



卓時檢測  
TIMEWAY TESTING LABORATORY



ISO/IEC17025 Accredited Lab.

Report No: FCC 1010265  
File reference No: 2011-01-11

Applicant: DongGuan Goldland Electronics Co., LTD.

Product: Keyboard

Model No: GL-X10BT

Trademark: N/A

Test Standards: FCC Part 15 Subpart C, Paragraph 15.247

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 15.247 regulations and RSS-210 for the evaluation of electromagnetic compatibility

Approved By

*Jack Chung*

Jack Chung  
Manager

Dated: January 11, 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**

5/F,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 meets 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 17025:1999 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 No.: IC 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

<b>1.0</b>	<b>General Details</b>	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	4
1.7	Test By	5
<b>2.0</b>	<b>List of Measurement Equipment</b>	5
<b>3.0</b>	<b>Technical Details</b>	7
3.1	Summary of Test Results	7
3.2	Test Standards	7
<b>4.0</b>	<b>EUT Modification</b>	7
<b>5.0</b>	<b>Power Line Conducted Emission Test</b>	8
5.1	Schematics of the Test	8
5.2	Test Method and Test Procedure	8
5.3	Configuration of the EUT	8
<b>5.4</b>	<b>EUT Operating Condition</b>	9
<b>5.5</b>	<b>Conducted Emission Limit</b>	9
<b>5.6</b>	<b>Test Result</b>	9
<b>6.0</b>	<b>Radiated Emission test</b>	12
6.1	Test Method and Test Procedure	12
6.2	Configuration of the EUT	12
6.3	EUT Operation Condition	12
6.4	Radiated Emission Limit	13
7.0	20dB Bandwidth Measurement	22
8.0	Maximum Peak Output Power	26
9.0	Carrier Frequency Separation	28
10.0	Number of Hopping Channel	30
11.0	Time of Occupancy (Dwell Time)	33
12.0	Out of Band Measurement	40
13.0	Antenna Requirement	45
14.0	Maximum Permissible Exposure	46
15.0	FCC Label	47
16.0	Photo of Test Setup and EUT View	49

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.



## 1.0 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: DongGuan Goldland Electronics Co. ,LTD.  
Address: Qiaoxin Industrial Park,Qiaotou,Dongguan Guangdong,China.  
Telephone: +86-769-81026999-203  
Fax: +86-769-81026997

### 1.3 Description of EUT

Product: Keyboard  
Manufacturer: DongGuan Goldland Electronics Co. ,LTD.  
Brand Name: N/A  
Model Number: GL-X10BT  
Additional Model Name N/A  
Additional Trade Name N/A  
Rating: Input: 3.7V  
Power Supply N/A  
Type of Modulation FHSS  
Frequency range 2402-2480MHz  
Number of Channel 79  
Frequency Selection By software  
Antenna type PCB antenna, the antenna gain is 2.0dBi

### 1.4 Submitted Sample: 1 Sample

### 1.5 Test Duration

2010-10-29-2011-01-11

### 1.6 Test Uncertainty

Conducted Emissions Uncertainty =3.6dB  
Radiated Emissions Uncertainty =4.7dB

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.



1.7 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	2010-12-04	2011-12-03
Absorbing Clamp	ROHDE&SCHWARZ	MDS-21	100126	2010-12-04	2011-12-03
TWO Line-V-NETW	ROHDE&SCHWARZ	EZH3-Z5	100294	2010-12-04	2011-12-03
TWO Line-V-NETW	ROHDE&SCHWARZ	EZH3-Z5	100253	2010-12-04	2011-12-03
Ultra Broadband ANT	ROHDE&SCHWARZ	HL562	100157	2010-12-04	2011-12-03
ESDV Test Receiver	ROHDE&SCHWARZ	ESDV	100008	2010-03-29	2011-03-28
4-WIRE ISN	ROHDE&SCHWARZ	ENY 41	830663/044	2010-02-17	2011-02-16
GG ENY22 Double 2-Wire ISN	ROHDE&SCHWARZ	ENY22	83066/016	2010-02-17	2011-02-16
Impuls-Begrenzer	ROHDE&SCHWARZ	ESH3-Z2	100281	2010-02-17	2011-02-16
System Controller	CT	SC100	-	2010-02-17	2011-02-16
Printer	EPSON	PHOTO EX3	CFNH234850	2010-02-17	2011-02-16
FM-AM Signal Generator	JUNGJIN	SG-150M	389911177	2010-02-17	2011-02-16
Color TV Pattern Generator	PHILIPS	PM5418	LO621747	2010-02-17	2011-02-16
Computer	IBM	8434	1S8434KCE99BLXLO*	-	-
Oscillator	KENWOOD	AG-203D	3070002	2010-02-17	2011-02-16
Spectrum Analyzer	HAMEG	HM5012	-	-	-
Power Supply	LW	APS1502	-	-	-

