



卓時檢測
TIMEWAY TESTING LABORATORY



ISO/IEC17025 Accredited Lab.

Report No: FCC1102042

File reference No: 2011-03-18

Applicant: JOYSWAY HOBBY (HK) LIMITED

Product: 2.4GHz Transmitter

Model No: J4C01

Brand Name: Joysway

Test Standards: FCC Part 15 Subpart C, Paragraph 15.249

Test result: It is herewith confirmed and found to comply with the requirements set up by ANSI C63.4&FCC Part 15 Subpart C, Paragraph 15.249 regulations for the evaluation of electromagnetic compatibility

Approved By

Jack Chung

Jack Chung

Manager

Dated: March 18, 2011

Results appearing herein relate only to the sample tested

The technical reports is issued errors and omissions exempt and is subject to withdrawal at

SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO LTD

East 5/Block 4, Anhua Industrial Zone, No.8,Tairan Rd. CheGongMiao, FuTian District,
Shenzhen, CHINA.

Tel (755) 83448688 Fax (755) 83442996



Special Statement:

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

CNAS-LAB Code: L2292

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of testing Laboratories.

FCC-Registration No.: 899988

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 899988.

IC- Registration No.: IC5205A-01

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration IC No.: 5205A-01.

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or other persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report, The Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



Test Report Conclusion
Content

1.0	General Details	4
1.1	Test Lab Details	4
1.2	Applicant Details	4
1.3	Description of EUT	4
1.4	Submitted Sample	4
1.5	Test Duration	4
1.6	Test Uncertainty	5
1.7	Test By	5
2.0	List of Measurement Equipment	5
3.0	Technical Details	6
3.1	Summary of Test Results	6
3.2	Test Standards	6
4.0	EUT Modification	6
5.0	Power Line Conducted Emission Test	7
5.1	Schematics of the Test	7
5.2	Test Method and Test Procedure	7
5.3	Configuration of the EUT	7
5.4	EUT Operating Condition	8
5.5	Conducted Emission Limit	8
5.6	Test Result	8
6.0	Radiated Emission test	9
6.1	Test Method and Test Procedure	9
6.2	Configuration of the EUT	9
6.3	EUT Operation Condition	9
6.4	Radiated Emission Limit	10
6.5	Test Result	11
7.0	Band Edge	19
7.1	Test Method and Test Procedure	19
7.2	Radiated Test Setup	19
7.3	Configuration of the EUT	19
7.4	EUT Operating Condition	19
7.5	Band Edge Limit	19
7.6	Band Edge Test Result	20
8.0	Antenna Requirement	24
9.0	20dB bandwidth measurement	25
10.0	FCC ID Label	28
11.0	Photo of Test Setup and EUT View	29

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer, supplier or other persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report, The Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



1.0 General Details

1.1 Test Lab Details

Name : SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO LTD
Address: 5/F,Block 4, Anhua Industrial Zone.,No.8 TaiRan Rd.CheGongMiao,FuTian District,
Shenzhen,CHINA.
Telephone: (755) 83448688
Fax: (755) 83442996
Site on File with the Federal Communications Commission – United States
Registration Number: 899988
For 3m & 10 m OATS
Site Listed with Industry Canada of Ottawa, Canada
Registration Number: IC: 5205A-01
For 3m & 10 m OATS

1.2 Applicant Details

Applicant: JOYSWAY HOBBY (HK) LIMITED
Address: No. 141, Guanhui Road, Wanjiang, Dongguan, China
Telephone: +86-769-23296899
Fax: +86-769-88735015

1.3 Description of EUT

Product: 2.4GHz Transmitter
FCC ID: ZDTJ4C0001
Manufacturer: JOYSWAY HOBBY (HK) LIMITED
Brand Name: Joysway
Model Number: J4C01
Additional Model Name J4C02, J4C03, J4C05, J4C06, J4C08, J4C09, J5C01, J5C02, J5C03, J5C05 ,
J5C06, J5C08
Additional Trade Name N/A
Rating: DC 6V (4pcs AAA batteries)
Modulation Type: GFSK
Operation Frequency 2403-2450MHz
Antenna Designation Dipole antenna and the maximum gain is 2.5dBi.

1.4 Submitted Sample

1 Sample

1.5 Test Duration

2011-02-21to 2011-03-18

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co.,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting Co.,Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting Co.,Ltd reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



1.6 Test Uncertainty

Conducted Emissions Uncertainty =3.6dB

Radiated Emissions Uncertainty =4.7dB

1.7 Test Engineer

Terry Tang

The sample tested by _____

Print Name: Terry Tang

2.0	Test Equipments				
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	ROHDE&SCHWARZ	ESPI 3	100379	2010-12-05	2011-12-04
TWO Line-V-NETW	ROHDE&SCHWARZ	EZH3-Z5	100294	2010-12-05	2011-12-04
TWO Line-V-NETW	ROHDE&SCHWARZ	EZH3-Z5	100253	2010-12-05	2011-12-04
Ultra Broadband ANT	Schwarebeck	VULB9163	9163/340	2011-2-22	2012-02-21
ESDV Test Receiver	ROHDE&SCHWARZ	ESDV	100008	2011-03-30	2012-03-29
Impuls-Begrenzer	ROHDE&SCHWARZ	ESH3-Z2	100281	2011-02-18	2012-02-17
Power meter	Anritsu	ML2487A	6K00003613	2011-02-18	2012-02-17
Power sensor	Anritsu	MA2491A	32263	2011-02-8	2012-02-17
ESPI Test Receiver	ROHDE&SCHWARZ	ESI26	838786/013	2011-02-18	2012-02-17
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170265	2010-08-15	2011-08-14
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-631	2010-07-02	2011-07-01
Loop Antenna	EMCO	6507	102615	2011-04-26	2012-04-25

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or other persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report, The Shenzhen Timeway Technology Consulting Co., Ltd reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



3.0 Technical Details

3.1 Summary of test results

The EUT has been tested according to the following specifications:			
Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.207	Conducted Emission Test	N/A	Not Applicable
FCC Part 15 Subpart C Paragraph 15.249(a) & 15.249(b) Limit	Field Strength of Fundamental	PASS	Complies
FCC Part 15, Paragraph 15.209	Radiated Emission Test	PASS	Complies
FCC Part 15 Subpart C Paragraph 15.249(d) Limit	Band Edge Test	PASS	Complies

3.2 Test Standards

FCC Part 15 Subpart C, Paragraph 15.249

4.0 EUT Modification

No modification by Shenzhen Timeway Technology Consulting Co.,Ltd

The report refers only to the sample tested and does not apply to the bulk.

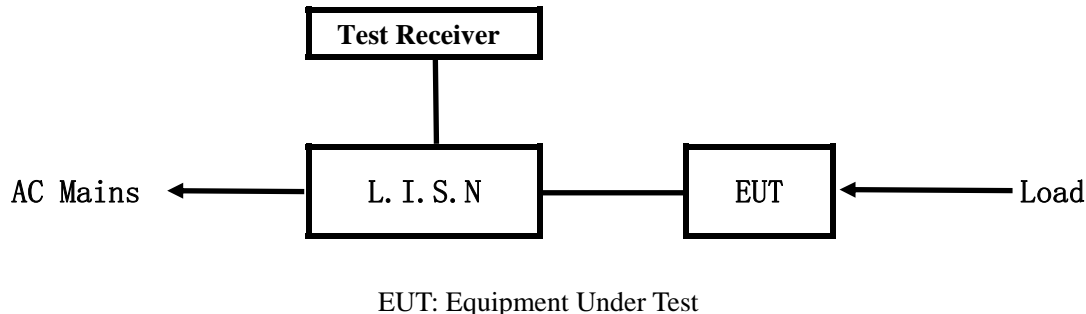
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co.,Ltd to his customer. Supplier or other persons directly concerned. Shenzhen Timeway Technology Consulting Co.,Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting Co.,Ltd reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



5. Power Line Conducted Emission Test

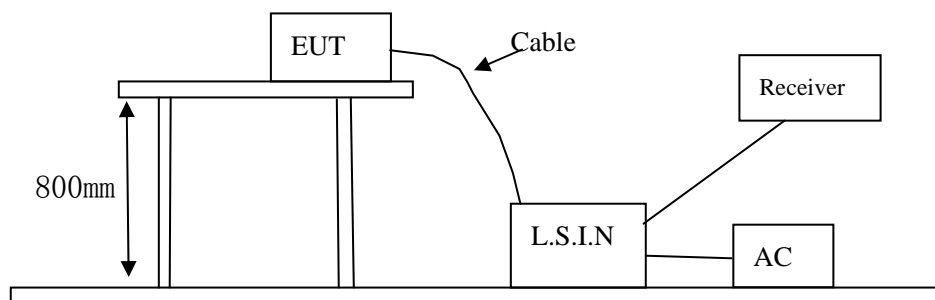
5.1 Schematics of the test



5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2003. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4 –2003.

Block diagram of Test setup



5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.4-2003. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

One channels are provided to the EUT

A. EUT

Device	Manufacturer	Model	FCC ID
2.4GHz Transmitter	JOYSWAY HOBBY (HK) LIMITED	J4C01	ZDTJ4C0001

B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



C. Peripherals

Device	Manufacturer	Model	FCC ID/DOC	Cable
N/A				

5.4 EUT Operating Condition

Operating condition is according to ANSI C63.4 -2003

A Setup the EUT and simulators as shown on follow

B Enable AF signal and confirm EUT active to normal condition

5.5 Power line conducted Emission Limit according to Paragraph 15.207

Frequency(MHz)	Class A Limits (dB μ V)		Class B Limits (dB μ V)	
	Quasi-peak Level	Average Level	Quasi-peak Level	Average Level
0.15 ~ 0.50	79.0	66.0	66.0~56.0*	56.0~46.0*
0.50 ~ 5.00	73.0	60.0	56.0	46.0
5.00 ~ 30.00	73.0	60.0	60.0	50.0

- Notes:
1. *Decreasing linearly with logarithm of frequency.
 2. The tighter limit shall apply at the transition frequencies

5.6 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

Note: Due to DC Operation, this test item not applicable

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting Co., Ltd reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.

