ISSUED BY Shenzhen BALUN Technology Co., Ltd.

RF

TEST REPOR

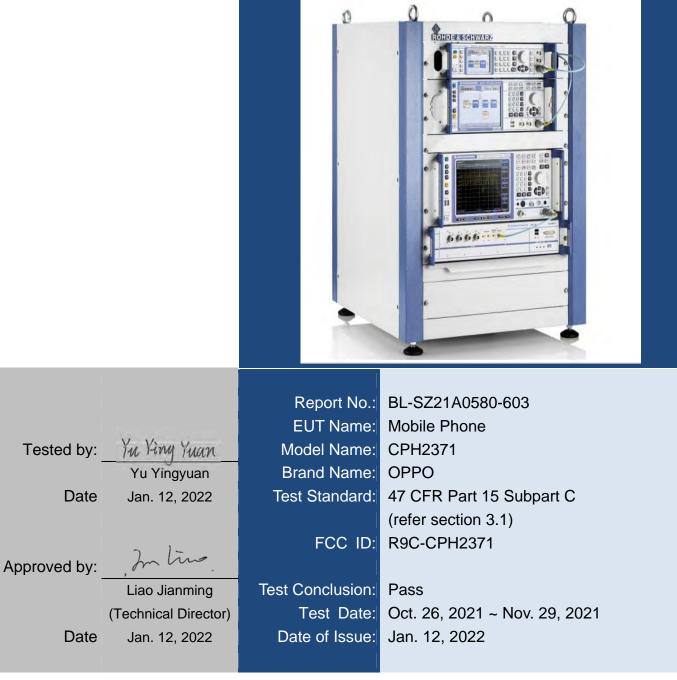


FOR

Mobile Phone

ISSUED TO Guangdong OPPO Mobile Telecommunications Corp., Ltd.

NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan City, Guangdong, China



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Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong, P. R. China 518055 TEL: +86-755-66850100, FAX: +86-755-61824271 Email: qc@baluntek.com www.baluntek.com



Revision History

| Version | Issue Date | Revisions Content |
|----------------------------------|---------------------------------------|---|
| <u>Rev. 01</u> <u>Rev. 02</u> | <u>Dec. 23, 2021</u> Jan. 12, 2022 | Initial Issue Updated Section 2.5 Technical Information |

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1 ADMINISTRATIVE DATA (GENERAL INFORMATION)

1.1 Identification of the Testing Laboratory

| Company Name | Shenzhen BALUN Technology Co., Ltd. | |
|--------------|---|--|
| A dalama a a | Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, | |
| Address | Nanshan District, Shenzhen, Guangdong Province, P. R. China | |
| Phone Number | +86 755 6685 0100 | |

1.2 Identification of the Responsible Testing Location

| Test Location | Shenzhen BALUN Technology Co., Ltd. |
|---------------|---|
| Addroop | Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, |
| Address | Nanshan District, Shenzhen, Guangdong Province, P. R. China |
| Accreditation | The laboratory is a testing organization accredited by FCC as a |
| Certificate | accredited testing laboratory. The designation number is CN1196. |
| | All measurement facilities used to collect the measurement data are |
| Description | located at Block B, FL 1, Baisha Science and Technology Park, Shahe |
| Description | Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. |
| | China 518055 |

1.3 Laboratory Condition

| Ambient Temperature | 20°C to 25°C |
|------------------------------|--------------------|
| Ambient Relative Humidity | 45% to 55% |
| Ambient Pressure | 100 kPa to 102 kPa |

1.4 Announce

- (1) The test report reference to the report template version v6.6.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
- (5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.
- (6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
- (7) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.



2 PRODUCT INFORMATION

2.1 Applicant Information

| Applicant | Guangdong OPPO Mobile Telecommunications Corp., Ltd. |
|-----------|---|
| Address | NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan |
| Address | City, Guangdong, China |

2.2 Manufacturer Information

| Manufacturer | Guangdong OPPO Mobile Telecommunications Corp., Ltd. |
|--------------|---|
| Address | NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan |
| Address | City, Guangdong, China |

2.3 Factory Information

| Factory | Guangdong OPPO Mobile Telecommunications Corp., Ltd. |
|---------|---|
| Address | NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan |
| Address | City, Guangdong, China |

2.4 General Description for Equipment under Test (EUT)

| EUT Name | Mobile Phone | |
|-----------------------|---------------------|--|
| Model Name Under Test | CPH2371 | |
| Series Model Name | N/A | |
| Description of Model | N/A | |
| name differentiation | N/A | |
| Hardware Version | 11 | |
| Software Version | ColorOS V12 | |
| Dimensions (Approx.) | 160.6*73.2*7.81mm | |
| Weight (Approx.) | 173g (with battery) | |



2.5 Technical Information

| | 2G Network GSM/GPRS/EDGE 850/1900 MHz |
|----------------------|---|
| | 3G Network WCDMA/HSDPA/HSUPA/DC-HSDPA/HSPA+ |
| | Band 2/4/5 |
| | 4G Network FDD LTE Band 2/4/5/7/12/17/26/66 |
| | TDD LTE Band 38/41 |
| | LTE CA Uplink (UL): CA_7C, CA_38C, CA_41C |
| | 5G Network SA: NR n5/n7/n38/n41 |
| Network and Wireless | NSA(EN-DC): DC_7A_n66A, DC_66A_n66A, DC_5A_n7A, |
| connectivity | DC_7A_n7A, DC_66A_n7A, DC_7A_n5A |
| | Bluetooth (BR+EDR+BLE) |
| | 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20/40), 802.11VHT20/40, |
| | 802.11ax(HE20/40) |
| | 5G WIFI 802.11a, 802.11n(HT20/40), 802.11ac(VHT20/40/80), |
| | 802.11ax(HE20/40/80) U-NII-1/2A/2C/3 |
| | GPS, GLONASS, BDS, Galileo, SBAS, NFC |
| | |

The requirement for the following technical information of the EUT was tested in this report:

| | 802.11b/g/n/VHT/ax(20 MHz): 2.412 GHz - 2.462 GHz |
|-------------------------|---|
| | $f_c = 2412 \text{ MHz} + (N-1)^*5 \text{ MHz}$, where |
| | - f_c = "Operating Frequency" in MHz, |
| | - N = "Channel Number" with the range from 1 to 11. |
| Frequency Range | 802.11n/VHT/ax(40 MHz): 2.422 GHz - 2.452 GHz |
| | $f_c = 2412 \text{ MHz} + (N-1)*5 \text{ MHz}$, where |
| | - f_c = "Operating Frequency" in MHz, |
| | - N = "Channel Number" with the range from 3 to 9. |
| Modulation Type | DSSS, OFDM, OFDMA |
| | |
| Product Type | ⊠ Portable |
| | Fix Location |
| Antenna System (eg., | N/A |
| MIMO, Smart Antenna) | |
| Categorization as | |
| Correlated or | N/A |
| Completely Uncorrelated | |
| Antenna Type | PIFA Antenna |
| Antenna Gain | 1.0 dBi (In test items related to antenna gain, the final results |
| | reflect this figure. This value is provided by the applicant.) |
| About the Product | Only the WIFI 802.11b, 802.11g, 802.11n (HT20/40), 802.11 |
| | (VHT20/40) and 802.11ax (HE20/40) was tested in this report. |



| Modulation technology | Modulation Type | Transfer Rate (Mbps)(Single RF path) |
|-----------------------|-----------------|--------------------------------------|
| | DBPSK | 1 |
| DSSS (802.11b) | DQPSK | 2 |
| | ССК | 5.5/11 |
| | BPSK | 6/9 |
| OFDM (802.11g) | QPSK | 12/18 |
| OFDM (602.119) | 16QAM | 24/36 |
| | 64QAM | 48/54 |
| | BPSK | 6.5/7.2 |
| OFDM | QPSK | 13/19.5/14.4/21.7 |
| (802.11n/VHT-20 MHz) | 16QAM | 26/39/28.9/43.3 |
| | 64QAM | 52/58.5/65/57.8/65/72.2 |
| | BPSK | 13.5/15 |
| OFDM | QPSK | 27/40.5/30/45 |
| (802.11n/VHT-40 MHz) | 16QAM | 54/81/60/90 |
| | 64QAM | 108/121.5/135/120/150 |
| | BPSK | 4 |
| | QPSK | 16/24/17/26 |
| OFDMA | 16QAM | 33/49/34/52 |
| (802.11ax-20 MHz) | 64QAM | 65/73/81/69/77/86 |
| | 256QAM | 98/108/103/115 |
| | 1024QAM | 122/135/129/143 |
| | BPSK | 8/9 |
| | QPSK | 33/49/34/52 |
| OFDMA | 16QAM | 65/98/69/103 |
| (802.11ax-40 MHz) | 64QAM | 130/146/163/138/155/172 |
| | 256QAM | 195/217/207/229 |
| | 1024QAM | 244/271/258/287 |

Note: Preliminary tests were performed in different data rate in above table to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.



| Test Items | Mode | Data Rate | Cha | nnel |
|------------------------|-----------------------|-------------------|--------|-------|
| Output Power | 11b/11g/11n20/11n40/ | 1/6/6.5/13.5/ | 1/6/11 | 3/6/9 |
| | VHT20/VHT40/ax20/ax40 | 6.5/13.5/4/8 Mbps | 1/0/11 | 3/0/9 |
| 6dB Bandwidth | 11b/11g/11n20/11n40/ | 1/6/6.5/13.5/ | 1/6/11 | 3/6/9 |
| | VHT20/VHT40/ax20/ax40 | 6.5/13.5/4/8 Mbps | 1/0/11 | 3/0/9 |
| Conducted Spurious | 11b/11g/11n20/11n40/ | 1/6/6.5/13.5/ | 1/6/11 | 3/6/9 |
| Emission | VHT20/VHT40/ax20/ax40 | 6.5/13.5/4/8 Mbps | 1/0/11 | 3/0/9 |
| Conducted Emission | 11b/11g/11n20/11n40/ | 1/6/6.5/13.5/ | 1/6/11 | 3/6/9 |
| Conducted Emission | VHT20/VHT40/ax20/ax40 | 6.5/13.5/4/8 Mbps | 1/0/11 | 3/0/9 |
| Radiated Spurious | 11b/11g/11n20/11n40/ | 1/6/6.5/13.5/ | 1/6/11 | 3/6/9 |
| Emission | VHT20/VHT40/ax20/ax40 | 6.5/13.5/4/8 Mbps | 1/0/11 | 3/0/9 |
| Pond Edge | 11b/11g/11n20/11n40/ | 1/6/6.5/13.5/ | | |
| Band Edge | VHT20/VHT40/ax20/ax40 | 6.5/13.5/4/8 Mbps | 1/6/11 | 3/6/9 |
| Power spectral density | 11b/11g/11n20/11n40/ | 1/6/6.5/13.5/ | 1/6/11 | 3/6/9 |
| (PSD) | VHT20/VHT40/ax20/ax40 | 6.5/13.5/4/8 Mbps | 1/0/11 | 3/0/9 |

Note: The above EUT information in section 2.4 and 2.6 was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.



2.6 Additional Instructions

EUT Software Settings:

| | \square | Special software is used. |
|------|-----------|---|
| Mode | | The software provided by client to enable the EUT under |
| Mode | | transmission condition continuously at specific channel |
| | | frequencies individually. |

During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

| Power level setup in software | | | |
|-------------------------------|-----------------|-----------------|----------|
| Test Software Version | *#*#3646633#*#* | | |
| Mode | Channel | Frequency (MHz) | Soft Set |
| | 1 | 2412 | 13.00 |
| 802.11 b | 6 | 2437 | 13.00 |
| | 11 | 2462 | 13.00 |
| | 1 | 2412 | 12.50 |
| | 2 | 2417 | 14.00 |
| | 3 | 2422 | 15.00 |
| 902 11 a | 4 | 2427 | 16.00 |
| 802.11 g | 6 | 2437 | 16.00 |
| | 9 | 2452 | 16.00 |
| | 10 | 2457 | 14.00 |
| | 11 | 2462 | 12.50 |
| | 1 | 2412 | 12.50 |
| | 2 | 2417 | 14.00 |
| | 3 | 2422 | 14.50 |
| 802.11 n20 | 4 | 2427 | 16.00 |
| 002.11120 | 6 | 2437 | 16.00 |
| | 9 | 2452 | 16.00 |
| | 10 | 2457 | 14.00 |
| | 11 | 2462 | 11.50 |
| | 3 | 2422 | 10.50 |
| | 4 | 2427 | 12.00 |
| | 5 | 2432 | 15.00 |
| 802.11 n40 | 6 | 2437 | 16.00 |
| | 7 | 2442 | 15.00 |
| | 8 | 2447 | 12.00 |
| | 9 | 2452 | 11.00 |
| | 1 | 2412 | 12.00 |
| | 2 | 2417 | 13.50 |
| 802.11 VHT20 | 3 | 2422 | 14.50 |
| 002.11 01120 | 4 | 2427 | 16.00 |
| | 6 | 2437 | 16.00 |
| | 9 | 2452 | 16.00 |



| | 10 | 2457 | 12.50 |
|-------------------|----|------|-------|
| | 11 | 2462 | 11.50 |
| | 3 | 2422 | 10.50 |
| | 4 | 2427 | 12.00 |
| | 5 | 2432 | 15.50 |
| 802.11 VHT40 | 6 | 2437 | 16.00 |
| | 7 | 2442 | 14.50 |
| | 8 | 2447 | 12.00 |
| | 9 | 2452 | 11.00 |
| | 1 | 2412 | 12.00 |
| | 2 | 2417 | 13.00 |
| | 3 | 2422 | 15.00 |
| 900 11 ov20 (CLI) | 4 | 2427 | 16.00 |
| 802.11 ax20 (SU) | 6 | 2437 | 16.00 |
| | 9 | 2452 | 16.00 |
| | 10 | 2457 | 13.50 |
| | 11 | 2462 | 10.50 |
| | 3 | 2422 | 5.50 |
| | 4 | 2427 | 10.00 |
| | 5 | 2432 | 11.50 |
| 802.11 ax40 (SU) | 6 | 2437 | 11.00 |
| | 7 | 2442 | 10.00 |
| | 8 | 2447 | 8.50 |
| | 9 | 2452 | 6.50 |

| Mode | Channel | Frequency (MHz) | RU Config | Soft Set |
|-------------|---------|--------------------|-----------|----------|
| | | | 26 | 8.00 |
| | 1 | 2412 | 52 | 11.00 |
| | | | 106 | 12.00 |
| | | | 26 | 8.00 |
| | 2 | 2417 | 52 | 11.00 |
| | | | 106 | 13.00 |
| | | 3 2422 6 2437 | 26 | 8.00 |
| | 20 | | 52 | 11.00 |
| 802.11 ax20 | | | 106 | 14.00 |
| 002.11 ax20 | | | 26 | 8.00 |
| | | | 52 | 11.00 |
| | | | 106 | 14.00 |
| | | | 26 | 8.00 |
| | 9 | 2452 | 52 | 11.00 |
| | | | 106 | 14.00 |
| | | | 26 | 8.00 |
| | 10 | 2457 | 52 | 11.00 |
| | | | 106 | 13.50 |



| | | | 26 | 8.00 |
|-------------|----|-------|-----|-------|
| | 11 | 2462 | 52 | 10.50 |
| | | | 106 | 10.50 |
| | | | 26 | 5.50 |
| | 2 | 0.400 | 52 | 5.50 |
| | 3 | 2422 | 106 | 5.50 |
| | | | 242 | 5.50 |
| | | | 26 | 8.00 |
| | 4 | 2427 | 52 | 10.00 |
| | 4 | 2427 | 106 | 10.00 |
| | | | 242 | 10.00 |
| | | | 26 | 8.00 |
| | 5 | 2432 | 52 | 11.00 |
| | | | 106 | 11.50 |
| | | | 242 | 11.50 |
| | | | 26 | 8.00 |
| 802.11 ax40 | 6 | 2437 | 52 | 11.00 |
| 002.11 ax40 | O | 2437 | 106 | 11.00 |
| | | | 242 | 11.00 |
| | | | 26 | 8.00 |
| | 7 | 2442 | 52 | 10.00 |
| | 1 | | 106 | 10.00 |
| | | | 242 | 10.00 |
| | | | 26 | 8.00 |
| | 8 | 2447 | 52 | 8.50 |
| | 0 | 2447 | 106 | 8.50 |
| | | | 242 | 8.50 |
| | | | 26 | 6.50 |
| | 9 | 2452 | 52 | 6.50 |
| | 9 | 2452 | 106 | 6.50 |
| | | | 242 | 6.50 |



Run software:

| Channel Info | | |
|-----------------------------|------------------|---|
| Tx0 channel | 1 [2412MHz] | - |
| Channel Bandwidth | BW20 | * |
| Data Bandwidth | BW20 | * |
| Primary Ch | 0 | |
| Test Mode | | |
| Mode | continuous packe | * |
| Package Info | | |
| Pkt length | 1024 | |
| Pkt cnt | 0 | |
| Preamble | CCK | * |
| Rate | 1M | |
| Guard interval | normal GI | |
| FEC | BCC | * |
| Tx power (dBm) | 15.0 | |
| Inter packet gap [0~255] | 50 | |
| HW TX | | |
| TX Count | 429 | - |
| GO | STO | D |



3 SUMMARY OF TEST RESULTS

3.1 Test Standards

| No. | Identity | Document Title | |
|-----|---------------------------|--|--|
| 1 | 47 CFR Part 15, Subpart C | Miscellaneous Wireless Communications Services | |
| | | GUIDANCE FOR COMPLIANCE MEASUREMENTS ON | |
| 2 | KDB Publication 558074 | DIGITAL TRANSMISSION SYSTEM, FREQUENCY HOPPING | |
| 2 | D01v05r02 | SPREAD SPECTRUM SYSTEM, AND HYBRID SYSTEM DEVICES | |
| | | OPERATING UNDER SECTION 15.247 OF THE FCC RULES | |
| 3 | ANGL CC2 40 2012 | American National Standard of Procedures for Compliance Testing of | |
| 3 | ANSI C63.10-2013 | Unlicensed Wireless Devices | |

3.2 Verdict

| No. | Description | FCC PART No. | Test Result | Verdict | | |
|----------|--------------------------------------|--------------------|-------------|------------------------|--|--|
| 1 | Antenna Requirement | 15.203 | N/A | Pass ^{Note 1} | | |
| 2 | Output Power | 15.247 (b) | ANNEX A.1 | Pass | | |
| 3 | 6dB Bandwidth | 15.247 (a) | ANNEX A.2 | Pass | | |
| 4 | Conducted Spurious Emission | 15.247 (d) | ANNEX A.3 | Pass | | |
| 5 | Band Edge(Authorized-band band-edge) | 15.247 (d) | ANNEX A.4 | Pass | | |
| 6 | Conducted Emission | 15.207 | ANNEX A.5 | Pass | | |
| 7 | Radiated Spurious Emission | 15.209; 15.247 (d) | ANNEX A.6 | Pass | | |
| 8 | Band Edge(Restricted-band band-edge) | 15.209; 15.247 (d) | ANNEX A.7 | Pass | | |
| 9 | Power spectral density (PSD) | 15.247 (e) | ANNEX A.8 | Pass | | |
| 10 | Receiver Spurious Emissions | N/A | N/A | N/A Note 2 | | |
| NI . (. | Note 1. Disease refer to postion 5.4 | | | | | |

Note ¹: Please refer to section 5.1.

Note ²: Only radio communication receivers operating in stand-alone mode within the band 30-960 MHz, as well as scanner receivers, are subject to Industry Canada requirements, so this test is not applicable.



