FCC PART 15.407
ISEDC RSS-247, ISSUE 2, FEBRUARY 2017
LP0002-2018

TEST REPORT

For

台灣思科系統股份有限公司

臺北市信義區信義路4段460號12樓

FCC ID: LDKHDGWI1903
IC: 2461N-HDGWI1903

Report Type:	**Product Type:**
Permissive II Change Report	Cisco Catalyst C9117AX Series

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Report Number:	R1811136-407-2 Rev C
Report Date:	2019-04-10
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Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. This report **must not** be used by the customer to claim product certification, approval, or endorsement by A2LA*, NIST, or any agency of the Federal Government.
* This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "*" (Rev.2)

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R1811136-407-2	Permissive II Change Report	2019-02-15
1	R1811136-407-2 Rev A	Added LP0002-2018 standard for Taiwan NCC approval Added receiver spurious emissions test results Provided antenna information details	2019-04-03
2	R1811136-407-2 Rev B	Added multiple Cisco PIDs based on customer's request, and Declaration of Similarity Letter in Appendix E	2019-04-10
3	R1811136-407-2 Rev C	Revised DoS in Appendix E, and added more Cisco PIDs based on customer's request.	2019-05-12

1 General Description

1.1 Product Description for Equipment under Test (EUT)

This test and measurement report was prepared on behalf of *Cisco Systems, Inc.*, and their product brand name: Cisco, model: *C9117AXI-B (US), C9117AXI-A (Canada), C9117AXI-T (Taiwan),* FCC ID: LDKHDGWI1903; IC: 2461N-HDGWI1903 or the "EUT" as referred to in this report. The product is an 802.11ax Access Point.

Product model: C9117AXI-Z (Australia/New Zealand), C9117AXI-S (Singapore/Hong Kong), and C9117AXI-D (India) are similar to the model tested. Please refer to the Declaration of Similarity Letter in Appendix E for details.

1.2 Mechanical Description of EUT

The GRU product measures approximately 220 mm (L) x 220 mm (W) x 60 mm (H) and weighs approximately 1300 g.

1.3 Objective

This report is prepared on behalf of *Cisco Systems Inc.,* in accordance with FCC CFR47 §15.407, ISED RSS-247 Issue 2, February2017, and LP0002-2018.

The objective is to determine compliance with FCC Part 15.407, ISEDC RSS-247, and LP0002-2018 rules for Antenna Requirements and Radiated Spurious Emissions.

1.4 Related Submittal(s)/Grant(s)

N/A

1.5 Test Methodology

All measurements contained in this report were conducted in accordance with ANSI C63.10-2013, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz, and FCC KDB 789033 D02 General UNII Test Procedure New Rules v02r01.

1.6 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in the field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Parameter	Measurement uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±0.57 dB
Power Spectral Density, conducted	±1.48dB
Unwanted Emissions, conducted	±1.57dB
All emissions, radiated	±4.0 dB
AC power line Conducted Emission	±2.0 dB
Temperature	±2 º C
Humidity	±5 %
DC and low frequency voltages	±1.0 %
Time	±2 %
Duty Cycle	±3 %

1.7 Test Facility Registrations

BACLs test facilities that are used to perform Radiated and Conducted Emissions tests are currently recognized by the Federal Communications Commission as Accredited with NIST Designation Number US1129.

BACL's test facilities that are used to perform Radiated and Conducted Emissions tests are currently registered with Industry Canada under Registration Numbers: 3062A-1, 3062A-2, and 3062A-3.

BACL is a Chinese Taipei Bureau of Standards Metrology and Inspection (BSMI) validated Conformity Assessment Body (CAB), under Appendix B, Phase I Procedures of the APEC Mutual Recognition Arrangement (MRA). BACL's BSMI Lab Code Number is: SL2-IN-E-1002R

BACL's test facilities that are used to perform AC Line Conducted Emissions, Telecommunications Line Conducted Emissions, Radiated Emissions from 30 MHz to 1 GHz, and Radiated Emissions from 1 GHz to 6 GHz are currently recognized as Accredited in accordance with the Voluntary Control Council for Interference [VCCI] Article 15 procedures under Registration Number A-0027.

1.8 Test Facility Accreditations

Bay Area Compliance Laboratories Corp. (BACL) is:

A- ***An independent, 3rd-Party, Commercial Test Laboratory accredited to ISO/IEC 17025:2005 by A2LA (Test Laboratory Accreditation Certificate Number 3279.02),*** in the fields of: Electromagnetic Compatibility and Telecommunications. Unless noted by an Asterisk (*) in the Compliance Matrix (See Section 3 of this Test Report), BACL's ISO/IEC 17025:2005 Scope of Accreditation includes all of the Test Method Standards and/or the Product Family Standards detailed in this Test Report..

BACL's ISO/IEC 17025:2005 Scope of Accreditation includes a comprehensive suite of EMC Emissions, EMC Immunity, Radio, RF Exposure, Safety and wireline Telecommunications test methods applicable to a wide range of product categories. These product categories include Central Office Telecommunications Equipment [including NEBS - Network Equipment Building Systems], Unlicensed and Licensed Wireless and RF devices,

Information Technology Equipment (ITE); Telecommunications Terminal Equipment (TTE); Medical Electrical Equipment; Industrial, Scientific and Medical Test Equipment; Professional Audio and Video Equipment; Industrial and Scientific Instruments and Laboratory Apparatus; Cable Distribution Systems, and Energy Efficient Lighting.

B- ***A Product Certification Body accredited to ISO/IEC 17065:2012 by A2LA (Product Certification Body Accreditation Certificate Number 3279.03)*** to certify

- For the USA (Federal Communications Commission):
  1- All Unlicensed radio frequency devices within FCC Scopes A1, A2, A3, and A4;
  2- All Licensed radio frequency devices within FCC Scopes B1, B2, B3, and B4;
  3- All Telephone Terminal Equipment within FCC Scope C.
- For the Canada (Industry Canada):
  1 All Scope 1-Licence-Exempt Radio Frequency Devices;
  2 All Scope 2-Licensed Personal Mobile Radio Services;
  3 All Scope 3-Licensed General Mobile & Fixed Radio Services;
  4 All Scope 4-Licensed Maritime & Aviation Radio Services;
  5 All Scope 5-Licensed Fixed Microwave Radio Services
  6 All Broadcasting Technical Standards (BETS) in the Category I Equipment Standards List.
- For Singapore (Info-Communications Development Authority (IDA)):
  1 All Line Terminal Equipment: All Technical Specifications for Line Terminal Equipment – Table 1 of IDA MRA Recognition Scheme: 2011, Annex 2
  2. All Radio-Communication Equipment: All Technical Specifications for Radio-Communication Equipment – Table 2 of IDA MRA Recognition Scheme: 2011, Annex 2
- For the Hong Kong Special Administrative Region:
  1 All Radio Equipment, per KHCA 10XX-series Specifications;
  2 All GMDSS Marine Radio Equipment, per HKCA 12XX-series Specifications;
  3 All Fixed Network Equipment, per HKCA 20XX-series Specifications.
- For Japan:
  1 MIC Telecommunication Business Law (Terminal Equipment):
    - All Scope A1 - Terminal Equipment for the Purpose of Calls;
    - All Scope A2 - Other Terminal Equipment
  2 Radio Law (Radio Equipment):
    - All Scope B1 - Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 1 of the Radio Law
    - All Scope B2 - Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 2 of the Radio Law
    - All Scope B3 - Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 3 of the Radio Law

C- ***A Product Certification Body accredited to ISO/IEC 17065:2012 by A2LA (Product Certification Body Accreditation Certificate Number 3279.01)*** to certify Products to USA's Environmental Protection Agency (EPA) ENERGY STAR Product Specifications for:

1 Electronics and Office Equipment:
- for Telephony (ver. 3.0)
- for Audio/Video (ver. 3.0)
- for Battery Charging Systems (ver. 1.1)
- for Set-top Boxes & Cable Boxes (ver. 4.1)
- for Televisions (ver. 6.1)
- for Computers (ver. 6.0)
- for Displays (ver. 6.0)
- for Imaging Equipment (ver. 2.0)

- for Computer Servers (ver. 2.0)

2 Commercial Food Service Equipment
- for Commercial Dishwashers (ver. 2.0)
- for Commercial Ice Machines (ver. 2.0)
- for Commercial Ovens (ver. 2.1)
- for Commercial Refrigerators and Freezers

3 Lighting Products
- For Decorative Light Strings (ver. 1.5)
- For Luminaires (including sub-components) and Lamps (ver. 1.2)
- For Compact Fluorescent Lamps (CFLs) (ver. 4.3)
- For Integral LED Lamps (ver. 1.4)

4 Heating, Ventilation, and AC Products
- for Residential Ceiling Fans (ver. 3.0)
- for Residential Ventilating Fans (ver. 3.2)

5 Other
- For Water Coolers (ver. 3.0)

D- ***A NIST Designated Phase-I and Phase-II Conformity Assessment Body (CAB) for the following economies and regulatory authorities under the terms of the stated MRAs/Treaties:***

- Australia: ACMA (Australian Communication and Media Authority) – APEC Tel MRA -Phase I;
- Canada: (Innovation, Science and Economic development Canada - ISEDC) Foreign Certification Body – FCB – APEC Tel MRA -Phase I & Phase II;
- Chinese Taipei (Republic of China – Taiwan):
  - BSMI (Bureau of Standards, Metrology and Inspection) APEC Tel MRA -Phase I;
  - NCC (National Communications Commission) APEC Tel MRA -Phase I;
- European Union:
  - EMC Directive 2014/30/EU US-EU EMC & Telecom MRA CAB (NB)
  - Radio Equipment (RE) Directive 2014/53/EU US-EU EMC & Telecom MRA CAB (NB)
  - Low Voltage Directive (LVD) 2014/35/EU
- Hong Kong Special Administrative Region: (Office of the Telecommunications Authority – OFTA) APEC Tel MRA -Phase I & Phase II
- Israel – US-Israel MRA Phase I
- Republic of Korea (Ministry of Communications - Radio Research Laboratory) APEC Tel MRA -Phase I
- Singapore: (Infocomm Media Development Authority - IMDA) APEC Tel MRA -Phase I & Phase II;
- Japan: VCCI - Voluntary Control Council for Interference US-Japan Telecom Treaty VCCI Side Letter-
- USA:
  - ENERGY STAR Recognized Test Laboratory – US EPA
  - Telecommunications Certification Body (TCB) – US FCC;
  - Nationally Recognized Test Laboratory (NRTL) – US OSHA
- Vietnam: APEC Tel MRA -Phase I;

2 System Test Configuration

2.1 Justification

The EUT was configured for testing according to ANSI C63.10-2013 and FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

The EUT was tested in a testing mode to represent worst-case results during the final qualification test.

The worst-case data rates are determined by measuring the average power, peak power and PPSD across all data rates bandwidths, and modulations.

2.2 EUT Exercise Software

The test firmware used was Tera Term and test commands, provided by *Cisco Systems Inc.,* the software is compliant with the standard requirements being tested against.

2.3 Duty Cycle Correction Factor

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01 section B:

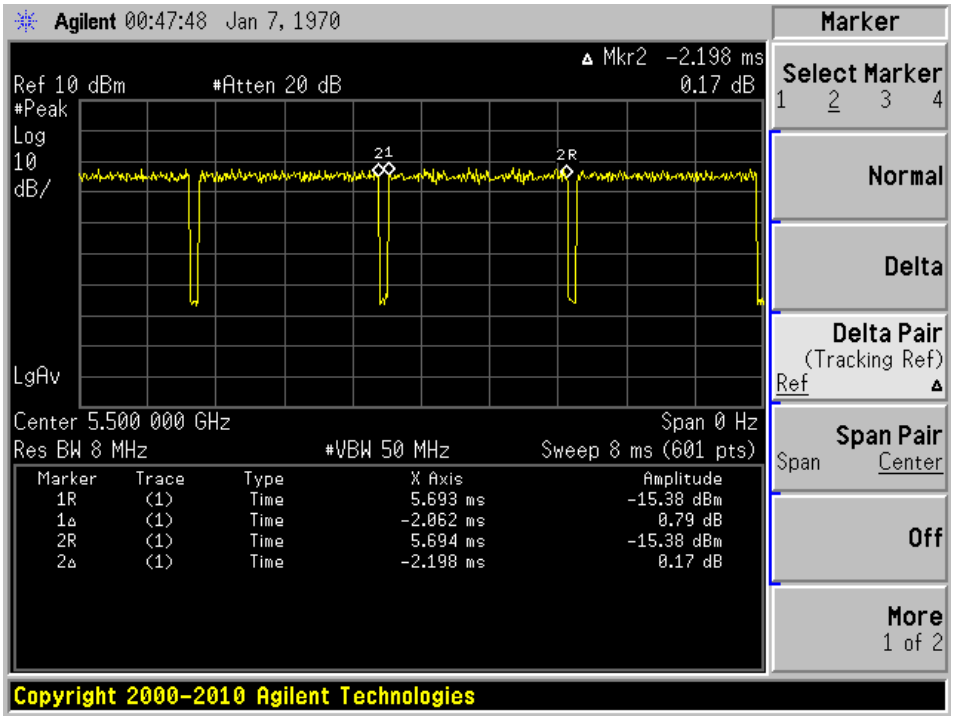
All measurements are to be performed with the EUT transmitting at 100% duty cycle at its maximum power control level; however, if 100% duty cycle cannot be achieved, measurements of duty cycle, x, and maximum-power transmission duration, T, are required for each tested mode of operation.

Radio Mode	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
802.11a	2.062	2.198	93.18	0.2774
802.11n20/ac20	5.354	5.628	95.13	0.2168
802.11n40/ac40	5367	5667	94.71	0.2362
802.11ac80	5.4	5.667	95.29	0.2096
802.11ac160	5.458	5.708	95.62	0.1945

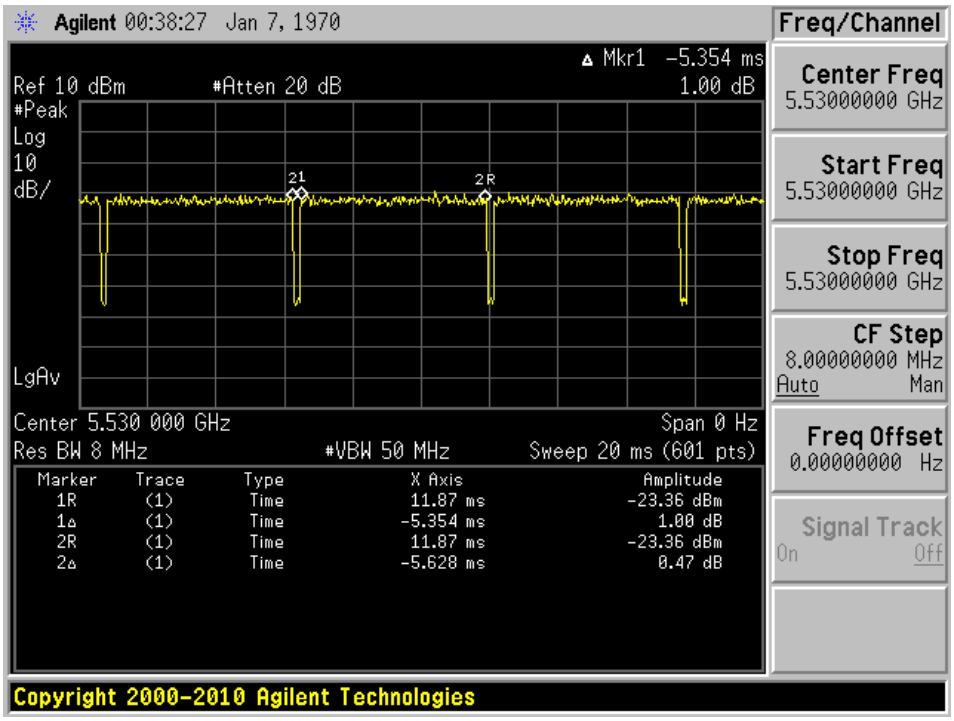
Note: Duty Cycle Correction Factor = 10*log(1/duty cycle)

Please refer to the following plots.

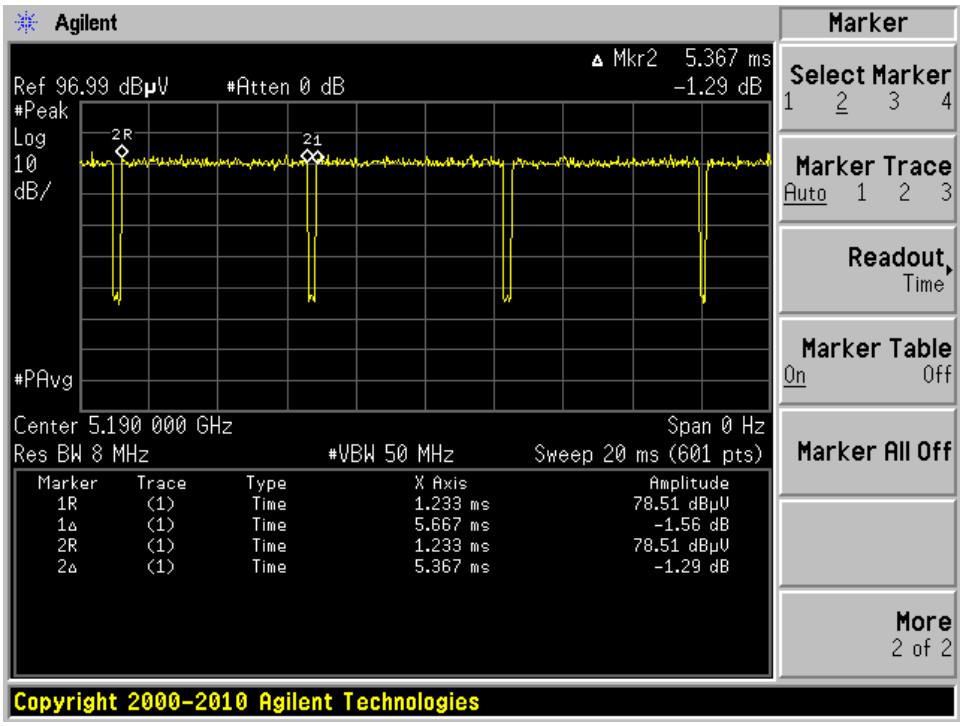
a Mode



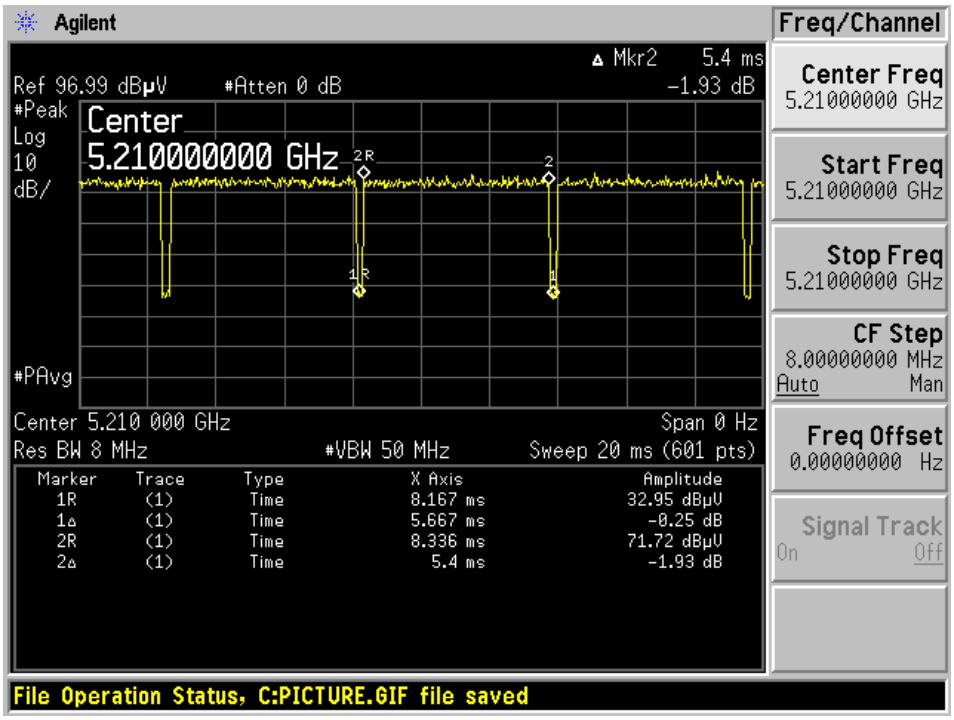
n20/ac20 Mode



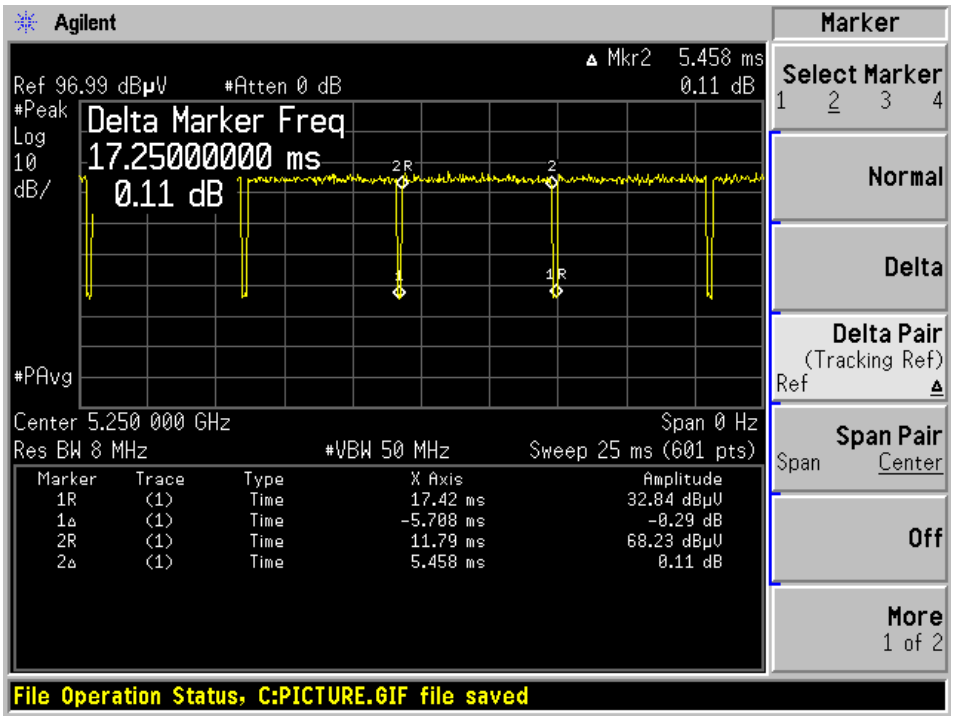
n40/ac40 Mode



ac80 Mode



ac160 Mode



2.4 Equipment Modifications

N/A

2.5 Local Support Equipment

Manufacturer	Description	Model	Serial Number
Dell	Laptop	Latitude E6410	3CKRAQ1

2.6 Support Equipment

Manufacturer	Description	Model
Cisco	Power supply	AIR-PWRINJ6 V01

2.7 Interface Ports and Cabling

Cable Description	Length (m)	To	From
Ethernet cable	2 m	PoE	EUT
Ethernet-serial-USB cable	2 m	EUT	Laptop

3 Summary of Test Results

FCC, ISED and NCC Rules	Description of Test	Result
FCC §15.203 ISED RSS-Gen §6.8 LP0002-2018 §2.2	Antenna Requirement	Compliant
FCC §15.207 ISED RSS-Gen §8.8 LP0002-2018 §2.3	AC Power Line Conducted Emissions	Compliant
FCC §2.1053, §15.205, §15.209, 15.407(b) ISED RSS-247 §6.2 ISEDC RSS-Gen §8.9 and §8.10 LP0002-2018 §3.10 and §4.7	Spurious Radiated Emissions	Compliant

Only the worst case measurement plots are provided in the test report.

4 FCC §15.203, ISED RSS-Gen §6.8 & LP0002-2018 §2.2 - Antenna Requirements

4.1 Applicable Standards

According to FCC §15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

And according to FCC §15.407 (a) (ii), if transmitting antennas of directional gain greater than 6 dBi are used the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to ISEDC RSS-Gen §6.8: Transmitter Antenna

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.

The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

For licence-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location:

This radio transmitter [enter the device's ISED certification number] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

4.2 Antenna List

Below detailed antenna information are provided by the applicant.

Frequency	HOST PID | Part Number - Please align Host(s) with antenna(s)	ANTENNA PID | Part Number	Antenna Type	Antenna Gain (includes antenna cable loss)
2.4 GHz & 5 GHz	TX/RX: Internal	(ANT A: Wi-Fi 2.4 GHz & 5 GHz)	Single port, dual band omni	2.4 GHz: 3.5 dBi 5 GHz: 4.5 dBi
2.4 GHz & 5 GHz	TX/RX: Internal	(ANT B: Wi-Fi 2.4 GHz & 5 GHz)	Single port, dual band omni	2.4 GHz: 3.5 dBi 5 GHz: 6 dBi
2.4 GHz & 5 GHz	TX/RX: Internal	(ANT C: Wi-Fi 2.4 GHz & 5 GHz)	Single port, dual band omni	2.4 GHz: 4 dBi 5 GHz: 6 dBi
2.4 GHz & 5 GHz	TX/RX: Internal	(ANT D: Wi-Fi 2.4 GHz/BLE 2.4 GHz & 5 GHz)	Single port, dual band omni	2.4 GHz: 3.5 dBi 5 GHz: 5 dBi
2.4 GHz & 5 GHz	TX/RX: Internal	(ANT D: Wi-Fi 2.4 GHz/BLE 2.4 GHz & 5 GHz)	Single port, dual band omni	2.4 GHz: 3.5 dBi 5 GHz: 5 dBi
5 GHz	TX/RX: Internal	(ANT E: Wi-Fi 5 GHz)	Single port, single band omni	5 GHz: 6 dBi
5 GHz	TX/RX: Internal	(ANT E: Wi-Fi 5 GHz)	Single port, single band omni	5 GHz: 6 dBi
5 GHz	TX/RX: Internal	(ANT E: Wi-Fi 5 GHz)	Single port, single band omni	5 GHz: 6 dBi
5 GHz	TX/RX: Internal	(ANT E: Wi-Fi 5 GHz)	Single port, single band omni	5 GHz: 5.5 dBi

5 FCC §15.207, ISED RSS-Gen §8.8 & LP0002-2018 §2.3- AC Line Conducted Emissions

5.1 Applicable Standards

As per FCC §15.207 and ISEDC RSS-Gen §8.8 Conducted limits:

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 µH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequencies ranges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56 Note1	56 to 46 Note2
0.5-5	56	46
5-30	60	50

Note1: Decreases with the logarithm of the frequency.
Note2: A linear average detector is required

5.2 Test Setup

The measurement was performed at shield room, using the setup per ANSI C63.10-2013 measurement procedure. The specification used were FCC §15.207 and ISEDC RSS-Gen §8.8 limits.

External I/O cables were draped along the edge of the test table and bundle when necessary.

The AC/DC power adapter of the EUT was connected with LISN-1 which provided 110 V / 60 Hz AC power.

5.3 Test Procedure

During the conducted emissions test, the power cord of the EUT host system was connected to the mains outlet of the LISN-1 and the power cords of support equipment were connected to LISN-2.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data were recorded in the peak, quasi-peak, and average detection mode. Quasi-Peak readings are distinguished with a “QP.” Average readings are distinguished with an “Ave”.

5.4 Corrected Amplitude and Margin Calculation

The Corrected Amplitude (CA) is calculated by adding the Cable Loss (CL), the Attenuator Factor (Atten) to indicated Amplitude (Ai) reading. The basic equation is as follows:

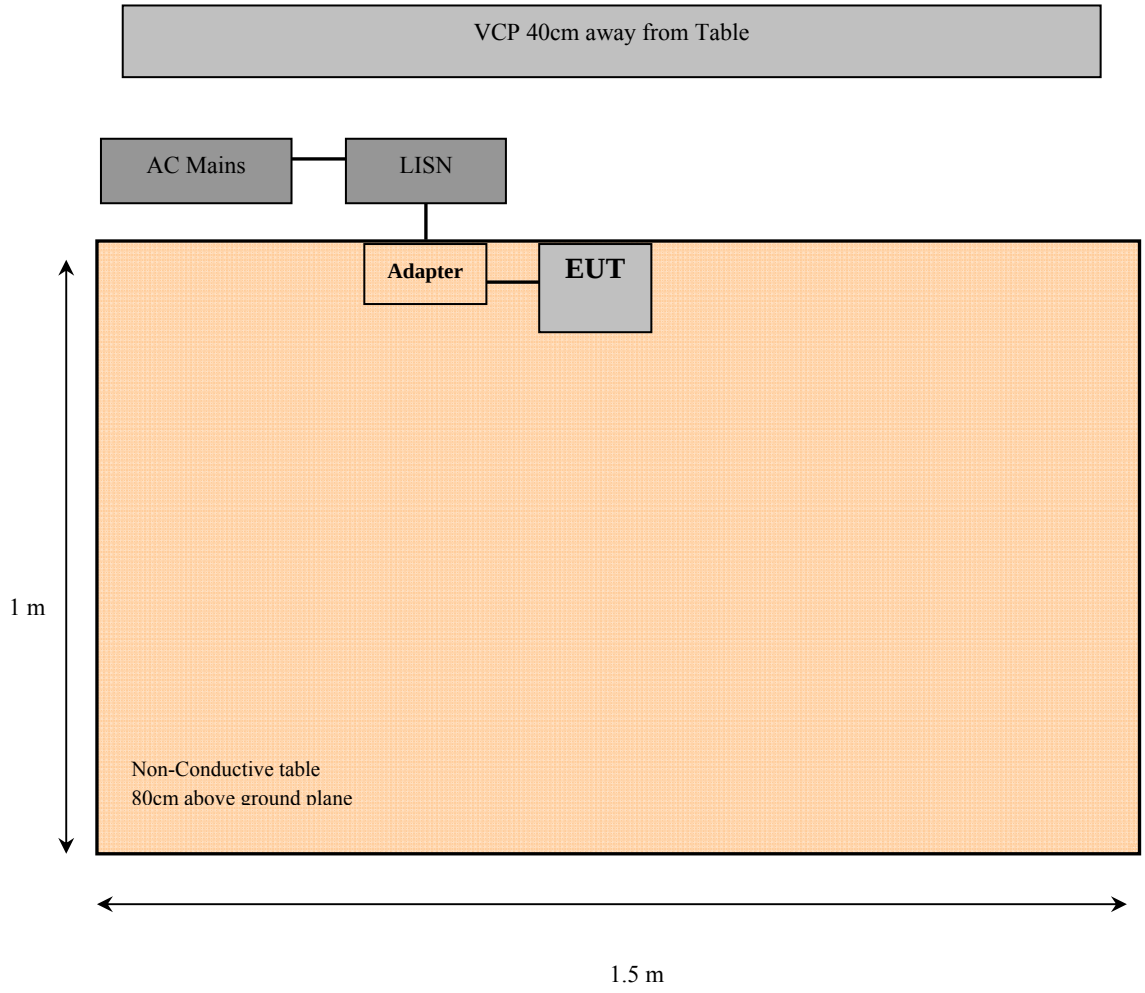
CA = Ai + CL + Atten

For example, a corrected amplitude of 46.2 dBuV = Indicated Reading (32.5 dBuV) + Cable Loss (3.7 dB) + Attenuator (10 dB)

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of -7 dB means the emission is 7 dB below the maximum limit. The equation for margin calculation is as follows:

Margin = Corrected Amplitude – Limit

5.5 Test Setup Block Diagram



5.6 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Rohde & Schwarz	Receiver, EMI Test	ESCI 1166.5950.03	100338	2018-07-05	2 years
Rohde & Schwarz	Impulse Limiter	ESH3-Z2	101964	2018-07-27	1 year
Solar Electronics Company	High Pass Filter	Type 7930-100	7930150203	2018-02-28	1 year
Suirong	30 ft conductive emission cable	LMR 400	-	N/R	N/A
FCC	LISN	FCC-LISN-50-25-2-10-CISPR16	160129	2018-04-04	1 year
Vasona	Test software	V6.0 build 11	10400213	N/R	N/R
Rohde & Schwarz	Receiver, EMI Test	ESCI 1166.5950.03	100338	2018-07-05	2 years

Statement of Traceability: BACL Corp. *attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with A2LA Policy P102 (dated 09 June 2016) "A2LA Policy on Metrological Traceability".*

5.7 Test Environmental Conditions

Temperature:	24º C
Relative Humidity:	30 %
ATM Pressure:	102.1 kPa

The testing was performed by Zhao Zhao on 2018-12-07

5.8 Summary of Test Results

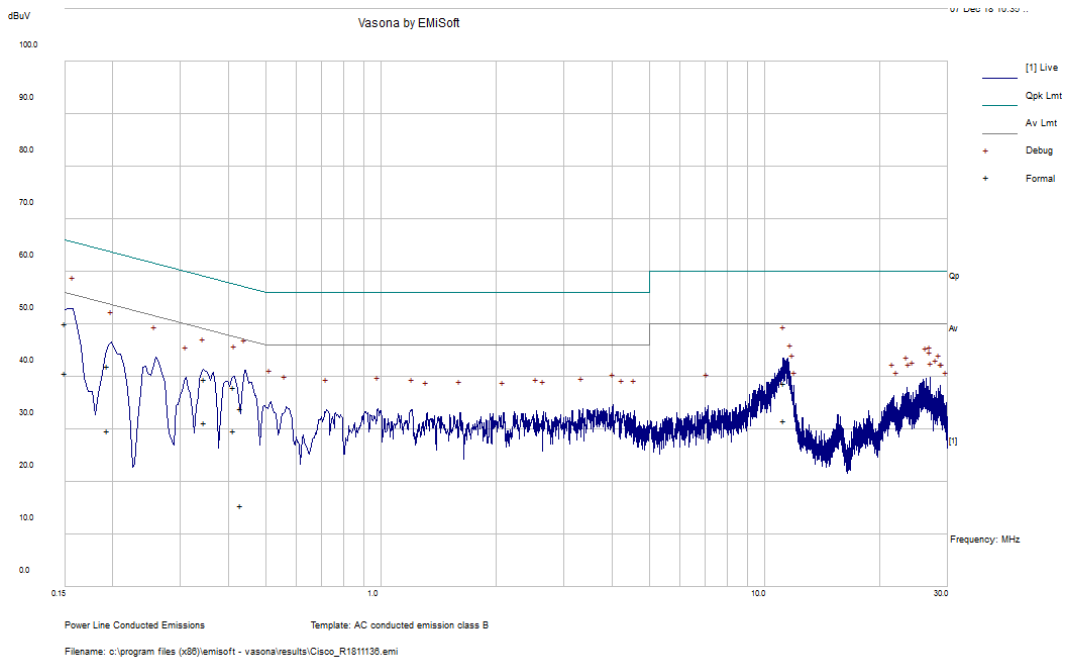
According to the recorded data in following table, the EUT complied with the FCC 15C and ISEDC RSS-Gen standard's conducted emissions limits, with the margin reading of:

Connection: AC/DC adapter connected to 120 V/60 Hz, AC			
Margin (dB)	**Frequency (MHz)**	**Conductor Mode (Line/Neutral)**	**Range (MHz)**
-15.17	0.150731	Neutral	0.15-30

5.9 Conducted Emissions Test Plots and Data

Worst Case Colocation, 2.4 GHz BLE, 2.4 GHz Wi-Fi CCK mode and 5 GHz Wi-Fi HT/VHT20 mode

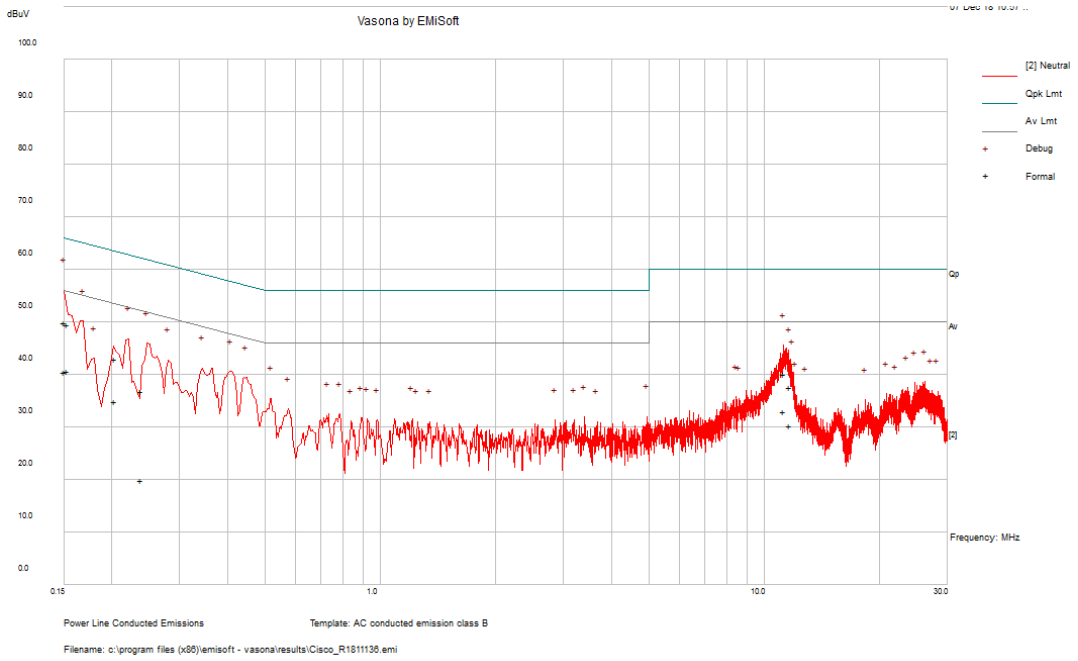
120 V, 60 Hz – Line



Frequency (MHz)	Corrected Amplitude (dBuV)	Conductor (Line/Neutral)	Limit (dBuV)	Margin (dB)	Detector (QP/Ave.)
0.150731	50.16	Line	65.96	-15.8	QP
0.347224	39.64	Line	59.03	-19.39	QP
0.412561	38.07	Line	57.6	-19.53	QP
11.21	38.73	Line	60	-21.27	QP
0.194118	42.02	Line	63.86	-21.84	QP
0.430779	33.89	Line	57.24	-23.35	QP

Frequency (MHz)	Corrected Amplitude (dBuV)	Conductor (Line/Neutral)	Limit (dBuV)	Margin (dB)	Detector (QP/Ave.)
0.150731	40.79	Line	55.96	-15.17	Ave.
0.347224	31.21	Line	49.03	-17.82	Ave.
0.412561	29.73	Line	47.6	-17.87	Ave.
11.21	31.73	Line	50	-18.27	Ave.
0.194118	29.7	Line	53.86	-24.16	Ave.
0.430779	15.46	Line	47.24	-31.78	Ave.

120 V, 60 Hz – Neutral



Frequency (MHz)	Corrected Amplitude (dBuV)	Conductor (Line/Neutral)	Limit (dBuV)	Margin (dB)	Detector (QP/Ave.)
0.150288	49.98	Neutral	65.98	-16.01	QP
0.153142	49.56	Neutral	65.83	-16.27	QP
11.211363	40.06	Neutral	60	-19.94	QP
0.203223	43.07	Neutral	63.48	-20.41	QP
11.666763	37.56	Neutral	60	-22.44	QP
0.238721	36.95	Neutral	62.14	-25.19	QP

Frequency (MHz)	Corrected Amplitude (dBuV)	Conductor (Line/Neutral)	Limit (dBuV)	Margin (dB)	Detector (QP/Ave.)
0.153142	40.77	Neutral	55.83	-15.06	Ave.
0.150288	40.44	Neutral	55.98	-15.54	Ave.
11.211363	33.08	Neutral	50	-16.92	Ave.
0.203223	34.91	Neutral	53.48	-18.57	Ave.
11.666763	30.42	Neutral	50	-19.58	Ave.
0.238721	19.85	Neutral	52.14	-32.29	Ave.

6 FCC §15.209, §15.407(b), ISEDC RSS-247 §6.2, RSS-Gen §8.9, §8.10 & LP0002-2018 §3.10, §4.7- Spurious Radiated Emissions

6.1 Applicable Standard

As Per FCC §15.205(a) except as show in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 – 0.110	16.42 – 16.423	960 – 1240	4. 5 – 5. 15
0.495 – 0.505	16.69475 – 16.69525	1300 – 1427	5. 35 – 5. 46
2.1735 – 2.1905	25.5 – 25.67	1435 – 1626.5	7.25 – 7.75
4.125 – 4.128	37.5 – 38.25	1645.5 – 1646.5	8.025 – 8.5
4.17725 – 4.17775	73 – 74.6	1660 – 1710	9.0 – 9.2
4.20725 – 4.20775	74.8 – 75.2	1718.8 – 1722.2	9.3 – 9.5
6.215 – 6.218	108 – 121.94	2200 – 2300	10.6 – 12.7
6.26775 – 6.26825	123 – 138	2310 – 2390	13.25 – 13.4
6.31175 – 6.31225	149.9 – 150.05	2483.5 – 2500	14.47 – 14.5
8.291 – 8.294	156.52475 – 156.52525	2690 – 2900	15.35 – 16.2
8.362 – 8.366	156.7 – 156.9	3260 – 3267	17.7 – 21.4
8.37625 – 8.38675	162.0125 –167.17	3.332 – 3.339	22.01 – 23.12
8.41425 – 8.41475	167.72 – 173.2	3 3458 – 3 358	23.6 – 24.0
12.29 – 12.293	240 – 285	3.600 – 4.400	31.2 – 31.8
12.51975 – 12.52025	322 – 335.4		36.43 – 36.5
12.57675 – 12.57725	399.9 – 410		Above 38.6
13.36 – 13.41	608 – 614		

As per FCC §15.209: The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table

Frequency (MHz)	Field Strength (micro volts/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 Note 1	3
88 - 216	150 Note 1	3
216 - 960	200 Note 1	3
Above 960	500	3

Note 1: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

As per FCC Part 15.407 (b)

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

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

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

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

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

(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

As per ISED RSS-247 §6.2

For transmitters with operating frequencies in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHzshall not exceed -27 dBm/MHz e.i.r.p. Any unwanted emissions that fall into the band 5250-5350 MHz shall be attenuated below the channel power by at least 26 dB, when measured using a resolution bandwidth between 1 and 5% of the occupied bandwidth (i.e. 99% bandwidth), above 5250 MHz. The 26 dB bandwidth may fall into the 5250-5350 MHz band; however, if the occupied bandwidth also falls within the 5250-5350 MHz band, the transmission is considered as intentional and the devices shall comply with all requirements in the band 5250-5350 MHz including implementing dynamic frequency selection (DFS) and TPC, on the portion of the emission that resides in the 5250-5350 MHz band.

For devices with both operating frequencies and channel bandwidths contained within the band 5250-5350 MHz, the device shall comply with the following:

1. All emissions outside the band 5250-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. if the equipment is intended for outdoor use; or

2. All emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. and any emissions within the band 5150-5250 MHz shall meet the power spectral density limits of Section 6.2.1. The device shall be labelled "for indoor use only."

For devices with operating frequencies in the band 5250-5350 MHz but having a channel bandwidth that overlaps the band 5150-5250 MHz, the devices' unwanted emission shall not exceed -27 dBm/MHz e.i.r.p. outside the band 5150-5350 MHz and its power shall comply with the spectral power density for operation within the band 5150-5250 MHz. The device shall be labelled "for indoor use only."

For transmitters operating in the band 5470-5725 MHz, emissions outside the band shall not exceed -27 dBm/MHz e.i.r.p.

Devices operating in the band 5725-5850 MHz shall have e.i.r.p. of unwanted emissions comply with the following:

a. 27 dBm/MHz at frequencies from the band edges decreasing linearly to 15.6 Bm/MHz at 5 MHz above or below the band edges;

b. 15.6 dBm/MHz at 5 MHz above or below the band edges decreasing linearly to 10 dBm/MHzat 25 MHz above or below the band edges;

c. 10 dBm/MHz at 25 MHz above or below the band edges decreasing linearly to -27 dBm/MHzat 75 MHz above or below the band edges; and

d. -27 dBm/MHz at frequencies more than 75 MHz above or below the band edges.

As per LP0002 §2.7, the fundamental frequency of any low-power radio-frequency devices shall be restricted in any of the operation bands listed below; spurious emissions shall be permitted in any of frequency band listed below and shall meet the field strength requirement of 2.8:

頻率 (MHz)	頻率 (MHz)	頻率 (MHz)
0.090 - 0.110	167.72 - 173.20	3260.0 - 3267.0
0.490 - 0.510	240.00 - 285.00	3332.0 - 3339.0
2.172 - 2.198	322.00 - 335.40	3345.8 - 3358.0
3.013 - 3.033	399.90 - 410.00	3500.0 - 4400.0
4.115 - 4.198	608.00 - 614.00	4500.0 - 5250.0
5.670 - 5.690	703.00 - 748.00	5350.0 - 5460.0
6.200 - 6.300	758.00 - 803.00	7250.0 - 7750.0
8.230 - 8.400	825.00 - 915.00	8025.0 - 8500.0
12.265 - 12.600	930.00 - 1240.0	9000.0 - 9200.0
13.340 - 13.430	1300.0 - 1427.0	9300.0 - 9500.0
14.965 - 15.020	1435.0 - 1626.5	10600 - 12700
16.700 - 16.755	1660.0 - 1785.0	13250 - 13400
19.965 - 20.020	1805.0 - 1880.0	14470 - 14500
25.500 - 25.700	1885.0 - 1900.0	15350 - 16200
37.475 - 38.275	1905.0 - 1985.0	17700 - 21400
73.500 - 75.400	2010.0 - 2025.0	22010 - 23120
108.00 - 138.00	2110.0 - 2170.0	23600 - 24000
149.90 - 150.05	2200.0 - 2300.0	31200 - 31800
156.70 - 156.90	2310.0 - 2390.0	36430 - 36500
162.01 - 167.17	2483.5 - 2900.0	38600 以上

6.2 Test Setup

The radiated emissions tests were performed in the 5-meter Chamber, using the setup in accordance with ANSI C63.10-2013. The specification used was the FCC 15.407 and ISED RSS-247 limits.

The spacing between the peripherals was 10 centimeters.

External I/O cables were draped along the edge of the test table and bundle when necessary.

6.3 Test Procedure

For the radiated emissions test, the EUT host, and all support equipment power cords were connected to the AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.
The EUT is set 3 meter away from the testing antenna, which is varied from 1-4 meter, and the EUT is placed on a turntable, which is 0.8 meter or 1.5 meter above ground plane, the table shall be rotated for 360 degrees to find out the highest emission. The receiving antenna should be changed the polarization both of horizontal and vertical.

The spectrum analyzer or receiver is set as:

Below 1000 MHz:

RBW = 100 kHz / VBW = 300 kHz / Sweep = Auto

Above 1000 MHz:

(1) Peak: RBW = 1MHz / VBW = 3MHz / Sweep = 100 ms
(2) Average: RBW = 1MHz / VBW = 1 / T or 10 Hz / Sweep = Auto

6.4 Corrected Amplitude and Margin Calculation

The Corrected Amplitude (CA) is calculated by adding the Antenna Factor (AF), the Cable Loss (CL), the Attenuator Factor (Atten) and subtracting the Amplifier Gain (Ga) to indicated Amplitude (Ai) reading. The basic equation is as follows:

CA = Ai + AF + CL + Atten – Ga

For example, a corrected amplitude of 40.3 dBuV/m = Indicated Reading (32.5 dBuV) + Antenna Factor (+23.5dB) + Cable Loss (3.7 dB) + Attenuator (10 dB) - Amplifier Gain (29.4 dB)

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of -7 dB means the emission is 7 dB below the maximum limit for Class A. The equation for margin calculation is as follows:

Margin = Corrected Amplitude – Limit

6.5 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Rohde and Schwarz	Receiver, EMI Test	ESCI 1166.5950K03	100338	2018-07-05	2 years
Agilent	Analyzer, Spectrum	E4446A	MY48250238	2018-05-08	1 year
Sunol Sciences	System Controller	SC99V	011003-1	N/R	N/A
Sunol Sciences	Antenna, Biconi-Log	JB1	A013105-3	2018-02-26	2 years
Wisewave	Antenna, Horn	ARH-4223-02	10555-02	2018-02-14	2 years
Wisewave	Antenna, Horn	ARH-4223-02	10555-01	2018-02-14	2 years
Agilent	Amplifier, Pre	8447D	2944A10187	2018-04-02	1 year
Insulated Wire INC	2.92mm (M) X2, 1501 Armor Neoprene, 396	KPS-1501AN-3960-KPS	DC 1807	2018-03-13	1 year
-	SMA cable	-	C00011	Each time[1]	N/A
-	N-Type Cable	-	C00012	Each time[1]	N/A
-	N-Type Cable	-	C00014	Each time[1]	N/A
HP	Pre-Amplifier	8449B	3147A00400	2018-02-02	1 year
Sunol Sciences	Antenna, Horn	DRH-118	A052704	2017-03-27	2 years
Vasona	Test software	V6.0 build 11	10400213	N/R	N/R

Note[1]: cables included in the test set-up will be checked each time before testing.
Statement of Traceability: BACL Corp. *attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with A2LA Policy P102 (dated 09 June 2016) "A2LA Policy on Metrological Traceability".*

6.6 Test Environmental Conditions

Temperature:	22-25 ºC
Relative Humidity:	29-30 %
ATM Pressure:	102.1 kPa

The testing was performed by Zhao Zhao from 2018-11-21

6.7 Summary of Test Results

According to the data hereinafter, the EUT complied with the FCC Part 15.407 and RSS-247 standards' radiated emissions limits, and had the worst margin of:

Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Mode, Channel**
-1.70	11019.7	Vertical	HT/VHT 40 mode, 5510 MHz

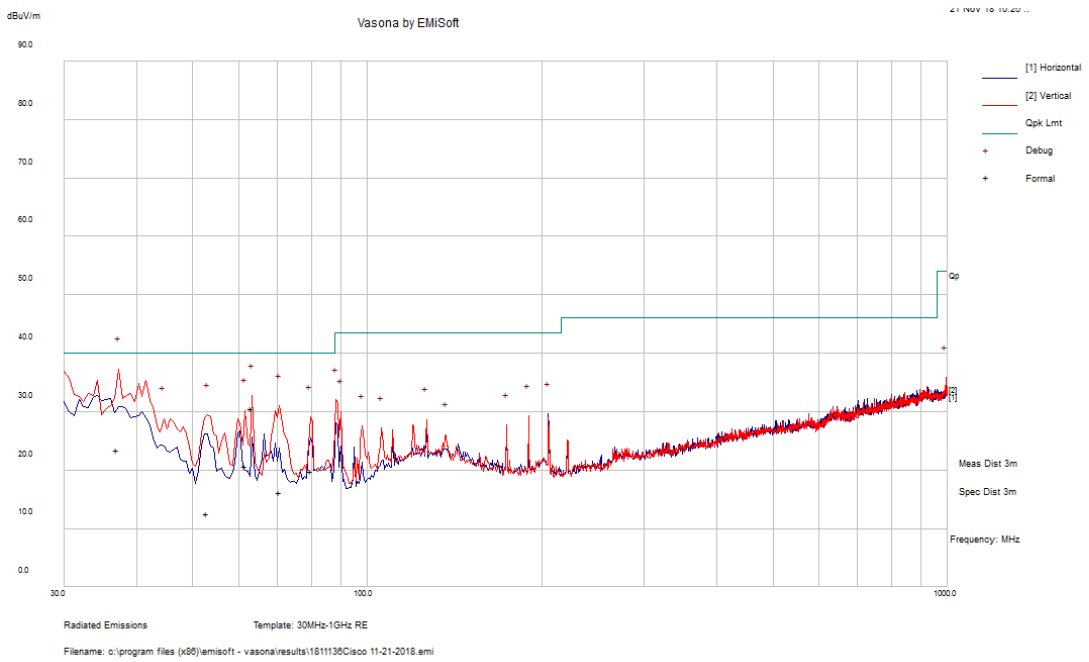
Please refer to the following table and plots for specific test result details

Note: EUT doesn't support any channel from 5600MHz to 5650MHz in Canada.