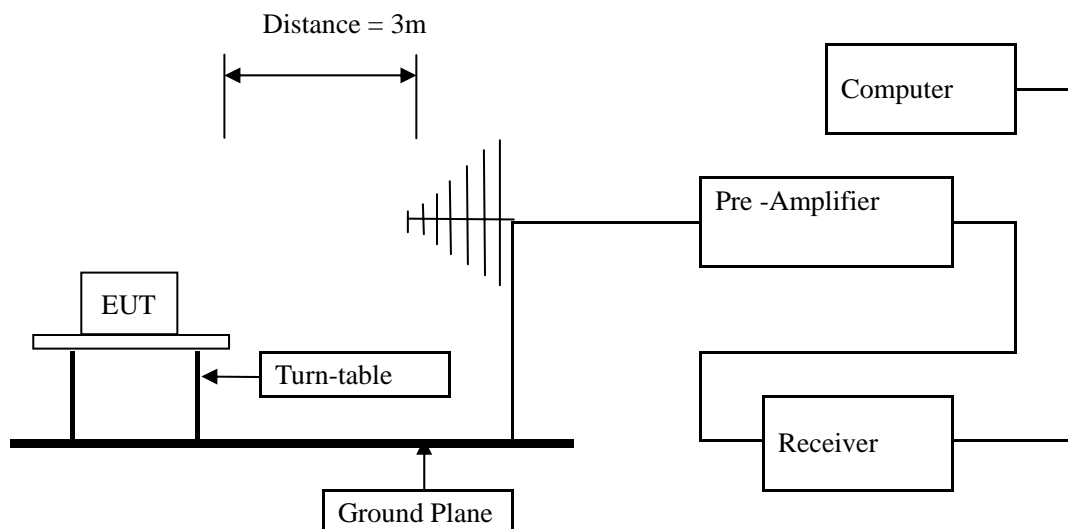


6 Radiated Emission Test

6.1 Test Method and test Procedure:

- (1) The EUT was tested according to ANSI C63.4 –2003. The radiated test was performed at Timeway Laboratory. This site is on file with the FCC laboratory division, Registration No.899988
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.4-2003.
- (3) The frequency spectrum from 30 MHz to 25 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 kHz. All readings are above 1 GHz, peak values with RBW=VBW=1 MHz; AV value with RBW=1MHz, VBW=10Hz and PK detector. Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) The antenna polarization : Vertical polarization and Horizontal polarization.

Block diagram of Test setup



Configuration of The EUT

Same as section 5.3 of this report

EUT Operating Condition

Same as section 5.4 of this report.

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or other persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report, The Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

A FCC Part 15 Subpart C Paragraph 15.249(a) Limit

Fundamental Frequency (MHz)	Field Strength of Fundamental (3m)			Field Strength of Harmonics (3m)		
	mV/m	dBuV/m		uV/m	dBuV/m	
2400-2483.5	50	94 (Average)	114 (Peak)	500	54 (Average)	74 (Peak)

- Note:
1. RF Field Strength (dBuV) = 20 log RF Voltage (uV)
 2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
 3. The emission limit in this paragraph is based on measurement instrumentation employing an average detector.

B. Frequencies in restricted band are complied to limit on Paragraph 15.209.

Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
0.009-0.490	3	20log 2400/F (kHz) + 40
0.490-1.705	3	20log 24000/F (kHz) + 20
1.705-30	3	20log 30 + 20
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

- Note:
1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
 2. In the Above Table, the tighter limit applies at the band edges.
 3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT
 4. This is a handheld device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), After pre-test. It was found that the worse radiated emission was get at the lying position.
 5. All scanning using PK detector. And the final emission level was get using QP detector for frequency range from 30-1000MHz. As to 1G-25G, the final emission level got using PK and AV detector.
 6. If measurement is made at 3m distance, then F.S Limitation at 3m distance is adjusted by using the formula $Ld1 = Ld2 * (d2/d1)$
 7. New batteries were used during the test

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or other persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report, The Shenzhen Timeway Technology Consulting Co., Ltd reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.

**6.5 Test result****A Fundamental & Harmonics Radiated Emission Data**

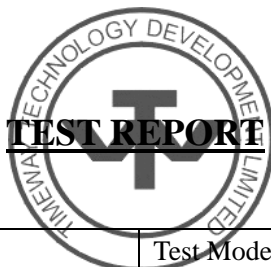
Product:	2.4GHz Transmitter	Test Mode:	Low Channel
Test Item:	Fundamental Radiated Emission Data	Temperature:	25°C
Test Voltage:	6VDC	Humidity:	56%
Test Result:	Pass		

Frequency (MHz)	Emission PK/AV (dBuV/m)	Horiz / Vert	Limits PK/AV (dBuV/m)	Margin (dB)
2403	84.2 (PK)	H	114/94	--
2403	96.6 (PK)/83.8(AV)	V	114/94	--
4806	--	H/V	74/54	--
4806	--	H/V	74/54	--
7209	--	H/V	74/54	--
9612	--	H/V	74/54	--
12015	--	H/V	74/54	--
14418	--	H/V	74/54	--
16821	--	H/V	74/54	--
19224	--	H/V	74/54	--
21627	--	H/V	74/54	--

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or other persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



Product:	2.4GHz Transmitter	Test Mode:	Middle Channel
Test Item:	Fundamental Radiated Emission Data	Temperature:	25°C
Test Voltage:	6VDC	Humidity:	56%
Test Result:	Pass		

Frequency (MHz)	Emission PK/AV (dBuV/m)	Horiz / Vert	Limits PK/AV (dBuV/m)	Margin (dB)
2425	85.8(PK)	H	114/94	--
2425	95.2 (PK)/83.2(AV)	V	114/94	--
4850	--	V	74/54	--
4850	--	H	74/54	--
7275	--	H/V	74/54	--
9700	--	H/V	74/54	--
12125	--	H/V	74/54	--
14450	--	H/V	74/54	--
16975	--	H/V	74/54	--
19400	--	H/V	74/54	--
21825	--	H/V	74/54	--
24250	--	H/V	74/54	--

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



Product:	2.4GHz Transmitter	Test Mode:	High Channel
Test Item:	Fundamental Radiated Emission Data	Temperature:	25°C
Test Voltage:	6VDC	Humidity:	56%
Test Result:	Pass		

Frequency (MHz)	Emission PK/AV (dBuV/m)	Horiz / Vert	Limits PK/AV (dBuV/m)	Margin (dB)
2450	83.7(PK)	H	114/94	--
2450	94.8 (PK)/82.1(AV)	V	114/94	--
4900.	--	V	74/54	--
4900.	--	H	74/54	--
7350	--	H/V	74/54	--
9800	--	H/V	74/54	--
12250	--	H/V	74/54	--
14700	--	H/V	74/54	--
17150	--	H/V	74/54	--
19600	--	H/V	74/54	--
22050	--	H/V	74/54	--
24500	--	H/V	74/54	--

- Note:
- (1) PK= Peak, AV= Average
 - (2) Emission Level = Reading Level + Probe Factor + Cable Loss.
 - (3)Margin=Emission-Limits
 - (4)According to section 15.35(b), the peak limit is 20dB higher than the average limit
 - (5) The measured PK value less than the AV limit.

The report refers only to the sample tested and does not apply to the bulk.

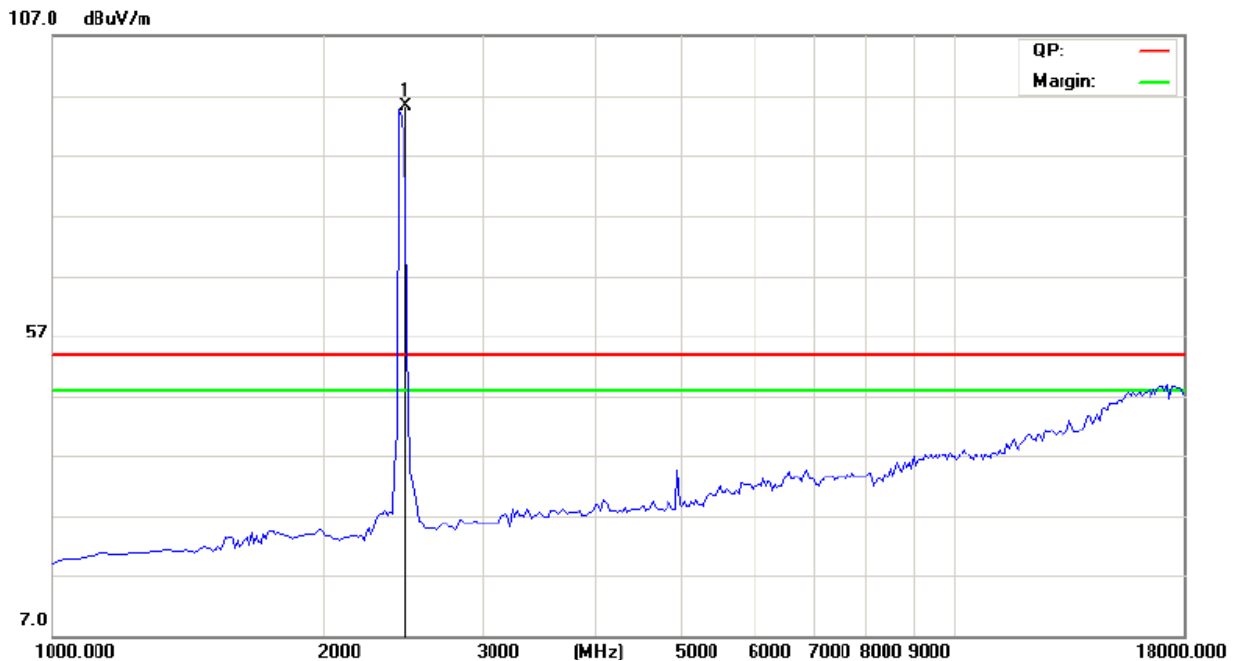
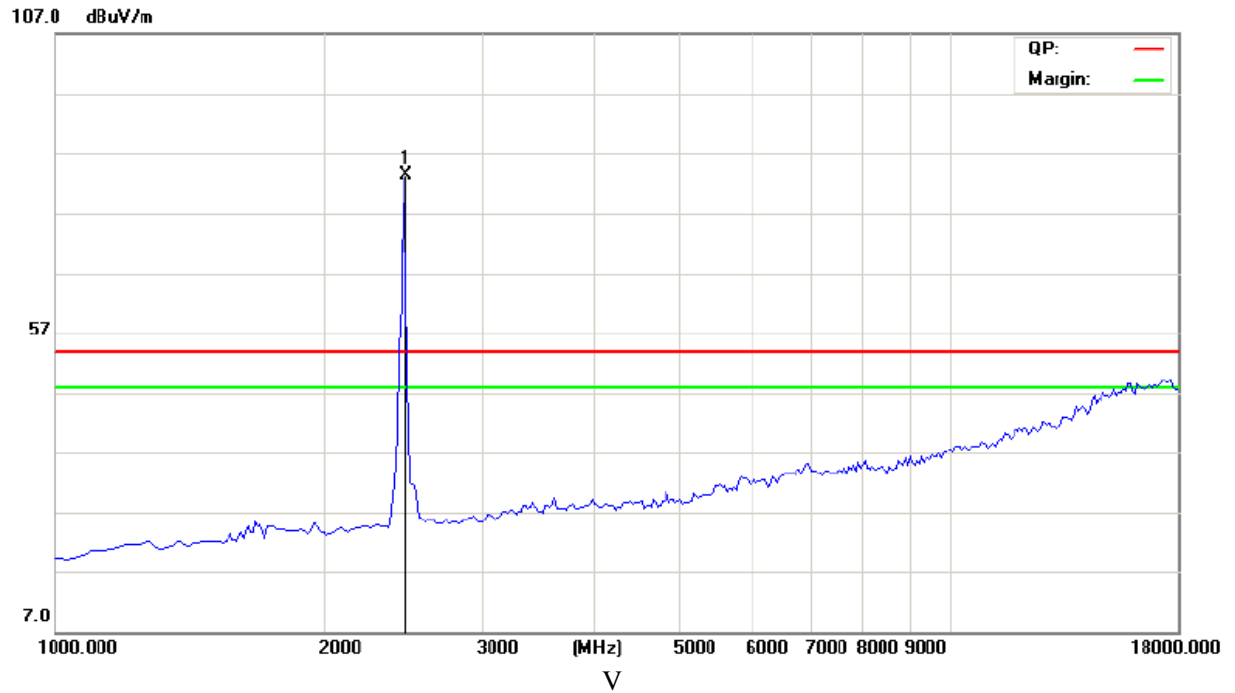
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd to his customer. Supplier or other persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting Co., Ltd reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



