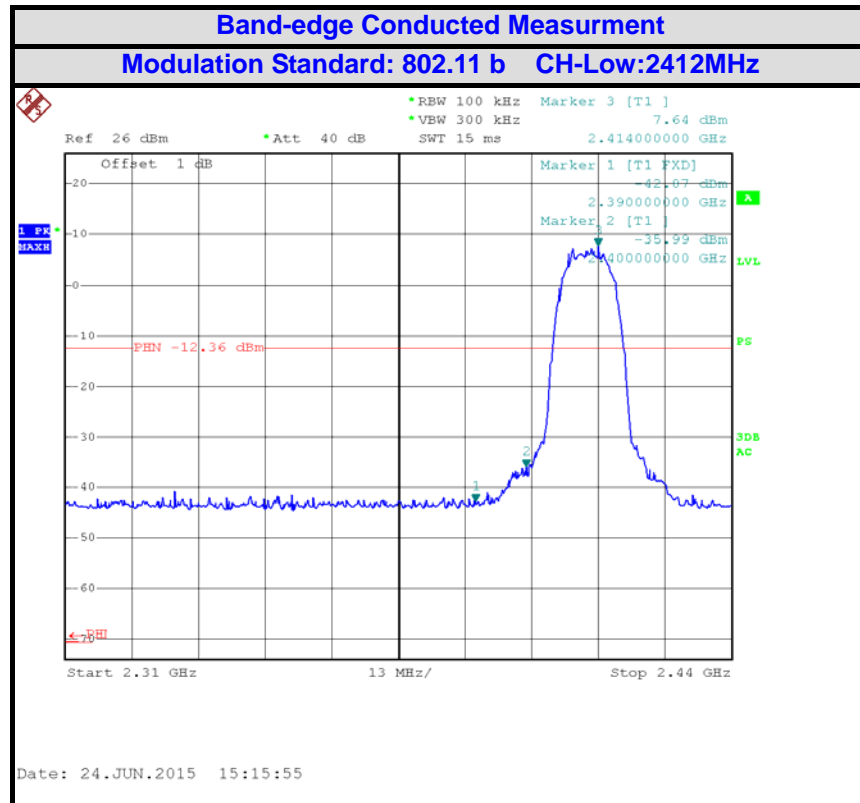
1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 100kHz, VBW = 300kHz, Sweep=Auto couple
4. Record the max. reading.
5. Repeat the above procedure until the measurements for all frequencies are

Radiated Measurement:

1. The EUT is placed on a turntable, which is 0.8m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
 - (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
 - (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

10.5 TEST RESULTS

Refer to attach spectrum analyzer data chart.

