

FCC PART 95 TEST REPORT
for
REMOTE CONTROLLER FOR MODELS
Model No.: SEA COMMANDER T6M (75 MHz)
FCC ID: VEJCOMMANDER-F75

of

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

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.: W6M20803-8964-C-1

6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C.
TEL: 886-2-66068877 FAX: 886-2-66068879 E-mail: wts@wts-lab.com

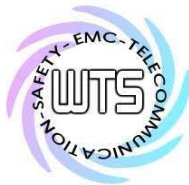
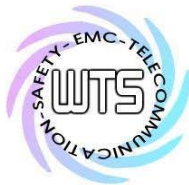


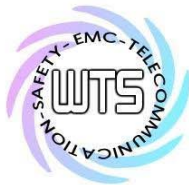
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1. General Information

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 Worldwide Testing Services(Taiwan) Co., Ltd.

Tester:

June 20, 2008

Jay Chaing

Date

WTS-Lab.

Name

Signature

Technical responsibility for area of testing:

June 20, 2008

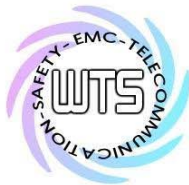
Steven Chuang

Date

WTS

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

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

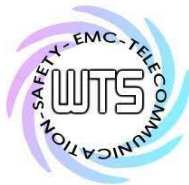
A2LA accredited number: 2732.01

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 |
| City: | TAICHUNG. |
| Country: | TAIWAN R.O.C. 407 |
| Telephone: | +886-4-2359-1616 |
| Fax: | +886-4-2359-1902 |



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1.4 Application details

Date of receipt of test item: April 25, 2008
Date of test: from April 26, 2008 to June 20, 2008

1.5 General information of Test item

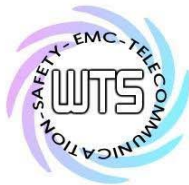
Type of test item: REMOTE CONTROLLER FOR MODELS
Model Number: SEA COMMANDER T6M(75 MHz)
Brand Name: ACE RC
Multi-listing model number: without
Photos: See appendix

Technical data

Operating frequency band:

| Frequency(MHz) | Used Band |
|----------------|-------------------------------------|
| 75.41~75.99 | <input checked="" type="checkbox"/> |

Sample tested frequency: 75.71 MHz
Number of RF-channels: 1
Type of modulation: FM
Designation of emission: 7K45F1D
Antenna Type: rod antenna
Connection of Antenna: ☐ detachable ☒ not detachable
Power supply: Adaptor (I/P: AC 120 V / 60 Hz O/P: 9.6 V / 110 mA)
Battery (9.6V 1100mAh NIMH Tx Battery Pack)
End point of Battery voltage: 8.8 VDC
Operation modes: Simplex



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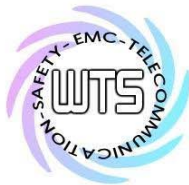
Manufacturer: (if applicable)

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

1.6 Test standards

Technical standard:

FCC RULES PART 95 - Personal Radio Service
Subpart C - Radio Control (R/C) Radio Service
Subpart E - Technical Regulations
FCC RULES PART 2 - Frequency Allocations General Rules and Regulations



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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

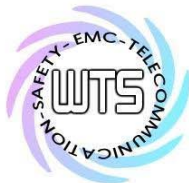
Temperature: 23 °C
Relative humidity content: 20 ... 75 %
Air pressure: 86-103 KPa

2.3 Description of Tested System

The EUT was tested with the Accessories or Peripherals Listed below:

| Equipment | Model No. | Series No. | Software | Cable information | Note |
|-----------|-----------|------------|----------|-------------------|------|
| -- | -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- |

Explanation: The EUT was configured as stand alone device, and there are no accessories or peripherals during the test.



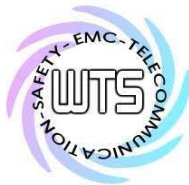
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2.4 Test Equipment List

| No. | Test equipment | Type | Serial No. | Manufacturer | Cal. Date | Next Cal. Date |
|--------------|---|------------------|----------------|--------------|---------------|----------------|
| ETSTW-CE 001 | EMI TEST RECEIVER | ESHS10 | 842121/013 | R&S | 2007/10/15 | 2008/10/14 |
| 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 | 2007/10/15 | 2008/10/14 |
| ETSTW-CE 005 | Line-Impedance Stabilisation Network | NNBM 8126D | 137 | Schwarzbeck | 2007/10/15 | 2008/10/14 |
| ETSTW-CE 006 | IMPULSBEGRENZER PULSE LIMITER | ESH3-Z2 | 100226 | R&S | 2008/5/10 | 2009/5/09 |
| ETSTW-CE 008 | ABSORBING CLAMP | MDS 21 | 3469 | Schwarzbeck | 2007/10/23 | 2009/10/22 |
| 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 | 2007/11/2 | 2009/11/1 |
| ETSTW-CE 014 | CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK | FCC-TLISN-T2-02 | 20241 | FCC | 2005/12/7 | 2008/12/6 |
| 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 | 2007/10/29 | 2008/10/28 |
| 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 | 2007/12/3 | 2008/12/2 |
| ETSTW-RE 004 | EMI TEST RECEIVER | ESI 40 | 832427/004 | R&S | 2007/10/29 | 2008/10/28 |
| ETSTW-RE 005 | EMI TEST RECEIVER | ESVS10 | 843207/020 | R&S | 2007/10/11 | 2008/10/12 |
| 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 | 2008/5/5 | 2010/5/4 |
| ETSTW-RE 018 | MICROWAVE HORN ANTENNA | AT4560 | 27212 | AR | 2007/11/7 | 2010/11/6 |
| ETSTW-RE 020 | MICROWAVE HORN ANTENNA | AT4002A | 306915 | AR | Function Test | |
| ETSTW-RE 021 | SWEEP GENERATOR | SWM05 | 835130/010 | R&S | 2007/10/9 | 2008/10/8 |
| ETSTW-RE 027 | Passive Loop Antenna | 6512 | 00034563 | EMCO | 2007/6/29 | 2008/6/28 |
| ETSTW-RE 028 | Log-Periodic DipoleArray Antenna | 3148 | 34429 | EMCO | 2008/4/23 | 2010/4/22 |
| ETSTW-RE 029 | Biconical Antenna | 3109 | 33524 | EMCO | 2008/4/23 | 2010/4/22 |
| ETSTW-RE 030 | Double-Ridged Guide Horn Antenna | 3117 | 00035224 | EMCO | 2008/3/26 | 2010/3/25 |
| ETSTW-RE 032 | Millivoltmeter | URV 55 | 849086/013 | R&S | 2007/10/9 | 2008/10/8 |
| ETSTW-RE 033 | WaveRunner 6000A Serise Oscilloscope | WAVERUNNER 6100A | LCRY0604P14508 | LeCroy | 2007/7/9 | 2008/7/8 |
| ETSTW-RE 034 | Power Sensor | URV5-Z4 | 839313/006 | R&S | 2007/10/16 | 2009/10/15 |



