

FCC TEST REPORT

for

Bluetooth headset

Model No.: BL-902

of

Applicant: HI-Pro International R&D Co., Ltd.

Address: 3F., NO. 295, RUI GUANG RD., NEI HU, Taipei Taiwan

Tested and Prepared

by

Taiwan ETS Product Service Co., Ltd.

FCC Registration No.: 930600

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

A2LA Accredited No.: 1983.02

PTCRB Accredited Type Certification Test House

FCC ID: RLM-BLUEMATE-902

Report No.: W6D20801-8841-P-15

6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C.
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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 its 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.

The test report may only be reproduced or published in full.

Reproduction or publication of extracts from the report requires the prior written approval of the Taiwan ETS Product Service Co., Ltd.

Tester:

January 25, 2008

Jay Chaing

Date

ETS-Lab.

Name

Signature

Technical responsibility for area of testing:

January 25, 2008

Steven Chuang

Date

ETS

Name

Signature



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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
Taiwan ETS Product Service 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: 1983.02

FCC filed test laboratory Reg. No. 930600

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

PCTRB Accredited Type Certification Test House

1.3 Details of approval holder

Name	: HI-Pro International R&D Co., Ltd.
Street	: 3F., NO. 295, RUI GUANG RD., NEI HU,
Town	: Taipei
Country	: Taiwan
Telephone	: 02-8751-6618
Fax	: 02-8751-6629



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1.4 Application details

Date of receipt of test item : January 24, 2008
Date of test : from September 22, 2007 to September 27, 2007

1.5 General information of Test item

Type of test item : Bluetooth headset
Model Number : BL-902
Hardware : V2.0
Software : V2.0
Brand name : Bluemate
Photos : see Annex

Technical data

Frequency band : 2402 - 2480 MHz
Frequency (ch A) : 2.402 GHz
Frequency (ch B) : 2.441 GHz
Frequency (ch C) : 2.480 GHz

Transmitter Unom

Normal Mode
Power (ch A or ch 0) : Conducted: 0.78 dBm
Power (ch B or ch 39) : Conducted: 0.43 dBm
Power (ch C or ch 78) : Conducted: 0.21 dBm

Power supply adaptor : Adaptor (I/P: AC 100-240 V / 50-60 Hz, O/P: 5 Vdc / 650 mA)
Battery DC 5 V

Operation modes : duplex

Modulation Type : GFSK

Antenna Type : Chip antenna

Antenna gain : -2.83 dBi



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Host device : none

Classification :

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

Manufacturer: (if applicable)

Name : ./.
Street : ./.
Town : ./.
Country : ./.

Additional information : ./.

1.6 Test standards

Technical standard : FCC RULES PART 15 SUBPART C § 15.247 (2007-05)

Note: This device, BL-902, is based on the test report number W6M20708-8410-P-15. The differences between them are the approval holder, manufacturer, brand name, product name, model number and appearance.



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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 adaptor : Adaptor (I/P: AC 100-240 V / 50-60 Hz, O/P: 5 Vdc / 650 mA)
Battery DC 5 V

Extreme conditions parameters : test voltage : -- extreme
min :-- V
max :-- V



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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	2006/10/16	2007/10/15
ETSTW-CE 002	PREREULATOR MODE DC POWER SUPPLY	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	2006/10/16	2007/10/15
ETSTW-CE 005	Line-Impedance Stabilisation Network	NNBM 8126D	137	Schwarzbeck	2006/10/16	2007/10/15
ETSTW-CE 006	IMPULSBEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	In House Certificate	
ETSTW-CE 008	ABSORBING CLAMP	MDS 21	3469	Schwarzbeck	2005/10/24	2007/10/23
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	2007/8/2	2008/8/1
ETSTW-CE 013	CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK	FCC-TLISN-T4-02	20242	FCC	2005/12/8	2007/12/7
ETSTW-CE 014	CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK	FCC-TLISN-T2-02	20241	FCC	2005/12/7	2007/12/6
ETSTW-CE 015	CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK	FCC-TLISN-T8-02	20307	FCC	2006/11/7	2008/11/6
ETSTW-CE 016	TWO-LINE V-NETWORK	ENV216	100050	R&S	2006/11/21	2007/11/20
ETSTW-RE 002	Function Generator	33220A	MY43004982	Agilent	2005/10/14	2007/10/13
ETSTW-RE 003	EMI TEST RECEIVER	ESI 26	831438/001	R&S	2006/10/20	2007/10/19
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2006/10/30	2007/10/29
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10	843207/020	R&S	2006/10/12	2007/10/11
ETSTW-RE 010	PROGRAMMABLE LINEAR POWER SUPPLY	LPS-305	30503070181	MOTECH	Function Test	
ETSTW-RE 011	PROGRAMMABLE LINEAR POWER SUPPLY	LPS-305	30503070165	MOTECH	Function Test	
ETSTW-RE 017	Log-Periodic Antenna	HL025	352886/001	R&S	2006/5/4	2008/5/3
ETSTW-RE 018	MICROWAVE HORN ANTENNA	AT4560	27212	AR	2004/11/8	2007/11/7
ETSTW-RE 020	MICROWAVE HORN ANTENNA	AT4002A	306915	AR	Function Test	
ETSTW-RE 021	SWEEP GENERATOR	SWM05	835130/010	R&S	2006/10/11	2007/10/10
ETSTW-RE 027	Passive Loop Antenna	6512	00034563	EMCO	In House Certificate	
ETSTW-RE 028	Log-Periodic DipoleArray Antenna	3148	34429	EMCO	2006/5/26	2008/5/25
ETSTW-RE 029	Biconical Antenna	3109	33524	EMCO	2006/5/26	2008/5/25
ETSTW-RE 030	Double-Ridged Guide Horn Antenna	3117	00035224	EMCO	2006/5/3	2008/5/2
ETSTW-RE 032	Millivoltmeter	URV 55	849086/013	R&S	2006/10/11	2007/10/10
ETSTW-RE 034	Power Sensor	URV5-Z4	839313/006	R&S	2005/10/17	2007/10/16
ETSTW-RE 042	Biconical Antenna	HK116	100172	R&S	2007/1/11	2009/1/10
ETSTW-RE 043	Log-Periodic Dipole Antenna	HL223	100166	R&S	2006/5/8	2008/5/7



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ETSTW-RE 044	Log-Periodic Antenna	HL050	100094	R&S	2006/5/29	2008/5/28
ETSTW-RE 048	Triple Loop Antenna	HXYZ 9170	HXYZ 9170-134	Schwarzbeck	2005/3/22	2008/3/21
ETSTW-RE 049	TRILOG Super Broadband test Antenna	VULB 9160	9160-3185	Schwarzbeck	2007/5/2	2009/5/1
ETSTW-RE 055	SPECTRUM ANALYZER	FSU-26	200074	R&S	2007/7/16	2008/7/15
ETSTW-RE 064	Bluetooth Test Set	MT8852B-042	6K00005709	Anritsu	Function Test	
ETSTW-RE 072	CELL SITE TEST SET	8921A	3339A00375	HP	2007/7/2	2009/7/1



2.4 General Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-2003 using a 50 μ H 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 dB μ V) 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 dB μ V + 10.36 dB + 6 dB = 36.36 dB μ V/m @3m

The UUT 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 Taiwan ETS Product Service 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**.



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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 = $20 \log (\text{dwell time}/T)$

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



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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 Digital Part	15.109	☐	☐	☐
Power Line Conducted Emission	15.207(a)	☒	☒	☐

The follows is intended to leave blank.



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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]
$T_{nom} = 23^{\circ}\text{C}$	$V_{nom} = 5\text{ V}$	0.78	0.43	0.21

Test conditions		Radiated Power		
		Channel A [dBm]	Channel B [dBm]	Channel C [dBm]
$T_{nom} = \text{-- }^{\circ}\text{C}$	$V_{nom} = \text{-- V}$	--	--	--

Test conditions $T_{nom} = \text{-- }^{\circ}\text{C}$, $V_{nom} = \text{-- V}$ Frequency[MHz]	Signal Field strength TX highest power mode dB $\mu\text{V/m}$
--	--
Measurement uncertainty	< 3 dB

Explanation: The diagrams for the peak output power measurements are included in Appendix.



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Maximum Peak Output Power

Limits:

Frequency MHz	Number of hopping channels			
	≥ 75	≥ 50	$49 \geq 25$	$74 \geq 15$
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 003 ETSTW-RE 004 ETSTW-RE 055 ETSTW-RE 064



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3.2 Equivalent isotropic radiated power

FCC Rule: 15.239(b), 15.35

Because using an internal antenna there are no deviations from the radiated test results according 3.1.

3.3 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.

3.4 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

$93.42 \text{ dB}\mu\text{V/m} - 20 \text{ dB} = 73.42 \text{ dB}\mu\text{V/m}$

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 = $20 \log (\text{dwell time}/100\text{ms})$

For frequencies above 1GHz (Peak measurements).

Limit = max. aver. reading-20dB +20dB(because Peak detector is used)

$73.42 \text{ dB}\mu\text{V/m}$

For frequencies above 1GHz (Average measurements).

Max. reading – 20 dB - duty cycle correction:

No duty cycle correction was added to the reading

$93.42 \text{ dB}\mu\text{V/m} - 20 \text{ dB} = 73.42 \text{ dB}\mu\text{V/m}$

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 017 ETSTW-RE 021 ETSTW-RE 028
ETSTW-RE 030 ETSTW-RE 043 ETSTW-RE 044 ETSTW-RE 064

Explanation: See attached diagrams.



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3.5 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 = $20 \log (\text{dwell time}/100\text{ms})$

For frequencies above 1GHz (Average measurements).

Limit – duty cycle correction

No duty cycle correction was added to the reading.

54.0dB μ V/m

For frequencies above 1GHz (Peak measurements).

Limit + 20dB

54.0dB μ V/m + 20 dB= 74 dB μ V/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 044 ETSTW-RE 064

Explanation: See attached diagrams.



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3.6 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: BL-902 Date: 2007/9/10
 Mode: ch0 Tx Mode Temperature: 26.00 °C Engineer: Derek
 Polarization: Horizontal Humidity: 60.00 %

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
135.51	6.59	peak	14.49	21.08	43.50	-22.42	60	320
281.60	19.35	peak	14.87	34.22	46.00	-11.78	210	300
608.62	13.16	peak	22.22	35.38	46.00	-10.62	250	125
971.94	6.03	peak	27.23	33.26	54.00	-20.74	320	130

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
127.39	8.62	peak	13.92	22.54	43.50	-20.96	220	100
284.31	16.50	peak	14.93	31.43	46.00	-14.57	200	140
610.02	10.11	peak	22.22	32.33	46.00	-13.67	200	335
998.60	8.39	peak	27.39	35.78	54.00	-18.22	100	300



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Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1603.21	49.05	---	-9.39	39.66	---	74.00	54.00	-34.34	260	150
4801.60	62.96	---	-1.30	61.66	---	74.00	54.00	-12.34	260	150
4804.06	--	48.99	-1.30	--	47.69	74.00	54.00	-6.31	260	150

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1603.20	46.29	---	-9.39	36.90	---	74.00	54.00	-37.10	260	150
4801.60	58.94	48.07	-1.30	57.64	46.77	74.00	54.00	-3.64	260	150

Mode: Ch39 Tx Mode

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
108.46	11.47	peak	12.23	23.70	43.50	-19.80	65	310
280.52	20.47	peak	14.85	35.32	46.00	-10.68	200	300
610.02	13.12	peak	22.22	35.34	46.00	-10.66	255	125
987.37	6.50	peak	27.31	33.81	54.00	-20.19	310	125

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
119.28	7.95	peak	13.34	21.29	43.50	-22.21	200	100
273.49	14.29	peak	14.59	28.88	46.00	-17.12	195	130
608.62	10.22	peak	22.22	32.44	46.00	-13.56	205	330
992.99	8.30	peak	27.35	35.65	54.00	-18.35	105	300

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1601.20	49.06	---	-9.40	39.66	---	74.00	54.00	-34.34	260	150
4881.76	62.26	49.80	-1.30	60.96	48.50	74.00	54.00	-6.96	260	150



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Polarization: Vertical

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1601.202	46.59	---	-9.40	37.19	---	74	54	-36.81	260	150
4881.764	59.91	49	-1.30	58.61	47.7	74	54	-4.61	260	150

Mode: Ch78 Tx Mode

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
114.95	11.35	peak	12.88	24.23	43.50	-19.27	60	315
282.69	19.98	peak	14.89	34.87	46.00	-11.13	205	300
610.020	12.03	peak	22.22	34.25	46	-11.75	315	130
988.778	6.38	peak	27.32	33.70	54	-20.30	260	130

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
127.39	8.21	peak	13.92	22.13	43.50	-21.37	220	105
281.60	15.32	peak	14.87	30.19	46.00	-15.81	190	135
608.617	10.82	peak	22.22	33.04	46	-12.96	200	330
1000.000	7.43	peak	27.40	34.83	54	-19.17	105	300

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1627.255	47.81	---	-9.29	38.52	---	74	54	-35.48	260	150
4953.908	61.28	47.26	-1.08	60.20	46.18	74	54	-6.20	260	150

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1627.255	45.44	---	-9.29	36.15	---	74	54	-37.85	260	150
4961.924	58.83	49.16	-1.05	57.78	48.11	74	54	-3.78	260	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.

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



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

Explanation: see attached diagrams

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 044 ETSTW-RE 064



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3.7 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 0	Channel 0+1
$T_{nom} = 23^{\circ}\text{C}$	$V_{nom} = 5\text{ V}$	0.9871 MHz	

Test conditions		Channel Separation	
		Channel 39	Channel 39+1
$T_{nom} = 23^{\circ}\text{C}$	$V_{nom} = 5\text{ V}$	0.9935 MHz	

Test conditions		Channel Separation	
		Channel 78	Channel 78+1
$T_{nom} = 23^{\circ}\text{C}$	$V_{nom} = 5\text{ V}$	0.9935 MHz	

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 003 ETSTW-RE 004 ETSTW-RE 055 ETSTW-RE 064

Explanation: see attached diagram



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3.8 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
$T_{nom} = 23^{\circ}\text{C}$	$V_{nom} = 5\text{ V}$	normal transmitting	79
$T_{nom} = 23^{\circ}\text{C}$	$V_{nom} = 5\text{ V}$	Inquiry mode	32

Limits:

Frequency Range MHz	Limit			
	20dB Bandwidth		20dB Bandwidth < 250 kHz	20dB Bandwidth ≥ 250 kHz
	≤ 1MHz			
902-928 MHz			≥ 50	≥ 25
2400-2483.5	≥ 15	≥ 15		
5725-5850.0 MHz	≥ 75			

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 055 ETSTW-RE 064

Explanation: see attached diagrams

3.8.1 Pseudorandom Frequency Hopping Sequence

The generation of the hopping sequence is determined by the Bluetooth cord specification and complies with the FCC requirements.

3.8.2 Coordination of hopping sequences to other transmitters

According to the Bluetooth core specification V1.1 such a coordination is not possible. During scatternet function only one of the two hopping sequences will be used at a definite moment.

3.8.3 System Receiver Hopping Capability

According to the Bluetooth core specification. The system receivers shift frequencies in synchronization with the transmitted signals.



3.9 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
$T_{nom} = 23^{\circ}\text{C}$ $V_{nom} = 5\text{ V}$ Channel 0	normal transmitting-DH 1	31.6	139.2 ms
	normal transmitting-DH 3	31.6	204.6 ms
	normal transmitting-DH 5	31.6	266.49 ms

Test conditions	Operating mode	Measurement period	Time of Occupancy
$T_{nom} = 23^{\circ}\text{C}$ $V_{nom} = 5\text{ V}$ Channel 39	normal transmitting-DH 1	31.6	147.84 ms
	normal transmitting-DH 3	31.6	222.43 ms
	normal transmitting-DH 5	31.6	297.4 ms

Test conditions	Operating mode	Measurement period	Time of Occupancy
$T_{nom} = 23^{\circ}\text{C}$ $V_{nom} = 5\text{ V}$ Channel 78	normal transmitting-DH 1	31.6	134.85 ms
	normal transmitting-DH 3	31.6	187.55 ms
	normal transmitting-DH 5	31.6	296.7 ms



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Limits and measurement periods:

Frequency MHz	Number of channels	Measurement Period	Limit
902 – 928	≥ 50	20 s	0,4 s
	$49 \geq 25$	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 003 ETSTW-RE 004 ETSTW-RE 055 ETSTW-RE 064

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



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3.10 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
$T_{nom} = 23^{\circ}\text{C}$	$V_{nom} = 5\text{ V}$	980.769230769 kHz	974.358974359 kHz	974.358974359 kHz

Limits:

Frequency Range / MHz	Number of channels	Limit
902-928	< 50	$< 250\text{ kHz}$
	$49 \geq 25$	$500\text{ kHz} \geq 250\text{ kHz}$
2400-2483.5	≥ 15	not determined
5725-5850	75	$\leq 1\text{ MHz}$

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 055 ETSTW-RE 064

Explanation: See attached diagram

3.10.1 System Receiver Input Bandwidth

It is determined in the Bluetooth core specification. The value matches to the bandwidth of transmitter signal.



3.11 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
$T_{nom} = 23^{\circ}\text{C}$	$V_{nom} = 5 \text{ V}$	49.82 dB	46.66 dB

Test conditions		Attenuation at or outside band-edges Hopping Frequency	
		Lower Band-edge	Upper Band-edge
$T_{nom} = 23^{\circ}\text{C}$	$V_{nom} = 5 \text{ V}$	44.93 dB	46.78 dB

Limits:

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

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 017 ETSTW-RE 028
ETSTW-RE 030 ETSTW-RE 043 ETSTW-RE 044 ETSTW-RE 064

Explanation: See attached diagrams



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3.12 Radiated Emissions from Digital Part

FCC Rule: 15.109

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 044 ETSTW-RE 064

Explanation: The test is not required because the EUT is not connect with PC.



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3.13 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: BL-902

Date: 2007/9/17

Mode:

Temperature: 26 °C

Polarization: N

Humidity: 60 % Engineer: Derek

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result (dBuV)		Limit (dBuV)		Margin (dB)
	QP	Ave.		QP	Ave.	QP	Ave.	
0.1807	29.87	22.64	10.10	39.97	32.74	64.45	54.45	-21.71
0.3592	37.24	29.68	10.10	47.34	39.78	58.75	48.75	-8.97
0.9	32.33	24.87	10.10	42.43	34.97	56	46	-11.03
2.645	32.05	24.36	10.10	42.15	34.46	56	46	-11.54
5.3611	17.65	8.73	10.10	27.75	18.83	60	50	-31.17
27	4.47	0.23	10.10	14.57	10.33	60	50	-39.67

Polarization: L1

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result (dBuV)		Limit (dBuV)		Margin (dB)
	QP	Ave.		QP	Ave.	QP	Ave.	
0.1815	32.73	24.75	10.10	42.83	34.85	64.42	54.42	-19.57
0.3608	40.86	32.82	10.10	50.96	42.92	58.71	48.71	-5.79
0.9	35.22	27.75	10.10	45.32	37.85	56	46	-8.15
2.645	34.98	27.09	10.10	45.08	37.19	56	46	-8.81
5.9444	21.58	11.89	10.10	31.68	21.99	60	50	-28.01
18.6388	6.59	1.59	10.10	16.69	11.69	60	50	-38.31



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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

- 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.**

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

Explanation: See attached diagram



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. Power Line Conducted Emission

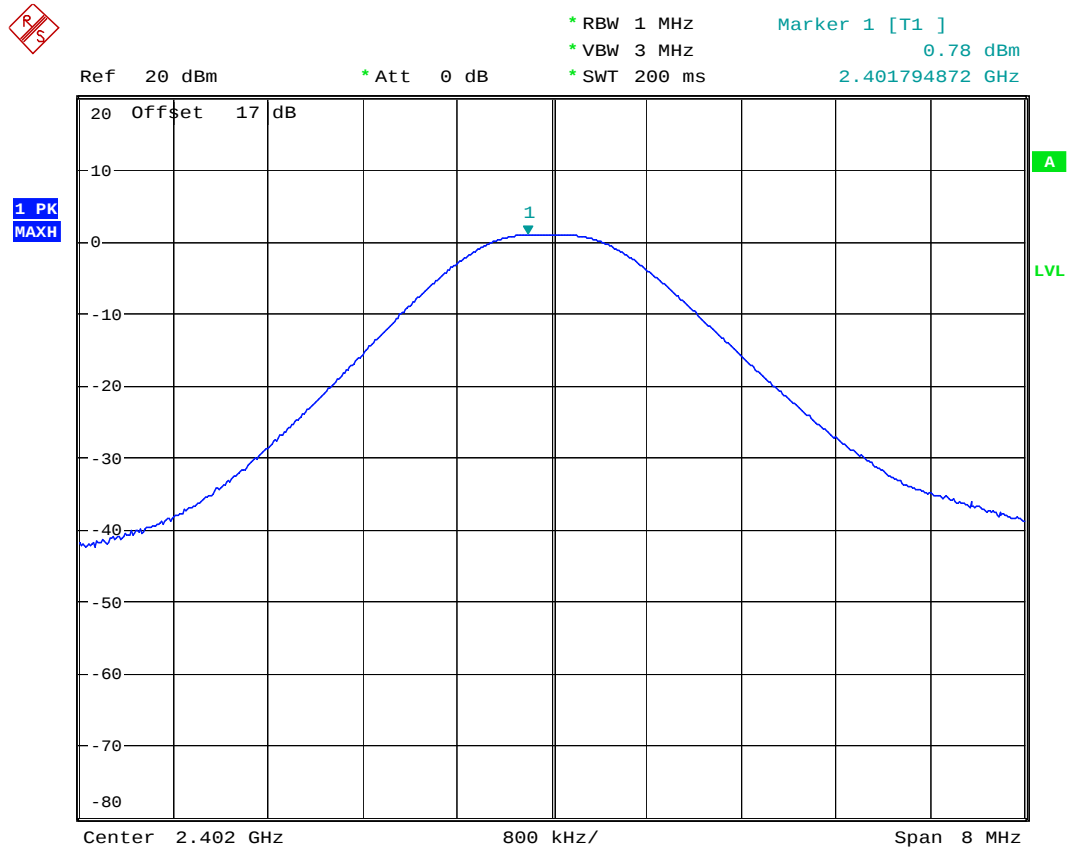
B Photos

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



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Peak Output Power



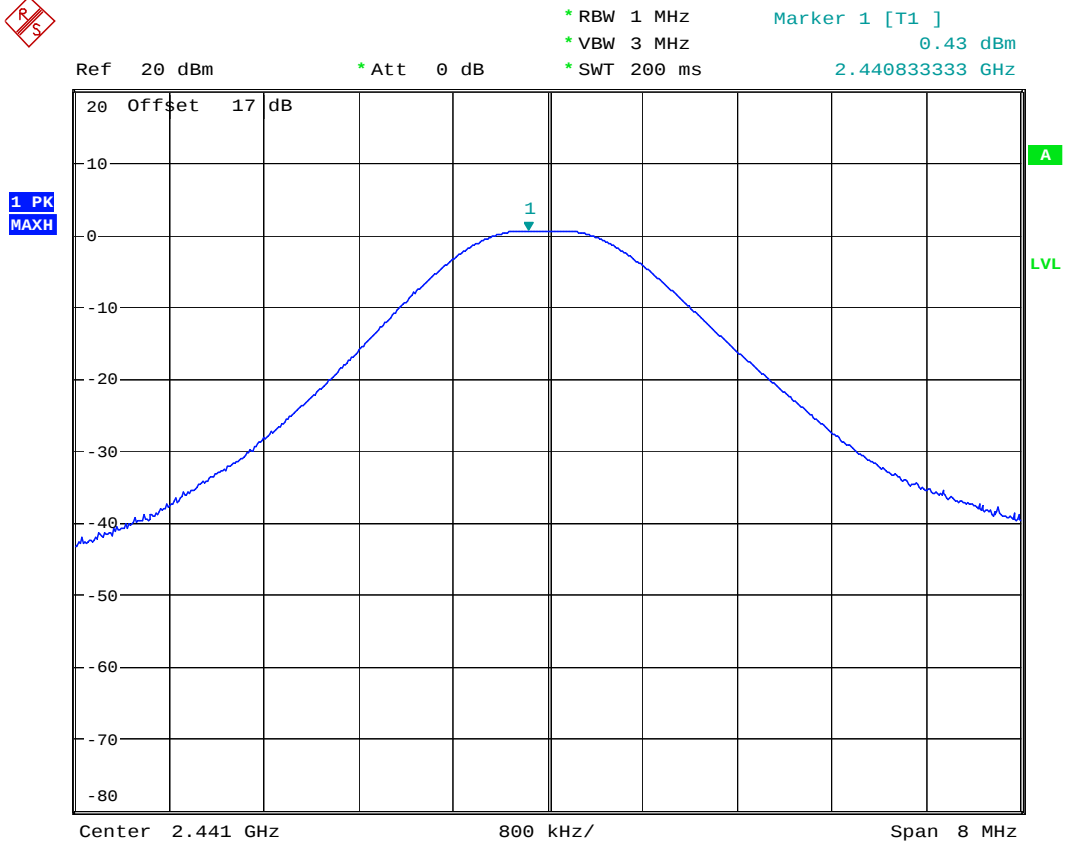
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Taiwan ETS Product Service Co., Ltd.

Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902



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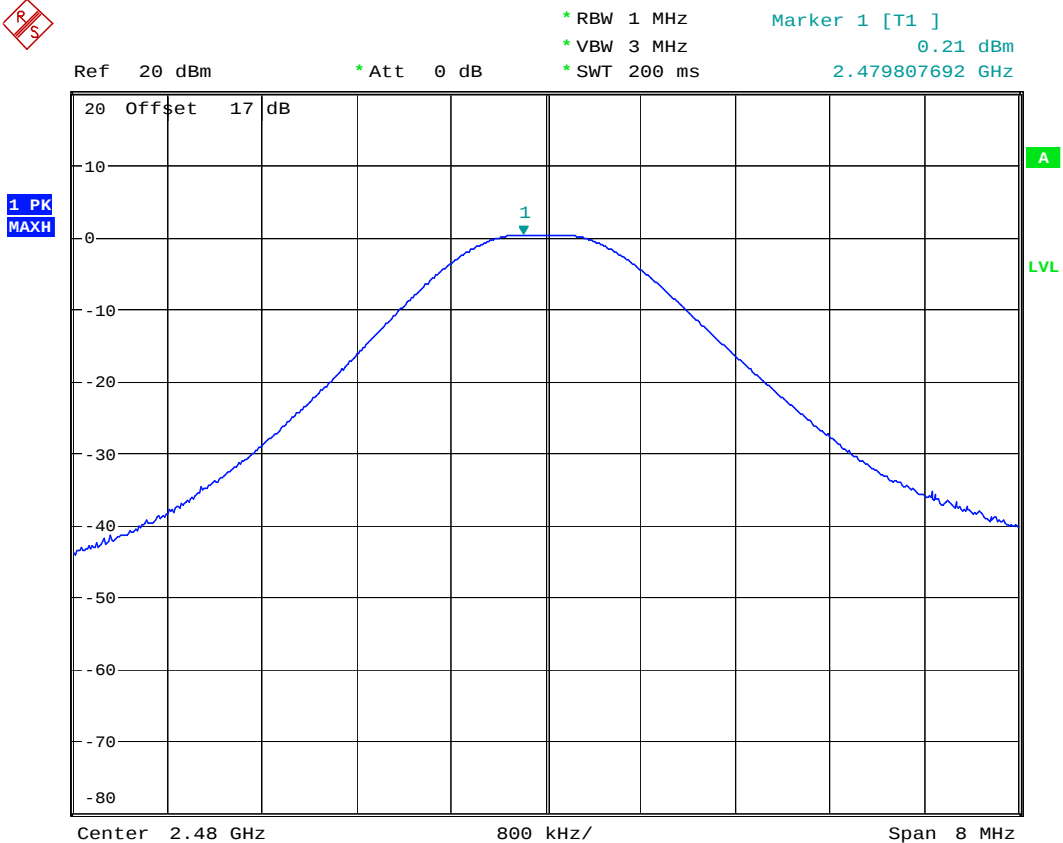
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Taiwan ETS Product Service Co., Ltd.

