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TEST REPORT

Application No.: SHEM1802001335CR **FCC ID:** 2ADTD-MP5504

Applicant: Hangzhou Hikvision Digital Technology Co., Ltd.

Address of Applicant: No. 555 Qianmo Road, Binjiang District, Hangzhou 310052, China

Manufacturer: Hangzhou Hikvision Digital Technology Co., Ltd.

Address of Manufacturer: No. 555 Qianmo Road, Binjiang District, Hangzhou 310052, China

Factory: 1. Hangzhou Hikvision Technology Co., Ltd. 2. Hangzhou Hikvision Electronics Co., Ltd.

3, Hangzhou Hikvision Digital Technology Co., Ltd.

Address of Factory: 1. No.700, Dongliu Road, Binjiang District, Hangzhou City, Zhejiang,

310052, China

2. No.299, Qiushi Road, Tonglu Economic Development Zone, Tonglu

County, Hangzhou, Zhejiang, 310052, China.

3, No. 555 Qianmo Road, Binjiang District, Hangzhou 310052, China

Equipment Under Test (EUT):

EUT Name: Mobile DVR

Model No.: DS-M5504HM-T/GW/WI58, DS-MP5504/GW/WI58, DS-MP5604/GW/WI58,

DS-M5504HM-T/GLF/WI58, DS-MP5504/GLF/WI58, DS-MP5604/GLF/WI58, DS-MP5YYY-WW/AAA/BBBB $^{\tt m}$

Please refer to section 2 of this report which indicates which model was

actually tested and which were electrically identical.

Trade mark: HIKVISION

Standard(s): 47 CFR Part 15, Subpart E 15.407

Date of Receipt: 2018-02-24

Date of Test: 2018-03-27 to 2018-03-29

Date of Issue: 2018-05-17

Test Result: Pass*

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



Parlam Zhan E&E Section Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

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| Revision Record | | | | | | |
|---------------------------------|----------|------------|---|--|--|--|
| Version Description Date Remark | | | | | | |
| 00 | Original | 2018-05-17 | / | | | |
| | | | | | | |
| | | | | | | |

| Authorized for issue by: | | |
|--------------------------|-------------------------------|--|
| | Vincent Zhu | |
| | Vincent Zhu /Project Engineer | |
| | Parlam Zhan | |
| | Parlam Zhan /Reviewer | |



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2 Test Summary

| Radio Spectrum Technical Requirement | | | | | |
|--------------------------------------|-------------------------------------|--------|--|--------|--|
| Item | Standard | Method | Requirement | Result | |
| Antenna Requirement | 47 CFR Part 15, Subpart E 15.407 | N/A | 47 CFR Part 15, Subpart C 15.203 | Pass | |
| Transmission in the Absence of Data | 47 CFR Part 15, Subpart E 15.407 | N/A | 47 CFR Part 15, Subpart C 15.407 (c) | Pass | |

N/A: Not applicable

| Radio Spectrum Matter Part | | | | | |
|---|-------------------------------------|-----------------------------------|--|--------|--|
| Item | Standard | Method | Requirement | Result | |
| 99% Bandwidth | 47 CFR Part 15, Subpart E 15.407 | KDB 789033 II D | N/A | Pass | |
| 26dB Emission bandwidth | 47 CFR Part 15, Subpart E 15.407 | KDB 789033 D02 II C 1 | 47 CFR Part 15, Subpart C 15.407 (a) | Pass | |
| Minimum 6 dB bandwidth (5.725- 5.85 GHz band) | 47 CFR Part 15, Subpart E 15.407 | KDB 789033 D02 II C 2 | 47 CFR Part 15, Subpart C 15.407 (e) | Pass | |
| Maximum Conducted output power | 47 CFR Part 15, Subpart E 15.407 | KDB 789033 D02 II E | 47 CFR Part 15, Subpart C 15.407 (a) | Pass | |
| Peak Power spectrum density | 47 CFR Part 15, Subpart E 15.407 | KDB 789033 D02 II F | 47 CFR Part 15, Subpart C 15.407 (a) | Pass | |
| Radiated Emissions | 47 CFR Part 15, Subpart E 15.407 | KDB 789033 D02 II G | 47 CFR Part 15, Subpart C 15.209 & 15.407(b) | Pass | |
| Radiated Emissions which fall in the restricted bands | 47 CFR Part 15, Subpart E 15.407 | KDB 789033 D02 II G | 47 CFR Part 15, Subpart C 15.209 & 15.407(b) | Pass | |
| Frequency Stability | 47 CFR Part 15, Subpart E 15.407 | ANSI C63.10 (2013) Section 6.8 | 47 CFR Part 15, Subpart C 15.407 (g) | Pass | |

N/A: Not applicable

Declaration of EUT Family Grouping:

Note1: There are series models mentioned in this report, and they are the identical in electrical and electronic characters. Only the model DS-M5504HM-T/GW/WI58, DS-M5504HM-T/GLF/WI58 was tested since their differences were the model number, trade name and appearance.

The module of UC20: FCC ID: XMR201510UC20.(DS-M5504HM-T/GW/WI58)

The module of ME909u-523: FCC ID:QISME909u-523.(DS-M5504HM-T/GLF/WI58)

Note2: Only one model was shown as the test setup photos since all models were same for the test setup.



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4 General Information

4.1 Details of E.U.T.

Power supply: DC 9V~32V
Test voltage: DC 24V
Internal source: 620MHz
Antenna Gain 3.5 dBi

Antenna Type Monopole Antenna

4.2 Description of Support Units

| Description | Manufacturer Model No. | | Serial No. |
|---------------------------|------------------------|----------------|------------|
| Laptop | Lenovo | ThinkPad X100e | / |
| SecureCRT | VanDyke | V 6.2.0 | / |
| Serial port adapter plate | / | Test Plate 3 | / |

4.3 Measurement Uncertainty

| No. | Item | Measurement Uncertainty |
|-----|---|-------------------------|
| 1 | Radio Frequency | 7.25 x 10-8 |
| 2 | Timeout | 2s |
| 3 | Duty cycle | 0.37% |
| 4 | Occupied Bandwidth | 3% |
| 5 | RF conducted power | 0.75dB |
| 6 | RF power density | 2.84dB |
| 7 | Conducted Spurious emissions | 0.75dB |
| 0 | DE Dedicted news | 4.5dB (Below 1GHz) |
| 8 | RF Radiated power | 4.8dB (Above 1GHz) |
| | | 4.2dB (Below 30MHz) |
| 0 | D 11 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 4.4dB (30MHz-1GHz) |
| 9 | Radiated Spurious emission test | 4.6dB (1GHz-18GHz) |
| | | 5.2dB (Above 18GHz) |
| 10 | Temperature test | 1℃ |
| 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.



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4.4 Test Location

All tests were performed at:

 ${\tt SGS-CSTC\ Standards\ Technical\ Services\ (Shanghai)\ Co.,\ Ltd.\ E\&E\ Lab}$

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China

Tel: +86 21 6191 5666 Fax: +86 21 6191 5678

No tests were sub-contracted.

4.5 Test Facility

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

• CNAS (No. CNAS L0599)

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• NVLAP (Certificate No. 201034-0)

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the National Voluntary Laboratory Accreditation Program(NVLAP). Certificate No. 201034-0.

• FCC -Designation Number: CN5033

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

Designation Number: CN5033. Test Firm Registration Number: 479755.

• Industry Canada (IC) - IC Assigned Code: 8617A

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A-1.

• VCCI (Member No.: 3061)

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3868,C-4336,T-12221,G-10830 respectively.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



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5 Equipment List

| Equipment | Manufacturer | Model No | Inventory No | Cal Date | Cal Due Date | |
|---|--------------|--------------------|--------------|------------|--------------|--|
| • • | | Woder No | inventory NO | Cai Date | Cai Due Date | |
| Conducted Emission at AC Power Line EMI test receiver R&S ESR7 SHEM162-1 2017-12-20 2018-12-19 | | | | | | |
| EMI test receiver | | _ | SHEM162-1 | 2017-12-20 | 2018-12-19 | |
| LISN | Schwarzbeck | NSLK8127 | SHEM061-1 | 2017-12-20 | 2018-12-19 | |
| LISN | EMCO | 3816/2 | SHEM019-1 | 2017-12-20 | 2018-12-19 | |
| Pulse limiter | R&S | ESH3-Z2 | SHEM029-1 | 2017-12-20 | 2018-12-19 | |
| CE test Cable | / | CE01 | / | 2017-12-26 | 2018-12-25 | |
| Conducted Test | | | T | | T | |
| Spectrum Analyzer | R&S | FSP-30 | SHEM002-1 | 2017-12-20 | 2018-12-19 | |
| Spectrum Analyzer | Agilent | N9020A | SHEM181-1 | 2017-09-26 | 2018-09-25 | |
| Power meter | R&S | NRP | SHEM057-1 | 2017-12-26 | 2018-12-25 | |
| Power Sensor | R&S | NRP-Z22 | SHEM136-1 | 2017-07-22 | 2018-07-21 | |
| Power Sensor | R&S | NRP-Z91 | SHEM057-2 | 2017-12-26 | 2018-12-25 | |
| Signal Generator | R&S | SMR40 | SHEM058-1 | 2017-07-03 | 2018-07-02 | |
| Signal Generator | Agilent | N5182A | SHEM182-1 | 2017-09-26 | 2018-09-25 | |
| Communication Tester | R&S | CMW270 | SHEM183-1 | 2017-10-22 | 2018-10-21 | |
| Switcher | Tonscend | JS0806 | SHEM184-1 | 2017-09-26 | 2018-09-25 | |
| Splitter | Anritsu | MA1612A | SHEM185-1 | / | / | |
| Coupler | e-meca | 803-S-1 | SHEM186-1 | / | / | |
| High-low Temp Cabinet | Suzhou Zhihe | TL-40 | SHEM087-1 | 2017-09-26 | 2018-09-25 | |
| AC Power Stabilizer | WOCEN | 6100 | SHEM045-1 | 2017-12-26 | 2018-12-25 | |
| DC Power Supply | QJE | QJ30003SII | SHEM046-1 | 2017-12-26 | 2018-12-25 | |
| Conducted test Cable | / | RF01, RF 02 | / | 2017-12-26 | 2018-12-25 | |
| Radiated Test | | | | | | |
| EMI test receiver | R&S | ESU40 | SHEM051-1 | 2017-12-20 | 2018-12-19 | |
| Spectrum Analyzer | R&S | FSP-30 | SHEM002-1 | 2017-12-20 | 2018-12-19 | |
| Loop Antenna (9kHz-30MHz) | Schwarzbeck | FMZB1519 | SHEM135-1 | 2017-04-10 | 2020-04-09 | |
| Antenna (25MHz-2GHz) | Schwarzbeck | VULB9168 | SHEM048-1 | 2017-02-28 | 2020-02-27 | |
| Antenna (25MHz-3GHz) | Schwarzbeck | HL562 | SHEM010-1 | 2017-02-28 | 2020-02-27 | |
| Horn Antenna (1-8GHz) | Schwarzbeck | HF906 | SHEM009-1 | 2017-10-24 | 2020-10-23 | |
| Horn Antenna (1-18GHz) | Schwarzbeck | BBHA9120D | SHEM050-1 | 2017-01-14 | 2020-01-13 | |
| Horn Antenna (14-40GHz) | Schwarzbeck | BBHA 9170 | SHEM049-1 | 2017-12-03 | 2020-12-02 | |
| Pre-amplifier (9KHz-2GHz) | CLAVIIO | BDLNA-0001-412010 | SHEM164-1 | 2017-08-22 | 2018-08-21 | |
| Pre-amplifier (1-18GHz) | CLAVIIO | BDLNA-0118-352810 | SHEM050-2 | 2017-08-22 | 2018-08-21 | |
| High-amplifier (14-40GHz) | Schwarzbeck | 10001 | SHEM049-2 | 2017-12-20 | 2018-12-19 | |
| Band filter | LORCH | 9BRX-875/X150-SR | SHEM156-1 | / | / | |
| Band filter | LORCH | 13BRX-1950/X500-SR | SHEM083-2 | / | / | |
| Band filter | LORCH | 5BRX-2400/X200-SR | SHEM155-1 | / | / | |
| Band filter | LORCH | 5BRX-5500/X1000-SR | SHEM157-2 | / | / | |
| High pass Filter | Wainwright | WHK3.0/18G-100SS | SHEM157-1 | / | / | |
| High pass Filter | Wainwright | WHKS1700-3SS | SHEM157-3 | / | | |
| Semi/Fully Anechoic | ST | 11*6*6M | SHEM078-2 | 2017-07-22 | 2020-07-21 | |
| RE test Cable | / | RE01, RE02, RE06 | / | 2017-12-26 | 2018-12-25 | |



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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

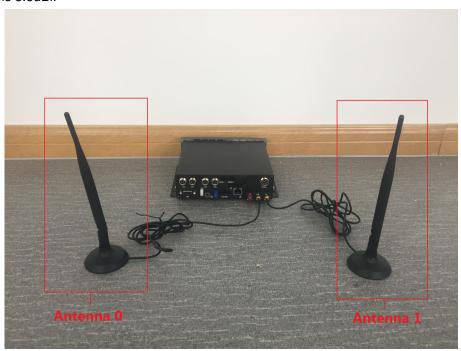
6.1.2 Conclusion

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 monopole antenna and no consideration of replacement. The best case gain of the antenna is 3.5dBi.





