

FCC PART 15 SUBPART C TEST REPORT

for

REMOTE CONTROL

Model No.: XP-TX303

FCC ID: YJF303XPTX

of

Applicant: GUARDIAN SHANGHAI CORP.

Address: 368, Min Shen Rd, SongJiang, Shanghai, China

Tested and Prepared

by

Worldwide Testing Services (Taiwan) Co., Ltd.

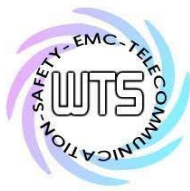
FCC Registration No.: 930600

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

A2LA Accredited No.: 2732.01



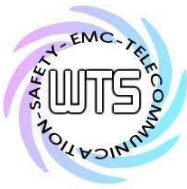
Report No.: W6M21008-10846-C-1



Registration number: W6M21008-10846-C-1
FCC ID: YJF303XPTX

TABLE OF CONTENTS

| | | |
|--------------|---|-----------|
| 1 | GENERAL INFORMATION | 2 |
| 1.1 | NOTES | 2 |
| 1.2 | TESTING LABORATORY | 3 |
| 1.2.1 | Location | 3 |
| 1.2.2 | Details of accreditation status | 3 |
| 1.3 | DETAILS OF APPROVAL HOLDER | 4 |
| 1.4 | APPLICATION DETAILS | 4 |
| 1.5 | TEST ITEM | 4 |
| 1.6 | TEST STANDARDS | 5 |
| 2 | TECHNICAL TEST | 5 |
| 2.1 | SUMMARY OF TEST RESULTS | 5 |
| 2.2 | TEST ENVIRONMENT | 5 |
| 2.3 | TEST MODE | 5 |
| 2.4 | TEST EQUIPMENT UTILIZED | 6 |
| 2.5 | GENERAL TEST PROCEDURE | 8 |
| 3 | TEST RESULTS (ENCLOSURE) | 9 |
| 3.1 | TRANSMISSION REQUIREMENTS | 10 |
| 3.1.1 | Limit of Transmission Time | 10 |
| 3.1.2 | Active Time | 10 |
| 3.2 | OUTPUT POWER (FIELD STRENGTH) | 11 |
| 3.3 | OUT OF BAND RADIATED EMISSIONS | 12 |
| 3.4 | TRANSMITTER RADIATED EMISSIONS IN RESTRICTED BANDS | 13 |
| 3.5 | SPURIOUS EMISSION RADIATED, TRANSMITTER | 14 |
| 3.6 | CHANNEL BANDWIDTH | 16 |
| 3.7 | ANTENNA REQUIREMENT | 17 |
| 3.8 | DUTY CYCLE | 18 |
| 3.9 | CONDUCTED MEASUREMENT AT (AC) POWER LINE | 19 |



Registration number: W6M21008-10846-C-1
FCC ID: YJF303XPTX

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.

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Tester:

August 24, 2010

Danny Sung

Date

WTS-Lab.

Name

Signature

Technical responsibility for area of testing:

August 24, 2010

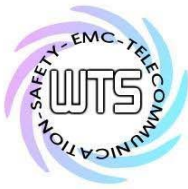
Chang Tse-Ming

Date

WTS

Name

Signature



Registration number: W6M21008-10846-C-1
FCC ID: YJF303XPTX

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



Test location, where different from Worldwide Testing Services (Taiwan) Co., Ltd. :

Name: ./.
Accredited number: ./.
Street: ./.
Town: ./.
Country: ./.
Telephone: ./.
Fax: ./.



Registration number: W6M21008-10846-C-1

FCC ID: YJF303XPTX

1.3 Details of approval holder

Name: GUARDIAN SHANGHAI CORP.
Street: 368, Min Shen Rd, SongJiang,
Town: Shanghai, China
Country: China
Telephone: +86-21-57684828
Fax: +86-21-57685151

1.4 Application details

Date of receipt of test item: August 17, 2010
Date of test: from August 17, 2010 to August 24, 2010

1.5 Test item

Description of test item: REMOTE CONTROL

Type identification: XP-TX303

Brand name: ./.

Multi-listing model number: without

Transmitting frequency: 303.9 MHz

Operation mode: simplex

Voltage supply: Battery 12Vdc

(The device is tested under fresh battery condition.)

Highest clock frequency: 303.9 MHz

Antenna type: PCB antenna

Photos: see Appendix

Manufacturer

(if applicable)

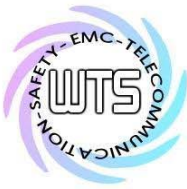
Name: ./.

Street: ./.

Town: ./.

Country: ./.

Additional information: ./.



Registration number: W6M21008-10846-C-1
FCC ID: YJF303XPTX

1.6 Test standards

Technical standard : FCC RULES SUBPART C § 15.231 (a) (2009-10)

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: Battery 12Vdc

2.3 Test Mode

This EUT is the portable device. So the EUT was tested on three different axes. Please see assessment test results as section 3 of this test report.



Registration number: W6M21008-10846-C-1

FCC ID: YJF303XPTX

2.4 Test equipment utilized

| No. | Test equipment | Type | Serial No. | Manufacturer | Cal. Date | Next Cal. Date |
|--------------|---|-------------------|----------------|--------------|------------------|----------------|
| ETSTW-CE 001 | EMI TEST RECEIVER | ESHS10 | 842121/013 | R&S | 2009/9/10 | 2010/9/9 |
| ETSTW-CE 004 | ZWEILEITER-V-NETZNACHBILDUNG TWO-LINE V-NETWORK | ESH3-Z5 | 840731/011 | R&S | 2010/3/2 | 2011/3/1 |
| ETSTW-CE 005 | Line-Impedance Stabilisation Network | NNBM 8126D | 137 | Schwarzbeck | 2009/9/9 | 2010/9/8 |
| ETSTW-CE 006 | IMPULSBEGRENZER PULSE LIMITER | ESH3-Z2 | 100226 | R&S | 2010/5/8 | 2011/5/7 |
| ETSTW-CE 007 | SPECTRUM ANALYZER 5GHz | FSB | 849670/001 | R&S | Pre-test Use NCR | |
| ETSTW-CE 008 | HF-EICHLITUNG RF STEP ATTENUATOR 139dB DPSP | 334.6010.02 | 844581/024 | R&S | Function Test | |
| ETSTW-CE 009 | TEMP.&HUMIDITY CHAMBER | GTH-225-40-1P-U | MAA0305-009 | GIANT FORCE | 2010/7/21 | 2011/7/19 |
| ETSTW-CE 015 | CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK | FCC-TLISN-T8-02 | 20307 | FCC | 2009/9/12 | 2010/9/11 |
| ETSTW-CE 016 | TWO-LINE V-NETWORK | ENV216 | 100050 | R&S | 2009/9/9 | 2010/9/8 |
| ETSTW-RE 002 | Function Generator | 33220A | MY43004982 | Agilent | Function Test | |
| ETSTW-RE 003 | EMI TEST RECEIVER | ESI 26 | 831438/001 | R&S | 2010/8/17 | 2011/8/16 |
| ETSTW-RE 004 | EMI TEST RECEIVER | ESI 40 | 832427/004 | R&S | 2009/9/18 | 2010/9/17 |
| ETSTW-RE 005 | EMI TEST RECEIVER | ESVS10 | 843207/020 | R&S | 2009/9/11 | 2010/9/10 |
| ETSTW-RE 006 | Attenuator 10dB | 50HF-010-5N-1 | None | STEP | 2010/3/5 | 2011/3/4 |
| ETSTW-RE 010 | ABSORBING CLAMP | MDS 21 | 3469 | Schwarzbeck | 2009/9/11 | 2010/9/10 |
| ETSTW-RE 012 | TUNABLE BANDREJECT FILTER | D.C 0309 | 146 | K&L | Function Test | |
| ETSTW-RE 013 | TUNABLE BANDREJECT FILTER | D.C 0336 | 397 | K&L | Function Test | |
| ETSTW-RE 018 | MICROWAVE HORN ANTENNA | AT4560 | 27212 | AR | 2009/10/1 | 2010/9/30 |
| ETSTW-RE 020 | MICROWAVE HORN ANTENNA | AT4002A | 306915 | AR | Function Test | |
| ETSTW-RE 021 | SWEEP GENERATOR | SWM05 | 835130/010 | R&S | 2010/8/17 | 2011/8/16 |
| ETSTW-RE 027 | Passive Loop Antenna | 6512 | 00034563 | EMCO | 2010/8/17 | 2011/8/16 |
| ETSTW-RE 028 | Log-Periodic Dipole Array Antenna | 3148 | 34429 | EMCO | 2010/4/14 | 2011/4/13 |
| ETSTW-RE 029 | Biconical Antenna | 3109 | 33524 | EMCO | 2010/4/14 | 2011/4/13 |
| ETSTW-RE 030 | Double-Ridged Guide Horn Antenna | 3117 | 00035224 | EMCO | 2010/3/2 | 2011/3/1 |
| ETSTW-RE 032 | Millivoltmeter | URV 55 | 849086/013 | R&S | 2010/8/17 | 2011/8/16 |
| ETSTW-RE 033 | WaveRunner 6000A Serie Oscilloscope | WAVERRUNNER 6100A | LCRY0604P14508 | LeCroy | Function Test | |
| ETSTW-RE 034 | Power Sensor | URV5-Z4 | 839313/006 | R&S | 2010/8/17 | 2011/8/16 |
| ETSTW-RE 042 | Biconical Antenna | HK116 | 100172 | R&S | 2010/1/13 | 2011/1/12 |
| ETSTW-RE 043 | Log-Periodic Dipole Antenna | HL223 | 100166 | R&S | 2010/4/29 | 2011/4/28 |
| ETSTW-RE 044 | Log-Periodic Antenna | HL050 | 100094 | R&S | 2010/5/11 | 2011/5/10 |
| ETSTW-RE 047 | PSA SERIES SPECTRUM ANALYZER | E4445A | MY46181369 | Agilent | Pre-test Use NCR | |
| ETSTW-RE 048 | Triple Loop Antenna | HXYZ 9170 | HXYZ 9170-134 | Schwarzbeck | 2010/8/17 | 2011/8/16 |
| ETSTW-RE 049 | TRILOG Super Broadband test Antenna | VULB 9160 | 9160-3185 | Schwarzbeck | 2010/4/13 | 2011/4/12 |

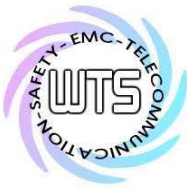


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Registration number: W6M21008-10846-C-1