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FCC ID: RLM-BLUEMATE-902



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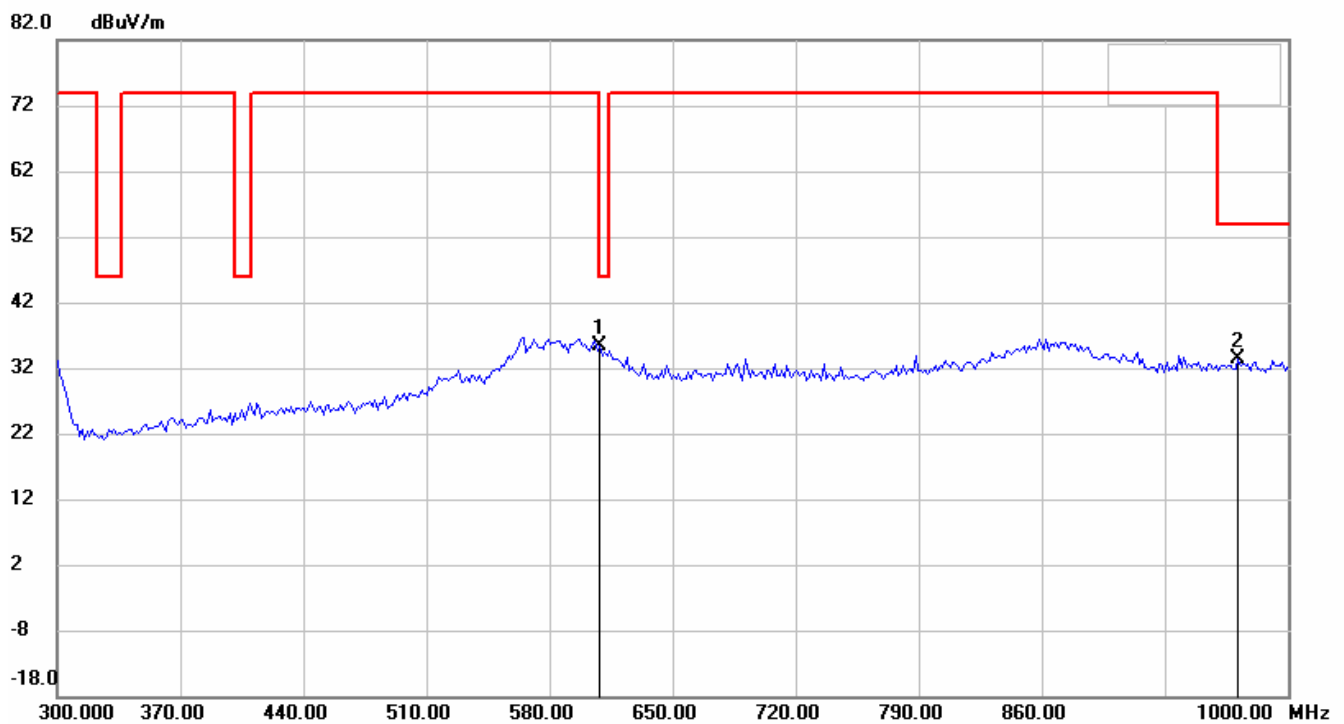
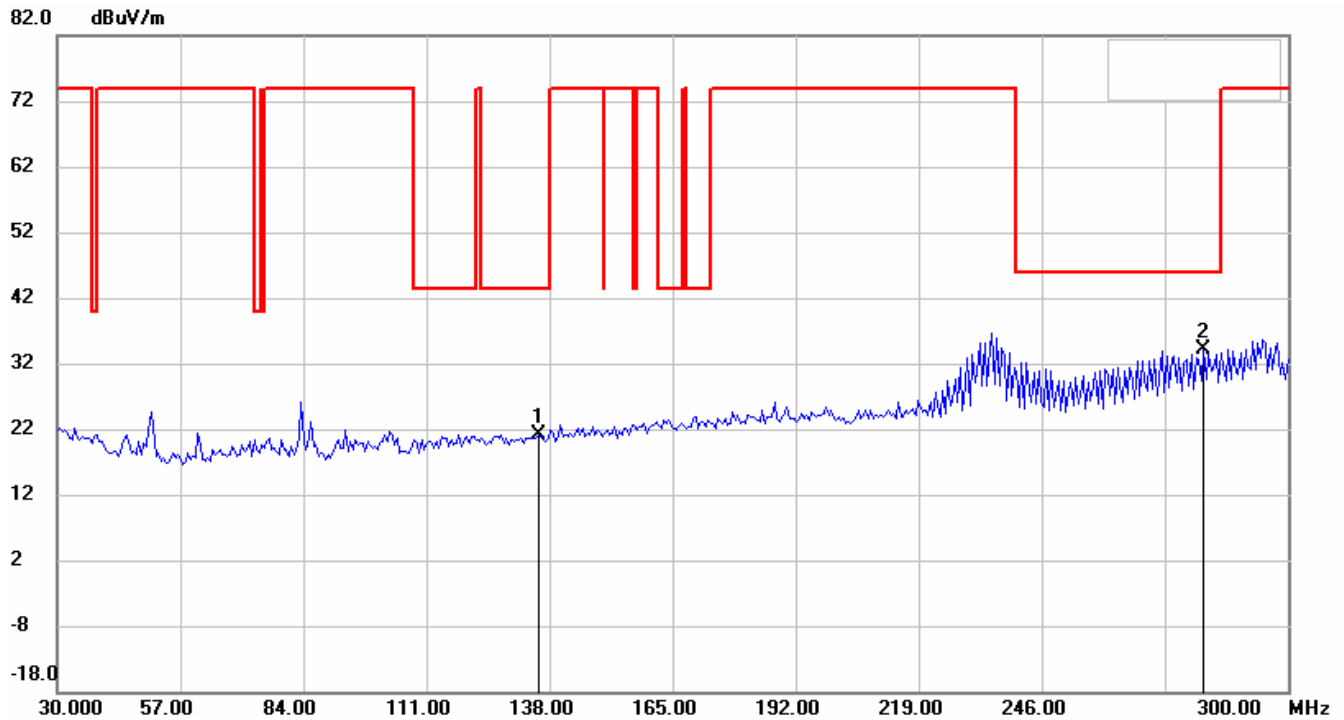


Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902

Spurious Emissions radiated

CH 0

Antenna Polarization H



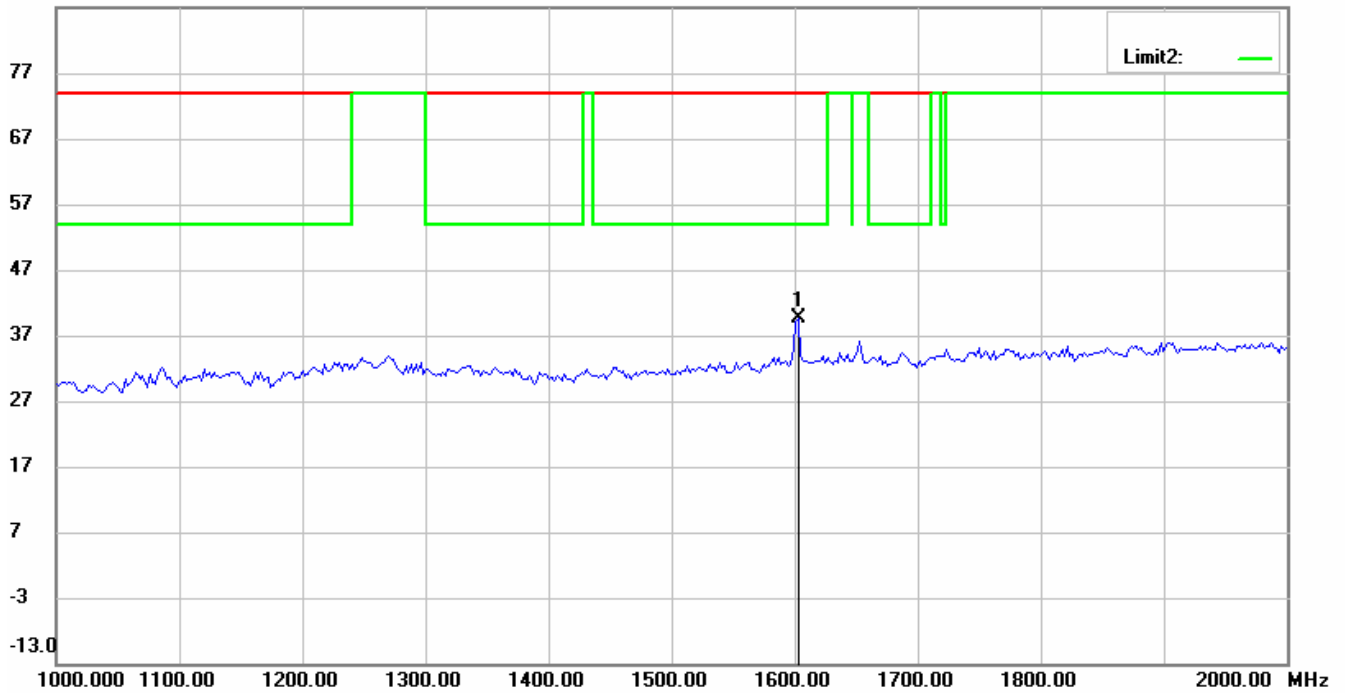


Taiwan ETS Product Service Co., Ltd.

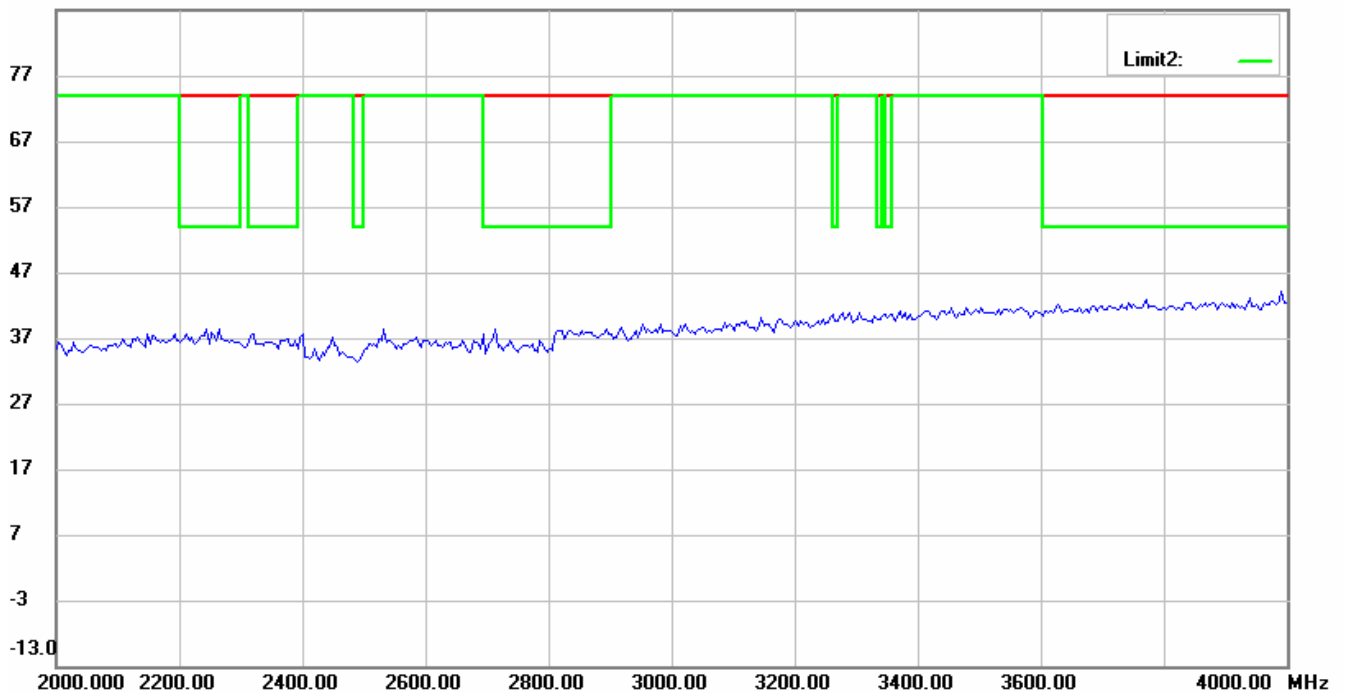
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FCC ID: RLM-BLUEMATE-902

87.0 dBuV/m



87.0 dBuV/m



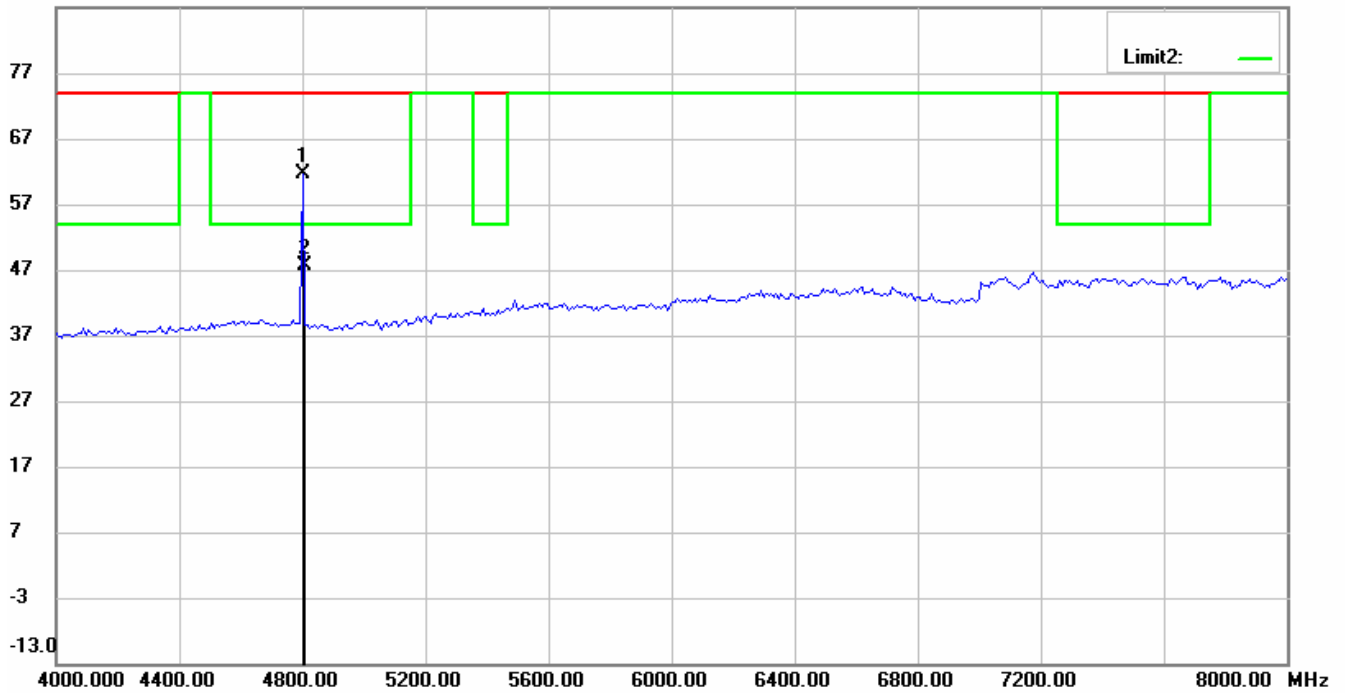


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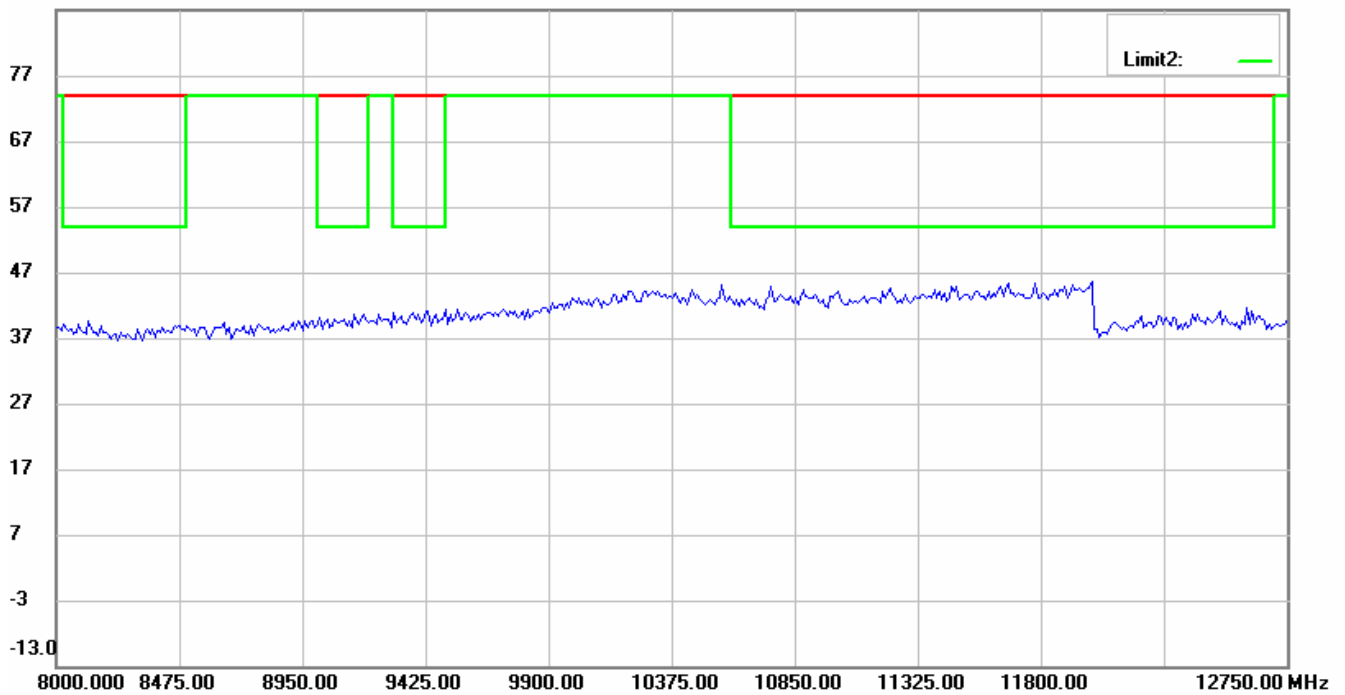
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87.0 dBuV/m



87.0 dBuV/m



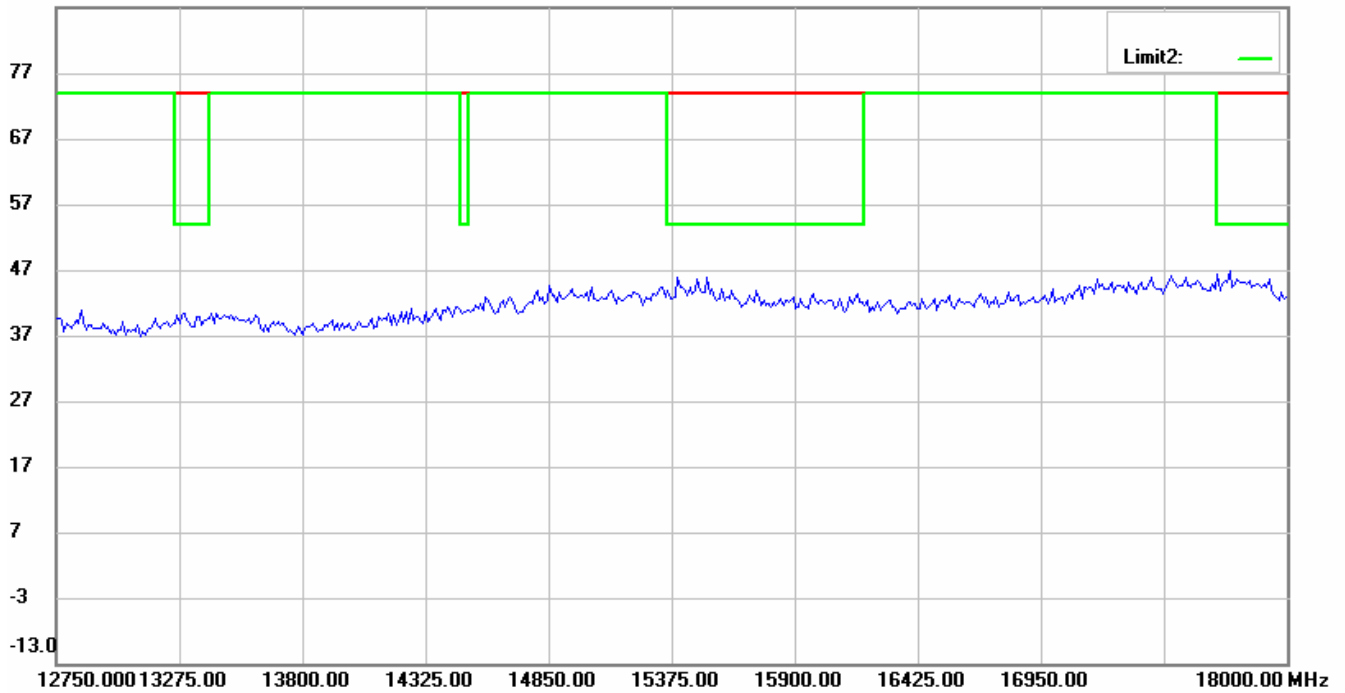


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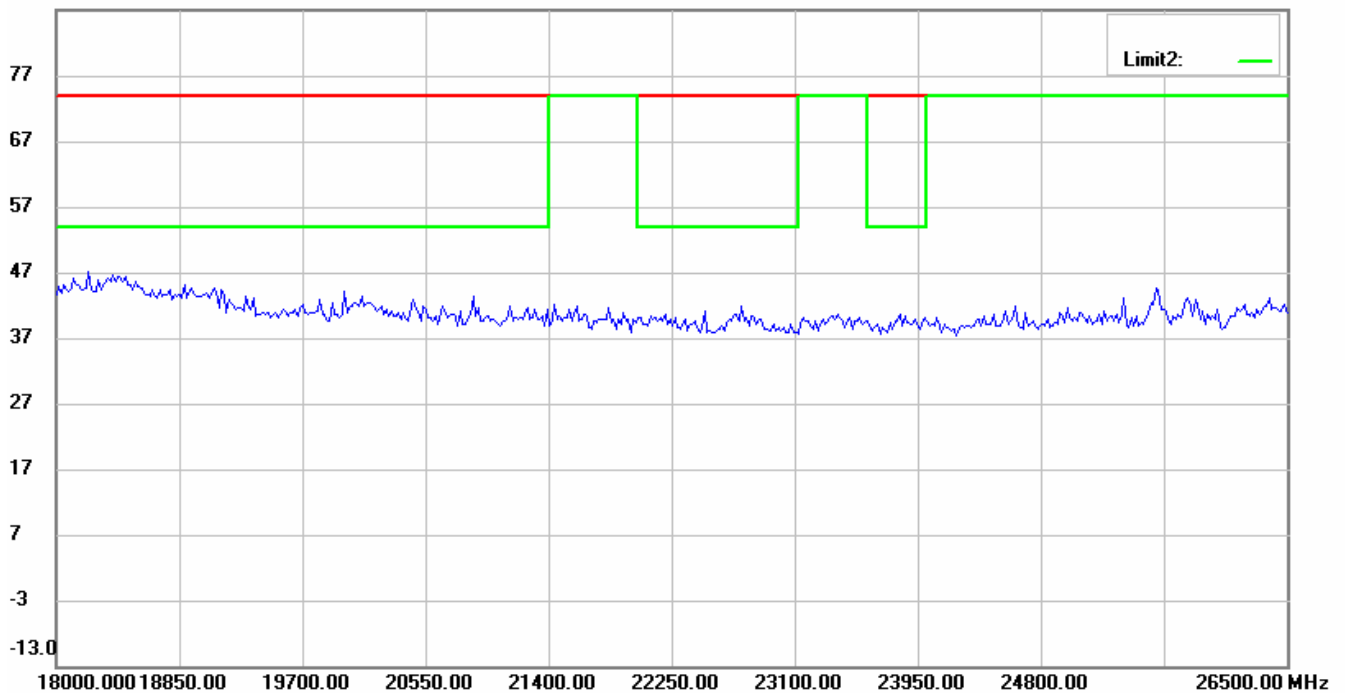
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87.0 dBuV/m