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6.2 Transmission in the Absence of Data

6.2.1 Test Requirement:

47 CFR Part 15, Subpart C 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 (RTL8812AU-VS) 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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7 Radio Spectrum Matter Test Results

7.1 99% Bandwidth

Test Requirement N/A

Test Method: KDB 789033 II D

7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1001 mbar

Pretest these mode to find the worst case:

a:TX mode 1(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-

M5504HM-T/GW/WI58)

b:TX mode 2(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-

M5504HM-T/GLF/WI58)

The worst case for final test:

a:TX mode 1(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-

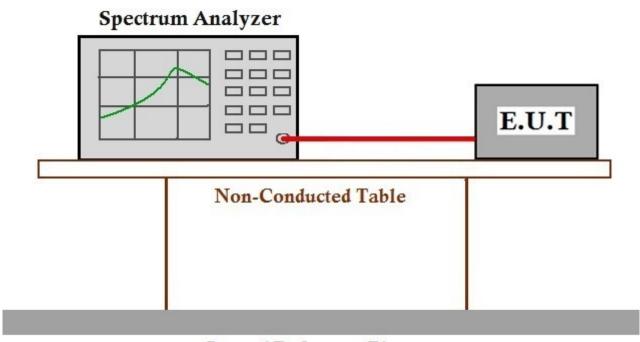
M5504HM-T/GW/WI58)



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7.1.2 Test Setup Diagram



Ground Reference Plane

7.1.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.407



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7.2 26dB Emission bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.407 (a)

Test Method: KDB 789033 D02 II C 1

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1001 mba

Pretest these mode to find the worst case:

a:TX mode 1(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-

M5504HM-T/GW/WI58)

b:TX mode 2(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-

M5504HM-T/GLF/WI58)

The worst case for final test:

a:TX mode 1(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-

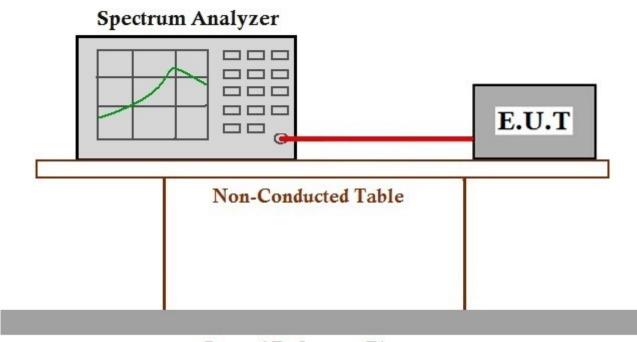
M5504HM-T/GW/WI58)



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7.2.2 Test Setup Diagram



Ground Reference Plane

7.2.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.407



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

Test Requirement 47 CFR Part 15, Subpart C 15.407 (e)

Test Method: KDB 789033 D02 II C 2

Limit: ≥500 kHz

7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1001 mbar

Pretest these mode to find the worst case:

a:TX mode 1(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-

M5504HM-T/GW/WI58)

b:TX mode 2(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-

M5504HM-T/GLF/WI58)

The worst case for final test:

a:TX mode 1(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-

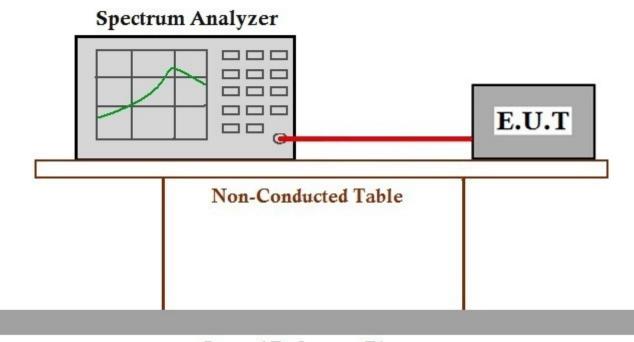
M5504HM-T/GW/WI58)



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7.3.2 Test Setup Diagram



Ground Reference Plane

7.3.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.407



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7.4 Maximum Conducted output power

Test Requirement 47 CFR Part 15, Subpart C 15.407 (a)

Test Method: KDB 789033 D02 II E

Limit:

| Frequency band(MHz) | Limit | | |
|----------------------|--|--|--|
| F1F0 F2F0 | ≤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 of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

7.4.1 E.U.T. Operation

Operating Environment:

Temperature: Pretest these

22 °C

Humidity: 50 % RH

Atmospheric Pressure: 1001 mbar

mode to find the worst case:

a:TX mode 1(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-

M5504HM-T/GW/WI58)

b:TX mode 2(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-

M5504HM-T/GLF/WI58)

The worst case for final test:

a:TX mode 1(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-

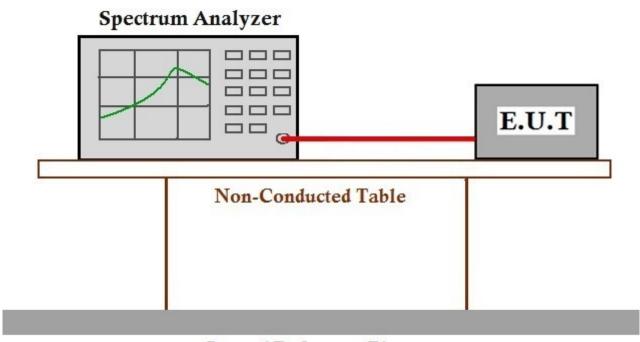
M5504HM-T/GW/WI58)



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7.4.2 Test Setup Diagram



Ground Reference Plane

7.4.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.407



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7.5 Peak Power spectrum density

Test Requirement 47 CFR Part 15, Subpart C 15.407 (a)

Test Method: KDB 789033 D02 II F

Limit:

| Frequency band(MHz) | Limit | | |
|-----------------------------|----------------------------------|--|--|
| E1E0 E2E0 | ≤17dBm in 1MHz for master device | | |
| 5150-5250 | ≤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 measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test.

7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1001 mba

Pretest these mode to find the worst case:

a:TX mode 1(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-M5504HM-T/GW/WI58)

b:TX mode 2(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-

M5504HM-T/GLF/WI58)

The worst case for final test:

a:TX mode 1(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-

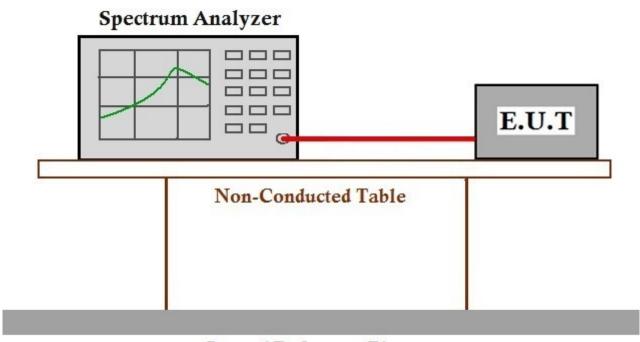
M5504HM-T/GW/WI58)



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7.5.2 Test Setup Diagram



Ground Reference Plane

7.5.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.407



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7.6 Radiated Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.209 & 15.407(b)

Test Method: KDB 789033 D02 II G

7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1001 mba

Pretest these mode to find the worst case:

a:TX mode 1(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-

M5504HM-T/GW/WI58)

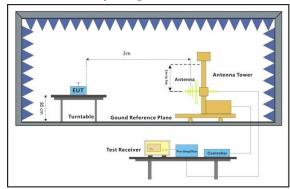
b:TX mode 2(Band 3)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE

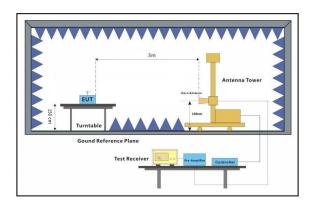
802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

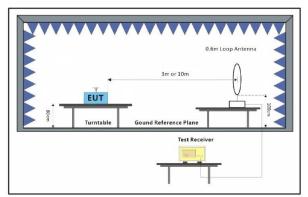
802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-

M5504HM-T/GLF/WI58)

7.6.2 Test Setup Diagram









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7.6.3 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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| Mode:a; Pol | arization:l | Horizontal; | Modulation:a | ı; bandwid | th:20MHz; | Channel:Low |
|-------------|-------------|-------------|--------------|------------|-----------|-------------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11490 | 34.19 | 14.41 | 48.60 | 54 | -5.40 | peak |
| 17235 | 28.29 | 22.57 | 50.86 | 68.2 | -17.34 | peak |
| 22980 | 24.35 | 24.45 | 48.80 | 54 | -5.20 | peak |

| Mode:a; Polarization:Vertical; Modulation:a; bandwidth:20MHz; Channel:Low | | | | | | | | | |
|---|--------|--------|----------|--------|--------|----------|--|--|--|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector | | | |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | | | |
| 11490 | 34.26 | 14.41 | 48.67 | 54 | -5.33 | peak | | | |
| 17235 | 28.63 | 22.57 | 51.20 | 68.2 | -17.00 | peak | | | |
| 22980 | 27.11 | 24.45 | 51.56 | 54 | -2.44 | peak | | | |

| Mode:a; Po | larization:F | lorizontal; | Modulation:a | ; bandwid | th:20MHz; | Channel:mide | dle |
|------------|--------------|-------------|--------------|-----------|-----------|--------------|-----|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector | |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | |
| 11570 | 34.19 | 14.25 | 48.44 | 54 | -5.56 | peak | |
| 17355 | 25.83 | 21.86 | 47.69 | 68.2 | -20.51 | peak | |
| 23140 | 27.00 | 24.68 | 51.68 | 68.2 | -16.52 | peak | |

| Mode:a; Polarization:Vertical; Modulation:a; bandwidth:20MHz; Channel:middle | | | | | | | | |
|--|--------|--------|----------|--------|--------|----------|--|--|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector | | |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | | |
| 11570 | 35.06 | 14.25 | 49.31 | 54 | -4.69 | peak | | |
| 17355 | 29.03 | 21.86 | 50.89 | 68.2 | -17.31 | peak | | |
| 23140 | 27.90 | 24.68 | 52.58 | 68.2 | -15.62 | peak | | |

| arization:F | lorizontal; | Modulation:a | ı; bandwid | th:20MHz; | Channel:High |
|-------------|--------------------------------|--|---|--|---|
| RX_R | Factor | Emission | Limit | Margin | Detector |
| dBuV | dB | dBuV/m | dBuV/m | dB | |
| 34.72 | 14.06 | 48.78 | 54 | -5.22 | peak |
| 27.25 | 21.15 | 48.40 | 68.2 | -19.80 | peak |
| 27.83 | 25.11 | 52.94 | 68.2 | -15.26 | peak |
| | RX_R dBuV 34.72 27.25 | RX_R Factor dBuV dB 34.72 14.06 27.25 21.15 | RX_R Factor Emission dBuV dB dBuV/m 34.72 14.06 48.78 27.25 21.15 48.40 | RX_R Factor Emission Limit dBuV dB dBuV/m dBuV/m 34.72 14.06 48.78 54 27.25 21.15 48.40 68.2 | dBuV dB dBuV/m dBuV/m dB 34.72 14.06 48.78 54 -5.22 27.25 21.15 48.40 68.2 -19.80 |



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| Mode:a; Polarization:Vertical; Modulation:a; bandwidth:20MHz; Channel:H | | | | | | |
|---|--------|--------|----------|--------|--------|----------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11650 | 35.30 | 14.06 | 49.36 | 54 | -4.64 | peak |
| 17475 | 29.55 | 21.15 | 50.70 | 68.2 | -17.50 | peak |
| 23300 | 24.56 | 25.11 | 49.67 | 68.2 | -18.53 | peak |

| Mode:a; Pola | arization:l | Horizontal; | Modulation:n | ı; bandwid | th:20MHz; | Channel:Low |
|--------------|-------------|-------------|--------------|------------|-----------|-------------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11490 | 33.83 | 14.41 | 48.24 | 54 | -5.76 | peak |
| 17235 | 28.73 | 22.57 | 51.30 | 68.2 | -16.90 | peak |
| 22980 | 28.43 | 24.45 | 52.88 | 54 | -1.12 | peak |

| Mode:a; Polarization:Vertical; Modulation:n; bandwidth:20MHz; Channel:Low | | | | | | | | |
|---|--------|--------|----------|--------|--------|----------|--|--|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector | | |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | | |
| 11490 | 33.98 | 14.41 | 48.39 | 54 | -5.61 | peak | | |
| 17235 | 29.06 | 22.57 | 51.63 | 68.2 | -16.57 | peak | | |
| 22980 | 25.55 | 24.45 | 50.00 | 54 | -4.00 | peak | | |

| Mode:a; Pol | arization:l | Horizontal; | Modulation:n | ı; bandwid | th:20MHz; | Channel:middle |
|-------------|-------------|-------------|--------------|------------|-----------|----------------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11570 | 33.59 | 14.25 | 47.84 | 54 | -6.16 | peak |
| 17355 | 28.61 | 21.86 | 50.47 | 68.2 | -17.73 | peak |
| 23140 | 26.45 | 24.68 | 51.13 | 68.2 | -17.07 | peak |