Please refer to following diagram for individual
Low Channel

H



The report refers only to the sample tested and does not apply to the bulk.

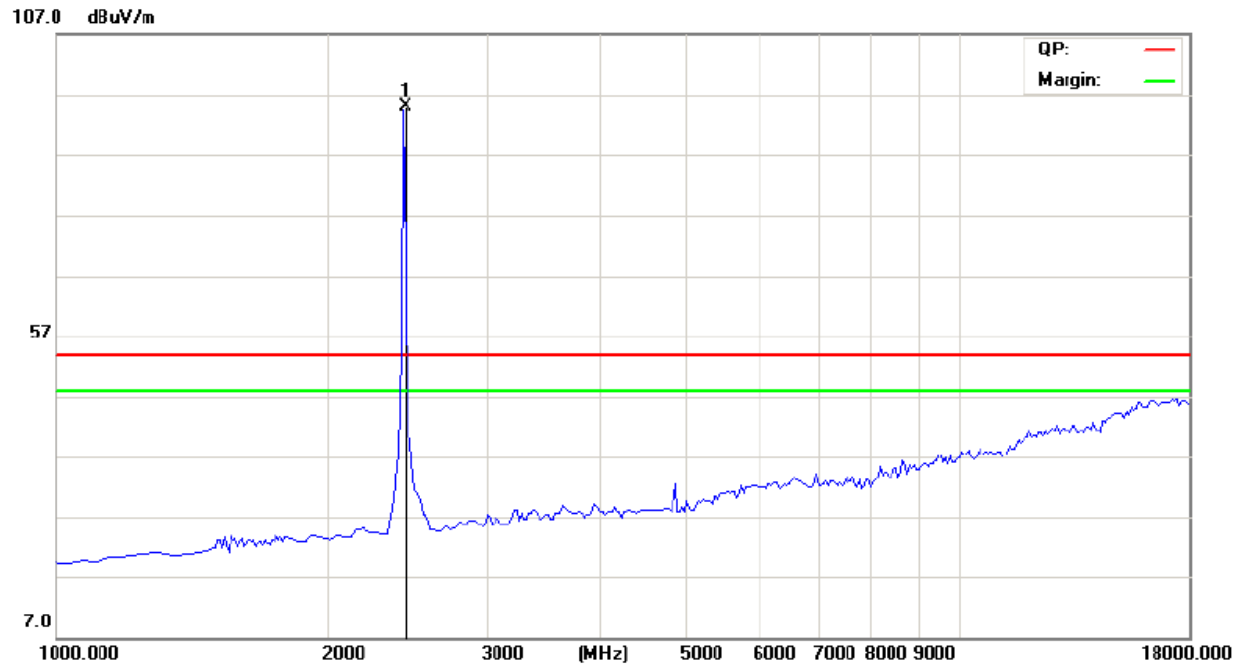
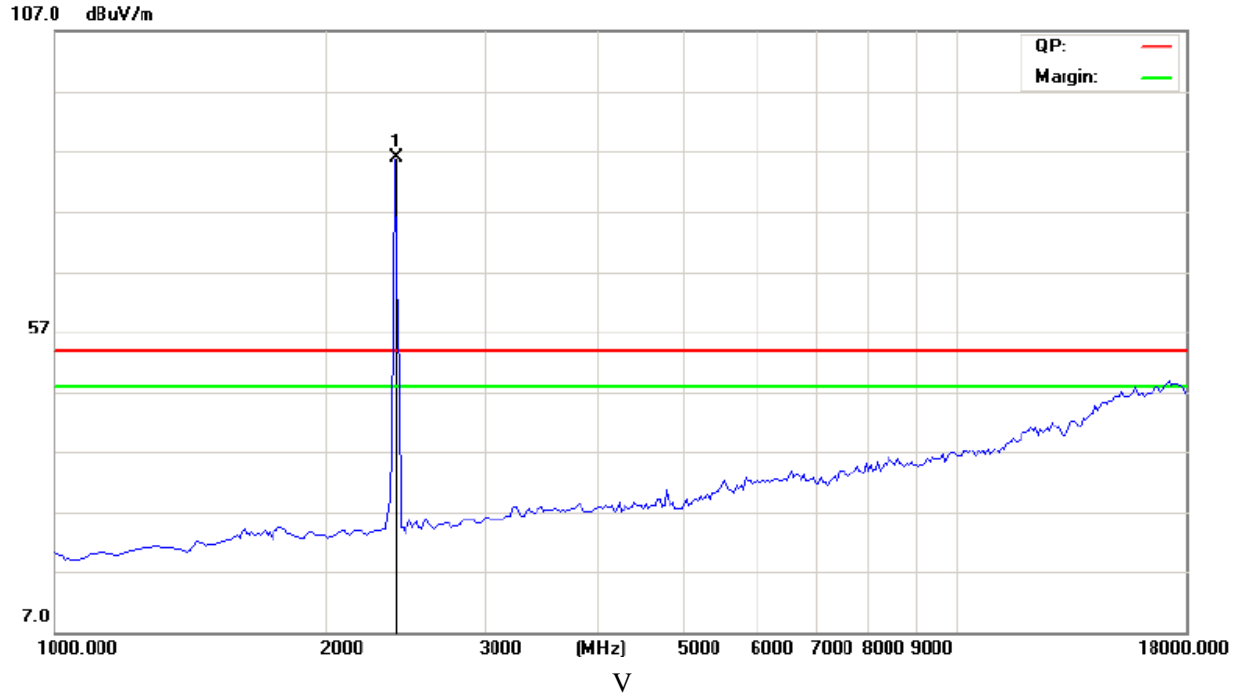
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report, The Shenzhen Timeway Technology Consulting Co., Ltd reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



Please refer to following diagram for individual
Middle Channel

H



The report refers only to the sample tested and does not apply to the bulk.