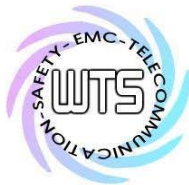
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| | | | | | | |
|--------------|-------------------------------------|-------------|---------------|-------------|---------------|-----------|
| ETSTW-RE 042 | Biconical Antenna | HK116 | 100172 | R&S | 2007/1/11 | 2009/1/10 |
| ETSTW-RE 043 | Log-Periodic Dipole Antenna | HL223 | 100166 | R&S | 2008/5/2 | 2010/5/1 |
| ETSTW-RE 044 | Log-Periodic Antenna | HL050 | 100094 | R&S | 2008/5/22 | 2010/5/21 |
| ETSTW-RE 047 | ESA-E SERIES SPECTRUM ANALYZER | E4445A | MY46181369 | Agilent | 2007/7/19 | 2008/7/18 |
| ETSTW-RE 048 | Triple Loop Antenna | HXYZ 9170 | HXYZ 9170-134 | Schwarzbeck | 2005/3/22 | 2009/3/21 |
| 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 |

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2.5 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.

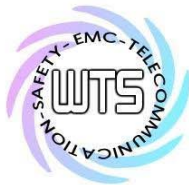
RADIATION INTERFERENCE: The test procedure used was according to ANSI STANDARD C63.4-2003 employing a spectrum analyzer. For investigated frequency is equal to or below 1GHz, the RBW and VBW of the spectrum analyzer was 100 kHz and 100kHz respectively with an appropriate sweep speed. For investigated 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 %.

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, an exploratory test was performed with three (3) orthogonal planes to determine the highest emissions.

Measurements were made by at the registered open field test site located at 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.

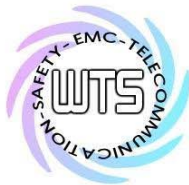


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3. Test results (enclosure)

| TEST CASE | Para. Number | Required | Test passed | Test failed |
|---|--------------------------|-------------------------------------|-------------------------------------|--------------------------|
| RF Power Output | 2.1046; 95.210 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Modulation Deviation | 2.1047 (b) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Audio Frequency Response | 2.1047 (a) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Occupied Bandwidth / Emission Mask | 2.1049 (c)(1); 95.633 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Spurious Emissions at Antenna Terminals | 2.1051 95.635 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Radiated Spurious Emission | 2.1053 95.635 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Frequency Stability vs. Temperature | 2.1055 (b); 95.623 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Frequency Stability vs. Voltage | 2.1055 (a)(1); 95.623 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

The follows is intended to leave blank.



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4. RF Power Output (conducted), FCC 2.1046; 95.210

4.1 Test procedure

This transmitter output was connected to a calibrated coaxial attenuator, the other end of which was connected to a spectrum analyzer. Transmitter output was derived with the spectrum analyzer in dBm. The power output at the transmitter antenna port was determined by assign the value of the attenuator to the spectrum analyzer reading.

An HP power meter was also used to measure the RF power.

Tests were performed with an un-modulated carrier at three frequencies (low, middle and high channels) and on all power levels, which can be set-up on the transmitters, if applicable.

4.2 Test Results

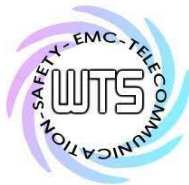
| Frequency Channel | Peak Output Power (dBm) |
|--------------------------|----------------------------------|
| -- | -- |
| -- | -- |
| -- | -- |

4.3 Limits:

| R/C transmitter | |
|----------------------------|-------------------------------------|
| Frequency [MHz] | Conducted output power [W] |
| 26 - 27; except for 27.255 | 4 |
| 27.255 | 25 |
| 72 - 76 | 0.75 |

Explanation: This test is not required because the antenna of this EUT is not detachable.

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



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5. Radiated Power

5.1 Test Procedure

The EUT was positioned on a non-conductive turntable, 0.8m above the ground on an open test site. The radiated emission at the fundamental frequency was measured at 3m distance with a test antenna and spectrum analyzer.

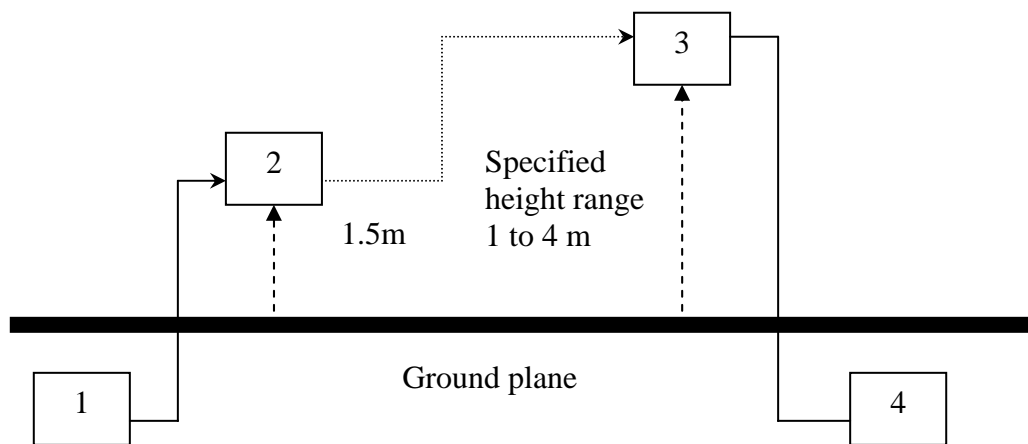
Worst case emission was recorded with the rotation of the turntable and the rising and lowering of the test antenna.

Substitution RF power Measurement at WTS

General:

The applied substitution method follows ANSI/TIA/EIA-603, ANSI/TIA/EIA-102.CAAA or the appropriate ETSI rules respectively.

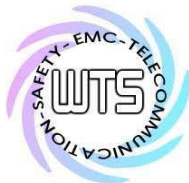
The actual signal generated by the EUT can be determined by means of a substitution measurement in which a known signal source replaces the device to be measured.



- 1) Signal generator ;
- 2) Substitution antenna ;
- 3) Test antenna ;
- 4) Spectrum analyzer or selective voltmeter.

The substitution antenna replaces the transmitter antenna at the same position and in vertical polarization. The frequency of the signal generator shall be adjusted to the measurement frequency. The test antenna shall be raised or lowered, if necessary, to ensure that the maximum signal is still received. The input signal to the substitution antenna shall be adjusted in level until an equal or a known related level to that detected from the transmitter is obtained in the measurement receiver. If a fully anechoic chamber is used as test site in order to provide free space conditions there is no need to change the height of the antenna.

The measurement will be repeated in horizontal position.



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Calibration:

In order to make this kind of measurement more effective and to avoid subjective measurement faults ETS has installed automatic computer controlled measurement procedures.