Mode:a; Polarization:Vertical; Modulation:n; bandwidth:20MHz; Channel:middle Frequency RX_R Factor **Emission** Limit Margin Detector MHz dBuV dB dBuV/m dBuV/m dΒ 11570 31.80 14.25 46.05 54 -7.95 peak 17355 30.59 21.86 52.45 68.2 -15.75 peak 26.13 23140 24.68 50.81 68.2 -17.39peak



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| Mode:a; Pol | arization:ŀ | Horizontal; | Modulation:n | ; bandwid | th:20MHz; | Channel:High |
|-------------|-------------|-------------|--------------|-----------|-----------|--------------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11650 | 31.59 | 14.06 | 45.65 | 54 | -8.35 | peak |
| 17475 | 26.12 | 21.15 | 47.27 | 68.2 | -20.93 | peak |
| 23300 | 30.06 | 25.11 | 55.17 | 68.2 | -13.03 | peak |

| Mode:a; Polarization:Vertical; Modulation:n; bandwidth:20MHz; Channel:High | | | | | | | |
|--|--------|--------|----------|--------|--------|----------|--|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector | |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | |
| 11650 | 35.38 | 14.06 | 49.44 | 54 | -4.56 | peak | |
| 17475 | 29.94 | 21.15 | 51.09 | 68.2 | -17.11 | peak | |
| 23300 | 26.18 | 25.11 | 51.29 | 68.2 | -16.91 | peak | |

| Mode:a; Polarization:Horizontal; | | | Modulation:n | ı; bandwid | th:40MHz; | Channel:Low |
|----------------------------------|--------|--------|--------------|------------|-----------|-------------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11510 | 33.87 | 14.40 | 48.27 | 54 | -5.73 | peak |
| 17265 | 26.15 | 22.40 | 48.55 | 68.2 | -19.65 | peak |
| 23020 | 23.49 | 24.68 | 48.17 | 54 | -5.83 | peak |

| Mode:a; Polarization:Vertical; Modulation:n; bandwidth:40MHz; Channel:Low | | | | | | | | |
|---|--------|--------|----------|--------|--------|----------|--|--|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector | | |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | | |
| 11510 | 33.34 | 14.40 | 47.74 | 54 | -6.26 | peak | | |
| 17265 | 28.91 | 22.40 | 51.31 | 68.2 | -16.89 | peak | | |
| 23020 | 27.63 | 24.68 | 52.31 | 54 | -1.69 | peak | | |

| Mode:a; Pol | arization:l | Horizontal; | Modulation:n | ı; bandwid | th:40MHz; | Channel:High |
|-------------|-------------|-------------|--------------|------------|-----------|--------------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11590 | 34.20 | 14.20 | 48.40 | 54 | -5.60 | peak |
| 17385 | 26.01 | 21.68 | 47.69 | 68.2 | -20.51 | peak |
| 23180 | 25.06 | 24.72 | 49.78 | 68.2 | -18.42 | peak |



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| Mode:a; Polarization:Vertical; Modulation:n; bandwidth:40MHz; Channel:High | | | | | | | | |
|--|--------|--------|----------|--------|--------|----------|--|--|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector | | |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | | |
| 11590 | 35.08 | 14.20 | 49.28 | 54 | -4.72 | peak | | |
| 17385 | 29.00 | 21.68 | 50.68 | 68.2 | -17.52 | peak | | |
| 23180 | 27.35 | 24.72 | 52.07 | 68.2 | -16.13 | peak | | |

| Mode:a; Polarization:Horizontal; | | | Modulation:c; | bandwid | th:20MHz; | Channel:Low |
|----------------------------------|--------|--------|---------------|---------|-----------|-------------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11490 | 35.56 | 14.41 | 49.97 | 54 | -4.03 | peak |
| 17235 | 29.74 | 22.57 | 52.31 | 68.2 | -15.89 | peak |
| 22980 | 25.76 | 24.45 | 50.21 | 54 | -3.79 | peak |

| Mode:a; F | Polarization:Ve | rtical; | Modulation:c; | bandwidth: | 20MHz; | Channel:Low |
|-----------|-----------------|---------|---------------|------------|--------|-------------|
| 17235 | 26.93 | 22.57 | 49.50 | 68.2 | -18.70 |) peak |
| 22980 | 28.35 | 24.45 | 52.80 | 54 | -1.20 | peak |

| Mode:a; Polarization:Horizontal; | | | Modulation:c; | bandwic | lth:20MHz; | Channel:middle | |
|----------------------------------|--------|--------|---------------|---------|------------|----------------|--|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector | |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | |
| 11570 | 34.94 | 14.25 | 49.19 | 54 | -4.81 | peak | |
| 17355 | 26.99 | 21.86 | 48.85 | 68.2 | -19.35 | peak | |
| 23140 | 26.93 | 24.68 | 51.61 | 68.2 | -16.59 | peak | |

| Mode:a; Polarization:Vertical; Modulation:c; bandwidth:20MHz; Channel:middle | | | | | | | | |
|--|--------|--------|----------|--------|--------|----------|--|--|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector | | |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | | |
| 11570 | 32.13 | 14.25 | 46.38 | 54 | -7.62 | peak | | |
| 17355 | 29.33 | 21.86 | 51.19 | 68.2 | -17.01 | peak | | |
| 23140 | 29.30 | 24.68 | 53.98 | 68.2 | -14.22 | peak | | |



Frequency

MHz

11590

17385

23180

RX_R

dBuV

33.69

28.75

22.91

Factor

dB

14.20

21.68

24.72

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| | | | | | | Channel:High | | | |
|---|--------------|------------|----------------|-------------|----------|--------------|--|--|--|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector | | | |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | | | |
| 11650 | 33.13 | 14.06 | 47.19 | 54 | -6.81 | peak | | | |
| 17475 | 26.64 | 21.15 | 47.79 | 68.2 | -20.41 | peak | | | |
| 23300 | 23.66 | 25.11 | 48.77 | 68.2 | -19.43 | peak | | | |
| Mode:a; Polarization:Vertical; Modulation:c; bandwidth:20MHz; Channel:High | | | | | | | | | |
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector | | | |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | | | |
| 11650 | 35.44 | 14.06 | 49.50 | 54 | -4.50 | peak | | | |
| 17475 | 27.93 | 21.15 | 49.08 | 68.2 | -19.12 | peak | | | |
| 23300 | 27.20 | 25.11 | 52.31 | 68.2 | -15.89 | peak | | | |
| | | | | | | | | | |
| Mode:a; Polarization:Horizontal; Modulation:c; bandwidth:40MHz; Channel:Low | | | | | | | | | |
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector | | | |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | | | |
| 11510 | 33.36 | 14.40 | 47.76 | 54 | -6.24 | peak | | | |
| 17265 | 26.26 | 22.40 | 48.66 | 68.2 | -19.54 | peak | | | |
| 23020 | 26.55 | 24.68 | 51.23 | 54 | -2.77 | peak | | | |
| | | | | | | | | | |
| Mode:a; Pol | arization:Ve | ertical; M | odulation:c; k | oandwidth:4 | 0MHz; Cł | nannel:Low | | | |
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector | | | |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | | | |
| 11510 | 31.81 | 14.40 | 46.21 | 54 | -7.79 | peak | | | |
| 17265 | 30.18 | 22.40 | 52.58 | 68.2 | -15.62 | peak | | | |
| 23020 | 26.94 | 24.68 | 51.62 | 54 | -2.38 | peak | | | |
| | | | | | | | | | |
| Mode:a; Pol | arization:H | orizontal; | Modulation: | ; bandwidth | n:40MHz; | Channel:High | | | |
| Г., | DV D | English to | Englandar | 1.1 | N 4 ! | Datastan | | | |

Emission

dBuV/m

47.89

50.43

47.63

Limit

dBuV/m

54

68.2

68.2

Margin

dΒ

-6.11

-17.77

-20.57

Detector

peak

peak

peak



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| zation:Vert | tical; Modi | ulation:c; b | andwidth:40 | MHz; Cha | nnel:High |
|-------------|--------------------------------|--|---|--|---|
| RX_R | Factor | Emission | Limit | Margin | Detector |
| dBuV | dB | dBuV/m | dBuV/m | dB | |
| 36.02 | 14.20 | 50.22 | 54 | -3.78 | peak |
| 26.95 | 21.68 | 48.63 | 68.2 | -19.57 | peak |
| 27.90 | 24.72 | 52.62 | 68.2 | -15.58 | peak |
| | RX_R dBuV 86.02 26.95 | RX_R Factor dBuV dB 36.02 14.20 26.95 21.68 | RX_R Factor Emission dBuV dB dBuV/m 36.02 14.20 50.22 26.95 21.68 48.63 | RX_R Factor Emission Limit dBuV dB dBuV/m dBuV/m 36.02 14.20 50.22 54 26.95 21.68 48.63 68.2 | dBuV dB dBuV/m dBuV/m dB 36.02 14.20 50.22 54 -3.78 26.95 21.68 48.63 68.2 -19.57 |

| Mode:a; Polarization:Horizontal; | | | Modulation:c; | bandwid | th:80MHz; | Channel:Low |
|----------------------------------|--------|--------|---------------|---------|-----------|-------------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11550 | 34.63 | 14.30 | 48.93 | 54 | -5.07 | peak |
| 17325 | 27.09 | 22.04 | 49.13 | 68.2 | -19.07 | peak |
| 23100 | 27.31 | 24.60 | 51.91 | 54 | -2.09 | peak |

| Mode:a; Polarization:Vertical; Modulation:c; bandwidth:80MHz; Channel:Low | | | | | | | | |
|---|--------|--------|----------|--------|--------|----------|--|--|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector | | |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | | |
| 11550 | 35.63 | 14.30 | 49.93 | 54 | -4.07 | peak | | |
| 17325 | 29.05 | 22.04 | 51.09 | 68.2 | -17.11 | peak | | |
| 23100 | 24.05 | 24.60 | 48.65 | 54 | -5.35 | peak | | |

| Mode:b; Pol | arization:ŀ | Horizontal; | Modulation:a | ; bandwid | th:20MHz; | Channel:Low |
|-------------|-------------|-------------|--------------|-----------|-----------|-------------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11490 | 36.31 | 14.41 | 50.72 | 54 | -3.28 | peak |
| 17235 | 29.63 | 22.57 | 52.20 | 68.2 | -16.00 | peak |
| 22980 | 24.36 | 24.45 | 48.81 | 54 | -5.19 | peak |

| Mode:b; Polarization:Vertical; Modulation:a; bandwidth:20MHz; Channel:Low | | | | | | | | | |
|---|--------|--------|----------|--------|--------|----------|--|--|--|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector | | | |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | | | |
| 11490 | 31.67 | 14.41 | 46.08 | 54 | -7.92 | peak | | | |
| 17235 | 25.33 | 22.57 | 47.90 | 68.2 | -20.30 | peak | | | |
| 22980 | 29.06 | 24.45 | 53.51 | 54 | -0.49 | peak | | | |



11490

17235

22980

31.11

26.63

29.41

14.41

22.57

24.45

45.52

49.20

53.86

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| Mode:b; Pola | arization:Ho | orizontal; | Modulation:a | ; bandwidt | h:20MHz; | Channel:middle |
|--------------|---------------|-------------|----------------|------------|-----------------|----------------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11570 | 35.11 | 14.25 | 49.36 | 54 | -4.64 | peak |
| 17355 | 27.74 | 21.86 | 49.60 | 68.2 | -18.60 | peak |
| 23140 | 26.28 | 24.68 | 50.96 | 68.2 | -17.24 | peak |
| Madaihi Bak | orization:\/a | ortical: M | adulation:a: b | andwidth: | 20MHz. CI | nannel:middle |
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 11570 | 34.55 | 14.25 | 48.80 | 54 | -5.20 | peak |
| 17355 | 26.23 | 21.86 | 48.09 | 68.2 | -3.20 -20.11 | • |
| | | | | | | peak |
| 23140 | 27.14 | 24.68 | 51.82 | 68.2 | -16.38 | peak |
| Mode:b; Pola | arization:Ho | orizontal; | Modulation:a | ; bandwidt | h:20MHz; | Channel:High |
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11650 | 31.78 | 14.06 | 45.84 | 54 | -8.16 | peak |
| 17475 | 27.24 | 21.15 | 48.39 | 68.2 | -19.81 | peak |
| 23300 | 28.77 | 25.11 | 53.88 | 68.2 | -14.32 | peak |
| Modeth: Pol | arization:Ve | ertical: Mo | odulation:a; b | andwidth: | DOMHZ: CI | hannel·High |
| Frequency | RX R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11650 | 33.74 | 14.06 | 47.80 | 54 | -6.20 | peak |
| 17475 | 26.11 | 21.15 | 47.26 | 68.2 | -20.94 | peak |
| 23300 | 23.20 | 25.11 | 48.31 | 68.2 | -19.89 | peak |
| | | | | | | , |
| | | | | | | |
| • | | - | | | - | Channel:Low |
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |

54

68.2

54

-8.48

-19.00

-0.14

peak

peak

peak



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| Mode:b; Polarization:Vertical; Modulation:n; bandwidth:20MHz; Channel:Low | | | | | | | |
|---|--------|--------|----------|--------|--------|----------|--|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector | |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | |
| 11490 | 34.25 | 14.41 | 48.66 | 54 | -5.34 | peak | |
| 17235 | 28.16 | 22.57 | 50.73 | 68.2 | -17.47 | peak | |
| 22980 | 27.52 | 24.45 | 51.97 | 54 | -2.03 | peak | |

| Mode:b; | Polarization:H | orizontal; | Modulation:n; | bandwid | dth:20MHz; | Channel:middle |
|----------|----------------|------------|---------------|---------|------------|----------------|
| Frequenc | cy RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11570 | 33.62 | 14.25 | 47.87 | 54 | -6.13 | peak |
| 17355 | 29.55 | 21.86 | 51.41 | 68.2 | -16.79 | peak |
| 23140 | 25.94 | 24.68 | 50.62 | 68.2 | -17.58 | peak |

| Mode:b; Pola | ırization:Ve | ertical; Modu | ılation:n; bar | ndwidth:20M | IHz; Chann | el:middle |
|--------------|--------------|---------------|----------------|-------------|------------|-----------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11570 | 33.27 | 14.25 | 47.52 | 54 | -6.48 | peak |
| 17355 | 28.74 | 21.86 | 50.60 | 68.2 | -17.60 | peak |
| 23140 | 26.80 | 24.68 | 51.48 | 68.2 | -16.72 | peak |

| Mode:b; Pola | arization:l | Horizontal; | Modulation:n | ı; bandwid | th:20MHz; | Channel:High |
|--------------|-------------|-------------|--------------|------------|-----------|--------------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11650 | 32.81 | 14.06 | 46.87 | 54 | -7.13 | peak |
| 17475 | 25.67 | 21.15 | 46.82 | 68.2 | -21.38 | peak |
| 23300 | 29.90 | 25.11 | 55.01 | 68.2 | -13.19 | peak |

| Mode:b; Polarization:Vertical; Modulation:n; bandwidth:20MHz; Channel:High | | | | | | | |
|--|--------|--------|----------|--------|--------|----------|--|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector | |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | |
| 11650 | 32.68 | 14.06 | 46.74 | 54 | -7.26 | peak | |
| 17475 | 28.45 | 21.15 | 49.60 | 68.2 | -18.60 | peak | |
| 23300 | 25.96 | 25.11 | 51.07 | 68.2 | -17.13 | peak | |



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| Mode:b; Pol | arization:ŀ | Horizontal; | Modulation:n | ; bandwid | th:40MHz; | Channel:Low |
|-------------|-------------|-------------|--------------|-----------|-----------|-------------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11510 | 30.45 | 14.40 | 44.85 | 54 | -9.15 | peak |
| 17265 | 30.04 | 22.40 | 52.44 | 68.2 | -15.76 | peak |
| 23020 | 24.87 | 24.68 | 49.55 | 54 | -4.45 | peak |

| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
|-----------|-------|--------|----------|--------|--------|----------|
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11510 | 34.72 | 14.40 | 49.12 | 54 | -4.88 | peak |
| 17265 | 29.39 | 22.40 | 51.79 | 68.2 | -16.41 | peak |
| 23020 | 25.68 | 24.68 | 50.36 | 54 | -3.64 | peak |

| High | Channel:F | ith:40MHz; | ı; bandwid | Modulation:r | lorizontal; | arızatıon:F | Mode:b; Pol |
|------|-----------|------------|------------|--------------|-------------|-------------|-------------|
| r | Detector | Margin | Limit | Emission | Factor | RX_R | Frequency |
| | | dB | dBuV/m | dBuV/m | dB | dBuV | MHz |
| | peak | -4.89 | 54 | 49.11 | 14.20 | 34.91 | 11590 |
| | peak | -19.63 | 68.2 | 48.57 | 21.68 | 26.89 | 17385 |
| | peak | -16.03 | 68.2 | 52.17 | 24.72 | 27.45 | 23180 |

| Mode:b; Pol | arization:\ | /ertical; Mo | bandwidth:40MHz; Channel:High | | | |
|-------------|-------------|--------------|-------------------------------|--------|--------|----------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11590 | 34.21 | 14.20 | 48.41 | 54 | -5.59 | peak |
| 17385 | 29.54 | 21.68 | 51.22 | 68.2 | -16.98 | peak |
| 23180 | 25.29 | 24.72 | 50.01 | 68.2 | -18.19 | peak |

| Mode:b; Pol | arization:H | Horizontal; | Modulation:c | ; bandwidt | th:20MHz; | Channel:Low |
|-------------|-------------|-------------|--------------|------------|-----------|-------------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11490 | 34.21 | 14.41 | 48.62 | 54 | -5.38 | peak |
| 17235 | 30.23 | 22.57 | 52.80 | 68.2 | -15.40 | peak |
| 22980 | 28.04 | 24.45 | 52.49 | 54 | -1.51 | peak |



17355

23140

27.54

24.20

21.86

24.68

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peak

peak

-18.80

-19.32

68.2

68.2

| Mode:b; Polarization:Vertical; Modulation:c; bandwidth:20MHz; Channel:Low | | | | | | |
|---|-------------|-------------|-------------|-------------|-----------|----------------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11490 | 31.95 | 14.41 | 46.36 | 54 | -7.64 | peak |
| 17235 | 26.85 | 22.57 | 49.42 | 68.2 | -18.78 | peak |
| 22980 | 27.98 | 24.45 | 52.43 | 54 | -1.57 | peak |
| | | | | | | |
| Mode:b; Pol | arization:l | Horizontal; | Modulation: | c; bandwidt | th:20MHz; | Channel:middle |
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11570 | 32.77 | 14.25 | 47.02 | 54 | -6.98 | peak |

49.40

48.88

| Mode:b; Pol | arization:\ | /ertical; Mo | bandwidth:2 | 20MHz; Ch | annel:middle | |
|-------------|-------------|--------------|-------------|-----------|--------------|----------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11570 | 33.82 | 14.25 | 48.07 | 54 | -5.93 | peak |
| 17355 | 28.97 | 21.86 | 50.83 | 68.2 | -17.37 | peak |
| 23140 | 30.61 | 24.68 | 55.29 | 68.2 | -12.91 | peak |

| Mode:b; Pol | arization:l | Horizontal; | Modulation:c; | bandwid | th:20MHz; | Channel:High |
|-------------|-------------|-------------|---------------|---------|-----------|--------------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11650 | 35.22 | 14.06 | 49.28 | 54 | -4.72 | peak |
| 17475 | 29.25 | 21.15 | 50.40 | 68.2 | -17.80 | peak |
| 23300 | 25.37 | 25.11 | 50.48 | 68.2 | -17.72 | peak |

Mode:b; Polarization:Vertical; Modulation:c; bandwidth:20MHz; Channel:High Frequency RX_R Factor **Emission** Limit Margin Detector MHz dBuV dB dBuV/m dBuV/m dB 11650 33.50 14.06 47.56 54 -6.44 peak 17475 28.54 21.15 49.69 68.2 -18.51peak 23300 25.91 25.11 51.02 68.2 -17.18 peak



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| Mode:b; Pola | arization:I | Horizontal; | Modulation:c; | bandwid | th:40MHz; | Channel:Low |
|--------------|-------------|-------------|---------------|---------|-----------|-------------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11510 | 34.75 | 14.40 | 49.15 | 54 | -4.85 | peak |
| 17265 | 29.82 | 22.40 | 52.22 | 68.2 | -15.98 | peak |
| 23020 | 27.17 | 24.68 | 51.85 | 54 | -2.15 | peak |

| Mode:b; Polarization:Vertical; Modulation:c; bandwidth:40MHz; Channel:Low | | | | | | | |
|---|--------|--------|----------|--------|--------|----------|--|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector | |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | |
| 11510 | 33.24 | 14.40 | 47.64 | 54 | -6.36 | peak | |
| 17265 | 26.42 | 22.40 | 48.82 | 68.2 | -19.38 | peak | |
| 23020 | 27.01 | 24.68 | 51.69 | 54 | -2.31 | peak | |

| el:Hig | Channel | th:40MHz; | bandwid | Modulation:c | orizontal; | arization: | Mode:b; Pol |
|--------|---------|-----------|---------|--------------|------------|------------|-------------|
| ctor | Detect | Margin | Limit | Emission | Factor | RX_R | Frequency |
| | | dB | dBuV/m | dBuV/m | dB | dBuV | MHz |
| ak | peak | -3.28 | 54 | 50.72 | 14.20 | 36.52 | 11590 |
| ak | peak | -19.35 | 68.2 | 48.85 | 21.68 | 27.17 | 17385 |
| ak | peak | -20.64 | 68.2 | 47.56 | 24.72 | 22.84 | 23180 |

| Mode:b; Polarization:Vertical; Modulation:c; bandwidth:40MHz; Channel:High | | | | | | |
|--|--------|--------|----------|--------|--------|----------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11590 | 34.35 | 14.20 | 48.55 | 54 | -5.45 | peak |
| 17385 | 29.28 | 21.68 | 50.96 | 68.2 | -17.24 | peak |
| 23180 | 24.59 | 24.72 | 49.31 | 68.2 | -18.89 | peak |

| Mode:b; Pol | arization:ŀ | Horizontal; | Modulation:c | ; bandwid | th:80MHz; | Channel:Low |
|-------------|-------------|-------------|--------------|-----------|-----------|-------------|
| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11550 | 31.95 | 14.30 | 46.25 | 54 | -7.75 | peak |
| 17325 | 26.63 | 22.04 | 48.67 | 68.2 | -19.53 | peak |
| 23100 | 27.76 | 24.60 | 52.36 | 54 | -1.64 | peak |



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Mode:b; Polarization:Vertical; Modulation:c; bandwidth:80MHz; Channel:Low

| Frequency | RX_R | Factor | Emission | Limit | Margin | Detector |
|-----------|-------|--------|----------|--------|--------|----------|
| MHz | dBuV | dB | dBuV/m | dBuV/m | dB | |
| 11550 | 33.78 | 14.30 | 48.08 | 54 | -5.92 | peak |
| 17325 | 29.31 | 22.04 | 51.35 | 68.2 | -16.85 | peak |
| 23100 | 24.50 | 24.60 | 49.10 | 54 | -4.90 | peak |



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7.7 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.209 & 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 |

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 °C Humidity: 50 % RH Atmospheric Pressure: 1001 mbar

Pretest these mode to find the worst case:

a:TX mode 1(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-M5504HM-T/GW/WI58)

b:TX mode 2(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-

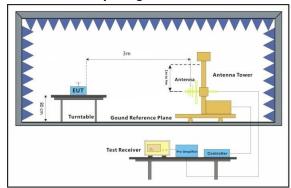
M5504HM-T/GLF/WI58)

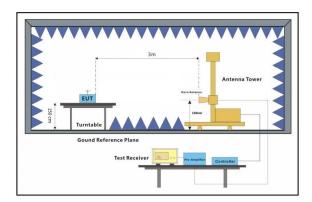


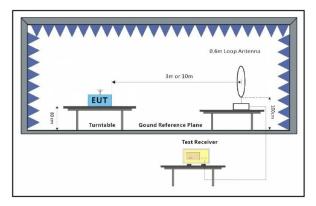
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7.7.2 Test Setup Diagram







7.7.3 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

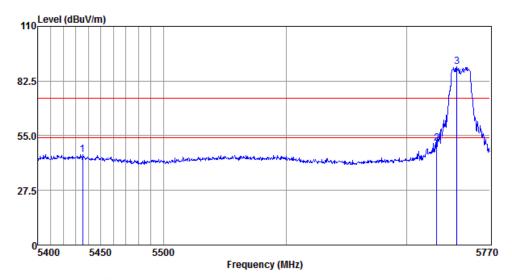
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Mode:a; Polarization:Horizontal; Modulation:a; bandwidth:20MHz; Channel:Low



Antenna Polarity : HORIZONTAL

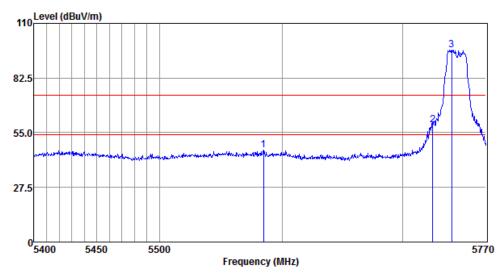
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|---------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5435.55 | 42.84 | 32.02 | 9.34 | 38.65 | 45.55 | 74.00 | -28.45 | Peak |
| 2 | 5725.00 | 48.85 | 32.15 | 9.00 | 38.75 | 51.25 | 74.00 | -22.75 | Peak |
| 3 | 5741.77 | 87.39 | 32.15 | 9.00 | 38.76 | 89.78 | 74.00 | 15.78 | Peak |



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Mode:a; Polarization:Vertical; Modulation:a; bandwidth:20MHz; Channel:Low