FCC ID: YJF303XPTX

| | | | | | | |
|-----------------|--------------------------------------|--|----------------|--------------------------|---|------------|
| ETSTW-RE 051 | Attenuator 6dB | 50HF-006-1 | None | JFW | 2010/3/5 | 2011/3/4 |
| ETSTW-RE 053 | Attenuator 3dB | 50HF-003-1 | None | JFW | 2010/3/5 | 2011/3/4 |
| ETSTW-RE 055 | SPECTRUM ANALYZER | FSU 26 | 200074 | R&S | 2010/6/3 | 2011/6/2 |
| ETSTW-RE 060 | Attenuator 30dB | 5015-30 | F651012z-01 | ATM | Pre-test Use NCR | |
| ETSTW-RE 061 | Amplifier Module | CHC 1 | None | ETS | 2009/11/12 | 2010/11/11 |
| ETSTW-RE 062 | Amplifier Module | CHC 2 | None | KMIC | 2009/11/12 | 2010/11/11 |
| ETSTW-RE 064 | Bluetooth Test Set | MT8852B-042 | 6K00005709 | Anritsu | Function Test | |
| ETSTW-RE 065 | Amplifier | AMF-6F-18002650-25-10P | 941608 | MITEQ | 2010/4/13 | 2011/4/12 |
| ETSTW-RE 066 | Highpass Filter | H1G013G1 | 206015 | MICROWAVE CIRCUITS, INC. | 2010/3/5 | 2011/3/4 |
| ETSTW-RE 072 | CELL SITE TEST SET | 8921A | 3339A00375 | HP | 2009/10/2 | 2010/10/1 |
| ETSTW-RE 073 | Power Meter | N1911A | MY45100769 | Agilent | 2010/1/7 | 2011/1/6 |
| ETSTW-RE 074 | Power Sensor | N1921A | MY45241198 | Agilent | 2010/1/7 | 2011/1/6 |
| ETSTW-RE 081 | Highpass Filter | H03G13G1 | 4260-02 DC0428 | MICROWAVE CIRCUITS, INC. | 2010/3/5 | 2011/3/4 |
| ETSTW-RE 096 | SIGNAL GENERATOR | SMIQ 03B | 102274 | R&S | 2010/5/31 | 2011/5/30 |
| ETSTW-RE 099 | DC Block | 50DB-007-1 | None | JFW | 2010/3/5 | 2011/3/4 |
| ETSTW-RE 105 | 2.4GHz Notch Filter | NO124411 | 39555 | MICROWAVE CIRCUITS, INC. | 2010/3/25 | 2011/3/24 |
| ETSTW-RE 106 | Humidity Temperature Meter | TES-1366 | 091011113 | TES | 2010/3/25 | 2011/3/24 |
| ETSTW-GSM 002 | Universal Radio Communication Tester | CMU 200 | 109439 | R&S | 2009/9/22 | 2010/9/21 |
| ETSTW-GSM 019 | Band Reject Filter | WRCTF824/849-822/851-40/12+9SS | 3 | WI | Function Test | |
| ETSTW-GSM 020 | Band Reject Filter | WRCD1747/1748-1743/1752-32/5SS | 1 | WI | Function Test | |
| ETSTW-GSM 021 | Band Reject Filter | WRCD1879.5/1880.5-1875.5/1884.5-32/5SS | 3 | WI | Function Test | |
| ETSTW-GSM 022 | Band Reject Filter | WRCT901.9/903.1-904.25-50/8SS | 1 | WI | Function Test | |
| ETSTW-GSM 023 | Power Divider | 4901.19.A | None | SUHNER | 2009/9/21 | 2010/9/20 |
| ETSTW-Cable 002 | Microwave Cable | SUCOFLEX 104 (S_Cable 7) | 238093 | HUBER+SUHNER | 2009/9/16 | 2010/9/15 |
| ETSTW-Cable 003 | Microwave Cable | SUCOFLEX 104 (S_Cable 11) | 209953 | HUBER+SUHNER | 2009/9/16 | 2010/9/15 |
| ETSTW-Cable 006 | Microwave Cable | SUCOFLEX 104 (S_Cable 8) | 238095 | HUBER+SUHNER | 2010/3/5 | 2011/3/4 |
| ETSTW-Cable 010 | BNC Cable | 5 M BNC Cable | None | JYE BAO CO.,LTD. | 2010/3/5 | 2011/3/4 |
| ETSTW-Cable 011 | BNC Cable | BNC Cable 1 | None | JYE BAO CO.,LTD. | 2010/8/17 | 2011/8/16 |
| ETSTW-Cable 012 | BNC Cable | BNC Cable 2 | None | JYE BAO CO.,LTD. | 2010/8/17 | 2011/8/16 |
| ETSTW-Cable 013 | Microwave Cable | SUCOFLEX 104 (S_Cable 5) | 232345 | HUBER+SUHNER | 2010/3/5 | 2011/3/4 |
| ETSTW-Cable 022 | N TYPE Cable | OATS Cable 3 | 0002 | JYE BAO CO.,LTD. | 2010/3/5 | 2011/3/4 |
| ETSTW-Cable 039 | Microwave Cable | SUCOFLEX 104 (S_Cable 19) | 316739 | HUBER+SUHNER | 2010/3/5 | 2011/3/4 |
| WTSTW-SW 001 | EMI TEST SOFTWARE | Harmonics-1000 | None | EMC PARTNER | HARCS Version 4.16 Firmware Version 2.18 | |
| WTSTW-SW 002 | EMI TEST SOFTWARE | EZ_EMC | None | Farad | Version ETS-03A1 | |
| WTSTW-SW 003 | EMS TEST SOFTWARE | i2 | None | AUDIX | Version 3.2007-8-17b | |
| WTSTW-SW 005 | GSM Fading Level Correction | GSMFadLevCor | None | R&S | Version 1.66 | |



Registration number: W6M21008-10846-C-1
FCC ID: YJF303XPTX

2.5 General Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-2003 5.2 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 ANSI STANDARD C63.4-2003 6.4 using a spectrum analyzer. The bandwidth of the spectrum analyzer was 100 kHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was the 100 kHz and the video bandwidth was 300 kHz.

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:

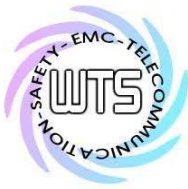
Freq (MHz) METER READING + ACF + CABLE LOSS (to the receiver) = FS
33 20 dB μ V + 10.36 dB/m + 6 dB = 36.36 dB μ V/m @3m

ANSI STANDARD C63.4-2003 6.2.1 MEASUREMENT PROCEDURES: The UUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m (non metallic table). The UUT was placed in the center of the table. The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to 10th harmonic of the fundamental.

Peak readings were taken in three (3) orthogonal planes and the highest readings.

Measurements were made by Worldwide Testing Services(Taiwan) Co., Ltd. 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.



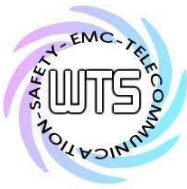
Registration number: W6M21008-10846-C-1
FCC ID: YJF303XPTX

3 Test results (enclosure)

1st test test after modification production test

| TEST CASE | Para. Number | Required | Test passed | Test failed |
|--|---------------------|-------------------------------------|-------------------------------------|--------------------------|
| Transmission Requirements | FCC 15.231(a) | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Radiated Emission | FCC 15.231(b) | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Bandwidth of Emission | FCC 15.231(c) | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Frequency Tolerance | FCC 15.231(d) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Period Alternate Field Strength Requirements | FCC 15.231(e) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Antenna Requirement | FCC 15.203 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Conducted Measurement at (AC) Power Line | FCC 15.207 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

The follows is intended to leave blank.



Registration number: W6M21008-10846-C-1
FCC ID: YJF303XPTX

3.1 Transmission Requirements

FCC 15.231(a)

3.1.1 Limit of Transmission Time

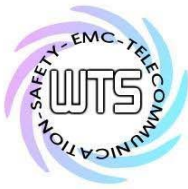
- According to 15.231(a)(1), a manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.
- According to 15.231(a)(2), a transmitter activated automatically shall cease transmission within 5 seconds after activation.

3.1.2 Active Time

- This manually operated transmitter employs a switch that automatically deactivate the transmitter within 141.723447ms of being released.
- This transmitter is operated by automatic activation and active will cease transmission in _____ s after activation.

Explanation: See attached appendix.

Test equipment used: ETSTW-RE 055



Registration number: W6M21008-10846-C-1
 FCC ID: YJF303XPTX

3.2 Output Power (Field Strength)

Model: XP-TX303 Date: 2010/8/18
 Mode: TX POWER Temperature: 30.2 °C Engineer: Danny
 Polarization: Horizontal Humidity: 59 %

| Frequency (MHz) | Reading (dBuV) Peak | Factor (dB) | | Result @3m (dBuV/m) | | Limit @3m (dBuV/m) | | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|--------------------|---------------------------|----------------|-------|------------------------|-------|-----------------------|-------|----------------|---------------------------|----------------------|
| | | Corr. | Duty | Peak | Ave. | Peak | Ave. | | | |
| 303.8922 | 59.83 | 16.31 | -5.22 | 76.14 | 70.92 | 94.94 | 74.94 | -4.02 | 130 | 150 |

Polarization: Vertical

| Frequency (MHz) | Reading (dBuV) Peak | Factor (dB) | | Result @3m (dBuV/m) | | Limit @3m (dBuV/m) | | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|--------------------|---------------------------|----------------|-------|------------------------|-------|-----------------------|-------|----------------|---------------------------|----------------------|
| | | Corr. | Duty | Peak | Ave. | Peak | Ave. | | | |
| 303.8880 | 49.62 | 16.31 | -5.22 | 65.93 | 60.71 | 94.94 | 74.94 | -14.23 | 135 | 150 |

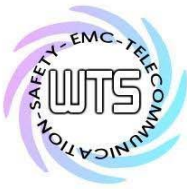
Limit 15.231(b)

| Fundamental Frequency (MHz) | Field strength of fundamental, limit μV/m |
|--------------------------------|--|
| 40.66 – 40.70 | 2,250 |
| 70 – 130 | 1,250 |
| 130 – 174 | 1,250 to 3,750 |
| 174 – 260 | 3,750 |
| 260 – 470 | 3,750 to 12,500** (303.9 MHz: 74.94 dBμV/m = 5579.17713 μV/m) |
| Above 470 | 12,500 |

** linear interpolation

Explanation: See attached appendix.

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



Registration number: W6M21008-10846-C-1
FCC ID: YJF303XPTX

3.3 Out of Band Radiated Emissions

FCC Rule: 15.231(b) , 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.

Guidance on Measurement of pulsed emission: 15.35(c)

“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.”

Duty Cycle correction = $20 \log (\text{dwell time}/100\text{ms or one period})$

Limits:

For frequencies (Average measurements)

Correction factor conform 15.35 (c) (Average measurements)

Duty cycle correction :

Max. Peak reading – duty cycle correction

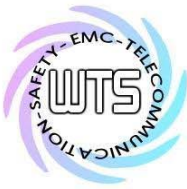
Max permitted average Limits = Max permitted Fundamental limit – 20 dB

For example for 303.9 fundamental carrier:

Max permitted average Limit: $74.94\text{dB}\mu\text{V/m} - 20\text{ dB} = 54.94\text{ dB}\mu\text{V/m}$

For frequencies above 1GHz (Peak measurements).

Modified Limits for peak conform 15.35 (b) = Max Permitted average Limits + 20dB (because Peak detector is used)



Registration number: W6M21008-10846-C-1
FCC ID: YJF303XPTX

3.4 Transmitter Radiated Emissions in restricted Bands

FCC Rules: 15.231 (b), 15.205, 15.209, 15.35

Radiated emission measurements were performed from 30 MHz to 8000 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 pulsed emission:

“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.

For frequencies above 1GHz (Average measurements).

The correction factor, based on the channel dwell time in a 100 ms period, may be mathematically applied to a measurement made with an average detector, to further reduce the value.