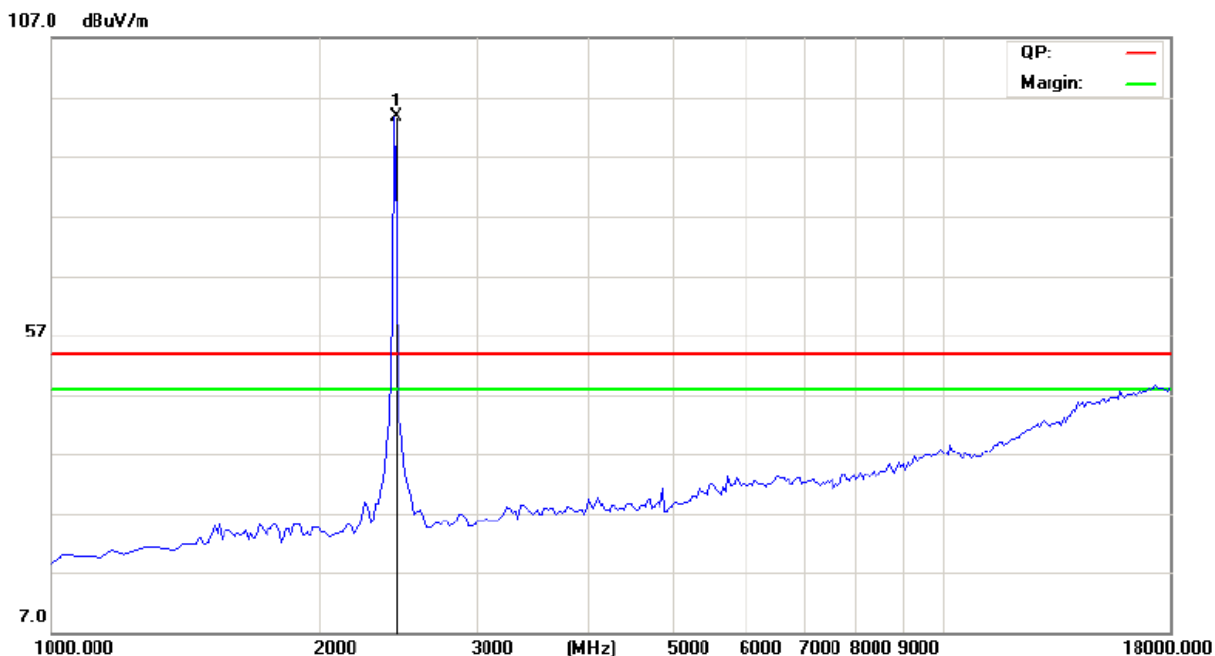
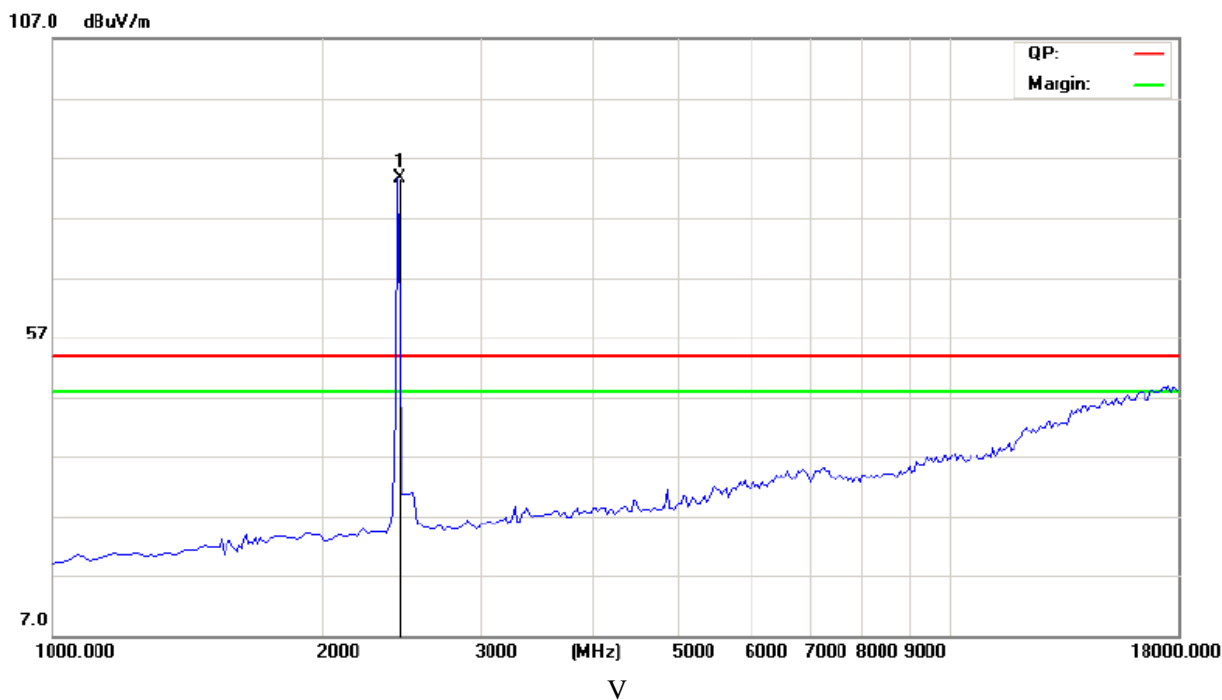
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



Please refer to following diagram for individual
High Channel

H



Note: For the radiated emissions from 18GHz-25GHz, it is the floor noise that meets the requirement of FCC rule.

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report, The Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.

**B. General Radiated Emission Data****Radiated Emission In Vertical (30MHz----1000MHz)**

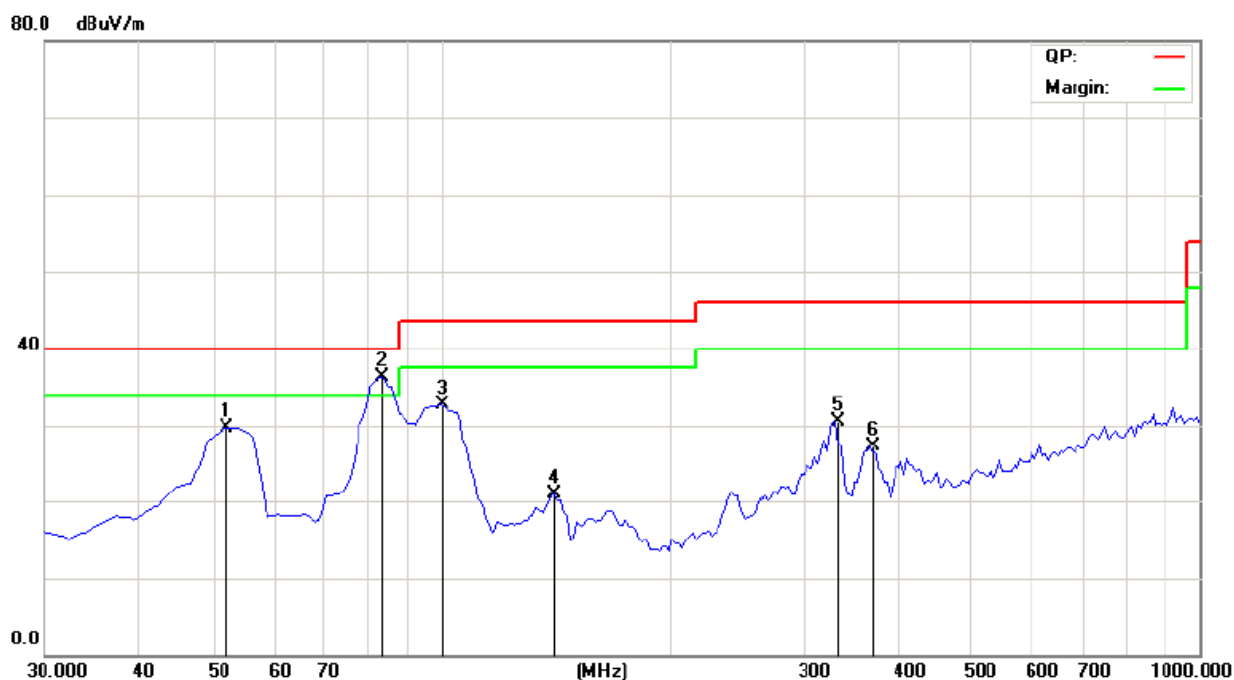
Model: J4C01

EUT set Condition: Keep transmitting

Mode: Normal work

Results: Pass

Please refer to following diagram for individual



Frequency (MHz)	Level@3m (dB μ V/m)	Antenna Polarity	Limit@3m (dB μ V/m)
51.8250	29.77	V	40.00
83.6688	36.23	V	40.00
100.3250	32.68	V	43.50
141.5777	20.85	V	43.50
333.1250	30.46	V	46.00
369.5000	27.23	V	46.00

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or other persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report, The Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



Radiated Emission In Horizontal (30MHz----1000MHz)

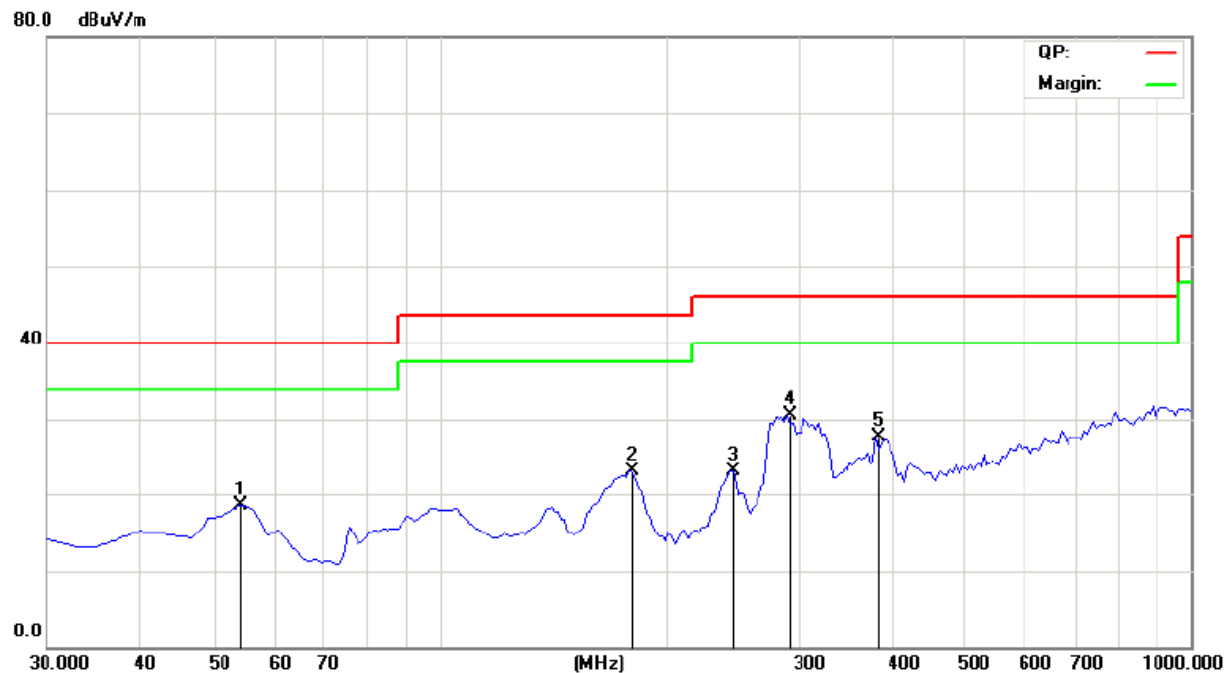
Model: J4C01

EUT set Condition: Keep transmitting

Mode: Normal work

Results: Pass

Please refer to following diagram for individual



Frequency (MHz)	Level@3m (dB μ V/m)	Antenna Polarity	Limit@3m (dB μ V/m)
54.2500	18.59	H	40.00
180.3500	23.03	H	43.50
245.9508	23.12	H	46.00
291.9000	30.53	H	46.00
384.0500	27.72	H	46.00

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or other persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report, The Shenzhen Timeway Technology Consulting Co., Ltd reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.