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.



5K VA AC Power Source	California Instruments	50011X	56060	2010-02-17	2011-02-16
CDN	EM TEST	CDN M2/M3	-	2010-02-17	2011-02-16
Attenuation	EM TEST	ATT6/75	-	2010-02-17	2011-02-16
Resistance	EM TEST	R100	-	2010-02-17	2011-02-16
Electromagnetic Injection Clamp	LITTHI	EM101	35708	2010-02-17	2011-02-16
Inductive Components	EM TEST	MC2630	-	2010-02-17	2011-02-16
Antenna	EM TEST	MS100	-	2010-02-17	2011-02-16
Signal Generator	ROHDE&SCHWARZ	SMT03	100029	2010-02-17	2011-02-16
Power Amplifier	AR	150W1000	300999	2010-02-17	2011-02-16
Field probe	Holaday	HI-6005	105152	2010-02-17	2011-02-16
Bilog Antenna	Chase	CBL6111C	2576	2010-02-17	2011-02-16
Loop Antenna	EMCO	6502	00042960	2010-02-17	2011-02-16
ESPI Test Receiver	ROHDE&SCHWARZ	ESI26	838786/013	2010-02-17	2011-02-16
3m OATS	--	--	N/A	2010-02-17	2011-02-16
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-631	2010-07-03	2011-07-02
Power meter	Anritsu	ML2487A	6K00003613	2010-02-17	2011-02-16
Power sensor	Anritsu	MA2491A	32263	2010-02-17	2011-02-16
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2010-05-14	2011-05-13
LISN	AFJ	LS16C	10010947251	2010-5-14	2011-05-13
LISN (Three Phase)	Schwarebeck	NSLK 8126	8126453	2010-5-14	2011-05-13
9*6*6 Anechoic	--	--	N/A	2010-5-14	2011-05-13

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:			
Requirement	CFR 47 Section	Result	Notes
Antenna Requirement	15.203, 15.247(b)(4)	PASS	Complies
Maximum Peak Out Power	15.247 (b)(1), (4)	PASS	Complies
Carrier Frequency Separation	15.247(a)(1)	PASS	Complies
20dB Channel Bandwidth	15.247 (a)(1)	PASS	Complies
Number of Hopping Channels	15.247(a)(iii), 15.247(b)(1)	PASS	Complies
Time of Occupancy (Dwell Time)	15.247(a)(iii)	PASS	Complies
Spurious Emission, Band Edge, and Restricted bands	15.247(d),15.205(a), 15.209 (a),15.109	PASS	Complies
Conducted Emissions	15.207(a), 15.107	PASS	Complies
RF Exposure	15.247(i), 1.1307(b)(1)	PASS	Complies

#### 3.2 Test Standards

FCC Part 15 Subpart & Subpart C, Paragraph 15.247

#### 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.

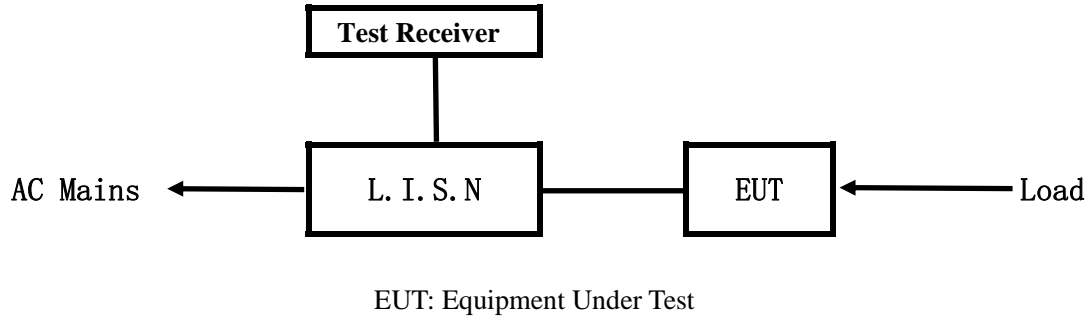
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send it or a certified copy thereof prepared by the Shenzhen Timeway Technology Consulting Co.,Ltd to his customer. Supplier or 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.