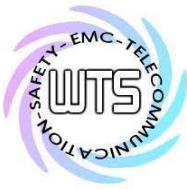
Duty cycle correction = $20 \log(\text{dwell time}/100\text{ms})$

No duty cycle correction was added to the reading

Modified Limits for peak conform 15.35 (b) = Max Permitted average Limits + 20dB (because Peak detector is used)

Above 960 MHz

For mode DSSS CW: $54 \text{ dB}\mu\text{V/m} + 20 \text{ dB} = 74 \text{ dB}\mu\text{V/m}$



Registration number: W6M21008-10846-C-1
FCC ID: YJF303XPTX

3.5 Spurious Emission radiated, Transmitter

Spurious emission was measured with modulation (declared by manufacturer).

The limits on the field strength of the spurious emission in the table § 15.231(b) are based on the fundamental frequency of the intentional radiator. Spurious emission shall be attenuated to the average (or alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in § 15.209, whichever limit permits a higher field strength.

In addition, radiated emission 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.

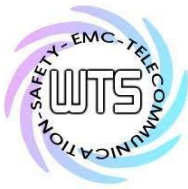
The peak and average spurious emission plots was measured with the average limits.

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

Summary table with radiated data of the test plots

| | | | | |
|---------------|------------|--------------|-----------|-----------------|
| Model: | XP-TX303 | Date: | 2010/8/18 | |
| Mode: | TX | Temperature: | 30.2 °C | Engineer: Danny |
| Polarization: | Horizontal | Humidity: | 59 % | |

| Frequency (MHz) | Reading (dBuV) Peak | Factor (dB) | | Result @3m (dBuV/m) | | Limit @3m (dBuV/m) | | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|--------------------|---------------------------|----------------|-------|------------------------|-------|-----------------------|-------|----------------|---------------------------|----------------------|
| | | Corr. | Duty | Peak | Ave. | Peak | Ave. | | | |
| 281.6032 | 15.44 | 15.77 | -5.22 | 31.21 | 25.99 | 46.00 | 46.00 | -14.79 | 110 | 150 |
| 607.7915 | 35.22 | 23.65 | -5.22 | 58.87 | 53.65 | 74.94 | 54.94 | -1.29 | 130 | 150 |
| 911.6702 | 31.03 | 27.86 | -5.22 | 58.89 | 53.67 | 74.94 | 54.94 | -1.27 | 120 | 150 |
| 2124.2490 | 65.59 | -9.69 | -5.22 | 55.90 | 50.68 | 74.94 | 54.94 | -4.26 | 140 | 150 |
| 2428.8580 | 62.12 | -8.31 | -5.22 | 53.81 | 48.59 | 74.94 | 54.94 | -6.35 | 145 | 150 |
| 2733.4670 | 60.46 | -6.13 | -5.22 | 54.33 | 49.11 | 74.00 | 54.00 | -4.89 | 160 | 150 |
| 3038.0760 | 63.23 | -4.63 | -5.22 | 58.60 | 53.38 | 74.94 | 54.94 | -1.56 | 140 | 150 |



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Registration number: W6M21008-10846-C-1
 FCC ID: YJF303XPTX

Polarization: Vertical

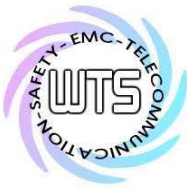
| Frequency (MHz) | Reading (dBuV) Peak | Factor (dB) | | Result @3m (dBuV/m) | | Limit @3m (dBuV/m) | | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|--------------------|---------------------------|----------------|-------|------------------------|-------|-----------------------|-------|----------------|---------------------------|----------------------|
| | | Corr. | Duty | Peak | Ave. | Peak | Ave. | | | |
| 282.6854 | 13.25 | 15.80 | -5.22 | 29.05 | 23.83 | 46.00 | 46.00 | -16.95 | 110 | 150 |
| 607.7921 | 22.85 | 23.65 | -5.22 | 46.50 | 41.28 | 74.94 | 54.94 | -13.66 | 135 | 150 |
| 911.6766 | 19.96 | 27.86 | -5.22 | 47.82 | 42.60 | 74.94 | 54.94 | -12.34 | 120 | 150 |
| 2124.2490 | 51.82 | -9.69 | -5.22 | 42.13 | 36.91 | 74.94 | 54.94 | -18.03 | 160 | 150 |
| 2428.8580 | 50.38 | -8.31 | -5.22 | 42.07 | 36.85 | 74.94 | 54.94 | -18.09 | 165 | 150 |
| 3038.0760 | 58.95 | -4.63 | -5.22 | 54.32 | 49.10 | 74.94 | 54.94 | -5.84 | 140 | 150 |

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

All other not noted test plots do not contain significant test results in relation to the limits
 Test results: The unit meets the FCC requirements.

Explanation: See attached appendix.

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



Registration number: W6M21008-10846-C-1

FCC ID: YJF303XPTX

3.6 Channel Bandwidth

Measurement of Necessary Bandwidth (BN)

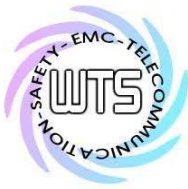
| Used frequency | Bandwidth | Limit |
|----------------|------------------|------------|
| 303.9 MHz | 100.20040080 kHz | 0.75975MHz |

Explanation: The bandwidth fulfills the requirements of FCC § 15.231,
See attached appendix.

Limits:

The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

Test equipment used: ETSTW-RE 055



Registration number: W6M21008-10846-C-1

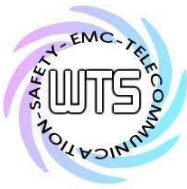
FCC ID: YJF303XPTX

3.7 Antenna requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

Explanation: This PCB antenna is integral antenna which passes antenna requirement.

| | | |
|--------------------------------------|--|--------------------------------|
| The equipment meets the requirements | yes <input checked="" type="checkbox"/> | no <input type="checkbox"/> |
|--------------------------------------|--|--------------------------------|



Registration number: W6M21008-10846-C-1
FCC ID: YJF303XPTX

3.8 Duty Cycle

The correction factor, based on the channel dwell time in a 100ms period, may be mathematically applied to a measurement made with an average detector, to further reduce the measured value.

Average Reading = Peak Reading (dBuV/m) + Duty Cycle Correction

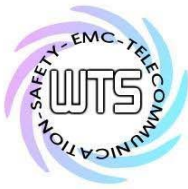
Duty Cycle Correction = $20 \log(\text{Cycle})$

In order to determine the Duty Cycle, the EUT is measured as:

| Testing Mode | T period (ms) | T on (ms) | Duty Cycle | Duty Cycle Correction $20*\log(\text{Duty Cycle})$ |
|-------------------|---------------|-----------|-------------|--|
| Transmitting mode | 57.11 | 31.31 | 0.548240238 | -5.22 |

Explanation: See attached appendix.

Test equipment used: ETSTW-RE 055



Registration number: W6M21008-10846-C-1
 FCC ID: YJF303XPTX

3.9 Conducted Measurement at (AC) Power Line

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.

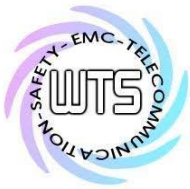
| Frequency | Level | |
|-----------|---------------------------|------------------------|
| | quasi-peak (dB μ V/m) | average (dB μ V/m) |
| -- kHz | -- | -- |

Limits:

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

Explanation: This test is not required because the sample uses a battery.

Test equipment used: ETSTW-CE 001, ETSTW-CE 004, ETSTW-CE 006



Registration number: W6M21008-10846-C-1
FCC ID: YJF303XPTX

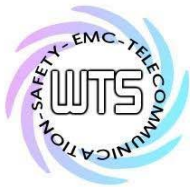
Appendix

A Measurement diagrams

1. Active Time
2. Output Power
3. Spurious Emissions Radiated
4. Bandwidth
5. Duty Cycle

B Photos

1. External Photos
2. Internal Photos
3. Set Up Photos



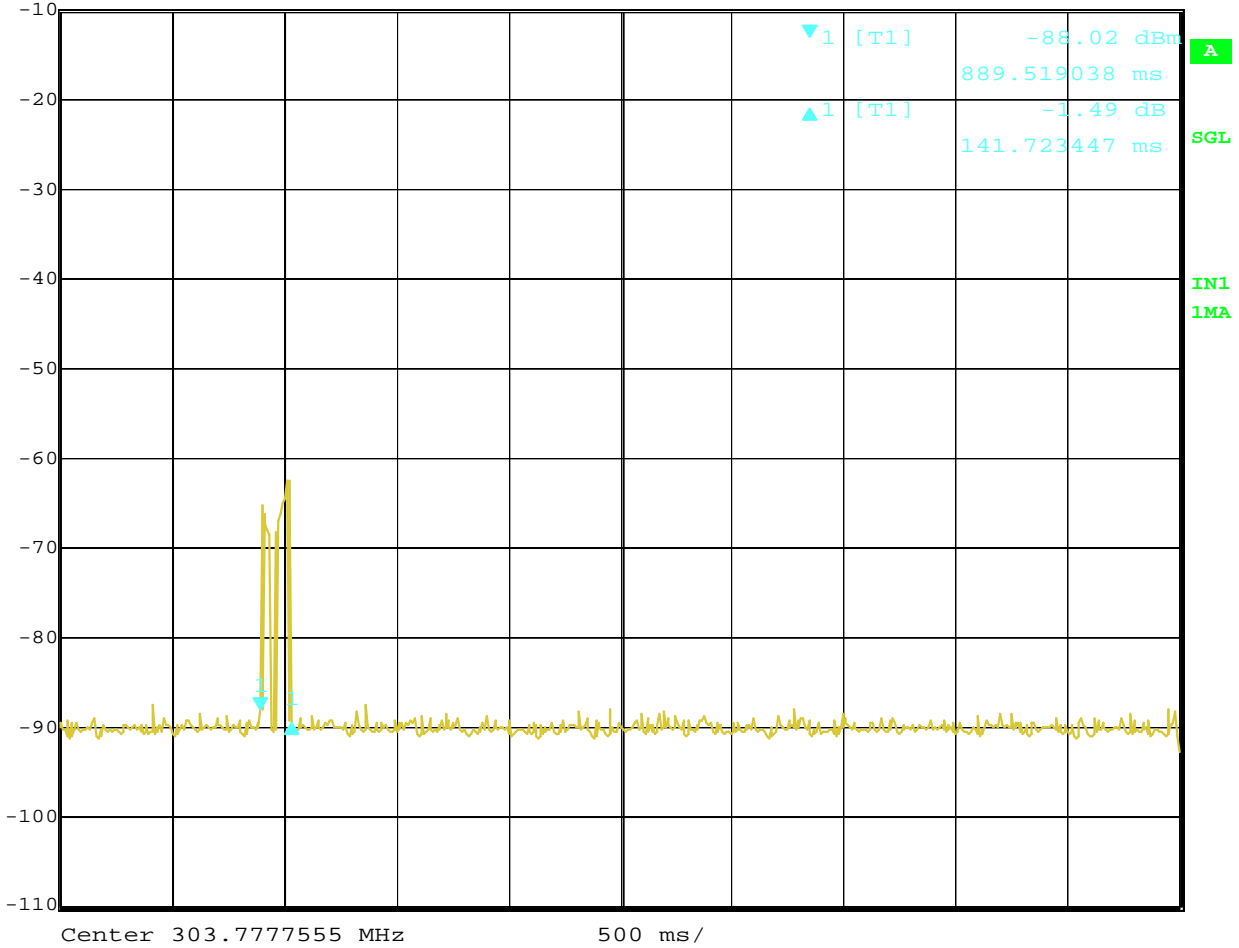
Registration number: W6M21008-10846-C-1

FCC ID: YJF303XPTX

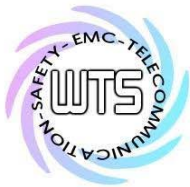
Active Time



| | | | | | |
|---------|---------------|-----|---------|--------|------|
| | Delta 1 [T1] | RBW | 100 kHz | RF Att | 0 dB |
| Ref Lvl | -1.49 dB | VBW | 100 kHz | | |
| -10 dBm | 141.723447 ms | SWT | 5 s | Unit | dBm |