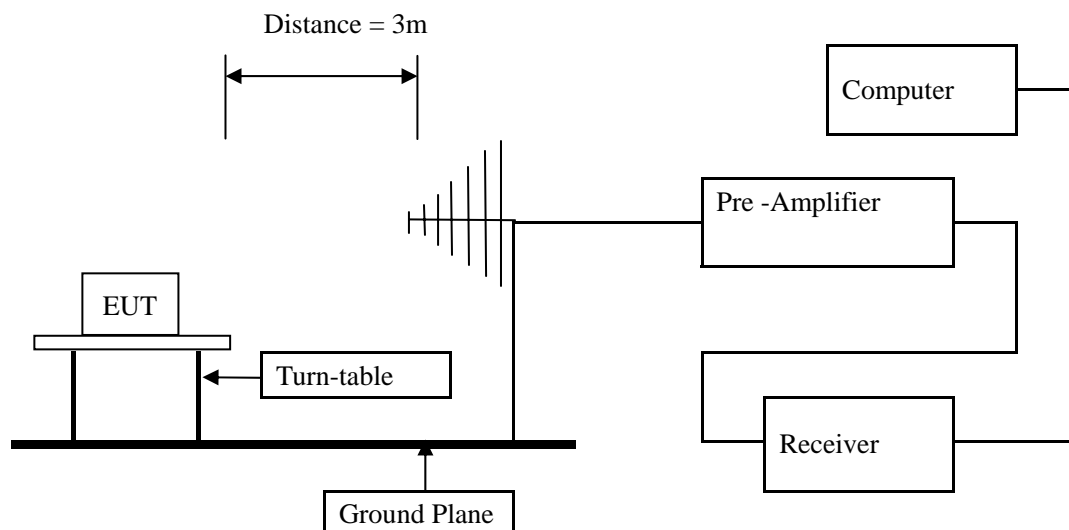


7. Band Edge

7.1 Test Method and test Procedure:

- (1) The EUT was tested according to ANSI C63.4 –2003. The radiated test was performed at Timeway Laboratory. This site is on file with the FCC laboratory division, Registration No.899988
- (2) Set Spectrum as RBW=VBW=1MHz and Peak detector used
- (3) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (4) The antenna polarization: Vertical polarization and Horizontal polarization.

7.2 Radiated Test Setup



For the actual test configuration , please refer to the related items – Photos of Testing

7.3 Configuration of The EUT

Same as section 5.3 of this report

7.4 EUT Operating Condition

Same as section 5.4 of this report.

7.5 Band Edge Limit

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or other persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report, The Shenzhen Timeway Technology Consulting Co., Ltd reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



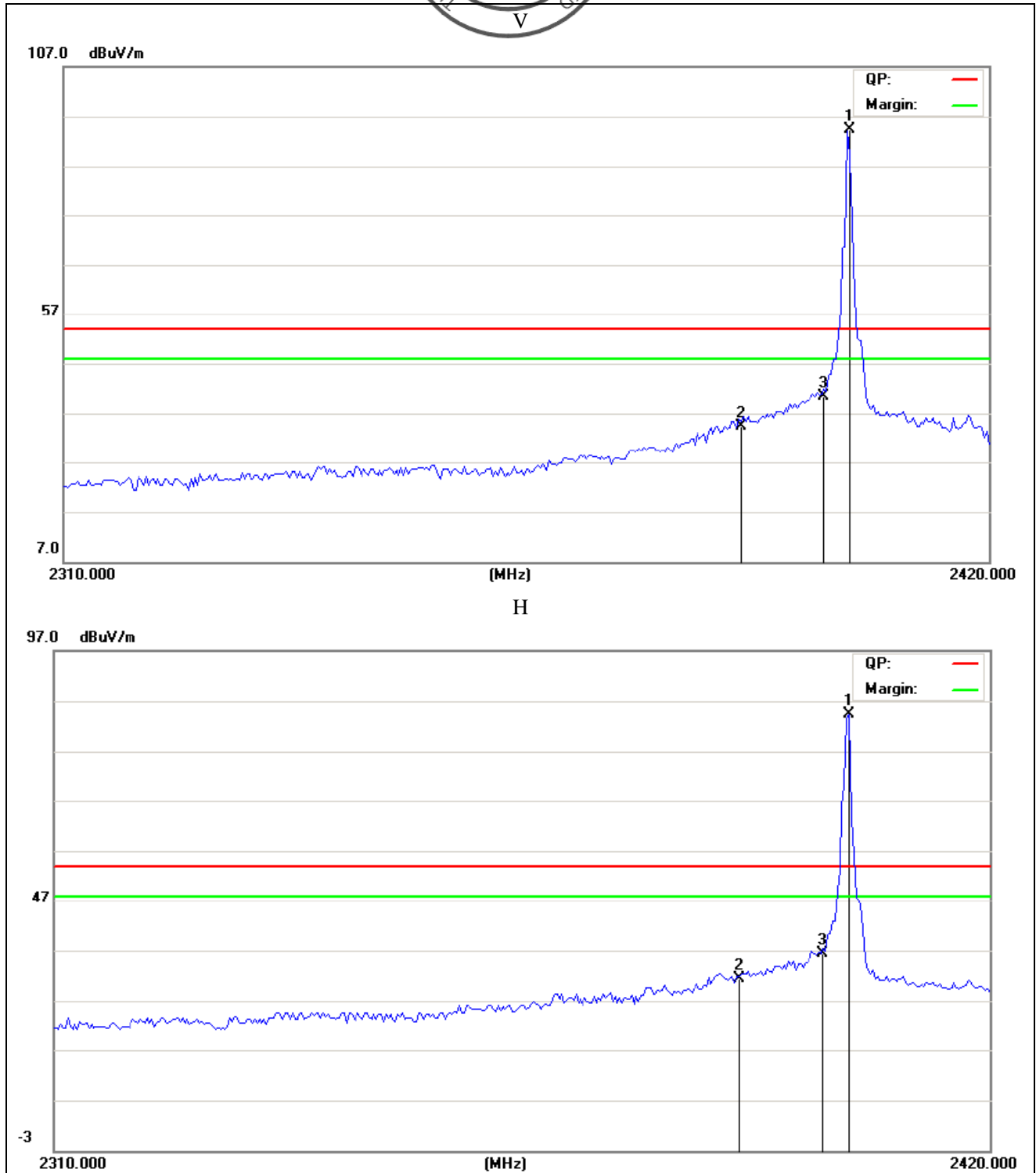
7.6 Test Result

Product:	2.4GHz Transmitter		Test Mode:	Low Channel
Mode	Keeping Transmitting		Test Voltage	DC6V
Temperature	24 deg. C		Humidity	56% RH
Test Result:	Pass		Detector	PK
2390MHz	PK (dBμV/m)	34.5 (V) /31.5(H)	Limit	74(dBμV/m)
	AV(dBμV/m)	--		54(dBμV/m)
2400MHz	PK (dBμV/m)	40.3 (V) /36.3(H)		74(dBμV/m)
	AV(dBμV/m)	--		54(dBμV/m)

The report refers only to the sample tested and does not apply to the bulk.

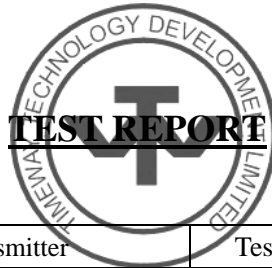
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



Note: Field Strength in restrict band measured in conventional manner

The report refers only to the sample tested and does not apply to the bulk.
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.
In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.