4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

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

| Relative Humidity | 45% - 55% | | |
|----------------------------|-------------------------|----------------|--|
| Atmospheric Pressure | 100 kPa - 102 kPa | | |
| Temperature | NT (Normal Temperature) | +22°C to +25°C | |
| Working Voltage of the EUT | NV (Normal Voltage) | 7.74 V | |

4.2 Test Equipment List

| Description | Manufacturer | Model | Serial No. | Cal. Date | Cal. Due |
|---------------------------------------|----------------------------|-----------------------|------------|------------|------------|
| Spectrum Analyzer | ROHDE&SCHWARZ | FSV-40 | 101544 | 2021.04.01 | 2022.03.31 |
| Bluetooth Signaling Unit | ROHDE&SCHWARZ | CMW500 | 142028 | 2021.06.01 | 2022.05.31 |
| EMI Receiver | KEYSIGHT | N9038A | MY53220118 | 2021.06.01 | 2022.05.31 |
| EMI Receiver | ROHDE&SCHWARZ | ESRP | 101036 | 2021.06.01 | 2022.05.31 |
| LISN | SCHWARZBECK | NSLK 8127 | 8127-687 | 2021.06.01 | 2022.05.31 |
| Test Antenna- Loop(9 kHz-30 MHz) | SCHWARZBECK | FMZB 1519 | 1519-037 | 2021.04.16 | 2024.04.15 |
| Test Antenna- Bi-Log(30 MHz-3 GHz) | SCHWARZBECK | VULB 9163 | 9163-624 | 2021.08.20 | 2024.08.19 |
| Test Antenna- Horn(1-18 GHz) | SCHWARZBECK | BBHA 9120D | 9120D-1917 | 2019.07.02 | 2022.07.01 |
| Test Antenna- Horn (18-40 GHz) | A-INFO | LB- 180400KF | J211060273 | 2021.07.02 | 2023.07.01 |
| Anechoic Chamber | RAINFORD | 9m*6m*6m | N/A | 2017.02.21 | 2022.02.20 |
| Anechoic Chamber | EMC Electronic Co., Ltd | 20.10*11.60 *7.35m | N/A | 2019.08.08 | 2022.08.07 |
| Shielded Enclosure | ChangNing | CN-130701 | 130703 | | |

4.3 Test Software List

| Description | Manufacturer | Software Version | Serial No. | Applicable test Setup |
|-------------|--------------|------------------|------------|-------------------------------------|
| BLE410R | BALUN | V2.1.1.488 | N/A | The section 4.5.1 |
| BLE410E | BALUN | V19.8.28.435 | N/A | The section 4.5.2&4.5.3&4.5.4&4.5.5 |



4.4 Measurement Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2.

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

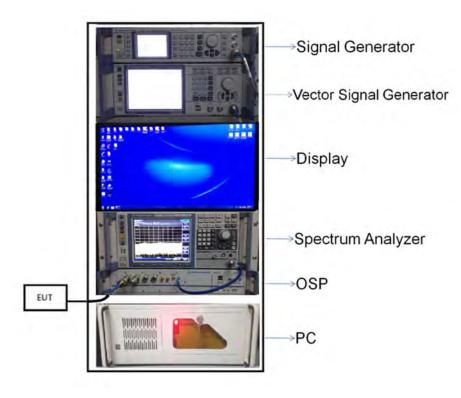
| Parameters | Uncertainty |
|-----------------------------------|-------------|
| Occupied Channel Bandwidth | 2.8% |
| RF output power, conducted | 1.28 dB |
| Power Spectral Density, conducted | 1.30 dB |
| Unwanted Emissions, conducted | 1.84 dB |
| All emissions, radiated | 5.36 dB |
| Temperature | 0.82°C |
| Humidity | 4.1% |

4.5 Description of Test Setup

4.5.1 For Antenna Port Test

Conducted value (dBm) = Measurement value (dBm) + cable loss (dB)

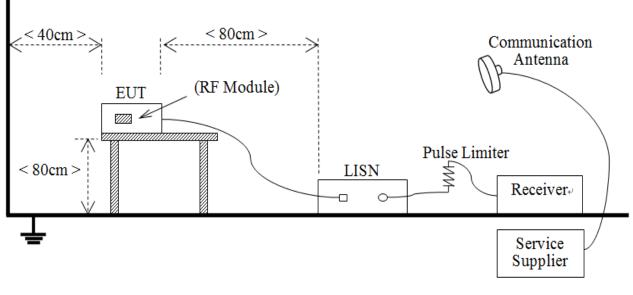
For example: the measurement value is 10 dBm and the cable 0.5dBm used, then the final result of EUT: Conducted value (dBm) = 10 dBm + 0.5 dB = 10.5 dBm



(Diagram 1)

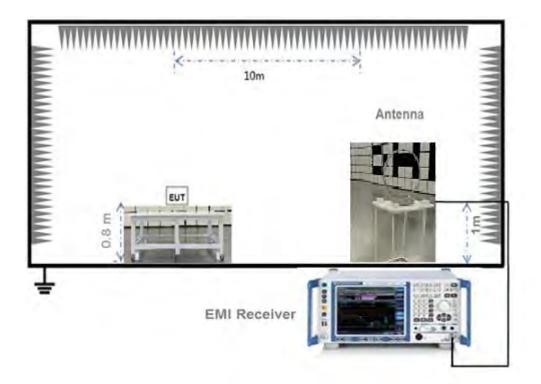


4.5.2 For AC Power Supply Port Test





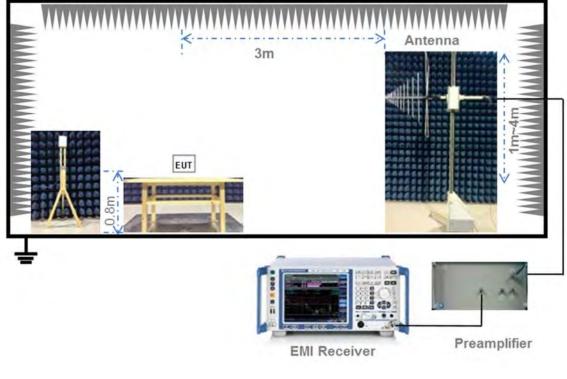
4.5.3 For Radiated Test (Below 30 MHz)





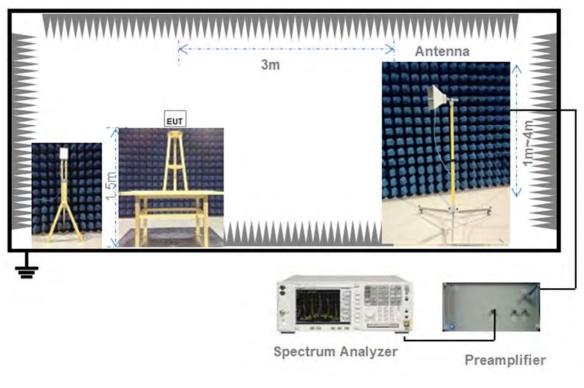


4.5.4 For Radiated Test (30 MHz-1 GHz)



(Diagram 4)

4.5.5 For Radiated Test (Above 1 GHz)







4.6 Measurement Results Explanation Example

4.6.1 For conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

4.6.2 For radiated band edges and spurious emission test:

 $\mathsf{E} = \mathsf{EIRP} - 20\mathsf{log} \ \mathsf{D} + 104.8$

where:

 $E = electric field strength in dB\mu V/m$,

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

EIRP= Measure Conducted output power Value (dBm) + Maximum transmit antenna gain (dBi) + the appropriate maximum ground reflection factor (dB)



5 TEST ITEMS

5.1 Antenna Requirements

5.1.1 Relevant Standards

FCC §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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of § 15.211, § 15.213, § 15.217, § 15.219, or § 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

If directional gain of transmitting antennas is greater than 6 dBi, the power shall be reduced by the same level in dB comparing to gain minus 6 dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

5.1.2 Antenna Anti-Replacement Construction

The Antenna Anti-Replacement as following method:

| Protected Method | Description |
|--------------------------------|--|
| The antenna is embedded in the | An embedded-in antenna design is used. |
| product. | |

| Reference Documents | Item |
|---------------------|--|
| Photo | Please refer to the EUT Photo documents. |

5.1.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



5.2 Output Power

5.2.1 Test Limit

FCC § 15.247(b)

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antennas antennas antennas antennas and antennas and antennas anten

5.2.2 Test Setup

See section 4.5.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.2.3 Test Procedure

Maximum peak conducted output power

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector.

Maximum conducted (average) output power (Reporting Only)

a) As an alternative to spectrum analyzer or EMI receiver measurements, measurements may be performed

using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied.

1) The EUT is configured to transmit continuously, or to transmit with a constant duty factor.

2) At all times when the EUT is transmitting, it shall be transmitting at its maximum power control level.

3) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a

factor of five.

b) If the transmitter does not transmit continuously, measure the duty cycle (x) of the transmitter output signal as

described in Section 6.0.

c) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.

d) Adjust the measurement in dBm by adding $10\log(1/x)$, where x is the duty cycle to the measurement result.

Measurements of duty cycle

The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal.

Set the center frequency of the instrument to the center frequency of the transmission.



Set RBW \geq OBW if possible; otherwise, set RBW to the largest available value.

Set VBW \geq RBW. Set detector = peak or average.

The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if T \leq 16.7 microseconds.)

5.2.4 Test Result

Please refer to ANNEX A.1.



5.36dB Bandwidth

5.3.1 Limit

FCC §15.247(a)

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW. The 6 dB bandwidth must be greater than 500 kHz.

5.3.2 Test Setup

See section 4.5.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.3.3 Test Procedure

Use the following spectrum analyzer settings:

Set RBW = 100 kHz.

Set the video bandwidth (VBW) \geq 3 RBW.

Detector = Peak.

Trace mode = max hold.

Sweep = auto couple.

Allow the trace to stabilize.

Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

5.3.4 Test Result

Please refer to ANNEX A.2.



5.4 Conducted Spurious Emission

5.4.1 Limit

FCC §15.247(d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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.

5.4.2 Test Setup

See section 4.5.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.4.3 Test Procedure

The DTS rules specify that in any 100 kHz bandwidth outside of the authorized frequency band, the power shall be attenuated according to the following conditions:

a) If the maximum peak conducted output power procedure was used to demonstrate compliance as described in 9.1, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 20 dBc).

b) If maximum conducted (average) output power was used to demonstrate compliance as described in 9.2, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 30 dBc).

c) In either case, attenuation to levels below the 15.209 general radiated emissions limits is not required.

The following procedures shall be used to demonstrate compliance to these limits. Note that these procedures can be used in either an antenna-port conducted or radiated test set-up. Radiated tests must conform to the test site requirements and utilize maximization procedures defined herein.

Reference level measurement

Establish a reference level by using the following procedure:

Set instrument center frequency to DTS channel center frequency.

Set the span to \geq 1.5 times the DTS bandwidth.

Set the RBW = 100 kHz.

Set the VBW \geq 3 x RBW.

Detector = peak.

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum PSD level.



Emission level measurement

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.

Set the RBW = 100 kHz.

Set the VBW \geq 3 x RBW.

Detector = peak.

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) are attenuated by at least the minimum requirements specified in 11.1 a) or 11.1 b). Report the three highest emissions relative to the limit.

5.4.4 Test Result

Please refer to ANNEX A.3.



5.5 Band Edge (Authorized-band band-edge)

5.5.1 Limit

FCC §15.247(d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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.

5.5.2 Test Setup

See section 4.5.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.5.3 Test Procedure

The following procedures may be used to determine the peak or average field strength or power of an unwanted emission that is within 2 MHz of the authorized band edge. If a peak detector is utilized, use the procedure described in 13.2.1. Use the procedure described in 13.2.2 when using an average detector and the EUT can be configured to transmit continuously (i.e., duty cycle \geq 98%). Use the procedure described in 13.2.3 when using an average detector and the EUT cannot be configured to transmit continuously but the duty cycle is constant (i.e., duty cycle variations are less than ± 2 percent). Use the procedure described in 13.2.4 when using an average detector for those cases where the EUT cannot be configured to transmit continuously and the duty cycle is not constant (duty cycle variations equal or exceed 2 percent).

When using a peak detector to measure unwanted emissions at or near the band edge (within 2 MHz of the authorized band), the following integration procedure can be used.

Set instrument center frequency to the frequency of the emission to be measured (must be within 2 MHz of the authorized band edge).

Set span to 2 MHz

RBW = 100 kHz.

VBW \geq 3 x RBW.

Detector = peak.

Sweep time = auto.

Trace mode = max hold.

Allow sweep to continue until the trace stabilizes (required measurement time may increase for low duty cycle applications)

Compute the power by integrating the spectrum over 1 MHz using the analyzer's band power measurement function with band limits set equal to the emission frequency (femission) \pm 0.5 MHz. If the instrument does not have a band power function, then sum the amplitude levels (in power units) at 100 kHz intervals extending across the 1 MHz spectrum defined by femission \pm 0.5 MHz.

Standard method(The 99% OBW of the fundamental emission is without 2 MHz of the authorized band):

Span: Wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products that fall outside of the authorized band of operation.



Reference level: As required to keep the signal from exceeding the maximum instrument input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.

Attenuation: Auto (at least 10 dB preferred).

Sweep time: Coupled.

Resolution bandwidth: 100 kHz.

Video bandwidth: 300 kHz.

Detector: Peak.

Trace: Max hold.

5.5.4 Test Result

Please refer to ANNEX A.4.



5.6 Conducted Emission

5.6.1 Limit

FCC §15.207

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50μ H/50 Ω line impedance stabilization network (LISN).

| Frequency range | Conducted Limit (dBµV) | | | |
|-----------------|------------------------|----------|--|--|
| (MHz) | Quai-peak | Average | | |
| 0.15 - 0.50 | 66 to 56 | 56 to 46 | | |
| 0.50 - 5 | 56 | 46 | | |
| 0.50 - 30 | 60 | 50 | | |

5.6.2 Test Setup

See section 4.5.2 for test setup description for the AC power supply port. The photo of test setup please refer to ANNEX B.

5.6.3 Test Procedure

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.

Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

5.6.4 Test Result

Please refer to ANNEX A.5.



5.7 Radiated Spurious Emission

5.7.1 Limit

FCC §15.209&15.247(d)

Radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

According to FCC section 15.209 (a), 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) | Field Strength (µV/m) | Measurement Distance (m) |
|-----------------|-----------------------|--------------------------|
| 0.009 - 0.490 | 2400/F(kHz) | 300 |
| 0.490 - 1.705 | 24000/F(kHz) | 30 |
| 1.705 - 30.0 | 30 | 30 |
| 30 - 88 | 100 | 3 |
| 88 - 216 | 150 | 3 |
| 216 - 960 | 200 | 3 |
| Above 960 | 500 | 3 |

Note:

- 1. For Above 1000 MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.
- 2. For above 1000 MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK).

5.7.2 Test Setup

See section 4.5.3 to 4.5.5 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.7.3 Test Procedure

Since the emission limits are specified in terms of radiated field strength levels, measurements performed to demonstrate compliance have traditionally relied on a radiated test configuration. Radiated measurements remain the principal method for demonstrating compliance to the specified limits; however antenna-port conducted measurements are also now acceptable to demonstrate compliance (see below for details). When radiated measurements are utilized, test site requirements and procedures for maximizing and measuring radiated emissions that are described in ANSI C63.10 shall be followed.

Antenna-port conducted measurements may also be used as an alternative to radiated measurements for demonstrating compliance in the restricted frequency bands. If conducted measurements are performed, then proper impedance matching must be ensured and an additional radiated test for cabinet/case spurious emissions is required.

General Procedure for conducted measurements in restricted bands

a) Measure the conducted output power (in dBm) using the detector specified (see guidance regarding measurement procedures for determining quasi-peak, peak, and average conducted output power, respectively).



b) Add the maximum transmit antenna gain (in dBi) to the measured output power level to determine the EIRP level (see guidance on determining the applicable antenna gain)

c) Add the appropriate maximum ground reflection factor to the EIRP level (6 dB for frequencies \leq 30 MHz, 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive and 0 dB for frequencies > 1000 MHz).

d) For devices with multiple antenna-ports, measure the power of each individual chain and sum the EIRP of all chains in linear terms (e.g., Watts, mW).

e) Convert the resultant EIRP level to an equivalent electric field strength using the following relationship:

E = EIRP - 20log D + 104.8

where:

 $E = electric field strength in dB\mu V/m$,

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

f) Compare the resultant electric field strength level to the applicable limit.

g) Perform radiated spurious emission test.

Quasi-Peak measurement procedure

The specifications for measurements using the CISPR quasi-peak detector can be found in Publication 16 of the International Special Committee on Radio Frequency Interference (CISPR) of the International Electrotechnical Commission.

As an alternative to CISPR quasi-peak measurement, compliance can be demonstrated to the applicable emission limits using a peak detector.

Peak power measurement procedure

Peak emission levels are measured by setting the instrument as follows:

- a) RBW = as specified in Table 1.
- b) VBW \geq 3 x RBW.
- c) Detector = Peak.
- d) Sweep time = auto.

e) Trace mode = max hold.

f) Allow sweeps to continue until the trace stabilizes. (Note that the required measurement time may be longer for low duty cycle applications).

Table 1—RBW as a function of frequency

| Frequency | RBW |
|-------------|-------------|
| 9-150 kHz | 200-300 Hz |
| 0.15-30 MHz | 9-10 kHz |
| 30-1000 MHz | 100-120 kHz |



> 1000 MHz 1 MHz

If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

Trace averaging across on and off times of the EUT transmissions followed by duty cycle correction

If continuous transmission of the EUT (i.e., duty cycle \ge 98 percent) cannot be achieved and the duty cycle is constant (i.e., duty cycle variations are less than \pm 2 percent), then the following procedure shall be used:

a) The EUT shall be configured to operate at the maximum achievable duty cycle.

b) Measure the duty cycle, x, of the transmitter output signal as described in section 6.0.

c) RBW = 1 MHz (unless otherwise specified).

d) VBW \geq 3 x RBW.

e) Detector = RMS, if span/(# of points in sweep) \leq (RBW/2). Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.

f) Averaging type = power (i.e., RMS).

1) As an alternative, the detector and averaging type may be set for linear voltage averaging.

2) Some instruments require linear display mode in order to use linear voltage averaging. Log or dB averaging shall not be used.

g) Sweep time = auto.

h) Perform a trace average of at least 100 traces.

i) A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:

1) If power averaging (RMS) mode was used in step f), then the applicable correction factor is $10 \log(1/x)$, where x is the duty cycle.

2) If linear voltage averaging mode was used in step f), then the applicable correction factor is $20 \log(1/x)$, where x is the duty cycle.

3) If a specific emission is demonstrated to be continuous (\geq 98 percent duty cycle) rather than turning on and off with the transmit cycle, then no duty cycle correction is required for that emission.

NOTE: Reduction of the measured emission amplitude levels to account for operational duty factor is not permitted. Compliance is based on emission levels occurring during transmission - not on an average across on and off times of the transmitter.

Determining the applicable transmit antenna gain

A conducted power measurement will determine the maximum output power associated with a restricted band emission; however, in order to determine the associated EIRP level, the gain of the transmitting antenna (in dBi) must be added to the measured output power (in dBm).



Since the out-of-band characteristics of the EUT transmit antenna will often be unknown, the use of a conservative antenna gain value is necessary. Thus, when determining the EIRP based on the measured conducted power, the upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands, or 2 dBi, whichever is greater. However, for devices that operate in multiple frequency bands while using the same transmit antenna, the highest gain of the antenna within the operating band nearest in frequency to the restricted band emission being measured may be used in lieu of the overall highest gain when the emission is at a frequency that is within 20 percent of the nearest band edge frequency, but in no case shall a value less than 2 dBi be used.

See KDB 662911 for guidance on calculating the additional array gain term when determining the effective antenna gain for a EUT with multiple outputs occupying the same or overlapping frequency ranges in the same band.

