FCC PART 15 SUBPART C TEST REPORT

for

Remote Controller for models

Model No.: TM-FH2.4G-A101

FCC ID: VEJTT-FHM2P4G-A12

of

Applicant: **THUNDER TIGER CORP.**
Address: **NO.7, 6TH ROAD INDUSTRY PARK TAICHUNG. TAIWAN R.O.C. 407**

Tested and Prepared

by

Worldwide Testing Services (Taiwan) Co., Ltd.

FCC Registration No.: 930600

Industry Canada filed test laboratory Reg. No. IC 5679A-1

A2LA Accredited No.: 2732.01

Report No.: W6M20904-9701-P-15

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Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

TABLE OF CONTENTS

1 General Information

1.1 Notes

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.
The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.
Furthermore, there is no guarantee that a test sample which has passed all the relevant tests conforms to a specification.
Neither is there any guarantee that such a test sample will interwork with other genuinely open systems.
The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that is performance generally conforms to representative cases of communications equipment.

The test results of this test report relate exclusively to the item tested as specified in 1.5.
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Tester:

April 28, 2009		Danny Sung	Danny
Date	WTS-Lab.	Name	Signature

Technical responsibility for area of testing:

April 28, 2009		Chang Tse-Ming	Chang Tse-ming
Date	WTS	Name	Signature

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

1.2 Testing laboratory

1.2.1 Location

OATS
No.5-1, Shuang Sing Village,
LiShuei Rd., Wanli Township,
Taipei County 207, Taiwan (R.O.C.)

Company
Worldwide Testing Services(Taiwan) Co., Ltd.
6F, NO. 58, LANE 188, RUEY-KUANG RD.
NEIHU, TAIPEI 114, TAIWAN R.O.C.
Tel : 886-2-66068877
Fax : 886-2-66068879

1.2.2 Details of accreditation status

Accredited testing laboratory

A2LA accredited number: 2732.01

FCC filed test laboratory Reg. No. 930600

Industry Canada filed test laboratory Reg. No. IC 5679A-1

1.3 Details of approval holder

Name:	THUNDER TIGER CORP.
Street:	NO.7, 6TH ROAD INDUSTRY PARK
Town:	TAICHUNG
Country:	TAIWAN R.O.C. 407
Telephone:	+886-4-2359-1616
Fax:	+886-4-2359-1902

1.4 Application details

Date of receipt of test item: April 10, 2009
Date of test: from April 11, 2009 to April 28, 2009

1.5 General information of Test item

Type of test item: Remote Controller for models

Model Number: TM-FH2.4G-A101

Multi-listing model number: TM-FH2.4G-A102, TM-FH2.4G-A104

Brand Name: ACE RC / AE XP3-SS

Photos: see Annex

Technical data

Frequency band: 2402 - 2479 MHz
Frequency (ch A or ch 1): 2402 MHz
Frequency (ch B or ch 40): 2441 MHz
Frequency (ch C or ch 78): 2479 MHz

Transmitter **Unom**

Power (ch A): Conducted: 17.18 dBm
Power (ch B): Conducted: 15.30 dBm
Power (ch C): Conducted: 14.30 dBm

Power supply: 9.6V

Operation modes: duplex

Modulation Type: GFSK

Antenna Type: 1/4λ Dipole Sleeve Antenna

Antenna gain: 2 dBi

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

Host device: none

Classification:

Fixed Device	☐
Mobile Device (Human Body distance ＞ 20cm)	☐
Portable Device (Human Body distance ＜ 20cm)	☐
Modular Radio Device	☒

Manufacturer: (if applicable)

Name: Thunder Tiger Corp. (Ningbo)
Street: CW5 YUYAO, FAR-EAST INDUSTRY PARK,
Town: ZHEJIANG PROVINCE,
Country: CHINA

Additional information: ./.

1.6 Test standards

Technical standard: FCC RULES PART 15 Subpart B / SUBPART C § 15.247 (2008-07)

2 Technical test

2.1 Summary of test results

No deviations from the technical specification(s) were ascertained in the course of the tests performed. ☒

or

The deviations as specified in 3 were ascertained in the course of the tests performed. ☐

2.2 Test environment

Temperature:	23 °C
Relative humidity content:	20 ... 75 %
Air pressure:	86 ... 103 kPa
Details of power supply	9.6V
Extreme conditions parameters:	test voltage : -- extreme min : -- V max : -- V

2.3 Test Equipment List

No.	Test equipment	Type	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
ETSTW-CE 001	EMI TEST RECEIVER	ESHS10	842121/013	R&S	2008/9/18	2009/9/17
ETSTW-CE 002	PREREULATOR MODE DC POWER SUPPLY	None	None	None	Function Test	
ETSTW-CE 003	AC POWER SOURCE	APS-9102	D161137	GW	Function Test	
ETSTW-CE 004	ZWEILEITER-V-NETZNACHBILDUNG TWO-LINE V-NETWORK	ESH3-Z5	840731/011	R&S	2009/3/27	2010/3/26
ETSTW-CE 005	Line-Impedance Stabilisation Network	NNBM 8126D	137	Schwarzbeck	2008/9/15	2009/9/14
ETSTW-CE 006	IMPULSBEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	2008/5/10	2009/5/9
ETSTW-CE 008	ABSORBING CLAMP	MDS 21	3469	Schwarzbeck	2008/9/18	2009/9/17
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	2008/7/25	2009/7/24
ETSTW-CE 015	CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK	FCC-TLISN-T8-02	20307	FCC	2008/9/22	2009/9/21
ETSTW-CE 016	TWO-LINE V-NETWORK	ENV216	100050	R&S	2008/9/24	2009/9/23
ETSTW-RE 002	Function Generator	33220A	MY43004982	Agilent	2007/10/12	2009/10/11
ETSTW-RE 003	EMI TEST RECEIVER	ESI 26	831438/001	R&S	2008/10/8	2009/10/7
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2008/9/22	2009/9/21
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10	843207/020	R&S	2008/9/18	2009/9/17
ETSTW-RE 011	PROGRAMMABLE LINEAR POWER SUPPLY	LPS-305	30503070165	MOTECH	Function Test	
ETSTW-RE 017	Log-Periodic Antenna	HL025	352886/001	R&S	2008/5/5	2009/5/4
ETSTW-RE 018	MICROWAVE HORN ANTENNA	AT4560	27212	AR	2008/10/27	2009/10/26
ETSTW-RE 020	MICROWAVE HORN ANTENNA	AT4002A	306915	AR	Function Test	
ETSTW-RE 021	SWEEP GENERATOR	SWM05	835130/010	R&S	2008/8/27	2009/8/26
ETSTW-RE 028	Log-Periodic Dipole Array Antenna	3148	34429	EMCO	2009/4/15	2010/4/14
ETSTW-RE 029	Biconical Antenna	3109	33524	EMCO	2009/4/15	2010/4/14
ETSTW-RE 030	Double-Ridged Guide Horn Antenna	3117	00035224	EMCO	2009/3/23	2010/3/22
ETSTW-RE 032	Millivoltmeter	URV 55	849086/013	R&S	2008/9/1	2009/8/31
ETSTW-RE 033	WaveRunner 6000A Serise Oscilloscope	WAVERUNNER 6100A	LCRY0604P14508	LeCroy	2008/6/27	2009/6/26
ETSTW-RE 034	Power Sensor	URV5-Z4	839313/006	R&S	2008/9/1	2009/8/31
ETSTW-RE 042	Biconical Antenna	HK116	100172	R&S	2009/1/8	2011/1/7
ETSTW-RE 043	Log-Periodic Dipole Antenna	HL223	100166	R&S	2008/5/2	2009/5/1
ETSTW-RE 044	Log-Periodic Antenna	HL050	100094	R&S	2008/5/22	2009/5/21
ETSTW-RE 047	ESA-E SERIES SPECTRUM ANALYZER	E4445A	MY46181369	Agilent	2008/6/26	2009/6/25
ETSTW-RE 048	Triple Loop Antenna	HXYZ 9170	HXYZ 9170-134	Schwarzbeck	2008/9/1	2009/8/31
ETSTW-RE 049	TRILOG Super Broadband test Antenna	VULB 9160	9160-3185	Schwarzbeck	2009/4/14	2011/4/13
ETSTW-RE 055	SPECTRUM ANALYZER	FSU 26	200074	R&S	2008/7/1	2009/6/30
ETSTW-RE 064	Bluetooth Test Set	MT8852B-042	6K00005709	Anritsu	2008/9/1	2009/8/31

ETSTW-RE 065	Amplifier	AMF-6F-18002650-25-10P	941608	MITEQ	2009/4/21	2010/4/20
ETSTW-RE 072	CELL SITE TEST SET	8921A	3339A00375	HP	2008/10/28	2009/10/27
ETSTW-RE 073	Power Meter	N1911A	MY45100769	Agilent	2009/1/9	2011/1/8
ETSTW-RE 074	Power Sensor	N1921A	MY45241198	Agilent	2009/1/9	2011/1/8
ETSTW-RE 091	Match Pad	MDCS1500	None	WOKEN	2008/10/9	2009/10/8
ETSTW-RE 092	Match Pad	MDCS1510	None	WOKEN	2008/10/9	2009/10/8
ETSTW-RE 093	LUMPED ELEMENT POWER DIVIDER	PL2-10	146	MCLI	2009/3/6	2010/3/5
ETSTW-RE 094	Precision Coaxial Termination	HP 909F	03941	Agilent	2008/12/19	2009/12/18
ETSTW-RE 095	Digital Thermo-Hygro Meter	0410	01	WISEWIND	2009/3/24	2010/3/23
ETSTW-GSM 002	Universal Radio Communication Tester	CMU 200	109439	R&S	2008/9/23	2009/9/22
ETSTW-GSM 023	Power Divider	4901.19.A	None	SUHNER	2008/9/22	2009/9/21
ETSTW-Cable 001	Microwave Cable	SUCOFLEX 104	238094	HUBER+SUHNER	2008/9/22	2009/9/21
ETSTW-Cable 002	Microwave Cable	SUCOFLEX 104	238093	HUBER+SUHNER	2008/9/22	2009/9/21
ETSTW-Cable 003	Microwave Cable	SUCOFLEX 104	209953	HUBER+SUHNER	2008/9/22	2009/9/21
WTSTW-SW 001	EMI TEST SOFTWARE	Harmonics-1000	None	EMC PARTNER	HARCS Version 4.16 Firmware Version 2.18	
WTSTW-SW 002	EMI TEST SOFTWARE	EZ_EMC	None	Farad	Version ETS-03A1	
WTSTW-SW 003	EMI TEST SOFTWARE	i2	None	AUDIX	Version 3.2007-8-17b	

2.4 General Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-2003 using a 50µH LISN (if necessary). Both lines were observed. The bandwidth of the spectrum analyzer was 10 kHz with an appropriate sweep speed.

RADIATION INTERFERENCE: The test procedure used was according to ANSI STANDARD C63.4-2003 employing a spectrum analyzer. For investigated frequency is equal to or below 1GHz, the RBW and VBW of the spectrum analyzer was 100 kHz and 100kHz respectively with an appropriate sweep speed. For investigated frequency is above 1GHz, both of RBW and VBW of the spectrum analyzer were 1 MHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The ambient. temperature of the UUT was 23°C with a humidity of 40 %.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBµV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB.

Example:

Freq (MHz)	METER READING + ACF + CABLE LOSS (to the receiver) = FS
33	20 dBµV + 10.36 dB + 6 dB = 36.36 dBµV/m @3m

The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m (non metallic table) and arranged according to ANSI C63.4-2003 Section 13.1.2. The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to the frequency specified as follows:

(1) If the intentional radiator operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
(2) If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.
(3) If the intentional radiator operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.
(4) If the intentional radiator contains a digital device, regardless of whether this digital device controls the functions of the intentional radiator or the digital device is used for additional control or function purposes other than to enable the operation of the intentional radiator, the frequency range shall be investigated up to the range specified in paragraphs (a)(1)-(a)(3) of this section or the range applicable to the digital device, as shown in paragraph (b)(1) of this Section, whichever is the higher frequency range of investigation.

For hand-held devices, a exploratory test was performed with three (3) orthogonal planes to determine the highest emissions.
Measurements were made by Worldwide Testing Services(Taiwan) Co., Ltd. at the registered open field test site located No.5-1, Shuang Sing Village, LiShuei Rd., Wanli Township, Taipei County 207, Taiwan (R.O.C.). The Registration Number: **930600**.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

When the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.

The formula is as follows:
Average = Peak + Duty Factor
Duty Factor = 20 log (dwell time/T)
T = 100ms when the pulse train period is over 100 ms or the period of the pulse train.

Modified Limits for peak according to 15.35 (b) = Max Permitted average Limits + 20dB

3 Test results (enclosure)

TEST CASE	Para. Number	Required	Test passed	Test failed
Peak Output Power	15.247(b)	☒	☒	☐
Equivalent radiated Power	15.247(b)	☒	☒	☐
Spurious Emissions radiated – Transmitter operating	15.247(c)	☒	☒	☐
Spurious Emissions conducted – Transmitter operating	15.247	☐	☐	☐
Carrier Frequency Separation	15.247(a) (1)	☒	☒	☐
Number of Hopping Frequencies	15.247(a) (1)(i)	☒	☒	☐
Time of Occupancy (Dwell Time)	15.247(a) (1)(i)	☒	☒	☐
20 dB Bandwidth	15.247(a) (1)(i)	☒	☒	☐
Band-edge Compliance of RF Emission	15.247(c)	☒	☒	☐
Radiated Emission from Receiver Part	15.109	☒	☒	☐
Power Line Conducted Emission	15.207(a)	☐	☐	☐

The follows is intended to leave blank.

3.1 Peak Output Power (transmitter)

FCC Rule: 15.247

This measurement applies to equipment with an integral antenna and to equipment with an antenna connector and equipped with an antenna as declared by the applicant.

The power was measured with modulation (declared by the applicant).

Test conditions		Conducted Power		
		Channel A [dBm]	**Channel B** [dBm]	**Channel C** [dBm]
T_{nom}= 23°C	V_{nom} = 9.6 V	17.18	15.30	14.30

Test conditions		Radiated Power		
		Channel A [dBm]	**Channel B** [dBm]	**Channel C** [dBm]
T_{nom}= --°C	V_{nom} = -- V	--	--	--

Test conditions T_{nom}= -- °C, V_{nom}= -- V Frequency[MHz]	Signal Field strength TX highest power mode dBµV/m
--	--
Measurement uncertainty	< 3 dB

The diagrams for the field strength measurements are included in Appendix.

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

Maximum Peak Output Power

Limits:

Frequency	Number of hopping channels			
MHz	≥ 75	≥ 50	49 ≥ 25	74 ≥ 15
902-928		30 dBm	24 dBm	
2400-2483.5 MHz	30 dBm	-		21 dBm
5725-5850 MHz	30 dBm	-		

In case of employing transmitter antennas having antenna gain >dBi and using fixed poin-to point operation consider §15.247 (b)(4).

Test equipment used: ETSTW-RE 055, ETSTW-RE 064

Explanation: See attached diagrams in appendix.

3.2 RF Exposure Compliance Requirements

According to Supplement C, Edition 01-01 to OET Bulletin 65, Edition 97-01 this spread spectrum transmitter is categorically excluded from routine environmental evaluation because of the low power level, where there is a high likelihood of compliance with RF exposure standards.
The antenna used for this Bluetooth transceiver module must not be co-located or operating in conjunction with any other antenna or transmitter.

3.3 Out of Band Radiated Emissions

FCC Rule: 15.247(c) , 15.35
For out of band emissions that are close to or that exceed the 20 dB attenuation requirement described in the specification, radiated measurements were performed at a 3 m separation distance to determine whether these emissions complied with the general radiated emission requirement.
Limits:
For frequencies below 1GHz :
Max. reading – 20 dB

Guidance on Measurement of FHSS Systems:
"If the emission is pulsed, modify the unit for continuous operation , use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation." Here the correction was added to the limit instead subtracted from the reading.

Duty Cycle correction = 20 log (dwell time/100ms)
For frequencies above 1GHz (Peak measurements).
Limit = max. aver. reading-20dB +20dB(because Peak detector is used)

For frequencies above 1GHz (Average measurements).
Max. reading – 20 dB - duty cycle correction:

No duty cycle correction was added to the reading

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 017, ETSTW-RE 018, ETSTW-RE 021, ETSTW-RE 028, ETSTW-RE 030, ETSTW-RE 043, ETSTW-RE 064

Explanation: See attached diagrams in appendix.

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

3.4 Transmitter Radiated Emissions in restricted Bands

FCC Rules: 15.247 (c), 15.205, 15.209, 15.35
Radiated emission measurements were performed from 30 MHz to 26000 MHz.
For radiated emission tests, the analyzer setting was as followings:
RES BW VID BW
Frequency <1 GHz 100 kHz 100 kHz (Peak measurements)
Frequency >1 GHz 1 MHz 1 MHz (Peak measurements)
1 MHz 1 MHz (Average measurements)
Limits:

For frequencies below 1GHz :

Frequency of Emission (MHz)	Field strength (microvolts/meter)	Field Strength (dB microvolts/meter)
30 – 88	100	40.0
88 – 216	150	43.5
216 – 960	200	46.0
Above 960	500	54.0

For frequencies above 1GHz (Average measurements).
Guidance on Measurement of FHSS Systems:
"If the emission is pulsed, modify the unit for continues operation , use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation." Here the correction was added to the limit instead subtracted from the reading.

Duty cycle correction = 20 log (dwell time/100ms)

For frequencies above 1GHz (Average measurements).

Limit – duty cycle correction

No duty cycle correction was added to the reading.

54.0dBµV/m

For frequencies above 1GHz (Peak measurements).

Limit + 20dB

54.0dBµV/m + 20 dB= 74 dBµV/m

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 017, ETSTW-RE 028, ETSTW-RE 029, ETSTW-RE 030, ETSTW-RE 042, ETSTW-RE 043, ETSTW-RE 064

Explanation: See attached diagrams in appendix.

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

3.5 Spurious emissions (tx)

Spurious emission was measured with modulation (declared by manufacturer).
In any 100 kHz bandwidth outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c))

SAMPLE CALCULATION OF LIMIT. All results will be updated by an automatic measuring system in accordance to point 2.3.
Calculation of test results:
Such factors like antenna correction, cable loss, external attenuation etc. are already included in the provided measurement results. This is done by using validated test software and calibrated test system according the accreditation requirements.

The peak and average spurious emission plots was measured with the average limits.
In the Table being listed the critical peak and average value an exhibit the compliance with the above calculated Limits.

If in the column‘s correction factor states a value then the max. Field strength in the same row is corrected by a value gained from the “Marker-Delta-Method“ or the „Duty-Cycle Correction Factor“.

Summary table with radiated data of the test plots

Model:	TM-FH2.4G-A101	Date:	2009/4/24		
Mode:	TX 2402MHz	Temperature:	26 °C	Engineer:	Danny
Polarization:	Horizontal	Humidity:	60 %		

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
165.812	14.88	peak	15.18	30.06	43.50	-13.44	105	150
608.617	7.33	peak	22.22	29.55	46.00	-16.45	120	150

Frequency (MHz)	Reading (dBuV) Peak	Factor (dB) Corr.	Duty	Result @3m (dBuV/m) Peak	Ave.	Limit @3m (dBuV/m) Peak	Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
2217.132	60.53	49.72	-5.85	54.68	43.87	74.00	54.00	-10.13	140	150
4801.603	54.20	---	-1.30	52.90	---	74.00	54.00	-21.10	135	150
7206.000	41.51	---	1.89	43.40	---	74.00	54.00	-30.60	140	150
9608.000	19.07	---	25.34	38.41	---	74.00	54.00	-35.59	135	150
12010.000	19.99	---	29.32	43.31	---	74.00	54.00	-30.69	130	150

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
246.974	16.55	peak	13.75	30.30	46.00	-15.70	100	150
608.617	7.22	peak	22.22	29.44	46.00	-16.56	115	150

Frequency (MHz)	Reading (dBuV) Peak	Factor (dB) Corr.	Duty	Result @3m (dBuV/m) Peak	Ave.	Limit @3m (dBuV/m) Peak	Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
2220.408	65.66	55.64	-5.84	59.82	49.80	74.00	54.00	-4.20	135	150
4803.981	55.33	53.11	-1.30	54.03	51.81	74.00	54.00	-2.19	130	150
7206.000	41.28	---	1.89	43.17	---	74.00	54.00	-30.83	145	150
9608.000	20.10	---	25.34	39.44	---	74.00	54.00	-34.56	140	150
12010.000	20.54	---	29.32	43.86	---	74.00	54.00	-30.14	135	150

Mode: TX 2441MHz Temperature: 26 °C Engineer: Danny
Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
165.812	13.73	peak	15.18	28.91	43.50	-14.59	110	150
611.423	7.04	peak	22.23	29.27	46.00	-16.73	125	150

Frequency (MHz)	Reading (dBuV) Peak	Factor (dB) Corr.	Duty	Result @3m (dBuV/m) Peak	Ave.	Limit @3m (dBuV/m) Peak	Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
2240.481	56.61	---	-5.78	50.83	---	74.00	54.00	-23.17	140	150
4881.764	54.16	---	-1.30	52.86	---	74.00	54.00	-21.14	140	150
7323.000	41.38	---	1.85	43.23	---	74.00	54.00	-30.77	145	150
9764.000	19.21	---	25.02	38.23	---	74.00	54.00	-35.77	140	150
12205.000	20.51	---	29.79	44.30	---	74.00	54.00	-29.70	130	150

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
279.980	14.83	peak	14.84	29.67	46.00	-16.33	100	150
611.423	8.21	peak	22.23	30.44	46.00	-15.56	120	150

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

Frequency (MHz)	Reading (dBuV) Peak	Factor (dB) Corr.	Duty	Result @3m (dBuV/m) Peak	Ave.	Limit @3m (dBuV/m) Peak	Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
2259.452	65.80	55.58	-5.72	60.08	49.86	74.00	54.00	-4.14	135	150
4881.764	52.98	---	-1.30	51.68	---	74.00	54.00	-22.32	130	150
7323.000	41.03	---	1.85	42.88	---	74.00	54.00	-31.12	135	150
9764.000	19.28	---	25.02	38.3	---	74.00	54.00	-35.70	135	150
12205.000	21.37	---	29.79	45.16	---	74.00	54.00	-28.84	140	150

Mode: TX 2479MHz Temperature: 26 °C Engineer: Danny
Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
165.812	14.40	peak	15.18	29.58	43.50	-13.92	105	150
611.423	6.49	peak	22.23	28.72	46.00	-17.28	125	150

Frequency (MHz)	Reading (dBuV) Peak	Factor (dB) Corr.	Duty	Result @3m (dBuV/m) Peak	Ave.	Limit @3m (dBuV/m) Peak	Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
2288.577	54.98	---	-5.63	49.35	---	74.00	54.00	-24.65	135	150
4953.908	51.80	---	-1.08	50.72	---	74.00	54.00	-23.28	135	150
7437.000	41.91	---	1.82	43.73	---	74.00	54.00	-30.27	140	150
9916.000	20.63	---	25.99	40.62	---	74.00	54.00	-33.38	140	150
12395.000	20.76	---	30.25	45.01	---	74.00	54.00	-28.99	145	150

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
247.515	15.50	peak	13.76	29.26	46.00	-16.74	110	150
611.423	6.94	peak	22.23	29.17	46.00	-16.83	120	150

Frequency (MHz)	Reading (dBuV) Peak	Factor (dB) Corr.	Duty	Result @3m (dBuV/m) Peak	Ave.	Limit @3m (dBuV/m) Peak	Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
2310.140	65.08	54.63	-5.55	59.53	49.08	74.00	54.00	-4.92	135	150
4953.908	53.29	---	-1.08	52.21	---	74.00	54.00	-21.79	135	150
7437.000	41.93	---	1.82	43.75	---	74.00	54.00	-30.25	130	150
9916.000	20.84	---	25.99	40.83	---	74.00	54.00	-33.17	140	150
12395.000	21.25	---	30.25	45.50	---	74.00	54.00	-28.50	130	150

Note
1. **Correction Factor = Antenna factor + Cable loss - Preamplifier**
2. **The formula of measured value as: Test Result = Reading + Correction Factor**
3. **Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average**
4. **All not in the table noted test results are more than 20 dB below the relevant limits.**
5. **See the attached diagram as appendix.**

All other not noted test plots do not contain significant test results in relation to the limits.

TEST RESULT (Transmitter): The unit DOES meet the FCC requirements.

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 017, ETSTW-RE 018, ETSTW-RE 021, ETSTW-RE 028, ETSTW-RE 030, ETSTW-RE 043, ETSTW-RE 064

3.6 Carrier Frequency Separation

Carrier Frequency Separation was measured with modulation (declared by manufacturer).

According to FCC rules part 15 subpart C §15.247 frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or 20 dB bandwidth of the hopping channel, whichever is greater.

Test conditions		Channel Separation	
		Channel 1	Channel 1+1
T_{nom}= 23°C	V_{nom} = 9.6 V	1000.000000 kHz	

Test conditions		Channel Separation	
		Channel 40	Channel 40+1
T_{nom}= 23°C	V_{nom} = 9.6 V	1000.000000 kHz	

Test conditions		Channel Separation	
		Channel 78	Channel 78-1
T_{nom}= 23°C	V_{nom} = 9.6 V	1000.000000 kHz	

Limits:

Frequency Range MHz	Limits	
	20 dB bandwidth < 25 kHz	20 dB bandwidth > 25 kHz
902-928	25 kHz	20 dB bandwidth
2400-2483.5 5725-5850.0	25 kHz	20 dB bandwidth

Test equipment used: ETSTW-RE 055, ETSTW-RE 064

Explanation: See attached diagrams in appendix.

3.7 Number of Hopping Frequencies

According to FCC rules part 15 subpart C §15.247 frequency hopping systems operating in the 2400-2483.5 MHz band shall use at least 15 hopping frequencies. Frequency hopping systems in 5725-5850 MHz bands shall use least 75 hopping frequencies.

For frequency hopping systems operating in the 902-928 MHz band: if the 20dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies; if the 20dB bandwidth of the hopping channel 250 kHz or greater, the system shall use at least 25 hopping frequencies.

Test conditions		Operating Mode	Number of Channels
T_{nom}= 23°C	V_{nom}= 9.6 V	normal transmitting	78

Limits:

Frequency Range MHz	Limit	
	20dB Bandwidth	Number of Channels
902-928 MHz	Bandwidth < 250 kHz	≥ 50
	Bandwidth ≥ 250 kHz	≥ 25
2400-2483.5	not defined	15
5725-5850.0 MHz	1 MHz	75

Test equipment used: ETSTW-RE 055, ETSTW-RE 064

Explanation: See attached diagrams in appendix.

3.7.1 Pseudorandom Frequency Hopping Sequence

The CYWUSB6935 contains a 2.4GHz radio transceiver, a GFSK modem, and a dual DSSS reconfigurable baseband. The radio and baseband are both code- and frequency-agile.
Forty-nine spreading codes selected for optimal performance (Gold codes) are supported across 78 (1MHz) channels yielding a theoretical spectral capacity of 3822 channels. The CYWUSB6935 supports a range of up to 50 meters or more. The transmitter uses a DSP-based vector modulator to convert the 1-MHz chips to an accurate GFSK carrier. The receiver uses a fully integrated Frequency Modulator (FM) detector with automatic data slicer to demodulate the GFSK signal.

3.7.2 Coordination of hopping sequences to other transmitters

The CYWUSB6935 transceiver is a single-chip 2.4-GHz Direct Sequence Spread Spectrum (DSSS) Gaussian Frequency Shift Keying (GFSK) baseband modem radio that connects directly to a microcontroller via a simple serial peripheral interface.

3.7.3 System Receiver Hopping Capability

The receiver and transmitter are a single-conversion, low-Intermediate Frequency (low-IF) architecture with fully integrated IF channel matched filters to achieve high performance in the presence of interference. An integrated Power Amplifier (PA) provides an output power control range of 30 dB in seven steps. Both the receiver and transmitter integrated Voltage Controlled Oscillator (VCO) and synthesizer have the agility to cover the complete 2.4-GHz GFSK radio transmitter ISM band. The synthesizer provides the frequency-hopping local oscillator for the transmitter and receiver. The VCO loop filter is also integrated on-chip.

3.8 Time of Occupancy (Dwell Time)

Frequency hopping systems operating in the 5725-5850 MHz band shall use an average time of occupancy on any frequency not greater than 0.4 seconds within a 30 second period.

In 2400-2483,5 MHz band the average time of occupancy on any channel shall not be greater than 0,4 seconds multiplied by the number of hopping channels employed.

For frequency hopping systems operating in the 902-928 MHz band: if the 20dB bandwidth of the hopping channel is less than 250 kHz, the average time of occupancy on any frequency shall not greater than 0.4 seconds within a 20 second period; if the 20dB bandwidth of the hopping channel is 250 kHz or greater, the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period.

Test conditions	Operating mode	Measurement period	Time of Occupancy
T_{nom}= 23°C V_{nom} = 9.6 V Channel A	normal transmitting	31.2 s	259.62 ms

Test conditions	Operating mode	Measurement period	Time of Occupancy
T_{nom}= 23°C V_{nom} = 9.6 V Channel B	normal transmitting	31.2 s	264.42 ms

Test conditions	Operating mode	Measurement period	Time of Occupancy
T_{nom}= 23°C V_{nom} = 9.6 V Channel C	normal transmitting	31.2 s	264.42 ms

Limits and measurement periods:

Frequency MHz	Number of channels	Measurement Periode	Limit
902 – 928	≥50	20 s	0,4 s
	49 ≥ 25	10 s	0,4 s
2400 – 2483,5	≥ 15	0,4 s * number of used channels	0,4 s
5725- 5850	≥ 75	30 s	0,4s

Test equipment used: ETSTW-RE 055, ETSTW-RE 064

Explanation: See attached diagrams in appendix, which show the On-time and the number of counted events during the measurement period

3.9 20dB Bandwidth

Frequency hopping systems operating in the 5725-5850 MHz bands shall use a maximum 20dB bandwidth of 1 MHz.
The 20dB bandwidth is measured on the lowest, middle and highest hopping channel.

For frequency hopping systems operating in the 902-928 MHz band the maximum 20dB bandwidth of the hopping channel is 500 kHz.

Test conditions		**20 dB Bandwidth**		
		Channel A	**Channel B**	**Channel C**
T_{nom}= 23°C	V_{nom} = 9.6 V	1205.128205 kHz	1211.538462 kHz	1205.128205 kHz

Limits:

Frequency Range / MHz	Limit
902-928	≤ 500 kHz
2400-2483.5	not defined
5725-5850	≤ 1 MHz

Test equipment used: ETSTW-RE 055, ETSTW-RE 064

Explanation: See attached diagrams in appendix.

3.9.1 System Receiver Input Bandwidth

According to the 2.4GHz DSSS Radio SoC's providing the frequency-hopping function for transceiver, the bandwidth of the transceiver was determined to which it was matched the appropriate required value.

3.10 Band-edge Compliance of RF Emissions

According to FCC rules part 15 subpart C §15.247(c) in any 100 kHz bandwidth outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in § 15.209(a) is not required.

In addition radiated emission which fall in the restricted bands, as defined in section 15.205(a), must also with the radiated emission limits.

Test conditions		Attenuation at or outside band-edges **Single Frequency**	
		Lower Band-edge	Upper Band-edge
T_{nom}= 23°C	V_{nom} = 9.6 V	39.49 dB	52.47 dB

Test conditions		Attenuation at or outside band-edges **Hopping Frequency**	
		Lower Band-edge	Upper Band-edge
T_{nom}= 23°C	V_{nom} = 9.6 V	35.23 dB	33.43 dB

Limits:

Frequency Range / MHz	Limit
902 –928 2400 – 2483.5 5725 - 5850	- 20 dB

Test equipment used: ETSTW-RE 055, ETSTW-RE 064

Explanation: See attached diagrams in appendix.

3.11 Radiated Emissions from Receiver Part

FCC Rule: 15.109

Summary table with radiated data of the test plots

Model: TM-FH2.4G-A101 Date: 2009/04/25
Mode: RX 2402MHz Temperature: 26 °C Engineer: Danny
Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
187.996	19.80	peak	13.01	32.81	43.50	-10.69	105	150
210.180	19.99	peak	12.34	32.33	43.50	-11.17	110	150
308.417	13.22	peak	15.51	28.73	46.00	-17.27	125	150
959.319	8.12	peak	27.24	35.36	46.00	-10.64	130	150

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result @3m (dBuV/m) Peak	Result @3m (dBuV/m) Ave.	Limit @3m (dBuV/m) Peak	Limit @3m (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
1535.070	50.27	---	-10.70	39.57	---	74.00	54.00	-34.43	140	150
7134.269	42.95	---	2.49	45.44	---	74.00	54.00	-28.56	145	150

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
187.996	17.23	peak	13.01	30.24	43.50	-13.26	110	150
210.180	17.65	peak	12.34	29.99	43.50	-13.51	105	150
727.856	9.09	peak	24.18	33.27	46.00	-12.73	120	150
922.846	7.59	peak	26.78	34.37	46.00	-11.63	120	150

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result @3m (dBuV/m) Peak	Result @3m (dBuV/m) Ave.	Limit @3m (dBuV/m) Peak	Limit @3m (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
4000.000	43.13	---	1.20	44.33	---	74.00	54.00	-29.67	135	150
7094.188	42.47	---	2.79	45.26	---	74.00	54.00	-28.74	140	150

Mode: RX 2441MHz
Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
187.996	20.29	peak	13.01	33.30	43.50	-10.20	110	150
210.180	19.67	peak	12.34	32.01	43.50	-11.49	115	150
308.417	13.19	peak	15.51	28.70	46.00	-17.30	130	150
702.605	10.81	peak	23.50	34.31	46.00	-11.69	125	150

Frequency (MHz)	Reading (dBuV) Peak	Ave.	Factor (dB) Corr.	Result @3m (dBuV/m) Peak	Ave.	Limit @3m (dBuV/m) Peak	Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
1535.070	49.95	---	-10.70	39.25	---	74.00	54.00	-34.75	135	150
7126.252	42.72	---	2.56	45.28	---	74.00	54.00	-28.72	140	150

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
187.996	16.94	peak	13.01	29.95	43.50	-13.55	110	150
210.180	17.55	peak	12.34	29.89	43.50	-13.61	105	150
702.605	9.59	peak	23.50	33.09	46.00	-12.91	120	150
793.788	7.70	peak	25.05	32.75	46.00	-13.25	125	150

Frequency (MHz)	Reading (dBuV) Peak	Ave.	Factor (dB) Corr.	Result @3m (dBuV/m) Peak	Ave.	Limit @3m (dBuV/m) Peak	Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
3939.880	43.05	---	1.02	44.07	---	74.00	54.00	-29.93	145	150
7006.012	42.63	---	2.71	45.34	---	74.00	54.00	-28.66	135	150

Mode: RX 2479MHz
Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
187.996	19.78	peak	13.01	32.79	43.50	-10.71	110	150
210.180	19.62	peak	12.34	31.96	43.50	-11.54	115	150
806.413	9.63	peak	25.24	34.87	46.00	-11.13	125	150
900.401	8.59	peak	26.23	34.82	46.00	-11.18	120	150

Frequency (MHz)	Reading (dBuV) Peak	Ave.	Factor (dB) Corr.	Result @3m (dBuV/m) Peak	Ave.	Limit @3m (dBuV/m) Peak	Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
1535.070	49.26	---	-10.70	38.56	---	74.00	54.00	-35.44	135	150
6645.291	40.87	---	4.53	45.40	---	74.00	54.00	-28.60	140	150

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
187.996	17.34	peak	13.01	30.35	43.50	-13.15	105	150
210.180	18.10	peak	12.34	30.44	43.50	-13.06	110	150
727.856	8.09	peak	24.18	32.27	46.00	-13.73	120	150
767.134	7.95	peak	24.73	32.68	46.00	-13.32	125	150

Frequency (MHz)	Reading (dBuV) Peak	Ave.	Factor (dB) Corr.	Result @3m (dBuV/m) Peak	Ave.	Limit @3m (dBuV/m) Peak	Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
3711.423	43.59	---	0.25	43.84	---	74.00	54.00	-30.16	140	150
7599.198	43.68	---	1.80	45.48	---	74.00	54.00	-28.52	145	150

Note
1. **Correction Factor = Antenna factor + Cable loss - Preamplifier**
2. **The formula of measured value as: Test Result = Reading + Correction Factor**
3. **Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average**
4. **All not in the table noted test results are more than 20 dB below the relevant limits.**
5. **See attached diagrams in appendix.**

Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of Emission (MHz)	Field Strength (microvolts/meter)	Field Strength (dBmicrovolts/meter)
30 – 88	100	40.0
88 – 216	150	43.5
216 – 960	200	46.0
Above 960	500	54.0

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 017, ETSTW-RE 028, ETSTW-RE 029, ETSTW-RE 030, ETSTW-RE 042, ETSTW-RE 043, ETSTW-RE 064

3.12 Power Line Conducted Emission

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the table bellows with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.

This measurement was transact first with instrumentation using an average and peak detector and a 10 kHz bandwidth. If the peak detector achieves a calculated level, the measurement is repeated by an instrumentation using a quasi-peak detector.

Frequency	Level (dBμV)	
	quasi-peak	average
150 kHz	lower limit line	Lower limit line

Model: TM-FH2.4G-A101 Date: --
Mode: Temperature: -- °C Engineer: --
Polarization: N Humidity: -- %

Frequency (MHz)	Reading (dBuV) QP	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV) QP	Result (dBuV) Ave.	Limit (dBuV) QP	Limit (dBuV) Ave.	Margin (dB)
--	--	--	--	--	--	--	--	--

Polarization: L1

Frequency (MHz)	Reading (dBuV) QP	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV) QP	Result (dBuV) Ave.	Limit (dBuV) QP	Limit (dBuV) Ave.	Margin (dB)
--	--	--	--	--	--	--	--	--

Note: 1.The formula of measured value as: Test Result = Reading + Correction Factor
2.The Correction Factor = Cable Loss + LISN Insertion Loss + Pulse Limit Loss
3.Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average
4.All not in the table noted test results are more than 20 dB below the relevant limits.
5.The EUT is DC power supply, so this test is not applicable.