Antenna Polarity : VERTICAL

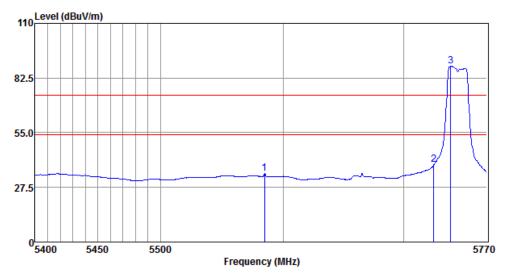
| | | | | | | Emission | | | |
|-----|---------|-------|--------|------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 5 | 5584.90 | 43.81 | 32.12 | 9.01 | 38.65 | 46.29 | 74.00 | -27.71 | Peak |
| 2 5 | 5725.05 | 56.35 | 32.15 | 9.00 | 38.75 | 58.75 | 74.00 | -15.25 | Peak |
| 3 5 | 5741.01 | 94.33 | 32.15 | 9.00 | 38.76 | 96.72 | 74.00 | 22.72 | Peak |



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Mode:a; Polarization:Vertical; Modulation:a; bandwidth:20MHz; Channel:Low



Antenna Polarity : VERTICAL

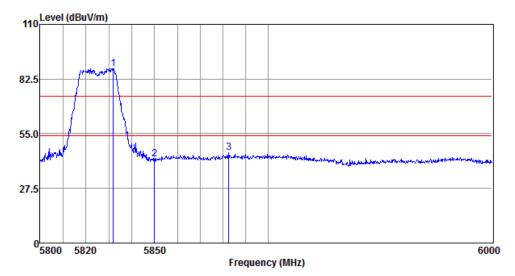
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|-------|------|-------|---------|-------|--------|----------|--------|--------|---------|
| F | req | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| 1 | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 558 | 4.90 | 32.14 | 32.12 | 9.01 | 38.65 | 34.62 | 54.00 | -19.38 | Average |
| 2 572 | 5.00 | 36.50 | 32.15 | 9.00 | 38.75 | 38.90 | 54.00 | -15.10 | Average |
| 3 573 | 9.11 | 86.02 | 32.15 | 9.00 | 38.76 | 88.41 | 54.00 | 34.41 | Average |



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Mode:a; Polarization:Horizontal; Modulation:a; bandwidth:20MHz; Channel:High



Antenna Polarity :HORIZONTAL

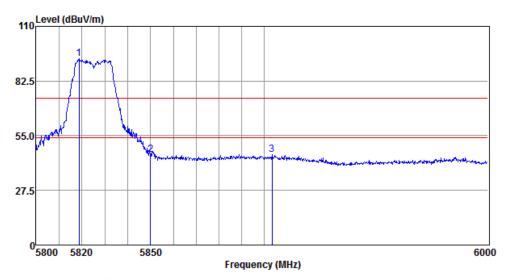
| | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---------|----------|---------|-------|--------|----------|--------|--------|--------|
| Fre | q Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | |
| MH | z dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 5831. | 94 85.54 | 32.17 | 8.90 | 38.77 | 87.84 | 74.00 | 13.84 | Peak |
| 2 5850. | 00 39.97 | 32.17 | 8.90 | 38.75 | 42.29 | 74.00 | -31.71 | Peak |
| 3 5882. | 58 42.87 | 32.18 | 8.93 | 38.72 | 45.26 | 74.00 | -28.74 | Peak |



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Mode:a; Polarization:Vertical; Modulation:a; bandwidth:20MHz; Channel:High



Antenna Polarity : VERTICAL

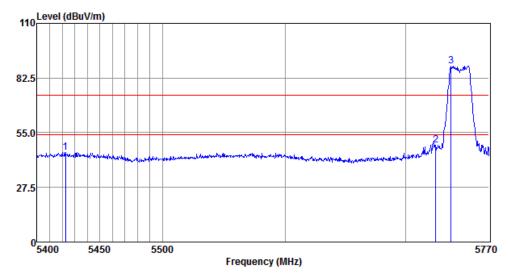
| _ | | | | | Emission | | | |
|-----------|-------|--------|------|--------|----------|--------|--------|--------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 5818.71 | 91.34 | 32.16 | 8.87 | 38.78 | 93.59 | 74.00 | 19.59 | Peak |
| 2 5850.00 | 43.13 | 32.17 | 8.90 | 38.75 | 45.45 | 74.00 | -28.55 | Peak |
| 3 5903.55 | 43.14 | 32.18 | 8.93 | 38.70 | 45.55 | 74.00 | -28.45 | Peak |



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Mode:a; Polarization:Horizontal; Modulation:n; bandwidth:20MHz; Channel:Low



Antenna Polarity : HORIZONTAL

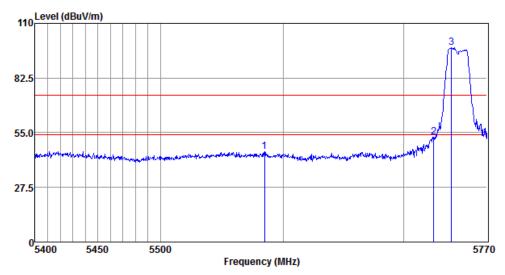
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|---------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5422.59 | 42.43 | 31.99 | 9.34 | 38.66 | 45.10 | 74.00 | -28.90 | Peak |
| 2 | 5725.00 | 46.36 | 32.15 | 9.00 | 38.75 | 48.76 | 74.00 | -25.24 | Peak |
| 3 | 5737.97 | 86.25 | 32.15 | 9.00 | 38.75 | 88.65 | 74.00 | 14.65 | Peak |



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Mode:a; Polarization:Vertical; Modulation:n; bandwidth:20MHz; Channel:Low



Antenna Polarity : VERTICAL

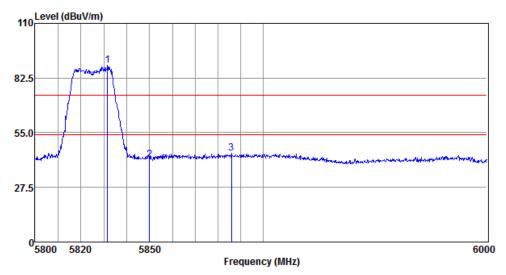
| _ | | | | | Emission | | | |
|-----------|-------|--------|------|--------|----------|--------|--------|--------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 5584.90 | 43.15 | 32.12 | 9.01 | 38.65 | 45.63 | 74.00 | -28.37 | Peak |
| 2 5725.00 | 50.43 | 32.15 | 9.00 | 38.75 | 52.83 | 74.00 | -21.17 | Peak |
| 3 5739.87 | 95.40 | 32.15 | 9.00 | 38.76 | 97.79 | 74.00 | 23.79 | Peak |



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Mode:a; Polarization:Horizontal; Modulation:n; bandwidth:20MHz; Channel:High



Antenna Polarity : HORIZONTAL

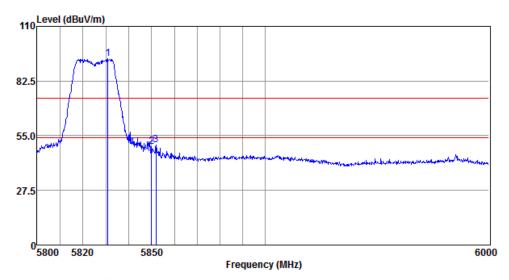
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|-----|--------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 5 | 831.55 | 86.64 | 32.17 | 8.90 | 38.77 | 88.94 | 74.00 | 14.94 | Peak |
| 2 5 | 850.00 | 38.94 | 32.17 | 8.90 | 38.75 | 41.26 | 74.00 | -32.74 | Peak |
| 3 5 | 885.97 | 42.42 | 32.18 | 8.93 | 38.72 | 44.81 | 74.00 | -29.19 | Peak |



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Mode:a; Polarization:Vertical; Modulation:n; bandwidth:20MHz; Channel:High



Antenna Polarity : VERTICAL

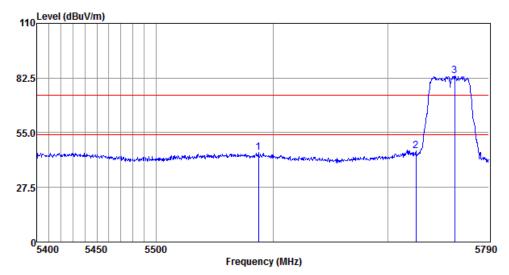
| _ | | | | | | Emission | | | _ |
|--------|-----|-------|--------|------|--------|----------|--------|--------|--------|
| Fr | eq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| М | Hz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 5830 | .95 | 91.43 | 32.17 | 8.90 | 38.77 | 93.73 | 74.00 | 19.73 | Peak |
| 2 5850 | .00 | 47.37 | 32.17 | 8.90 | 38.75 | 49.69 | 74.00 | -24.31 | Peak |
| 3 5851 | .95 | 47.96 | 32.17 | 8.90 | 38.75 | 50.28 | 74.00 | -23.72 | Peak |



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Mode:a; Polarization:Horizontal; Modulation:n; bandwidth:40MHz; Channel:Low



Antenna Polarity : HORIZONTAL

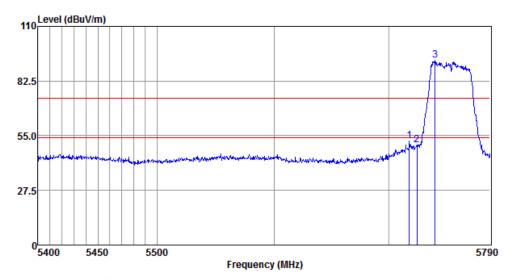
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|-----|-----------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 1 5587.70 | 42.38 | 32.12 | 9.01 | 38.65 | 44.86 | 74.00 | -29.14 | Peak |
| 1 | 2 5725.00 | 43.39 | 32.15 | 9.00 | 38.75 | 45.79 | 74.00 | -28.21 | Peak |
| - 3 | 3 5759.40 | 81.26 | 32.15 | 8.93 | 38.78 | 83.56 | 74.00 | 9.56 | Peak |



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Mode:a; Polarization:Vertical; Modulation:n; bandwidth:40MHz; Channel:Low



Antenna Polarity : VERTICAL

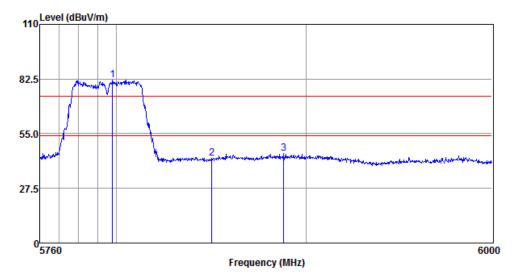
| _ | | | | | | Emission | | | DI- |
|-------|------|-------|--------|------|--------|----------|--------|--------|--------|
| F | req | rever | Factor | LOSS | Factor | Level | Line | Limit | Kemark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 571 | 8.18 | 49.90 | 32.14 | 9.00 | 38.74 | 52.30 | 74.00 | -21.70 | Peak |
| 2 572 | 5.00 | 47.85 | 32.15 | 9.00 | 38.75 | 50.25 | 74.00 | -23.75 | Peak |
| 3 574 | 0.95 | 90.60 | 32.15 | 9.00 | 38.76 | 92.99 | 74.00 | 18.99 | Peak |



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Mode:a; Polarization:Horizontal; Modulation:n; bandwidth:40MHz; Channel:High



Antenna Polarity :HORIZONTAL

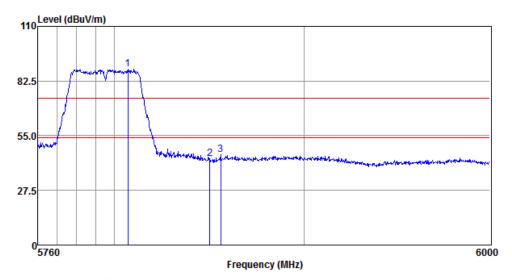
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|-----------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 1 5797.75 | 79.65 | 32.16 | 8.87 | 38.80 | 81.88 | 74.00 | 7.88 | Peak |
| 2 | 2 5850.00 | 40.28 | 32.17 | 8.90 | 38.75 | 42.60 | 74.00 | -31.40 | Peak |
| 3 | 3 5888.14 | 42.52 | 32.18 | 8.93 | 38.72 | 44.91 | 74.00 | -29.09 | Peak |



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Mode:a; Polarization:Vertical; Modulation:n; bandwidth:40MHz; Channel:High



Antenna Polarity : VERTICAL

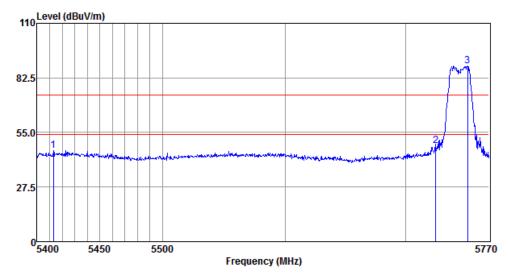
| | | Antenna | | | | | | |
|---------|----------|---------|------|--------|--------|--------|--------|--------|
| Fre | q Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | |
| MH | z dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 5806. | 98 86.29 | 32.16 | 8.87 | 38.78 | 88.54 | 74.00 | 14.54 | Peak |
| 2 5850. | 00 41.11 | 32.17 | 8.90 | 38.75 | 43.43 | 74.00 | -30.57 | Peak |
| 3 5855. | 78 43.33 | 32.17 | 8.90 | 38.75 | 45.65 | 74.00 | -28.35 | Peak |



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Mode:a; Polarization:Horizontal; Modulation:c; bandwidth:20MHz; Channel:Low