## 5. Power Line Conducted Emission Test

### 5.1 Schematics of the test

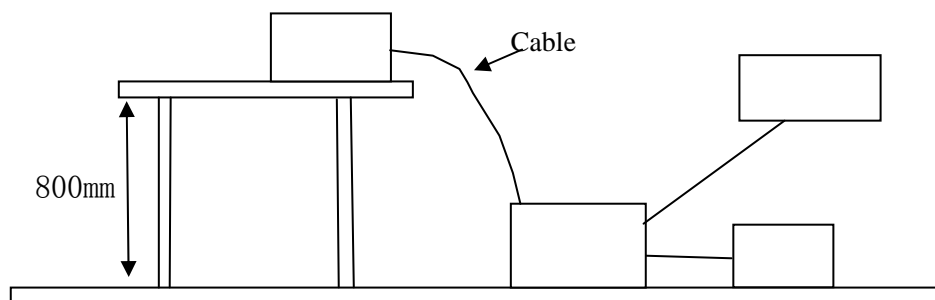


### 5.2 Test Method and test Procedure

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.

Test Voltage: 120V~60Hz

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.

79 channels are provided to the EUT

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.





A. EUT

Device	Manufacturer	Model	FCC ID
Keyboard	DongGuan Goldland Electronics Co. ,LTD.	GL-X10BT	ZDVGOLDLANDX10

B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

C. Peripherals

Device	Manufacturer	Model	FCC ID/DOC	Cable
PC	IBM	R400	DOC	--
Earphone	--	--	--	Data cable of 1.0m length
Mouse	BIGCOW	HM0509	DOC	Data cable of 1.5m length

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 15.107 ,15.207and RSS-210

Frequency (MHz)	Class A Limits (dB $\mu$ V)		Class B Limits (dB $\mu$ 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

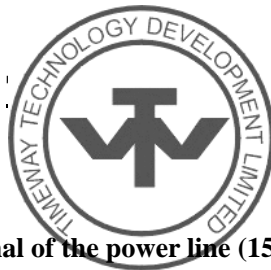
5.6 Test Results

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

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.



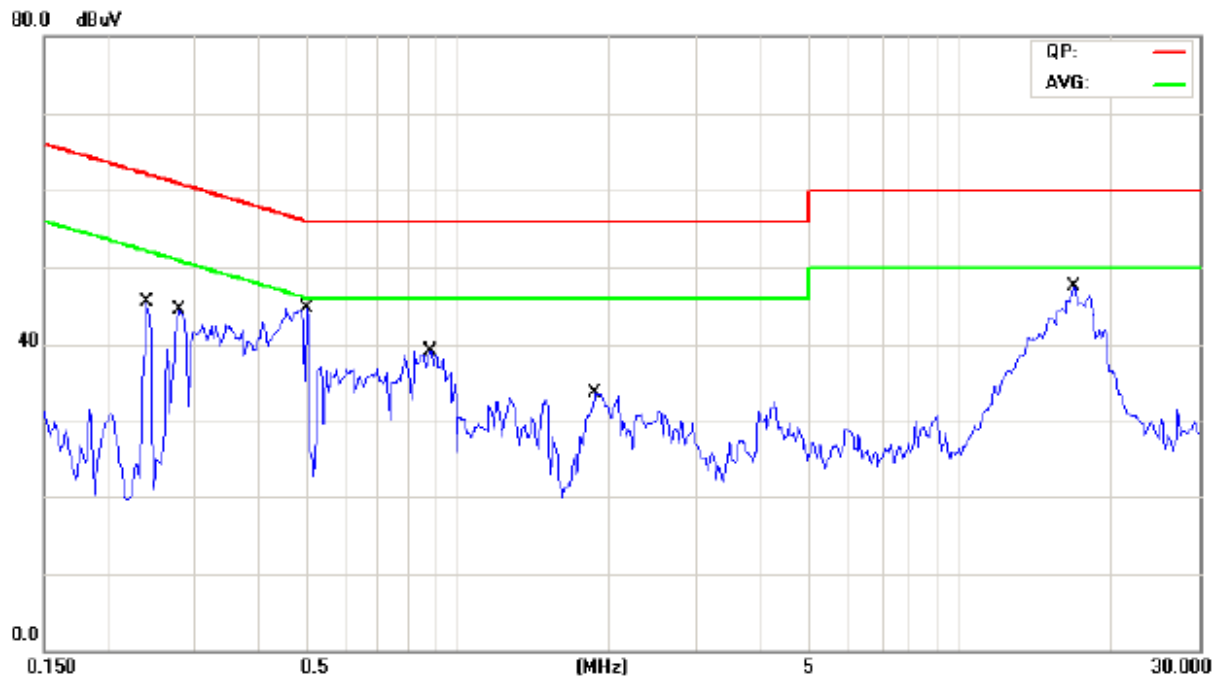
# **A Conducted Emission on Line Terminal of the power line (150kHz to 30MHz)**