Radiated spurious emission test

An additional consideration when performing conducted measurements of restricted band emissions is that unwanted emissions radiating from the EUT cabinet, control circuits, power leads, or intermediate circuit elements will likely go undetected in a conducted measurement configuration. To address this concern, a radiated test shall be performed to ensure that emissions emanating from the EUT cabinet (rather than the antenna port) also comply with the applicable limits.

For these cabinet radiated spurious emission measurements the EUT transmit antenna may be replaced with a termination matching the nominal impedance of the antenna. Procedures for performing radiated measurements are specified in ANSI C63.10. All detected emissions shall comply with the applicable limits.

The measurement frequency range is from 30 MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured RBW = 1 MHz for $f \ge 1$ GHz, 100 kHz for f < 1 GHz VBW \ge RBW Sweep = auto Detector function = peak Trace = max hold

5.7.4 Test Result

Please refer to ANNEX A.6.



5.8 Band Edge (Restricted-band band-edge)

5.8.1 Limit

FCC §15.209&15.247(d)

Radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

5.8.2 Test Setup

See section 4.5.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.8.3 Test Procedure

The measurement frequency range is from 9 kHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured RBW = 1 MHz for $f \ge 1$ GHz, 100 kHz for f < 1 GHz VBW \ge RBW Sweep = auto Detector function = peak Trace = max hold

For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported, Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

For transmitters operating above 1 GHz repeat the measurement with an average detector.

5.8.4 Test Result

Please refer to ANNEX A.7.



5.9 Power Spectral density (PSD)

5.9.1 Limit

FCC §15.247(e)

The same method of determining the conducted output power shall be used to determine the power spectral density. If a peak output power is measured, then a peak power spectral density measurement is required. If an average output power is measured, then an average power spectral density measurement should be used.

5.9.2 Test Setup

See section 4.5.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.9.3 Test Procedure

Set analyzer center frequency to DTS channel center frequency.

Set the span to 1.5 times the DTS bandwidth.

Set the RBW to: 3 kHz \leq RBW \leq 100 kHz.

Set the VBW \geq 3 RBW.

Detector = peak.

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum amplitude level within the RBW.

If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

5.9.4 Test Result

Please refer to ANNEX A.8.





ANNEX A TEST RESULT

A.1 Output Power

Duty Cycle

| Test Mode | On Time (ms) | On+Off time (ms) | Duty Cycle |
|-----------------|--------------|------------------|------------|
| 802.11b | 50 | 50 | 100.00% |
| 802.11g | 50 | 50 | 100.00% |
| 802.11n-20 MHz | 50 | 50 | 100.00% |
| 802.11n-40 MHz | 50 | 50 | 100.00% |
| 802.11ax-20 MHz | 50 | 50 | 100.00% |
| 802.11ax-40 MHz | 50 | 50 | 100.00% |

Peak Power Test Data

802.11b Mode:

| Channel | Measured Out | put Peak Power | Limit | | Verdict | |
|---------|--------------|----------------|-------|--------|---------|--|
| Channel | dBm | mW | dBm | mW | Verdict | |
| 1 | 15.87 | 38.64 | 30 | | Pass | |
| 6 | 15.82 | 38.19 | | 0 1000 | Pass | |
| 11 | 15.66 | 36.81 | | | Pass | |

802.11g Mode:

| Channel | Measured Output Peak Power | | Lir | nit | Verdict |
|---------|----------------------------|--------|-----|------|---------|
| Channel | dBm | mW | dBm | mW | verdict |
| 1 | 19.93 | 98.40 | | 4000 | Pass |
| 2 | 21.38 | 137.40 | | | Pass |
| 3 | 22.57 | 180.72 | | | Pass |
| 4 | 23.65 | 231.74 | 30 | | Pass |
| 6 | 23.68 | 233.35 | 30 | 1000 | Pass |
| 9 | 23.80 | 239.88 | - | | Pass |
| 10 | 21.61 | 144.88 | | | Pass |
| 11 | 20.06 | 101.39 | | | Pass |



802.11n-20 MHz Mode:

| Channel | Measured Output Peak Power | | Limit | | Verdict |
|---------|----------------------------|--------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | verdict |
| 1 | 19.93 | 98.40 | | 1000 | Pass |
| 2 | 21.37 | 137.09 | | | Pass |
| 3 | 21.99 | 158.12 | | | Pass |
| 4 | 23.41 | 219.28 | 20 | | Pass |
| 6 | 23.78 | 238.78 | 30 | 1000 | Pass |
| 9 | 23.66 | 232.27 | | | Pass |
| 10 | 21.51 | 141.58 | | | Pass |
| 11 | 19.04 | 80.17 | | | Pass |

802.11n-40 MHz Mode:

| Channel | Measured Output Peak Power | | Limit | | Vordict |
|---------|----------------------------|--------|-------|------|---------|
| | dBm | mW | dBm | mW | Verdict |
| 3 | 18.11 | 64.71 | 30 | 1000 | Pass |
| 4 | 19.49 | 88.92 | | | Pass |
| 5 | 22.63 | 183.23 | | | Pass |
| 6 | 23.75 | 237.14 | | | Pass |
| 7 | 22.28 | 169.04 | | | Pass |
| 8 | 19.67 | 92.68 | | | Pass |
| 9 | 18.68 | 73.79 | | | Pass |

802.11VHT-20 MHz Mode:

| Channel | Measured Output Peak Power | | Limit | | Verdict |
|---------|----------------------------|--------|-------|------|---------|
| | dBm | mW | dBm | mW | Verdici |
| 1 | 19.39 | 86.90 | - 30 | 1000 | Pass |
| 2 | 20.89 | 122.74 | | | Pass |
| 3 | 21.83 | 152.41 | | | Pass |
| 4 | 23.42 | 219.79 | | | Pass |
| 6 | 23.60 | 229.09 | | | Pass |
| 9 | 23.56 | 226.99 | | | Pass |
| 10 | 19.92 | 98.17 | | | Pass |
| 11 | 18.87 | 77.09 | | | Pass |

802.11VHT-40 MHz Mode:

| Channel | Measured Output Peak Power | | Limit | | Verdict |
|---------|----------------------------|--------|-------|------|---------|
| | dBm | mW | dBm | mW | Verdict |
| 3 | 18.00 | 63.10 | 30 | 1000 | Pass |
| 4 | 19.59 | 90.99 | | | Pass |
| 5 | 23.13 | 205.59 | | | Pass |
| 6 | 23.57 | 227.51 | | | Pass |
| 7 | 21.68 | 147.23 | | | Pass |
| 8 | 19.66 | 92.47 | | | Pass |
| 9 | 18.43 | 69.66 | | | Pass |



802.11ax-20 MHz(SU) Mode:

| Channel | Measured Output Peak Power | | Limit | | Verdict |
|---------|----------------------------|--------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | Verdict |
| 1 | 20.96 | 124.74 | | | Pass |
| 2 | 21.97 | 157.40 | | | Pass |
| 3 | 23.97 | 249.46 | | | Pass |
| 4 | 24.95 | 312.61 | 20 | 1000 | Pass |
| 6 | 25.18 | 329.61 | 30 | 1000 | Pass |
| 9 | 25.03 | 318.42 | - | | Pass |
| 10 | 22.49 | 177.42 | | | Pass |
| 11 | 19.47 | 88.51 | | | Pass |

802.11ax-40 MHz(SU) Mode:

| Channel | Measured Output Peak Power | | Limit | | Verdict | | | |
|---------|----------------------------|--------|-------|------|---------|------|--|------|
| Channel | dBm | mW | dBm | mW | Verdict | | | |
| 3 | 14.25 | 26.61 | | | | | | Pass |
| 4 | 18.90 | 77.62 | | | Pass | | | |
| 5 | 20.67 | 116.68 | | | Pass | | | |
| 6 | 20.24 | 105.68 | 30 | 1000 | Pass | | | |
| 7 | 18.63 | 72.95 | | | Pass | | | |
| 8 | 17.39 | 54.83 | | | | Pass | | |
| 9 | 15.46 | 35.16 | | | Pass | | | |

802.11ax-20 MHz(RU26) Mode:

| Channel | Measured Output Peak Power | | Limit | | Verdict |
|---------|----------------------------|-------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | Verdici |
| 1 | 17.55 | 56.89 | | | Pass |
| 2 | 17.76 | 59.70 | | | Pass |
| 3 | 17.86 | 61.09 | | | Pass |
| 6 | 17.67 | 58.48 | 30 | 1000 | Pass |
| 9 | 17.49 | 56.10 | | | Pass |
| 10 | 17.73 | 59.29 | | | Pass |
| 11 | 18.30 | 67.61 | | | Pass |

802.11ax-20 MHz(RU52) Mode:

| Channel | Measured Output Peak Power | | Limit | | Verdict |
|---------|----------------------------|--------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | verdict |
| 1 | 20.58 | 114.29 | | | Pass |
| 2 | 20.70 | 117.49 | | | Pass |
| 3 | 20.70 | 117.49 | | | Pass |
| 6 | 20.95 | 124.45 | 30 | 1000 | Pass |
| 9 | 20.63 | 115.61 | | | Pass |
| 10 | 20.75 | 118.85 | | | Pass |
| 11 | 20.53 | 112.98 | | | Pass |



802.11ax-20 MHz(RU106) Mode:

| Channel | Measured Output Peak Power | | Limit | | Verdict |
|---------|----------------------------|--------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | Verdict |
| 1 | 21.77 | 150.31 | | | Pass |
| 2 | 22.79 | 190.11 | | | Pass |
| 3 | 23.69 | 233.88 | | | Pass |
| 6 | 23.93 | 247.17 | 30 | 1000 | Pass |
| 9 | 23.79 | 239.33 | | | Pass |
| 10 | 23.17 | 207.49 | | | Pass |
| 11 | 20.30 | 107.15 | | | Pass |

802.11ax-40 MHz(RU26) Mode:

| Channel | Measured Output Peak Power | | Limit | | Verdict |
|---------|----------------------------|-------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | verdict |
| 3 | 15.11 | 32.43 | | | Pass |
| 4 | 17.53 | 56.62 | | | Pass |
| 5 | 17.86 | 61.09 | | | Pass |
| 6 | 18.01 | 63.24 | 30 | 1000 | Pass |
| 7 | 16.81 | 47.97 | | | Pass |
| 8 | 17.52 | 56.49 | | | Pass |
| 9 | 16.14 | 41.11 | | | Pass |

802.11ax-40 MHz(RU52) Mode:

| Channel | Measured Output Peak Power | | Limit | | Verdict |
|---------|----------------------------|--------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | Verdici |
| 3 | 15.15 | 32.73 | | | Pass |
| 4 | 19.55 | 90.16 | | | Pass |
| 5 | 20.55 | 113.50 | | | Pass |
| 6 | 20.81 | 120.50 | 30 | 1000 | Pass |
| 7 | 19.14 | 82.04 | | | Pass |
| 8 | 17.75 | 59.57 | 1 | | Pass |
| 9 | 15.91 | 38.99 | | | Pass |

802.11ax-40 MHz(RU106) Mode:

| Channel | Measured Output Peak Power | | Limit | | Verdict | |
|---------|----------------------------|--------|-------|------|---------|------|
| Channel | dBm | mW | dBm | mW | verdict | |
| 3 | 14.97 | 31.41 | | | | Pass |
| 4 | 19.61 | 91.41 | | | Pass | |
| 5 | 21.07 | 127.94 | | | Pass | |
| 6 | 20.65 | 116.14 | 30 | 1000 | Pass | |
| 7 | 19.21 | 83.37 | | | Pass | |
| 8 | 17.79 | 60.12 | | | Pass | |
| 9 | 15.78 | 37.84 | | | Pass | |



802.11ax-40 MHz(RU242) Mode:

| Channel | Measured Output Peak Power | | Limit | | Verdict |
|---------|----------------------------|--------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | verdict |
| 3 | 14.08 | 25.59 | | | Pass |
| 4 | 18.84 | 76.56 | | | Pass |
| 5 | 20.43 | 110.41 | | | Pass |
| 6 | 19.91 | 97.95 | 30 | 1000 | Pass |
| 7 | 19.21 | 83.37 | | | Pass |
| 8 | 17.37 | 54.58 | | | Pass |
| 9 | 15.42 | 34.83 | | | Pass |



Average Power Test Data

802.11b Mode:

| Channel | Measured Output Average Power | | Limit | | Verdict |
|---------|-------------------------------|-------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | verdict |
| 1 | 12.44 | 17.54 | | | Pass |
| 6 | 12.57 | 18.07 | 30 | 1000 | Pass |
| 11 | 12.75 | 18.84 | | | Pass |

802.11g Mode:

| Channel | Measured Output Average Power | | Limit | | Verdict |
|---------|-------------------------------|-------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | verdict |
| 1 | 12.14 | 16.37 | | | Pass |
| 2 | 13.77 | 23.82 | | | Pass |
| 3 | 14.57 | 28.64 | | | Pass |
| 4 | 15.63 | 36.56 | 30 | 1000 | Pass |
| 6 | 15.85 | 38.46 | 30 | 1000 | Pass |
| 9 | 15.76 | 37.67 | | | Pass |
| 10 | 13.62 | 23.01 | 1 | | Pass |
| 11 | 12.03 | 15.96 | | | Pass |

802.11n-20 MHz Mode:

| Channel | Measured Output Average Power | | Limit | | Verdict | | | | |
|---------|-------------------------------|-------|----------|------|---------|------|--|--|------|
| Channel | dBm | mW | dBm | mW | Verdict | | | | |
| 1 | 11.73 | 14.89 | | | Pass | | | | |
| 2 | 13.34 | 21.58 | | | | | | | Pass |
| 3 | 13.90 | 24.55 | | | Pass | | | | |
| 4 | 15.48 | 35.32 | - 30 100 | 1000 | Pass | | | | |
| 6 | 15.69 | 37.07 | 30 | 1000 | Pass | | | | |
| 9 | 15.56 | 35.97 | | | Pass | | | | |
| 10 | 13.41 | 21.93 | | | | Pass | | | |
| 11 | 10.94 | 12.42 | | | Pass | | | | |

802.11n-40 MHz Mode:

| Channel | Measured Output Average Power | | Limit | | Verdict |
|---------|-------------------------------|-------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | Verdict |
| 3 | 10.22 | 10.52 | | | Pass |
| 4 | 10.78 | 11.97 | | | Pass |
| 5 | 14.54 | 28.44 | | | Pass |
| 6 | 15.76 | 37.67 | 30 | 1000 | Pass |
| 7 | 14.31 | 26.98 | | | Pass |
| 8 | 11.80 | 15.14 | | | Pass |
| 9 | 10.70 | 11.75 | | | Pass |



802.11VHT-20 MHz Mode:

| Channel | Measured Output Average Power | | Limit | | Verdict |
|---------|-------------------------------|-------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | Verdict |
| 1 | 11.30 | 13.49 | | | Pass |
| 2 | 12.82 | 19.14 | | | Pass |
| 3 | 13.81 | 24.04 | | | Pass |
| 4 | 15.34 | 34.20 | 20 | 1000 | Pass |
| 6 | 15.54 | 35.81 | 30 | 1000 | Pass |
| 9 | 14.47 | 27.99 | | | Pass |
| 10 | 11.90 | 15.49 | | | Pass |
| 11 | 10.75 | 11.89 | | | Pass |

802.11VHT-40 MHz Mode:

| Channel | Measured Output Average Power | | Limit | | Verdict |
|---------|-------------------------------|-------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | Verdici |
| 3 | 10.08 | 10.19 | | | Pass |
| 4 | 11.74 | 14.93 | | | Pass |
| 5 | 15.23 | 33.34 | | | Pass |
| 6 | 15.78 | 37.84 | 30 | 1000 | Pass |
| 7 | 13.87 | 24.38 | | | Pass |
| 8 | 11.73 | 14.89 | | | Pass |
| 9 | 10.23 | 10.54 | | | Pass |

802.11ax-20 MHz(SU) Mode:

| Channel | Measured Outp | ut Average Power | Limit | | Verdict |
|---------|---------------|------------------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | Verdict |
| 1 | 11.55 | 14.29 | | | Pass |
| 2 | 12.46 | 17.62 | | | Pass |
| 3 | 14.45 | 27.86 | | | Pass |
| 4 | 15.50 | 35.48 | 30 | 1000 | Pass |
| 6 | 15.58 | 36.14 | 30 | 1000 | Pass |
| 9 | 15.64 | 36.64 | | | Pass |
| 10 | 13.04 | 20.14 | | | Pass |
| 11 | 10.19 | 10.45 | | | Pass |

802.11ax-40 MHz(SU) Mode:

| Channel | Measured Output Average Power | | Limit | | Verdict |
|---------|-------------------------------|-------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | verdict |
| 3 | 5.29 | 3.38 | | | Pass |
| 4 | 9.78 | 9.51 | | | Pass |
| 5 | 11.40 | 13.80 | | | Pass |
| 6 | 10.96 | 12.47 | 30 | 1000 | Pass |
| 7 | 9.44 | 8.79 | | | Pass |
| 8 | 8.24 | 6.67 | | | Pass |
| 9 | 6.20 | 4.17 | | | Pass |



802.11ax-20 MHz(RU26) Mode:

| Channel | Measured Output Average Power | | Limit | | Verdict |
|---------|-------------------------------|------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | Verdict |
| 1 | 7.66 | 5.83 | | | Pass |
| 2 | 7.73 | 5.93 | | | Pass |
| 3 | 7.53 | 5.66 | | | Pass |
| 6 | 7.73 | 5.93 | 30 | 1000 | Pass |
| 9 | 7.66 | 5.83 | | | Pass |
| 10 | 7.61 | 5.77 | | | Pass |
| 11 | 7.72 | 5.92 | | | Pass |

802.11ax-20 MHz(RU52) Mode:

| Channel | Measured Output Average Power | | Limit | | Verdict |
|---------|-------------------------------|-------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | Verdici |
| 1 | 10.49 | 11.19 | | | Pass |
| 2 | 10.58 | 11.43 | | | Pass |
| 3 | 10.65 | 11.61 | | | Pass |
| 6 | 10.80 | 12.02 | 30 | 1000 | Pass |
| 9 | 10.44 | 11.07 | | | Pass |
| 10 | 10.48 | 11.17 | | | Pass |
| 11 | 10.30 | 10.72 | | | Pass |

802.11ax-20 MHz(RU106) Mode:

| Channel | Measured Output Average Power | | Limit | | Verdict |
|---------|-------------------------------|-------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | verdict |
| 1 | 11.55 | 14.29 | | | Pass |
| 2 | 12.61 | 18.24 | | | Pass |
| 3 | 13.56 | 22.70 | | | Pass |
| 6 | 13.71 | 23.50 | 30 | 1000 | Pass |
| 9 | 13.54 | 22.59 | | | Pass |
| 10 | 12.91 | 19.54 | | | Pass |
| 11 | 10.33 | 10.79 | | | Pass |

802.11ax-40 MHz(RU26) Mode:

| Channel | Measured Output Average Power | | Limit | | Verdict |
|---------|-------------------------------|------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | Verdici |
| 3 | 4.97 | 3.14 | | | Pass |
| 4 | 7.63 | 5.79 | | | Pass |
| 5 | 7.56 | 5.70 | | | Pass |
| 6 | 7.69 | 5.87 | 30 | 1000 | Pass |
| 7 | 7.62 | 5.78 | | | Pass |
| 8 | 7.52 | 5.65 | | | Pass |
| 9 | 6.25 | 4.22 | | | Pass |