Antenna Polarity : HORIZONTAL

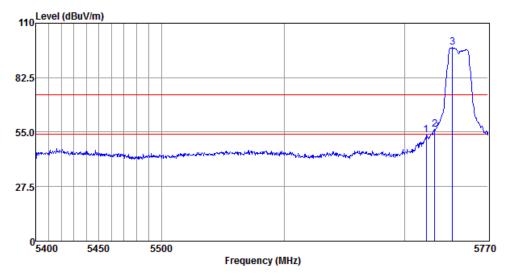
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|---------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5412.90 | 43.26 | 31.97 | 9.44 | 38.67 | 46.00 | 74.00 | -28.00 | Peak |
| 2 | 5725.00 | 45.85 | 32.15 | 9.00 | 38.75 | 48.25 | 74.00 | -25.75 | Peak |
| 3 | 5751.67 | 86.09 | 32.15 | 8.93 | 38.76 | 88.41 | 74.00 | 14.41 | Peak |



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Mode:a; Polarization:Vertical; Modulation:c; bandwidth:20MHz; Channel:Low



Antenna Polarity : VERTICAL

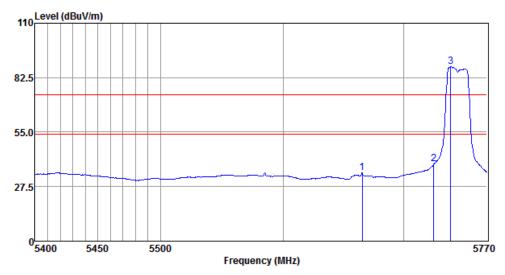
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|-------|------|-------|---------|-------|--------|----------|--------|--------|--------|
| F | req | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 571 | 7.85 | 51.35 | 32.14 | 9.00 | 38.74 | 53.75 | 74.00 | -20.25 | Peak |
| 2 572 | 5.00 | 54.05 | 32.15 | 9.00 | 38.75 | 56.45 | 74.00 | -17.55 | Peak |
| 3 573 | 9.87 | 95.36 | 32.15 | 9.00 | 38.76 | 97.75 | 74.00 | 23.75 | Peak |



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Mode:a; Polarization:Vertical; Modulation:c; bandwidth:20MHz; Channel:Low



Antenna Polarity : VERTICAL

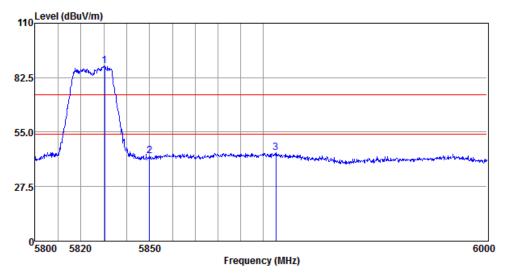
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|---------|-------|---------|-------|--------|----------|--------|--------|---------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5665.42 | 32.12 | 32.13 | 9.01 | 38.71 | 34.55 | 54.00 | -19.45 | Average |
| 2 | 5725.00 | 36.59 | 32.15 | 9.00 | 38.75 | 38.99 | 54.00 | -15.01 | Average |
| 3 | 5739.11 | 85.63 | 32.15 | 9.00 | 38.76 | 88.02 | 54.00 | 34.02 | Average |



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Mode:a; Polarization:Horizontal; Modulation:c; bandwidth:20MHz; Channel:High



Antenna Polarity : HORIZONTAL

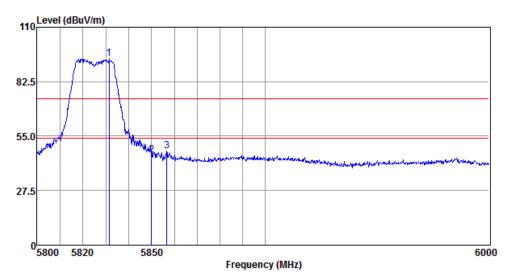
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|---------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5830.36 | 86.07 | 32.17 | 8.90 | 38.77 | 88.37 | 74.00 | 14.37 | Peak |
| 2 | 5850.00 | 40.51 | 32.17 | 8.90 | 38.75 | 42.83 | 74.00 | -31.17 | Peak |
| 3 | 5905.76 | 42.19 | 32.18 | 8.93 | 38.70 | 44.60 | 74.00 | -29.40 | Peak |



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Mode:a; Polarization:Vertical; Modulation:c; bandwidth:20MHz; Channel:High



Antenna Polarity : VERTICAL

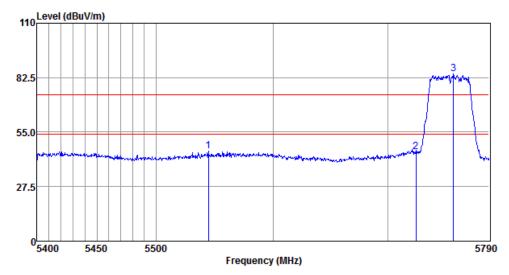
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|---------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5831.35 | 91.82 | 32.17 | 8.90 | 38.77 | 94.12 | 74.00 | 20.12 | Peak |
| 2 | 5850.00 | 43.19 | 32.17 | 8.90 | 38.75 | 45.51 | 74.00 | -28.49 | Peak |
| 3 | 5856.71 | 45.31 | 32.17 | 8.90 | 38.74 | 47.64 | 74.00 | -26.36 | Peak |



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Mode:a; Polarization:Horizontal; Modulation:c; bandwidth:40MHz; Channel:Low



Antenna Polarity : HORIZONTAL

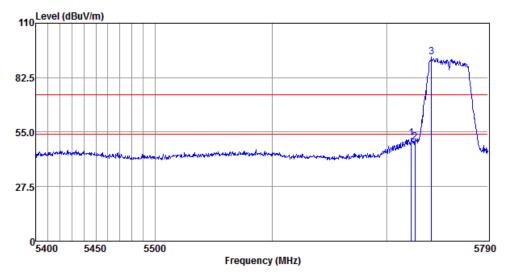
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|---------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5544.62 | 42.77 | 32.11 | 9.07 | 38.62 | 45.33 | 74.00 | -28.67 | Peak |
| 2 | 5725.00 | 42.61 | 32.15 | 9.00 | 38.75 | 45.01 | 74.00 | -28.99 | Peak |
| 3 | 5758.19 | 82.08 | 32.15 | 8.93 | 38.78 | 84.38 | 74.00 | 10.38 | Peak |



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Mode:a; Polarization:Vertical; Modulation:c; bandwidth:40MHz; Channel:Low



Antenna Polarity : VERTICAL

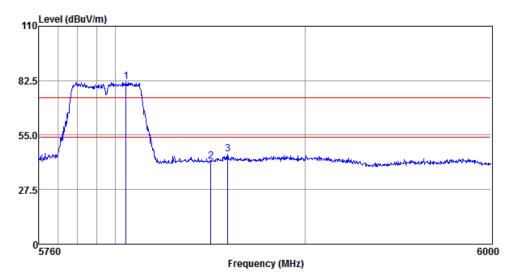
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|---------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5721.77 | 49.53 | 32.14 | 9.00 | 38.74 | 51.93 | 74.00 | -22.07 | Peak |
| 2 | 5725.00 | 47.73 | 32.15 | 9.00 | 38.75 | 50.13 | 74.00 | -23.87 | Peak |
| 3 | 5739.75 | 90.41 | 32.15 | 9.00 | 38.76 | 92.80 | 74.00 | 18.80 | Peak |



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Mode:a; Polarization:Horizontal; Modulation:c; bandwidth:40MHz; Channel:High



Antenna Polarity : HORIZONTAL

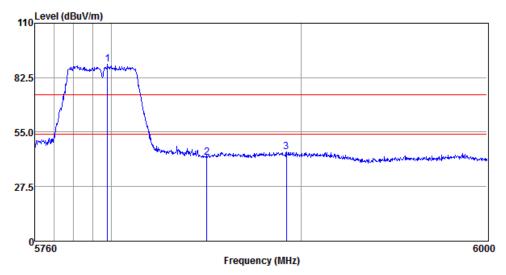
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|---------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5805.32 | 79.66 | 32.16 | 8.87 | 38.80 | 81.89 | 74.00 | 7.89 | Peak |
| 2 | 5850.00 | 39.54 | 32.17 | 8.90 | 38.75 | 41.86 | 74.00 | -32.14 | Peak |
| 3 | 5858.89 | 43.04 | 32.17 | 8.90 | 38.74 | 45.37 | 74.00 | -28.63 | Peak |



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Mode:a; Polarization:Vertical; Modulation:c; bandwidth:40MHz; Channel:High



Antenna Polarity : VERTICAL

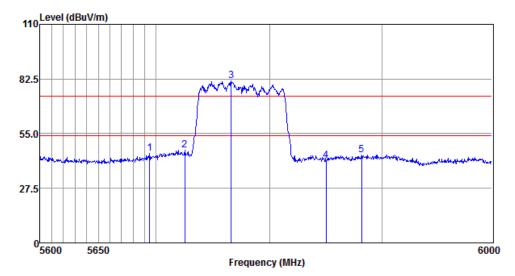
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|------|-------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| - | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 57 | 97.75 | 86.88 | 32.16 | 8.87 | 38.80 | 89.11 | 74.00 | 15.11 | Peak |
| 2 58 | 50.00 | 39.84 | 32.17 | 8.90 | 38.75 | 42.16 | 74.00 | -31.84 | Peak |
| 3 58 | 92.23 | 42.78 | 32.18 | 8.93 | 38.70 | 45.19 | 74.00 | -28.81 | Peak |



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Mode:a; Polarization:Horizontal; Modulation:c; bandwidth:80MHz; Channel:Low



Antenna Polarity :HORIZONTAL

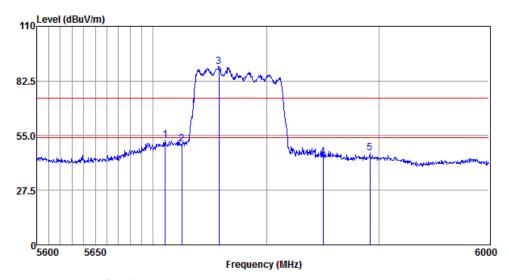
| | _ | | | | | Emission | | | |
|---|---------|-------|--------|------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5694.28 | 42.73 | 32.14 | 9.06 | 38.73 | 45.20 | 74.00 | -28.80 | Peak |
| 2 | 5725.00 | 44.18 | 32.15 | 9.00 | 38.75 | 46.58 | 74.00 | -27.42 | Peak |
| 3 | 5765.84 | 79.20 | 32.15 | 8.93 | 38.78 | 81.50 | 74.00 | 7.50 | Peak |
| 4 | 5850.00 | 39.10 | 32.17 | 8.90 | 38.75 | 41.42 | 74.00 | -32.58 | Peak |
| 5 | 5881.55 | 42.01 | 32.18 | 8.93 | 38.72 | 44.40 | 74.00 | -29.60 | Peak |



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Mode:a; Polarization:Vertical; Modulation:c; bandwidth:80MHz; Channel:Low



Antenna Polarity : VERTICAL

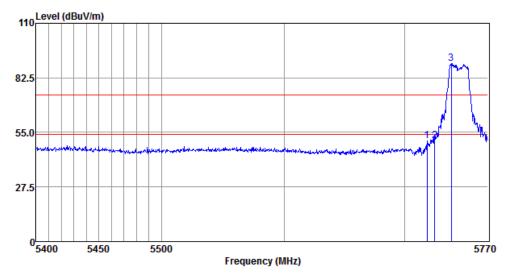
| Freq | | | | | Emission Level | | Over Limit | Remark |
|-----------|-------|-------|------|-------|-------------------|--------|---------------|--------|
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 5710.42 | 50.31 | 32.14 | 9.06 | 38.74 | 52.77 | 74.00 | -21.23 | Peak |
| 2 5725.00 | 48.15 | 32.15 | 9.00 | 38.75 | 50.55 | 74.00 | -23.45 | Peak |
| 3 5757.49 | 87.56 | 32.15 | 8.93 | 38.78 | 89.86 | 74.00 | 15.86 | Peak |
| 4 5850.00 | 41.98 | 32.17 | 8.90 | 38.75 | 44.30 | 74.00 | -29.70 | Peak |
| 5 5891.71 | 43.80 | 32.18 | 8.93 | 38.70 | 46.21 | 74.00 | -27.79 | Peak |



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Mode:b; Polarization:Horizontal; Modulation:a; bandwidth:20MHz; Channel:Low



Antenna Polarity : HORIZONTAL

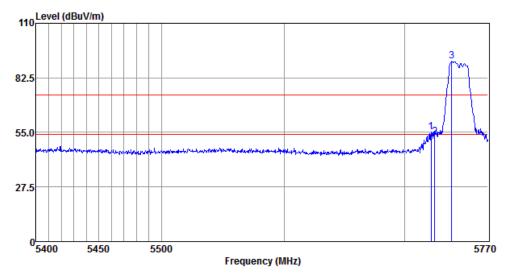
| | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|-----------|-------|---------|-------|--------|----------|--------|--------|--------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 5718.61 | 48.23 | 32.14 | 9.00 | 38.74 | 50.63 | 74.00 | -23.37 | Peak |
| 2 5725.00 | 48.17 | 32.15 | 9.00 | 38.75 | 50.57 | 74.00 | -23.43 | Peak |
| 3 5738.73 | 87.37 | 32.15 | 9.00 | 38.76 | 89.76 | 74.00 | 15.76 | Peak |