6.8 Radiated Emissions Test Result

1) 30 MHz – 1 GHz Worst Case, Measured at 3 meters

Worst Case Colocation, 2.4 GHz BLE, 2.4 GHz Wi-Fi CCK mode and 5 GHz Wi-Fi HT/VHT20 mode



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (Degrees)	Limit (dBµV/m)	Margin (dB)	Comment
63.1977	30.63	125	V	357	40	-9.37	Pass
37.0713	23.45	208	V	260	40	-16.55	Pass
61.5941	20.71	129	V	358	40	-19.29	Pass
79.9603	19.81	100	V	302	40	-20.19	Pass
70.4447	16.29	153	V	314	40	-23.71	Pass
52.9417	12.65	200	V	305	40	-27.35	Pass

2) 1GHz–10GHz, Measured at 3 meters

5250 - 5350 MHz

802.11 Non HT20 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5260 MHz non HT20 mode											
1255	48.93	243	289	H	24.36	3.91	37.52	39.68	74	-34.32	PK
1042.9	41.38	243	289	H	24.36	3.91	37.52	32.13	54	-21.87	AV
1045	49.22	135	260	V	24.05	3.91	37.52	39.66	74	-34.34	PK
1042.9	41.70	135	260	V	24.05	3.91	37.52	32.14	54	-21.86	AV
2110	47.53	243	289	H	28.02	5.76	36.17	45.14	74	-28.86	PK
2153.7	39.59	243	289	H	28.02	5.76	36.17	37.20	54	-16.80	AV
2125	47.38	135	260	V	27.90	5.76	36.17	44.86	74	-29.14	PK
2150.4	39.55	135	260	V	27.90	5.76	36.17	37.03	54	-16.97	AV
Mid Channel 5300 MHz non HT20 mode											
1060	48.45	243	289	H	24.36	3.91	37.52	39.20	74	-34.80	PK
1034.1	43.97	243	289	H	24.36	3.91	37.52	34.72	54	-19.28	AV
1990	49.03	135	260	V	24.05	3.91	37.52	39.47	74	-34.53	PK
1034.1	44.01	135	260	V	24.05	3.91	37.52	34.45	54	-19.55	AV
2132	47.25	243	289	H	28.02	5.76	36.17	44.86	74	-29.14	PK
2175.3	41.97	243	289	H	28.02	5.76	36.17	39.58	54	-14.42	AV
2620	47.61	135	260	V	27.90	5.76	36.17	45.09	74	-28.91	PK
2175.3	42.00	135	260	V	27.90	5.76	36.17	39.48	54	-14.52	AV
High Channel 5320 MHz non HT20 mode											
1990	47.92	110	255	H	24.36	3.91	37.52	38.67	74	-35.33	PK
1042.9	43.07	110	255	H	24.36	3.91	37.52	33.82	54	-20.18	AV
1105	48.93	206	255	V	24.05	3.91	37.52	39.37	74	-34.63	PK
1033	42.91	206	255	V	24.05	3.91	37.52	33.35	54	-20.65	AV
2125	47.12	110	255	H	28.02	5.76	36.17	44.73	74	-29.27	PK
2125.5	41.55	110	255	H	28.02	5.76	36.17	39.16	54	-14.84	AV
2449	47.24	206	255	V	27.90	5.76	36.17	44.72	74	-29.28	PK
1984.8	41.43	206	255	V	27.90	5.76	36.17	38.91	54	-15.09	AV

802.11 HT/VHT20 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5260 MHz HT/VHT20 mode											
1060	49.03	243	289	H	24.36	3.91	37.52	39.78	74	-34.22	PK
1031.9	43.98	243	289	H	24.36	3.91	37.52	34.73	54	-19.27	AV
1495	49.17	135	260	V	24.05	3.91	37.52	39.61	74	-34.39	PK
1035.2	43.83	135	260	V	24.05	3.91	37.52	34.27	54	-19.73	AV
2125	48.37	243	289	H	28.02	5.76	36.17	45.98	74	-28.02	PK
2150.7	41.88	243	289	H	28.02	5.76	36.17	39.49	54	-14.51	AV
2123	47.57	135	260	V	27.90	5.76	36.17	45.05	74	-28.95	PK
2150.7	42.00	135	260	V	27.90	5.76	36.17	39.48	54	-14.52	AV
Mid Channel 5300 MHz HT/VHT20 mode											
1000	49.22	243	209	H	24.36	3.91	37.52	39.97	74	-34.03	PK
1042.9	43.83	243	209	H	24.36	3.91	37.52	34.58	54	-19.42	AV
1000	48.93	230	210	V	24.05	3.91	37.52	39.37	74	-34.63	PK
1033	44.03	230	210	V	24.05	3.91	37.52	34.47	54	-19.53	AV
2117	47.91	243	209	H	28.02	5.76	36.17	45.52	74	-28.48	PK
2003.3	41.79	243	209	H	28.02	5.76	36.17	39.40	54	-14.60	AV
2081	47.33	230	210	V	27.90	5.76	36.17	44.81	74	-29.19	PK
1989	42.18	230	210	V	27.90	5.76	36.17	39.66	54	-14.34	AV
High Channel 5320 MHz HT/VHT20 mode											
1990	47.20	110	255	H	24.36	3.91	37.52	37.95	74	-36.05	PK
1981.2	42.55	110	255	H	24.36	3.91	37.52	33.30	54	-20.70	AV
1975	47.49	206	255	V	24.05	3.91	37.52	37.93	74	-36.07	PK
1034.1	42.54	206	255	V	24.05	3.91	37.52	32.98	54	-21.02	AV
2126	46.62	110	255	H	28.02	5.76	36.17	44.23	74	-29.77	PK
2129.5	41.60	110	255	H	28.02	5.76	36.17	39.21	54	-14.79	AV
2125	47.57	206	255	V	27.90	5.76	36.17	45.05	74	-28.95	PK
1980.1	42.00	206	255	V	27.90	5.76	36.17	39.48	54	-14.52	AV

802.11 HT/VHT40 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5270 MHz HT/VHT40 mode											
1030	47.68	321	300	H	24.36	3.91	37.52	38.43	74	-35.57	PK
1986.7	42.61	321	300	H	24.36	3.91	37.52	33.36	54	-20.64	AV
1990	48.49	197	262	V	24.05	3.91	37.52	38.93	74	-35.07	PK
1987.8	43.15	197	262	V	24.05	3.91	37.52	33.59	54	-20.41	AV
2488	46.24	321	300	H	28.02	5.76	36.17	43.85	74	-30.15	PK
2485.6	42.01	321	300	H	28.02	5.76	36.17	39.62	54	-14.38	AV
2487	47.24	197	262	V	27.90	5.76	36.17	44.72	74	-29.28	PK
2492.2	41.75	197	262	V	27.90	5.76	36.17	39.23	54	-14.77	AV
High Channel 5310 MHz HT/VHT40 mode											
1990	49.30	329	264	H	24.36	3.91	37.52	40.05	74	-33.95	PK
1987.8	42.97	329	264	H	24.36	3.91	37.52	33.72	54	-20.28	AV
2125	47.83	303	257	V	24.05	3.91	37.52	38.27	74	-35.73	PK
1295.6	42.87	303	257	V	24.05	3.91	37.52	33.31	54	-20.69	AV
2626	47.42	329	264	H	28.02	5.76	36.17	45.03	74	-28.97	PK
2473.9	41.95	329	264	H	28.02	5.76	36.17	39.56	54	-14.44	AV
2473	46.64	303	257	V	27.90	5.76	36.17	44.12	74	-29.88	PK
2504.7	41.65	303	257	V	27.90	5.76	36.17	39.13	54	-14.87	AV

802.11 VHT80 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Channel 5290 MHz VHT80 mode											
1975	48.18	160	280	H	24.36	3.91	37.52	38.93	74	-35.07	PK
1988.2	39.87	160	280	H	24.36	3.91	37.52	30.62	54	-23.38	AV
2125	47.92	204	254	V	24.05	3.91	37.52	38.36	74	-35.64	PK
1993.3	39.82	204	254	V	24.05	3.91	37.52	30.26	54	-23.74	AV
2470	46.77	160	280	H	28.02	5.76	36.17	44.38	74	-29.62	PK
2493	39.51	160	280	H	28.02	5.76	36.17	37.12	54	-16.88	AV
2471	46.85	204	254	V	27.90	5.76	36.17	44.33	74	-29.67	PK
2498.5	39.30	204	254	V	27.90	5.76	36.17	36.78	54	-17.22	AV

5.2 GHz & 5.3 GHz

802.11 VHT/HE160 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Channel 5250 MHz VHT/HE160 mode											
1975	49.78	80	282	H	24.36	3.91	37.52	40.53	74	-33.47	PK
1973.5	41.80	80	282	H	24.36	3.91	37.52	32.55	54	-21.45	AV
1990	47.79	80	282	V	24.05	3.91	37.52	38.23	74	-35.77	PK
1979	40.23	80	282	V	24.05	3.91	37.52	30.67	54	-23.33	AV
2545	48.06	80	282	H	28.02	5.76	36.17	45.67	74	-28.33	PK
2543.7	38.95	80	282	H	28.02	5.76	36.17	36.56	54	-17.44	AV
2351	46.69	80	282	V	27.90	5.76	36.17	44.17	74	-29.83	PK
2543.7	39.37	80	282	V	27.90	5.76	36.17	36.85	54	-17.15	AV

5470 - 5725 MHz

802.11 non HT20 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5500 MHz non HT20 mode											
1310	47.91	194	269	H	24.36	3.91	37.52	38.66	74	-35.34	PK
1309.6	43.11	194	269	H	24.36	3.91	37.52	33.86	54	-20.14	AV
1322	47.71	205	269	V	24.05	3.91	37.52	38.15	74	-35.85	PK
1306.3	43.40	205	269	V	24.05	3.91	37.52	33.84	54	-20.16	AV
Mid Channel 5580 MHz non HT20 mode											
1540	47.81	360	299	H	24.36	3.91	37.52	38.56	74	-35.44	PK
19966	43.37	360	299	H	24.36	3.91	37.52	34.12	54	-19.88	AV
1600	48.34	129	212	V	24.05	3.91	37.52	38.78	74	-35.22	PK
1986.7	43.12	129	212	V	24.05	3.91	37.52	33.56	54	-20.44	AV
3120	46.99	360	299	H	30.46	6.56	36.31	47.70	74	-26.30	PK
31145	42.44	360	299	H	30.46	6.56	36.31	43.15	54	-10.85	AV
3990	46.87	129	212	V	30.46	6.56	36.31	47.58	74	-26.42	PK
3520.2	41.61	129	212	V	30.46	6.56	36.31	42.32	54	-11.68	AV
High Channel 5700 MHz non HT20 mode											
1983	48.09	85	299	H	24.36	3.91	37.52	38.84	74	-35.16	PK
1996.6	43.35	85	299	H	24.36	3.91	37.52	34.10	54	-19.90	AV
1990	48.59	148	299	V	24.05	3.91	37.52	39.03	74	-34.97	PK
1986.7	43.34	148	299	V	24.05	3.91	37.52	33.78	54	-20.22	AV
Channel 5720 MHz Non HT mode											
1315	47.87	30	286	H	24.36	3.91	37.52	38.62	74	-35.38	PK
1006.6	43.51	30	286	H	24.36	3.91	37.52	34.26	54	-19.74	AV
1008	45.47	144	286	V	24.05	3.91	37.52	35.91	74	-38.09	PK
1994.4	43.67	144	286	V	24.05	3.91	37.52	34.11	54	-19.89	AV

802.11HT/VHT20 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5500 MHz HT/VHT20 mode											
2011	49.49	194	269	H	24.36	3.91	37.52	40.24	74	-33.76	PK
1994.4	43.27	194	269	H	24.36	3.91	37.52	34.02	54	-19.98	AV
1975	47.20	205	269	V	24.05	3.91	37.52	37.64	74	-36.36	PK
1993.3	43.68	205	269	V	24.05	3.91	37.52	34.12	54	-19.88	AV
Mid Channel 5580 MHz HT/VHT20 mode											
2020	47.68	360	299	H	24.36	3.91	37.52	38.43	74	-35.57	PK
1999.9	43.70	360	299	H	24.36	3.91	37.52	34.45	54	-19.55	AV
1315	47.95	129	212	V	24.05	3.91	37.52	38.39	74	-35.61	PK
1997.7	43.40	129	212	V	24.05	3.91	37.52	33.84	54	-20.16	AV
3440	46.22	360	299	H	30.46	6.56	36.31	46.93	74	-27.07	PK
3496	41.39	360	299	H	30.46	6.56	36.31	42.10	54	-11.90	AV
3496	46.31	129	212	V	30.46	6.56	36.31	47.02	74	-26.98	PK
3496	42.07	129	212.00	V	30.46	6.56	36.31	42.78	54	-11.22	AV
High Channel 5700 MHz HT/VHT20 mode											
1585	48.12	85	299	H	24.36	3.91	37.52	38.87	74	-35.13	PK
1325.2	43.05	85	299	H	24.36	3.91	37.52	33.80	54	-20.20	AV
1525	48.19	148	299	V	24.05	3.91	37.52	38.63	74	-35.37	PK
1993.3	43.36	148	299	V	24.05	3.91	37.52	33.80	54	-20.20	AV
3100	48.26	85	299	H	30.46	6.56	36.31	48.97	74	-25.03	PK
3127.5	42.36	85	299	H	30.46	6.56	36.31	43.07	54	-10.93	AV
3130	46.90	148	299	V	30.46	6.56	36.31	47.61	74	-26.39	PK
3136	42.11	148	299	V	30.46	6.56	36.31	42.82	54	-11.18	AV
Channel 5720 MHz HT/VHT20 mode											
1315	47.58	30	286	H	24.36	3.91	37.52	38.33	74	-35.67	PK
2003.2	43.29	30	286	H	24.36	3.91	37.52	34.04	54	-19.96	AV
1570	47.91	144	286	V	24.05	3.91	37.52	38.35	74	-35.65	PK
1302.2	42.99	144	286	V	24.05	3.91	37.52	33.43	54	-20.57	AV

802.11 HT/VHT40 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5510 MHz HT/VHT40 mode											
1572	48.35	355	280	H	24.36	3.91	37.52	39.10	74	-34.90	PK
1585.7	42.94	355	280	H	24.36	3.91	37.52	33.69	54	-20.31	AV
1315	49.60	27	265	V	24.05	3.91	37.52	40.04	74	-33.96	PK
1307.9	43.36	27	265	V	24.05	3.91	37.52	33.80	54	-20.20	AV
Mid Channel 5590 MHz HT/VHT40 mode											
1510	47.68	168	299	H	24.36	3.91	37.52	38.43	74	-35.57	PK
1302.8	43.34	168	299	H	24.36	3.91	37.52	34.09	54	-19.91	AV
1990	48.49	172	269	V	24.05	3.91	37.52	38.93	74	-35.07	PK
1305.5	43.42	172	269	V	24.05	3.91	37.52	33.86	54	-20.14	AV
High Channel 5670 MHz HT/VHT40 mode											
2000	47.95	105	299	H	24.36	3.91	37.52	38.70	74	-35.30	PK
2013.5	42.94	105	299	H	24.36	3.91	37.52	33.69	54	-20.31	AV
2025	48.19	237	299	V	24.05	3.91	37.52	38.63	74	-35.37	PK
2013.5	43.27	237	299	V	24.05	3.91	37.52	33.71	54	-20.29	AV

802.11 VHT80 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5530 MHz VHT80 mode											
1530	49.05	360	290	H	24.36	3.91	37.52	39.80	74	-34.20	PK
1533.3	43.06	360	290	H	24.36	3.91	37.52	33.81	54	-20.19	AV
1311	48.55	120	254	V	24.05	3.91	37.52	38.99	74	-35.01	PK
1535.5	43.19	120	254	V	24.05	3.91	37.52	33.63	54	-20.37	AV
High Channel 5610 MHz VHT80 mode											
1315	48.73	360	299	H	24.36	3.91	37.52	39.48	74	-34.52	PK
1297.8	43.20	360	299	H	24.36	3.91	37.52	33.95	54	-20.05	AV
1600	48.32	161	295	V	24.05	3.91	37.52	38.76	74	-35.24	PK
1309.9	43.21	161	295	V	24.05	3.91	37.52	33.65	54	-20.35	AV

802.11 VHT/HE160 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Channel 5570 MHz VHT/HE160 mode											
1090	49.33	102	290	H	24.36	3.91	37.52	40.08	74	-33.92	PK
1053.8	42.74	102	290	H	24.36	3.91	37.52	33.49	54	-20.51	AV
1015	50.57	31	243	V	24.05	3.91	37.52	41.01	74	-32.99	PK
1040.7	43.88	31	243	V	24.05	3.91	37.52	34.32	54	-19.68	AV

5725 - 5850 MHz

802.11 Non HT20 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5745 MHz non HT20 mode											
1310	47.91	145	257	H	24.36	3.91	37.52	38.66	74	-35.34	PK
1309.6	43.11	145	257	H	24.36	3.91	37.52	33.86	54	-20.14	AV
1322	47.71	290	269	V	24.05	3.91	37.52	38.15	74	-35.85	PK
1306.3	43.40	290	269	V	24.05	3.91	37.52	33.84	54	-20.16	AV
Mid Channel 5785 MHz non HT20 mode											
1540	47.81	194	282	H	24.36	3.91	37.52	38.56	74	-35.44	PK
1966	43.37	194	282	H	24.36	3.91	37.52	34.12	54	-19.88	AV
1600	48.34	125	237	V	24.05	3.91	37.52	38.78	74	-35.22	PK
1986.7	43.12	125	237	V	24.05	3.91	37.52	33.56	54	-20.44	AV
3120	46.99	194	282	H	30.46	6.56	36.31	47.70	74	-26.30	PK
31145	42.44	194	282	H	30.46	6.56	36.31	43.15	54	-10.85	AV
3990	46.87	125	237	V	30.46	6.56	36.31	47.58	74	-26.42	PK
3520.2	41.61	123	237	V	30.46	6.56	36.31	42.32	54	-11.68	AV
High Channel 5825 MHz non HT20 mode											
1983	48.09	100	277	H	24.36	3.91	37.52	38.84	74	-35.16	PK
1996.6	43.35	100	277	H	24.36	3.91	37.52	34.10	54	-19.90	AV
1990	48.59	163	229	V	24.05	3.91	37.52	39.03	74	-34.97	PK
1986.7	43.34	163	229	V	24.05	3.91	37.52	33.78	54	-20.22	AV

802.11 HT/VHT20 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5745 MHz HT/VHT20 mode											
2011	49.49	145	257	H	24.36	3.91	37.52	40.24	74	-33.76	PK
1994.4	43.27	145	257	H	24.36	3.91	37.52	34.02	54	-19.98	AV
1975	47.20	290	269	V	24.05	3.91	37.52	37.64	74	-36.36	PK
1993.3	43.68	290	269	V	24.05	3.91	37.52	34.12	54	-19.88	AV
Mid Channel 5785 MHz HT/VHT20 mode											
2020	47.68	194	282	H	24.36	3.91	37.52	38.43	74	-35.57	PK
1999.9	43.70	194	282	H	24.36	3.91	37.52	34.45	54	-19.55	AV
1315	47.95	125	237	V	24.05	3.91	37.52	38.39	74	-35.61	PK
1997.7	43.40	125	237	V	24.05	3.91	37.52	33.84	54	-20.16	AV
3440	46.22	194	282	H	30.46	6.56	36.31	46.93	74	-27.07	PK
3496	41.39	194	282	H	30.46	6.56	36.31	42.10	54	-11.90	AV
3496	46.31	125	237	V	30.46	6.56	36.31	47.02	74	-26.98	PK
3496	42.07	123	237	V	30.46	6.56	36.31	42.78	54	-11.22	AV
High Channel 5825 MHz HT/VHT20 mode											
1585	48.12	100	277	H	24.36	3.91	37.52	38.87	74	-35.13	PK
1325.2	43.05	100	277	H	24.36	3.91	37.52	33.80	54	-20.20	AV
1525	48.19	163	229	V	24.05	3.91	37.52	38.63	74	-35.37	PK
1993.3	43.36	163	229	V	24.05	3.91	37.52	33.80	54	-20.20	AV
3100	48.26	100	277	H	32.93	30.46	6.56	36.31	74	-37.69	PK
3127.5	42.36	100	277	H	32.93	30.46	6.56	36.31	54	-17.69	AV
3130	46.90	163	229	V	32.86	30.46	6.56	36.31	74	-37.69	PK
3136	42.11	163	229	V	32.86	30.46	6.56	36.31	54	-17.69	AV

Mesured at 1 m

802.11 HT/VHT40 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low channel 5755 MHz HT/VHT 40 mode											
1195	51.13	243	167	H	24.36	3.91	37.52	41.88	84	-42.12	PK
1195	42.64	243	167	H	24.36	3.91	37.52	33.39	64	-30.61	AV
1195	49.65	330	164	V	24.05	3.91	37.52	40.09	84	-43.91	PK
1195	42.15	330	164	V	24.05	3.91	37.52	32.59	64	-31.41	AV
2530	48.82	243	167	H	32.93	8.69	35.59	54.85	84	-29.15	PK
2530	40.69	243	167	H	32.93	8.69	35.59	46.72	64	-17.28	AV
2530	48.64	330	164	V	32.86	8.69	35.59	54.60	84	-29.40	PK
2530	41.12	330	164	V	32.86	8.69	35.59	47.08	64	-16.92	AV
High channel 5795 MHz HT/VHT 40 mode											
1470	50.12	276	165	H	24.36	3.91	37.52	40.87	84	-43.13	PK
1470	42.27	276	165	H	24.36	3.91	37.52	33.02	64	-30.98	AV
1470	50.37	121	165	V	24.05	3.91	37.52	40.81	84	-43.19	PK
1470	41.97	121	165	V	24.05	3.91	37.52	32.41	64	-31.59	AV
2588	49.12	276	165	H	32.93	8.69	35.59	55.15	84	-28.85	PK
2588	41.43	276	165	H	32.93	8.69	35.59	47.46	64	-16.54	AV
2588	48.76	121	165	V	32.86	8.69	35.59	54.72	84	-29.28	PK
2588	42.20	121	165	V	32.86	8.69	35.59	48.16	64	-15.84	AV

802.11 HT/VHT80 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Channel 5775 MHz VHT 80 mode											
1375	51.04	64	167	H	24.36	3.91	37.52	41.79	84	-42.21	PK
1375	42.56	64	167	H	24.36	3.91	37.52	33.31	64	-30.69	AV
1375	51.48	113	164	V	24.05	3.91	37.52	41.92	84	-42.08	PK
1375	42.46	113	164	V	24.05	3.91	37.52	32.90	64	-31.10	AV
2119	50.19	64	167	H	32.93	8.69	35.59	56.22	84	-27.78	PK
2119	41.54	64	167	H	32.93	8.69	35.59	47.57	64	-16.43	AV
2119	49.37	113	164	V	32.86	8.69	35.59	55.33	84	-28.67	PK
2119	40.93	113	164	V	32.86	8.69	35.59	46.89	64	-17.11	AV

3) 10–18 GHz, Measured at 1 meter

5250 - 5350 MHz

802.11 Non HT20 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5260 MHz non HT20 mode											
10213	43.23	10	205	H	38.60	14.18	35.36	60.65	84	-23.35	PK
10230.5	38.69	10	205	H	38.60	14.18	35.36	56.11	64	-7.89	AV
10133	43.29	150	211	V	38.56	14.18	35.36	60.67	84	-23.33	PK
10089.9	38.67	150	211	V	38.56	14.18	35.36	56.05	64	-7.95	AV
10865	42.22	10	205	H	38.80	14.94	34.65	61.31	84	-22.69	PK
11039.3	37.38	10	205	H	38.80	14.94	34.65	56.47	64	-7.53	AV
11041	42.18	150	211	V	38.79	14.94	34.65	61.26	84	-22.74	PK
11039.3	37.62	150	211	V	38.79	14.94	34.65	56.70	64	-7.30	AV
Mid Channel 5300 MHz non HT20 mode											
10253	44.69	243	209	H	38.60	14.18	35.36	62.11	84	-21.89	PK
10100.6	38.71	243	209	H	38.60	14.18	35.36	56.13	64	-7.87	AV
10120	43.74	230	210	V	38.56	14.18	35.36	61.12	84	-22.88	PK
10130.9	38.67	230	210	V	38.56	14.18	35.36	56.05	64	-7.95	AV
10933	43.28	243	209	H	38.80	14.94	34.65	62.37	84	-21.63	PK
10917.2	37.45	243	209	H	38.80	14.94	34.65	56.54	64	-7.46	AV
10827	42.51	230	210	V	38.79	14.94	34.65	61.59	84	-22.41	PK
10998.3	37.13	230	210	V	38.79	14.94	34.65	56.21	64	-7.79	AV
High Channel 5320 MHz non HT20 mode											
10427	42.80	243	209	H	38.60	14.18	35.36	60.22	84	-23.78	PK
10112.3	38.13	243	209	H	38.60	14.18	35.36	55.55	64	-8.45	AV
10133	43.06	230	210	V	38.56	14.18	35.36	60.44	84	-23.56	PK
10111.3	38.22	230	210	V	38.56	14.18	35.36	55.60	64	-8.40	AV
10675	42.11	243	209	H	38.80	14.94	34.65	61.20	84	-22.80	PK
11103.2	36.84	243	209	H	38.80	14.94	34.65	55.93	64	-8.07	AV
10781	42.19	230	210	V	38.79	14.94	34.65	61.27	84	-22.73	PK
10966.5	36.74	230	210	V	38.79	14.94	34.65	55.82	64	-8.18	AV

802.11 HT/VHT20 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5260 MHz HT/VHT20 mode											
10093	43.08	10	205	H	38.60	14.18	35.36	60.50	84	-23.50	PK
100967	38.81	10	205	H	38.60	14.18	35.36	56.23	64	-7.77	AV
10053	44.27	150	211	V	38.56	14.18	35.36	61.65	84	-22.35	PK
10221.7	38.78	150	211	V	38.56	14.18	35.36	56.16	64	-7.84	AV
10905	42.24	10	205	H	38.80	14.94	34.65	61.33	84	-22.67	PK
11036.6	37.45	10	205	H	38.80	14.94	34.65	56.54	64	-7.46	AV
11011	43.28	150	211	V	38.79	14.94	34.65	62.36	84	-21.64	PK
11030.7	37.40	150	211	V	38.79	14.94	34.65	56.48	64	-7.52	AV
Mid Channel 5300 MHz HT/VHT20 mode											
10107	44.35	243	209	H	38.60	14.18	35.36	61.77	84	-22.23	PK
10101.6	38.63	243	209	H	38.60	14.18	35.36	56.05	64	-7.95	AV
10547	43.16	230	210	V	38.56	14.18	35.36	60.54	84	-23.46	PK
10121.1	38.39	230	210	V	38.56	14.18	35.36	55.77	64	-8.23	AV
10974	42.04	243	209	H	38.80	14.94	34.65	61.13	84	-22.87	PK
11081.2	36.76	243	209	H	38.80	14.94	34.65	55.85	64	-8.15	AV
11197	41.52	230	210	V	38.79	14.94	34.65	60.60	84	-23.40	PK
11101.7	37.03	230	210	V	38.79	14.94	34.65	56.11	64	-7.89	AV
High Channel 5320 MHz HT/VHT20 mode											
10173	43.66	243	209	H	38.60	14.18	35.36	61.08	84	-22.92	PK
10117.2	38.40	243	209	H	38.60	14.18	35.36	55.82	64	-8.18	AV
10120	43.46	230	210	V	38.56	14.18	35.36	60.84	84	-23.16	PK
10126	38.55	230	210	V	38.56	14.18	35.36	55.93	64	-8.07	AV
10888	42.88	243	209	H	38.80	14.94	34.65	61.97	84	-22.03	PK
11099.5	36.78	243	209	H	38.80	14.94	34.65	55.87	64	-8.13	AV
10930	42.20	230	210	V	38.79	14.94	34.65	61.28	84	-22.72	PK
10639.5	37.49	230	210	V	38.79	14.94	34.65	56.57	64	-7.43	AV

802.11 HT/VHT40 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5270 MHz HT/VHT40 mode											
10147	43.58	140	206	H	38.60	14.18	35.36	61.00	84	-23.00	PK
10100.6	38.80	140	206	H	38.60	14.18	35.36	56.22	64	-7.78	AV
10133	44.38	204	200	V	38.56	14.18	35.36	61.76	84	-22.24	PK
10125	38.65	204	200	V	38.56	14.18	35.36	56.03	64	-7.97	AV
10904	42.60	140	206	H	38.80	14.94	34.65	61.69	84	-22.31	PK
11049.2	37.58	140	206	H	38.80	14.94	34.65	56.67	64	-7.33	AV
10864	43.04	204	200	V	38.79	14.94	34.65	62.12	84	-21.88	PK
11049.2	37.63	204	200	V	38.79	14.94	34.65	56.71	64	-7.29	AV
High Channel 5310 MHz HT/VHT40 mode											
10093	44.08	240	213	H	38.60	14.18	35.36	61.50	84	-22.50	PK
10106.5	38.17	240	213	H	38.60	14.18	35.36	55.59	64	-8.41	AV
10213	43.72	303	190	V	38.56	14.18	35.36	61.10	84	-22.90	PK
10096.7	38.60	303	190	V	38.56	14.18	35.36	55.98	64	-8.02	AV
11053	42.42	240	213	H	38.80	14.94	34.65	61.51	84	-22.49	PK
11041.1	37.28	240	213	H	38.80	14.94	34.65	56.37	64	-7.63	AV
11000	41.89	303	190	V	38.79	14.94	34.65	60.97	84	-23.03	PK
11000.4	37.04	303	190	V	38.79	14.94	34.65	56.12	64	-7.88	AV

802.11 VHT80 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Channel 5290 MHz VHT80 mode											
10013	43.25	240	213	H	38.60	14.18	35.36	60.67	84	-23.33	PK
10118.2	38.14	240	213	H	38.60	14.18	35.36	55.56	64	-8.44	AV
10080	43.72	303	188	V	38.56	14.18	35.36	61.10	84	-22.90	PK
10136.7	38.15	303	188	V	38.56	14.18	35.36	55.53	64	-8.47	AV
10920	42.21	240	213	H	38.80	14.94	34.65	61.30	84	-22.70	PK
11095.4	36.71	240	213	H	38.80	14.94	34.65	55.80	64	-8.20	AV
11051	40.56	303	188	V	38.79	14.94	34.65	59.64	84	-24.36	PK
10995.7	36.40	303	188	V	38.79	14.94	34.65	55.48	64	-8.52	AV

5150 - 5350 MHz

802.11 VHT/HE160 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Channel 5250 MHz VHT/HE160 mode											
10133	43.44	280	182	H	38.60	14.18	35.36	60.86	84	-23.14	PK
10137.7	39.36	280	182	H	38.60	14.18	35.36	56.78	64	-7.22	AV
10080	44.19	280	182	V	38.56	14.18	35.36	61.57	84	-22.43	PK
10117.2	39.35	280	182	V	38.56	14.18	35.36	56.73	64	-7.27	AV
11000	43.29	280	182	H	38.80	14.94	34.65	62.38	84	-21.62	PK
11000.4	37.04	280	182	H	38.80	14.94	34.65	56.13	64	-7.87	AV
11096	41.69	280	182	V	38.79	14.94	34.65	60.77	84	-23.23	PK
11080.5	36.86	280	182	V	38.79	14.94	34.65	55.94	64	-8.06	AV

5470 - 5725 MHz

802.11 Non HT20 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5500 MHz non HT20 mode											
10067	44.02	132	221	H	38.60	14.18	35.36	61.44	84	-22.56	PK
10174.8	38.75	132	221	H	38.60	14.18	35.36	56.17	64	-7.83	AV
10107	43.59	270	219	V	38.56	14.18	35.36	60.97	84	-23.03	PK
10190.2	38.58	270	219	V	38.56	14.18	35.36	55.96	64	-8.04	AV
11347	42.03	132	221	H	39.67	16.75	34.65	63.80	84	-20.20	PK
11000	37.66	132	221	H	39.67	16.75	34.65	59.43	64	-4.57	AV
11093	41.98	270	219	V	39.71	16.75	34.65	63.79	84	-20.21	PK
11000	40.22	270	219	V	39.71	16.75	34.65	62.03	64	-1.97	AV
Mid Channel 5580 MHz non HT20 mode											
10200	43.45	276	202	H	38.60	14.18	35.36	60.87	84	-23.13	PK
10174.8	38.64	276	202	H	38.60	14.18	35.36	56.06	64	-7.94	AV
10120	42.94	237	217	V	38.56	14.18	35.36	60.32	84	-23.68	PK
10139.7	38.57	237	271	V	38.56	14.18	35.36	55.95	64	-8.05	AV
11853	41.73	276	202	H	39.67	16.75	33.67	64.48	84	-19.53	PK
11000	37.27	276	202	H	39.67	16.75	33.67	60.02	64	-3.98	AV
11107	44.19	237	217	V	39.71	16.75	33.67	66.97	84	-17.03	PK
10986.3	37.03	237	271	V	39.71	16.75	33.67	59.81	64	-4.19	AV
High Channel 5700 MHz non HT20 mode											
10000	43.12	71	211	H	38.60	14.18	35.36	60.54	84	-23.46	PK
10178.7	38.77	71	211	H	38.60	14.18	35.36	56.19	64	-7.81	AV
10307	43.17	120	219	V	38.56	14.18	35.36	60.55	84	-23.45	PK
10178.7	38.76	120	219	V	38.56	14.18	35.36	56.14	64	-7.86	AV
11800	42.27	71	211	H	39.67	16.75	33.67	65.02	84	-18.99	PK
11009.3	37.32	71	211	H	39.67	16.75	33.67	60.07	64	-3.94	AV
11053	42.81	120	219	V	39.71	16.75	33.67	65.59	84	-18.41	PK
11400	38.58	120	219	V	39.71	16.75	33.67	61.36	64	-2.64	AV
Channel 5720 MHz non HT20 mode											
10080	45.47	55	196	H	38.60	14.18	35.36	62.89	84	-21.11	PK
10169.9	38.77	55	196	H	38.60	14.18	35.36	56.19	64	-7.81	AV
10107	43.77	148	224	V	38.56	14.18	35.36	61.15	84	-22.85	PK
10191.4	38.79	148	224	V	38.56	14.18	35.36	56.17	64	-7.83	AV
11867	42.04	55	196	H	39.67	16.75	33.67	64.79	84	-19.22	PK
11095.7	37.28	55	196	H	39.67	16.75	33.67	60.03	64	-3.98	AV
10893	42.18	148	224	V	39.71	16.75	33.67	64.96	84	-19.04	PK
11035.2	37.57	148	224	V	39.71	16.75	33.67	60.35	64	-3.65	AV

802.11 HT/VHT20 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5500 MHz HT/VHT20 mode											
10093	43.64	132	221	H	38.60	14.18	35.36	61.06	84	-22.94	PK
10186.5	38.76	132	221	H	38.60	14.18	35.36	56.18	64	-7.82	AV
10067	43.74	270	219	V	38.56	14.18	35.36	61.12	84	-22.88	PK
10186.5	38.57	270	219	V	38.56	14.18	35.36	55.95	64	-8.05	AV
11893	42.04	132	221	H	39.67	16.75	34.65	63.81	84	-20.19	PK
11000	37.74	132	221	H	39.67	16.75	34.65	59.51	64	-4.49	AV
11827	41.83	270	219	V	39.71	16.75	34.65	63.64	84	-20.36	PK
11000	40.35	270	219	V	39.71	16.75	34.65	62.16	64	-1.84	AV
Mid Channel 5580 MHz HT/VHT20 mode											
10413	44.21	276	202	H	38.60	14.18	35.36	61.63	84	-22.37	PK
10185.6	38.63	276	202	H	38.60	14.18	35.36	56.05	64	-7.95	AV
10120	44.42	237	217	V	38.56	14.18	35.36	61.80	84	-22.20	PK
10119.2	38.91	237	271	V	38.56	14.18	35.36	56.29	64	-7.71	AV
11813	42.09	276	202	H	39.67	16.75	33.67	64.84	84	-19.17	PK
11036.1	37.79	276	202	H	39.67	16.75	33.67	60.54	64	-3.47	AV
11907	42.50	237	217	V	39.71	16.75	33.67	65.28	84	-18.72	PK
11039.1	37.68	237	271	V	39.71	16.75	33.67	60.46	64	-3.54	AV
High Channel 5700 MHz HT/VHT20 mode											
10173	43.75	71	211	H	38.60	14.18	35.36	61.17	84	-22.83	PK
10418	36.93	71	211	H	38.60	14.18	35.36	54.35	64	-9.65	AV
10107	43.53	120	219	V	38.56	14.18	35.36	60.91	84	-23.09	PK
10113.3	38.75	120	219	V	38.56	14.18	35.36	56.13	64	-7.87	AV
11893	40.97	71	211	H	39.67	16.75	33.67	63.72	84	-20.29	PK
11399.8	36.88	71	211	H	39.67	16.75	33.67	59.63	64	-4.38	AV
11840	42.37	120	219	V	39.71	16.75	33.67	65.15	84	-18.85	PK
11399.8	38.07	120	219	V	39.71	16.75	33.67	60.85	64	-3.15	AV
Channel 5720 MHz HT/VHT20 mode											
10107	43.32	55	196	H	38.60	14.18	35.36	60.74	84	-23.26	PK
10177.8	38.96	55	196	H	38.60	14.18	35.36	56.38	64	-7.62	AV
10200	43.12	148	224	V	38.56	14.18	35.36	60.50	84	-23.50	PK
10191.4	38.70	148	224	V	38.56	14.18	35.36	56.08	64	-7.92	AV
11960	41.47	55	196	H	39.67	16.75	33.67	64.22	84	-19.79	PK
11845.8	37.16	55	196	H	39.67	16.75	33.67	59.91	64	-4.10	AV
11813	42.17	148	224	V	39.71	16.75	33.67	64.95	84	-19.05	PK
11821.4	37.18	148	224	V	39.71	16.75	33.67	59.96	64	-4.04	AV

802.11 HT/VHT40 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5510 MHz HT/VHT40 mode											
10000	42.77	151	212	H	38.60	14.18	35.36	60.19	84	-23.81	PK
10153.3	38.28	151	212	H	38.60	14.18	35.36	55.70	64	-8.30	AV
10107	44.93	239	212	V	38.56	14.18	35.36	62.31	84	-21.69	PK
10226.5	38.32	239	212	V	38.56	14.18	35.36	55.70	64	-8.30	AV
11800	41.64	151	212	H	39.67	16.75	34.65	63.41	84	-20.59	PK
11019.7	37.93	151	212	H	39.67	16.75	34.65	59.70	64	-4.30	AV
11019.7	42.22	239	212	V	39.71	16.75	34.65	64.03	84	-19.97	PK
11019.7	40.49	239	212	V	39.71	16.75	34.65	62.30	64	-1.70	AV
Mid Channel 5590 MHz HT/VHT40 mode											
10227	43.15	314	202	H	38.60	14.18	35.36	60.57	84	-23.43	PK
10305.7	37.86	314	202	H	38.60	14.18	35.36	55.28	64	-8.72	AV
10107	43.82	259	234	V	38.56	14.18	35.36	61.20	84	-22.80	PK
10185.6	39.33	259	234	V	38.56	14.18	35.36	56.71	64	-7.29	AV
11827	42.02	314	202	H	39.67	16.75	33.67	64.77	84	-19.24	PK
11054.9	37.38	314	202	H	39.67	16.75	33.67	60.13	64	-3.88	AV
11853	42.01	259	234	V	39.71	16.75	33.67	64.79	84	-19.21	PK
11179.8	38.21	259	234	V	39.71	16.75	33.67	60.99	64	-3.01	AV
High Channel 5670 MHz HT/VHT40 mode											
10227	44.52	71	224	H	38.60	14.18	35.36	61.94	84	-22.06	PK
10183.6	39.07	71	224	H	38.60	14.18	35.36	56.49	64	-7.51	AV
10120	43.42	173	222	V	38.56	14.18	35.36	60.80	84	-23.20	PK
10178.7	39.21	173	222	V	38.56	14.18	35.36	56.59	64	-7.41	AV
11782	43.14	71	224	H	39.67	16.75	33.67	65.89	84	-18.12	PK
11340	37.87	71	224	H	39.67	16.75	33.67	60.62	64	-3.39	AV
12067	41.13	173	222	V	39.71	16.75	33.67	63.91	84	-20.09	PK
11340	39.03	173	222	V	39.71	16.75	33.67	61.81	64	-2.19	AV

802.11 VHT80 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5530 MHz VHT80 mode											
10187	43.02	145	206	H	38.60	14.18	35.36	60.44	84	-23.56	PK
10293	37.72	145	206	H	38.60	14.18	35.36	55.14	64	-8.86	AV
10093	43.40	116	217	V	38.56	14.18	35.36	60.78	84	-23.22	PK
10181.7	38.99	116	217	V	38.56	14.18	35.36	56.37	64	-7.63	AV
11933	42.36	145	206	H	39.67	16.75	33.67	65.11	84	-18.90	PK
11116.4	36.93	145	206	H	39.67	16.75	33.67	59.68	64	-4.33	AV
12600	40.51	116	217	V	39.71	16.75	33.67	63.29	84	-20.71	PK
10992.3	37.70	116	217	V	39.71	16.75	33.67	60.48	64	-3.52	AV
High Channel 5610 MHz VHT80 mode											
10093	43.03	97	203	H	38.60	14.18	35.36	60.45	84	-23.55	PK
10302.8	37.87	97	203	H	38.60	14.18	35.36	55.29	64	-8.71	AV
10093	44.87	184	199	V	38.56	14.18	35.36	62.25	84	-21.75	PK
10117.8	38.88	184	199	V	38.56	14.18	35.36	56.26	64	-7.74	AV
11813	42.09	97	203	H	39.67	16.75	33.67	64.84	84	-19.17	PK
11067.6	37.52	97	203	H	39.67	16.75	33.67	60.27	64	-3.73	AV
11880	42.16	184	199	V	39.71	16.75	33.67	64.94	84	-19.06	PK
11039.2	37.59	184	199	V	39.71	16.75	33.67	60.37	64	-3.63	AV

802.11 VHT/HE160 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Channel 5570 MHz VHT/HE160 mode											
10080	43.97	177	209	H	38.60	14.18	35.36	61.39	84	-22.61	PK
10239.3	37.68	177	209	H	38.60	14.18	35.36	55.10	64	-8.90	AV
10120	43.62	25	212	V	38.56	14.18	35.36	61.00	84	-23.00	PK
10300.8	37.83	25	212	V	38.56	14.18	35.36	55.21	64	-8.79	AV
10968	43.06	177	209	H	39.67	16.75	33.67	65.81	84	-18.20	PK
11079.1	37.30	177	209	H	39.67	16.75	33.67	60.05	64	-3.96	AV
10994	43.27	25	212	V	39.71	16.75	33.67	66.05	84	-17.95	PK
11085.9	36.93	25	212	V	39.71	16.75	33.67	59.71	64	-4.29	AV

5725 - 5850 MHz

802.11 Non HT20 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5745 MHz non HT20 mode											
10067	44.02	175	212	H	38.60	14.18	35.36	61.44	84	-22.56	PK
10174.8	38.75	175	212	H	38.60	14.18	35.36	56.17	64	-7.83	AV
10107	43.59	168	208	V	38.56	14.18	35.36	60.97	84	-23.03	PK
10190.2	38.58	168	208	V	38.56	14.18	35.36	55.96	64	-8.04	AV
11347	42.03	175	212	H	38.80	14.94	34.65	61.12	84	-22.88	PK
11000	37.66	175	212	H	38.80	14.94	34.65	56.75	64	-7.25	AV
11093	41.98	168	208	V	38.79	14.94	34.65	61.06	84	-22.94	PK
11000	40.22	168	208	V	38.79	14.94	34.65	59.30	64	-4.70	AV
Mid Channel 5785 MHz non HT20 mode											
10200	43.45	139	207	H	38.60	14.18	35.36	60.87	84	-23.13	PK
10174.8	38.64	139	207	H	38.60	14.18	35.36	56.06	64	-7.94	AV
10120	42.94	177	215	V	38.56	14.18	35.36	60.32	84	-23.68	PK
10139.7	38.57	177	215	V	38.56	14.18	35.36	55.95	64	-8.05	AV
11853	41.73	139	207	H	38.80	14.94	33.67	61.79	84	-22.21	PK
11000	37.27	139	207	H	38.80	14.94	33.67	57.33	64	-6.67	AV
11107	44.19	177	215	V	38.79	14.94	33.67	64.25	84	-19.75	PK
10986.3	37.03	177	215	V	38.79	14.94	33.67	57.09	64	-6.91	AV
High Channel 5825 MHz non HT20 mode											
10000	43.12	36	197	H	38.60	14.18	35.36	60.54	84	-23.46	PK
10178.7	38.77	36	197	H	38.60	14.18	35.36	56.19	64	-7.81	AV
10307	43.17	343	211	V	38.56	14.18	35.36	60.55	84	-23.45	PK
10178.7	38.76	343	211	V	38.56	14.18	35.36	56.14	64	-7.86	AV
11800	42.27	36	197	H	38.80	16.75	33.67	64.15	84	-19.86	PK
11009.3	37.32	36	197	H	38.80	16.75	33.67	59.20	64	-4.81	AV
11053	42.81	343	211	V	38.79	16.75	33.67	64.68	84	-19.32	PK
11400	38.58	343	211	V	38.79	16.75	33.67	60.45	64	-3.55	AV

802.11 HT/VHT20 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5745 MHz HT/VHT20 mode											
10093	43.64	175	212	H	38.60	14.18	35.36	61.06	84	-22.94	PK
10186.5	38.76	175	212	H	38.60	14.18	35.36	56.18	64	-7.82	AV
70067	43.74	168	208	V	38.56	14.18	35.36	61.12	84	-22.88	PK
10186.5	38.57	168	208	V	38.56	14.18	35.36	55.95	64	-8.05	AV
11893	42.04	175	212	H	38.80	14.94	34.65	61.13	84	-22.87	PK
11000	37.74	175	212	H	38.80	14.94	34.65	56.83	64	-7.17	AV
11827	41.83	168	208	V	38.79	14.94	34.65	60.91	84	-23.09	PK
11000	40.35	168	208	V	38.79	14.94	34.65	59.43	64	-4.57	AV
Mid Channel 5785 MHz HT/VHT20 mode											
10413	44.21	139	207	H	38.60	14.18	35.36	61.63	84	-22.37	PK
10185.6	38.63	139	207	H	38.60	14.18	35.36	56.05	64	-7.95	AV
10120	44.42	177	215	V	38.56	14.18	35.36	61.80	84	-22.20	PK
10119.2	38.91	177	215	V	38.56	14.18	35.36	56.29	64	-7.71	AV
11813	42.09	139	207	H	38.80	14.94	33.67	62.15	84	-21.85	PK
11036.1	37.79	139	207	H	38.80	14.94	33.67	57.85	64	-6.15	AV
11907	42.50	177	215	V	38.79	14.94	33.67	62.56	84	-21.44	PK
11039.1	37.68	177	215	V	38.79	14.94	33.67	57.74	64	-6.26	AV
High Channel 5825 MHz HT/VHT20 mode											
10173	43.75	36	197	H	38.60	14.18	35.36	61.17	84	-22.83	PK
10418	36.93	36	197	H	38.60	14.18	35.36	54.35	64	-9.65	AV
10107	43.53	343	211	V	38.56	14.18	35.36	60.91	84	-23.09	PK
10113.3	38.75	343	211	V	38.56	14.18	35.36	56.13	64	-7.87	AV
11893	40.97	36	197	H	38.80	16.75	33.67	62.85	84	-21.16	PK
11399.8	36.88	36	197	H	38.80	16.75	33.67	58.76	64	-5.25	AV
11840	42.37	343	211	V	38.79	16.75	33.67	64.24	84	-19.76	PK
11399.8	38.07	343	211	V	38.79	16.75	33.67	59.94	64	-4.06	AV

802.11 HT/VHT40 mode

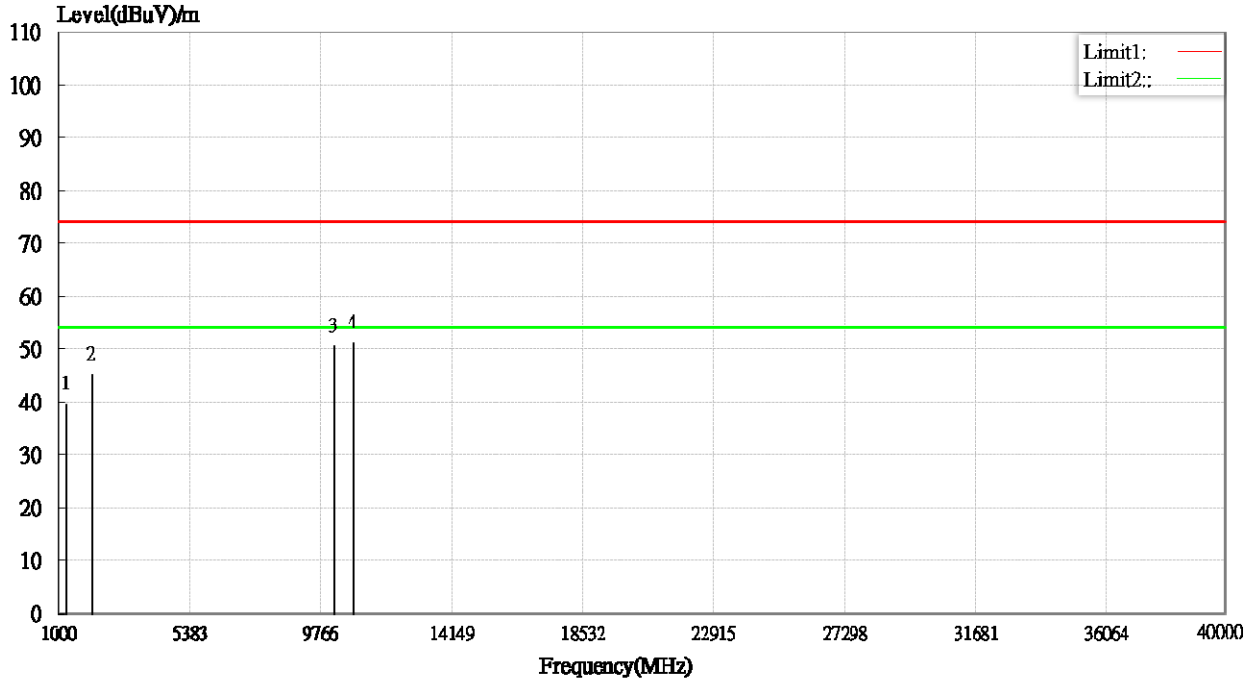
Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low channel 5755 MHz HT/VHT 40 mode											
10440	45.34	243	167	H	38.80	14.94	34.65	64.43	84	-19.57	PK
10440	39.91	243	167	H	38.79	14.94	34.65	58.99	64	-5.01	AV
10440	44.50	330	164	V	38.80	14.94	34.65	63.59	84	-20.41	PK
10440	39.73	330	164	V	38.79	14.94	34.65	58.81	64	-5.19	AV
11550	45.55	243	167	H	39.55	16.74	34.29	67.55	84	-16.45	PK
11550	40.99	243	167	H	39.48	16.74	34.29	62.92	64	-1.08	AV
11550	43.62	330	164	V	39.55	16.74	34.29	65.62	84	-18.38	PK
11550	39.69	330	164	V	39.48	16.74	34.29	61.62	64	-2.38	AV
High channel 5795 MHz HT/VHT 40 mode											
10330	46.35	276	165	H	38.80	14.94	34.65	65.44	84	-18.56	PK
10330	38.99	276	165	H	38.79	14.94	34.65	58.07	64	-5.93	AV
10330	46.10	121	165	V	38.80	14.94	34.65	65.19	84	-18.81	PK
10330	38.93	121	165	V	38.79	14.94	34.65	58.01	64	-5.99	AV
11600	46.36	276	165	H	39.55	16.74	34.29	68.36	84	-15.64	PK
11600	38.99	276	165	H	39.48	16.74	34.29	60.92	64	-3.08	AV
11600	45.97	121	165	V	39.55	16.74	34.29	67.97	84	-16.03	PK
11600	38.75	121	165	V	39.48	16.74	34.29	60.68	64	-3.32	AV

802.11 VHT80 mode

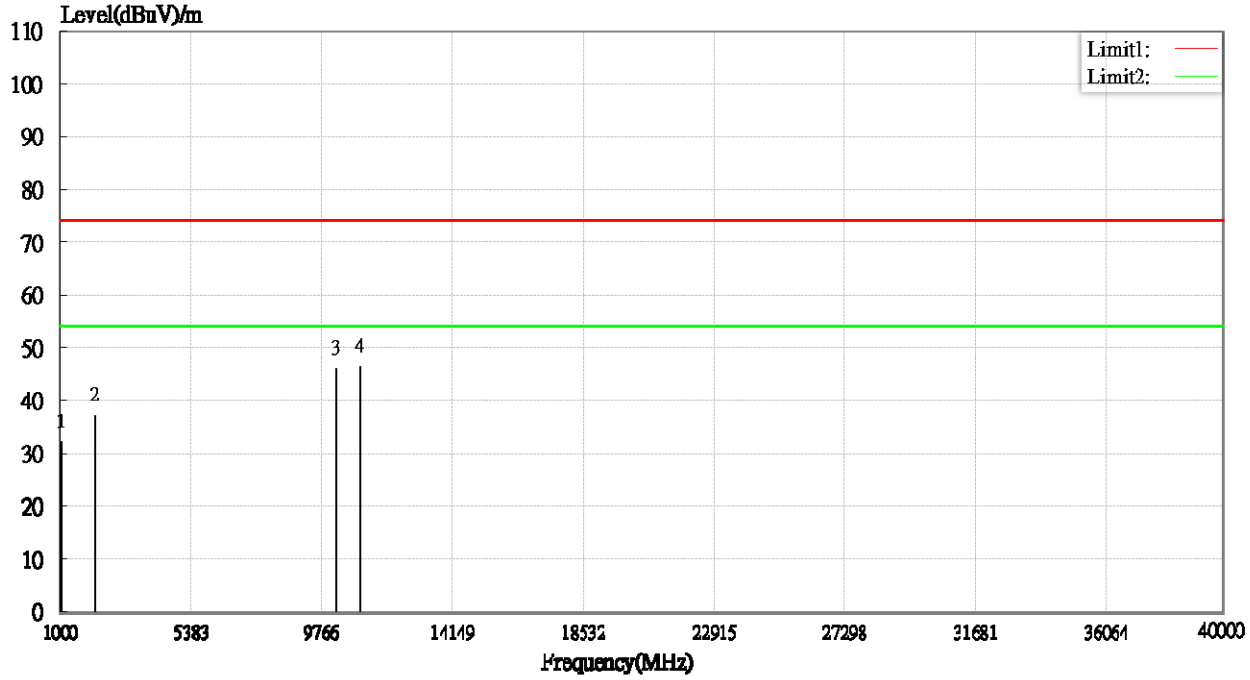
Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISED		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Channel 5775 MHz VHT 80 mode											
10820	15.99	64	167	H	38.80	14.94	34.65	35.08	84	-48.92	PK
10820	39.70	64	167	H	38.79	14.94	34.65	58.78	64	-5.22	AV
10820	45.82	113	164	V	38.80	14.94	34.65	64.91	84	-19.09	PK
10820	39.65	113	164	V	38.79	14.94	34.65	58.73	64	-5.27	AV
11740	45.61	64	167	H	39.55	16.74	34.29	67.61	84	-16.39	PK
11740	40.51	64	167	H	39.48	16.74	34.29	62.44	64	-1.56	AV
11740	46.09	113	164	V	39.55	16.74	34.29	68.09	84	-15.91	PK
11740	40.02	113	164	V	39.48	16.74	34.29	61.95	64	-2.05	AV