Conducted Measurement:**Chain a:****Test Polt:**

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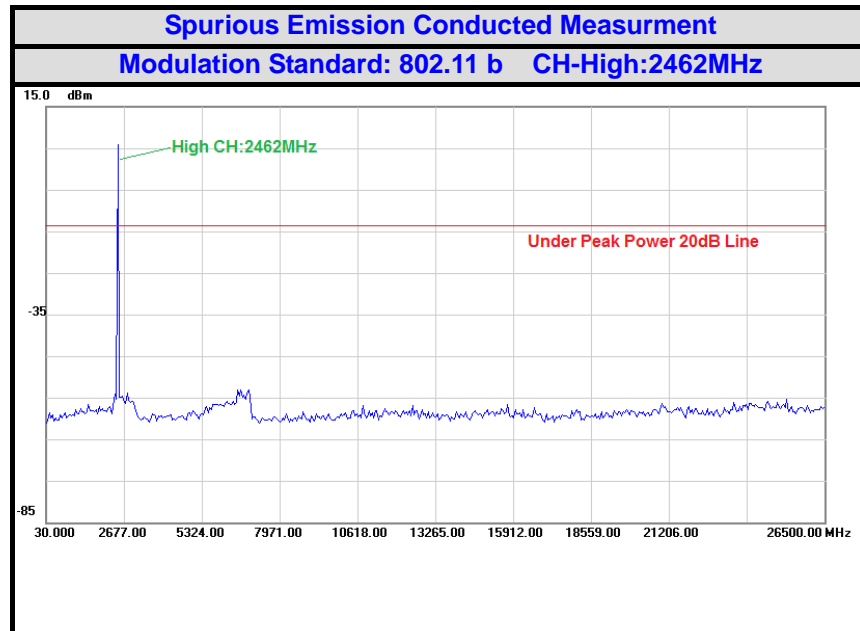
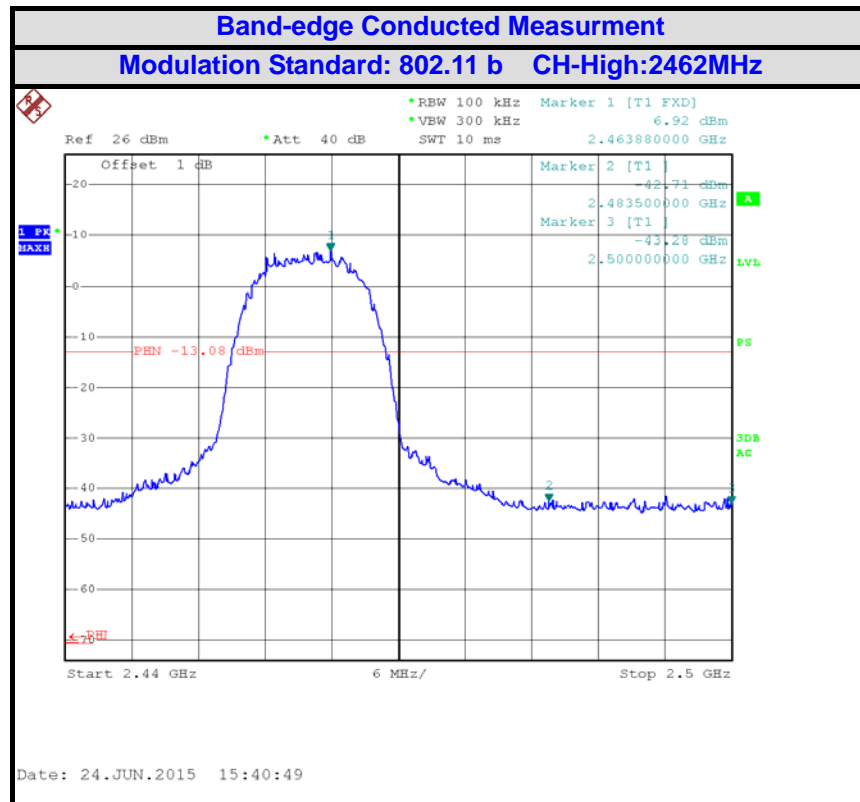
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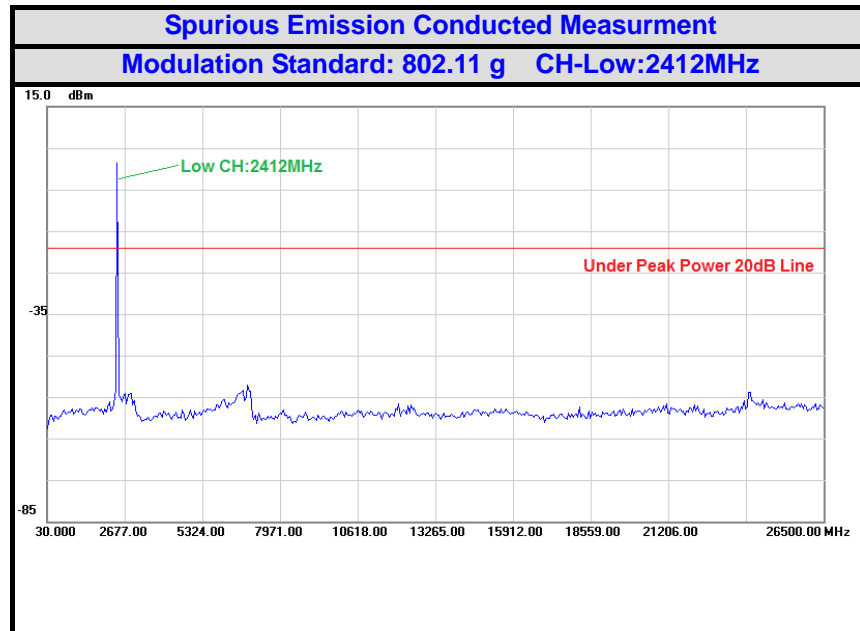
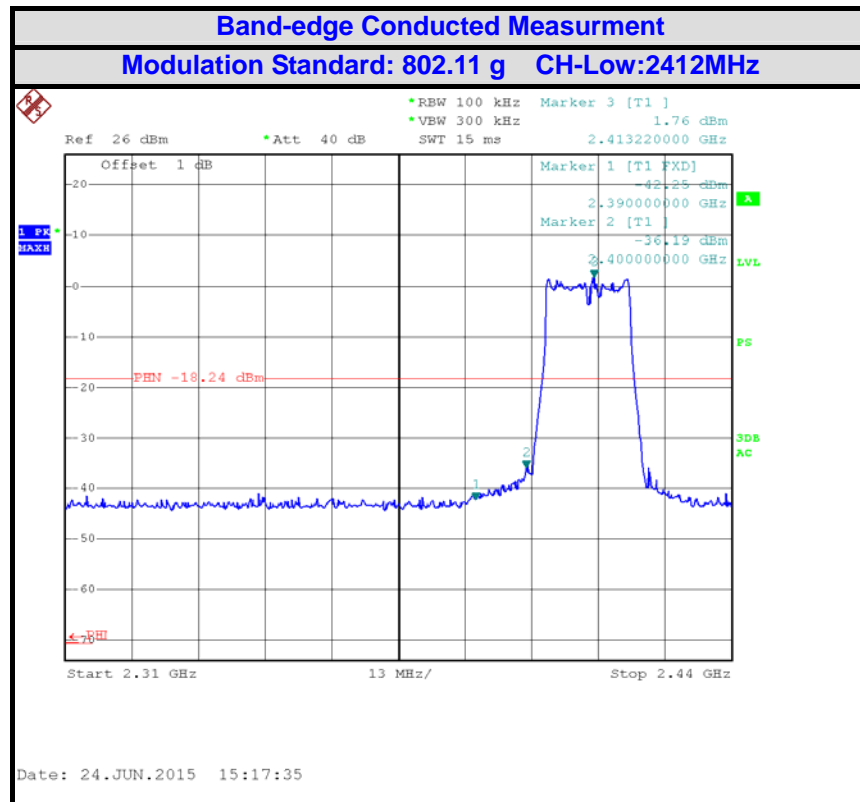
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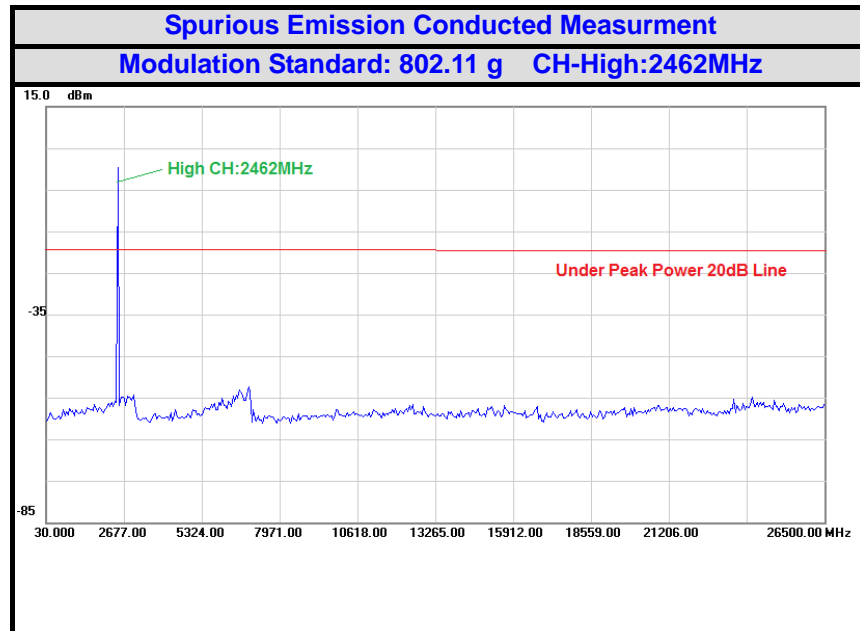
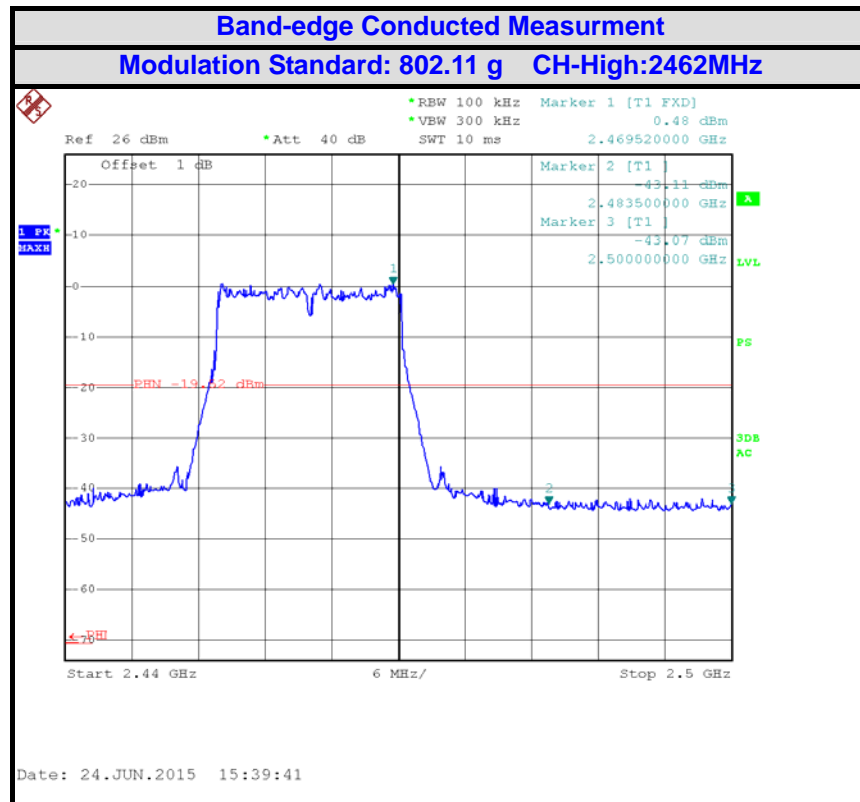
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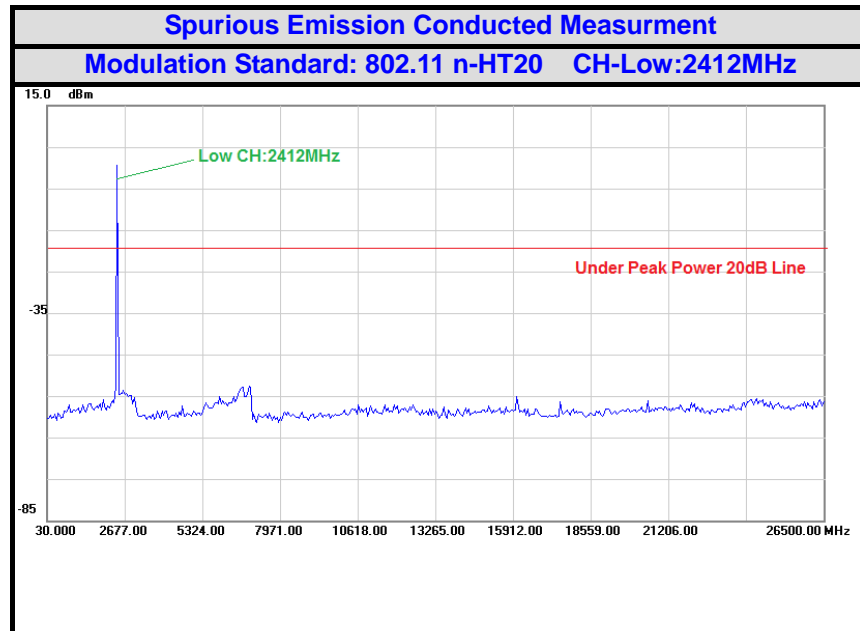
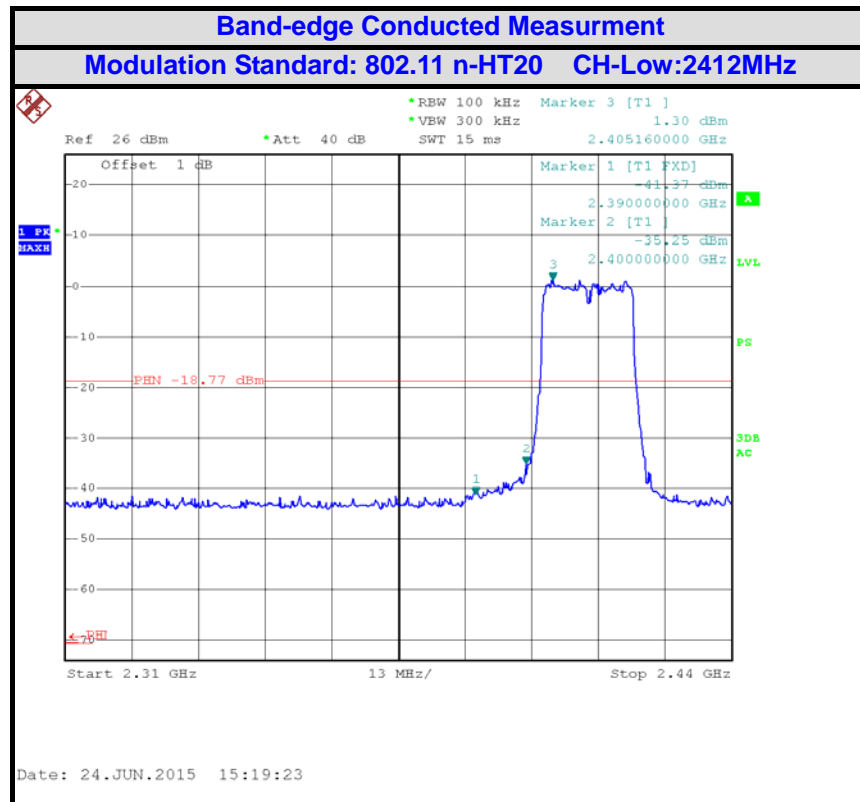
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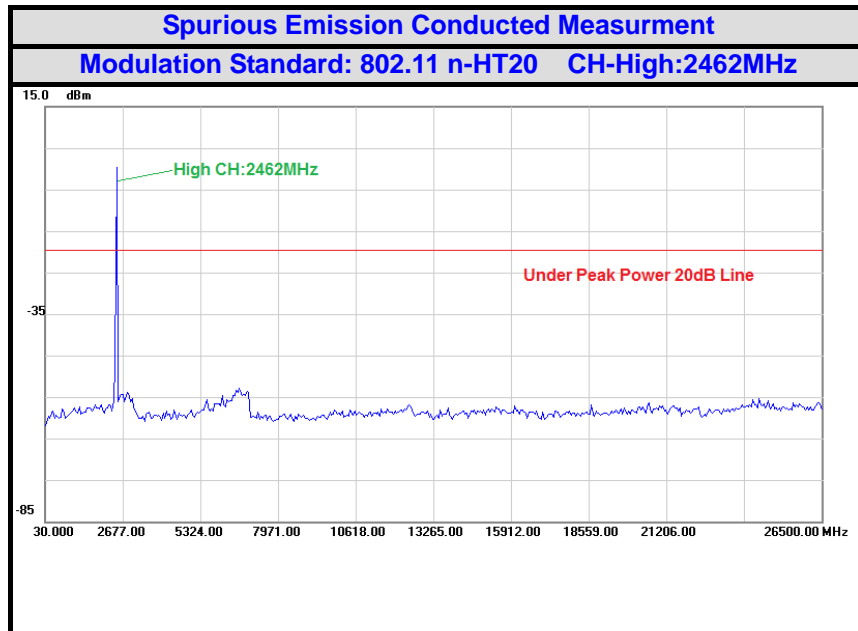
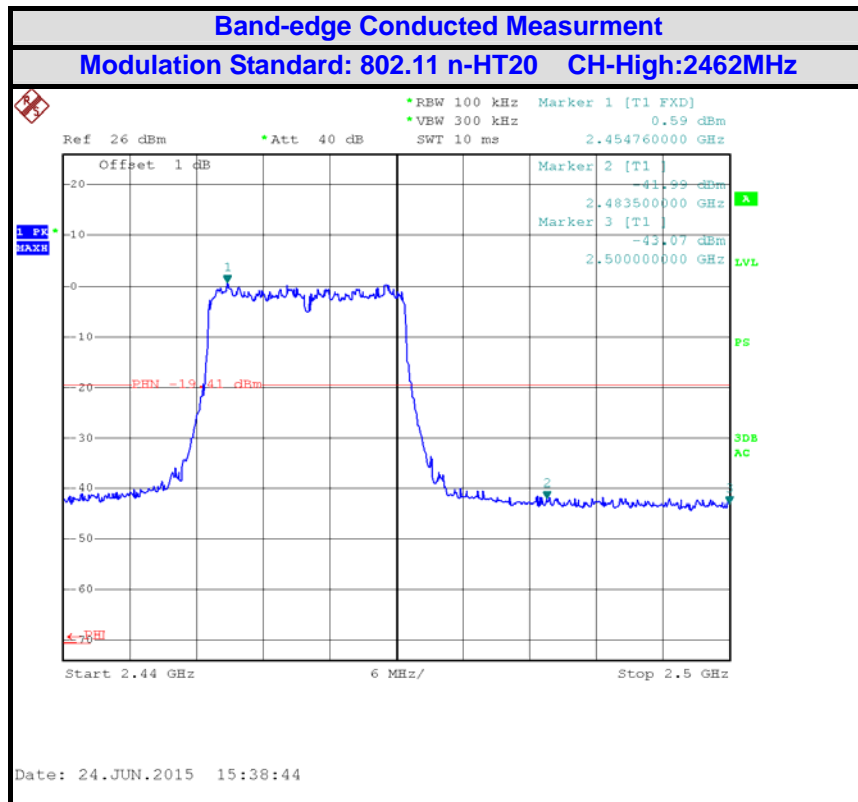
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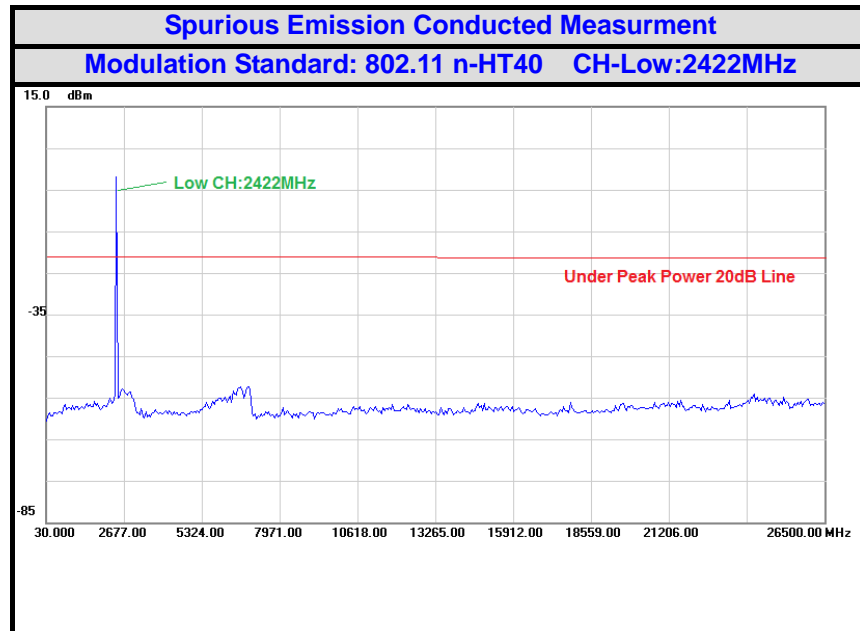
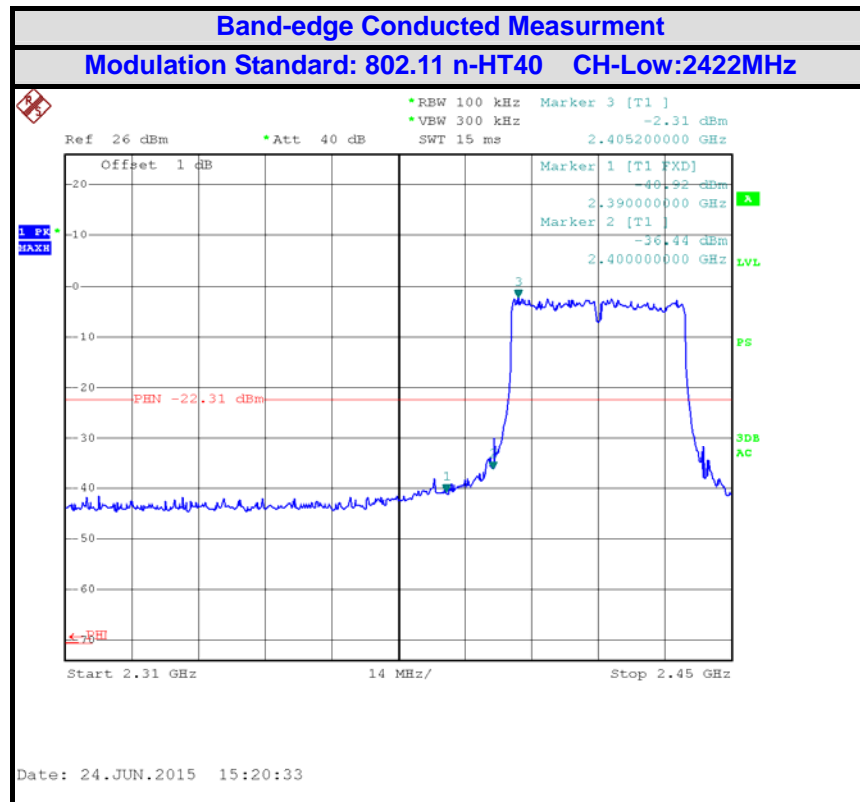