Limits:

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

Test equipment used: ETSTW-CE 001, ETSTW-CE 003, ETSTW-CE 004, ETSTW-CE 006, ETSTW-RE 064

Appendix

A Measurement diagrams

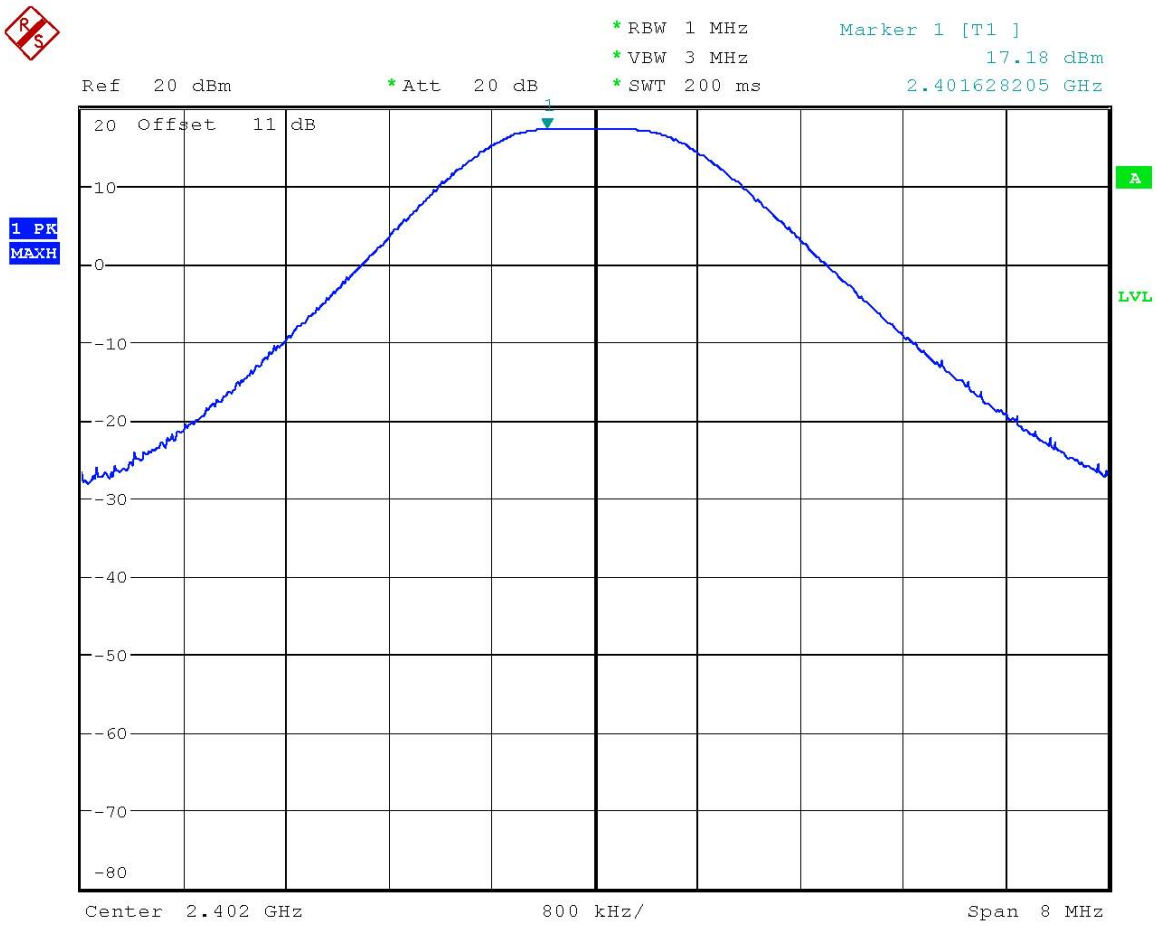
1. Peak Output Power
2. Spurious Emissions radiated
3. Carrier Frequency Separation
4. Number of Hopping Frequencies
5. Time of Occupancy (Dwell Time)
6. 20dB Bandwidth
7. Band-edge Compliance of RF Conducted Emissions
8. Radiated Emissions from Receiver Part

B Photos

1. External Photos
2. Internal Photos
3. Set Up Photo of Radiated Emission

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

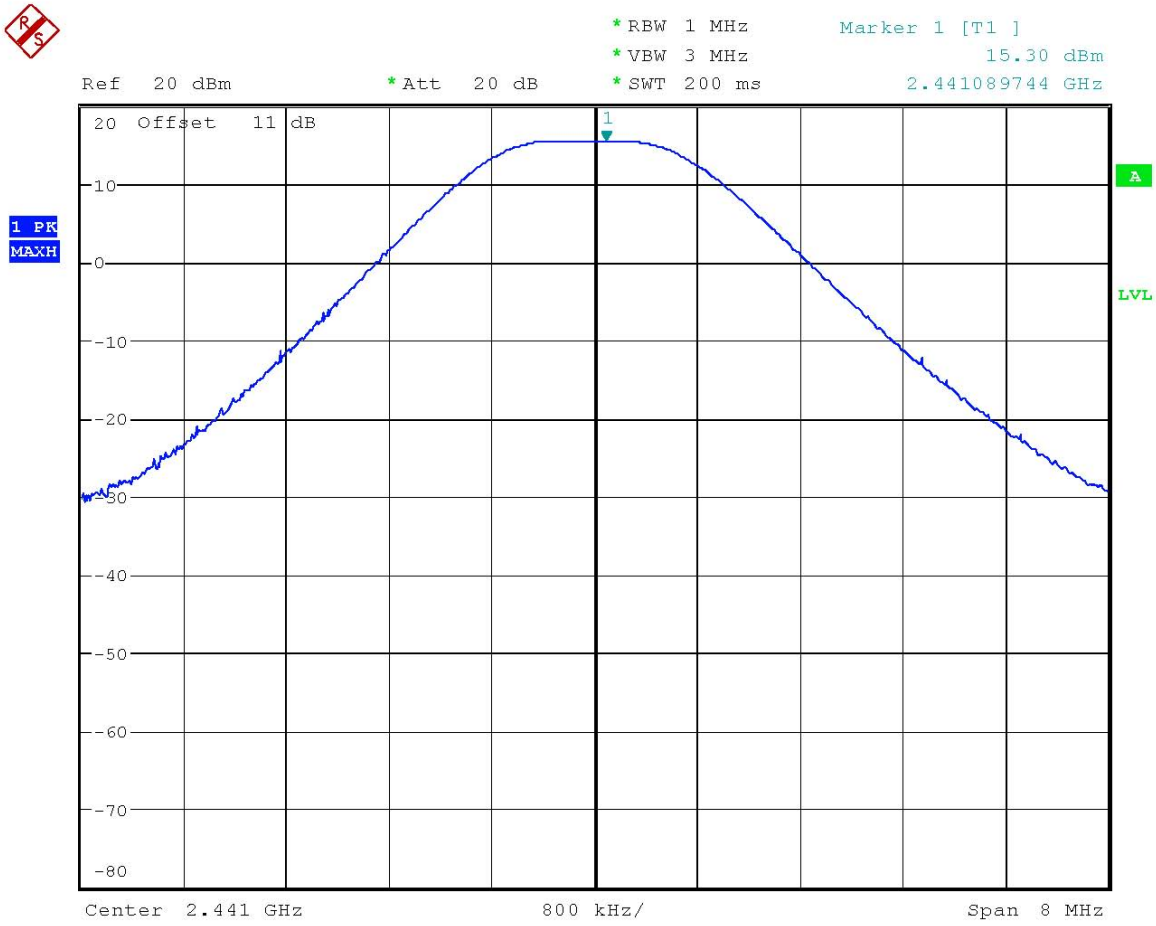
Peak Output Power



MAX OUTPUT POWER 2402MHz

Date: 25.APR.2009 08:01:37

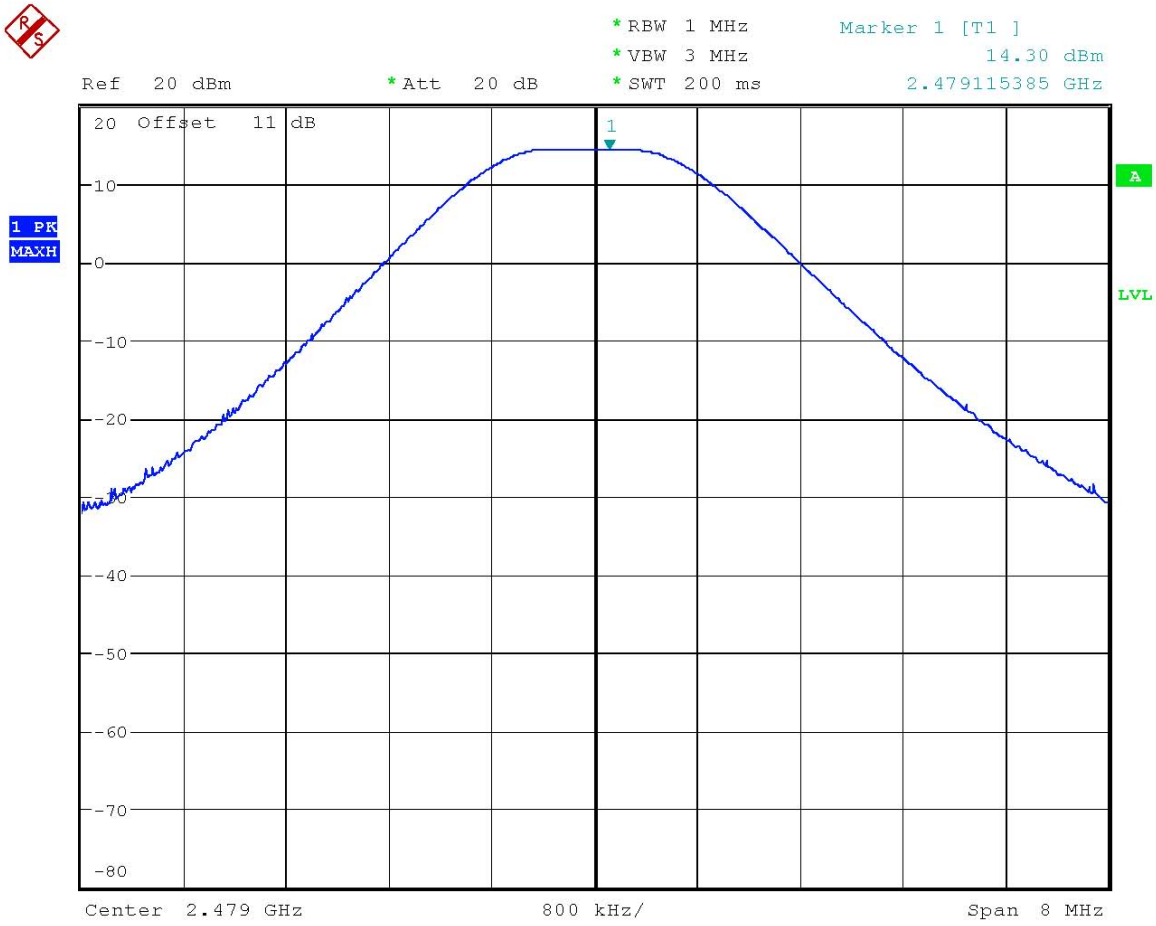
Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12



MAX OUTPUT POWER 2441MHz

Date: 25.APR.2009 08:01:57

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

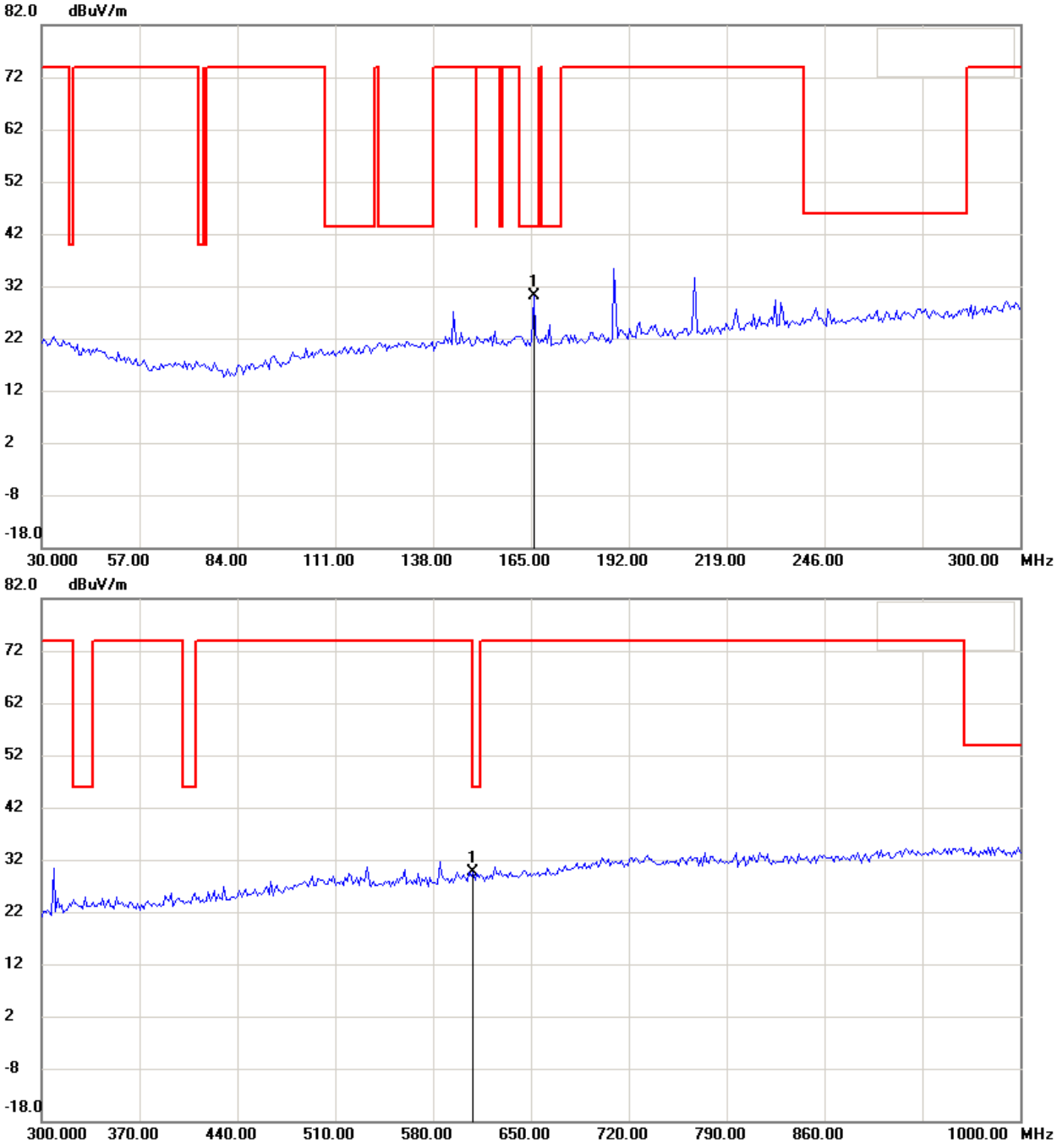


MAX OUTPUT POWER 2479MHz

Date: 25.APR.2009 08:02:16

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

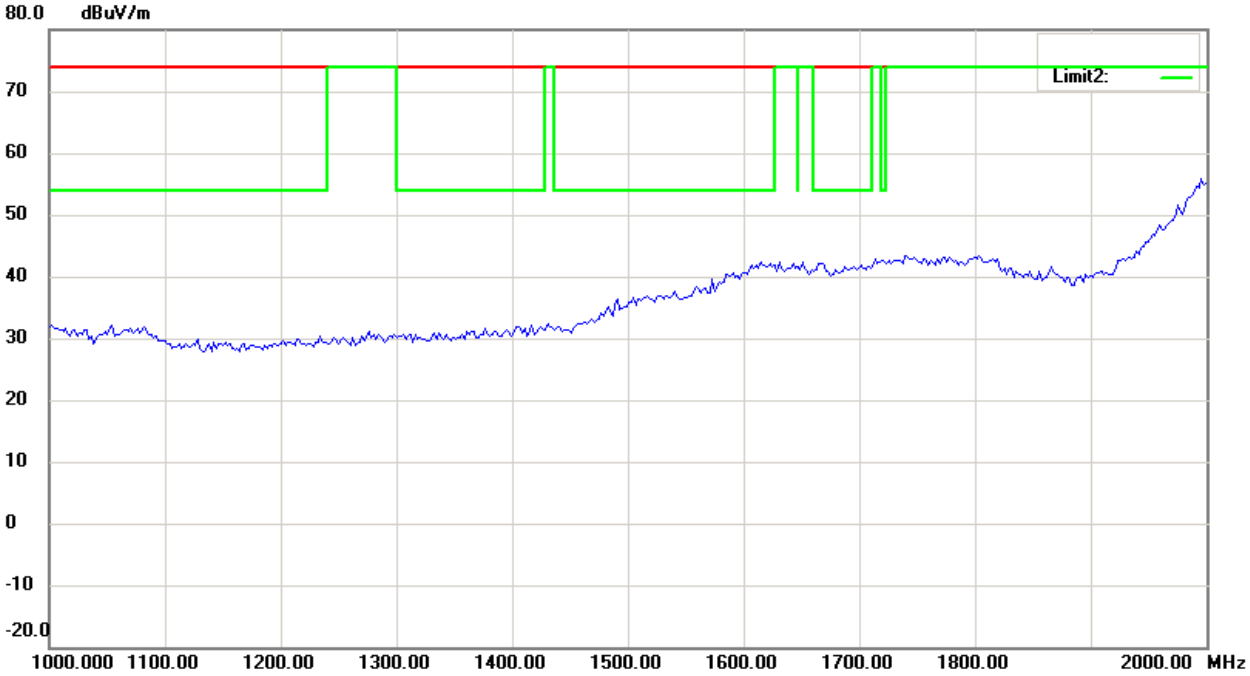
Spurious Emissions radiated
Channel 1
Antenna Polarization H

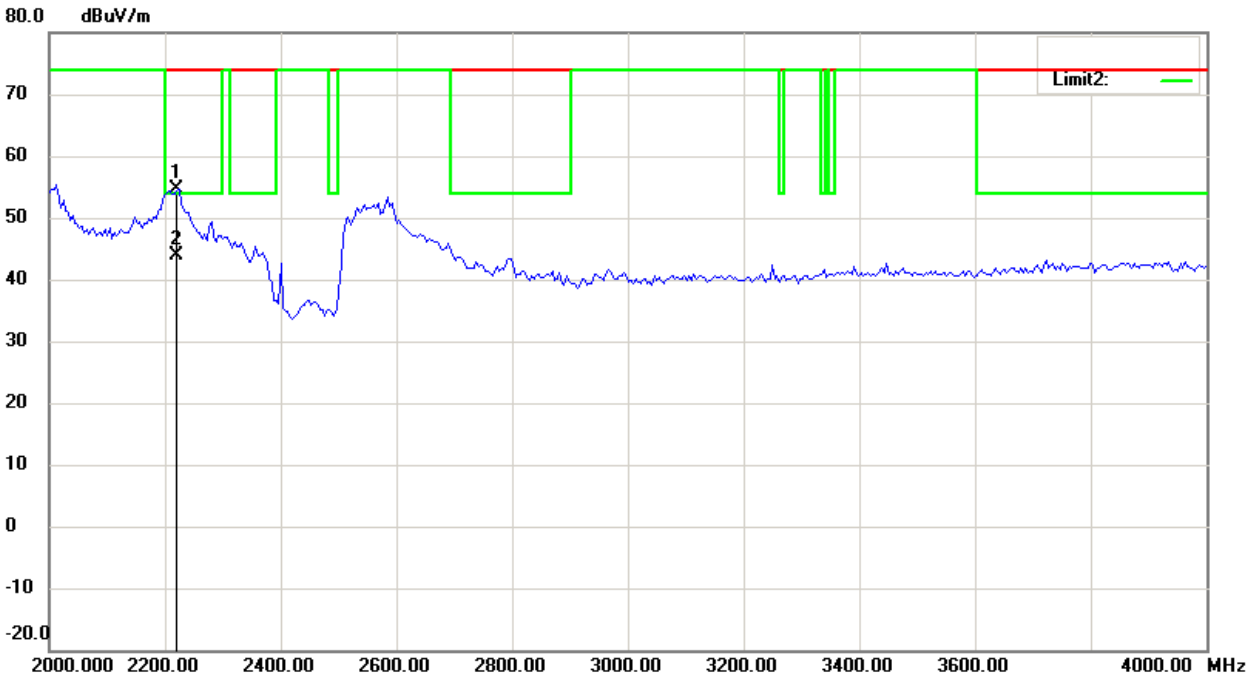


Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

1. **The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.**
2. **The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.**
3. **For corrected test results are listed in the relevant table of radiated test data of this test report.**

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

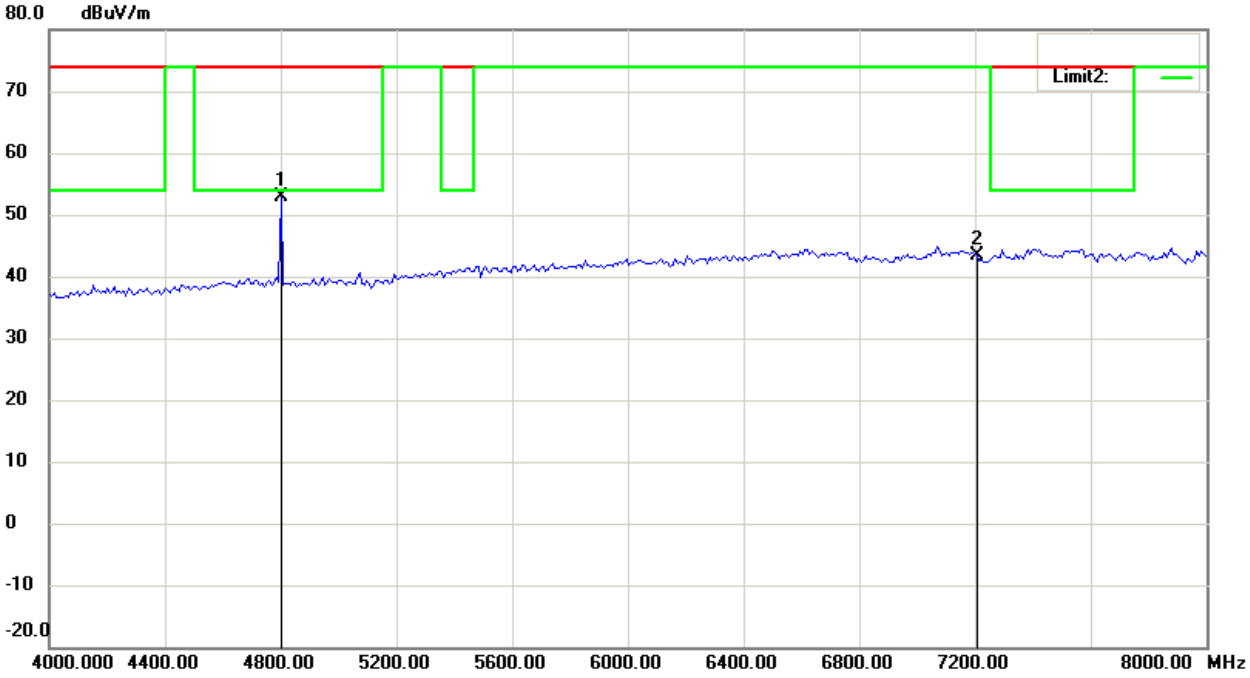


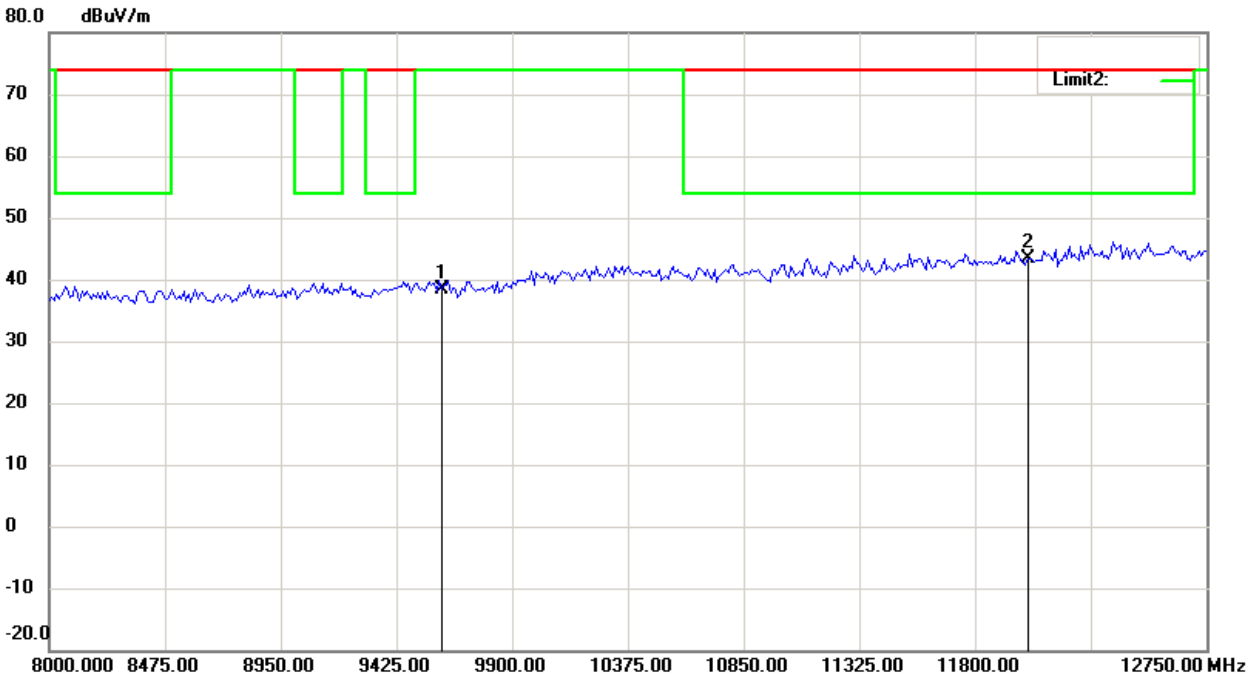


Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

1. **The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.**
2. **The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.**
3. **For corrected test results are listed in the relevant table of radiated test data of this test report.**

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12





Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

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2. **The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.**
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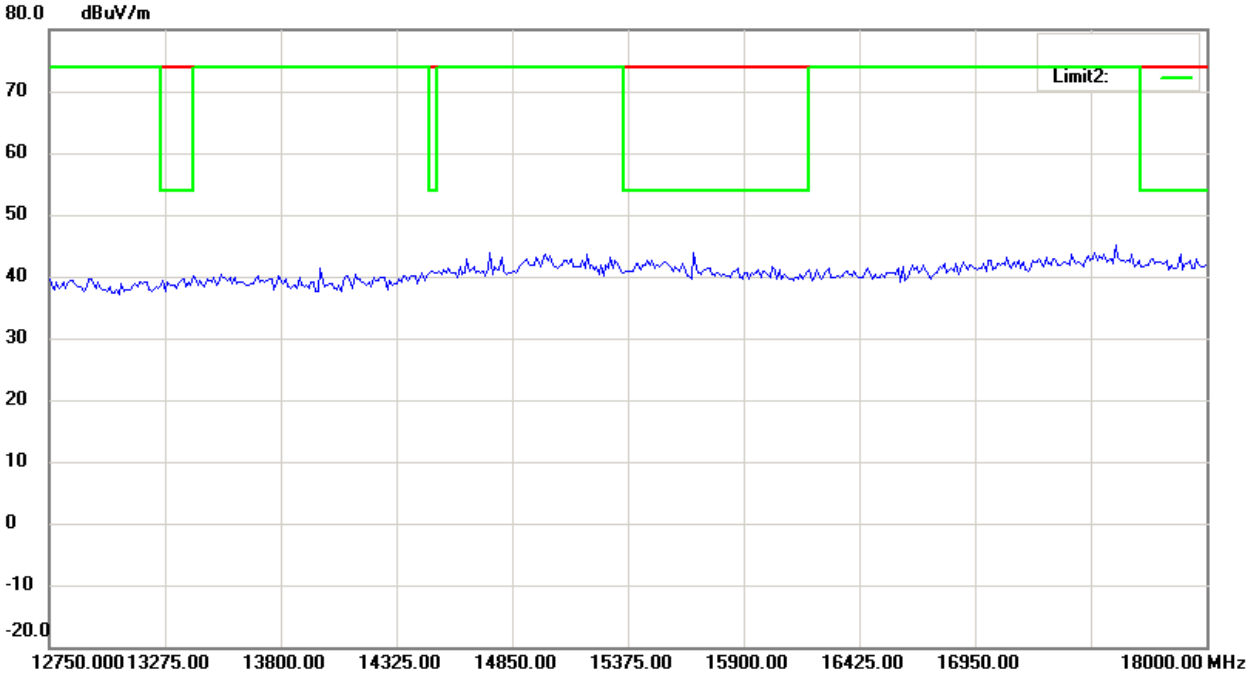
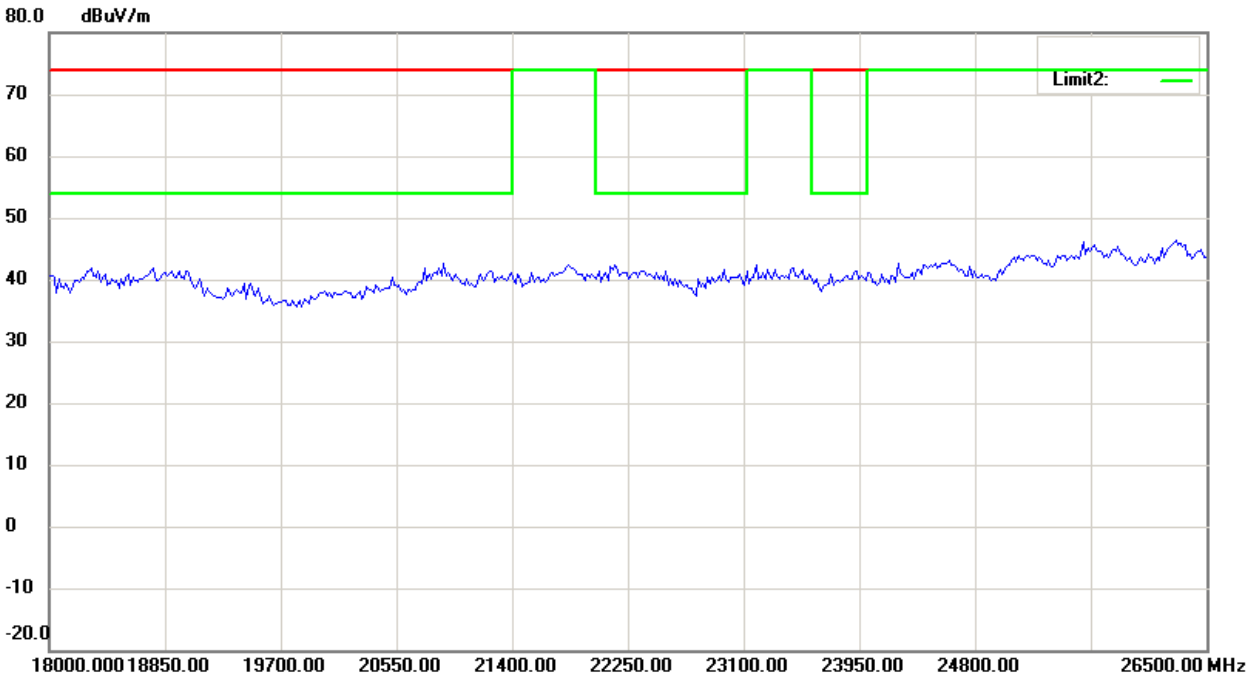
FCC ID: VEJTT-FHM2P4G-A12





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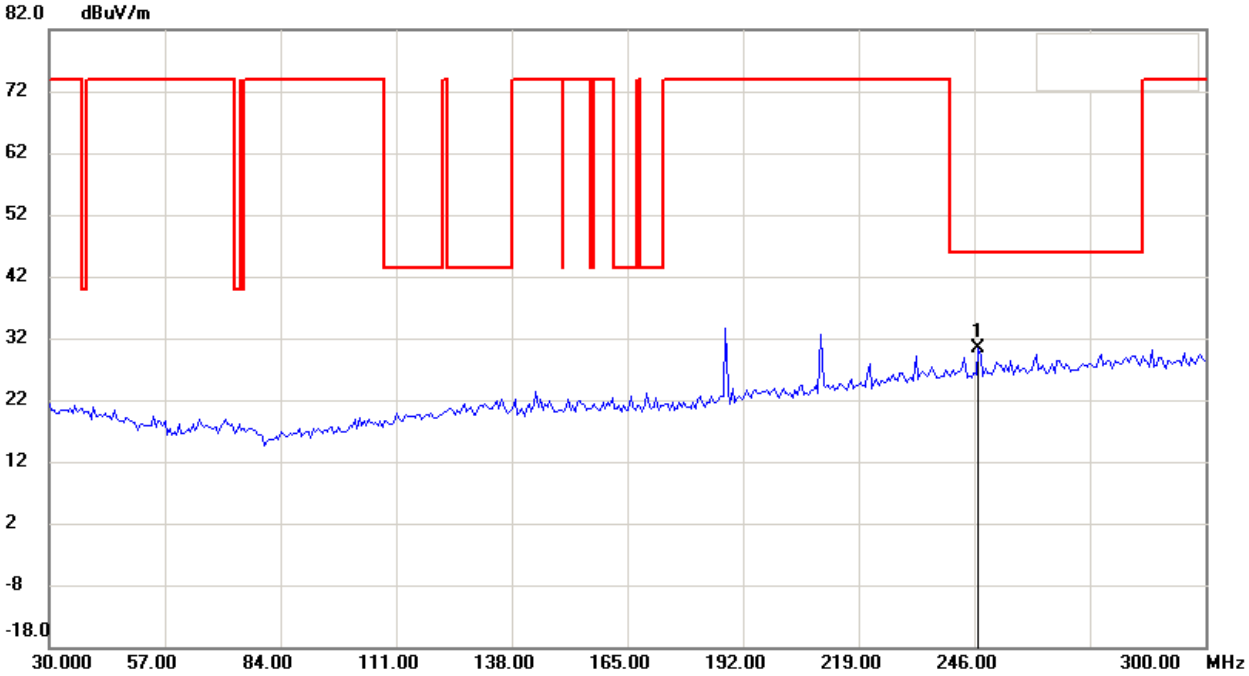
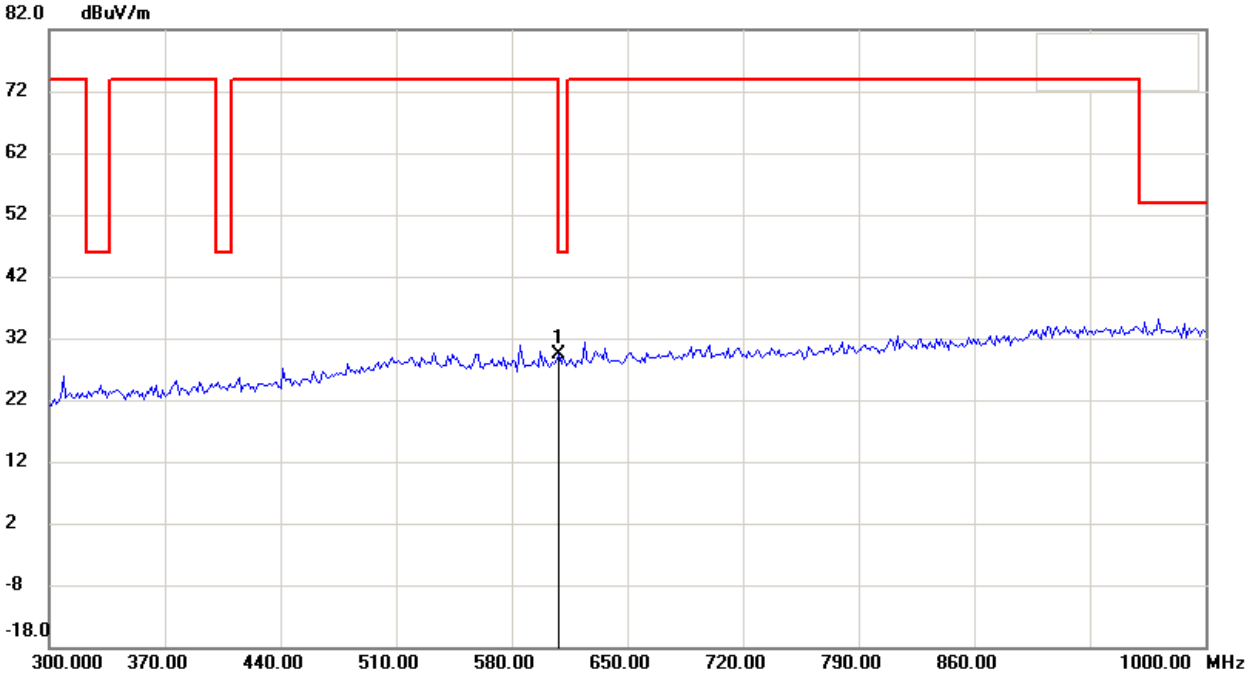
FCC ID: VEJTT-FHM2P4G-A12

Antenna Polarization V





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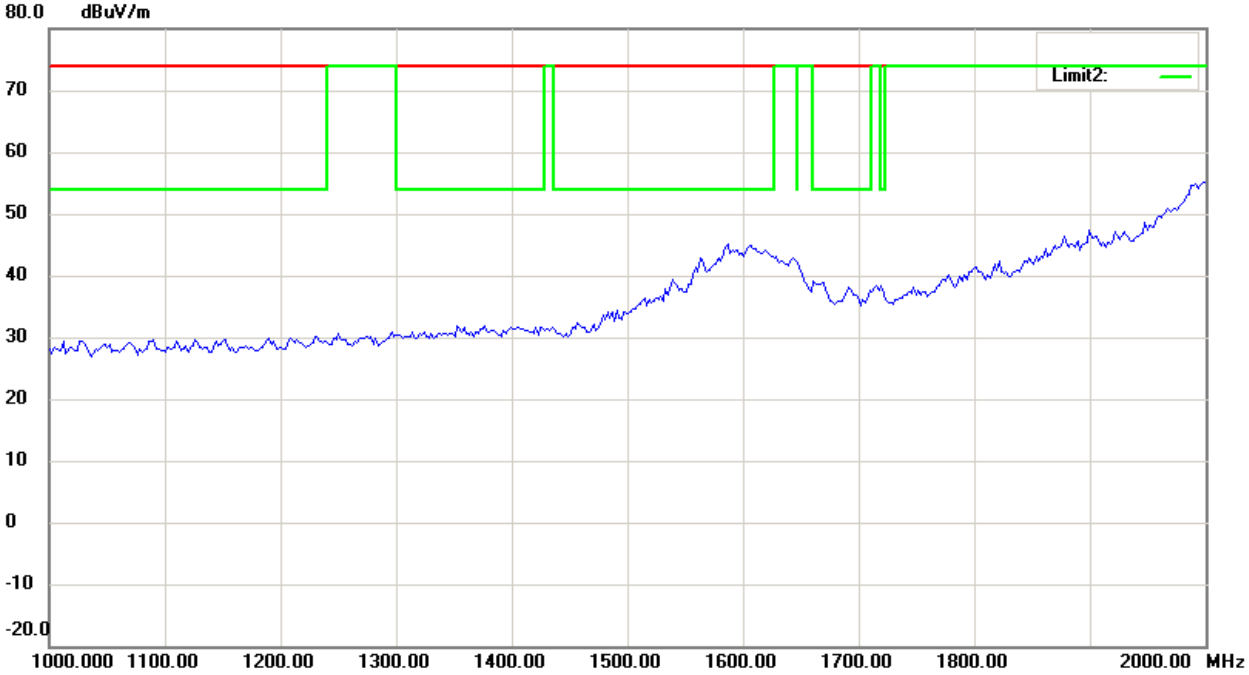