Please refer to the following plots,

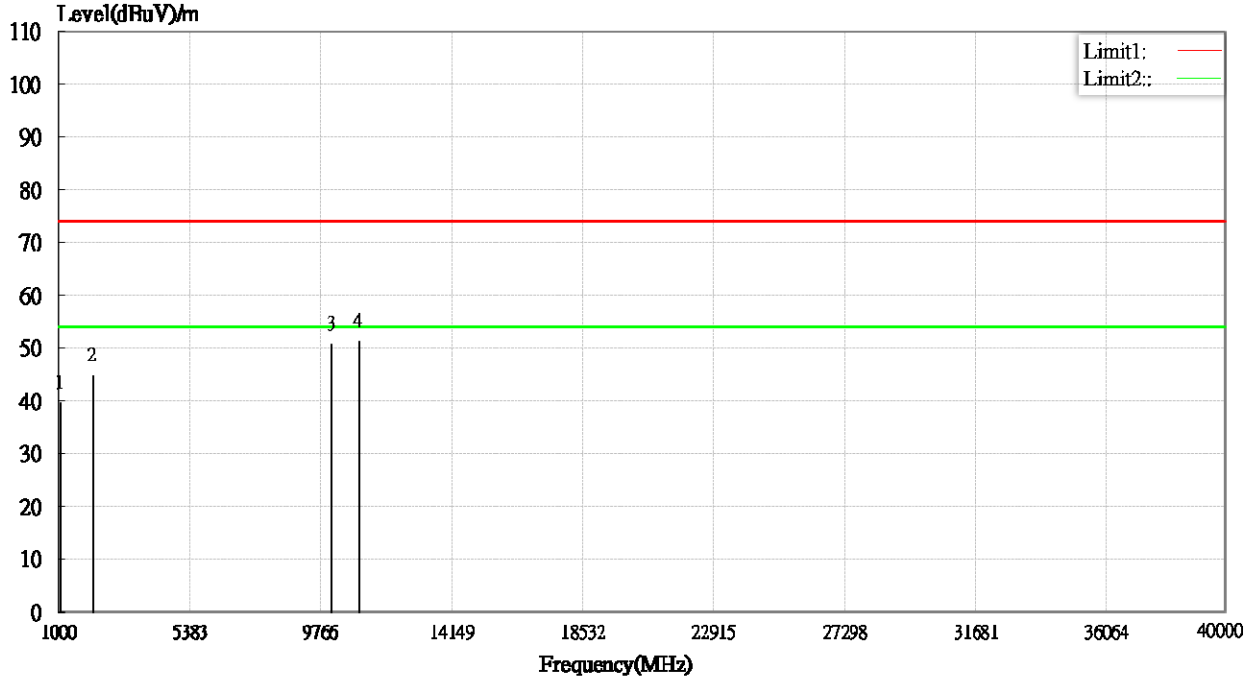
nonHT20 5260 MHz H-pol Peak



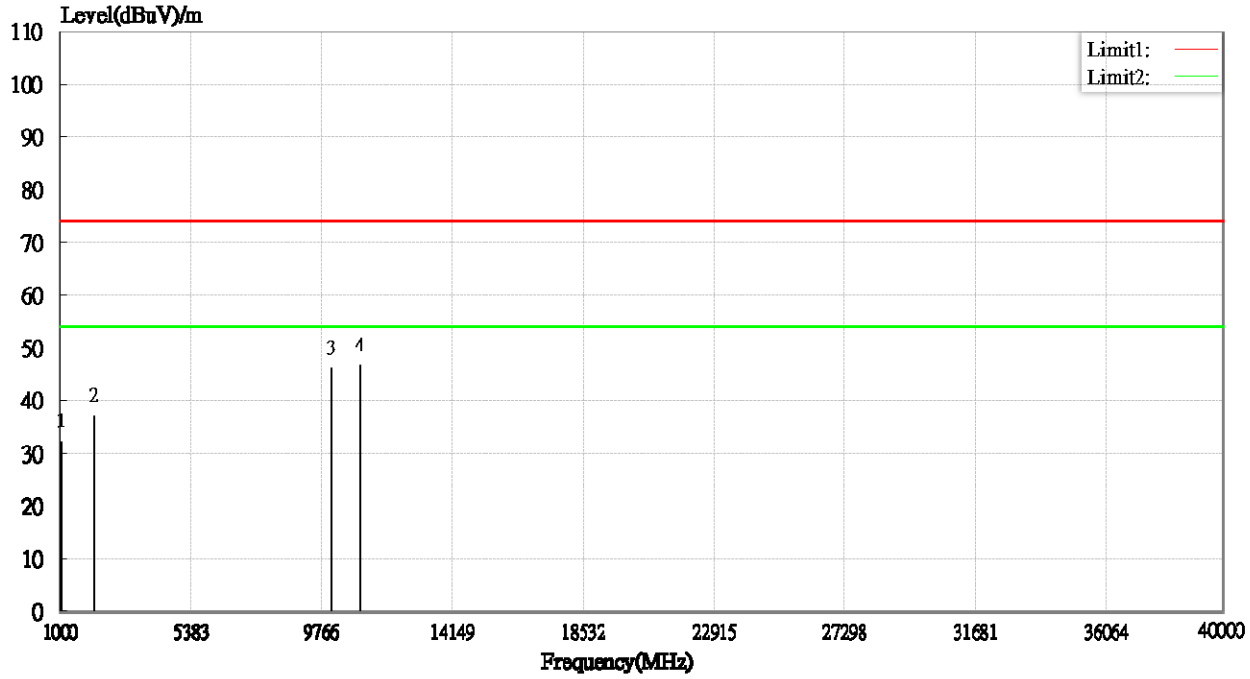
nonHT20 5260 MHz H-pol Avg



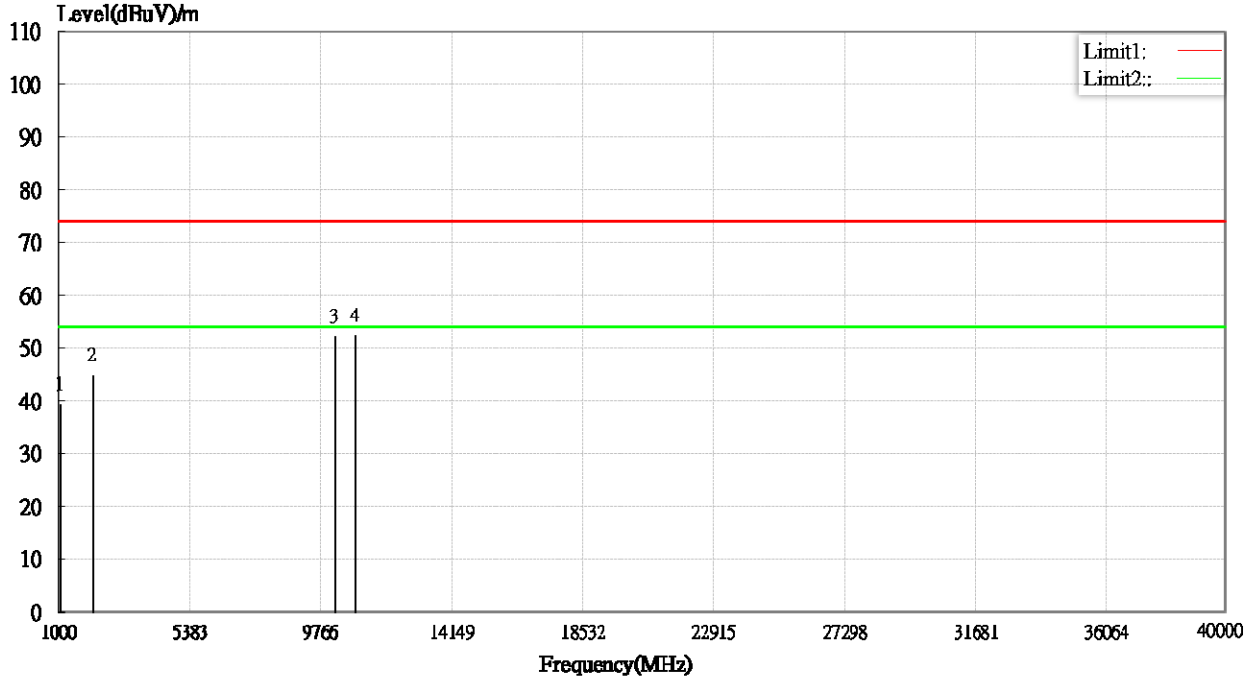
nonHT20 5260 MHz V-pol Peak



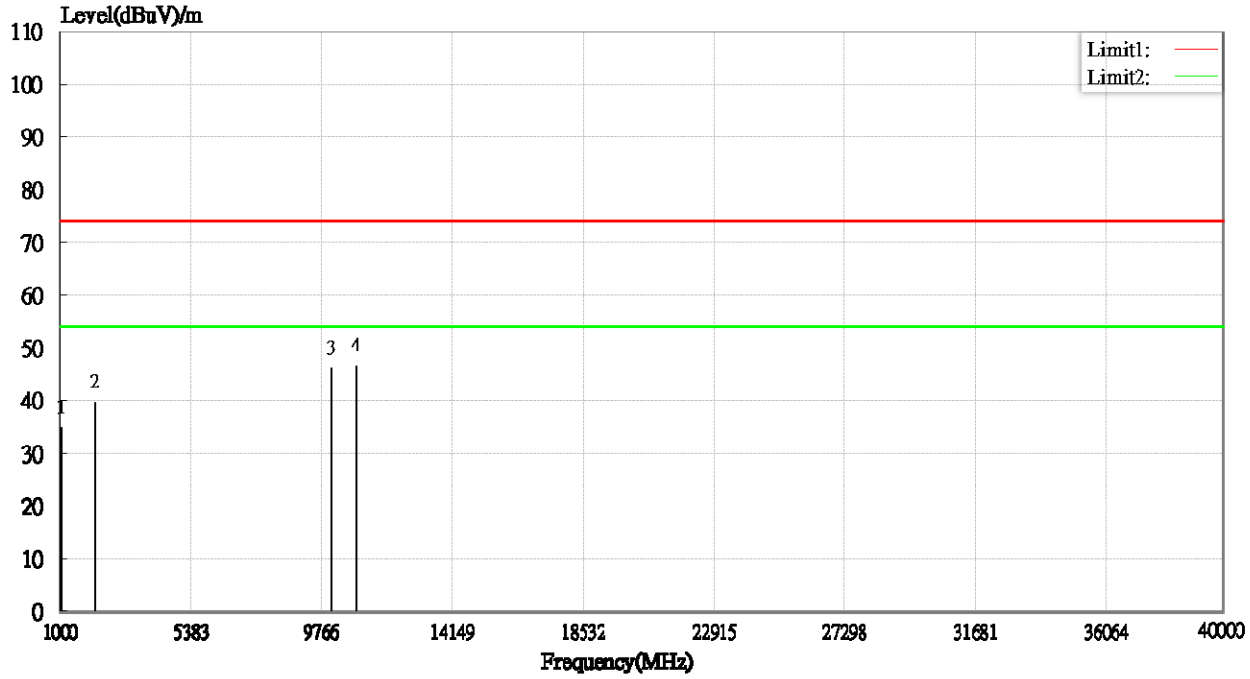
nonHT20 5260 MHz V-pol Avg



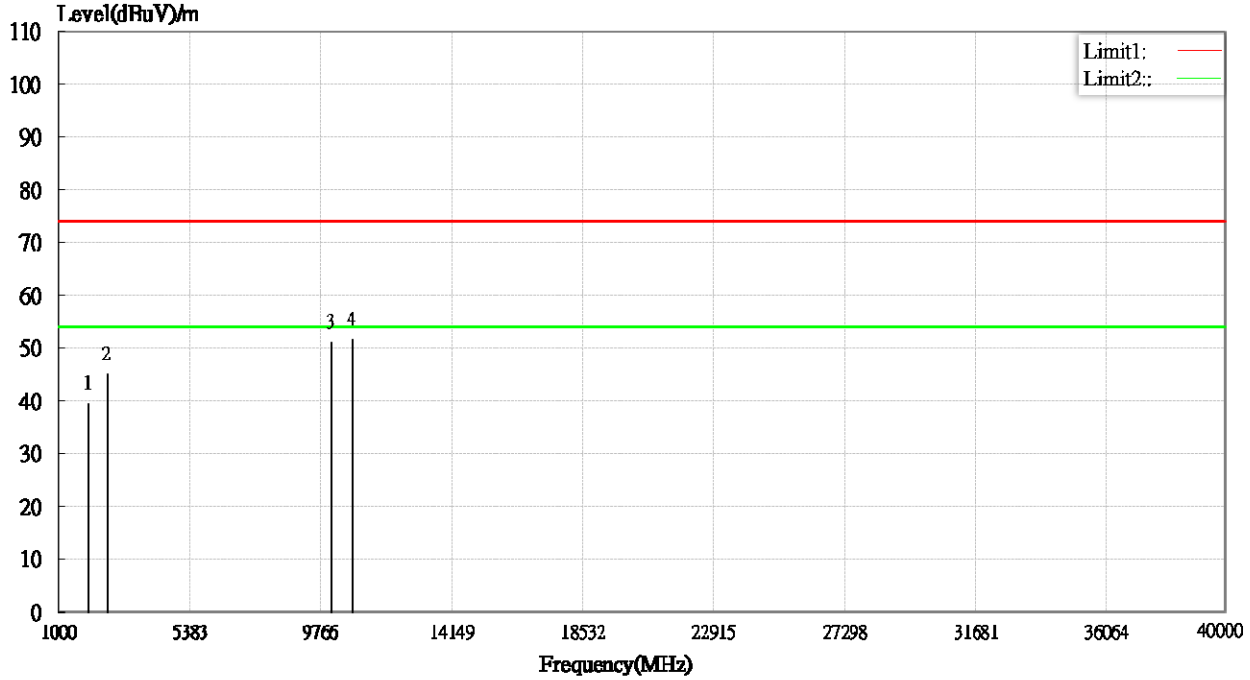
nonHT20 5300 MHz H-pol Peak



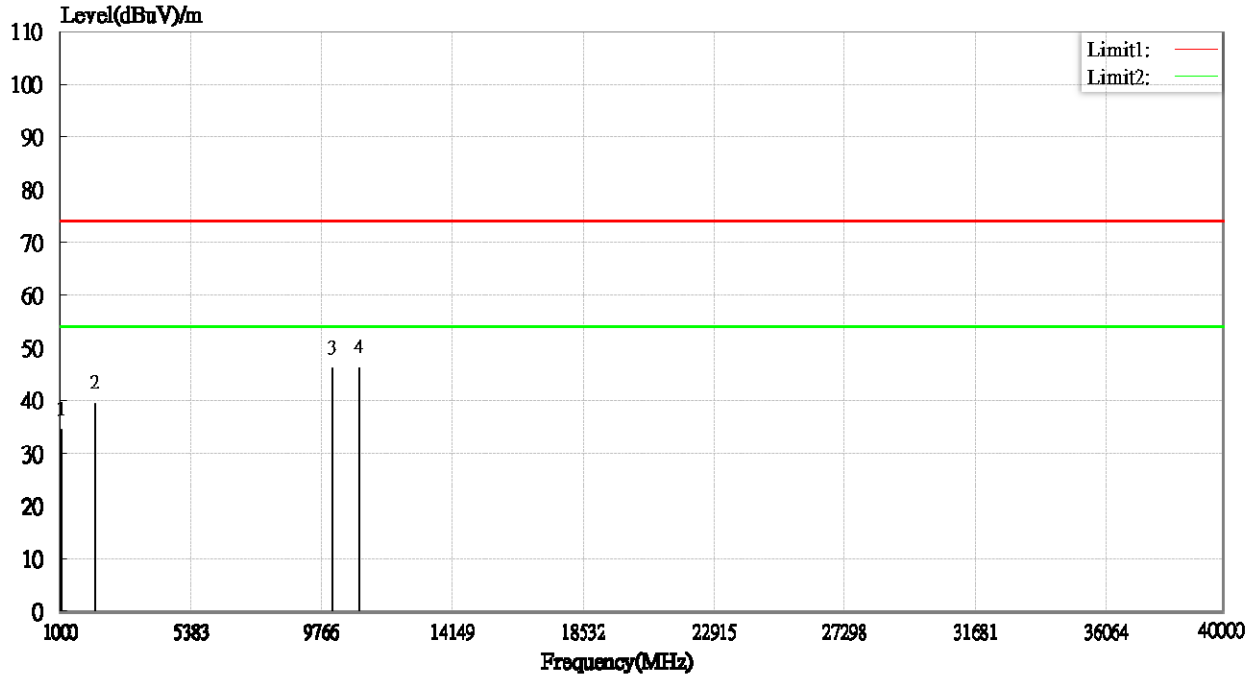
nonHT20 5300 MHz H-pol Avg



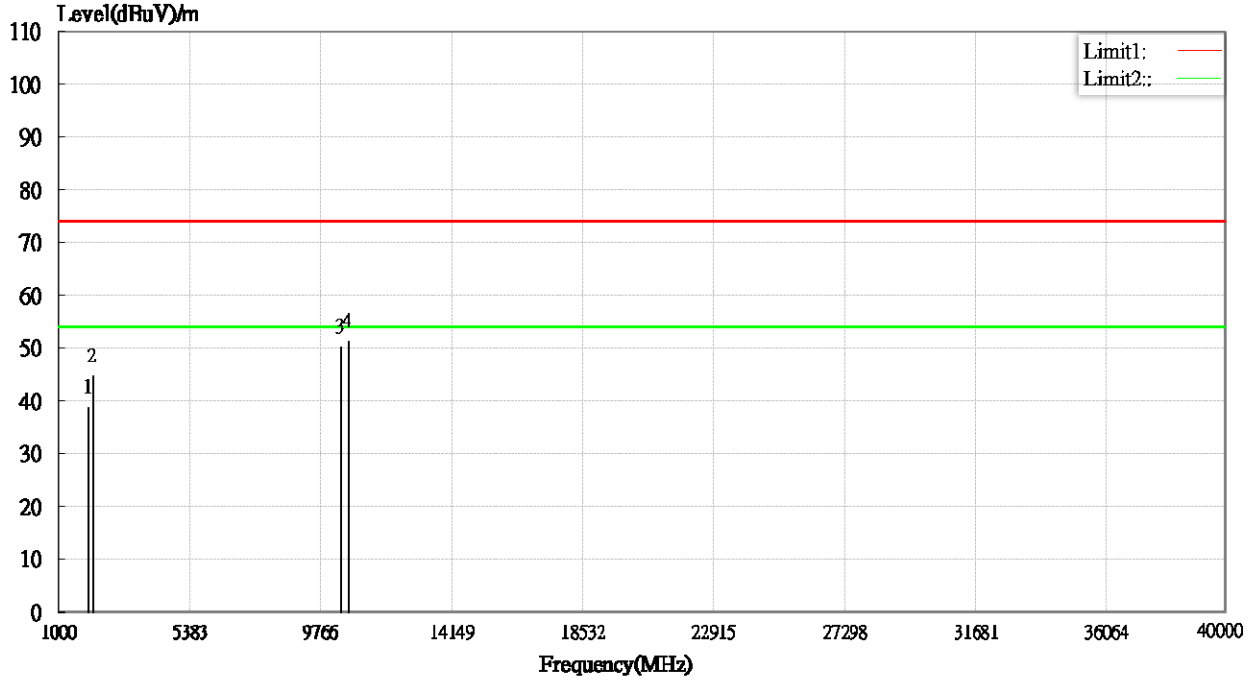
nonHT20 5300 MHz V-pol Peak



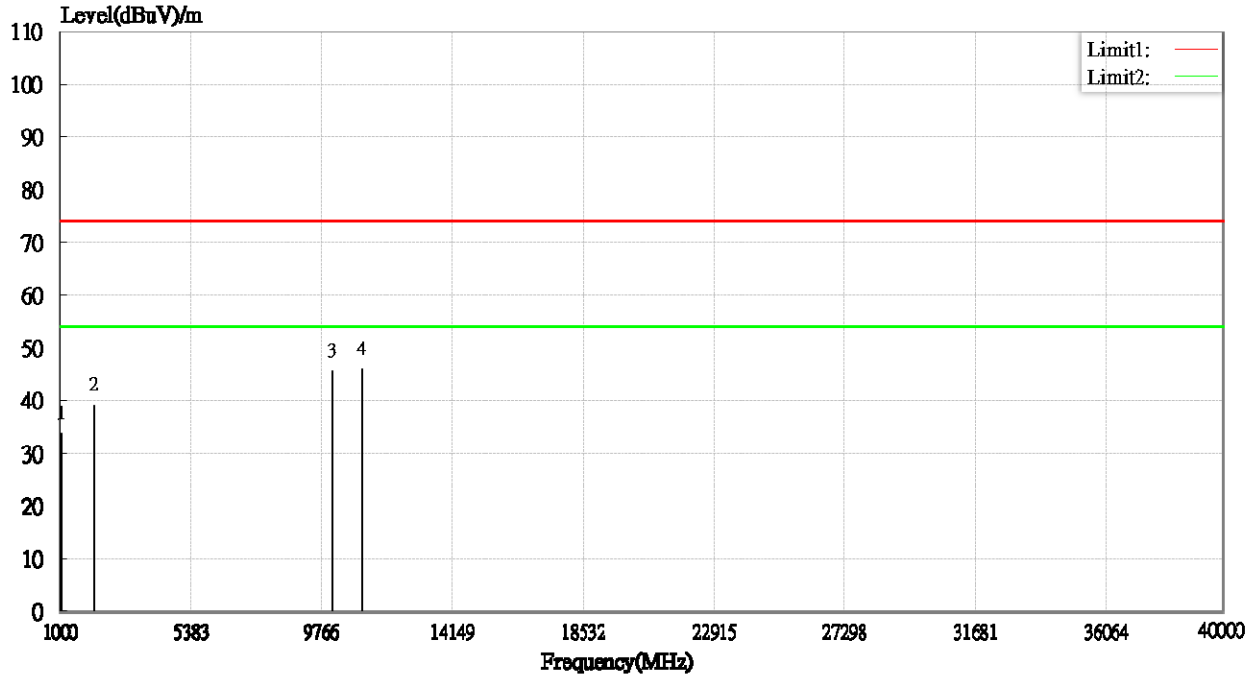
nonHT20 5300 MHz V-pol Avg



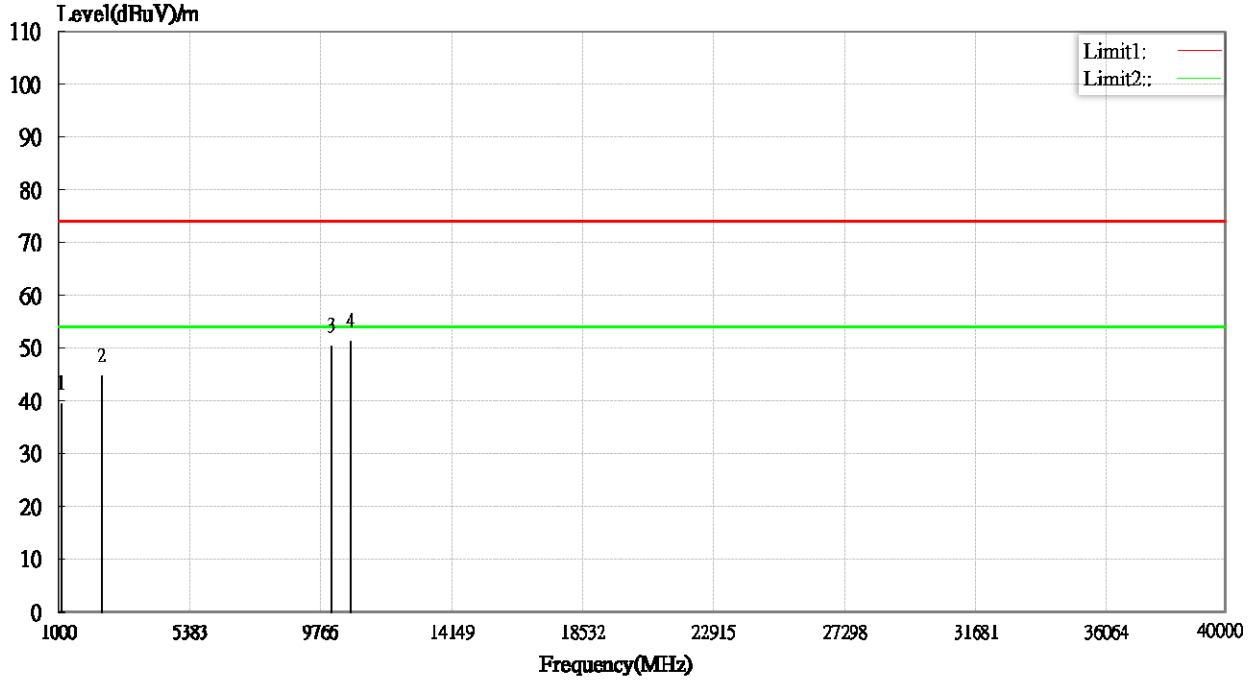
nonHT20 5320 MHz H-pol Peak



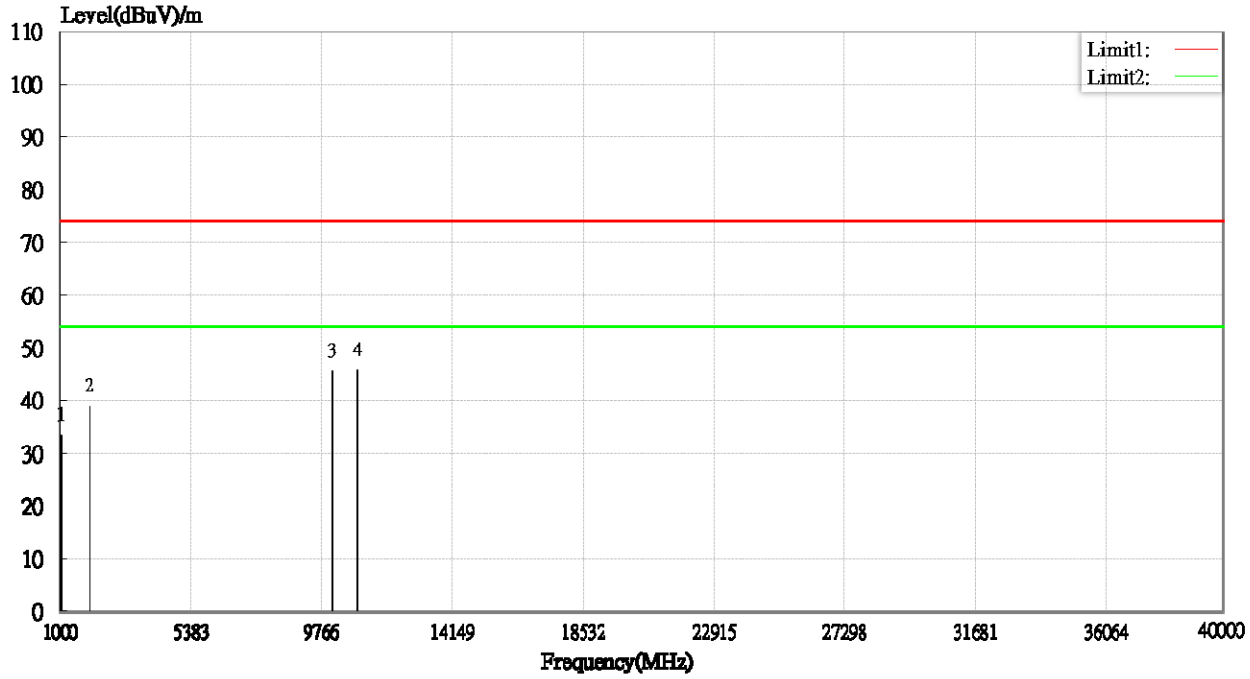
nonHT20 5320 MHz H-pol Avg



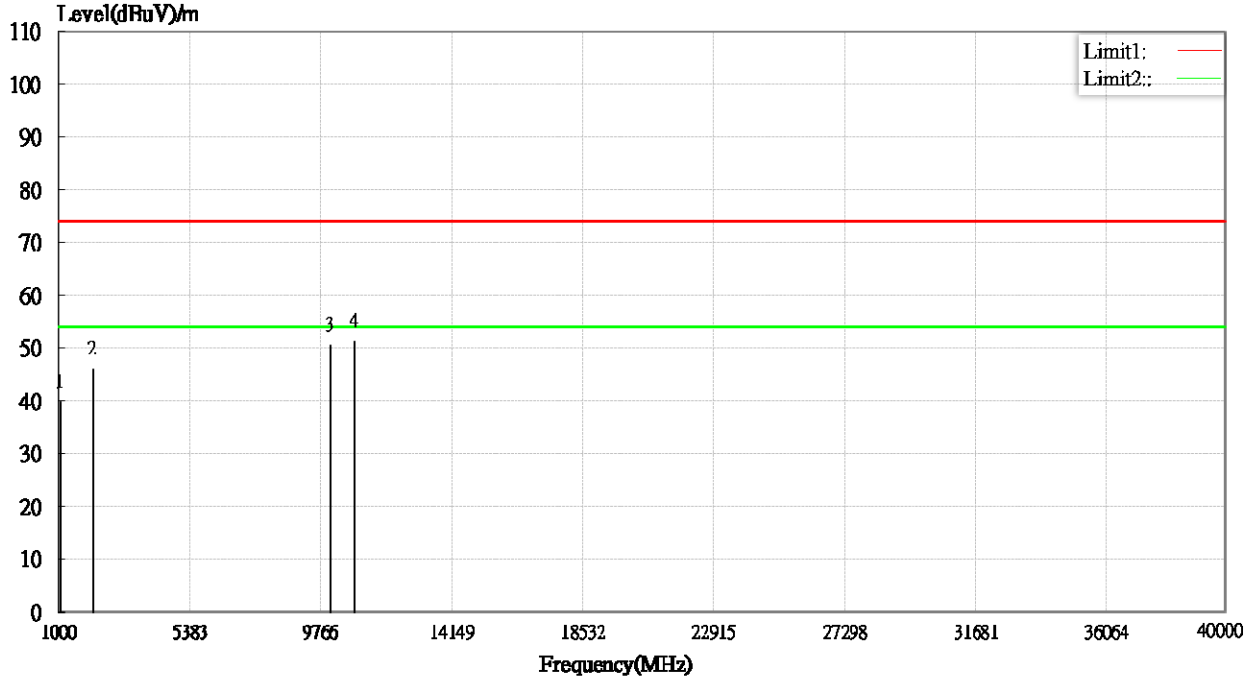
nonHT20 5320 MHz V-pol Peak



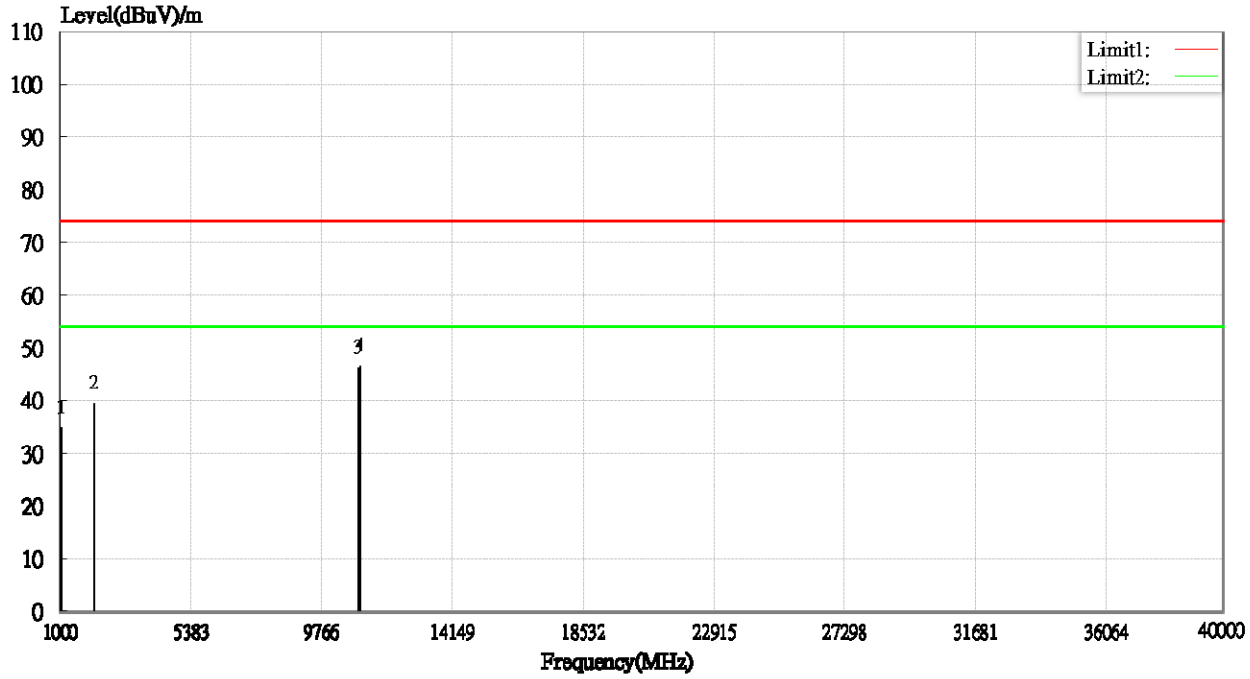
nonHT20 5320 MHz V-pol Avg



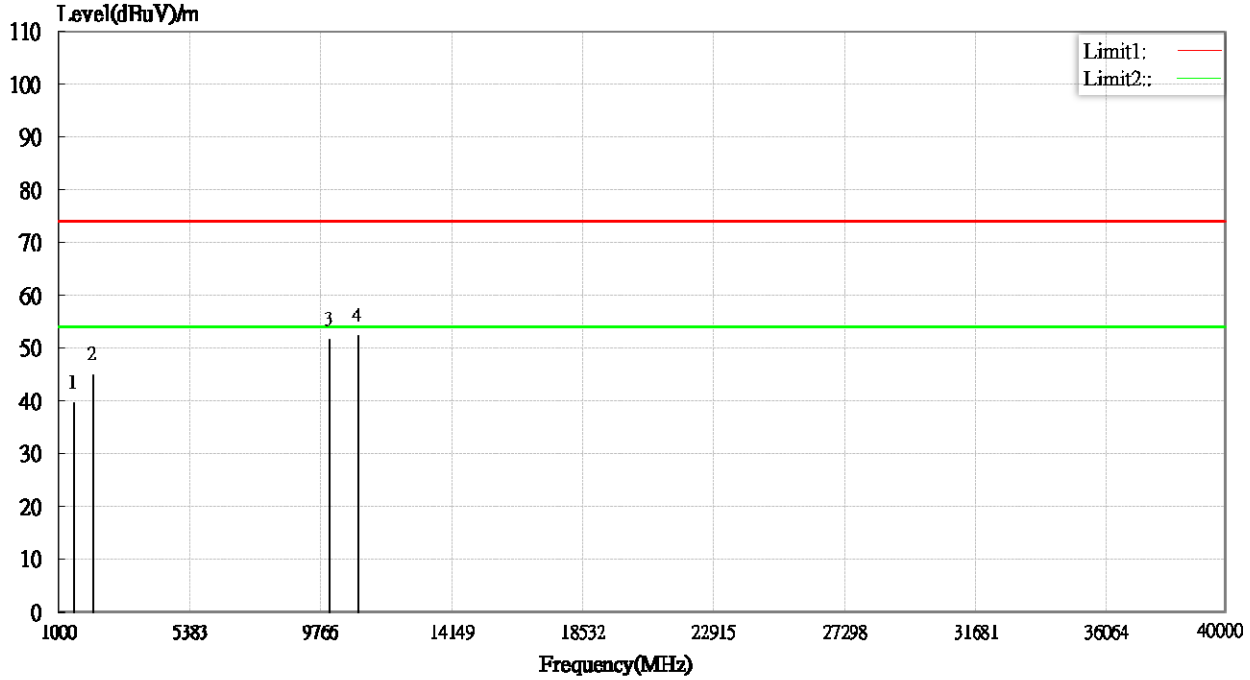
HT20 5260 MHz H-pol Peak



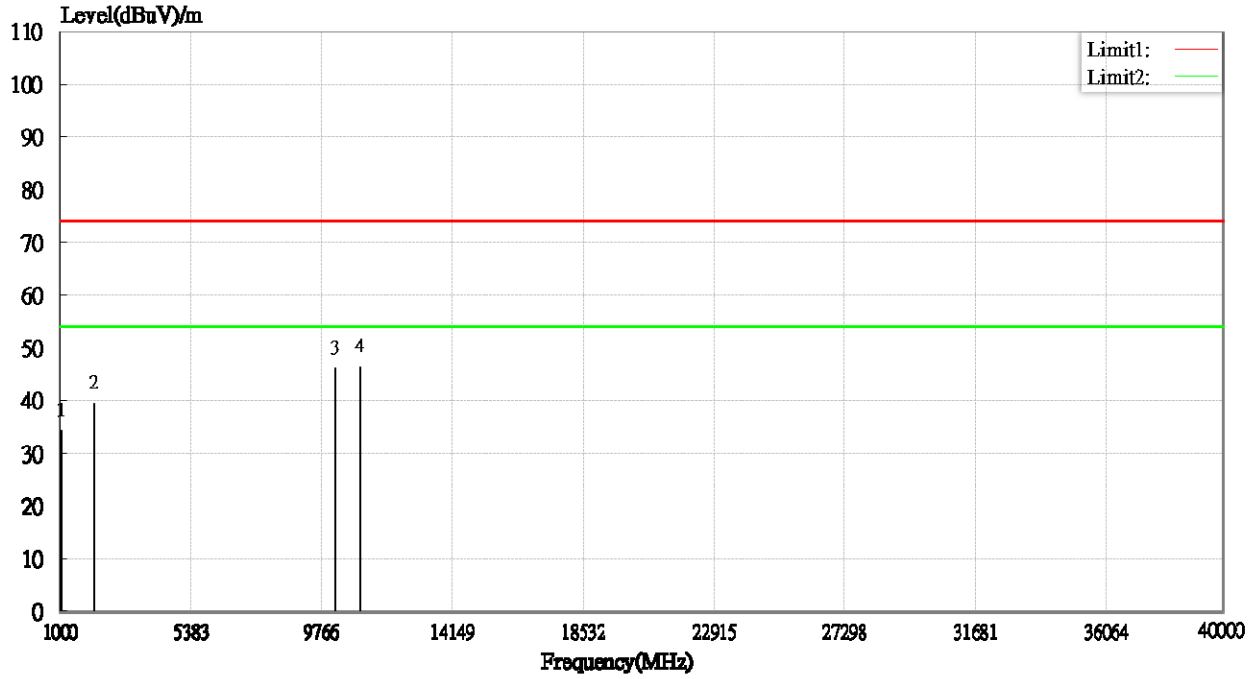
HT20 5260 MHz H-pol Avg



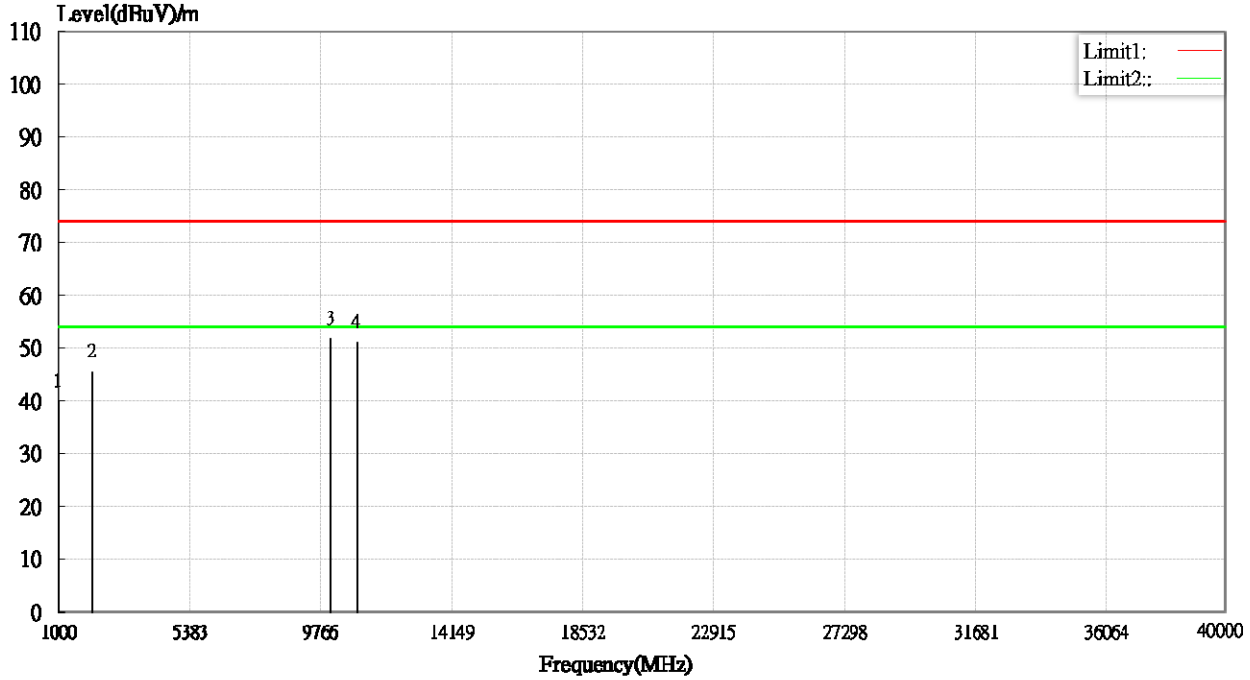
HT20 5260 MHz V-pol Peak



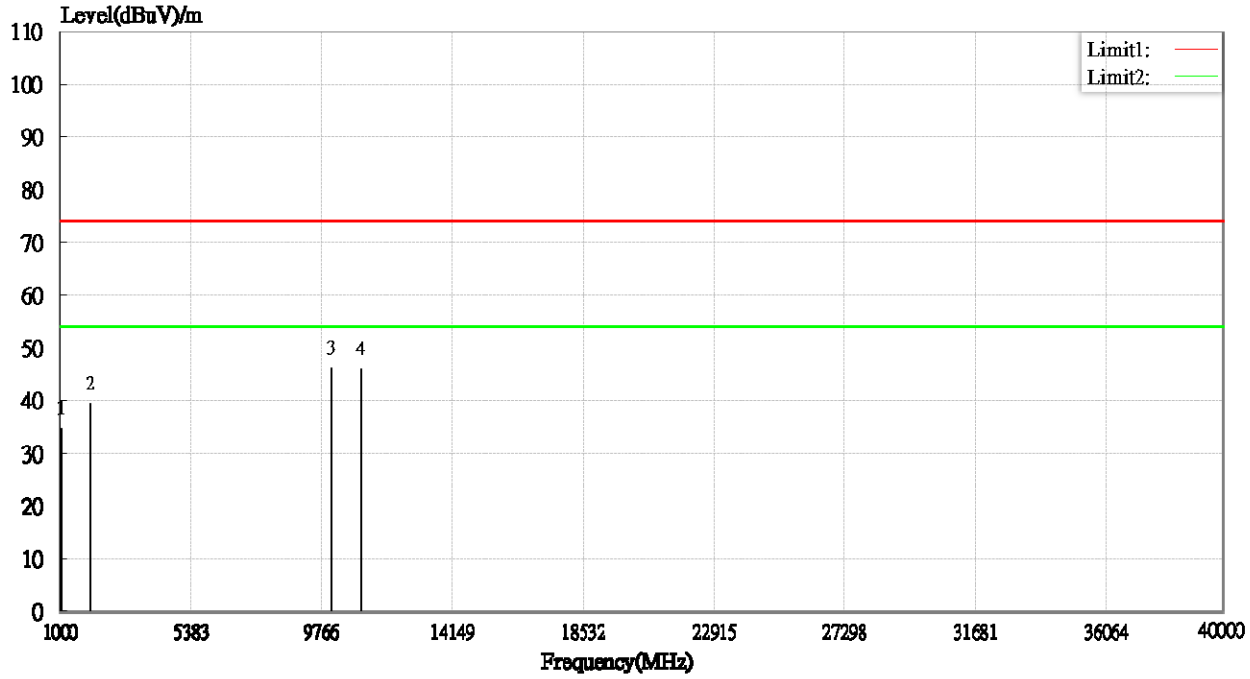
HT20 5260 MHz V-pol Avg



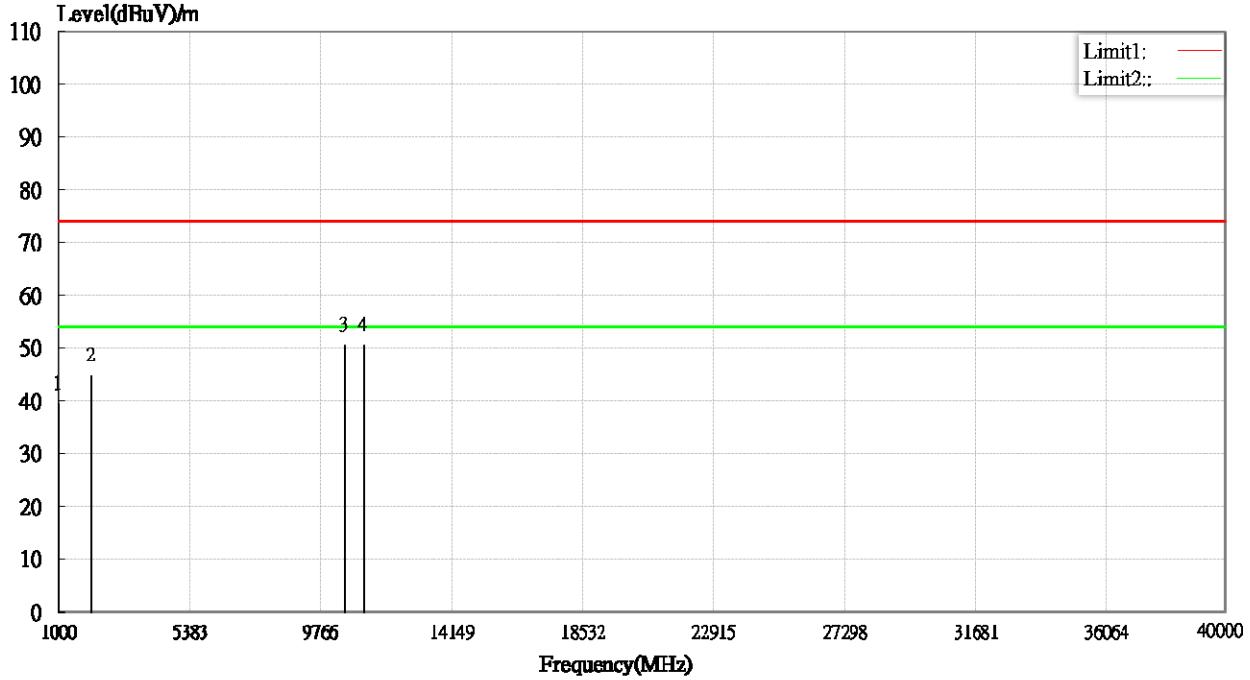
HT20 5300 MHz H-pol Peak



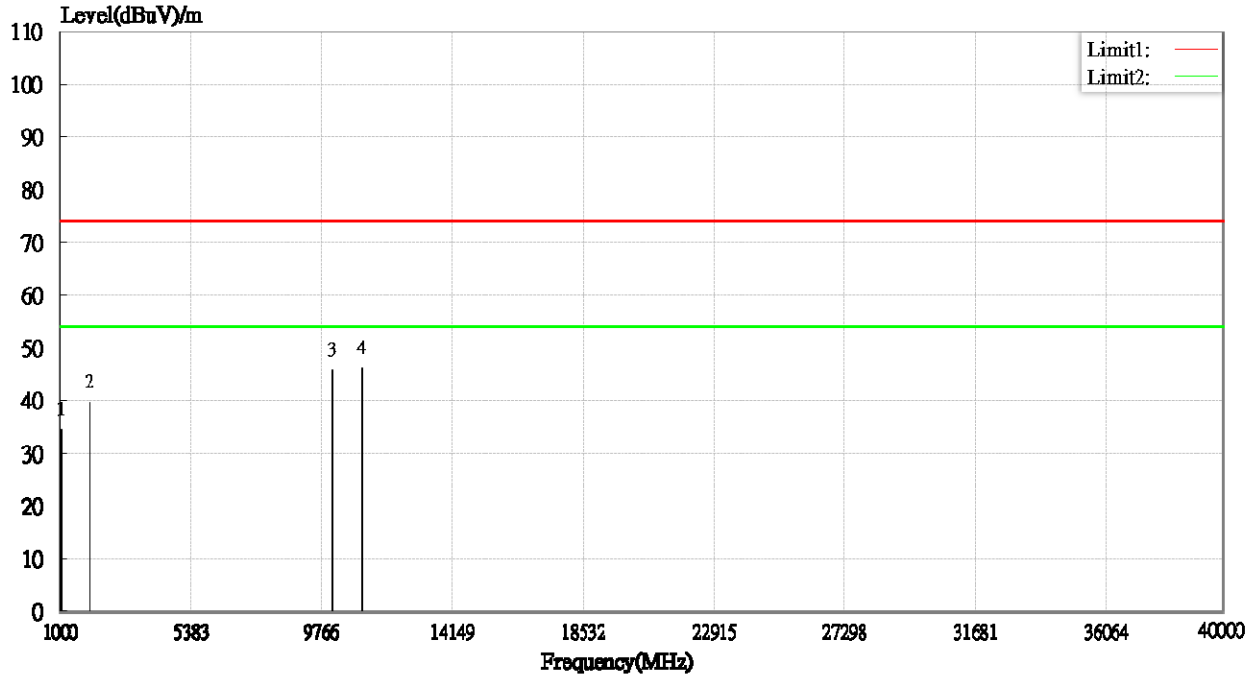
HT20 5300 MHz H-pol Avg



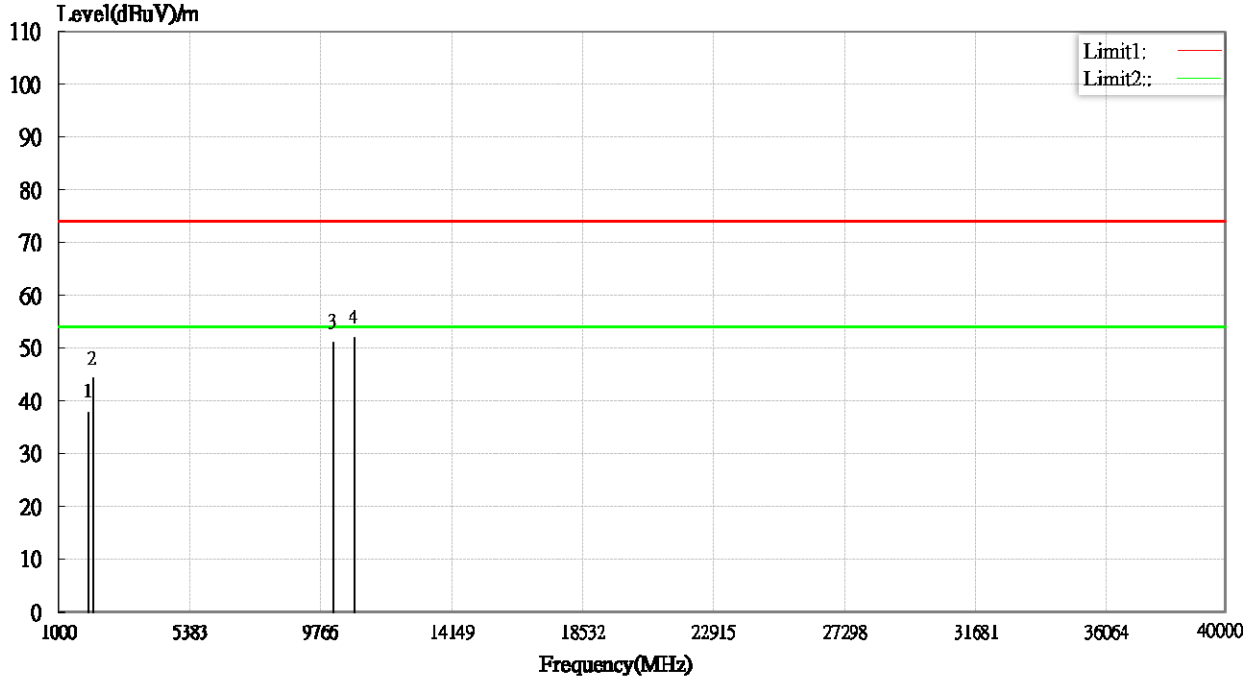
HT20 5300 MHz V-pol Peak



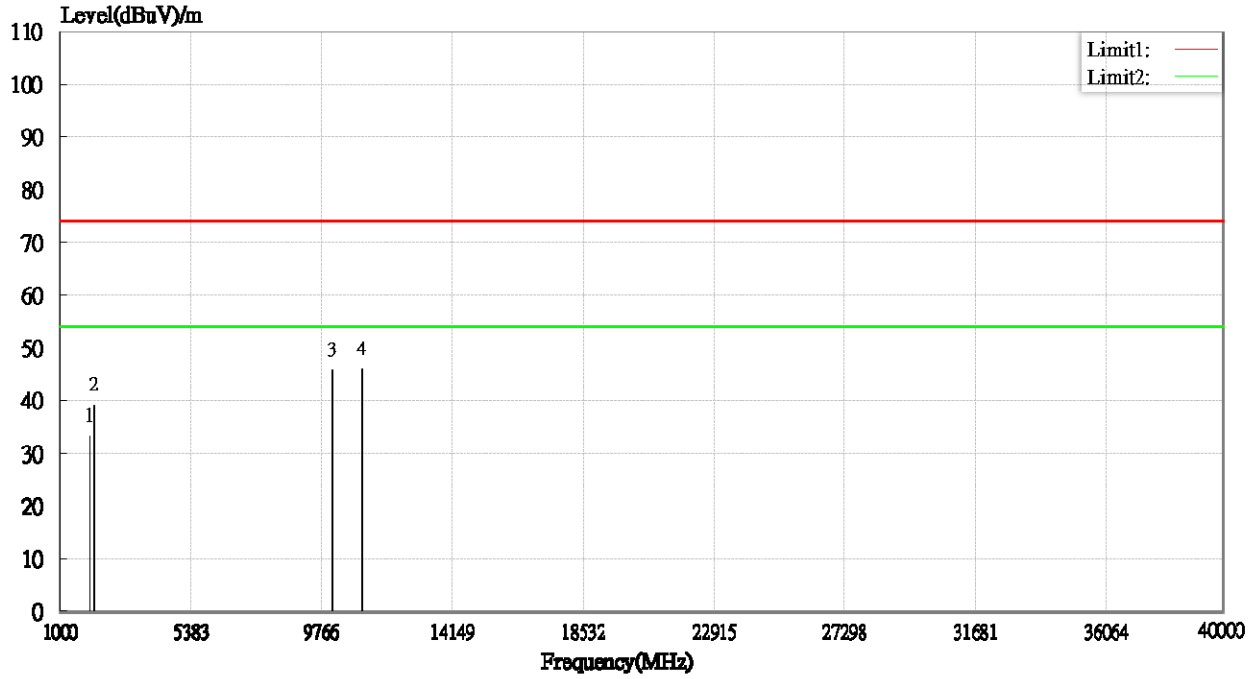
HT20 5300 MHz V-pol Avg



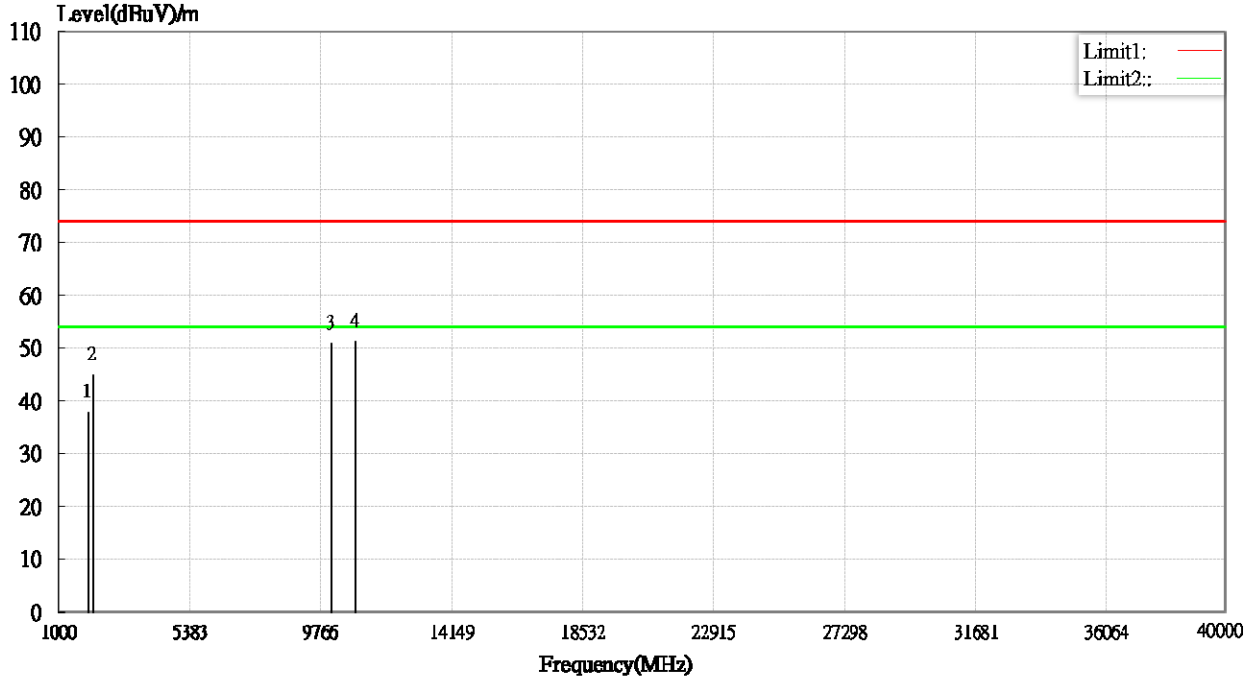
HT20 5320 MHz H-pol Peak



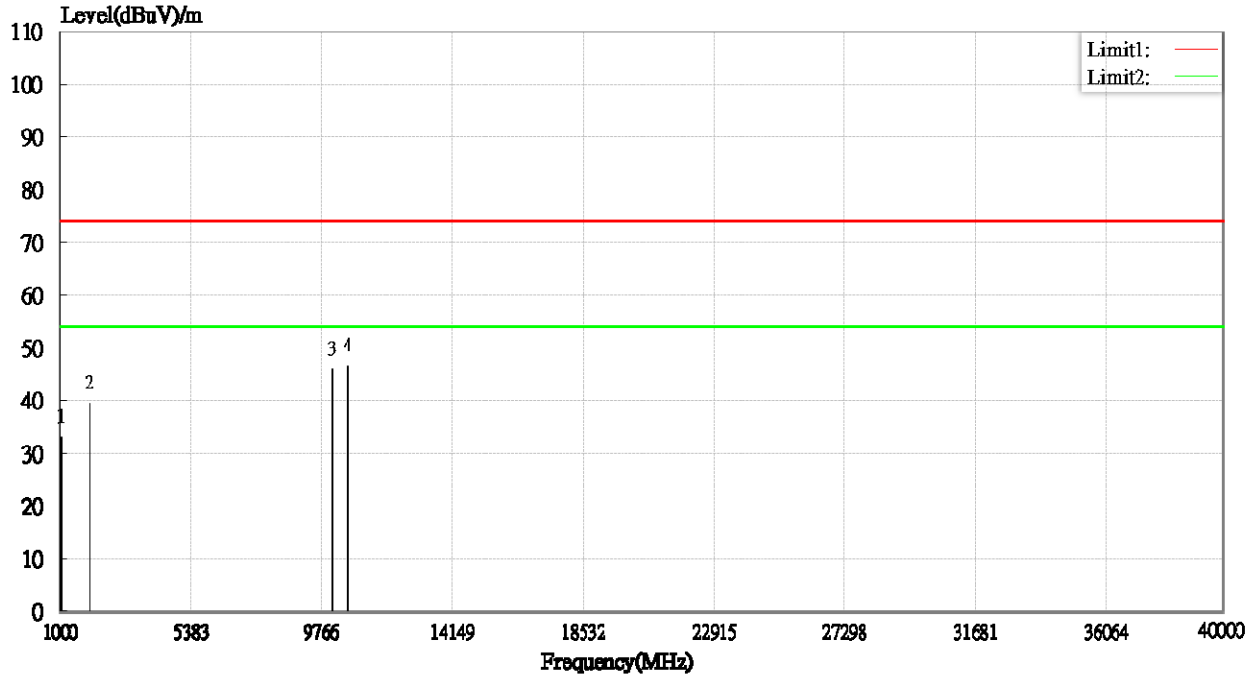
HT20 5320 MHz H-pol Avg



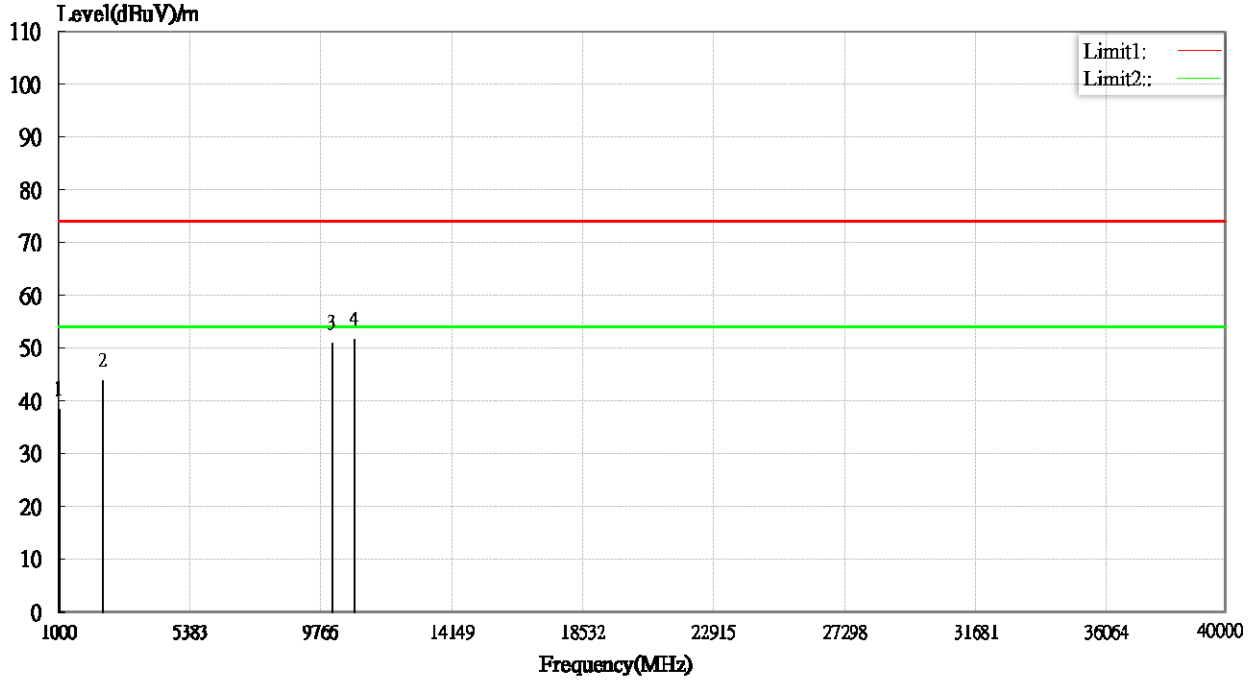
HT20 5320 MHz V-pol Peak



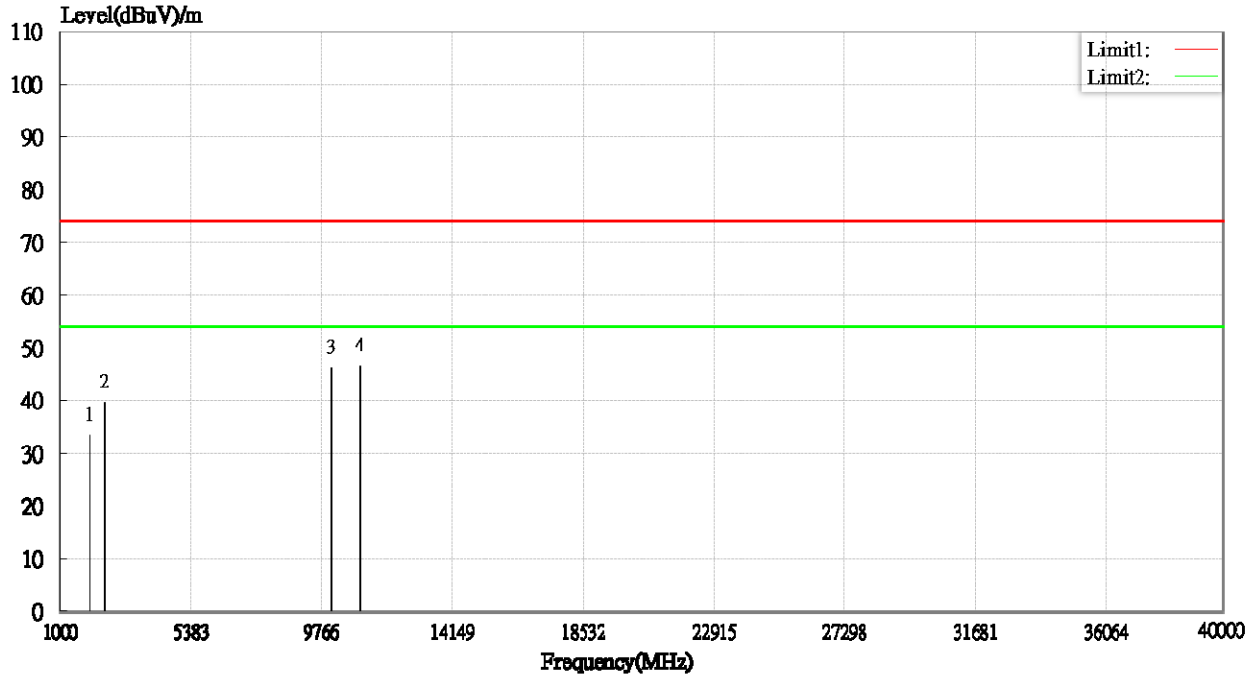
HT20 5320 MHz V-pol Avg



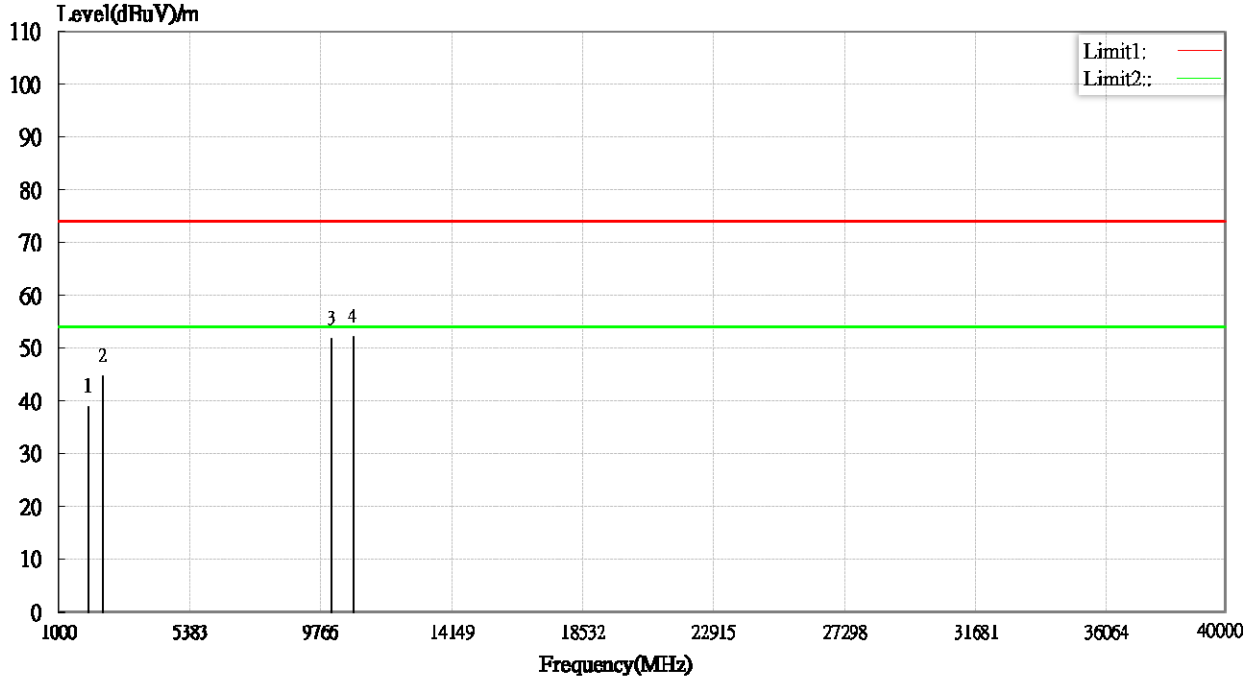
HT40 5270 MHz H-pol Peak



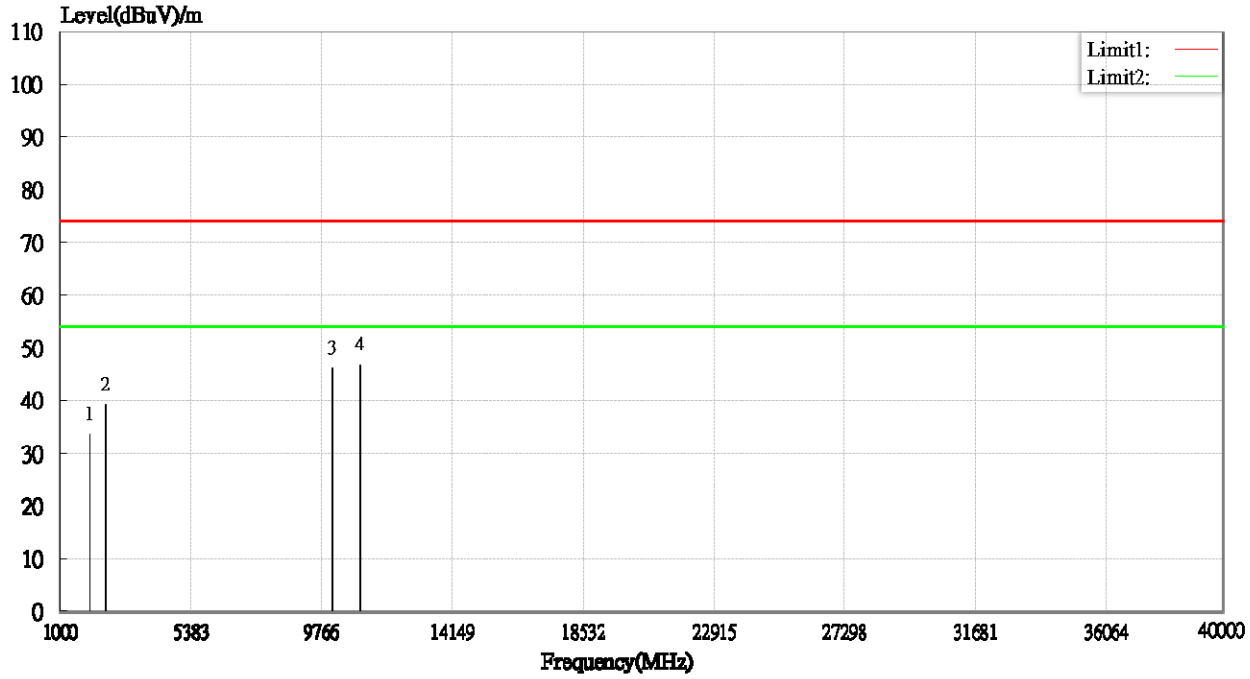
HT40 5270 MHz H-pol Avg



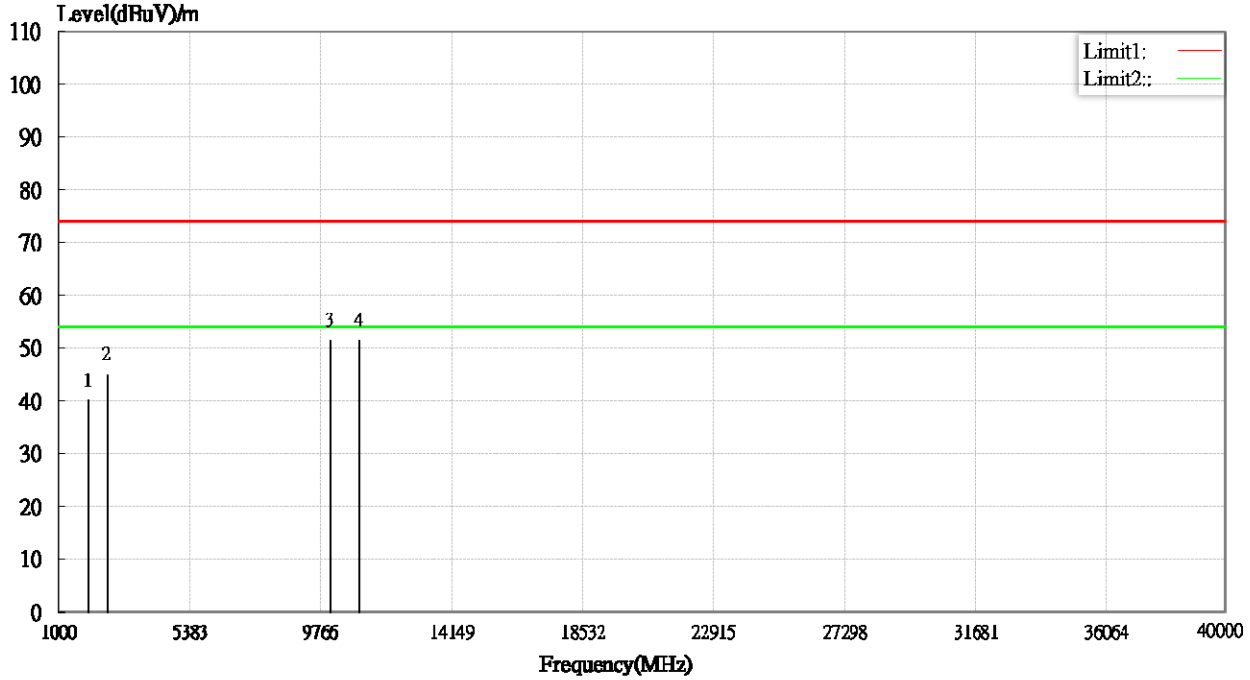
HT40 5270 MHz V-pol Peak



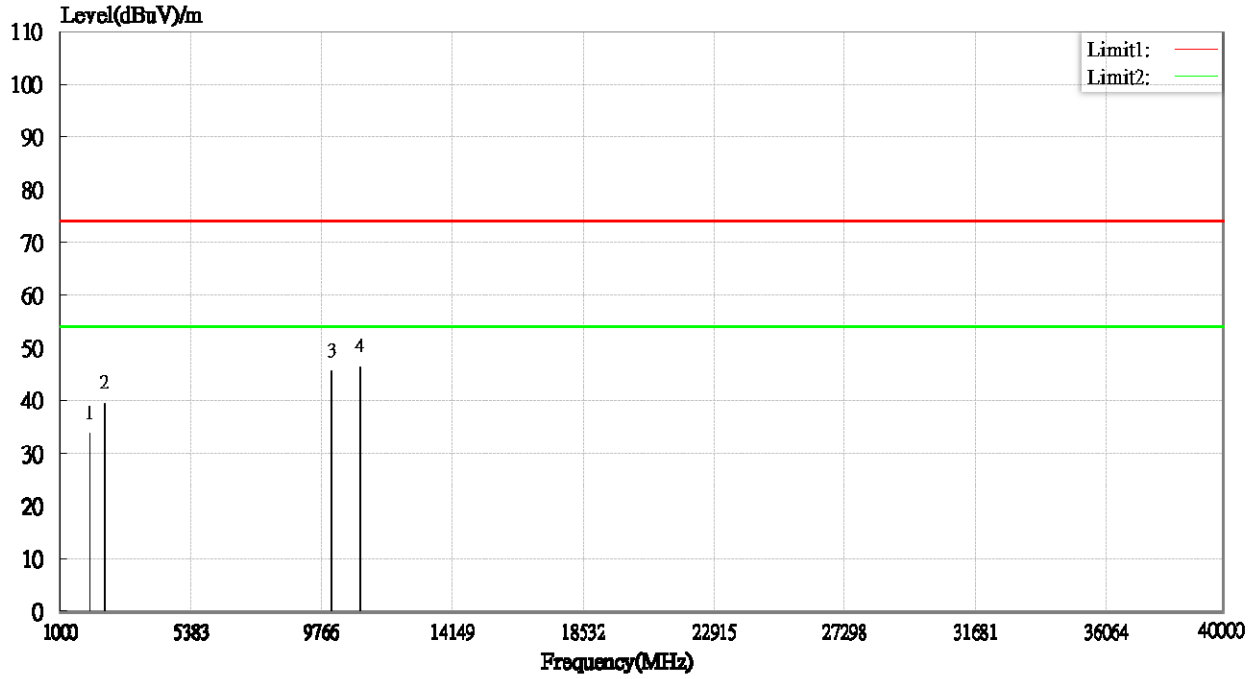
HT40 5270 MHz V-pol Avg



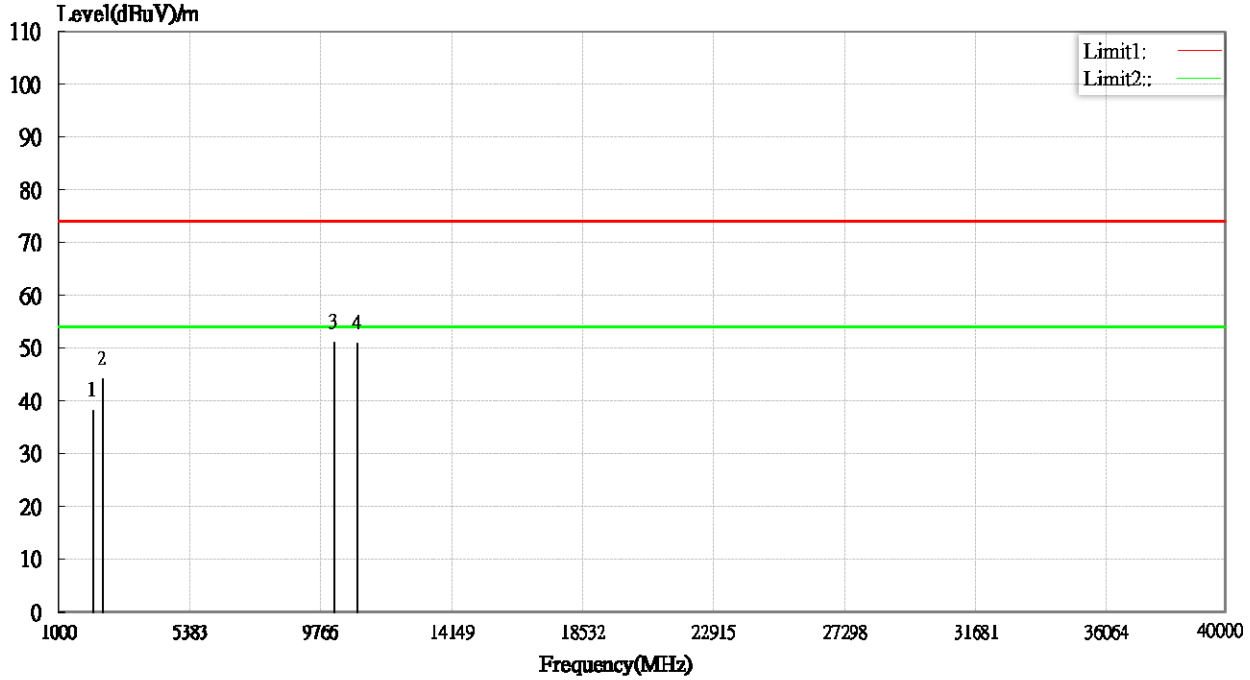
HT40 5310 MHz H-pol Peak



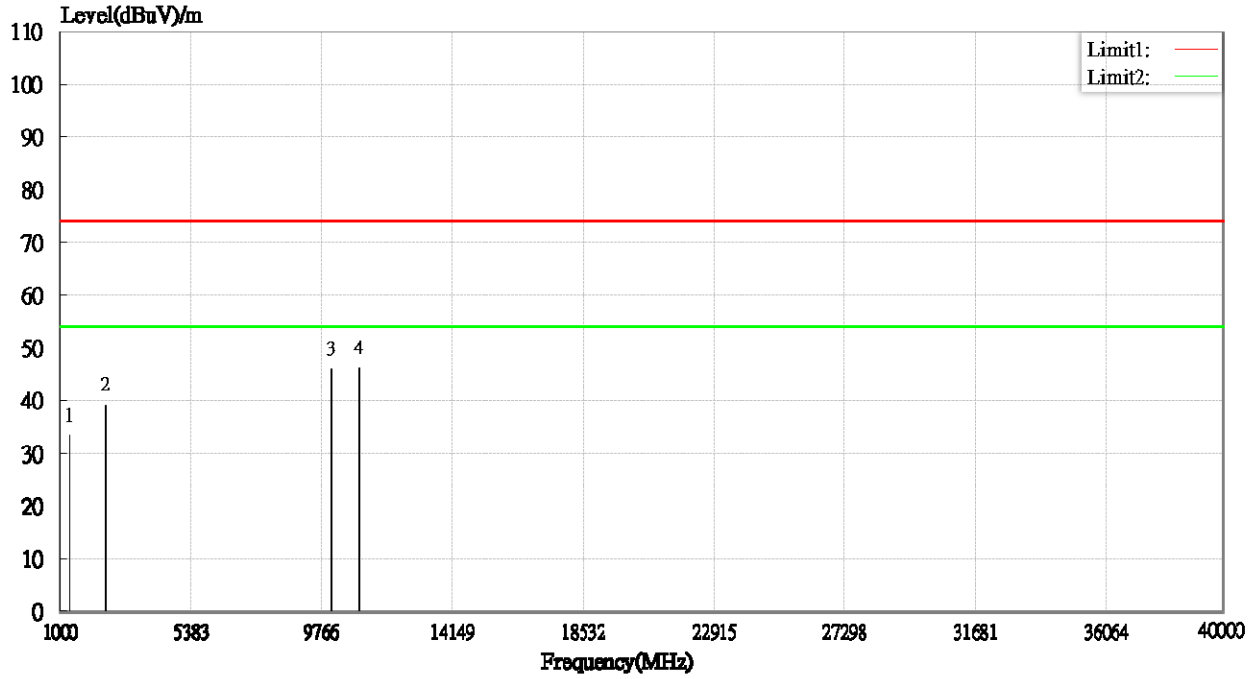
HT40 5310 MHz H-pol Avg



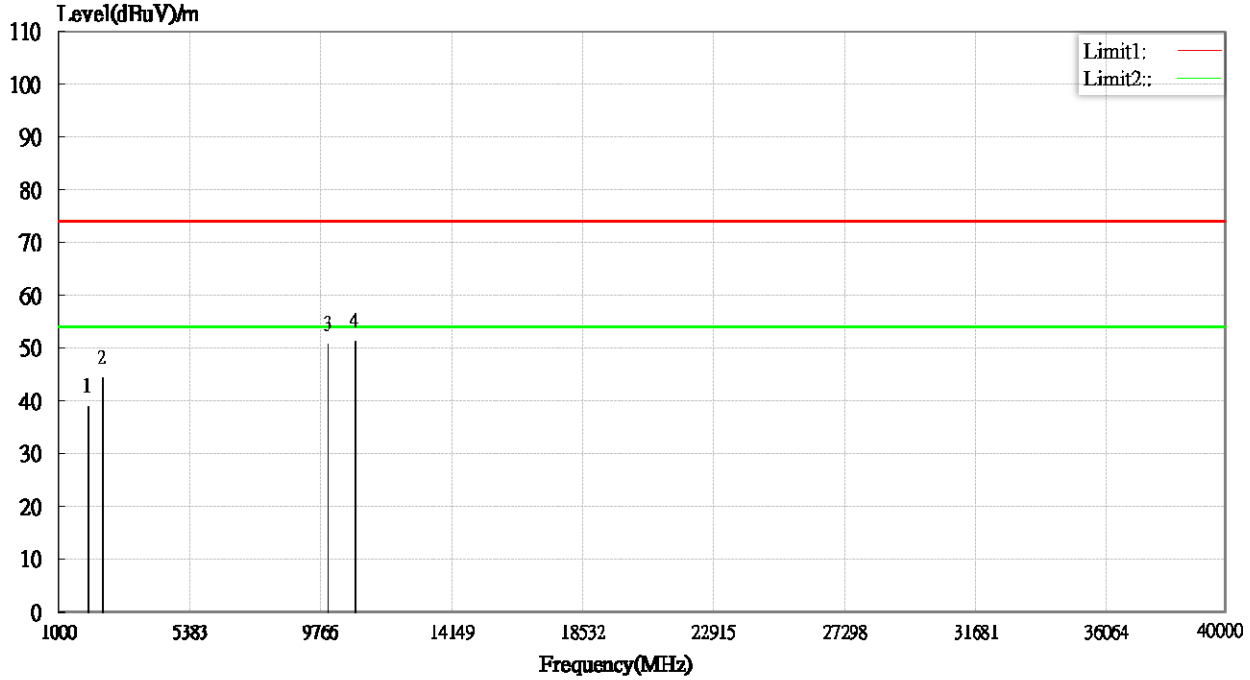
HT40 5310 MHz V-pol Peak



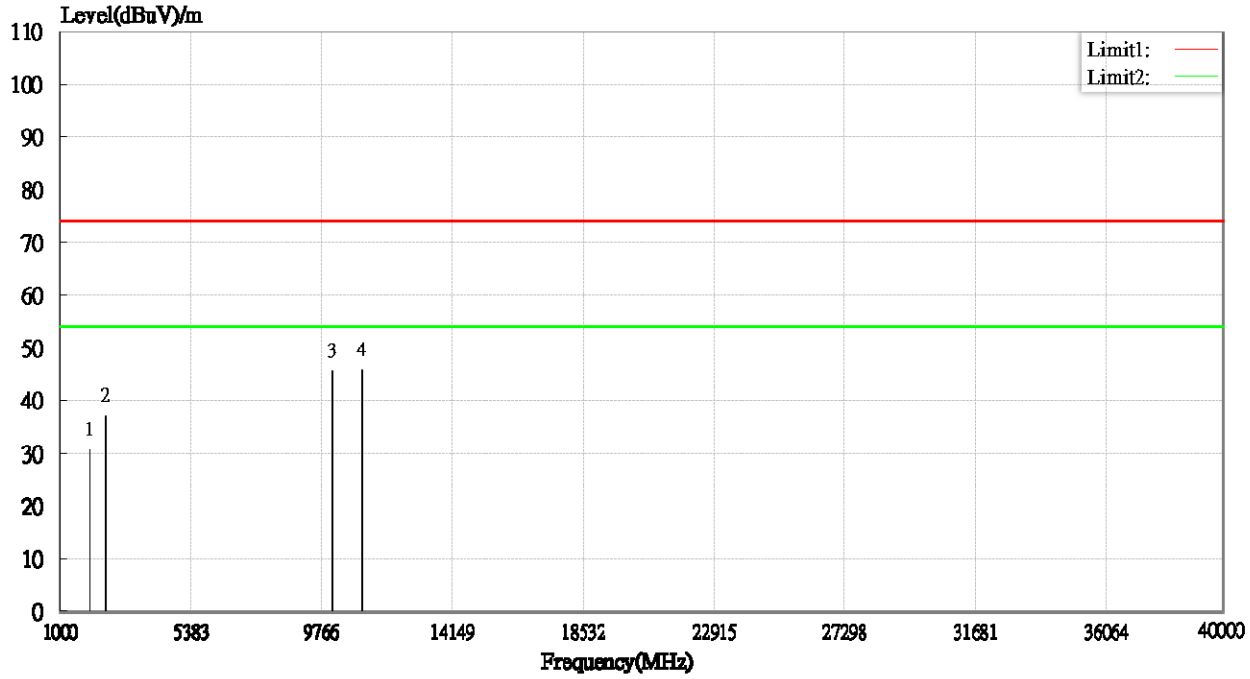
HT40 5310 MHz V-pol Avg



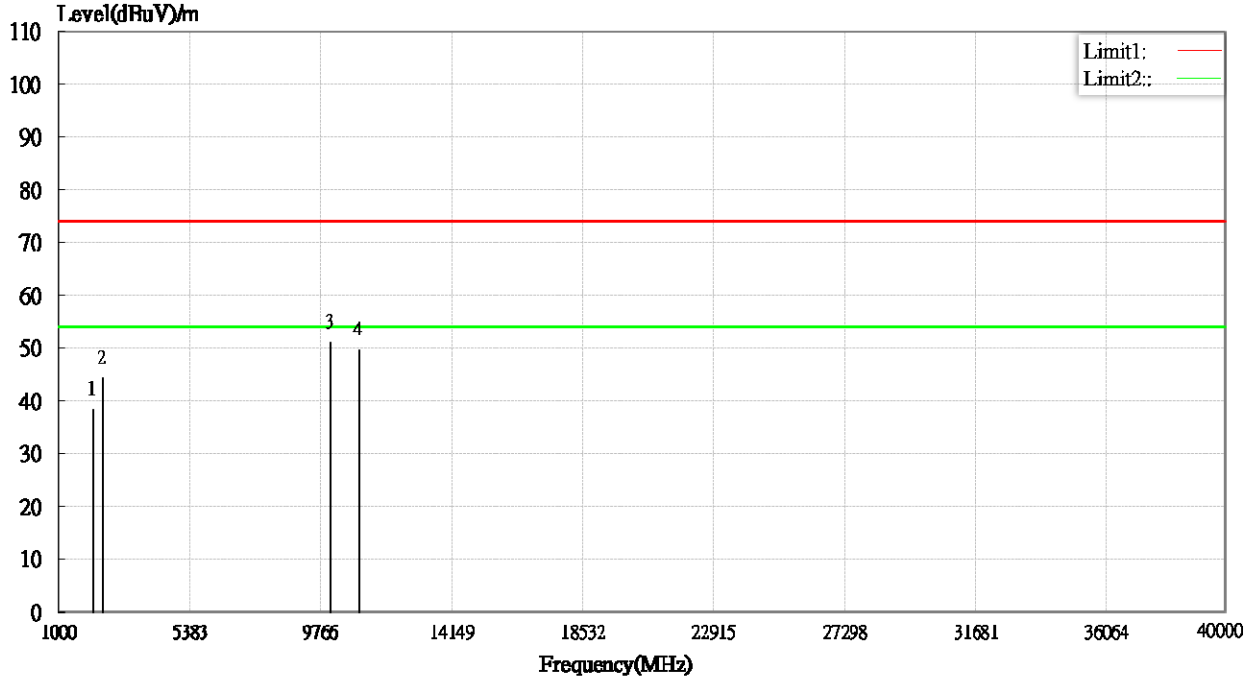
HT80 5290 MHz H-pol Peak



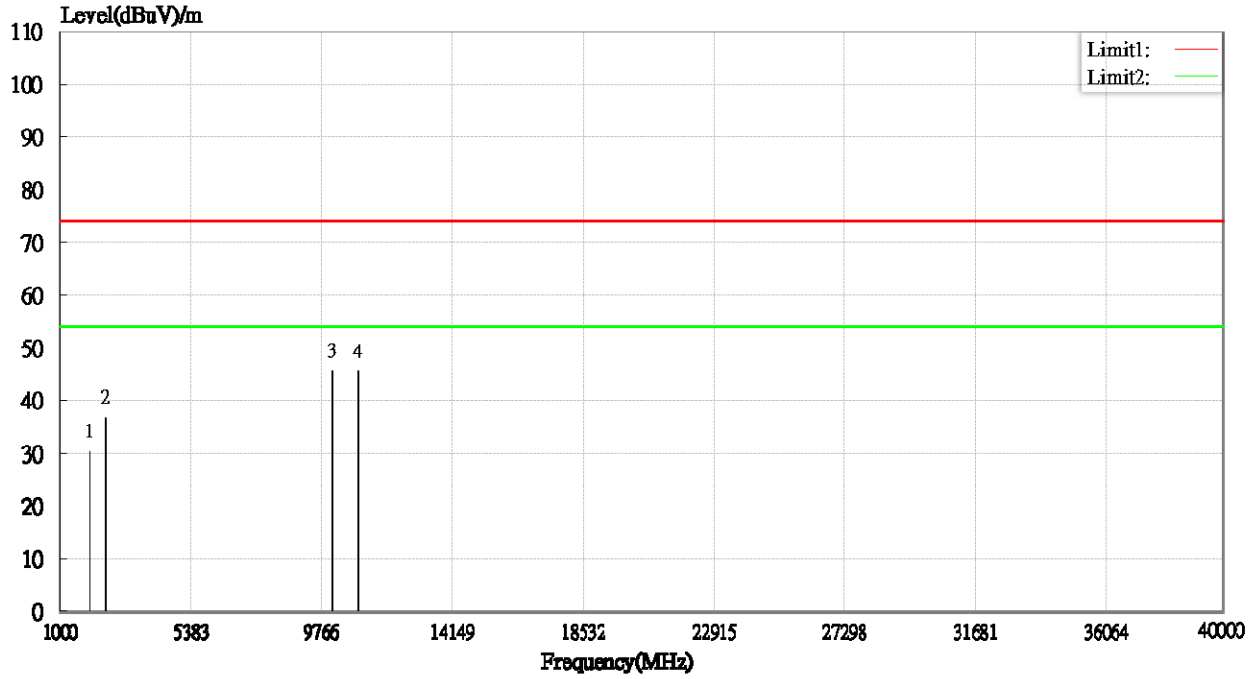
HT80 5290 MHz H-pol Avg