EUT set Condition: Charging Mode

Power supply model: N/A

**Results: Pass**

Please refer to following diagram for individual



Frequency (MHz)	Line	Reading(dBμV)		Limit(dBμV)	
		Quasi-peak	Average	Quasi-peak	Average
16.902	Live	41.38	34.92	60.00	50.00
0.884	Live	30.85	16.07	56.00	46.00
0.501	Live	40.57	19.83	56.00	46.00
0.278	Live	39.53	24.58	60.85	50.85
0.239	Live	38.29	13.54	62.10	52.10
1.880	Live	23.12	12.60	56.00	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.



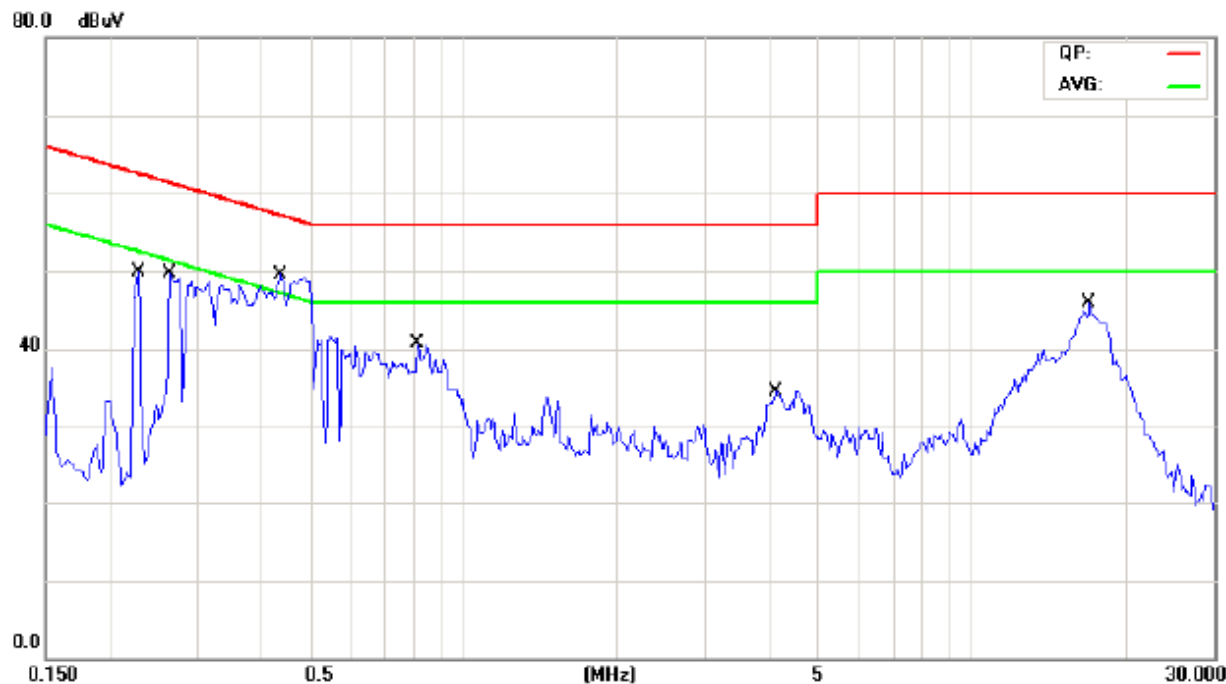
## B Conducted Emission on Neutral Terminal of the power line (150kHz to 30MHz)