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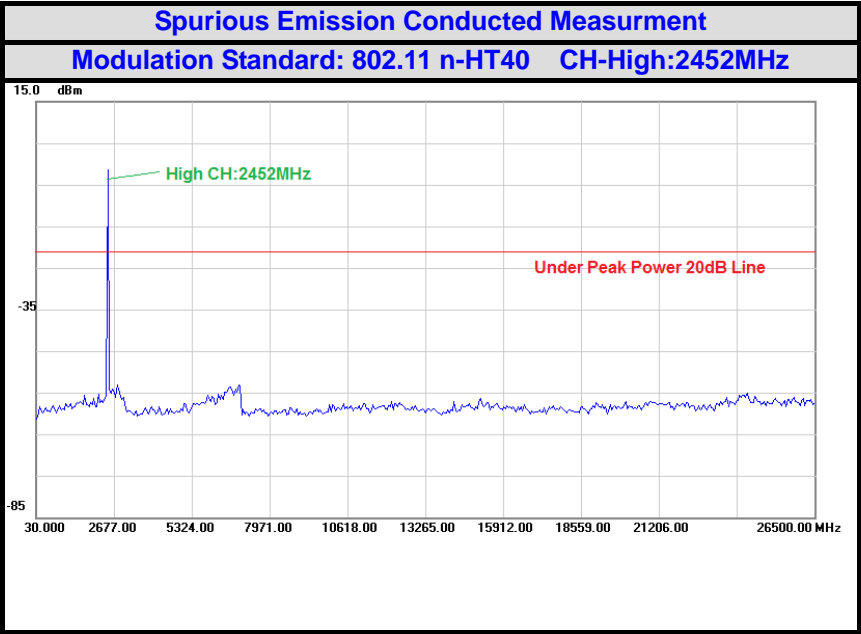
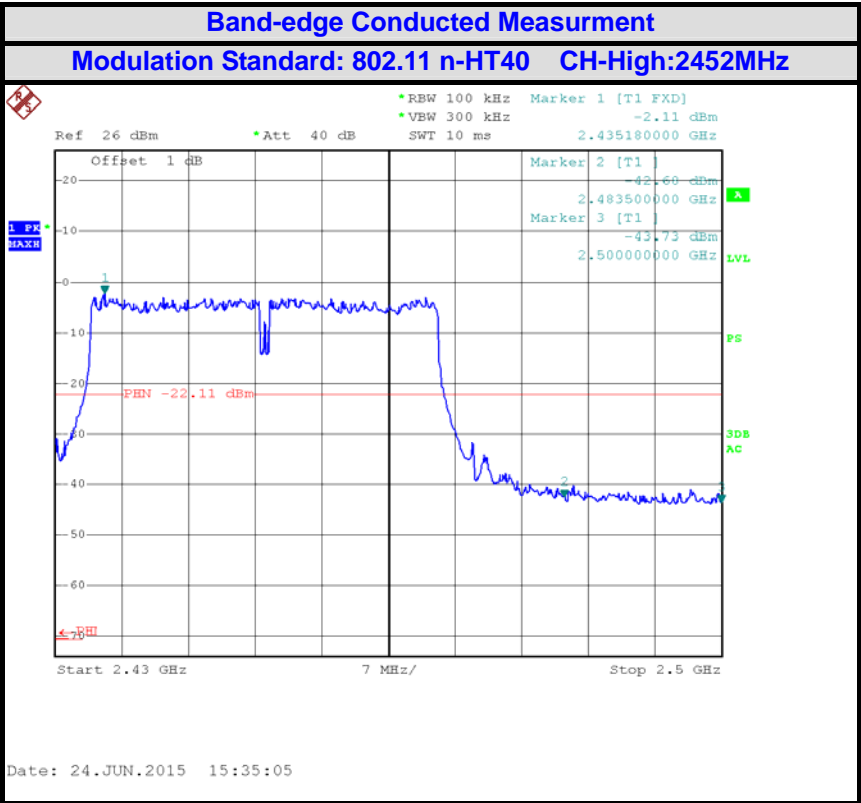
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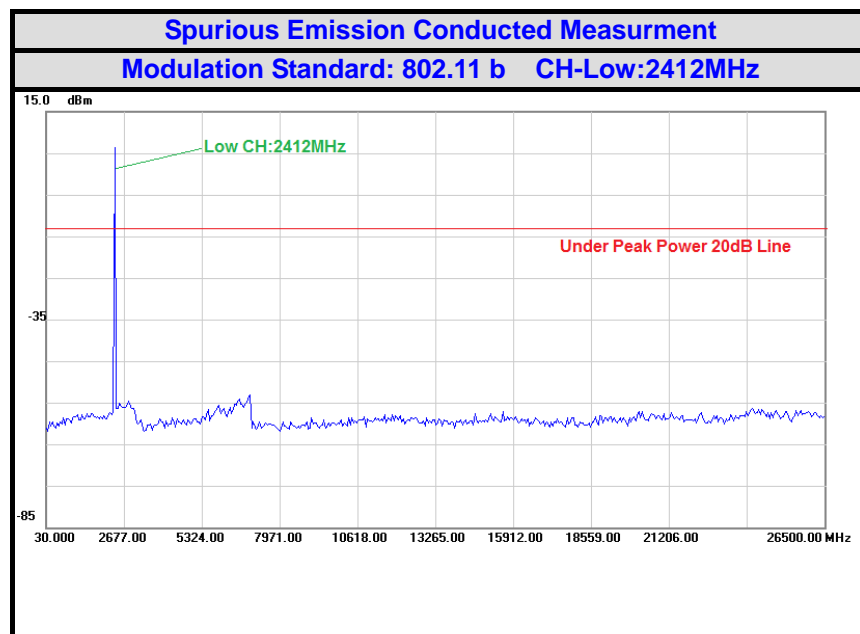
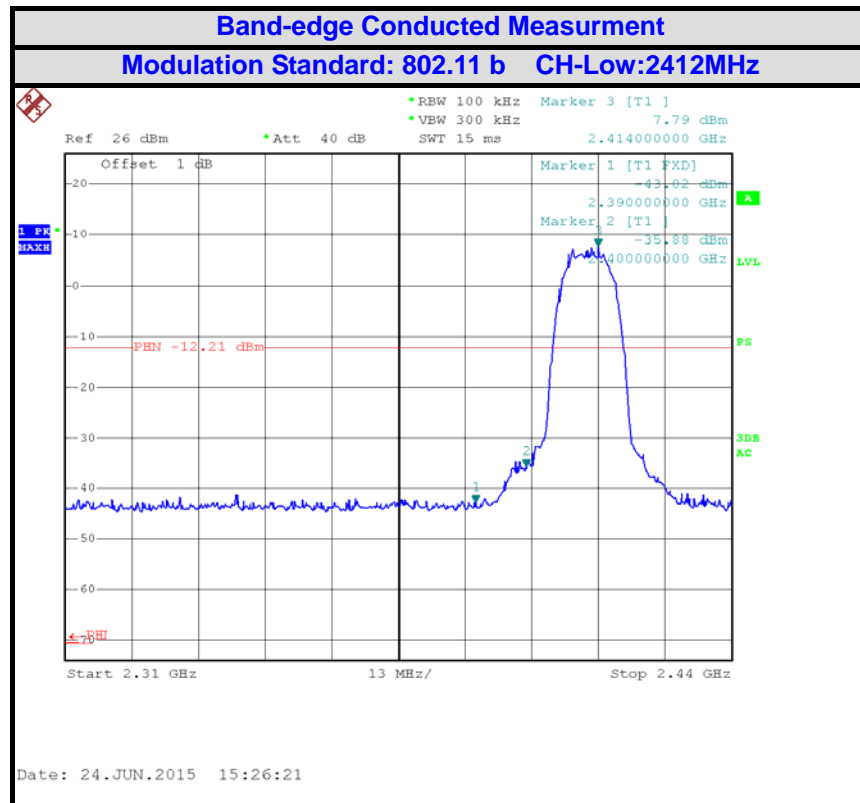
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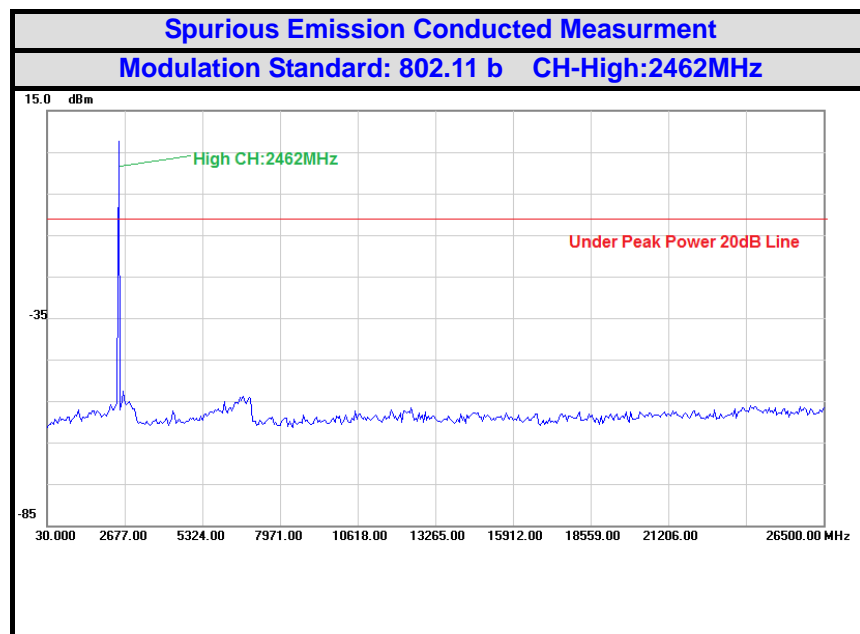
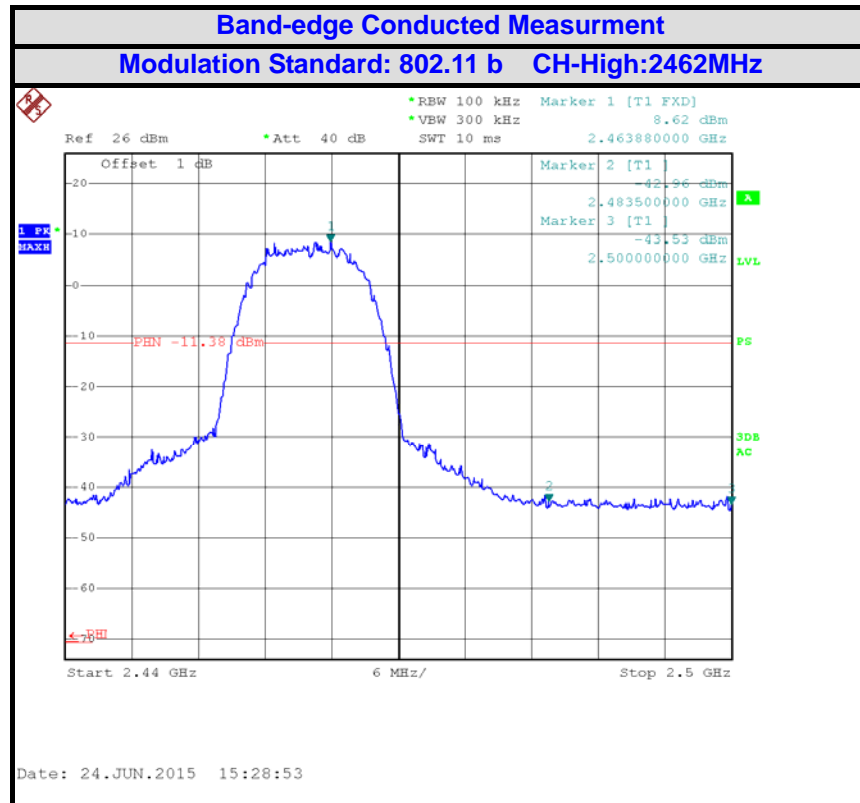
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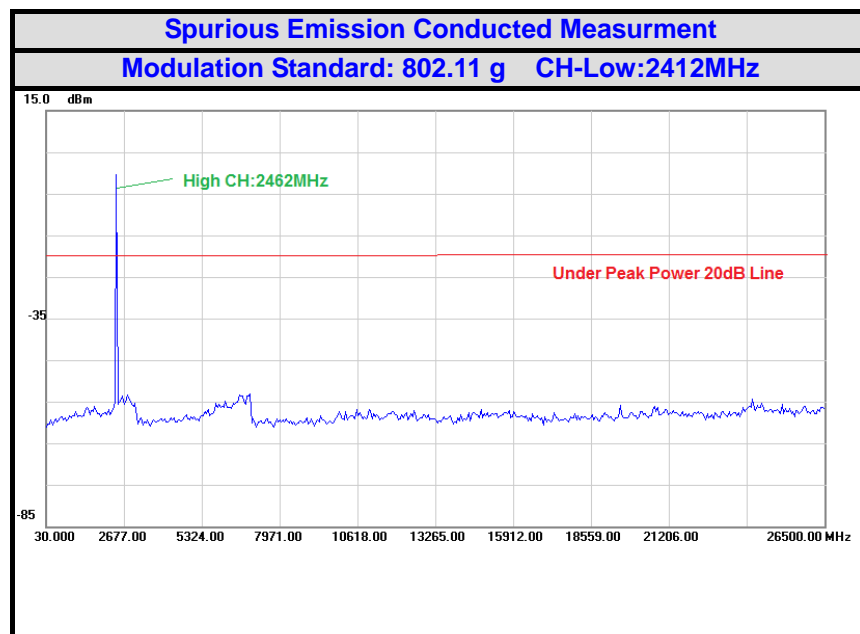
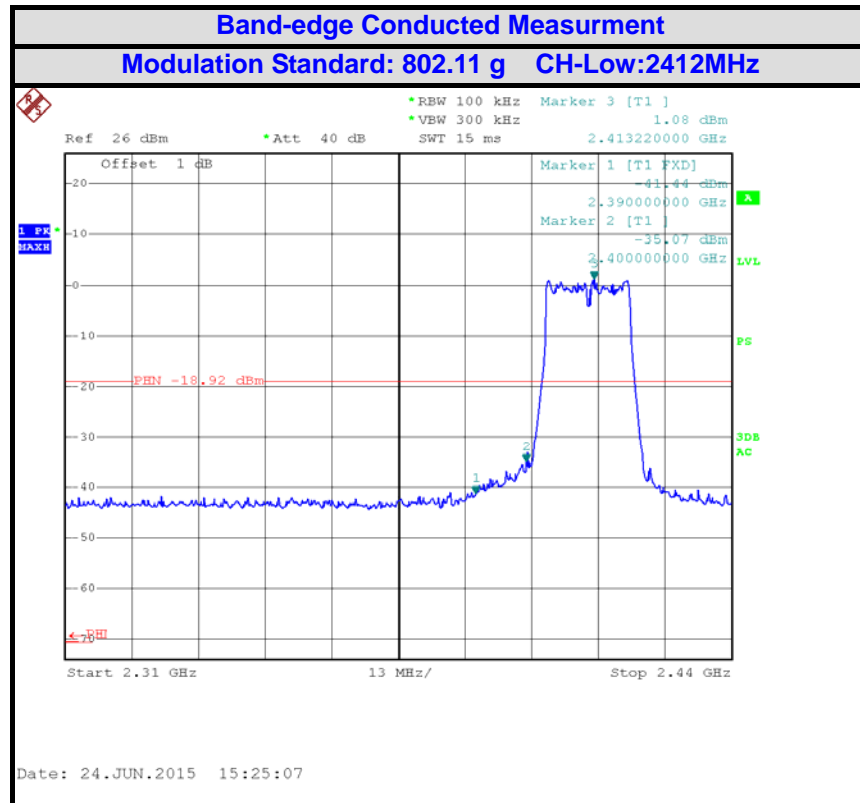
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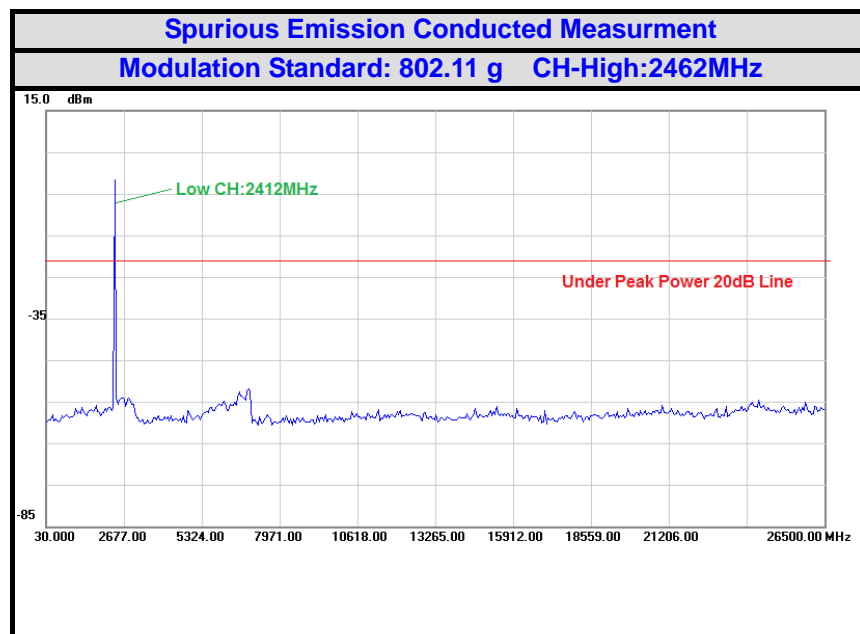
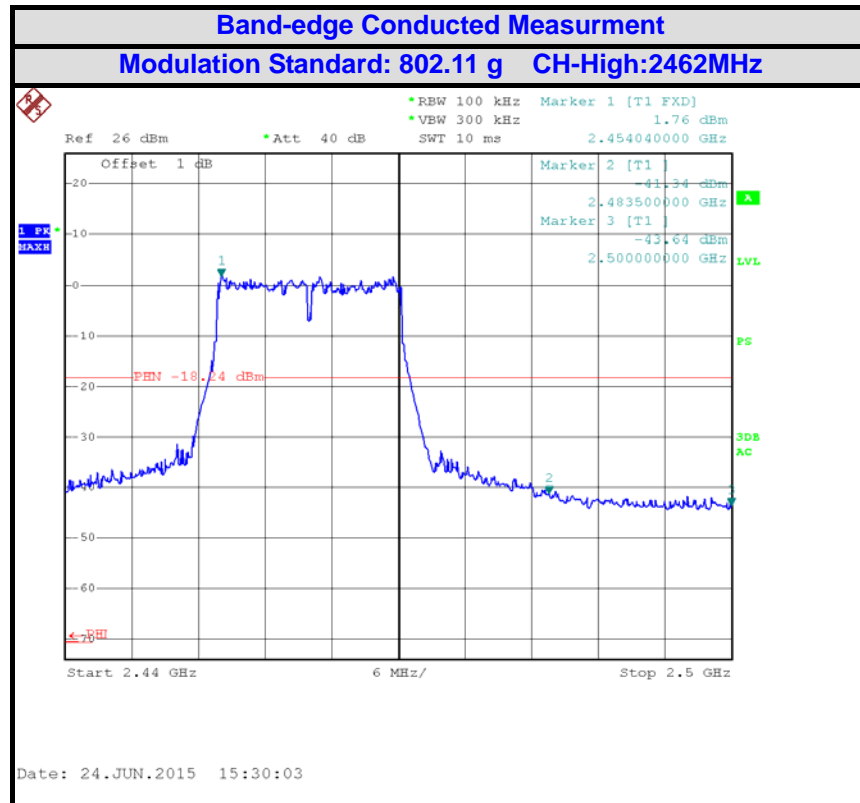
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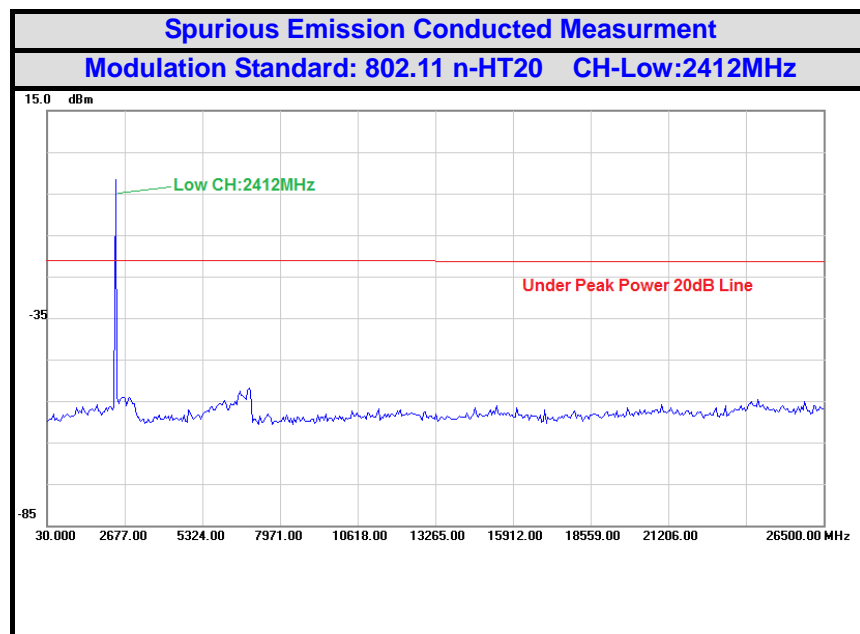
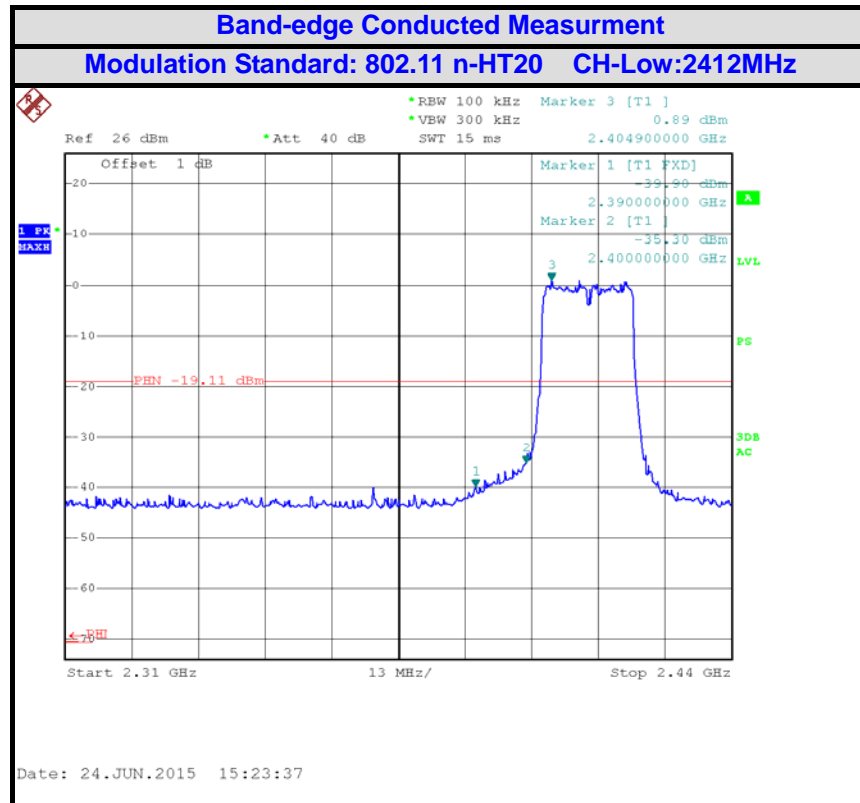
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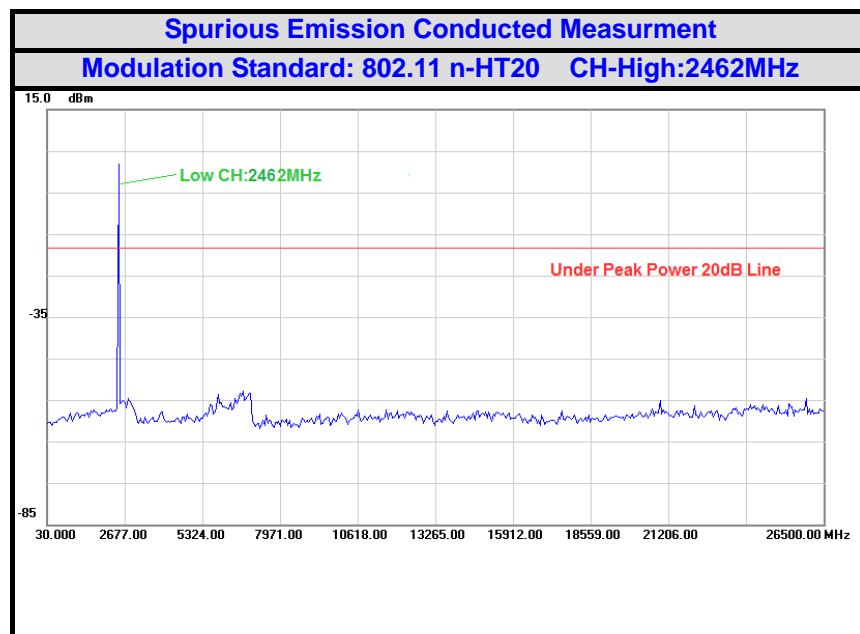