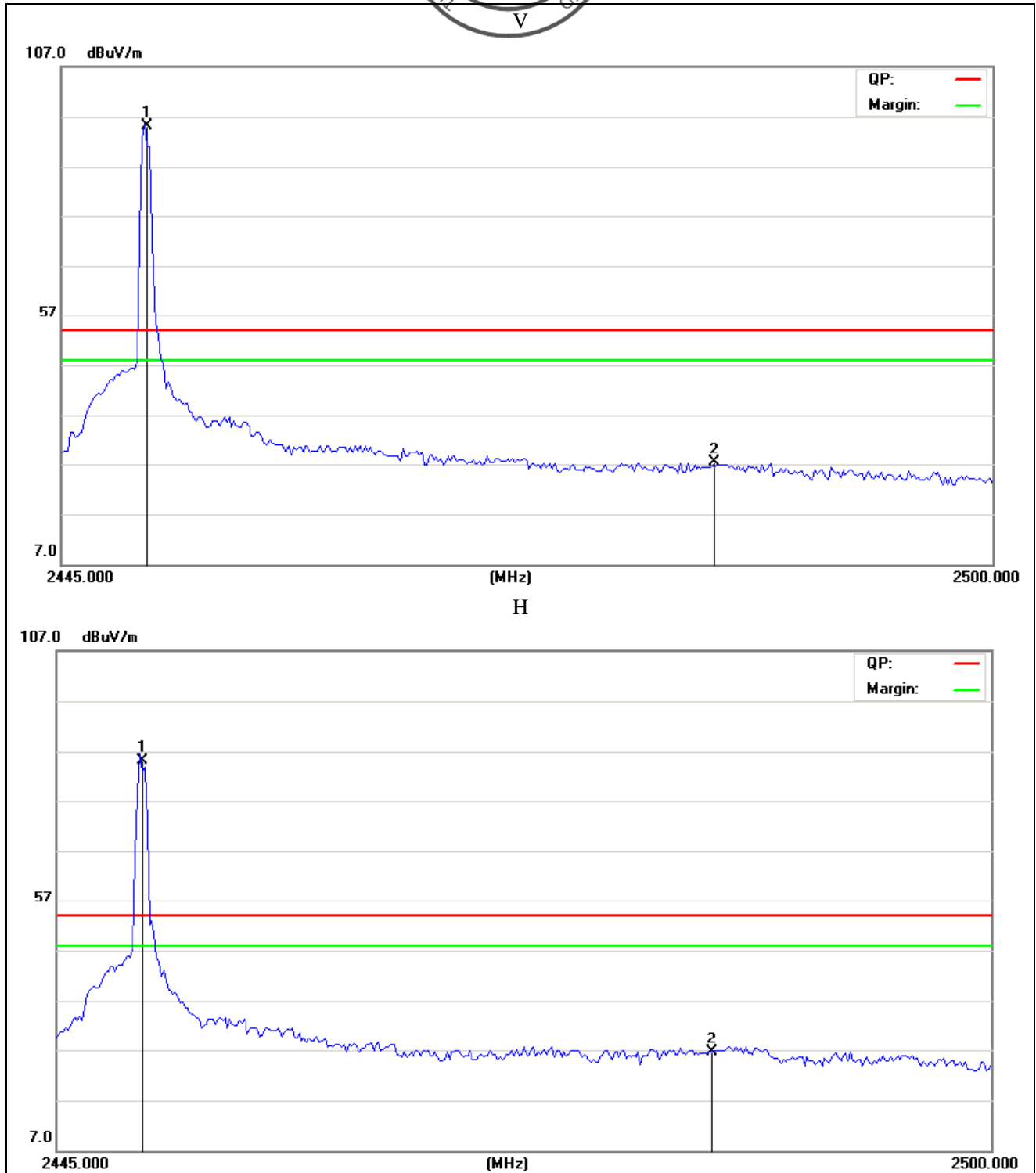


Product:	2.4GHz Transmitter		Test Mode:	High Channel
Mode	Keeping Transmitting		Test Voltage	DC6V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
2483.5MHz	PK (dB μ V/m)	27.4 (V)/ 26.8(H)	Limit	74(dB μ V/m)
	AV(dB μ V/m)	--		54(dB μ V/m)

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



Note: 1. Field Strength in restrict band measured in conventional manner

2. Emission Level = Reading Level + Probe Factor + Cable Loss.

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



8.0 Antenna Requirement

Applicable Standard

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.

Dipole antenna with RF cable connected to RF board by means of soldering. The maximum Gain of the antennas is 2.5dBi.

Test Result: Pass

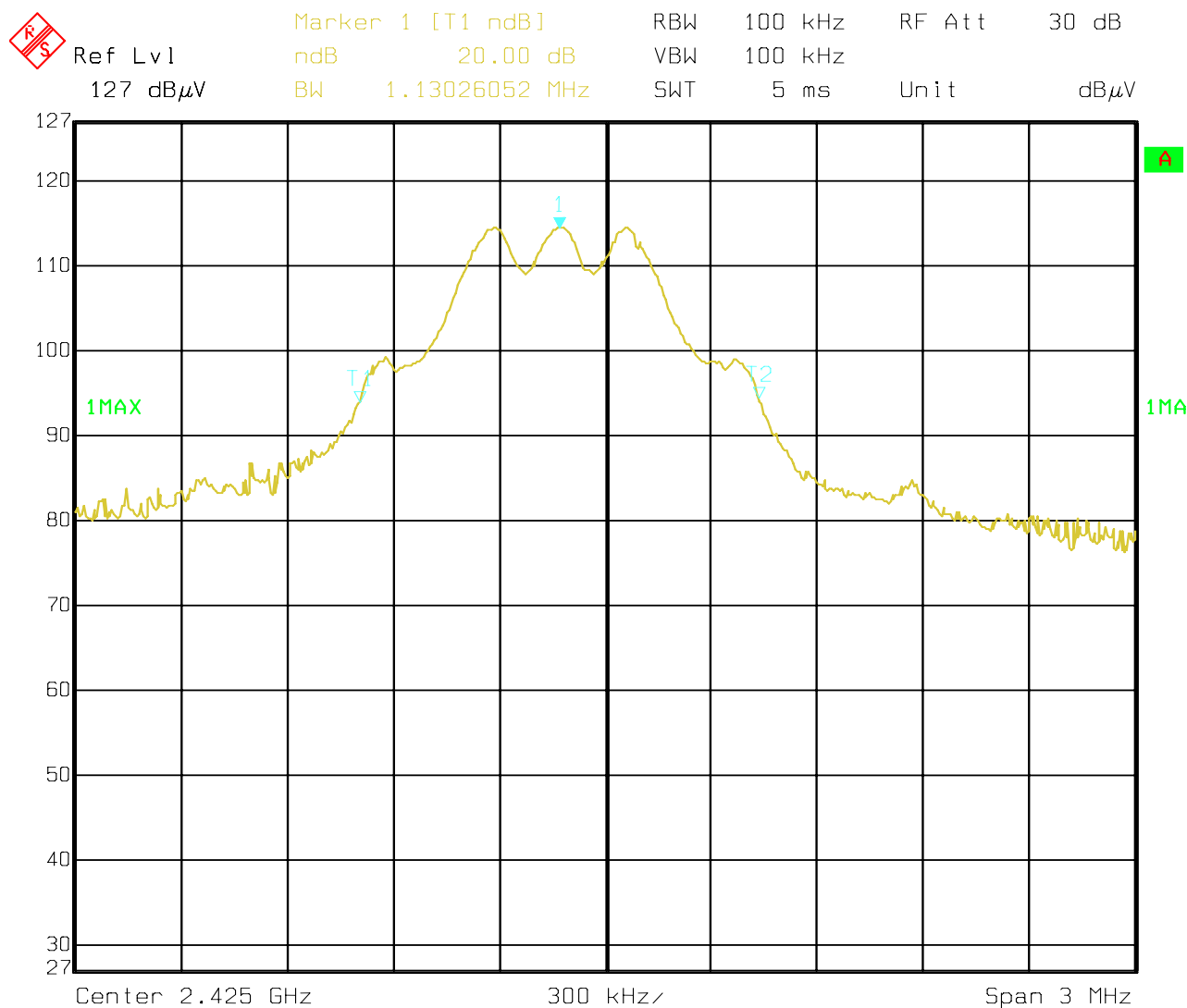
The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer, supplier or other persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client, enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report, the Shenzhen Timeway Technology Consulting Co., Ltd. reserves the right to withdraw it and to adopt any other remedies which may be appropriate.



Product:	2.4GHz Transmitter	Test Mode:	Middle Channel
Mode	Keeping Transmitting	Test Voltage	DC6V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	1130.3KHz	--	--

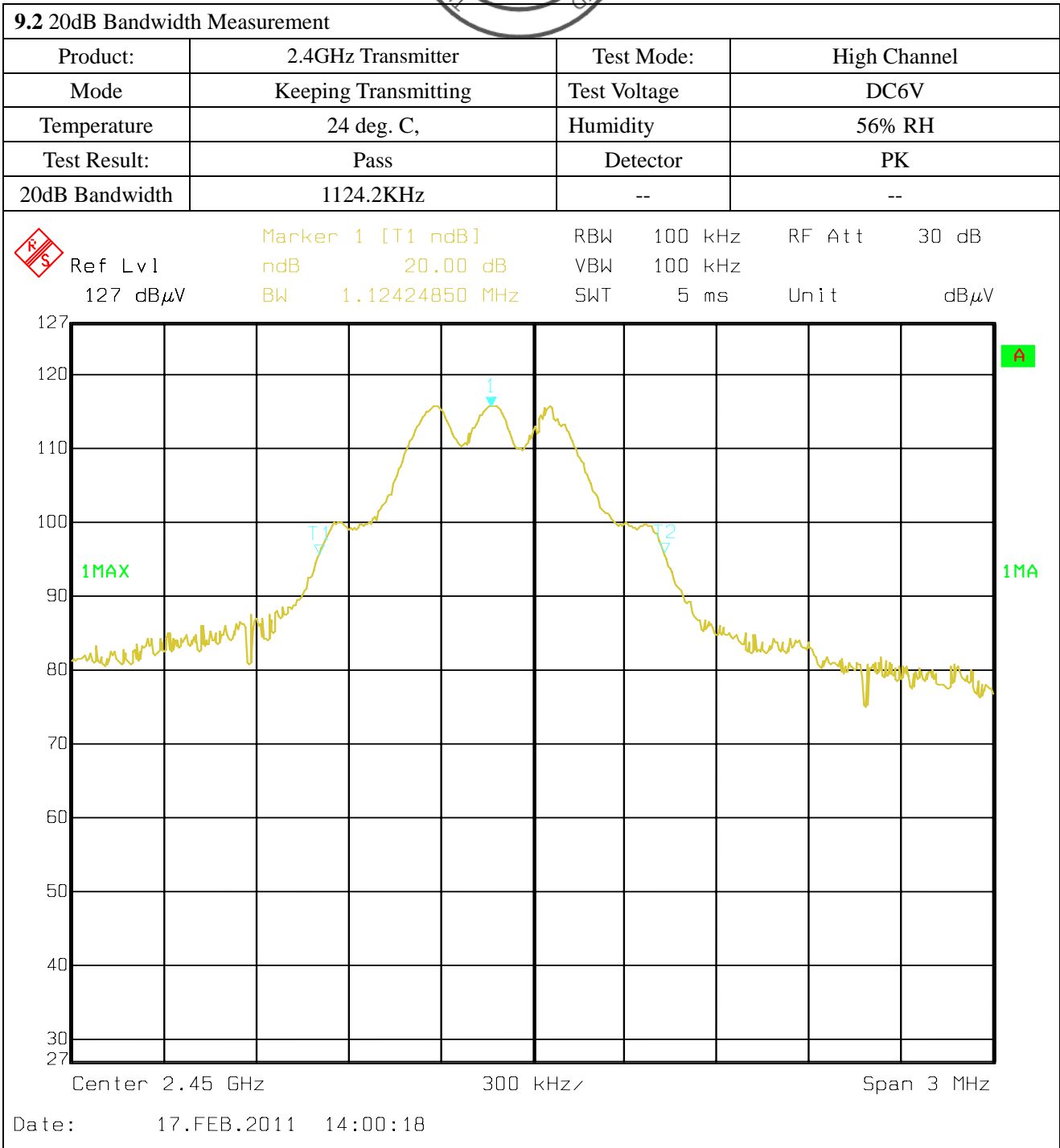


Date: 17.FEB.2011 14:38:33

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or other persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report, The Shenzhen Timeway Technology Consulting co.,Ltd reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



The report refers only to the sample tested and does not apply to the bulk.
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co.,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co.,Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.
In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting co.,Ltd reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



10.0 FCC ID Label

FCC ID: ZDTJ4C0001

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Mark Location:



FCC ID Label Location

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or other persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client, enter into any discussion of correspondence with any third party concerning the contents of the report.