EUT set Condition: Charging Mode

Power supply model: N/A

**Results: Pass**

Please refer to following diagram for individual



Frequency (MHz)	Line	Reading(dBμV)		Limit(dBμV)	
		Quasi-peak	Average	Quasi-peak	Average
0.228	Neutral	42.44	16.85	62.52	52.52
0.435	Neutral	43.54	27.06	57.15	47.15
0.810	Neutral	31.80	16.45	56.00	46.00
17.023	Neutral	40.33	33.56	60.00	50.00
4.113	Neutral	29.77	22.27	56.00	46.00
0.263	Neutral	42.34	22.77	61.32	51.32

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.

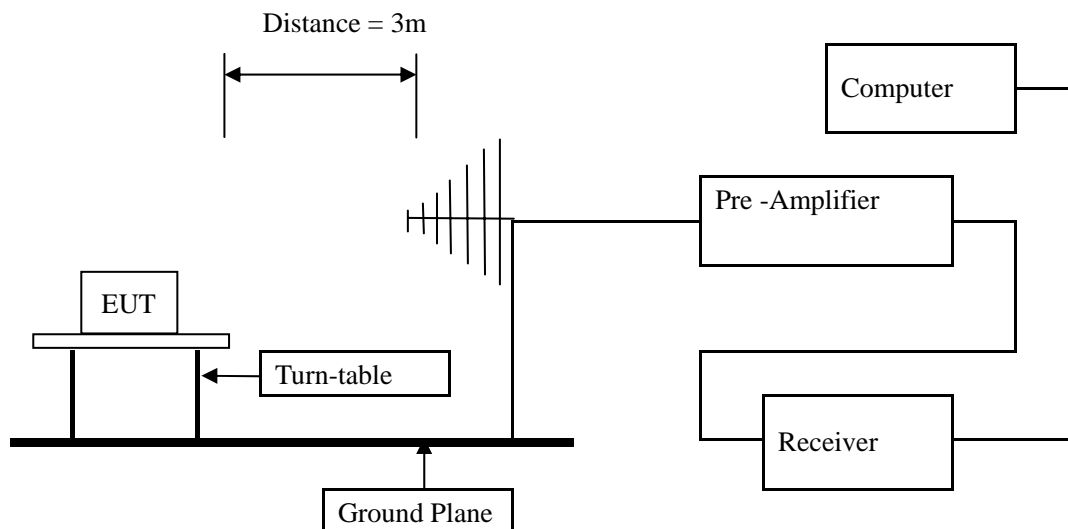


## 6 Radiated Emission Test

### 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 1 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 a resolution bandwidth of 1 MHz . 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) Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "QP" in the data table.
- (6) The antenna polarization : Vertical polarization and Horizontal polarization.

#### Block diagram of Test setup



### 6.2 Configuration of The EUT

Same as section 5.3 of this report

### 6.3 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:

**Frequencies in restricted band are complied to limit on Paragraph 15.109. 15.209**

Frequency Range (MHz)	Distance (m)	Field strength (dB $\mu$ V/m)
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 ( $\mu$ V)
  2. In the Above Table, the higher limit applies at the band edges.
  3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT



**Test result**

**General Radiated Emission Data and Harmonics Radiated Emission Data**

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

**Results: Pass**

**EUT set Condition: Charging Mode**

Frequency (MHz)	Level@3m (dB $\mu$ V/m)	Antenna Polarity	Limit@3m (dB $\mu$ V/m)
142.745	30.67	H	43.50
175.791	31.99	H	43.50
243.827	30.35	H	46.00
319.639	32.52	H	46.00
98.036	24.98	V	43.50
175.791	23.96	V	43.50