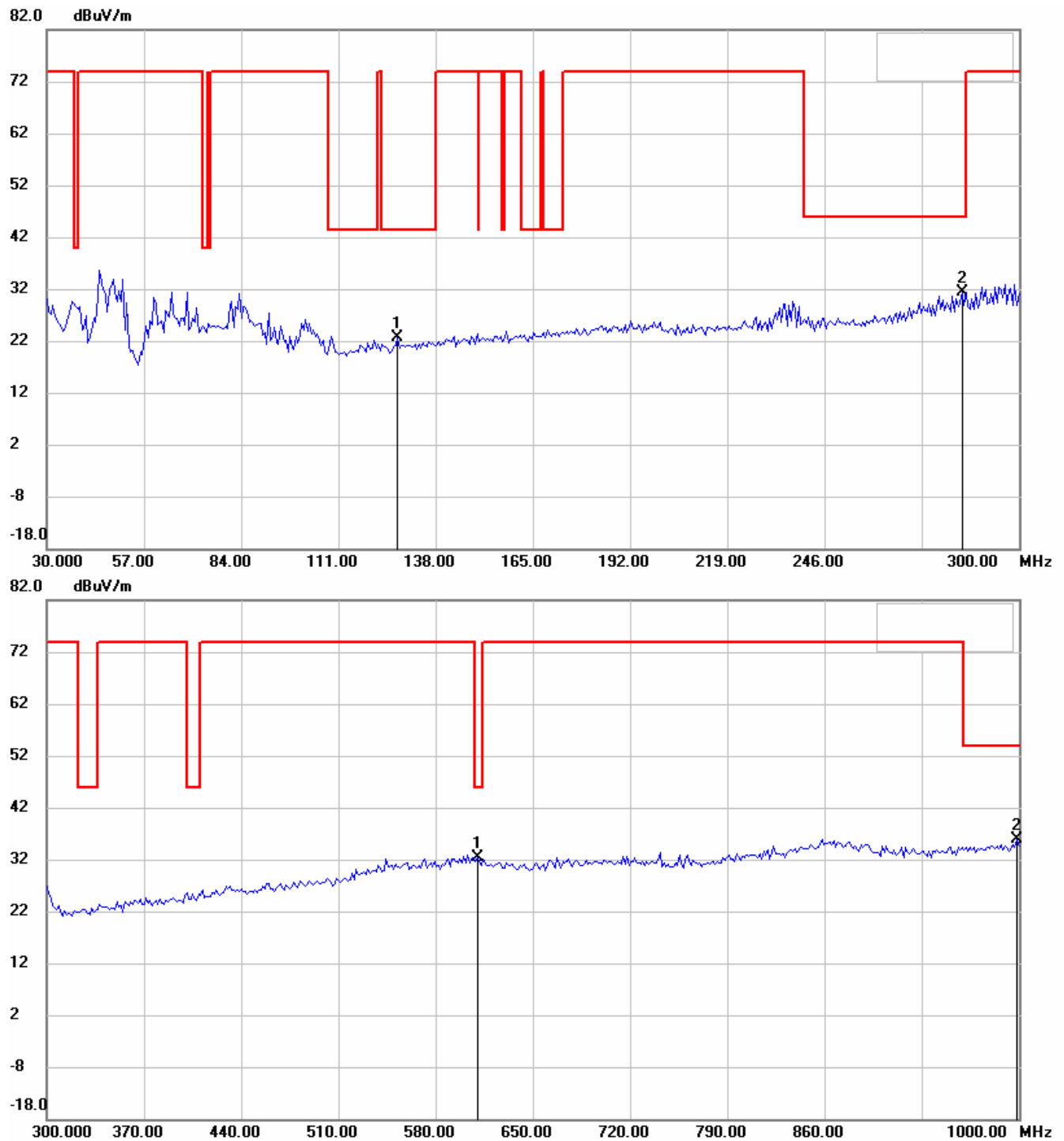
87.0 dBuV/m





Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902

Antenna Polarization V



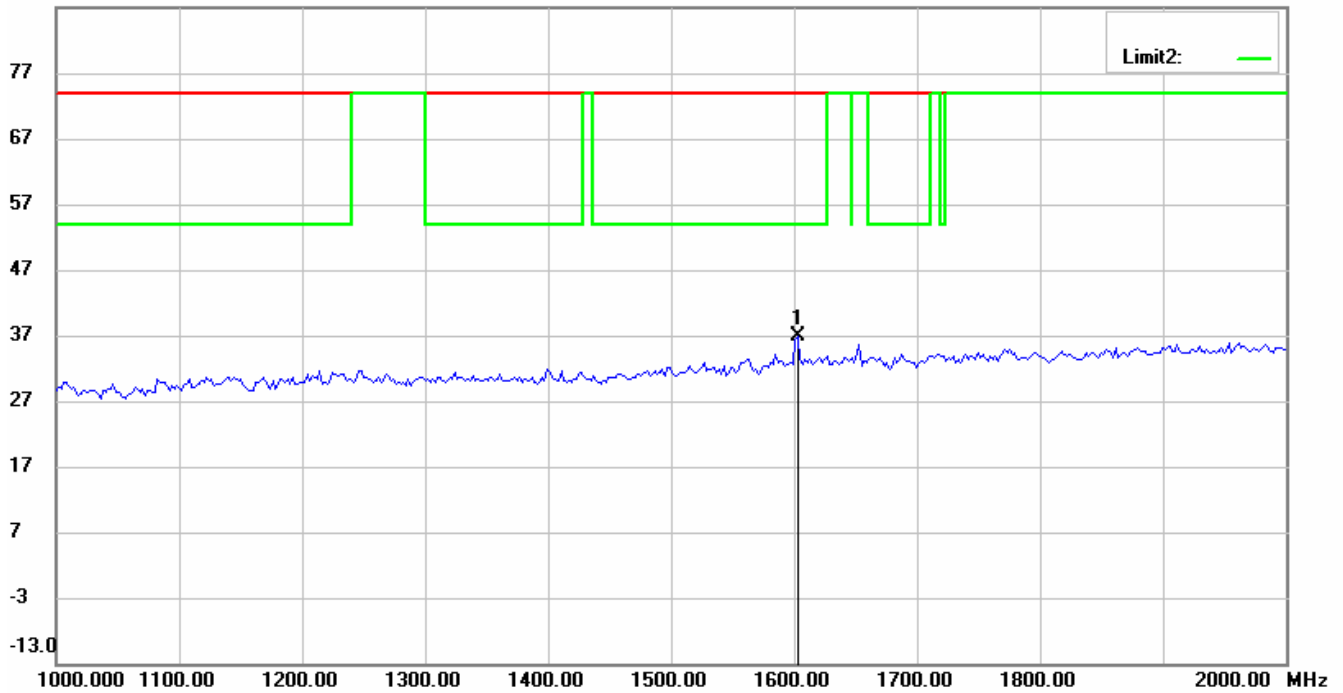


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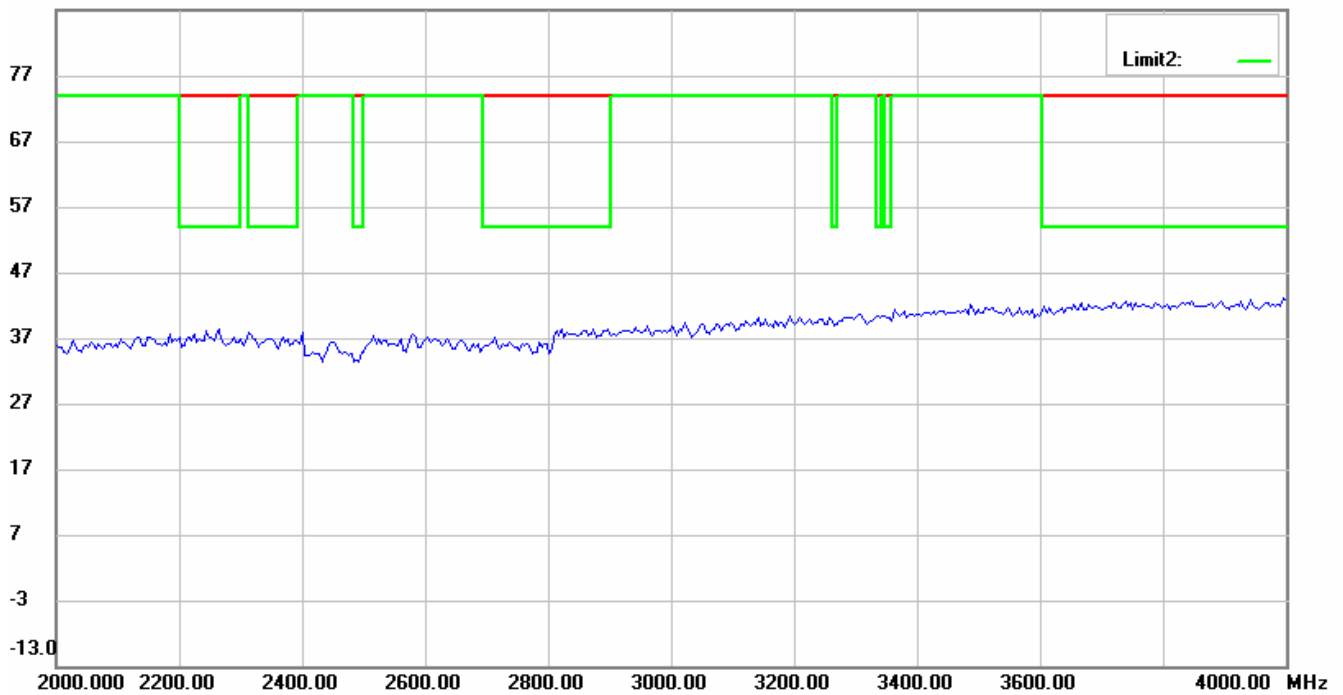
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87.0 dBuV/m



87.0 dBuV/m



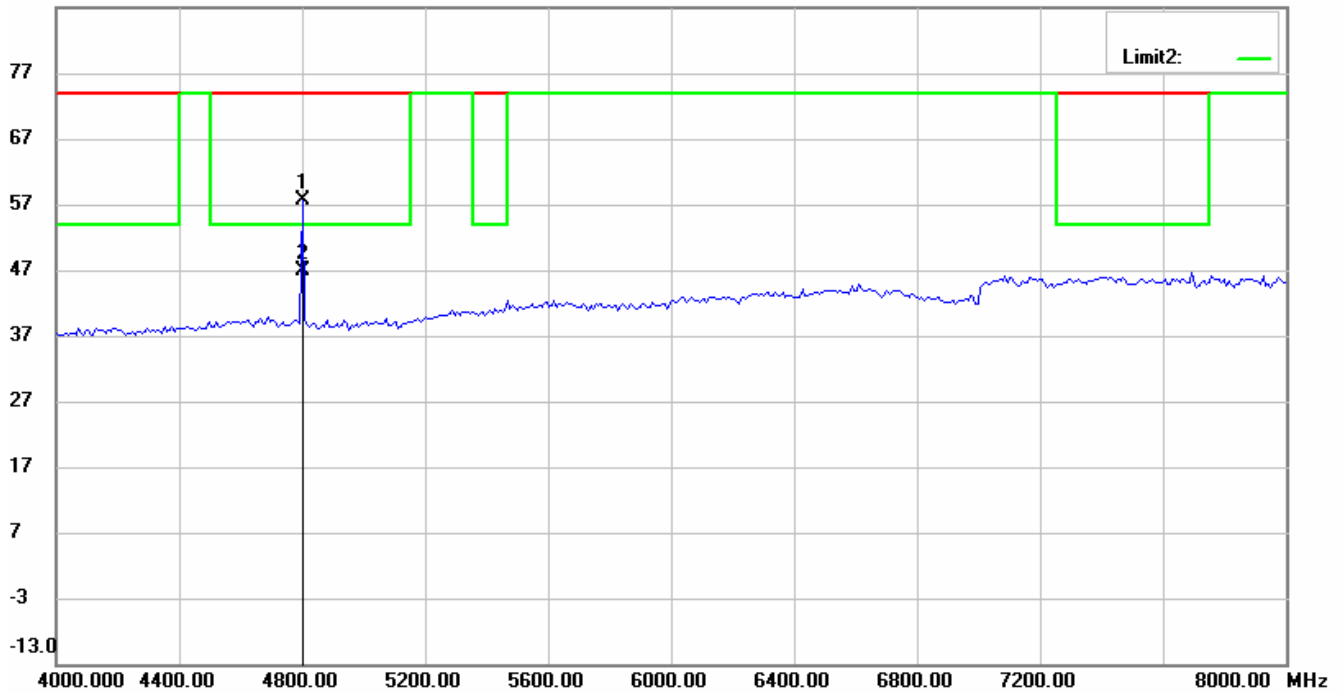


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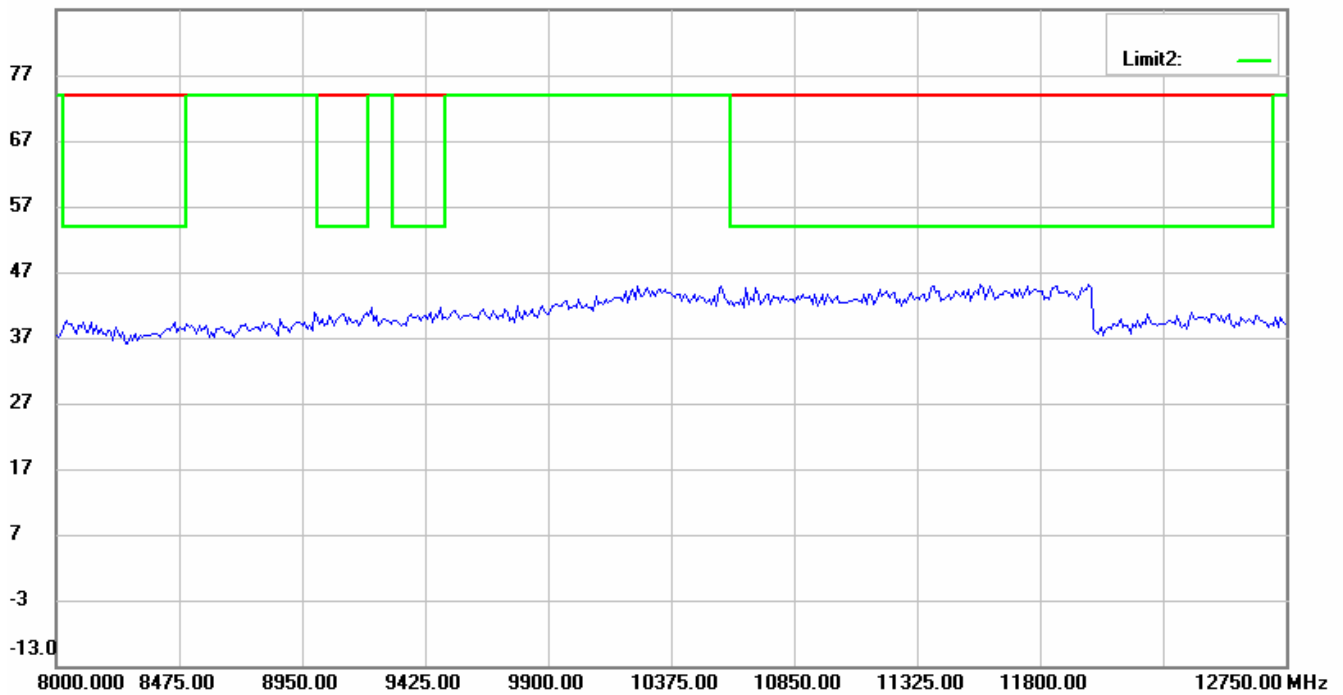
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FCC ID: RLM-BLUEMATE-902

87.0 dBuV/m



87.0 dBuV/m



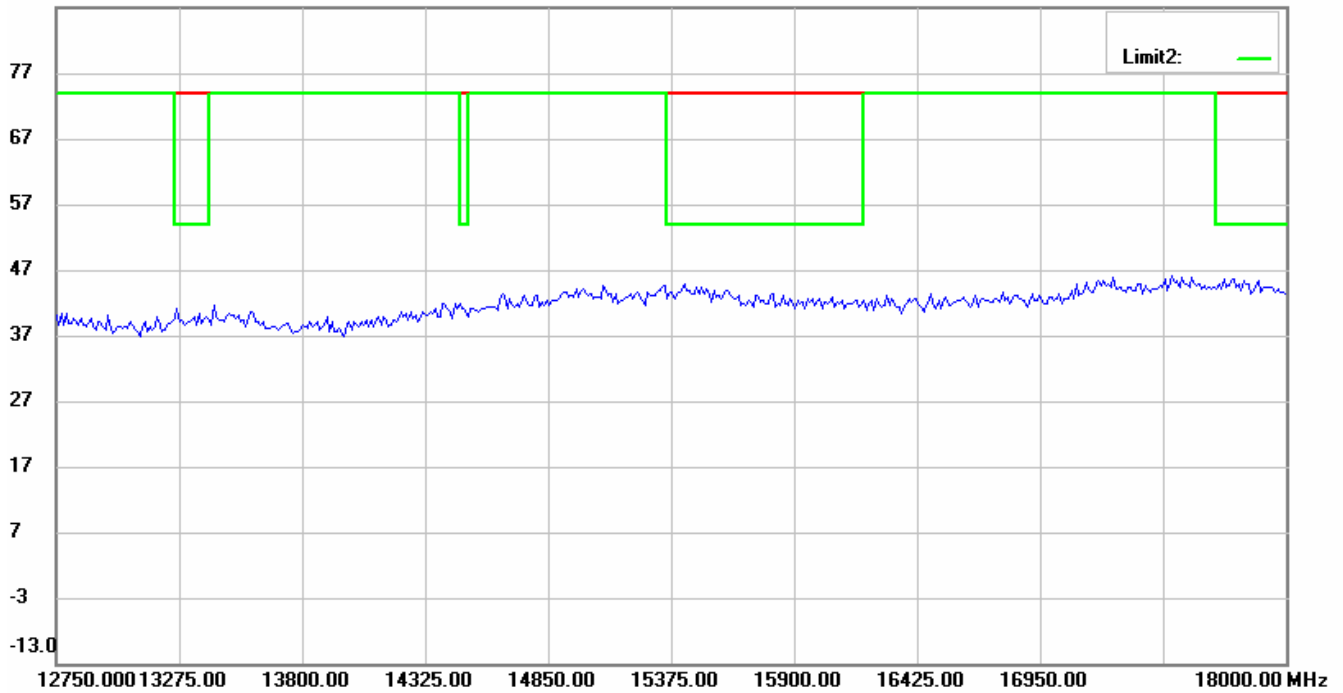


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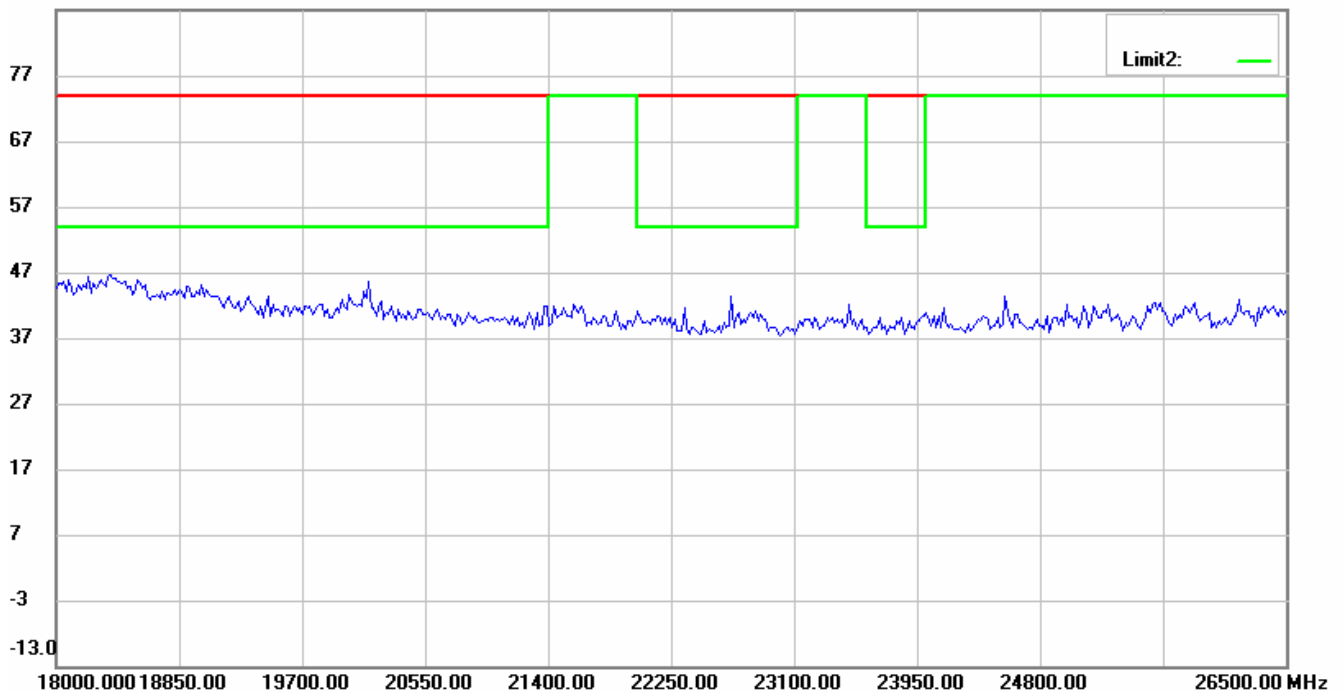
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87.0 dBuV/m



87.0 dBuV/m

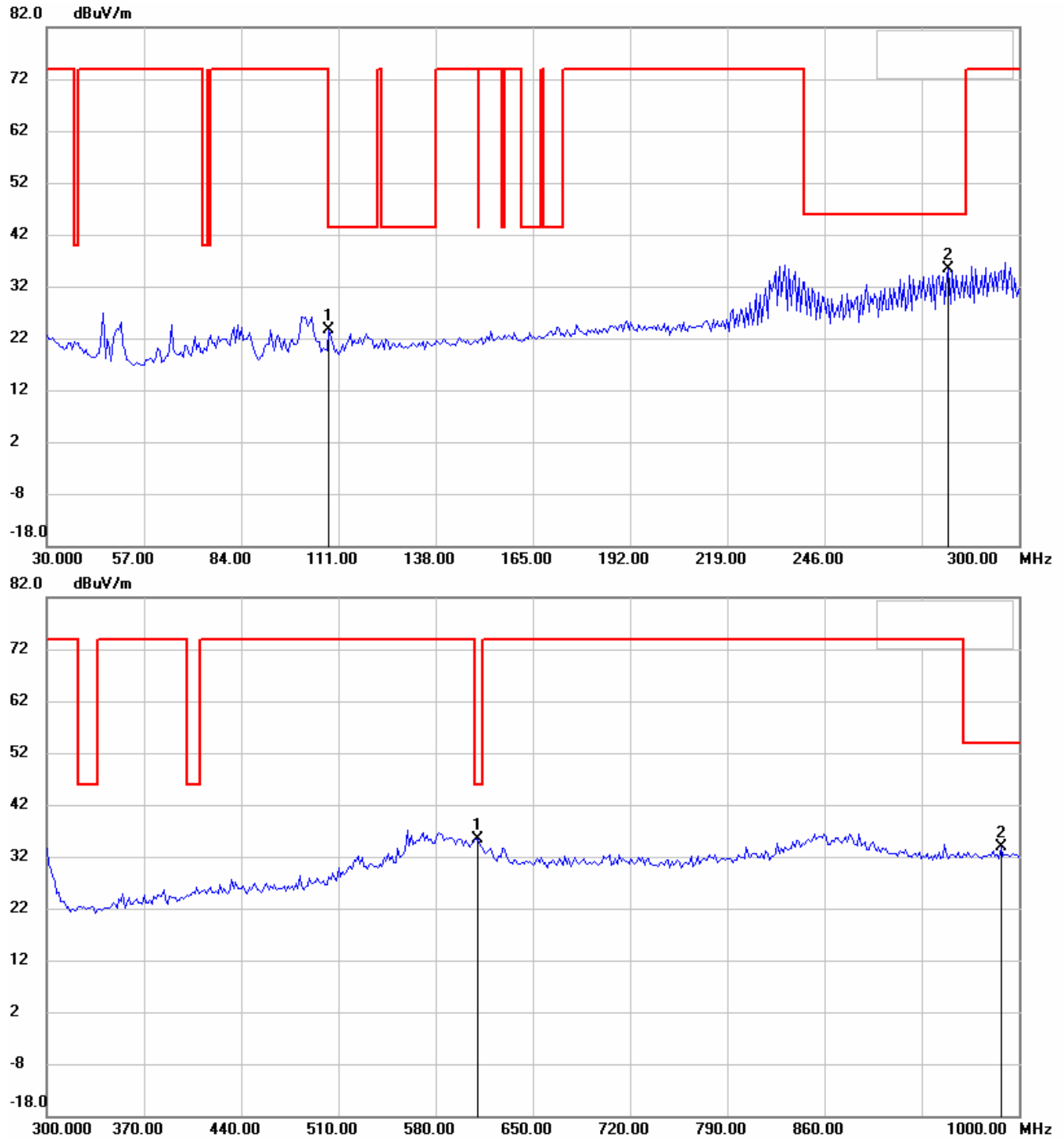




Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902

CH 39

Antenna Polarization H



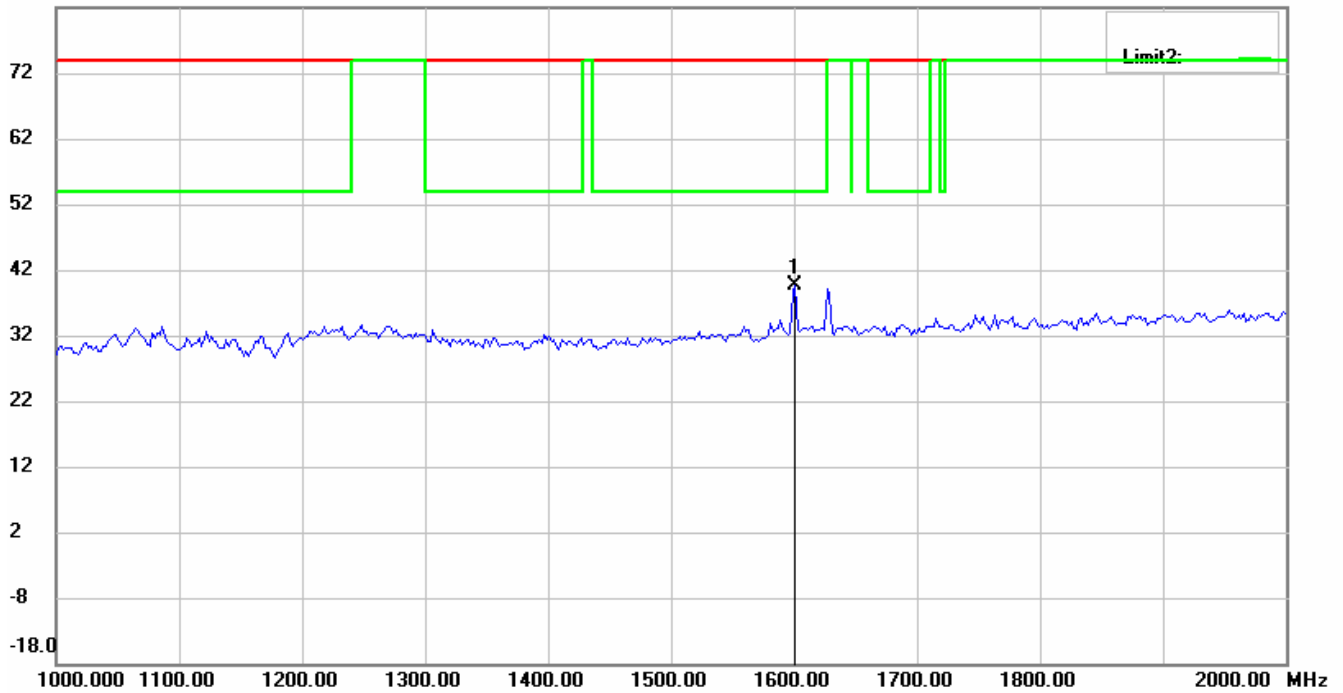


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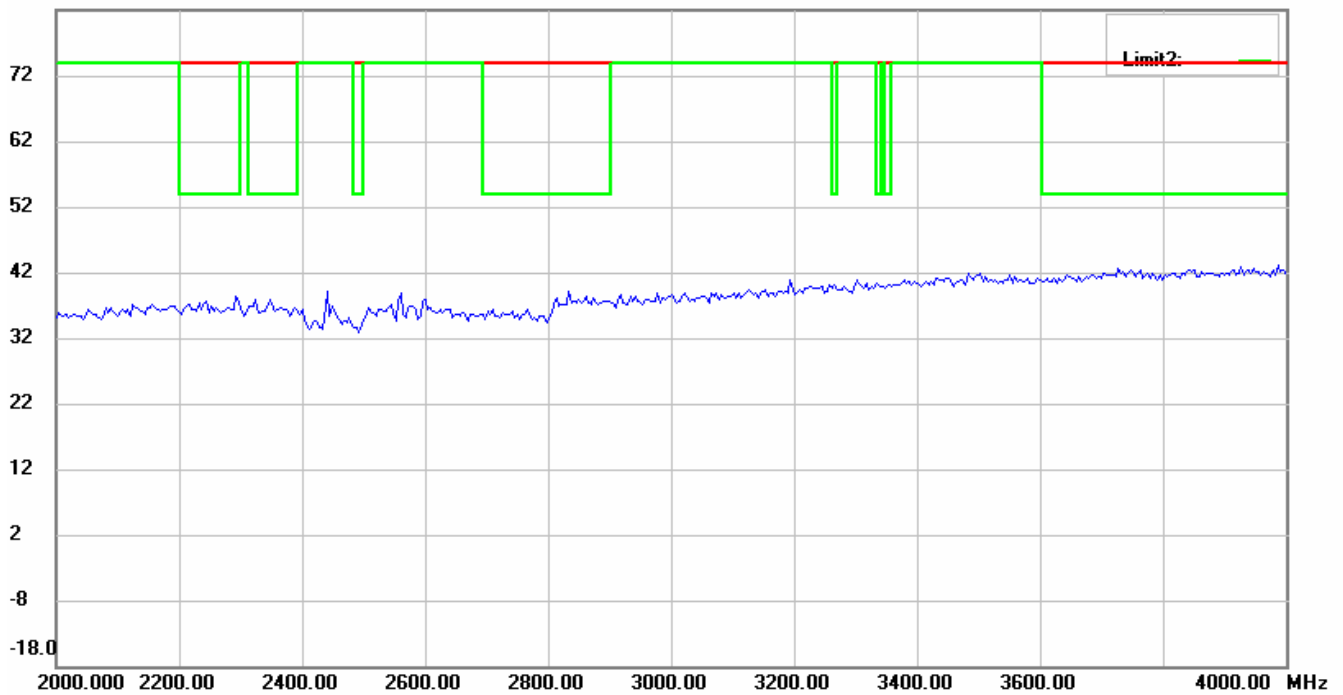
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FCC ID: RLM-BLUEMATE-902

82.0 dBuV/m



82.0 dBuV/m



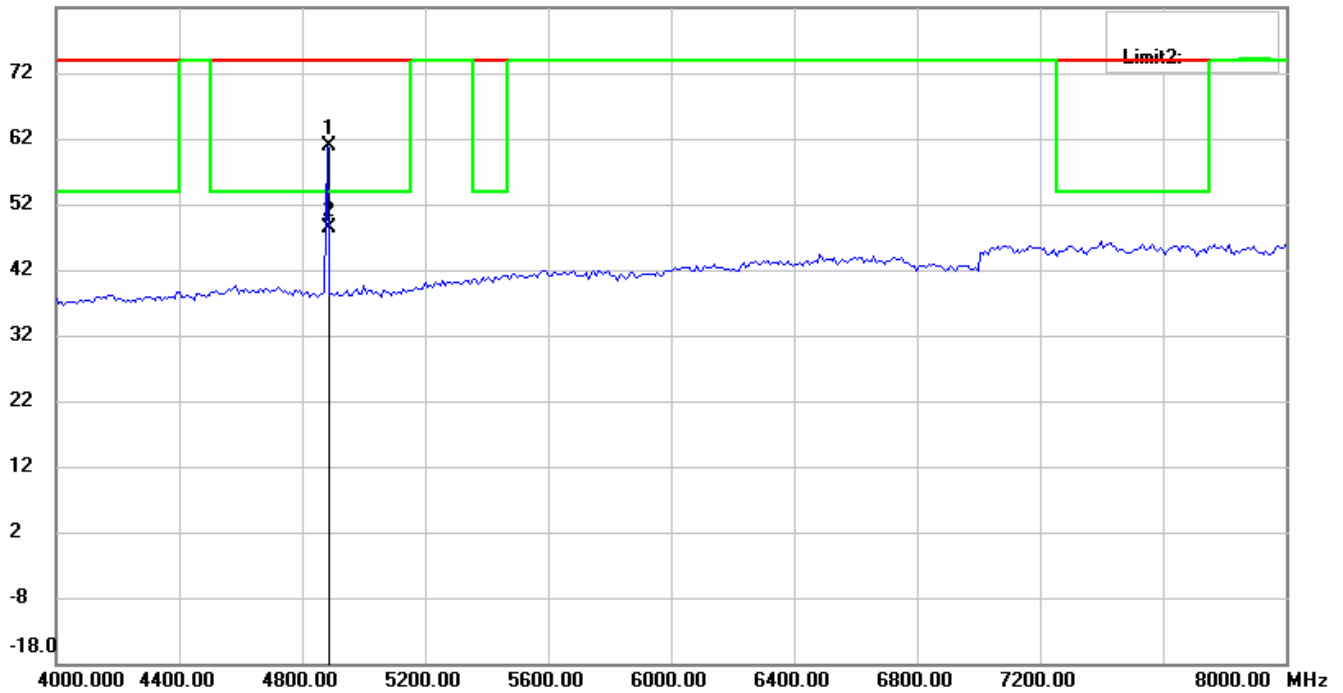


Taiwan ETS Product Service Co., Ltd.