Title: DURATION TIME
 Date: 12.AUG.2010 20:31:37

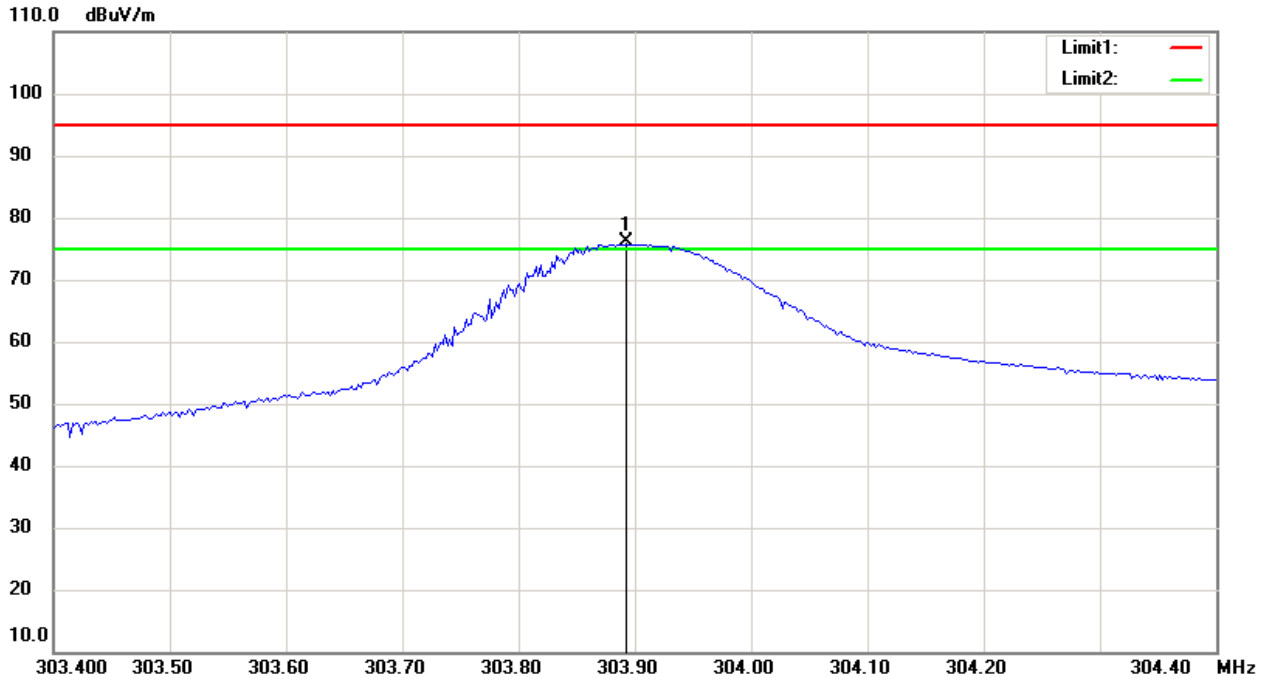


Registration number: W6M21008-10846-C-1

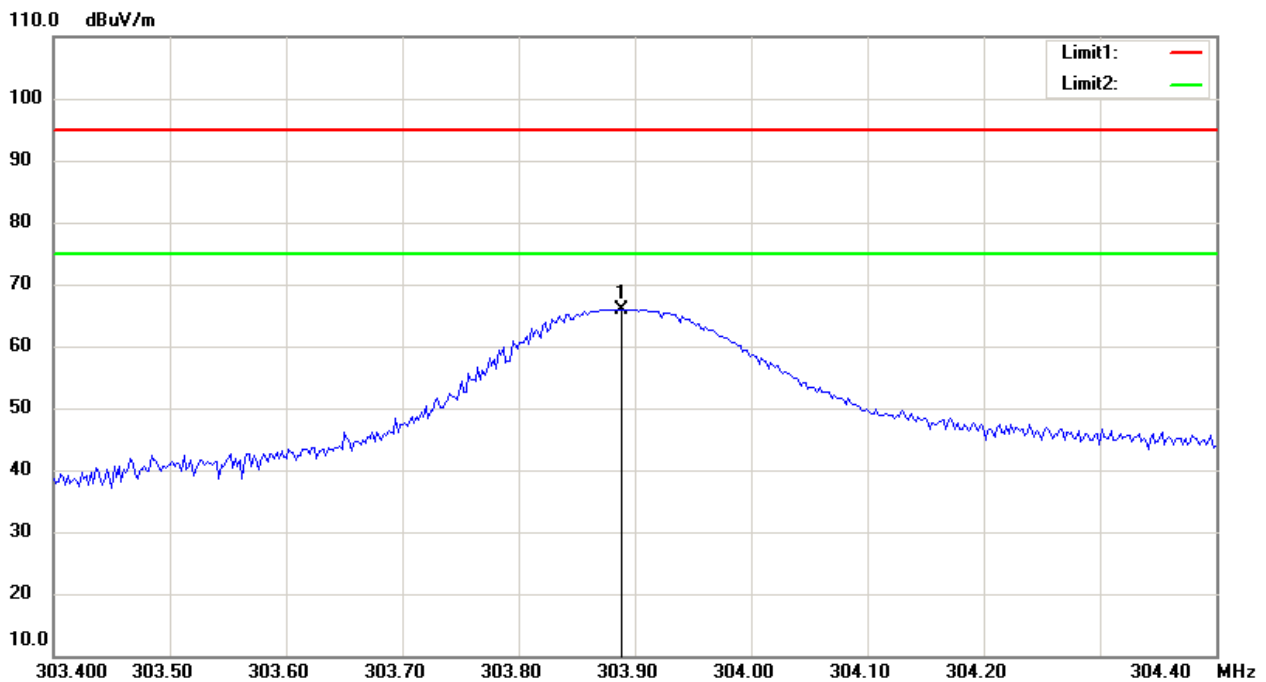
FCC ID: YJF303XPTX

Output Power

Antenna Polarization H



Antenna Polarization V



Note:

Up Line: Peak Limit Line, Down Line: Ave Limit Line

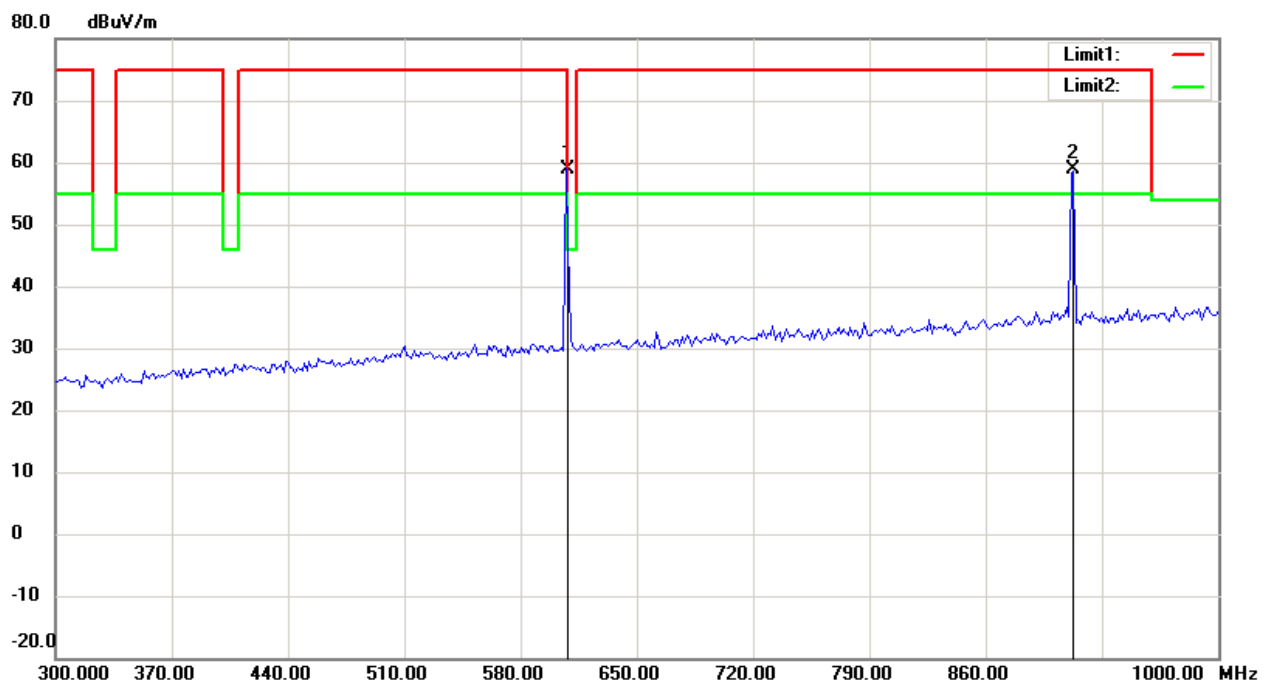
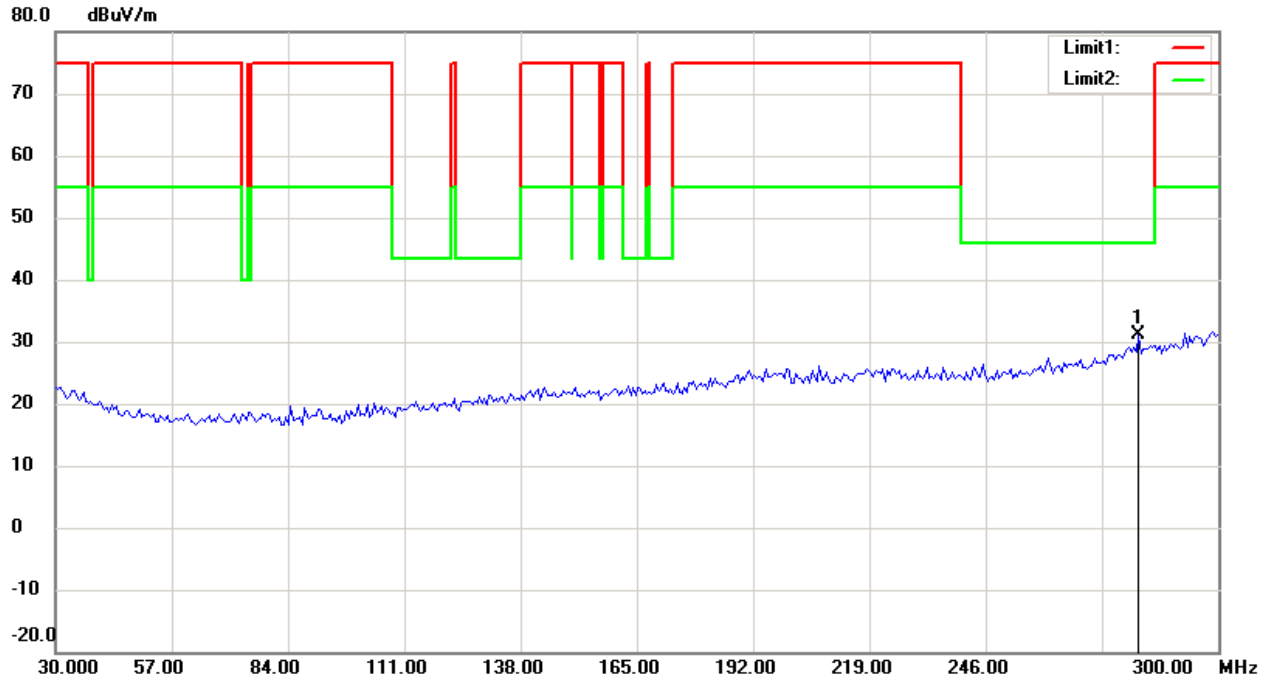
1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification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