**EUT set Condition: Keep Transmitting under Low CH**

Frequency (MHz)	Level@3m (dB $\mu$ V/m)	Antenna Polarity	Limit@3m (dB $\mu$ V/m)
37.351	22.53	H	40.00
190.739	26.75	H	43.50
233.700	31.69	H	46.00
325.859	28.90	H	46.00
447.100	31.46	H	46.00
473.775	32.71	H	46.00
39.714	33.27	V	40.00
59.100	27.38	V	40.00
80.925	29.71	V	40.00
146.400	24.46	V	43.50
226.425	29.53	V	46.00
806.000	34.64	V	46.00

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

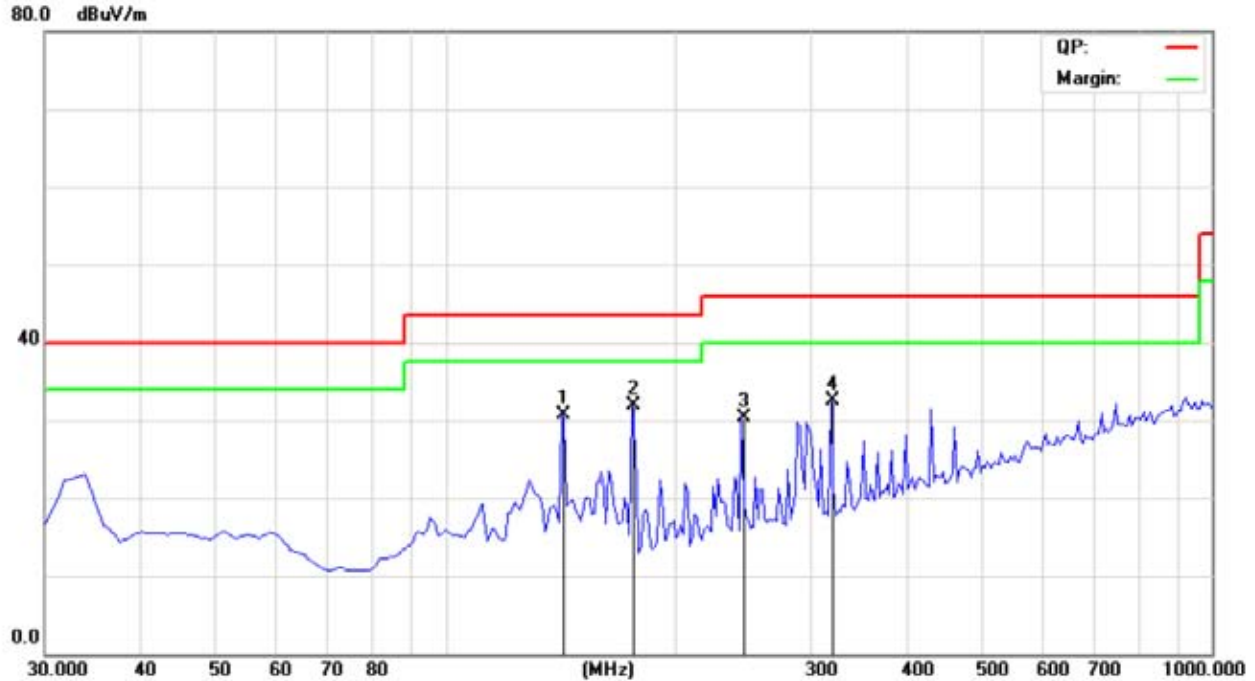
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send 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.