With the above described substitution method a test site is calibrated over the full frequency range which is used in suitable frequency steps. For a certain power level on the substitution antenna the received power over the whole frequency range is documented. All necessary antenna gains, cable losses, filter losses and amplifications of preamplifiers are taken in consideration. The summary of this calibration measurement performs a transducer factor that is related to the considered test site and a certain measurement distance. Differences of the radiated power levels of different test samples are determined by internal attenuation of measurement receiver. The proper function of such test site will be maintained by short term plausibility checks and periodical re-calibration.

Testing:

Now the test sample will be putted on the table at the defined position and the radiated power will be receiver and documented by the measurement receiver.

On test sites with ground plane the measurement antenna will be lowered and raised to maximum values at significant frequencies.

For peak power measurements the sample is turned by the turntable over 360 degree in order to find the direction with the maximum radiation or to document the max reading with the MAXHOLD function during the rotation.

5.2 Test results

SEA COMMANDER

Model: T6M(75MHz) Date: 2008/4/15
Mode: TX power Temperature: 26 °C Engineer: Danny
Polarization: Horizontal Humidity: 60 %

| Frequency (MHz) | Reading (dBm) Peak | Factor (dB) Corr. | Result (dBm) | Limit (dBm) | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|--------------------|--------------------------|-------------------------|-----------------|----------------|----------------|---------------------------|----------------------|
| 75.703 | -25.74 | 25.20 | -0.54 | 28.80 | -29.34 | 120 | 150 |

Polarization: Horizontal Humidity: 60 %

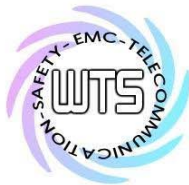
| Frequency (MHz) | Reading (dBm) Peak | Factor (dB) Corr. | Result (dBm) | Limit (dBm) | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|--------------------|--------------------------|-------------------------|-----------------|----------------|----------------|---------------------------|----------------------|
| 75.703 | -9.91 | 24.68 | 14.77 | 28.80 | -14.03 | 125 | 150 |

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 017 ETSTW-RE 021

ETSTW-RE 028 ETSTW-RE 029 ETSTW-RE 030 ETSTW-RE 042

ETSTW-RE 043 ETSTW-RE 044

Explanation: Please see attached diagram as appendix.



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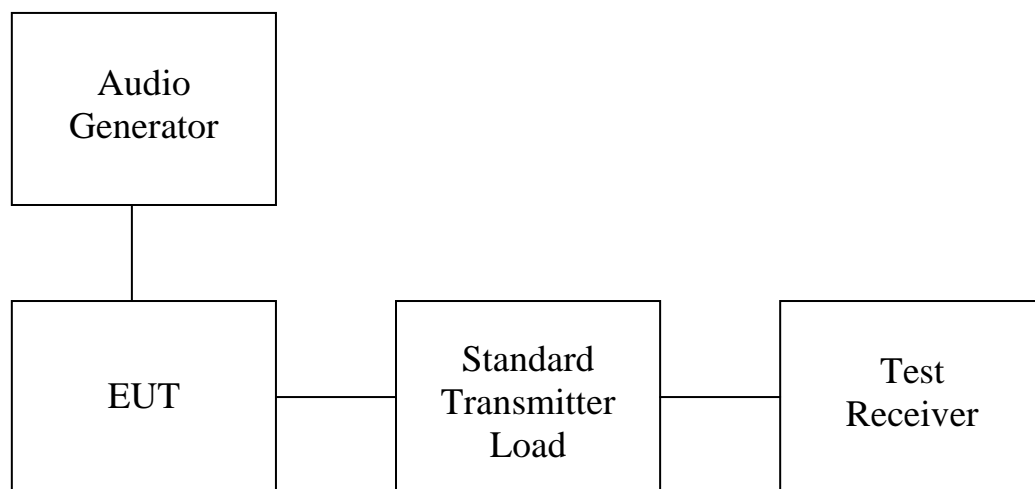
6 Modulation Deviation, FCC 2.1047 (b)

6.1 Test procedure

Modulation limiting is the transmitter circuit's ability to limit the transmitter from producing deviations in excess of rated system deviation.

The audio signal generator is connected to the audio input of the EUT with its full rating.

The modulation response is measured at certain modulation frequencies, related to 1000Hz reference signal. Tests are performed for positive and negative modulation.

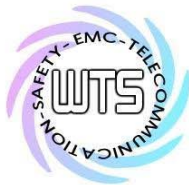


6.2 Test results: --

6.3 Limits: ± 75 kHz

Test equipment used: --

Explanation: This test is not applicable for Radio Control Service devices.



Registration number: W6M20803-8964-C-1
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7 Audio frequency response, FCC 2.1047 (a)

7.1 Test procedure

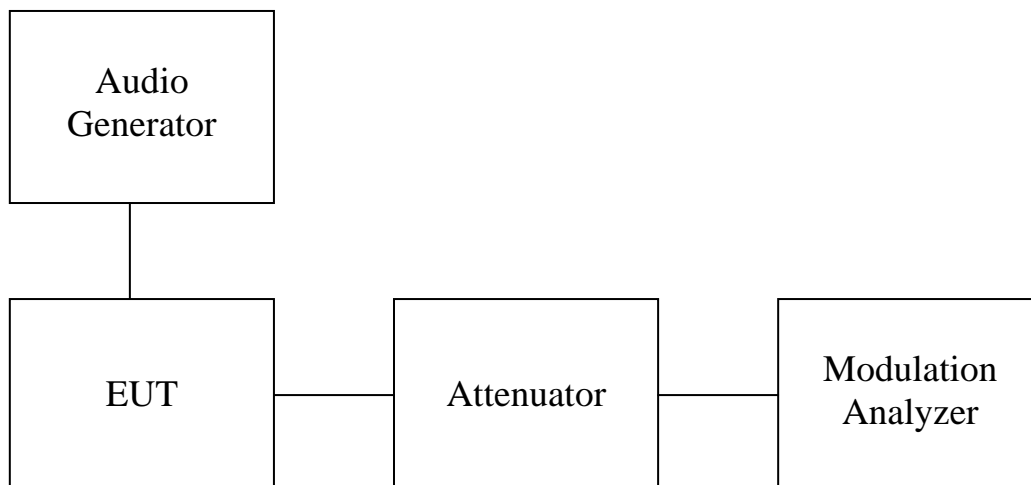
The audio frequency response is the degree of closeness to which the frequency deviation of the transmitter follows a prescribed characteristic.

The frequency response of the audio modulation part is measured over a frequency range of 100 Hz to 5000Hz.

For 1000Hz tone reference signal the audio generator level is adjusted to get 20% of the rated system deviation.

The deviations obtained over the frequency range from 100Hz to 5000Hz are recorded and compared with the reference deviation as follows:

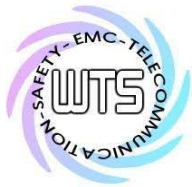
$$\text{Audio Frequency Response} = 20 \log [\text{DEV}_{\text{Freq}} / \text{DEV}_{\text{ref}}].$$



7.2 Test results: --

Test equipment used: --

Explanation: This test is not applicable for Radio Control Service devices.