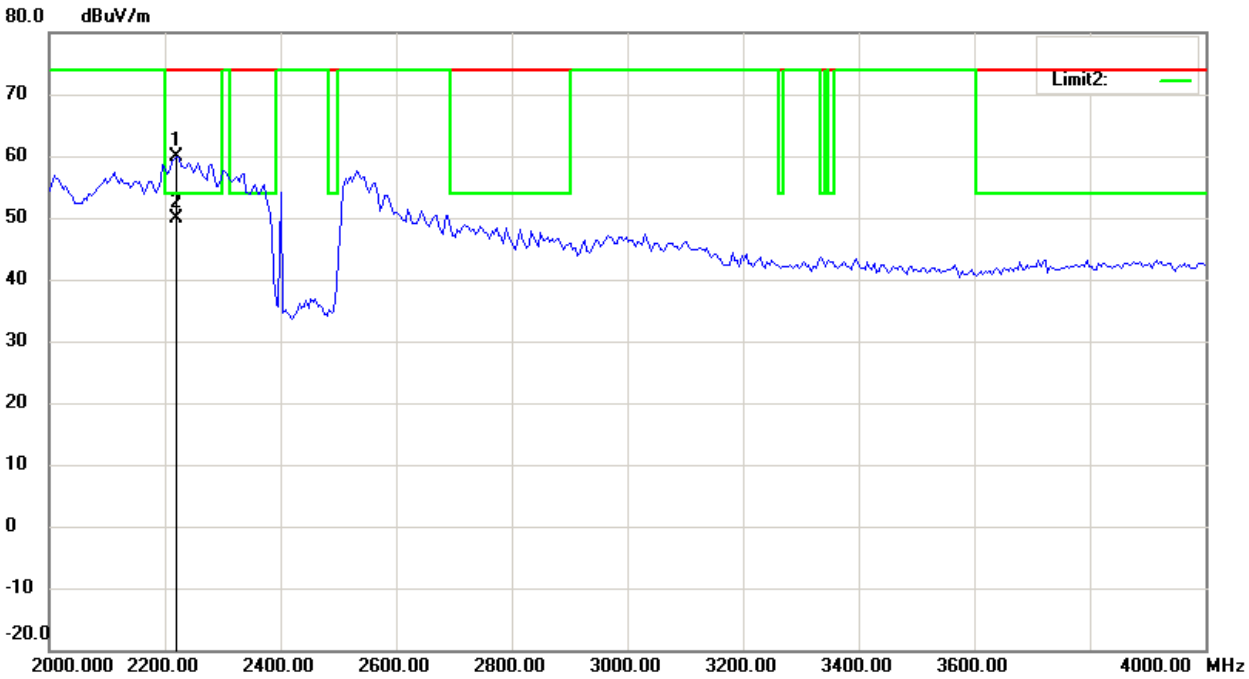

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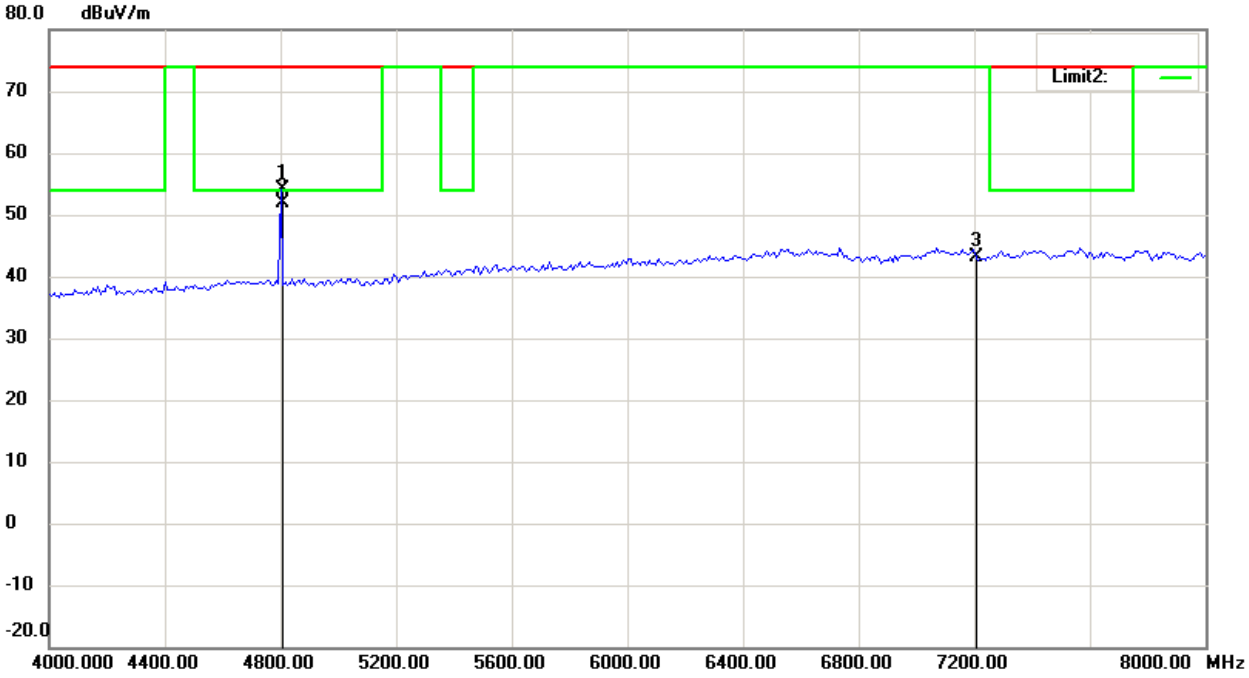

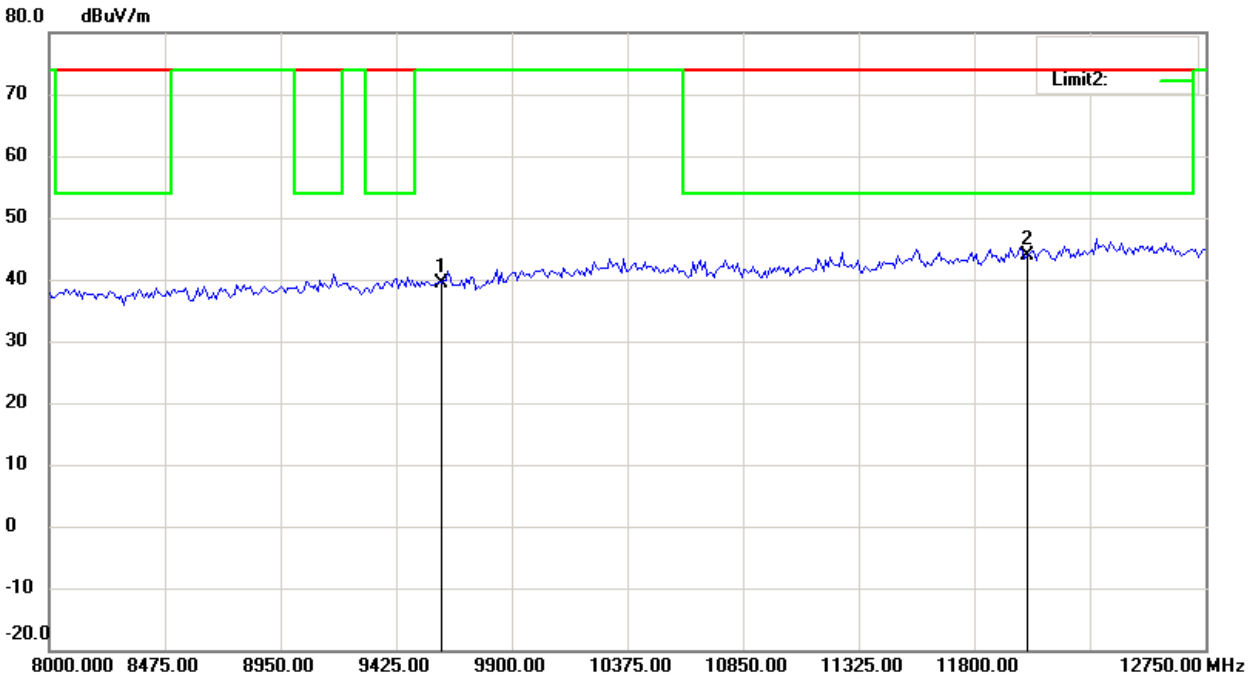

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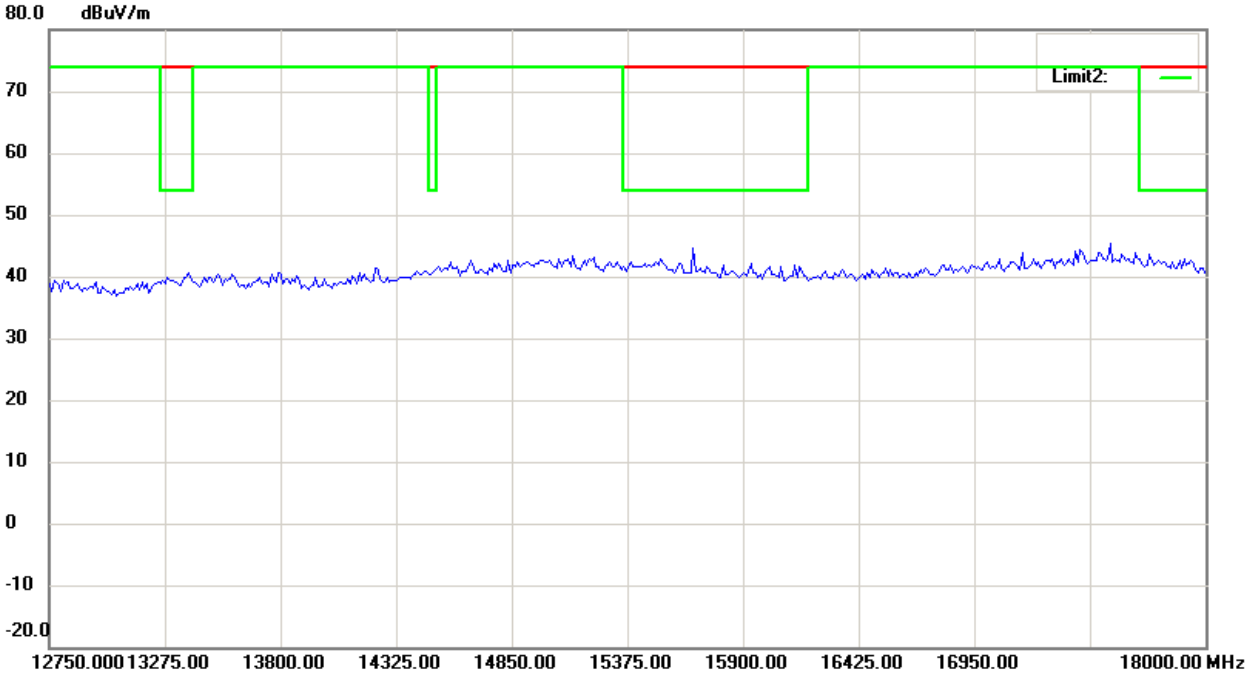

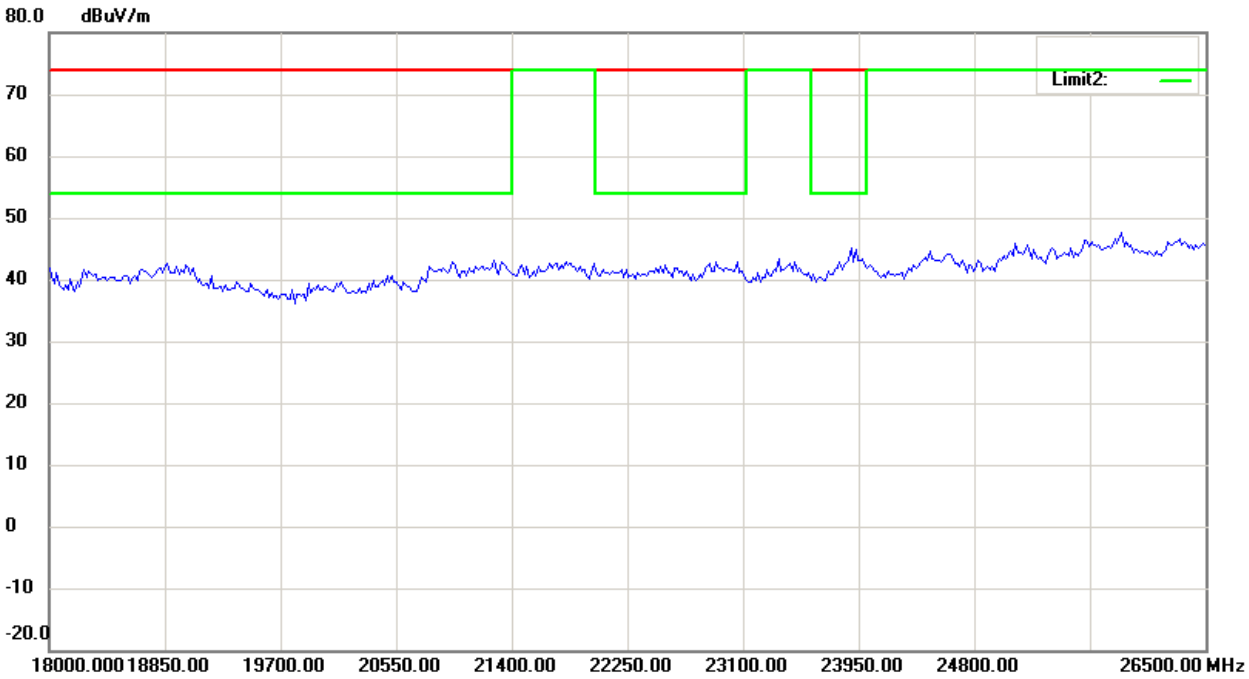

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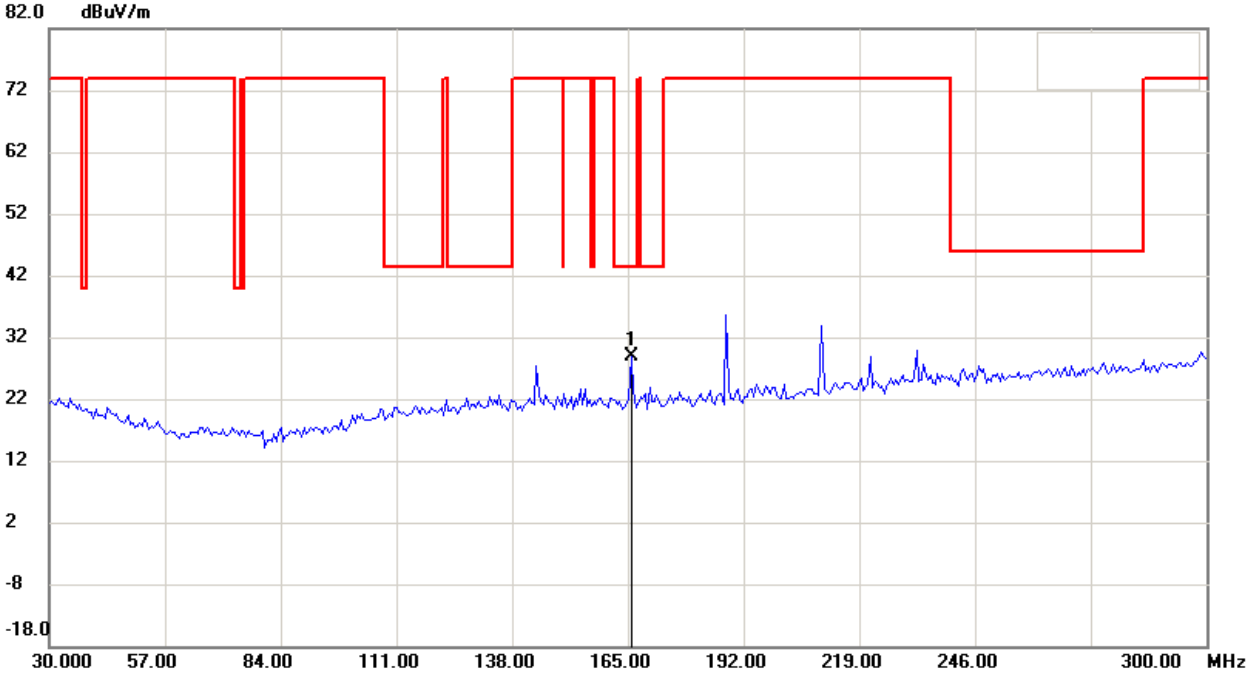
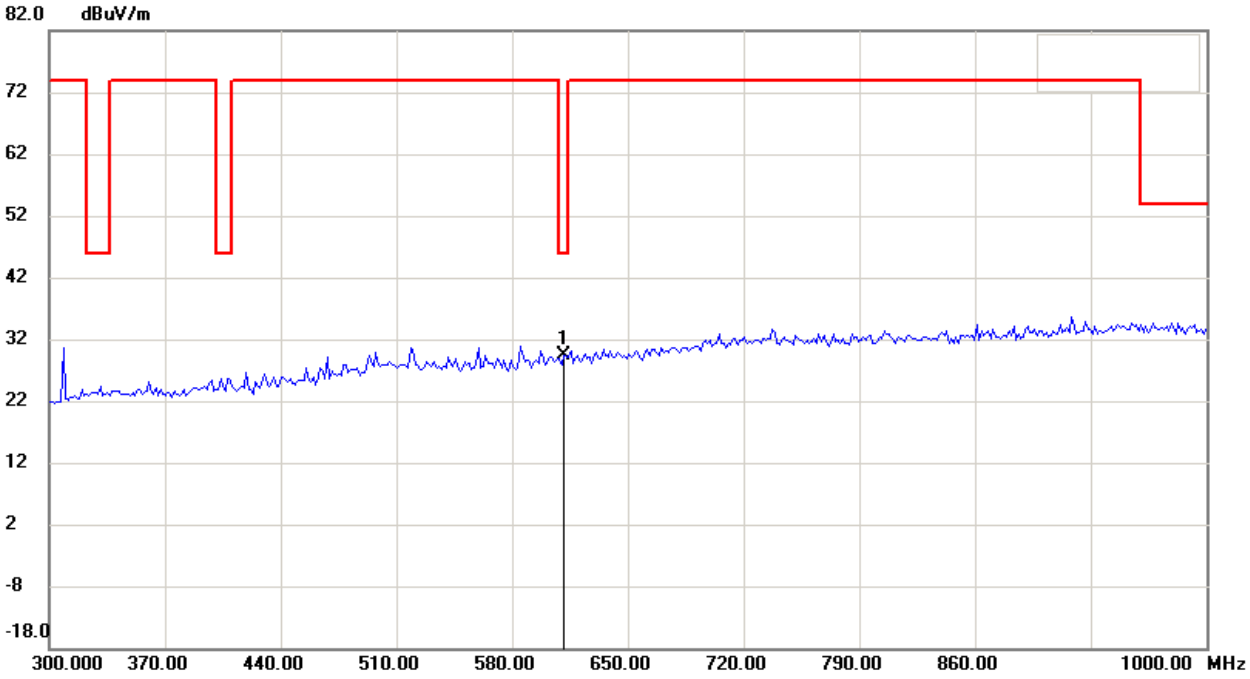
Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

Channel 40

Antenna Polarization H





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Note:

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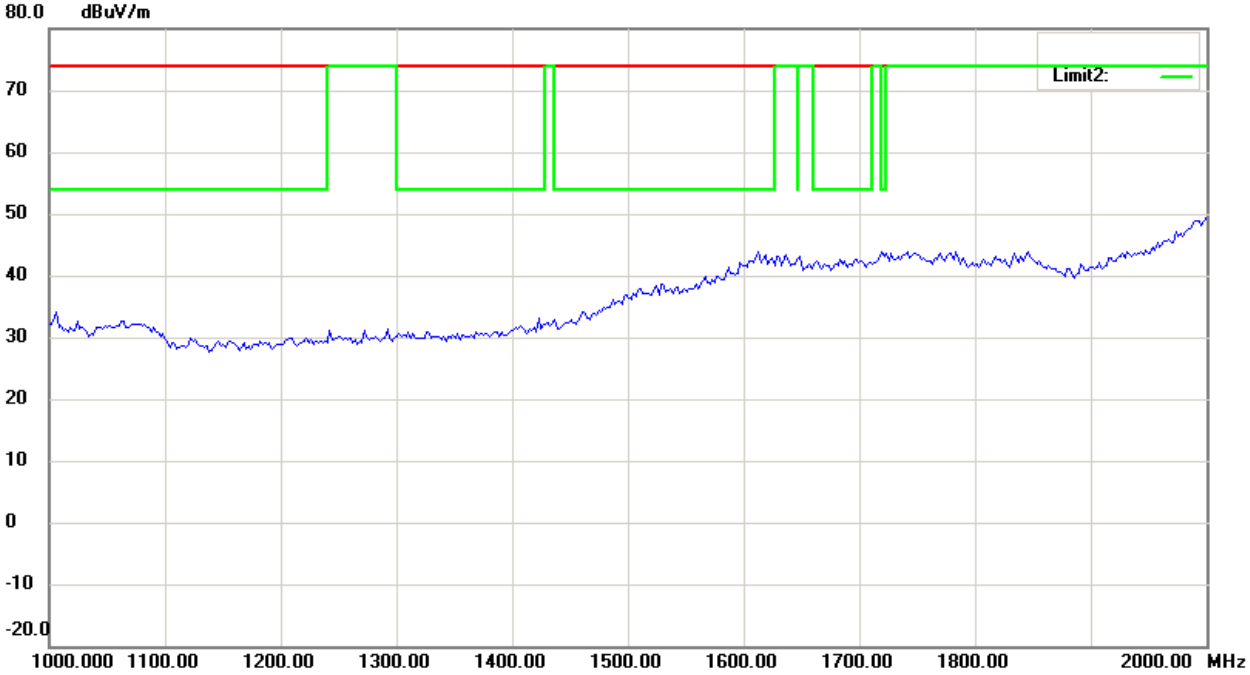
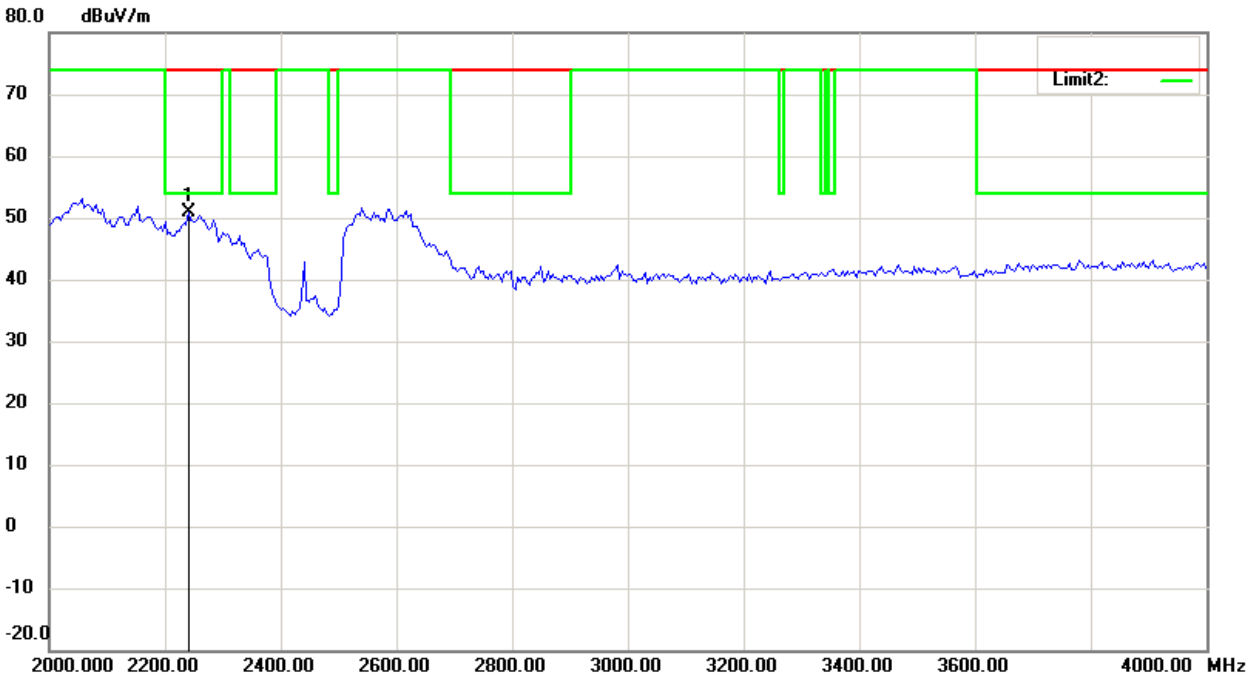
FCC ID: VEJTT-FHM2P4G-A12





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Note:

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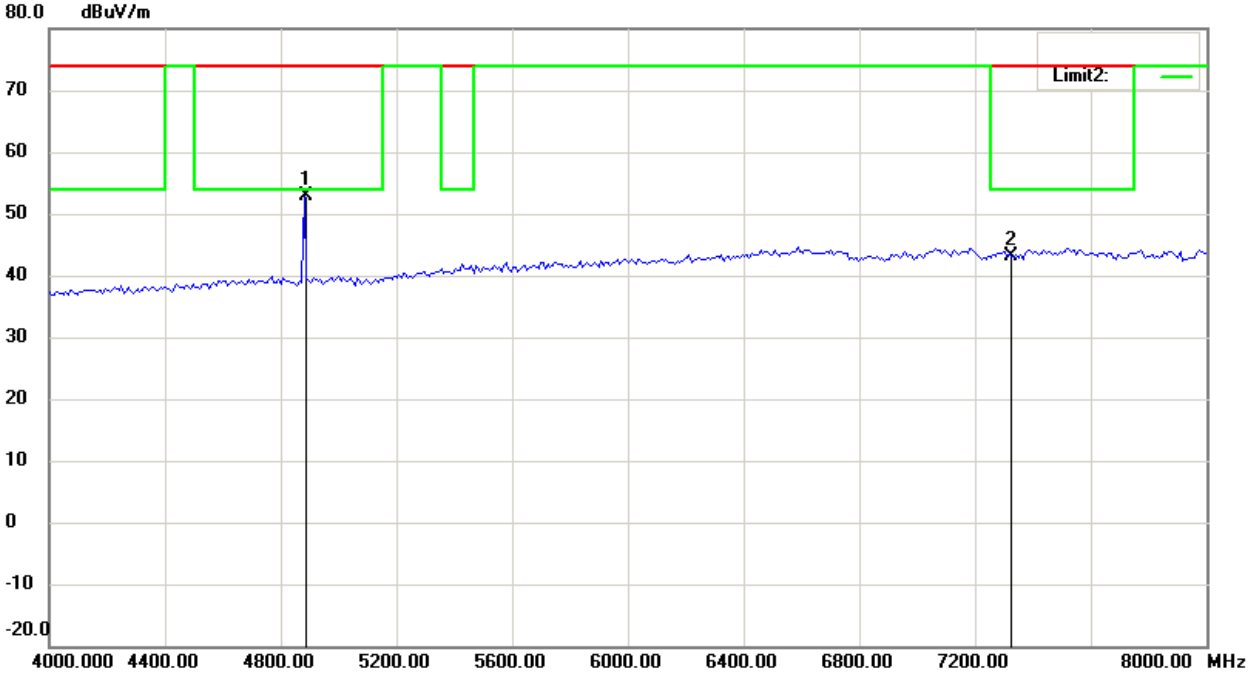
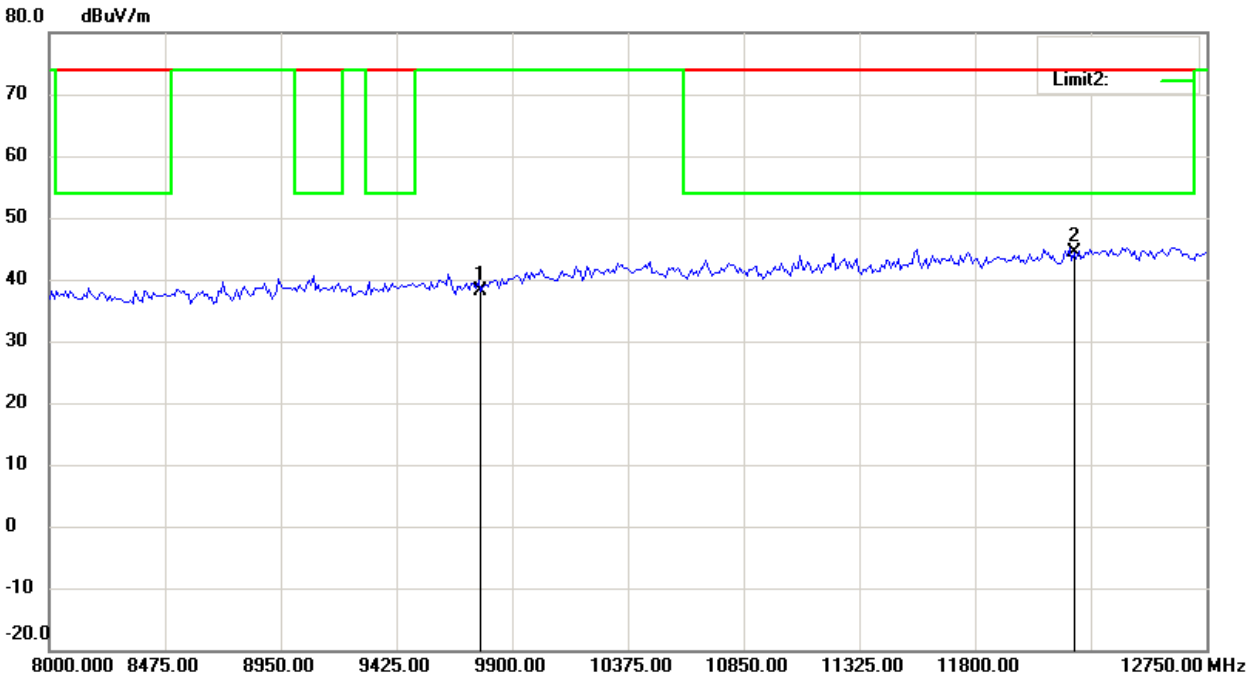
FCC ID: VEJTT-FHM2P4G-A12





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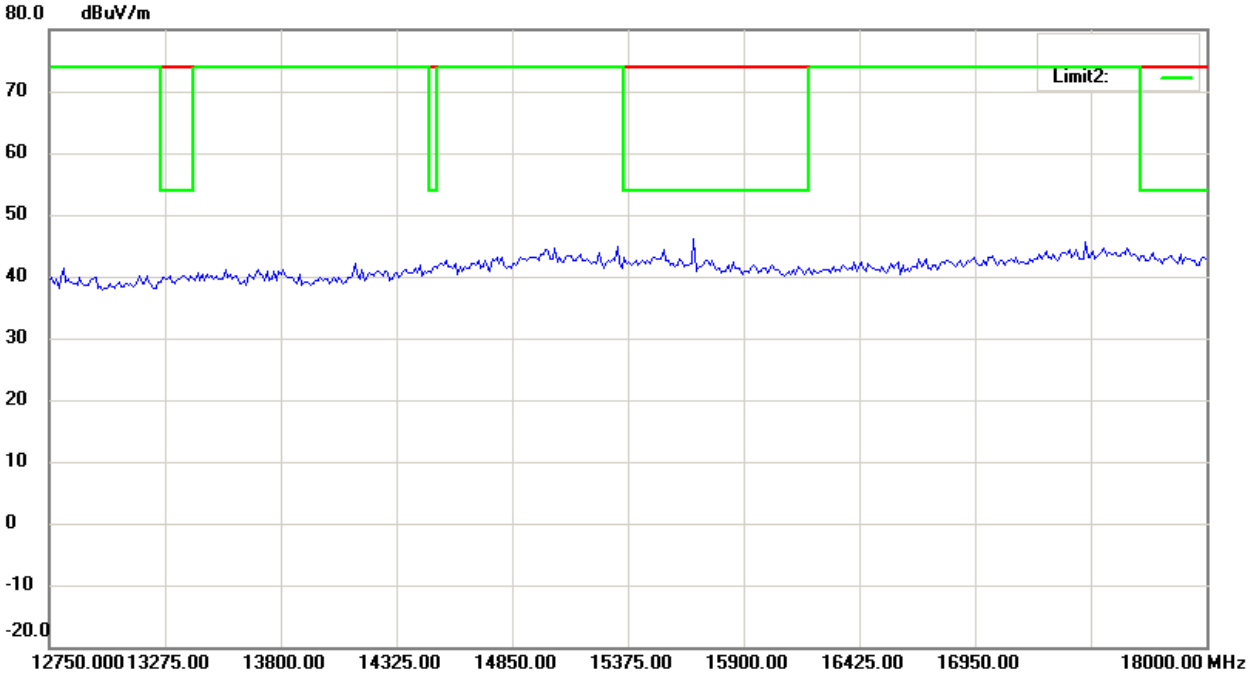

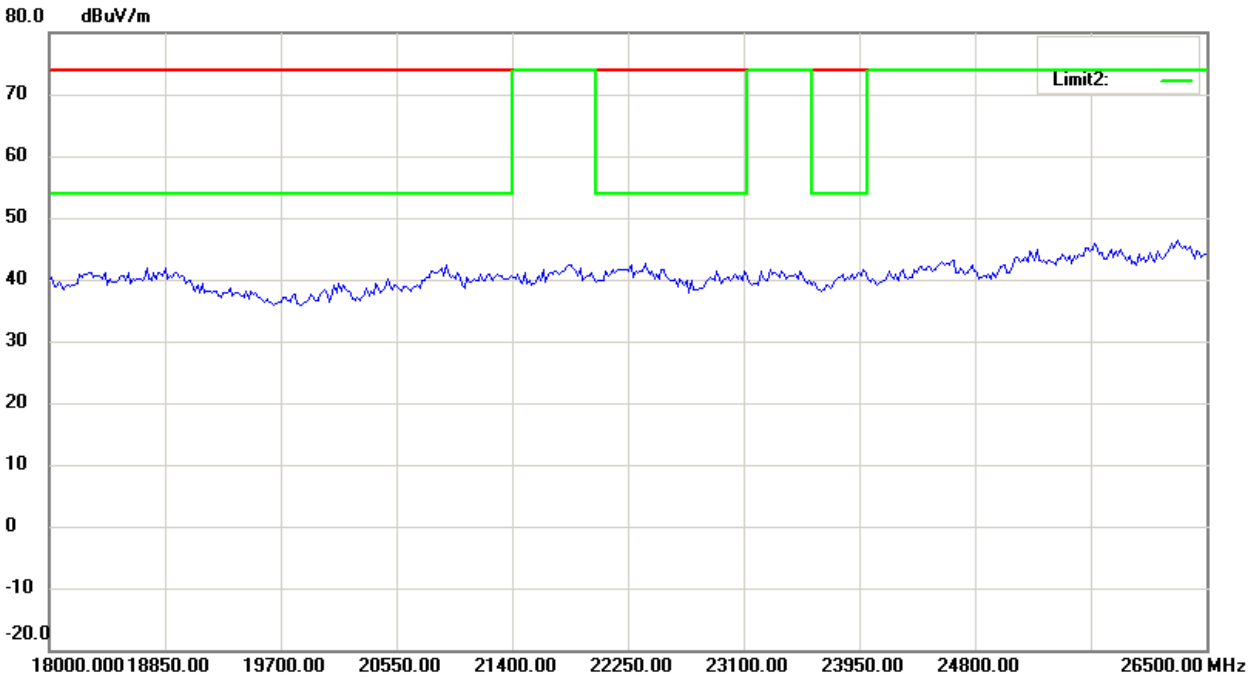

Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

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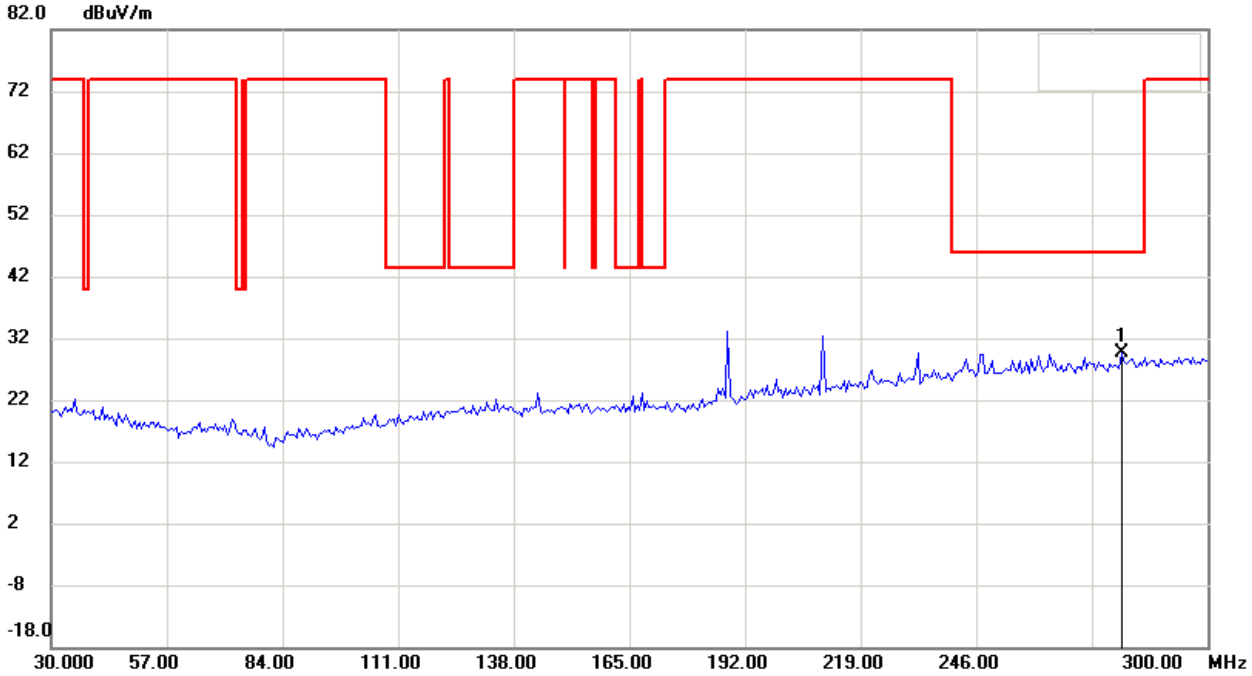
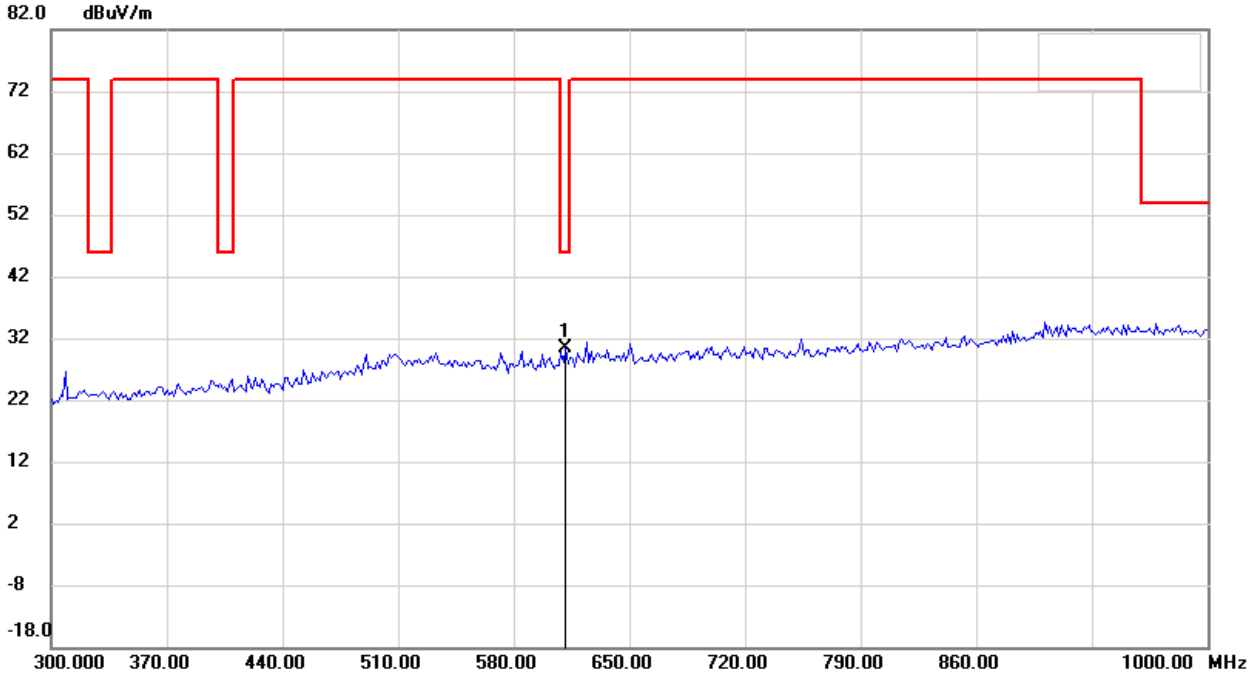
FCC ID: VEJTT-FHM2P4G-A12