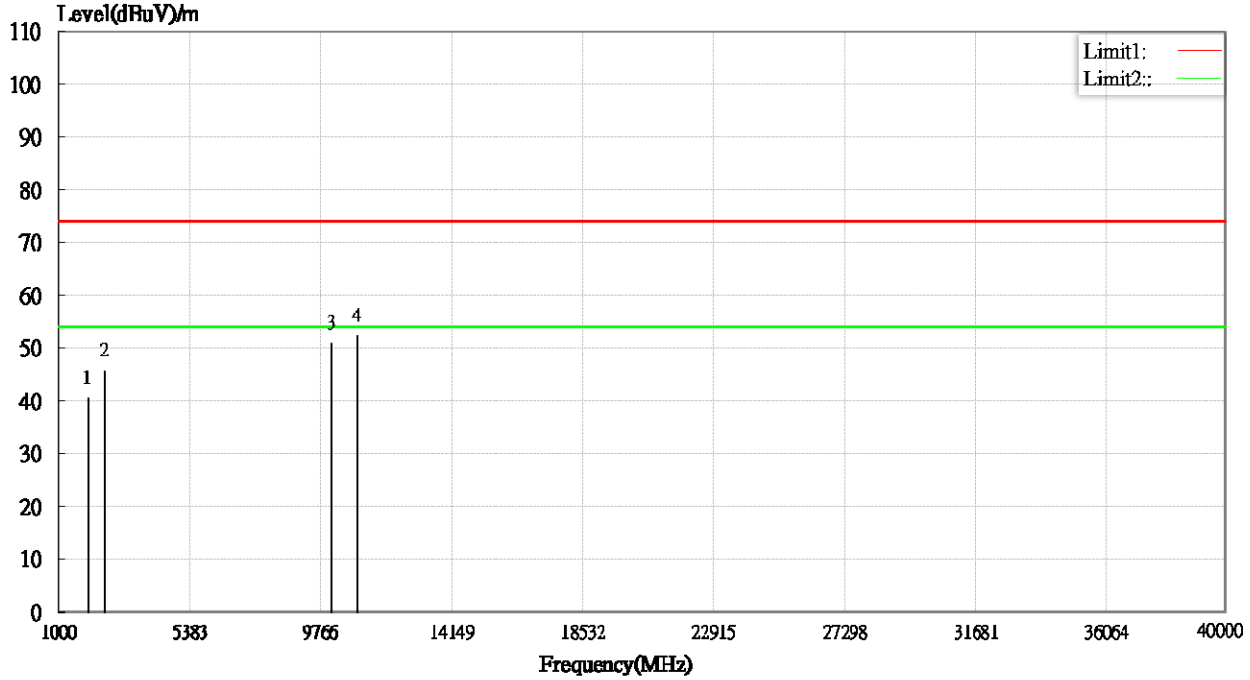
HT80 5290 MHz V-pol Peak



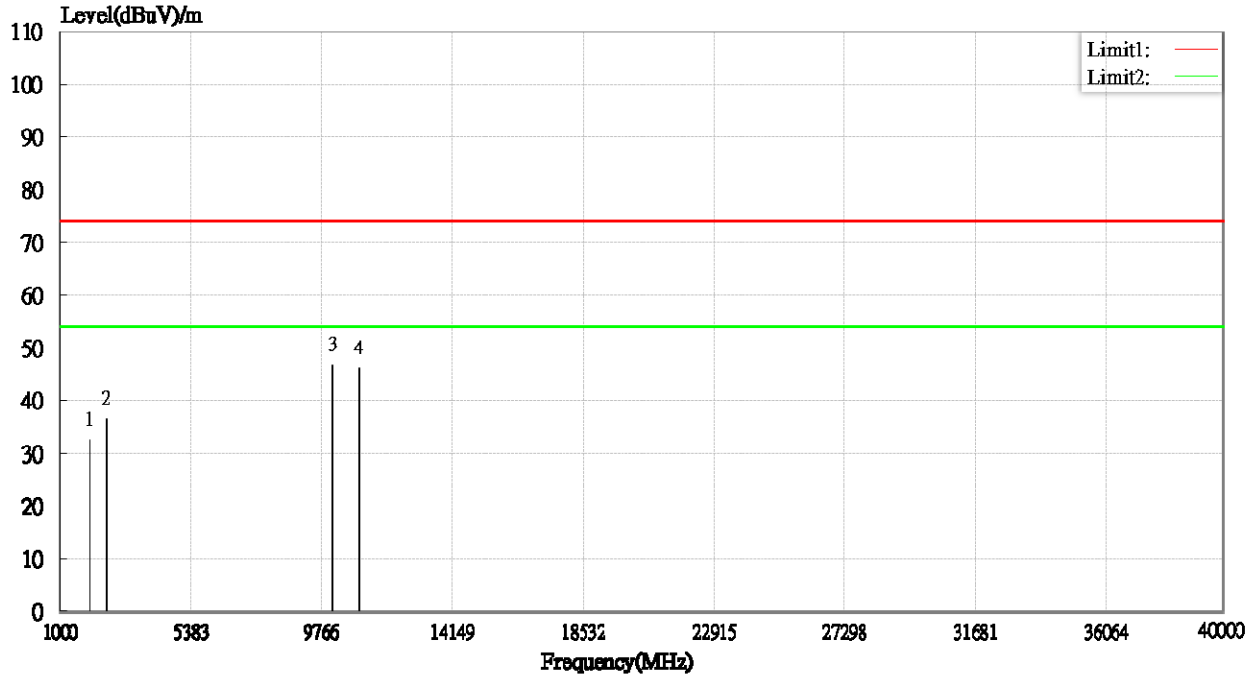
HT80 5290 MHz V-pol Avg



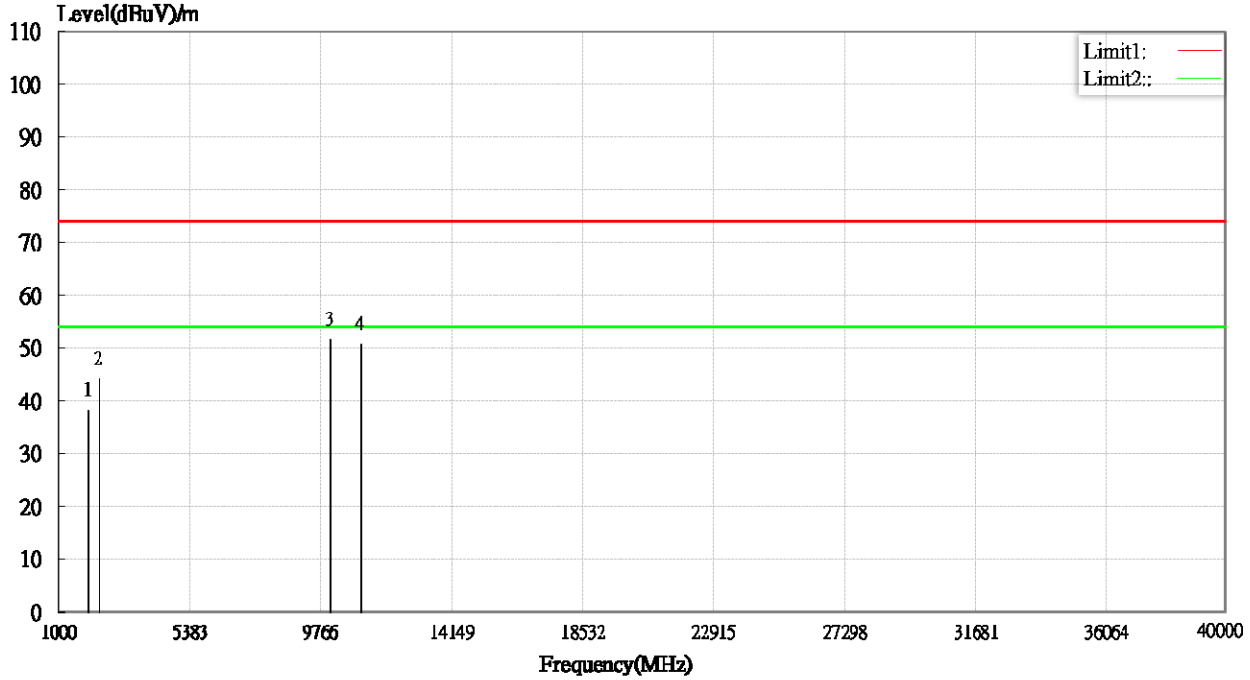
HT160 5250 MHz H-pol Peak



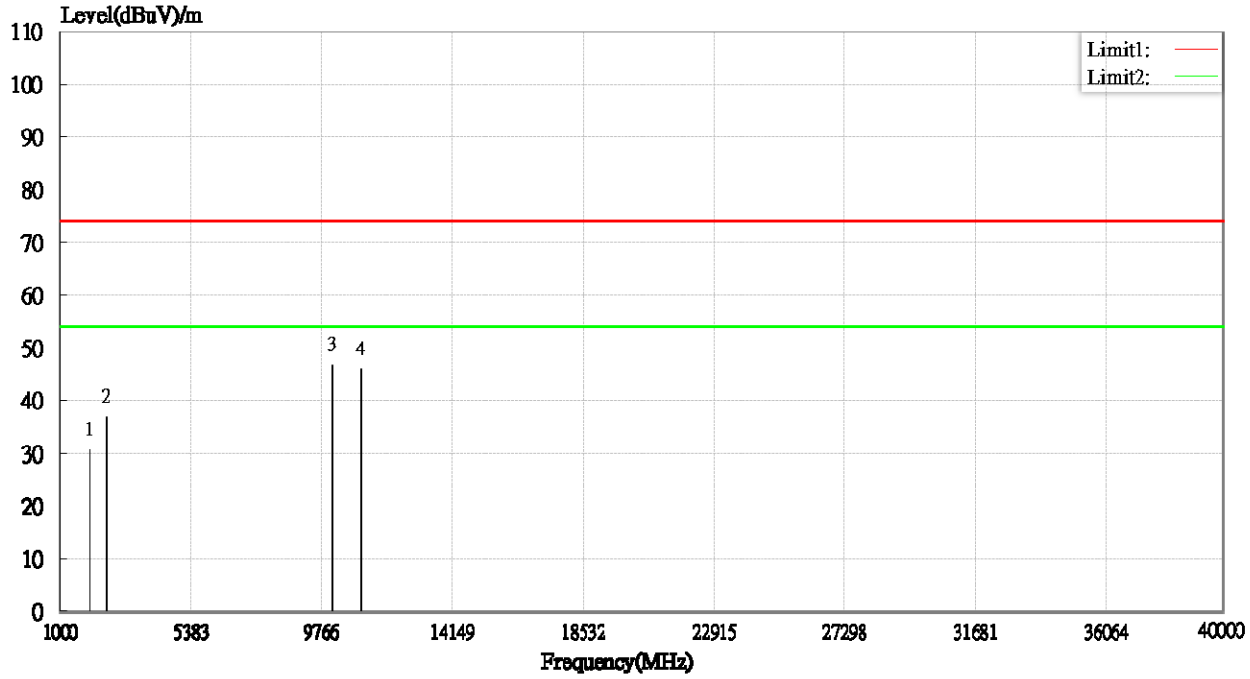
HT160 5250 MHz H-pol Avg



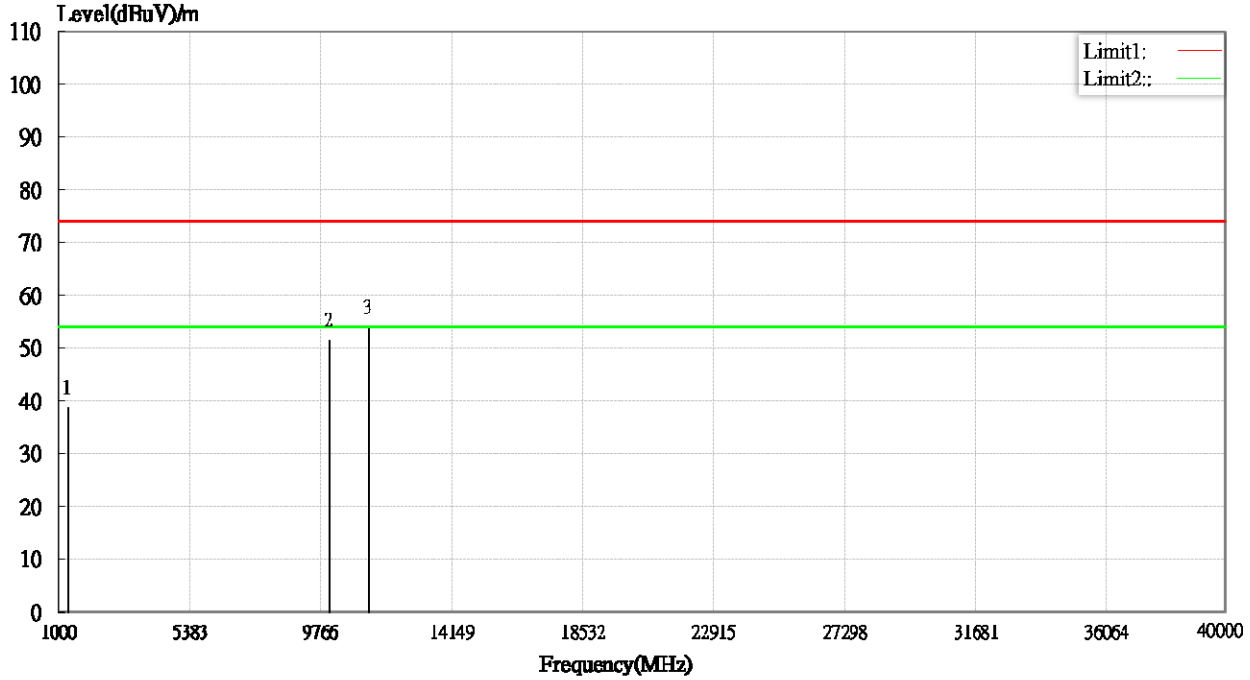
HT160 5250 MHz V-pol Peak



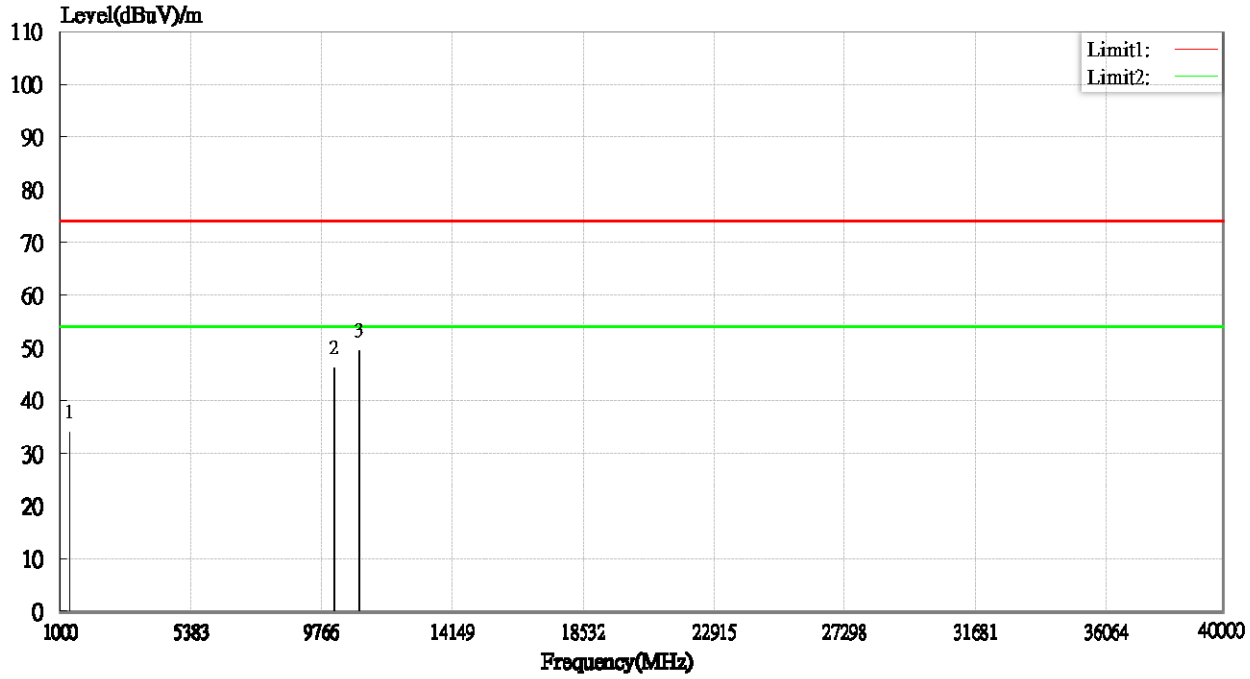
HT160 5250 MHz V-pol Avg



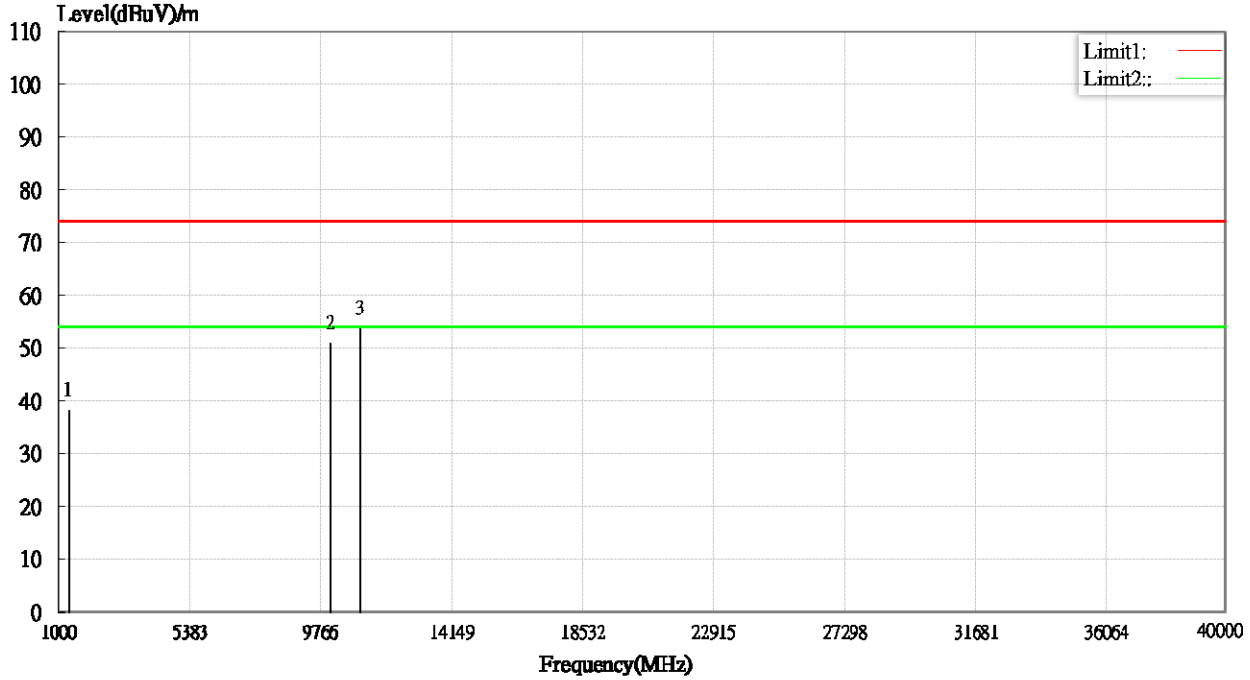
nonHT20 5500 MHz H-pol Peak



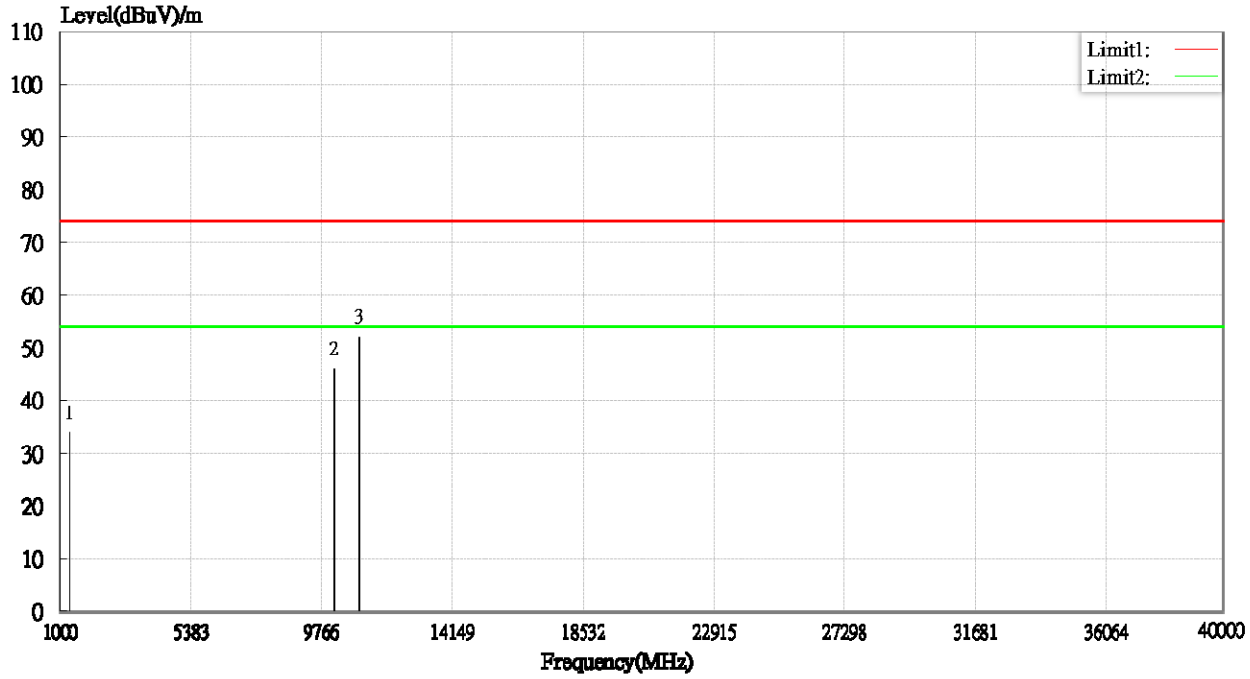
nonHT20 5500 MHz H-pol Avg



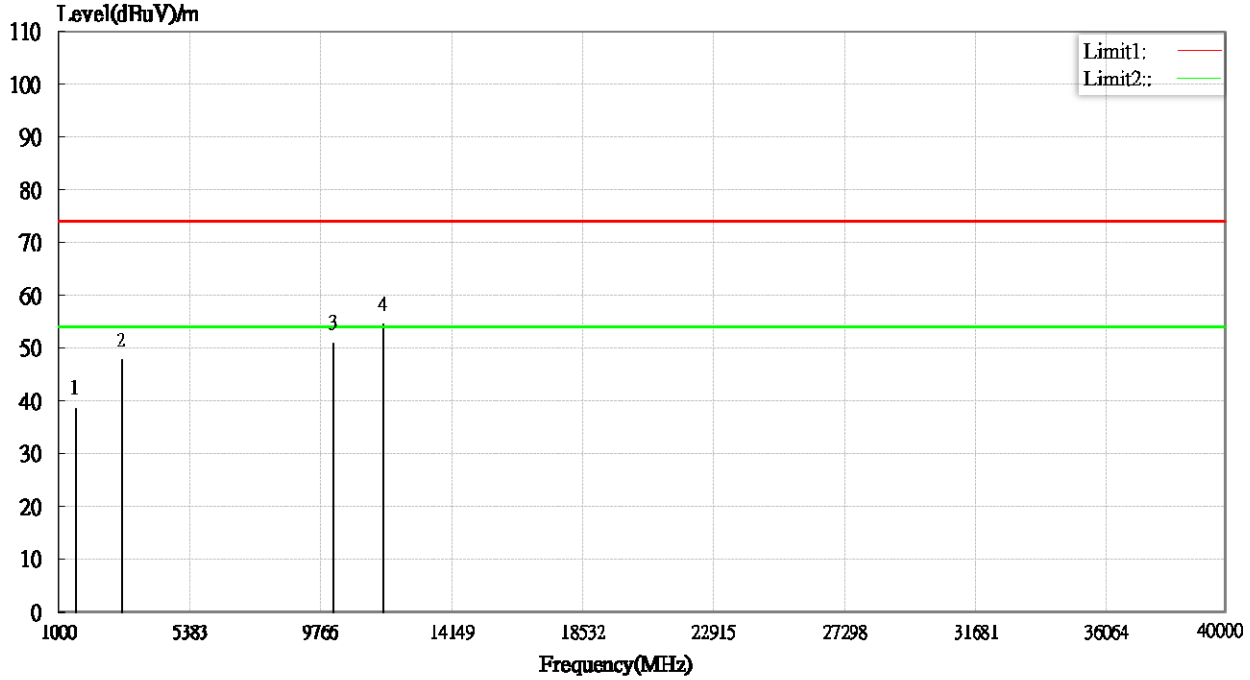
nonHT20 5500 MHz V-pol Peak



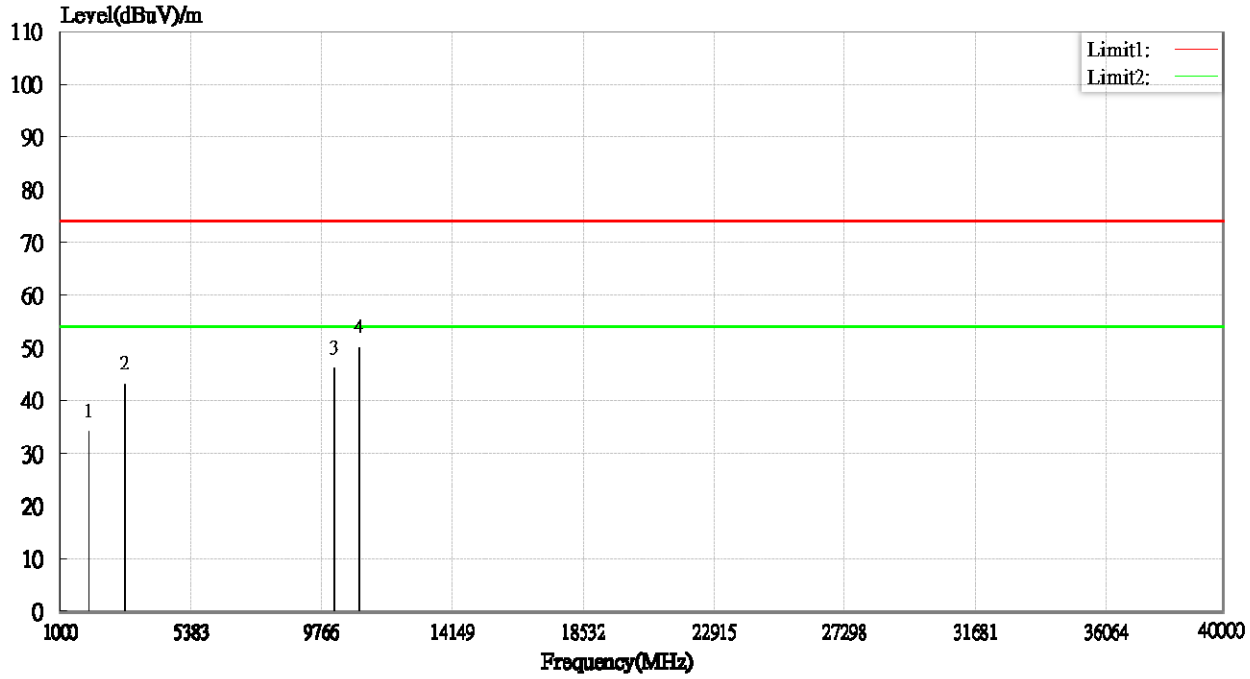
nonHT20 5500 MHz V-pol Avg



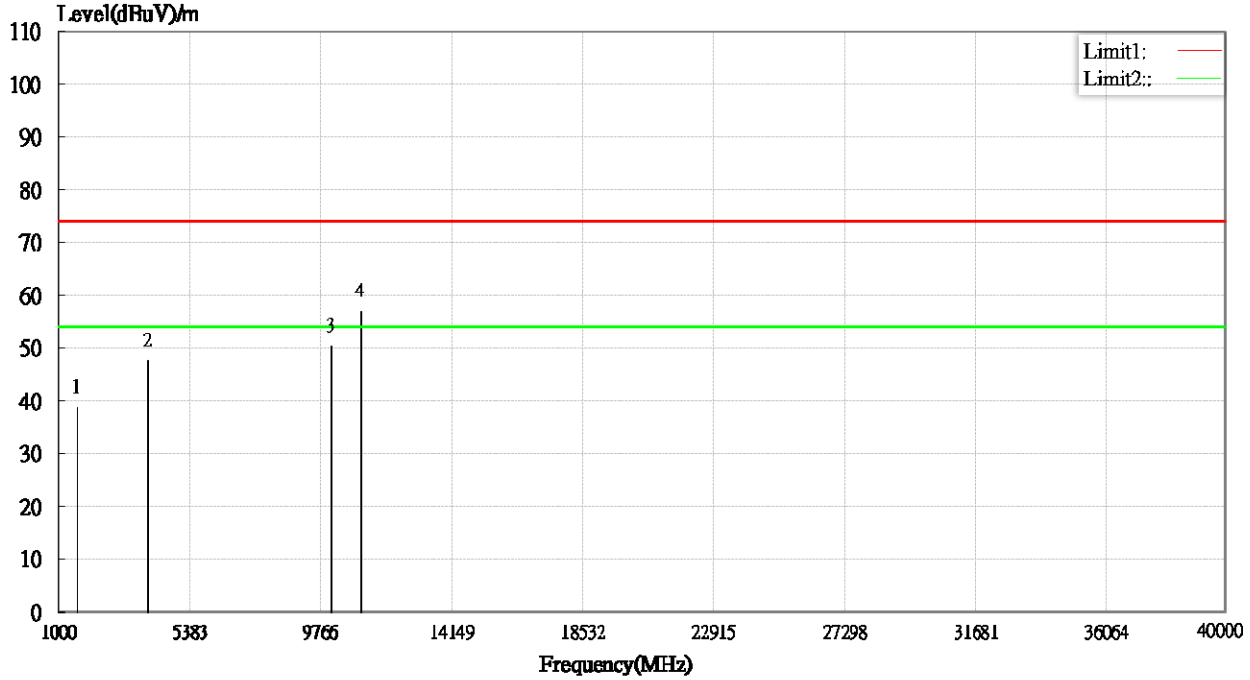
nonHT20 5580 MHz H-pol Peak



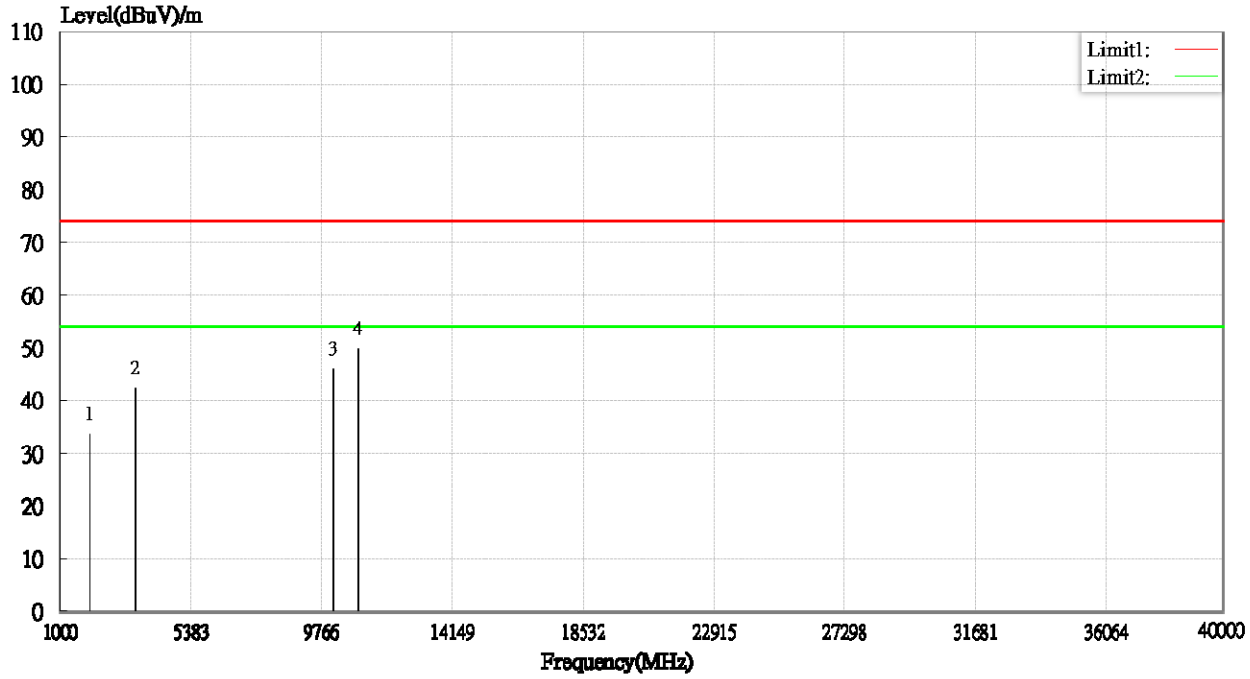
nonHT20 5580 MHz H-pol Avg



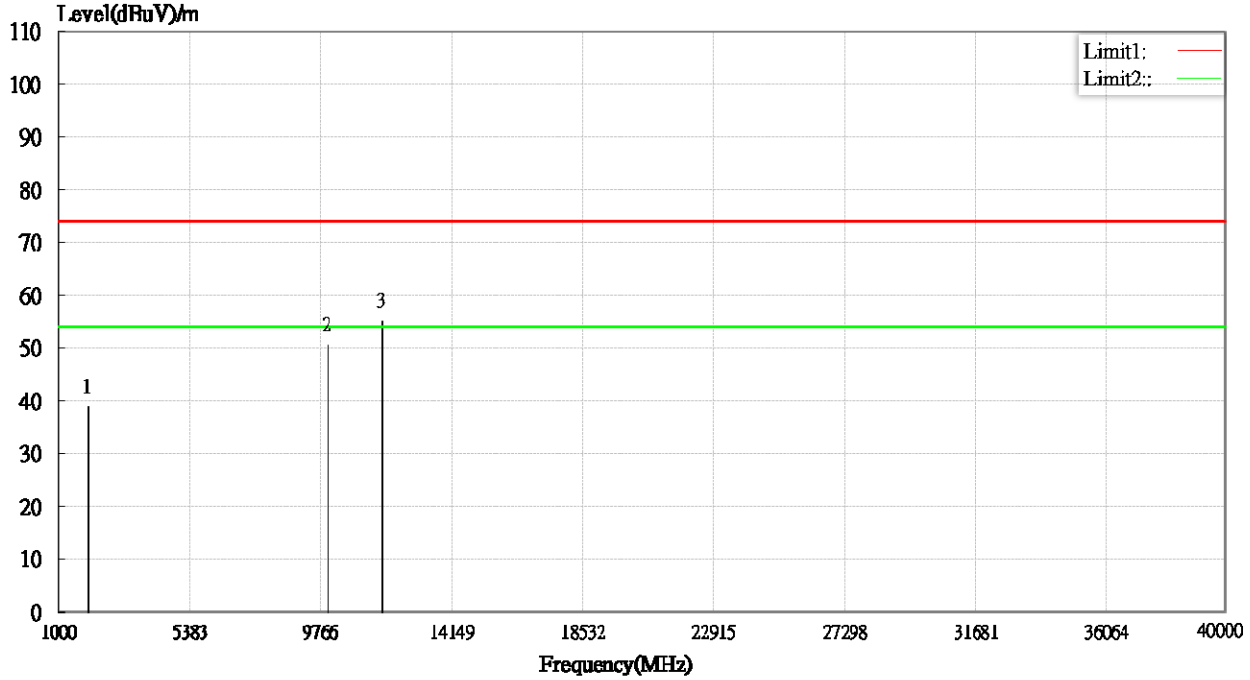
nonHT20 5580 MHz V-pol Peak



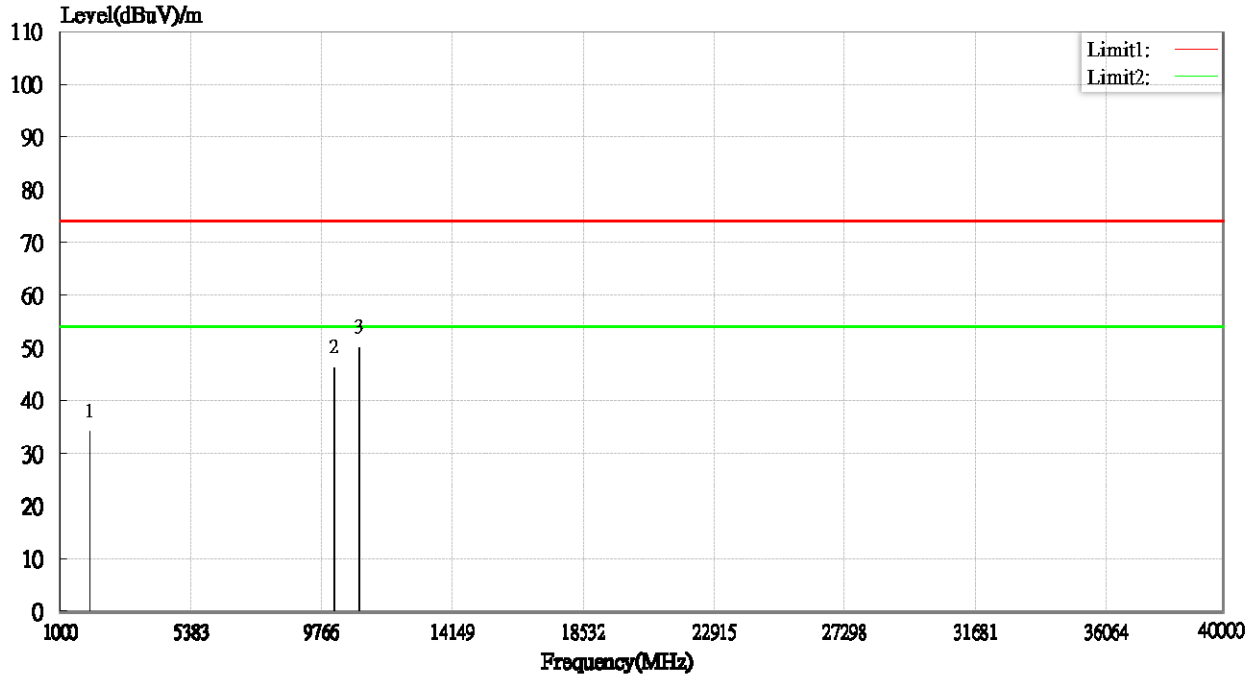
nonHT20 5580 MHz V-pol Avg



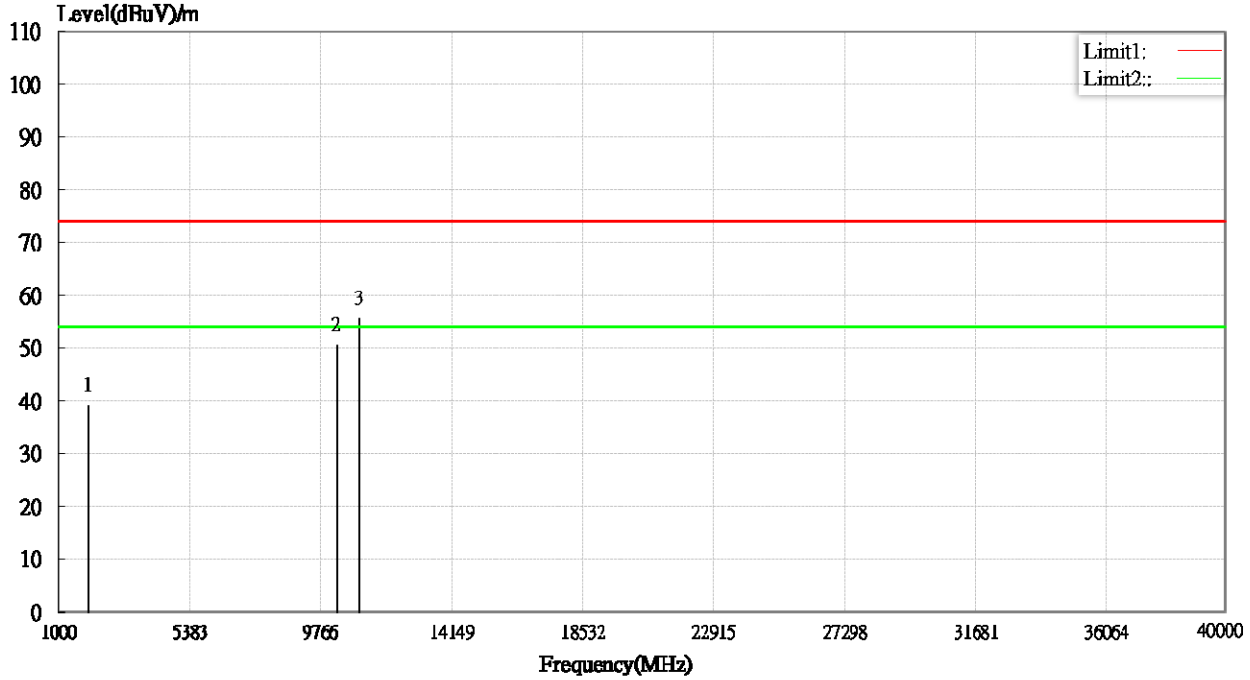
nonHT20 5700 MHz H-pol Peak



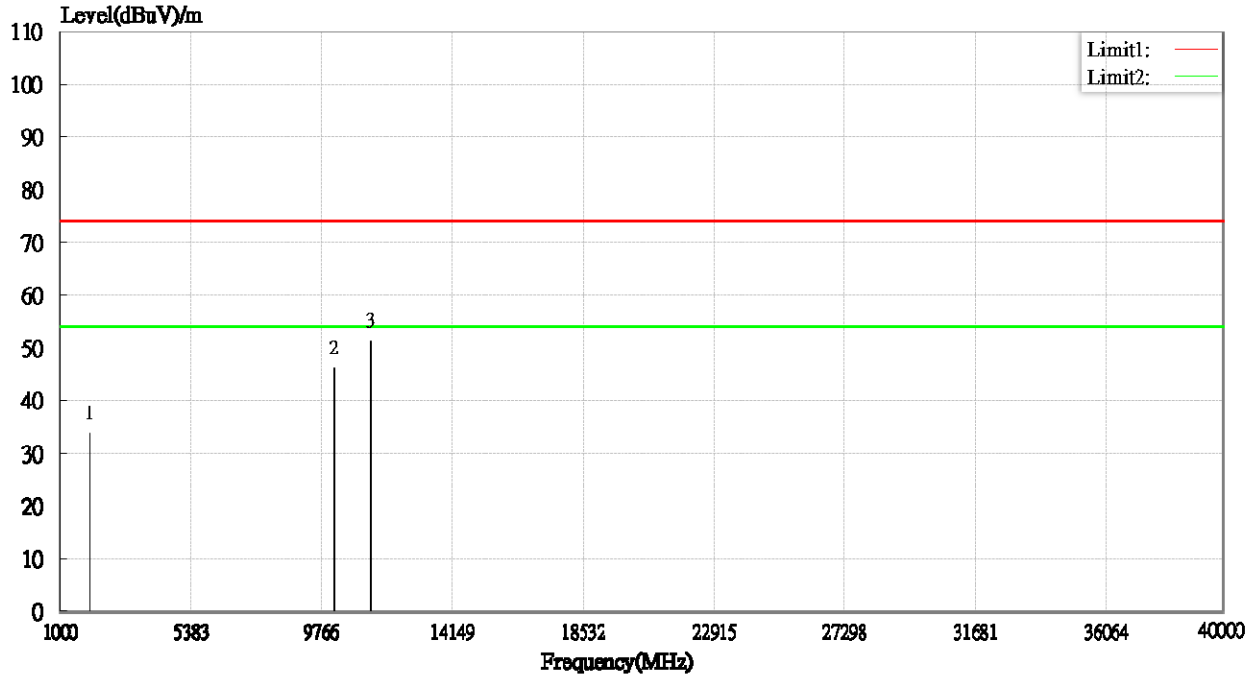
nonHT20 5700 MHz H-pol Avg



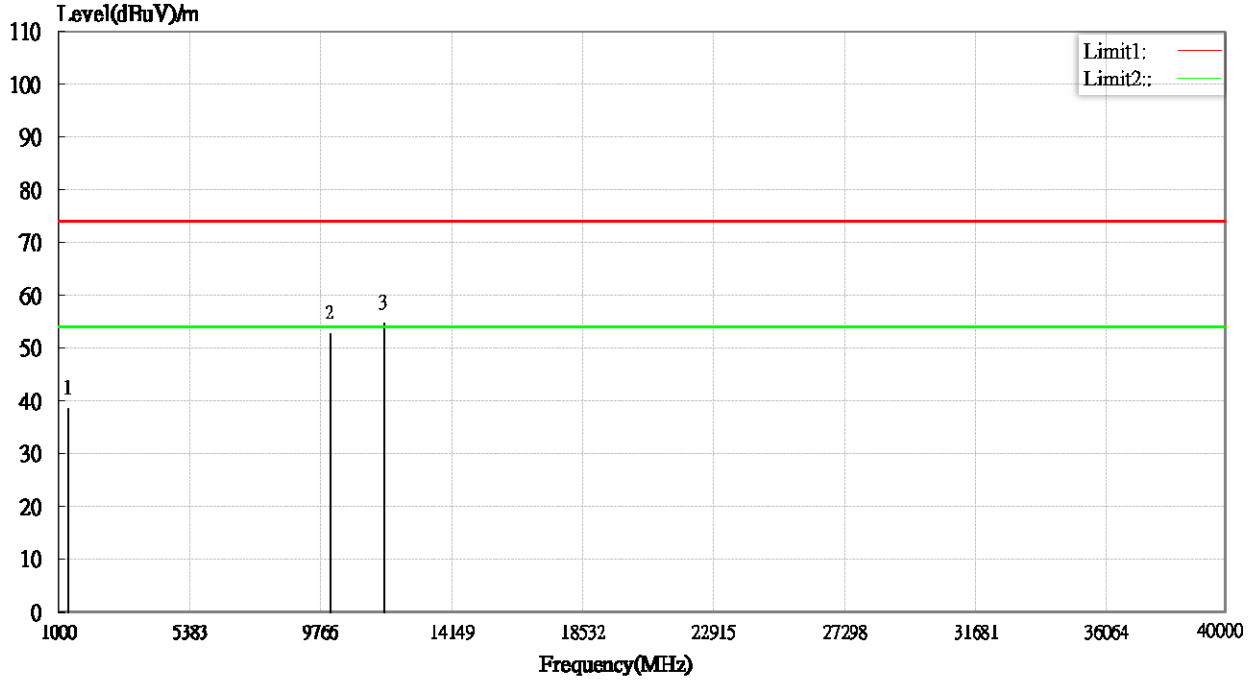
nonHT20 5700 MHz V-pol Peak



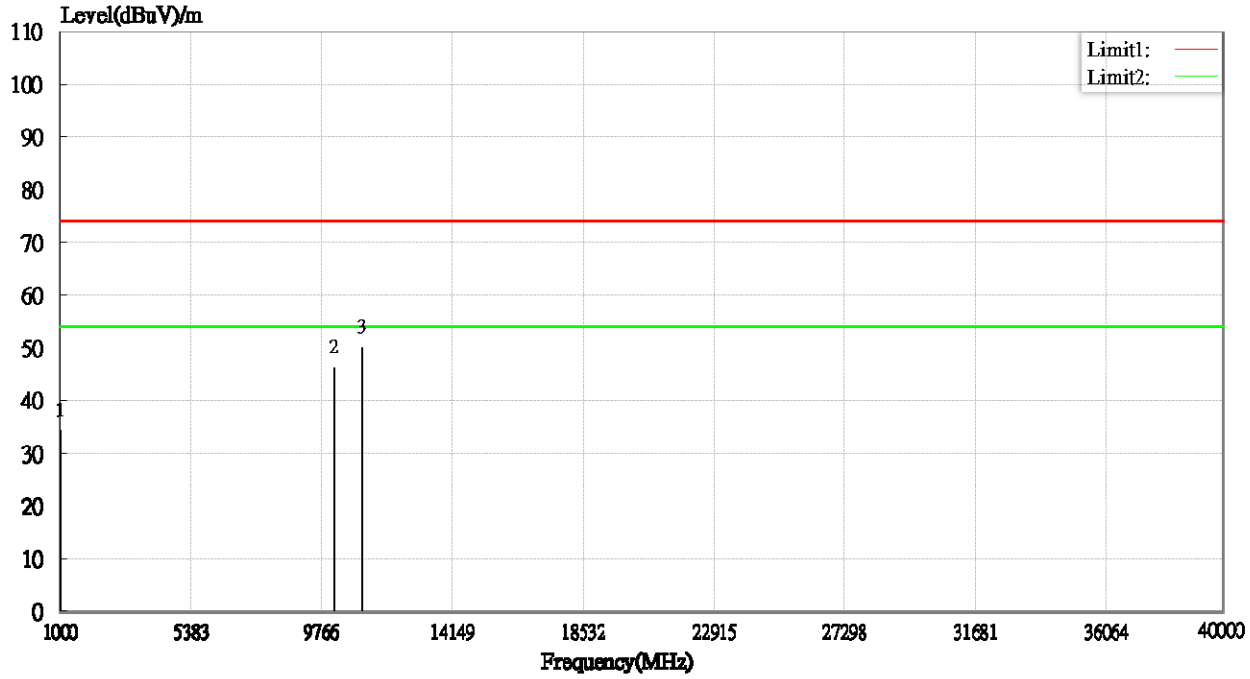
nonHT20 5700 MHz V-pol Avg



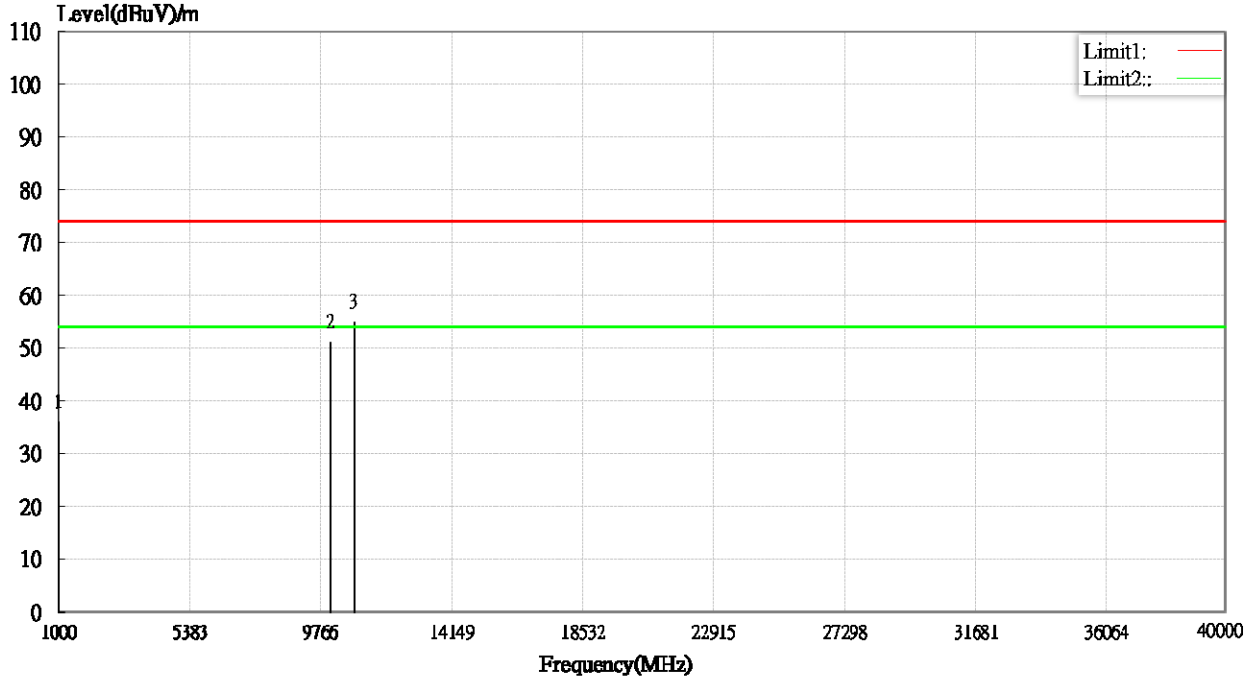
nonHT20 5720 MHz H-pol Peak



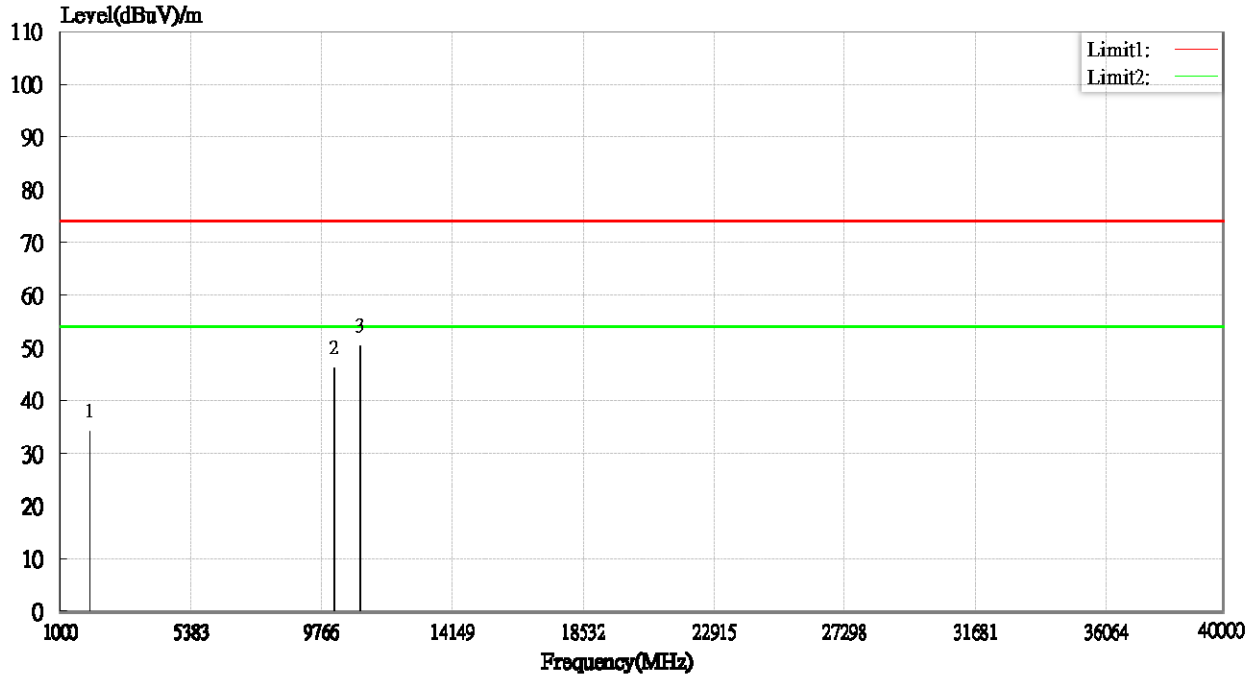
nonHT20 5720 MHz H-pol Avg



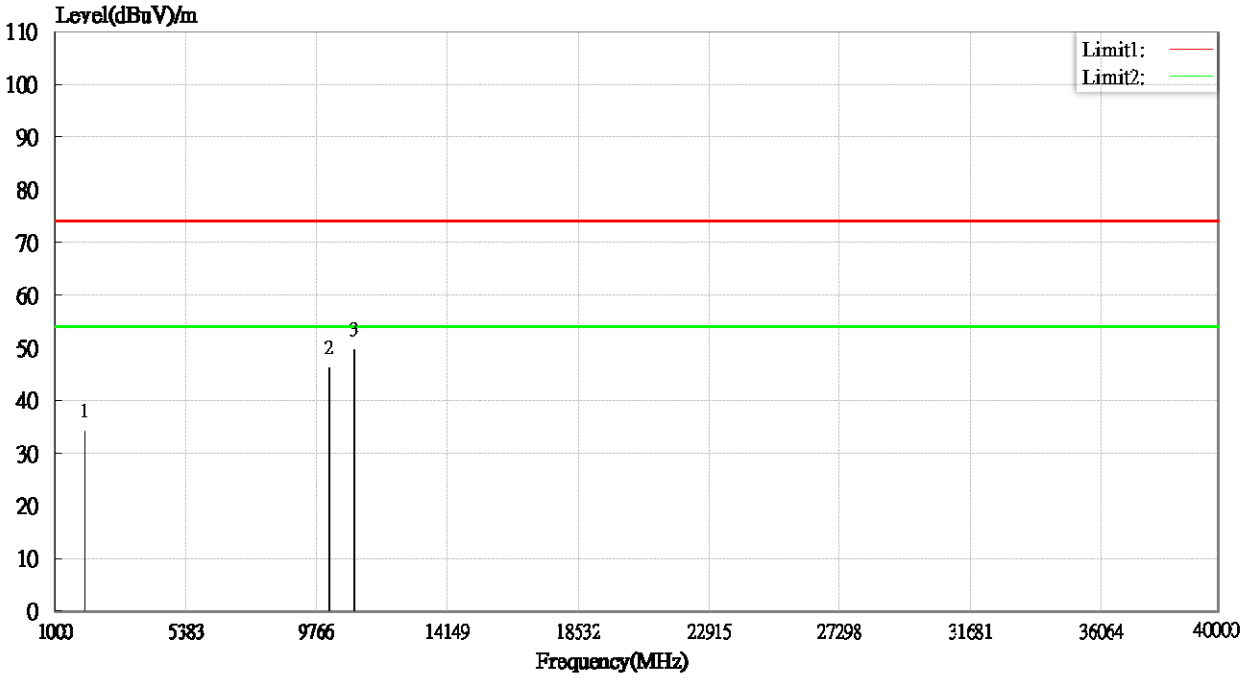
nonHT20 5720 MHz V-pol Peak



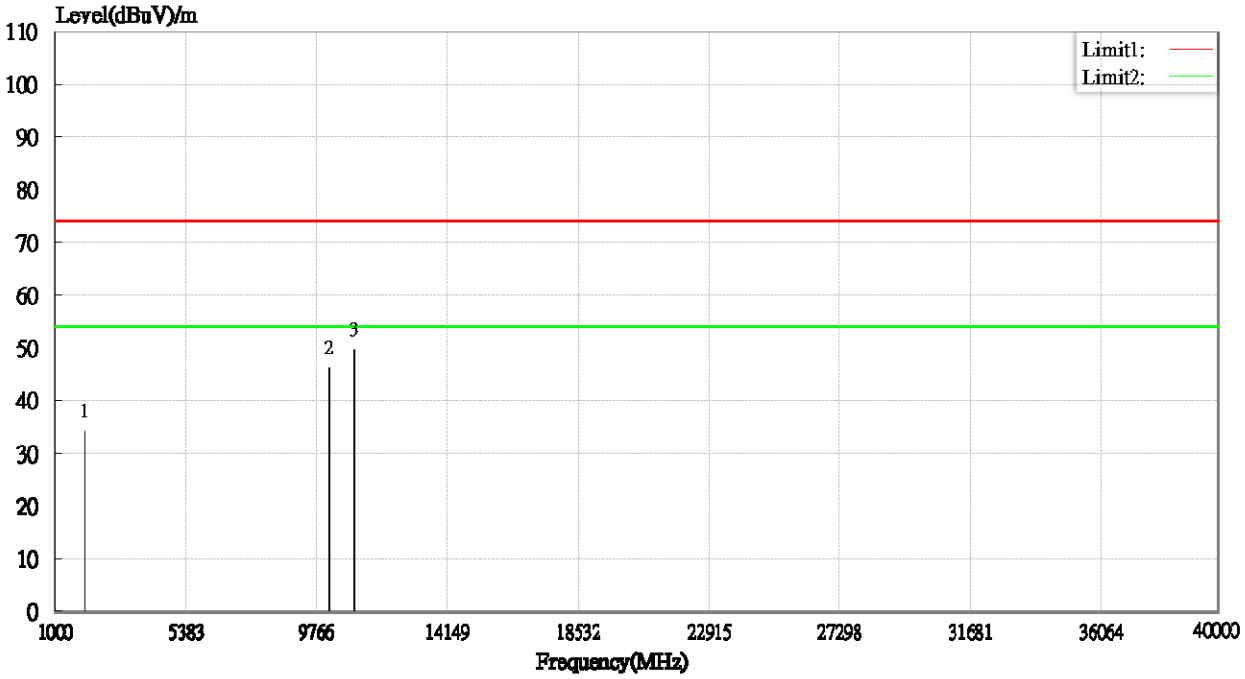
nonHT20 5720 MHz V-pol Avg



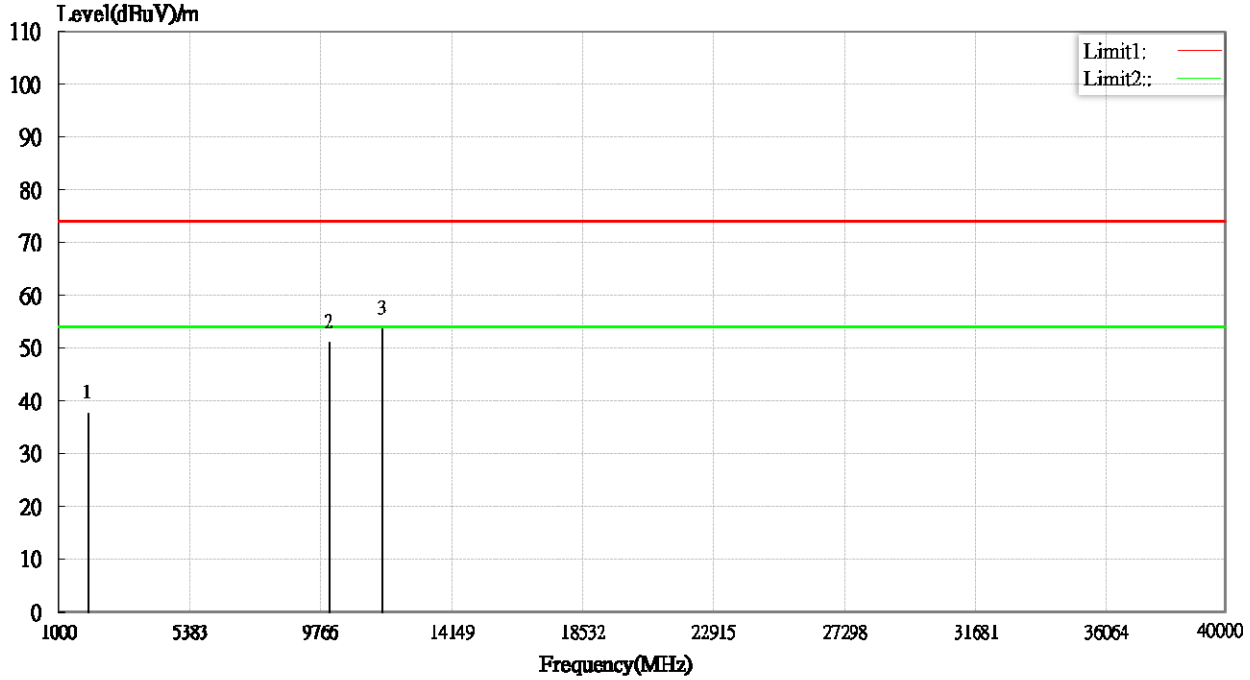
HT20 5500 MHz H-pol Peak



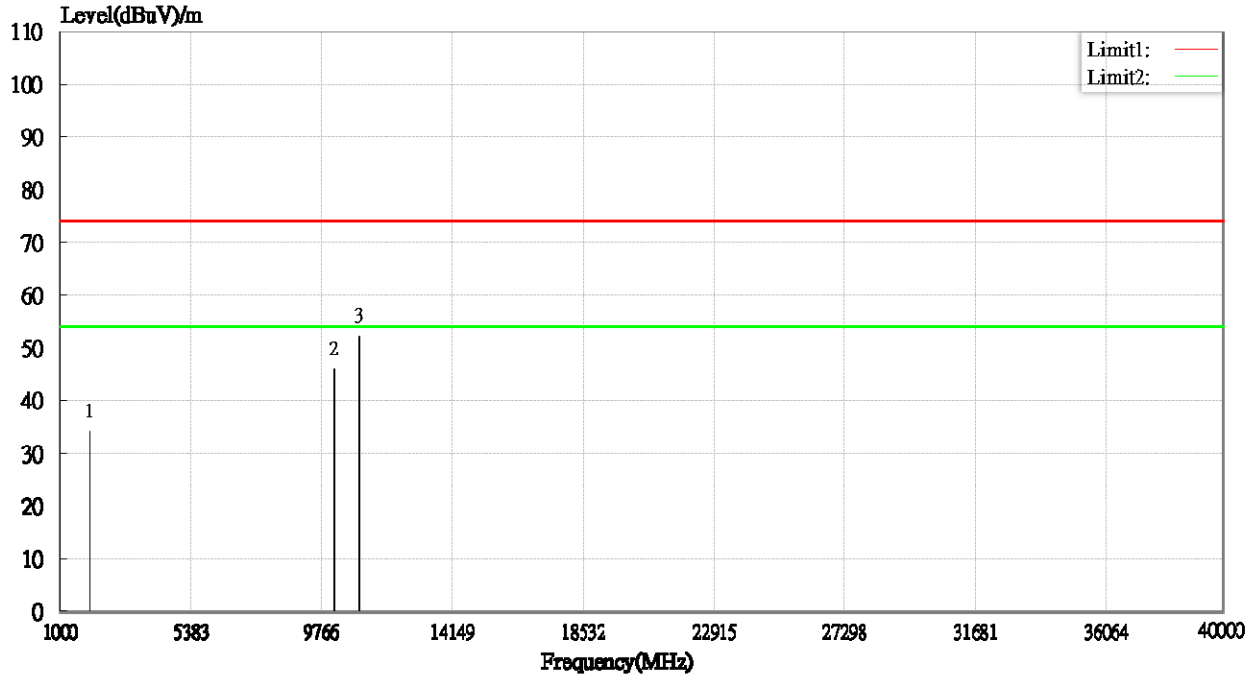
HT20 5500 MHz H-pol Avg



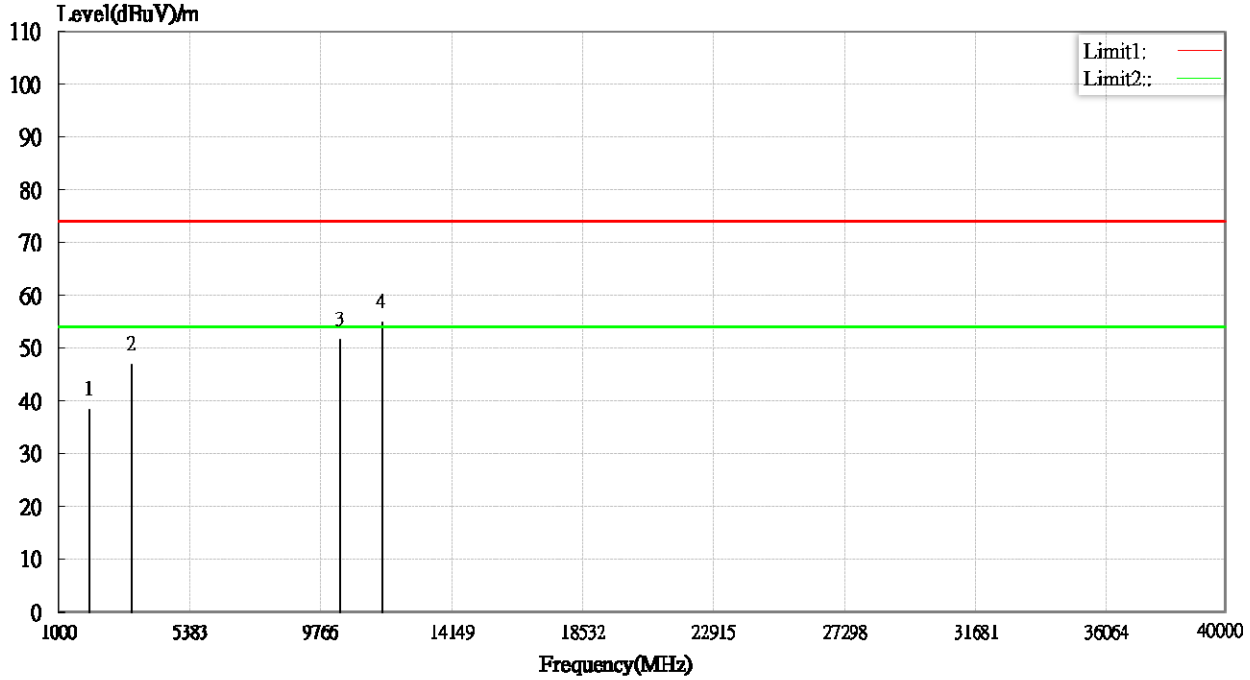
HT20 5500 MHz V-pol Peak



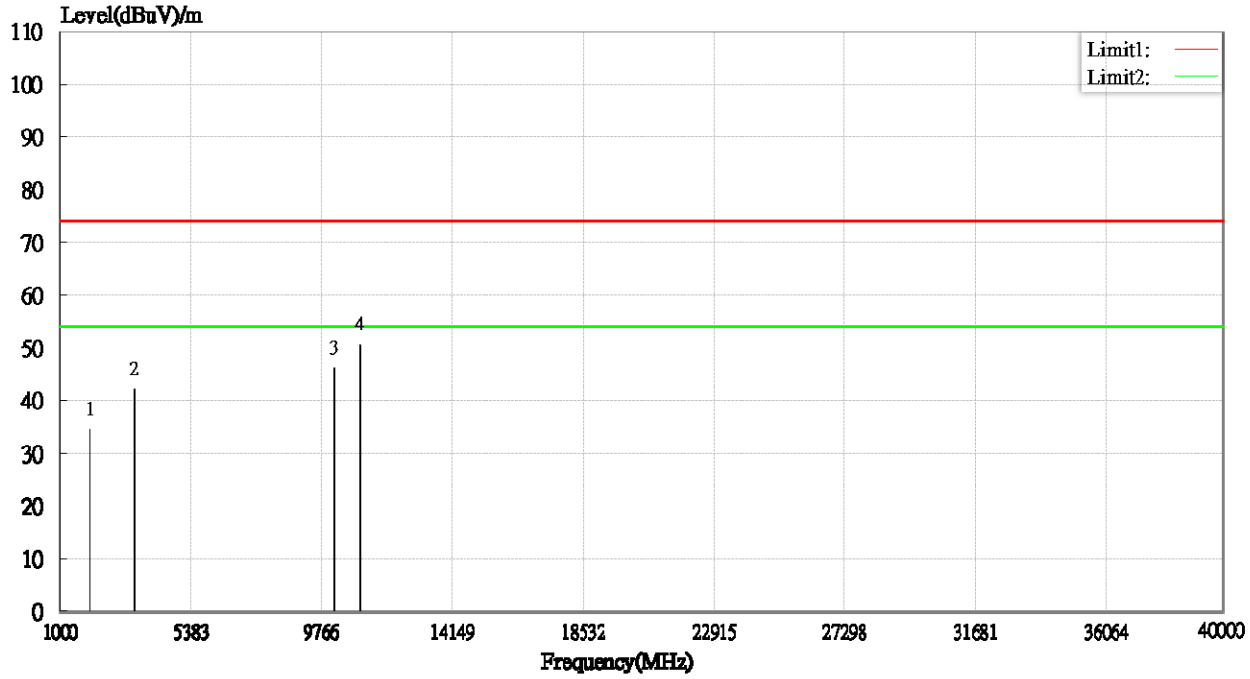
HT20 5500 MHz V-pol Avg



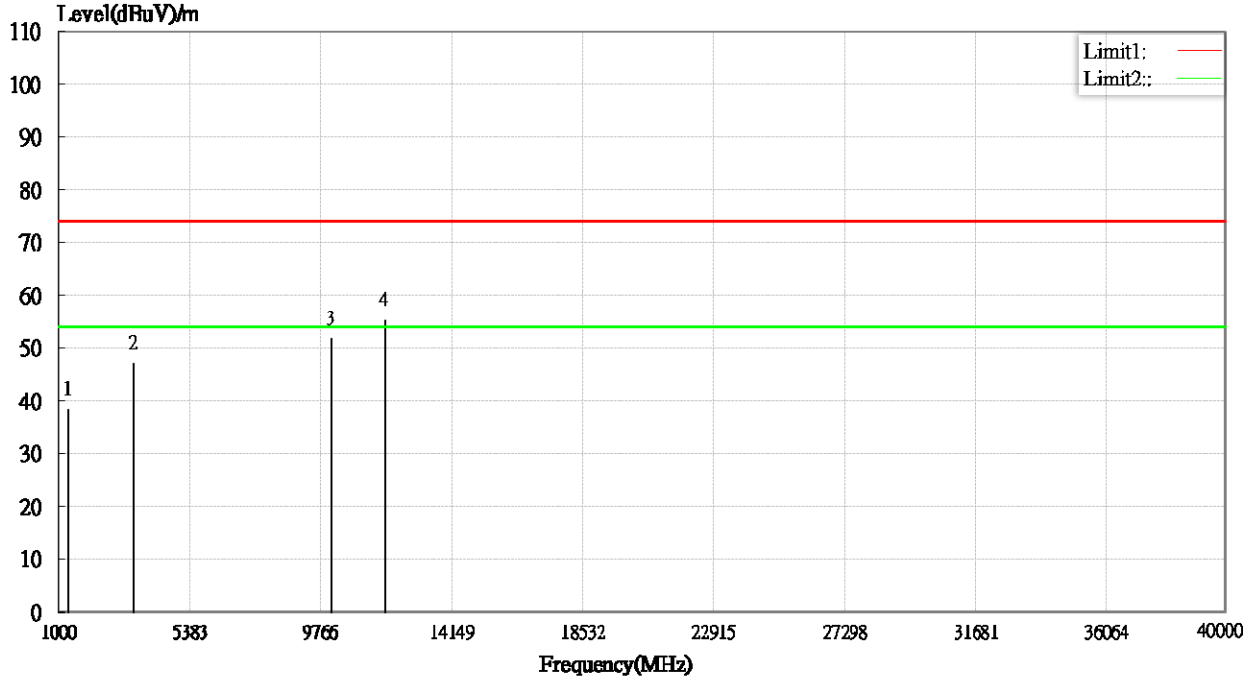
HT20 5580 MHz H-pol Peak



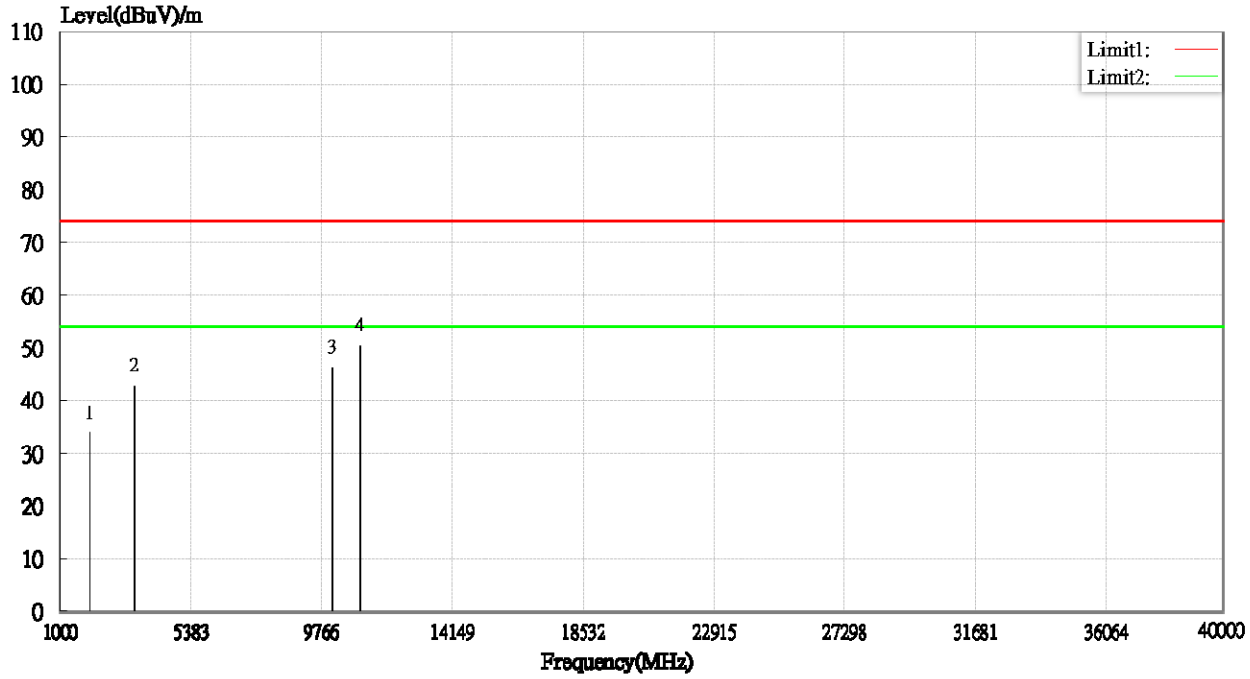
HT20 5580 MHz H-pol Avg



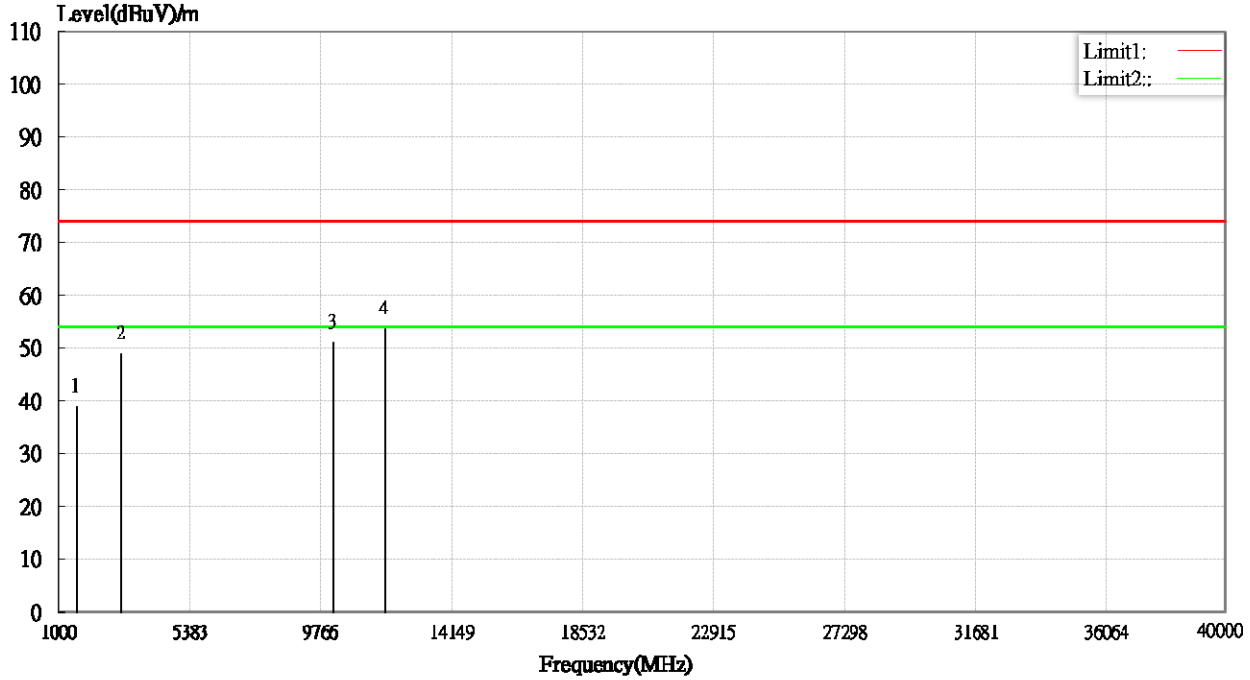
HT20 5580 MHz V-pol Peak



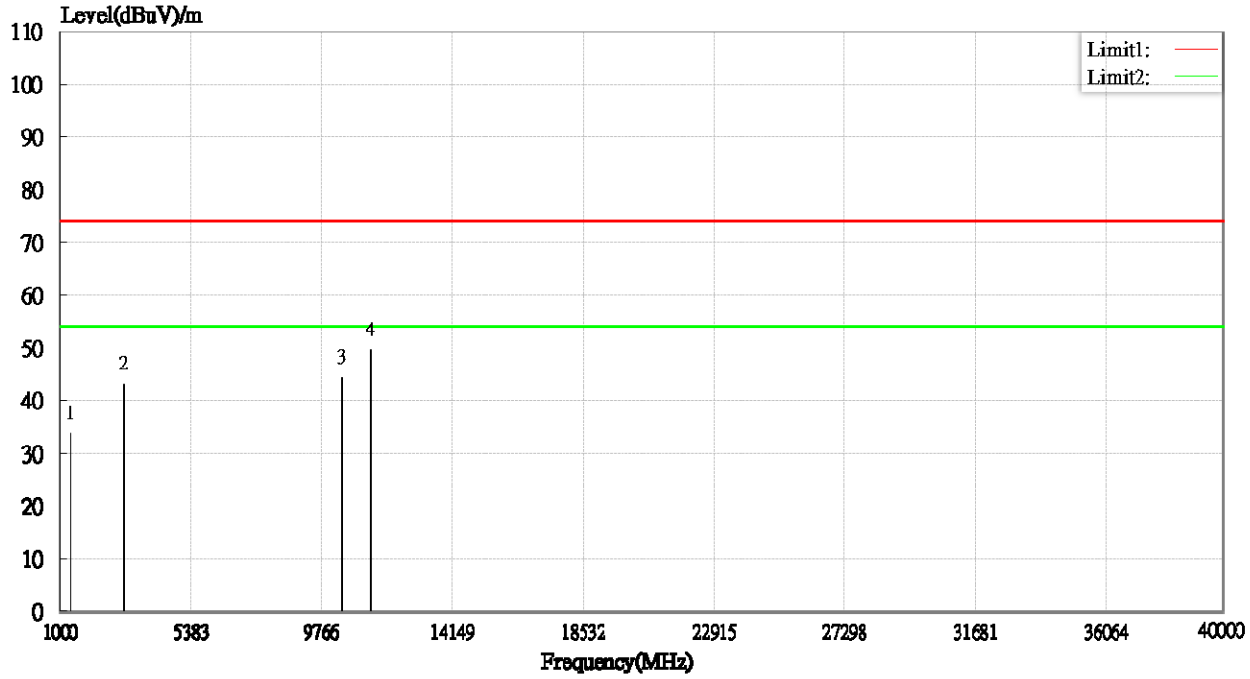
HT20 5580 MHz V-pol Avg



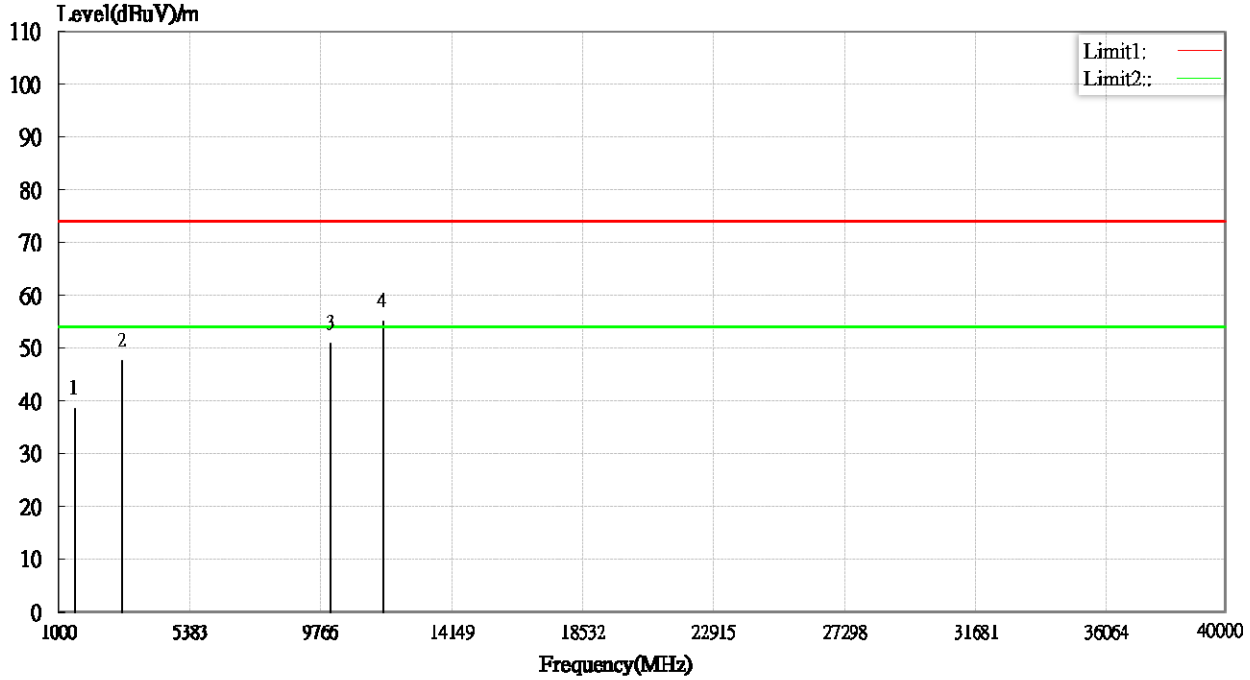
HT20 5700 MHz H-pol Peak



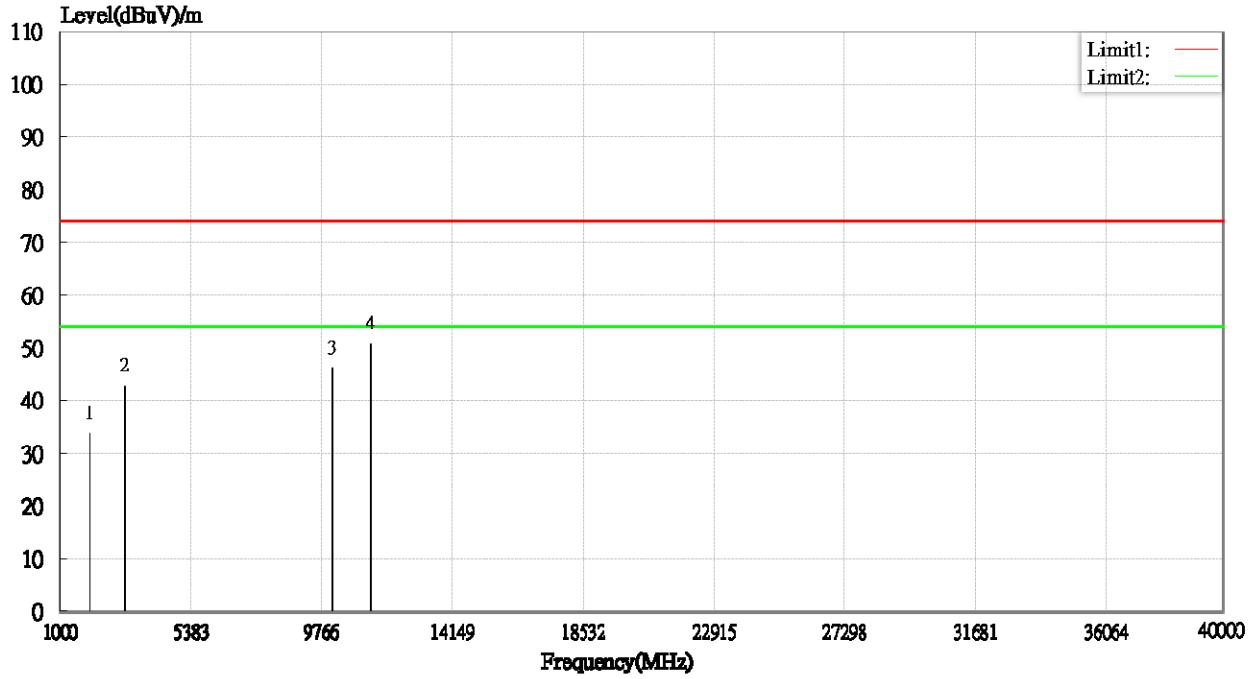
HT20 5700 MHz H-pol Avg



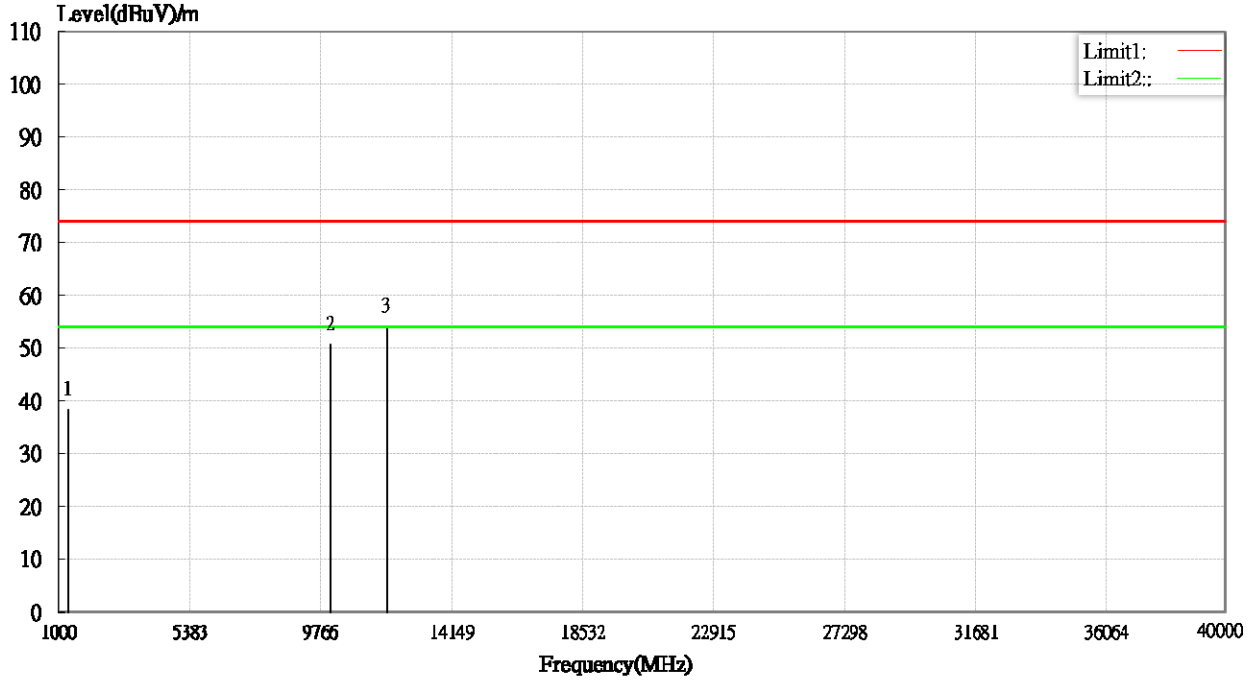
HT20 5700 MHz V-pol Peak



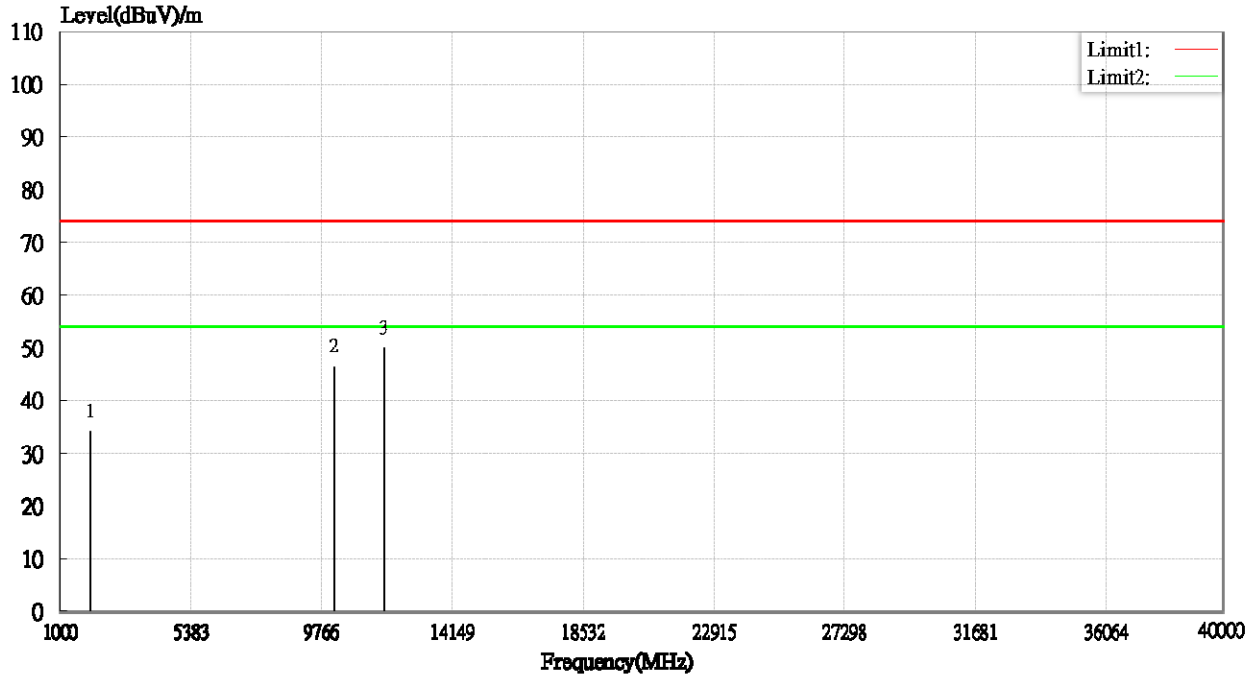
HT20 5700 MHz V-pol Avg



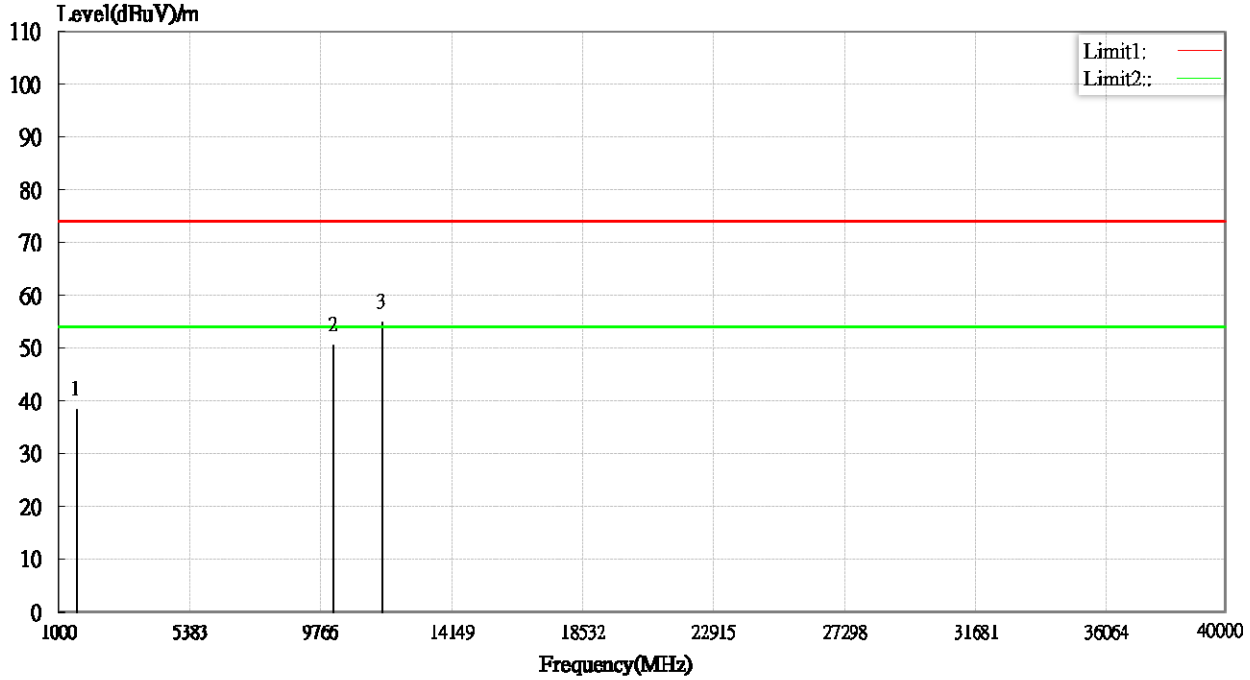