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8 Occupied Bandwidth/Emission Mask, FCC 2.1049 (c) ; 95.633

An R/C transmitter is allowed to transmit any appropriate non-voice emission, which meets the emission limitations for an R/C transmitter. The authorized bandwidth for any emission type transmitted by an R/C transmitter is 8 kHz.

8.1 Test Results

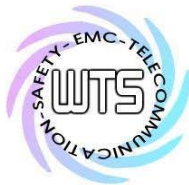
| Occupied Channel Bandwidth (kHz) | Authorized Bandwidth |
|---|-----------------------------|
| 7.4519 | 8 kHz |

8.2 Limit

The authorized bandwidth for any emission type transmitted by an R/C transmitter is 8 kHz.

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

Explanation: Please see attached diagram as appendix.



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FCC ID: VEJCOMMANDER-F75

9 Spurious Emissions at Antenna Terminals FCC2.1051; 95.635

9.1 Test procedure

This transmitter output was connected to a calibrated coaxial attenuator, the other end of which was connected to a spectrum analyzer. Transmitter output was derived with the spectrum analyzer in dBm. The Spurious Emissions at Antenna Terminals was measured by the spectrum analyzer with a suitable notch filter and high-pass filter.

Tests were performed with an un-modulated carrier at three frequencies (low, middle and high channels) and on all power levels, which can be set-up on the transmitters, if applicable.

9.2 Test Results

Summary table with conducted data of the test plots for Carrier Test Frequency

| Frequency Marker Indication [MHz] | Indication Power Level [dBm] | Compliance Limit [dBm] | Margin |
|-----------------------------------|------------------------------|------------------------|--------|
| -- | -- | -- | -- |
| -- | -- | -- | -- |
| -- | -- | -- | -- |
| -- | -- | -- | -- |

9.3 Limit

Compliance with § 95.635 requires that any frequency removed from the center of the authorized bandwidth shall be less than below specific requirement for the transmitter operating in the 72-76 MHz:

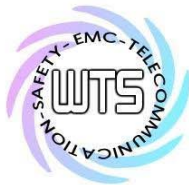
- (1) At least as below 25 dB for more than 50% up to and including 100% of the authorized bandwidth.
- (2) At least as below 45 dB for more than 100% up to and including 125% of the authorized bandwidth.
- (3) At least as below 55 dB for more than 125% up to and including 250% of the authorized bandwidth.
- (4) At least $56 + 10 \log_{10} P$ (P = transmitter power in Watts) for more than 250%.

The compliance limit was calculated as an example for part (4) per the following table:

| | |
|----------------------------------|---|
| Maximum transmitter output power | -- dBm |
| Required attenuation | $56 + 10 \log_{10} \text{ -- } W = \text{ -- } \text{dB}$ |
| Maximum transmitter output power | -- dBm |
| <u>Required attenuation</u> | <u>-- dB</u> |
| Compliance limit | -26 dBm |

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

Explanation: This test is not required because the antenna of this EUT is not detachable.



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FCC ID: VEJCOMMANDER-F75

10 Radiated Spurious Emission, FCC 2.1053; 95.635

10.1 Test procedure

The EUT was positioned on a non-conductive turntable, 0.8m above the ground plane.

The radiated emission at the fundamental frequency was measured at 3 m distance with a test antenna and spectrum analyzer.

Worst case emission was recorded with the rotation of the turntable and the raising and lowering of the test antenna.

ERP was measured using a substitution method. The EUT was replaced by reference antenna connected to a signal generator.

The test of spurious radiated emission has been carried out with the validated test software. The measurements below 1GHz were performed with a measurement bandwidth of 100 kHz, above 1GHz with a bandwidth of 1MHz.

Spurious emission limits near the carrier are defined by a emission mask.

10.2 Test Results

The measurements of the spurious emission at the upper, center and lower channel, if applicable.

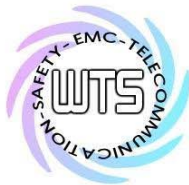
The measurement diagrams show that all significant spurious emissions are well below the limit line.

10.2.1 Spurious emission near the carrier:

The Results of Emission Mask: ☒ PASSED ☐ NOT PASSED

10.2.2 Spurious emission not near the carrier:

| SEA COMMANDER | | | | | | | |
|--------------------|--------------------------|-------------------------|-----------------|----------------|----------------|---------------------------|----------------------|
| Model: | T6M(75 MHz) | | Date: | 2008/4/15 | | | |
| Mode: | | | Temperature: | 26 | °C | Engineer: | Danny |
| Polarization: | Horizontal | | Humidity: | 60 | % | | |
| Frequency (MHz) | Reading (dBm) Peak | Factor (dB) Corr. | Result (dBm) | Limit (dBm) | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
| 60.301 | -66.68 | peak | 13.70 | -52.98 | -26.00 | -26.98 | 125 |
| 90.601 | -66.34 | peak | 10.62 | -55.72 | -26.00 | -29.72 | 130 |
| 151.202 | -71.50 | peak | 15.40 | -56.10 | -26.00 | -30.10 | 120 |
| 227.495 | -67.80 | peak | 12.92 | -54.88 | -26.00 | -28.88 | 125 |
| 605.812 | -55.62 | peak | 22.21 | -33.41 | -26.00 | -7.41 | 130 |
| 681.563 | -63.34 | peak | 23.08 | -40.26 | -26.00 | -14.26 | 120 |



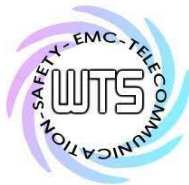
Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M20803-8964-C-1
FCC ID: VEJCOMMANDER-F75

Polarization: Vertical

| Frequency (MHz) | Reading (dBm) Peak | Factor (dB) Corr. | Result (dBm) | Limit (dBm) | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|--------------------|--------------------------|-------------------------|-----------------|----------------|----------------|---------------------------|----------------------|
| 60.301 | -54.21 | peak | 13.70 | -40.51 | -26.00 | -14.51 | 120 |
| 90.601 | -51.64 | peak | 10.62 | -41.02 | -26.00 | -15.02 | 120 |
| 151.202 | -59.00 | peak | 15.40 | -43.60 | -26.00 | -17.60 | 125 |
| 227.495 | -61.07 | peak | 12.92 | -48.15 | -26.00 | -22.15 | 120 |
| 530.060 | -62.61 | peak | 20.30 | -42.31 | -26.00 | -16.31 | 130 |
| 605.812 | -63.84 | peak | 22.21 | -41.63 | -26.00 | -15.63 | 135 |

- Note:**
- 1. Correction Factor = Antenna Gain + Cable Loss + Amplifier Gain**
 - 2. The formula of measured value as: Test Result = Reading + Correction Factor**
 - 3. Detector function in the form: PK = 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.**



Registration number: W6M20803-8964-C-1
FCC ID: VEJCOMMANDER-F75

10.3 Explanation of test result

The measurements of the spurious emissions at the equipment output terminals were performed pursuant to the test procedure above in order to verify that any emissions are below the limits given by § 95.635.

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.