802.11ax-40 MHz(RU52) Mode:

| Channel | Measured Output Average Power | | Limit | | Verdict |
|---------|-------------------------------|-------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | Verdict |
| 3 | 5.19 | 3.30 | | | Pass |
| 4 | 9.45 | 8.81 | | | Pass |
| 5 | 10.54 | 11.32 | | | Pass |
| 6 | 10.90 | 12.30 | 30 | 1000 | Pass |
| 7 | 9.44 | 8.79 | | | Pass |
| 8 | 7.92 | 6.19 | | | Pass |
| 9 | 6.27 | 4.24 | | | Pass |

802.11ax-40 MHz(RU106) Mode:

| Channel | Measured Output Average Power | | Limit | | Verdict |
|---------|-------------------------------|-------|-------|------|---------|
| Channel | dBm | mW | dBm | mW | Verdici |
| 3 | 5.14 | 3.27 | | | Pass |
| 4 | 9.47 | 8.85 | | | Pass |
| 5 | 11.00 | 12.59 | | | Pass |
| 6 | 10.64 | 11.59 | 30 | 1000 | Pass |
| 7 | 9.53 | 8.97 | | Pa | Pass |
| 8 | 7.97 | 6.27 | | | Pass |
| 9 | 6.16 | 4.13 | | | Pass |

802.11ax-40 MHz(RU242) Mode:

| Channel | Measured Output Average Power | | Limit | | Verdict | | | | | |
|---------|-------------------------------|-------|-------|------|---------|------|--|--|--|------|
| Channel | dBm | mW | dBm | mW | verdict | | | | | |
| 3 | 4.85 | 3.05 | | | | | | | | Pass |
| 4 | 9.25 | 8.41 | | | Pass | | | | | |
| 5 | 10.91 | 12.33 | | | Pass | | | | | |
| 6 | 10.26 | 10.62 | 30 | 1000 | Pass | | | | | |
| 7 | 9.69 | 9.31 | | | Pass | | | | | |
| 8 | 7.93 | 6.21 | | | | Pass | | | | |
| 9 | 6.06 | 4.04 | | | Pass | | | | | |



A.2 Bandwidth

Test Data

802.11b Mode:

| Channel | 6 dB Bandwidth (MHz) | 99% Bandwidth (MHz) | 6 dB Bandwidth Limits (kHz) |
|---------|-------------------------|------------------------|--------------------------------|
| 1 | 8.100000 | 12.776000 | ≥500 |
| 6 | 8.150000 | 12.802000 | ≥500 |
| 11 | 8.100000 | 12.928000 | ≥500 |

802.11g Mode:

| Channel | 6 dB Bandwidth (MHz) | 99% Bandwidth (MHz) | 6 dB Bandwidth Limits (kHz) |
|---------|-------------------------|------------------------|--------------------------------|
| 1 | 15.400000 | 18.159000 | ≥500 |
| 6 | 15.800000 | 18.038000 | ≥500 |
| 11 | 16.150000 | 18.460000 | ≥500 |

802.11n-20MHz Mode:

| Channel | 6 dB Bandwidth (MHz) | 99% Bandwidth (MHz) | 6 dB Bandwidth Limits (kHz) |
|---------|-------------------------|------------------------|--------------------------------|
| 1 | 15.500000 | 19.234000 | ≥500 |
| 6 | 17.100000 | 19.324000 | ≥500 |
| 11 | 17.200000 | 19.551000 | ≥500 |

802.11n-40MHz Mode:

| Channel | 6 dB Bandwidth (MHz) | 99% Bandwidth (MHz) | 6 dB Bandwidth Limits (kHz) |
|---------|-------------------------|------------------------|--------------------------------|
| 3 | 35.200000 | 36.065000 | ≥500 |
| 6 | 35.200000 | 36.079000 | ≥500 |
| 9 | 35.200000 | 36.048000 | ≥500 |

802.11VHT-20MHz Mode:

| Channel | 6 dB Bandwidth (MHz) | 99% Bandwidth (MHz) | 6 dB Bandwidth Limits (kHz) |
|---------|-------------------------|------------------------|--------------------------------|
| 1 | 15.150000 | 19.021000 | ≥500 |
| 6 | 15.500000 | 19.224000 | ≥500 |
| 11 | 16.500000 | 19.604000 | ≥500 |

802.11VHT-40MHz Mode:

| Channel | 6 dB Bandwidth (MHz) | 99% Bandwidth (MHz) | 6 dB Bandwidth Limits (kHz) |
|---------|-------------------------|------------------------|--------------------------------|
| 3 | 35.200000 | 36.055000 | ≥500 |
| 6 | 35.150000 | 36.062000 | ≥500 |
| 9 | 35.100000 | 36.069000 | ≥500 |



802.11ax-20MHz(SU) Mode:

| Channel | 6 dB Bandwidth (MHz) | 99% Bandwidth (MHz) | 6 dB Bandwidth Limits (kHz) |
|---------|-------------------------|------------------------|--------------------------------|
| 1 | 18.050000 | 19.129000 | ≥500 |
| 6 | 18.700000 | 19.177000 | ≥500 |
| 11 | 18.850000 | 19.339000 | ≥500 |

802.11ax-40MHz(SU) Mode:

| Channel | 6 dB Bandwidth 99% Bandwidth | | 6 dB Bandwidth | |
|---------|------------------------------|-----------|----------------|--|
| Channel | (MHz) | (MHz) | Limits (kHz) | |
| 3 | 36.350000 | 37.603000 | ≥500 | |
| 6 | 35.200000 | 37.529000 | ≥500 | |
| 9 | 35.200000 | 37.699000 | ≥500 | |



Test plots

6 dB Bandwidth



802.11b 6 CHANNEL



802.11b 11 CHANNEL



802.11g 1 CHANNEL



802.11g 6 CHANNEL





802.11g 11 CHANNEL



802.11n-20 MHz 1 CHANNEL



802.11n-20 MHz 11 CHANNEL



802.11n-20 MHz 6 CHANNEL

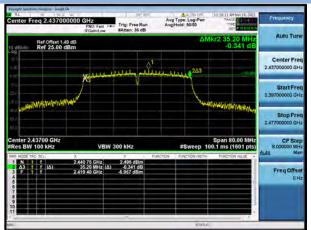




802.11n-40 MHz 3 CHANNEL



802.11n-40 MHz 6 CHANNEI



802.11n-40 MHz 9 CHANNEL



802.11VHT-20 MHz 1 CHANNEL



802.11VHT-20 MHz 6 CHANNE

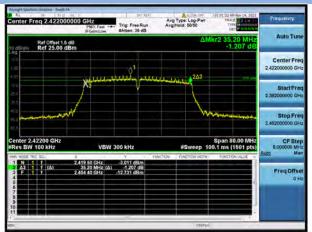




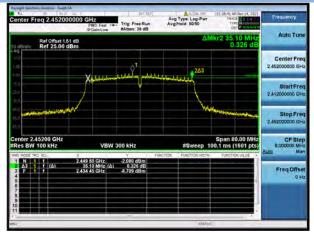
802.11VHT-20 MHz 11 CHANNEL



802.11VHT-40 MHz 3 CHANNEL



802.11VHT-40 MHz 9 CHANNEL

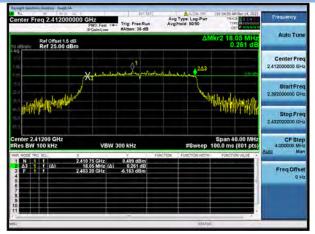


802.11VHT-40 MHz 6 CHANNEL

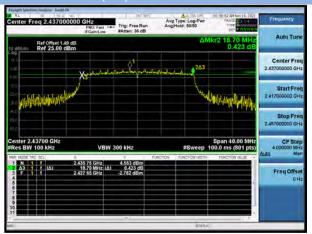




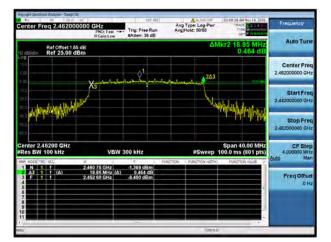
802.11ax-20 MHz(SU) 1 CHANNEI



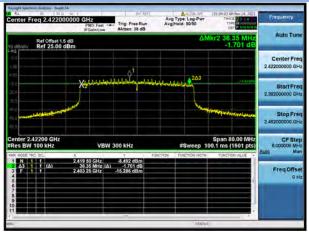
302.11ax-20 MHz(SU) 6 CHANNE



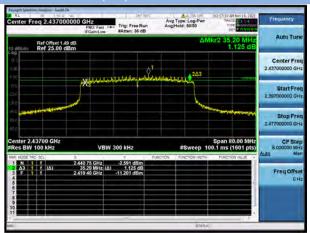
802.11ax-20 MHz(SU) 11 CHANNEL



802.11ax-40 MHz(SU) 3 CHANNEL



802.11ax-40 MHz(SU) 6 CHANNEL





802.11ax-40 MHz(SU) 9 CHANNEL





99% Bandwidth





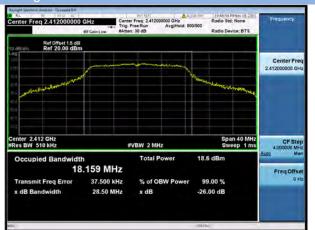
802.11b 6 CHANNEL



802.11b 11 CHANNEL



802.11g 1 CHANNEL



802.11g 6 CHANNEL





802.11g 11 CHANNEL



802.11n-20 MHz 1 CHANNEL



802.11n-20 MHz 11 CHANNEL



802.11n-20 MHz 6 CHANNEL





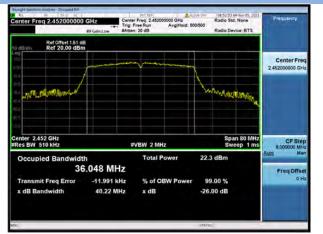
802.11n-40 MHz 3 CHANNEL



302.11n-40 MHz 6 CHANNEL



802.11n-40 MHz 9 CHANNEL



802.11VHT-20 MHz 1 CHANNEL



802.11VHT-20 MHz 6 CHANNE





802.11VHT-20 MHz 11 CHANNEL



802.11VHT-40 MHz 3 CHANNEL



802.11VHT-40 MHz 9 CHANNEL

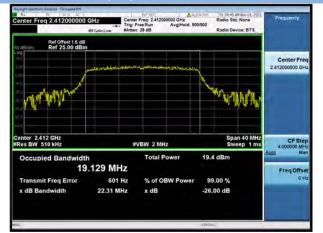


802.11VHT-40 MHz 6 CHANNEL





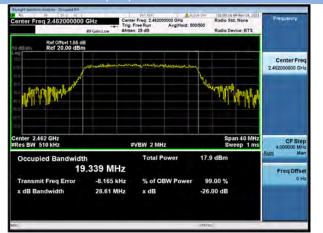
802.11ax-20 MHz(SU) 1 CHANNEI



302.11ax-20 MHz(SU) 6 CHANNE



802.11ax-20 MHz(SU) 11 CHANNEL



802.11ax-40 MHz(SU) 3 CHANNEI



802.11ax-40 MHz(SU) 6 CHANNE





802.11ax-40 MHz(SU) 9 CHANNEL





A.3 Conducted Spurious Emissions

Test Data

802.11b Mode:

| Ma | Measured Max. Out of | Limit (dBm) | | |
|---------|----------------------|---------------|----------------------------|---------|
| Channel | Band Emission (dBm) | Carrier Level | Calculated 20 dBc Limit | Verdict |
| 1 | -49.31 | 7.05 | -12.95 | Pass |
| 6 | -49.32 | 7.35 | -12.65 | Pass |
| 11 | -47.87 | 6.59 | -13.41 | Pass |

802.11g Mode:

| | Measured Max. Out of | Limit (| dBm) | |
|---------|----------------------|---------------|----------------------------|---------|
| Channel | Band Emission (dBm) | Carrier Level | Calculated 20 dBc Limit | Verdict |
| 1 | -49.58 | 2.08 | -17.92 | Pass |
| 2 | -48.51 | 3.63 | -16.37 | Pass |
| 3 | -49.05 | 4.64 | -15.36 | Pass |
| 4 | -48.70 | 5.68 | -14.32 | Pass |
| 6 | -48.18 | 5.83 | -14.17 | Pass |
| 9 | -46.21 | 5.94 | -14.06 | Pass |
| 10 | -48.35 | 3.57 | -16.43 | Pass |
| 11 | -47.93 | 1.85 | -18.15 | Pass |

802.11n-20MHz Mode:

| | Manaurad Max, Out of | Limit (| dBm) | |
|---------|--|---------------|----------------------------|---------|
| Channel | Measured Max. Out of Band Emission (dBm) | Carrier Level | Calculated 20 dBc Limit | Verdict |
| 1 | -48.49 | 2.09 | -17.91 | Pass |
| 2 | -48.45 | 3.49 | -16.51 | Pass |
| 3 | -48.72 | 4.14 | -15.86 | Pass |
| 4 | -47.15 | 5.55 | -14.45 | Pass |
| 6 | -48.50 | 5.37 | -14.63 | Pass |
| 9 | -48.41 | 5.77 | -14.23 | Pass |
| 10 | -48.43 | 3.50 | -16.50 | Pass |
| 11 | -48.93 | 0.69 | -19.31 | Pass |



802.11n-40MHz Mode:

| | Measured Max. Out of | Limit (| dBm) | |
|---------|----------------------|---------------|----------------------------|---------|
| Channel | Band Emission (dBm) | Carrier Level | Calculated 20 dBc Limit | Verdict |
| 3 | -48.49 | -2.80 | -22.80 | Pass |
| 4 | -48.19 | -1.37 | -21.37 | Pass |
| 5 | -48.38 | 1.76 | -18.24 | Pass |
| 6 | -48.78 | 2.72 | -17.28 | Pass |
| 7 | -48.46 | 1.24 | -18.76 | Pass |
| 8 | -48.49 | -0.95 | -20.95 | Pass |
| 9 | -48.23 | -1.84 | -21.84 | Pass |

802.11VHT-20MHz Mode:

| | Measured Max. Out of | Limit (| dBm) | |
|---------|----------------------|---------------|----------------------------|---------|
| Channel | Band Emission (dBm) | Carrier Level | Calculated 20 dBc Limit | Verdict |
| 1 | -48.43 | 1.48 | -18.52 | Pass |
| 2 | -46.49 | 3.03 | -16.97 | Pass |
| 3 | -47.36 | 4.03 | -15.97 | Pass |
| 4 | -46.36 | 5.54 | -14.46 | Pass |
| 6 | -47.44 | 5.66 | -14.34 | Pass |
| 9 | -47.66 | 5.87 | -14.13 | Pass |
| 10 | -48.16 | 1.91 | -18.09 | Pass |
| 11 | -46.78 | 0.55 | -19.45 | Pass |

802.11VHT-40MHz Mode:

| | Measured Max. Out of | Limit (| | |
|---------|----------------------|---------------|----------------------------|---------|
| Channel | Band Emission (dBm) | Carrier Level | Calculated 20 dBc Limit | Verdict |
| 3 | -48.12 | -2.96 | -22.96 | Pass |
| 4 | -48.79 | -1.41 | -21.41 | Pass |
| 5 | -47.69 | 2.20 | -17.80 | Pass |
| 6 | -48.41 | 2.72 | -17.28 | Pass |
| 7 | -45.69 | 0.61 | -19.39 | Pass |
| 8 | -48.11 | -1.53 | -21.53 | Pass |
| 9 | -47.98 | -1.89 | -21.89 | Pass |



802.11ax-20MHz(SU) Mode:

| | Measured Max. Out of | Limit (| | |
|---------|----------------------|---------------|----------------------------|---------|
| Channel | Band Emission (dBm) | Carrier Level | Calculated 20 dBc Limit | Verdict |
| 1 | -47.52 | 0.99 | -19.01 | Pass |
| 2 | -48.30 | 2.00 | -18.00 | Pass |
| 3 | -48.36 | 3.39 | -16.61 | Pass |
| 4 | -47.60 | 4.90 | -15.10 | Pass |
| 6 | -47.98 | 5.25 | -14.75 | Pass |
| 9 | -47.65 | 5.21 | -14.79 | Pass |
| 10 | -49.05 | 1.81 | -18.19 | Pass |
| 11 | -48.83 | -0.96 | -20.96 | Pass |

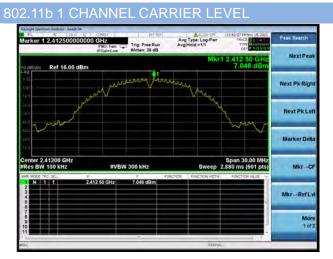
802.11ax-40MHz(SU) Mode:

| | Measured Max. Out of | Limit (| | |
|---------|----------------------|---------------|----------------------------|---------|
| Channel | Band Emission (dBm) | Carrier Level | Calculated 20 dBc Limit | Verdict |
| 3 | -48.36 | -8.33 | -28.33 | Pass |
| 4 | -48.40 | -3.95 | -23.95 | Pass |
| 5 | -47.65 | -2.10 | -22.10 | Pass |
| 6 | -48.24 | -2.30 | -22.30 | Pass |
| 7 | -48.53 | -3.95 | -23.95 | Pass |
| 8 | -47.33 | -4.78 | -24.78 | Pass |
| 9 | -46.42 | -6.30 | -26.30 | Pass |



10:43:10 #1416: 18, 2021

Test Plots



802.11b 1 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz 802.11b 1 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

Reyayta Spectrum Analyzer - Swept

| 0000 GHz | Trim Free Pun | Avg Type: Log-Pwr | TRACE DISTORT | Marker |
|------------------|--|--|--|--|
| IFGaintLow | #Atten: 26 dB | A CONTRACTOR OF A CONTRACTOR OFTA CONT | DET P NIN N N | Select Marker |
| Bm | | Mk | -58.333 dBm | 1 |
| | | | in the second | Norma |
| | | | | Deita |
| | - and an all and a second | لمنتحد المرسيس | 1 | Fixed |
| | | | | o |
| × 2.688.2 GHz | -58.333 dBm | NCTON FUNCTION WOTH | PUNCTION VALUE | Properties |
| | | | | Mor |
| | 10000 GHz PROFESS C IFGentLow IBM | 10000 CH2 PHO TAN THE Free Run HGaint Law EM EM EW EW SOUND HALE SUBJECT SUBJECT SUBJE | 10000 CH2 PHC Fax Trig: Free Run Matter: 28 db Avg Type: Log-Put AvgHold: >11 Avg Type: Log-Put AvgHold: >11 Bm Mite Mite Image: Second S | D0000 GHz PHOT Fail Trig: Free Run PLG: Fail Arg Type: Log-Pur Type: Log-Pur Arghesics M1 Trig: Free Run Comment of Planta Trig: Free Run Planta Mill 2 (See 2) Bm -58: 333 dBm -58: 333 dBm -58: 333 dBm -58: 333 dBm Bm -58: 333 dBm -58: 333 dBm -58: 333 dBm -58: 333 dBm Bm -58: 333 dBm -58: 333 dBm -58: 333 dBm -58: 333 dBm Bm -58: 35: 300 MHz Sweep 28: 30: 000 GHz -50: 30: 000 GHz #VBW 300 MHz Sweep 28: 000 MHz Sweep 28: 000 MHz -50: 000 GHz |

| Peak Search | TRACE DE LE CONTRACTOR | vg[Hold;>1/1 | an Av | Trig: Free Ru #Atten: 26 dl | NO: Fast C. | 000000 G | 84250 | 21.0 | ker 1 | Mari |
|----------------|---|--------------|----------|--------------------------------|-------------|-----------|---------|------|----------------|------------------------------|
| Next Peak | 1.084 25 GHz -49.307 dBm | Mkr1 2 | | | | IBm | 16.00 (| Ref | BJdiv | 10 dê |
| Next Pk Righ | and the second se | | | | | | | | | 8-00 -1.00 |
| Next Pk Lef | 1 | | | | | | | | | -140 -240 -340 -410 |
| Marker Delta | hannand | | - | h | | | | *** | - | 5410 5410 5410 |
| Mkr-C | Stop 25.00 GHz 198 s (4001 pts) | | FIRCTICA | 300 kHz | #VBV | x | kHz | 100 | t 2.00 s BW | Re |
| MkrRef Lv | | | | -49.307 dBm | 5 GHz | 21.084 25 | | | N | |
| | | | | | | | | | | 678910 10 |
| More 1 of 2 | | STAPUL | | | | | | | | |