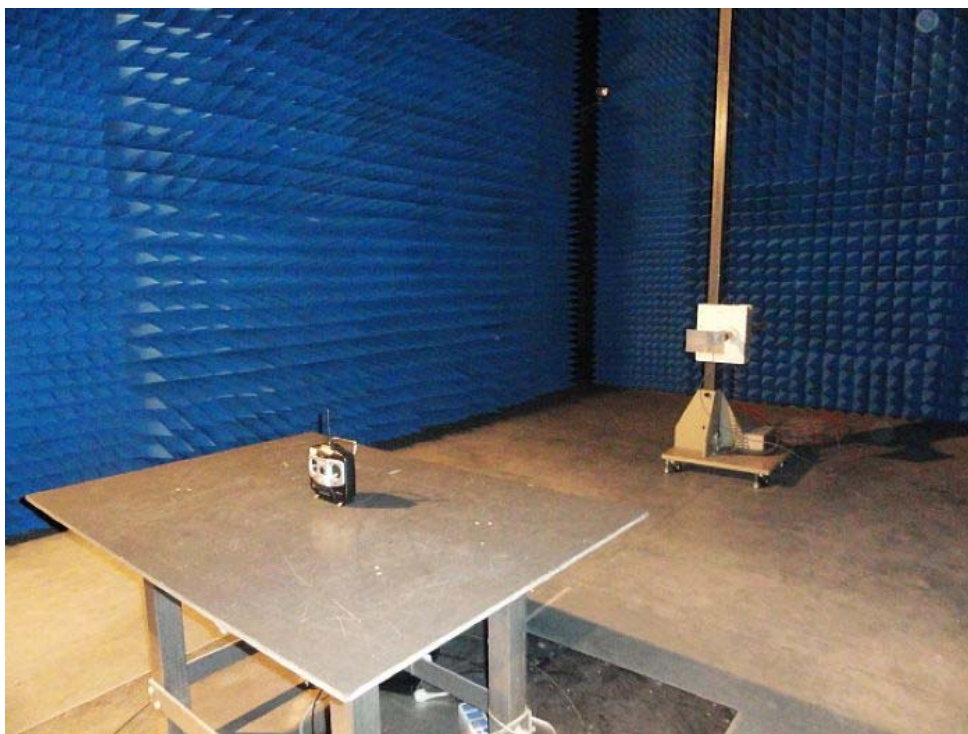
In the event of the improper use of the report, the Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



11.0 Photo of testing

11.1 Conducted test View-- N/A

11.2 Radiated emission test view



The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or other persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report, The Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



11.3 Photo for the EUT

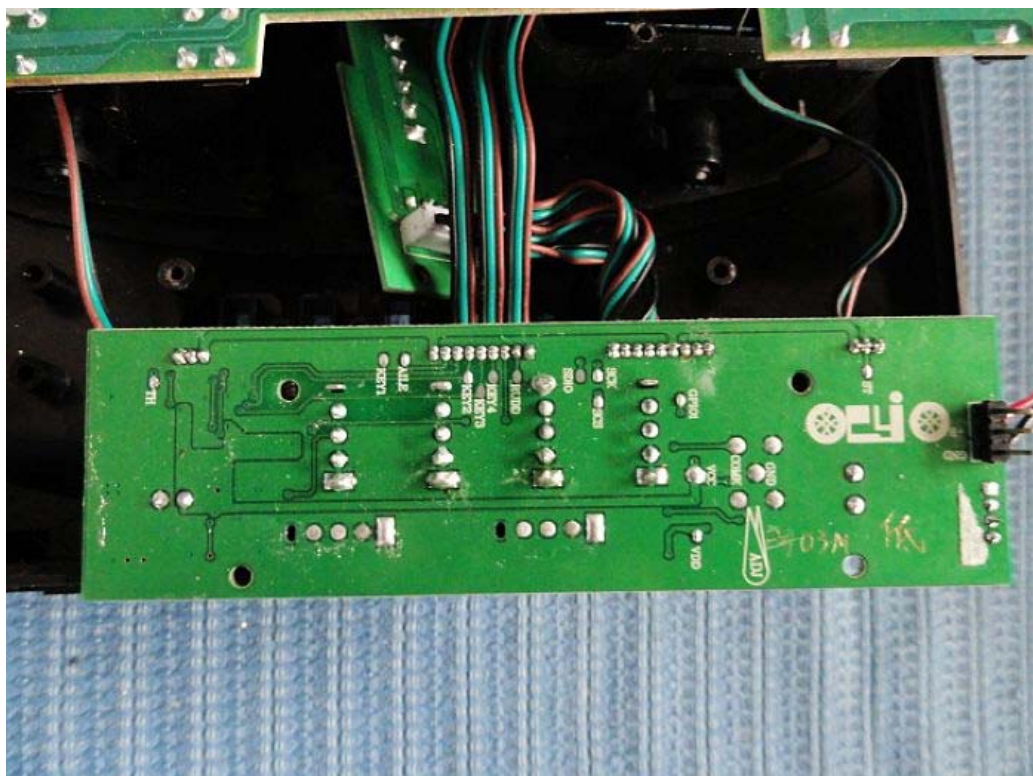
Outside View



The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or other persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

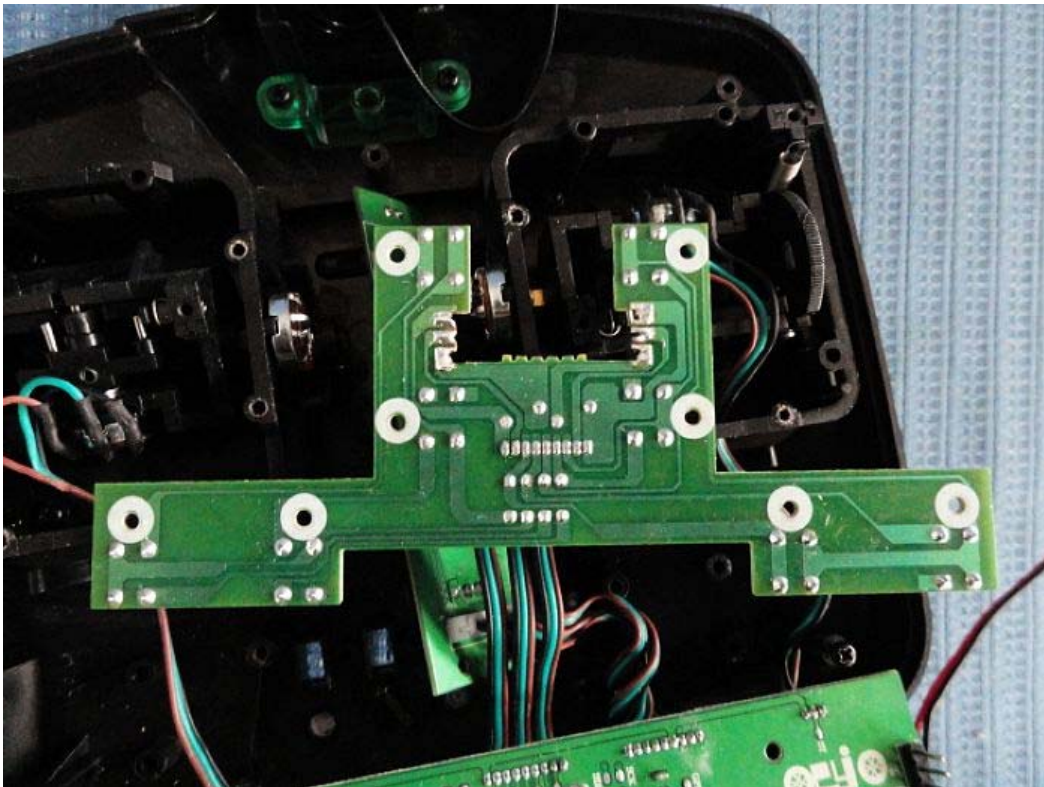
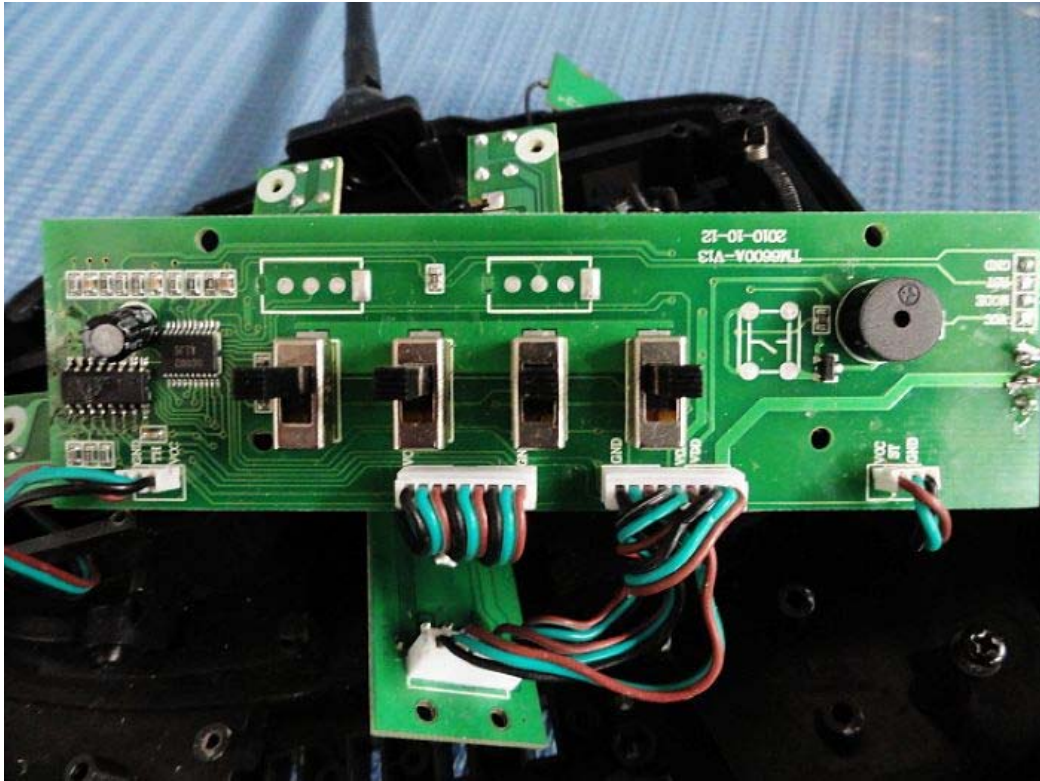
In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer, supplier or other persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client, enter into any discussion of correspondence with any third party concerning the contents of the report.