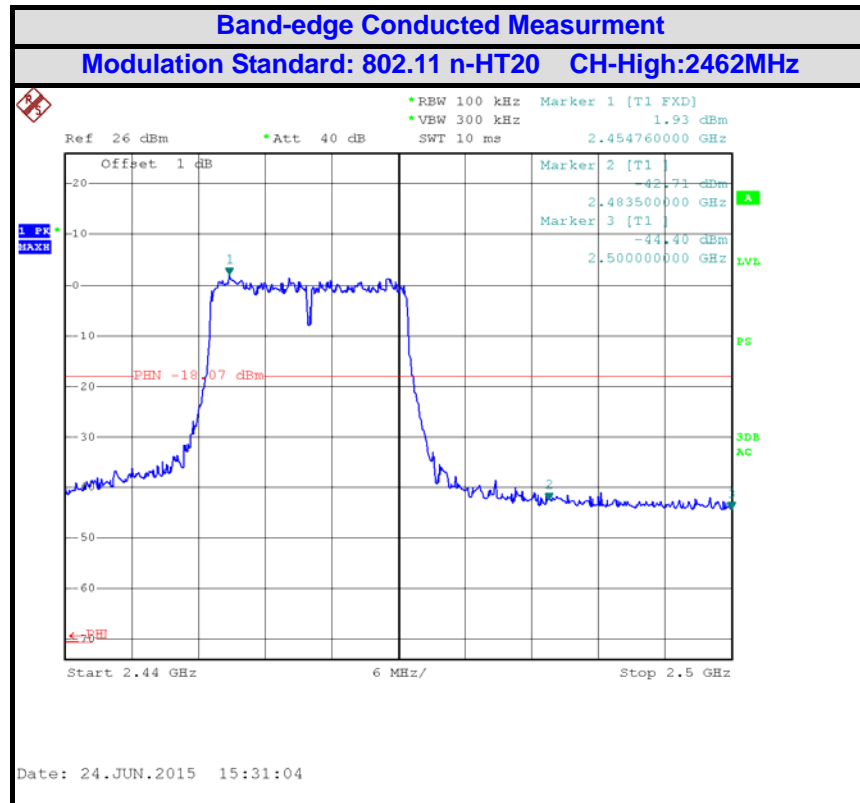
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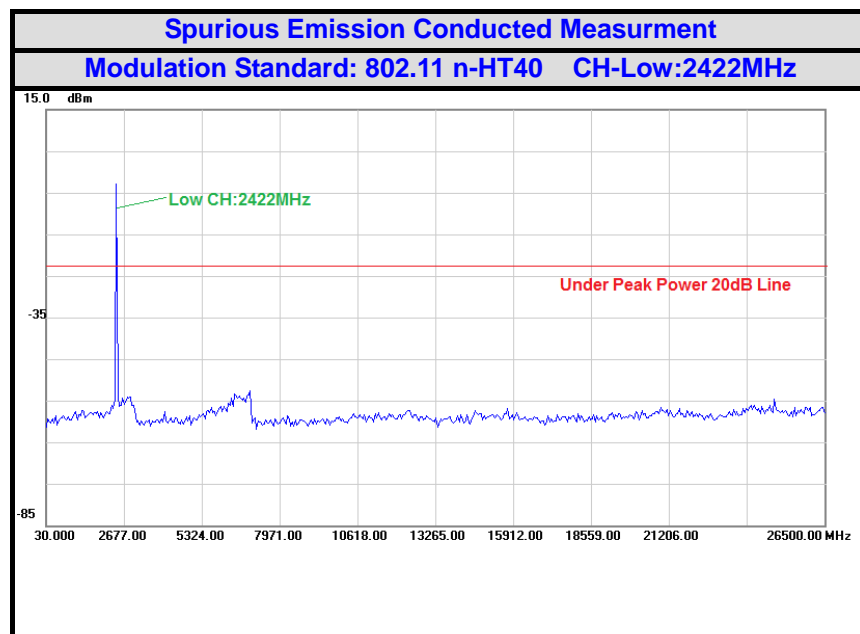
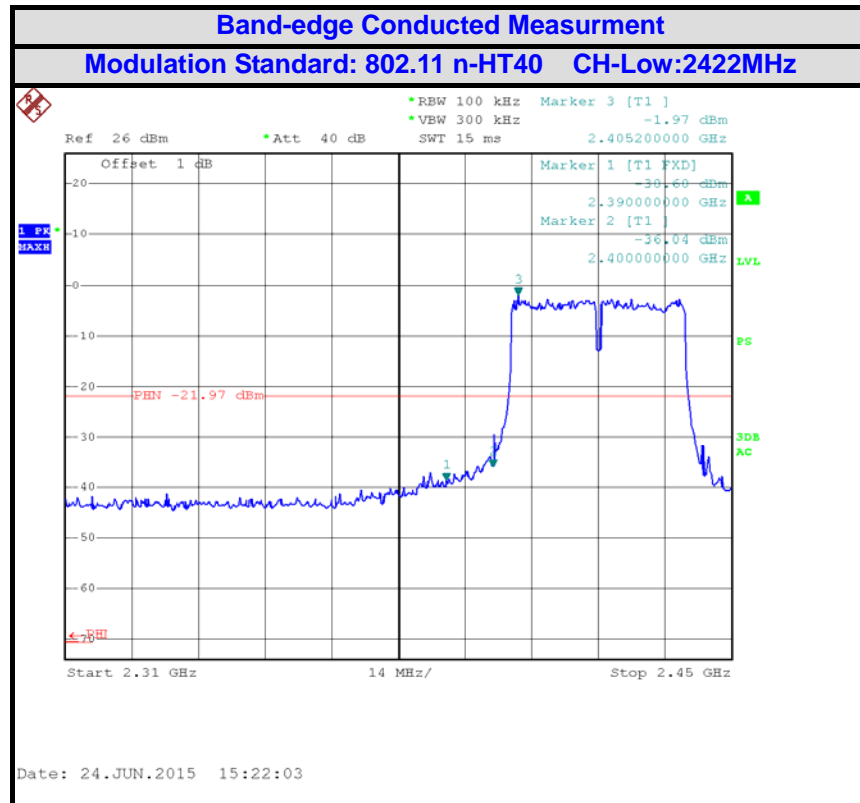
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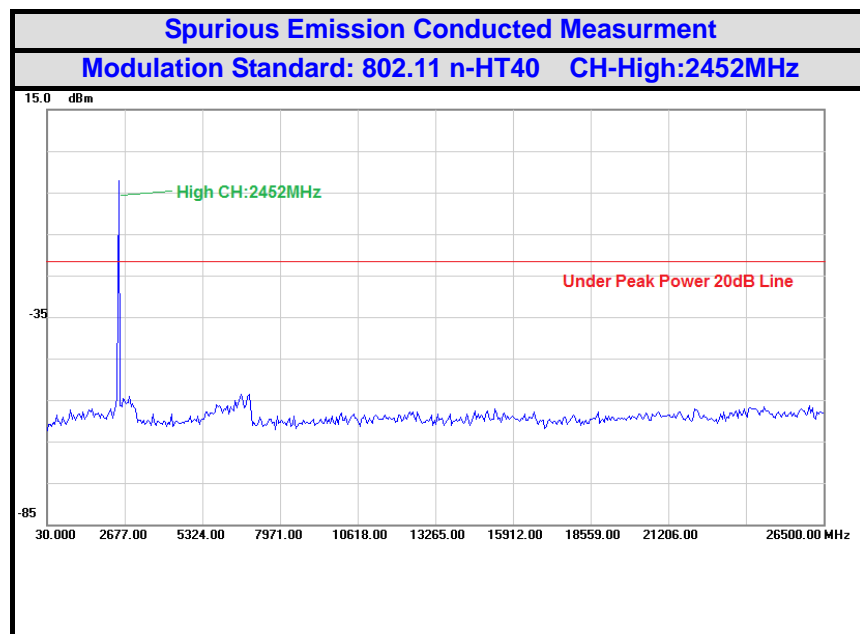
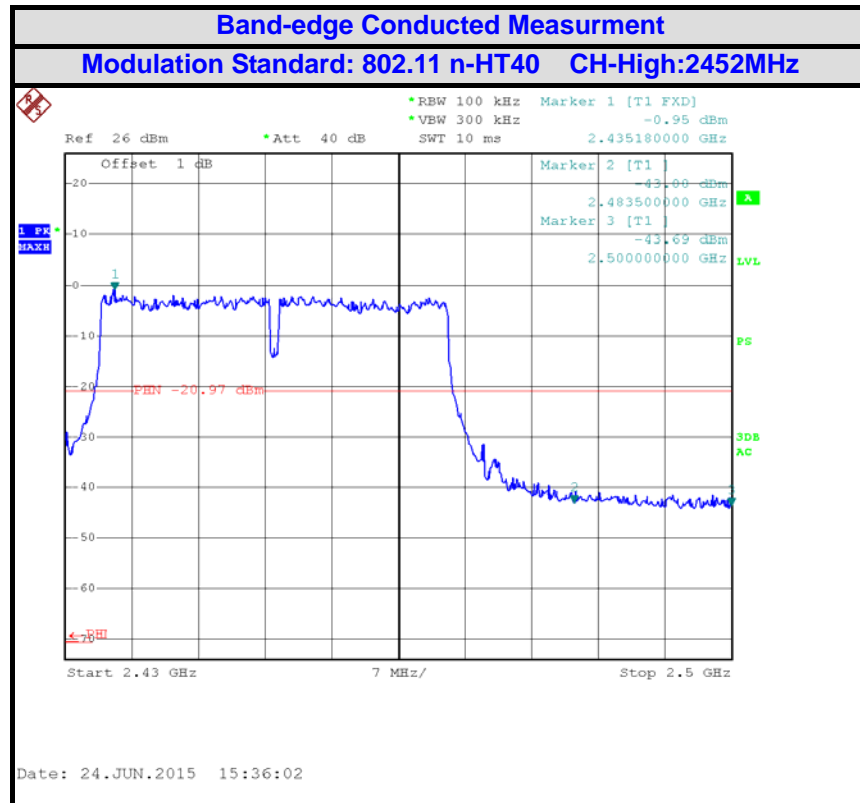
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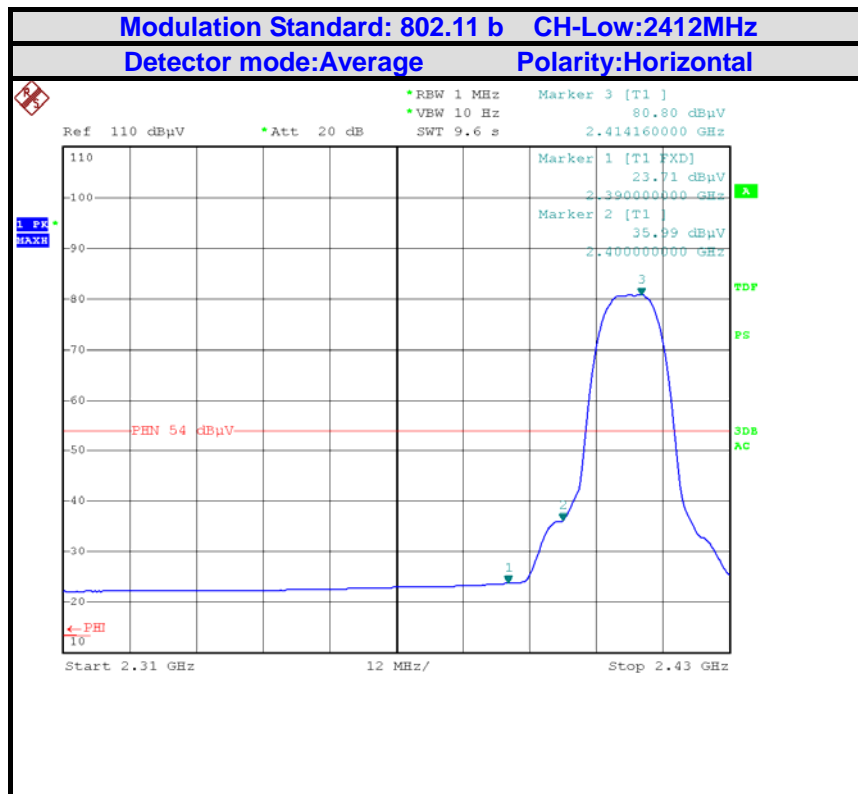
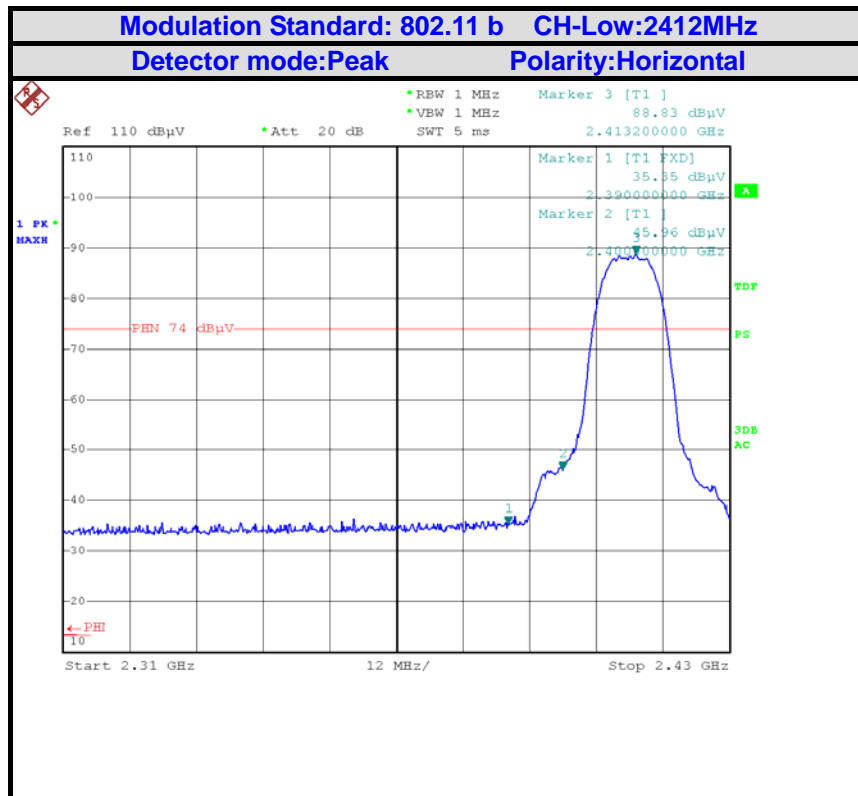
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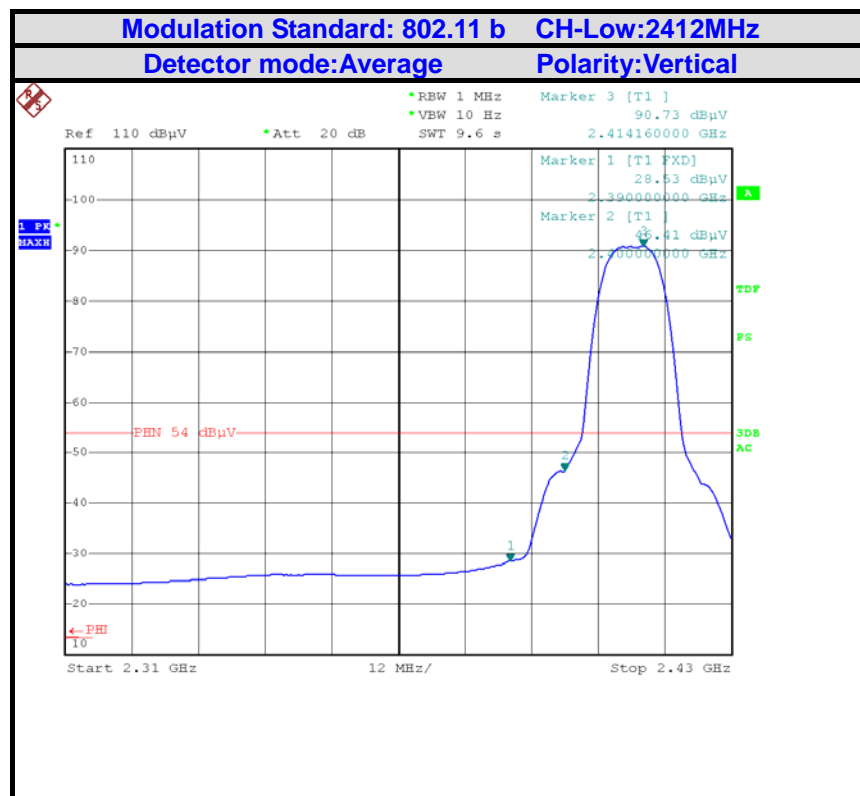
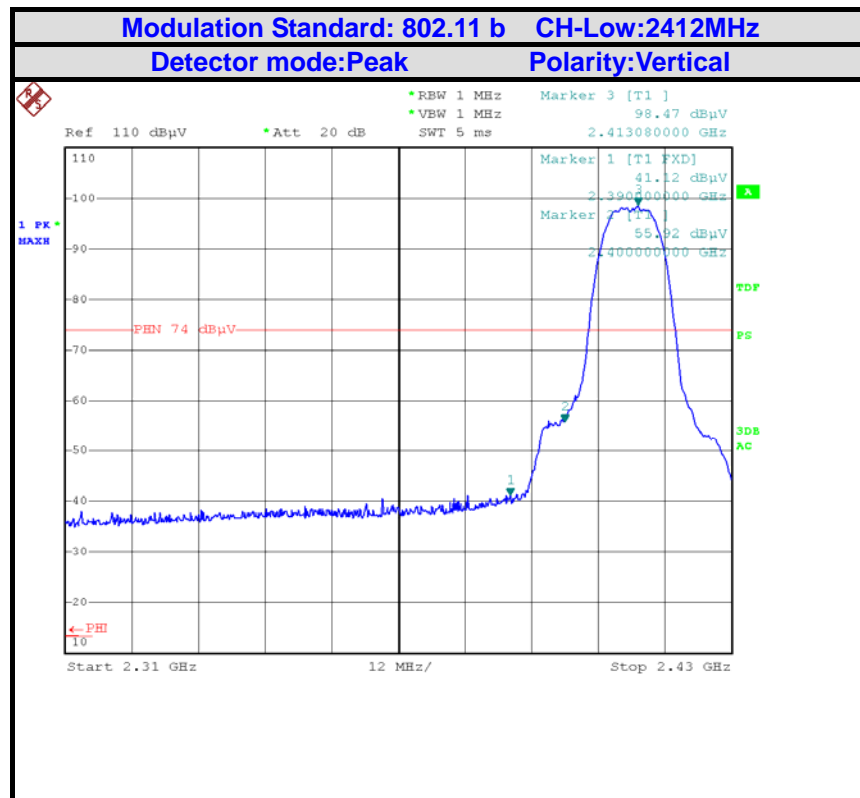
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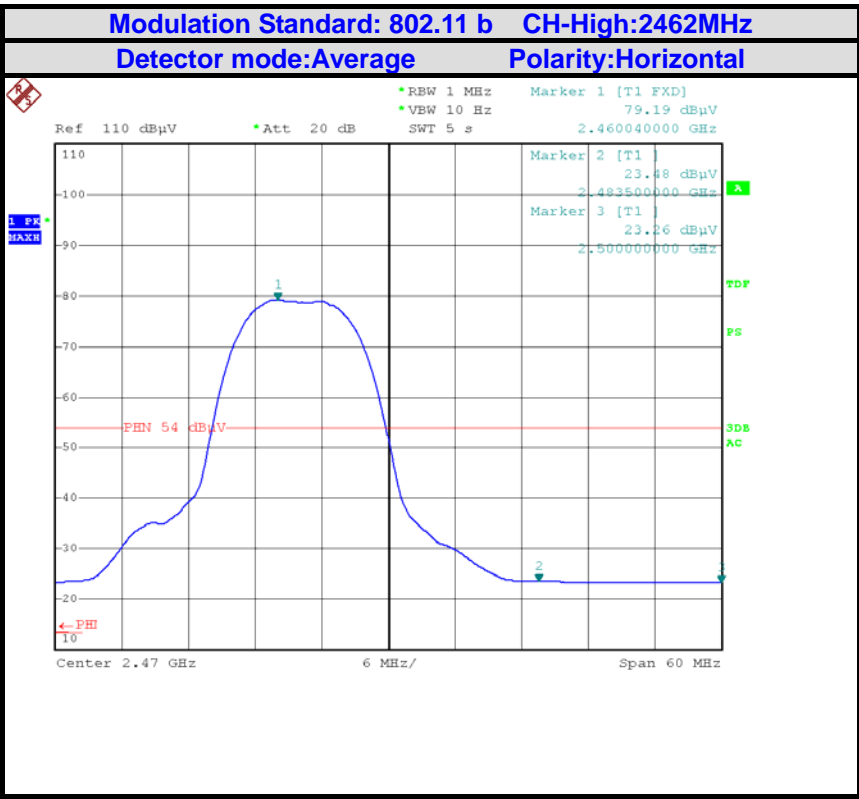
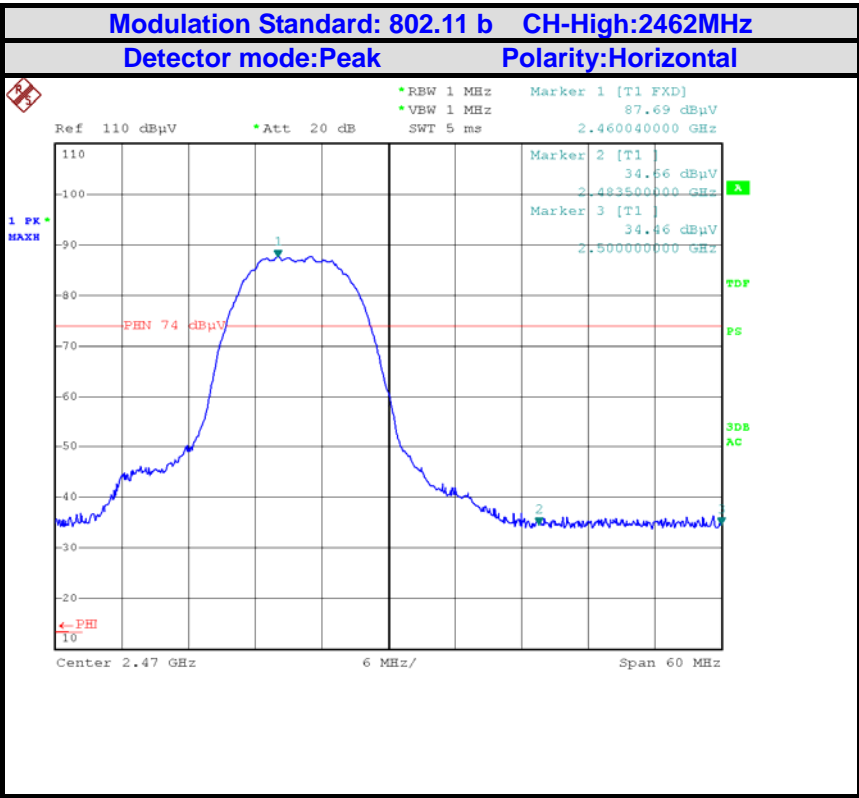
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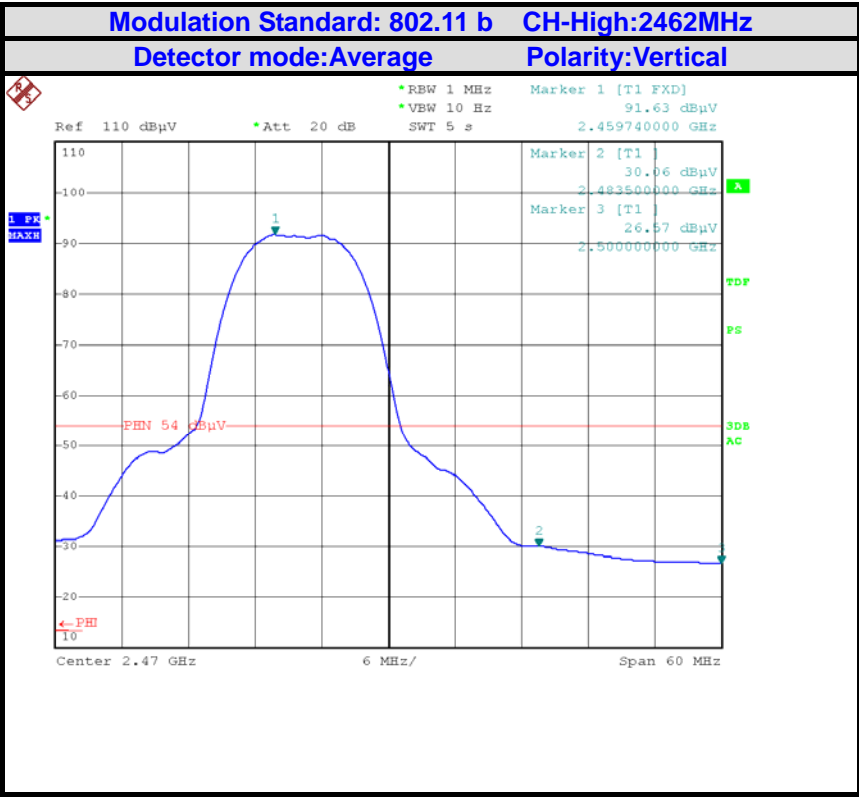