Registration number: W6M21008-10846-C-1

FCC ID: YJF303XPTX

Spurious Emissions Radiated – Transmitter

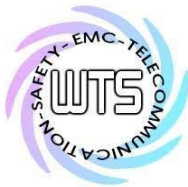
Antenna Polarization H



Note:

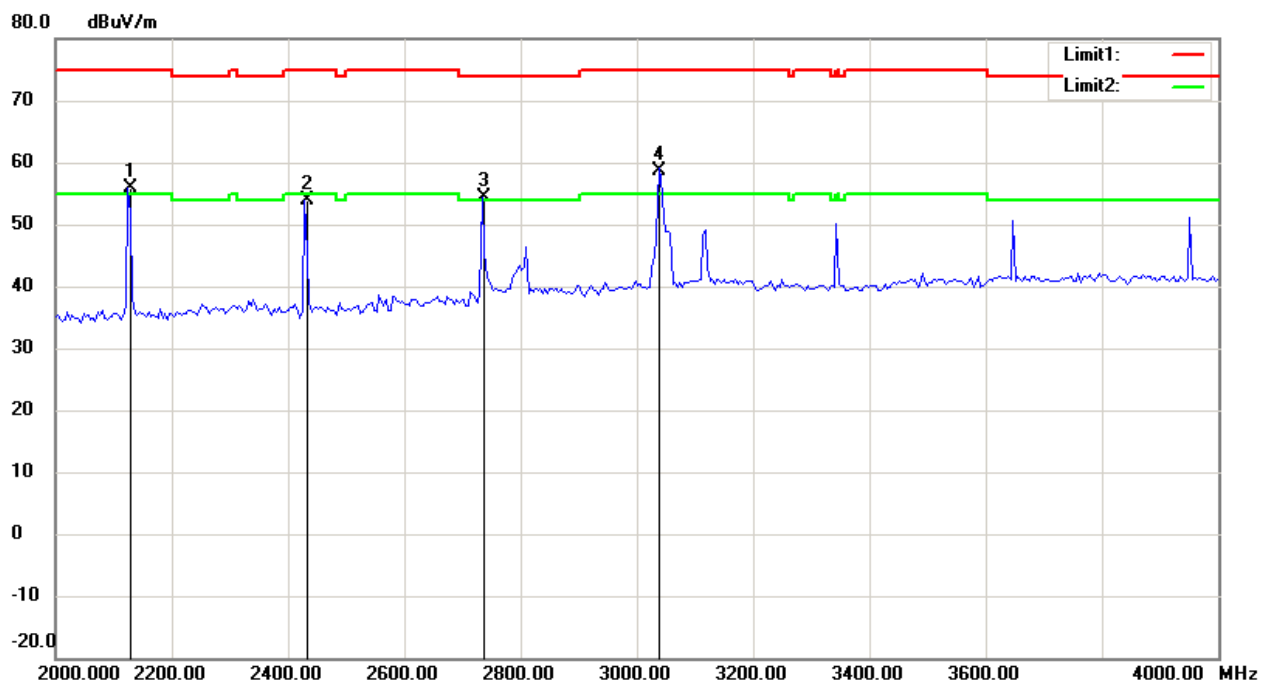
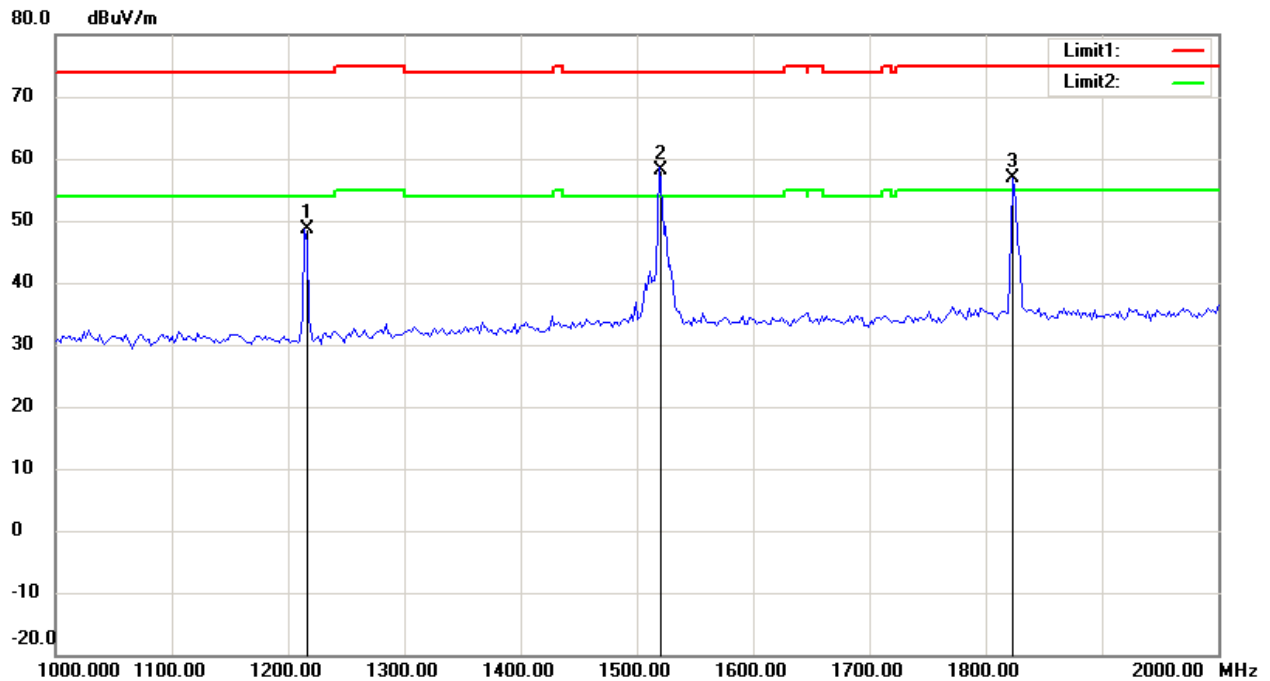
Up Line: Peak Limit Line, Down Line: Ave Limit Line

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



Registration number: W6M21008-10846-C-1

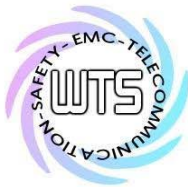
FCC ID: YJF303XPTX



Note:

Up Line: Peak Limit Line, Down Line: Ave Limit Line

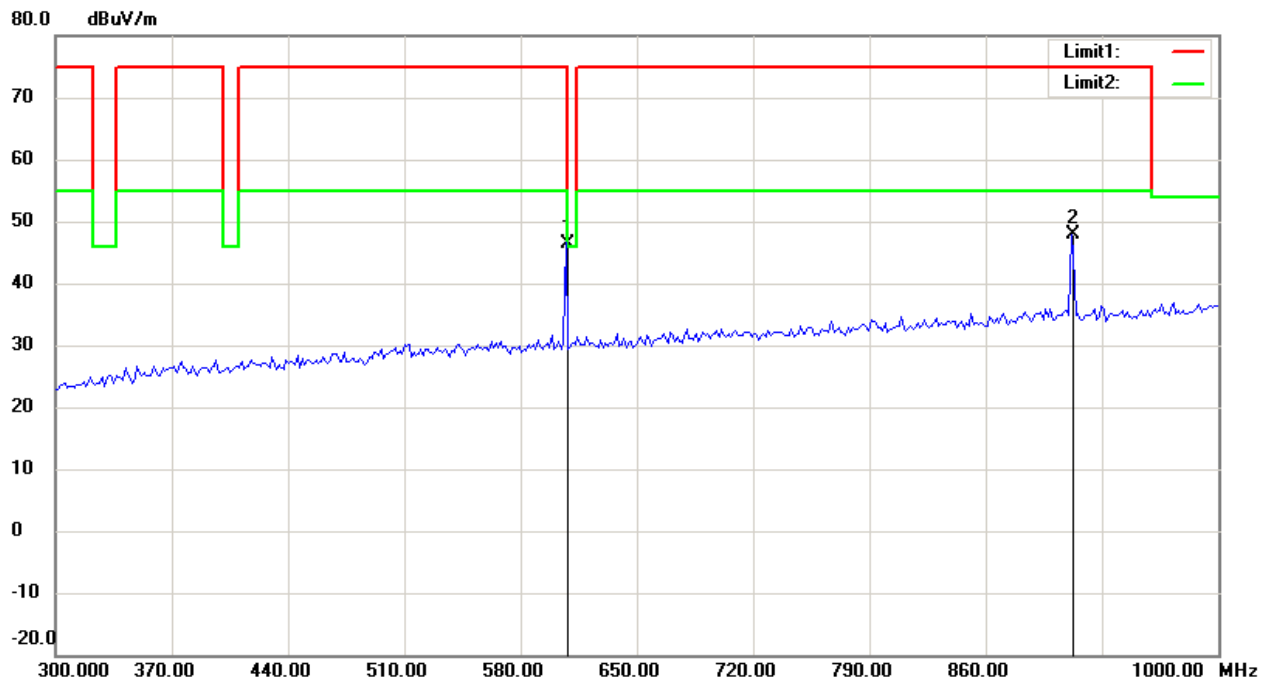
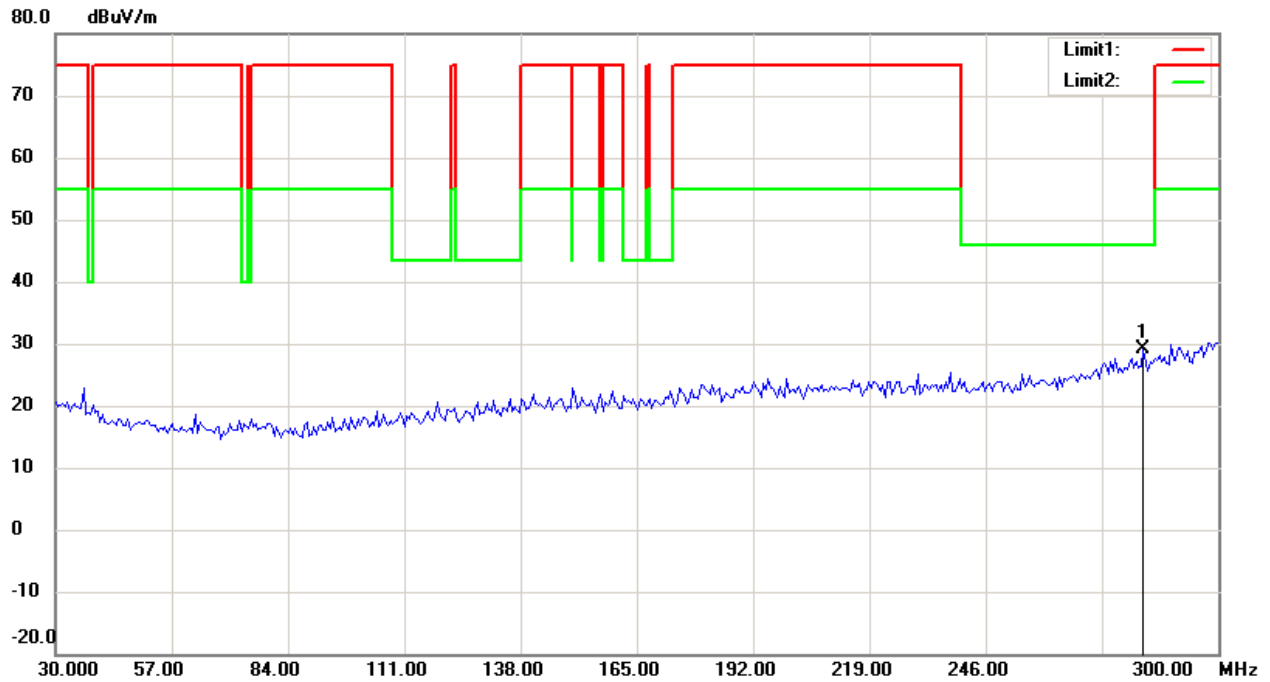
1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification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