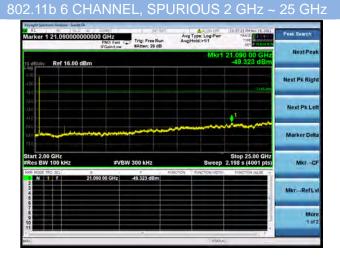
802.11b 6 CHANNEL CARRIER LEVEL





802.11b 6 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

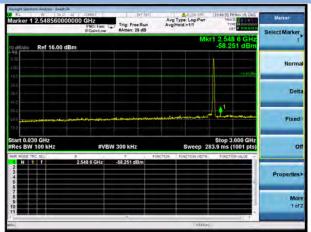
sr 1 2.66736000000 GHz PNO: Fest Cart Atten: 20 dB Avg Type: Log-Pwr Avg(Hold.>1/1 Marke TRACE DO LO Select Marker dkr1 2.667 4 G Ref 16.00 dBm Norm Delt Fixed Stop 3.000 GHz Sweep 283.9 ms (1001 pts) Start 0.030 GHz Res BW 100 kHz #VBW 300 kHz 01 2.667 4 GHz Prop Mor 1 of



802.11b 11 CHANNEL CARRIER LEVEL



802.11b 11 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz 802.11b 11 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz







802.11g 1 CHANNEL CARRIER LEVEL



802.11g 1 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz 802.11g 1 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

Reyoutes

| Marker | 10:50:30 PH New 18, 2021 TRACE 12:20 4 4 10 TYPE MANY |
|--|--|
| 1 GHD Select Marker | r1 2.691 1 GHz |
| Norma | -58.930 dBm |
| Detta | |
| Fixed | - I and |
| 001 pts) Of | |
| Properties | |
| Mon | |
| Z man trig: Free Run Avg Type: Log-Per maca AvgHeld:511 MKr1 2:631 MKr1 2:63 | Z Trig: Free Run RAtten: 28 dB Arg Type: (op-Per Argiteid.svi) Mite Will Argentiation (Statement Will A |

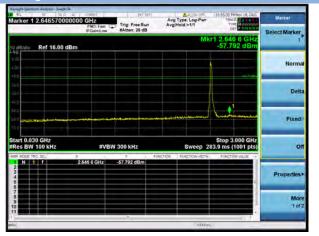
| Peak Search | | e: Log-Pwr | | e Run 6 dB | 10000 | GHz PNO: Fast C FGain:Low | 000000 | 53250 | 21.1 | 12 | arker |
|----------------|------------------------------------|------------|-----------|---------------|-----------|---------------------------------|--------|------------|------|------|-----------------|
| Next Peak | 49.582 dBm | Mkr1 2 | | | | | | 16.00 | Ref | W | dBJdi |
| Next Pk Righ | | | | | | | | | | | 69 |
| Next Pk Lef | 4 ¹ | | | | | | | | | | 10 |
| Marker Delta | Junio and | | - | ~~~ | | | | and states | ÷. | - | 10 10 |
| MkrC | Stop 25.00 GHz 198 s (4001 pts) | | NCTION TR | | / 300 kHz | #VBI | × | | 100 | SW 1 | art 2. tes B |
| Mkr-Ref Lv | | | | | -49,582 d | 25 GHz | | | | 1 | |
| | | | | | | | | | | t | |
| More 1 of 3 | | | | | | | | | | | |

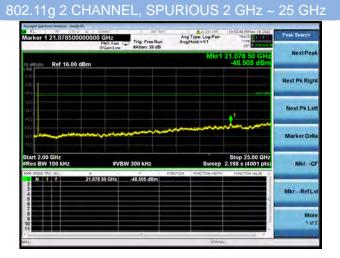
802.11g 2 CHANNEL CARRIER LEVEL





802.11g 2 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

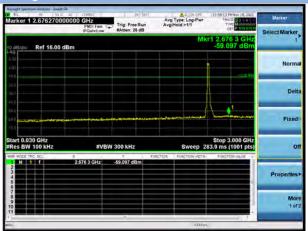




802.11g 3 CHANNEL CARRIER LEVEL



802.11g 3 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz 802.11g 3 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz







802.11g 4 CHANNEL CARRIER LEVEL



802.11g 4 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz 802.11g 4 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

| arker 1 2.66736000 | 0000 GHz PNO: Fast | Trig: Free Run | Avg Type: Log-Pwr Avg/Hold>1/1 | 112(07292040er 18,2021 TRACE 1921 | Marker |
|-----------------------------------|-----------------------|----------------|-----------------------------------|--------------------------------------|---------------|
| | IFGaintLow | #Atten: 26 dB | | OUT P PINING A | Select Marker |
| o dBraw Ref 16.00 d | Bm | | Mk | -58.688 dBm | |
| -00 6-00 6-00 6-00 | | | | | Norma |
| 440 244 440 | | | | | Deita |
| 543) 140 | | | لنعينين ستحجيمهم | - Internet | Fixed |
| Start 0.030 GHz Res BW 100 kHz | x | 300 kHz | | Stop 3.000 GHz 83.9 ms (1001 pts) | or |
| | 2.667 4 GHz | -58.688 dBm | | | Properties |
| 9 7 8 9 10 | | | | | More 1 of: |
| | | | STATUS | 11.5 | 14 A |

| Peak Search | 100-50 EH fen 18, 2021 TRACZ DE CONT TIPE AND OUT PROVINSION | Type: Log-Pwr Hold > 1/1 | Av | | 0000000 GHz PN0: Fast IFGaint.ow | 2.061750 | 12 | | R Mar |
|--------------|---|-----------------------------|----------|-----------|--|-----------|----|-------|------------------------------|
| Next Peak | -48.697 dBm | Mikr1 : | | | dBm | Ref 16.00 | | BJdiv | 0 di |
| Next Pk Righ | 4122 | | | | | | | ī | 8 00 8 00 8 00 8 00 |
| Next Pk Le | | | | | | | | | |
| Marker Delt | - | | | | | | - | | |
| MkrC | Stop 25.00 GHz 198 s (4001 pts) | | | W 300 kHz | | DO KHZ | | s Bl | Re |
| Mkr-+Ref L | PUNCTION VALUE | PUNCTION WOTH | FUNCTION | | 22.061 75 GHz | SCL . | | N | 20346 |
| Mor 1 of | | | | | | | | | 678910 |
| | | | | | | | | _ | 22. |

802.11g 6 CHANNEL CARRIER LEVEL





802.11g 6 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

 Space
 Space
 Committee
 Investment

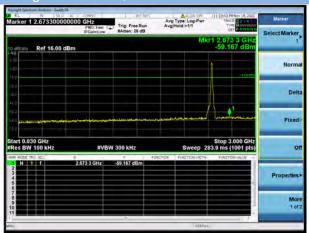
 er 1 2.65822100000000 GHz
 PN0: Fast Car
 Trig: Free Run Adten: 26 dB
 Marke Avg Type: Log-Pwr Avg Hold > 1/1 TRACE DO LA COL TRACE DO LA COL TIPE MUNICIPALITY Select Marker 4kr1 2.682 2 G -57.368 d Ref 16.00 dBm Norm Delt Fixed Stop 3.000 GHz Sweep 283.9 ms (1001 pts) Start 0.030 GHz Res BW 100 kHz #VBW 300 kHz 01 2 682 2 GHz -57 36 Prop Mon

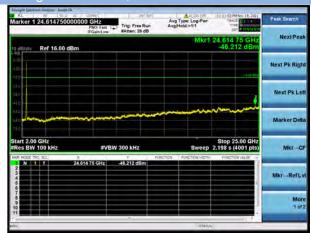


802.11g 9 CHANNEL CARRIER LEVEL



802.11g 9 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz 802.11g 9 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz





66 / 272



802.11g 10 CHANNEL CARRIER LEVEL



802.11g 10 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz 802.11g 10 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

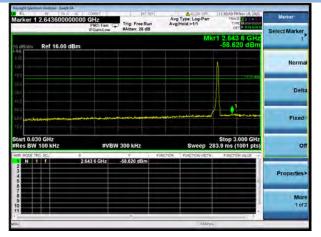
| Marker 1 2.65251000 | 0000 GHz PNO Fast | Trig: Free Run | Avg Type: Log-Pwr Avg/Hold:>1/1 | 11:16:21 PH No. 18, 2021 TRACE 12:24 4 TUPE MUSIC | Mariner |
|------------------------------------|----------------------|---------------------|------------------------------------|---|---|
| | IFGain:Low | #Atten: 26 dB | | | Select Marker, |
| to dBraw Ref 16.00 d | Bm | | MA. | r1 2.652 5 GHz -57.873 dBm | 1 |
| 4.00 | | | | 1 | Norma |
| 22 () 22 () -31 () -31 () | | | | | Deita |
| 541) 541) 540 | | ijana dining mahain | | 1. • | Fixed |
| Start 0.030 GHz #Res BW 100 kHz | | W 300 kHz | | Stop 3.000 GHz 83.9 ms (1001 pts) | or |
| HORE THE SEL | 2.852.5 GHz | -57.873 dBm | UNCTION PUNCTION W07H | PUNCTION VALUE | Properties |
| 6 7 8 9 10 | | | | | Mon 1 of 3 |
| 1 | | | STÁTU | 11.4 | 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 - |

| Peak Search | 11116 52 PH Nov 18, 2021 THACE 10 14 1 THE MUSICINE OCT P HIM NOV | Avg Type: Log-Pwr Avg Hold.>1/1 | Trig: Free Run #Atten: 26 dB | 00000 GHz PN0: Fast C | 21.0842500 | Warker 1 |
|--------------|--|------------------------------------|---------------------------------|--------------------------|-------------|------------------------|
| Next Pea | 21.084 25 GHz -48.352 dBm | Mkr1 | | Bm | Ref 16.00 d | to aBraiv |
| Next Pk Righ | | | | | | 4.00 |
| Next Pk Le | <u>_1</u> | | | | | 34.0 34.0 |
| Marker Delt | · ···································· | | | | - | 543 |
| MkrC | Stop 25.00 GHz 2.198 s (4001 pts) | Sweep | 300 kHz | #VBI | 100 kHz | Start 2.00 Res BW |
| MkrRefL | | | 48.352 dBm | 21.084 25 GHz | 1 (/ | |
| Mor 1 of | | | | | | 6 7 8 9 10 |
| | 11.5 | STÂRUS | | | | + ma] |

802.11g 11 CHANNEL CARRIER LEVEL



802.11g 11 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz 802.11g 11 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

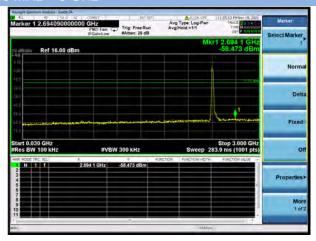




802.11n-20MHz 1 CHANNEL CARRIER LEVEL

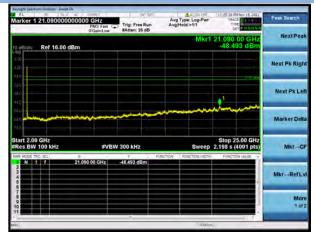


802.11n-20MHz 1 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11n-20MHz 1 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz

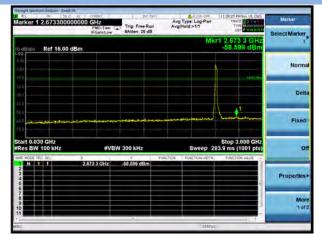




802.11n-20MHz 2 CHANNEL CARRIER LEVE



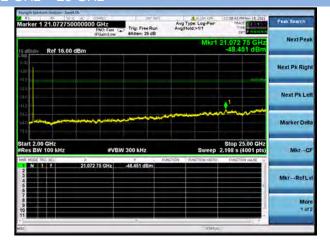
802.11n-20MHz 2 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11n-20MHz 3 CHANNEL CARRIER LEVEL

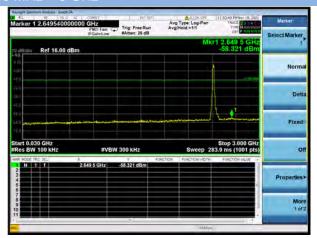


802.11n-20MHz 2 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz





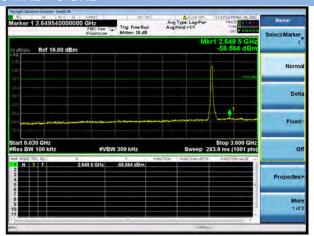
802.11n-20MHz 3 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11n-20MHz 4 CHANNEL CARRIER LEVE

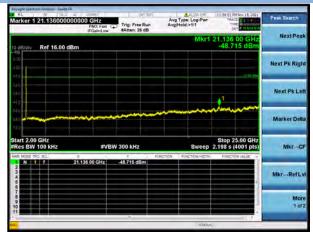


802.11n-20MHz 4 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11n-20MHz 3 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz



802.11n-20MHz 4 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz

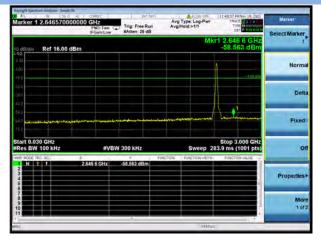




802.11n-20MHz 6 CHANNEL CARRIER LEVE



802.11n-20MHz 6 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11n-20MHz 9 CHANNEL CARRIER LEVEL

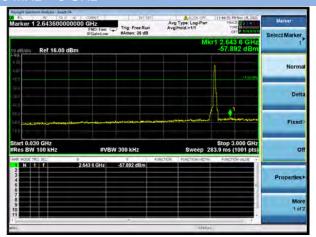


802.11n-20MHz 6 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

| Marker 1 21.12450000 | PNO: Fast Trig: Free Run | Avg Type: Log-Pwr Avg(Hold:>1/1 | 1114100 FM Nov 18, 2021 TRACE 1 2 2 4 000 TYPE MORE AND A | Peak Search |
|----------------------------------|---------------------------|------------------------------------|---|----------------|
| g dBldw Ref 16.00 dBm 48.504 dBm | | | | Next Peak |
| -99 8-00 -4.00 | | | 120 | Next Pk Righ |
| 120 220 340 410 | | | | Next Pk Lef |
| 543 940 740 | | | muna | Marker Delta |
| Start 2.00 GHz Res BW 100 kHz | #VBW 300 kHz | Sweep | Stop 25.00 GHz 2.198 s (4001 pts) | MkrCr |
| N 1 7 7 | 21.124 50 GHz -48.504 dBm | | | Mkr-+RefLv |
| | | | | |
| 6 7 8 9 10 | | | | More 1 of 3 |



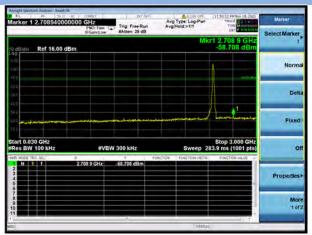
802.11n-20MHz 9 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11n-20MHz 10 CHANNEL CARRIER LEVE



802.11n-20MHz 10 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



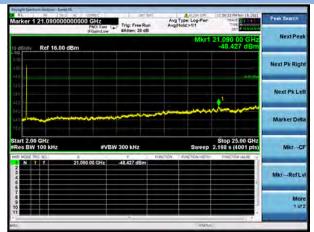
802.11n-20MHz 9 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz



802.11n-20MHz 10 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz

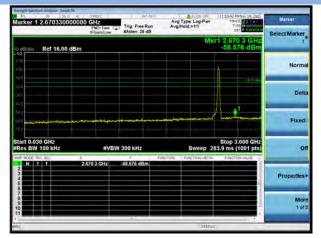




802.11n-20MHz 11 CHANNEL CARRIER LEVEL



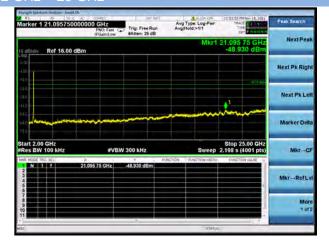
802.11n-20MHz 11 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11n-40MHz 3 CHANNEL CARRIER LEVEL

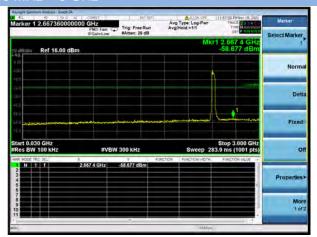


802.11n-20MHz 11 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

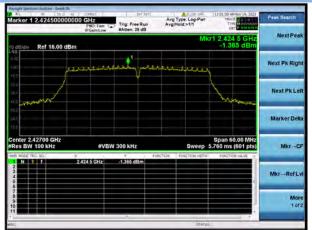




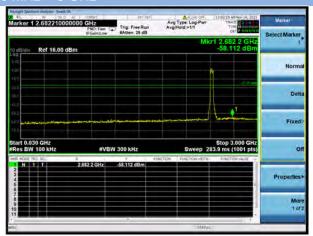
802.11n-40MHz 3 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11n-40MHz 4 CHANNEL CARRIER LEVE

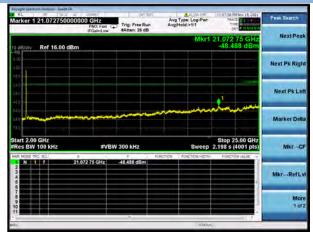


802.11n-40MHz 4 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



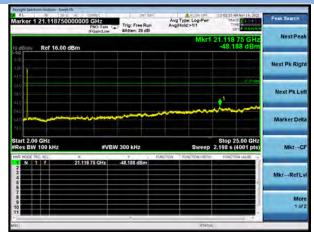
802.11n-40MHz 3 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz



802.11n-40MHz 4 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz

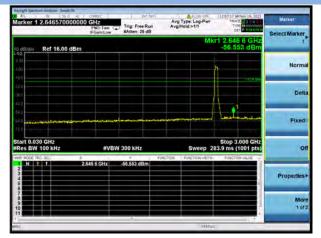




802.11n-40MHz 5 CHANNEL CARRIER LEVE



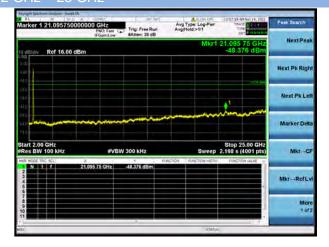
802.11n-40MHz 5 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11n-40MHz 6 CHANNEL CARRIER LEVEL

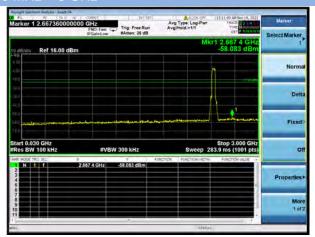


802.11n-40MHz 5 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz





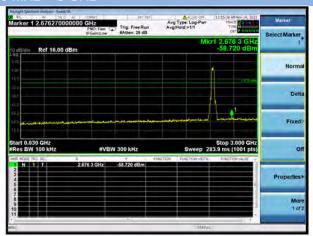
802.11n-40MHz 6 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11n-40MHz 7 CHANNEL CARRIER LEVE

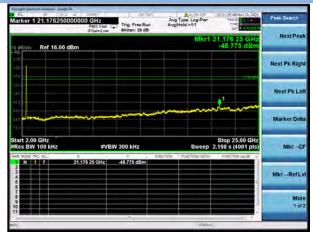


802.11n-40MHz 7 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11n-40MHz 6 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz



802.11n-40MHz 7 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz

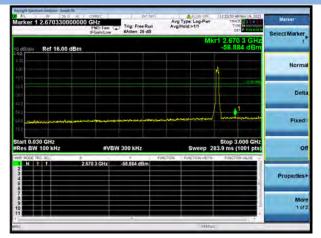




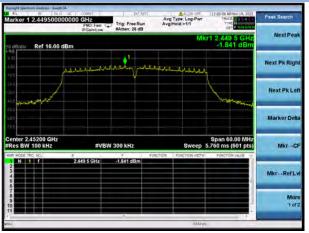
802.11n-40MHz 8 CHANNEL CARRIER LEVE



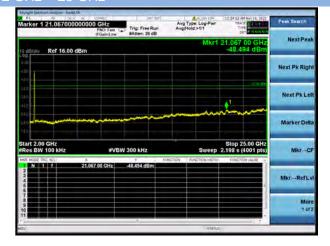
802.11n-40MHz 8 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11n-40MHz 9 CHANNEL CARRIER LEVEL

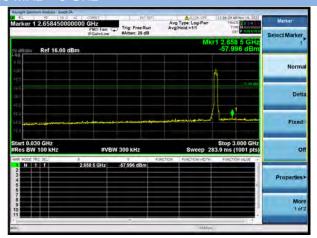


802.11n-40MHz 8 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz





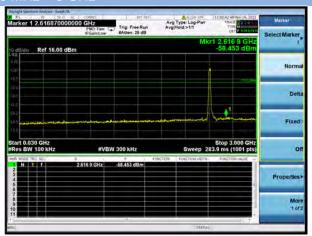
802.11n-40MHz 9 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11VHT-20MHz 1 CHANNEL CARRIER LEVEI

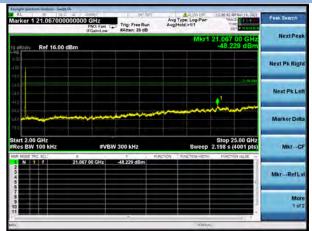


802.11VHT-20MHz 1 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



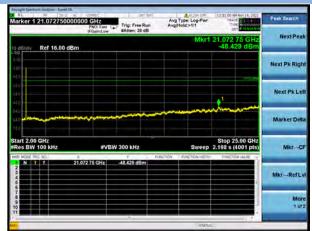
802.11n-40MHz 9 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz



802.11VHT-20MHz 1 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz

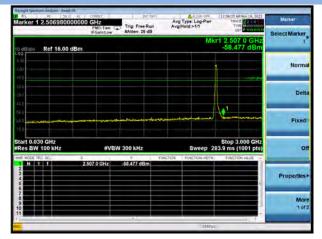




802.11VHT-20MHz 2 CHANNEL CARRIER LEVEL



802.11VHT-20MHz 2 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11VHT-20MHz 3 CHANNEL CARRIER LEVEL

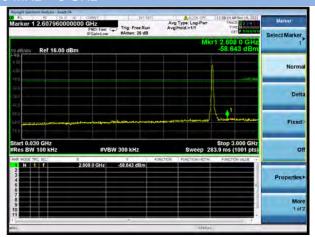


802.11VHT-20MHz 2 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

| Peak Search Next Peak | 12:35:03 4H Nov 19, 3021 TRACE 03 4 4 TYPE M | Avg Type: Log-Pwr Avg[Hold:>1/1 | Trig: Free Run #Atten: 26 dB | DOODO GHZ PNO: Fast C IEGaint.cm | 1 24.62625000 | Marker 1 |
|--------------------------|--|------------------------------------|--|--|---------------|------------------------|
| | 19 etsaw, Ref 16.00 dBm - 46.490 dBm - 46.490 dBm | | | | | |
| Next Pk Righ | | | | | | 8-00 -4.00 |
| Next Pk Lef | | | | | | 320 320 |
| Marker Delta | · ···································· | | and the second | نې د د د د د د د د د د د د د د د د د د د | | 549 549 760 |
| Mkr-CF | Stop 25.00 GHz 2.198 s (4001 pts) | | 300 kHz | #VBV | / 100 kHz | Start 2.00 #Res BW |
| Mkr-+RefLv | | | 46,490 dBm | 24.626 25 GHz | | N 1 2345 |
| More 1 of 3 | | | | | | 6 7 8 9 10 |
| | 10 | STATUL | | | | A Landa |



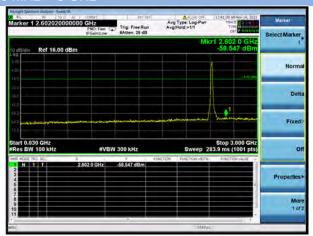
802.11VHT-20MHz 3 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11VHT-20MHz 4 CHANNEL CARRIER LEVE



802.11VHT-20MHz 4 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



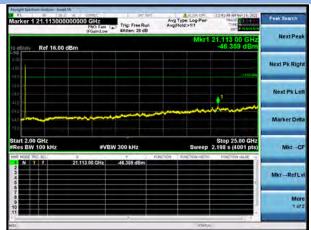
802.11VHT-20MHz 3 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz



802.11VHT-20MHz 4 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz

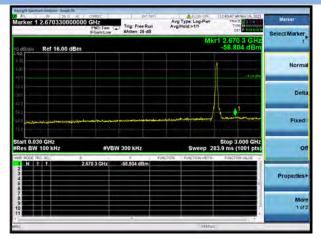




802.11VHT-20MHz 6 CHANNEL CARRIER LEVEL



802.11VHT-20MHz 6 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11VHT-20MHz 9 CHANNEL CARRIER LEVEL

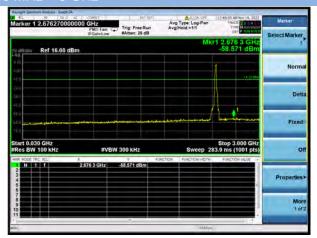


802.11VHT-20MHz 6 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

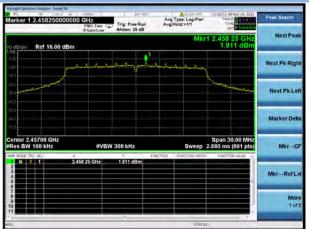
| Marker 1 21.09575000 | CONVECTOR | Avg Type: Log-Pwr Avg/Hold.>1/1 | 12-49.13 AH Nov 19, 3021 TRACE 13 C 4 4 TYPE MINIMUM | Peak Search | |
|------------------------------------|--|------------------------------------|--|----------------|--|
| yo dBraw Ref 16.00 dBm -47.438 dBm | | | | | |
| - 09. 8-03 - 4.00 | | | | Next PK Righ | |
| 140 240 310 410 | | | | Next Pk Lef | |
| 540 940 740 | and the second s | | · ······ | Marker Delta | |
| Start 2.00 GHz #Res BW 100 kHz | #VBW 300 kHz | Sweep | Stop 25.00 GHz 2.198 s (4001 pts) | Mkr-CF | |
| N 1 F | 21.095 75 GHz -47.438 dBm | | | Mkr-+RefLv | |
| 6 7 8 9 10 | | | | More 1 of 3 | |
| t (ma) | | STÁPLE | 1.1 | | |



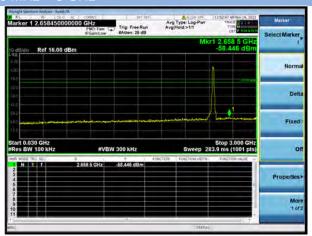
802.11VHT-20MHz 9 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11VHT-20MHz 10 CHANNEL CARRIER LEVEL



802.11VHT-20MHz 10 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11VHT-20MHz 9 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz



802.11VHT-20MHz 10 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz

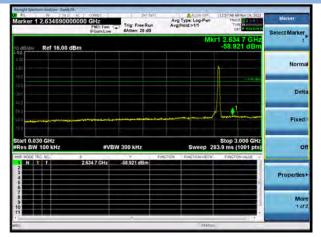




802.11VHT-20MHz 11 CHANNEL CARRIER LEVEL



802.11VHT-20MHz 11 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11VHT-40MHz 3 CHANNEL CARRIER LEVEL

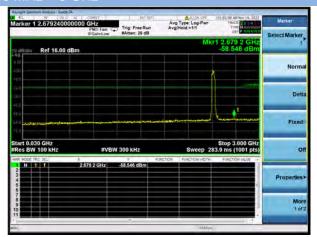


802.11VHT-20MHz 11 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

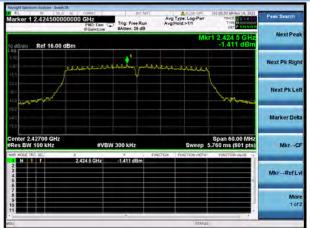
| Marker 1 24.60900000 | 00000 GHz PN0: Fast C IFGaint.ow | Trig: Free Run #Atten: 26 dB | Avg Type: Log-Pwr Avg[Hold,>1/1 | 112:58:11 AH Nov 19, 3021 TRACE 12 45 45 TIPE ALL CONTRACTOR | Peak Search Next Peak |
|---|--|---------------------------------|------------------------------------|--|------------------------------|
| Mkr1 24.609 00 GHz 0 dB3dw Ref 16.00 dBm -46.783 dBm | | | | | |
| -4.00 | | | | | Next Pk Right |
| 440 | | | | and de la | Next Pk Lef |
| 540 110 740 | and the states | | munn | manut | Marker Delta |
| Start 2.00 GHz #Res BW 100 kHz | #VBI | N 300 kHz | | Stop 25.00 GHz 2.198 s (4001 pts) | MkrCF |
| | 24.609 00 GHz | -46.783 dBm | ACTOR FORCION WORK | FORCIDAR VALUE | |
| 3 4 5 | | | | | Mkr-+Ref Lv |
| 3 4 | | | | | Mkr-+RefLv More 1 of 3 |



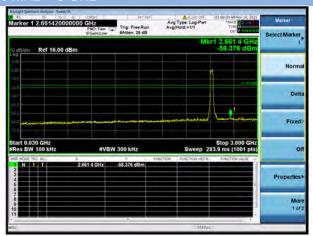
802.11VHT-40MHz 3 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11VHT-40MHz 4 CHANNEL CARRIER LEVEI



802.11VHT-40MHz 4 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



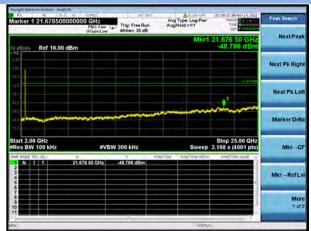
802.11VHT-40MHz 3 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz



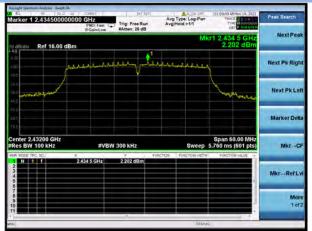
802.11VHT-40MHz 4 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz

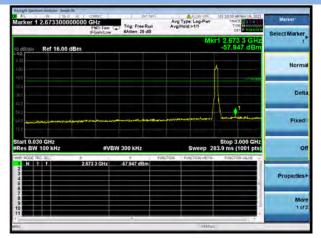




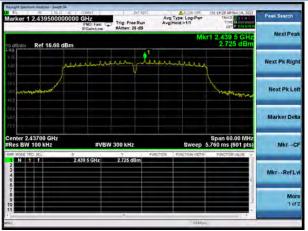
802.11VHT-40MHz 5 CHANNEL CARRIER LEVEL



802.11VHT-40MHz 5 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11VHT-40MHz 6 CHANNEL CARRIER LEVEL

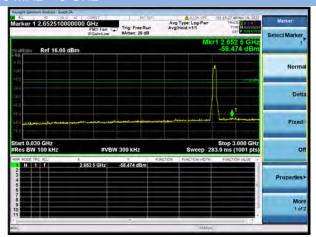


802.11VHT-40MHz 5 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

| Marker 1 21.159000000 | PNO: Fast C Trig: Free Run FGaintow #Atten: 26 dB | Avg Type: Log-Pwr Avg/Hold >1/1 | 101-10-41 AH Nov 19, 3021 TRACE 0.2 44 | Peak Search | |
|---|--|------------------------------------|---|----------------|--|
| Mkr1 21,159 00 GHz 10 dBrdw Ref 16.00 dBm - 47,688 dBm | | | | | |
| 4.00 | | | | Next Pk Righ | |
| 440 240 | | | 1 | Next Pk Lef | |
| 510 910 | - | مرحرافيين وريعان م | Marana and | Marker Delta | |
| Start 2.00 GHz #Res BW 100 kHz | #VBW 300 kHz | Sweep | Stop 25.00 GHz 2.198 s (4001 pts) | MkrCF | |
| N 1 7 21 | .159 00 GHz -47,688 dBm | | | Mkr-+RefLv | |
| 6 7 8 9 10 | | | | More 1 of 3 | |
| + Helaj | | STATU | 1.1 | - | |



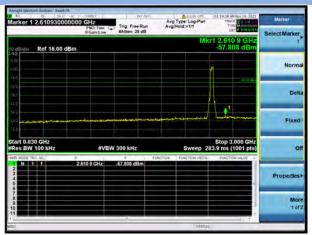
802.11VHT-40MHz 6 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11VHT-40MHz 7 CHANNEL CARRIER LEVE

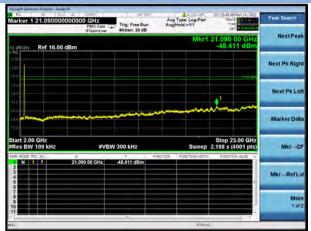


802.11VHT-40MHz 7 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



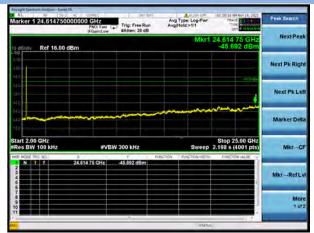
802.11VHT-40MHz 6 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz



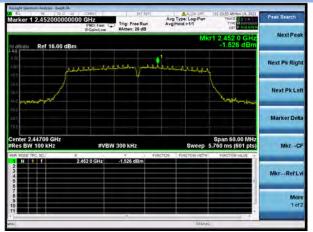
802.11VHT-40MHz 7 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz

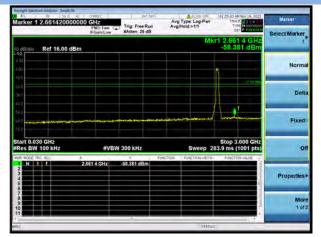




802.11VHT-40MHz 8 CHANNEL CARRIER LEVEL



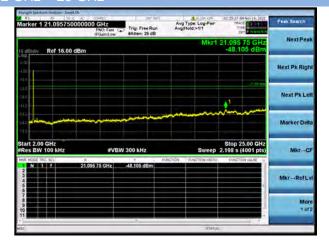
802.11VHT-40MHz 8 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11VHT-40MHz 9 CHANNEL CARRIER LEVEL

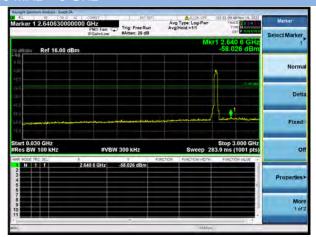


802.11VHT-40MHz 8 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz





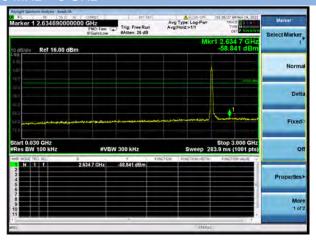
802.11VHT-40MHz 9 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11ax-20MHz(SU) 1 CHANNEL CARRIER LEVEL

| arker 1 2.413250000000 GHz PNO: FGain | Fast Co Trig: Free Run | Avg Type: Log-Per Avg/Hold.>1/1 | 01:35:04 AH Nov 19, 3021 TRACE 12 14 15 TIPE ANNUAL | Peak Search Next Peak | | |
|---|------------------------|------------------------------------|---|--------------------------|--|--|
| 0 dB/dlv Ref 16.00 dBm 0.995 dBm | | | | | | |
| 00 00 | due Namburg me | 1 | | Next Pk Right | | |
| 400 410 149 - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 1 | | | alight the fight | Next Pk Len | | |
| 940) 140 | | | | Marker Delta | | |
| enter 2.41200 GHz Res BW 100 kHz | #VBW 300 kHz | Sweep | Span 30.00 MHz 2.880 ms (601 pts) | MkrCF | | |
| N 1 F 2.413 25 G | Hz 0.995 dBm | | | MkrRefLv | | |
| 6 7 8 9 9 | | | | More 1 of 2 | | |
| | | STATU | 1.5 | 100 C | | |

802.11ax-20MHz(SU) 1 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

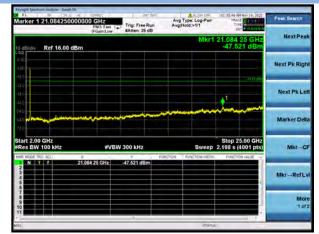


802.11VHT-40MHz 9 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz



802.11ax-20MHz(SU) 1 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz





802.11ax-20MHz(SU) 2 CHANNEL CARRIER LEVEL



802.11ax-20MHz(SU) 2 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

| PN0: Fast IFGainsLow | | | | | |
|--------------------------|--|--|--|--|--|
| | | | | | |
| 10 dB/day Ref 16.00 dBm | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| 030 GHz W 100 kHz #Vi | | | | | |
| 1 1 2.655 5 GHz | | | | | |
| | | | | | |
| #VI | | | | | |

802.11ax-20MHz(SU) 3 CHANNEL CARRIER LEVEL

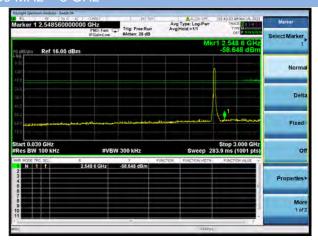


802.11ax-20MHz(SU) 2 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

| Marker 1 21.078500000 | 0000 GHz PNO: Fast C IFGaint on | Trig: Free Run #Atten: 25 dB | Avg Type: Log-Pwr Avg[Hold:>1/1 | 101-10:00 AH Nov 19, 3021 TRACZ 1 3 3 4 600 TIPE MUSEUM | Peak Search Next Peak |
|-------------------------------------|---------------------------------------|---------------------------------|------------------------------------|---|--------------------------|
| IP dBrave Ref 16.00 dBm -48.302 dBm | | | | | |
| 1.0) -1.00 | | | | | Next Pk Righ |
| | | | | | Next Pk Le |
| 541) 345 780 | | | | ain an | Marker Delt |
| Start 2.00 GHz #Res BW 100 kHz | x | | Sweep экстюк Якистон ийтн | Stop 25.00 GHz 2.198 s (4001 pts) | Mkr-C |
| 2 3 4 5 | 1.078 50 GHz | -48.302 dBm | | | MkrRef L |
| 6 7 9 9 10 | | | | | Mor 1 of |
| 1 | | | STATU | 104 | |



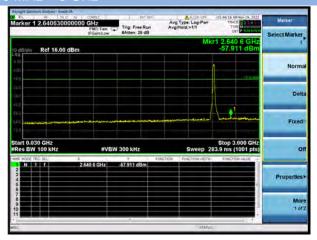
802.11ax-20MHz(SU) 3 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11ax-20MHz(SU) 4 CHANNEL CARRIER LEVEL



