

 Report No.:
 SHCR221200280204

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TEST REPORT

| Application No.: | SHCR2212002802ME |
|----------------------------|---------------------------------------------------|
| FCC ID: | OU5VSM01 |
| Applicant: | GE Medical Systems Information Technologies, Inc. |
| Address of Applicant: | 9900 Innovation Drive, Wauwatosa, WI 53226 USA |
| Manufacturer: | GE Medical Systems Information Technologies, Inc. |
| Address of Manufacturer: | 9900 Innovation Drive, Wauwatosa, WI 53226 USA |
| Equipment Under Test (EUT) | : |
| EUT Name: | VSM WLAN module |
| Model No.: | VSM-WLAN-01 |
| Trade Mark: | GE |
| Standard(s) : | 47 CFR Part 15, Subpart E 15.407 |
| | RSS-247 Issue 2, February 2017 |
| | RSS-Gen Issue 5 Amendment 2 (February 2021) |
| Date of Receipt: | 2022-12-22 |
| Date of Test: | 2023-03-06 to 2023-06-09 |
| Date of Issue: | 2023-06-12 |
| Test Result: | Pass* |

* In the configuration tested, the EUT complied with the standards specified above.

parlan share

Parlam Zhan Laboratory Manager



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| Revision Record | | | | | | | |
|---------------------------------|----------|------------|---|--|--|--|--|
| Version Description Date Remark | | | | | | | |
| 00 | Original | 2023-06-12 | / | | | | |
| | | | | | | | |
| | | | | | | | |

| Authorized for issue by: | | | |
|--------------------------|-----------------------------|---|--|
| | Wade thang | - | |
| | Wade Zhang/Project Engineer | | |
| | Parlam zhan | | |
| | Parlam Zhan/Reviewer | | |



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2 Test Summary

| Radio Spectrum Technical Requirement | | | | | | |
|----------------------------------------|-----------------------------------------|---------------------------|--------|--------|--|--|
| ltem | FCC Requirement | IC Requirement | Method | Result | | |
| Antenna Requirement | 47 CFR Part 15, Subpart C 15.203 | RSS-Gen Clause 6.8 | N/A | Pass | | |
| Transmission in the Absence of Data | 47 CFR Part 15, Subpart C 15.407 (c) | RSS-247 Section 6.4(a) | N/A | Pass | | |

N/A: Not applicable

| Radio Spectrum Matter Part | | | | | | |
|-------------------------------------------------------------|----------------------------------------------------|------------------------------------------------|--------------------------|--------|--|--|
| ltem | FCC Requirement | IC Requirement | Method | Result | | |
| 99% Bandwidth | N/A | RSS-Gen Section 6.7 | KDB 789033 II D | Pass | | |
| 26dB Emission bandwidth | 47 CFR Part 15, Subpart C 15.407 (a) | RSS-247 Section 6.2.1(1) | KDB 789033 D02 II C 1 | Pass | | |
| Minimum 6 dB bandwidth (5.725- 5.85 GHz band) | 47 CFR Part 15, Subpart C 15.407 (e) | RSS-247 Section 6.2.4 | KDB 789033 D02 II C 2 | Pass | | |
| Maximum Conducted output power | 47 CFR Part 15, Subpart C 15.407 (a) | RSS-247 Section 6.2.1&6.2.2&6.2.3&6.2 .4 | KDB 789033 D02 II E | Pass | | |
| Peak Power spectrum density | 47 CFR Part 15, Subpart C 15.407 (a) | RSS-247 Section 6.2.1&6.2.2&6.2.3& 6.2.4 | KDB 789033 D02 II F | Pass | | |
| Radiated Emissions | 47 CFR Part 15, Subpart C 15.209 & 15.407(b) | RSS-247 Section 3.3 & RSS-Gen Section 8.9 | KDB 789033 D02 II G | Pass | | |
| Radiated Emissions which fall in the restricted bands | 47 CFR Part 15, Subpart C 15.209 & 15.407(b) | RSS-247 Section 3.3 & RSS-Gen Section 8.9 | KDB 789033 D02 II G | Pass | | |



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4 General Information

4.1 Details of E.U.T.

| Power supply: | DC 3.3V |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Voltage: | DC 3.3V |
| Operation Frequency/Number of channels (20MHz): | U-NII-1: 5180-5240MHz (4 Channels); U-NII-2A: 5260-5320MHz (4 Channels); U-NII-2C: 5500-5700MHz (11 Channels);U-NII-3: 5745- 5825MHz (5 Channels) |
| Operation Frequency/Number of channels/(40MHz): | U-NII-1: 5190-5230MHz (2 Channels); U-NII-2A: 5270-5310MHz (2 Channels); U-NII-2C: 5510-5670MHz (5 Channels); U-NII-3: 5755-5795MHz (2 Channels) |
| Modulation Type: | 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK); 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM) |
| Channel Spacing: | 802.11a/n(HT20): 20MHz; 802.11n(HT40): 40MHz |
| DFS Function: | Slave without Radar detection |
| TPC Function: | Without TPC function |
| Antenna Type: | PCB Antenna |
| Antonno Coini | Antenna 1: 2.38dBi (Provided by manufacturer) |
| Antenna Gain: | Antenna 2: 1dBi (Provided by manufacturer) |
| Data Pata: | 802.11a:6/9/12/18/24/36/48/54Mbps |
| | 802.11n: MCS0-MCS7 |

4.2 Description of Support Units

| Description | Manufacturer | Model No. | Serial No. |
|---------------------------|--------------|--------------|------------|
| Laptop | LENOVO | L460 | - |
| SecureCRT | VanDyke | V 6.2.0 | - |
| Serial port adapter plate | - | Test Plate 3 | - |

4.3 Power level setting using in test:

| Channel | 802.11a | 802.11n (HT20) | 802.11n (HT40) |
|--------------|---------|-------------------|-------------------|
| UNII Band 1 | 5 | 5 | 5 |
| UNII Band 2A | 5 | 5 | 5 |
| UNII Band 2C | 5 | 5 | 5 |
| UNII Band 3 | 5 | 5 | 5 |



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4.4 Measurement Uncertainty & Decision Rule

| No. | ltem | Measurement Uncertainty |
|-----|---------------------------------|-------------------------|
| 1 | Radio Frequency | 8.4 x 10 ⁻⁸ |
| 2 | Timeout | 2s |
| 3 | Duty cycle | 0.4% |
| 4 | Occupied Bandwidth | 3% |
| 5 | RF conducted power | 0.6dB |
| 6 | RF power density | 2.9dB |
| 7 | Conducted Spurious emissions | 0.75dB |
| 0 | PE Padiated power | 5.2dB (Below 1GHz) |
| 0 | RF Radiated power | 5.9dB (Above 1GHz) |
| | | 4.2dB (Below 30MHz) |
| 0 | Padiated Spurious omission test | 4.5dB (30MHz-1GHz) |
| 9 | Radiated Spurious emission test | 5.1dB (1GHz-6GHz) |
| | | 5.4dB (6GHz-18GHz) |
| 10 | Temperature test | 1°C |
| 11 | Humidity test | 3% |
| 12 | Supply voltages | 1.5% |
| 13 | Time | 3% |

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

4.5 Test Location

All tests were performed at: SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. E&E Lab 588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China Tel: +86 21 6191 5666 Fax: +86 21 6191 5678 No tests were sub-contracted. Note:

SGS is not responsible for wrong test results due to incorrect information (e.g. max. clock frequency, highest internal frequency, antenna gain, cable loss, etc.) is provided by the applicant. (if applicable).
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4.6 Test Facility

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

• A2LA (Certificate No. 6332.01)

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the American Association for Laboratory Accreditation(A2LA).

• FCC (Designation Number: CN1301)

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been recognized as an accredited testing laboratory.