In the Table being listed the critical peak and average value an exhibit the compliance with the above calculated Limits.

10.4 Limits

Compliance with § 95.635 requires that any frequency removed from the center of the authorized bandwidth shall be less than below specific requirement for the transmitter operating in the 72-76 MHz:

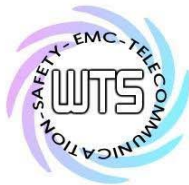
- (1) At least as below 25 dB for more than 50% up to and including 100% of the authorized bandwidth.
- (2) At least as below 45 dB for more than 100% up to and including 125% of the authorized bandwidth.
- (3) At least as below 55 dB for more than 125% up to and including 250% of the authorized bandwidth.
- (4) At least $56 + 10 \log_{10} P$ (P = transmitter power in Watts) for more than 250%.

The compliance limit was calculated as an example for part (4) per the following table:

| | |
|----------------------------------|---|
| Maximum transmitter output power | 14.77 dBm |
| Required attenuation | $56 + 10 \log_{10} 0.03 \text{ W} = 40.77 \text{ dB}$ |
| Maximum transmitter output power | 14.77 dBm |
| <u>Required attenuation</u> | <u>40.77 dB</u> |
| Compliance limit | -26 dBm |

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 017 ETSTW-RE 021
ETSTW-RE 028 ETSTW-RE 029 ETSTW-RE 030 ETSTW-RE 042
ETSTW-RE 043 ETSTW-RE 044

Explanation: See attached diagrams in appendix.



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FCC ID: VEJCOMMANDER-F75

11 Frequency Stability vs. Temperature, FCC 2.1055, 95.623

11.1 Test procedure

The equipment under test was connected to an external DC power supply and the RF output was connected to a frequency counter via feed through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable, exited the chamber through an opening made for that purpose.

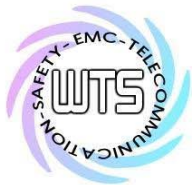
After the temperature stabilized the frequency output was recorded from the counter.

11.2 Test Results

Test frequency: 75.71 MHz Testing Voltage 9.6 VDC

| Test Temp. (°C) | Power on time (Minutes) | Carrier Freq. (MHz) | Deviation (KHz) | Limit: 0.002% | Result |
|-----------------|-------------------------|---------------------|-----------------|---------------|--------|
| 0 | 0 | 75.711784 | 0.361833 | 0.0005% | pass |
| 0 | 2 | 75.711604 | 0.181620 | 0.0002% | pass |
| 0 | 5 | 75.710855 | -0.567091 | -0.0007% | pass |
| 0 | 10 | 75.711311 | -0.111493 | -0.0001% | pass |
| -10 | 0 | 75.71173 | 0.307758 | 0.0004% | pass |
| -10 | 2 | 75.710541 | -0.881131 | -0.0012% | pass |
| -10 | 5 | 75.710942 | -0.479824 | -0.0006% | pass |
| -10 | 10 | 75.711589 | 0.167225 | 0.0002% | pass |
| -20 | 0 | 75.710789 | -0.632735 | -0.0008% | pass |
| -20 | 2 | 75.712117 | 0.695020 | 0.0009% | pass |
| -20 | 5 | 75.71173 | 0.308016 | 0.0004% | pass |
| -20 | 10 | 75.710439 | -0.983060 | -0.0013% | pass |
| 50 | 0 | 75.711197 | -0.225292 | -0.0003% | pass |
| 50 | 2 | 75.710694 | -0.727804 | -0.0010% | pass |
| 50 | 5 | 75.712389 | 0.966520 | 0.0013% | pass |
| 50 | 10 | 75.710791 | -0.630919 | -0.0008% | pass |
| 40 | 0 | 75.710767 | -0.655142 | -0.0009% | pass |
| 40 | 2 | 75.710814 | -0.607591 | -0.0008% | pass |
| 40 | 5 | 75.712209 | 0.787313 | 0.0010% | Pass |
| 40 | 10 | 75.712101 | 0.679303 | 0.0009% | pass |
| 30 | 0 | 75.711434 | 0.012362 | 0.0000% | pass |
| 30 | 2 | 75.711173 | -0.248732 | -0.0003% | pass |
| 30 | 5 | 75.710681 | -0.740623 | -0.0010% | pass |
| 30 | 10 | 75.712064 | 0.641966 | 0.0008% | pass |
| 20 | 0 | 75.710569 | -0.852825 | -0.0011% | pass |
| *20 | 2 | 75.711422 | 0.000000 | 0.0000% | pass |
| 20 | 5 | 75.711336 | -0.085854 | -0.0001% | pass |
| 20 | 10 | 75.710673 | -0.748985 | -0.0010% | pass |
| 10 | 0 | 75.711291 | -0.130992 | -0.0002% | pass |
| 10 | 2 | 75.710754 | -0.668129 | -0.0009% | pass |
| 10 | 5 | 75.711132 | -0.101879 | -0.0001% | pass |
| 10 | 10 | 75.710877 | -0.544950 | -0.0007% | pass |

Note: * means the reference frequency.

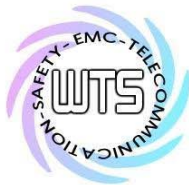


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FCC ID: VEJCOMMANDER-F75

11.3 Limits:

According to FCC 95.623(c), all R/C transmitters capable of operation in the 72-76 MHz band must be maintained within a frequency tolerance of 0.002%.

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 055 ETSTW-CE 009



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FCC ID: VEJCOMMANDER-F75

12 Frequency Stability vs. Voltage, FCC 2.1055 (d) ; 95.623

12.1 Test procedure

An external variable DC power supply was connected to the battery terminals of the equipment under test.

For hand carried, battery powered equipment primary supply voltage was reduced to the battery operating end point as specified by the manufacturer. The output frequency was recorded for each battery voltage.

12.2 Test Results

Test frequency: 75.71 MHz Testing Temperature: 20 °C

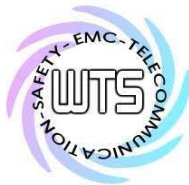
| Test Voltage (V) | Power On Time (Minutes) | Carrier Freq. (MHz) | Deviation (KHz) | Limit: 0.002%. | Result |
|------------------|-------------------------|---------------------|-----------------|----------------|--------|
| 9.6 | 0 | 75.711623 | 0.1811242 | 0.0002% | pass |
| 9.6 | *2 | 75.711442 | 0 | 0.0000% | pass |
| 9.6 | 5 | 75.710895 | -0.547251 | -0.0007% | pass |
| 9.6 | 10 | 75.711073 | -0.369168 | -0.0005% | pass |
| 8.8 | 0 | 75.711917 | 0.4750477 | 0.0006% | pass |
| 8.8 | 2 | 75.711248 | -0.194206 | -0.0003% | pass |
| 8.8 | 5 | 75.71055 | -0.891745 | -0.0012% | pass |
| 8.8 | 10 | 75.712379 | 0.9371478 | 0.0012% | pass |

Note: * means the reference frequency.