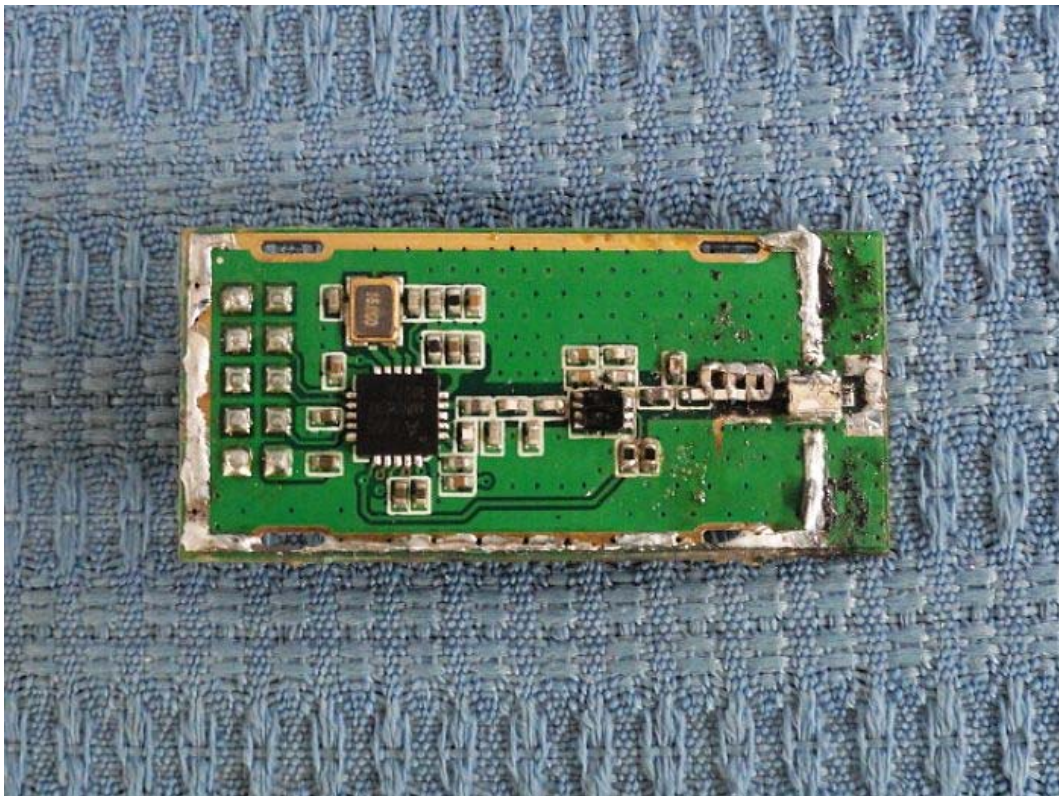
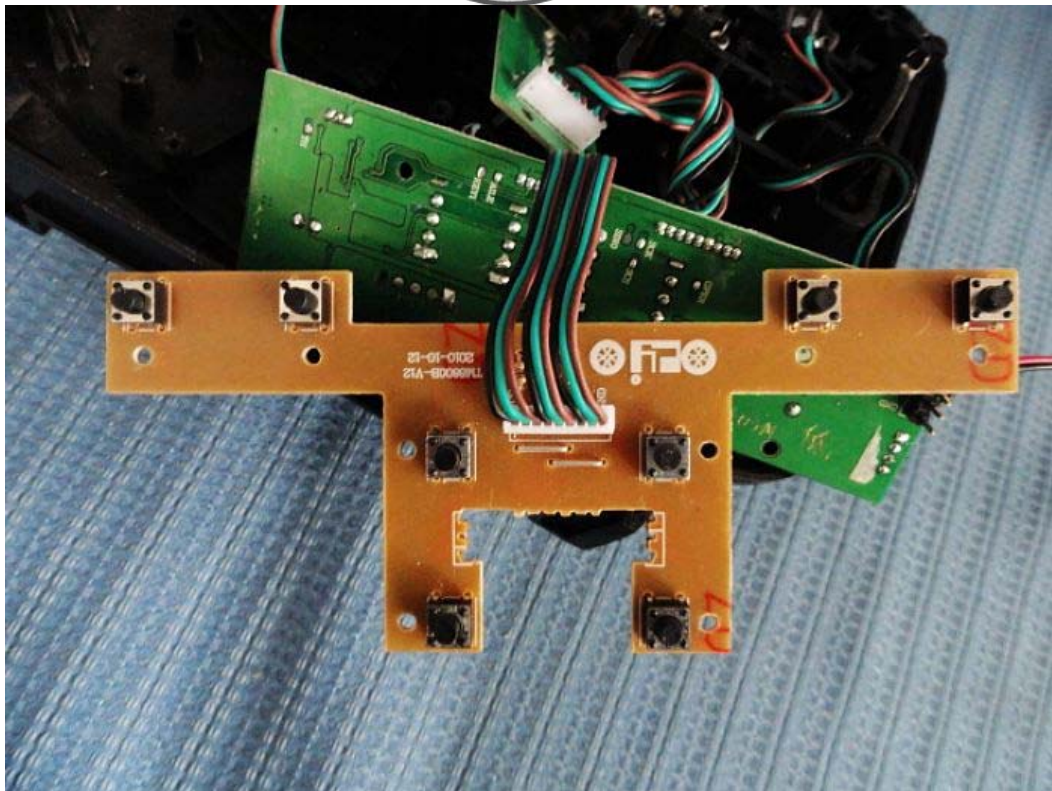
In the event of the improper use of the report, the Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer, supplier or other persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client, enter into any discussion of correspondence with any third party concerning the contents of the report.

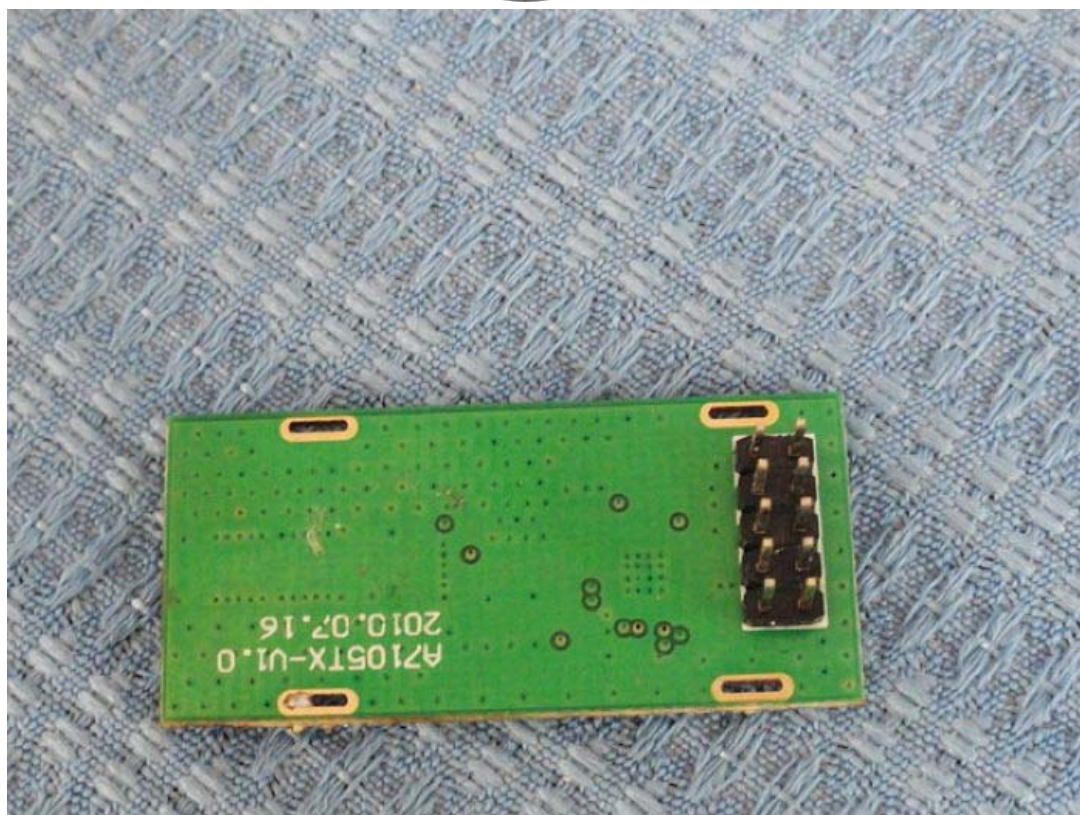
In the event of the improper use of the report, the Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer, supplier or other persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client, enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report, the Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



--End of the report--

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it, or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co., Ltd. to his customer. Supplier or other persons directly concerned. Shenzhen Timeway Technology Consulting Co., Ltd. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report, The Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.