• ISED (CAB Identifier: CN0020)

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. EMC Laboratory has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory. Company Number: 8617A

• VCCI (Member No.: 3061)

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4.7 Deviation from Standards None

4.8 Abnormalities from Standard Conditions None



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Equipment List 5

| Equipment | Manufacturer | Model No | Inventory No | Cal Date | Cal Due Date |
|---------------------------|--------------|-------------------------------|-----------------------|------------|--------------|
| RF Conducted Test | | | | | • |
| Spectrum Analyzer | R&S | FSP-30 | SHEM002-1 | 2022-12-20 | 2023-12-19 |
| Spectrum Analyzer | Keysight | N9020B | SHEM241-1 | 2022-12-20 | 2023-12-19 |
| Spectrum Analyzer | Agilent | N9020A | SHEM181-1 | 2022-08-02 | 2023-08-01 |
| Signal Generator | R&S | SMR20 | SHEM006-1 | 2022-08-02 | 2023-08-01 |
| Signal Generator | Agilent | N5182A | SHEM182-1 | 2022-08-02 | 2023-08-01 |
| Communication Tester | R&S | CMW270 | SHEM183-1 | 2022-07-25 | 2023-07-24 |
| Communication Tester | R&S | CMW500 | SHEM268-1 | 2022-07-25 | 2023-07-24 |
| Power Sensor | Keysight | U2021XA * 4 | SHEM184-1 | 2022-08-02 | 2023-08-01 |
| Splitter | Anritsu | MA1612A | SHEM185-1 | / | / |
| Coupler | e-meca | 803-S-1 | SHEM186-1 | / | / |
| High-low Temp Cabinet | Suzhou Zhihe | TL-40 | SHEM087-1 | 2022-11-08 | 2024-11-07 |
| AC Power Stabilizer | APC | KDF-31020T-V0-F0 | SHEM216-1 | 2022-12-20 | 2023-12-19 |
| DC Power Supply | MCH | MCH-303A | SHEM210-1 | 2022-12-20 | 2023-12-19 |
| Conducted test Cable | / | RF01~RF04 | / | 2022-12-20 | 2023-12-19 |
| Switcher | Tonscend | JS0806 | SHEM184-1 | 2022-08-02 | 2023-08-01 |
| Test software | Tonscend | JS Tonscend BT/WIFI System | Version: 2.6 | / | / |
| Coaxial Cable | TST | | SHEM263-1 | 2022-08-02 | 2023-08-01 |
| Test software | TST | TST PASS | Version: 2.0 | / | / |
| RF Radiated Test | | | | | |
| EMI test Receiver | R&S | ESU40 | SHEM051-1 | 2022-12-20 | 2023-12-19 |
| Spectrum Analyzer | R&S | FSP-30 | SHEM002-1 | 2022-12-20 | 2023-12-19 |
| Communication Tester | R&S | CMW500 | SHEM268-1 | 2022-07-25 | 2023-07-24 |
| Loop Antenna (9kHz-30MHz) | Schwarzbeck | FMZB1519 | SHEM135-1 | 2022-12-20 | 2023-12-19 |
| Antenna (25MHz-2GHz) | Schwarzbeck | VULB9168 | SHEM048-1 | 2021-09-11 | 2023-09-10 |
| Antenna (25MHz-2GHz) | Schwarzbeck | VULB9168 | SHEM202-1 | 2022-05-07 | 2024-05-06 |
| Horn Antenna (1-18GHz) | Schwarzbeck | HF906 | SHEM009-1 | 2022/8/11 | 2024-08-10 |
| Horn Antenna (1-18GHz) | Schwarzbeck | BBHA9120D | SHEM050-1 | 2021-09-18 | 2023-09-17 |
| Horn Antenna (14-40GHz) | Schwarzbeck | BBHA 9170 | SHEM049-1 | 2021-09-18 | 2023-09-17 |
| Pre-Amplifier | HP | 8447D | SHEM236-1 | 2022-08-02 | 2023-08-01 |
| High-amplifier (14-40GHz) | Schwarzbeck | 10001 | SHEM049-2 | 2022-12-20 | 2023-12-19 |
| Band Filter | LORCH | 9BRX-875/X150 | SHEM156-1 | / | / |
| Band Filter | LORCH | 13BRX-1950/X500 | SHEM083-2 | / | / |
| Band Filter | LORCH | 5BRX-2400/X200 | SHEM155-1 | / | / |
| Band Filter | LORCH | 5BRX-5500/X1000 | SHEM157-2 | / | / |
| High pass Filter | Wainwright | WHK3.0/18G | SHEM157-1 | / | / |
| High pass Filter | Wainwright | WHKS1700 | SHEM157-3 | / | / |
| Semi/Fully Anechoic | ST | 11*6*6M | SHEM078-2 | 2021-05-25 | 2024-05-24 |
| RE test Cable | / | RE01, RE02, RE06 | / | 2023-01-07 | 2024-01-06 |
| Test software | ESE | E3 | Version: 6.111221a | / | / |



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6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

6.1.2 Conclusion

Standard Requirement:

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 antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is PCB antenna and no consideration of replacement. The best case gain is 2.38dBi of antenna 1, and 1dBi of antenna 2.

Antenna location: Refer to internal photo.



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6.2 Transmission in the Absence of Data

6.2.1 Test Requirement:

47 CFR Part 15, Subpart E 15.407 (c)

6.2.2 Conclusion

Standard Requirement:

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signalling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals.

Applicants shall include in their application for equipment authorization a description of how this requirement is met.

EUT Details:

WIFI chip support automatically discontinue transmission in case of either absence of information to transmit or operational failure, if the chip detect absence of information to transmit or operational failure, it will be automatically shut off.



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Radio Spectrum Matter Test Results 7

7.1 Duty Cycle

Test Requirement KDB 789033 D02 II B 1 Test Method: KDB 789033 II B 1

7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22.1 °C Humidity: 37.0 % RH

Atmospheric Pressure: 1010 mbar

7.1.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|--------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Final test | 04 | TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Final test | 05 | TX mode (U-NII-2A)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Final test | 06 | TX mode (U-NII-2C)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Final test | 07 | TX mode (U-NII-3)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |



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7.1.3 Test Setup Diagram



Ground Reference Plane

7.1.4 Measurement Procedure and Data

Please Refer to Appendix for Details



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7.2 99% Bandwidth

| Test Requirement | N/A |
|------------------|-----------------|
| Test Method: | KDB 789033 II D |

7.2.1 E.U.T. Operation

Operating Environment: Temperature: 22.1 °C

Humidity: 37.0 % RH

Atmospheric Pressure: 1010 mbar

7.2.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|--------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Final test | 04 | TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Final test | 05 | TX mode (U-NII-2A)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Final test | 06 | TX mode (U-NII-2C)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Final test | 07 | TX mode (U-NII-3)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |



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7.2.3 Test Setup Diagram



Ground Reference Plane

7.2.4 Measurement Procedure and Data

Please Refer to Appendix for Details



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7.3 26dB Emission bandwidth

| Test Requirement | 47 CFR Part 15, Subpart E 15.407 (a) |
|------------------|--------------------------------------|
| Test Method: | KDB 789033 D02 II C 1 |

7.3.1 E.U.T. Operation

Operating Environment: Temperature: 22.1 °C

Humidity: 36.9 % RH

Atmospheric Pressure: 1010 mbar

7.3.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|--------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Final test | 04 | TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Final test | 05 | TX mode (U-NII-2A)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Final test | 06 | TX mode (U-NII-2C)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Final test | 07 | TX mode (U-NII-3)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |



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7.3.3 Test Setup Diagram



Ground Reference Plane

7.3.4 Measurement Procedure and Data

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7.4 Minimum 6 dB bandwidth (5.725-5.85 GHz band)

| Test Requirement | 47 CFR Part | : 15, Subpart E 15.407 (e) | | |
|------------------|-------------|----------------------------|----------|--|
| Test Method: | KDB 789033 | 3 D02 II C 2 | | |
| Limit: | | | | |
| Frequency ba | nd(MHz) | | Limit | |
| 5725-58 | 50 | | ≥500 kHz | |

7.4.1 E.U.T. Operation

Operating Environment:

| Tomporatura | 22.4 00 | بر بانام: معربا ا | | Atmoonharia Dragourou | 1010 | mhor |
|--------------|---------|-------------------|-------------|-----------------------|------|------|
| remperature. | 22.1 0 | numuity. | 30.0 /0 111 | Autospheric Pressure. | 1010 | mbai |

7.4.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|--------------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Final test | 07 | TX mode (U-NII-3)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |

7.4.3 Test Setup Diagram



Ground Reference Plane

7.4.4 Measurement Procedure and Data

Please Refer to Appendix for Details



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7.5 Maximum Conducted output power

| Test Requirement | 47 CFR Part 15, Subpart E 15.407 (a) |
|------------------|--------------------------------------|
| Test Method: | KDB 789033 D02 II E |

Limit:

| Frequency | band(MHz) | Limit | |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--|
| 5450 | 5250 | ≤1W(30dBm) for master device | |
| 5150 | -5250 | ≤250mW(24dBm) for client device | |
| 5250 | -5350 | ≤250mW(24dBm) for client device or 11dBm+10logB* | |
| 5470 | -5725 | ≤250mW(24dBm) for client device or 11dBm+10logB* | |
| 5725-5850 | | ≤1W(30dBm) | |
| Remark: | * Where B is the 26dB emission bandwidth in MHz. | | |
| | The maximum conducted output power must be measured over any interval o continuous transmission using instrumentation calibrated in terms of an rms equivalent voltage. | | |

7.5.1 E.U.T. Operation

| Operating Environ | ment: | | | | | |
|-------------------|---------|-----------|-----------|-----------------------|------|------|
| Temperature: | 22.1 °C | Humidity: | 36.9 % RH | Atmospheric Pressure: | 1010 | mbar |

7.5.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|--------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Final test | 04 | TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Final test | 05 | TX mode (U-NII-2A)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Final test | 06 | TX mode (U-NII-2C)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Final test | 07 | TX mode (U-NII-3)_Keep the EUT in continuously transmitting mode with all |
| | | |



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| modulation types. All data rates for each modulation type have been tested and |
|---------------------------------------------------------------------------------|
| found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 |
| is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of |
| IEEE 802.11n(HT40), final test modes are considering the modulation and worse |
| data rates. Only the data of worst case is recorded in the report. |

7.5.3 Test Setup Diagram



Ground Reference Plane

7.5.4 Measurement Procedure and Data

Note: Since the verify power the same operating range bandwidth and smaller power can be covered by the higher power.