HT20 5720 MHz H-pol Peak



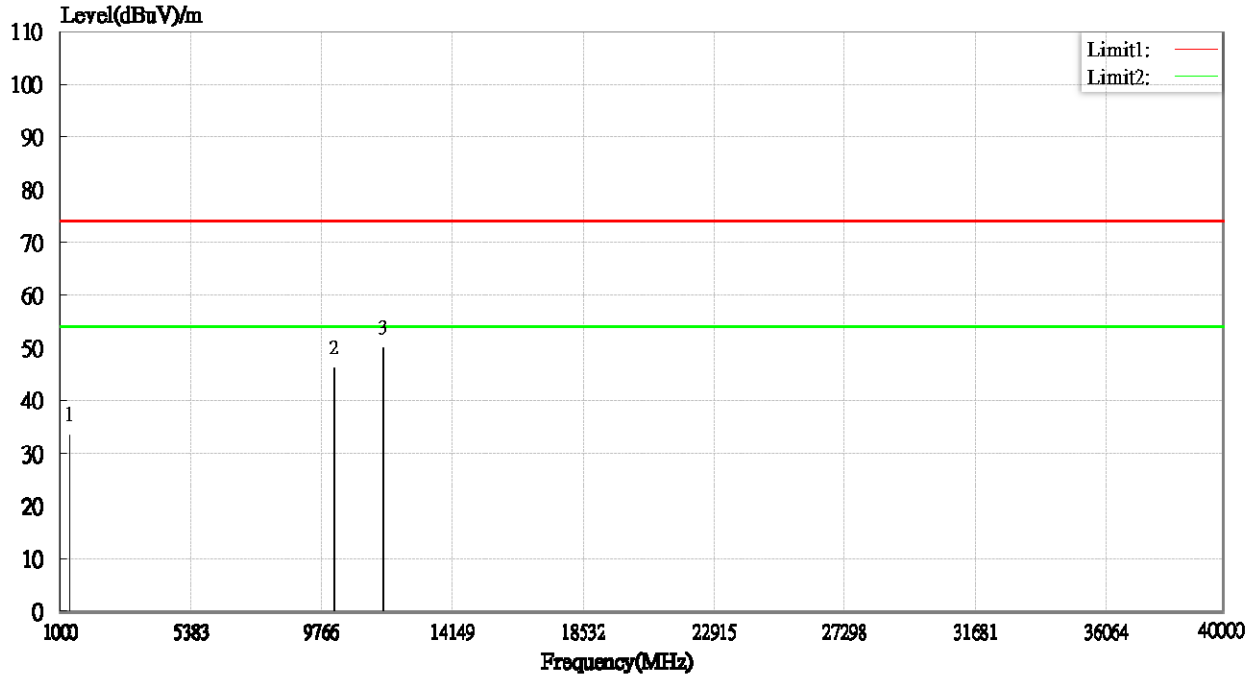
HT20 5720 MHz H-pol Avg



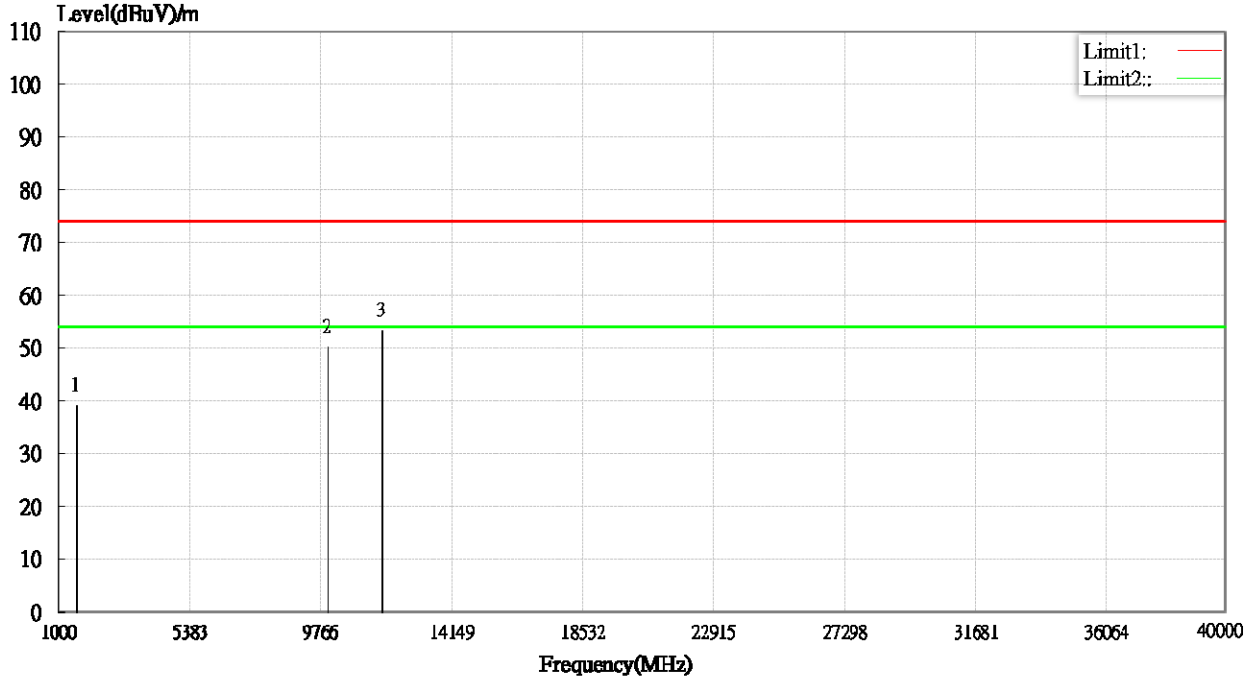
HT20 5720 MHz V-pol Peak



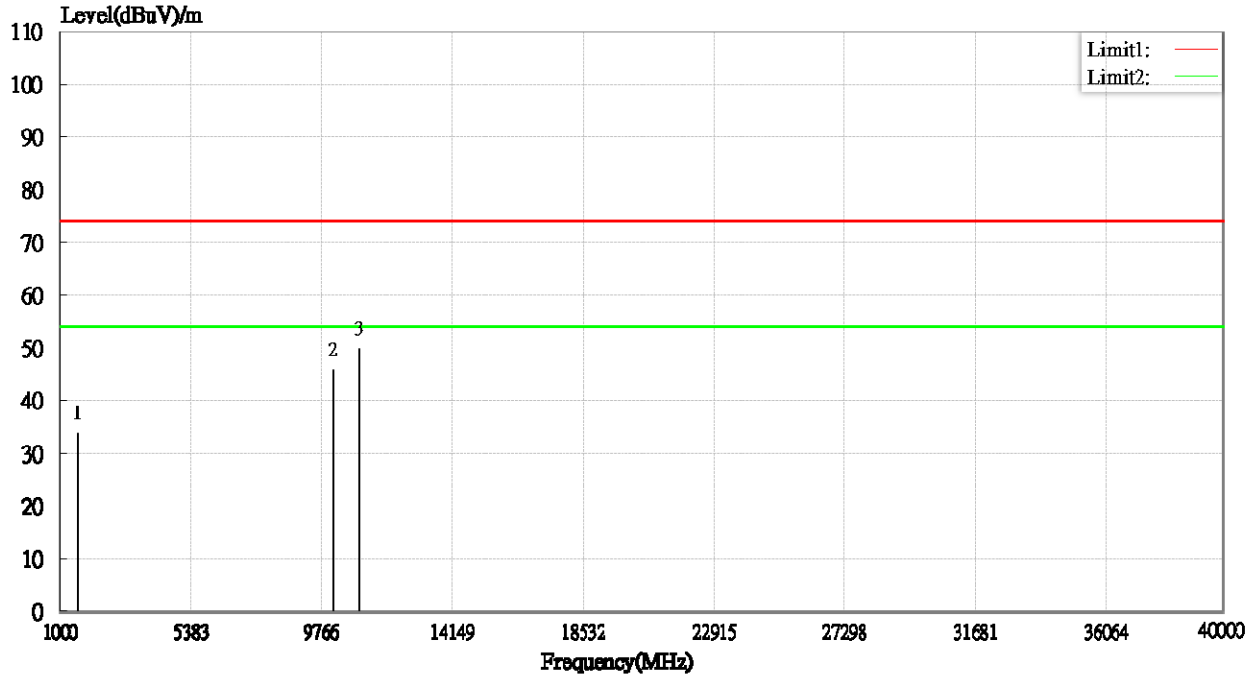
HT20 5720 MHz V-pol Avg



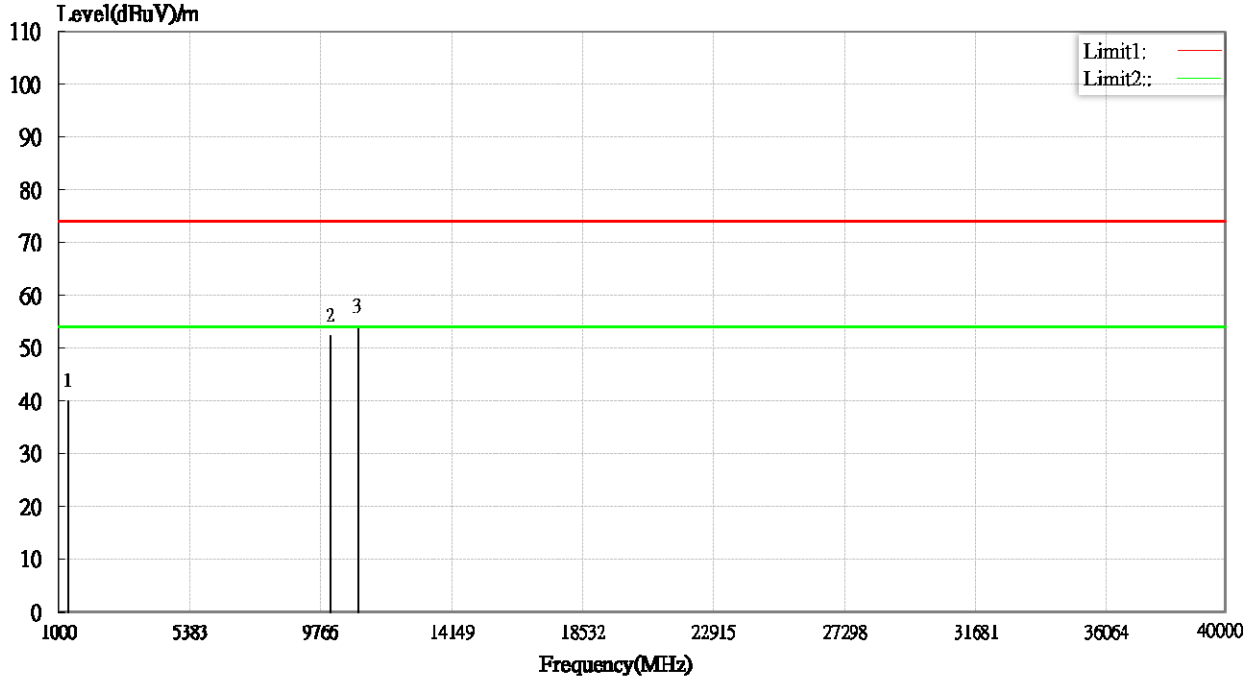
HT40 5510 MHz H-pol Peak



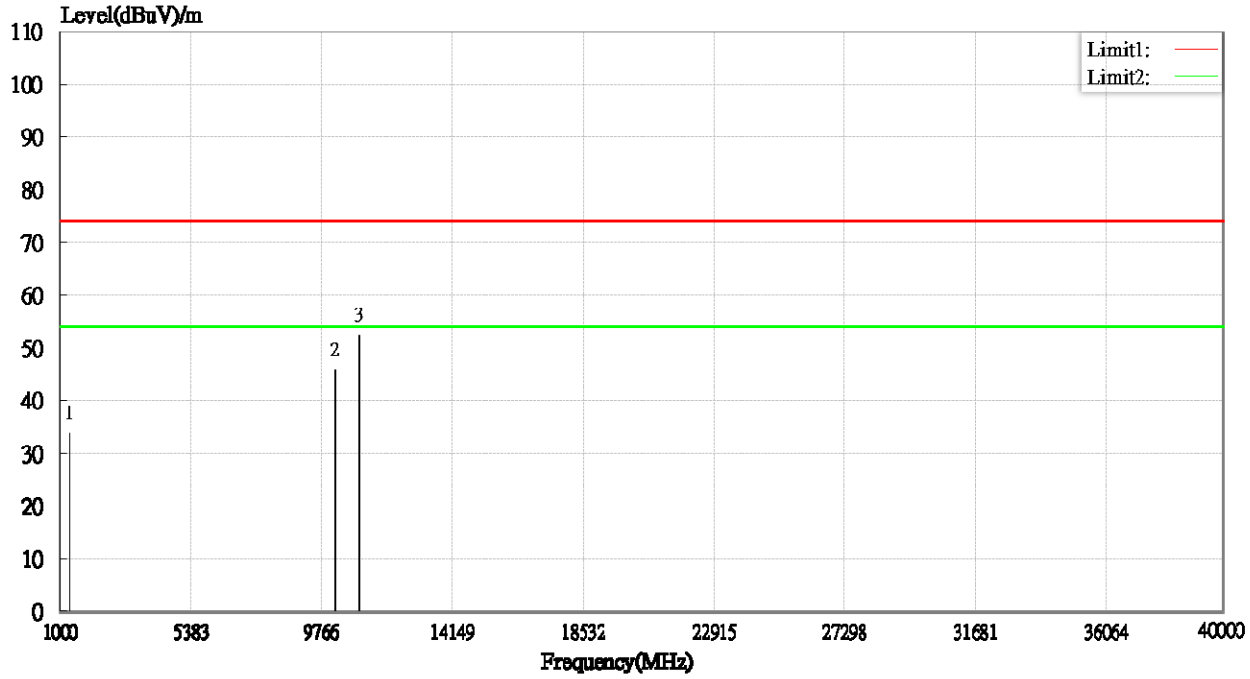
HT40 5510 MHz H-pol Avg



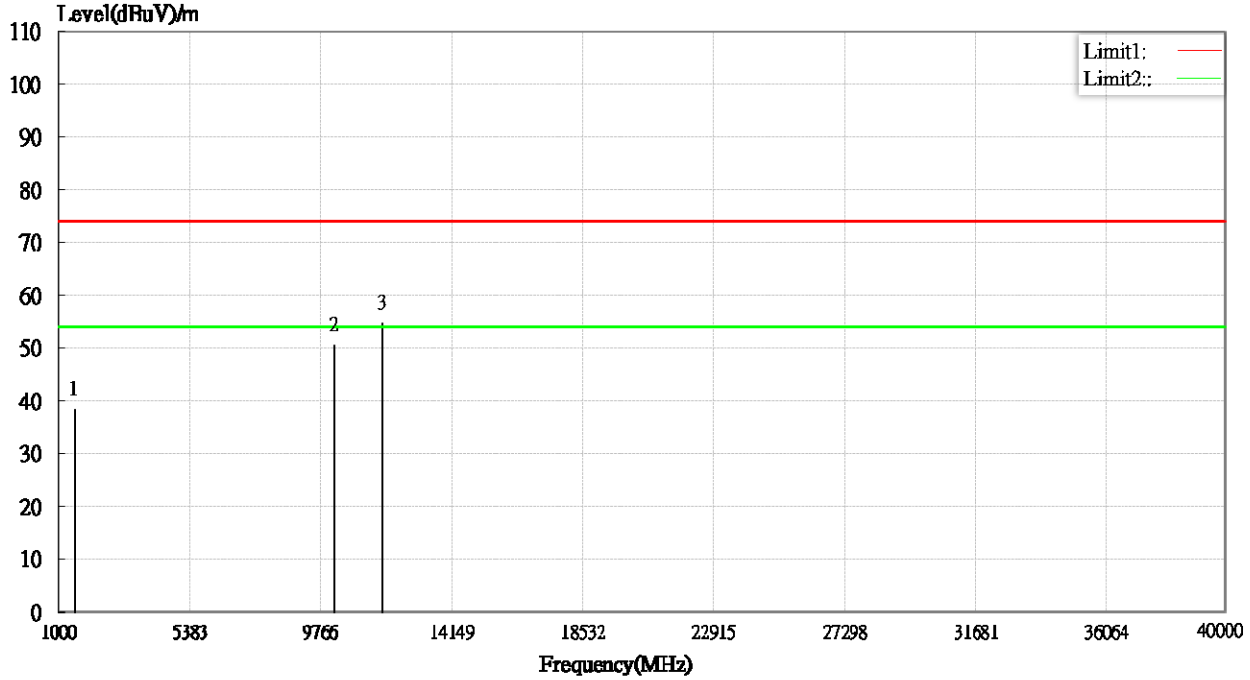
HT40 5510 MHz V-pol Peak



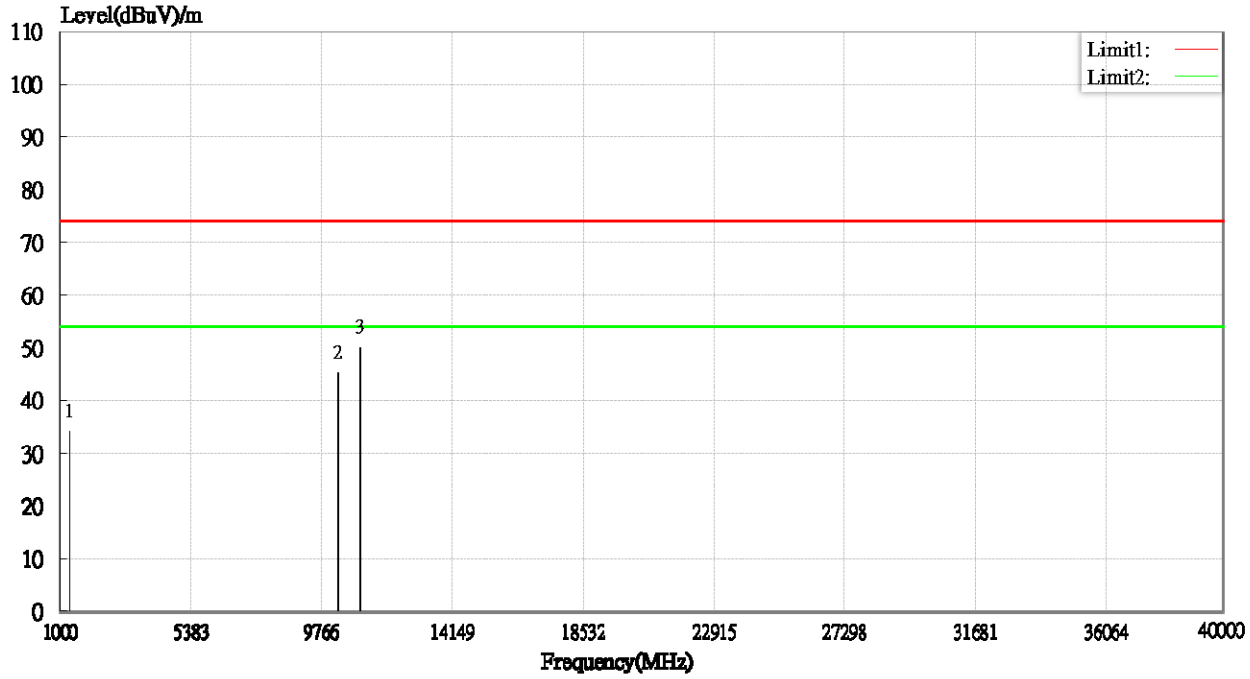
HT40 5510 MHz V-pol Avg



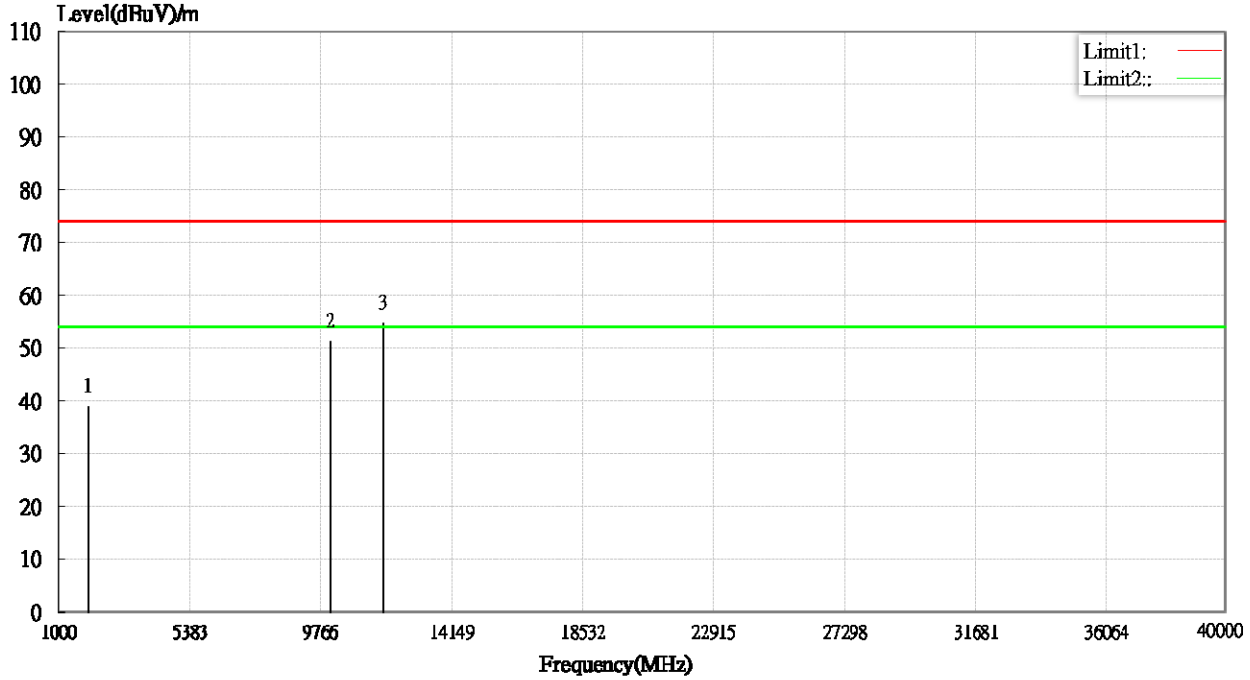
HT40 5590 MHz H-pol Peak



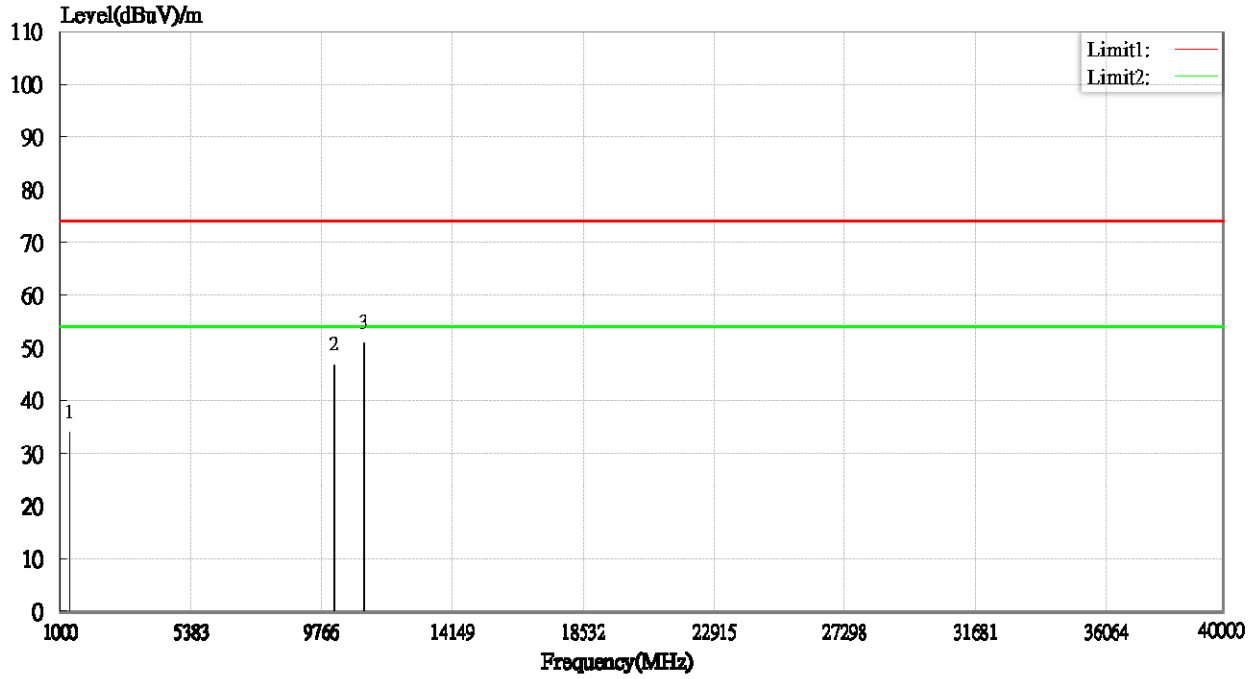
HT40 5590 MHz H-pol Avg



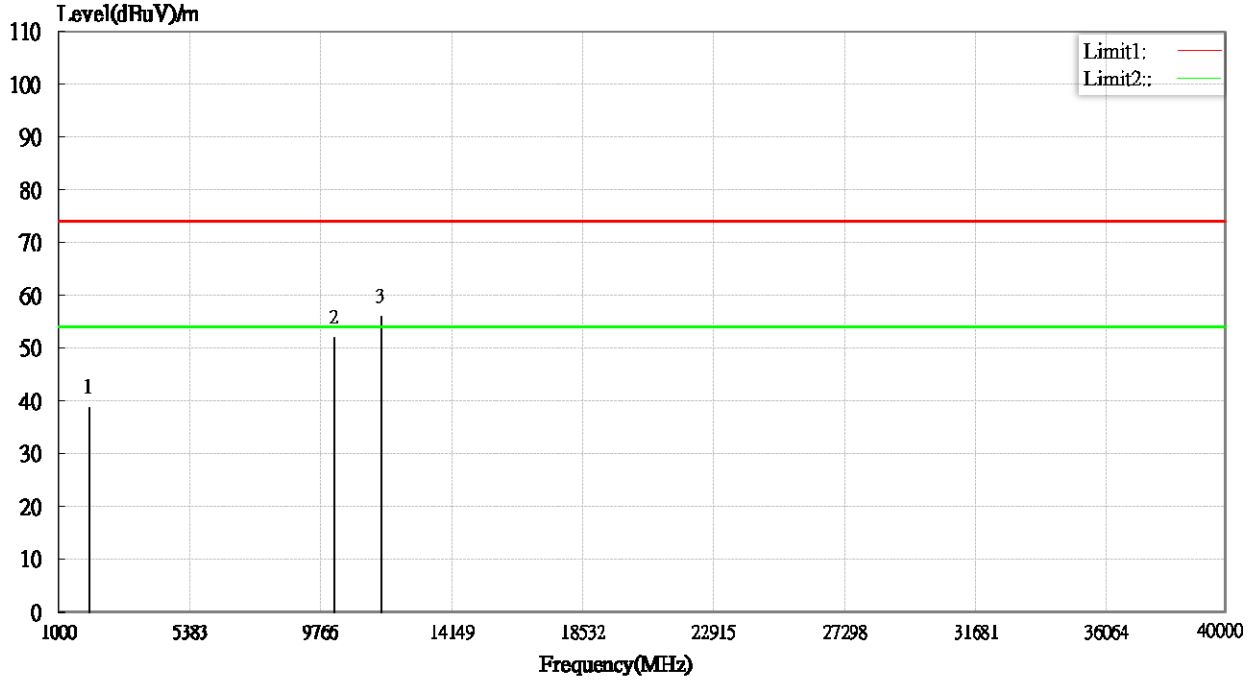
HT40 5590 MHz V-pol Peak



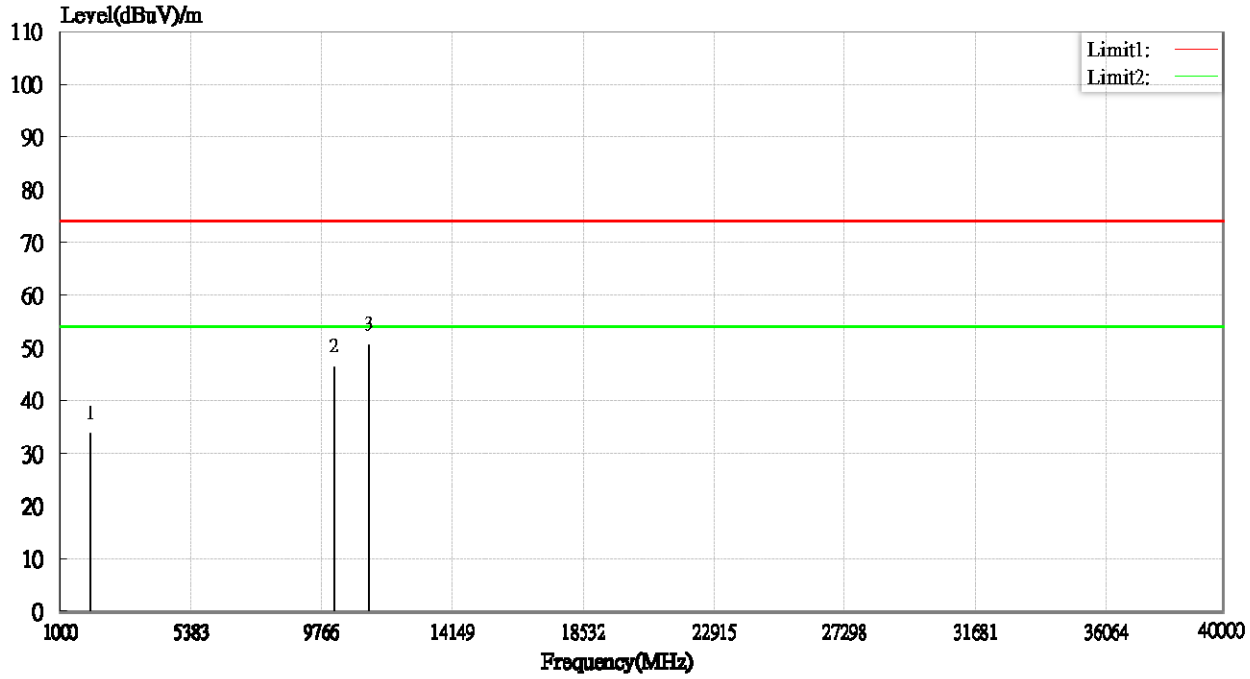
HT40 5590 MHz V-pol Avg



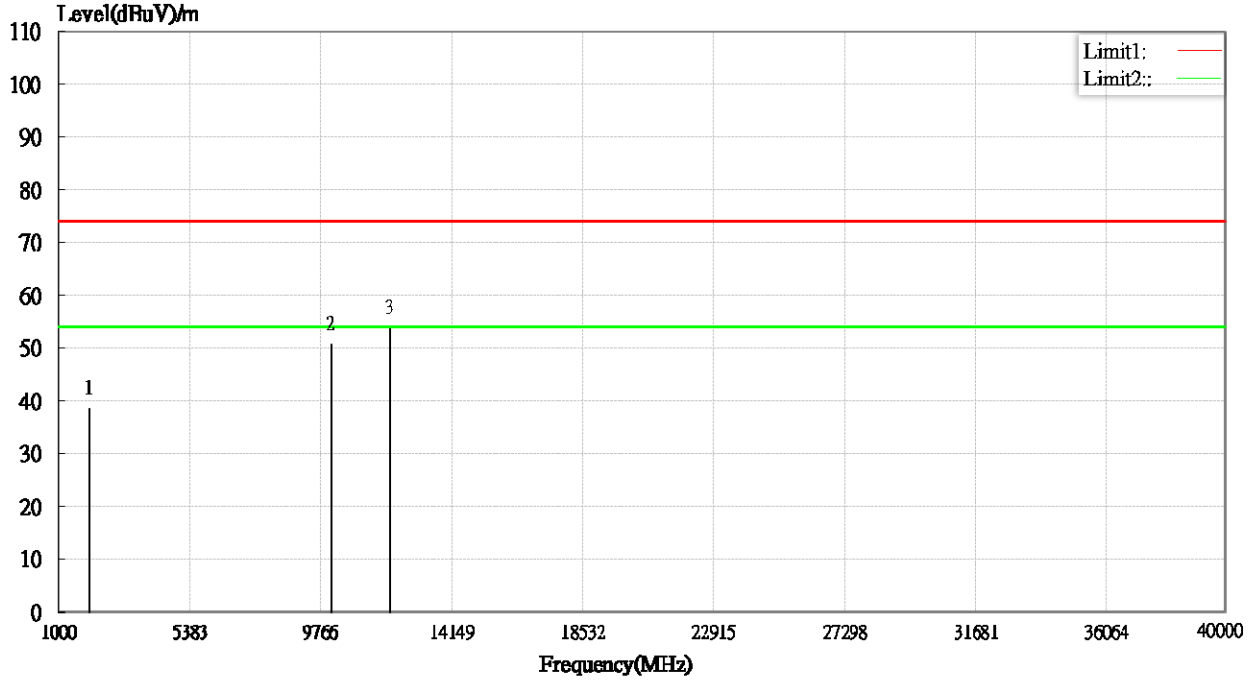
HT40 5670 MHz H-pol Peak



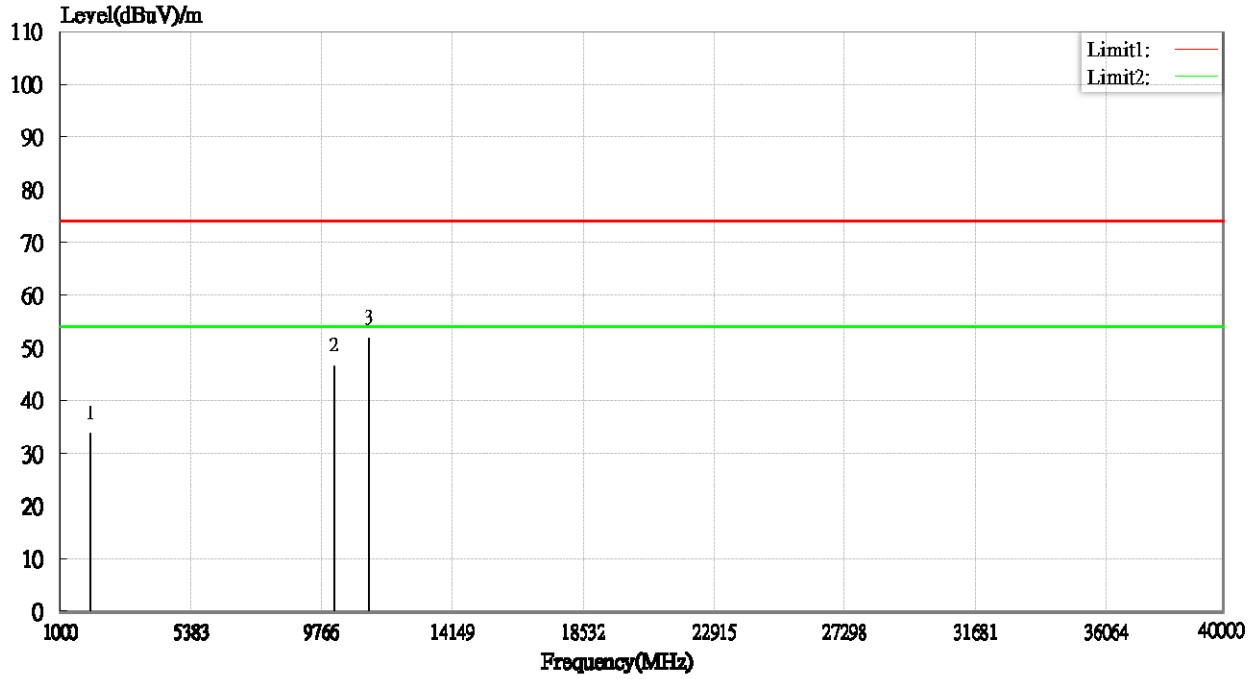
HT40 5670 MHz H-pol Avg



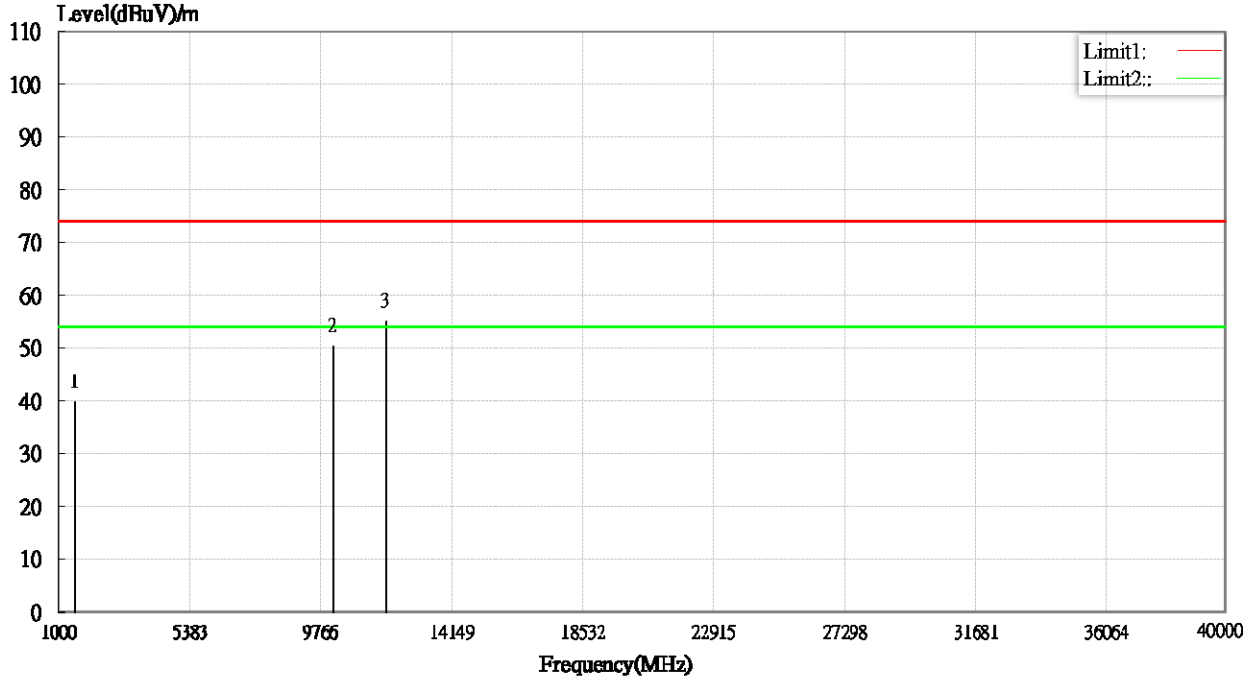
HT40 5670 MHz V-pol Peak



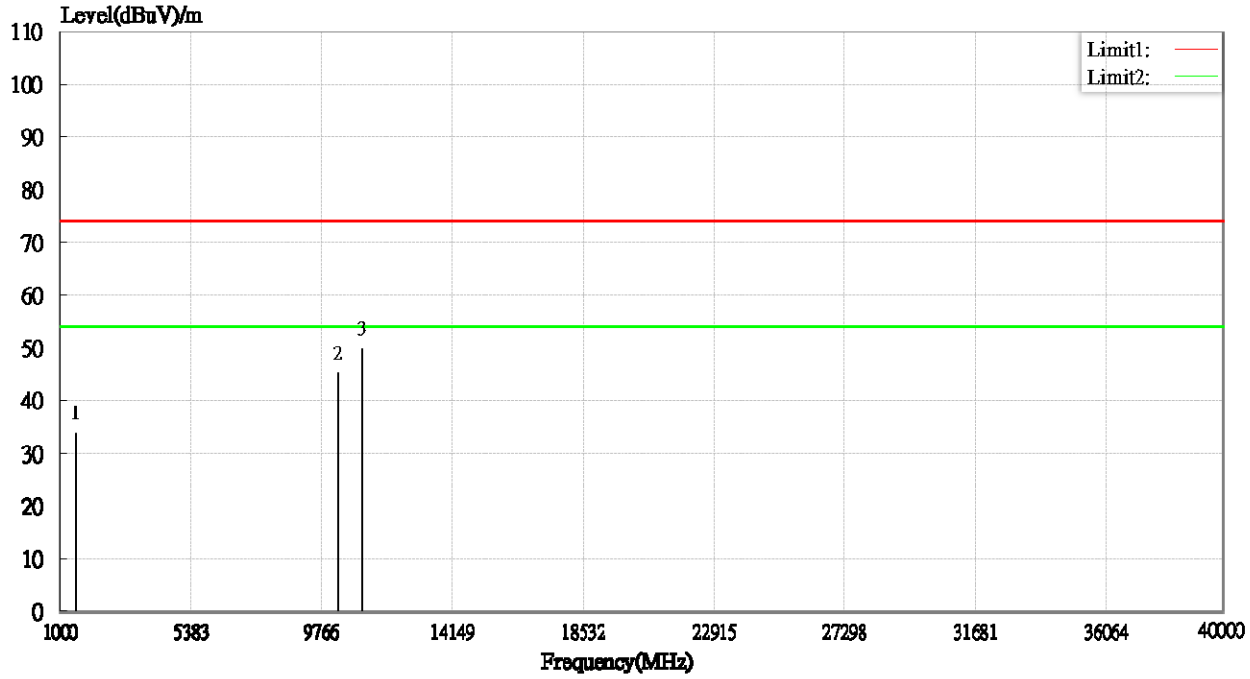
HT40 5670 MHz V-pol Avg



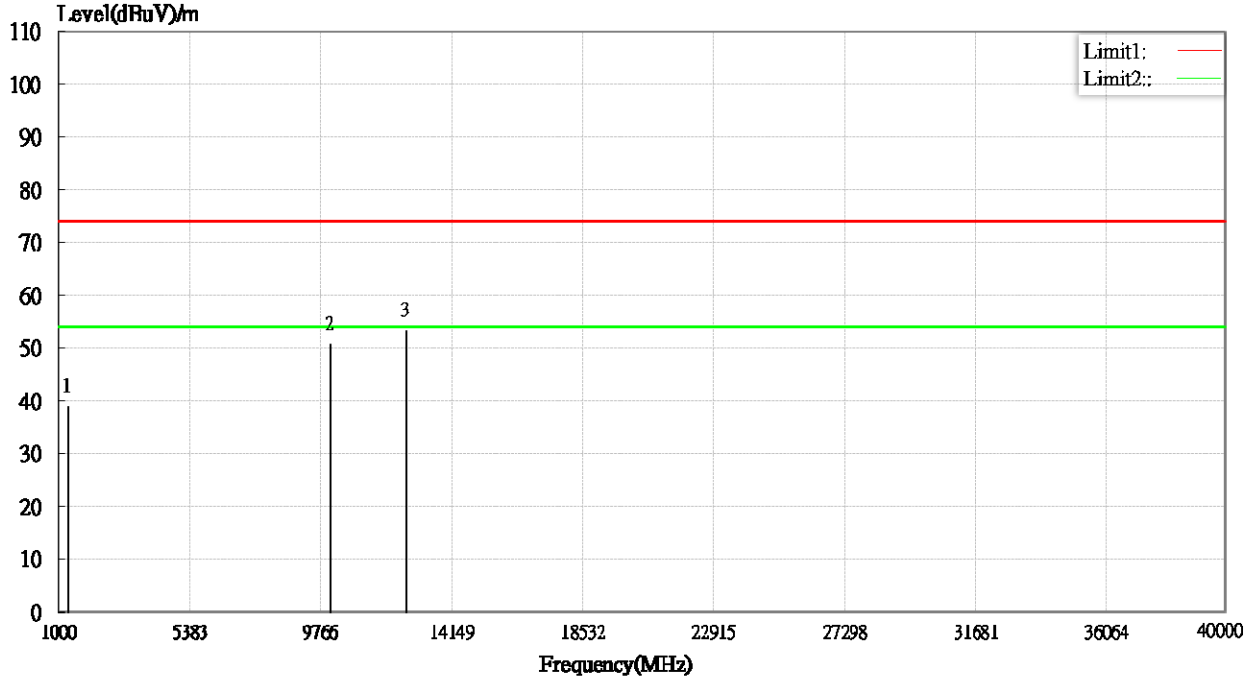
HT80 5530 MHz H-pol Peak



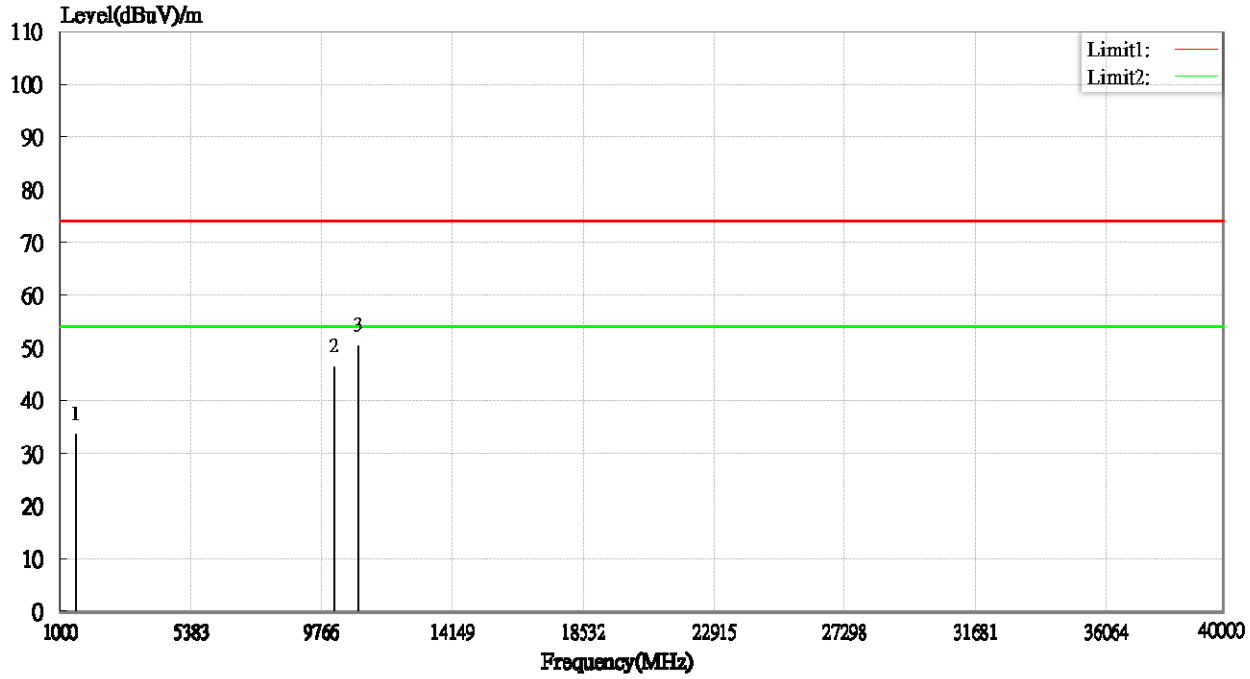
HT80 5530 MHz H-pol Avg



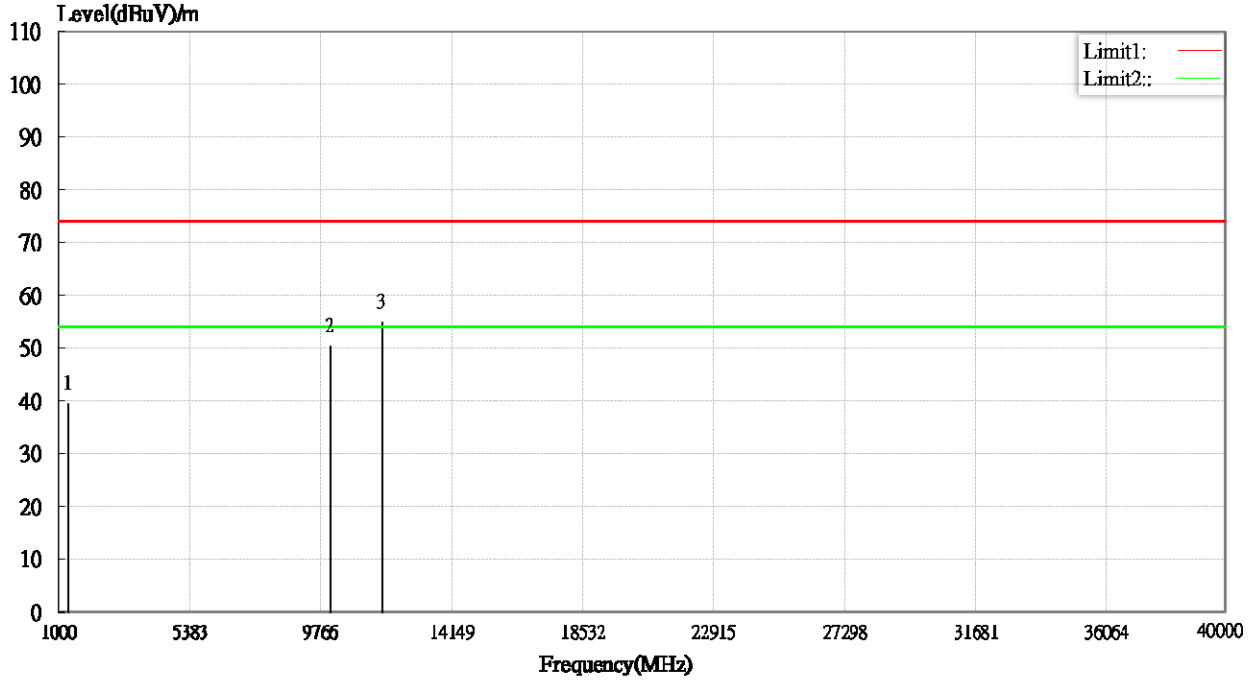
HT80 5530 MHz V-pol Peak



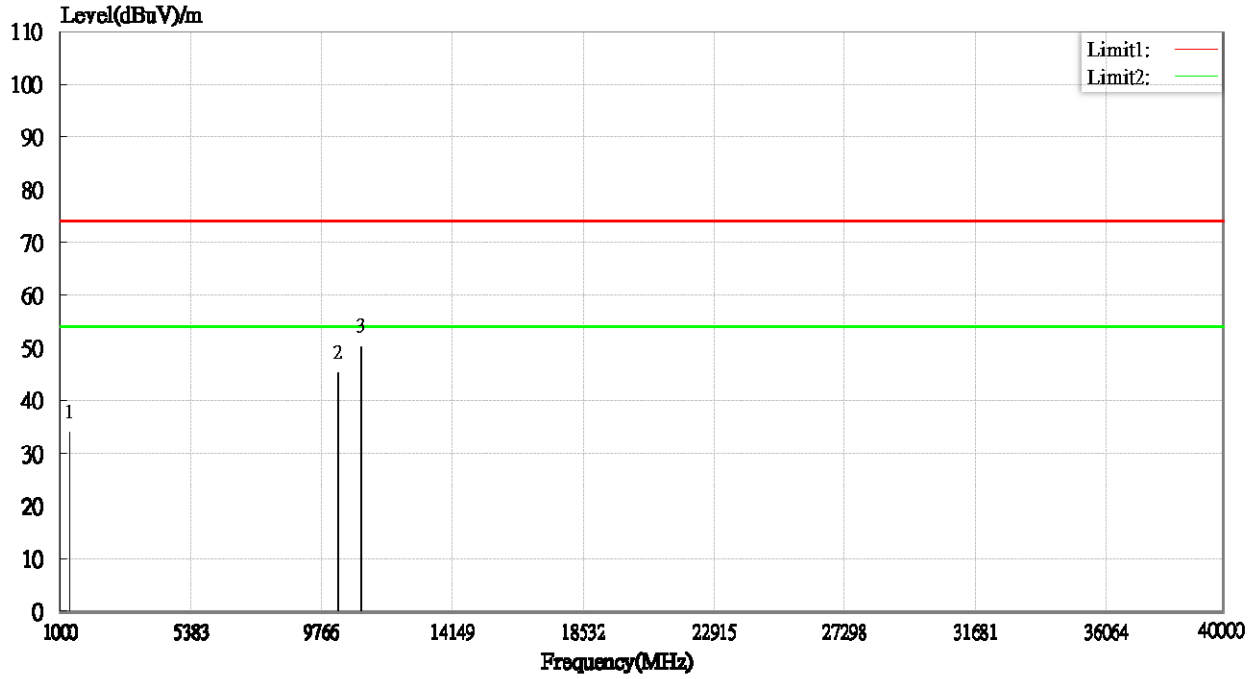
HT80 5530 MHz V-pol Avg



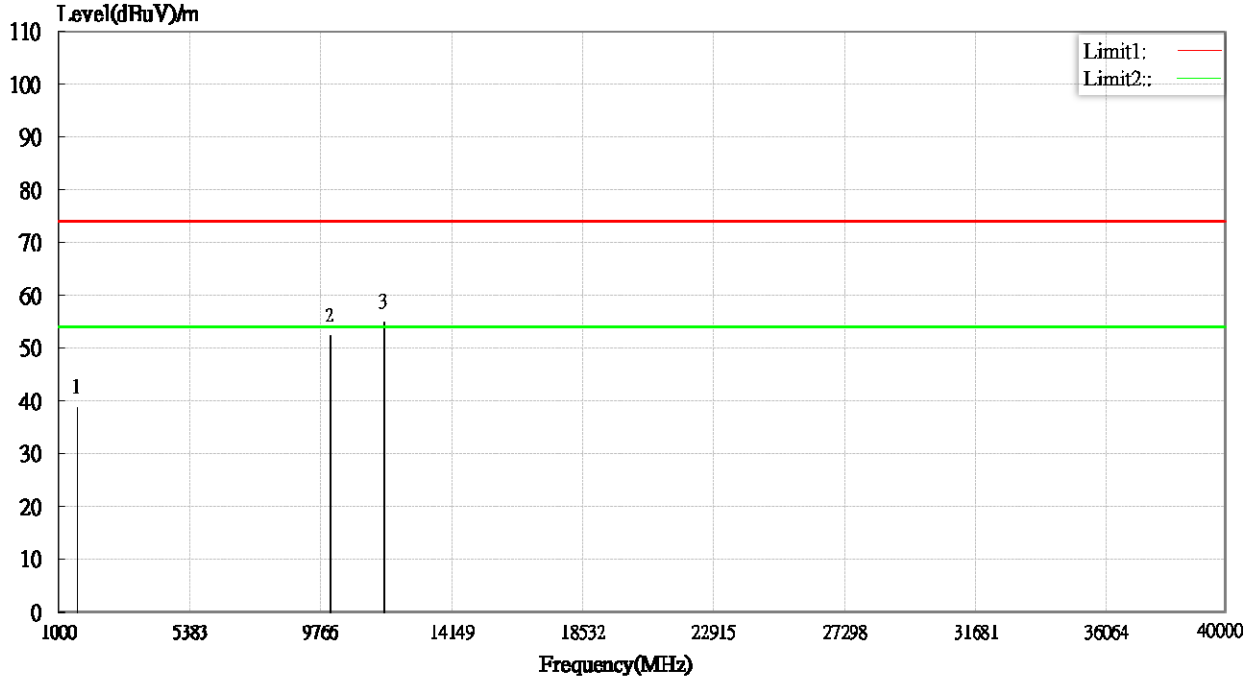
HT80 5610 MHz H-pol Peak



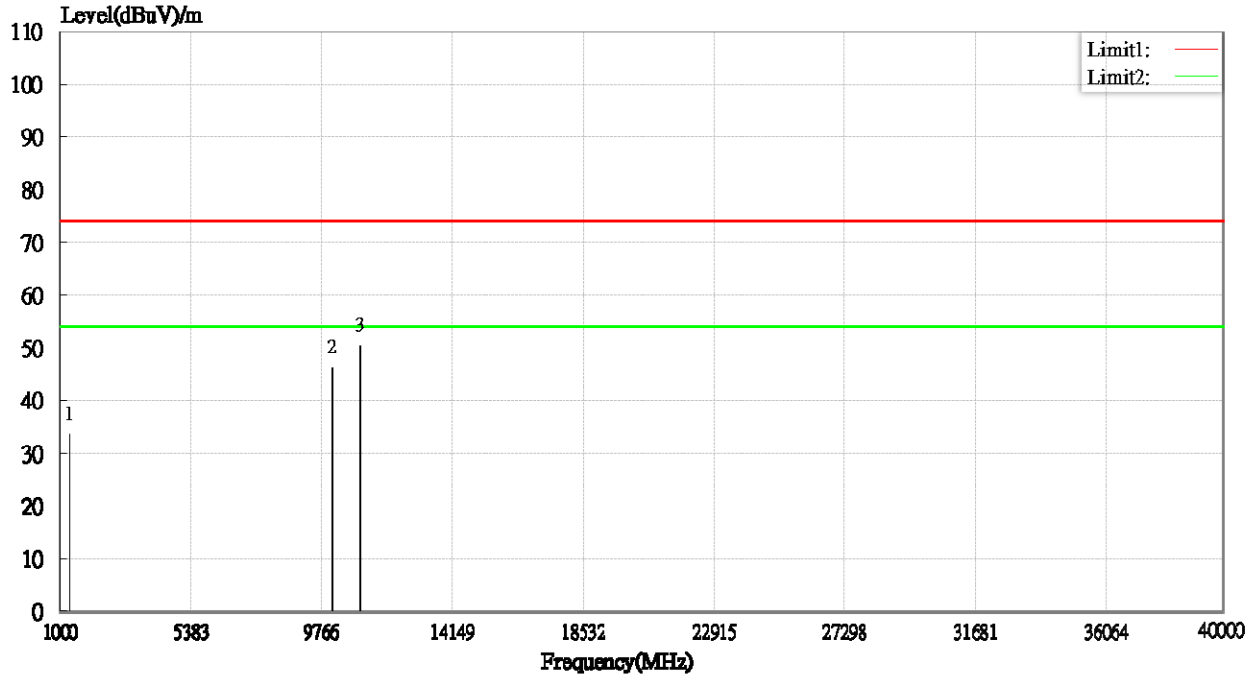
HT80 5610 MHz H-pol Avg



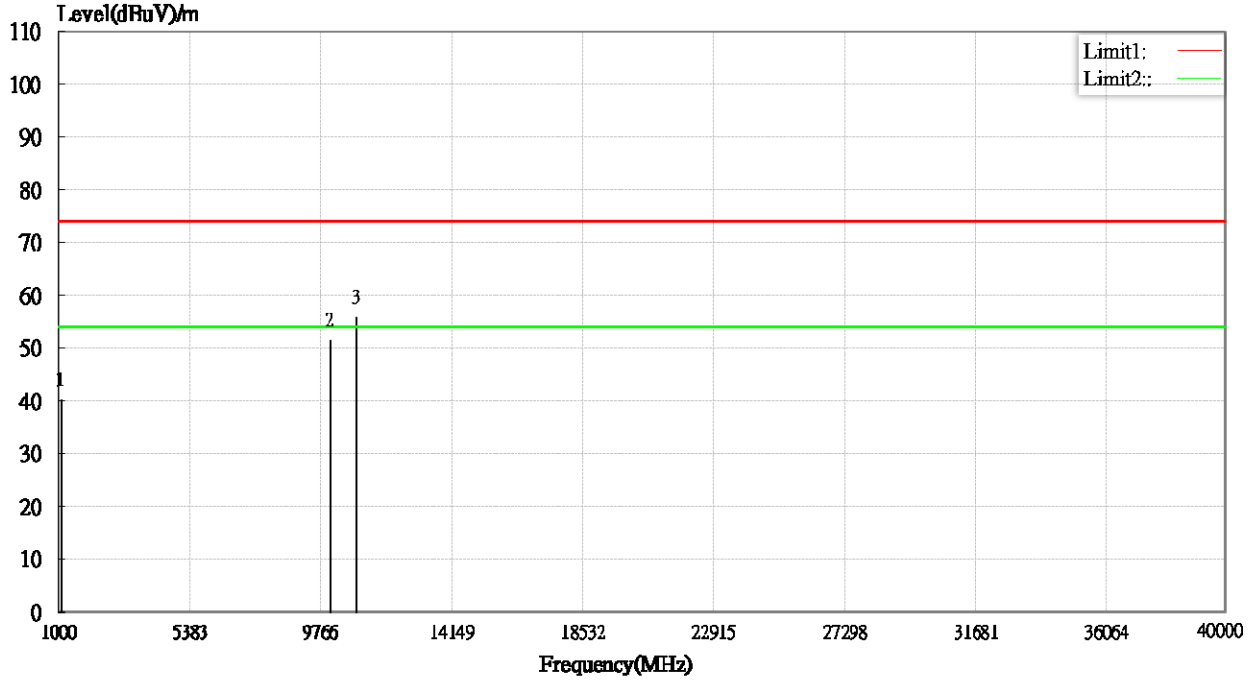
HT80 5610 MHz V-pol Peak



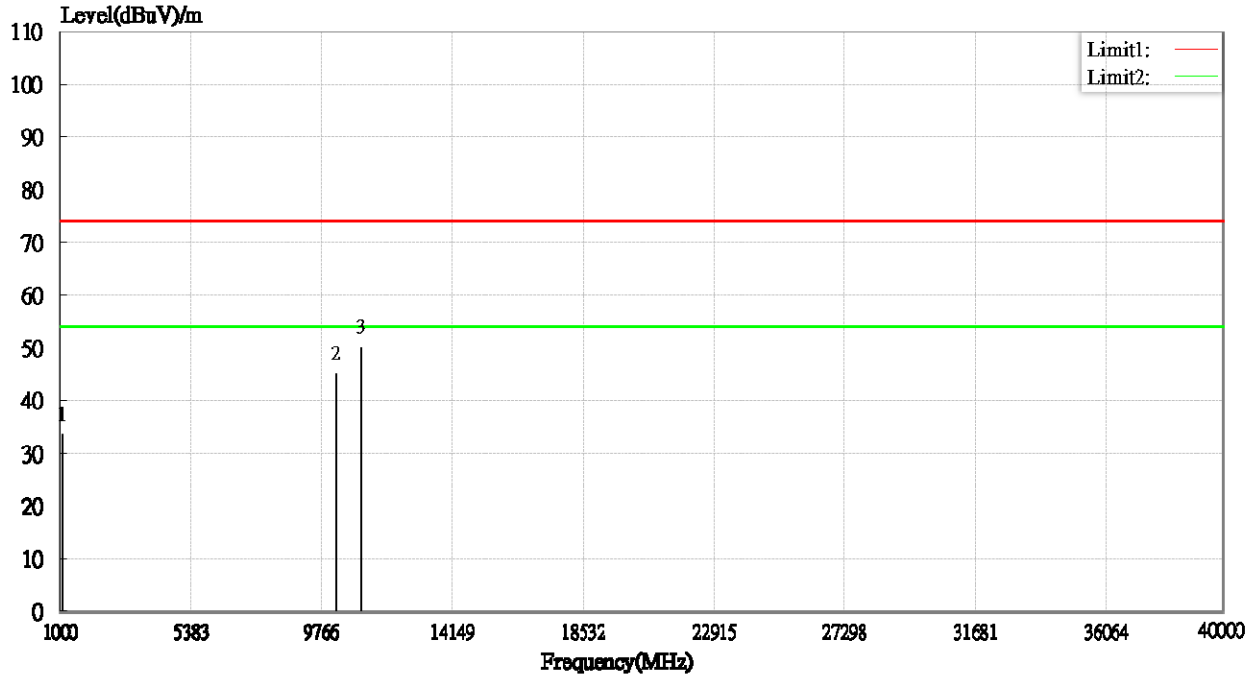
HT80 5610 MHz V-pol Avg



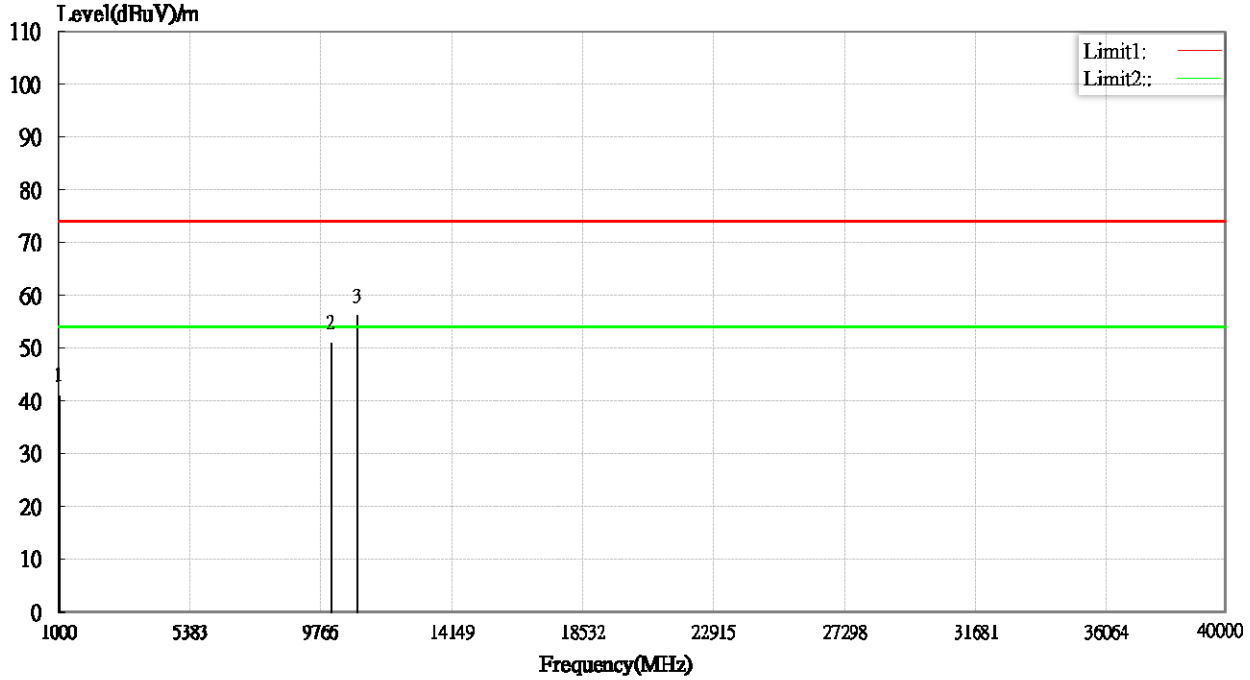
HT160 5570 MHz H-pol Peak



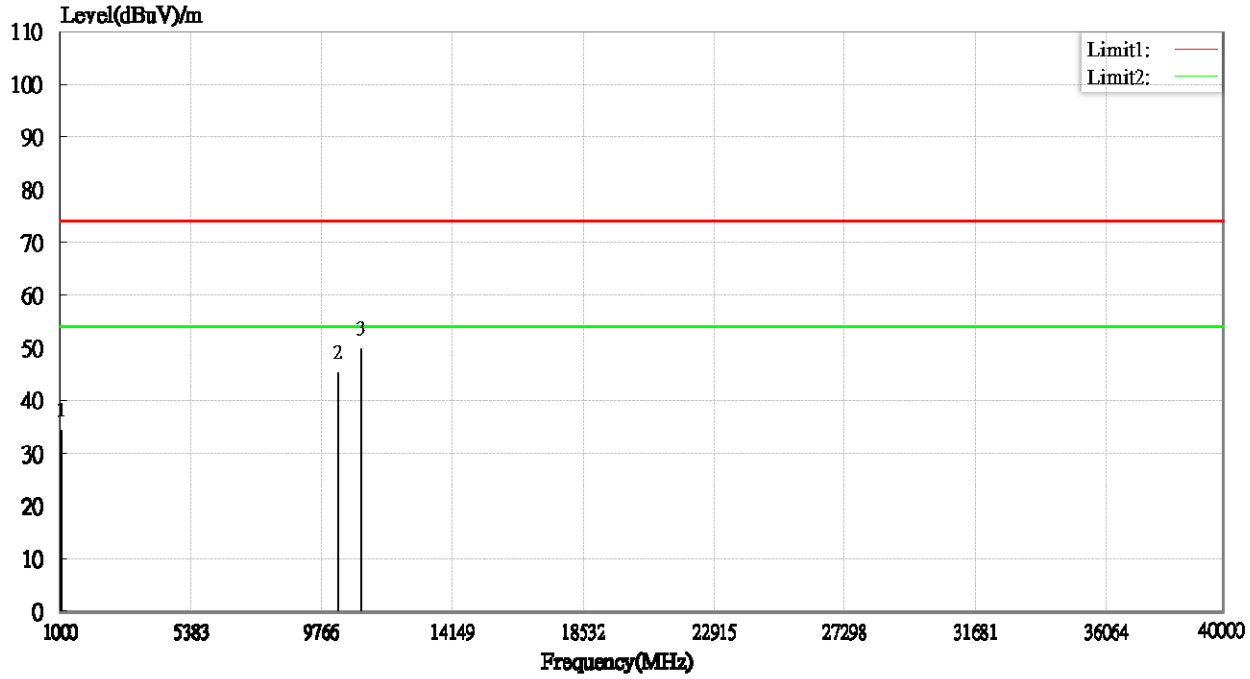
HT160 5570 MHz H-pol Avg



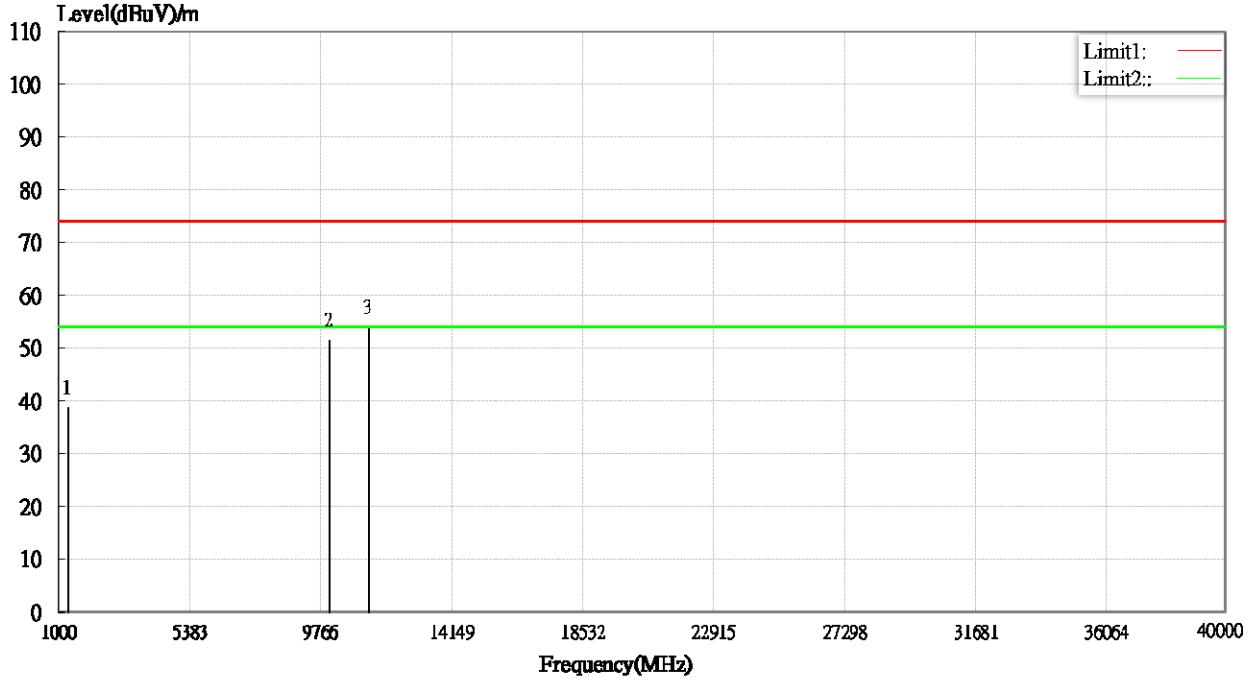
HT160 5570 MHz V-pol Peak



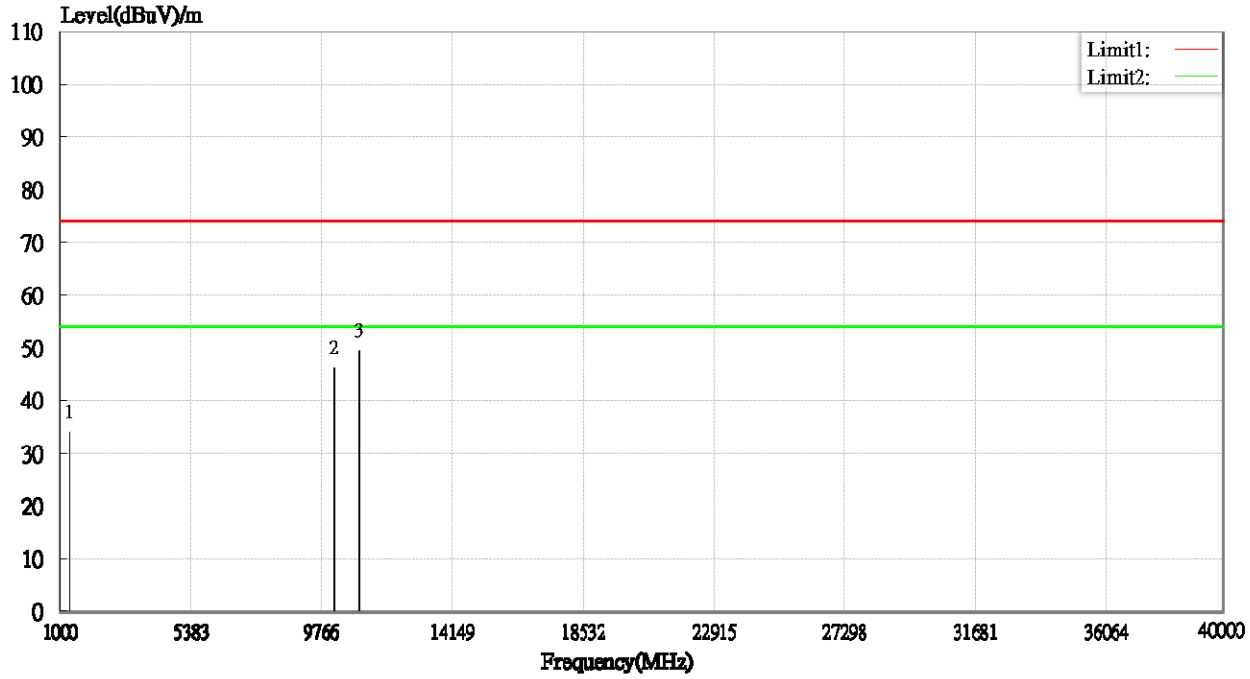
HT160 5570 MHz V-pol Avg



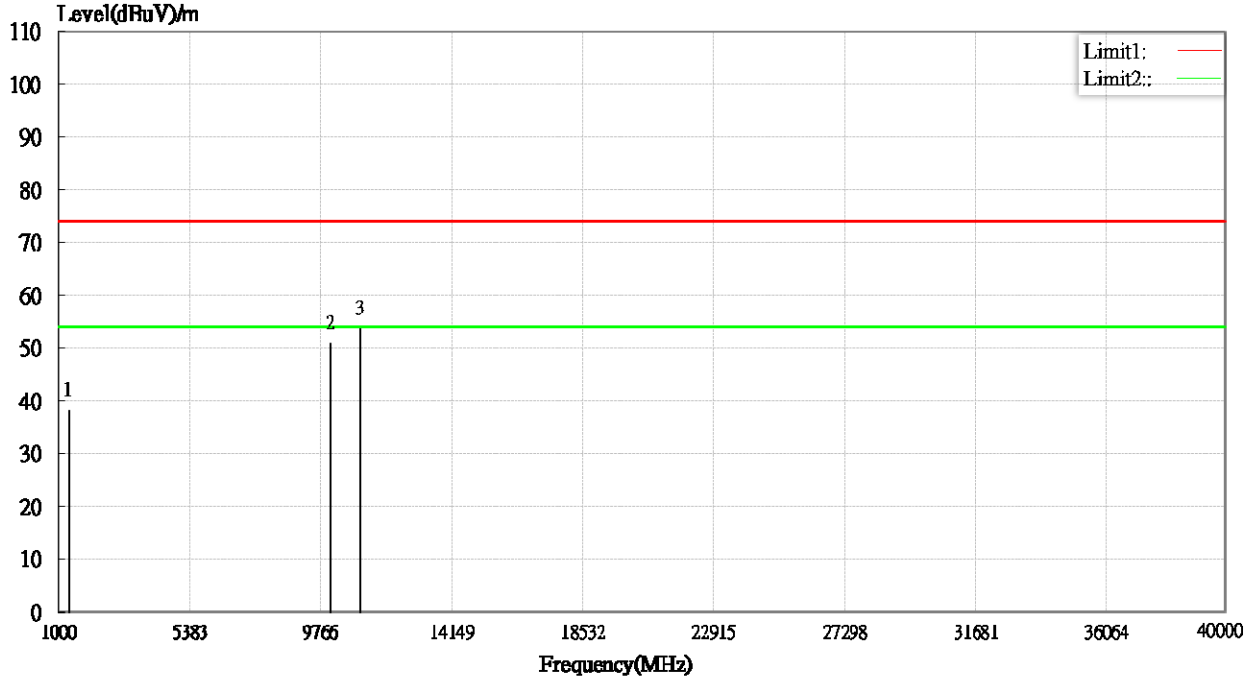
nonHT20 5745 MHz H-pol Peak



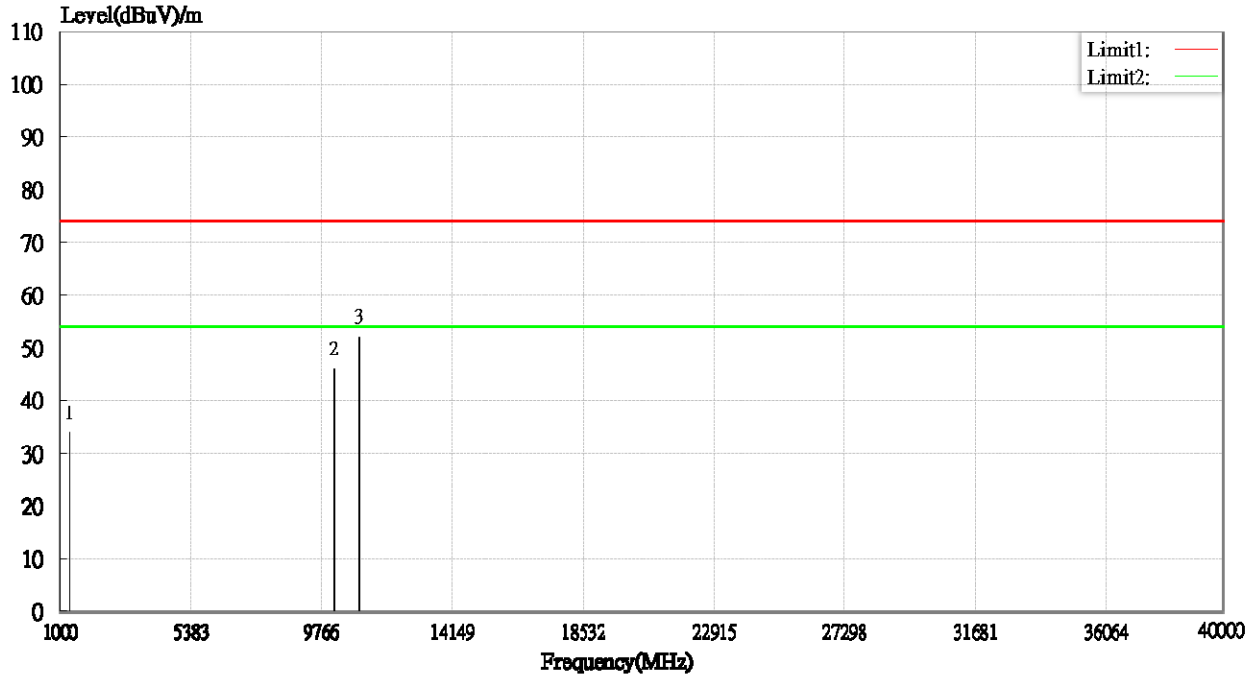
nonHT20 5745 MHz H-pol Avg



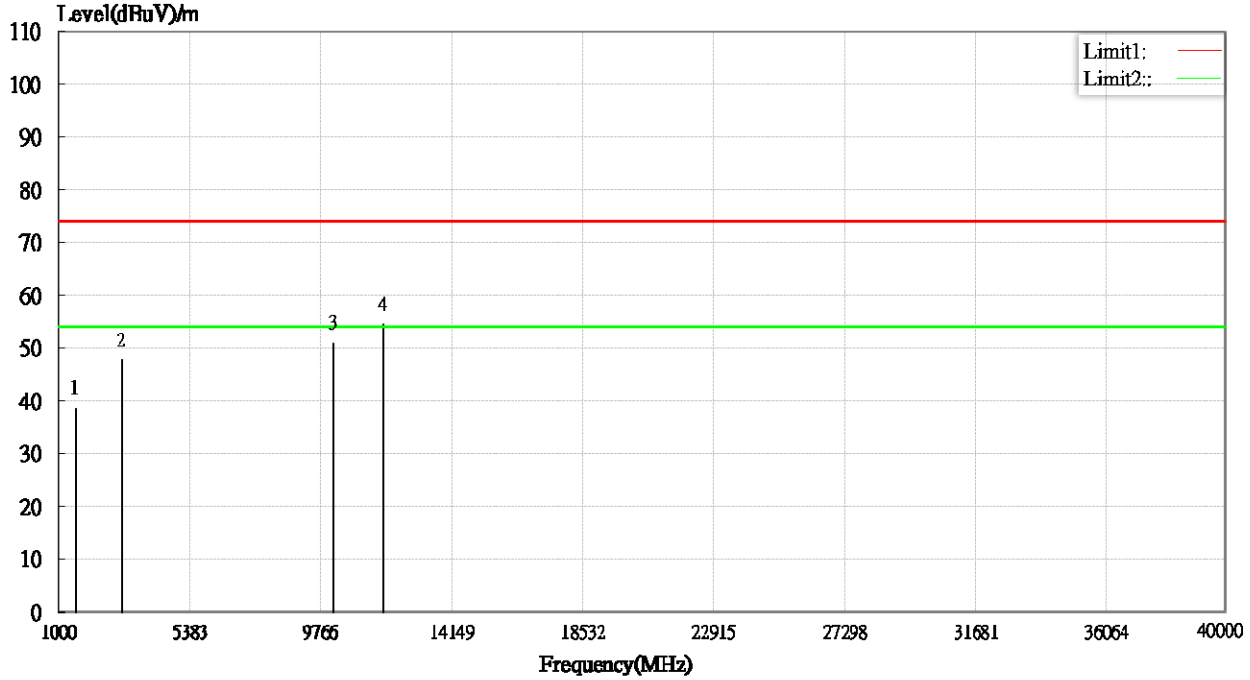
nonHT20 5745 MHz V-pol Peak



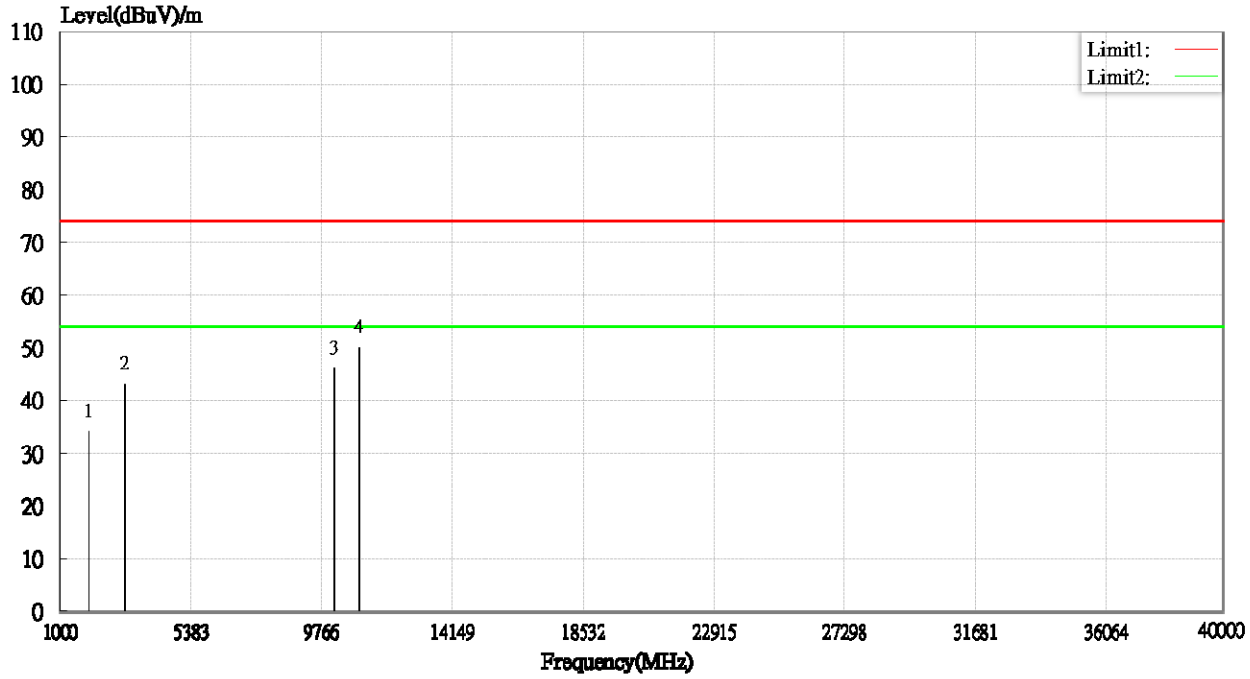
nonHT20 5745 MHz V-pol Avg



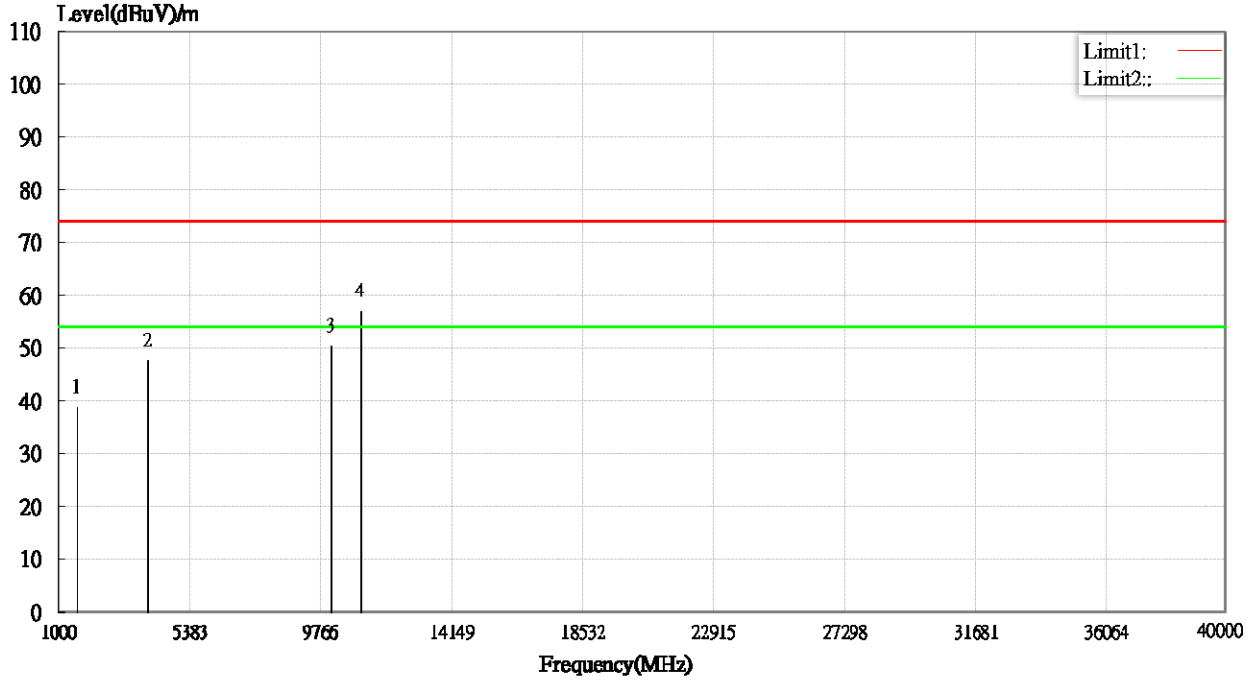
nonHT20 5785 MHz H-pol Peak



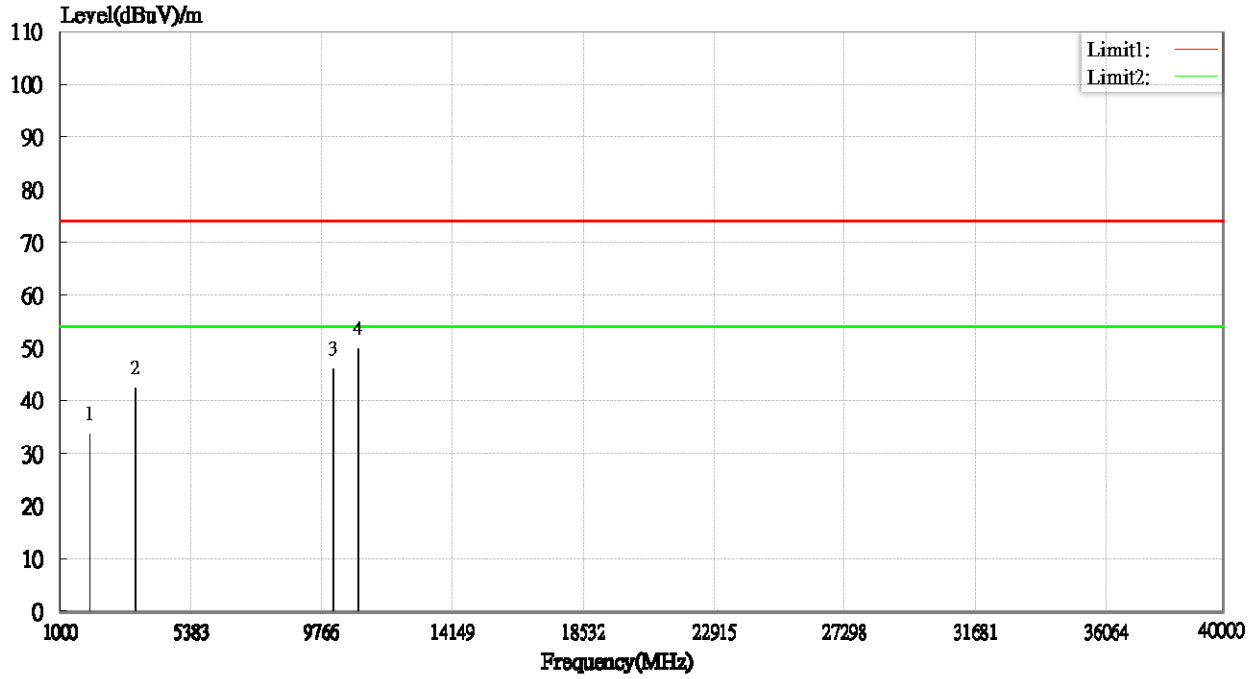
nonHT20 5785 MHz H-pol Avg



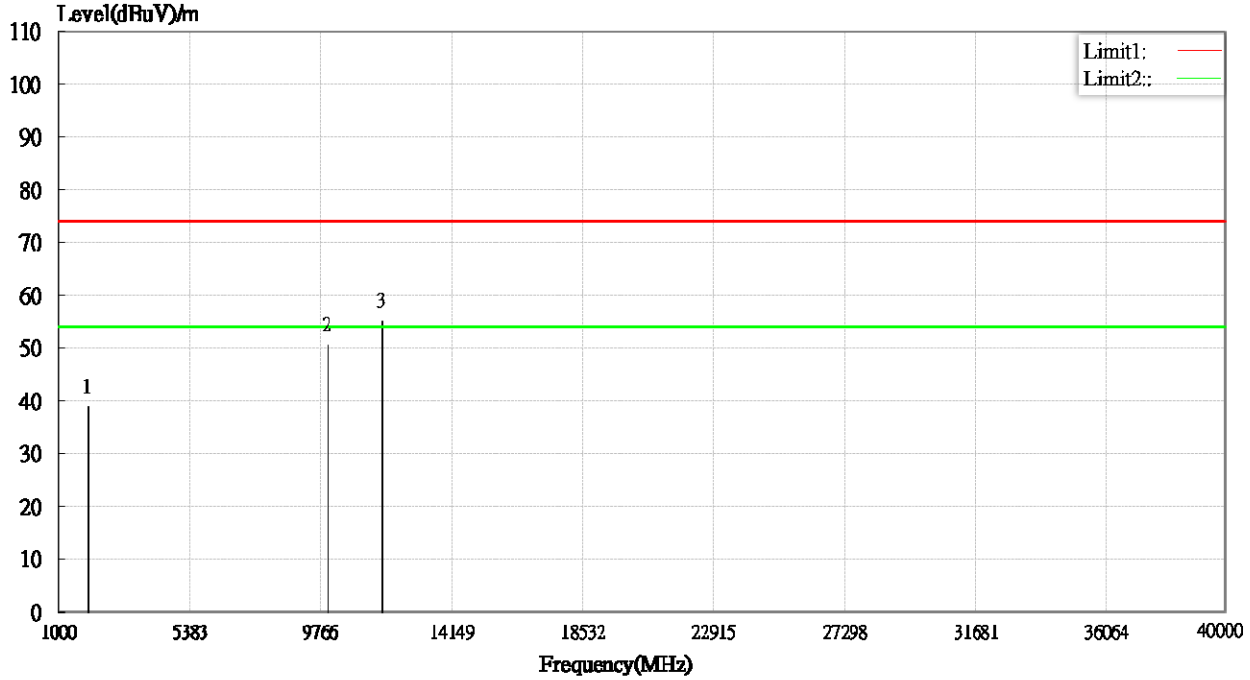
nonHT20 5785 MHz V-pol Peak