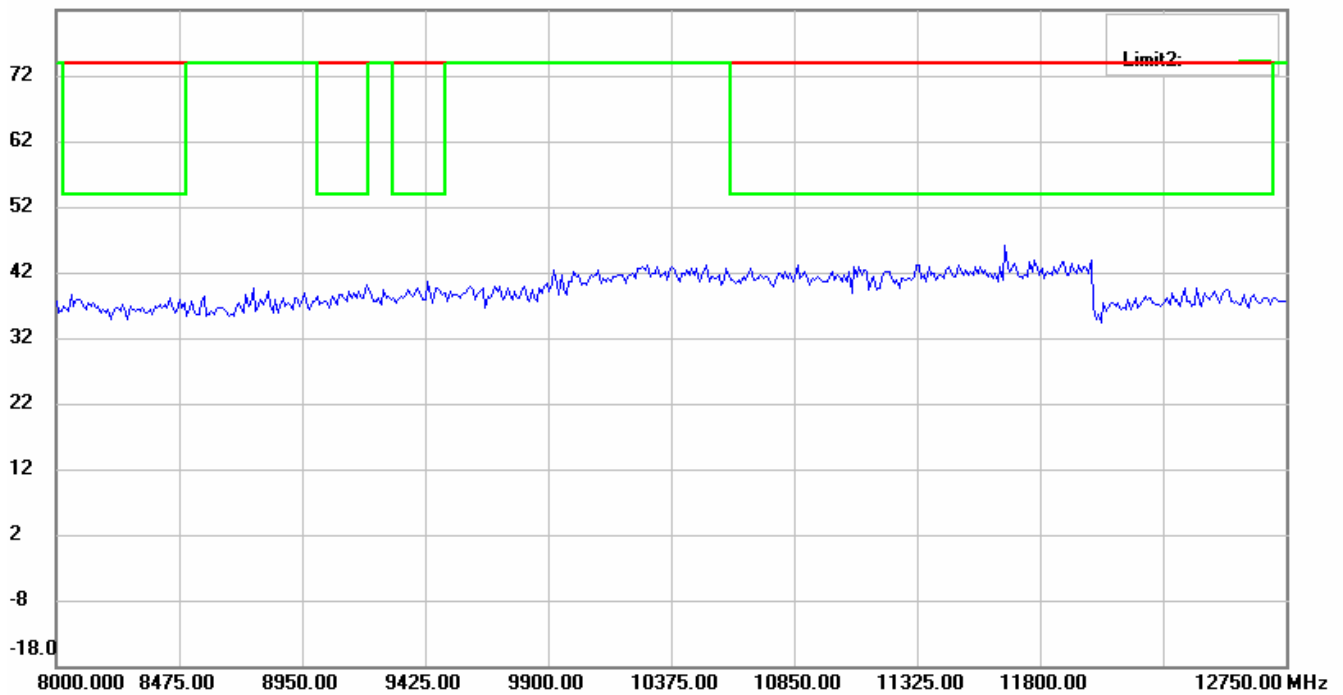
Registration number: W6D20801-8841-P-15

FCC ID: RLM-BLUEMATE-902

82.0 dBuV/m



82.0 dBuV/m



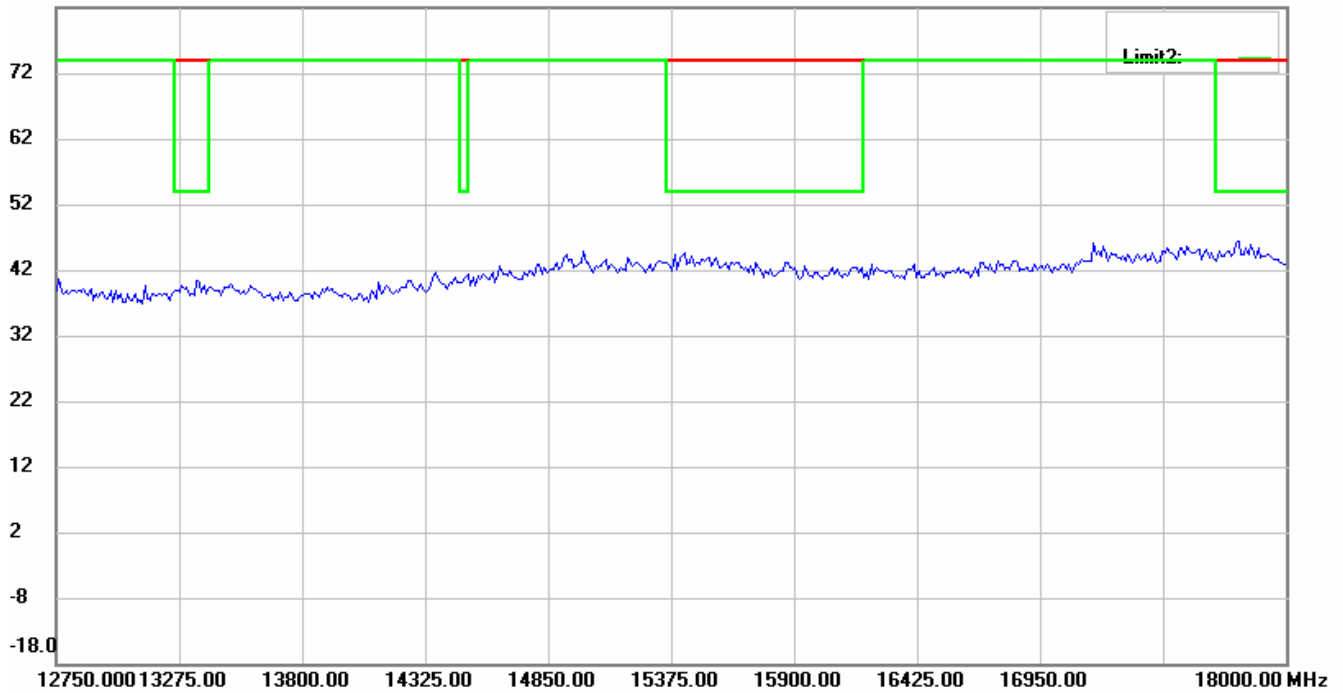


Taiwan ETS Product Service Co., Ltd.

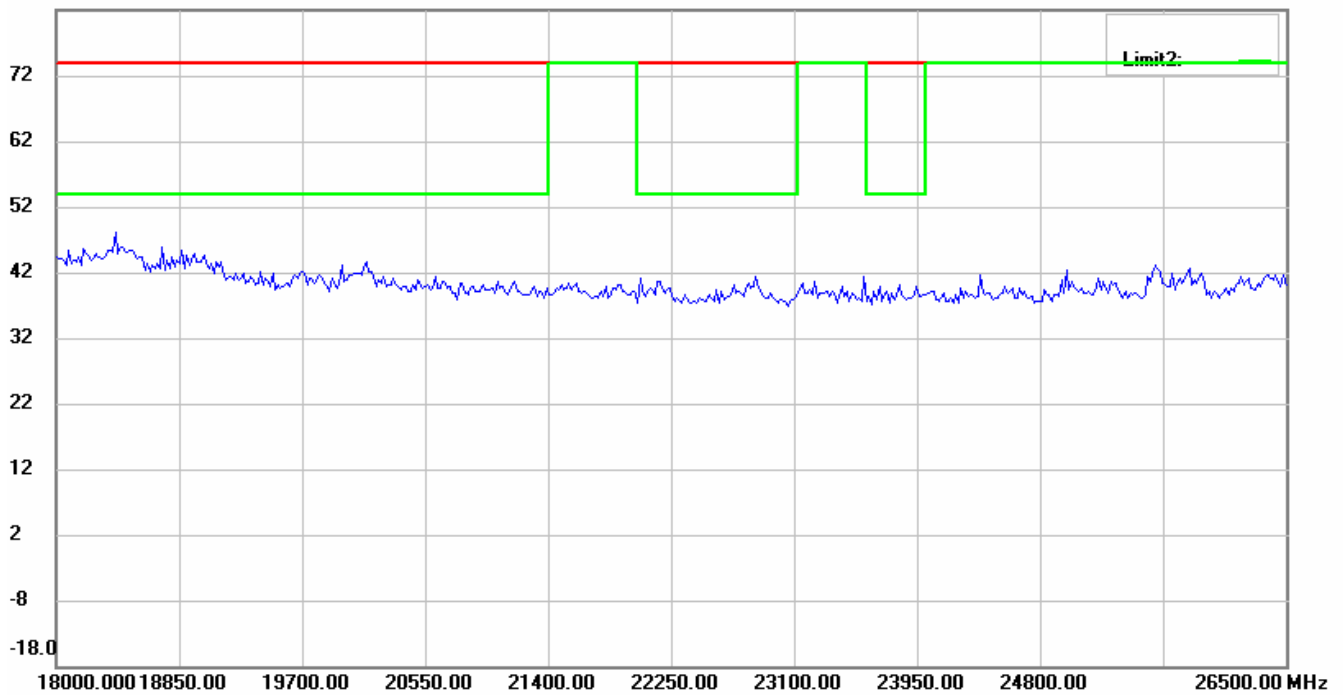
Registration number: W6D20801-8841-P-15

FCC ID: RLM-BLUEMATE-902

82.0 dBuV/m



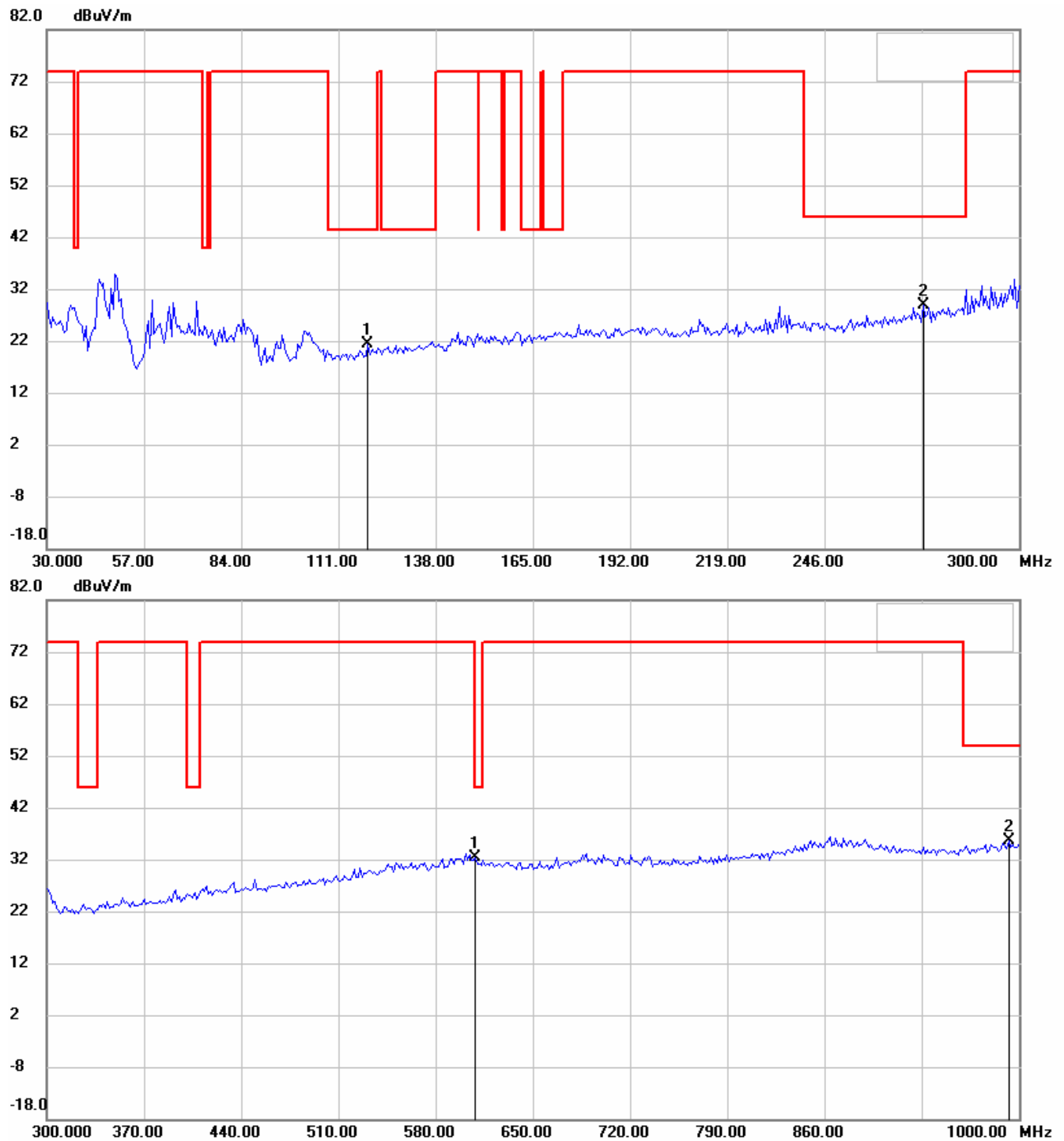
82.0 dBuV/m





Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902

Antenna Polarization V



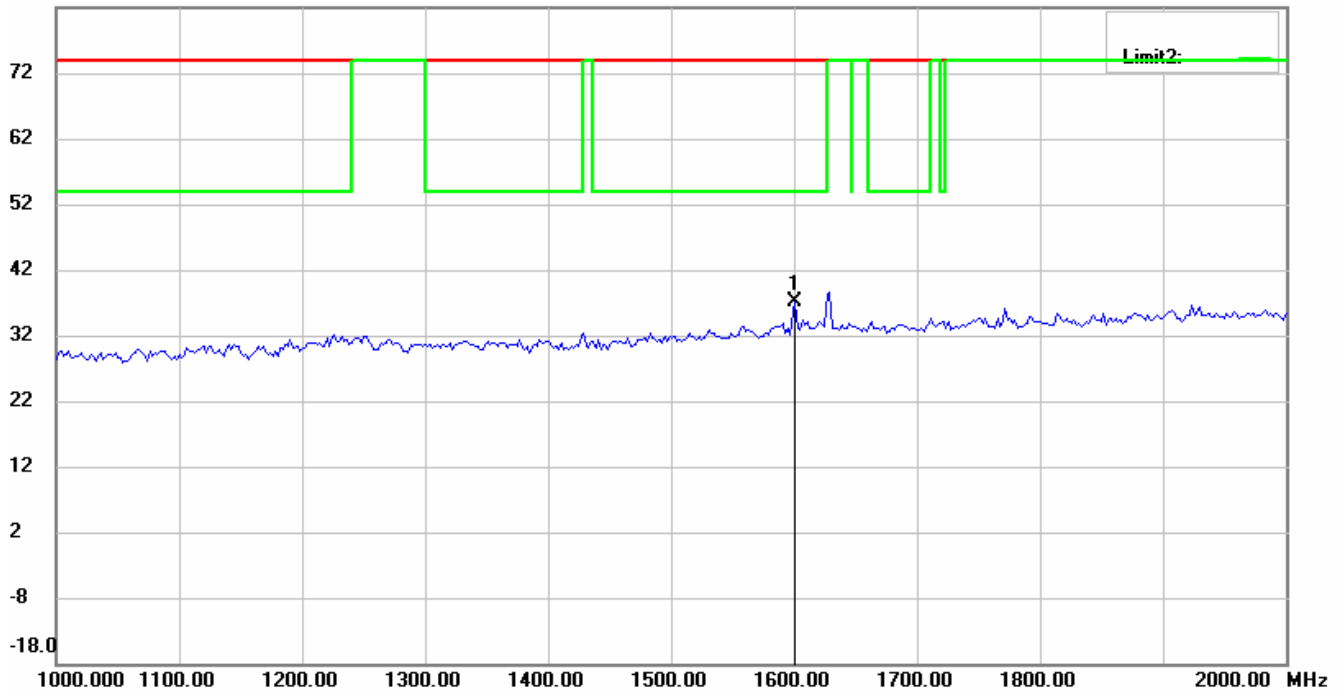


Taiwan ETS Product Service Co., Ltd.

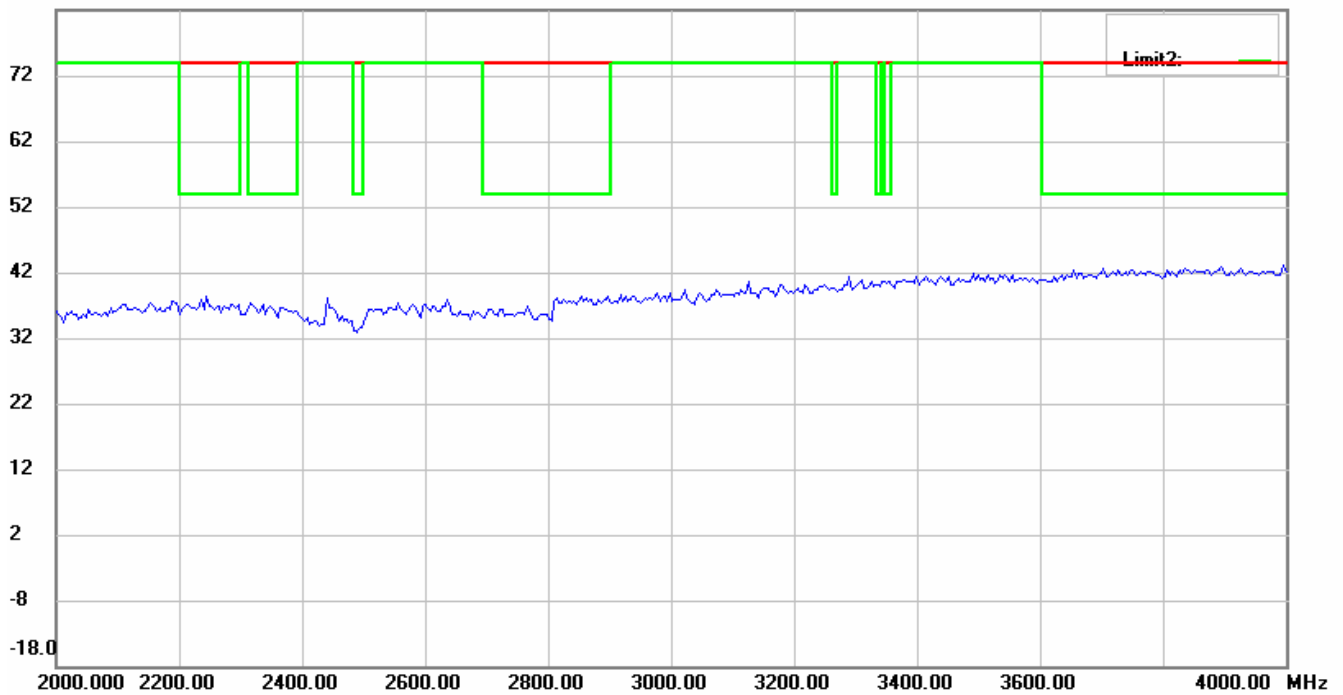
Registration number: W6D20801-8841-P-15

FCC ID: RLM-BLUEMATE-902

82.0 dBuV/m



82.0 dBuV/m



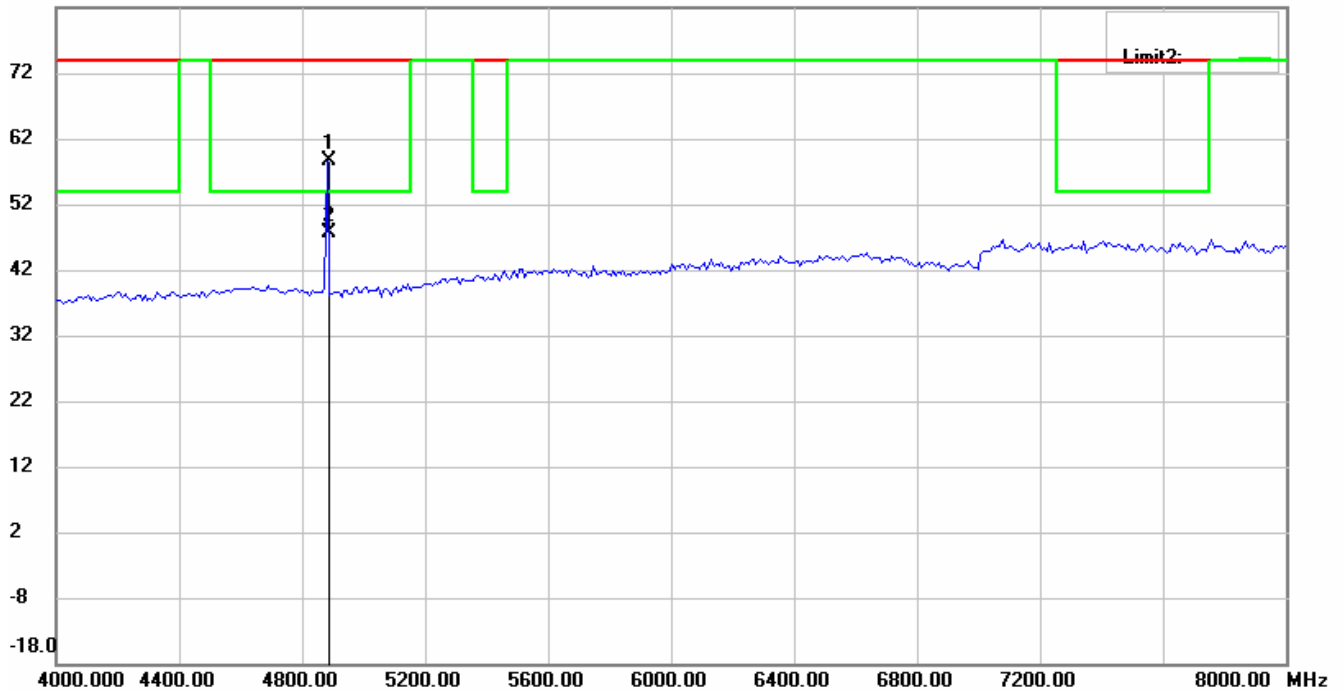


Taiwan ETS Product Service Co., Ltd.

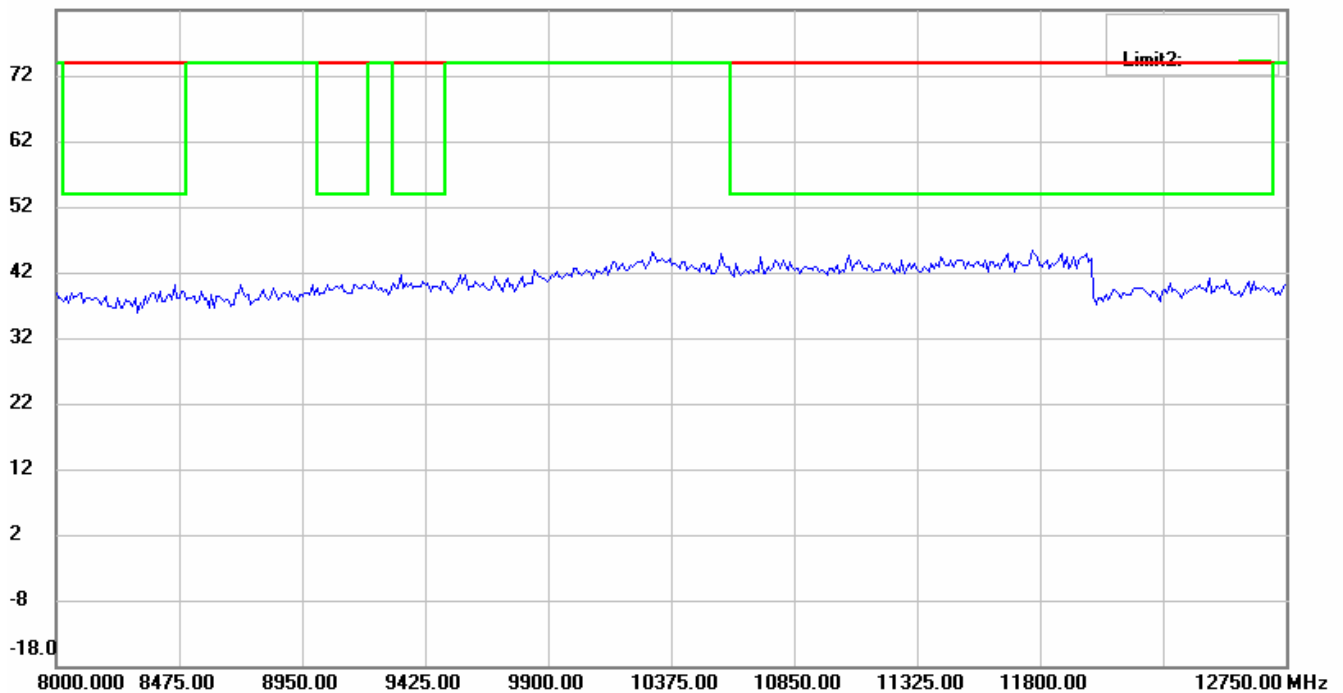
Registration number: W6D20801-8841-P-15

FCC ID: RLM-BLUEMATE-902

82.0 dBuV/m



82.0 dBuV/m



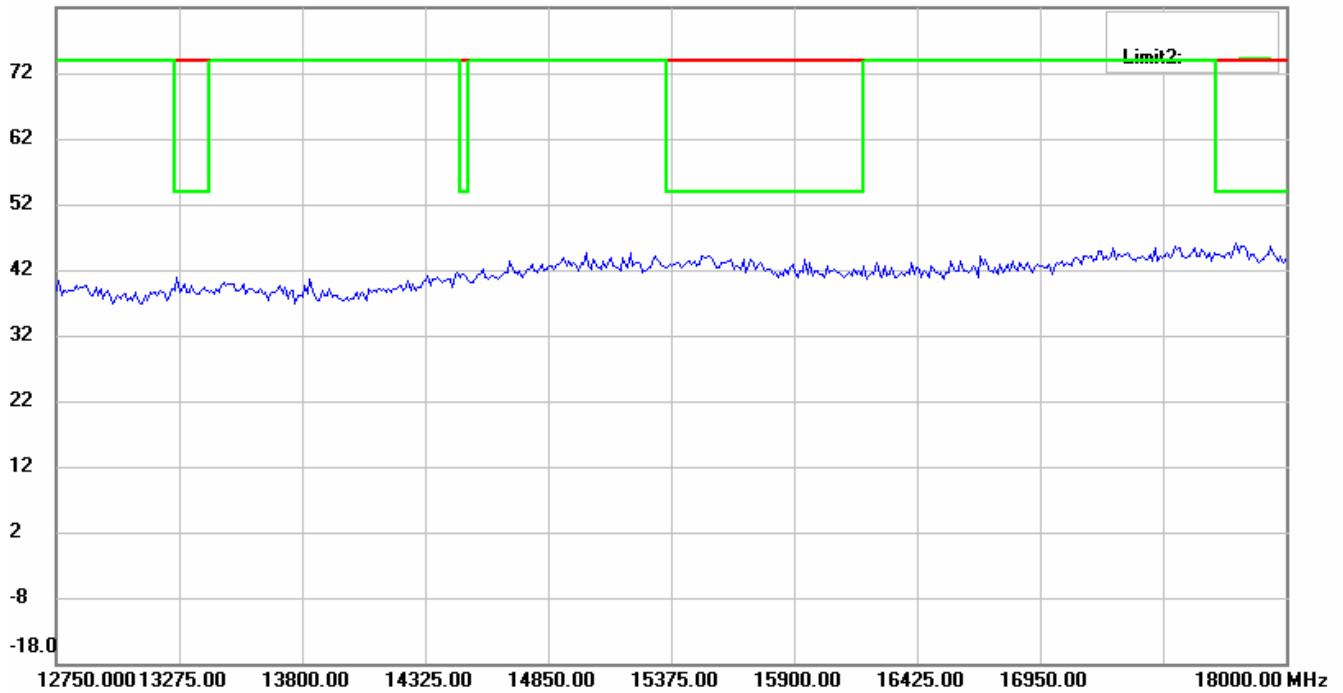


Taiwan ETS Product Service Co., Ltd.