802.11ax-20MHz(SU) 4 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

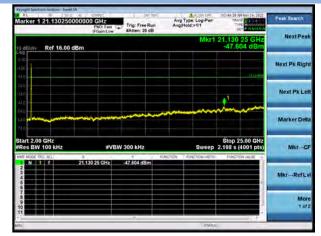


802.11ax-20MHz(SU) 3 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz

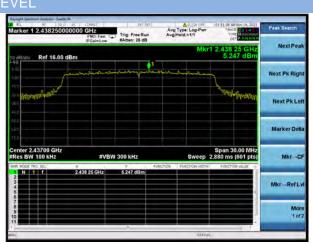


802.11ax-20MHz(SU) 4 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



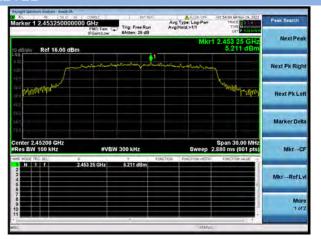


802.11ax-20MHz(SU) 6 CHANNEL CARRIER LEVEL



802.11ax-20MHz(SU) 6 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

802.11ax-20MHz(SU) 9 CHANNEL CARRIER LEVEL

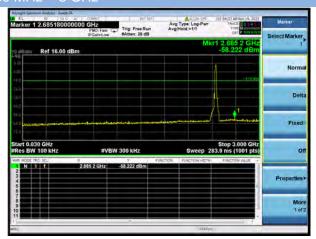


802.11ax-20MHz(SU) 6 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

| nker 1 21.078500000 | PNO: Fast C Tr | ig: Free Run | Avg Type: Log-Pwr Avg[Hold:>1/1 | 101515144 Nov 19, 303 TRACE 05 14 | Reak Search |
|--|----------------|--------------|--|--------------------------------------|--------------|
| Ufdaintow #Atten: 28 dB of tautumeter 10 dBtday Ref 16.00 dBm Mkr1 21.078 50 GHz 447.984 dBm | | | | | |
| | | | | alone a | Next Pk Righ |
| 0 0 0 | | | | 1 | Next Pk Lei |
| | | | a haran a sa | 1 mar | Marker Delt |
| art 2.00 GHz tes BW 100 kHz | #VBW 30 |) KHZ | | Stop 25.00 GH 2.198 s (4001 pts | MkrC |
| | | 984 dBm | | PORT LOW MEDE | Mkr-+RefL |
| | | | | | Mor |
| | | × | | | |



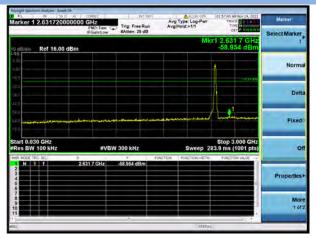
802.11ax-20MHz(SU) 9 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11ax-20MHz(SU) 10 CHANNEL CARRIER LEVEL

| rker 1 2.455750000000 | CH2 PND: Fast C Trig: Free Run #Atten: 26 dB | Avg Type: Log-Pwr Avg(Hold,>1/1 | 01:57:10 AH Nov 19, 3021 TRACE 13 14 4 TIPE AND AND A | Peak Search Next Peak | | |
|-----------------------------------|--|------------------------------------|---|--------------------------|--|--|
| 10 dBIdly Ref 16.00 dBm 1.814 dBm | | | | | | |
| | Anterio minimpristi | -theil weter friet was | | Next Pk Right | | |
| millionarth | | | Sugar Winner 10 | Next Pk Lef | | |
| 0 0 | | | | Marker Delta | | |
| nter 2.45700 GHz es BW 100 kHz | #VBW 300 kHz | | Span 30.00 MHz 2.880 ms (601 pts) FUNCTION VALUE | MkrCf | | |
| N 1 1 2.455 | 5 75 GHz 1.814 dBm | | | MkrRef Lv | | |
| | | | | More 1 of S | | |
| | | STÁDE | | - | | |

802.11ax-20MHz(SU) 10 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11ax-20MHz(SU) 9 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz

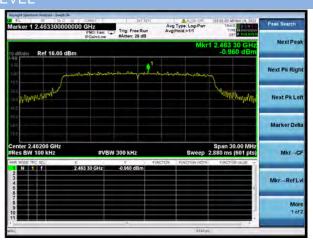


802.11ax-20MHz(SU) 10 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz





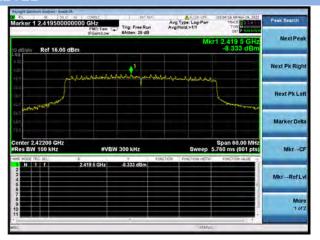
802.11ax-20MHz(SU) 11 CHANNEL CARRIER LEVEL



802.11ax-20MHz(SU) 11 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

| arker 1 2.685180000 | PNO: Fast | Trig: Free Run | Avg Type: Log-Pwr AvgHold >1/1 | 102-01-17 AH Nov 19, 3021 TRACE D 2 4 4 | Mariner | |
|--|-------------------------------|---------------------|-----------------------------------|--|---------------|--|
| | IFGaintLow | #Atten: 26 dB | The second second | DET P NINNIN | Seject Marker | |
| Mkr1 2,685 2 GHz 10 dBtdw Ref 16.00 dBm57.861 dBm | | | | | | |
| ού | | | | | Norma | |
| 40 +0 | | | | 2.0.20 | | |
| 40 | | | | | Deita | |
| 10 | مارسي فروا والمعالية المسارين | | | Amandana | Fixed | |
| tart 0.030 GHz Res BW 100 kHz | #VBV | V 300 kHz | Sweep 2 | Stop 3.000 GHz 83.9 ms (1001 pts) | 01 | |
| N 1 1 | x 2.685 2 GHz | ¥ FU -57.861 dBm | NCTION PUNCTION W07H | FUNCTION VALUE | | |
| 2 3 4 5 | | | | | Properties | |
| 5 7 8 9 | | | | | Mon | |
| | | | | | 1 013 | |

802.11ax-40MHz(SU) 3 CHANNEL CARRIER LEVEL

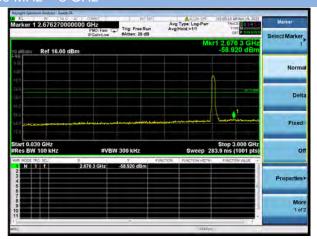


802.11ax-20MHz(SU) 11 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

| Peak Search | 126 AH Nov 19, 3021 TRACE CON 4 AM | Type: Log-Pwr told:>1/1 | Avg Avg | Trig: Free Ru | 00000 GHz PNOt Fast | 21.057000 | arker 1 2 |
|---------------|--|----------------------------|------------|---------------|------------------------|-----------|-------------------------|
| Next Peak | 12Geintow #Atten: 28 dB 001 Mkr1 21.067 00 GHz 19 eBlate Ref 15.00 dBm -48.827 dBm | | | | | | |
| Next Pk Righ | | | | | | | 60 60 |
| Next Pk Lei | | | | | | | 10 |
| Marker Delt | | | | | the second | | ii) 10 Jointy |
| MkrC | op 25.00 GHz 8 s (4001 pts) | Sweep | ; FUNCTION | W 300 kHz | x | 100 kHz | art 2.00 C Res BW 1 |
| MkrRef L | | | | -48.827 dBm | 21,067 00 GHz | | |
| Mon 1 of 3 | | | | | | | |
| | | STATUS | | | | | a) |



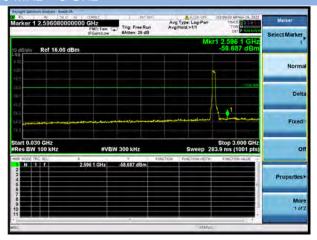
802.11ax-40MHz(SU) 3 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11ax-40MHz(SU) 4 CHANNEL CARRIER LEVEL

| PeakSearch | 102-08-21 AM Nov 19, 3021 TRACE DO 14 TYPE MULTINE OUT P REMEMBER | Type: Log-Pwr Hold >1/1 | hun u | 100000 | 000 GHz PNO: Fast 0 IEGaint.com | 1 2.418300000 |
|--------------|--|----------------------------|----------|-----------|---------------------------------------|-----------------------|
| NextPea | 1 2.418 3 GHz -3.948 dBm | Mk | | | | Ref 16.00 dB |
| Next Pk Righ | | - John March And | un | - | enertant | ٨ |
| Next Pk Le | moon | | | | | mont |
| Marker Del | | | | | | |
| MkrC | Span 60.00 MHz 5.760 ms (601 pts) FUNCTION VALUE | | FUNCTION | | x | .42700 GHz 100 kHz |
| MkrRef L | | | | -3.948 dB | 2.418 3 GHz | r . |
| Mor 1 of | | | | | | |
| - | 107 | STATUS | _ | | | |

802.11ax-40MHz(SU) 4 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

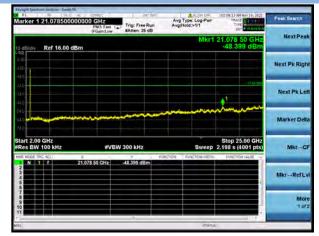


802.11ax-40MHz(SU) 3 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz

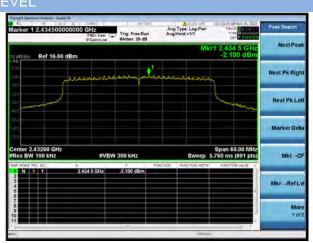


802.11ax-40MHz(SU) 4 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz





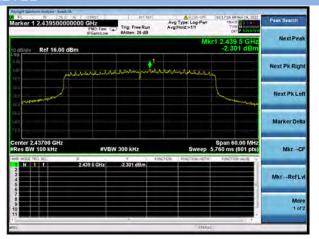
802.11ax-40MHz(SU) 5 CHANNEL CARRIER LEVEL



802.11ax-40MHz(SU) 5 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

| TRACE DECEM | Type: Log-Pwr | Av | And the second second | 000 GHz | | |
|-----------------------|------------------------------|--|---------------------------------|--|---|--|
| DET P NIMMAN | 100.201 | | #Atten: 26 dB | PNO: Fast C IFGain:Low | | - |
| -58.285 dBm | Mkr | | | sm | Ref 16.00 d | o dBrdiv |
| | | | | | | - 98 8-07 4.00 |
| -22.05,00- | | | | | | 140 240 340 |
| ane and a manufacture | and a state of the second | ed digentic all' | م (د جهوری مر باد م | | | 541) 541) 141) |
| | | EISCICS. | | | 100 kHz | start 0.03 Res BW |
| | | | -58,285 dBm | 2.700 0 GHz | | 1 N 1 2 3 4 5 |
| | | | _ | | | 6789 |
| | 1 2,700 0 GH2 -56.285 dBm | 1 Type Log-Per phode 517 Mikr1 2,700 0 GHz -58,288 dBm -22,859 1 excellent extension | Mkr1 2,700 0 GHz -S5.285 dBm | Ang Type LoopPar Thick D back to the Magnetic State Trig: Free Run Avgited State Thick D back to the Magnetic State March State March State March State State March State State March State State March State State M 300 KHz State Y March State March State | 0000 GH2 PHO Fast Trig: Free Run BedinLow Trig: Free Run BedinLow Trig: Free Run Avgiried.511 Mkr1 2, 720 0 GH2 Stop 3.000 GH2 Stop 3.00 | Z.70003000000 GHz FR00 Fatt Trig: Free Run BLank.com Arg Type: Log Per Arg/Heid: k11 Trig: Com Com Trig: Free Run Com Arg Type: Log Per Arg/Heid: k11 Trig: Com Trig: Com |

802.11ax-40MHz(SU) 6 CHANNEL CARRIER LEVEL

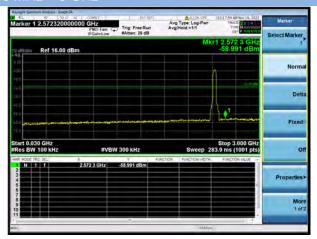


802.11ax-40MHz(SU) 5 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

| Peak Search | 102-13-5# AH Nov 19, 3021 TRACE DO BY 4 TYPE | Type: Log-Pwr Hold >1/1 | eRun A | | 00000 GHz PN0: Fast C EGaint on | 1.130250 | ker 1 2' |
|--------------|--|----------------------------|---------|-------------|---------------------------------------|-------------|-----------------|
| NextPea | 21.130 25 GHz -47.652 dBm | Mkr1 | e ob | EAGEN: 20 | | Ref 16.00 (| Jidiv - |
| Next Pk Righ | | | | | | | 1 |
| Next Pk Le | a sector | | | | | | |
| Marker Delt | · ····· | | ~~~~ | مەمەمەنىيەن | | | lum, |
| MkrC | Stop 25.00 GHz 2.198 s (4001 pts) | Sweep RUNCTION WETTH | FUNCTIO | W 300 kHz | x | 0 kHz | 2.00 G BW 10 |
| MkrRef L | | | Bm | -47.652 dB | 21.130 25 GHz | 1 | N 1 |
| Mor 1 of | | | | | | | |
| - | 117 | STATUS | | | | - | _ |



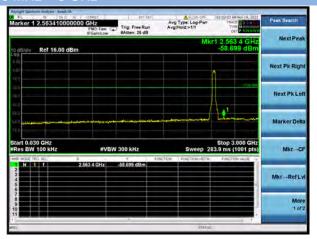
802.11ax-40MHz(SU) 6 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11ax-40MHz(SU) 7 CHANNEL CARRIER LEVEL

| 000000 GHz PNO: Fast | Trig: Free Run | Avg Type: Log-Pwr Avg(Hold>1/1 | 02-21-29 4H Nov 19, 3021 TRACE 19 14 40 TVRE | Peak Search |
|-------------------------|-----------------------------------|---|--|--|
| | #Atten: 26 dB | M | | Next Peak |
| | 1 Jahr Maria markate | MANULLES | | Next Pk Righ |
| | | | | Next Pk Lef |
| | | | | Marker Delt |
| #V | Ý) FL | | | MkrCl |
| 2.444 5 GHz | -3.950 dBm | | | Mkr-+RefLv |
| | | | | Mon |
| | PNC Fast (F Gained on 0 dBm | PHO: Fair Configure Run Britantice Configure Run Configure Configure Configure Configure Configure Configure Configure Configure Configure Configure Configu | PRO TAXE TARE TARE Run Angliteid-surf Refer to 80 | PAD Team 2 and 2 Anglifeld-s17 Team 2 Anglifeld-s17 Te |

802.11ax-40MHz(SU) 7 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11ax-40MHz(SU) 6 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz

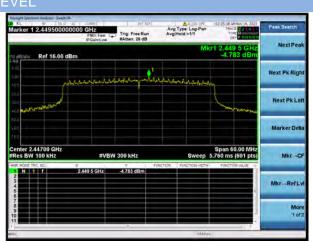


802.11ax-40MHz(SU) 7 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz





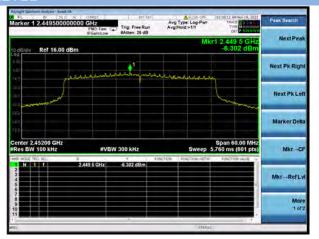
802.11ax-40MHz(SU) 8 CHANNEL CARRIER LEVEL



802.11ax-40MHz(SU) 8 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

| | 2.6317200 | 00000 GHz | 1000 | | Avg Type: Log-Pwr Avg/Hold >1/1 | | Manuer |
|---------------------------|-----------|-------------------|-------------|----------------|------------------------------------|--------------------------------------|---------------|
| _ | | IFGain:Lo | | dB | | ORT P FIRENCE | Select Marker |
| 0 dB/div | Ref 16.00 | dBm | | | M | kr1 2.631 7 GHz -58.425 dBm | 1 |
| - 08 8-02 4.00 | | | | | | A | Norma |
| 140 280 340 | | | | | | -3179.00 | Deita |
| 540 540 540 540 | | ىيىمەمىيەمەرىدۇن. | a | anin salat mar | مەخۇرىيە ھەروھۇرىي | Ale | Fixed |
| tart 0.03 Res BW | 100 kHz | | /BW 300 kHz | | | Stop 3.000 GHz 283.9 ms (1001 pts | or |
| 1 N 1 2 3 4 5 | | 2.631 7 GHz | | | SH PUNCTION WOTH | FUNCTION VALUE | Properties |
| 6 7 8 9 10 | | | | | | | Mor 1 of |
| - | | | | | STÁTU | 114 | |

802.11ax-40MHz(SU) 9 CHANNEL CARRIER LEVEL

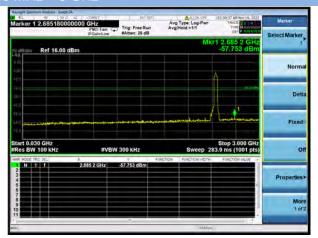


802.11ax-40MHz(SU) 8 CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

| PeakSearch | H Nov 19, 3021 | TRAC | ype: Log-Pwr old:>1/1 | Av | Trig: Free Run #Atten: 25 dB | 0000 GHz PN0: Fast 0 IFGaint on | 1475000 | r 1 21 | Narke |
|--------------|-----------------------|------------|--------------------------|----------|---------------------------------|---------------------------------------|------------|---------------------|-----------------------|
| Next Peak | 50 GHz 25 dBm | 21.147 | Mkr1 | | 10000 C 00 | | ef 16.00 c | W R | o diBJd |
| Next Pk Righ | | | | | | | | | -98 8-00 4.00 |
| Next Pk Le | -3674 (| A 1 | | | | | | | 440 - 280 340 - |
| Marker Delt | | in | | | | | | nand _{ine} | 520 10 10 |
| Mkr-C | 5.00 GHz 4001 pts) | 2.198 s (| Sweep Function with | FUNCTION | W 300 kHz | x | kHz | .00 GI 3W 10 | Res |
| MkrRef L | | | | | -47.325 dBm | 21.147 50 GHz | | 1 | N 2345 |
| Mor 1 of | | | | | | | | | 6789 1011 |
| | 11 | 0 | STÁPUS | _ | | | | _ | (m) |



802.11ax-40MHz(SU) 9 CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11ax-40MHz(SU) 9 CHANNEL, SPURIOUS

2 GHz ~ 25 GHz

| ICOURT DODO GHZ PNO: Fast IFGain:Low #Atten: 28 dB | Avg Type: Log-Pwr Avg(Hold,>1/1 | 107:31:12 44 Nov 19, 3021 TRACE 12 45 10 TIPE 10 1000000 DET 12 11 10 NOV | Peek Ssarch |
|--|---|--|--|
| m | Mkr1 | 24.632 00 GHz -46.417 dBm | NextPeak |
| | | | Next Pk Righ |
| | | | Next Pk Lef |
| | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | manul | Marker Delt |
| #VBW 300 kHz | | | MkrCl |
| 24.632 00 GHz 46.417 dBm | | | MkrRef L |
| | | | Mor |
| | 10000 GHZ PAO Fait PGahataw Trig: Pree Run ZAtan: 24 db m #VEW 300 kHz 3 v v v v | 00000 GHz PRO1eta Trig: Free Run Bacter: 24 dB Avg/Trigs: Log-Pur Avg/Holds->11 IFGLIN:100 IMERCIDE Micro IFGLIN:100 IMERCIDE Micro IFGLIN:100 IFGLIN:100 ImerciDe IFGLIN:100 ImerciDe ImerciDe IFGLIN:100 ImerciDe ImerciDe IFGLIN:100 ImerciDe ImerciDe | ODD00 GHz PHO1 Here IFCain-Low Trug: Free Run RAgHeid:s-bit Avg Type: Log-Perr AvgHeid:s-bit Truck III State (cf) Truck III State (cf) Inter: 24 dB Mkr1 24, 632 Q.00 GHz -46, 417 dBm Mkr1 24, 632 Q.00 GHz -46, 417 dBm Imter: 24 dB Stop 25,00 GHz Stop 25,00 GHz Stop 25,00 GHz Stop 25,00 GHz Stop 25,00 GHz Stop 25,00 GHz |



A.4 Band Edge (Authorized-band band-edge)

Test Data

Note: The 99% OBW of the fundamental emission is without 2 MHz of the authorized band.