Antenna Polarization V





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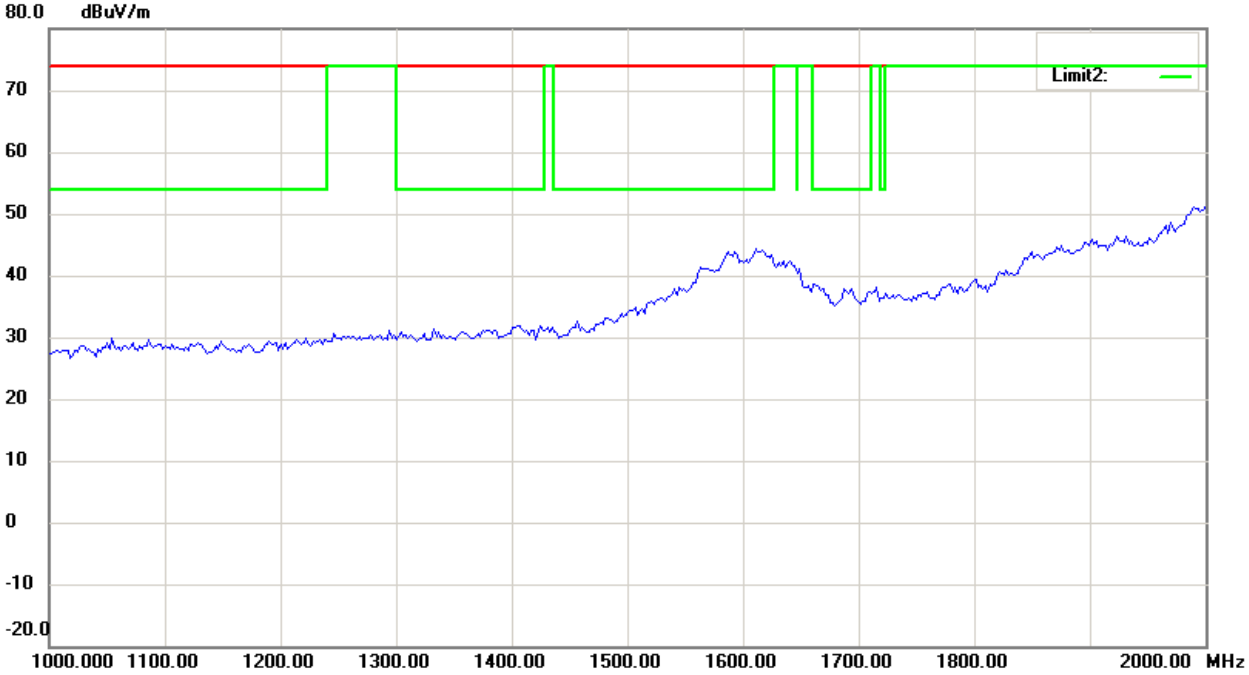

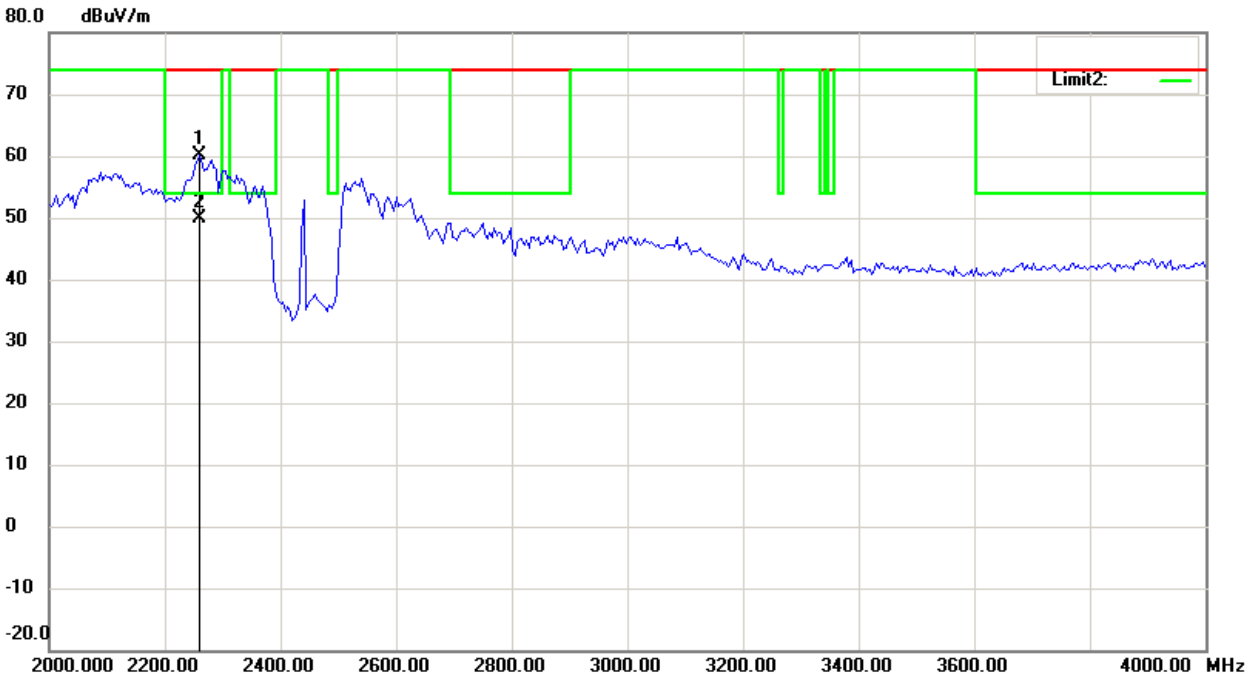

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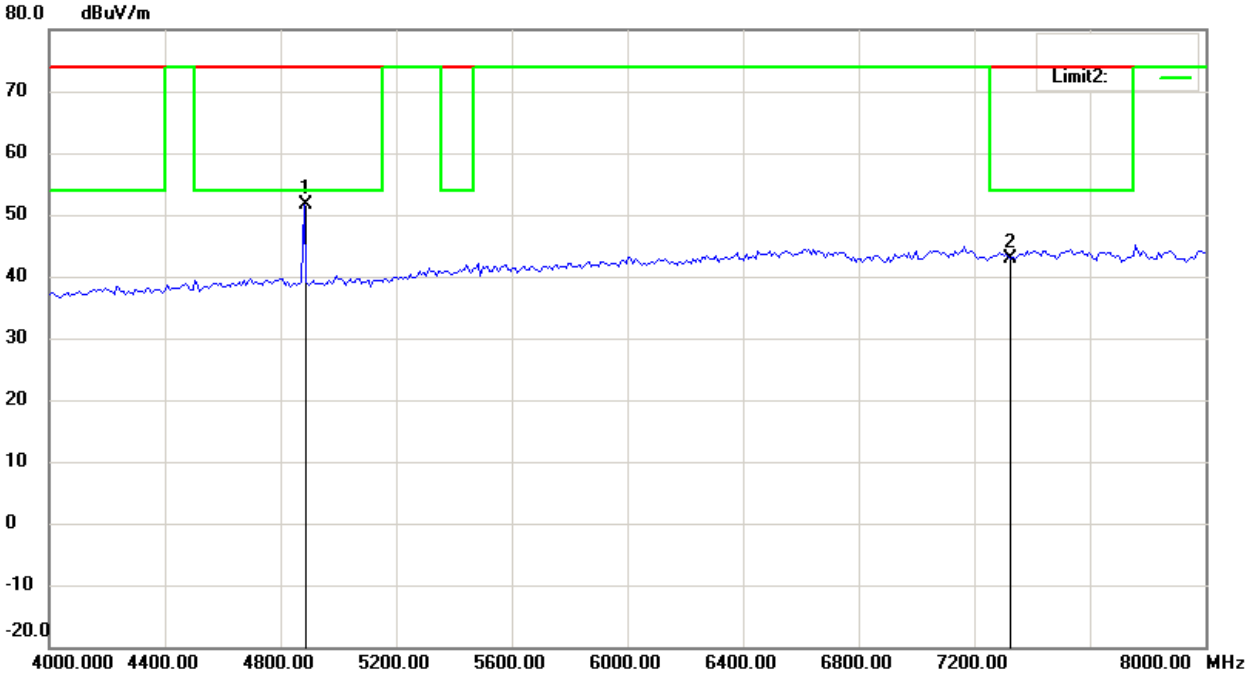

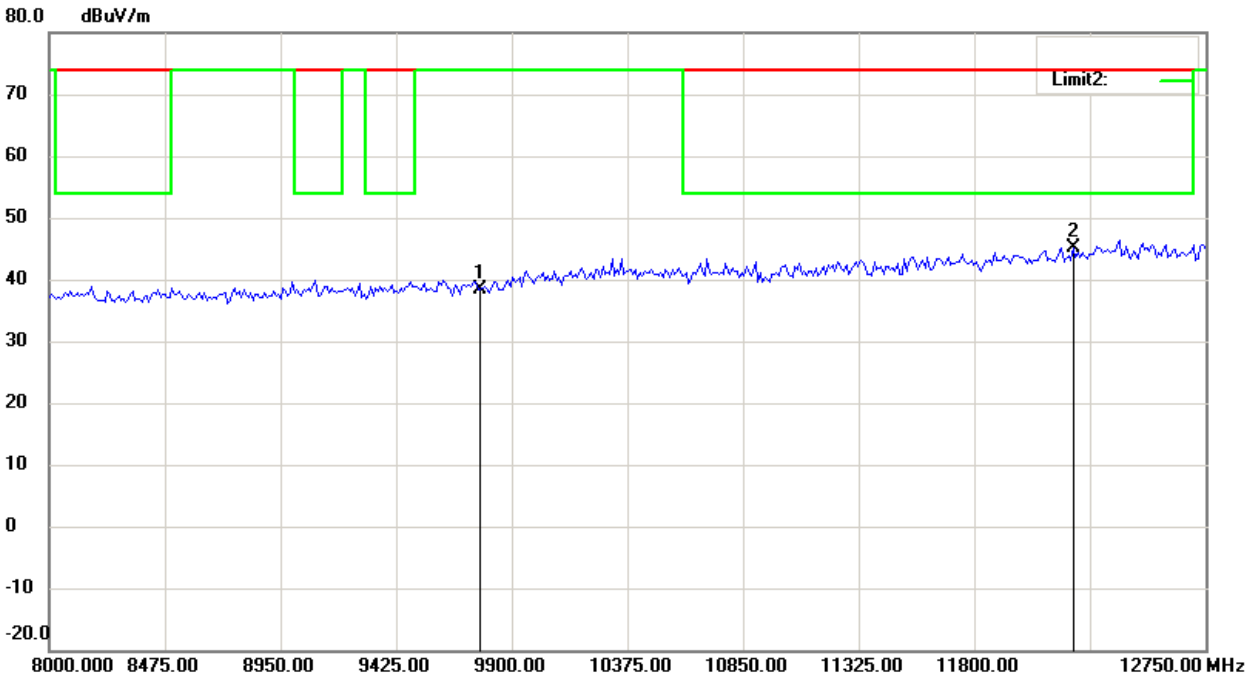

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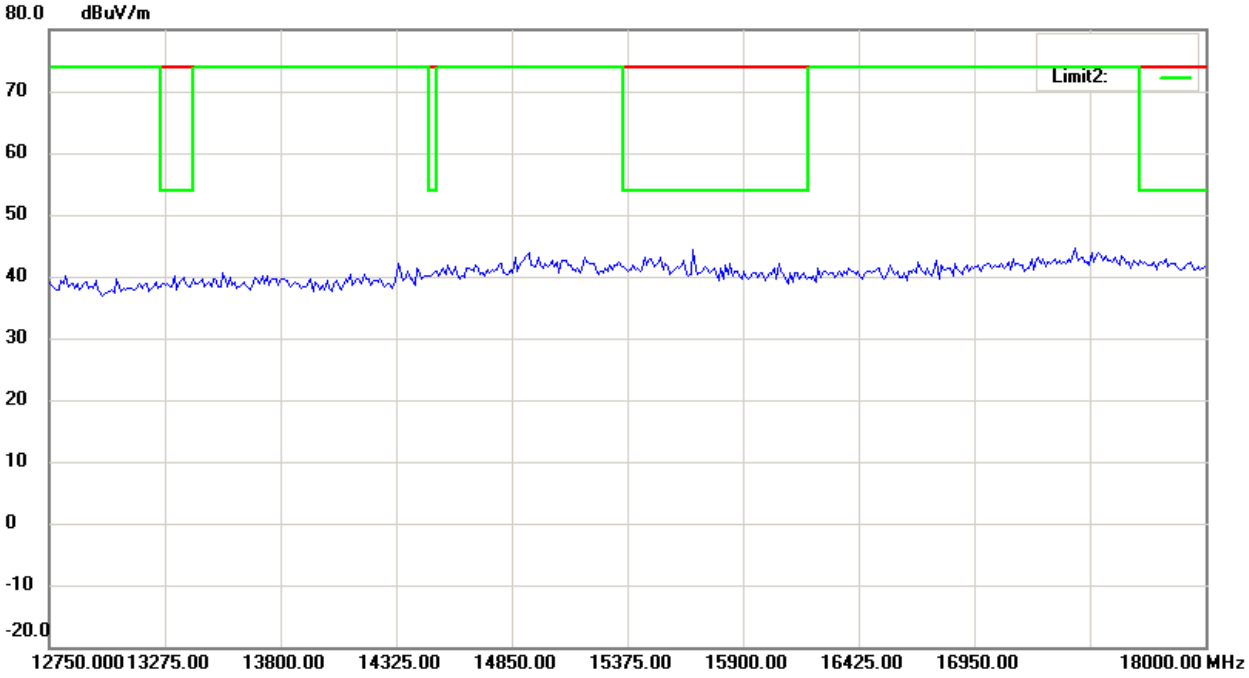

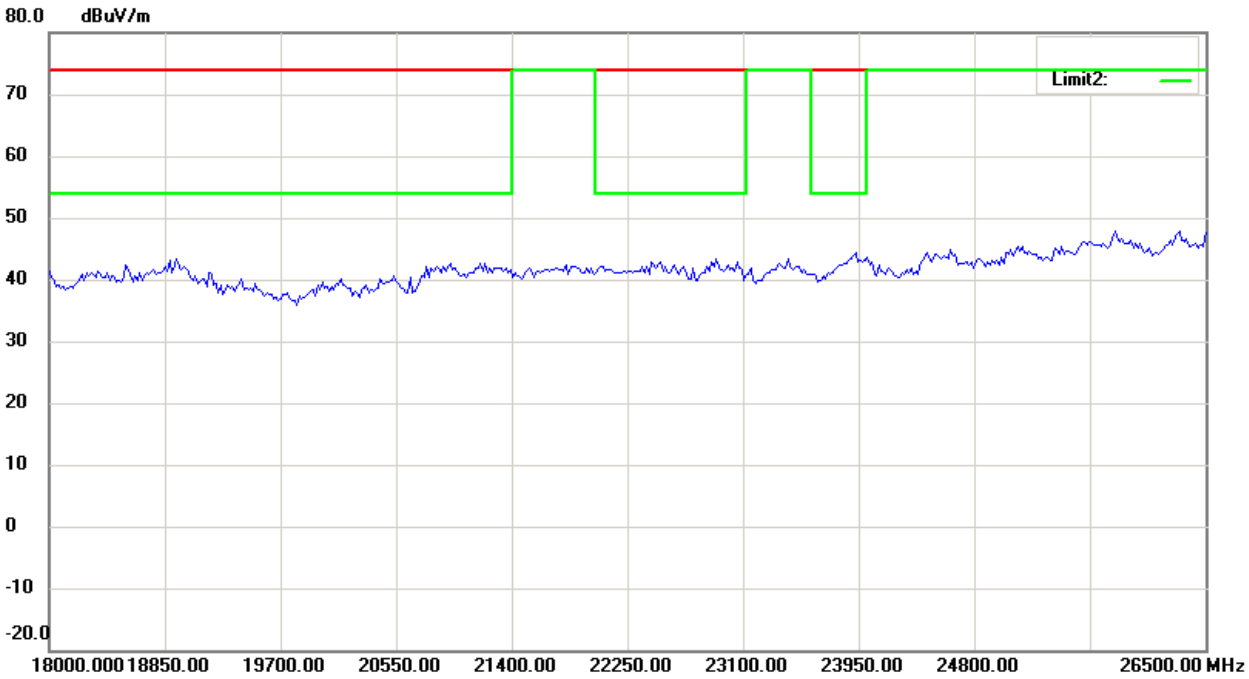

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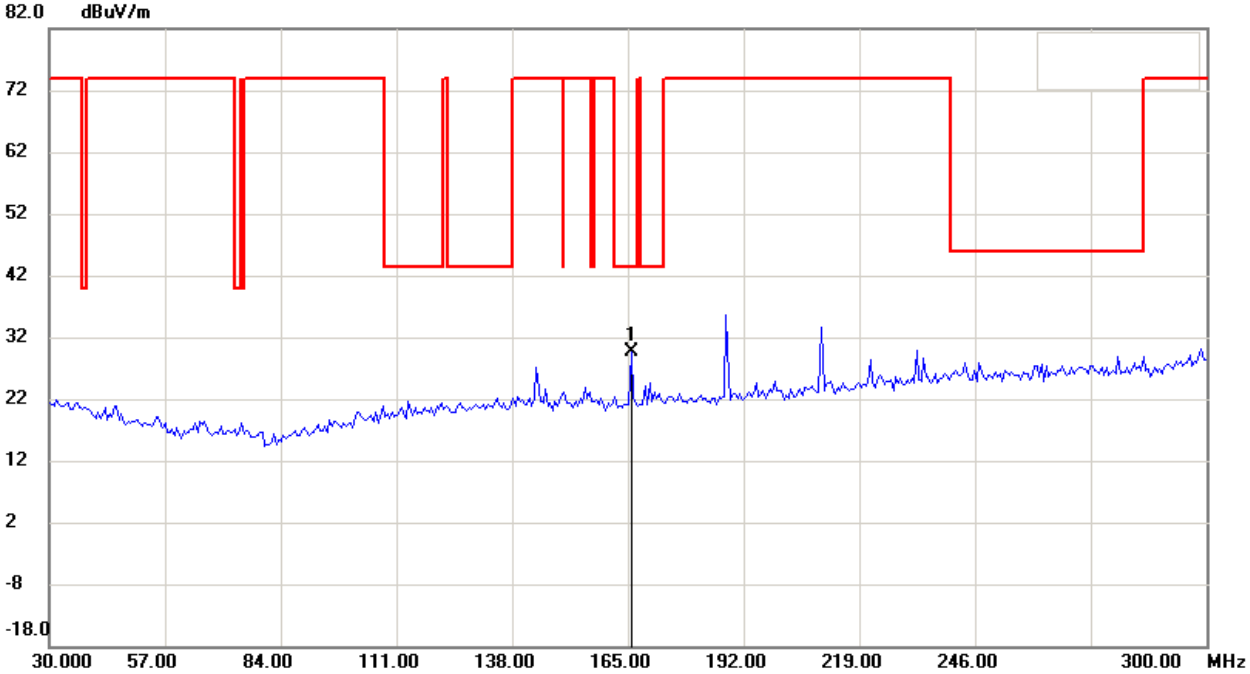
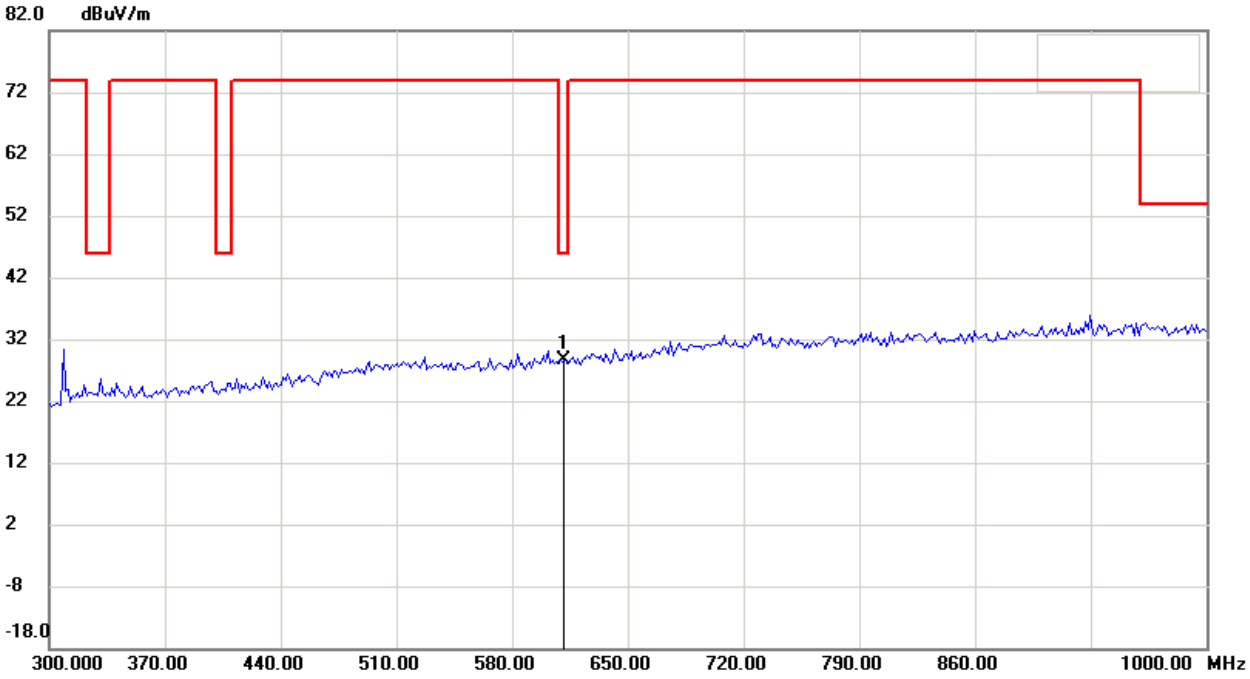
FCC ID: VEJTT-FHM2P4G-A12

Channel 78

Antenna Polarization H





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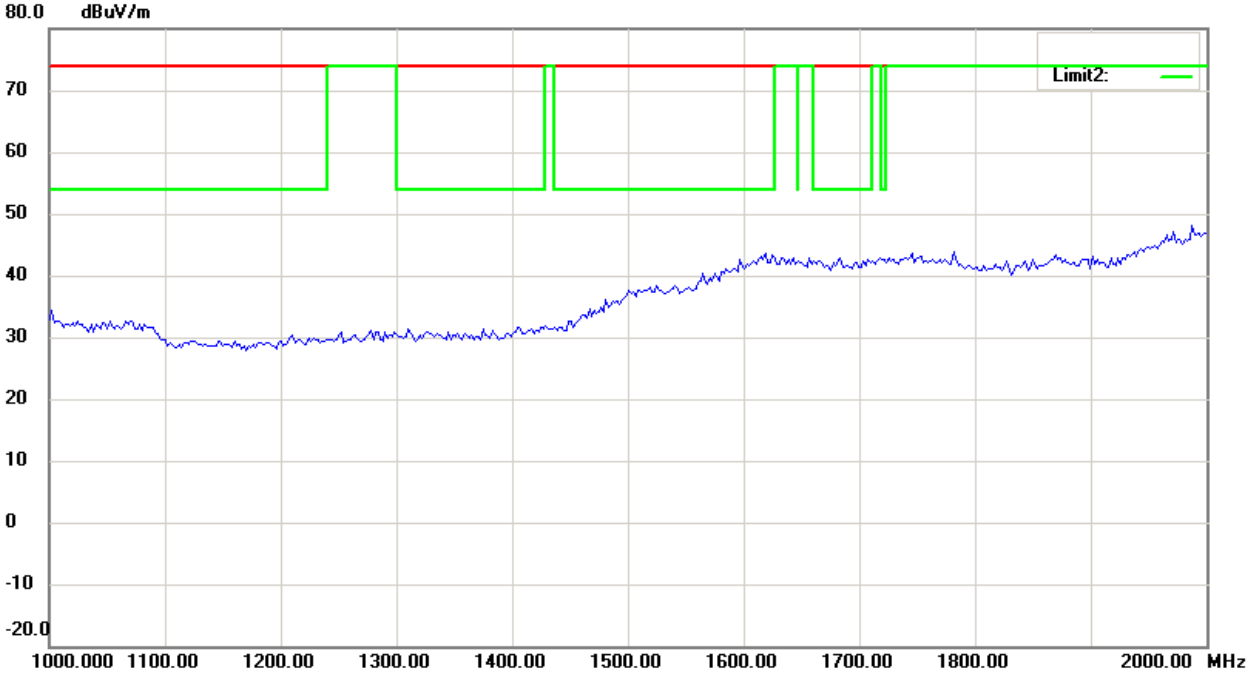

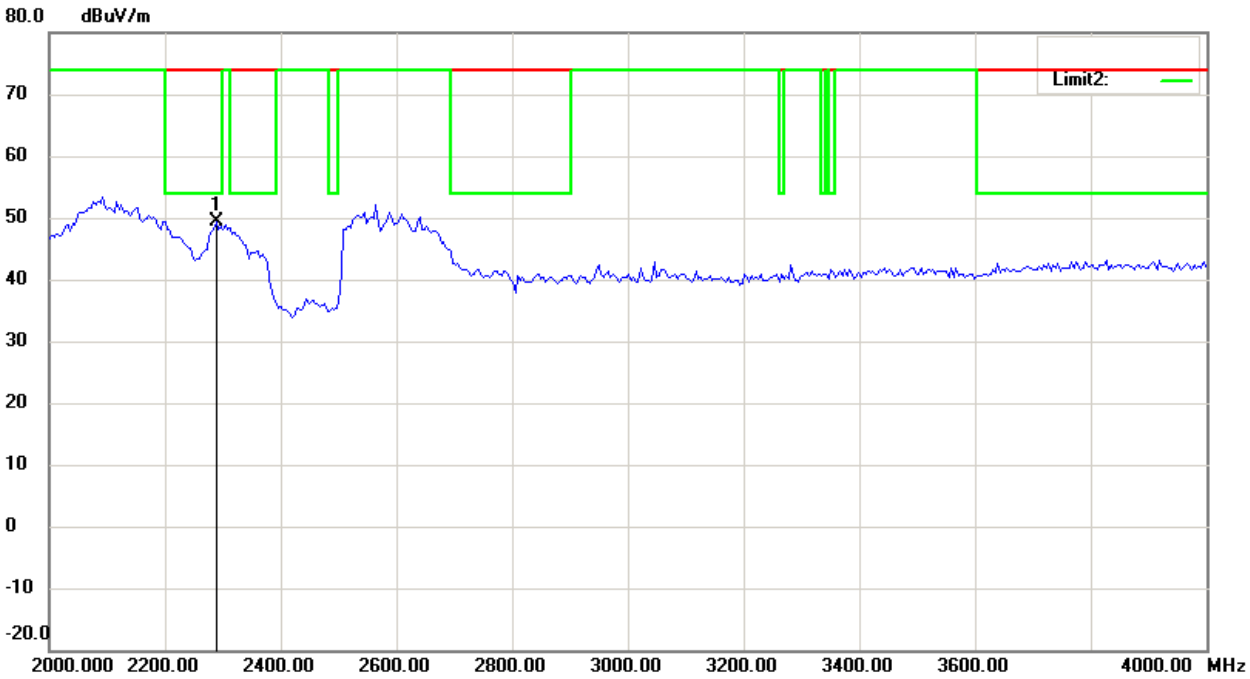

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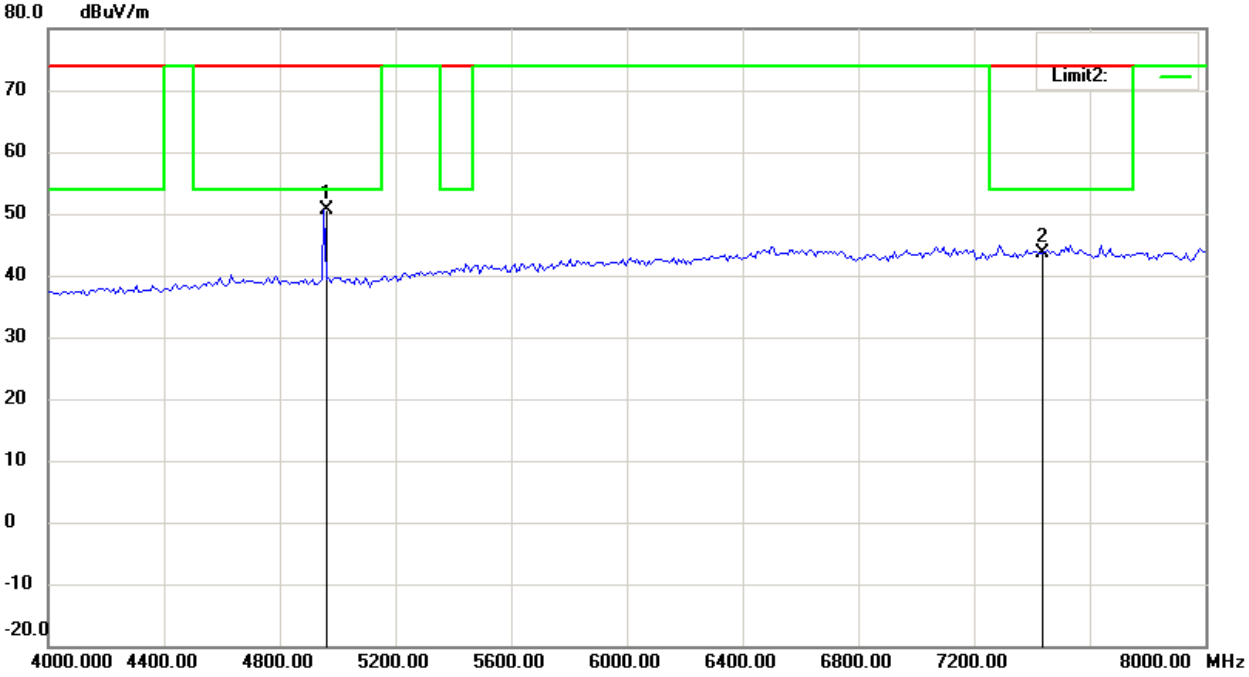

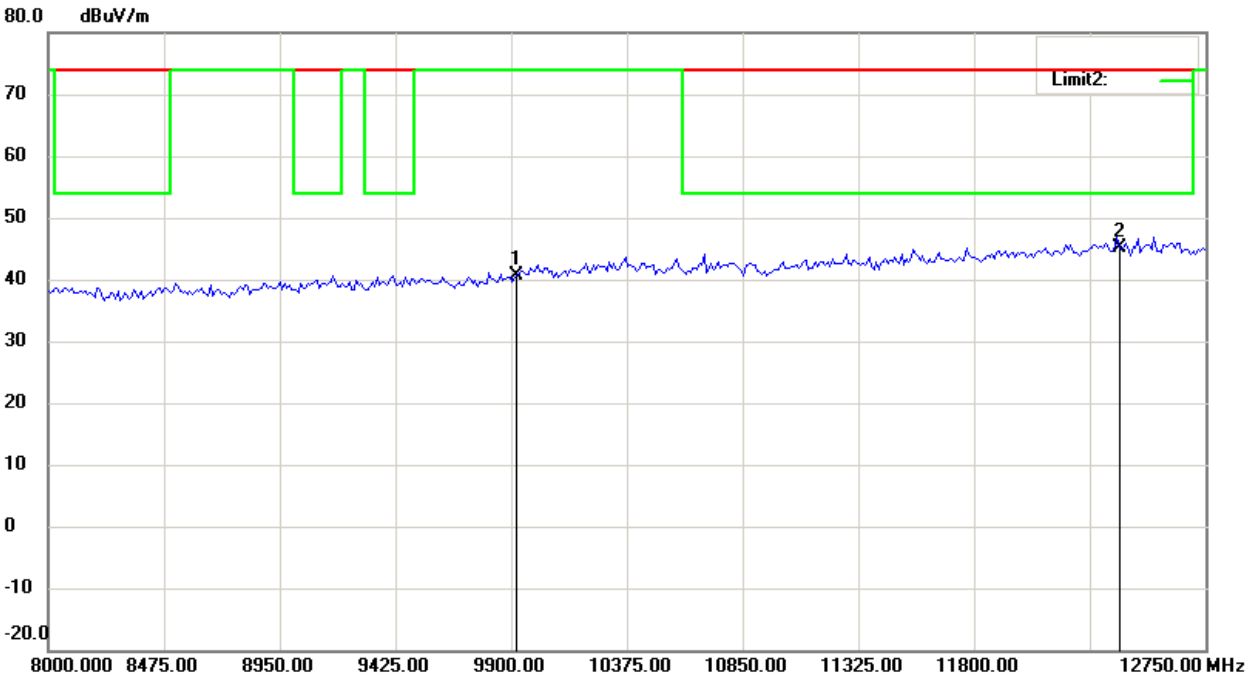

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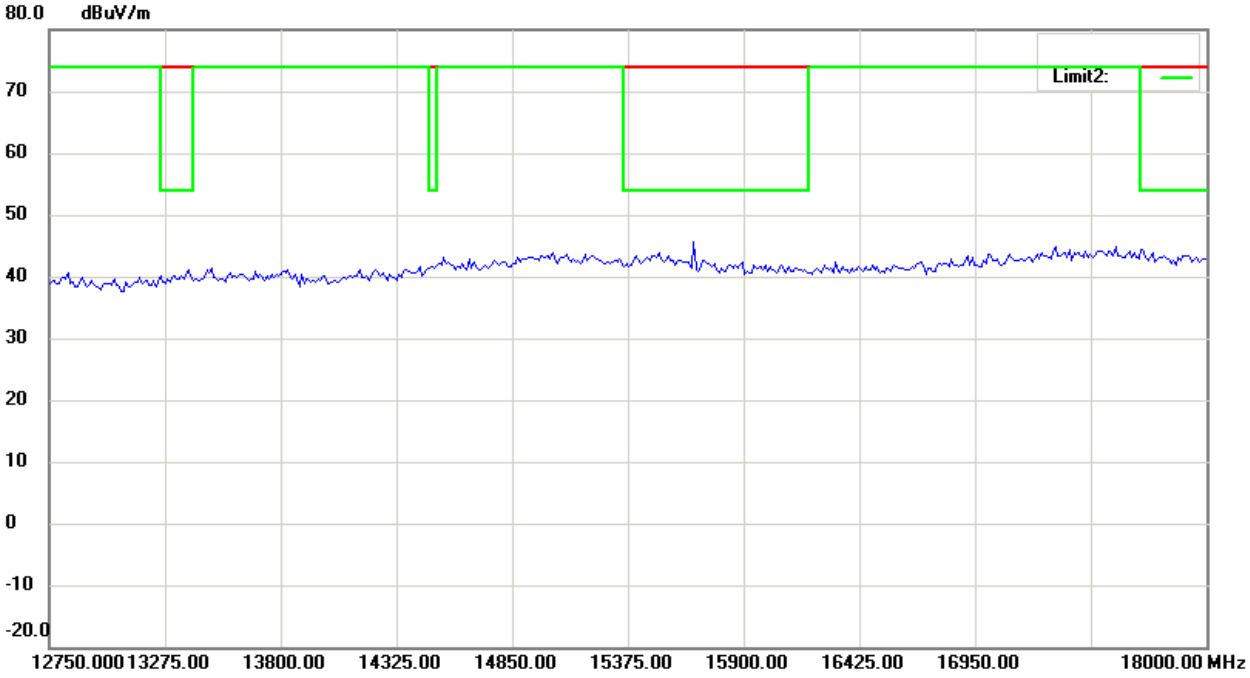