12.3 Limits:

According to FCC 95.623(c), all R/C transmitters capable of operation in the 72-76 MHz band must be maintained within a frequency tolerance of 0.002%.

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 055 ETSTW-CE 009



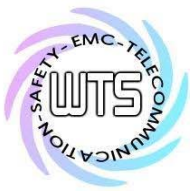
Appendix

A Measurement diagrams

1. RF Power Output
2. Audio frequency response
(This test is not applicable for Radio Control Service devices.)
3. Occupied Bandwidth / Emission Mask
4. Spurious Emissions at Antenna Terminals
(This test is not required because the antenna of this EUT is not detachable.)
5. Radiation Spurious Emission
6. Frequency Stability vs. Temperature
No diagrams
Refer to point 11.2
7. Frequency Stability vs. Voltage
No diagrams
Refer to point 12.2

B Photos

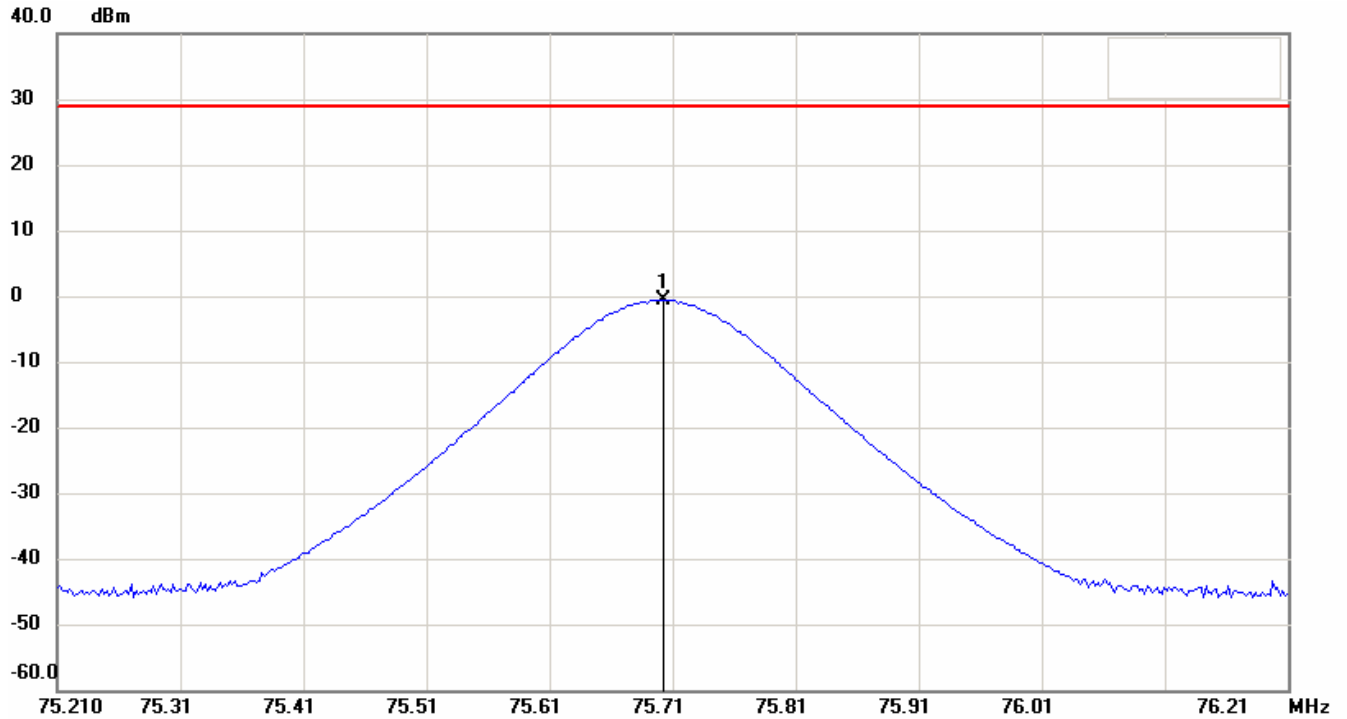
1. External Photos
2. Internal Photos
3. Set Up Photo of Radiated Emission



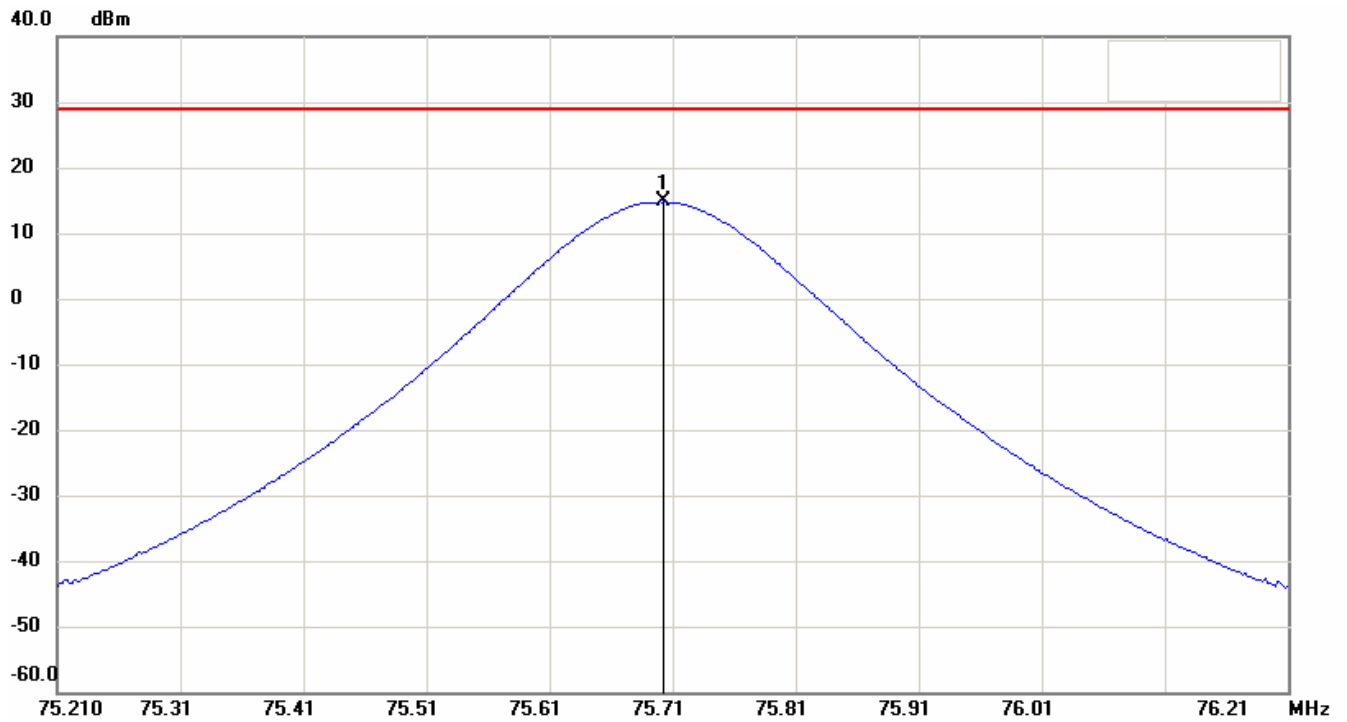
Registration number: W6M20803-8964-C-1
FCC ID: VEJCOMMANDER-F75