Registration number: W6M21008-10846-C-1

FCC ID: YJF303XPTX

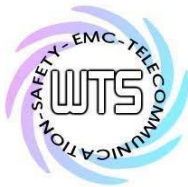
Antenna Polarization V



Note:

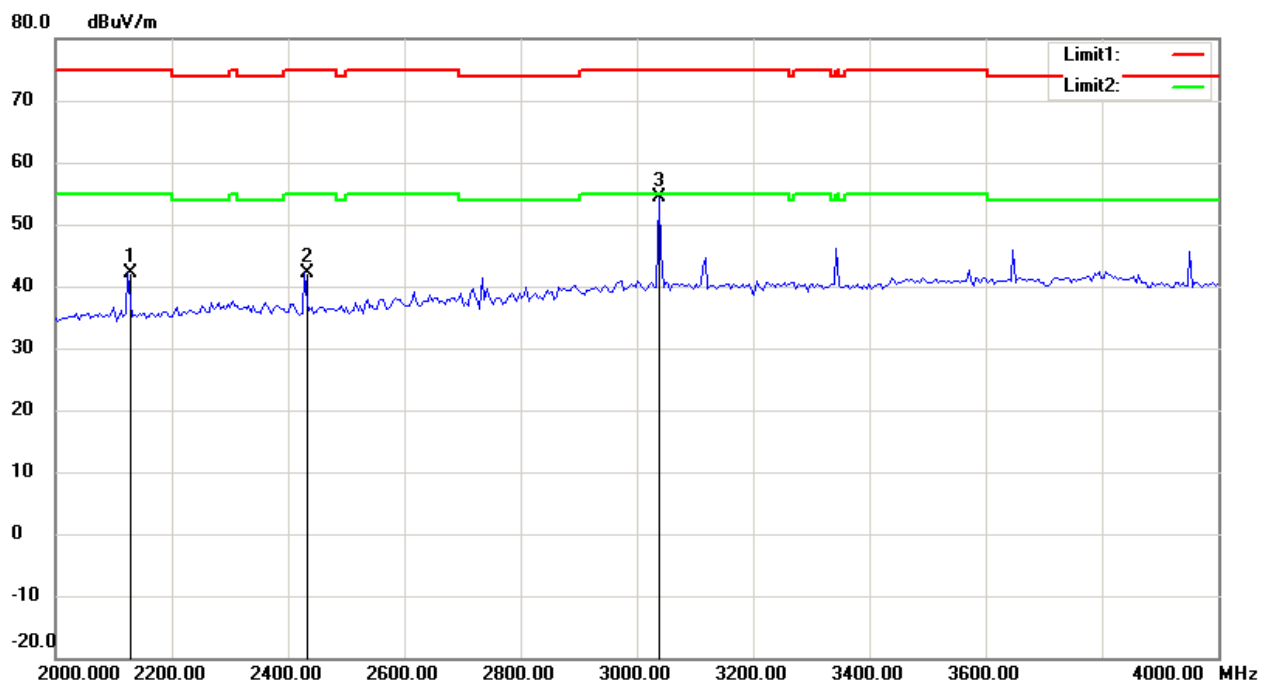
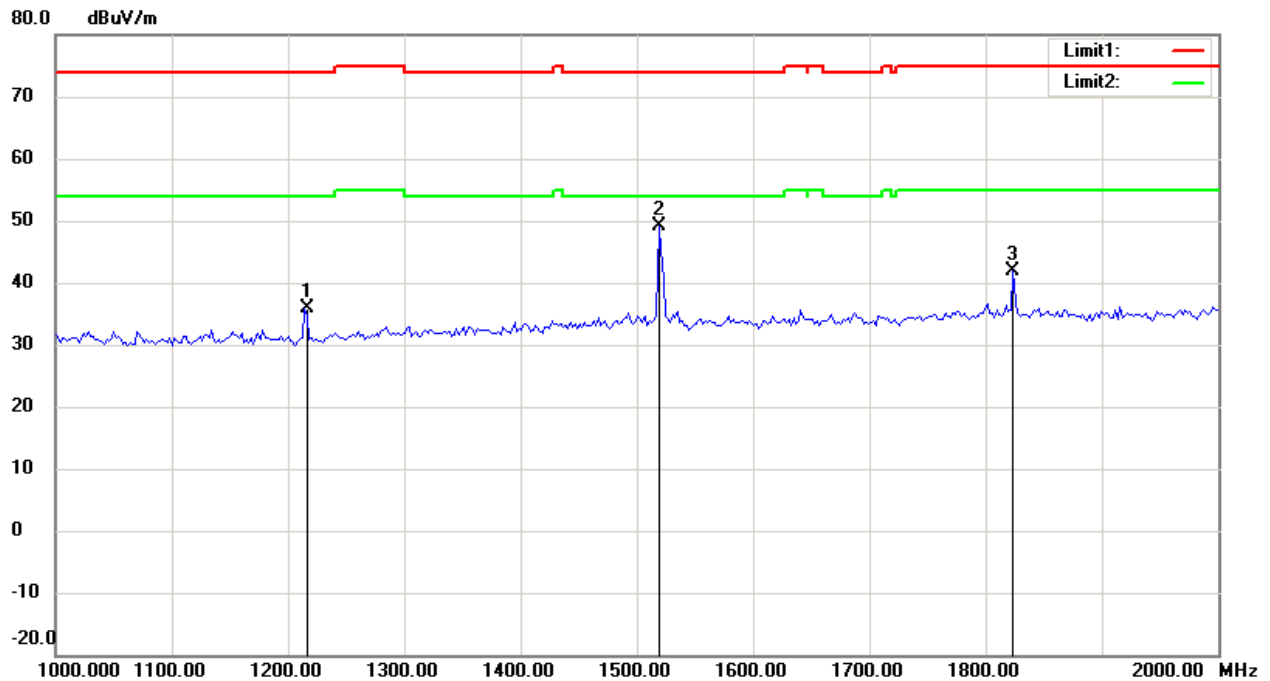
Up Line: Peak Limit Line, Down Line: Ave Limit Line

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



Registration number: W6M21008-10846-C-1

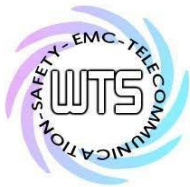
FCC ID: YJF303XPTX



Note:

Up Line: Peak Limit Line, Down Line: Ave Limit Line

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



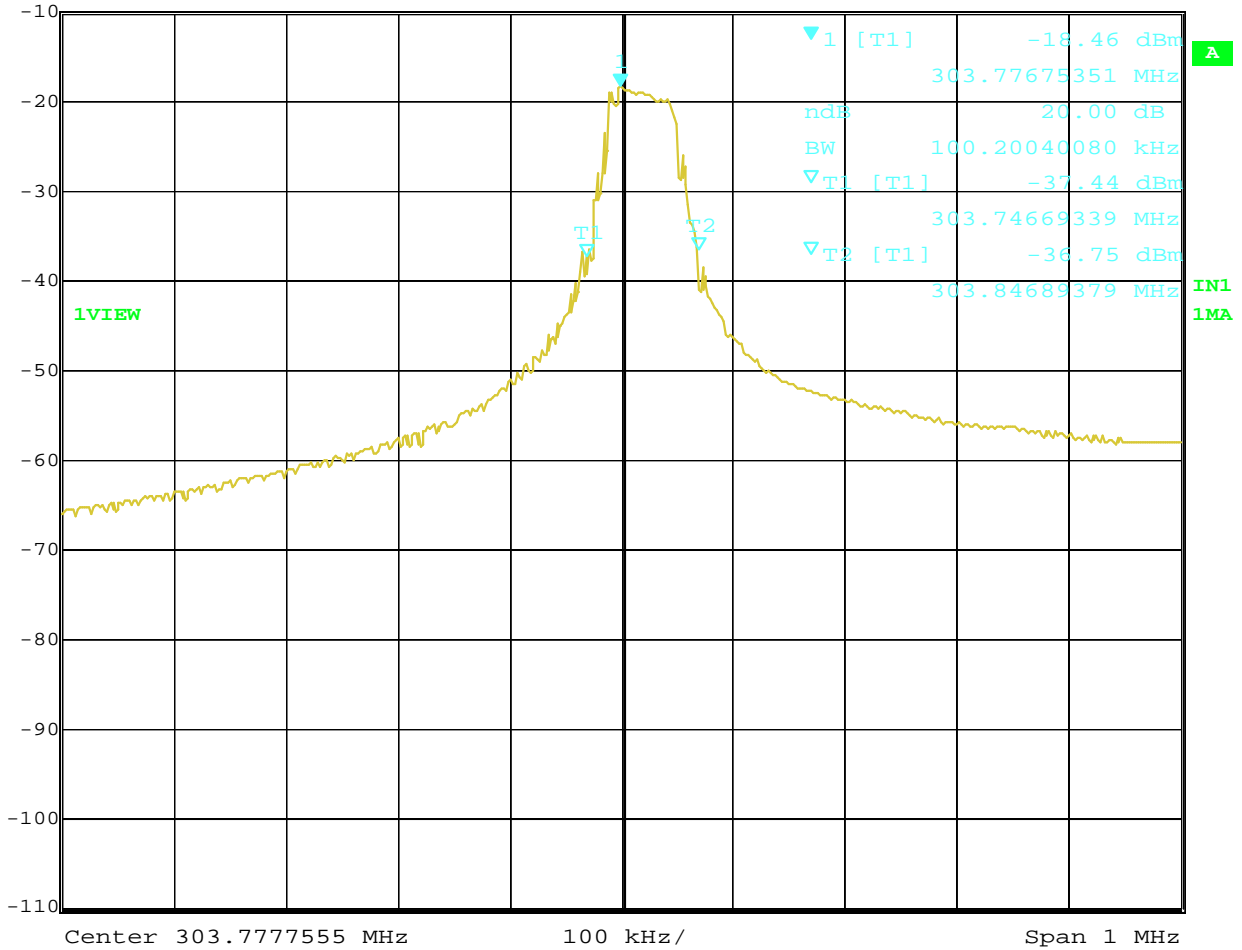
Registration number: W6M21008-10846-C-1

FCC ID: YJF303XPTX

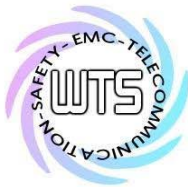
Bandwidth



| | | | | | |
|---------|---------------------|-----|--------|--------|------|
| Ref Lvl | Marker 1 [T1 ndB] | RBW | 10 kHz | RF Att | 0 dB |
| -10 dBm | ndB 20.00 dB | VBW | 30 kHz | | |
| | BW 100.20040080 kHz | SWT | 200 ms | Unit | dBm |