Please Refer to Appendix for Details



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7.6 Peak Power spectrum density

| Test Requirement | 47 CFR Part 15, Subpart E 15.407 (a) |
|------------------|--------------------------------------|
| Test Method: | KDB 789033 D02 II F |

Limit:

| Frequency band(MHz) | | Limit | |
|------------------------------------------------------------------------------------------------------|-----|-------------------------------------------------------------------------------------------------------------------------------|--|
| 5450 5050 | | ≤17dBm in 1MHz for master device | |
| 5150-5 | 250 | ≤11dBm in 1MHz for client device | |
| 5250-5350 | | ≤11dBm in 1MHz for client device | |
| 5470-5725 | | ≤11dBm in 1MHz for client device | |
| 5725-5850 | | ≤30dBm in 500 kHz | |
| Remark: The maximum power spectral density is meas direct connection of a calibrated test instrument | | power spectral density is measured as a conducted emission by on of a calibrated test instrument to the equipment under test. | |

7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 22.1 °C

Humidity: 36.7 % RH

Atmospheric Pressure: 1010 mbar

7.6.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|--------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Final test | 04 | TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Final test | 05 | TX mode (U-NII-2A)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Final test | 06 | TX mode (U-NII-2C)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Final test | 07 | TX mode (U-NII-3)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 |



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| | is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of |
|--|--------------------------------------------------------------------------------|
| | IEEE 802.11n(HT40), final test modes are considering the modulation and worse |
| | data rates. Only the data of worst case is recorded in the report. |

7.6.3 Test Setup Diagram



Ground Reference Plane

7.6.4 Measurement Procedure and Data

Please Refer to Appendix for Details



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7.7 Radiated Emissions (Above 1GHz)

Test Requirement Test Method:

t 47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b) KDB 789033 D02 II G

Limit:

| Frequency(MHz) | Field strength(microvolts/meter) | Measurement distance(meters) |
|----------------|----------------------------------|---------------------------------|
| Above 1GHz | 500 | 3 |
| | | |

*(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

7.7.1 E.U.T. Operation

Operating Environment: Temperature: 22.1 °C Humidity: 36.8 % RH

3 % RH Atmospheric Pressure: 1010 mbar

7.7.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|--------------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Final test | 04 | TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Final test | 05 | TX mode (U-NII-2A)_Keep the EUT in continuously transmitting mode with all |



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| | | modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
|------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Final test | 06 | TX mode (U-NII-2C)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Final test | 07 | TX mode (U-NII-3)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |

7.7.3 Test Setup Diagram





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7.7.4 Measurement Procedure and Data

a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middle channel, the Highest channel.

h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

5. For devices with multiple operating modes, measurements on the middle channel is used to determine the worst-case mode(s). Only the worst case mode with the highest output power and the mode with the highest output power spectral density for each modulation family (e.g., OFDM and direct sequence spread spectrum) is recorded in the test report.



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Test Mode: 04; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 10360.00 15540.00 20720.00 | dBuv 47.20 37.73 30.02 | dB/m 34.93 37.43 43.41 | dB 6.53 9.99 11.90 | dB 34.40 36.78 36.05 | dBuv/m 54.26 48.37 49.28 | dBuv/m 68.20 54.00 54.00 | dB -13.94 -5.63 -4.72 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 04; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 10360.00 15540.00 20720.00 | dBuv 45.58 36.65 27.78 | dB/m 34.93 37.43 43.41 | dB 6.53 9.99 11.90 | dB 34.40 36.78 36.05 | dBuv/m 52.64 47.29 47.04 | dBuv/m 68.20 54.00 54.00 | dB -15.56 -6.71 -6.96 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 04; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 10440.00 15660.00 20880.00 | dBuv 47.14 37.20 28.87 | dB/m 34.92 37.51 43.48 | dB 6.56 10.11 11.97 | dB 34.46 36.63 36.05 | dBuv/m 54.16 48.19 48.27 | dBuv/m 68.20 54.00 54.00 | dB -14.04 -5.81 -5.73 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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25.0

1000

1500

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Test Mode: 04; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:middle

Antenna Polarity :VERTICAL

2000

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|----------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 10440.00 | 48.15 | 34.92 | 6.56 | 34.46 | 55.17 | 68.20 | -13.03 | Peak |
| 15660.00 | 38.37 | 37.51 | 10.11 | 36.63 | 49.36 | 54.00 | -4.64 | Peak |
| 20880.00 | 29.24 | 43.48 | 11.97 | 36.05 | 48.64 | 54.00 | -5.36 | Peak |

5000

Frequency (MHz)

10000

24000

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 04; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High

Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 10480.00 15720.00 20960.00 | dBuv 49.24 37.28 29.21 | dB/m 34.95 37.54 43.52 | dB 6.58 9.80 12.00 | dB 34.48 36.58 36.06 | dBuv/m 56.29 48.04 48.67 | dBuv/m 68.20 54.00 54.00 | dB -11.91 -5.96 -5.33 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 04; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 10480.00 15720.00 20960.00 | dBuv 48.12 37.90 29.46 | dB/m 34.95 37.54 43.52 | dB 6.58 9.80 12.00 | dB 34.48 36.58 36.06 | dBuv/m 55.17 48.66 48.92 | dBuv/m 68.20 54.00 54.00 | dB -13.03 -5.34 -5.08 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 10360.00 15540.00 20720.00 | dBuv 49.33 38.23 28.96 | dB/m 34.93 37.43 43.41 | dB 6.53 9.99 11.90 | dB 34.40 36.78 36.05 | dBuv/m 56.39 48.87 48.22 | dBuv/m 68.20 54.00 54.00 | dB -11.81 -5.13 -5.78 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 10360.00 15540.00 20720.00 | dBuv 49.32 38.10 30.20 | dB/m 34.93 37.43 43.41 | dB 6.53 9.99 11.90 | dB 34.40 36.78 36.05 | dBuv/m 56.38 48.74 49.46 | dBuv/m 68.20 54.00 54.00 | dB -11.82 -5.26 -4.54 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 10440.00 15660.00 20880.00 | dBuv 49.15 37.66 27.93 | dB/m 34.92 37.51 43.48 | dB 6.56 10.11 11.97 | dB 34.46 36.63 36.05 | dBuv/m 56.17 48.65 47.33 | dBuv/m 68.20 54.00 54.00 | dB -12.03 -5.35 -6.67 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 10440.00 15660.00 20880.00 | dBuv 47.76 38.37 30.15 | dB/m 34.92 37.51 43.48 | dB 6.56 10.11 11.97 | dB 34.46 36.63 36.05 | dBuv/m 54.78 49.36 49.55 | dBuv/m 68.20 54.00 54.00 | dB -13.42 -4.64 -4.45 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High

Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 10480.00 15720.00 20960.00 | dBuv 47.47 37.87 29.13 | dB/m 34.95 37.54 43.52 | dB 6.58 9.80 12.00 | dB 34.48 36.58 36.06 | dBuv/m 54.52 48.63 48.59 | dBuv/m 68.20 54.00 54.00 | dB -13.68 -5.37 -5.41 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 10480.00 15720.00 20960.00 | dBuv 49.28 38.43 30.25 | dB/m 34.95 37.54 43.52 | dB 6.58 9.80 12.00 | dB 34.48 36.58 36.06 | dBuv/m 56.33 49.19 49.71 | dBuv/m 68.20 54.00 54.00 | dB -11.87 -4.81 -4.29 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 10380.00 15570.00 20760.00 | dBuv 49.20 38.88 29.85 | dB/m 34.93 37.45 43.41 | dB 6.53 10.03 11.90 | dB 34.40 36.73 36.05 | dBuv/m 56.26 49.63 49.11 | dBuv/m 68.20 54.00 54.00 | dB -11.94 -4.37 -4.89 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|----------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 10380.00 | 48.30 | 34.93 | 6.53 | 34.40 | 55.36 | 68.20 | -12.84 | Peak |
| 15570.00 | 37.73 | 37.45 | 10.03 | 36.73 | 48.48 | 54.00 | -5.52 | Peak |
| 20760.00 | 28.79 | 43.41 | 11.90 | 36.05 | 48.05 | 54.00 | -5.95 | Peak |
| | | | | | | | | |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High

Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 10460.00 15690.00 20920.00 | dBuv 49.21 37.10 28.91 | dB/m 34.95 37.51 43.52 | dB 6.58 10.11 12.00 | dB 34.48 36.63 36.06 | dBuv/m 56.26 48.09 48.37 | dBuv/m 68.20 54.00 54.00 | dB -11.94 -5.91 -5.63 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 10460.00 15690.00 20920.00 | dBuv 49.06 37.98 29.07 | dB/m 34.95 37.51 43.52 | dB 6.58 10.11 12.00 | dB 34.48 36.63 36.06 | dBuv/m 56.11 48.97 48.53 | dBuv/m 68.20 54.00 54.00 | dB -12.09 -5.03 -5.47 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 05; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|----------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | Peak |
| 10520.00 | 49.26 | 34.98 | 6.60 | 34.51 | 56.33 | 68.20 | -11.87 | Peak |
| 15780.00 | 37.85 | 37.56 | 9.48 | 36.55 | 48.34 | 54.00 | -5.66 | Peak |
| 21040.00 | 30.20 | 43.58 | 12.07 | 36.06 | 49.79 | 54.00 | -4.21 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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25.0

1000

1500

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Test Mode: 05; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low

Antenna Polarity :VERTICAL

2000

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|----------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 10520.00 | 50.12 | 34.98 | 6.60 | 34.51 | 57.19 | 68.20 | -11.01 | Peak |
| 15780.00 | 39.09 | 37.56 | 9.48 | 36.55 | 49.58 | 54.00 | -4.42 | Peak |
| 21040.00 | 29.79 | 43.58 | 12.07 | 36.06 | 49.38 | 54.00 | -4.62 | Peak |

5000

Frequency (MHz)

10000

24000

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 05; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|-------------------------------|----------------------|
| MHz 10600.00 15900.00 21200.00 | dBuv 43.27 40.27 30.02 | dB/m 35.07 37.65 43.65 | dB 6.66 8.85 12.14 | dB 34.59 36.48 36.07 | dBuv/m 50.41 50.29 49.74 | dBuv/m 54.00 54.00 54.00 | dB -3.59 -3.71 -4.26 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 05; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



Frequency (MHz)

Antenna Polarity :VERTICAL

| Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|-------|--------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | |
| dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 42.19 | 35.07 | 6.66 | 34.59 | 49.33 | 54.00 | -4.67 | Peak |
| 40.12 | 37.65 | 8.85 | 36.48 | 50.14 | 54.00 | -3.86 | Peak |
| 30.33 | 43.65 | 12.14 | 36.07 | 50.05 | 54.00 | -3.95 | Peak |
| | Read Level dBuv 42.19 40.12 30.33 | Read Antenna Level Factor dBuv dB/m 42.19 35.07 40.12 37.65 30.33 43.65 | Read Antenna Cable Level Factor Loss dBuv dB/m dB 42.19 35.07 6.66 40.12 37.65 8.85 30.33 43.65 12.14 | Read Antenna Cable Preamp Level Factor Loss Factor dBuv dB/m dB dB 42.19 35.07 6.66 34.59 40.12 37.65 8.85 36.48 30.33 43.65 12.14 36.07 | Read Antenna Cable Preamp Emission Level Factor Loss Factor Level dBuv dB/m dB dB dBuv/m 42.19 35.07 6.66 34.59 49.33 40.12 37.65 8.85 36.48 50.14 30.33 43.65 12.14 36.07 50.05 | Read Antenna Cable Preamp Emission Limit Level Factor Loss Factor Level Line dBuv dB/m dB dB dBuv/m dBuv/m 42.19 35.07 6.66 34.59 49.33 54.00 40.12 37.65 8.85 36.48 50.14 54.00 30.33 43.65 12.14 36.07 50.05 54.00 | Read Antenna Cable Preamp Emission Limit Over Level Factor Loss Factor Level Line Limit dBuv dB/m dB dB dBuv/m dBuv/m dB 42.19 35.07 6.66 34.59 49.33 54.00 -4.67 40.12 37.65 8.85 36.48 50.14 54.00 -3.86 30.33 43.65 12.14 36.07 50.05 54.00 -3.95 |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 05; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High

Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|-------------------------------|----------------------|
| MHz 10640.00 15960.00 21280.00 | dBuv 43.12 39.85 30.89 | dB/m 35.10 37.74 43.69 | dB 6.68 8.60 12.18 | dB 34.61 36.42 36.07 | dBuv/m 50.29 49.77 50.69 | dBuv/m 54.00 54.00 54.00 | dB -3.71 -4.23 -3.31 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 05; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|----------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 10640.00 | 43.16 | 35.10 | 6.68 | 34.61 | 50.33 | 54.00 | -3.67 | Peak |
| 15960.00 | 39.24 | 37.74 | 8.60 | 36.42 | 49.16 | 54.00 | -4.84 | Peak |
| 21280.00 | 31.13 | 43.69 | 12.18 | 36.07 | 50.93 | 54.00 | -3.07 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|----------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | Peak |
| 10520.00 | 47.09 | 34.98 | 6.60 | 34.51 | 54.16 | 68.20 | -14.04 | Peak |
| 15780.00 | 38.06 | 37.56 | 9.48 | 36.55 | 48.55 | 54.00 | -5.45 | Peak |
| 21040.00 | 28.50 | 43.58 | 12.07 | 36.06 | 48.09 | 54.00 | -5.91 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Antenna Polarity :VERTICAL

| Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------------|--------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | | | | |
| dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 49.32 | 34.98 | 6.60 | 34.51 | 56.39 | 68.20 | -11.81 | Peak |
| 39.52 | 37.56 | 9.48 | 36.55 | 50.01 | 54.00 | -3.99 | Peak |
| 30.70 | 43.58 | 12.07 | 36.06 | 50.29 | 54.00 | -3.71 | Peak |
| | Read Level dBuv 49.32 39.52 30.70 | Read Antenna Level Factor dBuv dB/m 49.32 34.98 39.52 37.56 30.70 43.58 | Read Antenna Cable Level Factor Loss dBuv dB/m dB 49.32 34.98 6.60 39.52 37.56 9.48 30.70 43.58 12.07 | Read Antenna Cable Preamp Level Factor Loss Factor dBuv dB/m dB dB 49.32 34.98 6.60 34.51 39.52 37.56 9.48 36.55 30.70 43.58 12.07 36.06 | Read Antenna Cable Preamp Emission Level Factor Loss Factor Level dBuv dB/m dB dB dBuv/m 49.32 34.98 6.60 34.51 56.39 39.52 37.56 9.48 36.55 50.01 30.70 43.58 12.07 36.06 50.29 | Read Antenna Cable Preamp Emission Limit Level Factor Loss Factor Level Line dBuv dB/m dB dB dBuv/m dBuv/m 49.32 34.98 6.60 34.51 56.39 68.20 39.52 37.56 9.48 36.55 50.01 54.00 30.70 43.58 12.07 36.06 50.29 54.00 | Read Antenna Cable Preamp Emission Limit Over Level Factor Loss Factor Level Line Limit dBuv dB/m dB dB dBuv/m dBuv/m dB 49.32 34.98 6.60 34.51 56.39 68.20 -11.81 39.52 37.56 9.48 36.55 50.01 54.00 -3.99 30.70 43.58 12.07 36.06 50.29 54.00 -3.71 |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|----------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | Peak |
| 10600.00 | 41.68 | 35.07 | 6.66 | 34.59 | 48.82 | 54.00 | -5.18 | Peak |
| 15900.00 | 38.39 | 37.65 | 8.85 | 36.48 | 48.41 | 54.00 | -5.59 | Peak |
| 21200.00 | 28.35 | 43.65 | 12.14 | 36.07 | 48.07 | 54.00 | -5.93 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:middle