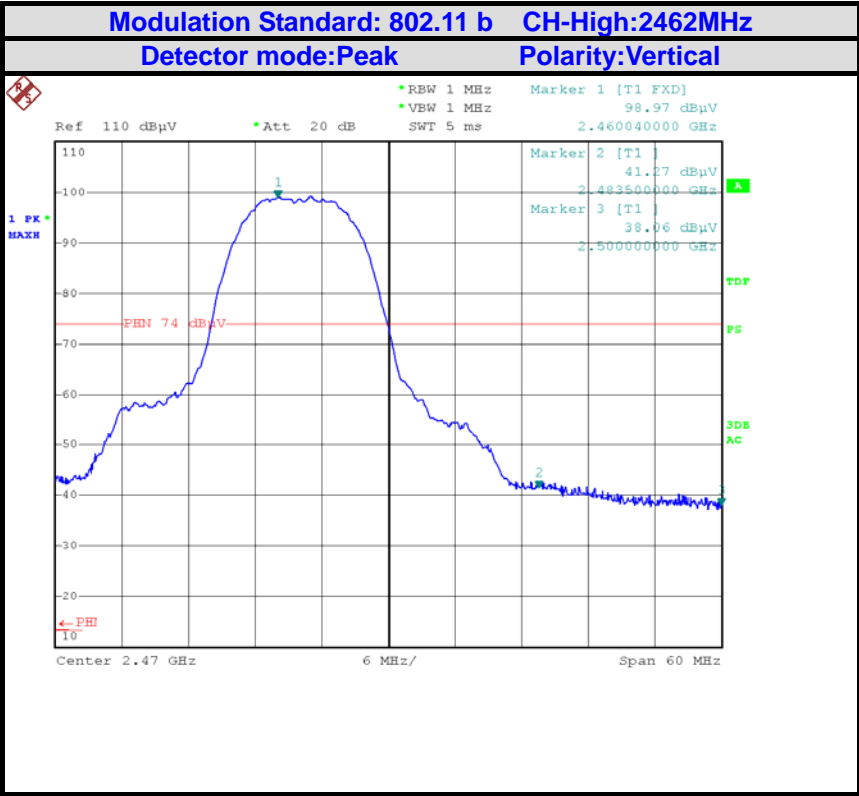
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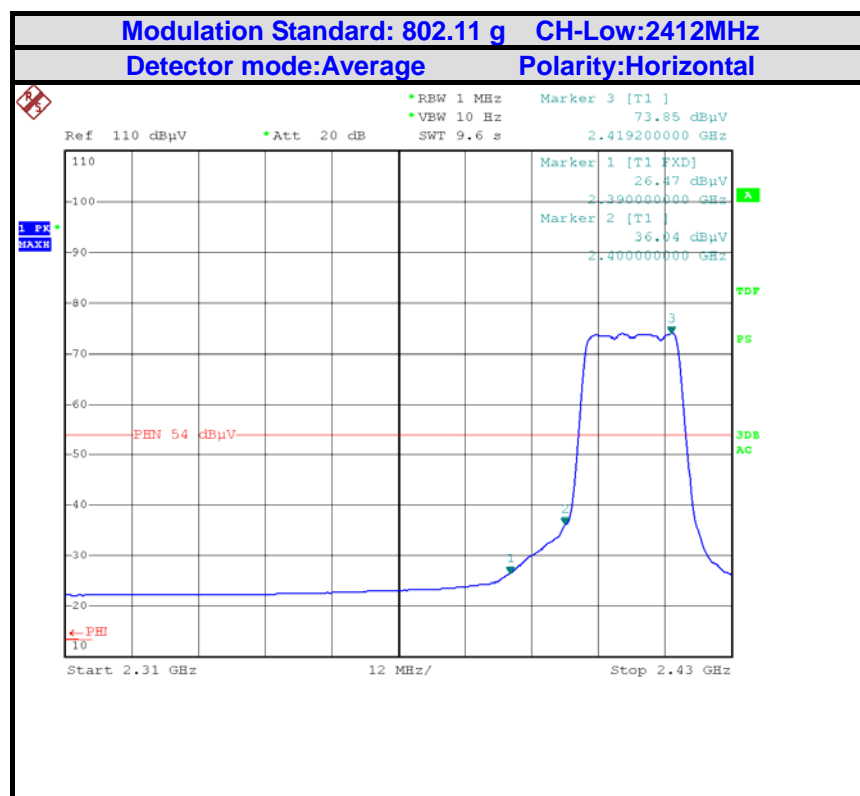
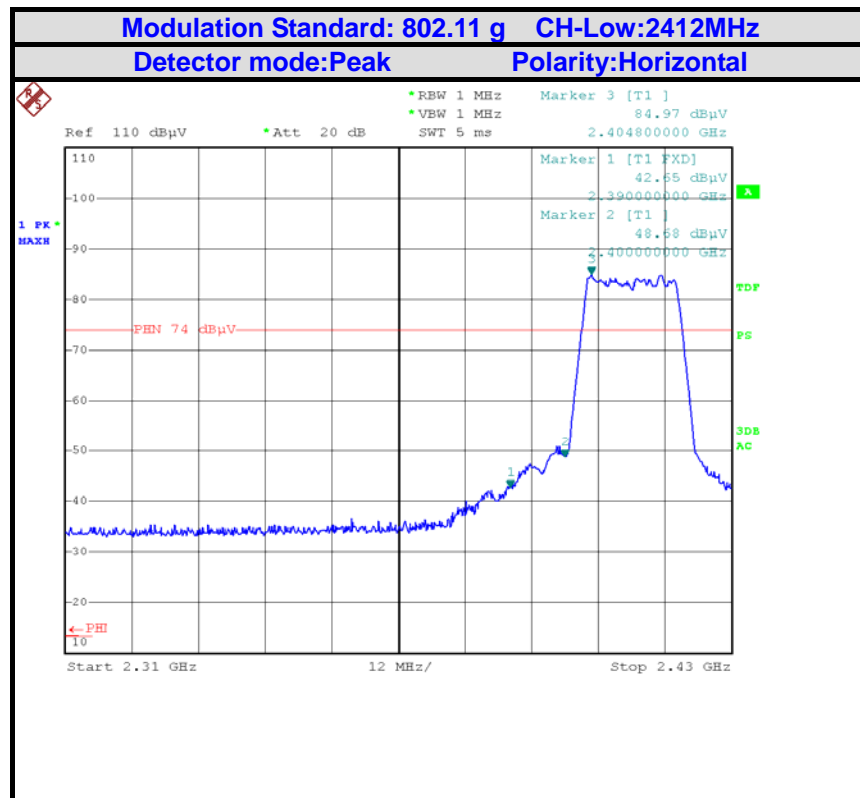
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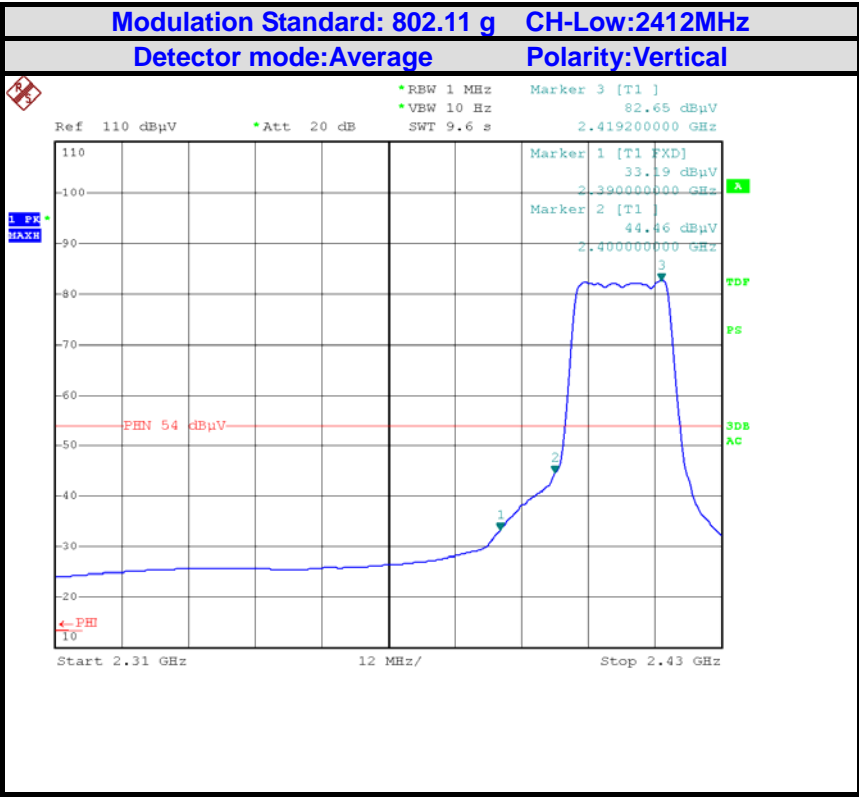
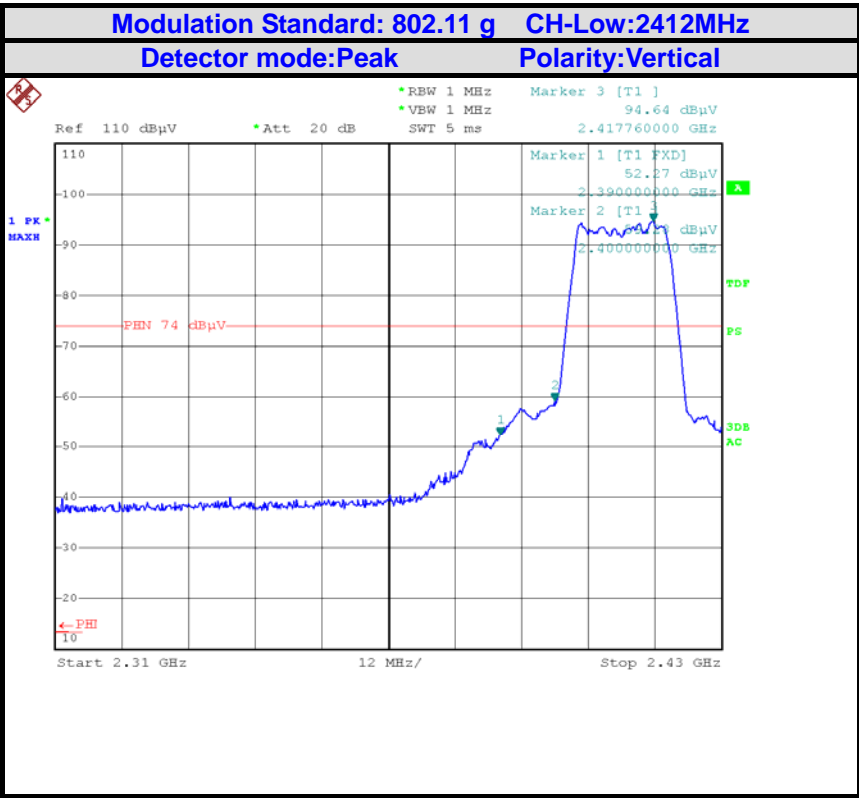
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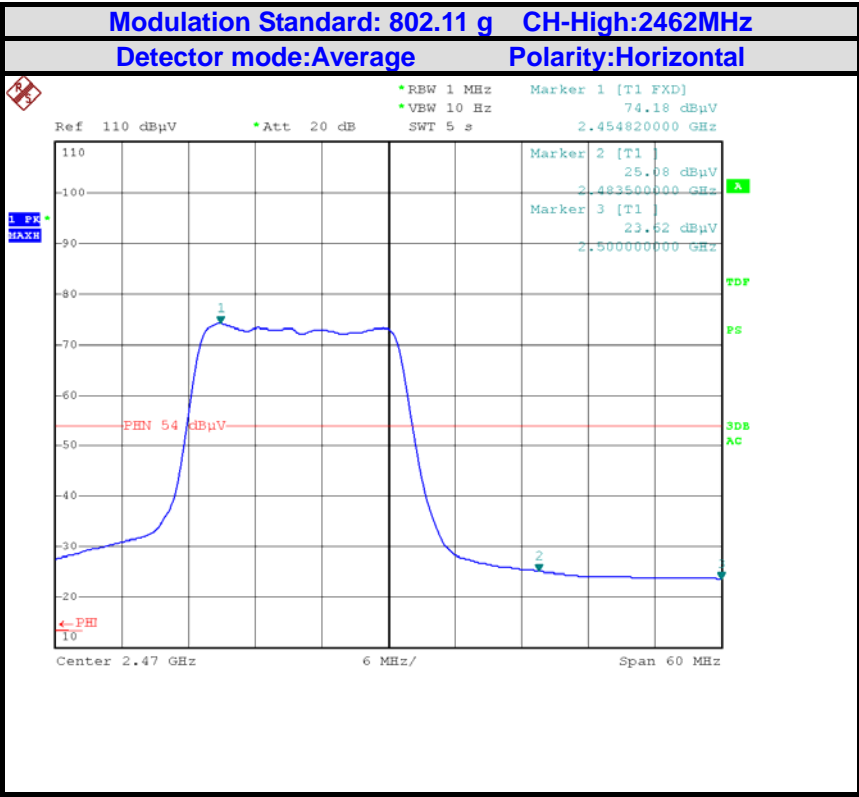
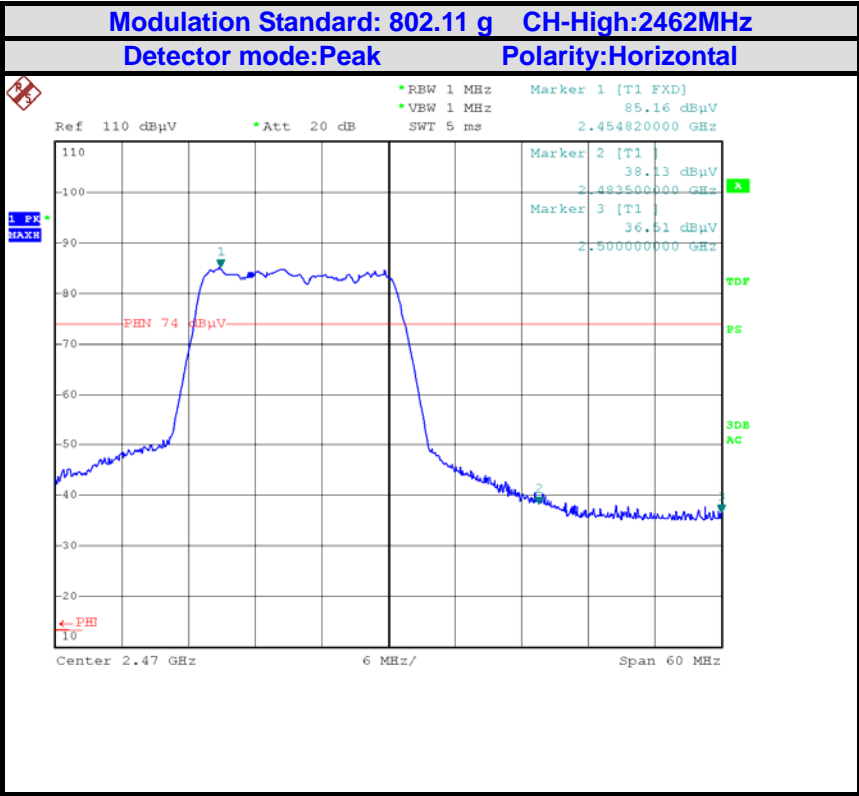
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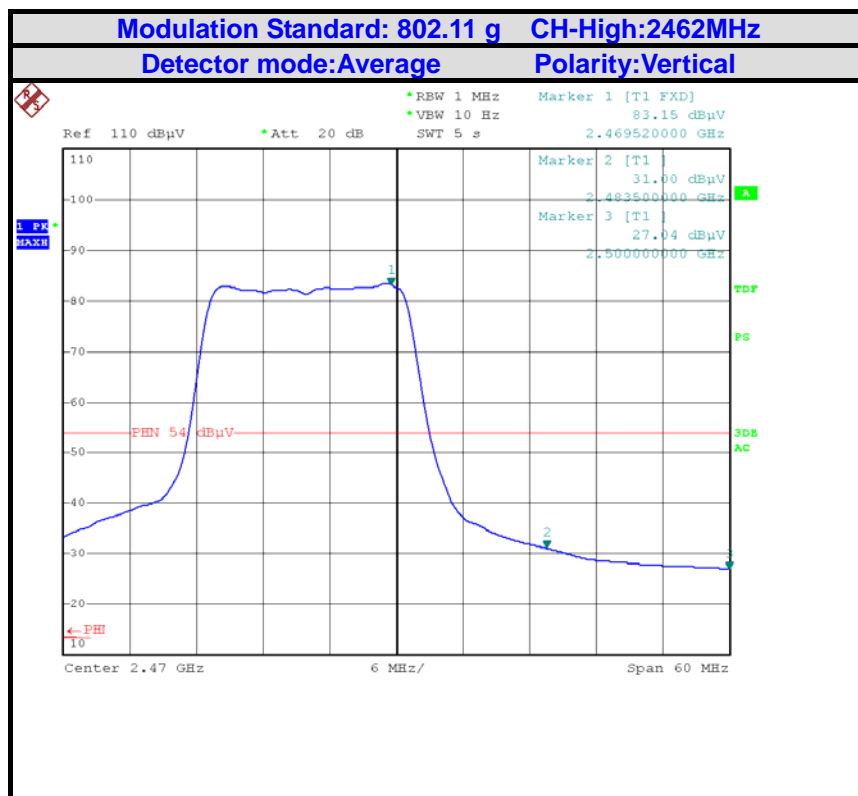
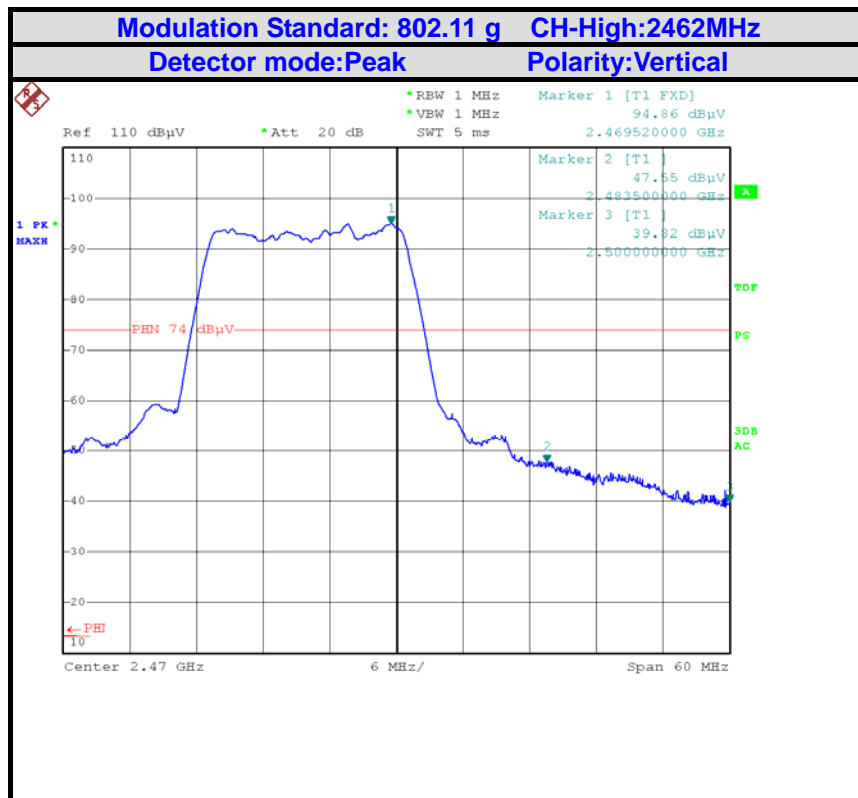
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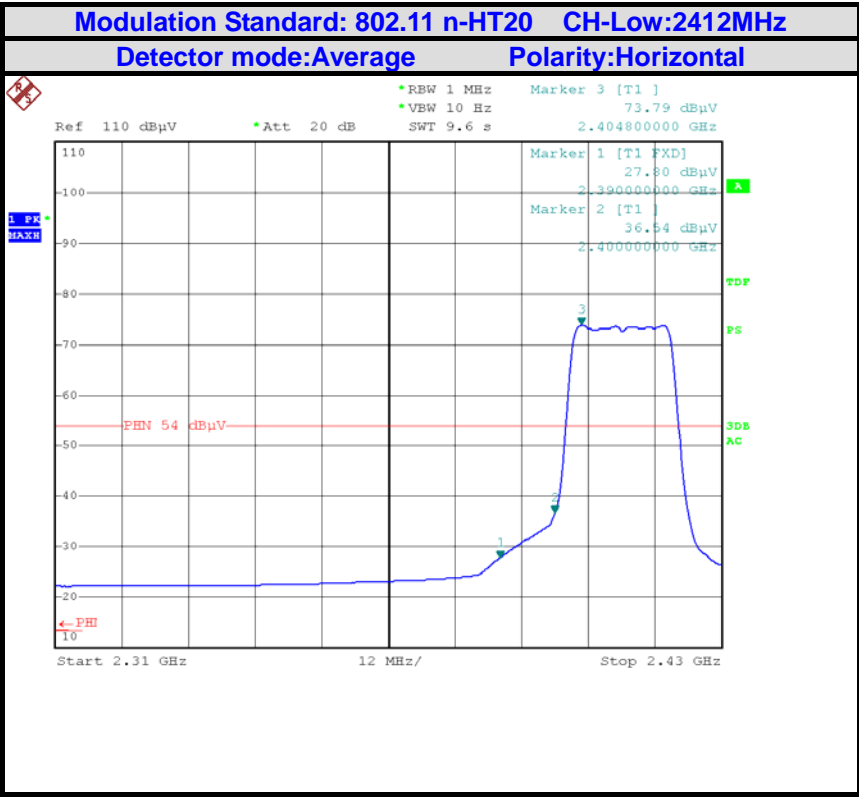
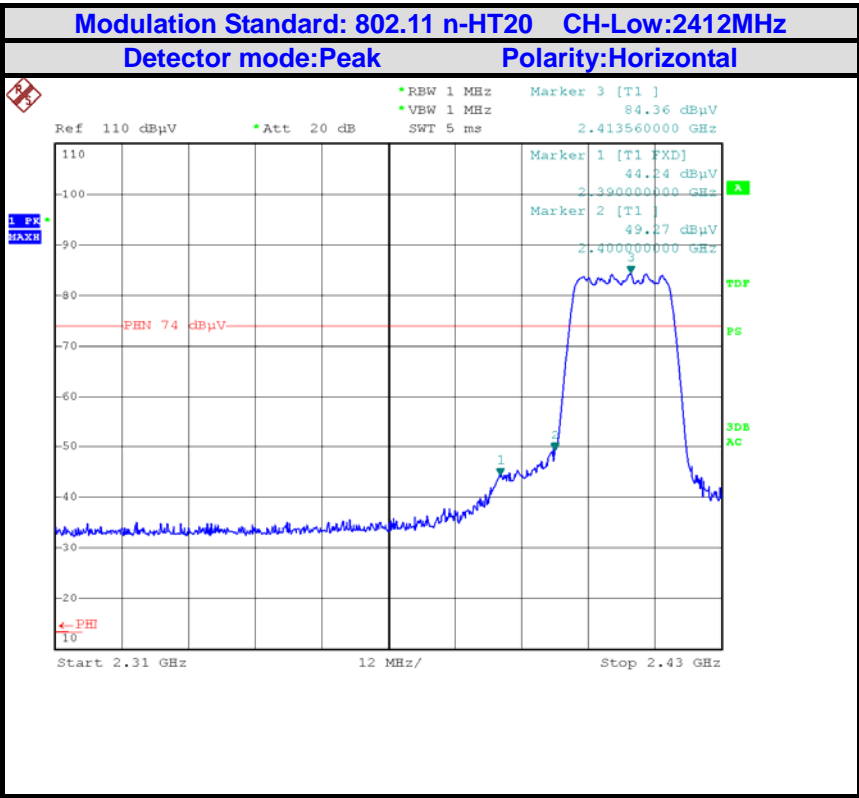
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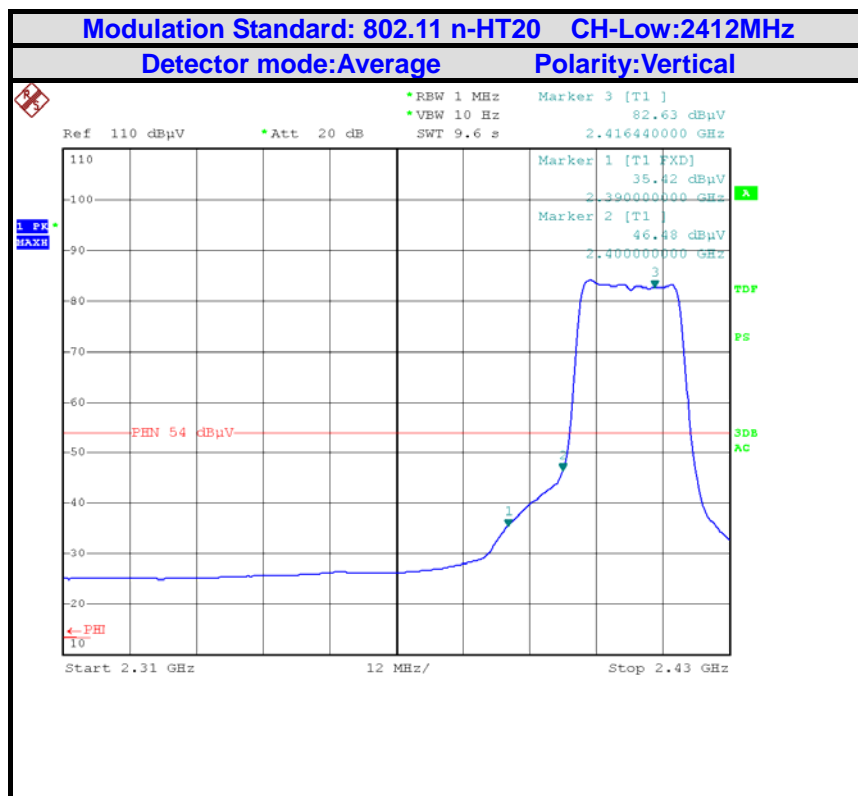
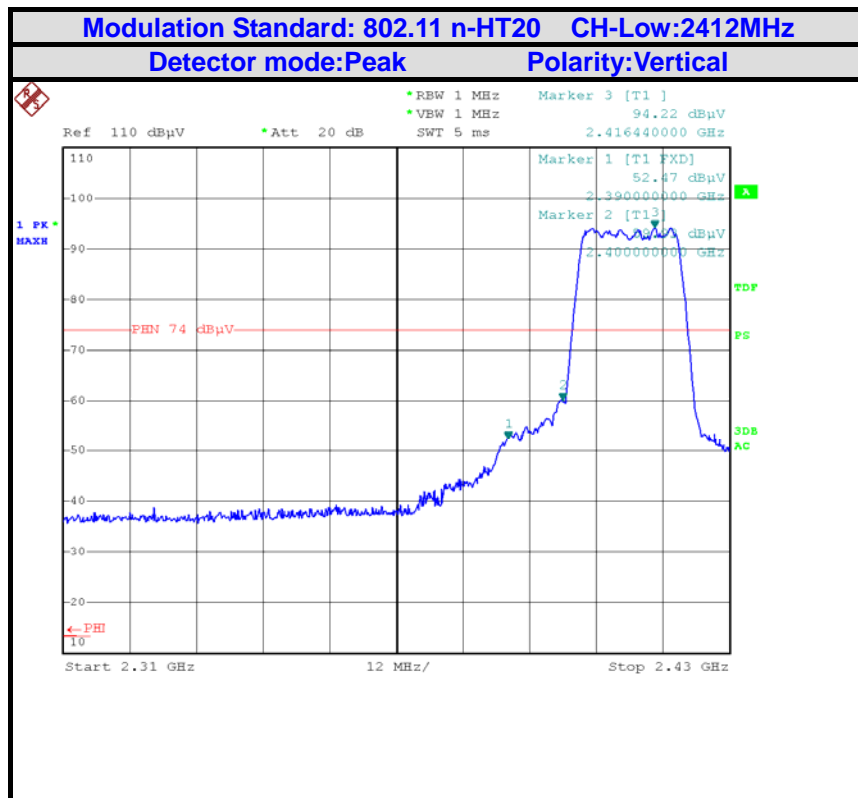