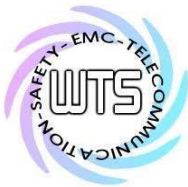
RF Power Output

Antenna Polarization H



Antenna Polarization V

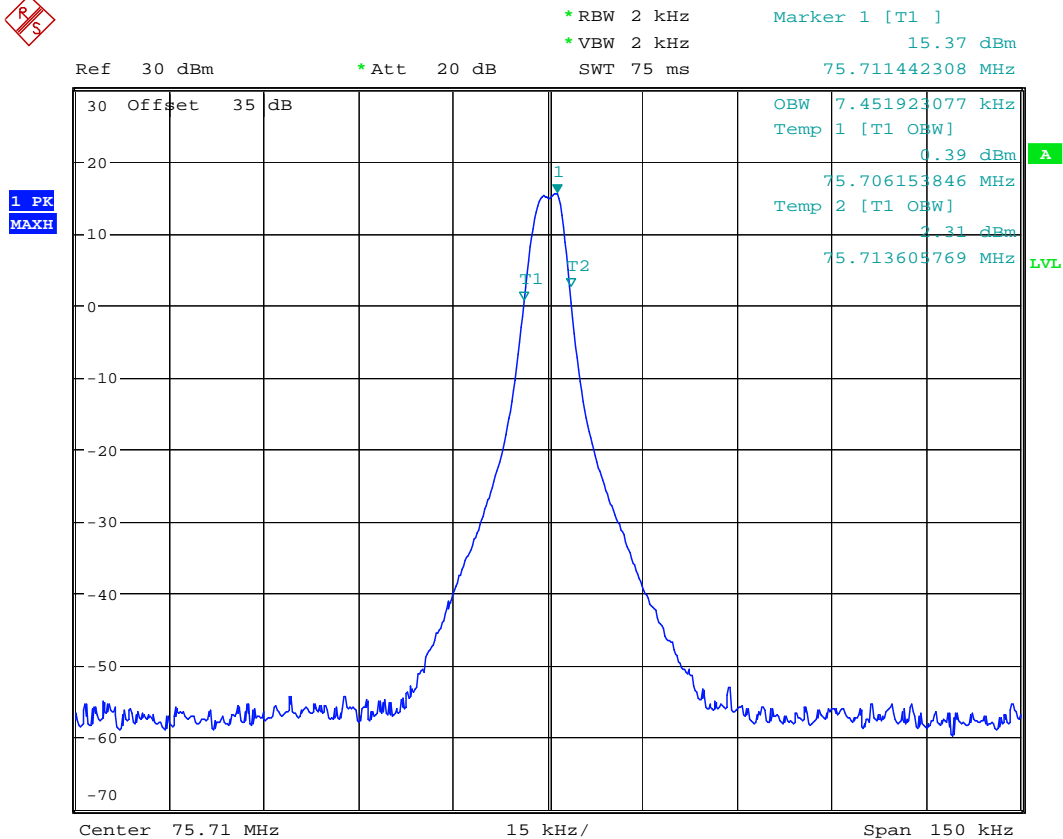




Registration number: W6M20803-8964-C-1

FCC ID: VEJCOMMANDER-F75

Occupied Bandwidth / Emission Mask



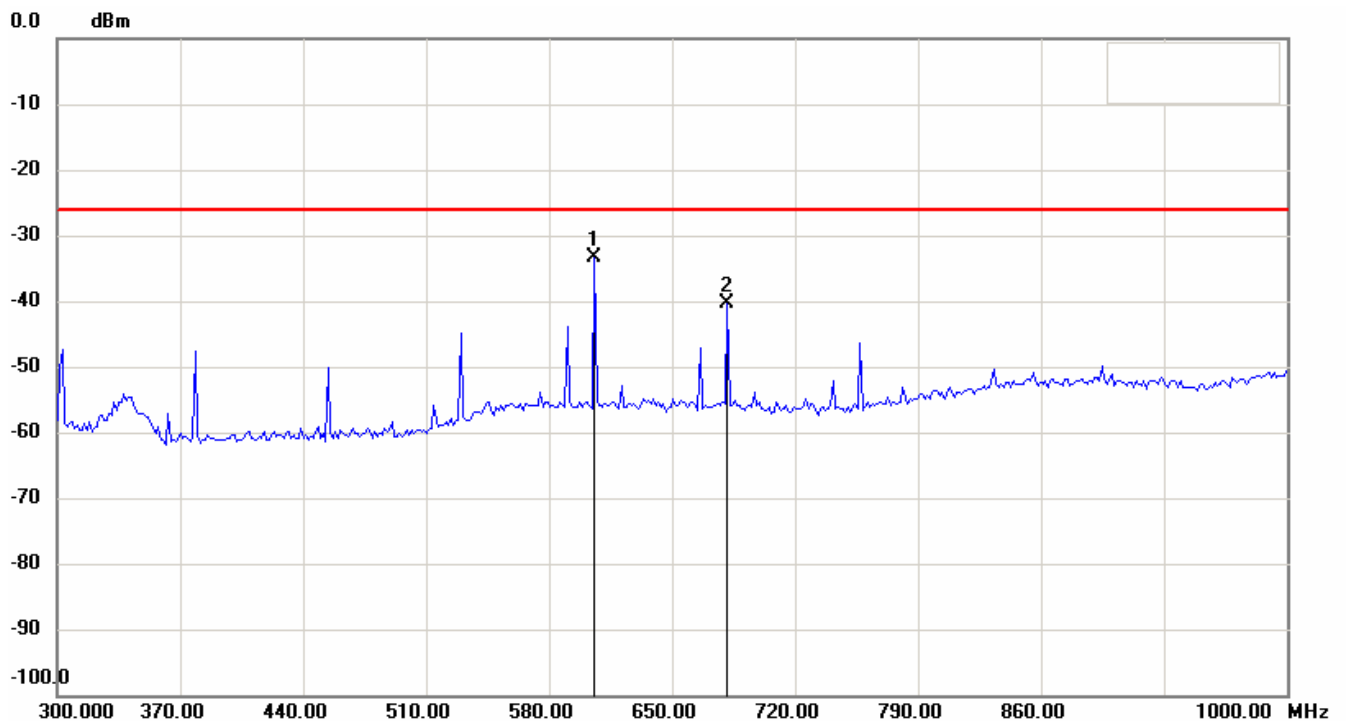
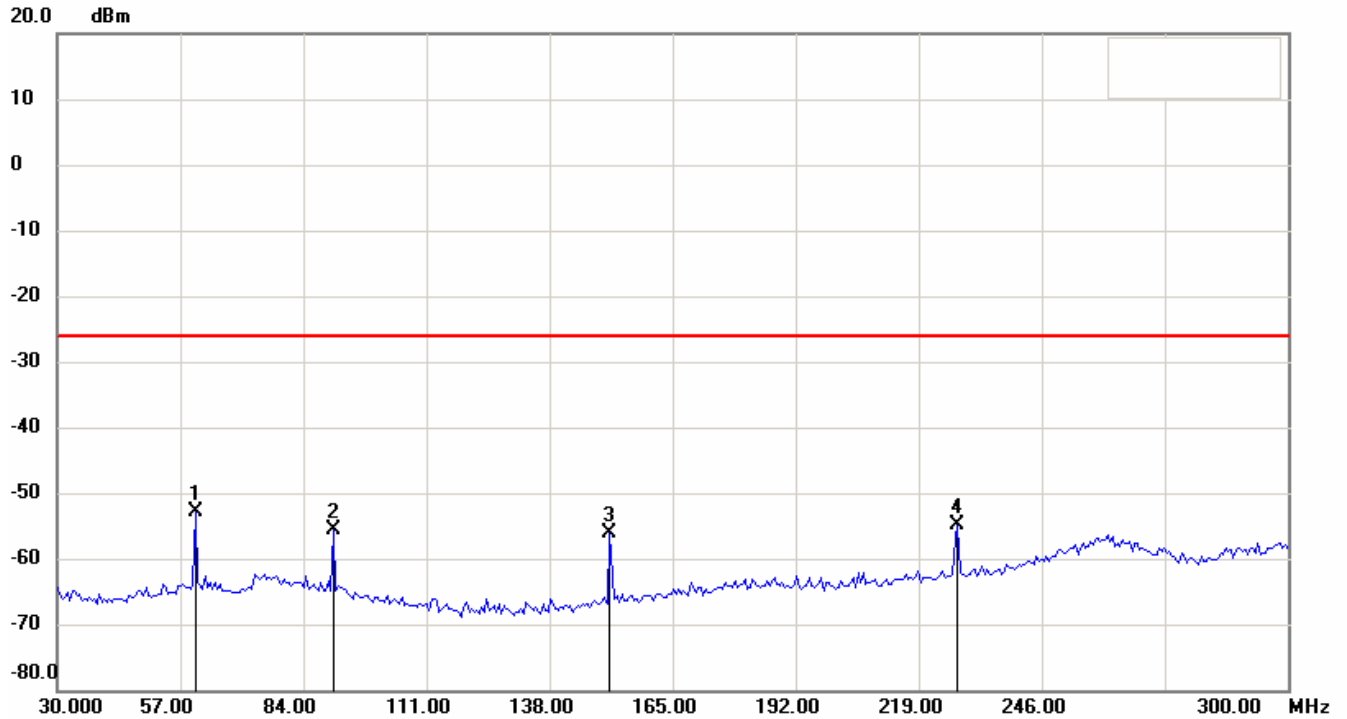
Occupied bandwidth