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|-------------------------------|----------------------|
| MHz 10600.00 15900.00 21200.00 | dBuv 43.19 39.24 30.12 | dB/m 35.07 37.65 43.65 | dB 6.66 8.85 12.14 | dB 34.59 36.48 36.07 | dBuv/m 50.33 49.26 49.84 | dBuv/m 54.00 54.00 54.00 | dB -3.67 -4.74 -4.16 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High

Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|-------------------------------|----------------------|
| MHz 10640.00 15960.00 21280.00 | dBuv 42.46 39.79 30.07 | dB/m 35.10 37.74 43.69 | dB 6.68 8.60 12.18 | dB 34.61 36.42 36.07 | dBuv/m 49.63 49.71 49.87 | dBuv/m 54.00 54.00 54.00 | dB -4.37 -4.29 -4.13 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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50.0

25.0

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24000



Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High

⁰1000 1500 2000 5000 10000 Frequency (MHz)

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|-------------------------------|----------------------|
| MHz 10640.00 15960.00 21280.00 | dBuv 42.11 40.79 30.47 | dB/m 35.10 37.74 43.69 | dB 6.68 8.60 12.18 | dB 34.61 36.42 36.07 | dBuv/m 49.28 50.71 50.27 | dBuv/m 54.00 54.00 54.00 | dB -4.72 -3.29 -3.73 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|----------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | Peak |
| 10540.00 | 50.65 | 35.01 | 6.62 | 34.54 | 57.74 | 68.20 | -10.46 | Peak |
| 15810.00 | 40.10 | 37.61 | 9.16 | 36.51 | 50.36 | 54.00 | -3.64 | Peak |
| 21080.00 | 30.55 | 43.58 | 12.07 | 36.06 | 50.14 | 54.00 | -3.86 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 10540.00 15810.00 21080.00 | dBuv 49.27 39.61 29.59 | dB/m 35.01 37.61 43.58 | dB 6.62 9.16 12.07 | dB 34.54 36.51 36.06 | dBuv/m 56.36 49.87 49.18 | dBuv/m 68.20 54.00 54.00 | dB -11.84 -4.13 -4.82 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High

Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|-------------------------------|----------------------|
| MHz 10620.00 15930.00 21240.00 | dBuv 42.22 40.39 30.49 | dB/m 35.07 37.70 43.69 | dB 6.66 8.53 12.18 | dB 34.59 36.45 36.07 | dBuv/m 49.36 50.17 50.29 | dBuv/m 54.00 54.00 54.00 | dB -4.64 -3.83 -3.71 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|-------------------------------|----------------------|
| MHz 10620.00 15930.00 21240.00 | dBuv 43.50 39.74 31.17 | dB/m 35.07 37.70 43.69 | dB 6.66 8.53 12.18 | dB 34.59 36.45 36.07 | dBuv/m 50.64 49.52 50.97 | dBuv/m 54.00 54.00 54.00 | dB -3.36 -4.48 -3.03 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 06; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|----------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | Peak |
| 11000.00 | 40.91 | 35.42 | 6.89 | 35.08 | 48.14 | 54.00 | -5.86 | Peak |
| 16500.00 | 38.72 | 38.47 | 9.26 | 36.11 | 50.34 | 68.20 | -17.86 | Peak |
| 22000.00 | 29.67 | 44.07 | 12.56 | 36.11 | 50.19 | 68.20 | -18.01 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|----------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 11000.00 | 40.14 | 35.42 | 6.89 | 35.08 | 47.37 | 54.00 | -6.63 | Peak |
| 16500.00 | 37.52 | 38.47 | 9.26 | 36.11 | 49.14 | 68.20 | -19.06 | Peak |
| 22000.00 | 27.20 | 44.07 | 12.56 | 36.11 | 47.72 | 68.20 | -20.48 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 06; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 11160.00 16740.00 22320.00 | dBuv 41.00 36.30 27.80 | dB/m 35.53 39.15 44.21 | dB 7.00 9.59 12.70 | dB 35.27 36.03 36.12 | dBuv/m 48.26 49.01 48.59 | dBuv/m 54.00 68.20 54.00 | dB -5.74 -19.19 -5.41 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 06; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:middle

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|----------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | Peak |
| 11160.00 | 40.20 | 35.53 | 7.00 | 35.27 | 47.46 | 54.00 | -6.54 | Peak |
| 16740.00 | 35.55 | 39.15 | 9.59 | 36.03 | 48.26 | 68.20 | -19.94 | Peak |
| 22320.00 | 27.95 | 44.21 | 12.70 | 36.12 | 48.74 | 54.00 | -5.26 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 06; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 11400.00 17100.00 22800.00 | dBuv 40.46 35.26 28.33 | dB/m 35.73 40.12 44.45 | dB 7.28 9.99 12.94 | dB 35.74 36.03 36.15 | dBuv/m 47.73 49.34 49.57 | dBuv/m 54.00 68.20 54.00 | dB -6.27 -18.86 -4.43 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 11400.00 17100.00 22800.00 | dBuv 41.40 35.16 26.05 | dB/m 35.73 40.12 44.45 | dB 7.28 9.99 12.94 | dB 35.74 36.03 36.15 | dBuv/m 48.67 49.24 47.29 | dBuv/m 54.00 68.20 54.00 | dB -5.33 -18.96 -6.71 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|---------------------------------|----------------------|
| MHz 11000.00 16500.00 22000.00 | dBuv 39.31 35.75 27.44 | dB/m 35.42 38.47 44.07 | dB 6.89 9.26 12.56 | dB 35.08 36.11 36.11 | dBuv/m 46.54 47.37 47.96 | dBuv/m 54.00 68.20 68.20 | dB -7.46 -20.83 -20.24 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 06; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|---------------------------------|----------------------|
| MHz 11000.00 16500.00 22000.00 | dBuv 39.94 36.76 26.77 | dB/m 35.42 38.47 44.07 | dB 6.89 9.26 12.56 | dB 35.08 36.11 36.11 | dBuv/m 47.17 48.38 47.29 | dBuv/m 54.00 68.20 68.20 | dB -6.83 -19.82 -20.91 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 11160.00 16740.00 22320.00 | dBuv 40.37 34.81 27.95 | dB/m 35.53 39.15 44.21 | dB 7.00 9.59 12.70 | dB 35.27 36.03 36.12 | dBuv/m 47.63 47.52 48.74 | dBuv/m 54.00 68.20 54.00 | dB -6.37 -20.68 -5.26 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 11160.00 16740.00 22320.00 | dBuv 40.19 35.57 26.95 | dB/m 35.53 39.15 44.21 | dB 7.00 9.59 12.70 | dB 35.27 36.03 36.12 | dBuv/m 47.45 48.28 47.74 | dBuv/m 54.00 68.20 54.00 | dB -6.55 -19.92 -6.26 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 11400.00 17100.00 22800.00 | dBuv 38.74 33.44 26.73 | dB/m 35.73 40.12 44.45 | dB 7.28 9.99 12.94 | dB 35.74 36.03 36.15 | dBuv/m 46.01 47.52 47.97 | dBuv/m 54.00 68.20 54.00 | dB -7.99 -20.68 -6.03 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 11400.00 17100.00 22800.00 | dBuv 40.40 32.93 27.34 | dB/m 35.73 40.12 44.45 | dB 7.28 9.99 12.94 | dB 35.74 36.03 36.15 | dBuv/m 47.67 47.01 48.58 | dBuv/m 54.00 68.20 54.00 | dB -6.33 -21.19 -5.42 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 11020.00 16530.00 22040.00 | dBuv 40.23 36.40 28.39 | dB/m 35.42 38.61 44.07 | dB 6.89 9.33 12.56 | dB 35.08 36.09 36.11 | dBuv/m 47.46 48.25 48.91 | dBuv/m 54.00 68.20 54.00 | dB -6.54 -19.95 -5.09 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 11020.00 16530.00 22040.00 | dBuv 40.29 36.74 26.69 | dB/m 35.42 38.61 44.07 | dB 6.89 9.33 12.56 | dB 35.08 36.09 36.11 | dBuv/m 47.52 48.59 47.21 | dBuv/m 54.00 68.20 54.00 | dB -6.48 -19.61 -6.79 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:middle



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|----------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | Peak |
| 11100.00 | 41.50 | 35.47 | 6.92 | 35.17 | 48.72 | 54.00 | -5.28 | Peak |
| 16650.00 | 36.85 | 38.88 | 9.46 | 36.05 | 49.14 | 68.20 | -19.06 | Peak |
| 22200.00 | 27.73 | 44.14 | 12.63 | 36.12 | 48.38 | 54.00 | -5.62 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|----------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 11100.00 | 42.41 | 35.47 | 6.92 | 35.17 | 49.63 | 54.00 | -4.37 | Peak |
| 16650.00 | 37.99 | 38.88 | 9.46 | 36.05 | 50.28 | 68.20 | -17.92 | Peak |
| 22200.00 | 28.52 | 44.14 | 12.63 | 36.12 | 49.17 | 54.00 | -4.83 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High

Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 11340.00 17010.00 22680.00 | dBuv 38.24 33.43 26.01 | dB/m 35.67 39.96 44.38 | dB 7.20 9.92 12.87 | dB 35.60 36.03 36.14 | dBuv/m 45.51 47.28 47.12 | dBuv/m 54.00 68.20 54.00 | dB -8.49 -20.92 -6.88 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|----------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | Peak |
| 11340.00 | 40.45 | 35.67 | 7.20 | 35.60 | 47.72 | 54.00 | -6.28 | Peak |
| 17010.00 | 34.66 | 39.96 | 9.92 | 36.03 | 48.51 | 68.20 | -19.69 | Peak |
| 22680.00 | 26.25 | 44.38 | 12.87 | 36.14 | 47.36 | 54.00 | -6.64 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

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Test Mode: 07; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|----------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 11490.00 | 42.34 | 35.79 | 7.36 | 35.88 | 49.61 | 54.00 | -4.39 | Peak |
| 17235.00 | 37.63 | 40.60 | 10.19 | 36.14 | 52.28 | 68.20 | -15.92 | Peak |
| 22980.00 | 28.38 | 44.52 | 13.01 | 36.15 | 49.76 | 54.00 | -4.24 | Peak |
| | | | | | | | | |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 11490.00 17235.00 22980.00 | dBuv 41.68 38.06 28.78 | dB/m 35.79 40.60 44.52 | dB 7.36 10.19 13.01 | dB 35.88 36.14 36.15 | dBuv/m 48.95 52.71 50.16 | dBuv/m 54.00 68.20 54.00 | dB -5.05 -15.49 -3.84 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:middle

Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MLI-7 | dBusy | dB /m | | | dBuy/m | dBun/m | | |
| 11570.00 | 41.61 | 35.78 | 7,44 | 36.02 | 48.81 | 54.00 | -5.19 | Peak |
| 17355.00 | 38.17 | 40.95 | 10.32 | 36.25 | 53.19 | 68.20 | -15.01 | Peak |
| 23140.00 | 30.71 | 44.62 | 13.12 | 36.16 | 52.29 | 68.20 | -15.91 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:middle

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------------|-----------------------------------|-----------------------------------|---------------------------------|----------------------|
| MHz 11570.00 17355.00 23140.00 | dBuv 42.38 36.80 30.67 | dB/m 35.78 40.95 44.62 | dB 7.44 10.32 13.12 | dB 36.02 36.25 36.16 | dBuv/m 49.58 51.82 52.25 | dBuv/m 54.00 68.20 68.20 | dB -4.42 -16.38 -15.95 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High

Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------------|-----------------------------------|-----------------------------------|---------------------------------|----------------------|
| MHz 11650.00 17475.00 23300.00 | dBuv 40.55 36.51 30.46 | dB/m 35.77 41.30 44.69 | dB 7.56 10.45 13.19 | dB 36.23 36.37 36.17 | dBuv/m 47.65 51.89 52.17 | dBuv/m 54.00 68.20 68.20 | dB -6.35 -16.31 -16.03 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------------|-----------------------------------|-----------------------------------|---------------------------------|----------------------|
| MHz 11650.00 17475.00 23300.00 | dBuv 41.04 36.91 32.11 | dB/m 35.77 41.30 44.69 | dB 7.56 10.45 13.19 | dB 36.23 36.37 36.17 | dBuv/m 48.14 52.29 53.82 | dBuv/m 54.00 68.20 68.20 | dB -5.86 -15.91 -14.38 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 11490.00 17235.00 22980.00 | dBuv 41.32 40.81 28.25 | dB/m 35.79 40.60 44.52 | dB 7.36 10.19 13.01 | dB 35.88 36.14 36.15 | dBuv/m 48.59 55.46 49.63 | dBuv/m 54.00 68.20 54.00 | dB -5.41 -12.74 -4.37 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 11490.00 17235.00 22980.00 | dBuv 40.38 39.60 29.11 | dB/m 35.79 40.60 44.52 | dB 7.36 10.19 13.01 | dB 35.88 36.14 36.15 | dBuv/m 47.65 54.25 50.49 | dBuv/m 54.00 68.20 54.00 | dB -6.35 -13.95 -3.51 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------------|-----------------------------------|-----------------------------------|---------------------------------|----------------------|
| MHz 11570.00 17355.00 23140.00 | dBuv 41.36 40.36 32.61 | dB/m 35.78 40.95 44.62 | dB 7.44 10.32 13.12 | dB 36.02 36.25 36.16 | dBuv/m 48.56 55.38 54.19 | dBuv/m 54.00 68.20 68.20 | dB -5.44 -12.82 -14.01 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:middle

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------------|-----------------------------------|-----------------------------------|---------------------------------|----------------------|
| MHz 11570.00 17355.00 23140.00 | dBuv 40.31 37.28 30.75 | dB/m 35.78 40.95 44.62 | dB 7.44 10.32 13.12 | dB 36.02 36.25 36.16 | dBuv/m 47.51 52.30 52.33 | dBuv/m 54.00 68.20 68.20 | dB -6.49 -15.90 -15.87 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High

Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------------|-----------------------------------|-----------------------------------|---------------------------------|----------------------|
| MHz 11650.00 17475.00 23300.00 | dBuv 42.42 35.68 30.48 | dB/m 35.77 41.30 44.69 | dB 7.56 10.45 13.19 | dB 36.23 36.37 36.17 | dBuv/m 49.52 51.06 52.19 | dBuv/m 54.00 68.20 68.20 | dB -4.48 -17.14 -16.01 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------------|-----------------------------------|-----------------------------------|---------------------------------|----------------------|
| MHz 11650.00 17475.00 23300.00 | dBuv 42.04 36.48 30.73 | dB/m 35.77 41.30 44.69 | dB 7.56 10.45 13.19 | dB 36.23 36.37 36.17 | dBuv/m 49.14 51.86 52.44 | dBuv/m 54.00 68.20 68.20 | dB -4.86 -16.34 -15.76 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|----------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | Peak |
| 11510.00 | 42.36 | 35.78 | 7.40 | 35.95 | 49.59 | 54.00 | -4.41 | Peak |
| 17265.00 | 36.72 | 40.60 | 10.19 | 36.14 | 51.37 | 68.20 | -16.83 | Peak |
| 23020.00 | 28.71 | 44.55 | 13.05 | 36.16 | 50.15 | 54.00 | -3.85 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------|----------------------|
| MHz 11510.00 17265.00 23020.00 | dBuv 41.70 37.51 30.49 | dB/m 35.78 40.60 44.55 | dB 7.40 10.19 13.05 | dB 35.95 36.14 36.16 | dBuv/m 48.93 52.16 51.93 | dBuv/m 54.00 68.20 54.00 | dB -5.07 -16.04 -2.07 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High

Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------------|-----------------------------------|-----------------------------------|---------------------------------|----------------------|
| MHz 11590.00 17385.00 23180.00 | dBuv 43.38 38.13 32.71 | dB/m 35.78 41.12 44.62 | dB 7.48 10.39 13.12 | dB 36.09 36.31 36.16 | dBuv/m 50.55 53.33 54.29 | dBuv/m 54.00 68.20 68.20 | dB -3.45 -14.87 -13.91 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-----------------------------------------|---------------------------------|---------------------------------|------------------------------|-------------------------------|-----------------------------------|-----------------------------------|---------------------------------|----------------------|
| MHz 11590.00 17385.00 23180.00 | dBuv 39.42 36.33 29.73 | dB/m 35.78 41.12 44.62 | dB 7.48 10.39 13.12 | dB 36.09 36.31 36.16 | dBuv/m 46.59 51.53 51.31 | dBuv/m 54.00 68.20 68.20 | dB -7.41 -16.67 -16.89 | Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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7.8 Radiated Emissions which fall in the restricted bands

| Test Requirement | 47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b) |
|------------------|--------------------------------------------------------|
| Test Method: | KDB 789033 D02 II G |

Limit:

| Frequency(MHz) | Field strength(microvolts/meter) | Measurement distance(meters) | |
|----------------|----------------------------------|---------------------------------|--|
| 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 | |

*(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

7.8.1 E.U.T. Operation

Operating Environment:

Temperature: 22.1 °C Humidity: 37.1 % RH

Atmospheric Pressure: 1010 mbar



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| 7.8.2 Test Mode Description | | | | | | | |
|-----------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|
| Pre-scan / Final test | Mode Code | Description | | | | | |
| Final test | 04 | TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. | | | | | |
| Final test | 05 | TX mode (U-NII-2A)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. | | | | | |
| Final test | 06 | TX mode (U-NII-2C)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. | | | | | |
| Final test | 07 | TX mode (U-NII-3)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. | | | | | |

7.8.3 Test Setup Diagram





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7.8.4 Measurement Procedure and Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

h. Test the EUT in the lowest channel, the middle channel, the Highest channel.

i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

j. Repeat above procedures until all frequencies measured was complete.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor



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Test Mode: 04; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|--------------------------------------|----------------------------------|---------------------------------|----------------------------|-------------------------------|------------------------------------|--------------------------------------------|---------------------------------|------------------------------|
| MHz 4842.00 5150.00 5178.80 | dBuv 49.73 48.52 101.63 | dB/m 33.66 33.78 33.87 | dB 4.63 4.78 4.76 | dB 36.80 36.88 36.89 | dBuv/m 51.22 50.20 103.37 | dBuv/m 74.00 74.00 74.00 74.00 | dB -22.78 -23.80 29.37 | Peak Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 04; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 5125.96 | 50.52 | 33.71 | 4.80 | 36.87 | 52.16 | 74.00 | -21.84 | Peak |
| 5150.00 | 48.84 | 33.78 | 4.78 | 36.88 | 50.52 | 74.00 | -23.48 | Peak |
| 5183.35 | 97.76 | 33.87 | 4.76 | 36.89 | 99.50 | 74.00 | 25.50 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| | | | | | | | | |
| MHZ | dBuv | dB/m | dВ | aB | dBuv/m | dBuv/m | aB | |
| 5133.48 | 49.85 | 33.74 | 4.80 | 36.88 | 51.51 | 74.00 | -22.49 | Peak |
| 5150.00 | 48.00 | 33.78 | 4.78 | 36.88 | 49.68 | 74.00 | -24.32 | Peak |
| 5178.80 | 100.95 | 33.87 | 4.76 | 36.89 | 102.69 | 74.00 | 28.69 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|--------------------------------------|---------------------------------|---------------------------------|----------------------------|-------------------------------|-----------------------------------|--------------------------------------------|---------------------------------|------------------------------|
| MHz 4996.95 5150.00 5176.52 | dBuv 48.21 48.26 98.01 | dB/m 33.69 33.78 33.87 | dB 4.90 4.78 4.76 | dB 36.84 36.88 36.89 | dBuv/m 49.96 49.94 99.75 | dBuv/m 74.00 74.00 74.00 74.00 | dB -24.04 -24.06 25.75 | Peak Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|--------------------------------------|---------------------------------|---------------------------------|----------------------------|-------------------------------|-----------------------------------|--------------------------------------------|---------------------------------|------------------------------|
| MHz 5070.34 5150.00 5188.33 | dBuv 49.71 48.24 98.02 | dB/m 33.68 33.78 33.91 | dB 4.85 4.78 4.76 | dB 36.86 36.88 36.89 | dBuv/m 51.38 49.92 99.80 | dBuv/m 74.00 74.00 74.00 74.00 | dB -22.62 -24.08 25.80 | Peak Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | Peak |
| 5050.81 | 48.86 | 33.69 | 4.86 | 36.85 | 50.56 | 74.00 | -23.44 | Peak |
| 5150.00 | 48.28 | 33.78 | 4.78 | 36.88 | 49.96 | 74.00 | -24.04 | Peak |
| 5193.73 | 92.37 | 33.91 | 4.75 | 36.89 | 94.14 | 74.00 | 20.14 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 05; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|--------------------------------------|---------------------------------|---------------------------------|----------------------------|-------------------------------|-----------------------------------|--------------------------------------------|---------------------------------|------------------------------|
| MHz 5318.95 5350.00 5376.53 | dBuv 93.16 46.78 49.30 | dB/m 34.16 34.19 34.29 | dB 4.91 4.95 4.98 | dB 36.93 36.94 36.95 | dBuv/m 95.30 48.98 51.62 | dBuv/m 74.00 74.00 74.00 74.00 | dB 21.30 -25.02 -22.38 | Peak Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 05; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|--------------------------------------|---------------------------------|---------------------------------|----------------------------|-------------------------------|-----------------------------------|--------------------------------------------|---------------------------------|------------------------------|
| MHz 5321.01 5350.00 5392.86 | dBuv 91.25 46.80 48.41 | dB/m 34.16 34.19 34.34 | dB 4.91 4.95 5.00 | dB 36.93 36.94 36.95 | dBuv/m 93.39 49.00 50.80 | dBuv/m 74.00 74.00 74.00 74.00 | dB 19.39 -25.00 -23.20 | Peak Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|--------------------------------------|---------------------------------|---------------------------------|----------------------------|-------------------------------|-----------------------------------|--------------------------------------------|---------------------------------|------------------------------|
| MHz 5316.10 5350.00 5361.68 | dBuv 94.13 47.95 48.73 | dB/m 34.16 34.19 34.24 | dB 4.91 4.95 4.98 | dB 36.93 36.94 36.94 | dBuv/m 96.27 50.15 51.01 | dBuv/m 74.00 74.00 74.00 74.00 | dB 22.27 -23.85 -22.99 | Peak Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|--------------------------------------|---------------------------------|---------------------------------|----------------------------|-------------------------------|-----------------------------------|--------------------------------------------|---------------------------------|------------------------------|
| MHz 5318.95 5350.00 5404.10 | dBuv 91.73 44.86 49.09 | dB/m 34.16 34.19 34.36 | dB 4.91 4.95 5.02 | dB 36.93 36.94 36.95 | dBuv/m 93.87 47.06 51.52 | dBuv/m 74.00 74.00 74.00 74.00 | dB 19.87 -26.94 -22.48 | Peak Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|--------------------|----------------|-------------------|---------------|------------------|-------------------|----------------|---------------|--------------|
| MH7 | dBuv | dB/m | dB | | dBuv/m | dBuv/m | dB | |
| 5314.63 | 90.68 | 34.16 | 4.91 | 36.93 | 92.82 | 74.00 | 18.82 | Peak |
| 5350.00 5410.99 | 45.87 48.63 | 34.19 34.36 | 4.95 | 36.94 36.95 | 48.07 51.06 | 74.00 74.00 | -25.93 | Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Frequency (MHz)

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | Peak |
| 5306.26 | 88.68 | 34.14 | 4.88 | 36.92 | 90.78 | 74.00 | 16.78 | Peak |
| 5350.00 | 45.76 | 34.19 | 4.95 | 36.94 | 47.96 | 74.00 | -26.04 | Peak |
| 5408.99 | 48.54 | 34.36 | 5.02 | 36.95 | 50.97 | 74.00 | -23.03 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 06; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 5440.63 | 48.82 | 34.42 | 5.07 | 36.96 | 51.35 | 74.00 | -22.65 | Peak |
| 5460.00 | 47.95 | 34.44 | 5.09 | 36.97 | 50.51 | 74.00 | -23.49 | Peak |
| 5501.21 | 93.07 | 34.52 | 5.40 | 36.98 | 96.01 | 74.00 | 22.01 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 06; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 5417.53 | 49.22 | 34.39 | 5.05 | 36.96 | 51.70 | 74.00 | -22.30 | Peak |
| 5460.00 | 47.34 | 34.44 | 5.09 | 36.97 | 49.90 | 74.00 | -24.10 | Peak |
| 5501.56 | 90.13 | 34.52 | 5.40 | 36.98 | 93.07 | 74.00 | 19.07 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 5396.73 | 48.53 | 34.34 | 5.02 | 36.95 | 50.94 | 74.00 | -23.06 | Peak |
| 5460.00 | 46.68 | 34.44 | 5.09 | 36.97 | 49.24 | 74.00 | -24.76 | Peak |
| 5501.73 | 93.04 | 34.52 | 5.40 | 36.98 | 95.98 | 74.00 | 21.98 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 06; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| | | | | | · | | | |
| MHZ | abuv | ab/m | aB | aB | abuv/m | aBuv/m | aB | |
| 5452.04 | 47.60 | 34.44 | 5.09 | 36.97 | 50.16 | 74.00 | -23.84 | Peak |
| 5460.00 | 46.05 | 34.44 | 5.09 | 36.97 | 48.61 | 74.00 | -25.39 | Peak |
| 5501.21 | 91.50 | 34.52 | 5.40 | 36.98 | 94.44 | 74.00 | 20.44 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 06; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 5412.72 | 49.02 | 34.36 | 5.05 | 36.95 | 51.48 | 74.00 | -22.52 | Peak |
| 5460.00 | 46.31 | 34.44 | 5.09 | 36.97 | 48.87 | 74.00 | -25.13 | Peak |
| 5511.27 | 87.99 | 34.52 | 5.40 | 36.98 | 90.93 | 74.00 | 16.93 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 06; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|--------------------------------------|---------------------------------|---------------------------------|----------------------------|-------------------------------|-----------------------------------|--------------------------------------------|---------------------------------|------------------------------|
| MHz 5415.37 5460.00 5507.04 | dBuv 48.77 48.38 90.01 | dB/m 34.36 34.44 34.52 | dB 5.05 5.09 5.40 | dB 36.95 36.97 36.98 | dBuv/m 51.23 50.94 92.95 | dBuv/m 74.00 74.00 74.00 74.00 | dB -22.77 -23.06 18.95 | Peak Peak Peak Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low