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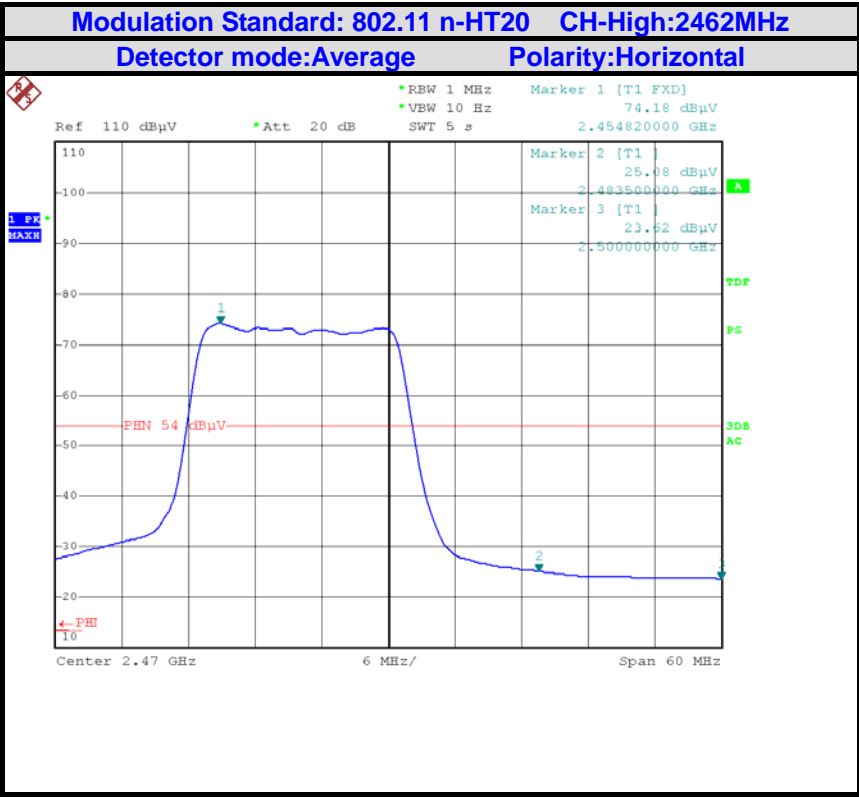
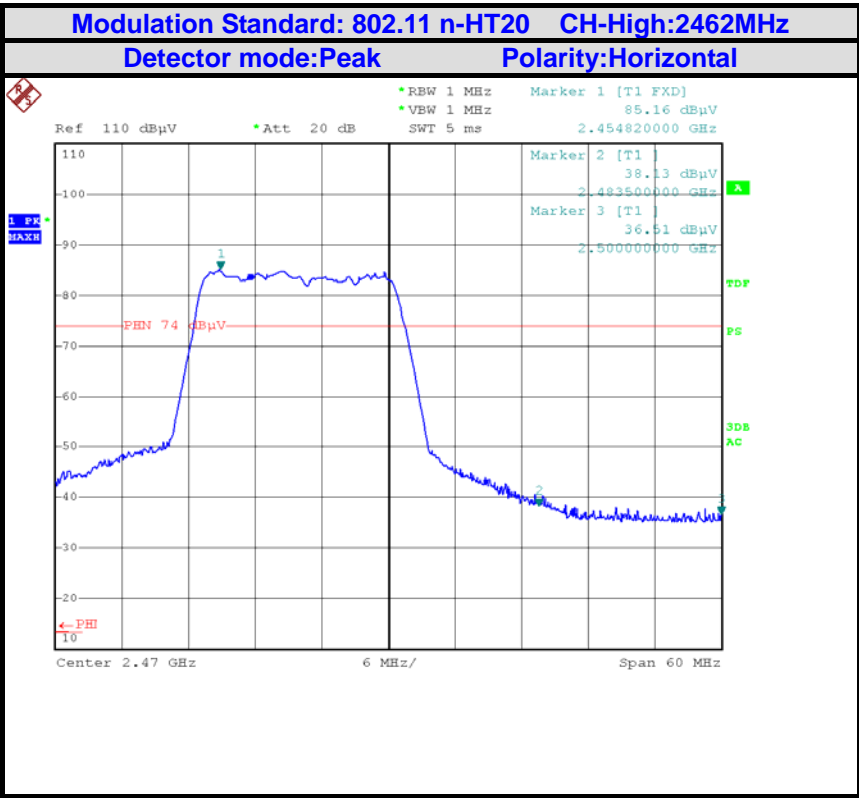
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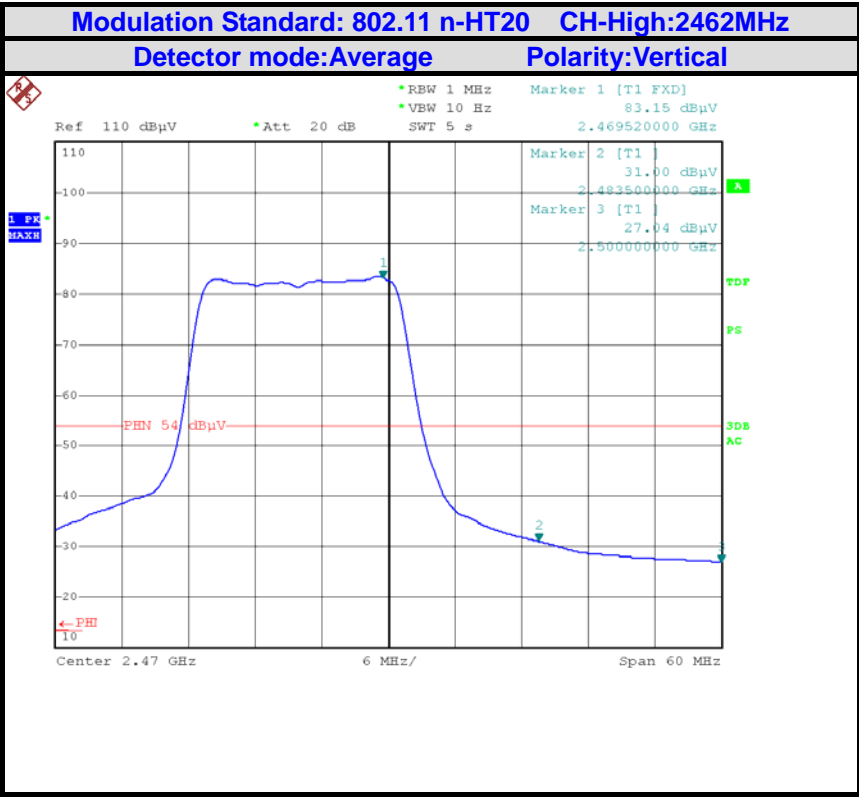
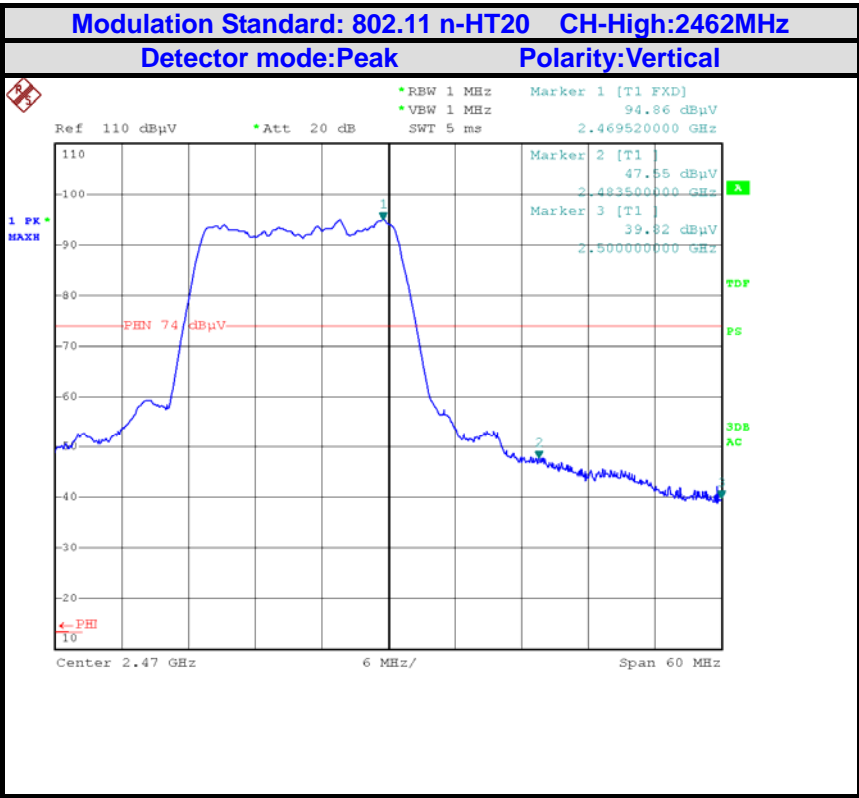
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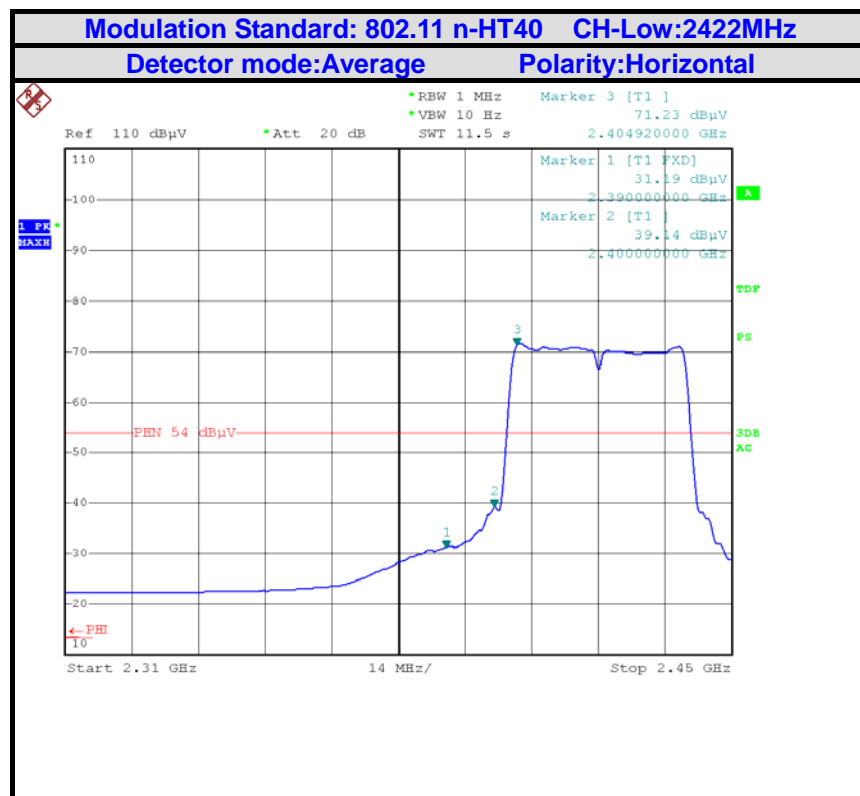
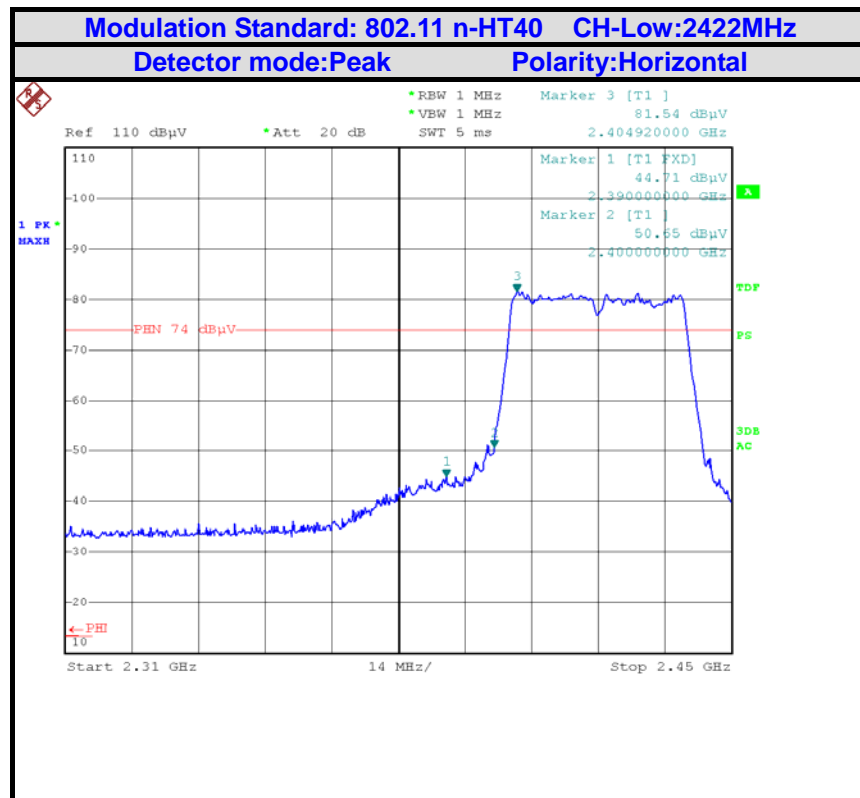
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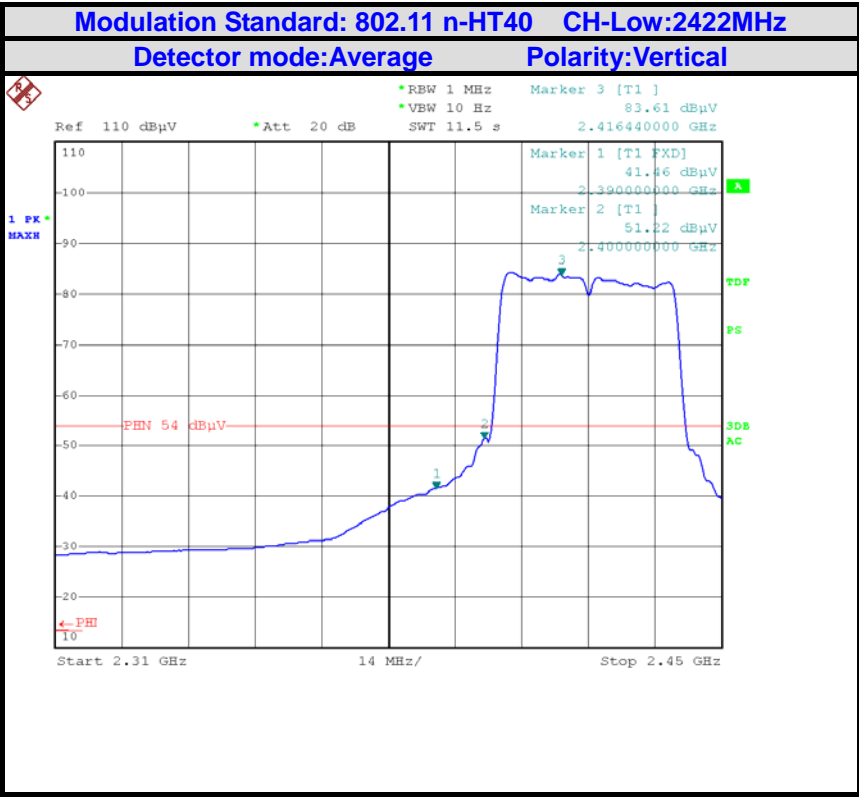
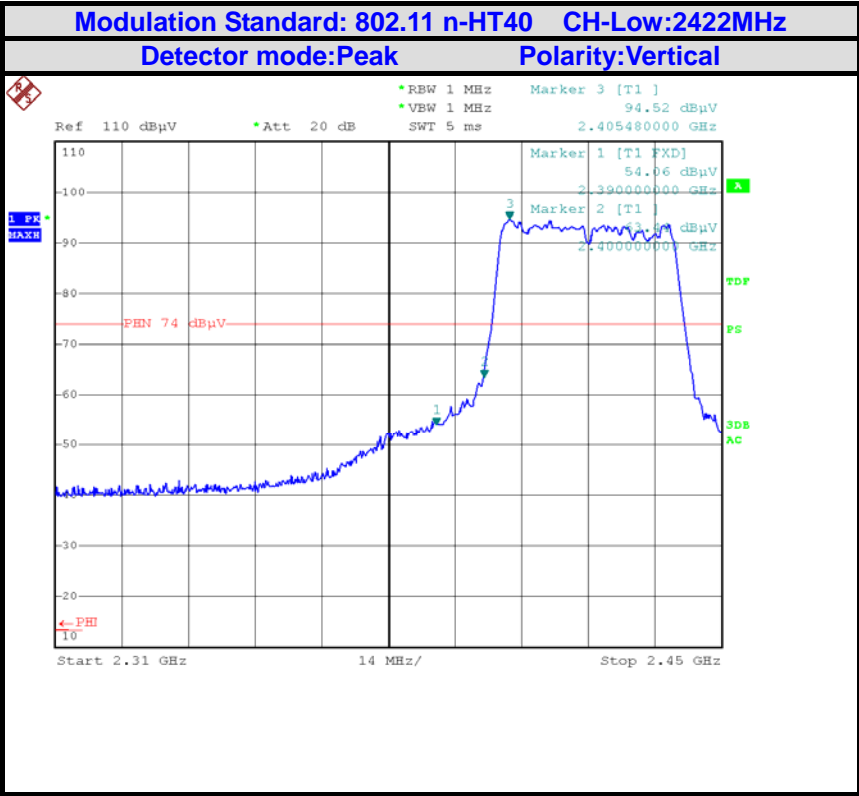
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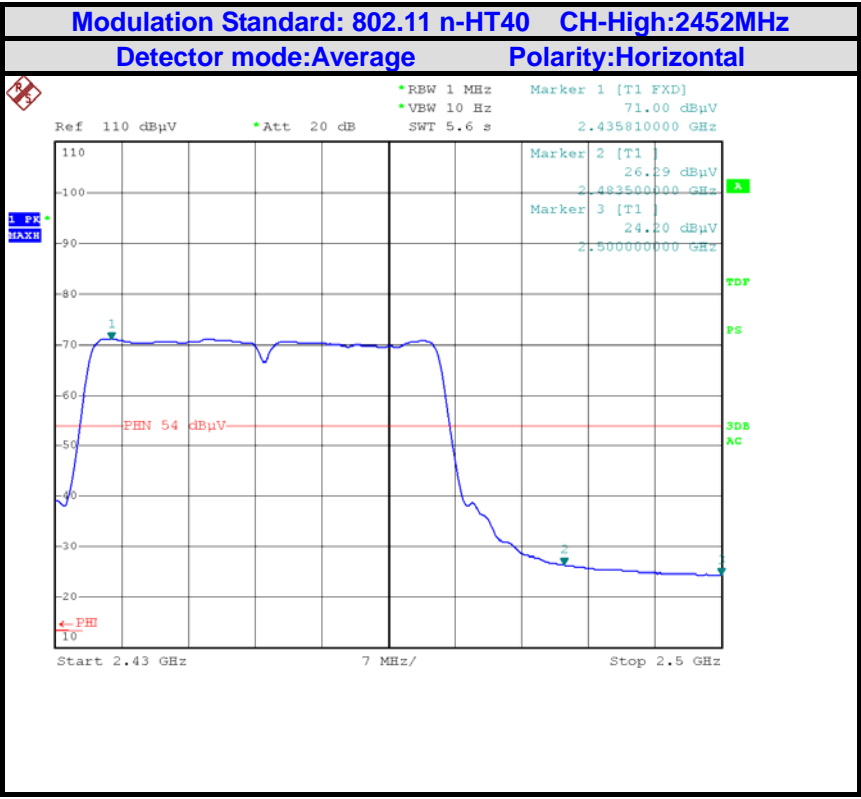
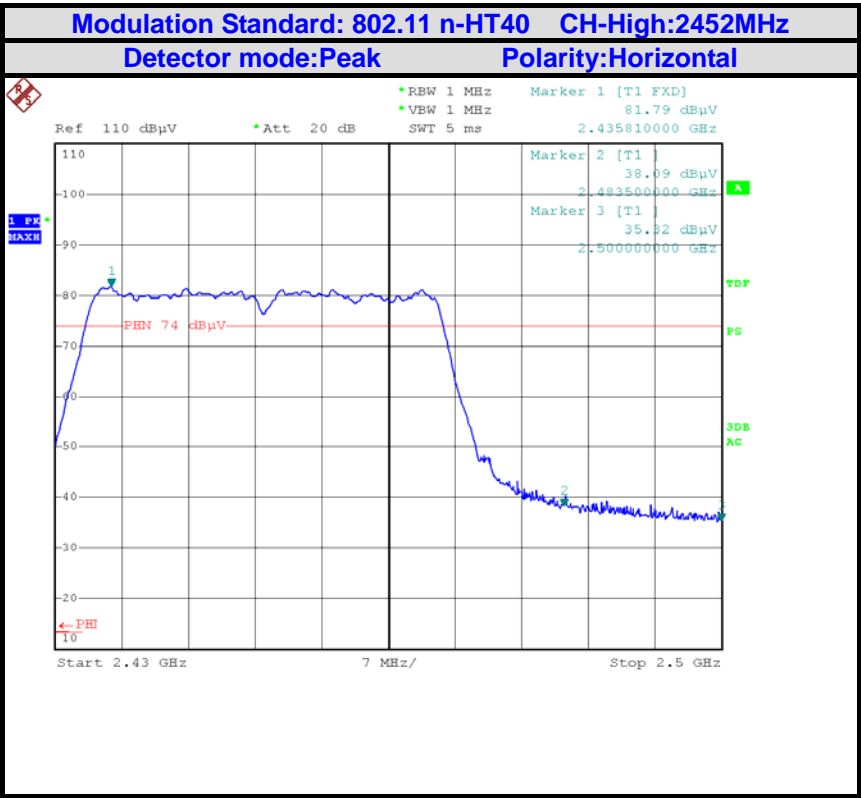
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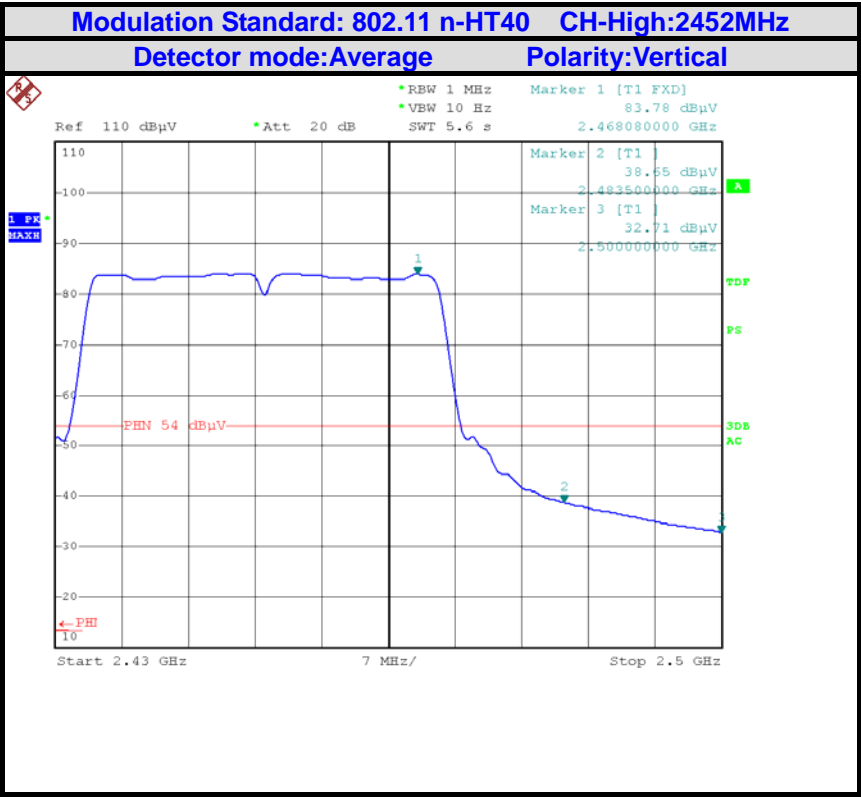
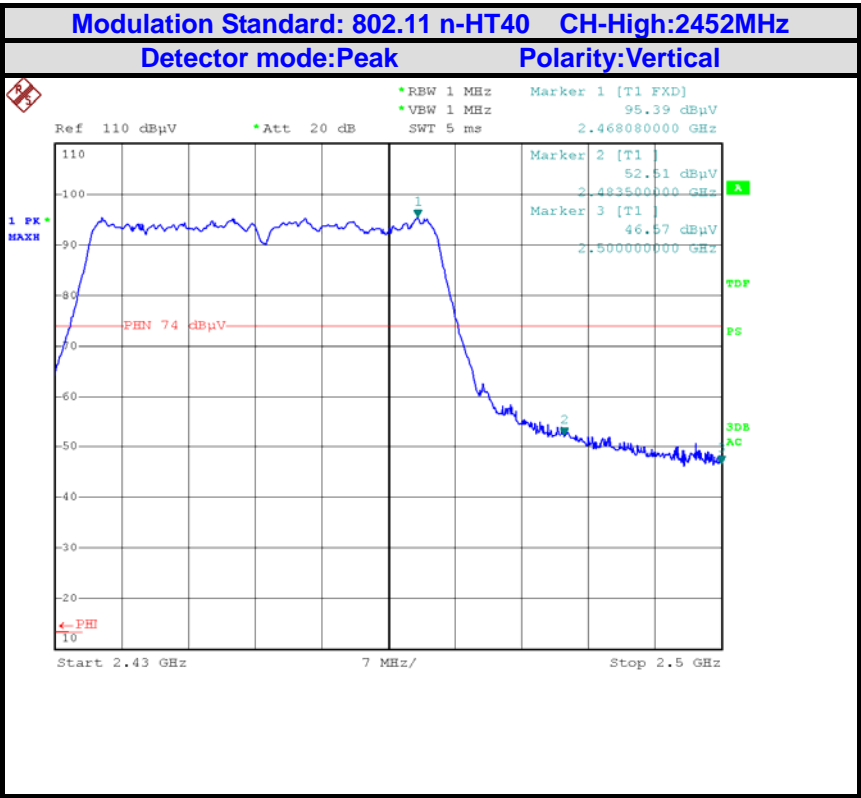
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11.0 SPURIOUS EMISSIONS