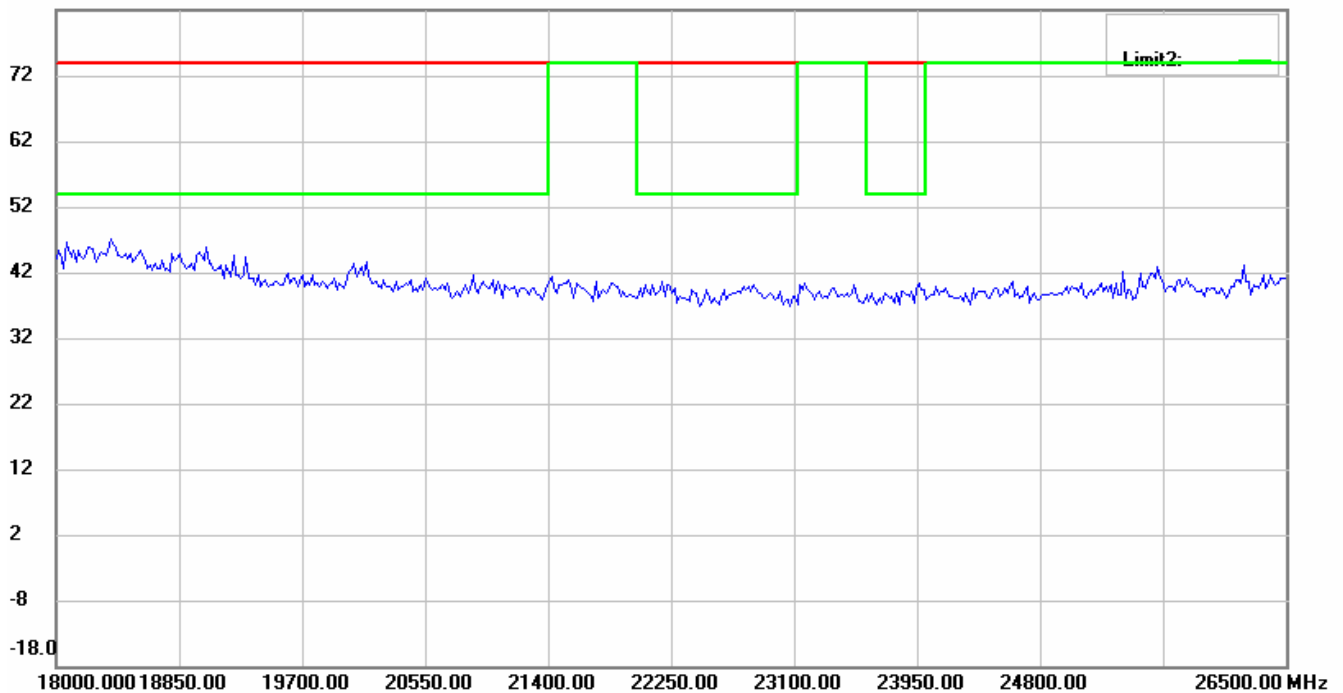
Registration number: W6D20801-8841-P-15

FCC ID: RLM-BLUEMATE-902

82.0 dBuV/m



82.0 dBuV/m

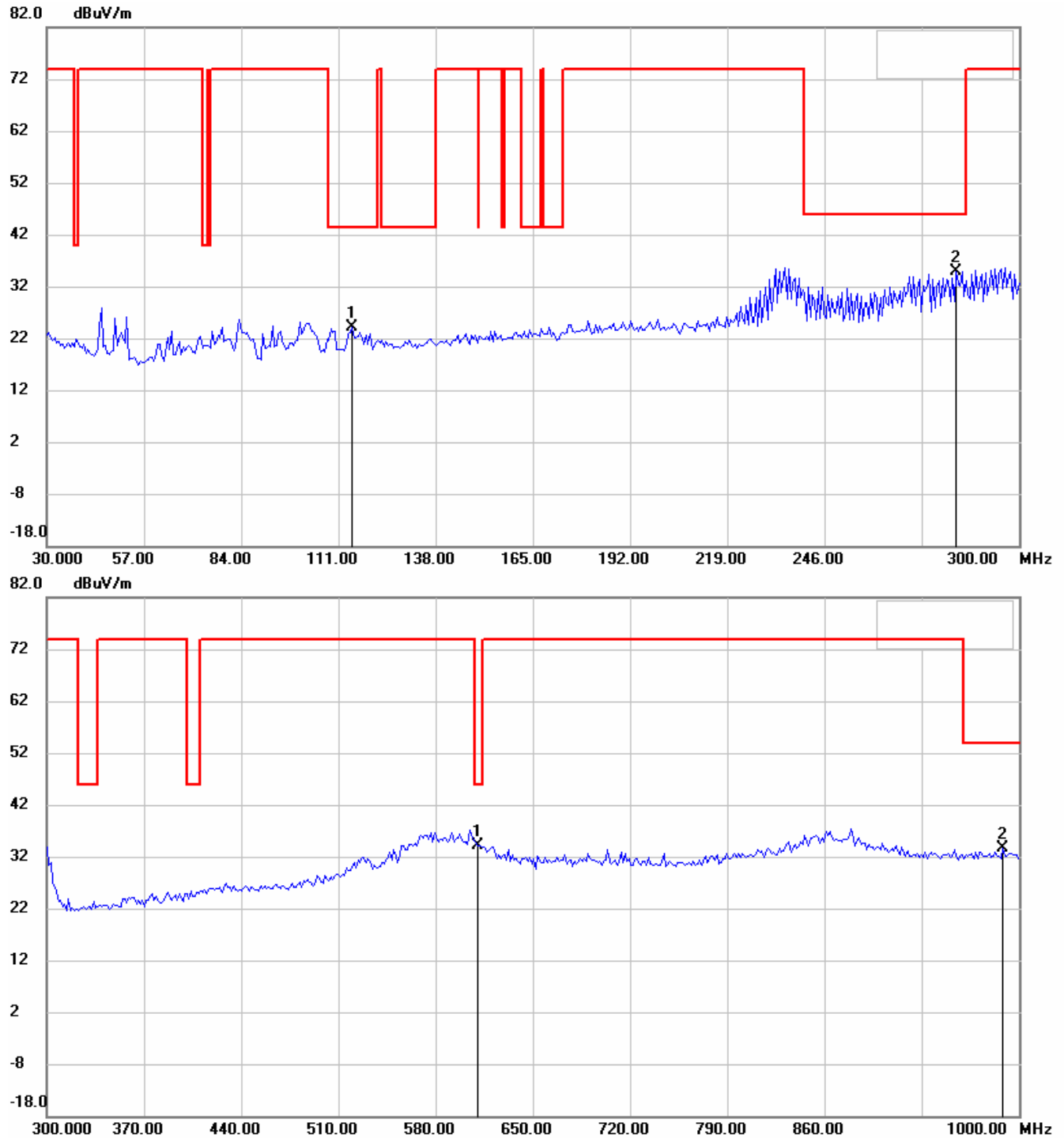




Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902

CH 78

Antenna Polarization H



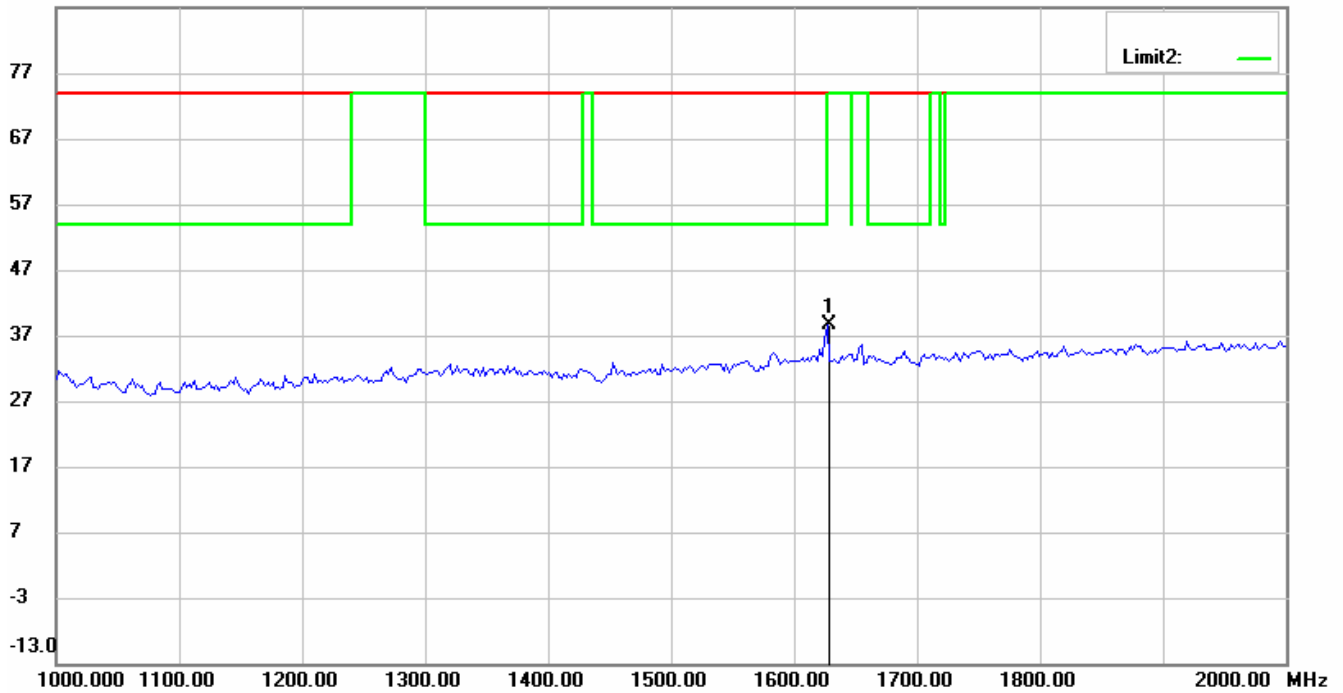


Taiwan ETS Product Service Co., Ltd.

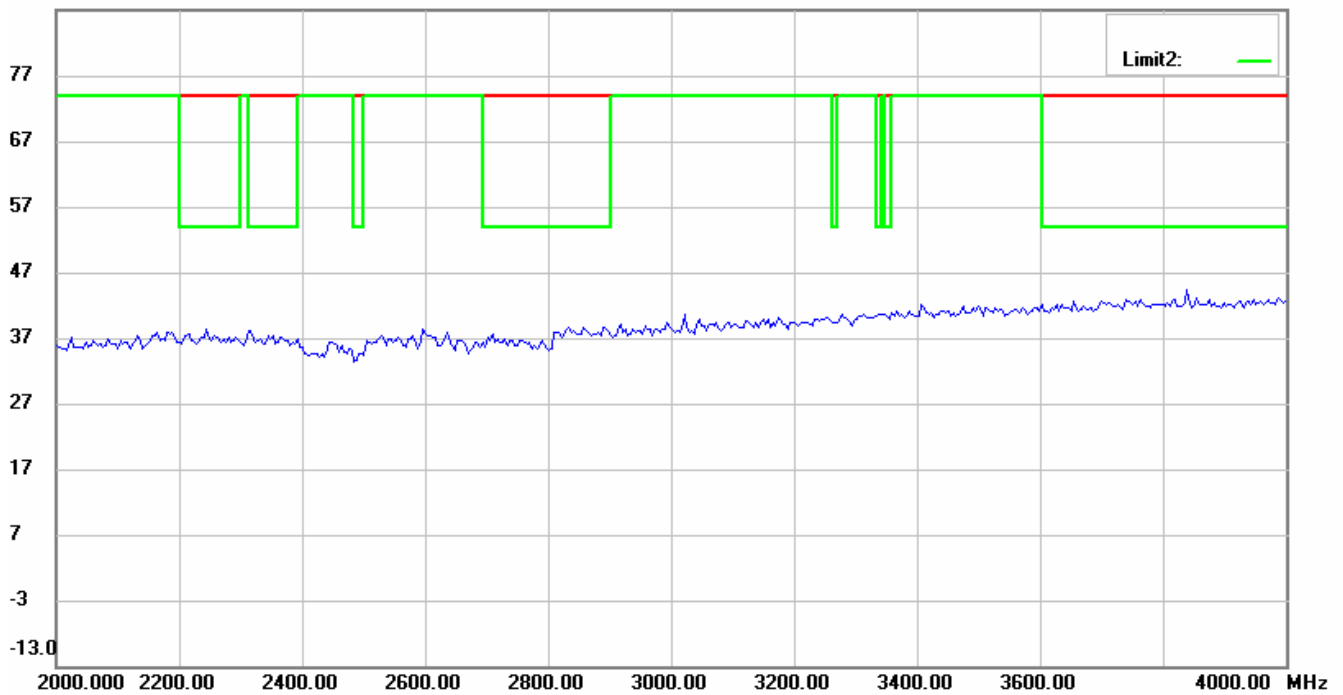
Registration number: W6D20801-8841-P-15

FCC ID: RLM-BLUEMATE-902

87.0 dBuV/m



87.0 dBuV/m



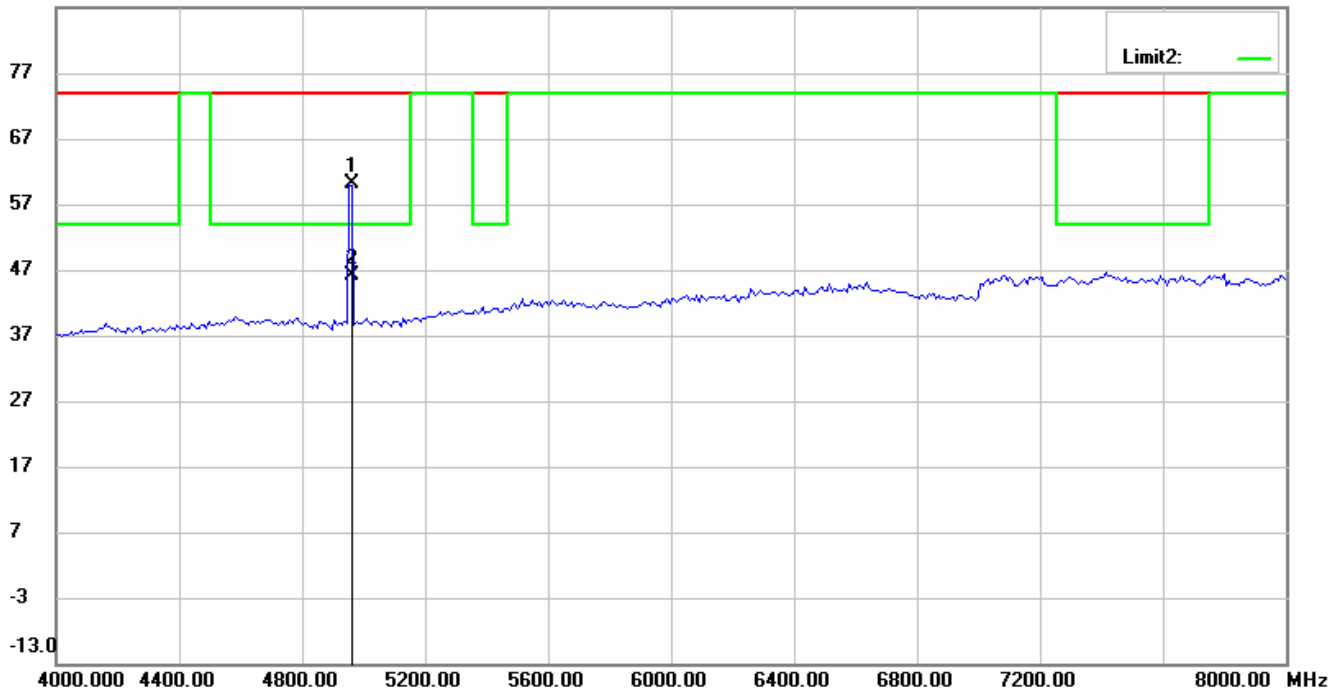


Taiwan ETS Product Service Co., Ltd.

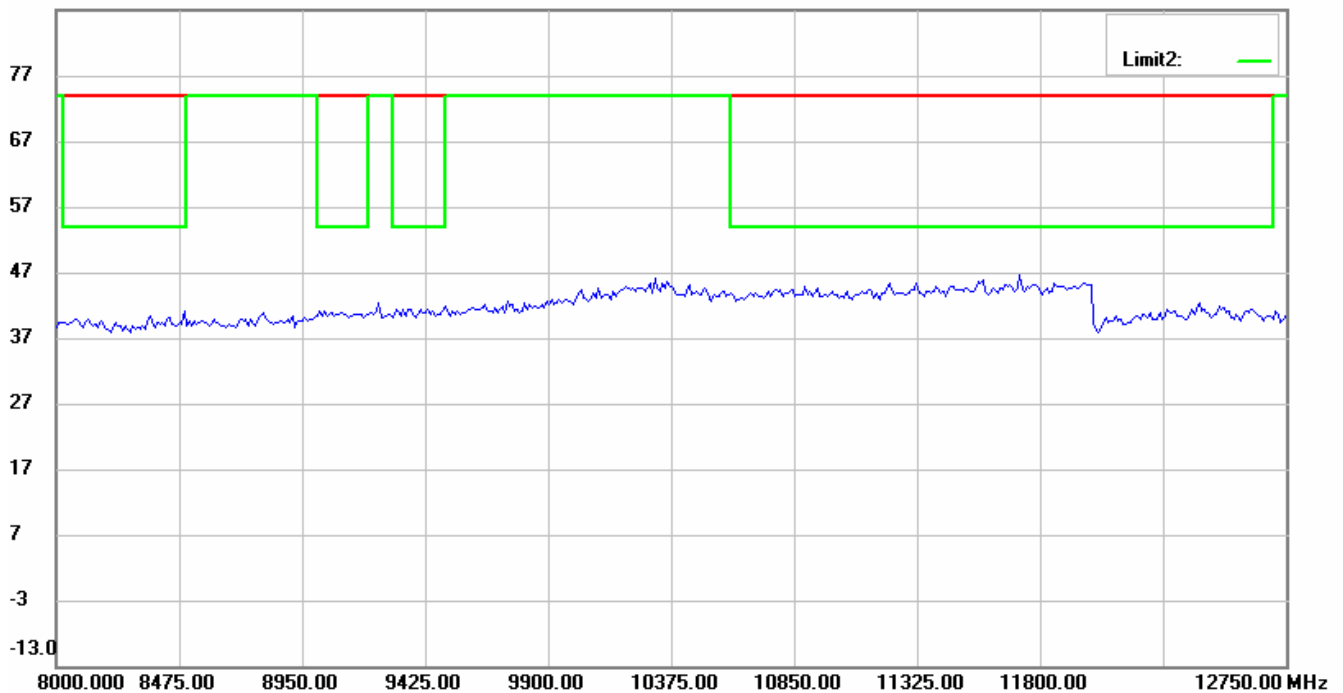
Registration number: W6D20801-8841-P-15

FCC ID: RLM-BLUEMATE-902

87.0 dBuV/m



87.0 dBuV/m



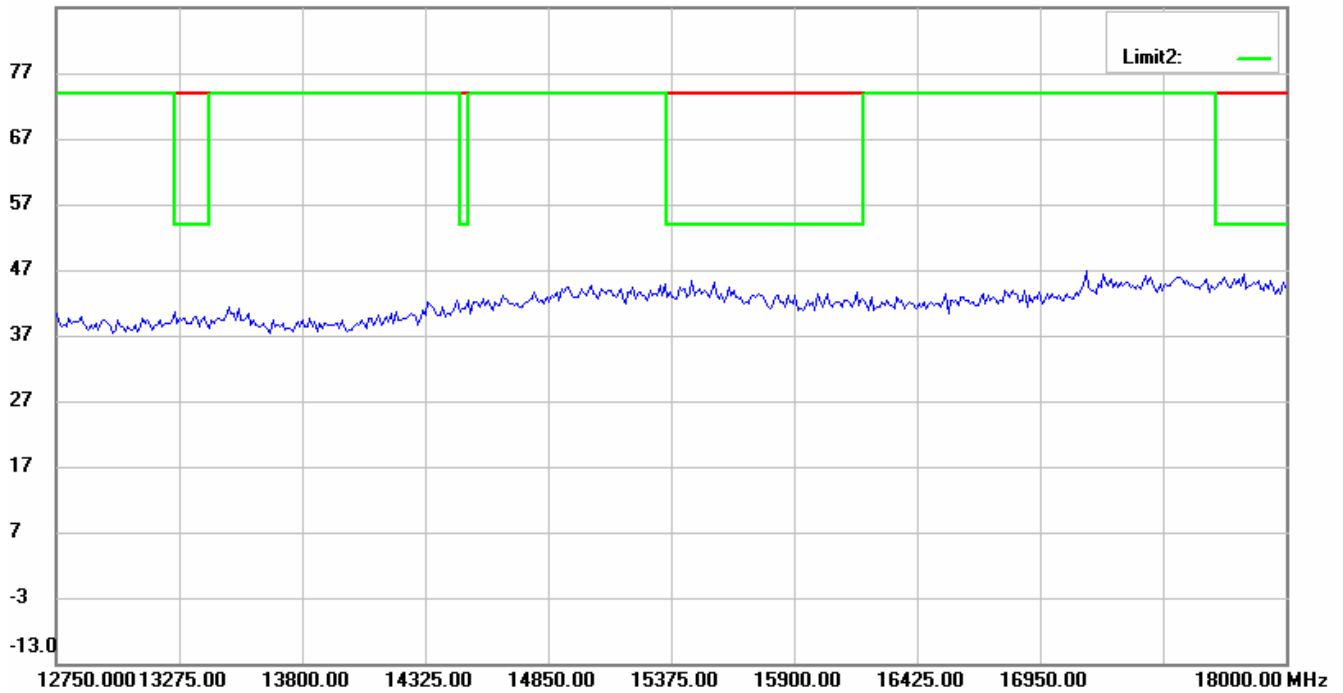


Taiwan ETS Product Service Co., Ltd.