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Mode:b; Polarization:Vertical; Modulation:a; bandwidth:20MHz; Channel:Low



Antenna Polarity : VERTICAL

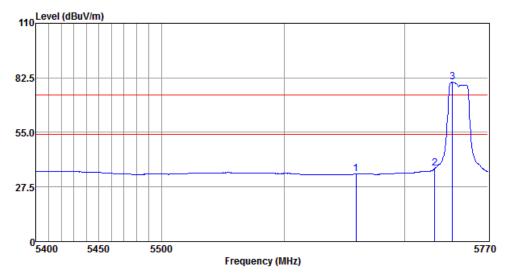
| | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|-----------|-------|---------|-------|--------|----------|--------|--------|--------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 5722.02 | 52.98 | 32.14 | 9.00 | 38.74 | 55.38 | 74.00 | -18.62 | Peak |
| 2 5725.00 | 50.27 | 32.15 | 9.00 | 38.75 | 52.67 | 74.00 | -21.33 | Peak |
| 3 5739.11 | 88.43 | 32.15 | 9.00 | 38.76 | 90.82 | 74.00 | 16.82 | Peak |



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Mode:b; Polarization:Vertical; Modulation:a; bandwidth:20MHz; Channel:Low



Antenna Polarity : VERTICAL

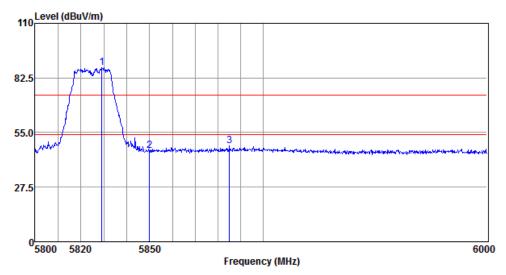
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|---------|-------|---------|-------|--------|----------|--------|--------|---------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5659.41 | 31.86 | 32.13 | 9.01 | 38.71 | 34.29 | 54.00 | -19.71 | Average |
| 2 | 5725.00 | 34.36 | 32.15 | 9.00 | 38.75 | 36.76 | 54.00 | -17.24 | Average |
| 3 | 5739.87 | 77.89 | 32.15 | 9.00 | 38.76 | 80.28 | 54.00 | 26.28 | Average |



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Mode:b; Polarization:Horizontal; Modulation:a; bandwidth:20MHz; Channel:High



Antenna Polarity : HORIZONTAL

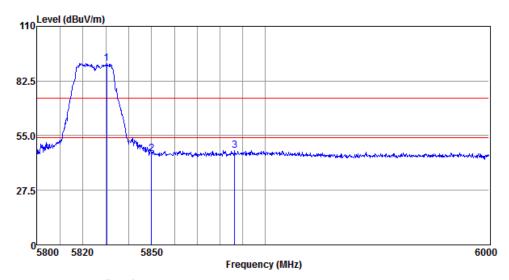
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|---------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5829.17 | 85.49 | 32.17 | 8.90 | 38.77 | 87.79 | 74.00 | 13.79 | Peak |
| 2 | 5850.00 | 43.39 | 32.17 | 8.90 | 38.75 | 45.71 | 74.00 | -28.29 | Peak |
| 3 | 5885.17 | 46.09 | 32.18 | 8.93 | 38.72 | 48.48 | 74.00 | -25.52 | Peak |



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Mode:b; Polarization:Vertical; Modulation:a; bandwidth:20MHz; Channel:High



Antenna Polarity : VERTICAL

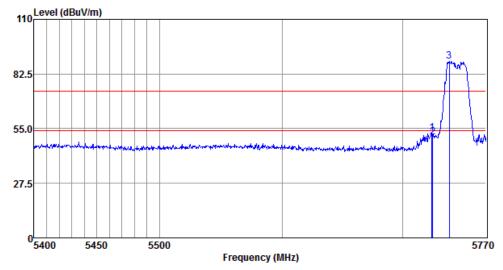
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|---------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5830.36 | 89.18 | 32.17 | 8.90 | 38.77 | 91.48 | 74.00 | 17.48 | Peak |
| 2 | 5850.00 | 43.73 | 32.17 | 8.90 | 38.75 | 46.05 | 74.00 | -27.95 | Peak |
| 3 | 5886.57 | 45.28 | 32.18 | 8.93 | 38.72 | 47.67 | 74.00 | -26.33 | Peak |



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Mode:b; Polarization:Horizontal; Modulation:n; bandwidth:20MHz; Channel:Low



Antenna Polarity : HORIZONTAL

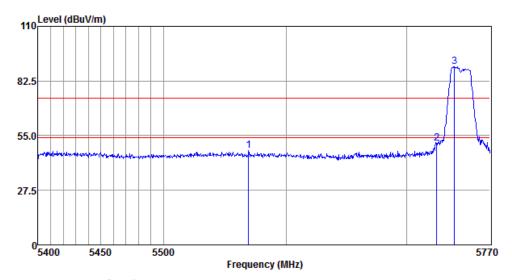
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|---------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5724.29 | 50.30 | 32.15 | 9.00 | 38.75 | 52.70 | 74.00 | -21.30 | Peak |
| 2 | 5725.00 | 48.51 | 32.15 | 9.00 | 38.75 | 50.91 | 74.00 | -23.09 | Peak |
| 3 | 5738.73 | 86.40 | 32.15 | 9.00 | 38.76 | 88.79 | 74.00 | 14.79 | Peak |



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Mode:b; Polarization:Vertical; Modulation:n; bandwidth:20MHz; Channel:Low



Antenna Polarity : VERTICAL

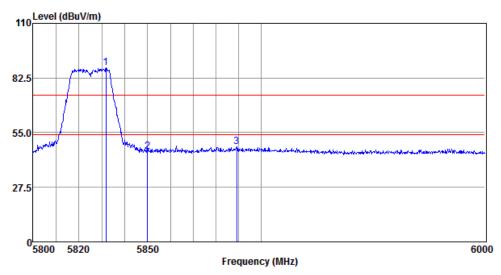
| Enoa | | | | | Emission Level | | | Romank |
|-----------|-------|--------|------|--------|-------------------|--------|--------|----------|
| rreq | rever | ractor | LUSS | Factor | rever | LINE | LIMIT | Kelliark |
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 5569.37 | 44.96 | 32.11 | 9.01 | 38.64 | 47.44 | 74.00 | -26.56 | Peak |
| 2 5725.00 | 48.59 | 32.15 | 9.00 | 38.75 | 50.99 | 74.00 | -23.01 | Peak |
| 3 5739.87 | 87.28 | 32.15 | 9.00 | 38.76 | 89.67 | 74.00 | 15.67 | Peak |



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Mode:b; Polarization:Horizontal; Modulation:n; bandwidth:20MHz; Channel:High



Antenna Polarity : HORIZONTAL

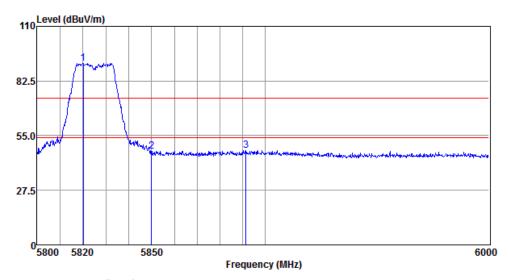
| | Frea | | | | | Emission Level | | | Remark |
|---|---------|-------|----------|------|-------|-------------------|--------|--------|--------|
| | 11.04 | LCVCI | i de coi | | | | | LIMIL | remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5831.74 | 85.27 | 32.17 | 8.90 | 38.77 | 87.57 | 74.00 | 13.57 | Peak |
| 2 | 5850.00 | 43.24 | 32.17 | 8.90 | 38.75 | 45.56 | 74.00 | -28.44 | Peak |
| 3 | 5889.16 | 45.32 | 32.18 | 8.93 | 38.72 | 47.71 | 74.00 | -26.29 | Peak |



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Mode:b; Polarization:Vertical; Modulation:n; bandwidth:20MHz; Channel:High



Antenna Polarity : VERTICAL

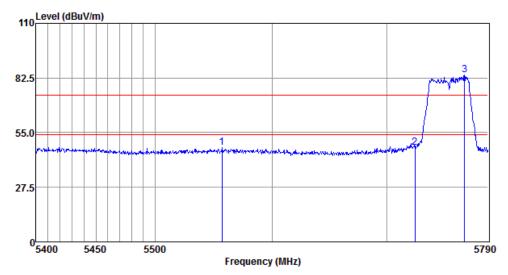
| Frea | | | | | Emission Level | | | Remark |
|-----------|-------|---------|------|-------|-------------------|--------|--------|--------|
| | LCVCI | , accor | 2033 | | 20002 | | LIMIT | remark |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 5820.09 | 89.16 | 32.16 | 8.87 | 38.78 | 91.41 | 74.00 | 17.41 | Peak |
| 2 5850.00 | 44.64 | 32.17 | 8.90 | 38.75 | 46.96 | 74.00 | -27.04 | Peak |
| 3 5891.56 | 45.15 | 32.18 | 8.93 | 38.70 | 47.56 | 74.00 | -26.44 | Peak |



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Mode:b; Polarization:Horizontal; Modulation:n; bandwidth:40MHz; Channel:Low



Antenna Polarity : HORIZONTAL

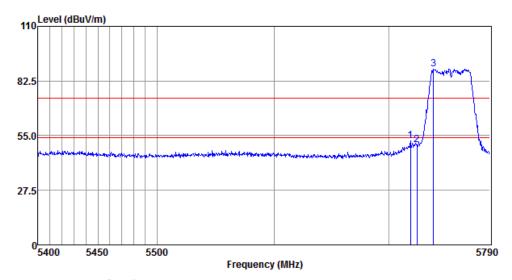
| Frea | | | | | Emission Level | | | Remark |
|-----------|-------|----------|------|---------|-------------------|--------|--------|--------|
| | 20701 | · dc coi | 2033 | , accor | LCVCI | Line | LIMIT | remark |
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 5557.01 | 44.88 | 32.11 | 9.07 | 38.62 | 47.44 | 74.00 | -26.56 | Peak |
| 2 5725.00 | 45.11 | 32.15 | 9.00 | 38.75 | 47.51 | 74.00 | -26.49 | Peak |
| 3 5769.04 | 81.71 | 32.15 | 8.93 | 38.78 | 84.01 | 74.00 | 10.01 | Peak |



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Mode:b; Polarization:Vertical; Modulation:n; bandwidth:40MHz; Channel:Low



Antenna Polarity : VERTICAL

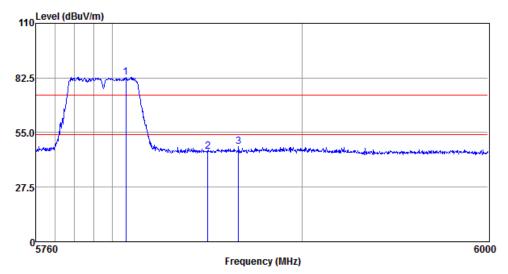
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|---------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5719.37 | 49.93 | 32.14 | 9.00 | 38.74 | 52.33 | 74.00 | -21.67 | Peak |
| 2 | 5725.00 | 47.80 | 32.15 | 9.00 | 38.75 | 50.20 | 74.00 | -23.80 | Peak |
| 3 | 5739.75 | 86.24 | 32.15 | 9.00 | 38.76 | 88.63 | 74.00 | 14.63 | Peak |



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Mode:b; Polarization:Horizontal; Modulation:n; bandwidth:40MHz; Channel:High



Antenna Polarity : HORIZONTAL

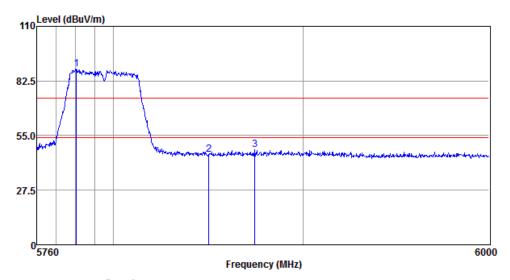
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|---------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5806.98 | 80.69 | 32.16 | 8.87 | 38.78 | 82.94 | 74.00 | 8.94 | Peak |
| 2 | 5850.00 | 43.17 | 32.17 | 8.90 | 38.75 | 45.49 | 74.00 | -28.51 | Peak |
| 3 | 5866.31 | 45.48 | 32.17 | 8.90 | 38.74 | 47.81 | 74.00 | -26.19 | Peak |



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Mode:b; Polarization:Vertical; Modulation:n; bandwidth:40MHz; Channel:High