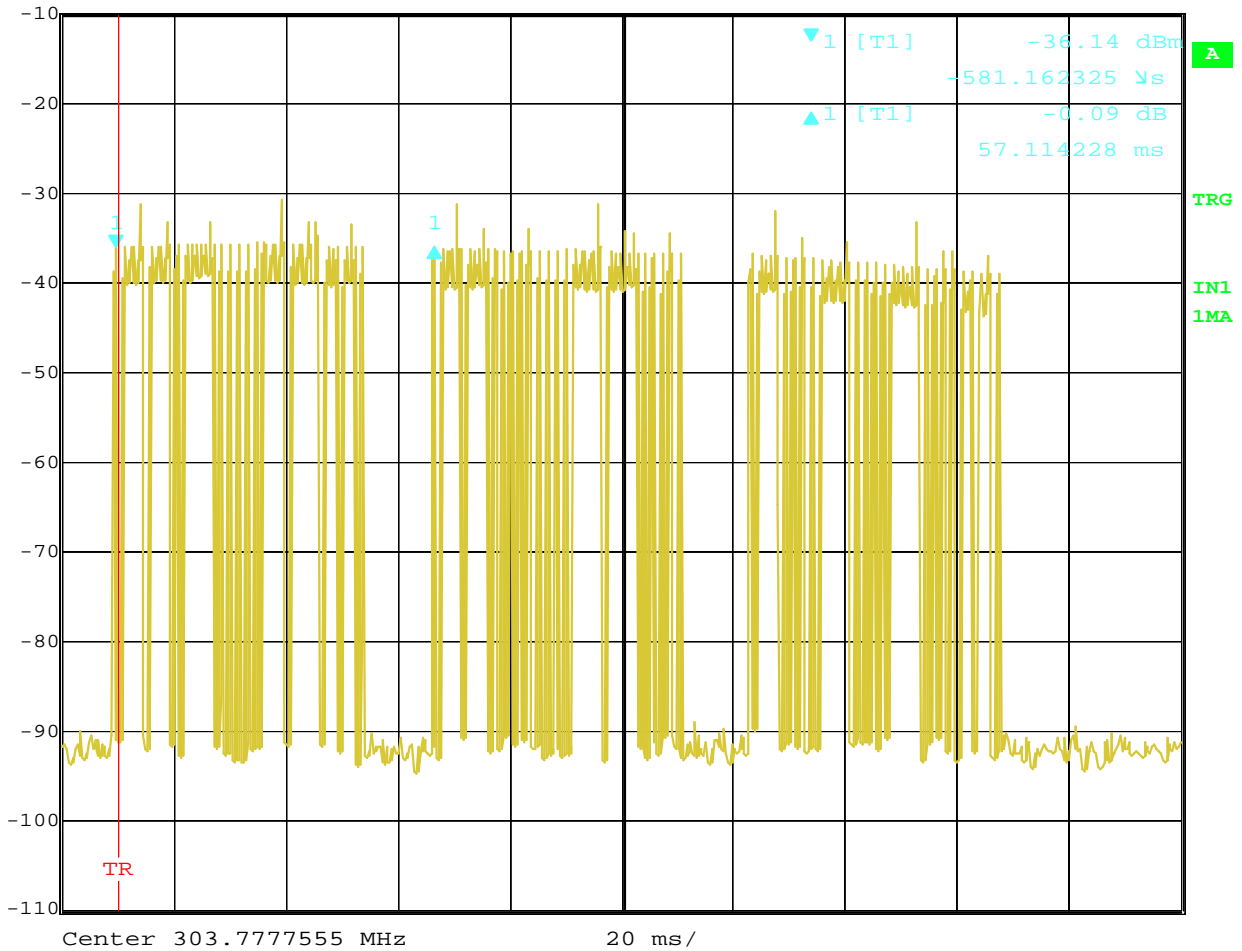
Title: 20DB BANDWIDTH
Date: 12.AUG.2010 20:20:29



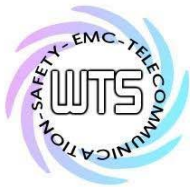
Registration number: W6M21008-10846-C-1
FCC ID: YJF303XPTX

Duty Cycle

| | | | | | | |
|--|---------|--------------|-----|---------|--------|------|
| | Ref Lvl | Delta 1 [T1] | RBW | 100 kHz | RF Att | 0 dB |
| | -10 dBm | -0.09 dB | VBW | 100 kHz | | |
| | | 57.114228 ms | SWT | 200 ms | Unit | dBm |



Title: DUTY CYCLE
Date: 12.AUG.2010 20:25:47



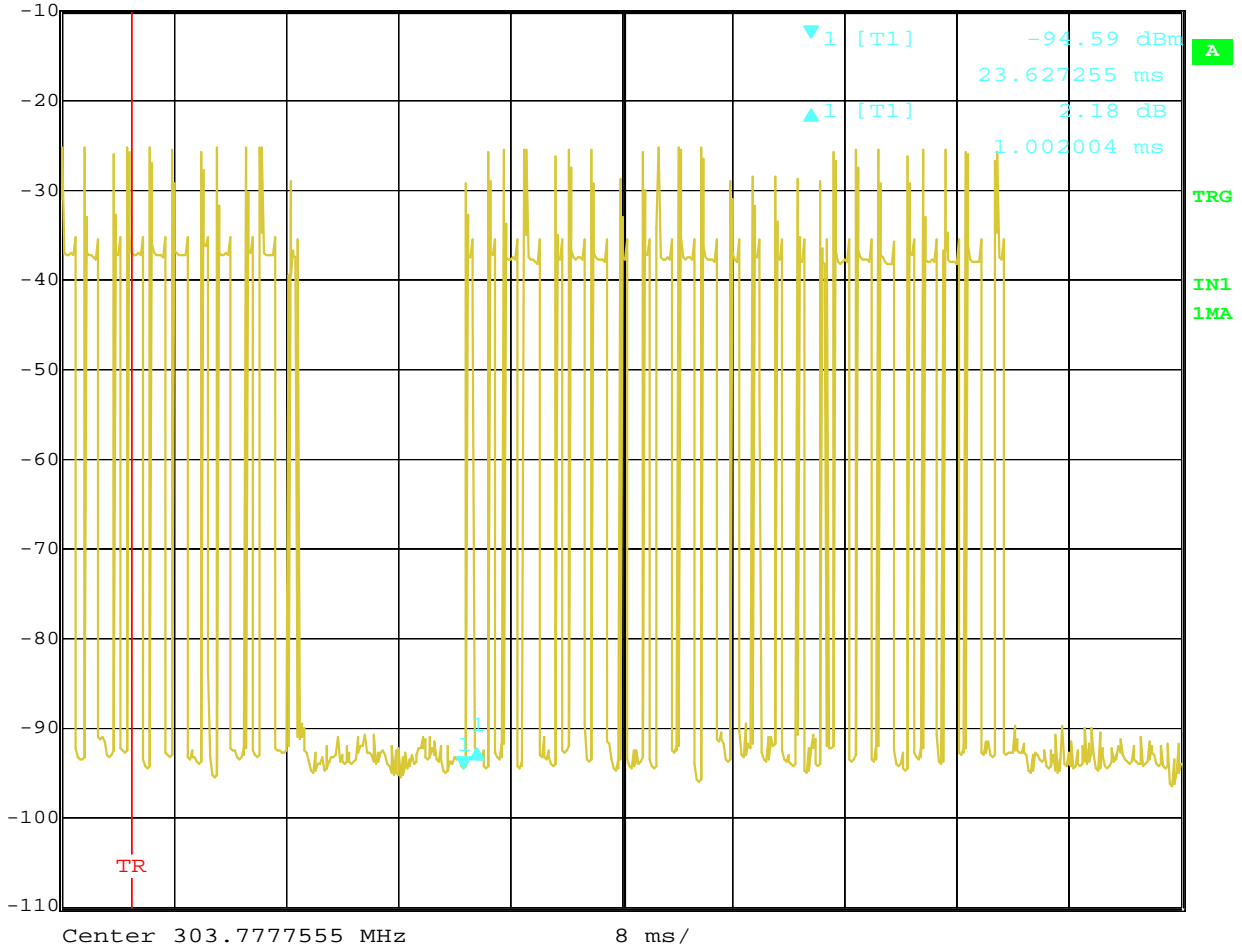
Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21008-10846-C-1

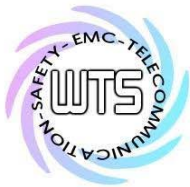
FCC ID: YJF303XPTX



| | | | | | |
|---------|--------------|-----|---------|--------|------|
| Ref Lvl | Delta 1 [T1] | RBW | 100 kHz | RF Att | 0 dB |
| -10 dBm | 2.18 dB | VBW | 100 kHz | | |
| | 1.002004 ms | SWT | 80 ms | Unit | dBm |