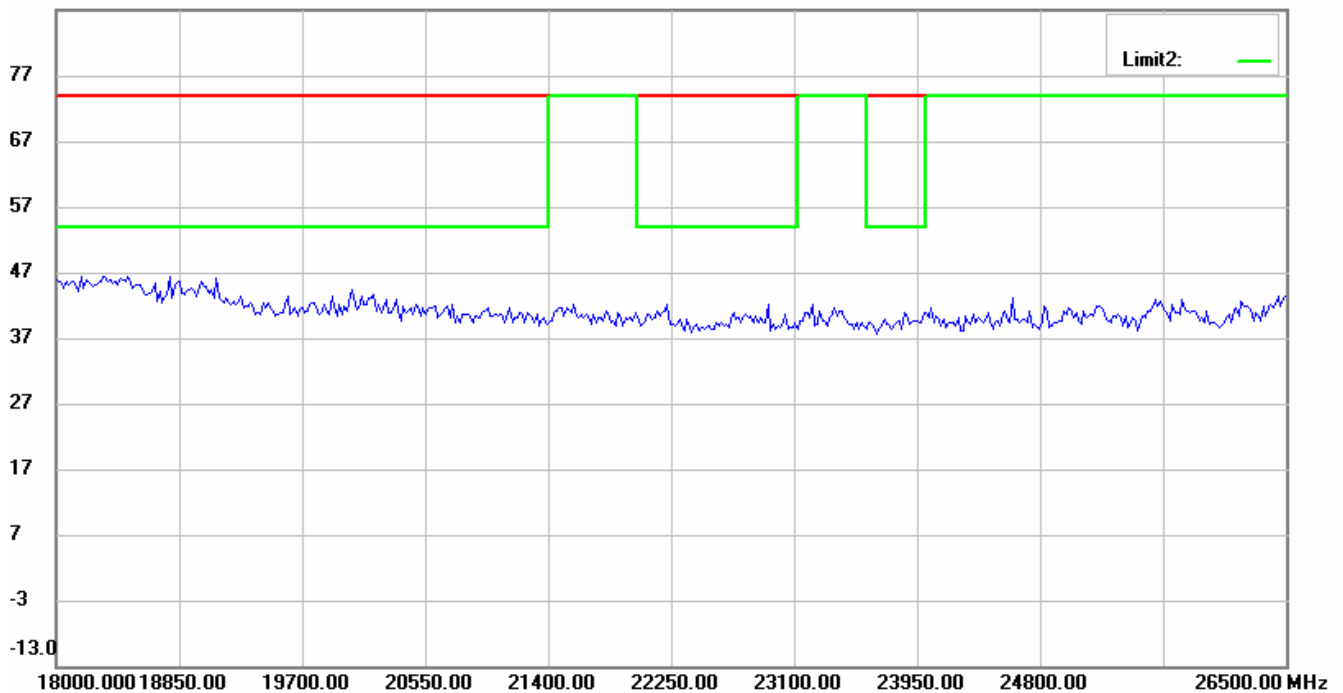
Registration number: W6D20801-8841-P-15

FCC ID: RLM-BLUEMATE-902

87.0 dBuV/m



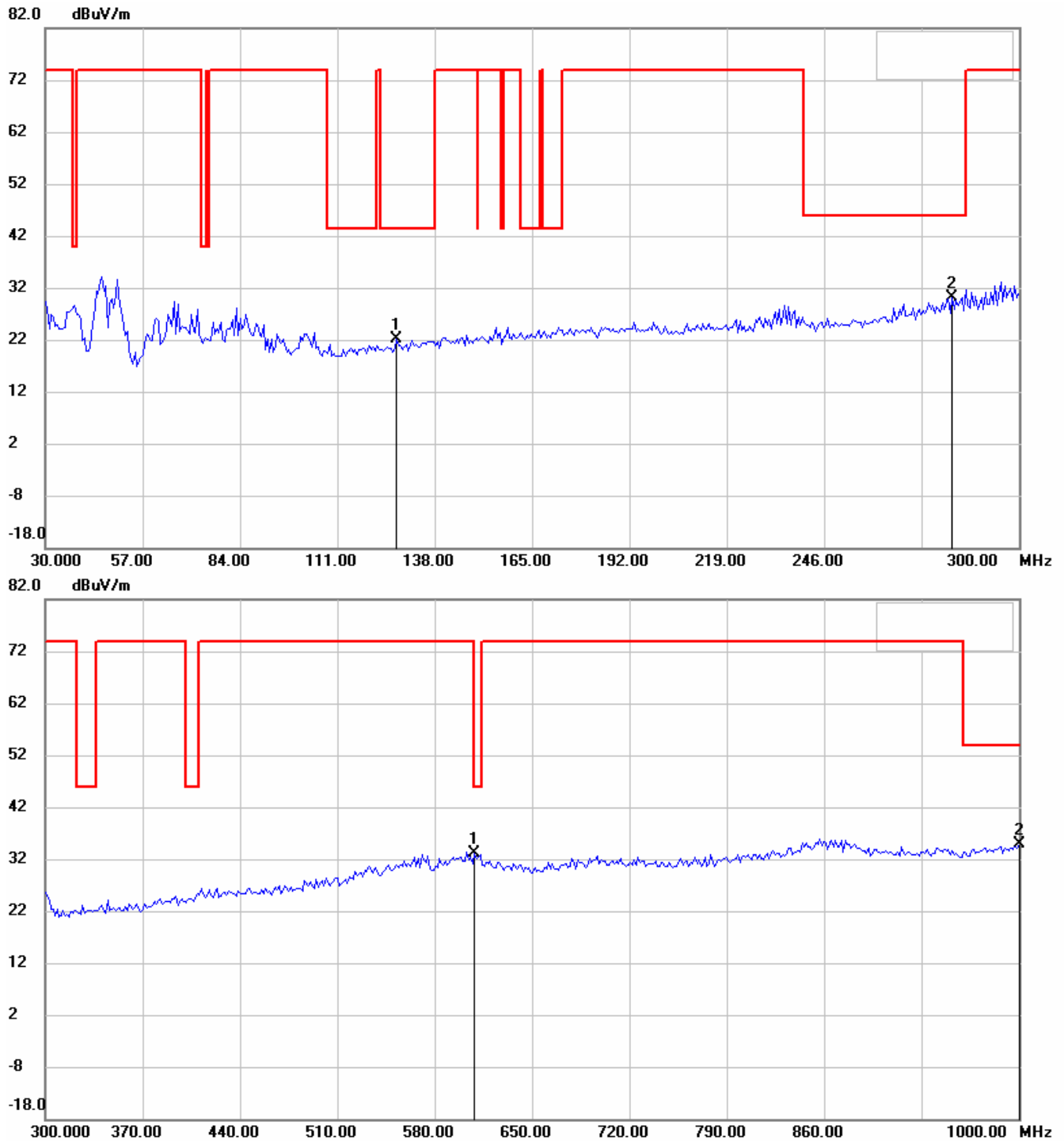
87.0 dBuV/m





Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902

Antenna Polarization V



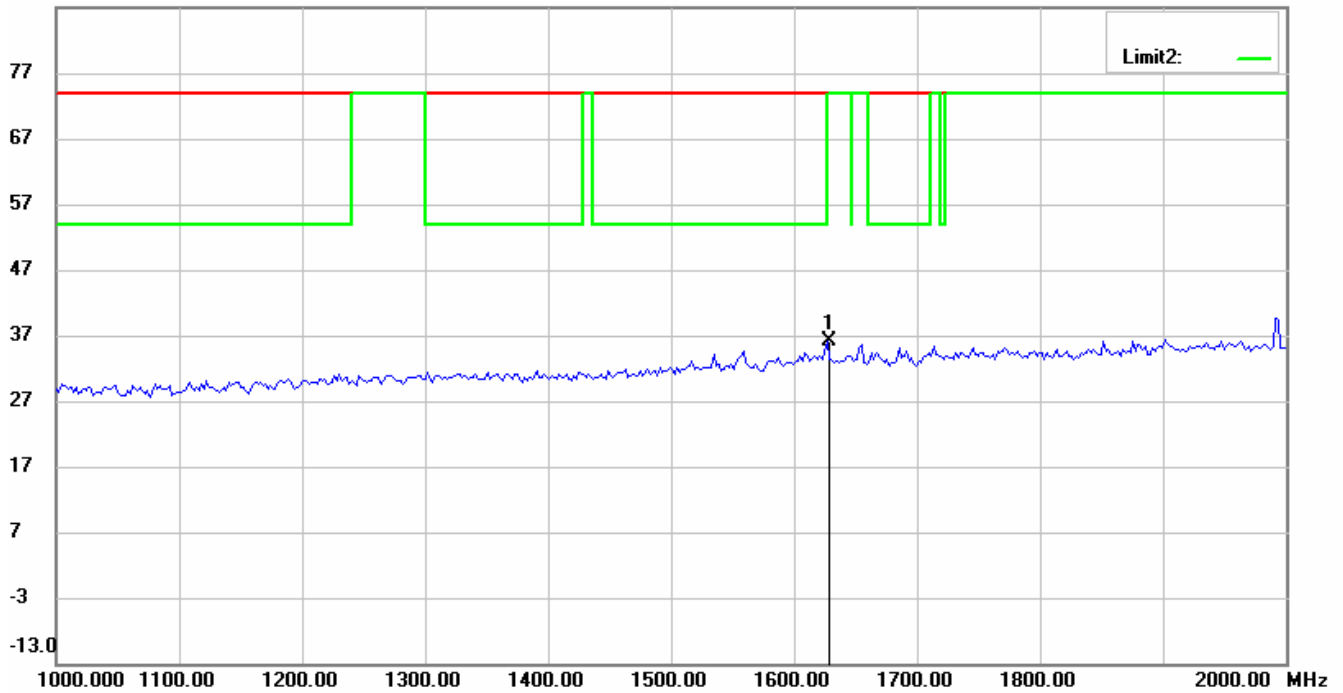


Taiwan ETS Product Service Co., Ltd.

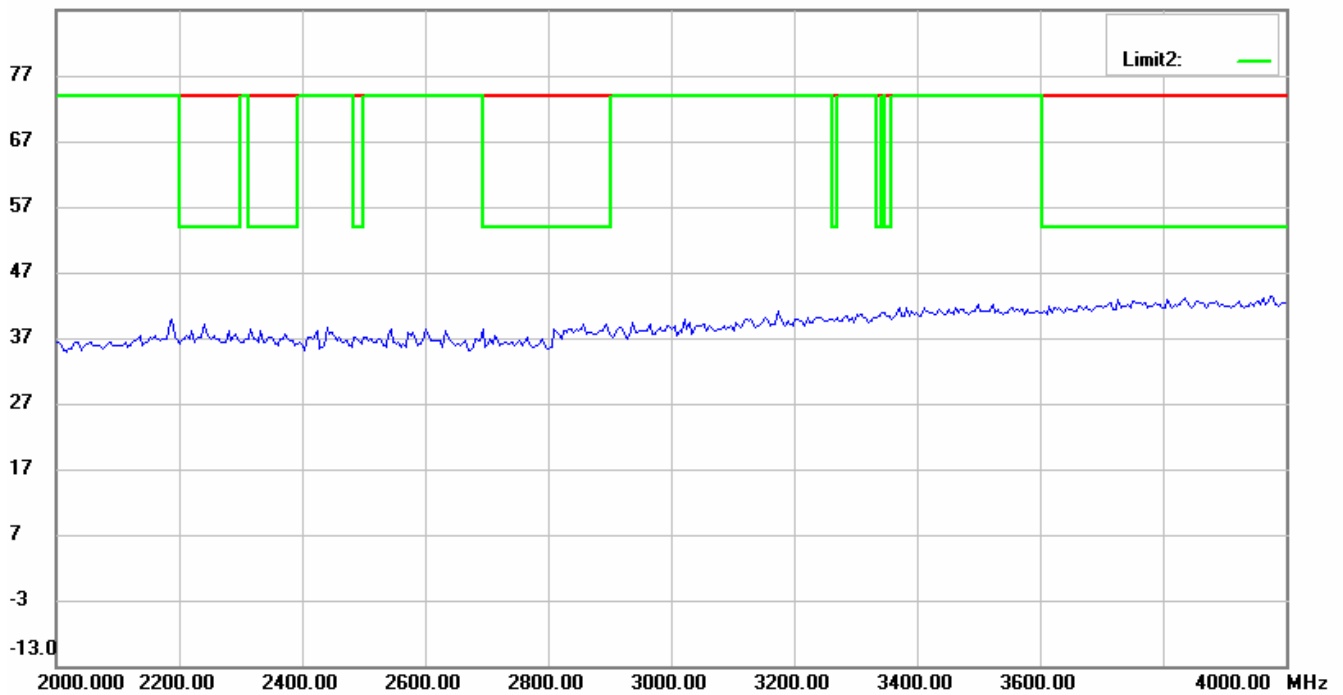
Registration number: W6D20801-8841-P-15

FCC ID: RLM-BLUEMATE-902

87.0 dBuV/m



87.0 dBuV/m



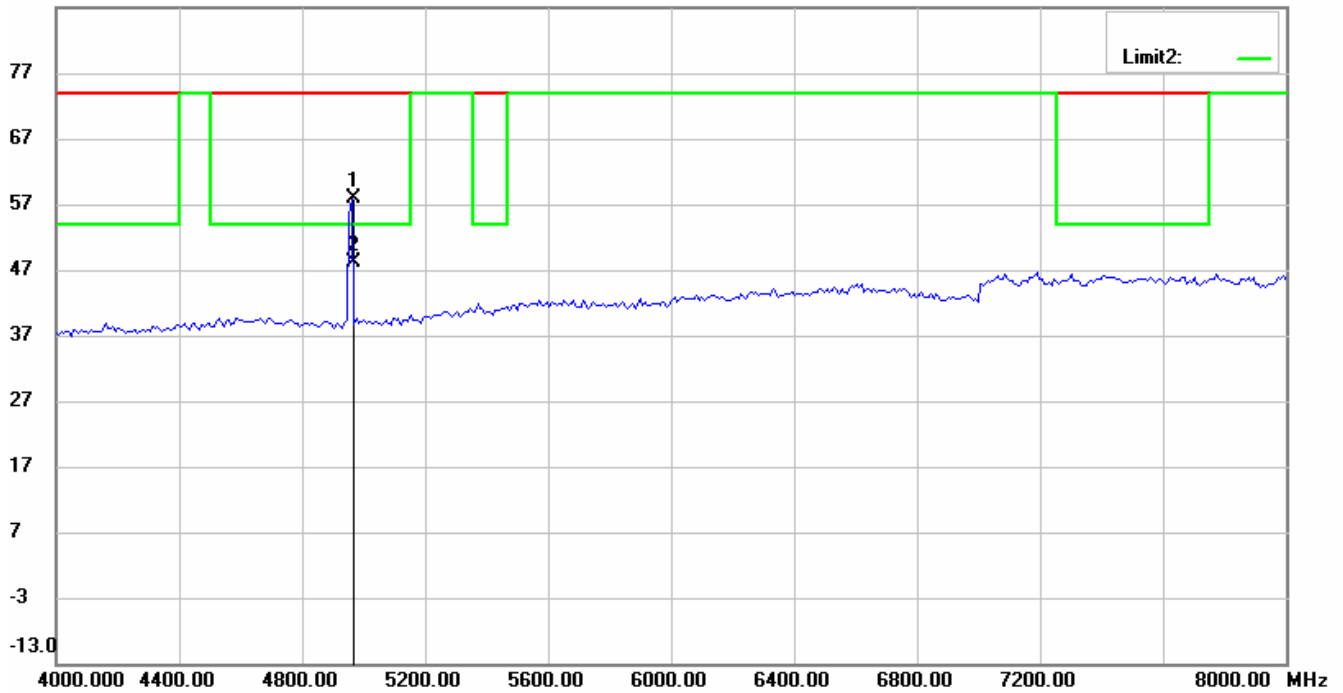


Taiwan ETS Product Service Co., Ltd.

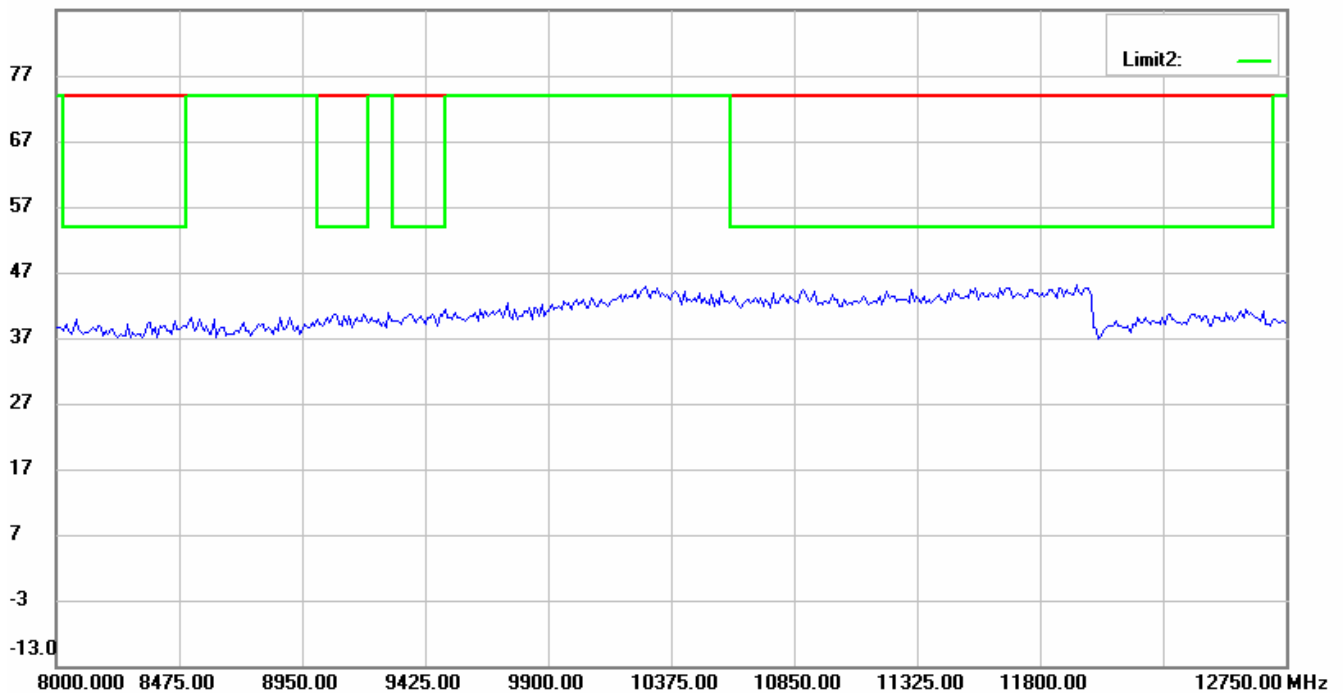
Registration number: W6D20801-8841-P-15

FCC ID: RLM-BLUEMATE-902

87.0 dBuV/m



87.0 dBuV/m



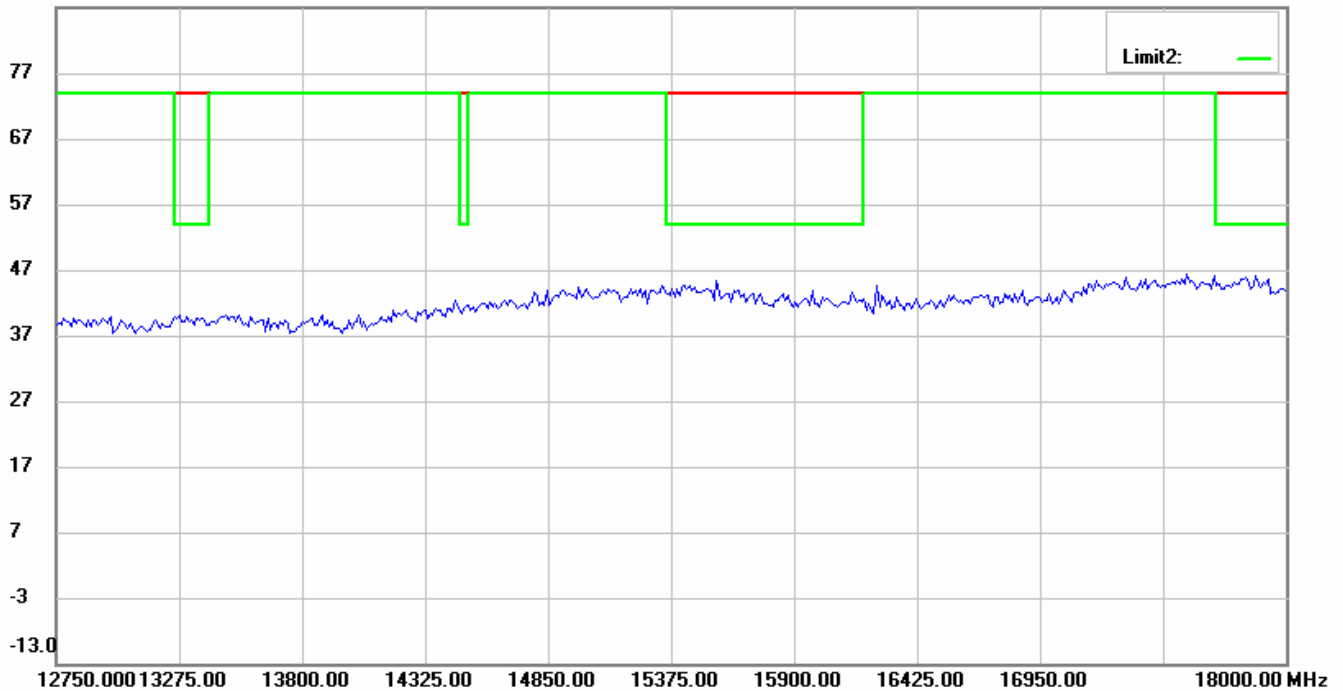


Taiwan ETS Product Service Co., Ltd.

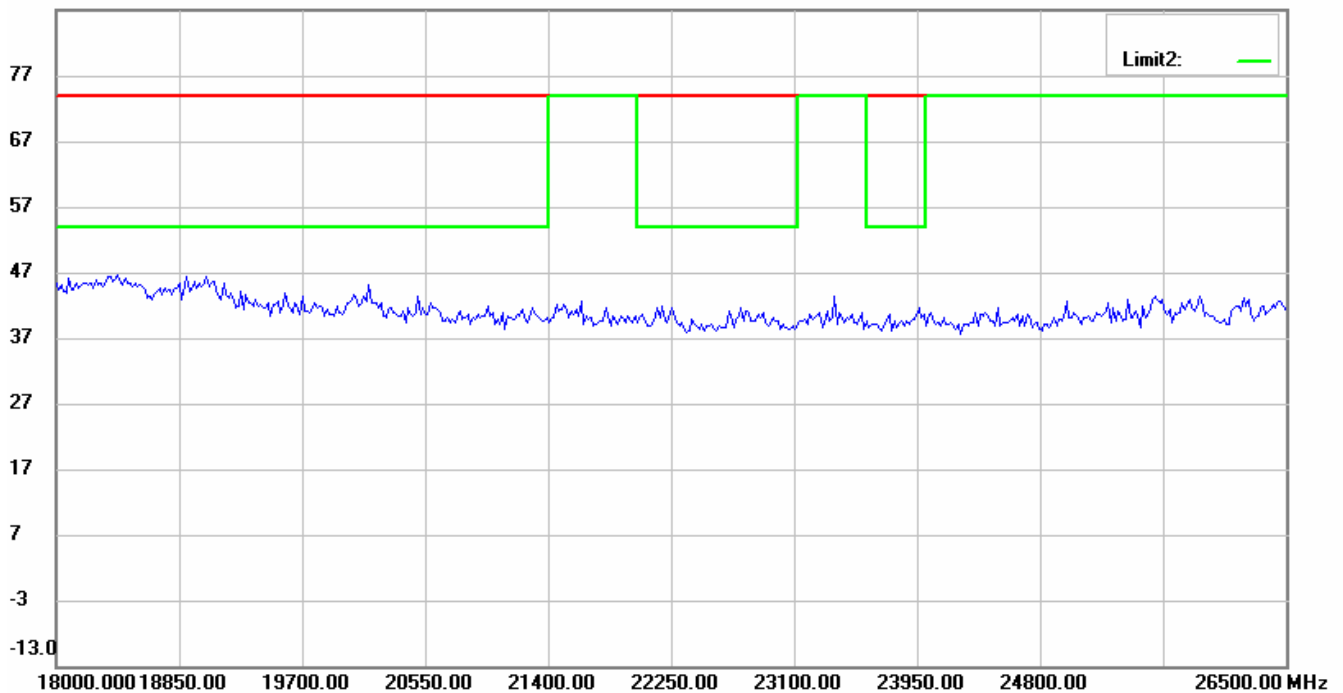
Registration number: W6D20801-8841-P-15

FCC ID: RLM-BLUEMATE-902

87.0 dBuV/m



87.0 dBuV/m



Up Line: Peak Limit Line

Down Line: Ave Limit Line

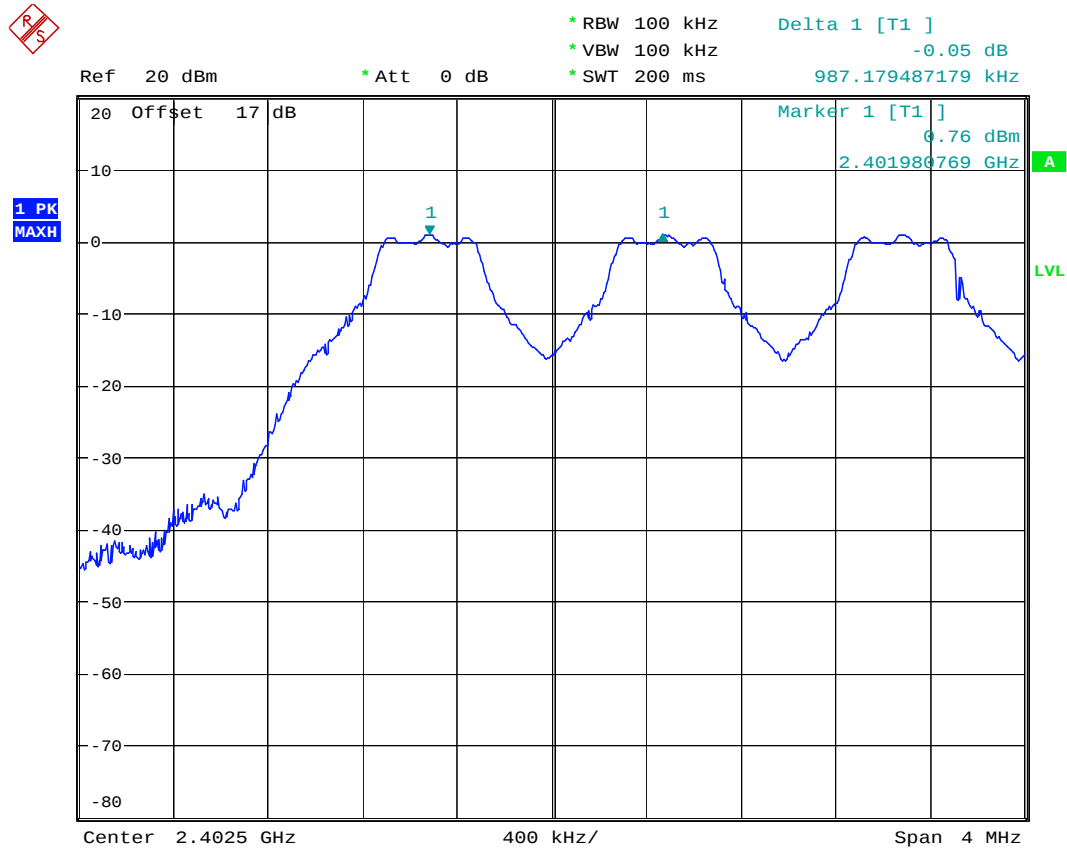
Note:

1. The plots are pre-scanned data for determining the tested points and for reference only.
2. The exact test result is shown in the data table of Radiated emission test of this test report.



Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902

Carrier Frequency Separation

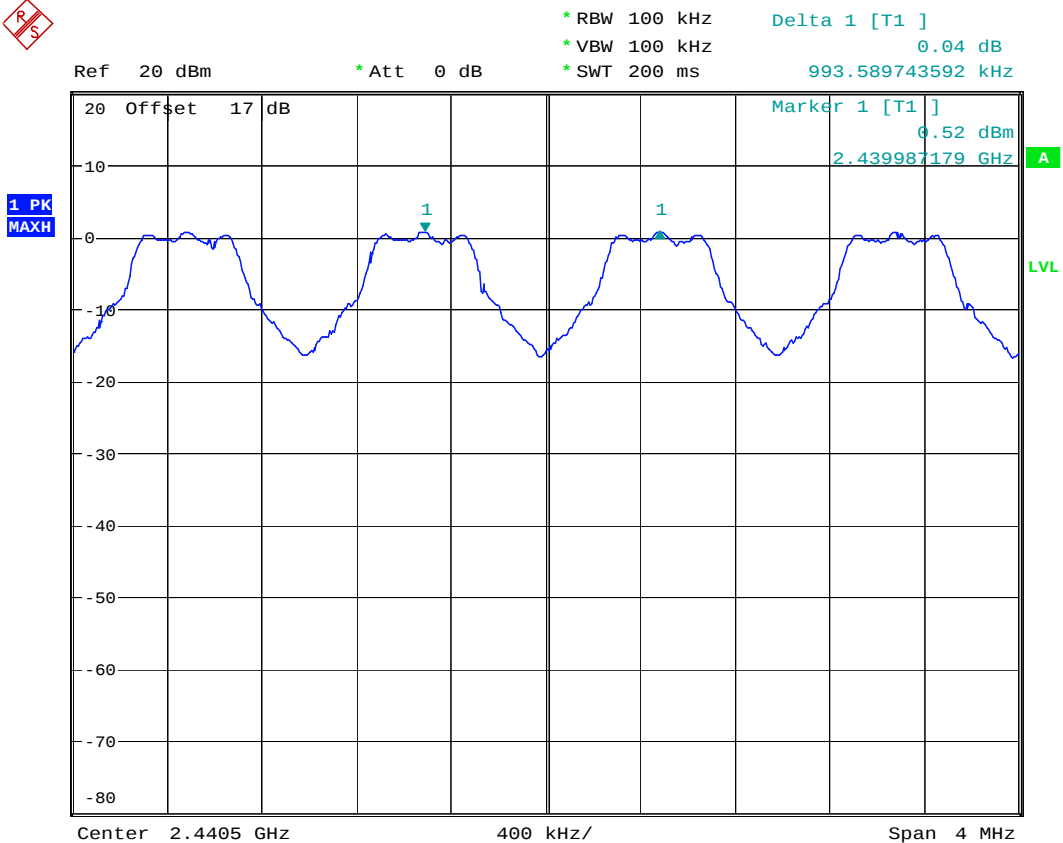


FREQUENCY SEPARATION CH0~CH1
Date: 11.SEP.2007 13:07:07



Taiwan ETS Product Service Co., Ltd.

Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902



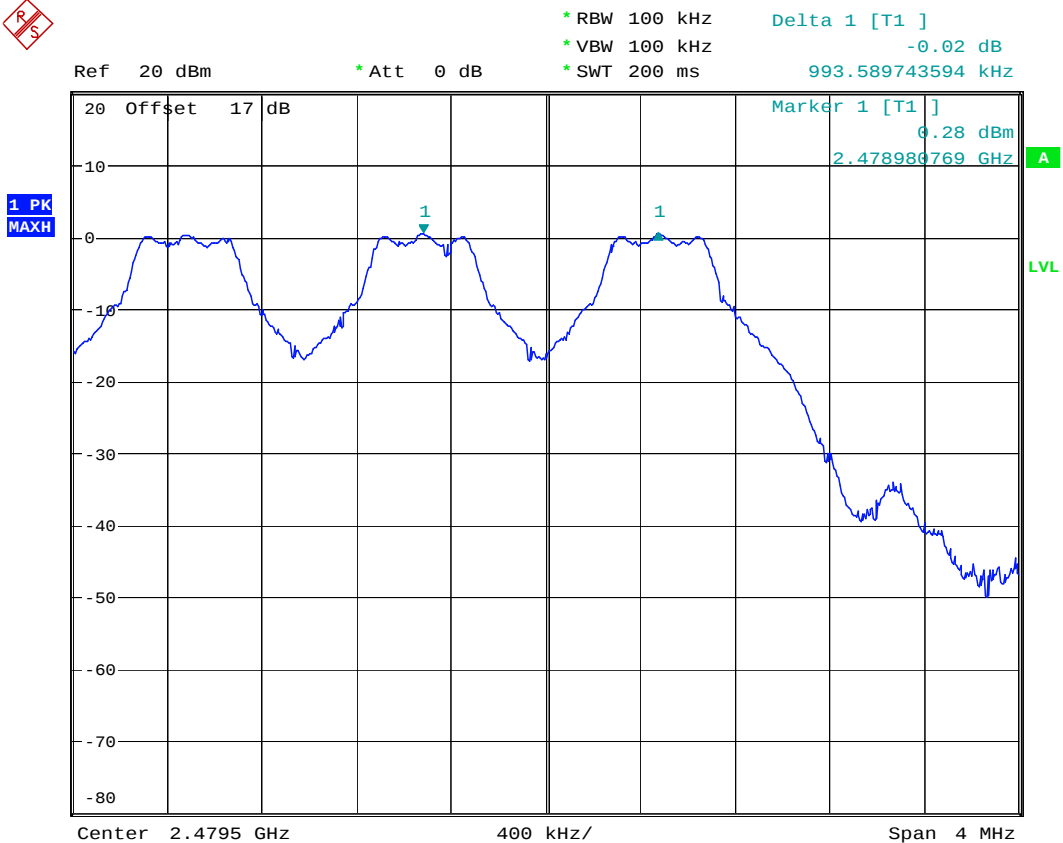
FREQUENCY SEPARATION CH38-CH39

Date: 11.SEP.2007 13:12:32



Taiwan ETS Product Service Co., Ltd.

Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902



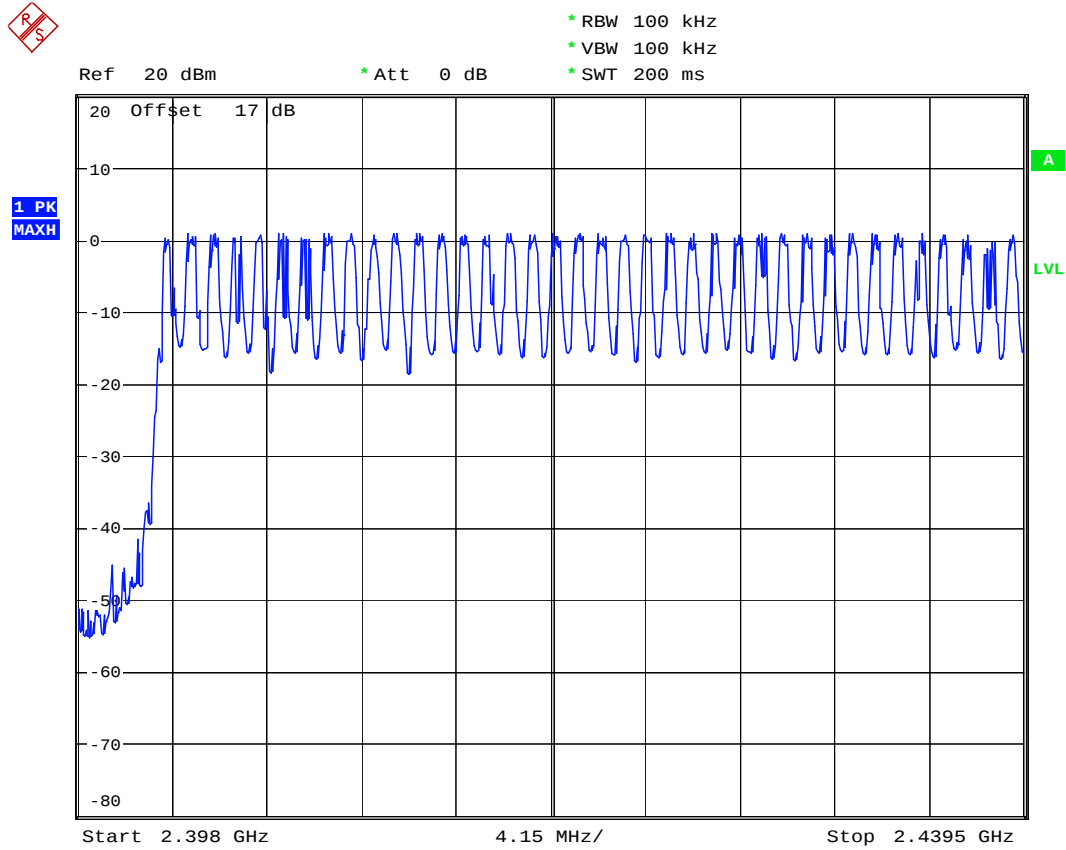
FREQUENCY SEPARATION CH77-CH78

Date: 11.SEP.2007 13:16:38



Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902

Number of Hopping Frequencies



NUMBER OF HOPPING CH0-CH37

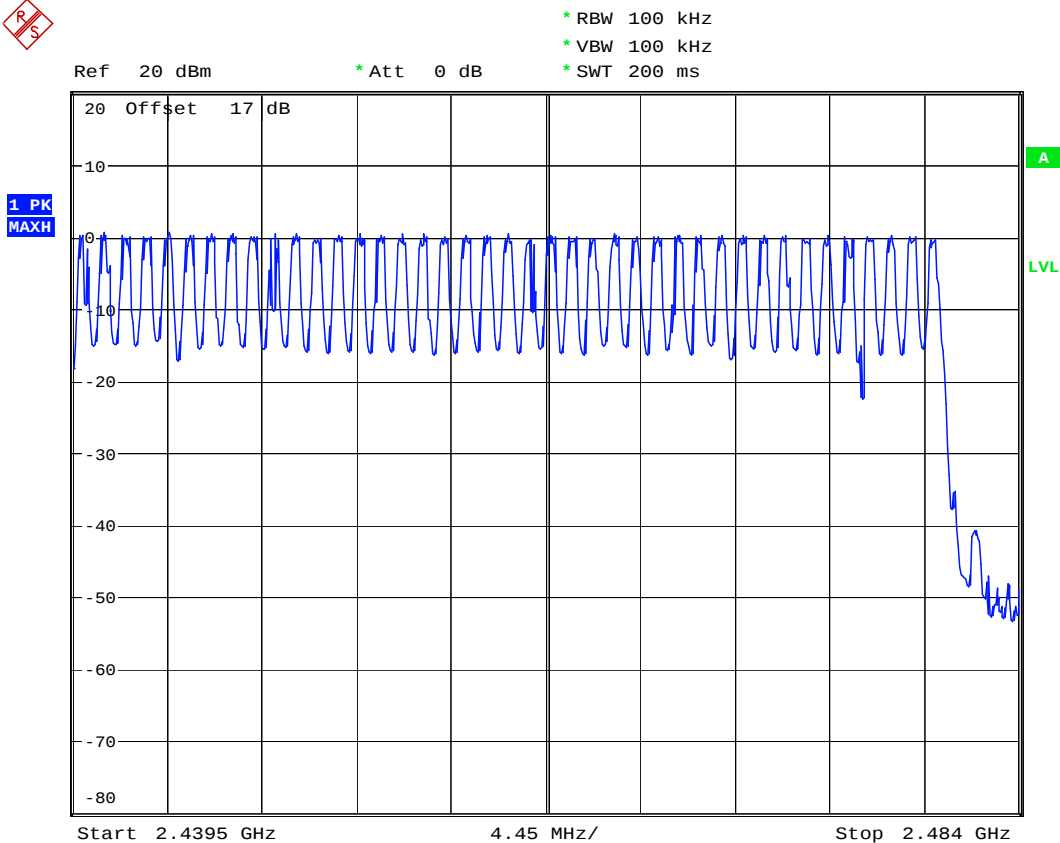
Date: 11.SEP.2007 12:58:37



Taiwan ETS Product Service Co., Ltd.

Registration number: W6D20801-8841-P-15

FCC ID: RLM-BLUEMATE-902



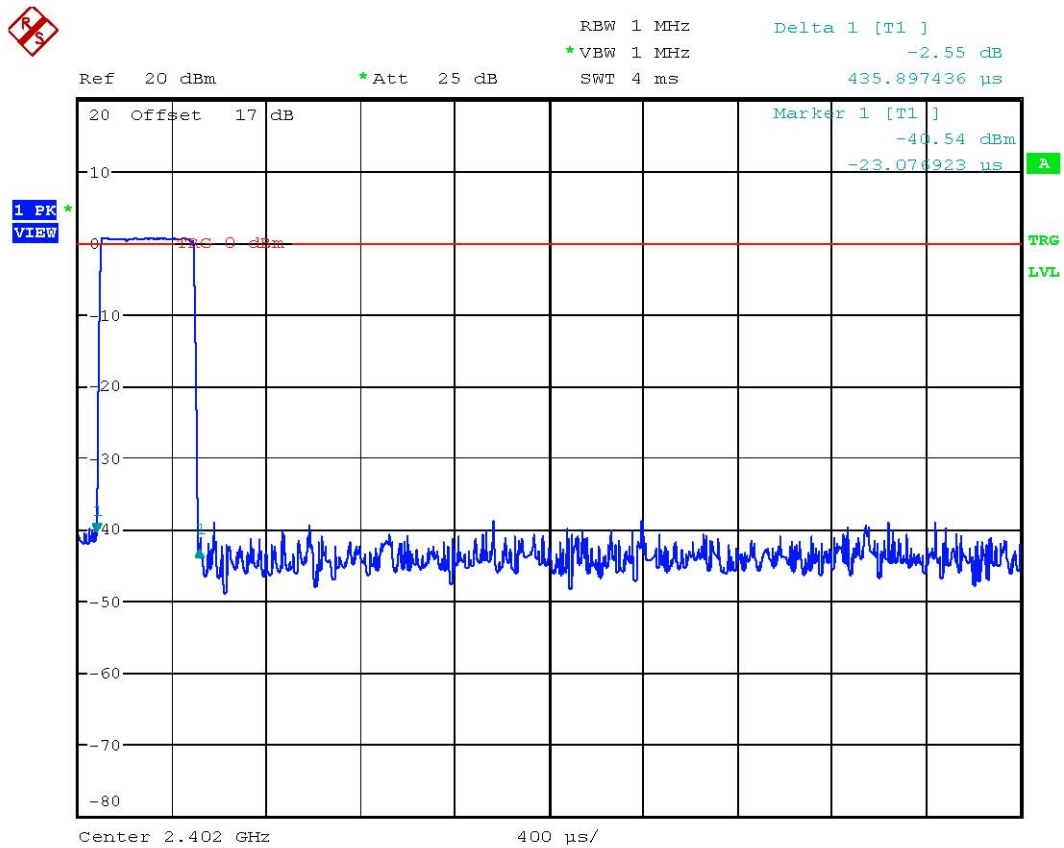
NUMBER OF HOPPING CH38~CH78

Date: 11.SEP.2007 13:02:24



Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902

Time of Occupancy (Dwell Time)



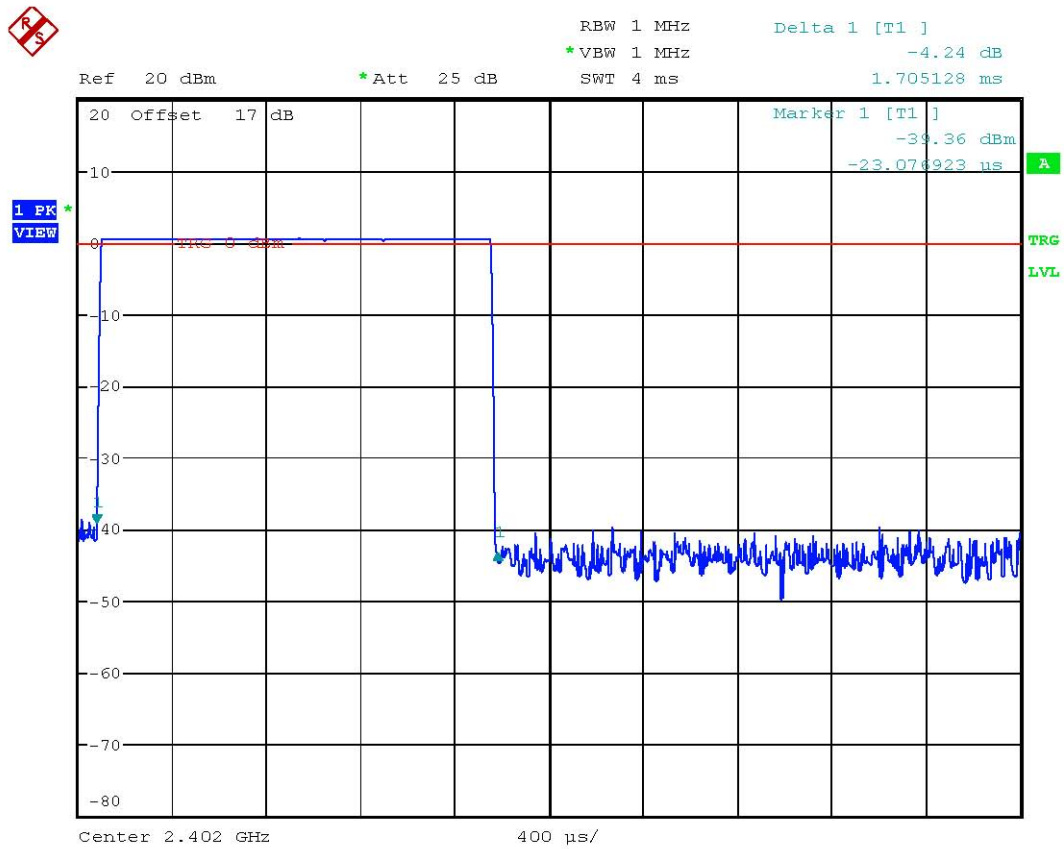
DWELL TIME CH0 DH1 (0.435ms * 320event = 139.2ms)

Date: 11.SEP.2007 13:41:59



Taiwan ETS Product Service Co., Ltd.

Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902



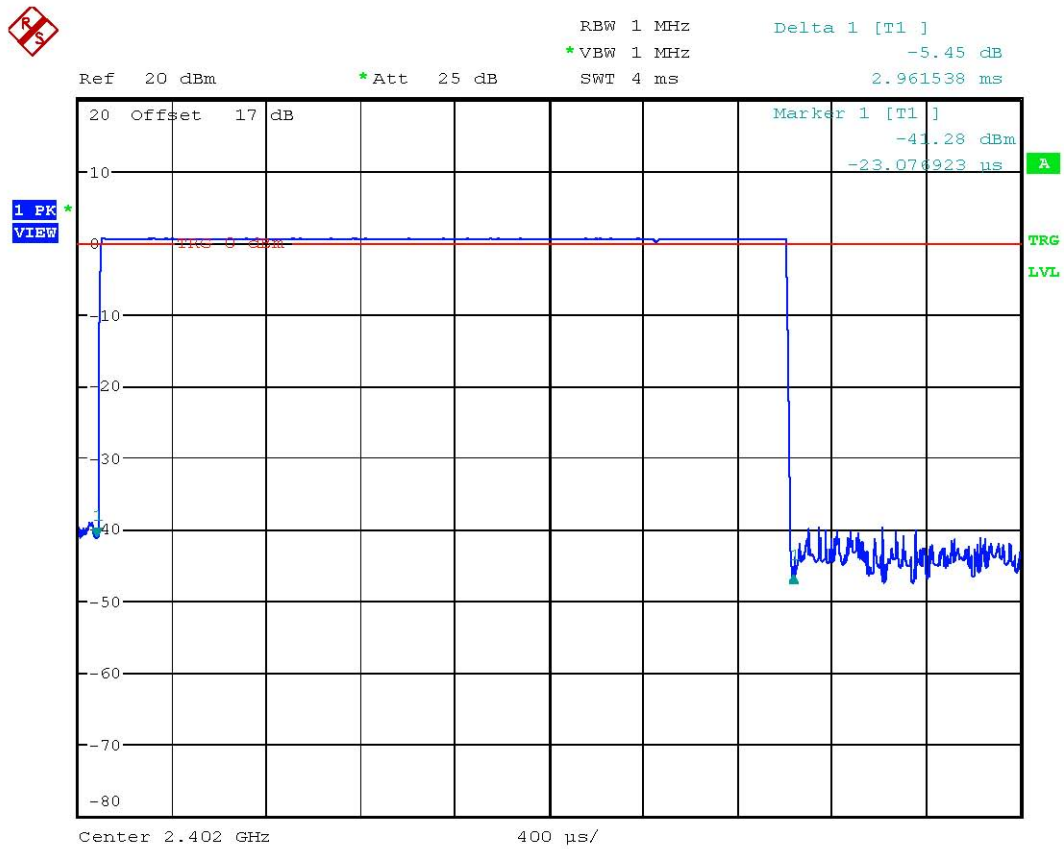
DWELL TIME CH0 DH3 (1.705ms * 120event = 204.6ms)

Date: 11.SEP.2007 13:37:47



Taiwan ETS Product Service Co., Ltd.

Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902



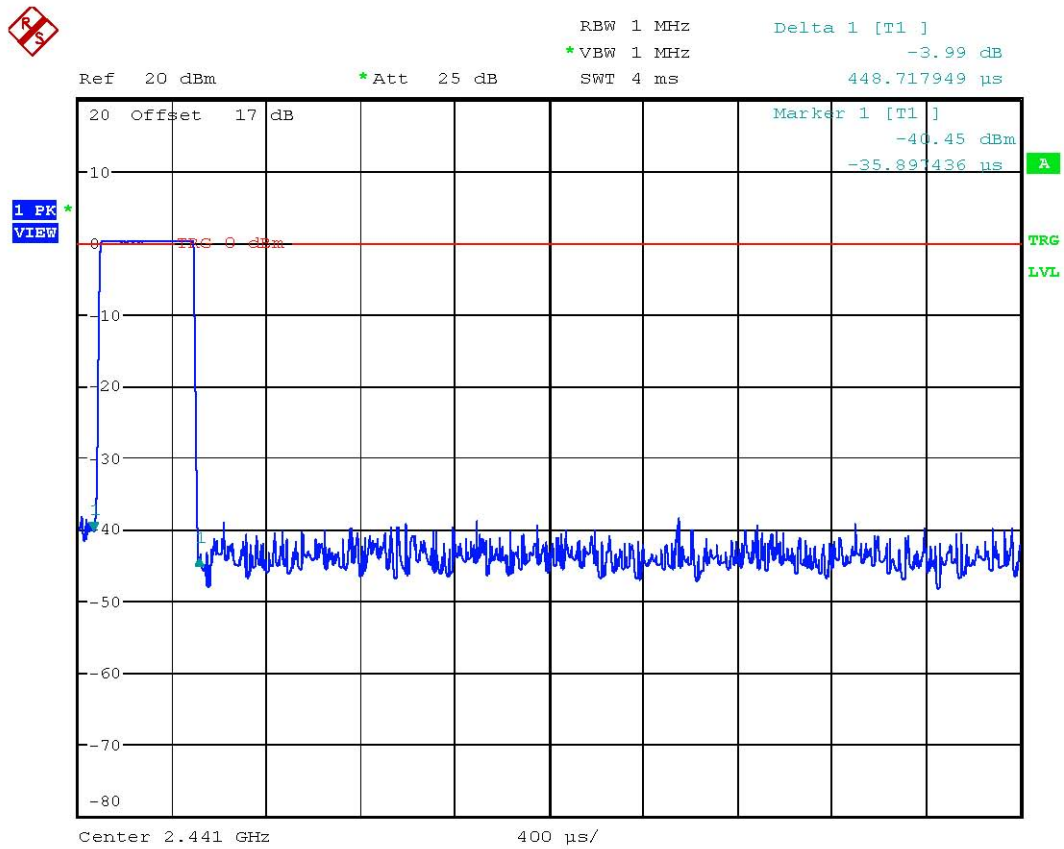
DWELL TIME CH0 DH5 (2.961ms * 90event = 266.49ms)

Date: 11.SEP.2007 13:41:10



Taiwan ETS Product Service Co., Ltd.

Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902



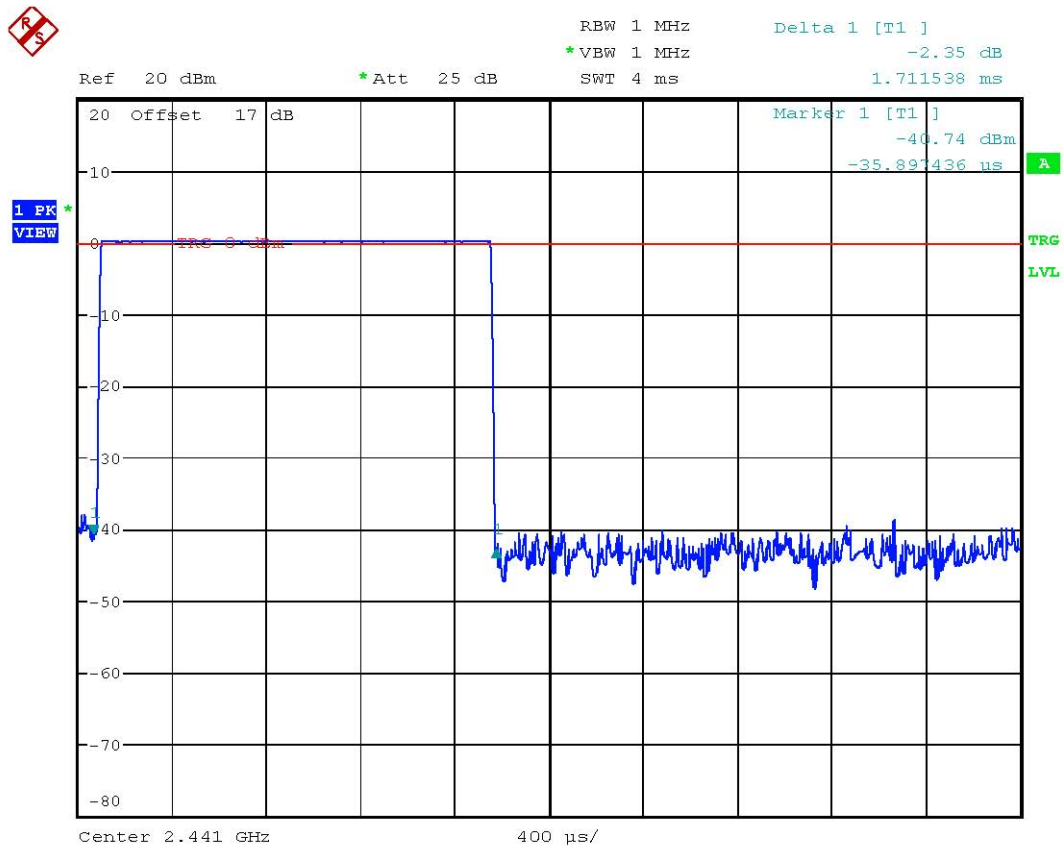
DWELL TIME CH39 DH1 (0.448ms * 330event = 147.84ms)

Date: 11.SEP.2007 13:45:21



Taiwan ETS Product Service Co., Ltd.

Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902



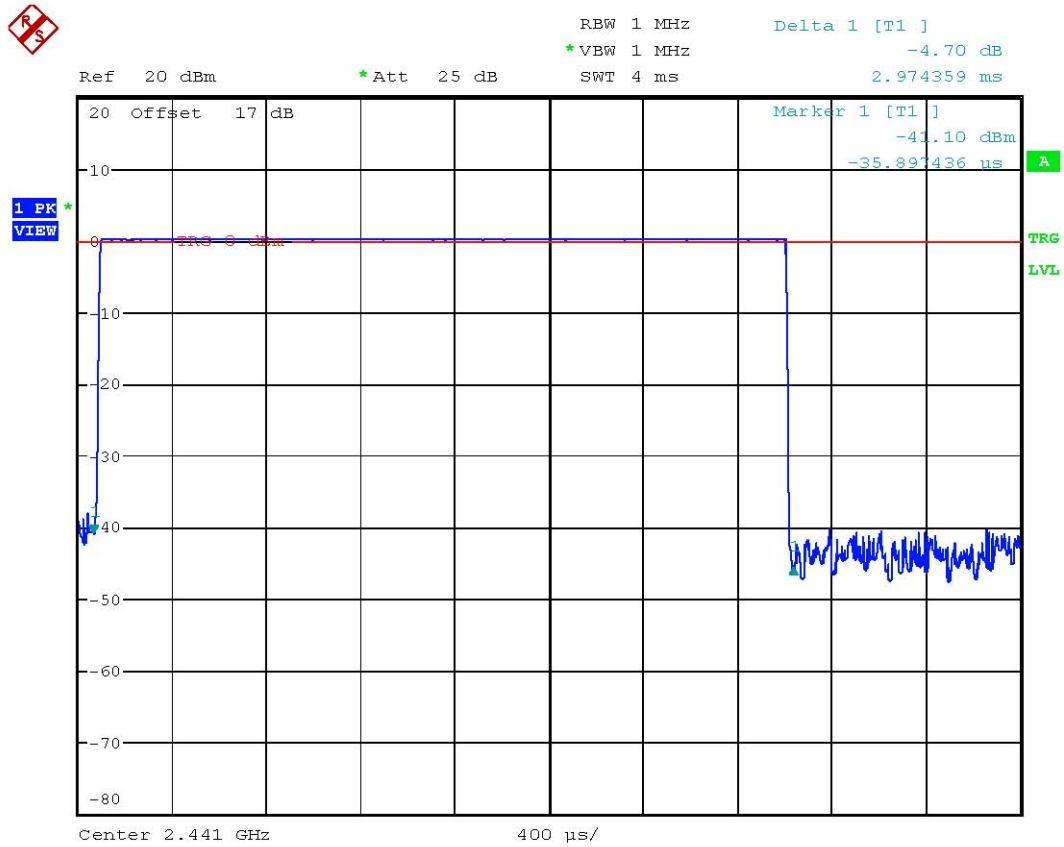
DWELL TIME CH39 DH3 (1.711ms * 130event = 222.43ms)

Date: 11.SEP.2007 13:47:54



Taiwan ETS Product Service Co., Ltd.

Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902

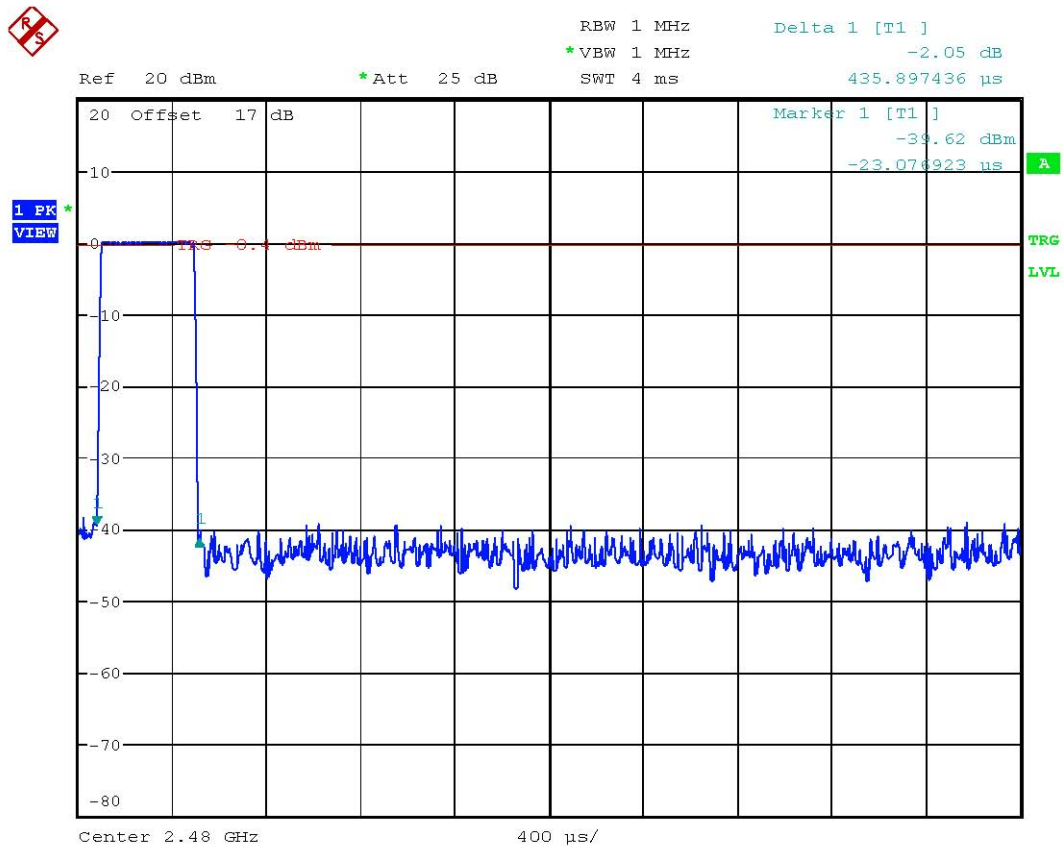


DWELL TIME CH39 DH5 (2.974ms * 100event = 297.4ms)

Date: 11.SEP.2007 13:46:58



Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902

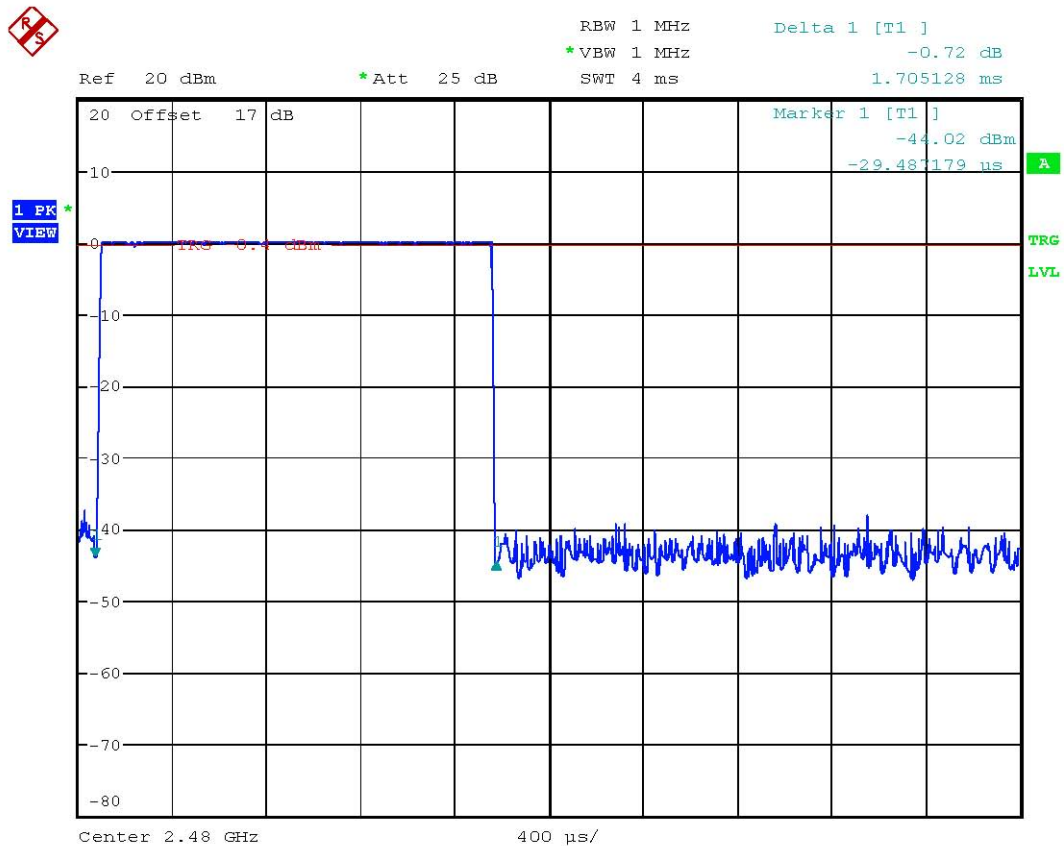


DWELL TIME CH78 DH1 (0.435ms * 310event = 134.85ms)

Date: 11.SEP.2007 13:49:36



Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902



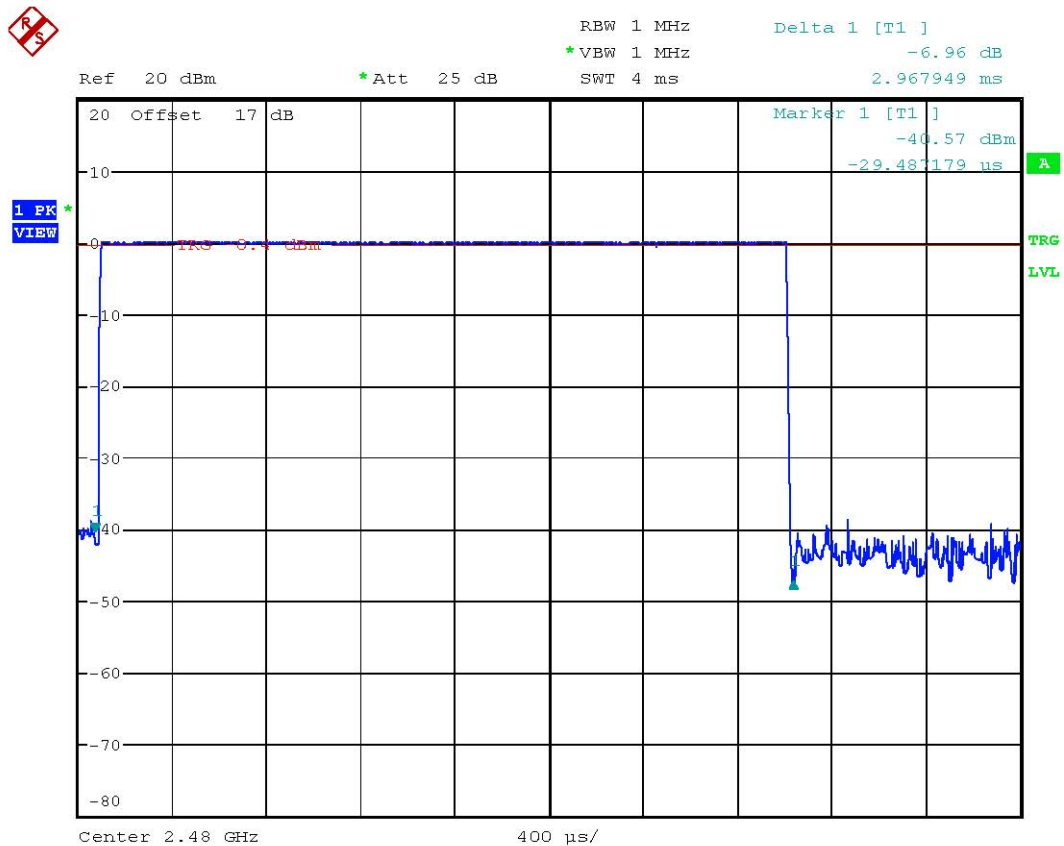
DWELL TIME CH78 DH3 (1.705ms * 110event = 187.55ms)

Date: 11.SEP.2007 13:50:37



Taiwan ETS Product Service Co., Ltd.

Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902



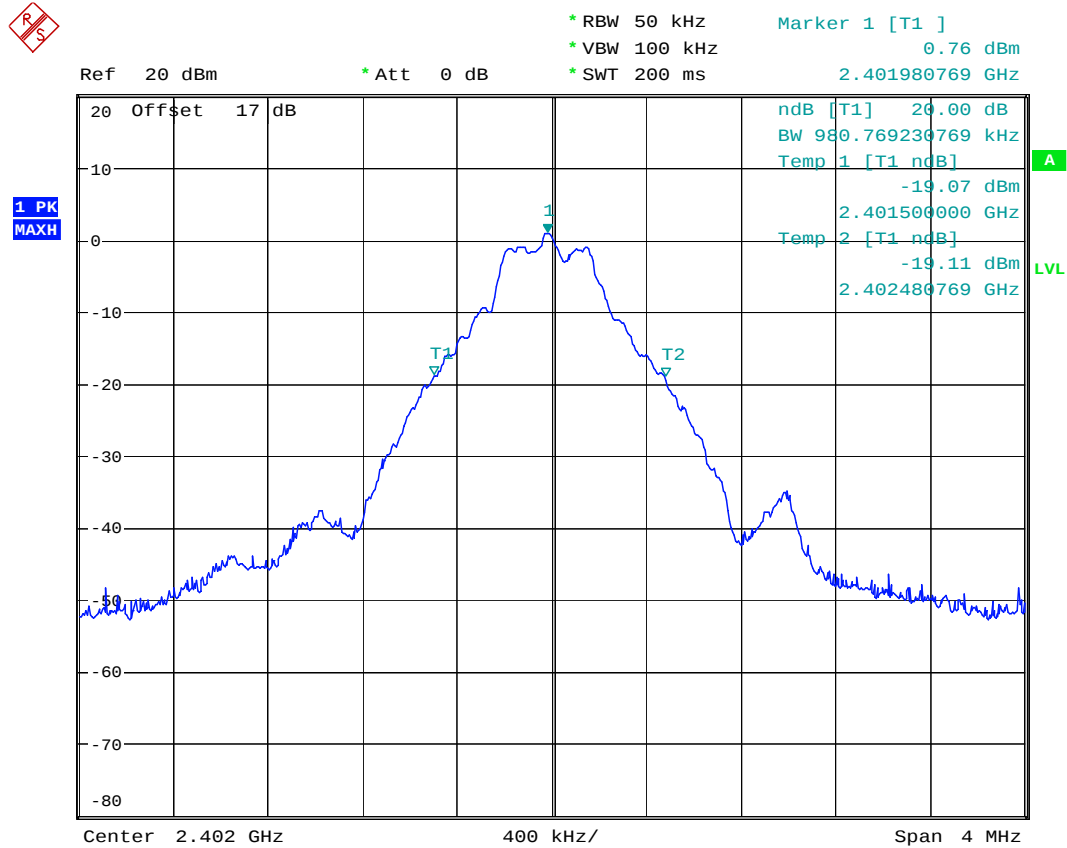
DWELL TIME CH78 DH5 (2.967ms * 100event = 296.7ms)

Date: 11.SEP.2007 13:51:06



Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902

20dB Bandwidth



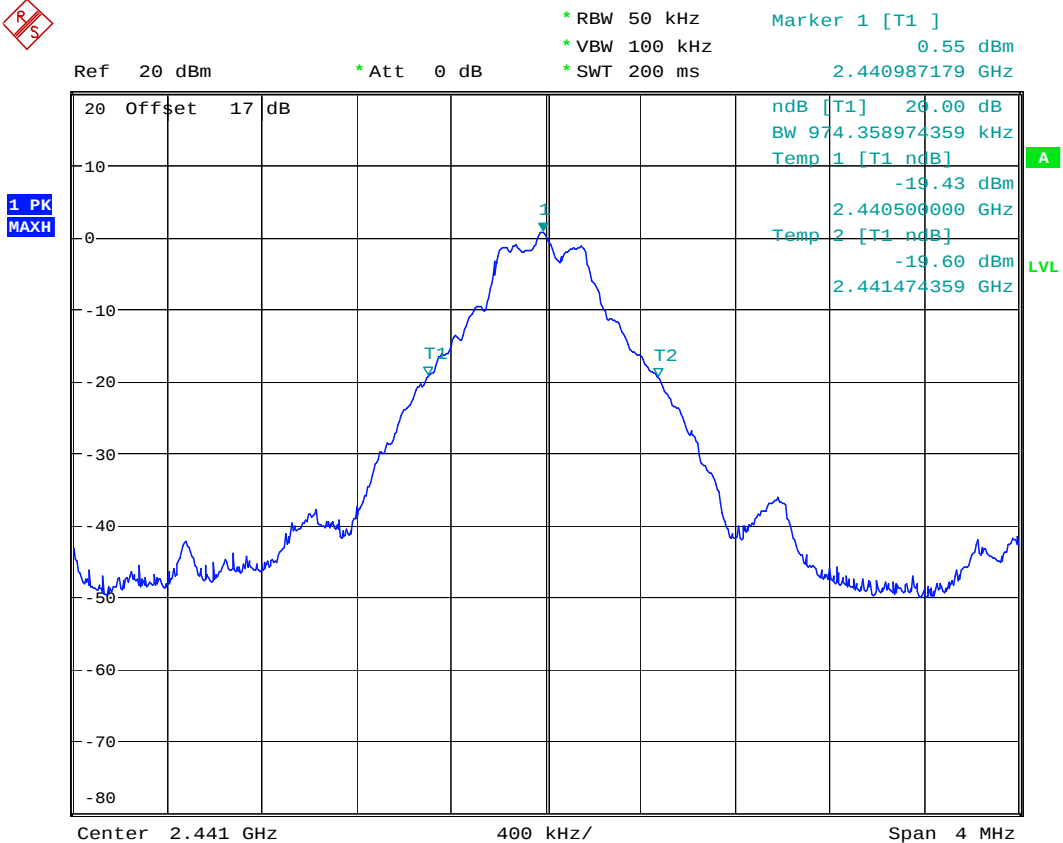
20dB BANDWIDTH CH0

Date: 11.SEP.2007 12:48:25



Taiwan ETS Product Service Co., Ltd.

Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902



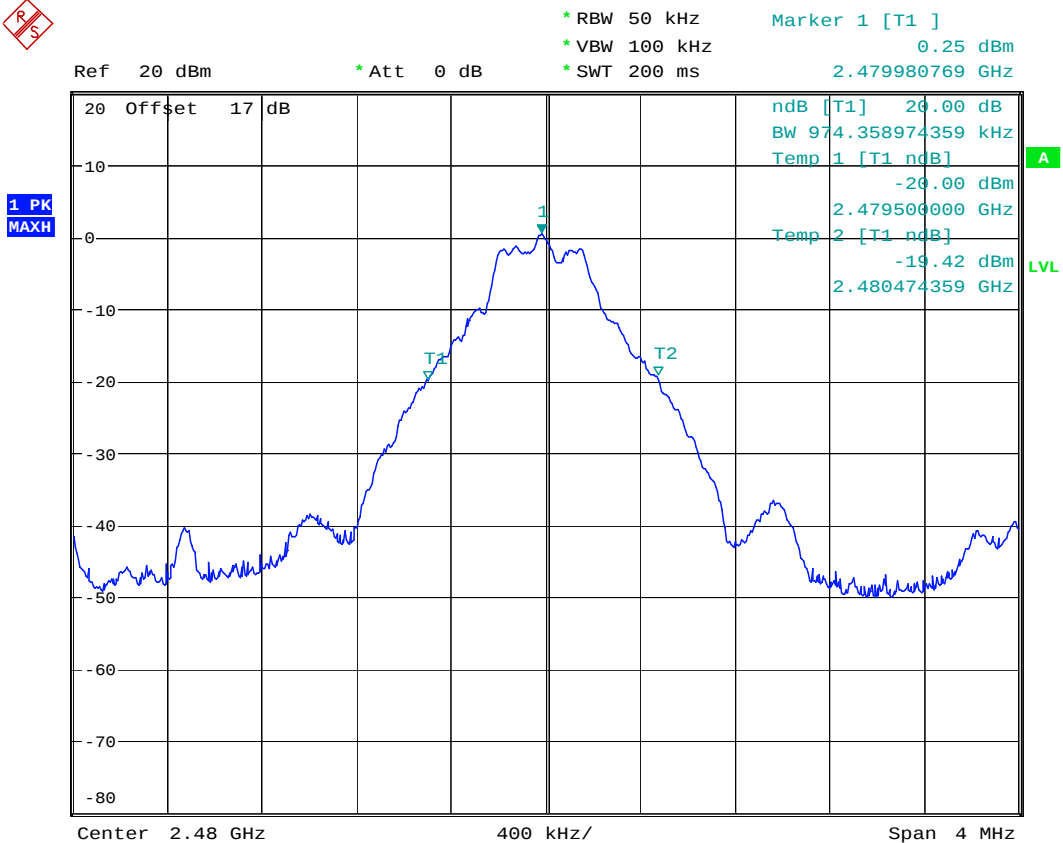
20dB BANDWIDTH CH39

Date: 11.SEP.2007 12:48:59



Taiwan ETS Product Service Co., Ltd.

Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902



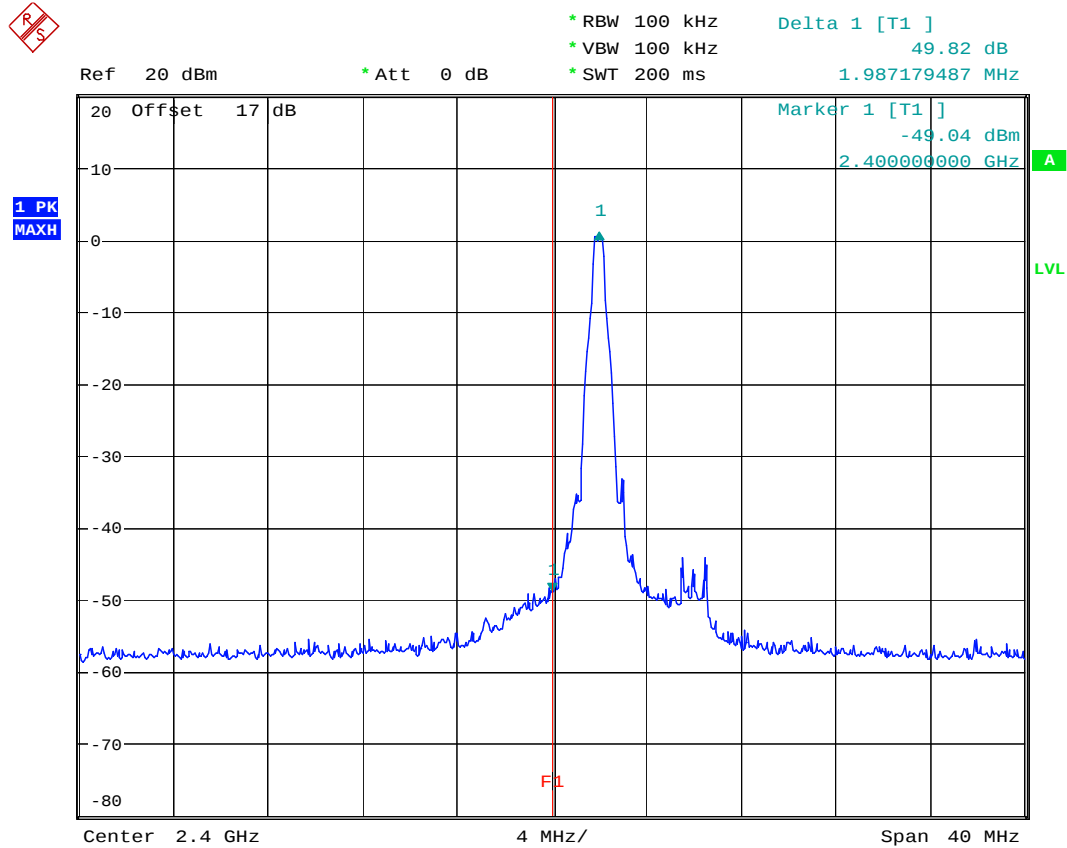
20dB BANDWIDTH CH78

Date: 11.SEP.2007 12:47:54



Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902

Band-edge Compliance of RF Conducted Emissions



BANDEDGE CH0

Date: 11.SEP.2007 12:44:25



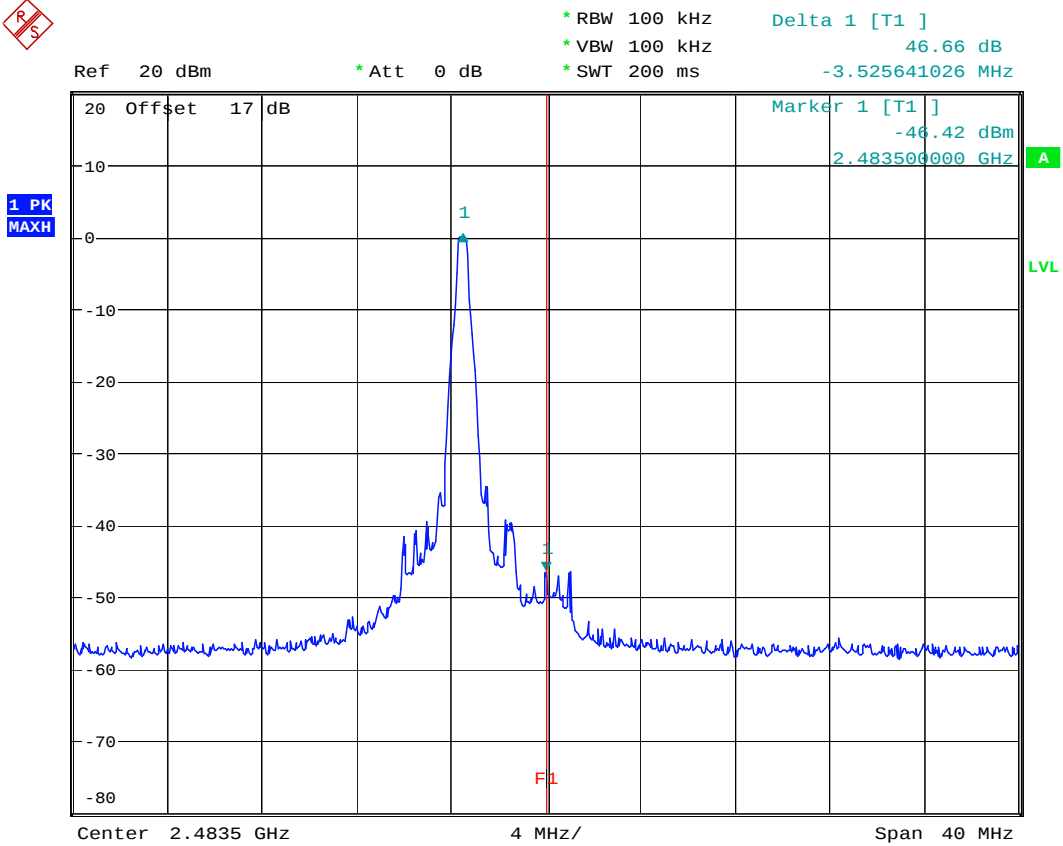
FCC ID: RLM-BLUEMATE-902

```
* RBW 100 kHz      Delta 1 [T1 ]
* VBW 100 kHz      44.93 dB
* SWT 200 ms       1.987179487 MHz
```



Taiwan ETS Product Service Co., Ltd.

Registration number: W6D20801-8841-P-15
FCC ID: RLM-BLUEMATE-902



BANDEDGE CH78

Date: 11.SEP.2007 12:43:28



FCC ID: RLM-BLUEMATE-902

```
* RBW 100 kHz      Delta 1 [T1 ]
* VBW 100 kHz      46.78 dB
* SWT 200 ms       -3.525641026 MHz
```

Date: 11.SEP.2007 13:21:03



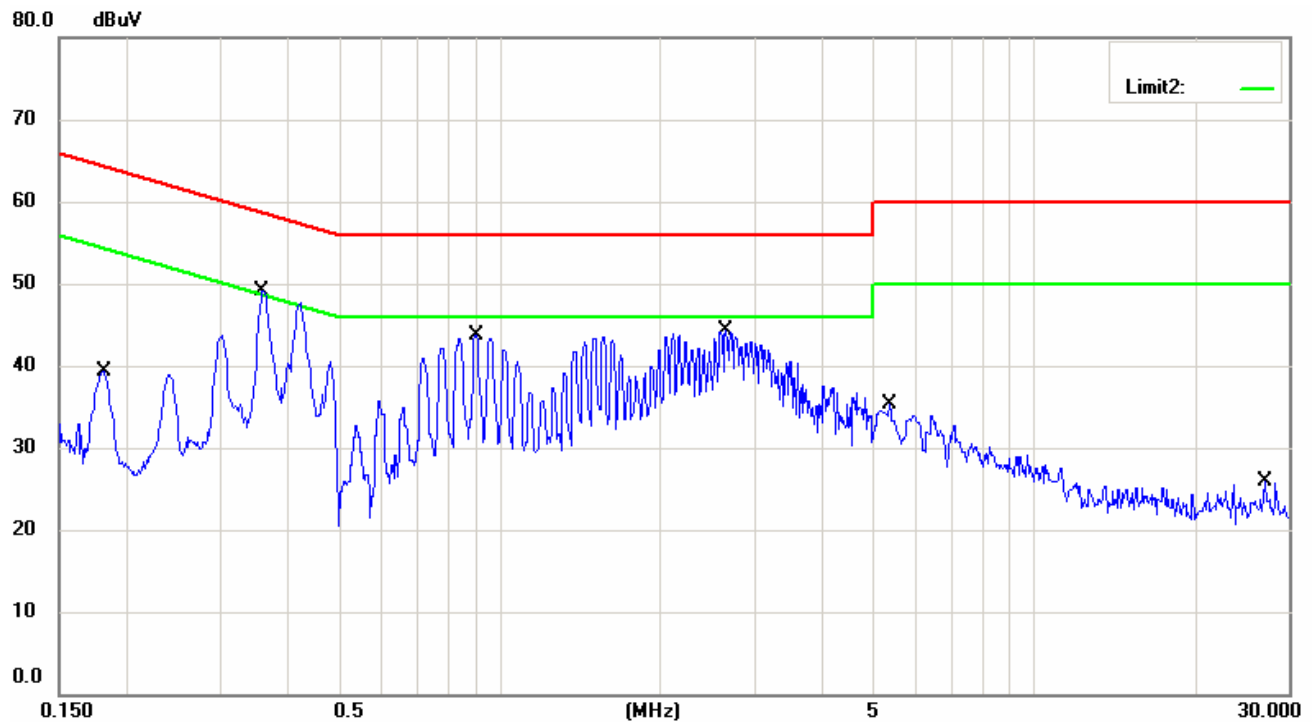
Taiwan ETS Product Service Co., Ltd.

Registration number: W6D20801-8841-P-15

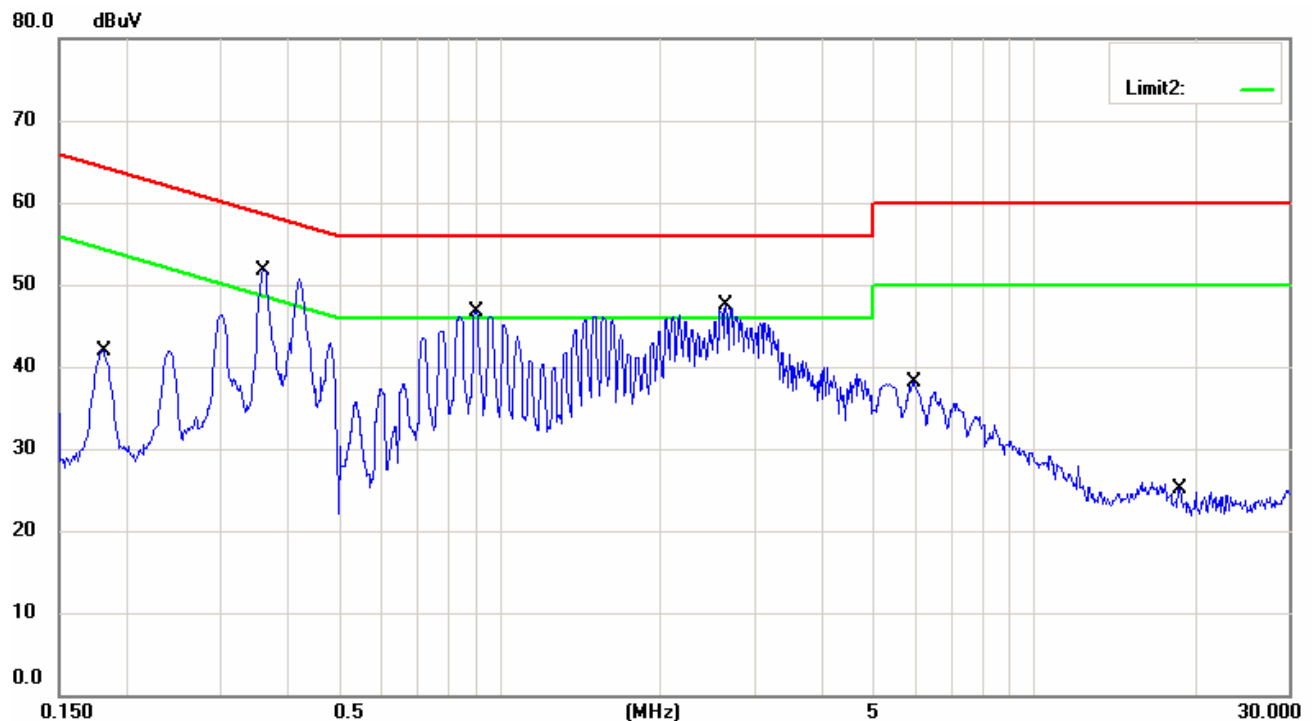
FCC ID: RLM-BLUEMATE-902

Power Line Conducted Emission

LISN N



LISN L1



Up Line: QP Limit Line

Down Line: Ave Limit Line

Note:

1. The plots are pre-scanned data for determining the tested points and for reference only.
2. The exact test result is shown in the data table of AC conducted emission test of this test report.