Antenna Polarity : VERTICAL

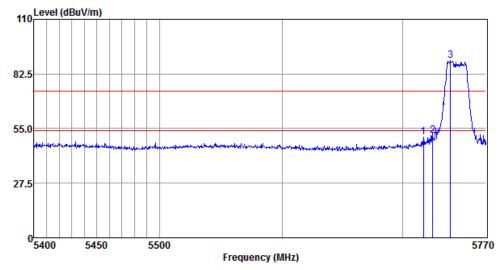
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|-------|------|-------|---------|-------|--------|----------|--------|--------|--------|
| F | req | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 578 | 0.49 | 86.23 | 32.16 | 8.93 | 38.79 | 88.53 | 74.00 | 14.53 | Peak |
| 2 585 | 0.00 | 43.05 | 32.17 | 8.90 | 38.75 | 45.37 | 74.00 | -28.63 | Peak |
| 3 587 | 4.46 | 45.33 | 32.18 | 8.93 | 38.72 | 47.72 | 74.00 | -26.28 | Peak |



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Mode:b; Polarization:Horizontal; Modulation:c; bandwidth:20MHz; Channel:Low



Antenna Polarity : HORIZONTAL

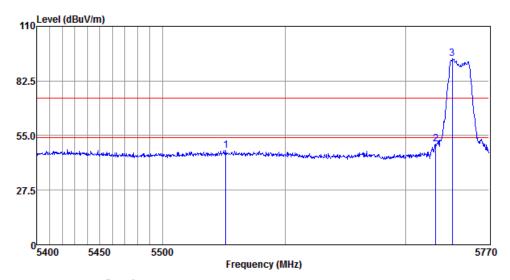
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|---------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5717.09 | 48.29 | 32.14 | 9.00 | 38.74 | 50.69 | 74.00 | -23.31 | Peak |
| 2 | 5725.00 | 49.15 | 32.15 | 9.00 | 38.75 | 51.55 | 74.00 | -22.45 | Peak |
| 3 | 5739.87 | 86.99 | 32.15 | 9.00 | 38.76 | 89.38 | 74.00 | 15.38 | Peak |



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Mode:b; Polarization:Vertical; Modulation:c; bandwidth:20MHz; Channel:Low



Antenna Polarity : VERTICAL

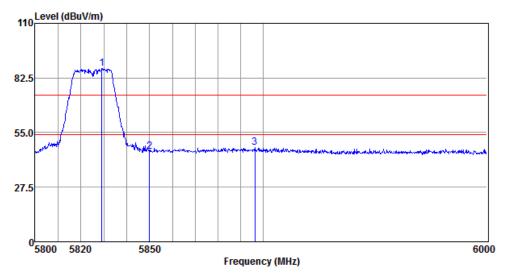
| | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|-----------|-------|---------|-------|--------|----------|--------|--------|--------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 5551.32 | 44.79 | 32.11 | 9.07 | 38.62 | 47.35 | 74.00 | -26.65 | Peak |
| 2 5725.00 | 48.16 | 32.15 | 9.00 | 38.75 | 50.56 | 74.00 | -23.44 | Peak |
| 3 5738.73 | 91.25 | 32.15 | 9.00 | 38.76 | 93.64 | 74.00 | 19.64 | Peak |



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Mode:b; Polarization:Horizontal; Modulation:c; bandwidth:20MHz; Channel:High



Antenna Polarity : HORIZONTAL

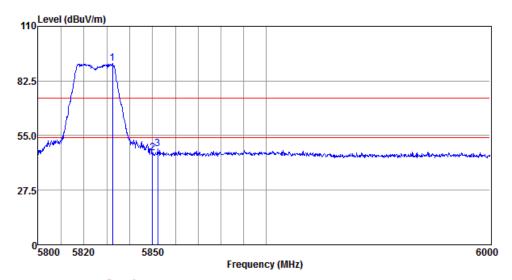
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|-----|--------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 5 | 329.17 | 85.08 | 32.17 | 8.90 | 38.77 | 87.38 | 74.00 | 13.38 | Peak |
| 2 5 | 350.00 | 43.31 | 32.17 | 8.90 | 38.75 | 45.63 | 74.00 | -28.37 | Peak |
| 3 5 | 396.35 | 45.14 | 32.18 | 8.93 | 38.70 | 47.55 | 74.00 | -26.45 | Peak |



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Mode:b; Polarization:Vertical; Modulation:c; bandwidth:20MHz; Channel:High



Antenna Polarity : VERTICAL

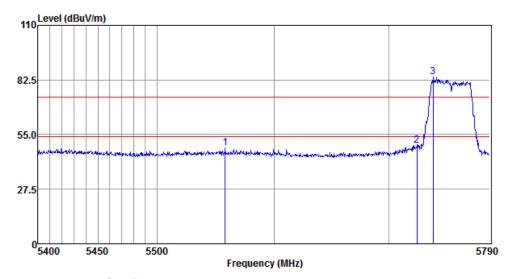
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|---------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5832.54 | 88.98 | 32.17 | 8.90 | 38.77 | 91.28 | 74.00 | 17.28 | Peak |
| 2 | 5850.00 | 43.85 | 32.17 | 8.90 | 38.75 | 46.17 | 74.00 | -27.83 | Peak |
| 3 | 5852.34 | 45.80 | 32.17 | 8.90 | 38.75 | 48.12 | 74.00 | -25.88 | Peak |



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Mode:b; Polarization:Horizontal; Modulation:c; bandwidth:40MHz; Channel:Low



Antenna Polarity :HORIZONTAL

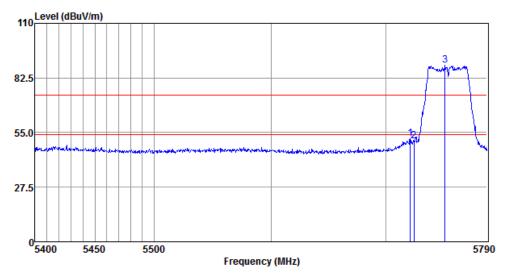
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|---------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5558.17 | 45.61 | 32.11 | 9.07 | 38.62 | 48.17 | 74.00 | -25.83 | Peak |
| 2 | 5725.00 | 46.98 | 32.15 | 9.00 | 38.75 | 49.38 | 74.00 | -24.62 | Peak |
| 3 | 5739.35 | 81.55 | 32.15 | 9.00 | 38.76 | 83.94 | 74.00 | 9.94 | Peak |



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Mode:b; Polarization:Vertical; Modulation:c; bandwidth:40MHz; Channel:Low



Antenna Polarity : VERTICAL

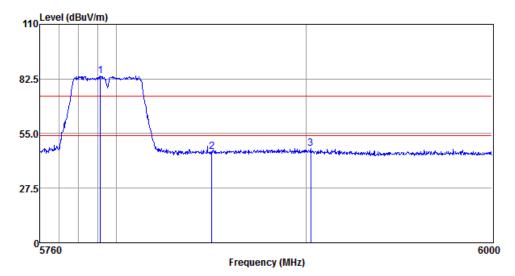
| | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|-----------|-------|---------|-------|--------|----------|--------|--------|--------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 5721.77 | 49.63 | 32.14 | 9.00 | 38.74 | 52.03 | 74.00 | -21.97 | Peak |
| 2 5725.00 | 48.36 | 32.15 | 9.00 | 38.75 | 50.76 | 74.00 | -23.24 | Peak |
| 3 5752.57 | 86.53 | 32.15 | 8.93 | 38.76 | 88.85 | 74.00 | 14.85 | Peak |



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Mode:b; Polarization:Horizontal; Modulation:c; bandwidth:40MHz; Channel:High



Antenna Polarity :HORIZONTAL

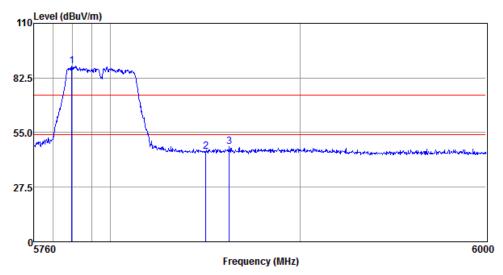
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|---------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5791.36 | 81.65 | 32.16 | 8.87 | 38.80 | 83.88 | 74.00 | 9.88 | Peak |
| 2 | 5850.00 | 43.52 | 32.17 | 8.90 | 38.75 | 45.84 | 74.00 | -28.16 | Peak |
| 3 | 5902.58 | 45.14 | 32.18 | 8.93 | 38.70 | 47.55 | 74.00 | -26.45 | Peak |



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Mode:b; Polarization:Vertical; Modulation:c; bandwidth:40MHz; Channel:High



Antenna Polarity : VERTICAL

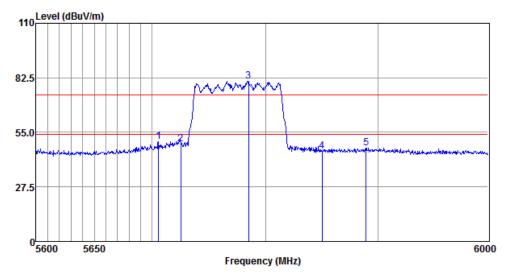
| | | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|---|---------|-------|---------|-------|--------|----------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 | 5779.55 | 86.34 | 32.16 | 8.93 | 38.79 | 88.64 | 74.00 | 14.64 | Peak |
| 2 | 5850.00 | 43.07 | 32.17 | 8.90 | 38.75 | 45.39 | 74.00 | -28.61 | Peak |
| 3 | 5862.48 | 45.44 | 32.17 | 8.90 | 38.74 | 47.77 | 74.00 | -26.23 | Peak |



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Mode:b; Polarization:Horizontal; Modulation:c; bandwidth:80MHz; Channel:Low



Antenna Polarity : HORIZONTAL

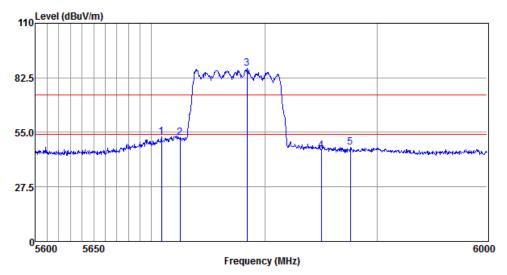
| | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|-----------|-------|---------|-------|--------|----------|--------|--------|--------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 5705.69 | 47.71 | 32.14 | 9.06 | 38.74 | 50.17 | 74.00 | -23.83 | Peak |
| 2 5725.00 | 46.71 | 32.15 | 9.00 | 38.75 | 49.11 | 74.00 | -24.89 | Peak |
| 3 5784.57 | 78.54 | 32.16 | 8.93 | 38.79 | 80.84 | 74.00 | 6.84 | Peak |
| 4 5850.00 | 43.25 | 32.17 | 8.90 | 38.75 | 45.57 | 74.00 | -28.43 | Peak |
| 5 5889.27 | 44.87 | 32.18 | 8.93 | 38.72 | 47.26 | 74.00 | -26.74 | Peak |



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Mode:b; Polarization:Vertical; Modulation:c; bandwidth:80MHz; Channel:Low



Antenna Polarity : VERTICAL

| | Read | Antenna | Cable | Preamp | Emission | Limit | 0ver | |
|-----------|-------|---------|-------|--------|----------|--------|--------|--------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | |
| MHz | dBuv | dB/m | dB | dB | dBuv/m | dBuv/m | dB | |
| 1 5708.84 | 50.12 | 32.14 | 9.06 | 38.74 | 52.58 | 74.00 | -21.42 | Peak |
| 2 5725.00 | 50.02 | 32.15 | 9.00 | 38.75 | 52.42 | 74.00 | -21.58 | Peak |
| 3 5783.77 | 84.79 | 32.16 | 8.93 | 38.79 | 87.09 | 74.00 | 13.09 | Peak |
| 4 5850.00 | 43.73 | 32.17 | 8.90 | 38.75 | 46.05 | 74.00 | -27.95 | Peak |
| 5 5875.87 | 45.26 | 32.18 | 8.93 | 38.72 | 47.65 | 74.00 | -26.35 | Peak |



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7.8 Frequency Stability

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

Limit: The frequency tolerance shall be maintained within the band of operation

frequency over a temperature variation of 0 degrees to 35 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

7.8.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1001 mbar

Pretest these mode to find the worst case:

a:TX mode 1(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-

M5504HM-T/GW/WI58)

b:TX mode 2(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-

M5504HM-T/GLF/WI58)

The worst case for final test:

a:TX mode 1(Band 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); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE

802.11ac(VHT80). Only the data of worst case is recorded in the report.(For DS-

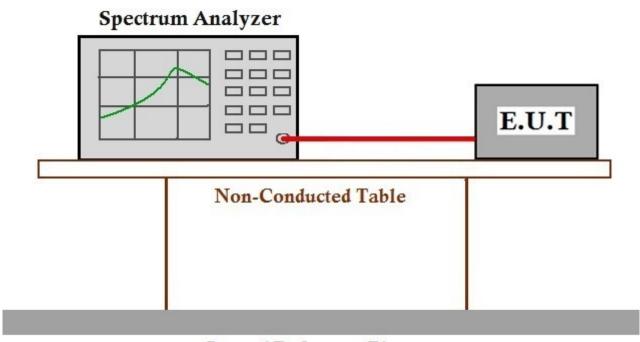
M5504HM-T/GW/WI58)



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7.8.2 Test Setup Diagram



Ground Reference Plane

7.8.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.407



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8 Test Setup Photographs

Refer to the < Test Setup photos-FCC>.

9 EUT Constructional Details

Refer to the < External Photos > & < Internal Photos >.

- End of the Report -