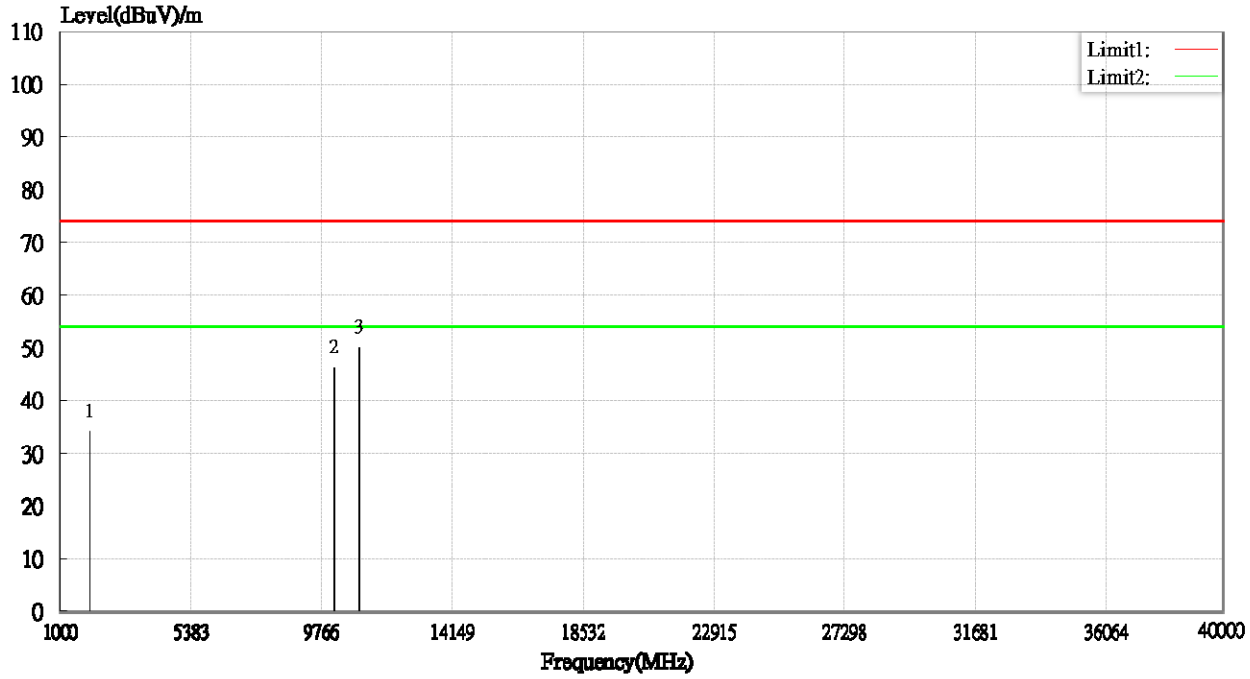
nonHT20 5785 MHz V-pol Avg



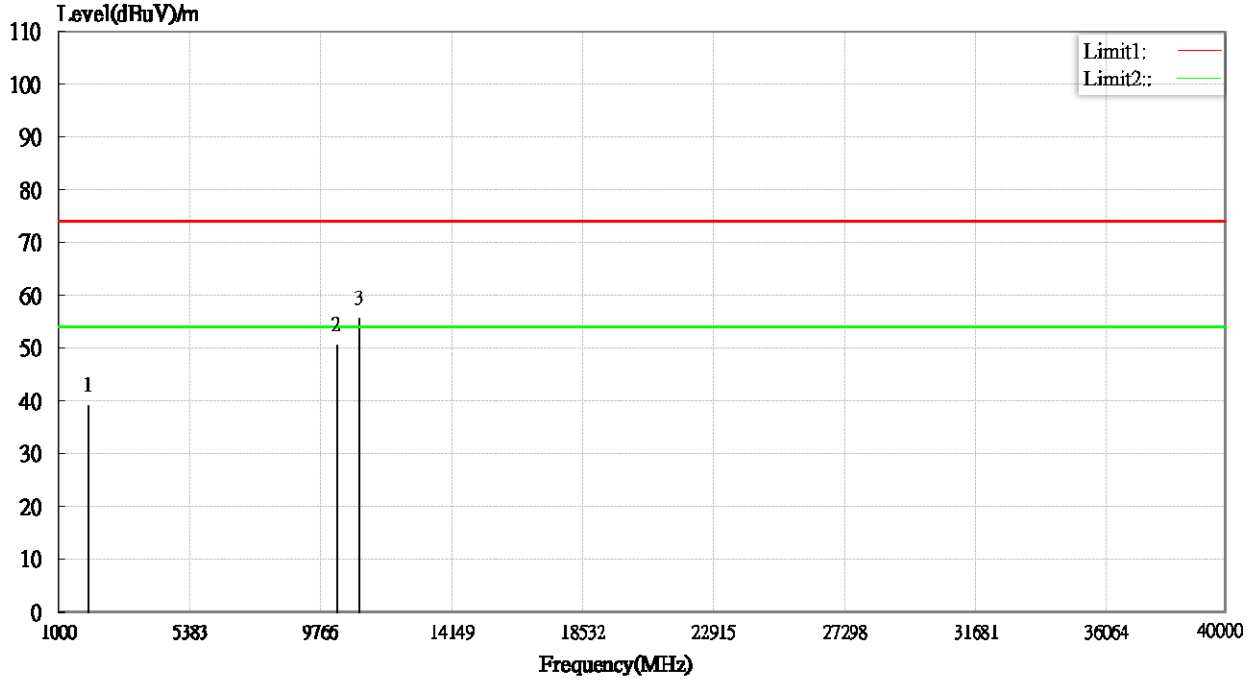
nonHT20 5825 MHz H-pol Peak



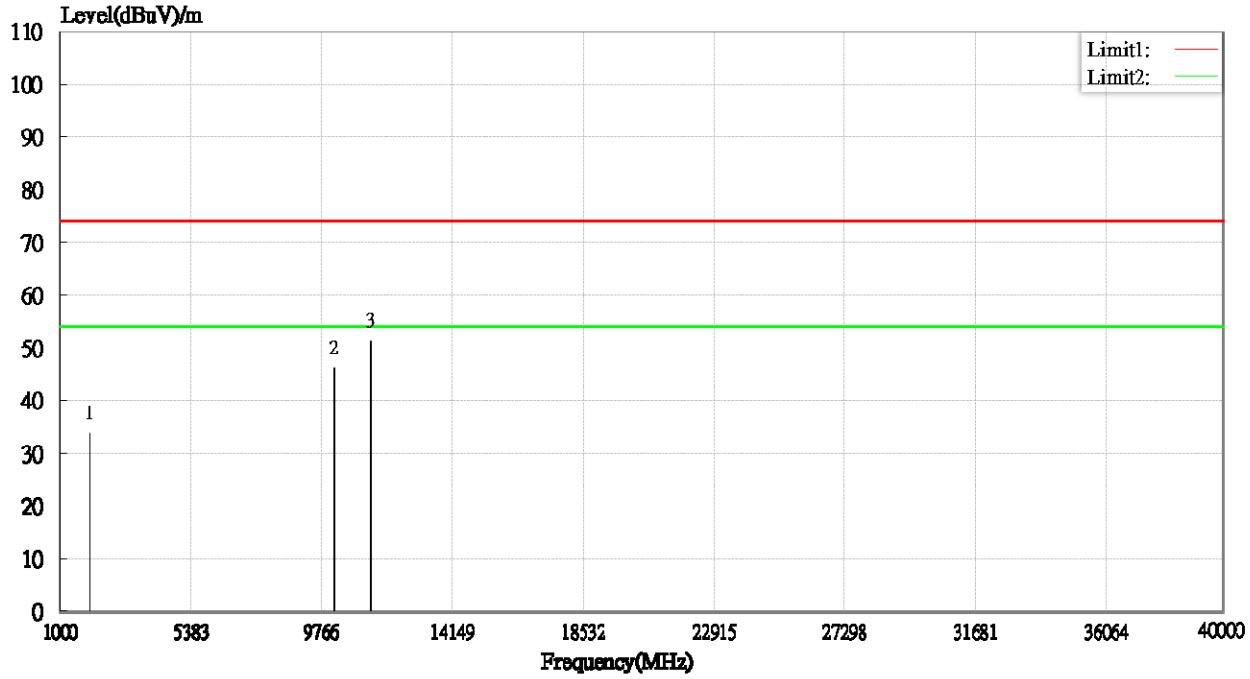
nonHT20 5825 MHz H-pol Avg



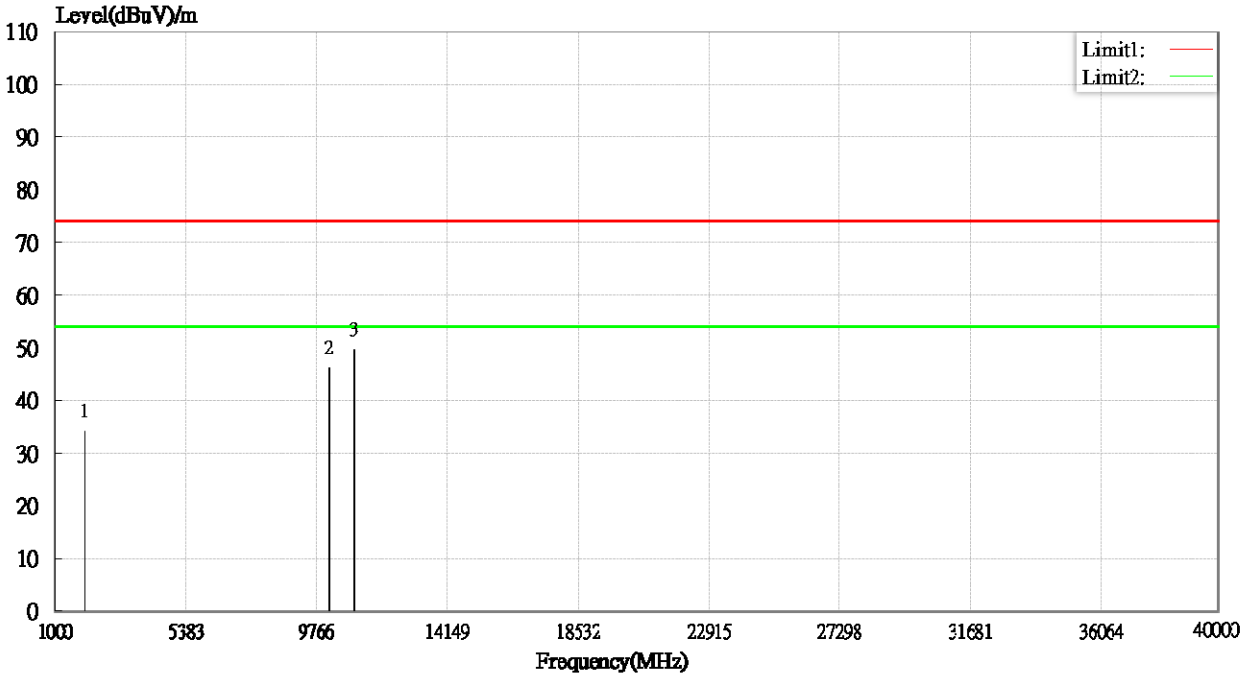
nonHT20 5825 MHz V-pol Peak



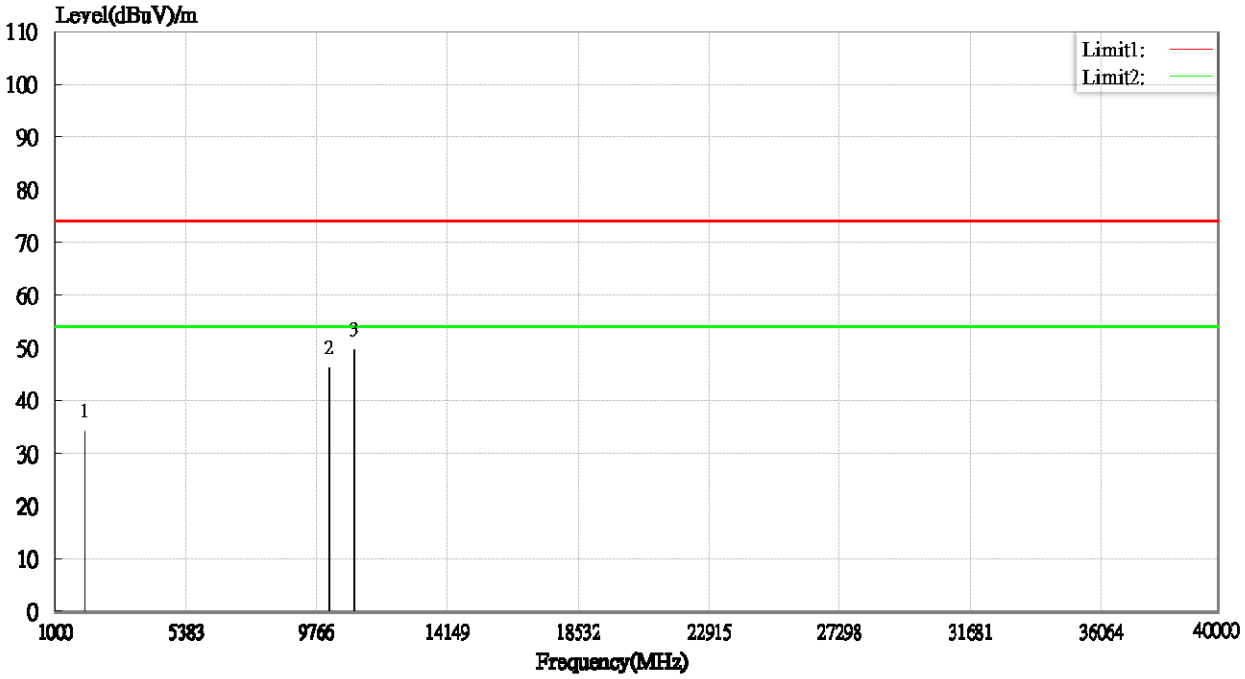
nonHT20 5825 MHz V-pol Avg



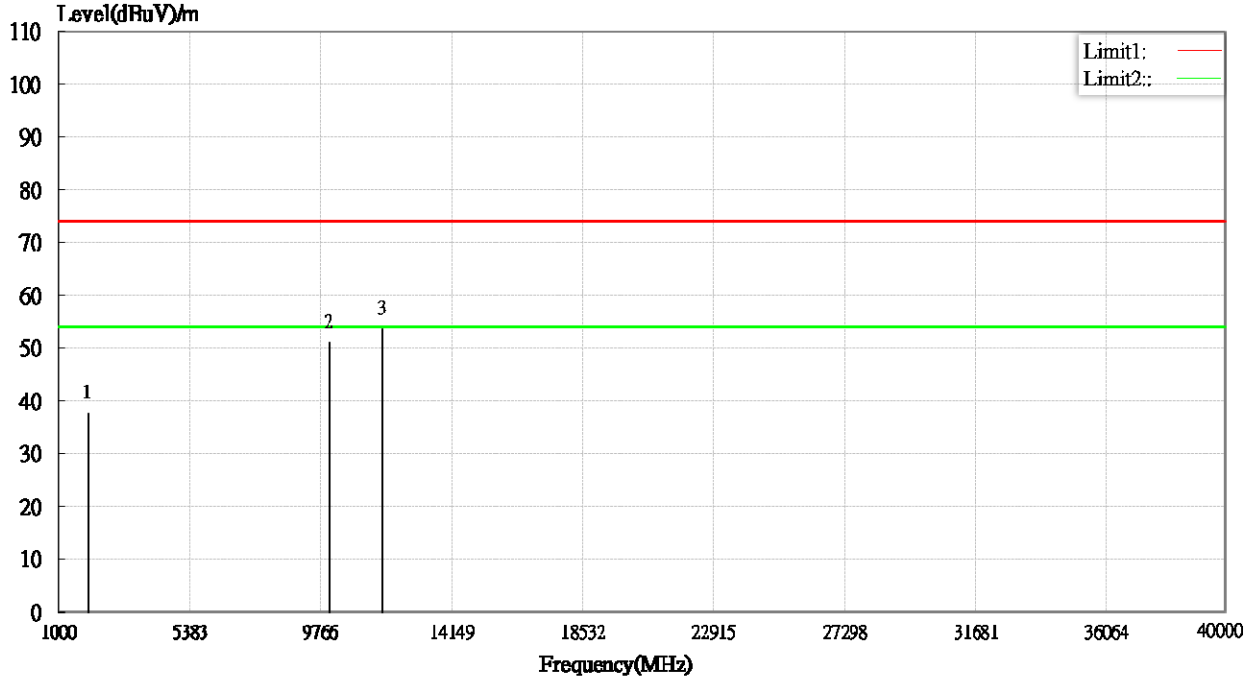
HT20 5745 MHz H-pol Peak



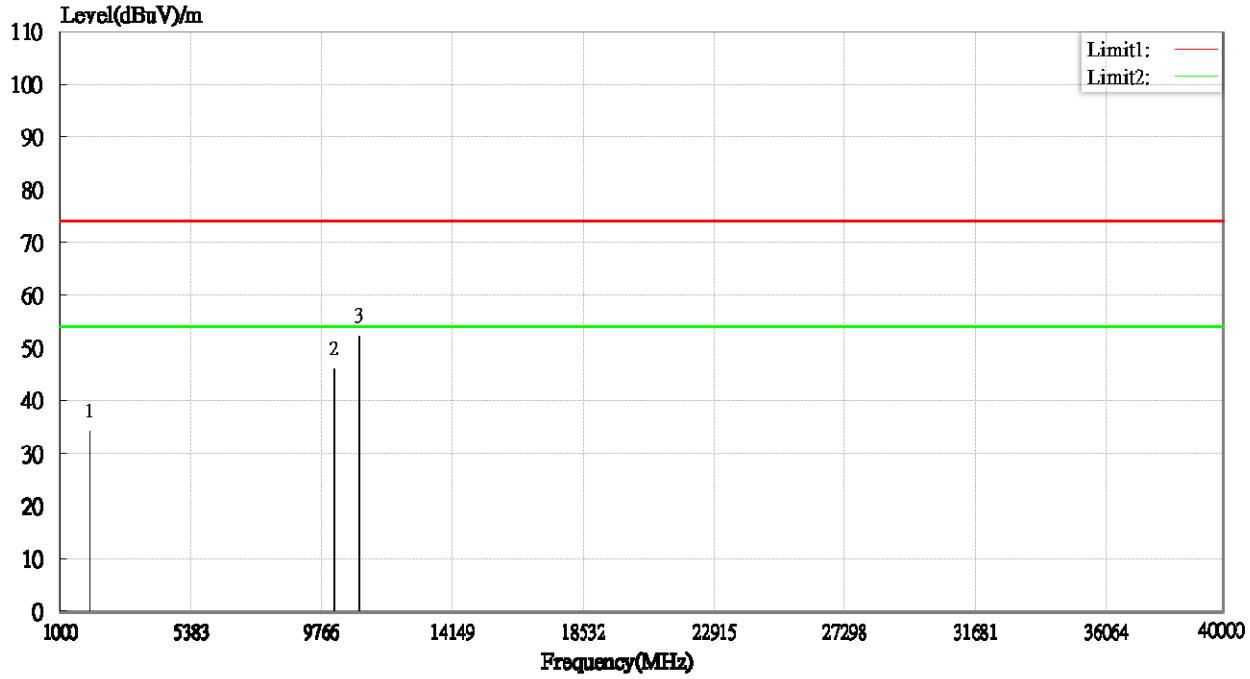
HT20 5745 MHz H-pol Avg



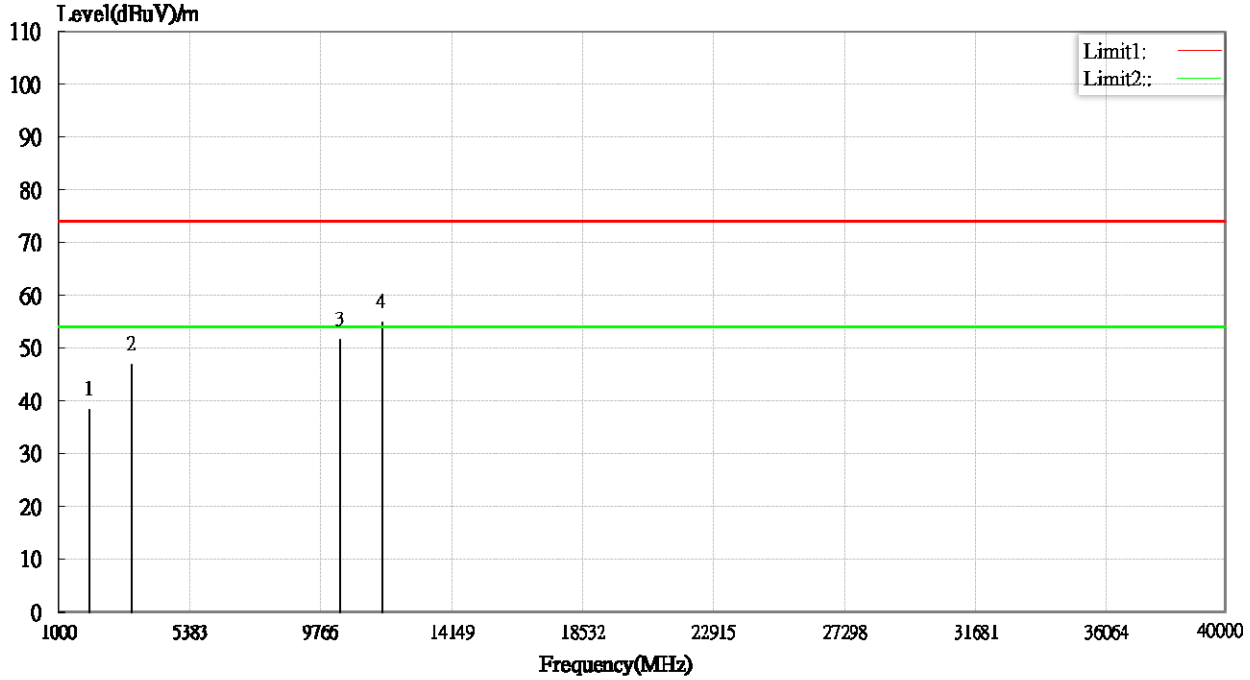
HT20 5745 MHz V-pol Peak



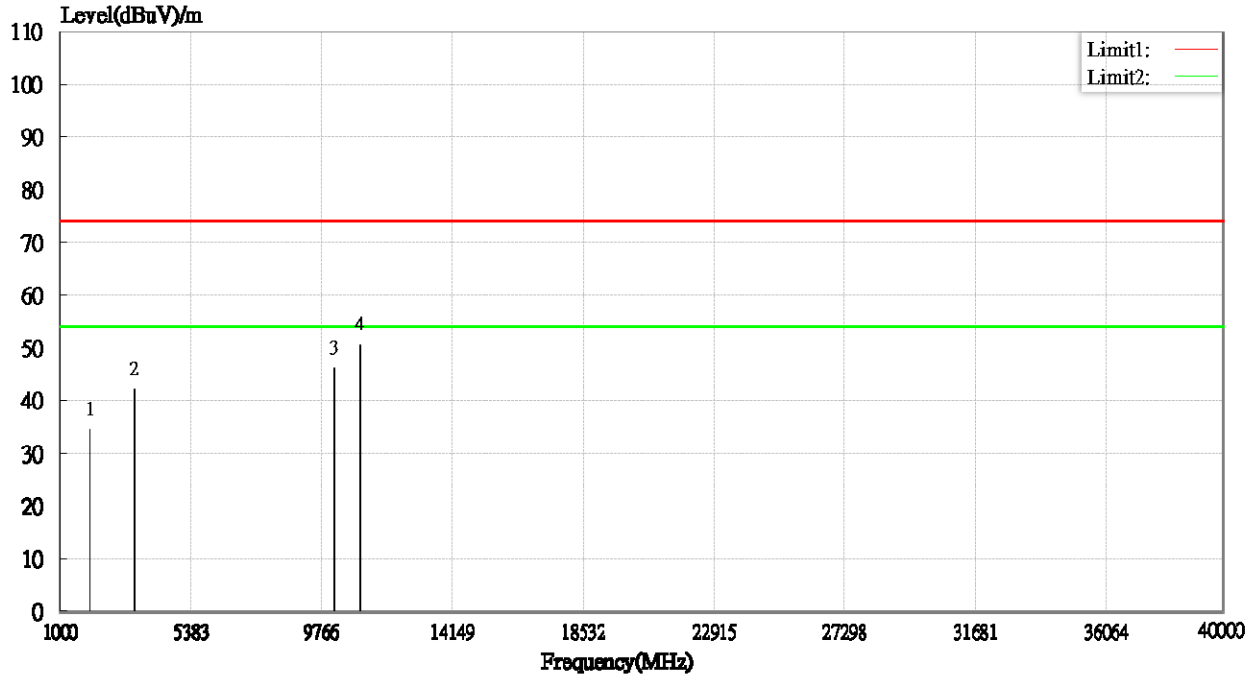
HT20 5745 MHz V-pol Avg



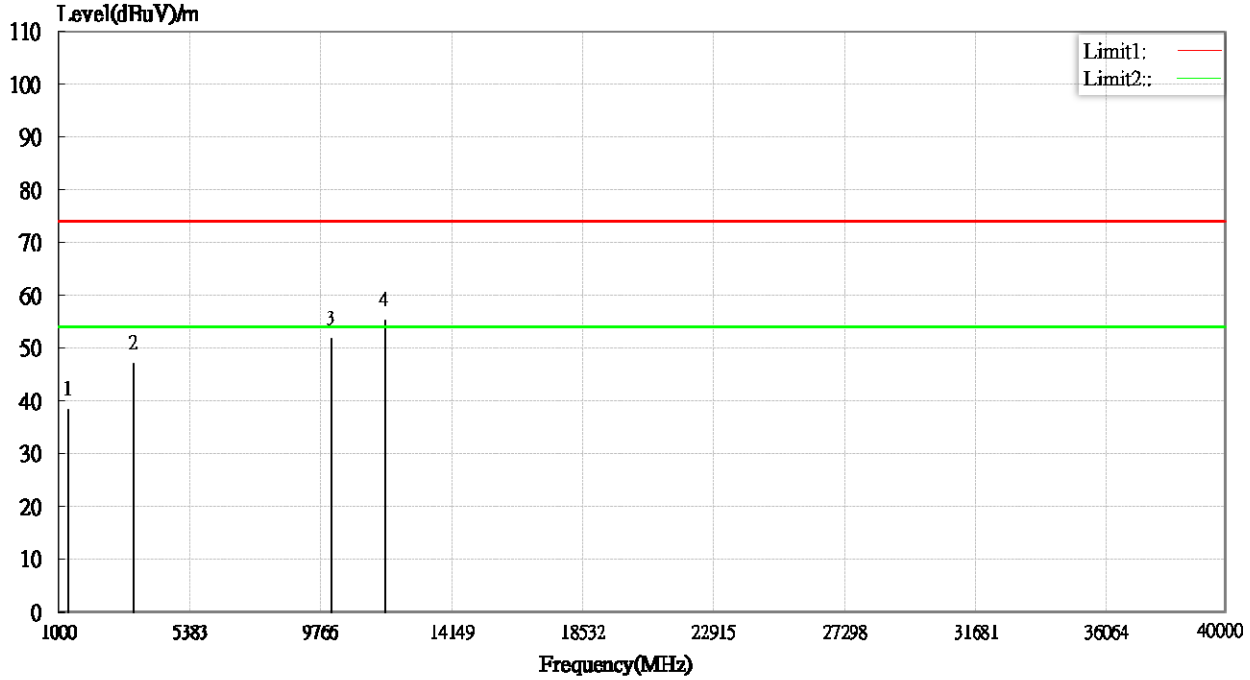
HT20 5785 MHz H-pol Peak



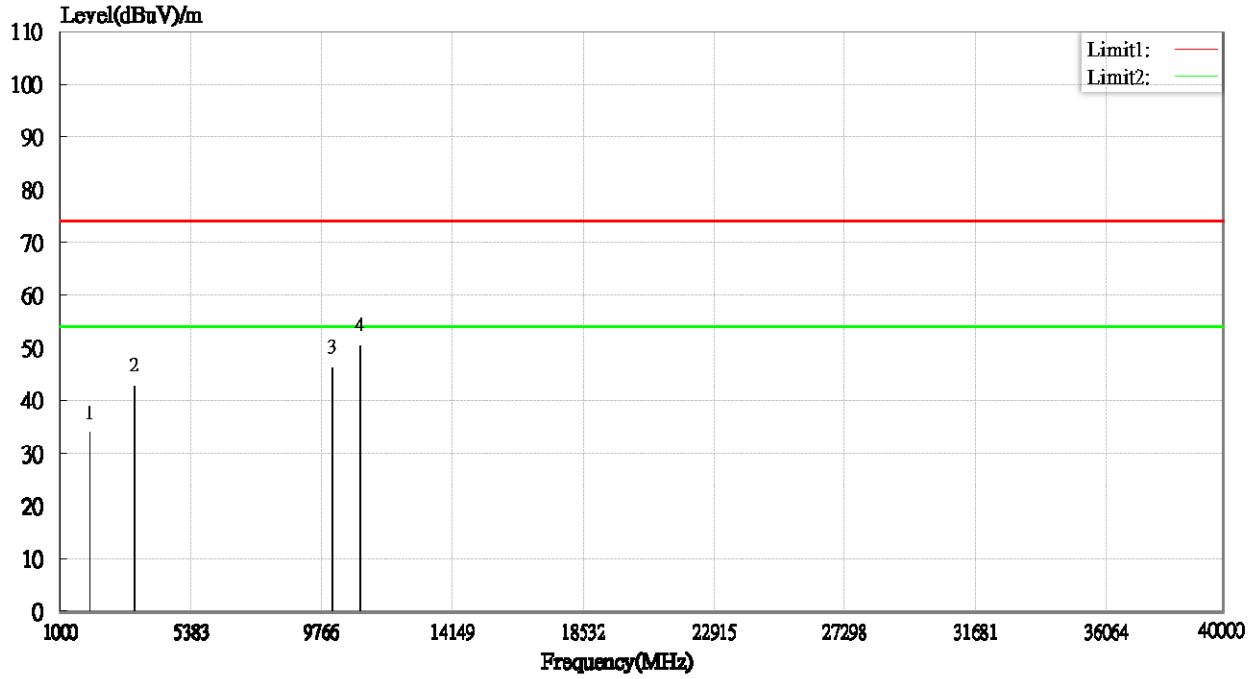
HT20 5785 MHz H-pol Avg



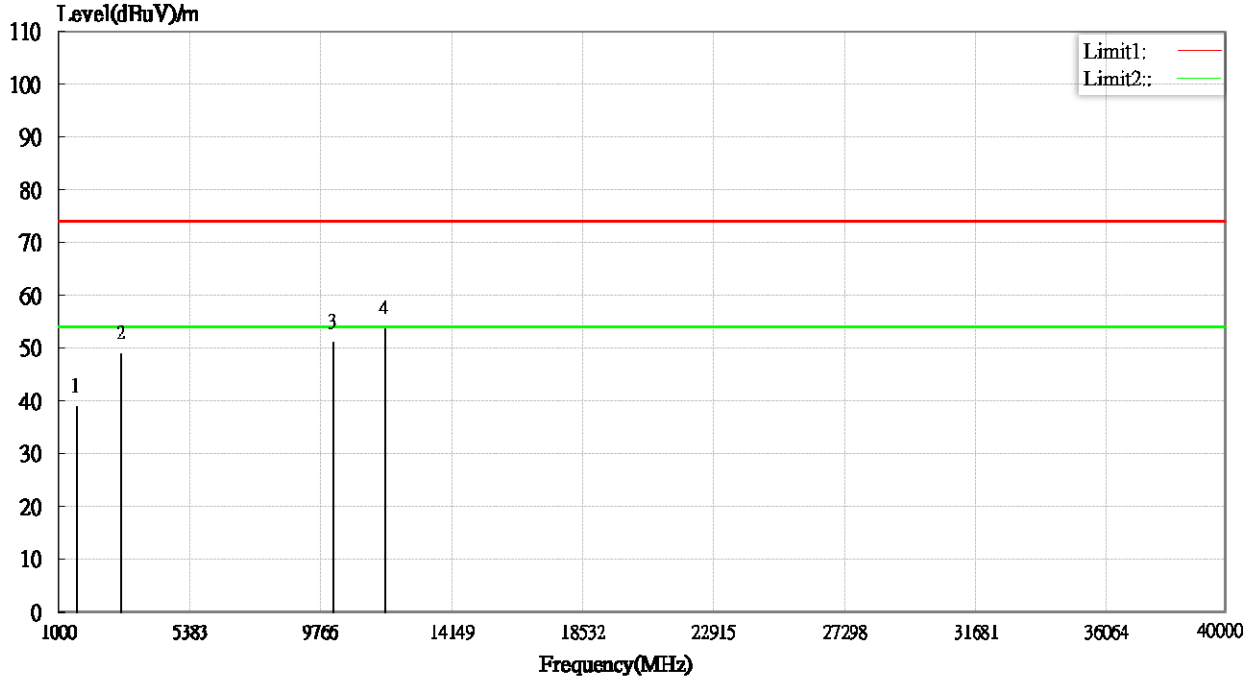
HT20 5785 MHz V-pol Peak



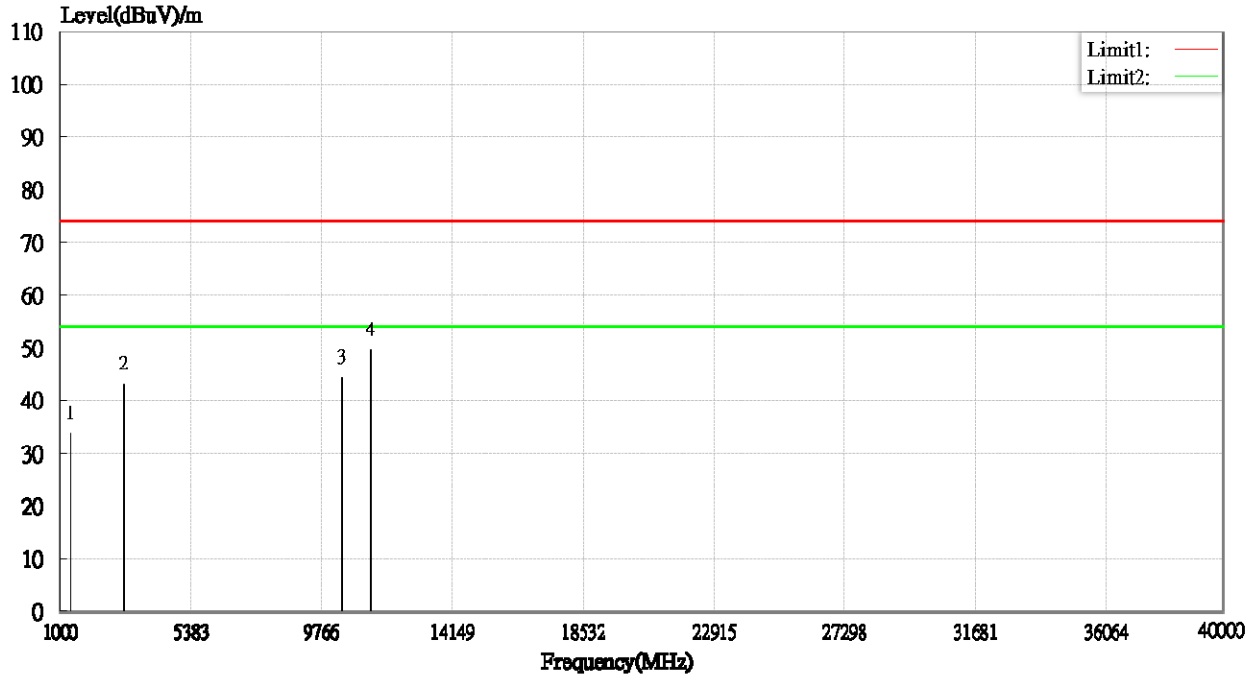
HT20 5785 MHz V-pol Avg



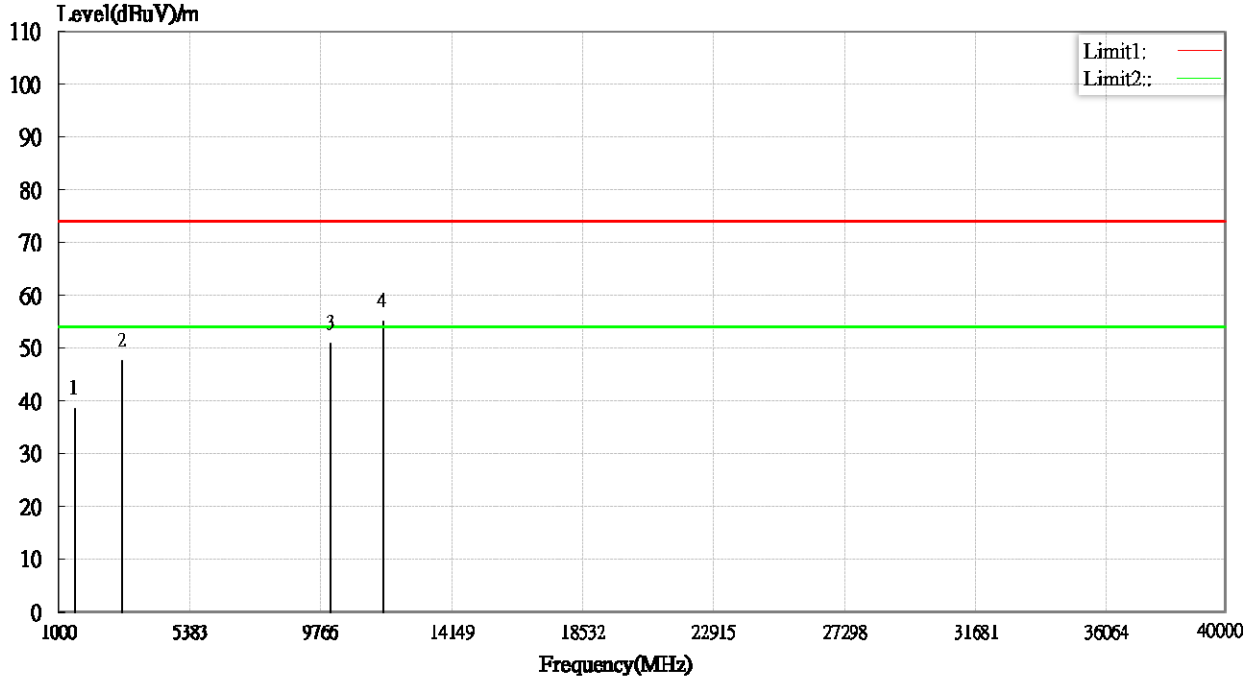
HT20 5825 MHz H-pol Peak



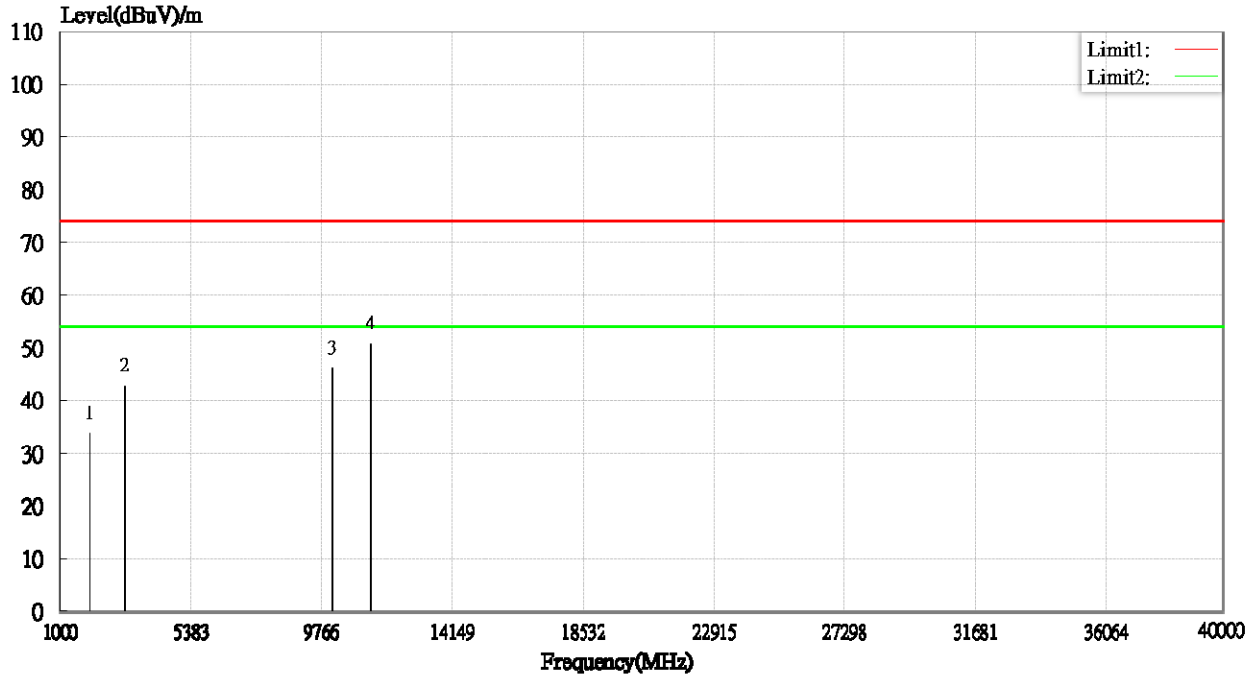
HT20 5825 MHz H-pol Avg



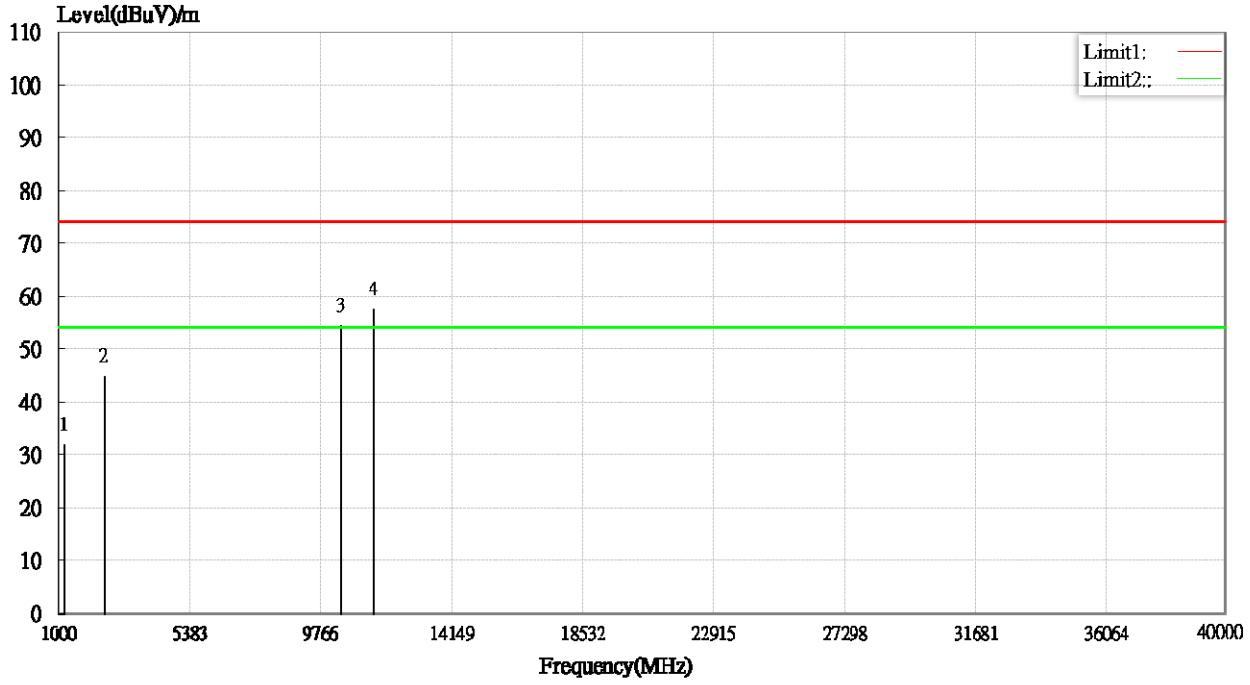
HT20 5825 MHz V-pol Peak



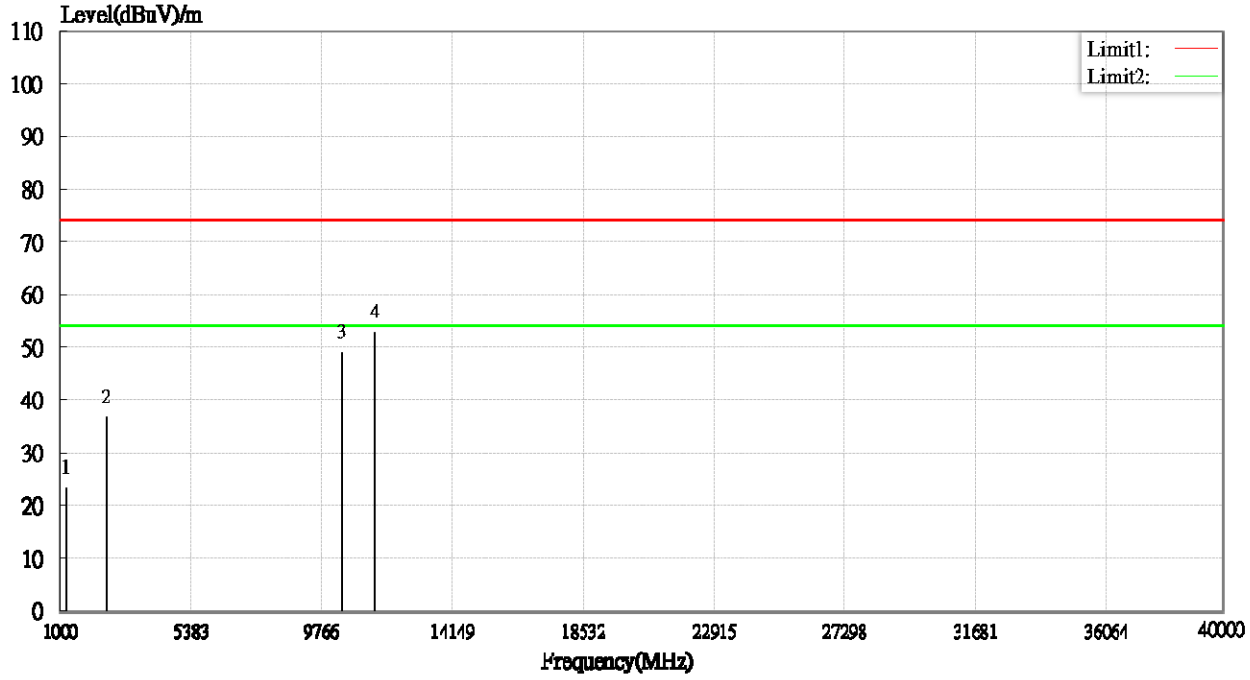
HT20 5825 MHz V-pol Avg



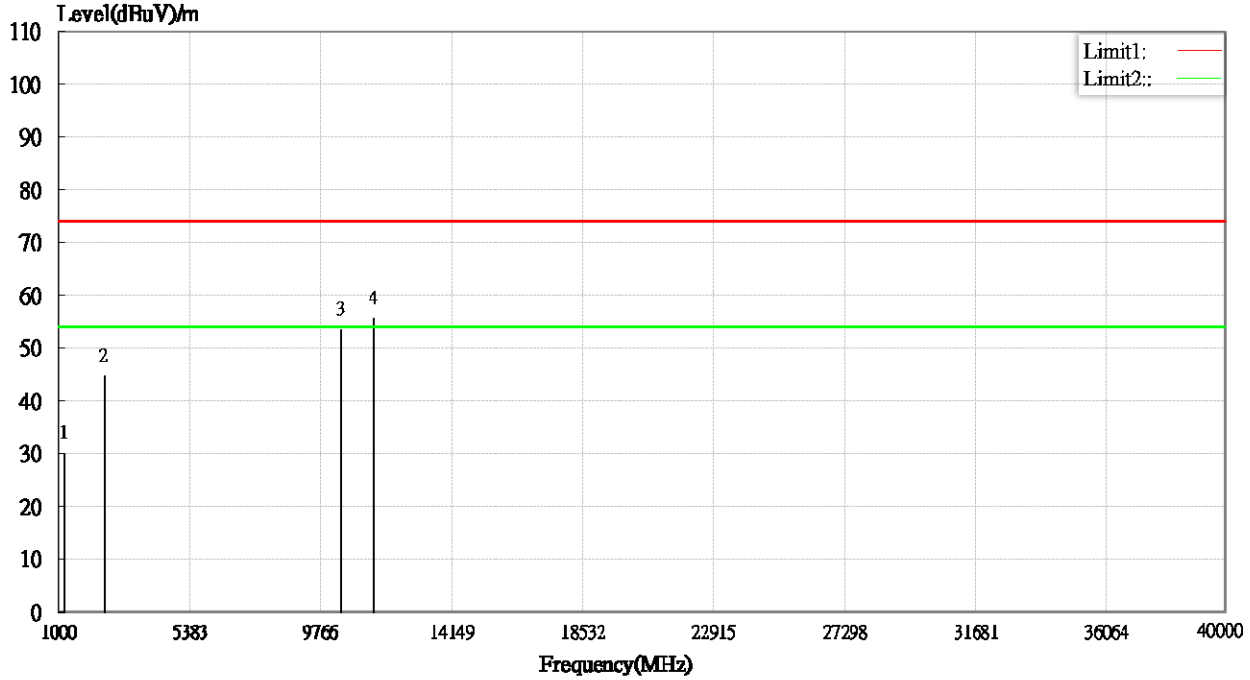
HT40 5755 MHz H-pol Peak



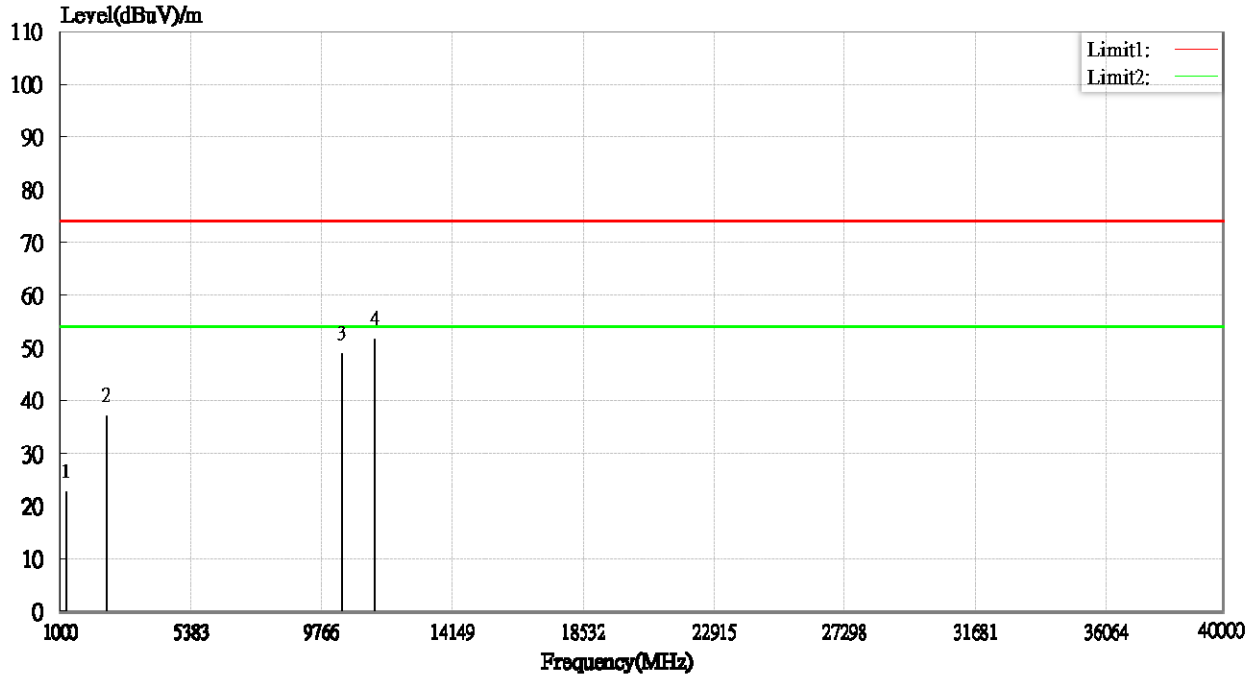
HT40 5755 MHz H-pol Avg



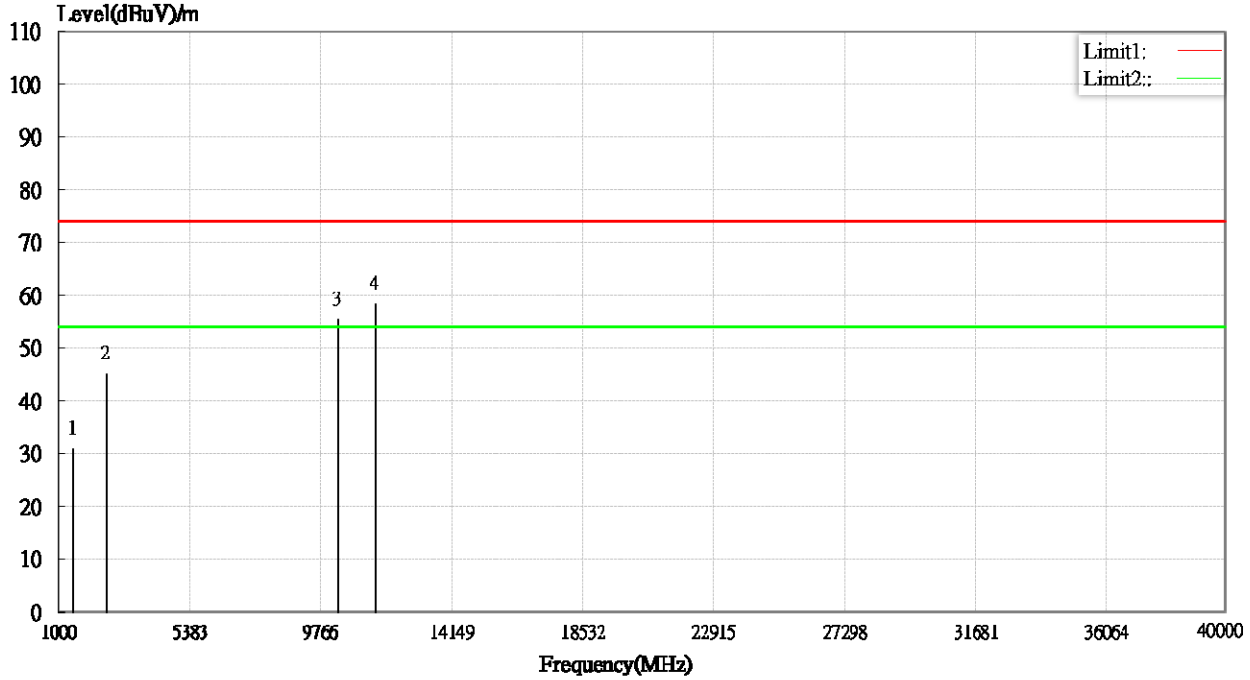
HT40 5755 MHz V-pol Peak



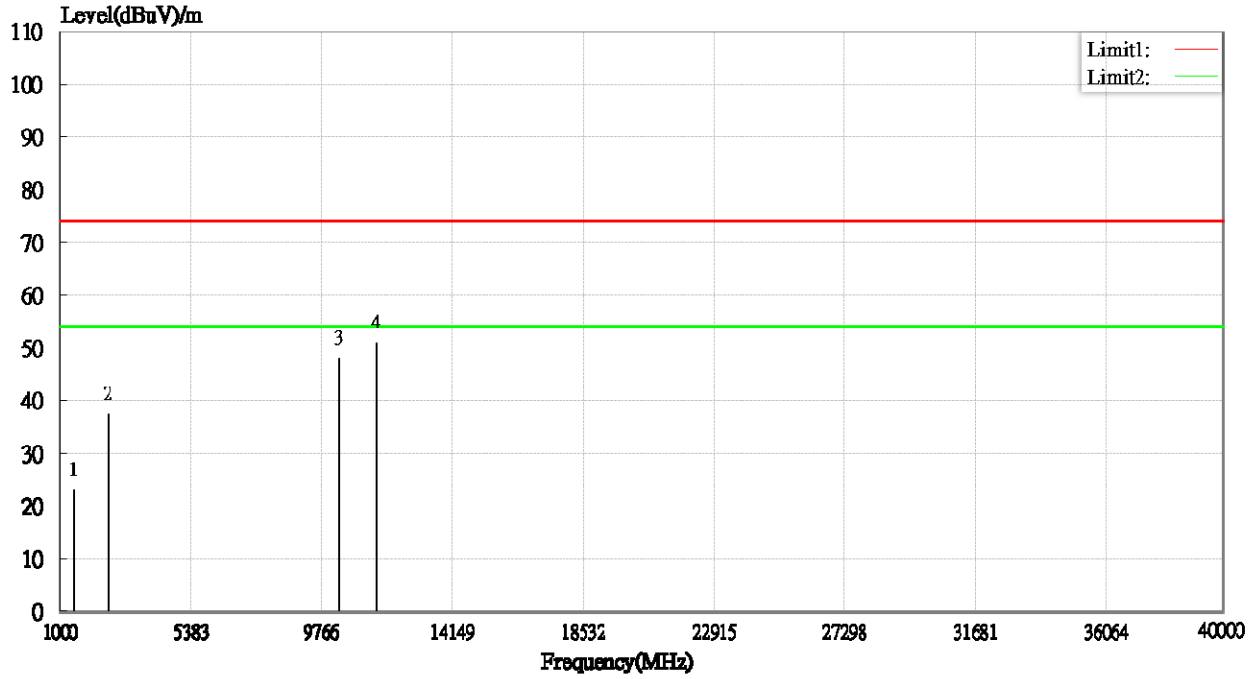
HT40 5755 MHz V-pol Avg



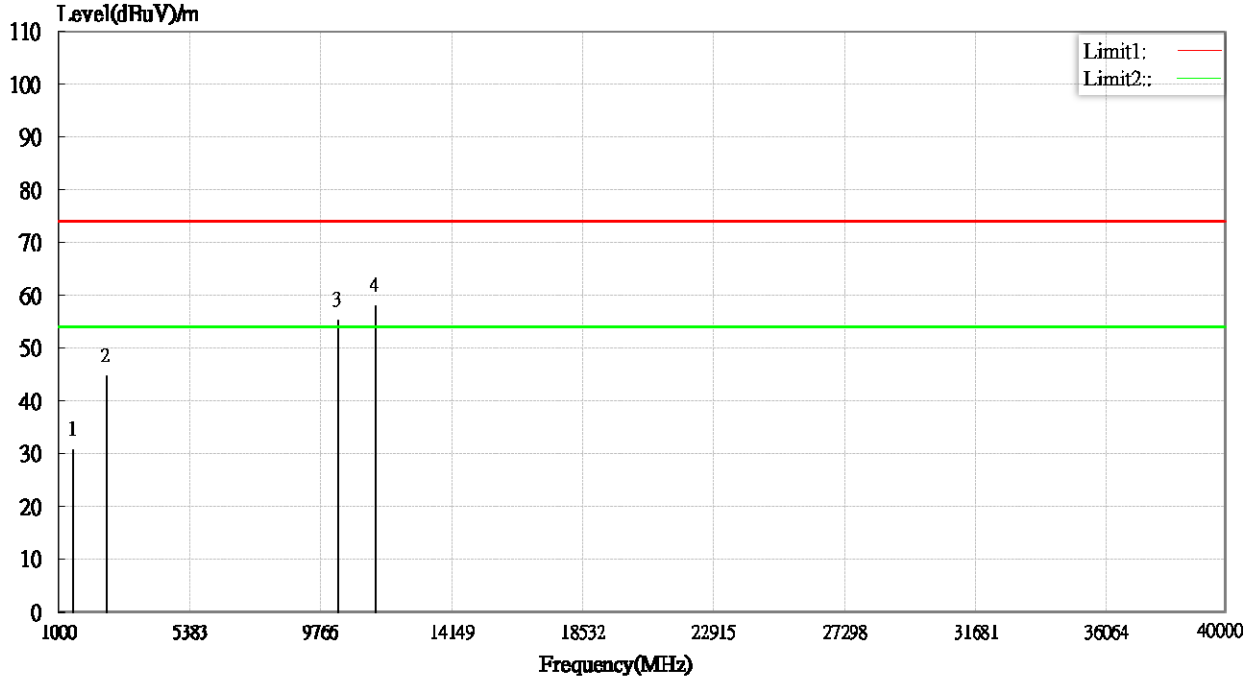
HT40 5795 MHz H-pol Peak



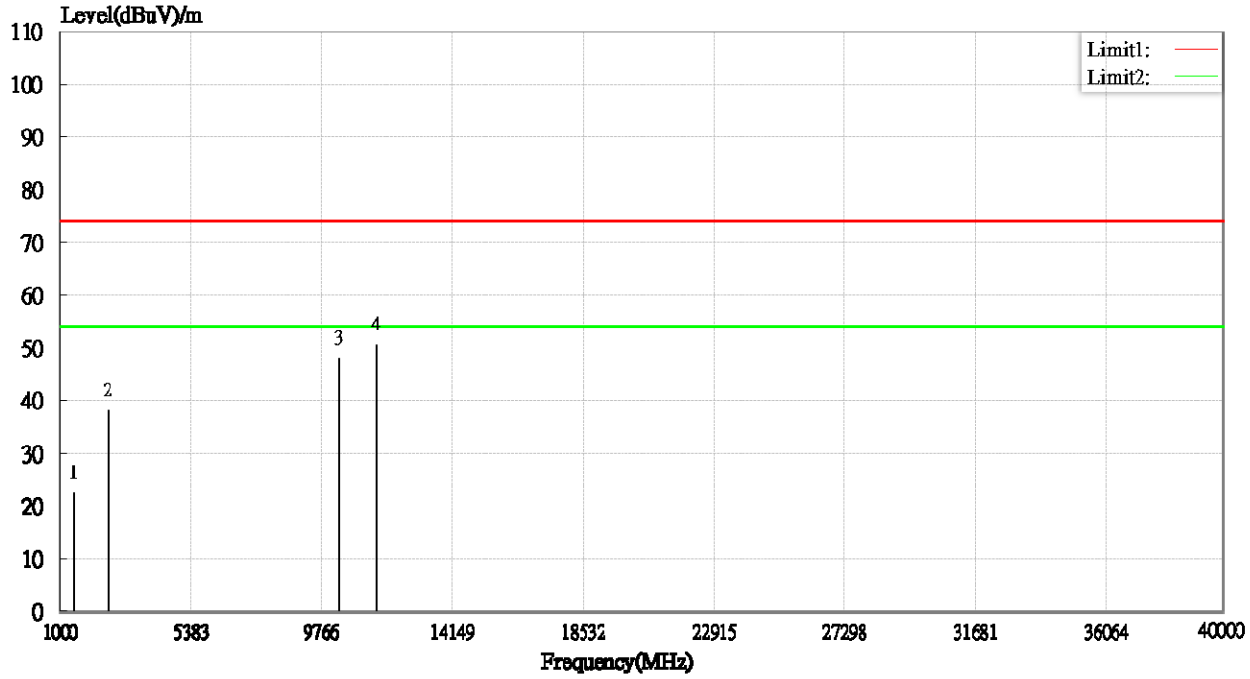
HT40 5795 MHz H-pol Avg



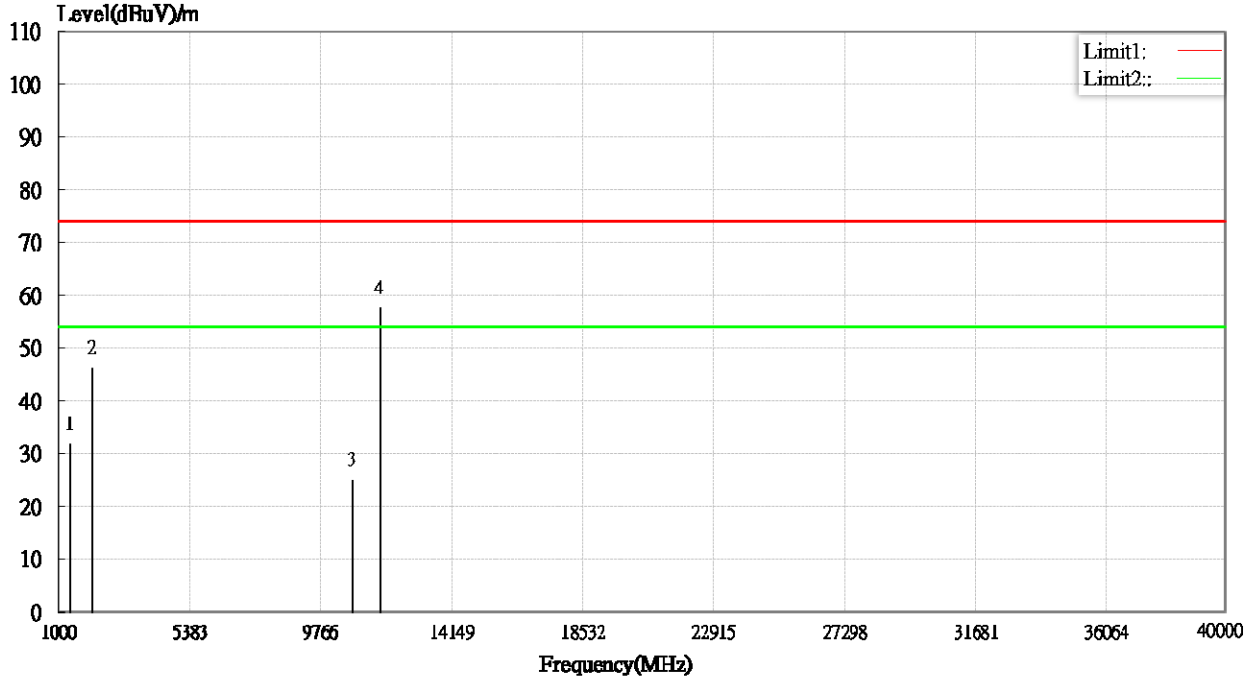
HT40 5795 MHz V-pol Peak



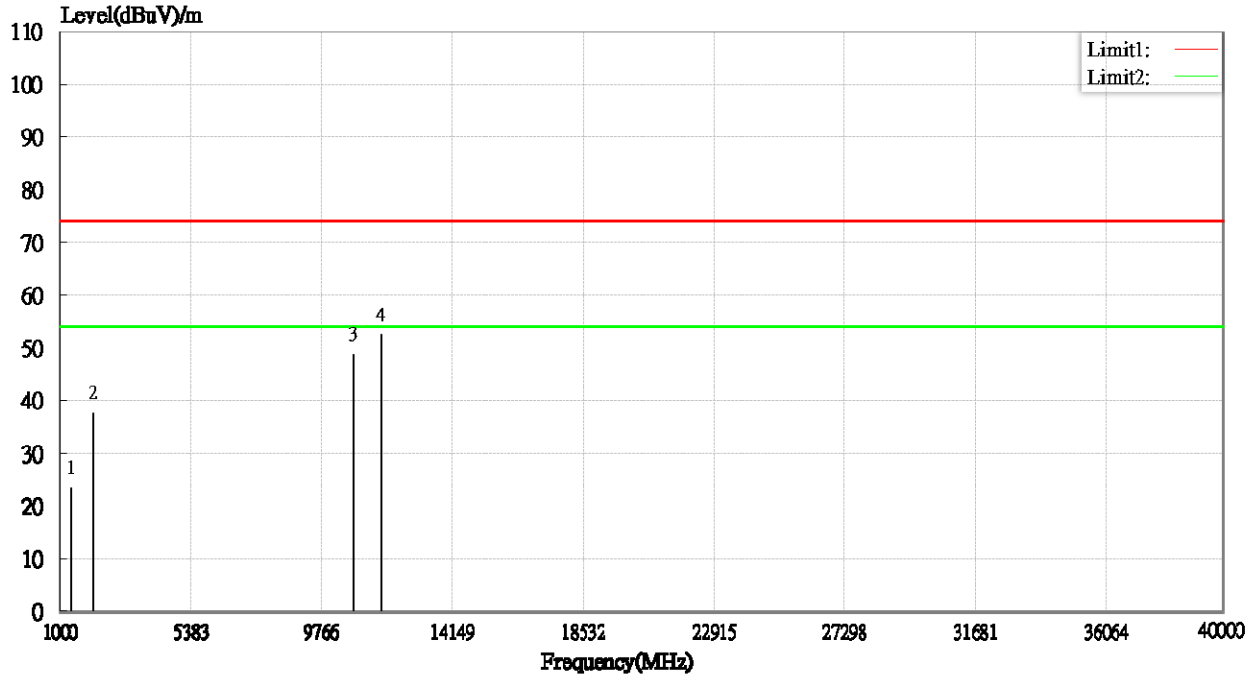
HT40 5795 MHz V-pol Avg



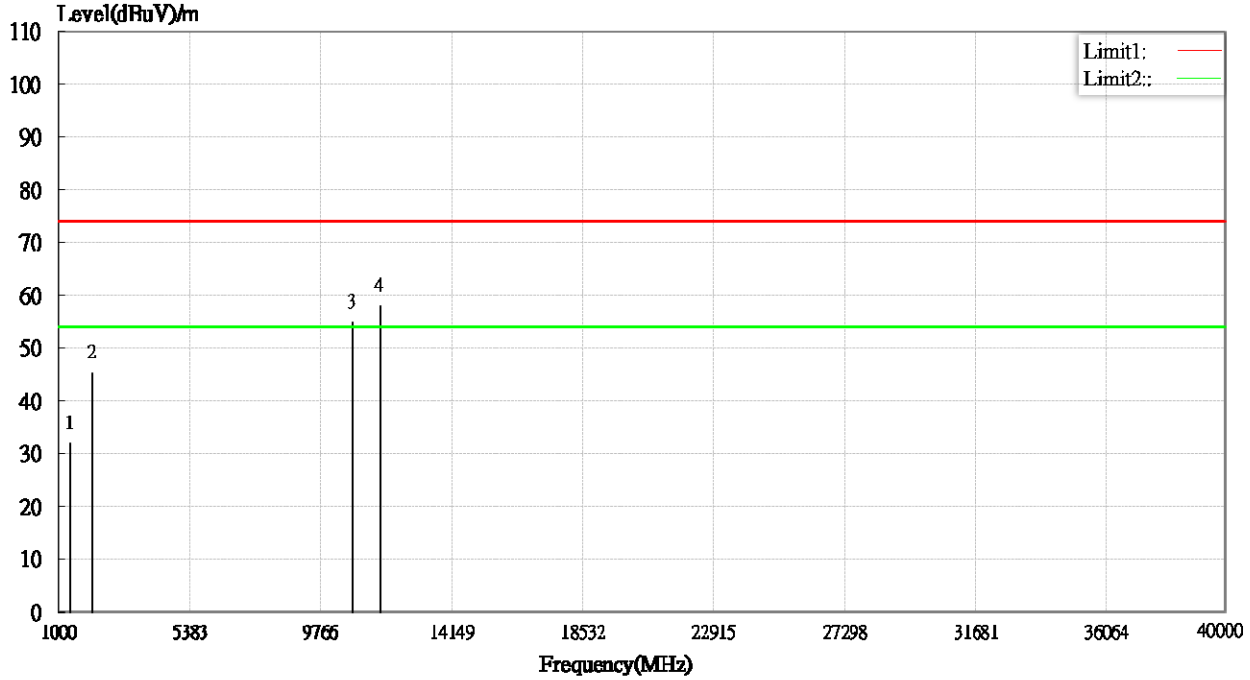
HT80 5775 MHz H-pol Peak



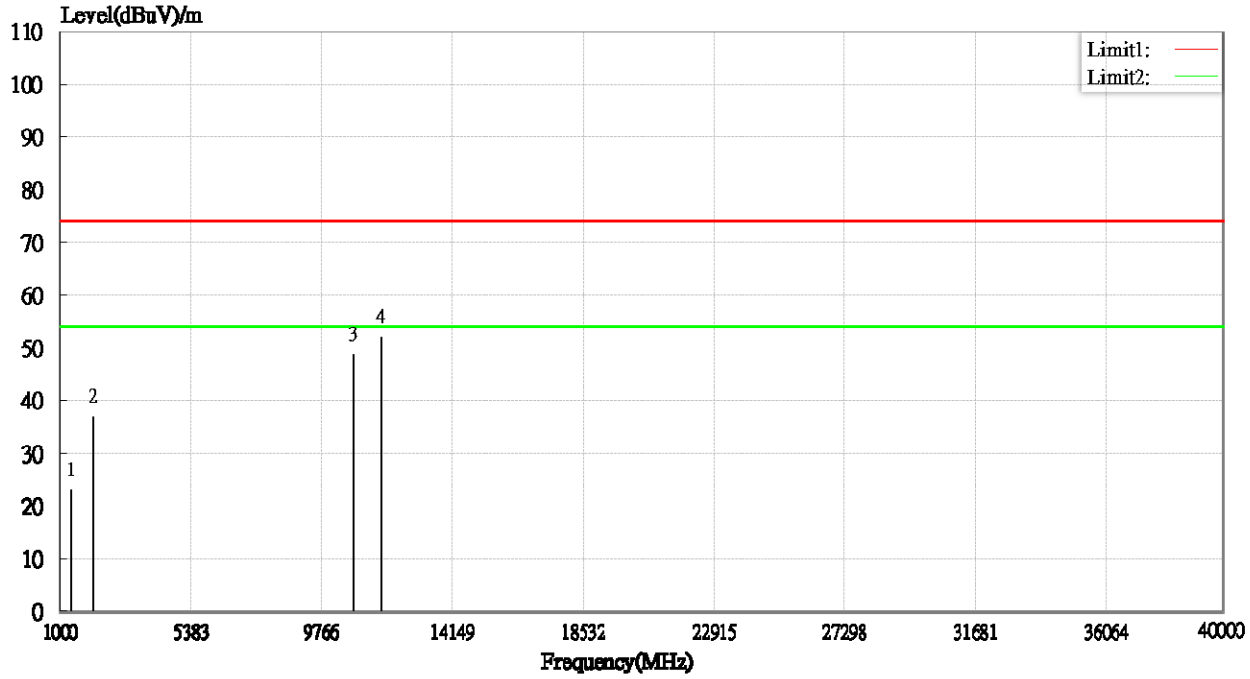
HT80 5775 MHz H-pol Avg



HT80 5775 MHz V-pol Peak



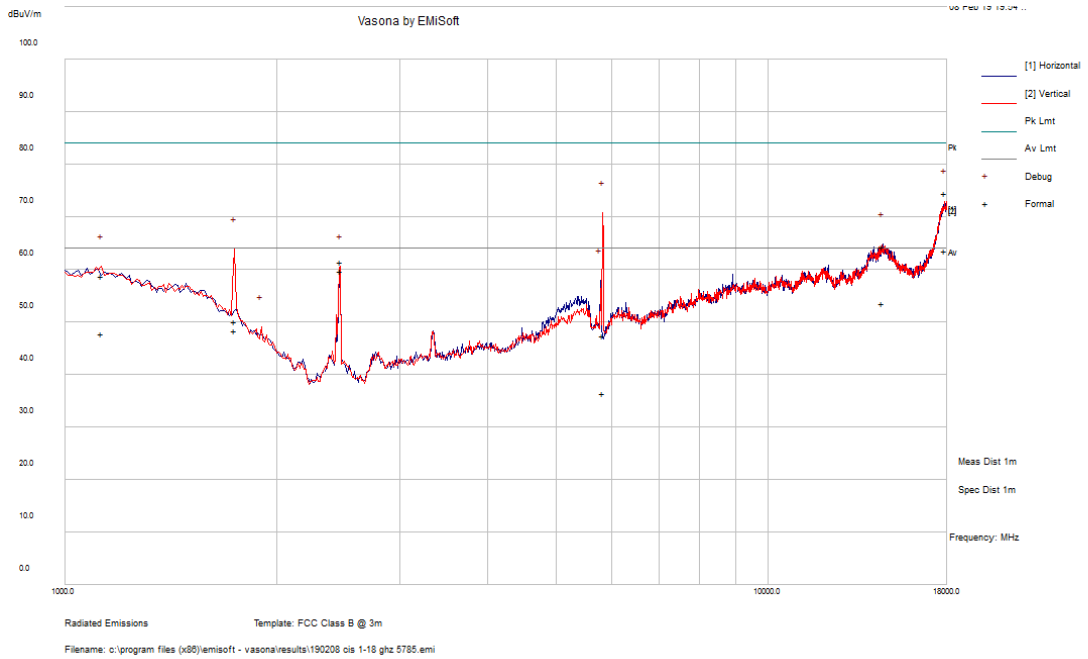
HT80 5775 MHz V-pol Avg



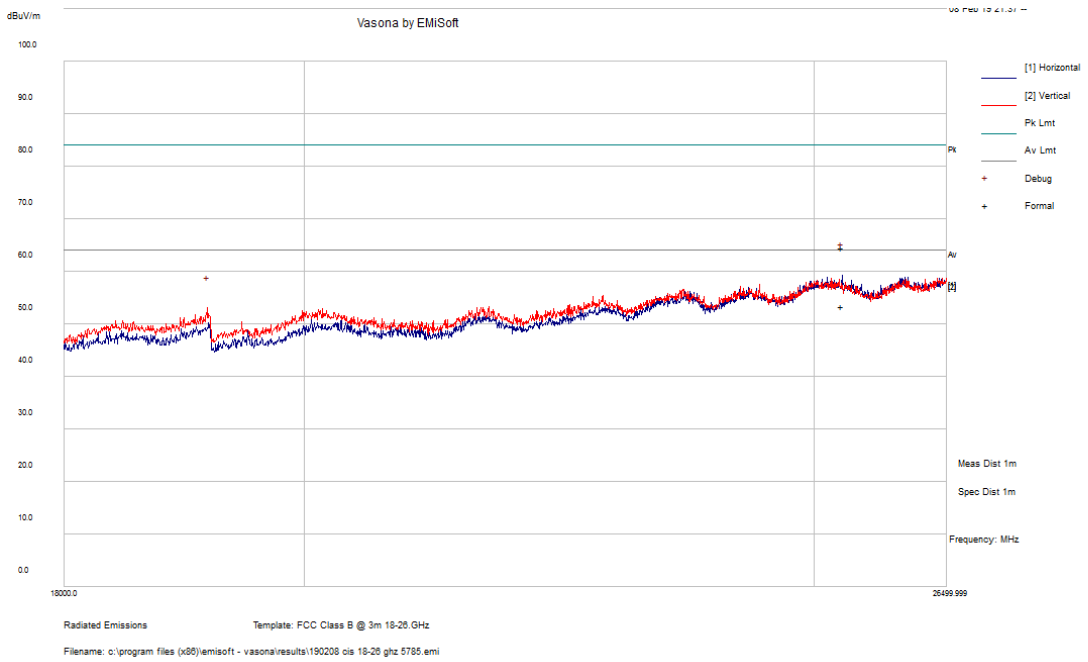
4) 1-18GHz & 18GHz -26.5GHz & 26.5GHz – 40GHz, Measured at 1 meter.

Worst Case Colocation, 2.4 GHz BLE, 2.4 GHz Wi-Fi CCK mode and 5 GHz Wi-Fi HT/VHT20 mode

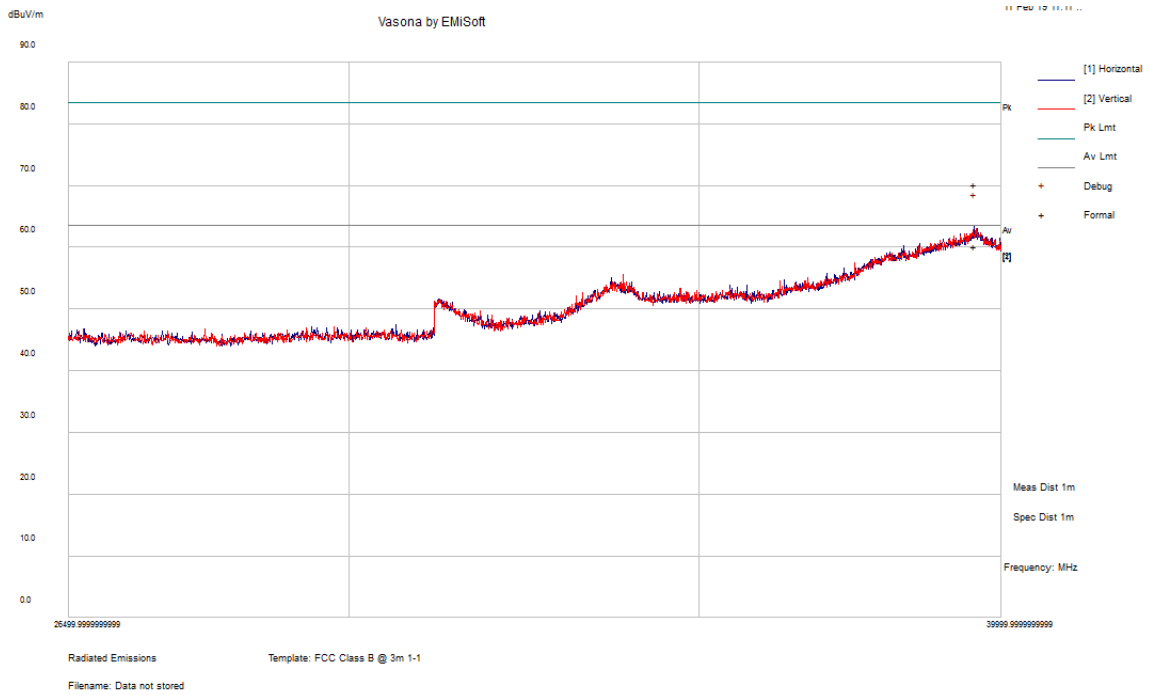
1 GHz -18 GHz



18 GHz - 26.5 GHz



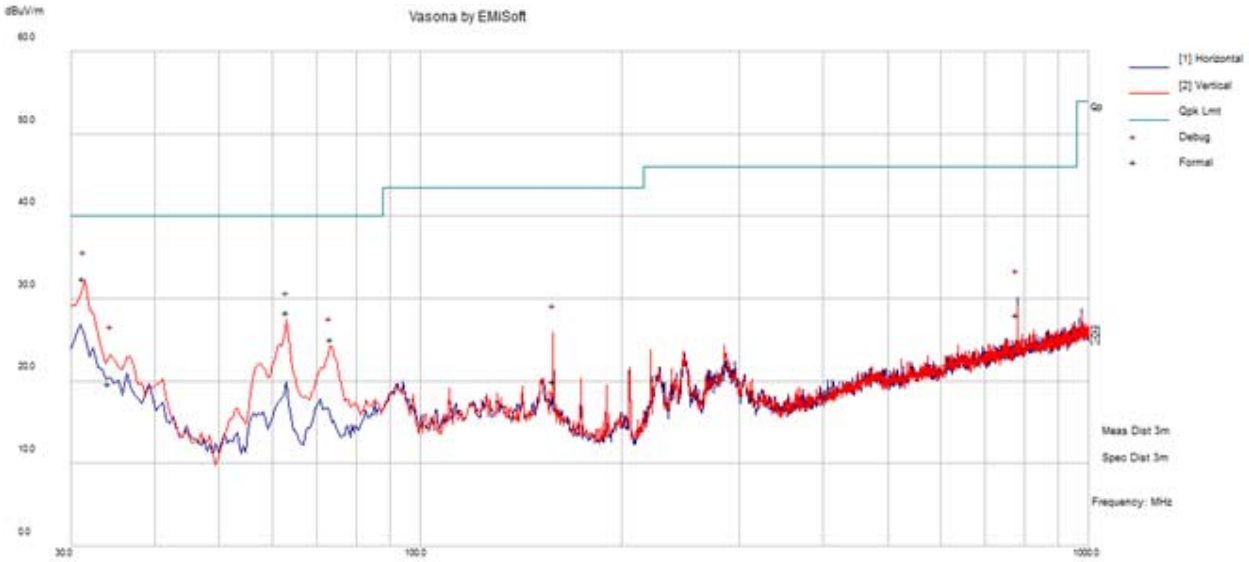
26.5 GHz – 40 GHz



No emission seen above 18GHz, the plot above represents worst case for all modes tested.

5) Receiver Mode