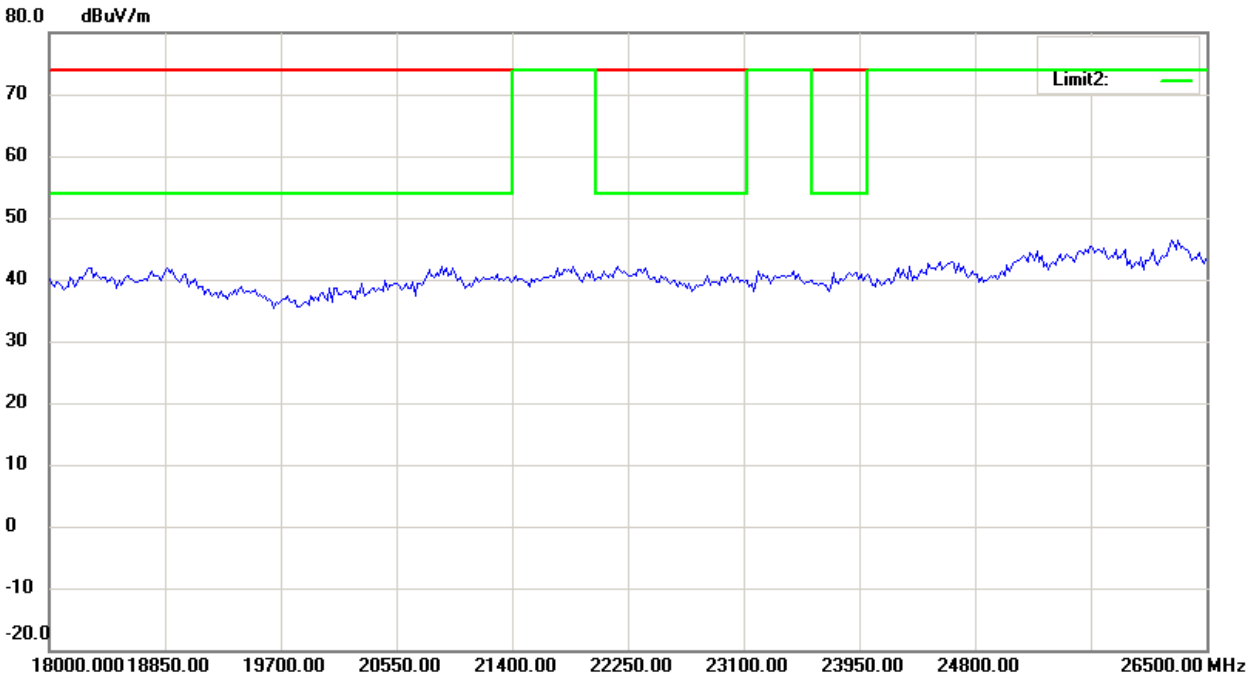

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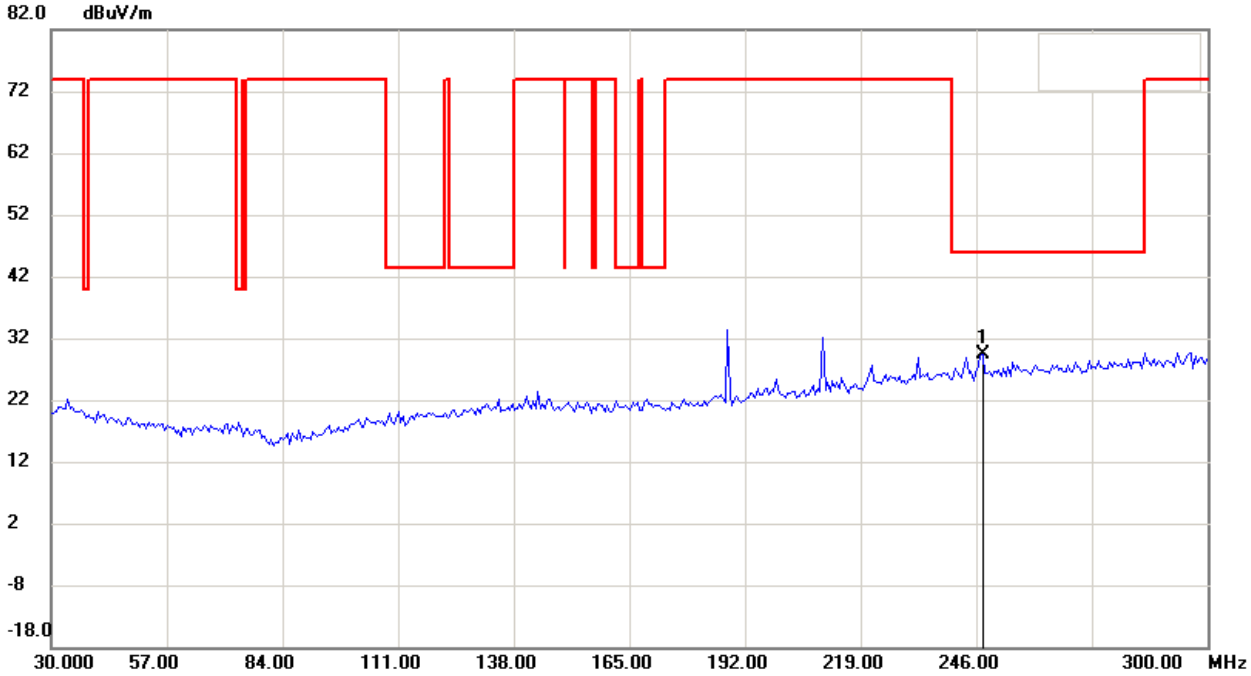
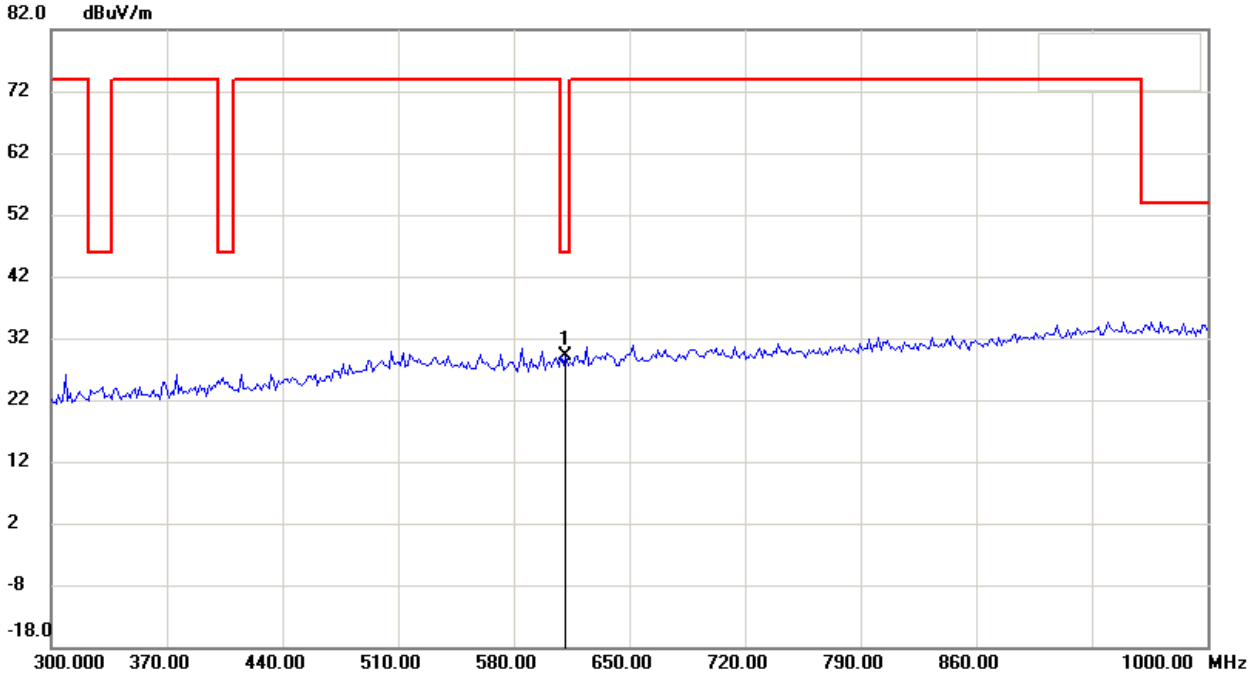
Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

Antenna Polarization V





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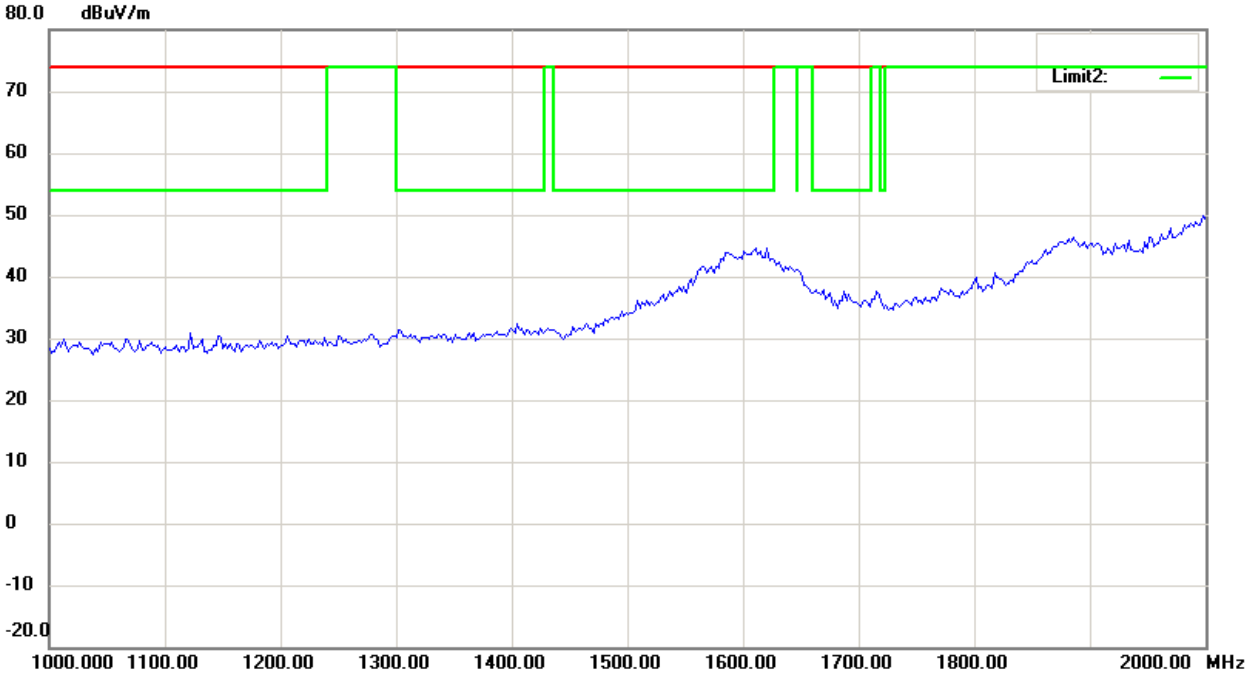

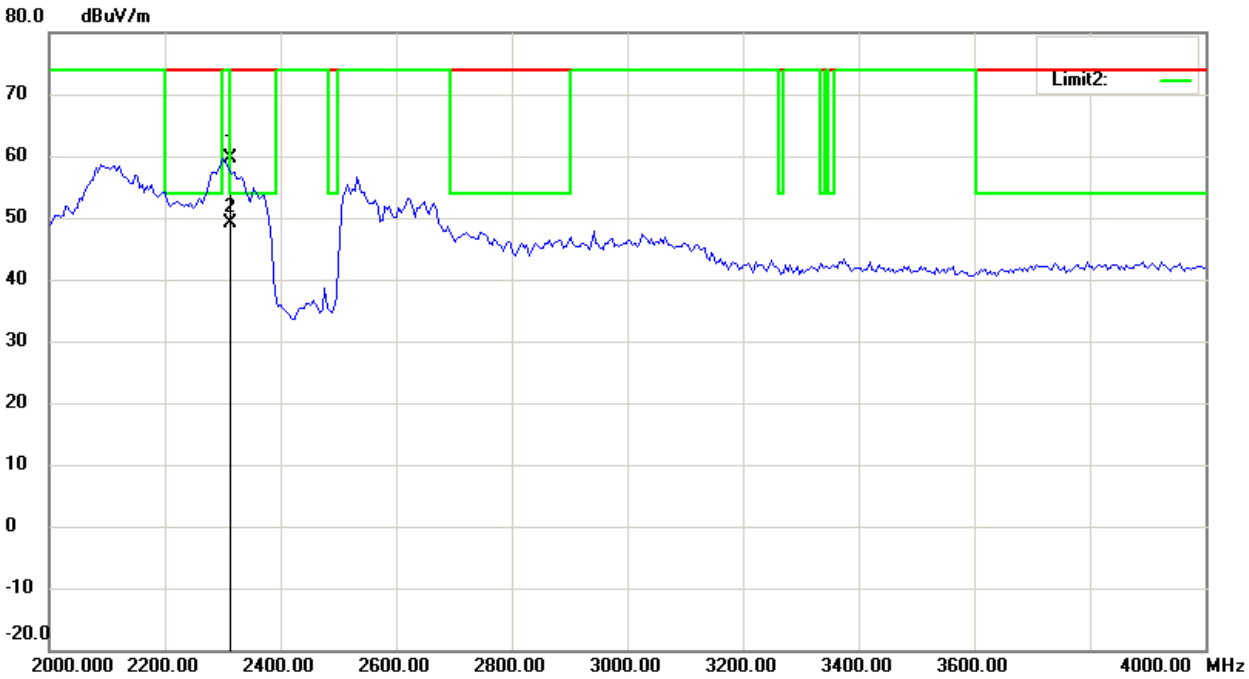

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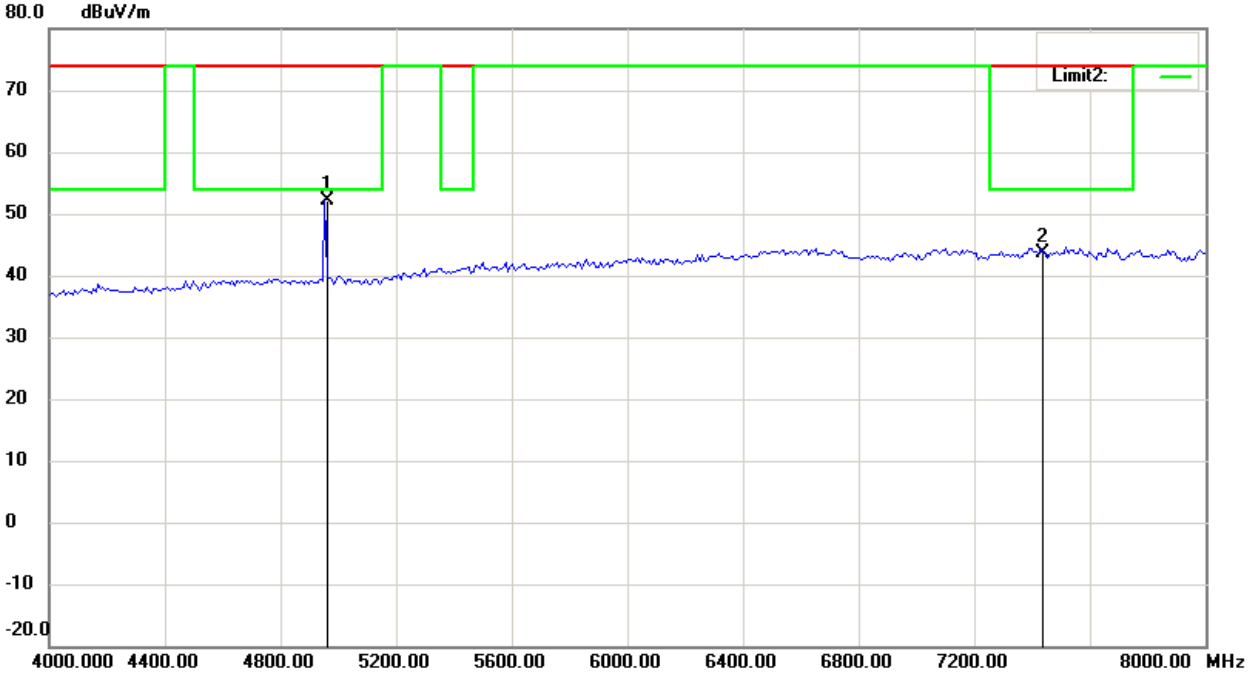
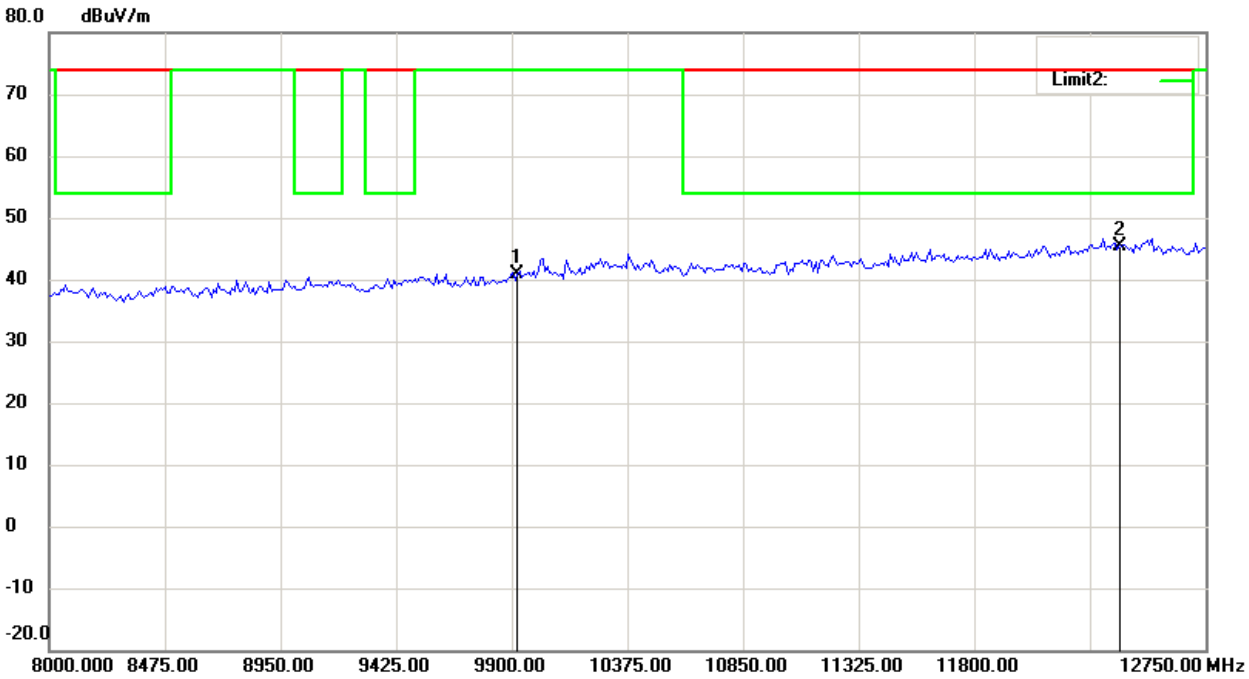
FCC ID: VEJTT-FHM2P4G-A12

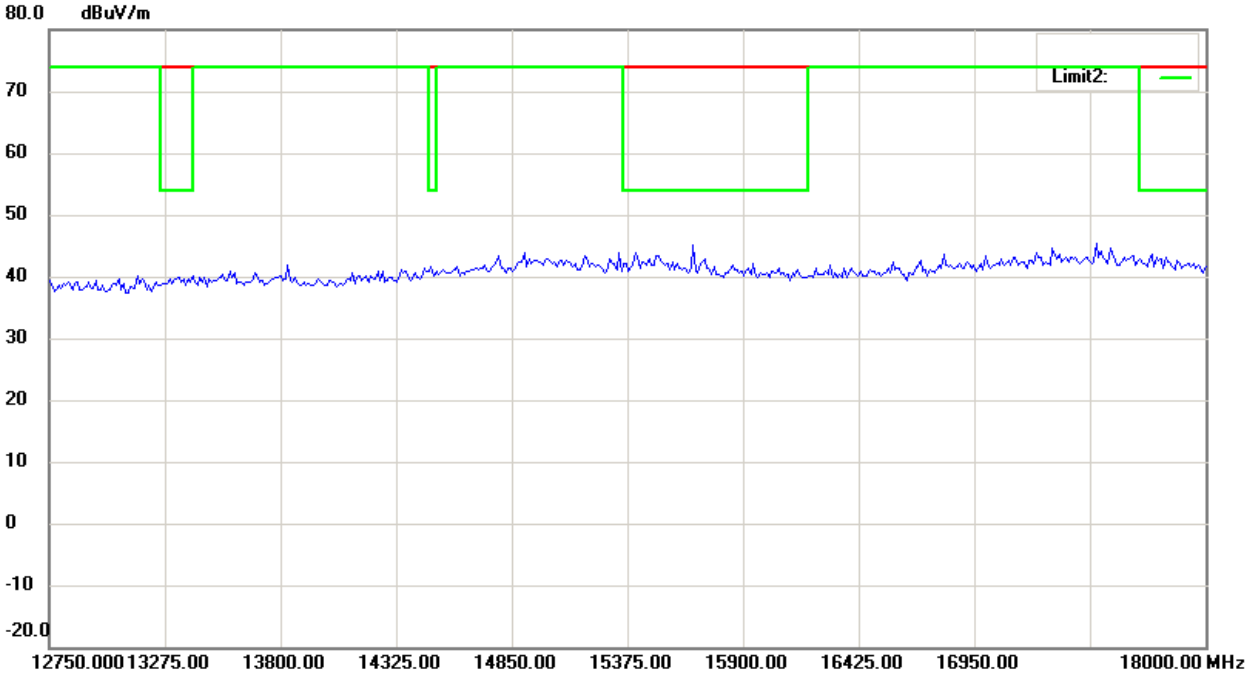


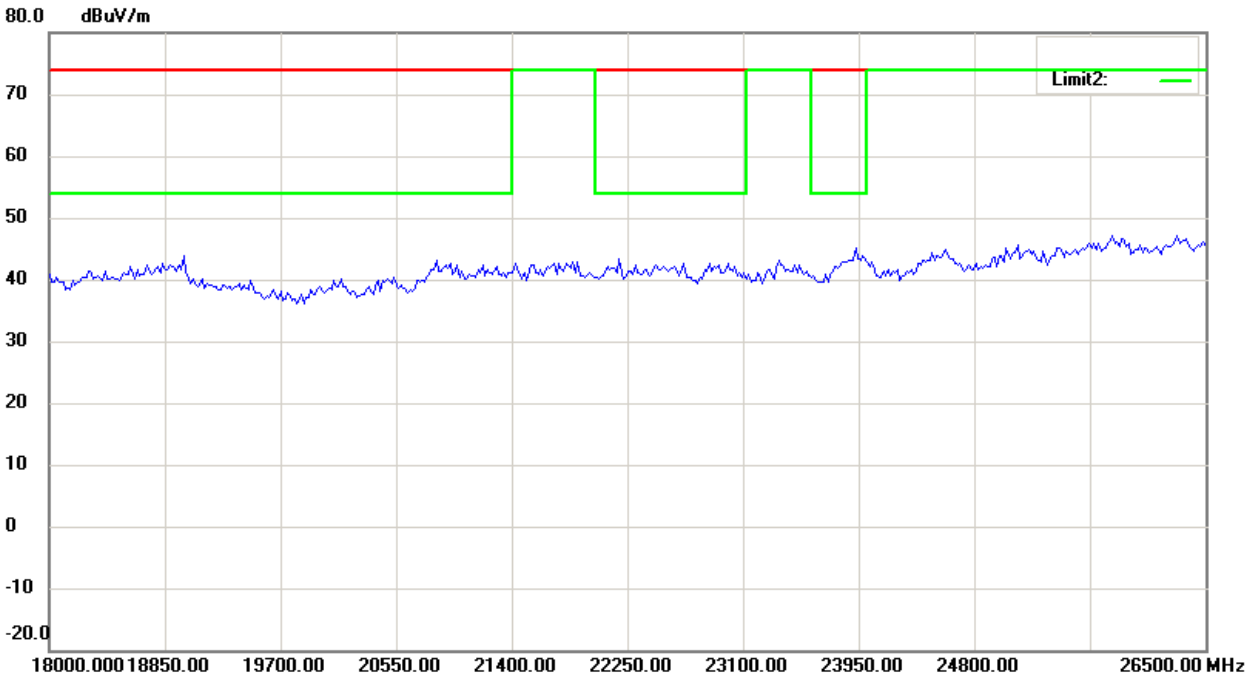


Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

1. **The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.**
2. **The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.**
3. **For corrected test results are listed in the relevant table of radiated test data of this test report.**

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12





Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

1. **The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.**
2. **The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.**
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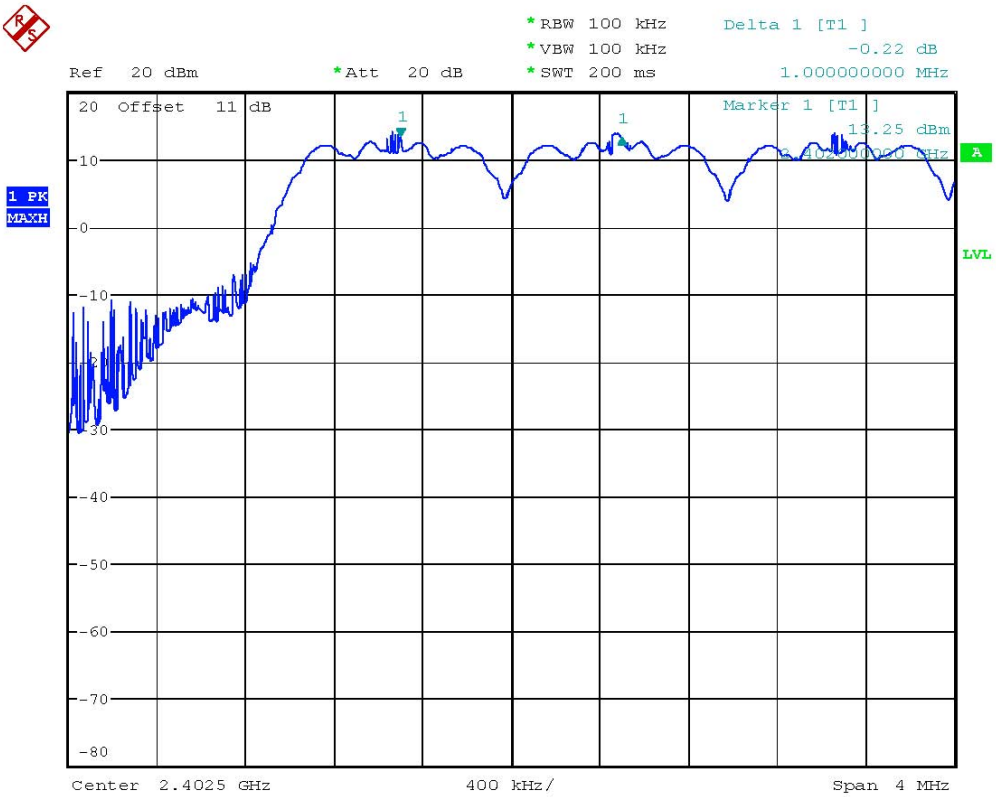
Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

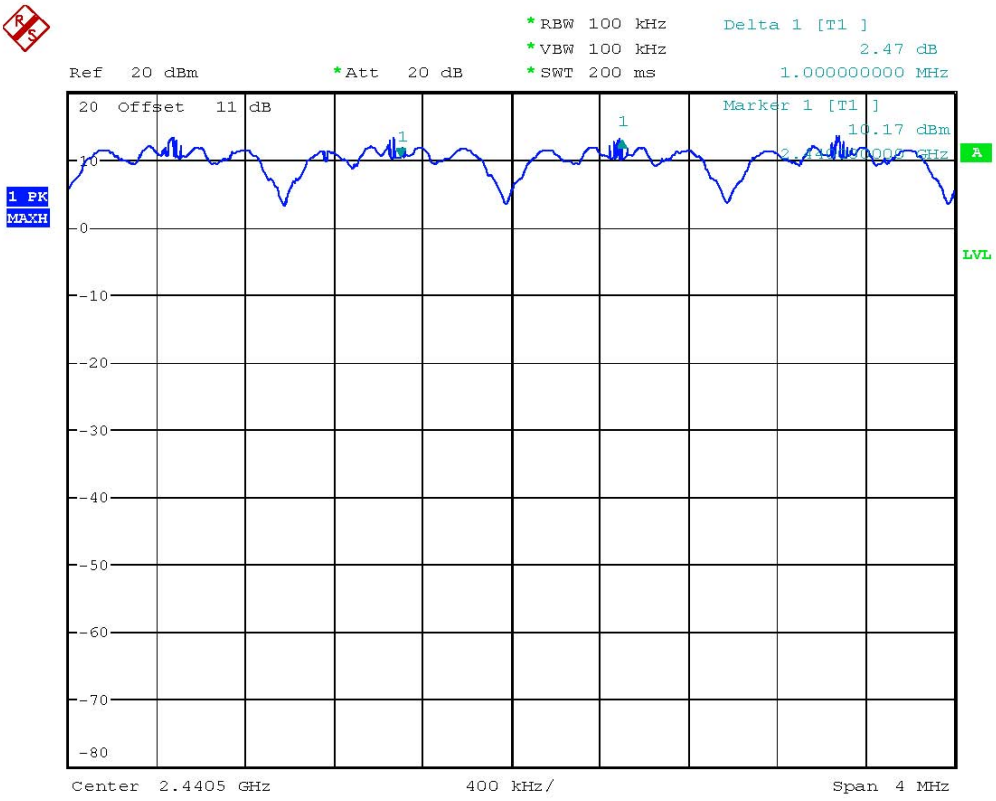
Carrier Frequency Separation



FREQUENCY SEPARATION 2402MHz

Date: 25.APR.2009 15:34:55

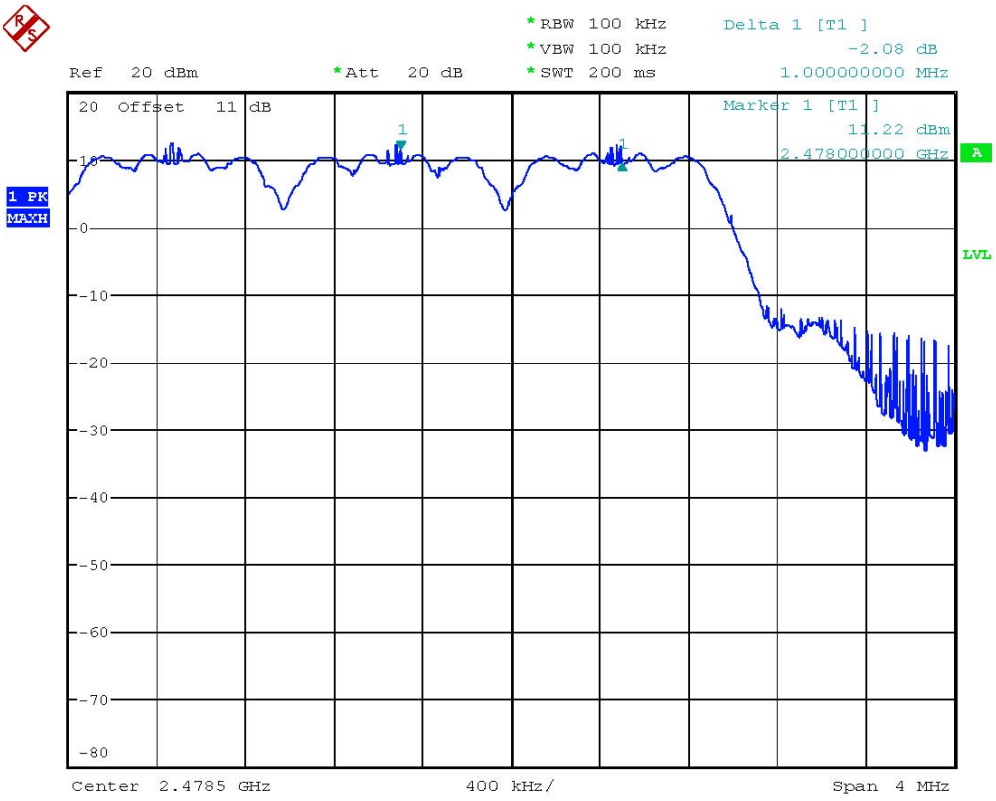
Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12



FREQUENCY SEPARATION 2441MHz

Date: 25.APR.2009 15:37:06

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

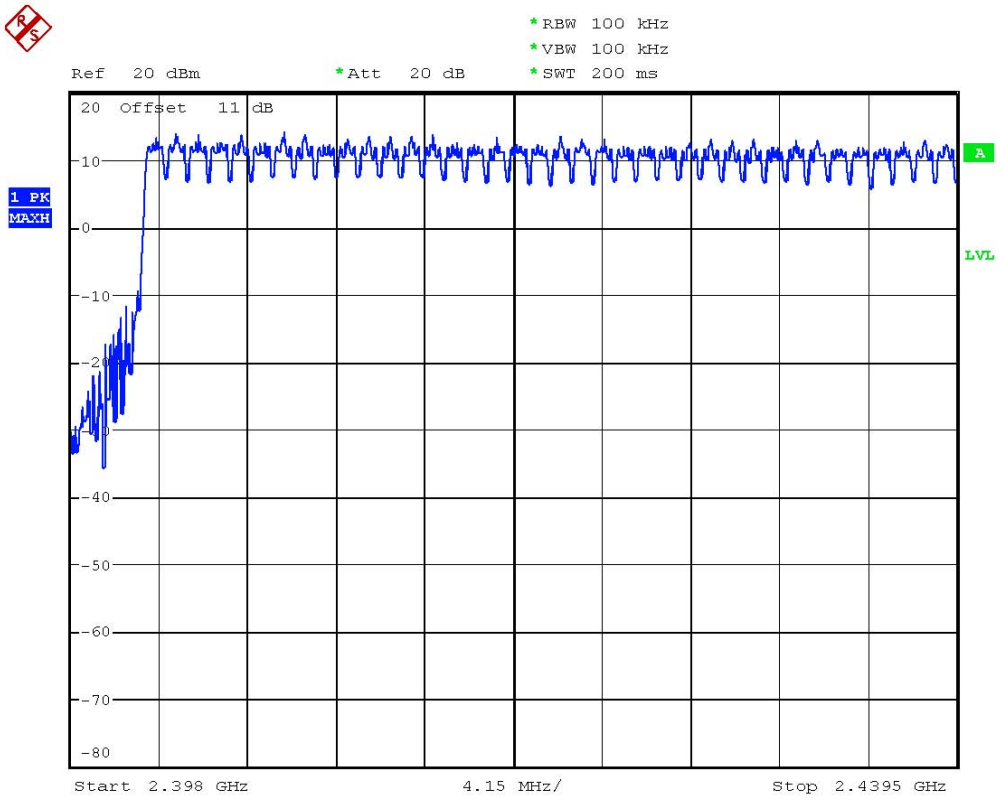


FREQUENCY SEPARATION 2479MHz

Date: 25.APR.2009 15:39:15

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

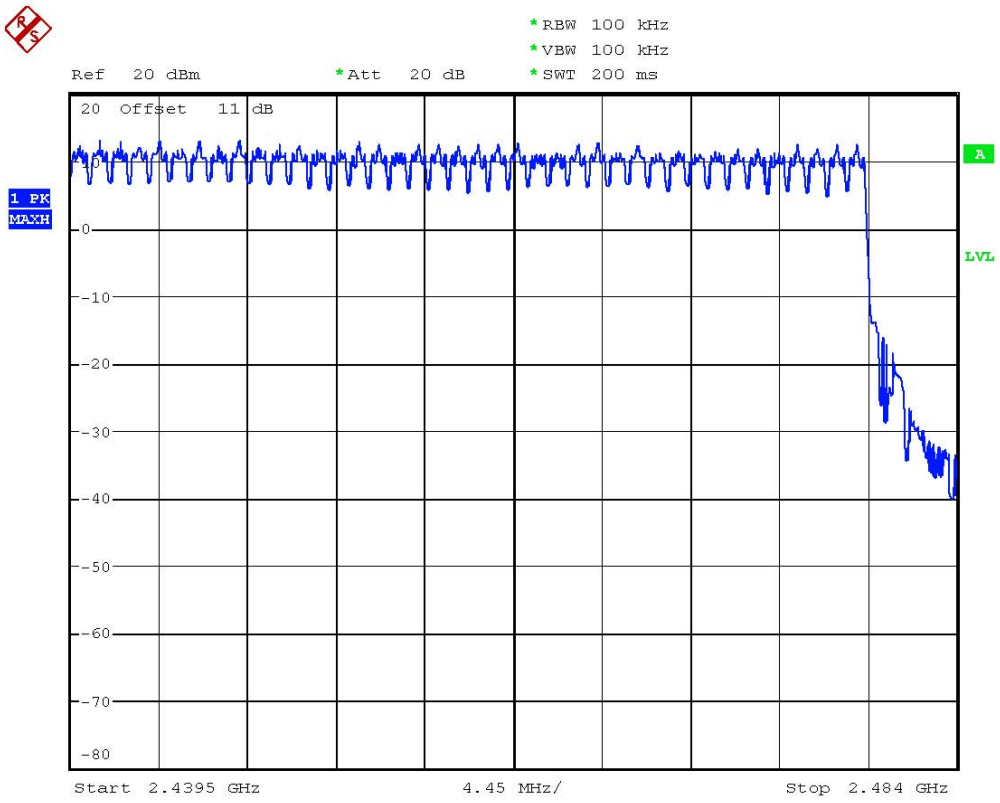
Number of Hopping Frequencies



NUMBER OF HOPPING

Date: 25.APR.2009 15:21:26

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

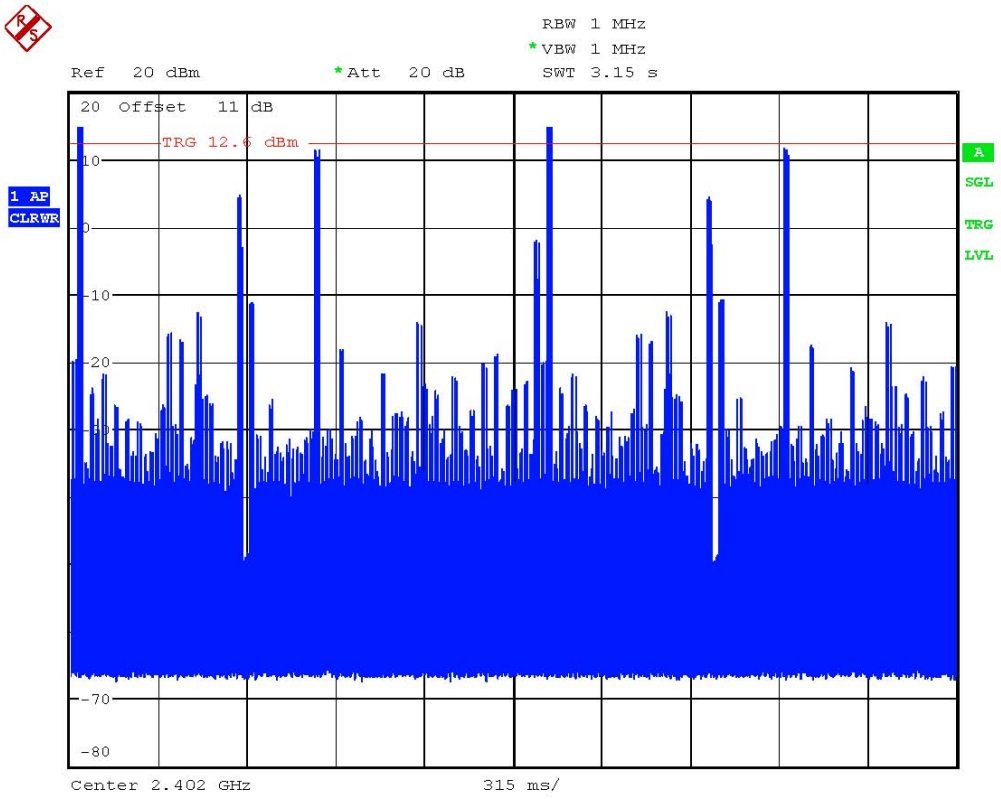


NUMBER OF HOPPING

Date: 25.APR.2009 15:31:49

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

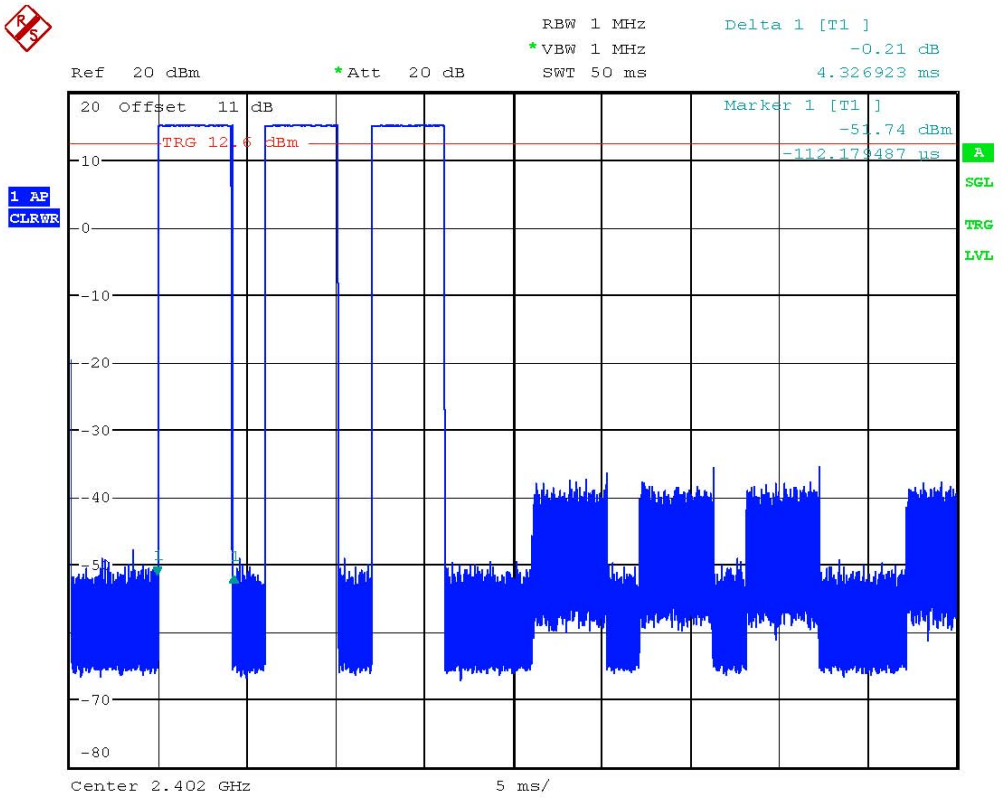
Time of Occupancy (Dwell Time)