Title: DUTY CYCLE
Date: 12.AUG.2010 20:27:41



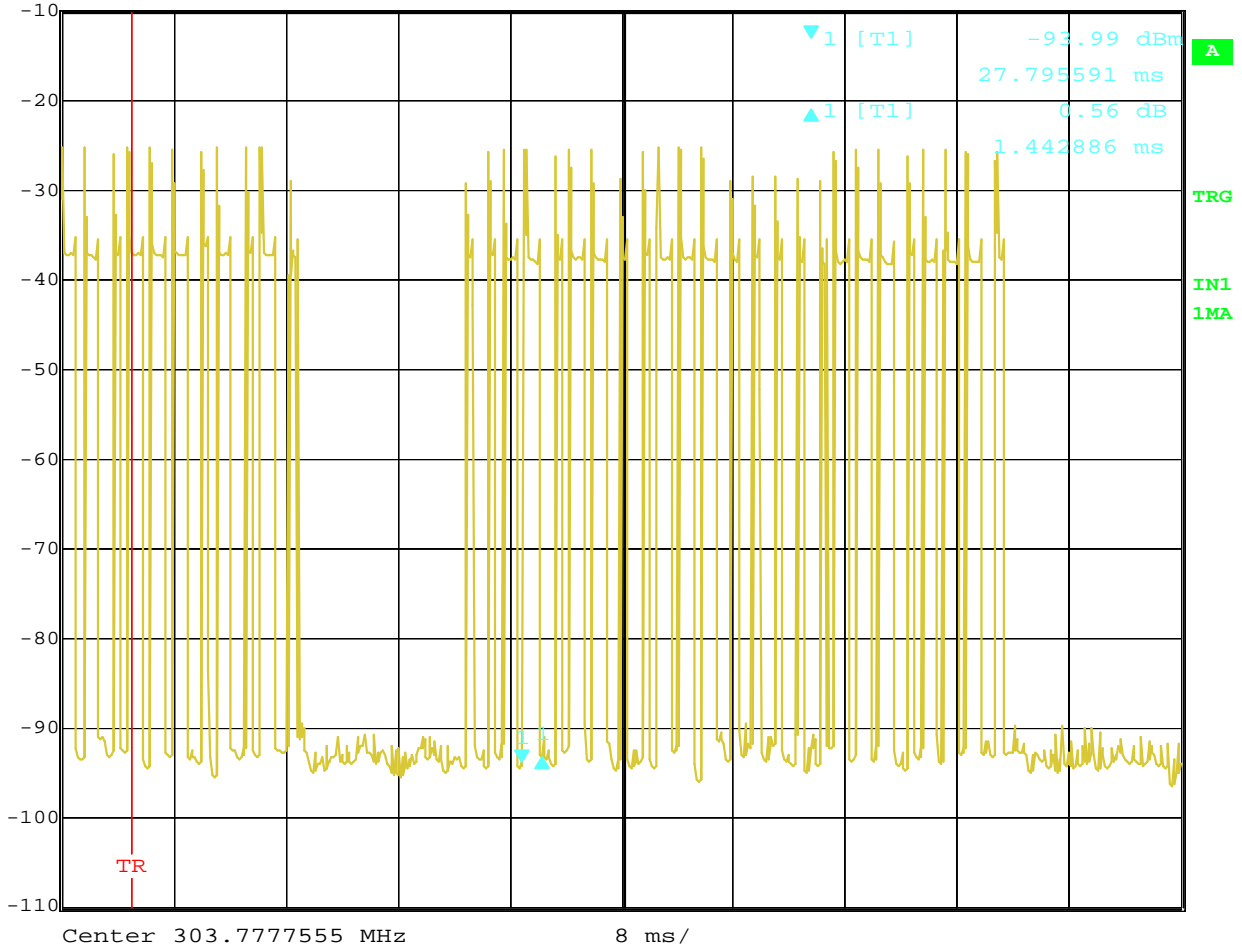
Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21008-10846-C-1

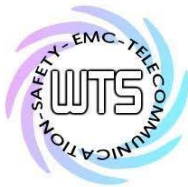
FCC ID: YJF303XPTX



| | | | | | |
|---------|--------------|-----|---------|--------|------|
| Ref Lvl | Delta 1 [T1] | RBW | 100 kHz | RF Att | 0 dB |
| -10 dBm | 0.56 dB | VBW | 100 kHz | | |
| | 1.442886 ms | SWT | 80 ms | Unit | dBm |



Title: DUTY CYCLE
Date: 12.AUG.2010 20:28:56

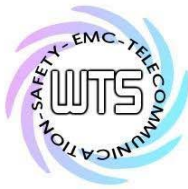


Registration number: W6M21008-10846-C-1
FCC ID: YJF303XPTX

Pictures

External Photos





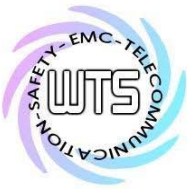
Registration number: W6M21008-10846-C-1
FCC ID: YJF303XPTX



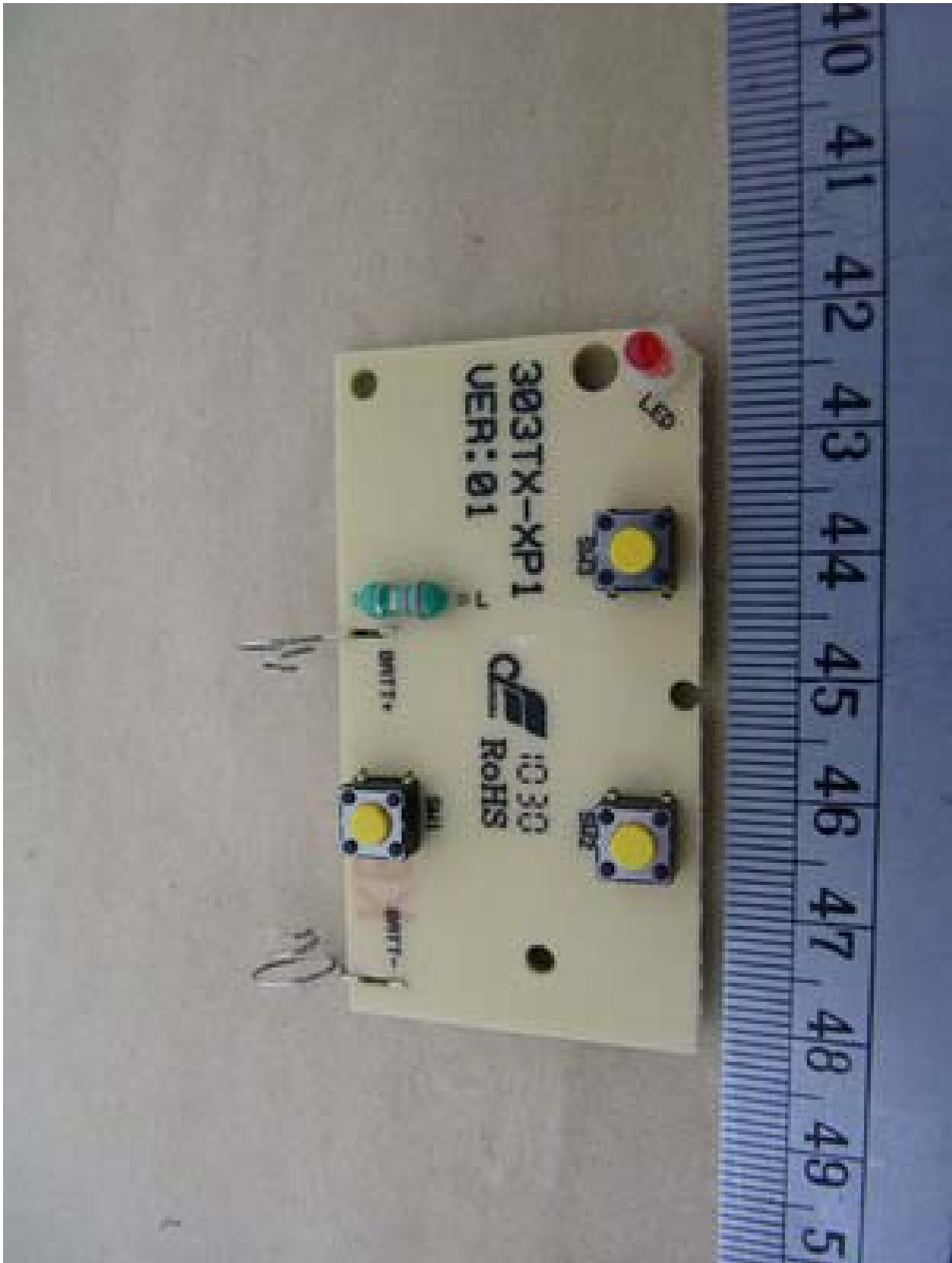
Registration number: W6M21008-10846-C-1
FCC ID: YJF303XPTX

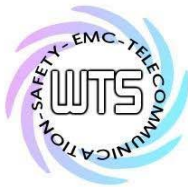
Internal Photos



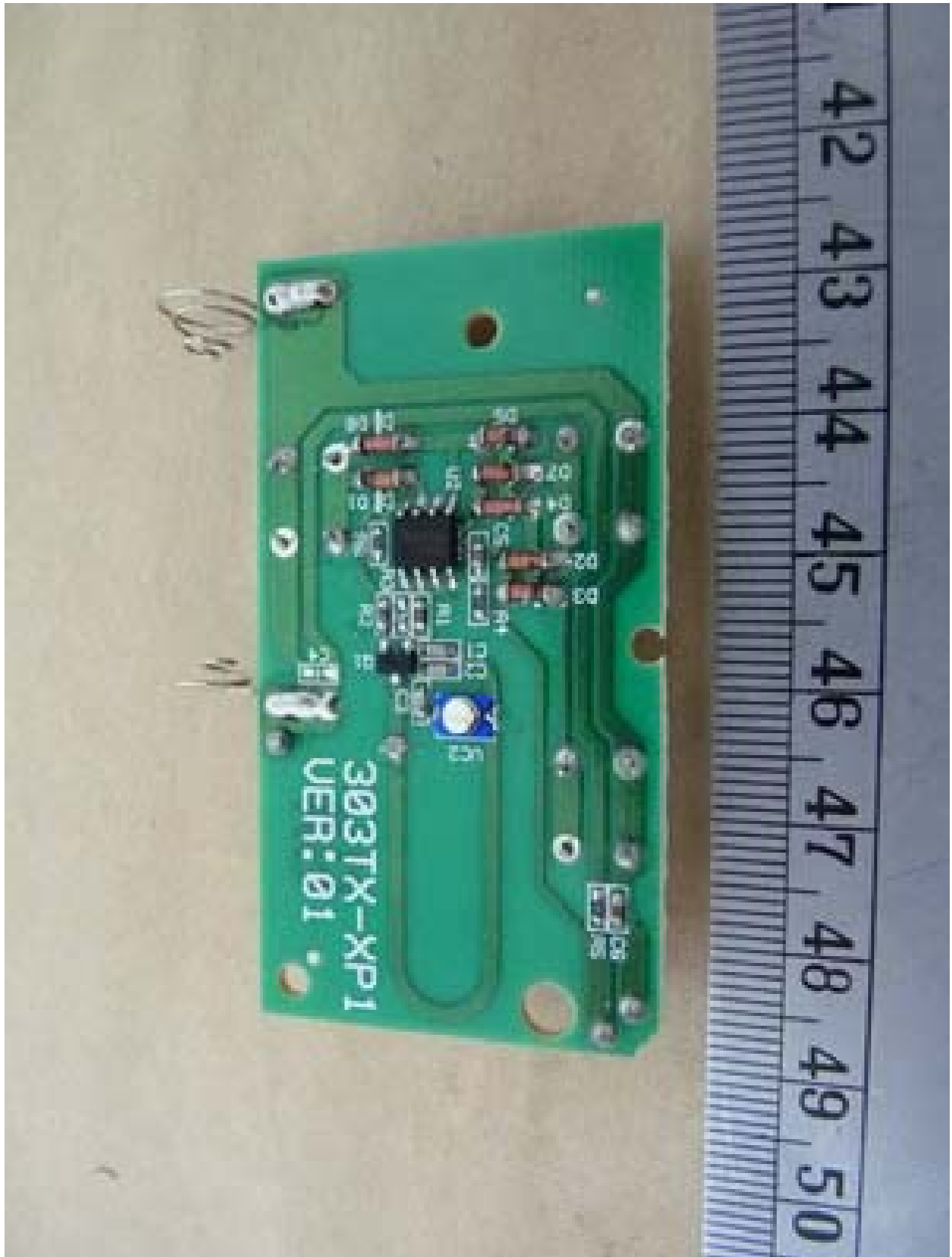


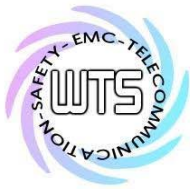
Registration number: W6M21008-10846-C-1
FCC ID: YJF303XPTX





Registration number: W6M21008-10846-C-1
FCC ID: YJF303XPTX





Registration number: W6M21008-10846-C-1

FCC ID: YJF303XPTX

Set Up Photos