11.1 LIMIT

Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

| FREQUENCY MHz | DISTANCE Meters | FIELD STRENGTHS LIMIT | |
|------------------|--------------------|--|-----------------------------------|
| | | $\mu\text{V}/\text{m}$ | $\text{dB}(\mu\text{V})/\text{m}$ |
| 0.009 ~ 0.490 | 300 | 2400/F(kHz) | --- |
| 0.490 ~ 1.705 | 30 | 24000/F(kHz) | --- |
| 1.705 ~ 30 | 30 | 30 | --- |
| 30 ~ 88 | 3 | 100 | 40.0 |
| 88 ~ 216 | 3 | 150 | 43.5 |
| 216 ~ 960 | 3 | 200 | 46.0 |
| 960 ~ 1000 | 3 | 500 | 54.0 |
| Above 1000 | 3 | Other: 74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average) | |

Note: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

11.2 Test Equipment

| Radiated disturbance (electric field) | | | | | |
|---------------------------------------|-------------------|-----------------|------------|------------|-----------|
| Item | Test Equipment | Manufacturer | Model No. | Serial No. | Last Cal. |
| 1 | EMI Test Receiver | ROHDE & SCHWARZ | ESCI | 100868 | 2014/11 |
| 2 | Biconical Antenna | ROHDE & SCHWARZ | HK116 | 100221 | 2015/03 |
| 3 | Log per Antenna | ROHDE & SCHWARZ | HL223 | 100226 | 2015/03 |
| 4 | Log per Antenna | ROHDE & SCHWARZ | HL050 | 100186 | 2015/03 |
| 5 | Signal analyzer | ROHDE & SCHWARZ | FSIQ26 | 100311 | 2015/03 |
| 6 | Loop Antenna | A.R.A | PLA-1030/B | 1030 | 2014/11 |
| 7 | EMI Test Software | EZ-EMC | Farad | N/A | N/A |

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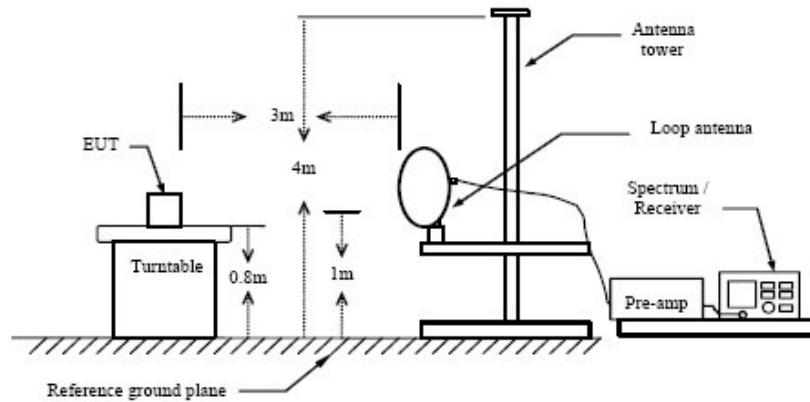
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E-mail: cts@cts-lab.com.cn

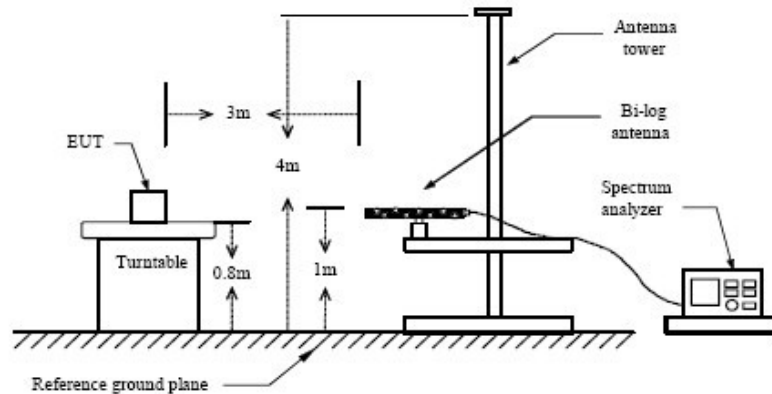
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11.3 TEST CONFIGURATION

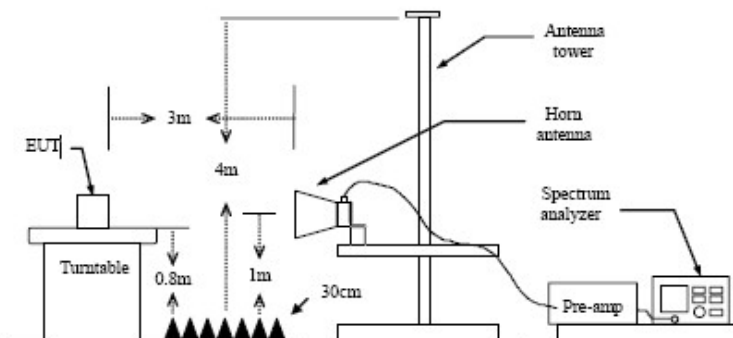
Below 30MHz



Below 1 GHz



Above 1 GHz



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11.4 TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.

11.5 TEST RESULTS

The frequency range from 9KHz~30MHz, 30MHz to 230MHz, 230MHz to 1000MHz and above 1GHz. is investigated. Please see the following pages.

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| | | | |
|------------------|---------------------|---------|--|
| Test Mode: | TX –X Position Mode | Result: | <input checked="" type="checkbox"/> - passed |
| Frequency range: | 9KHz~30MHz | | <input type="checkbox"/> - not passed |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|--|--------------------|----------------|-------------------|-------------------|-------------------|----------------|------|
| Remark: The test result reading value is to low, margin all > 10dB of the limit. | | | | | | | |

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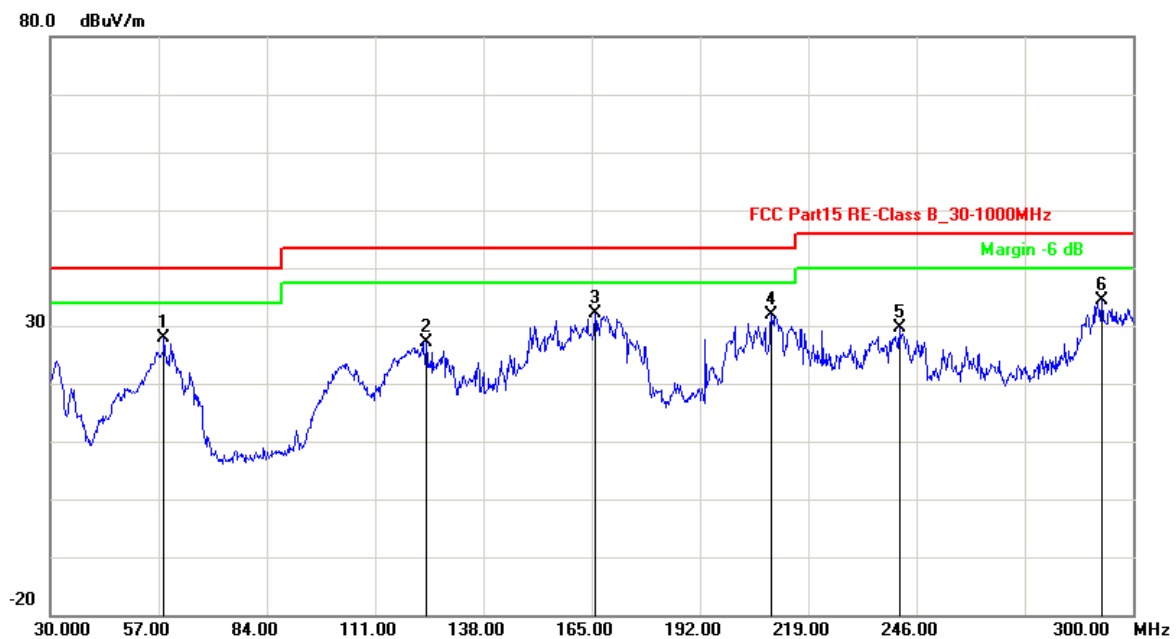
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| | |
|---------------------|---|
| EUT | Wireless Router |
| Operating Condition | DC 5V by adapter |
| Test Condition | Ambient Temperature: 25°C Humidity: 56% |
| Test distance | 3 Meter |
| Test Date: | 25 May~24 June 2015 |
| Operator | Duke |
| MODEL NO | MOFI4500-4GXeLTE |

| | | | |
|------------------|----------------|---------|--|
| Channel: | TX -X Position | Result: | <input checked="" type="checkbox"/> - passed |
| Test point: | Horizontal | | <input type="checkbox"/> - not passed |
| Frequency range: | 30MHz-1GHz | | |



| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 58.3500 | -19.51 | 47.47 | 27.96 | 40.00 | -12.04 | QP |
| 2 | 123.6900 | -16.51 | 43.71 | 27.20 | 43.50 | -16.30 | QP |
| 3 | 165.8100 | -15.98 | 48.05 | 32.07 | 43.50 | -11.43 | QP |
| 4 | 209.8200 | -10.23 | 42.22 | 31.99 | 43.50 | -11.51 | QP |
| 5 | 241.6800 | -11.54 | 41.08 | 29.54 | 46.00 | -16.46 | QP |
| 6 | 292.1700 | -3.49 | 37.80 | 34.31 | 46.00 | -11.69 | QP |

Remark: Other frequency mini margin all >6 dB of Limit

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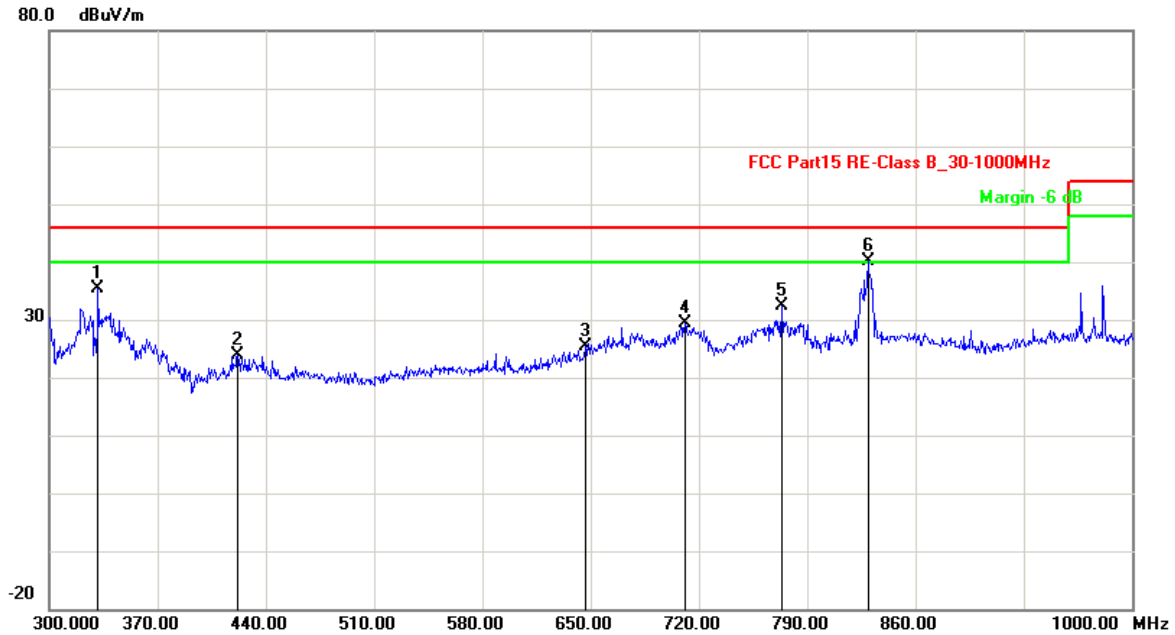
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| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|--|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 331.5000 | -12.19 | 47.62 | 35.43 | 46.00 | -10.57 | QP |
| 2 | 421.8000 | -9.62 | 33.46 | 23.84 | 46.00 | -22.16 | QP |
| 3 | 646.5000 | -3.39 | 28.86 | 25.47 | 46.00 | -20.53 | QP |
| 4 | 710.9000 | -3.25 | 32.61 | 29.36 | 46.00 | -16.64 | QP |
| 5 | 773.2000 | -2.37 | 34.82 | 32.45 | 46.00 | -13.55 | QP |
| 6 | 829.2000 | -1.53 | 41.63 | 40.10 | 46.00 | -5.90 | QP |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |

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| | | | |
|----------------------|--------------|---------|--|
| Modulation Standard: | 802.11 b | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | Low Channel | | <input type="checkbox"/> - not passed |
| Test point: | Horizontal | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3446.894 | -1.82 | 36.64 | 34.82 | 74.00 | -39.18 | peak |
| 2 | 3446.894 | -1.82 | 21.98 | 20.16 | 54.00 | -33.84 | AVG |
| 3 | 5783.567 | 5.80 | 38.84 | 44.64 | 74.00 | -29.36 | peak |
| 4 | 5783.567 | 5.80 | 24.48 | 30.28 | 54.00 | -23.72 | AVG |

Remark: Other frequency mini margin all >6 dB of Limit

| | | | |
|----------------------|----------------|---------|--|
| Modulation Standard: | 802.11 b | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | Middle Channel | | <input type="checkbox"/> - not passed |
| Test point: | Horizontal | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3513.026 | -1.57 | 37.14 | 35.57 | 74.00 | -38.43 | peak |
| 2 | 3513.026 | -1.57 | 22.86 | 21.29 | 54.00 | -32.71 | AVG |
| 3 | 6070.140 | 6.74 | 40.66 | 47.40 | 74.00 | -26.60 | peak |
| 4 | 6070.140 | 6.74 | 25.94 | 32.68 | 54.00 | -21.32 | AVG |

Remark: Other frequency mini margin all >6 dB of Limit

| | | | |
|----------------------|--------------|---------|--|
| Modulation Standard: | 802.11 b | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | High Channel | | <input type="checkbox"/> - not passed |
| Test point: | Horizontal | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3997.996 | -0.23 | 36.88 | 36.65 | 74.00 | -37.35 | peak |
| 2 | 3997.996 | -0.23 | 22.54 | 22.31 | 54.00 | -31.69 | AVG |
| 3 | 6929.860 | 8.30 | 43.39 | 51.69 | 74.00 | -22.31 | peak |
| 4 | 6929.860 | 8.30 | 28.24 | 36.54 | 54.00 | -17.46 | AVG |