DWELL TIME 2402MHz (4.327ms * 3 * 20event = 259.62ms)

Date: 25.APR.2009 15:12:46

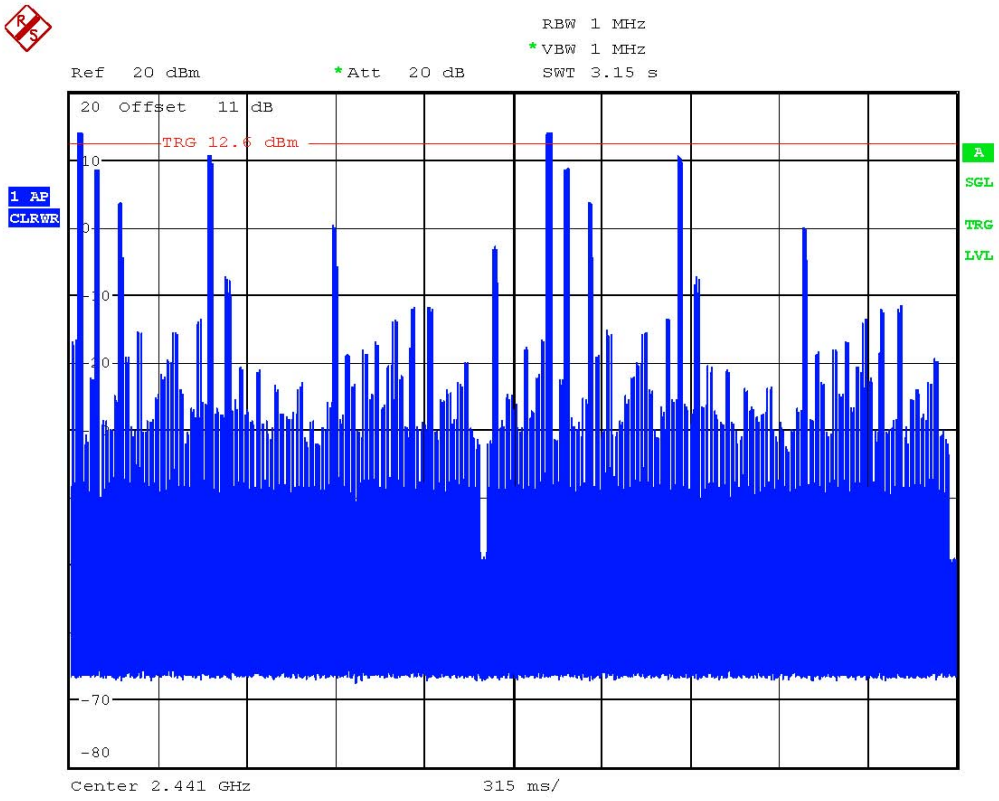
Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12



DWELL TIME 2402MHz

Date: 25.APR.2009 15:10:50

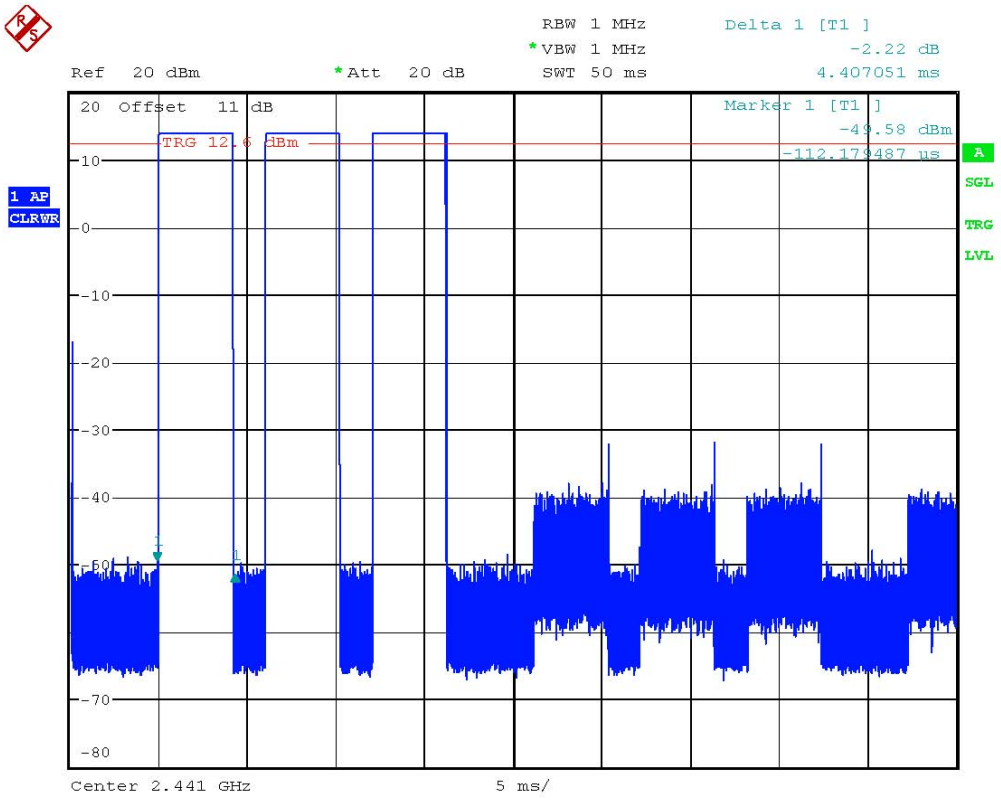
Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12



DWELL TIME 2441MHz (4.407ms * 3 * 20event = 264.42ms)

Date: 25.APR.2009 15:12:26

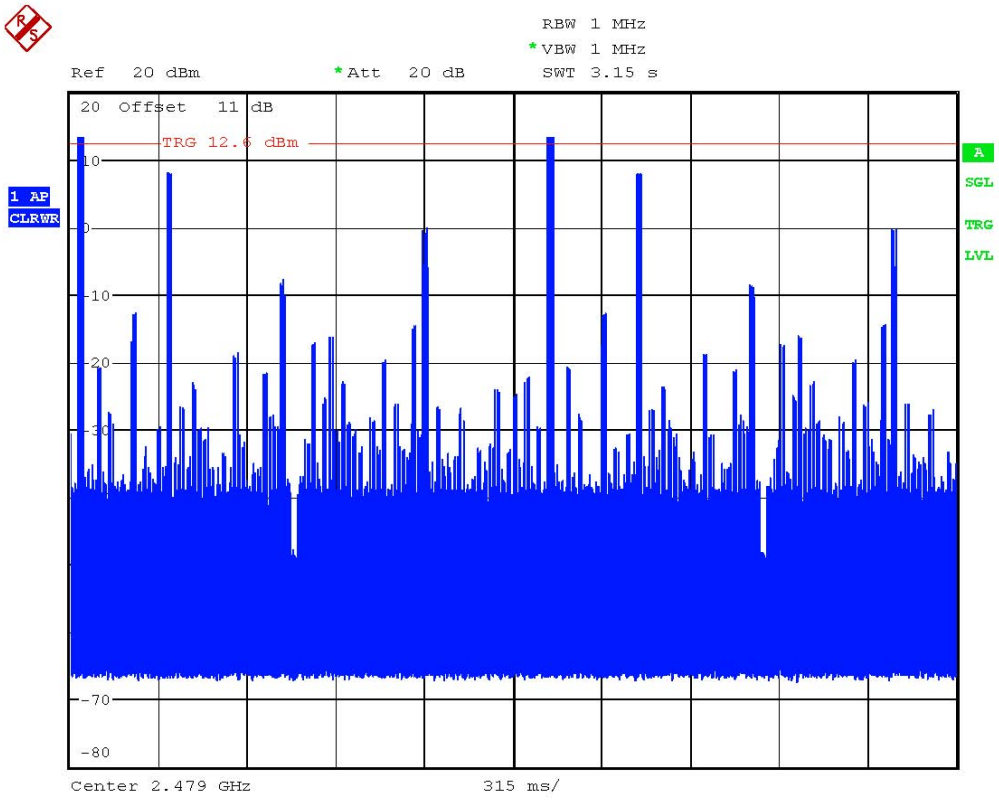
Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12



DWELL TIME 2441MHz

Date: 25.APR.2009 15:11:11

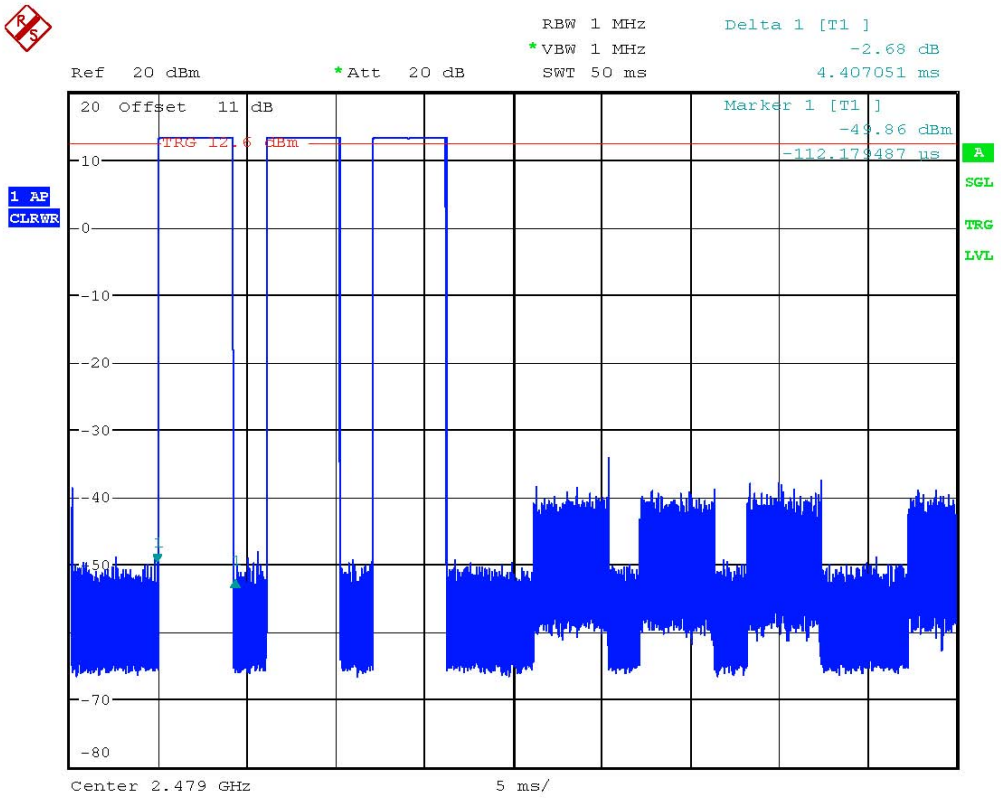
Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12



DWELL TIME 2479MHz (4.407ms * 3 * 20event = 264.42ms)

Date: 25.APR.2009 15:12:07

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

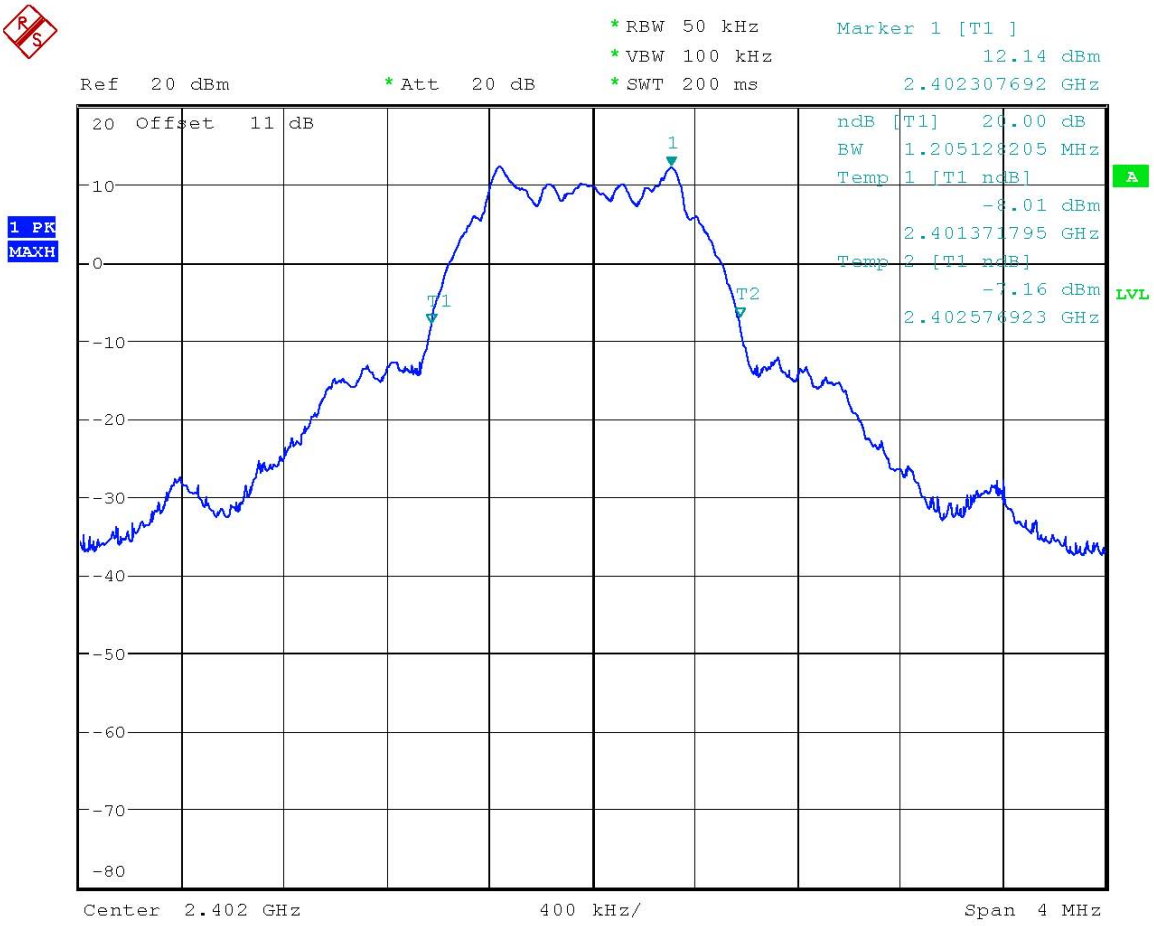


DWELL TIME 2479MHz

Date: 25.APR.2009 15:11:30

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

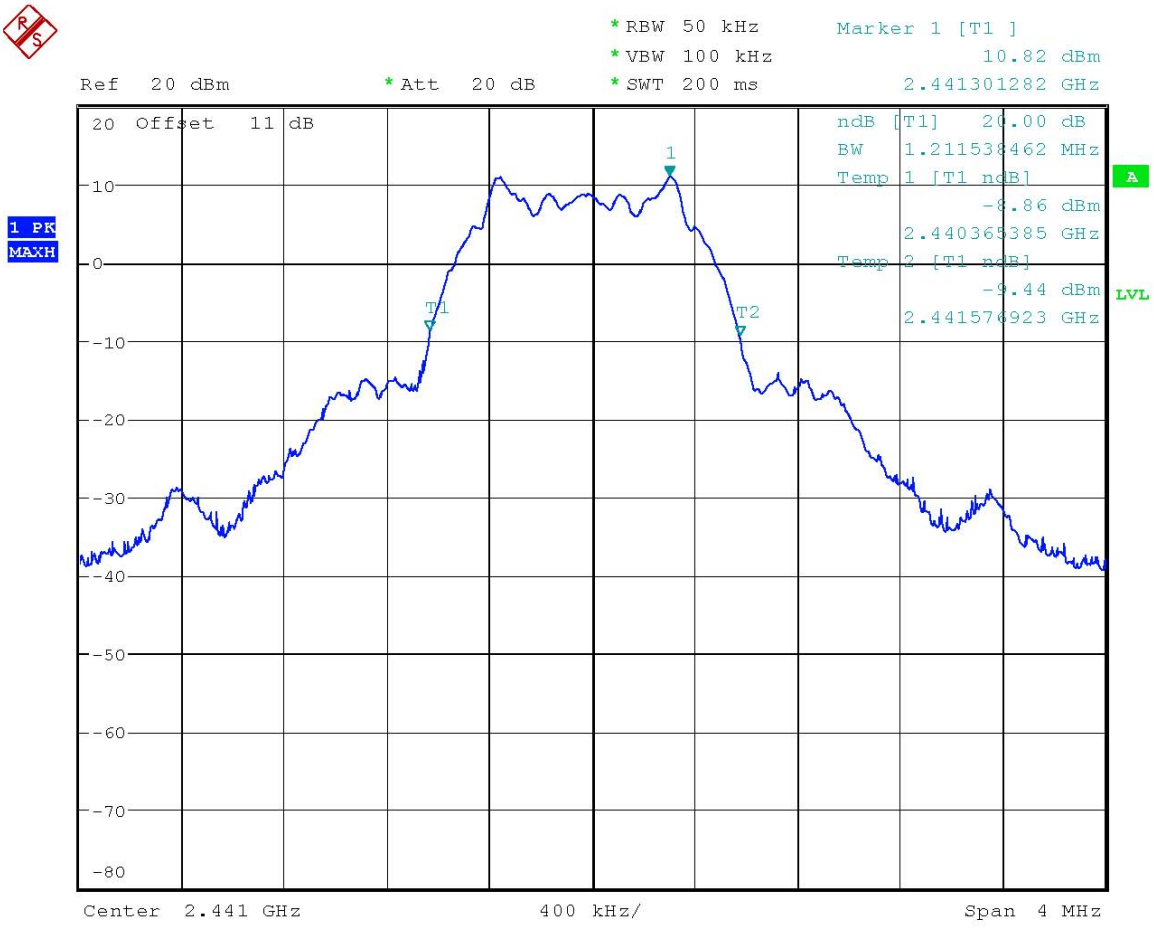
20dB Bandwidth



20DB BANDWIDTH 2402MHz

Date: 25.APR.2009 11:07:54

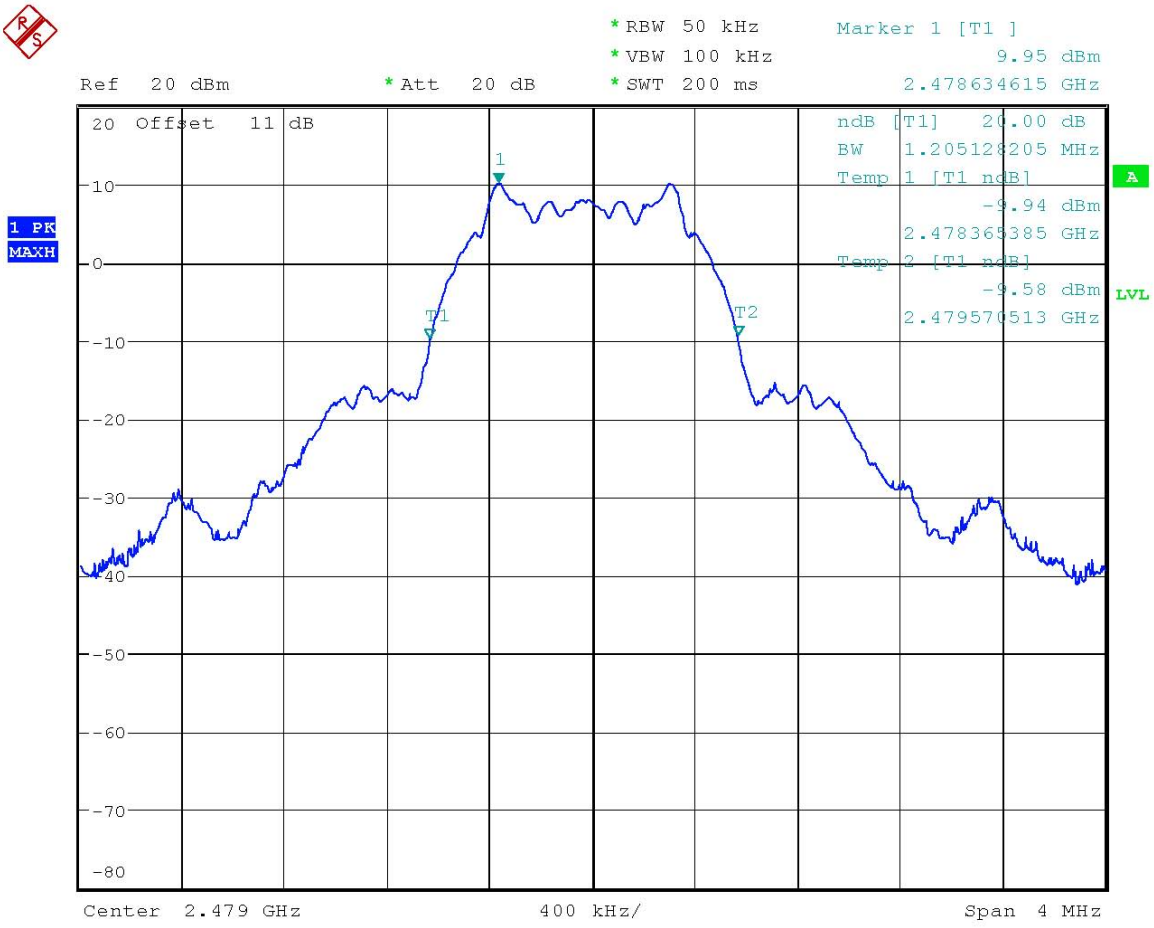
Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12



20DB BANDWIDTH 2441MHz

Date: 25.APR.2009 11:08:16

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

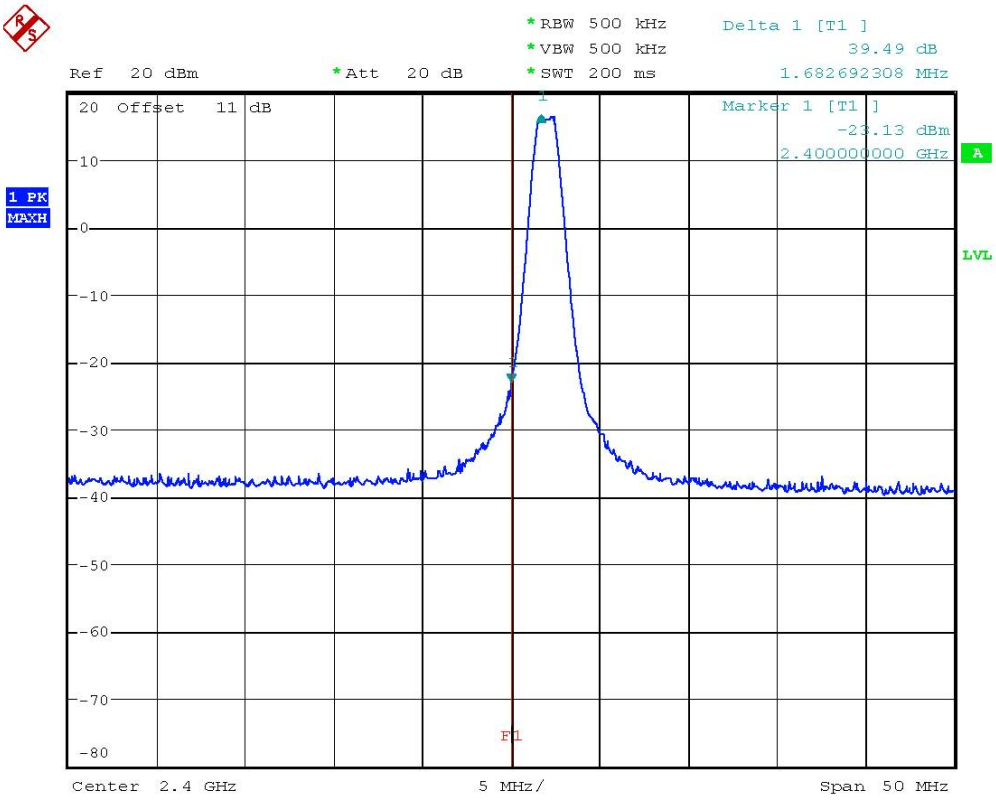


20DB BANDWIDTH 2479MHz

Date: 25.APR.2009 11:08:38

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

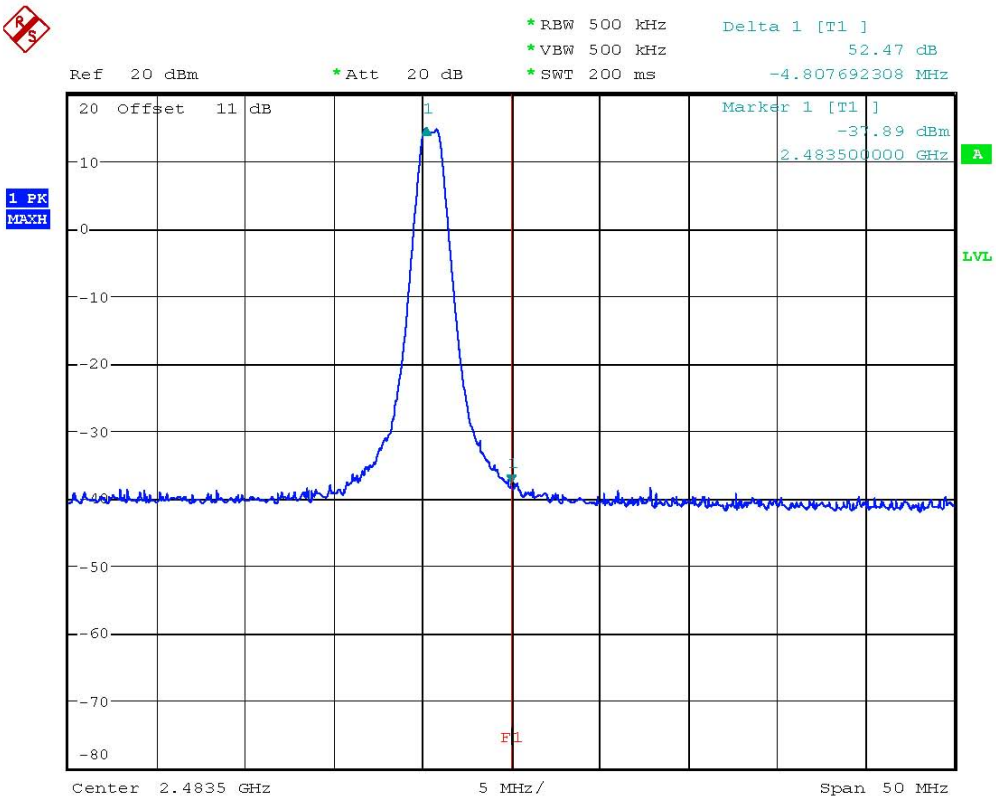
Band-edge Compliance of RF Conducted Emissions



BANDEDGE 2402MHz

Date: 25.APR.2009 11:01:14

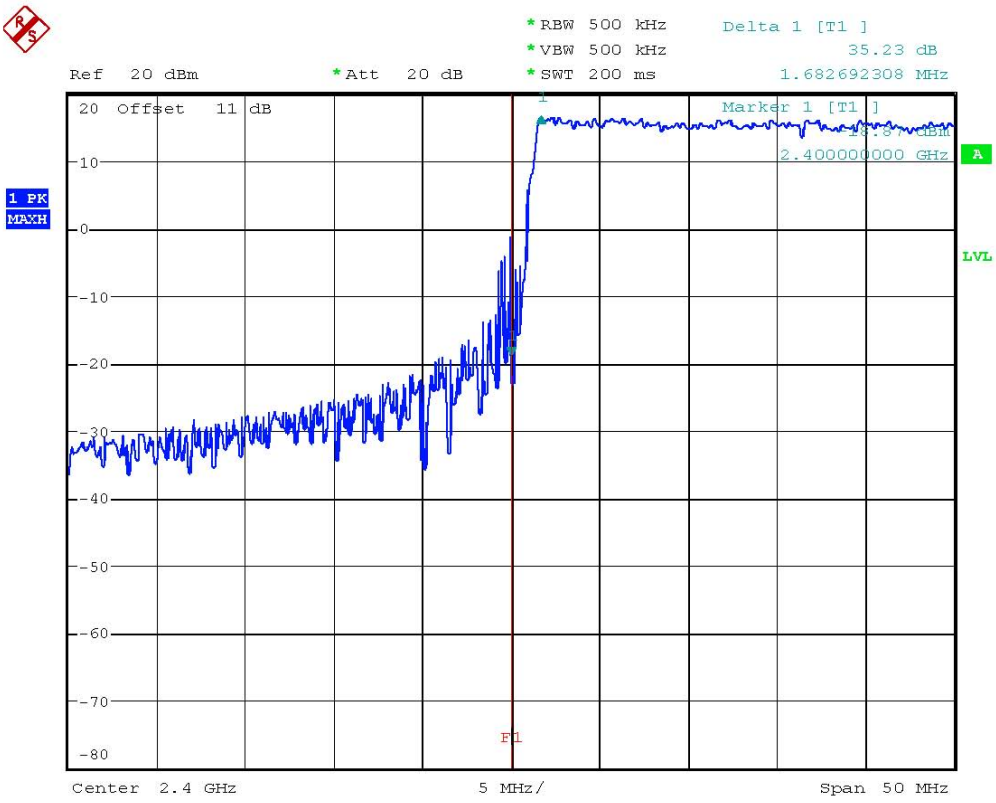
Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12



BANDEDGE 2479MHz

Date: 25.APR.2009 11:06:36

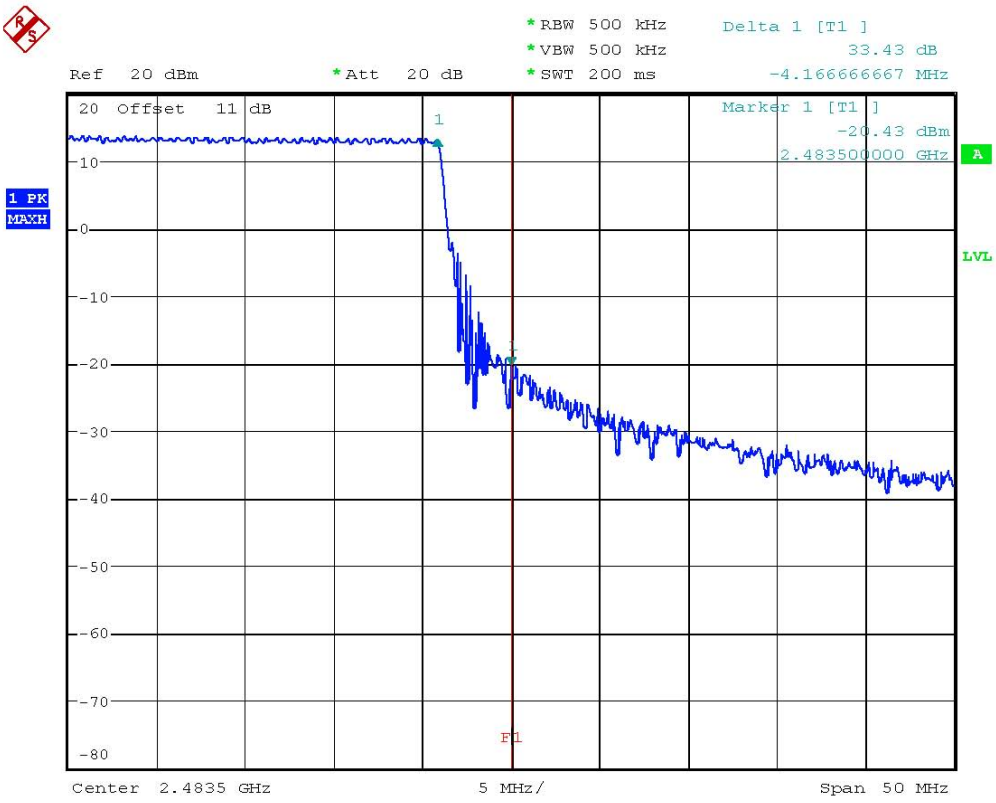
Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12