802.11b Mode:

| | Measured Max. Band | Limit | (dBm) | |
|---------|---------------------|---------------|----------------------------|---------|
| Channel | Edge Emission (dBm) | Carrier Level | Calculated 20 dBc Limit | Verdict |
| 1 | -45.81 | 7.05 | -12.95 | Pass |
| 11 | -57.30 | 6.59 | -13.41 | Pass |

802.11g Mode:

| | Measured Max. Band | Limit | (dBm) | |
|---------|---------------------|---------------|----------------------------|---------|
| Channel | Edge Emission (dBm) | Carrier Level | Calculated 20 dBc Limit | Verdict |
| 1 | -32.34 | 2.08 | -17.92 | Pass |
| 2 | -37.65 | 3.63 | -16.37 | Pass |
| 3 | -50.32 | 4.64 | -15.36 | Pass |
| 4 | -50.48 | 5.68 | -14.32 | Pass |
| 9 | -52.22 | 5.94 | -14.06 | Pass |
| 10 | -53.43 | 3.57 | -16.43 | Pass |
| 11 | -52.59 | 1.85 | -18.15 | Pass |

802.11n-20 MHz Mode:

| | Measured Max. Band | Limit | (dBm) | |
|---------|---------------------|---------------|---------------|---------|
| Channel | Edge Emission (dBm) | Carrier Level | Calculated 20 | Verdict |
| | | Camer Lever | dBc Limit | |
| 1 | -31.89 | 2.09 | -17.91 | Pass |
| 2 | -39.35 | 3.49 | -16.51 | Pass |
| 3 | -50.50 | 4.14 | -15.86 | Pass |
| 4 | -50.63 | 5.55 | -14.45 | Pass |
| 9 | -52.04 | 5.77 | -14.23 | Pass |
| 10 | -53.73 | 3.50 | -16.50 | Pass |
| 11 | -54.40 | 0.69 | -19.31 | Pass |



802.11n-40 MHz Mode:

| | Measured Max. Band | Limit (dBm) | | |
|---------|---------------------|---------------|----------------------------|---------|
| Channel | Edge Emission (dBm) | Carrier Level | Calculated 20 dBc Limit | Verdict |
| | | | UDC LITIIL | |
| 3 | -50.39 | -2.80 | -22.80 | Pass |
| 4 | -52.37 | -1.37 | -21.37 | Pass |
| 5 | -45.25 | 1.76 | -18.24 | Pass |
| 7 | -54.57 | 1.24 | -18.76 | Pass |
| 8 | -54.25 | -0.95 | -20.95 | Pass |
| 9 | -53.54 | -1.84 | -21.84 | Pass |

802.11VHT-20 MHz Mode:

| | Measured Max. Band | Limit | (dBm) | |
|---------|---------------------|---------------|----------------------------|---------|
| Channel | Edge Emission (dBm) | Carrier Level | Calculated 20 dBc Limit | Verdict |
| 1 | -32.69 | 1.48 | -18.52 | Pass |
| 2 | -37.61 | 3.03 | -16.97 | Pass |
| 3 | -49.05 | 4.03 | -15.97 | Pass |
| 4 | -50.55 | 5.54 | -14.46 | Pass |
| 9 | -53.34 | 5.87 | -14.13 | Pass |
| 10 | -55.13 | 1.91 | -18.09 | Pass |
| 11 | -53.76 | 0.55 | -19.45 | Pass |

802.11VHT-40 MHz Mode:

| Channel | Measured Max. Band Edge Emission (dBm) | Limit (dBm) | | |
|---------|---|---------------|----------------------------|---------|
| | | Carrier Level | Calculated 20 dBc Limit | Verdict |
| 3 | -51.10 | -2.96 | -22.96 | Pass |
| 4 | -52.27 | -1.41 | -21.41 | Pass |
| 5 | -46.84 | 2.20 | -17.80 | Pass |
| 7 | -54.49 | 0.61 | -19.39 | Pass |
| 8 | -54.37 | -1.53 | -21.53 | Pass |
| 9 | -53.39 | -1.89 | -21.89 | Pass |

802.11ax-20 MHz(SU) Mode:

| | Measured Max. Band | Limit (dBm) | | |
|---------|---------------------|---------------|---------------|---------|
| Channel | Edge Emission (dBm) | Carrier Level | Calculated 20 | Verdict |
| | Edge Emission (dBm) | Camer Lever | dBc Limit | |
| 1 | -43.60 | 0.99 | -19.01 | Pass |
| 2 | -48.77 | 2.00 | -18.00 | Pass |
| 3 | -49.73 | 3.39 | -16.61 | Pass |
| 4 | -50.82 | 4.90 | -15.10 | Pass |
| 9 | -52.49 | 5.21 | -14.79 | Pass |
| 10 | -55.24 | 1.81 | -18.19 | Pass |
| 11 | -55.96 | -0.96 | -20.96 | Pass |



802.11ax-40 MHz(SU) Mode:

| Channel | Measured Max. Band Edge Emission (dBm) | Limit (dBm) | | |
|---------|---|---------------|----------------------------|---------|
| | | Carrier Level | Calculated 20 dBc Limit | Verdict |
| 3 | -49.66 | -8.33 | -28.33 | Pass |
| 4 | -48.60 | -3.95 | -23.95 | Pass |
| 5 | -49.29 | -2.10 | -22.10 | Pass |
| 7 | -55.76 | -3.95 | -23.95 | Pass |
| 8 | -55.83 | -4.78 | -24.78 | Pass |
| 9 | -54.31 | -6.30 | -26.30 | Pass |



Test Plots

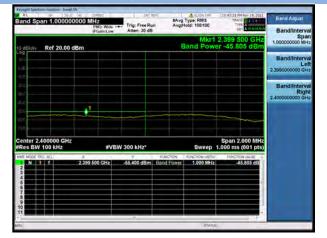




802.11b 1 CHANNEL, Reference level



802.11b 1 CHANNEL, Reference level

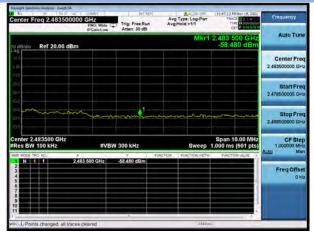


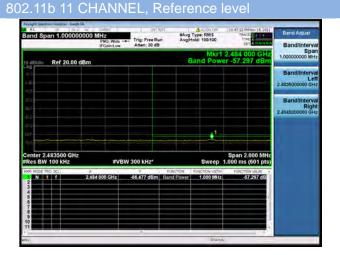
802.11b 11 CHANNEL, Carrier level





802.11b 11 CHANNEL, Reference level





802.11g 1 CHANNEL, Carrier level



802.11g 1 CHANNEL, Reference leve



802.11g 1 CHANNEL. Reference leve





802.11g 2 CHANNEL, Carrier level



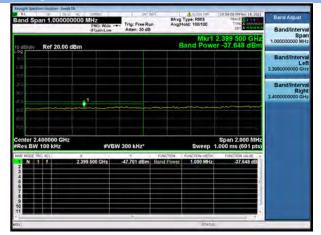
802.11g 2 CHANNEL, Reference leve



802.11g 3 CHANNEL, Carrier level

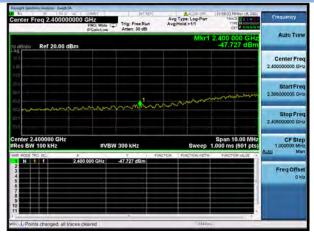


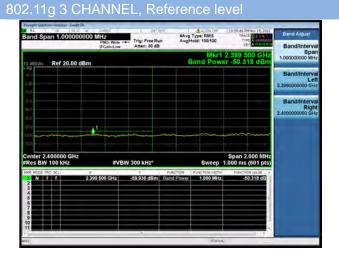
802.11g 2 CHANNEL, Reference level





802.11g 3 CHANNEL, Reference level

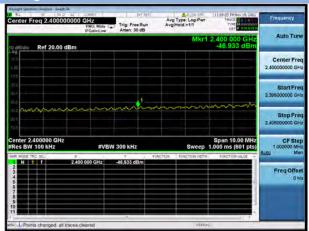




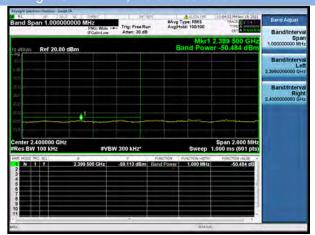
802.11g 4 CHANNEL, Carrier level



802.11g 4 CHANNEL, Reference leve



802.11g 4 CHANNEL. Reference leve

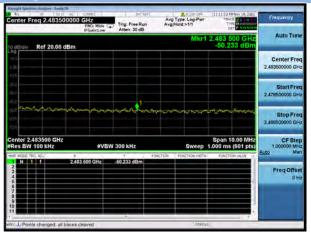




802.11g 9 CHANNEL, Carrier level



802.11g 9 CHANNEL, Reference leve



802.11g 10 CHANNEL, Carrier level

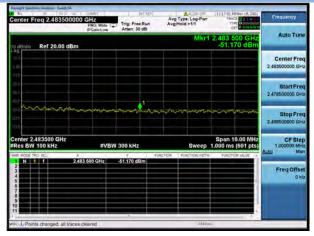


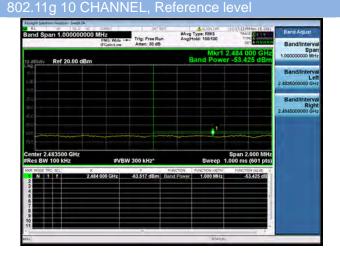
802.11g 9 CHANNEL, Reference level





802.11g 10 CHANNEL, Reference level

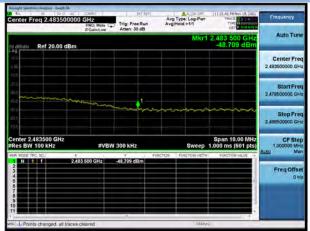




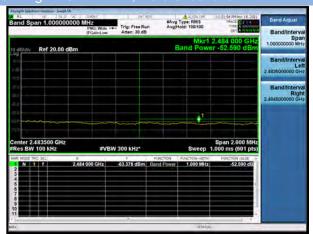
802.11g 11 CHANNEL, Carrier level



802.11g 11 CHANNEL, Reference leve



802.11g 11 CHANNEL, Reference level





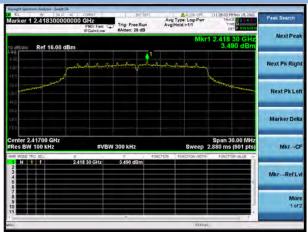
802.11n-20 MHz 1 CHANNEL, Carrier level



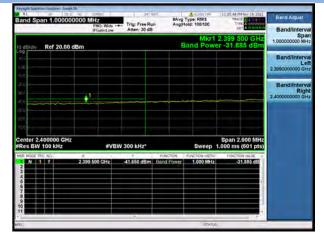
802.11n-20 MHz 1 CHANNEL, Reference level



802.11n-20 MHz 2 CHANNEL, Carrier leve



802.11n-20 MHz 1 CHANNEL, Reference level

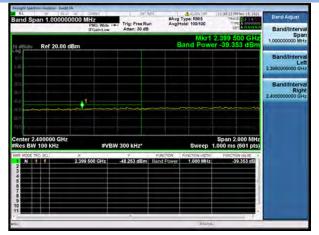




802.11n-20 MHz 2 CHANNEL, Reference level



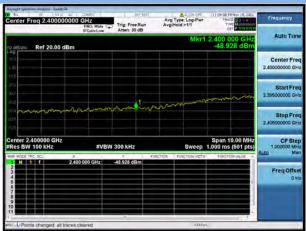
802.11n-20 MHz 2 CHANNEL, Reference level



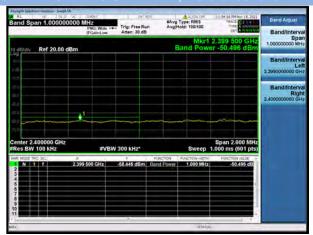
802.11n-20 MHz 3 CHANNEL, Carrier level



802.11n-20 MHz 3 CHANNEL, Reference leve



802.11n-20 MHz 3 CHANNEL. Reference level

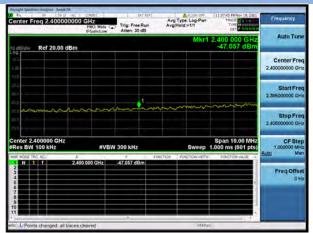




802.11n-20 MHz 4 CHANNEL, Carrier level



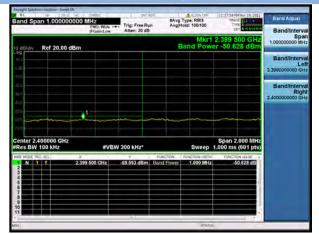
802.11n-20 MHz 4 CHANNEL, Reference level



802.11n-20 MHz 9 CHANNEL, Carrier leve

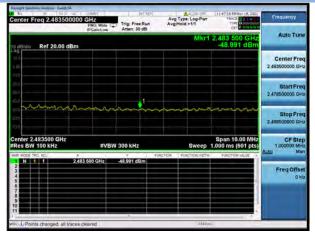


802.11n-20 MHz 4 CHANNEL, Reference level

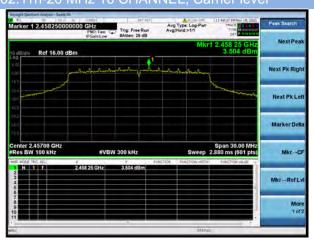




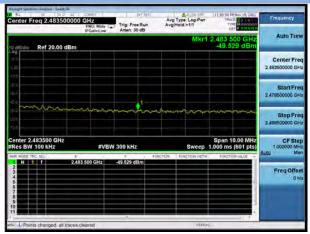
802.11n-20 MHz 9 CHANNEL, Reference level

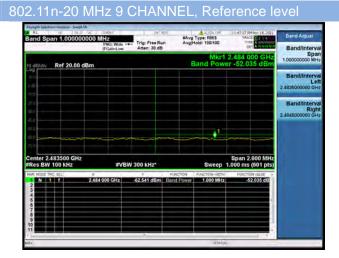


802.11n-20 MHz 10 CHANNEL, Carrier level

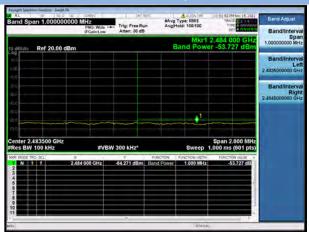


802.11n-20 MHz 10 CHANNEL, Reference leve





802.11n-20 MHz 10 CHANNEL, Reference level





802.11n-20 MHz 11 CHANNEL, Carrier level



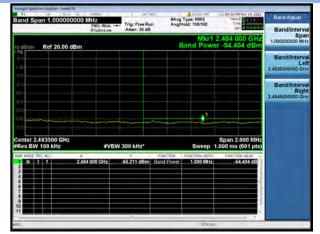
802.11n-20 MHz 11 CHANNEL, Reference level



802.11n-40 MHz 3 CHANNEL, Carrier level



802.11n-20 MHz 11 CHANNEL, Reference level

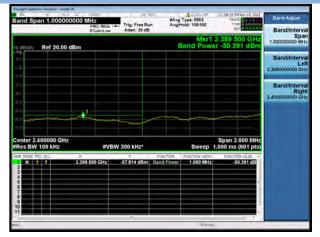




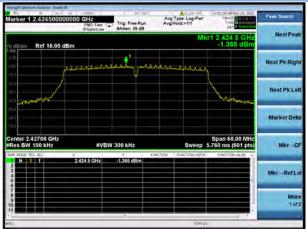
802.11n-40 MHz 3 CHANNEL, Reference level



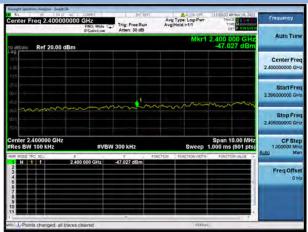
802.11n-40 MHz 3 CHANNEL, Reference level



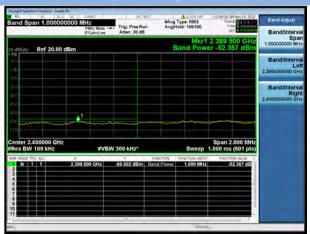
802.11n-40 MHz 4 CHANNEL, Carrier level



802.11n-40 MHz 4 CHANNEL, Reference leve



802.11n-40 MHz 4 CHANNEL. Reference leve

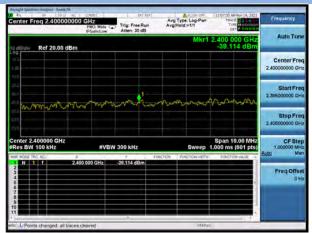




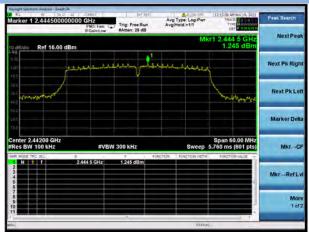
802.11n-40 MHz 5 CHANNEL, Carrier level



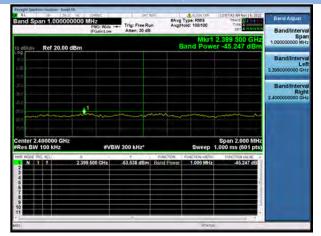
802.11n-40 MHz 5 CHANNEL, Reference level



802.11n-40 MHz 7 CHANNEL, Carrier leve



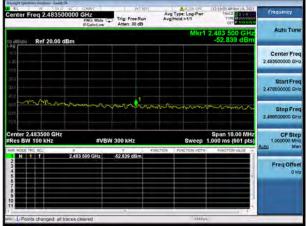
802.11n-40 MHz 5 CHANNEL, Reference level



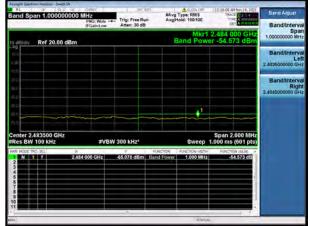


Band Adj

802.11n-40 MHz 7 CHANNEL, Reference level

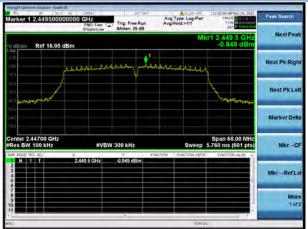


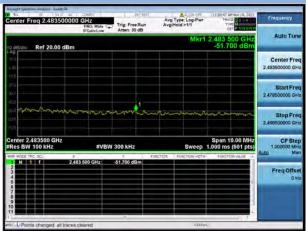
Ref 20.00 dBm

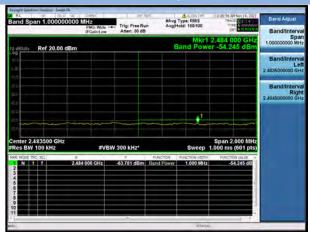


#Avg Type: RMS Avg(Hold: 100/100

802.11n-40 MHz 8 CHANNEL, Carrier level

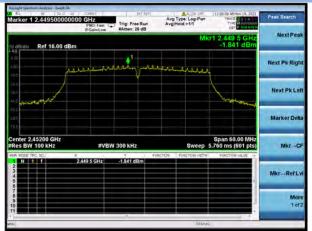




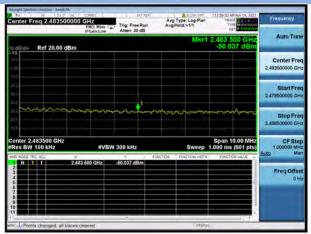




802.11n-40 MHz 9 CHANNEL, Carrier level



802.11n-40 MHz 9 CHANNEL, Reference level



802.11VHT-20 MHz 1 CHANNEL, Carrier leve



802.11n-40 MHz 9 CHANNEL, Reference level