Remark: Other frequency mini margin all >6 dB of Limit

| | | | |
|----------------------|--------------|---------|--|
| Modulation Standard: | 802.11 g | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | Low Channel | | <input type="checkbox"/> - not passed |
| Test point: | Horizontal | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3513.026 | -1.57 | 36.50 | 34.93 | 74.00 | -39.07 | peak |
| 2 | 3513.026 | -1.57 | 21.70 | 20.13 | 54.00 | -33.87 | AVG |
| 3 | 5717.435 | 5.55 | 39.49 | 45.04 | 74.00 | -28.96 | peak |
| 4 | 5717.435 | 5.55 | 25.30 | 30.85 | 54.00 | -23.15 | AVG |

Remark: Other frequency mini margin all >6 dB of Limit

| | | | |
|----------------------|----------------|---------|--|
| Modulation Standard: | 802.11 g | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | Middle Channel | | <input type="checkbox"/> - not passed |
| Test point: | Horizontal | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3513.026 | -1.57 | 36.11 | 34.54 | 74.00 | -39.46 | peak |
| 2 | 3513.026 | -1.57 | 21.71 | 20.14 | 54.00 | -33.86 | AVG |
| 3 | 5893.788 | 6.21 | 39.70 | 45.91 | 74.00 | -28.09 | peak |
| 4 | 5893.788 | 6.21 | 24.07 | 30.28 | 54.00 | -23.72 | AVG |

Remark: Other frequency mini margin all >6 dB of Limit

| | | | |
|----------------------|--------------|---------|--|
| Modulation Standard: | 802.11 g | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | High Channel | | <input type="checkbox"/> - not passed |
| Test point: | Horizontal | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3513.026 | -1.57 | 36.26 | 34.69 | 74.00 | -39.31 | peak |
| 2 | 3513.026 | -1.57 | 21.72 | 20.15 | 54.00 | -33.85 | AVG |
| 3 | 6268.537 | 7.12 | 39.34 | 46.46 | 74.00 | -27.54 | peak |
| 4 | 6268.537 | 7.12 | 25.46 | 32.58 | 54.00 | -21.42 | AVG |

Remark: Other frequency mini margin all >6 dB of Limit

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| | | | |
|----------------------|--------------|---------|--|
| Modulation Standard: | 802.11n-HT20 | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | Low Channel | | <input type="checkbox"/> - not passed |
| Test point: | Horizontal | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|--|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3028.056 | -3.44 | 38.72 | 35.28 | 74.00 | -38.72 | peak |
| 2 | 3028.056 | -3.44 | 23.60 | 20.16 | 54.00 | -33.84 | AVG |
| 3 | 5276.553 | 4.09 | 37.19 | 41.28 | 74.00 | -32.72 | peak |
| 4 | 5276.553 | 4.09 | 22.76 | 26.85 | 54.00 | -27.15 | AVG |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |

| | | | |
|----------------------|----------------|---------|--|
| Modulation Standard: | 802.11n-HT20 | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | Middle Channel | | <input type="checkbox"/> - not passed |
| Test point: | Horizontal | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|--|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3248.497 | -2.59 | 36.05 | 33.46 | 74.00 | -40.54 | peak |
| 2 | 3248.497 | -2.59 | 22.62 | 20.03 | 54.00 | -33.97 | AVG |
| 3 | 5783.567 | 5.80 | 38.53 | 44.33 | 74.00 | -29.67 | peak |
| 4 | 5783.567 | 5.80 | 24.48 | 30.28 | 54.00 | -23.72 | AVG |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |

| | | | |
|----------------------|--------------|---------|--|
| Modulation Standard: | 802.11n-HT20 | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | High Channel | | <input type="checkbox"/> - not passed |
| Test point: | Horizontal | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|--|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3292.585 | -2.41 | 37.02 | 34.61 | 74.00 | -39.39 | peak |
| 2 | 3292.585 | -2.41 | 22.57 | 20.16 | 54.00 | -33.84 | AVG |
| 3 | 5783.567 | 5.80 | 38.65 | 44.45 | 74.00 | -29.55 | peak |
| 4 | 5783.567 | 5.80 | 24.72 | 30.52 | 54.00 | -23.48 | AVG |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |

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| | | | |
|----------------------|--------------|---------|--|
| Modulation Standard: | 802.11n-HT40 | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | Low Channel | | <input type="checkbox"/> - not passed |
| Test point: | Horizontal | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3733.467 | -0.96 | 36.37 | 35.41 | 74.00 | -38.59 | peak |
| 2 | 3733.467 | -0.96 | 21.12 | 20.16 | 54.00 | -33.84 | AVG |
| 3 | 6268.537 | 7.12 | 40.97 | 48.09 | 74.00 | -25.91 | peak |
| 4 | 6268.537 | 7.12 | 26.16 | 33.28 | 54.00 | -20.72 | AVG |

Remark: Other frequency mini margin all >6 dB of Limit

| | | | |
|----------------------|----------------|---------|--|
| Modulation Standard: | 802.11n-HT40 | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | Middle Channel | | <input type="checkbox"/> - not passed |
| Test point: | Horizontal | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3667.335 | -1.14 | 36.51 | 35.37 | 74.00 | -38.63 | peak |
| 2 | 3667.335 | -1.14 | 21.29 | 20.15 | 54.00 | -33.85 | AVG |
| 3 | 6466.934 | 7.50 | 40.63 | 48.13 | 74.00 | -25.87 | peak |
| 4 | 6466.934 | 7.50 | 26.79 | 34.29 | 54.00 | -19.71 | AVG |

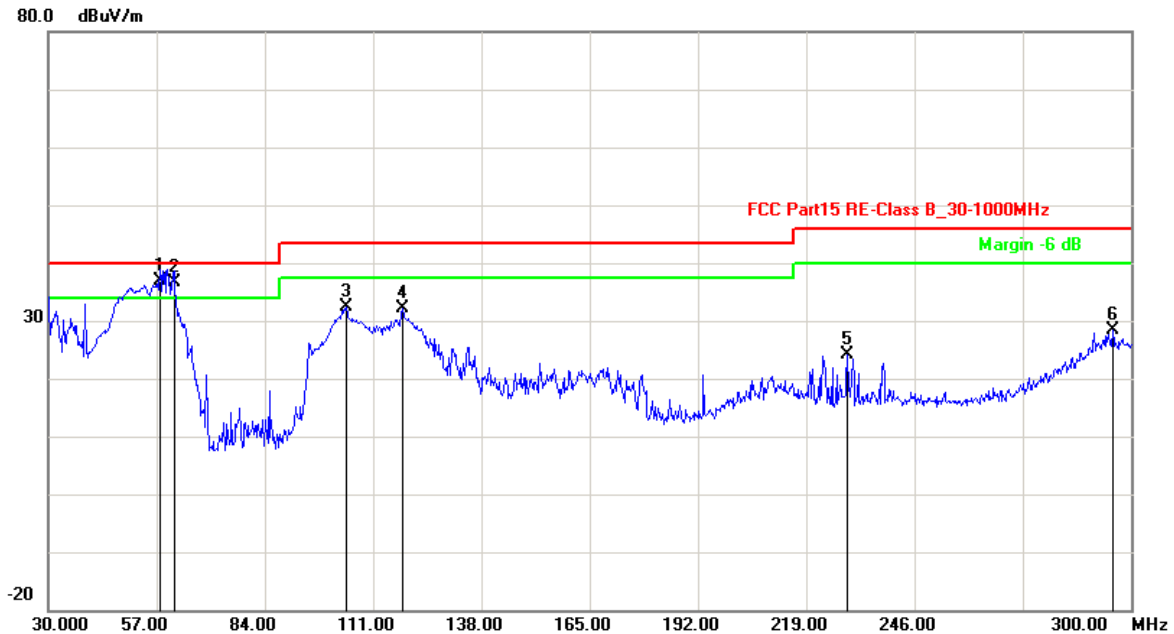
Remark: Other frequency mini margin all >6 dB of Limit

| | | | |
|----------------------|--------------|---------|--|
| Modulation Standard: | 802.11n-HT40 | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | High Channel | | <input type="checkbox"/> - not passed |
| Test point: | Horizontal | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3380.762 | -2.07 | 35.98 | 33.91 | 74.00 | -40.09 | peak |
| 2 | 3380.762 | -2.07 | 22.08 | 20.01 | 54.00 | -33.99 | AVG |
| 3 | 5474.950 | 4.67 | 39.96 | 44.63 | 74.00 | -29.37 | peak |
| 4 | 5474.950 | 4.67 | 25.59 | 30.26 | 54.00 | -23.74 | AVG |

Remark: Other frequency mini margin all >6 dB of Limit

| | | | |
|------------------|----------------|---------|----------------|
| Channel: | TX -X Position | Result: | ■ - passed |
| Test point: | Vertical | | □ - not passed |
| Frequency range: | 30MHz-1GHz | | |



| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 57.8100 | -19.46 | 56.39 | 36.93 | 40.00 | -3.07 | QP |
| 2 | 61.3200 | -19.83 | 56.36 | 36.53 | 40.00 | -3.47 | QP |
| 3 | 104.2500 | -17.83 | 50.22 | 32.39 | 43.50 | -11.11 | QP |
| 4 | 118.2900 | -16.82 | 49.01 | 32.19 | 43.50 | -11.31 | QP |
| 5 | 229.2600 | -11.60 | 35.79 | 24.19 | 46.00 | -21.81 | QP |
| 6 | 295.4100 | -2.64 | 30.95 | 28.31 | 46.00 | -17.69 | QP |

Remark: Other frequency mini margin all >6 dB of Limit

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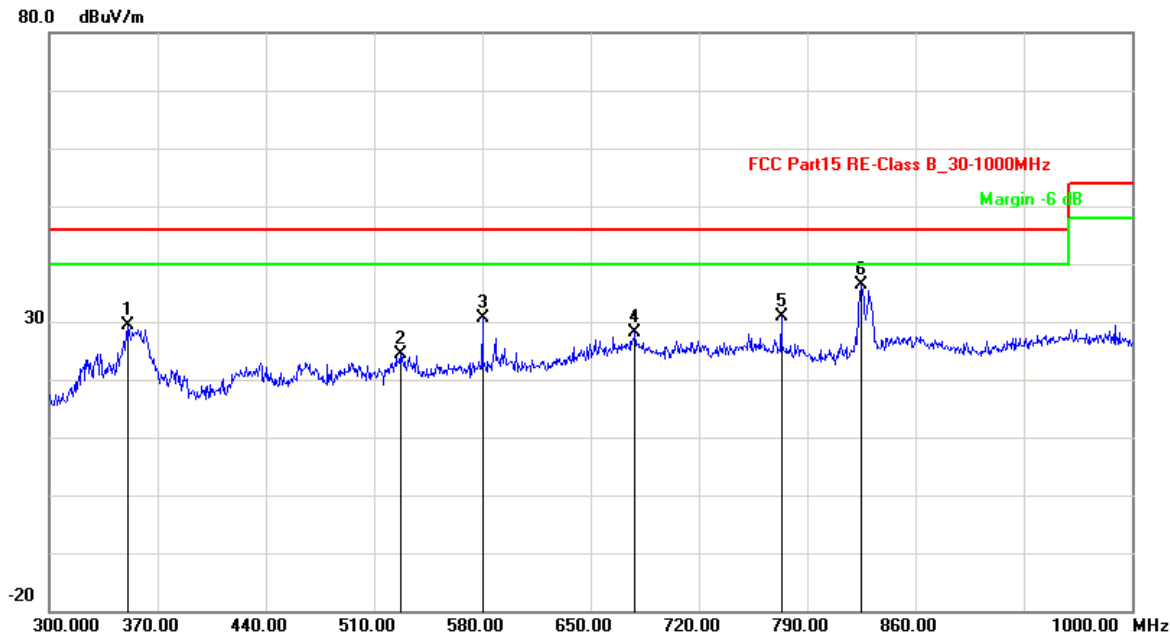
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| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|--|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 351.1000 | -11.33 | 40.76 | 29.43 | 46.00 | -16.57 | QP |
| 2 | 526.8000 | -6.81 | 31.10 | 24.29 | 46.00 | -21.71 | QP |
| 3 | 580.0000 | -5.60 | 36.17 | 30.57 | 46.00 | -15.43 | QP |
| 4 | 678.7000 | -3.51 | 31.56 | 28.05 | 46.00 | -17.95 | QP |
| 5 | 773.2000 | -2.37 | 33.27 | 30.90 | 46.00 | -15.10 | QP |
| 6 | 825.0000 | -1.78 | 38.16 | 36.38 | 46.00 | -9.62 | QP |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |

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| | | | |
|----------------------|--------------|---------|--|
| Modulation Standard: | 802.11 b | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | Low Channel | | <input type="checkbox"/> - not passed |
| Test point: | Vertical | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|--|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 2961.924 | -3.76 | 38.42 | 34.66 | 74.00 | -39.34 | peak |
| 2 | 2961.924 | -3.76 | 23.92 | 20.16 | 54.00 | -33.84 | AVG |
| 3 | 5474.950 | 4.67 | 39.58 | 44.25 | 74.00 | -29.75 | peak |
| 4 | 5474.950 | 4.67 | 26.18 | 30.85 | 54.00 | -23.15 | AVG |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |

| | | | |
|----------------------|----------------|---------|--|
| Modulation Standard: | 802.11 b | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | Middle Channel | | <input type="checkbox"/> - not passed |
| Test point: | Vertical | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|--|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3248.497 | -2.59 | 36.39 | 33.80 | 74.00 | -40.20 | peak |
| 2 | 3248.497 | -2.59 | 22.72 | 20.13 | 54.00 | -33.87 | AVG |
| 3 | 5915.832 | 6.30 | 40.52 | 46.82 | 74.00 | -27.18 | peak |
| 4 | 5915.832 | 6.30 | 25.55 | 31.85 | 54.00 | -22.15 | AVG |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |

| | | | |
|----------------------|--------------|---------|--|
| Modulation Standard: | 802.11 b | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | High Channel | | <input type="checkbox"/> - not passed |
| Test point: | Vertical | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|--|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 4086.172 | 0.10 | 36.74 | 36.84 | 74.00 | -37.16 | peak |
| 2 | 4086.172 | 0.10 | 21.26 | 21.36 | 54.00 | -32.64 | AVG |
| 3 | 6048.096 | 6.70 | 40.84 | 47.54 | 74.00 | -26.46 | peak |
| 4 | 6048.096 | 6.70 | 26.88 | 33.58 | 54.00 | -20.42 | AVG |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |

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| | | | |
|----------------------|--------------|---------|--|
| Modulation Standard: | 802.11 g | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | Low Channel | | <input type="checkbox"/> - not passed |
| Test point: | Vertical | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3755.511 | -0.90 | 38.36 | 37.46 | 74.00 | -36.54 | peak |
| 2 | 3755.511 | -0.90 | 23.21 | 22.31 | 54.00 | -31.69 | AVG |
| 3 | 6599.198 | 7.73 | 42.43 | 50.16 | 74.00 | -23.84 | peak |
| 4 | 6599.198 | 7.73 | 28.75 | 36.48 | 54.00 | -17.52 | AVG |

Remark: Other frequency mini margin all >6 dB of Limit

| | | | |
|----------------------|----------------|---------|--|
| Modulation Standard: | 802.11 g | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | Middle Channel | | <input type="checkbox"/> - not passed |
| Test point: | Vertical | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3821.643 | -0.72 | 36.92 | 36.20 | 74.00 | -37.80 | peak |
| 2 | 3821.643 | -0.72 | 21.98 | 21.26 | 54.00 | -32.74 | AVG |
| 3 | 6004.008 | 6.62 | 40.29 | 46.91 | 74.00 | -27.09 | peak |
| 4 | 6004.008 | 6.62 | 25.95 | 32.57 | 54.00 | -21.43 | AVG |

Remark: Other frequency mini margin all >6 dB of Limit

| | | | |
|----------------------|--------------|---------|--|
| Modulation Standard: | 802.11 g | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | High Channel | | <input type="checkbox"/> - not passed |
| Test point: | Vertical | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3358.717 | -2.16 | 37.07 | 34.91 | 74.00 | -39.09 | peak |
| 2 | 3358.717 | -2.16 | 22.30 | 20.14 | 54.00 | -33.86 | AVG |
| 3 | 5496.994 | 4.73 | 38.12 | 42.85 | 74.00 | -31.15 | peak |
| 4 | 5496.994 | 4.73 | 22.85 | 27.58 | 54.00 | -26.42 | AVG |

Remark: Other frequency mini margin all >6 dB of Limit

| | | | |
|----------------------|--------------|---------|--|
| Modulation Standard: | 802.11n-HT20 | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | Low Channel | | <input type="checkbox"/> - not passed |
| Test point: | Vertical | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3270.541 | -2.50 | 36.25 | 33.75 | 74.00 | -40.25 | peak |
| 2 | 3270.541 | -2.50 | 22.51 | 20.01 | 54.00 | -33.99 | AVG |
| 3 | 5496.994 | 4.73 | 39.51 | 44.24 | 74.00 | -29.76 | peak |
| 4 | 5496.994 | 4.73 | 25.53 | 30.26 | 54.00 | -23.74 | AVG |

Remark: Other frequency mini margin all >6 dB of Limit

| | | | |
|----------------------|----------------|---------|--|
| Modulation Standard: | 802.11n-HT20 | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | Middle Channel | | <input type="checkbox"/> - not passed |
| Test point: | Vertical | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3777.555 | -0.84 | 36.94 | 36.10 | 74.00 | -37.90 | peak |
| 2 | 3777.555 | -0.84 | 22.43 | 21.59 | 54.00 | -32.41 | AVG |
| 3 | 5893.788 | 6.21 | 40.47 | 46.68 | 74.00 | -27.32 | peak |
| 4 | 5893.788 | 6.21 | 26.37 | 32.58 | 54.00 | -21.42 | AVG |

Remark: Other frequency mini margin all >6 dB of Limit

| | | | |
|----------------------|--------------|---------|--|
| Modulation Standard: | 802.11n-HT20 | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | High Channel | | <input type="checkbox"/> - not passed |
| Test point: | Vertical | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 4108.216 | 0.18 | 36.45 | 36.63 | 74.00 | -37.37 | peak |
| 2 | 4108.216 | 0.18 | 21.97 | 22.15 | 54.00 | -31.85 | AVG |
| 3 | 6422.846 | 7.41 | 41.31 | 48.72 | 74.00 | -25.28 | peak |
| 4 | 6422.846 | 7.41 | 27.21 | 34.62 | 54.00 | -19.38 | AVG |

Remark: Other frequency mini margin all >6 dB of Limit

| | | | |
|----------------------|--------------|---------|--|
| Modulation Standard: | 802.11n-HT40 | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | Low Channel | | <input type="checkbox"/> - not passed |
| Test point: | Vertical | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|--|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3535.070 | -1.51 | 35.40 | 33.89 | 74.00 | -40.11 | peak |
| 2 | 3535.070 | -1.51 | 21.65 | 20.14 | 54.00 | -33.86 | AVG |
| 3 | 5673.347 | 5.39 | 39.06 | 44.45 | 74.00 | -29.55 | peak |
| 4 | 5673.347 | 5.39 | 24.83 | 30.22 | 54.00 | -23.78 | AVG |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |

| | | | |
|----------------------|----------------|---------|--|
| Modulation Standard: | 802.11n-HT40 | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | Middle Channel | | <input type="checkbox"/> - not passed |
| Test point: | Vertical | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|--|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3468.938 | -1.73 | 35.73 | 34.00 | 74.00 | -40.00 | peak |
| 2 | 3468.938 | -1.73 | 21.99 | 20.26 | 54.00 | -33.74 | AVG |
| 3 | 5563.126 | 4.98 | 38.33 | 43.31 | 74.00 | -30.69 | peak |
| 4 | 5563.126 | 4.98 | 23.71 | 28.69 | 54.00 | -25.31 | AVG |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |

| | | | |
|----------------------|--------------|---------|--|
| Modulation Standard: | 802.11n-HT40 | Result: | <input checked="" type="checkbox"/> - passed |
| Channel: | High Channel | | <input type="checkbox"/> - not passed |
| Test point: | Vertical | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|--|-----------------|-------------|----------------|----------------|----------------|-------------|------|
| 1 | 3733.467 | -0.96 | 36.26 | 35.30 | 74.00 | -38.70 | peak |
| 2 | 3733.467 | -0.96 | 21.32 | 20.36 | 54.00 | -33.64 | AVG |
| 3 | 5871.743 | 6.13 | 40.13 | 46.26 | 74.00 | -27.74 | peak |
| 4 | 5871.743 | 6.13 | 26.12 | 32.25 | 54.00 | -21.75 | AVG |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |

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12.0 Antenna Requirements

12.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

12.2 Antenna Construction and Directional Gain

Antenna type: External antenna

Antenna Gain: 5 dBi

13.0 Deviation to test specifications

The following identical model(s):

N/A

Belong to the tested device:

Product description: **Wireless Router**

Model name: **MOFI4500-4GXeLTE**