BANDEDGE HOPPING MODE 2402MHz

Date: 25.APR.2009 15:09:16

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

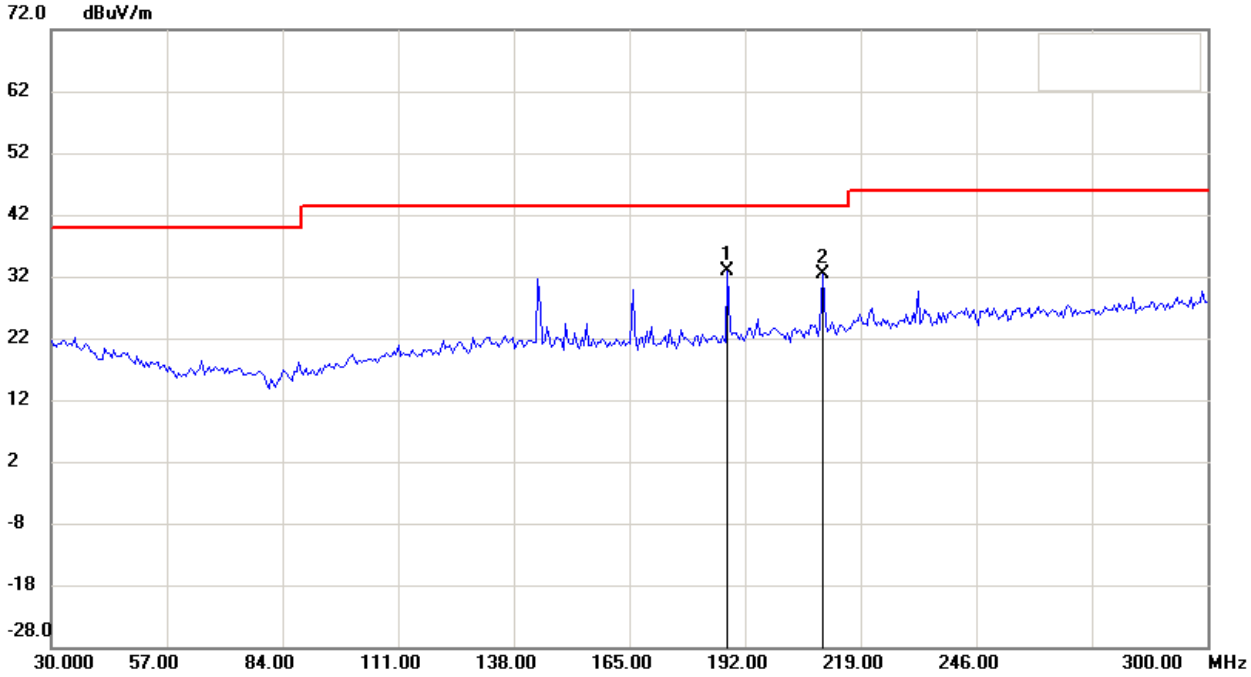


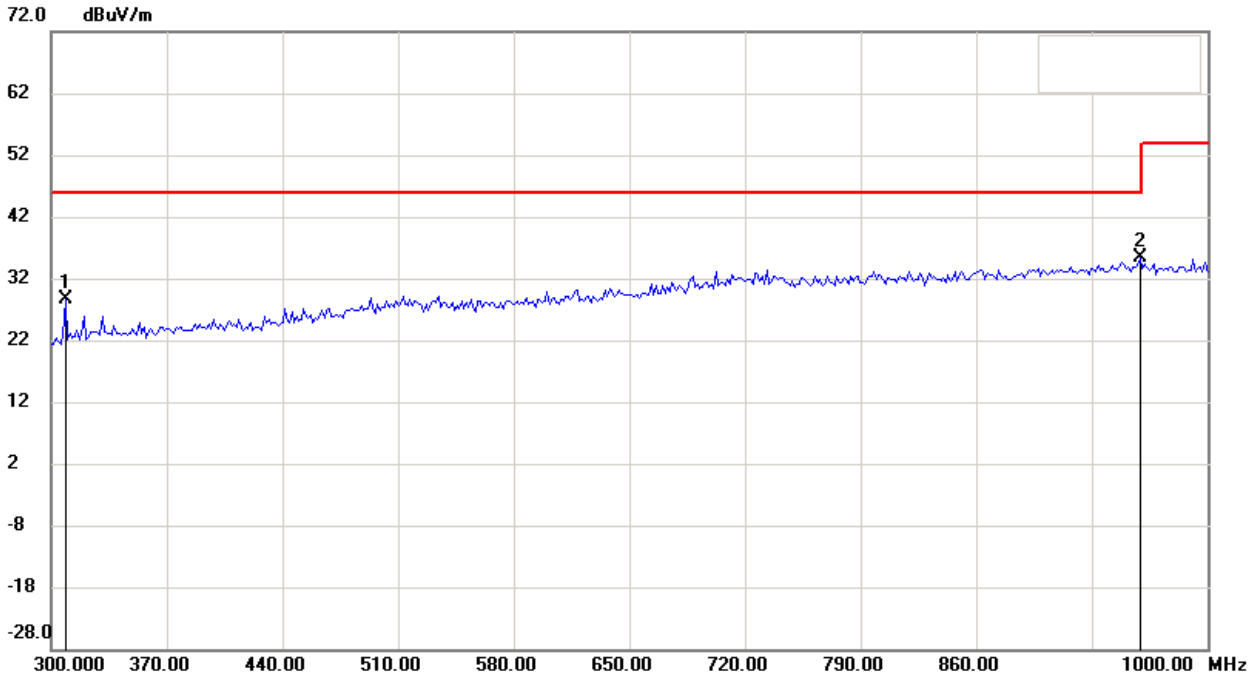
BANDEDGE HOPPING MODE 2479MHz

Date: 25.APR.2009 14:55:38

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

Radiated Emissions from Receiver Part
Channel 1
Antenna Polarization H





Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

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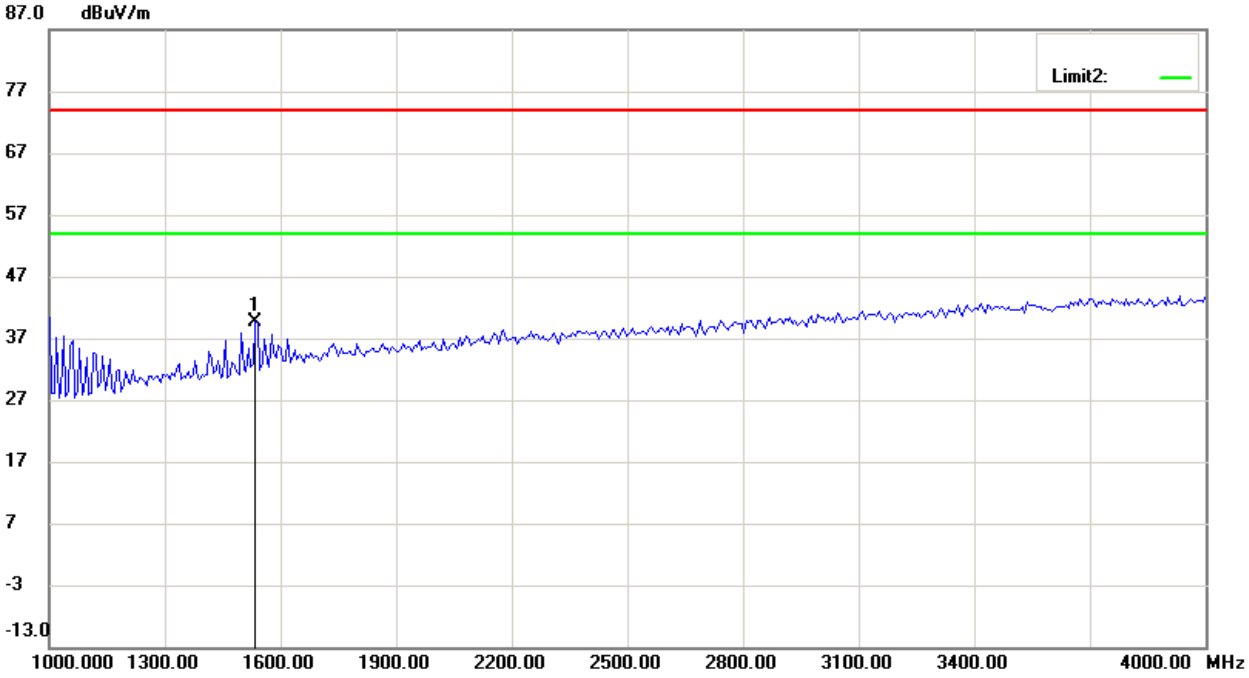
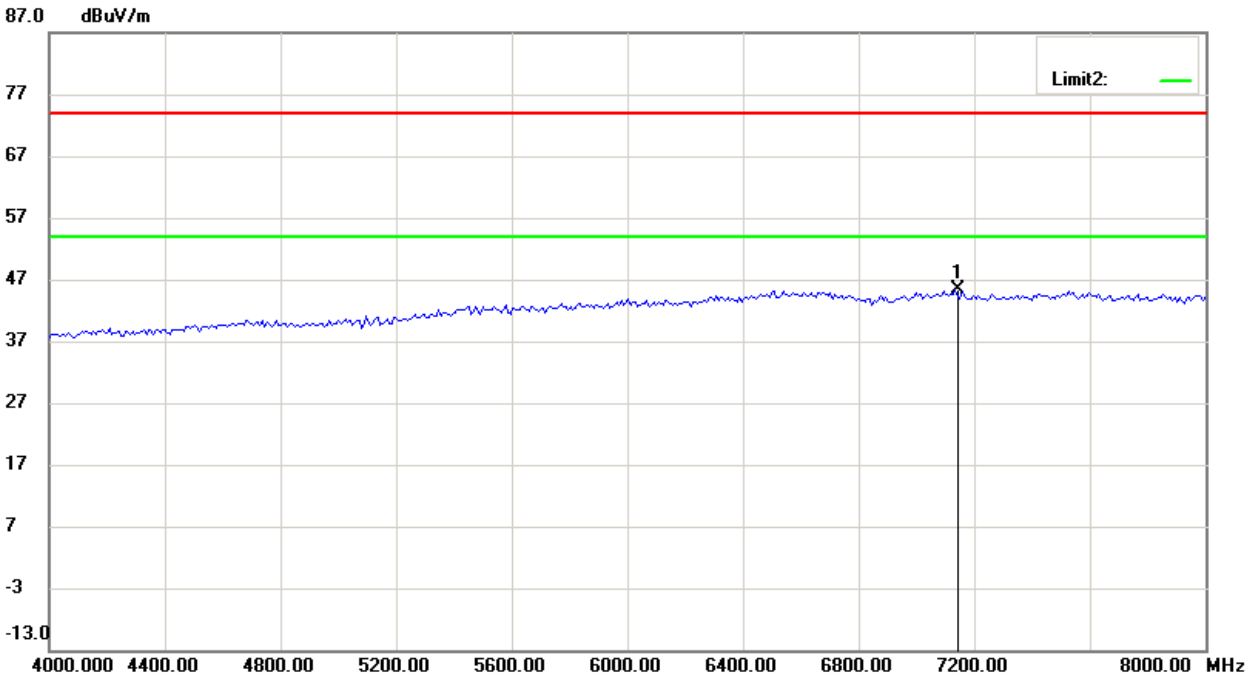
2. **The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.**
3. **For corrected test results are listed in the relevant table of radiated test data of this test report.**

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12





Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

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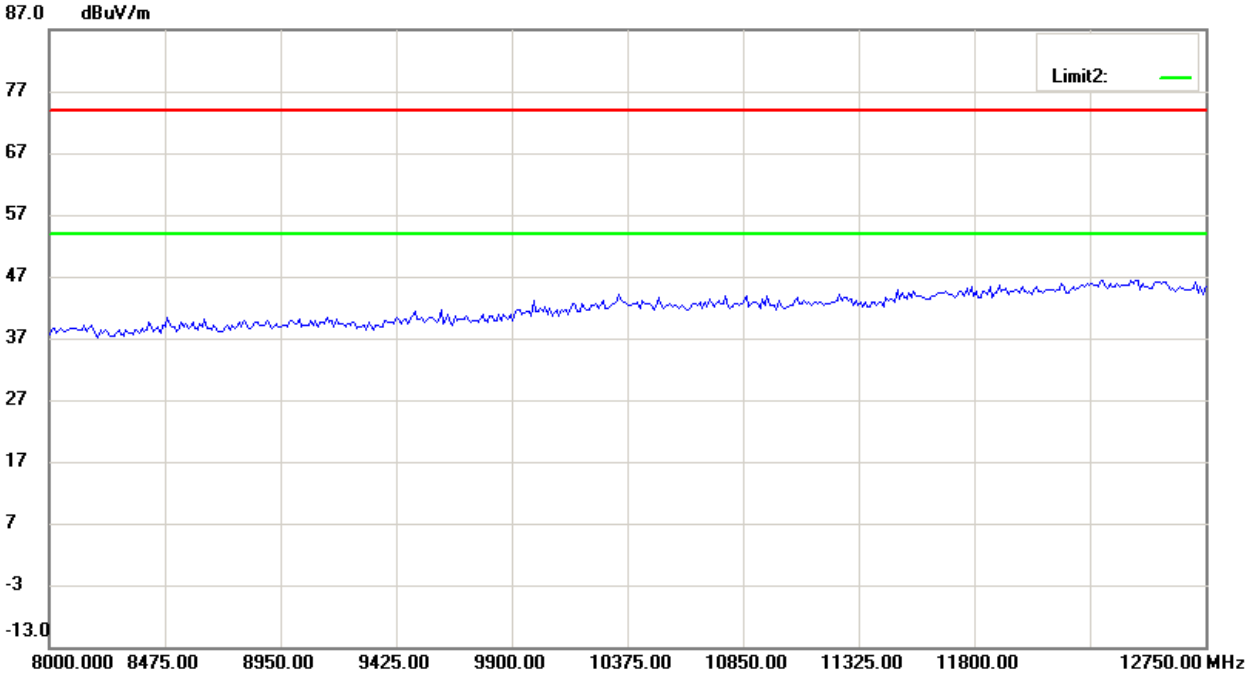
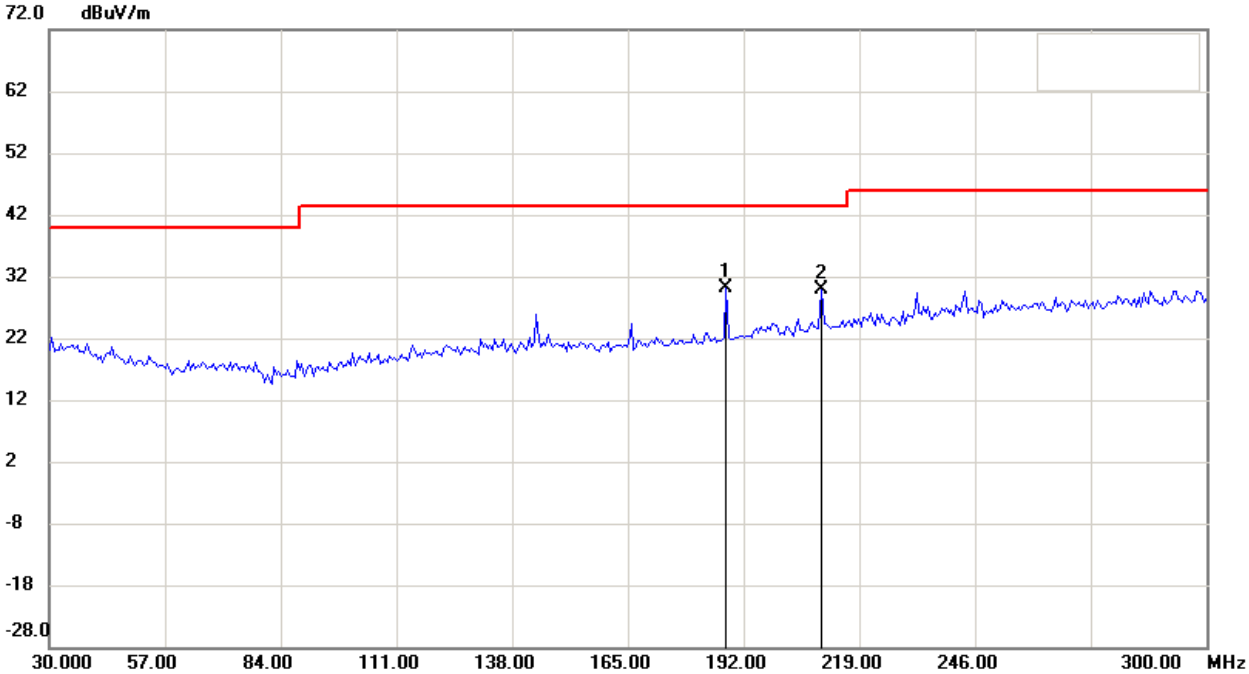
Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12



Antenna Polarization V



Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

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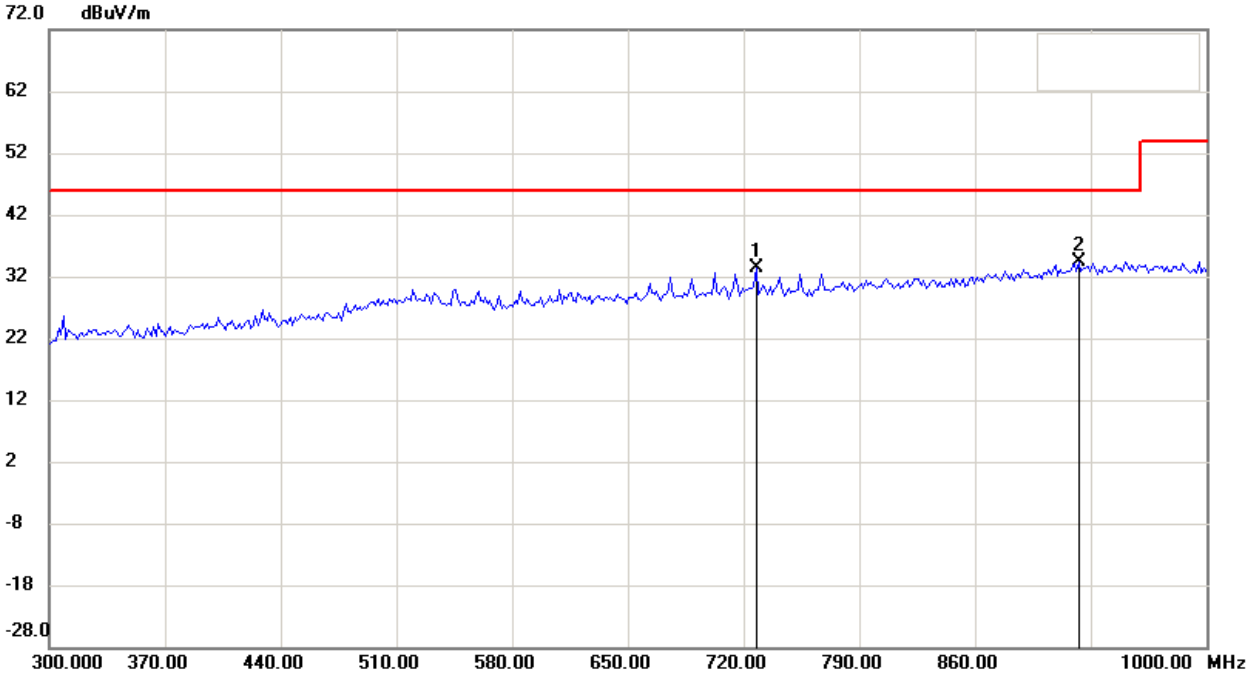
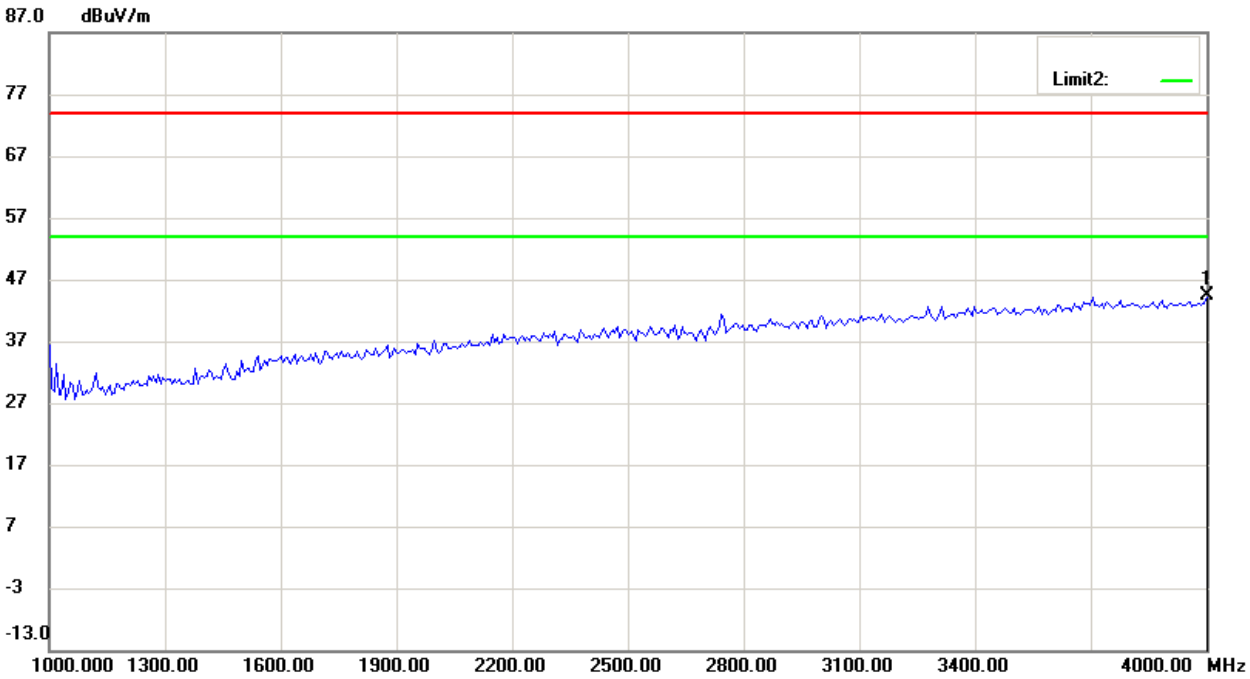
Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12





Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

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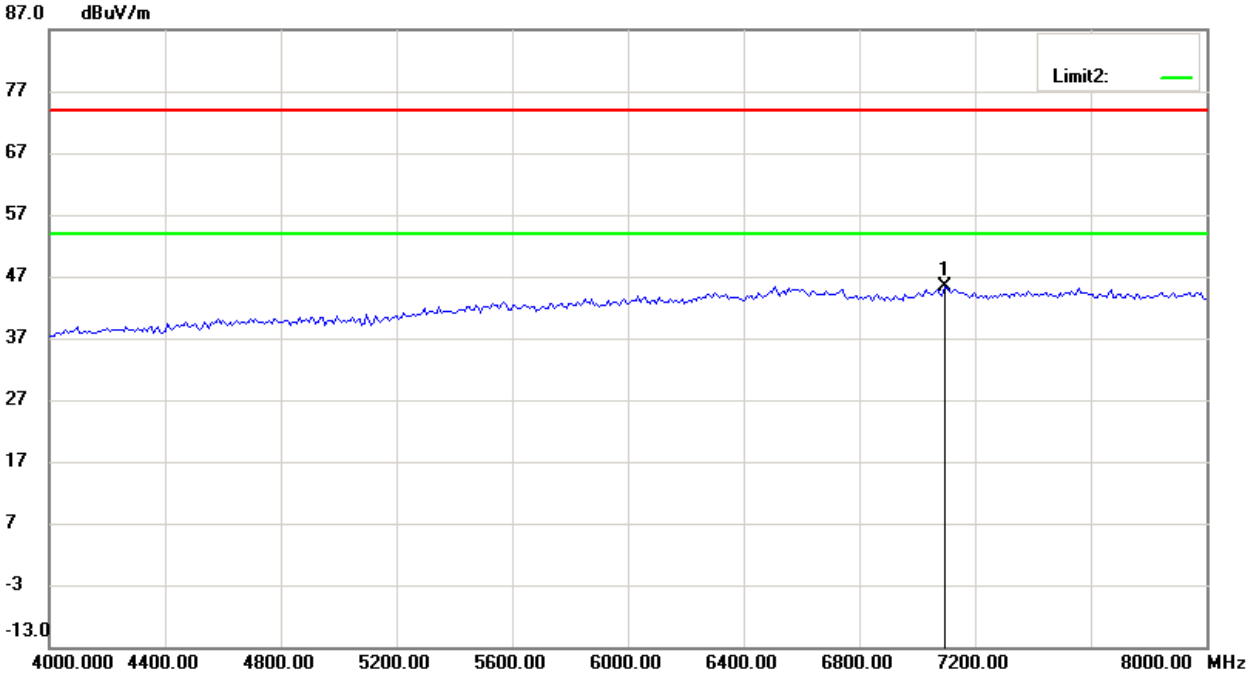
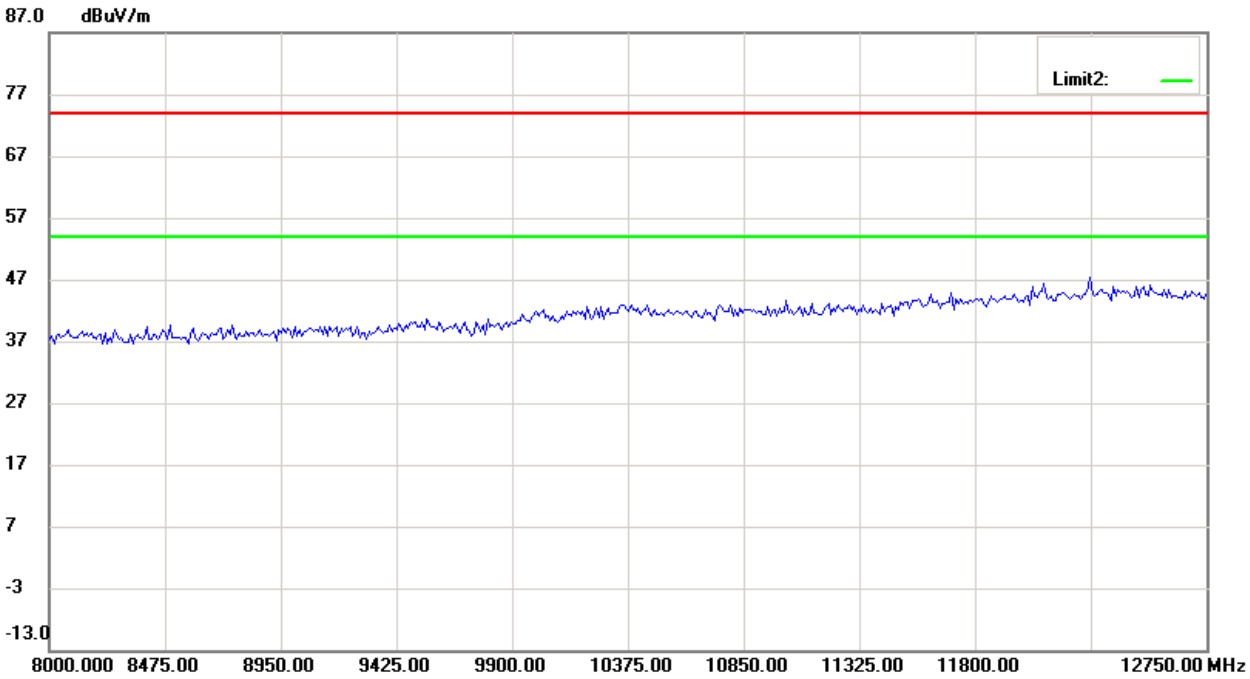
Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12





Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

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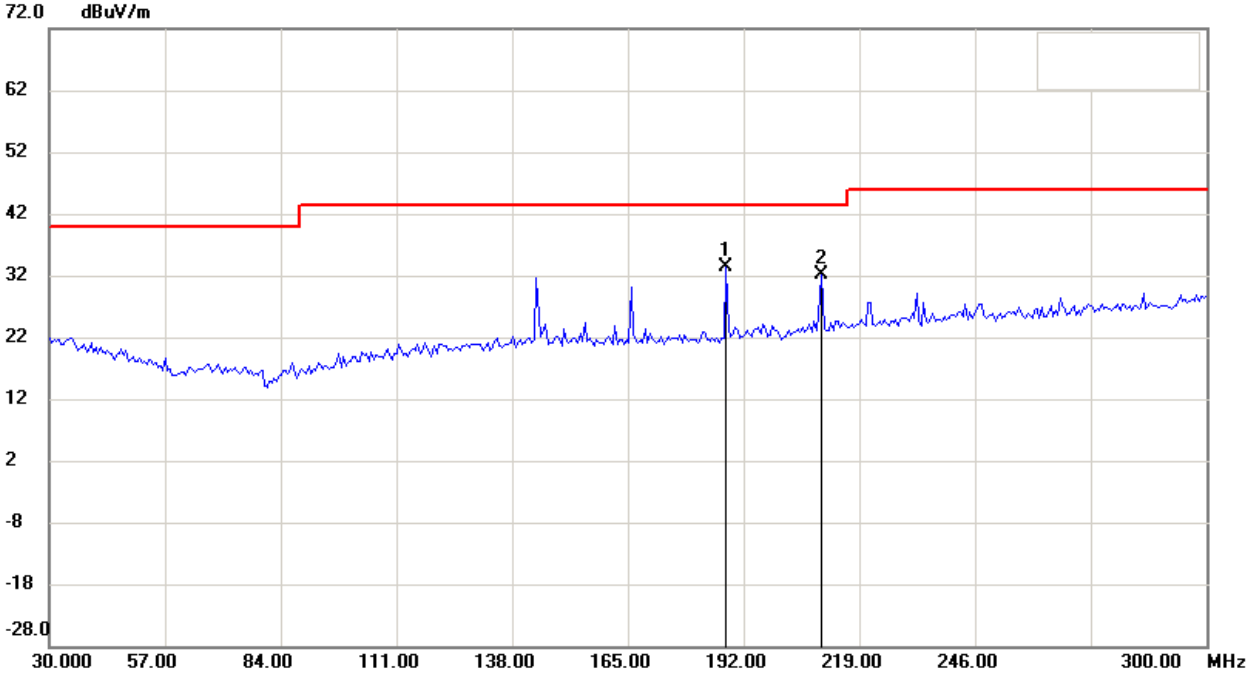
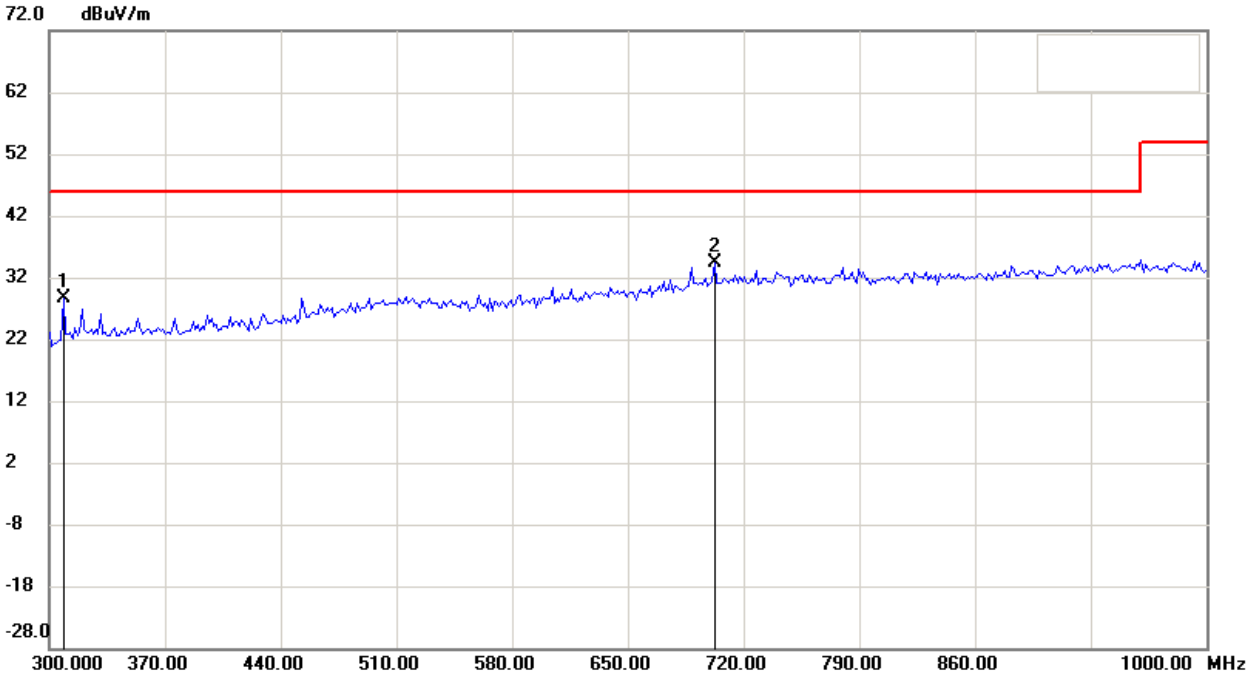
Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

Channel 40

Antenna Polarization H





Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

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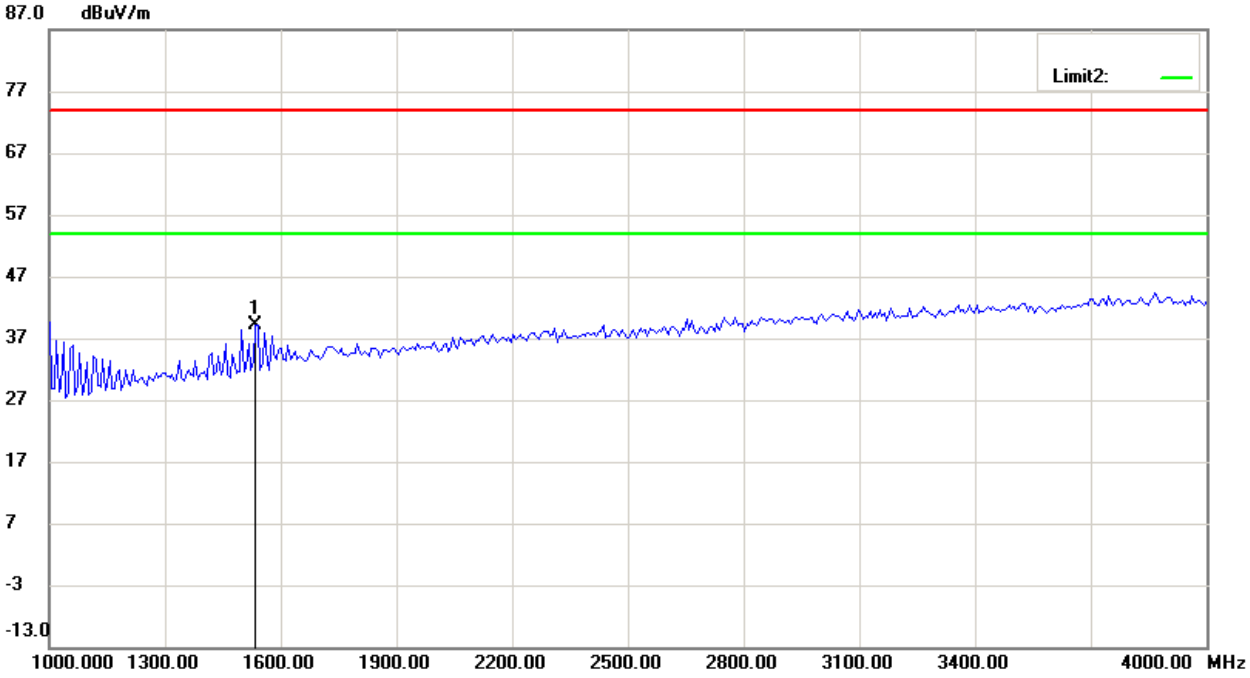
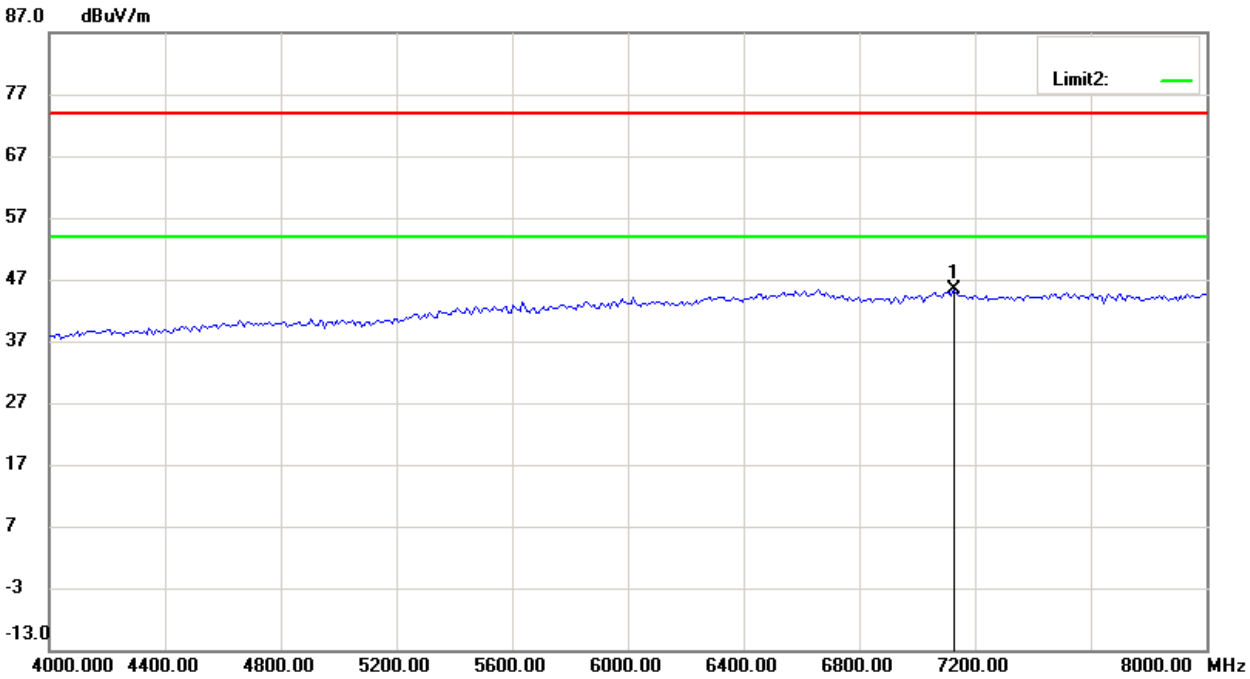
Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12





Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

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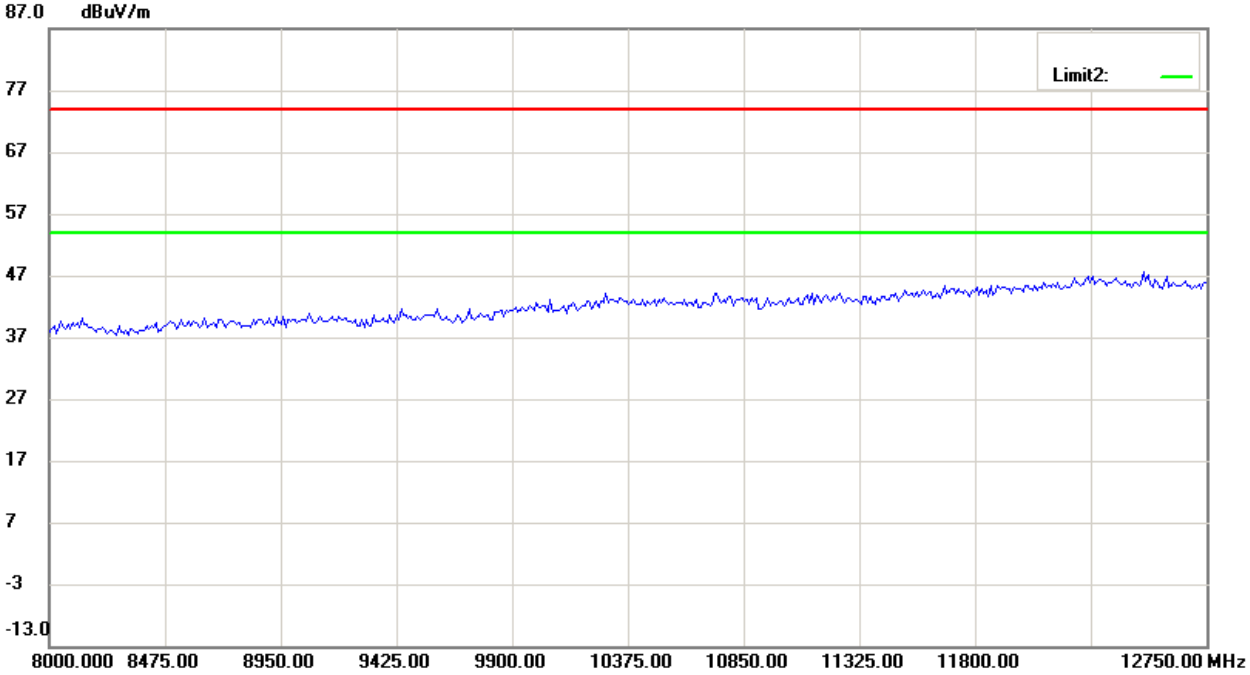
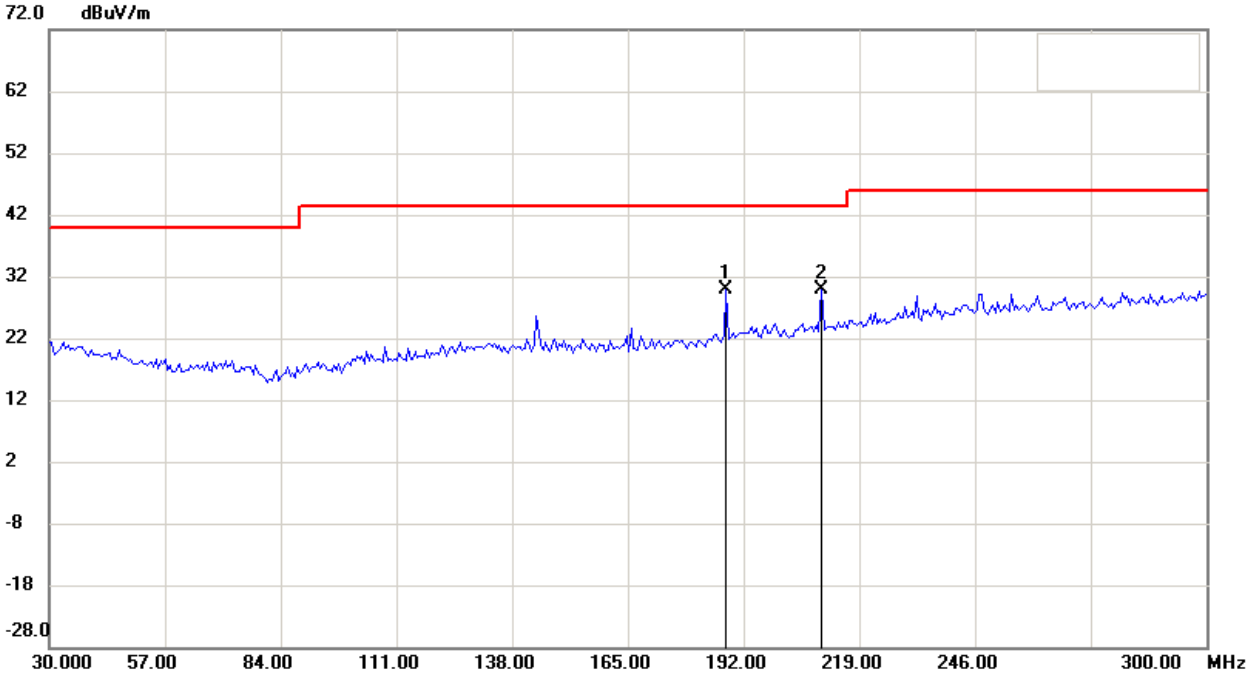
Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12