Date: 8.MAY.2008 12:24:15

Registration number: W6M20803-8964-C-1
FCC ID: VEJCOMMANDER-F75

Radiated emission

Antenna Polarization H

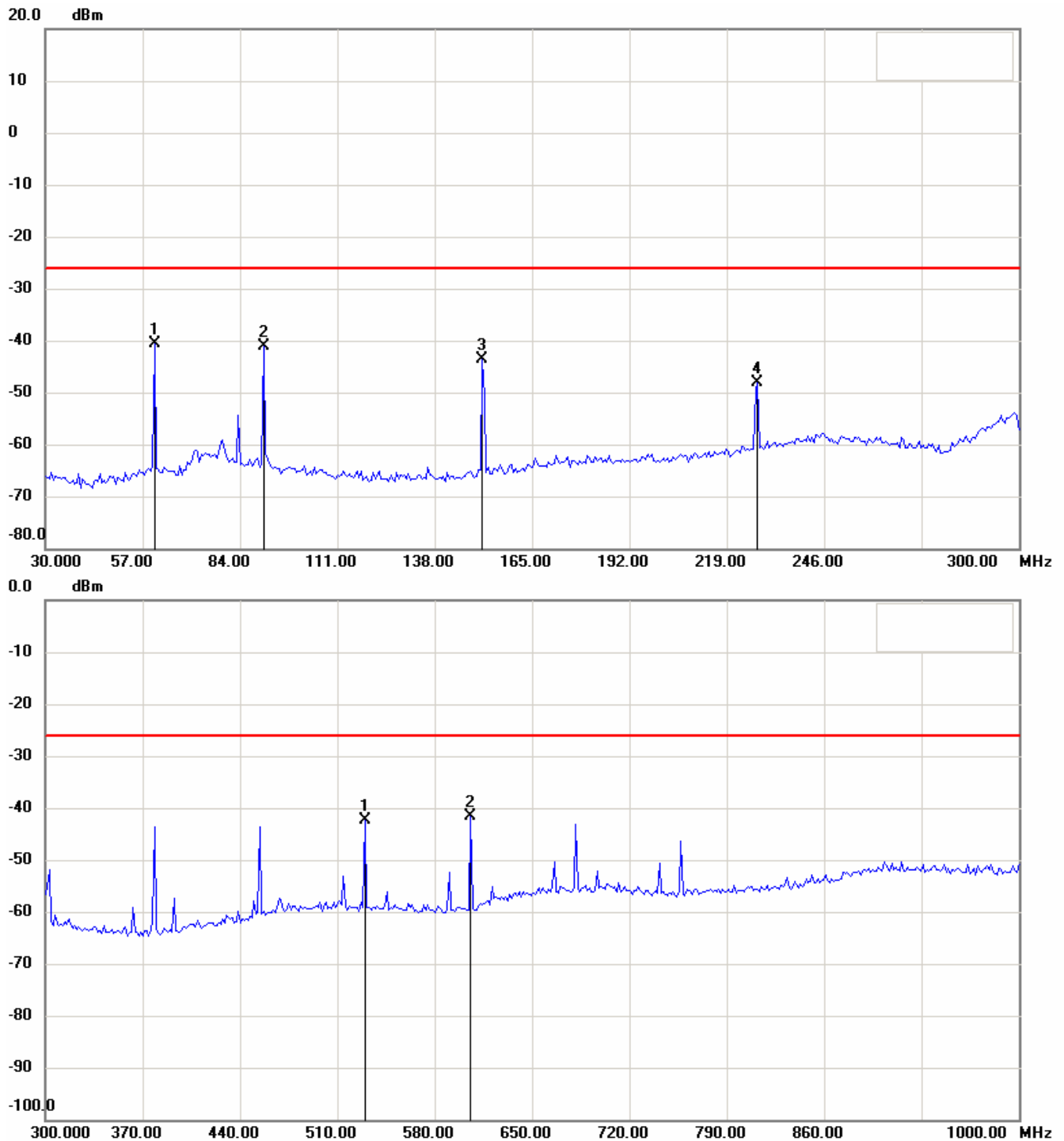


Note:

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.

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Antenna Polarization V



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.