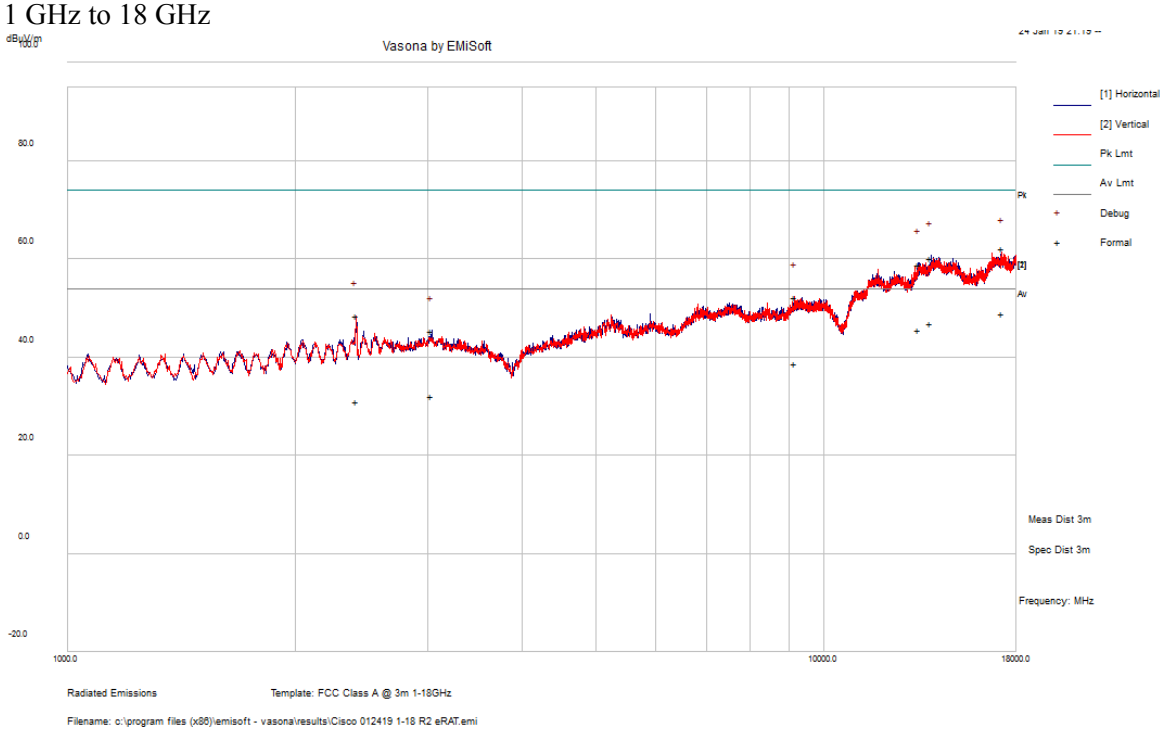
30 MHz to 1000 MHz



Quasi-Peak Measurements

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Polarity (H/V)	Antenna Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
31.25525	32.53	V	99	33	40	-7.47
63.1585	28.31	V	110	194	40	-11.69
73.36925	25.16	V	111	223	40	-14.84
781.268	28.02	H	102	214	46	-17.98
34.192	19.73	V	219	346	40	-20.27
157.972	20.02	V	187	256	43.5	-23.48

1 GHz to 18 GHz



Peak Measurements

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Polarity (H/V)	Antenna Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
17247.82	62.28	V	194	3	74	-11.72
13868.4	60.19	H	200	13	74	-13.81
13374.46	58.87	H	176	145	74	-15.13
9156.016	52.31	V	117	61	74	-21.69
2408.292	48.46	V	122	12	74	-25.54
3031.716	45.33	H	175	336	74	-28.67

Average Measurements

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Polarity (H/V)	Antenna Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
17247.82	48.82	V	194	3	54	-5.18
13868.4	46.98	H	200	13	54	-7.02
13374.46	45.52	H	176	145	54	-8.48
9156.016	38.78	V	117	61	54	-15.22
2408.292	31.06	V	122	12	54	-21.92
3031.716	32.08	H	175	336	54	-22.94

7 Appendix (Normative) - EUT Photographs

Please see attachments:

Appendix A – EUT Test Setup Photographs
Appendix B – EUT External Photographs
Appendix C – EUT Internal Photographs

8 Appendix D (Normative) - A2LA Electrical Testing Certificate

Accredited Laboratory

A2LA has accredited

BAY AREA COMPLIANCE LABORATORIES CORP.

Sunnyvale, CA

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets A2LA *R222 - Specific Requirements EPA ENERGY STAR Accreditation Program*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).

Presented this 2nd day of October 2018.

President and CEO
For the Accreditation Council
Certificate Number 3297.02
Valid to September 30, 2020

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

Please follow the web link below for a full ISO 17025 scope

https://portal.a2la.org/scopepdf/3297-02.pdf

9 Appendix E (Informative) – Declaration of Similarity

DECLARATION OF SIMILARITY

February 15, 2019

To:
Bay Area Compliance Laboratories Corp.
1274 Anvilwood Ave.
Sunnyvale, CA 94089
Phone: 408-732-9162, Fax: 408-732-9164
http://www.baclcorp.com

Dear Sir or Madam:

We *Cisco Systems, Inc.* hereby declare that product: *Cisco Catalyst 9117AX*, model(s): *C9117AXI-T* is electrically identical with the same electromagnetic emissions and electromagnetic compatibility characteristics as model: *C9117AXI-B* tested by BACL, the results of which are featured in BACL project: *R1811136*. Both model numbers have the same hardware and software/firmware build with the same radio capabilities and characteristics.

A description of the differences between the tested model and those that are declared similar are as follows:

Different model numbers to represent different regulatory domain.

Please contact me should there be need for any additional clarification or information.

Best Regards,

Responsible Party Signature

L. W. Custroe

Compliance Manager
125 W. Tasman Dr. San Jose, CA 95134

DECLARATION OF SIMILARITY

May 9, 2019

To:
Bay Area Compliance Laboratories Corp.
1274 Anvilwood Ave.
Sunnyvale, CA 94089
Phone: 408-732-9162, Fax: 408-732-9164
http://www.baclcorp.com

Dear Sir or Madam:

We *Cisco Systems, Inc.* hereby declare that product: *Cisco Catalyst 9117AX,* model(s): *C9117AXI-S, C9117AXI-Z, and C9117AXI-D* are electrically identical with the same electromagnetic emissions and electromagnetic compatibility characteristics as model: *C9117AXI-B* tested by BACL, the results of which are featured in BACL project: *R1811136.* Both model numbers have the same hardware build with the same radio characteristics. Both model numbers have the same software/firmware except channels listed below are disabled to satisfy the frequency allocation in specific countries.

A description of the differences between the tested model and those that are declared similar are as follows:

- *Different model numbers to represent different regulatory domain.*
- *Channel 142, and 138 are disabled in C9117AXI-S image. This configuration cannot be modified by end uses.*
- *Channel 120, 124, 128, 118, 126, 142, 122, 138, & 114 are disabled in C9117AXI-Z image. This configuration cannot be modified by end users.*
- *The test report does not contain any measurement results for channel frequency: 5845 MHz, 5865 MHz, and 5855 MHz because these channels are not supported by C9117AXI-B and are disabled in C9117AXI-D system firmware. The end users do not have access to alter this setting.*

Please contact me should there be need for any additional clarification or information.

Best Regards,

Responsible Party Signature

L. W. Custroe

Compliance Manager
125 W. Tasman Dr. San Jose, CA 95134

--- END OF REPORT ---