Antenna Polarization V



Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

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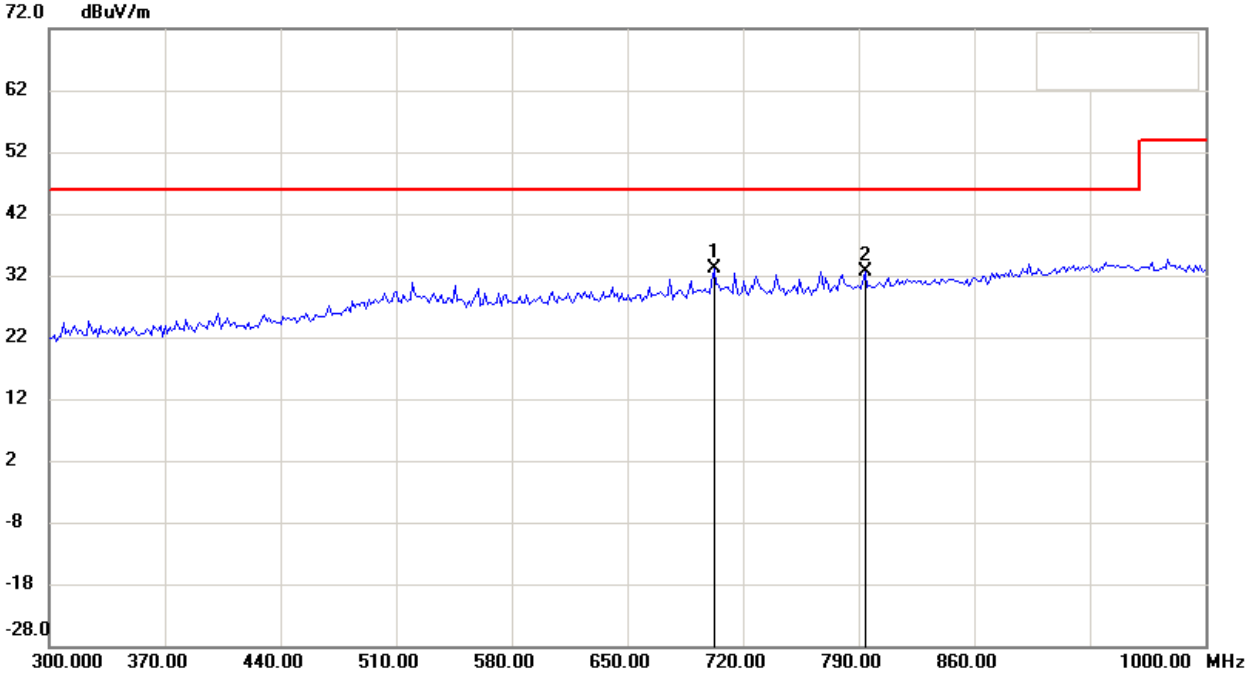
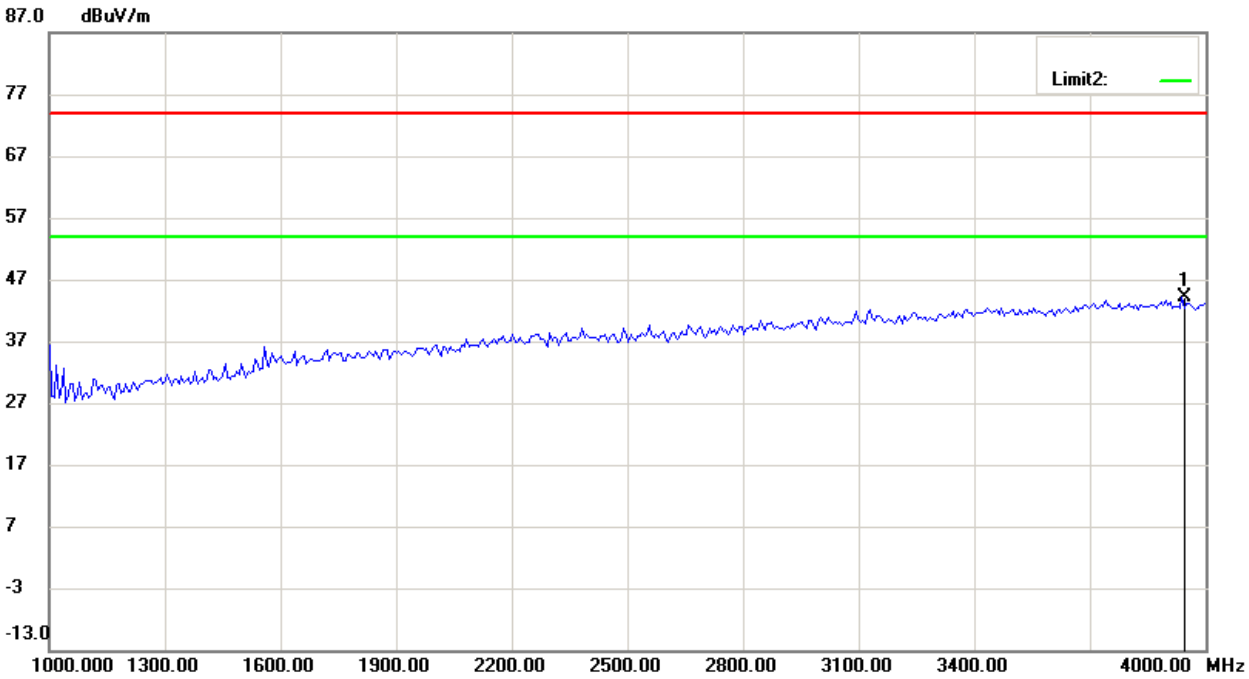
Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12





Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

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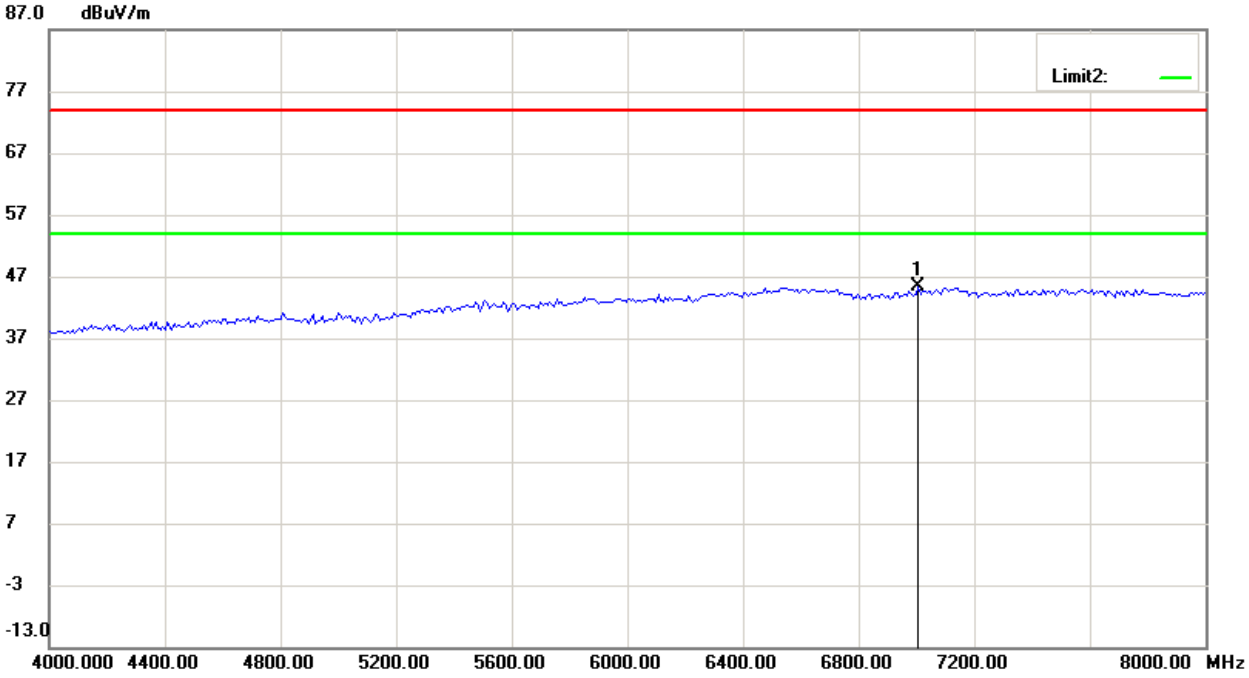
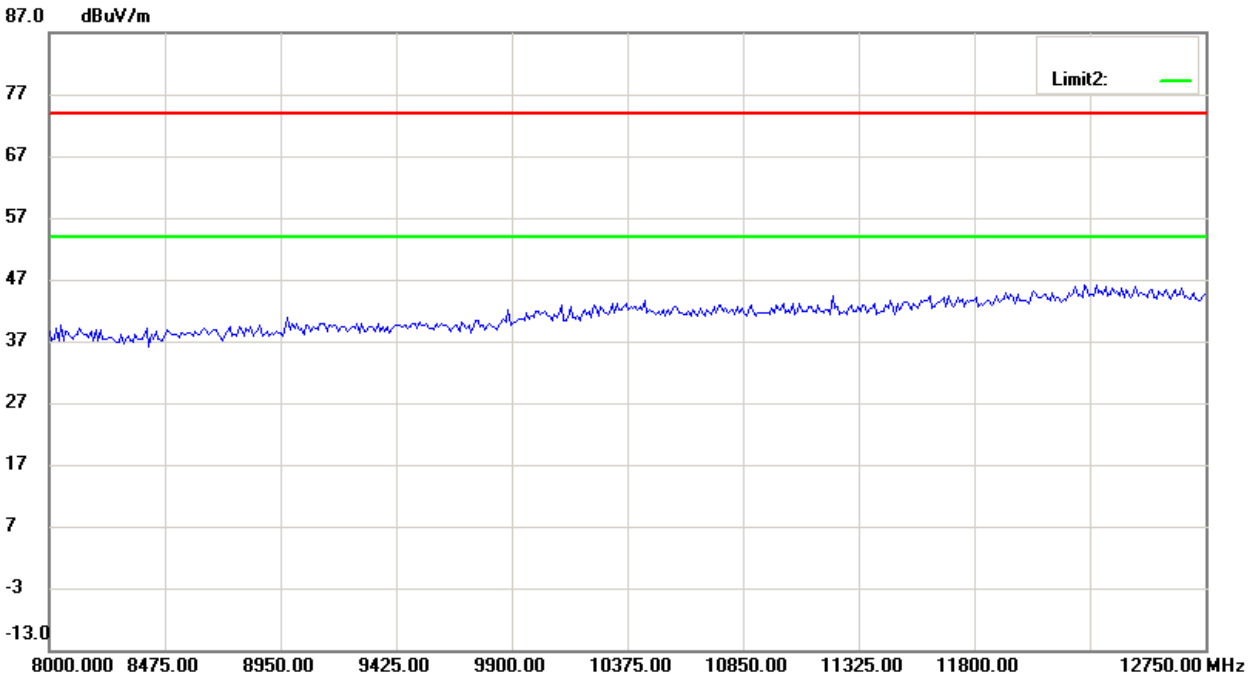
Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12





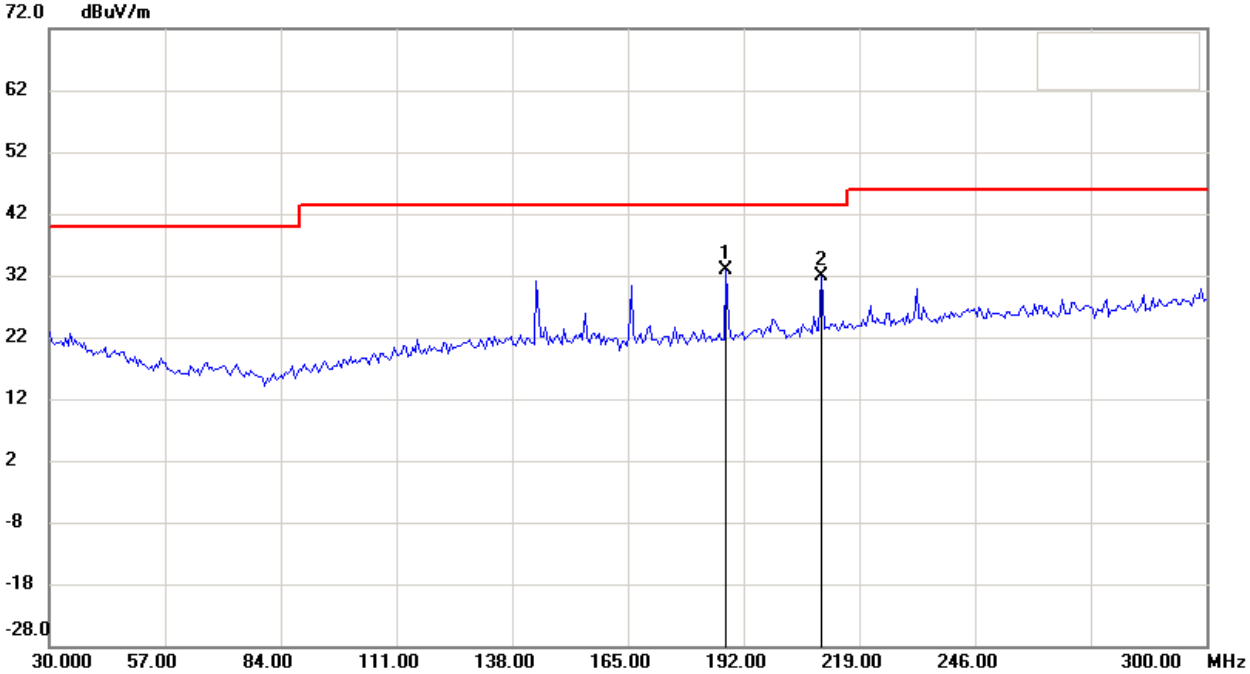
Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

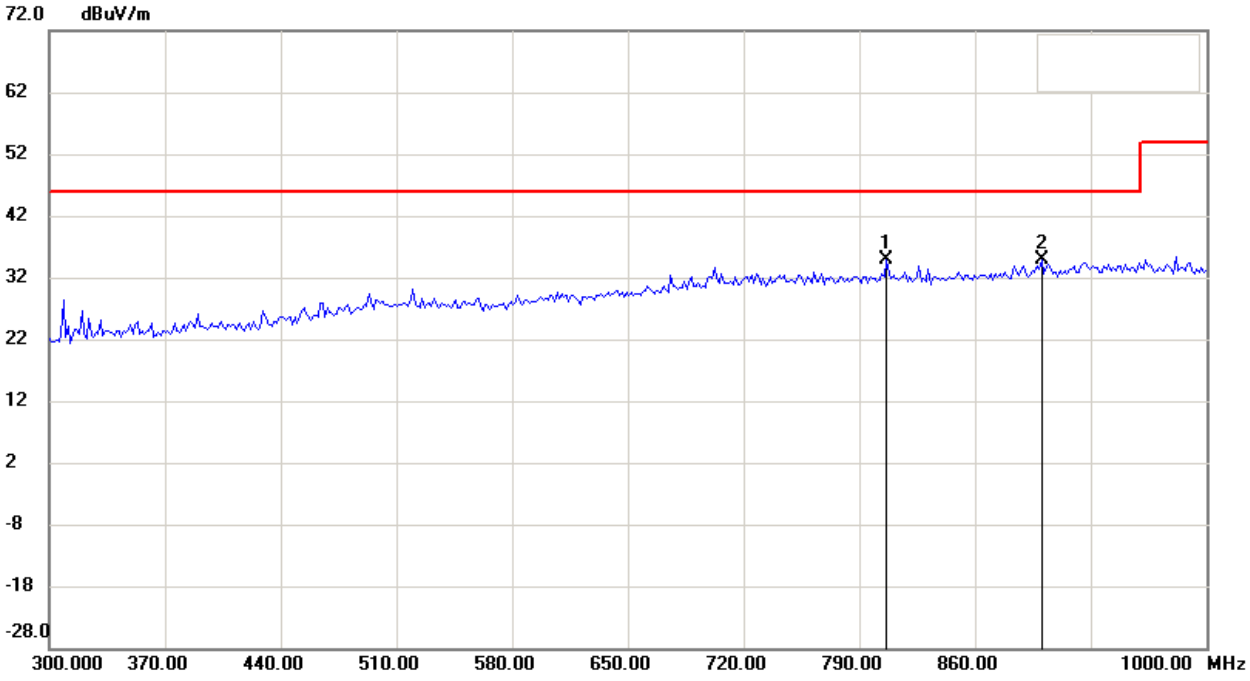
1. **The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.**
2. **The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.**
3. **For corrected test results are listed in the relevant table of radiated test data of this test report.**

Registration number: W6M20904-9701-P-15
FCC ID: VEJTT-FHM2P4G-A12

Channel 78

Antenna Polarization H





Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

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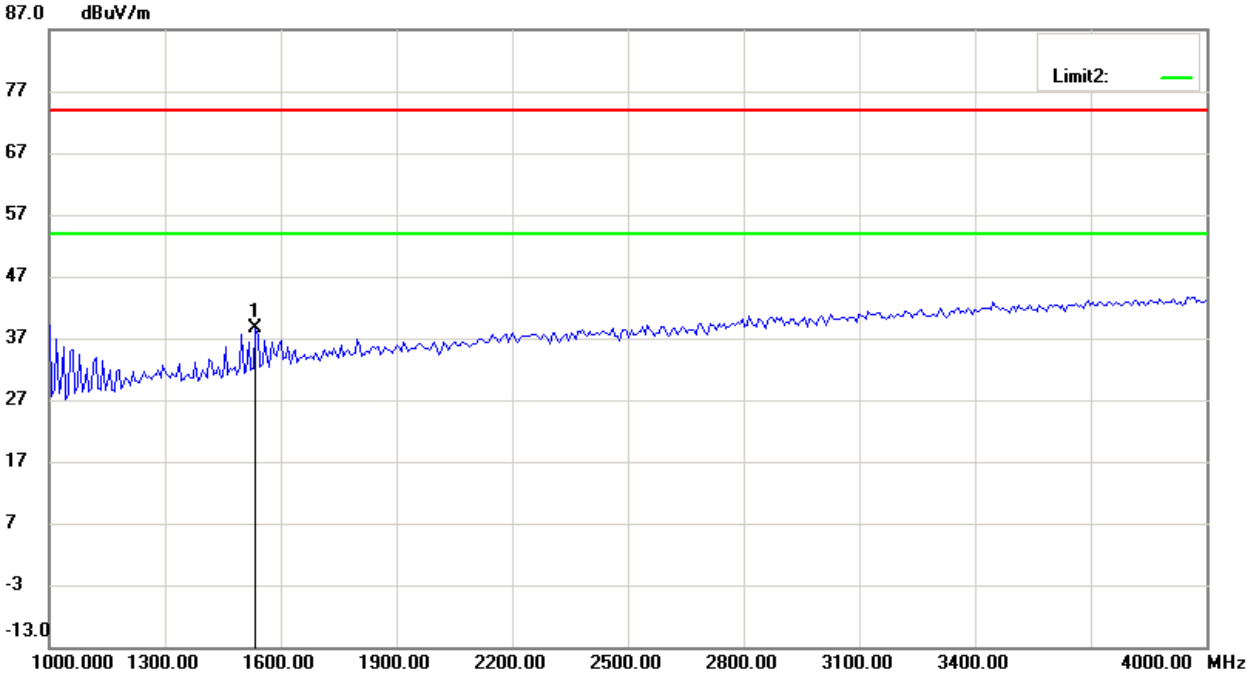

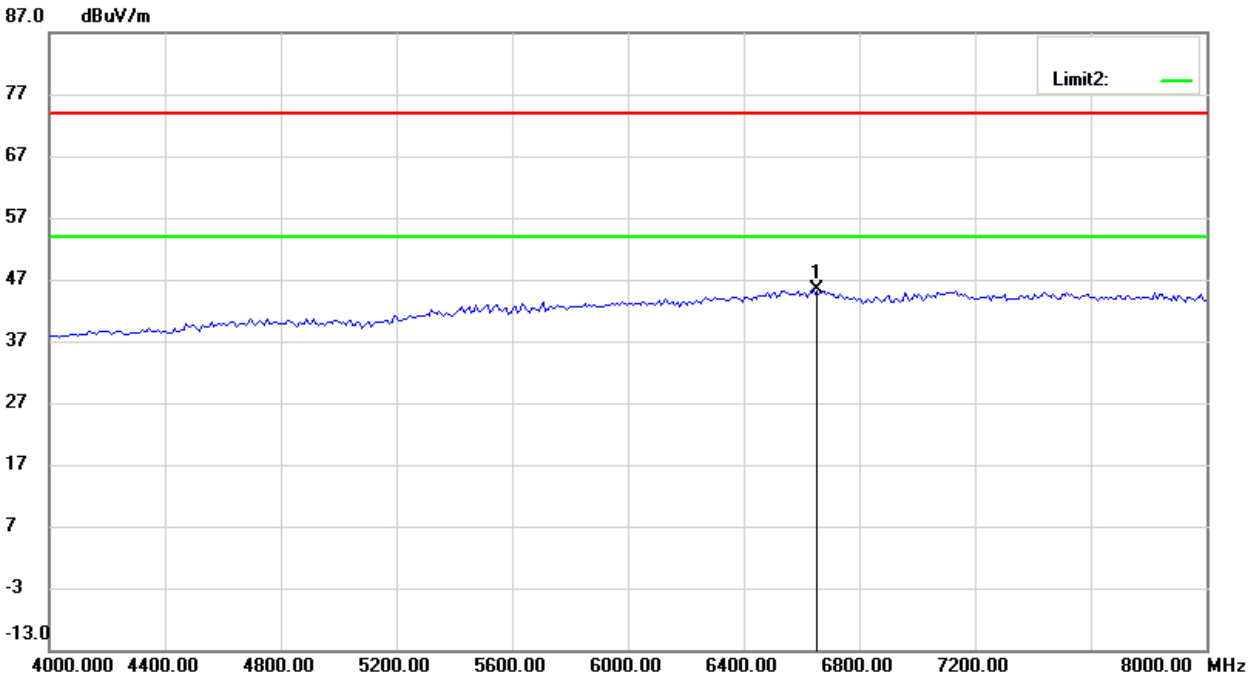

Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

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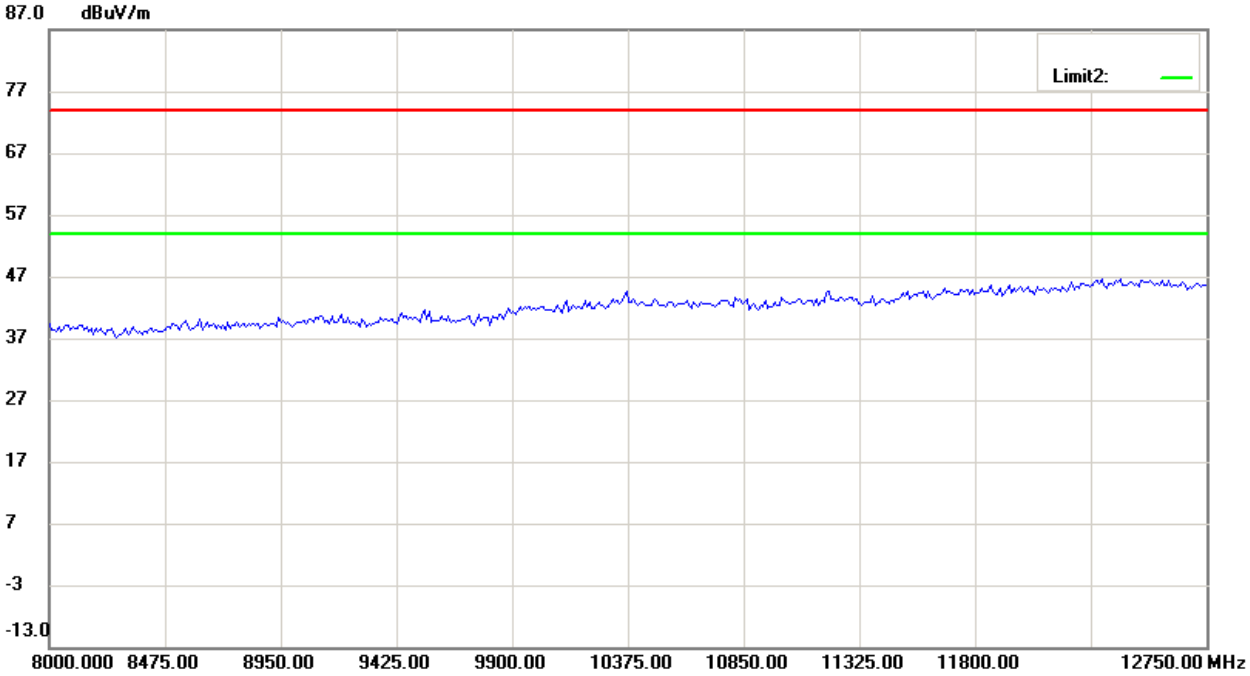
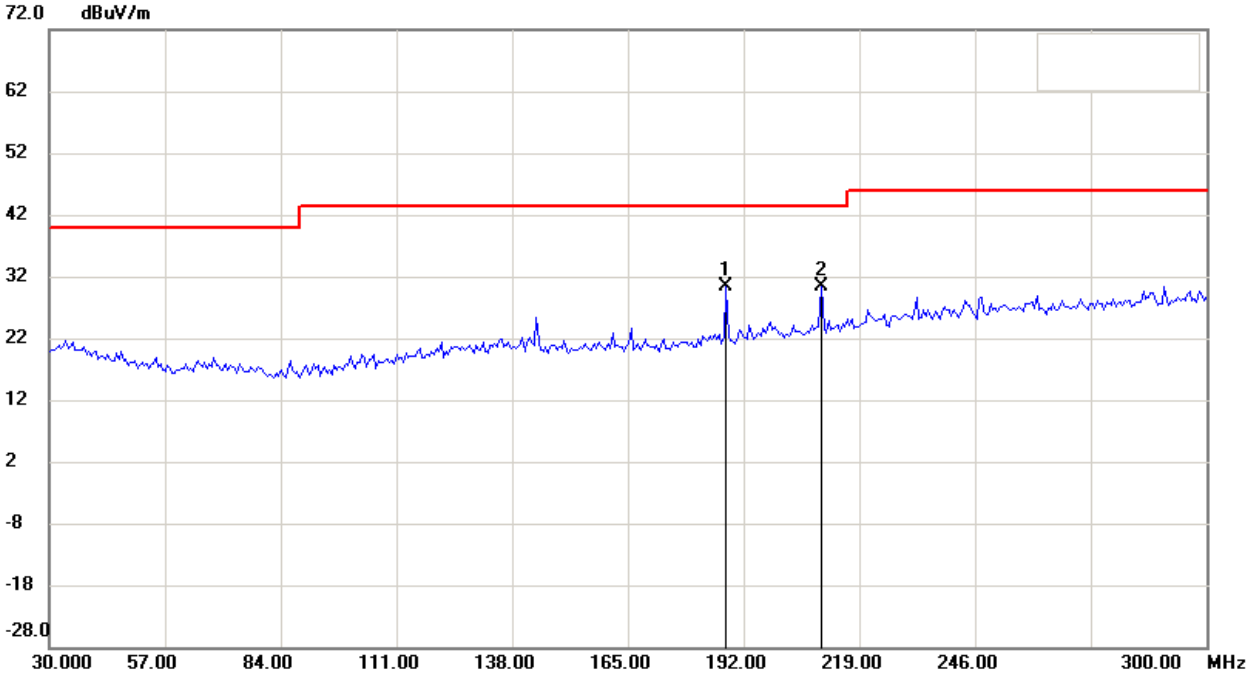


Antenna Polarization V



Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

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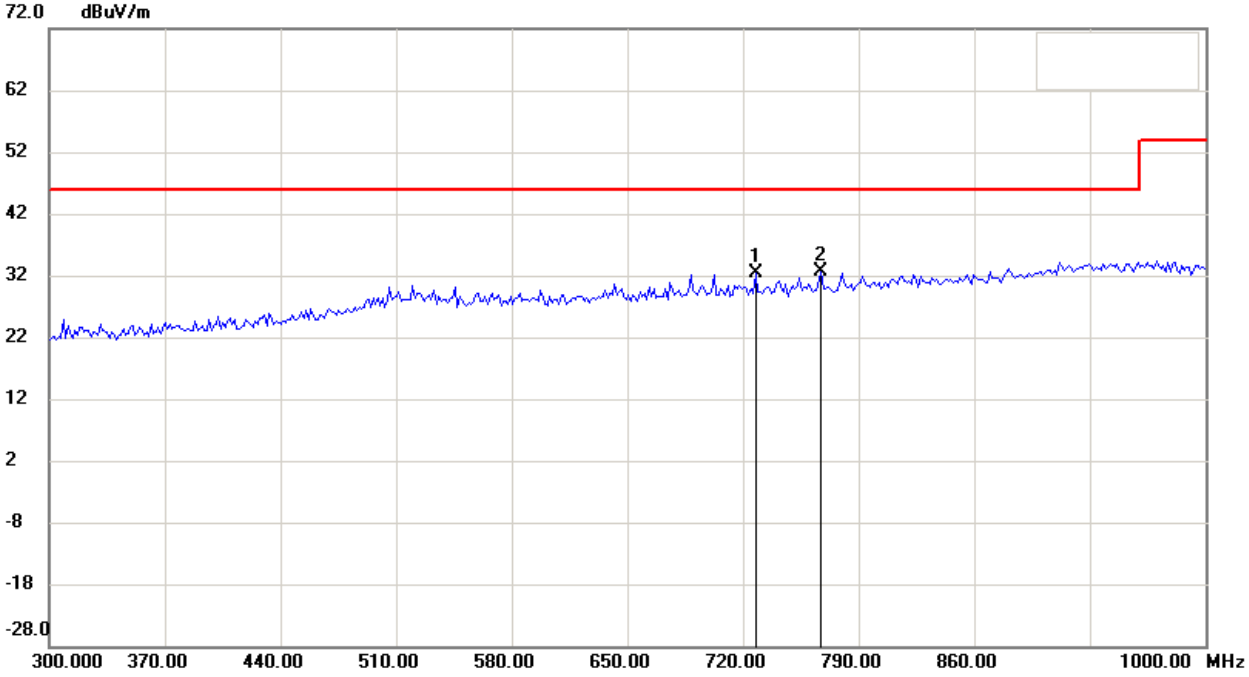

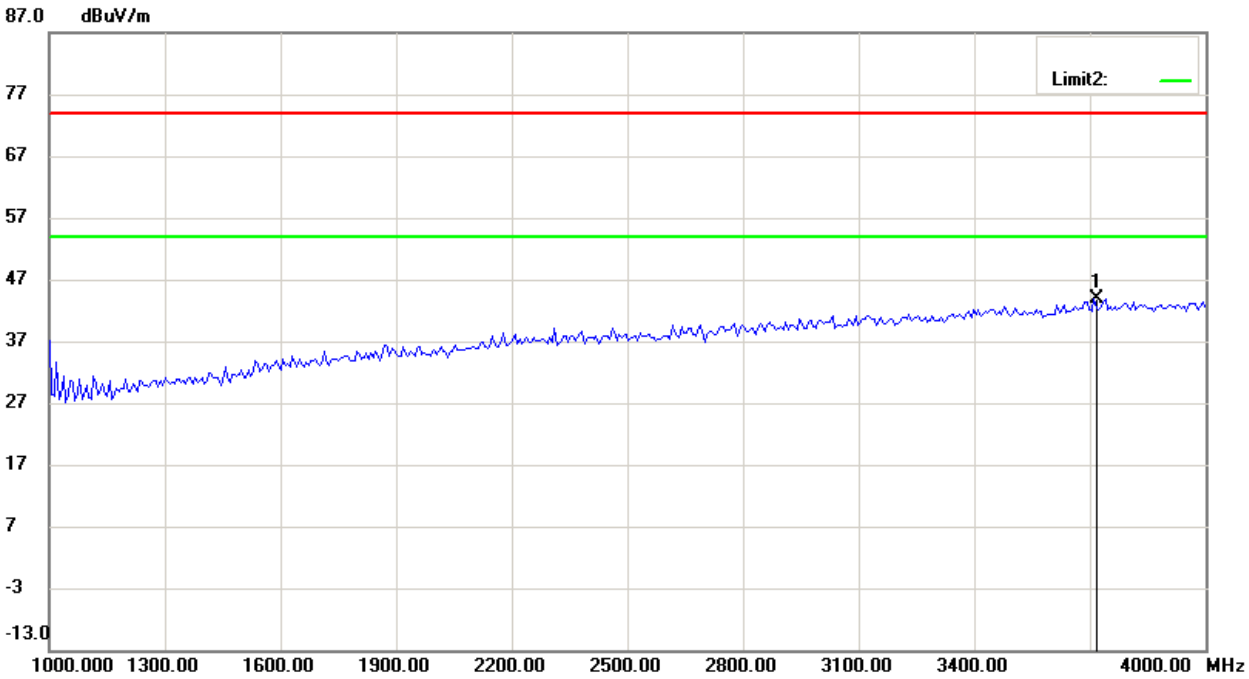

Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

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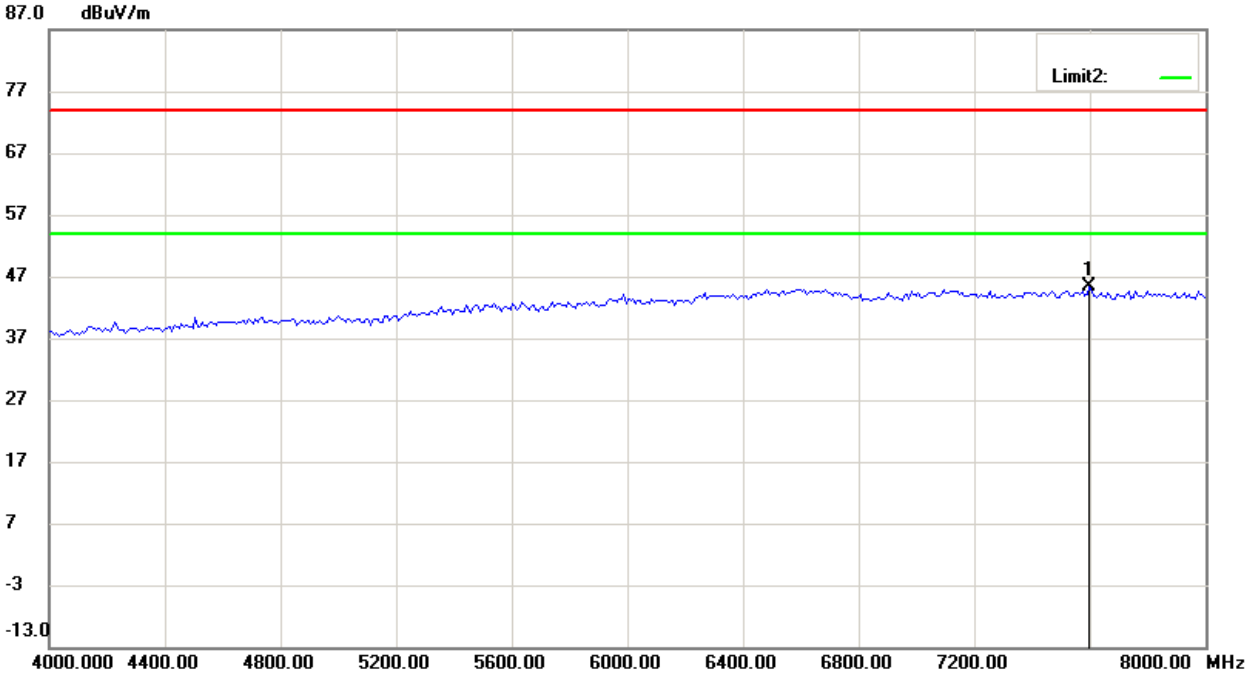

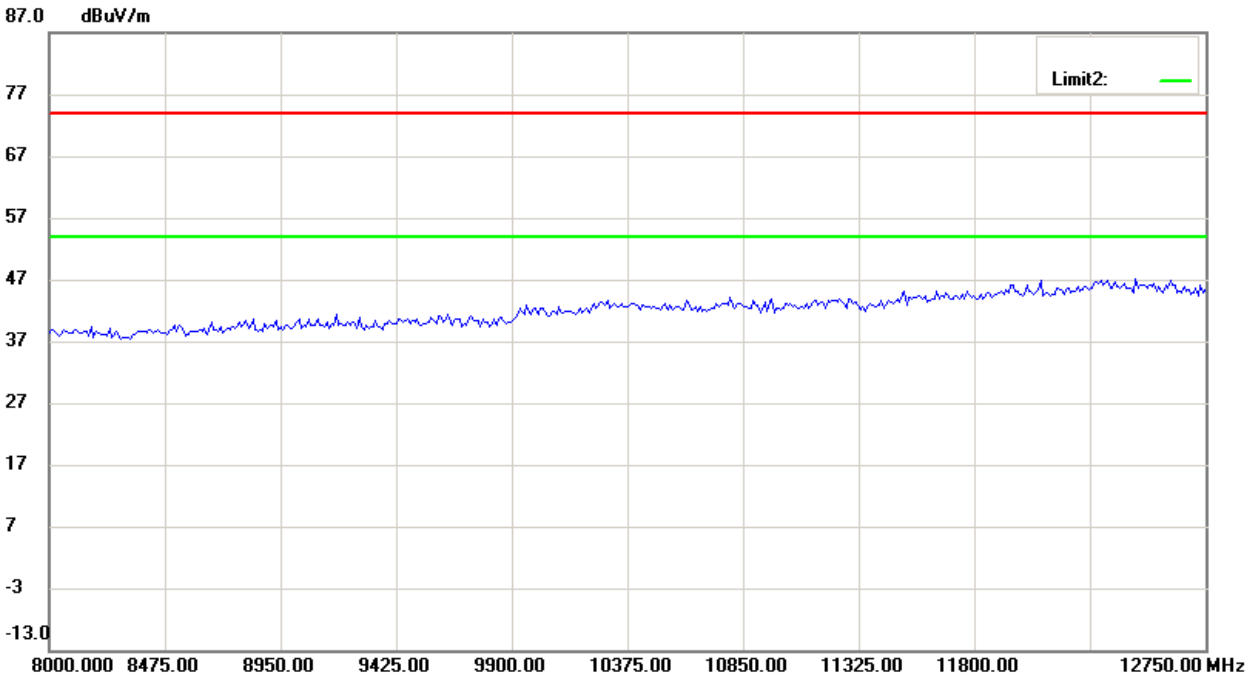

Up Line: Peak Limit Line Down Line: Ave Limit Line
Note:

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