Frequency (MHz)

Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 5613.54 | 49.57 | 34.52 | 5.78 | 37.00 | 52.87 | 68.20 | -15.33 | Peak |
| 5648.11 | 50.89 | 34.53 | 5.83 | 37.00 | 54.25 | 68.20 | -13.95 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 5606.19 | 49.04 | 34.52 | 5.78 | 37.00 | 52.34 | 68.20 | -15.86 | Peak |
| 5625.56 | 48.34 | 34.53 | 5.80 | 37.00 | 51.67 | 68.20 | -16.53 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High

Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 5931.27 | 48.68 | 34.81 | 6.00 | 37.05 | 52.44 | 68.20 | -15.76 | Peak |
| 5988.83 | 49.39 | 34.94 | 5.88 | 37.06 | 53.15 | 68.20 | -15.05 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 5930.04 | 48.51 | 34.81 | 6.00 | 37.05 | 52.27 | 68.20 | -15.93 | Peak |
| 5976.04 | 47.94 | 34.94 | 5.88 | 37.06 | 51.70 | 68.20 | -16.50 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 5624.39 | 49.24 | 34.53 | 5.80 | 37.00 | 52.57 | 68.20 | -15.63 | Peak |
| 5644.22 | 49.96 | 34.53 | 5.83 | 37.00 | 53.32 | 68.20 | -14.88 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 5613.15 | 49.23 | 34.52 | 5.78 | 37.00 | 52.53 | 68.20 | -15.67 | Peak |
| 5625.95 | 49.91 | 34.53 | 5.80 | 37.00 | 53.24 | 68.20 | -14.96 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High

Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 5951.76 | 49.92 | 34.85 | 5.96 | 37.05 | 53.68 | 68.20 | -14.52 | Peak |
| 5978.93 | 49.66 | 34.94 | 5.88 | 37.06 | 53.42 | 68.20 | -14.78 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 5957.10 | 49.01 | 34.85 | 5.92 | 37.05 | 52.73 | 68.20 | -15.47 | Peak |
| 5986.77 | 47.56 | 34.94 | 5.88 | 37.06 | 51.32 | 68.20 | -16.88 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low

riequency (min

Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 5618.96 | 49.73 | 34.52 | 5.80 | 37.00 | 53.05 | 68.20 | -15.15 | Peak |
| 5641.10 | 48.92 | 34.53 | 5.83 | 37.00 | 52.28 | 68.20 | -15.92 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low

Frequency (MHz)

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 5630.22 | 48.77 | 34.53 | 5.80 | 37.00 | 52.10 | 68.20 | -16.10 | Peak |
| 5641.88 | 49.30 | 34.53 | 5.83 | 37.00 | 52.66 | 68.20 | -15.54 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High

Antenna Polarity :HORIZONTAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 5943.97 | 48.67 | 34.85 | 5.96 | 37.05 | 52.43 | 68.20 | -15.77 | Peak |
| 5964.92 | 49.72 | 34.90 | 5.92 | 37.05 | 53.49 | 68.20 | -14.71 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High

Antenna Polarity :VERTICAL

| Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 5951.35 | 49.72 | 34.85 | 5.96 | 37.05 | 53.48 | 68.20 | -14.72 | Peak |
| 5971.51 | 49.12 | 34.90 | 5.92 | 37.05 | 52.89 | 68.20 | -15.31 | Peak |

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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7.9 Frequency Stability

| Test Requirement | 47 CFR Part 15, Subpart E 15.407 (g) |
|------------------|--------------------------------------|
| Test Method: | ANSI C63.10 (2013) Section 6.8 |

7.9.1 E.U.T. Operation

Operating Environment: Temperature: 22.1 °C

Humidity: 37.2 % RH

Atmospheric Pressure: 1010 mbar

7.9.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|--------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Final test | 04 | TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Final test | 05 | TX mode (U-NII-2A)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Final test | 06 | TX mode (U-NII-2C)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Final test | 07 | TX mode (U-NII-3)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |



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7.9.3 Test Setup Diagram



Ground Reference Plane

7.9.4 Measurement Procedure and Data

Please Refer to Appendix for Details



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7.10 Radiated Emissions (Below 1GHz)

| Test Requirement | |
|------------------|--|
| Test Method: | |

47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b) KDB 789033 D02 II G

Limit:

| Frequency(MHz) | Field strength(microvolts/meter) | Measurement distance(meters) |
|----------------|----------------------------------|---------------------------------|
| 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 |
| 960-1000 | 500 | 3 |

7.10.1 E.U.T. Operation

Operating Environment:

| eperaning | | |
|--------------|---------|--|
| Temperature: | 22.1 °C | |

Humidity: 36.7 % RH

Atmospheric Pressure: 1010 mbar

7.10.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|--------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pre-scan | 04 | TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Pre-scan | 05 | TX mode (U-NII-2A)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Pre-scan | 06 | TX mode (U-NII-2C)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
| Pre-scan | 07 | TX mode (U-NII-3)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and |



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| | | found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |
|------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Final test | 04 | TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report. |

7.10.3 Test Setup Diagram



Below 30MHz

30MHz-1GHz



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7.10.4 Measurement Procedure and Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using quasi-peak method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middle channel, the Highest channel.

h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

2. For emission below 1GHz, through the pre-scan found the worst case is the lowest channel of 802.11a. Only the worst case is recorded in the report.

3. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

4. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.



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Test Mode: 04; Polarity: Horizontal



Antenna Polarity :Horizontal EUT/Project :2802ME Test mode :04

| | Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|-------------------------------------------------------------------------|--------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| - | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 128.56 | 48.20 | 11.83 | 2.21 | 33.54 | 28.70 | 43.50 | -14.80 | QP |
| 2 | 171.99 | 48.20 | 12.50 | 2.60 | 33.41 | 29.89 | 43.50 | -13.61 | QP |
| 3 | 239.15 | 53.87 | 11.42 | 3.15 | 33.14 | 35.30 | 46.00 | -10.70 | QP |
| 4 | 296.18 | 49.88 | 13.43 | 3.66 | 33.01 | 33.96 | 46.00 | -12.04 | QP |
| 5 | 407.51 | 44.56 | 15.74 | 4.17 | 32.92 | 31.55 | 46.00 | -14.45 | QP |
| 6 | 526.40 | 39.78 | 18.23 | 5.32 | 33.00 | 30.33 | 46.00 | -15.67 | QP |
| Note: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor | | | | | | | | | |



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Test Mode: 04; Polarity: Vertical



Antenna Polarity :Vertical EUT/Project :2802ME Test mode :04

| | Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Emission Level | Limit Line | Over Limit | Remark |
|---|--------|---------------|-------------------|---------------|------------------|-------------------|---------------|---------------|--------|
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 141.33 | 46.00 | 12.97 | 2.47 | 33.52 | 27.92 | 43.50 | -15.58 | QP |
| 2 | 237.48 | 55.56 | 11.26 | 3.16 | 33.15 | 36.83 | 46.00 | -9.17 | QP |
| 3 | 294.11 | 52.28 | 13.41 | 3.61 | 33.01 | 36.29 | 46.00 | -9.71 | QP |
| 4 | 407.51 | 45.28 | 15.74 | 4.17 | 32.92 | 32.27 | 46.00 | -13.73 | QP |
| 5 | 526.40 | 41.17 | 18.23 | 5.32 | 33.00 | 31.72 | 46.00 | -14.28 | QP |
| 6 | 766.06 | 36.00 | 22.40 | 6.37 | 32.64 | 32.13 | 46.00 | -13.87 | QP |
| | | | | | | | | | |

Note: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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8 Test Setup Photo

Refer to Appendix - Test Setup Photo for SHCR2212002802ME

9 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for SHCR2212002802ME

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