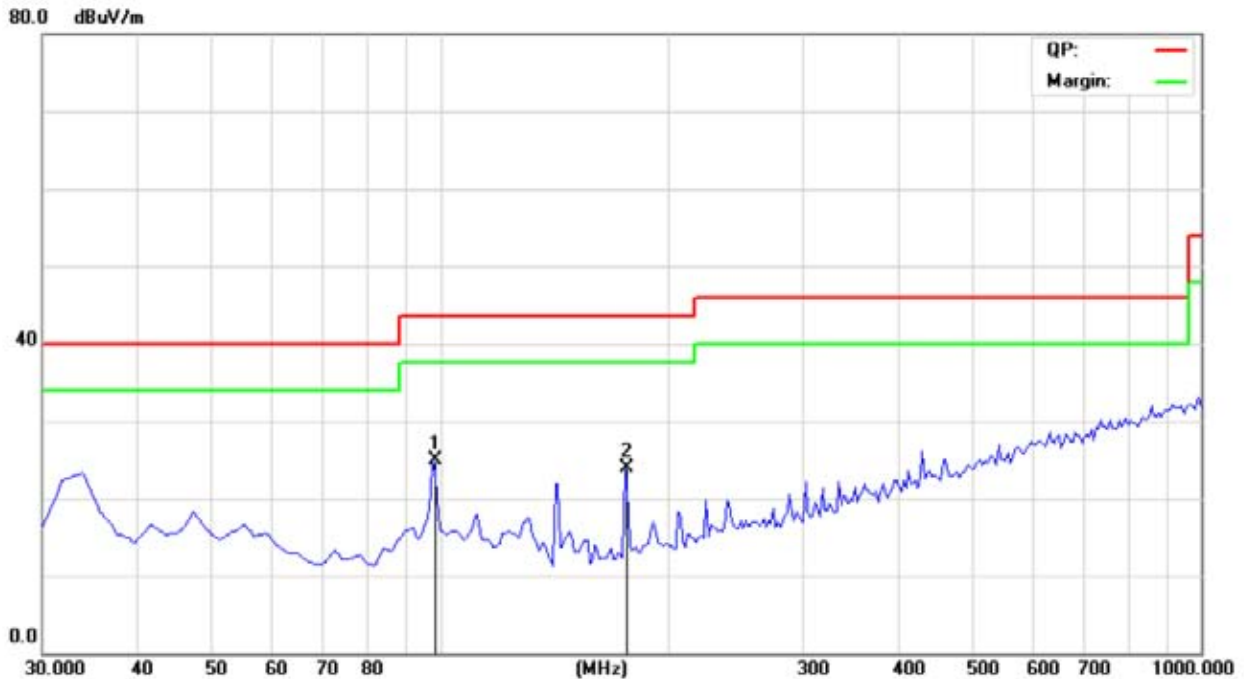


**Test Figure: Charging Mode**

H



V



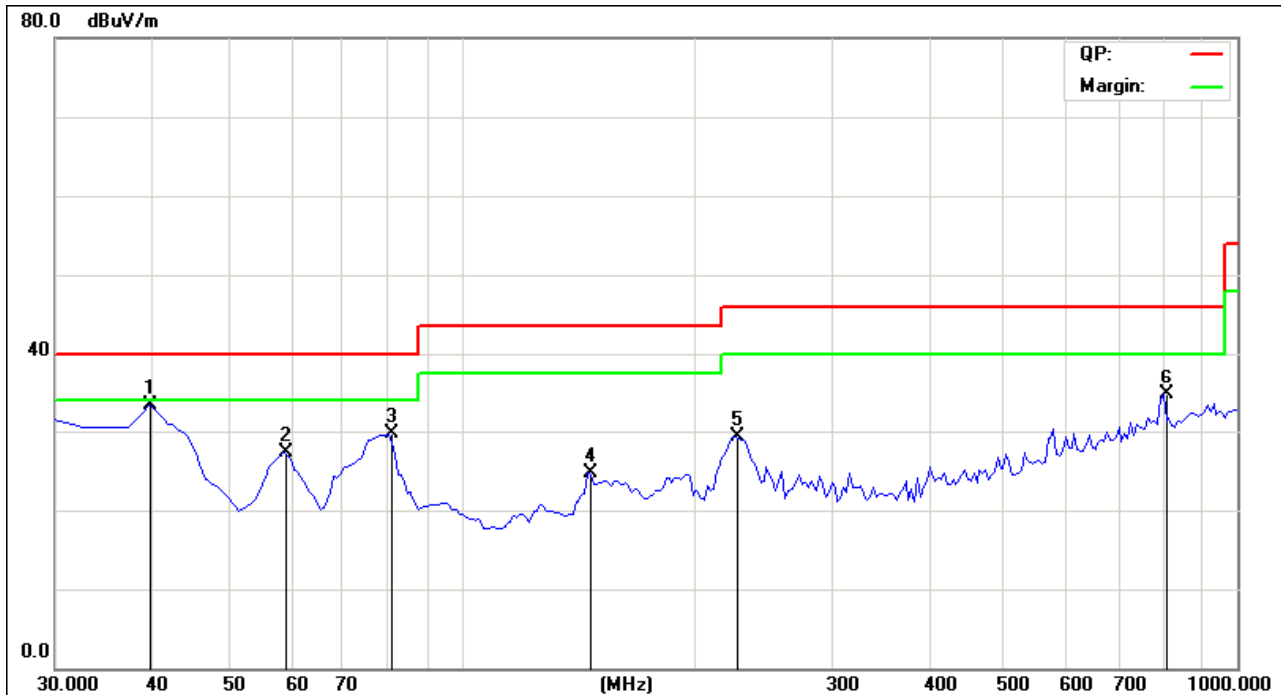
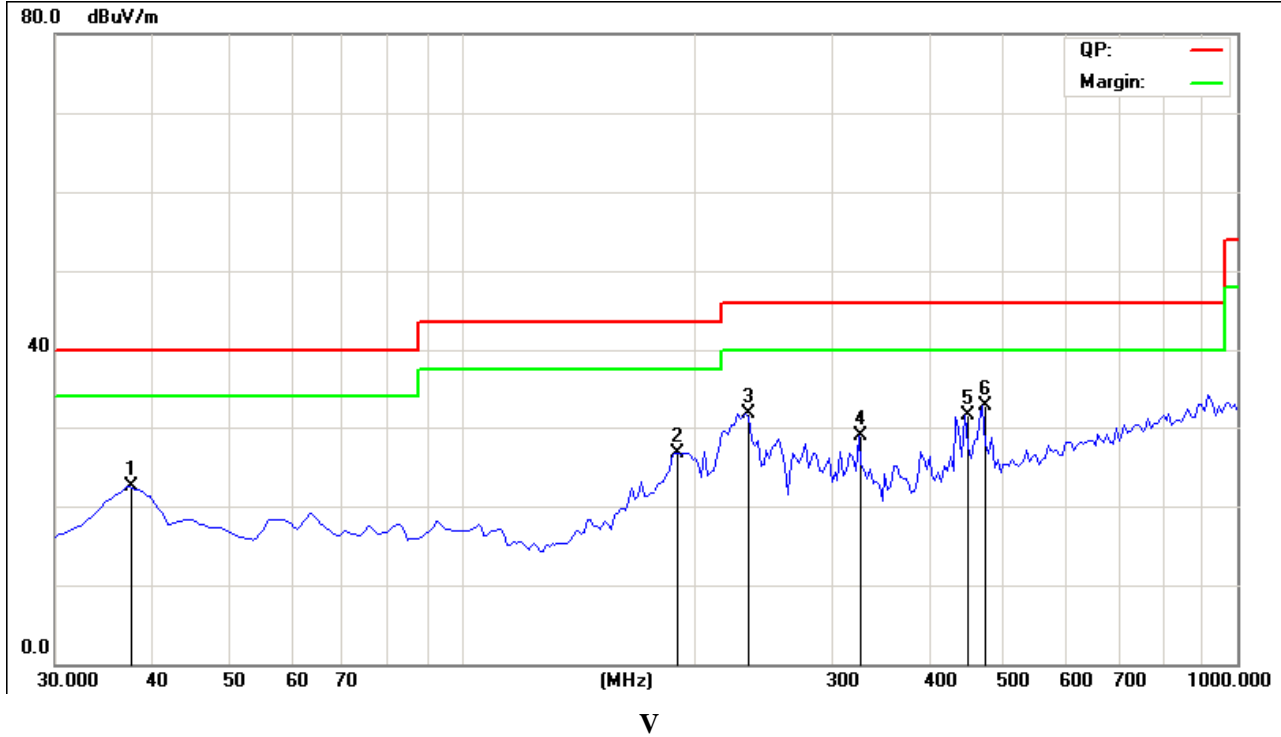
The report refers only to the sample tested and does not apply to the bulk.

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.



**Test Figure: Keep Transmitting under Low CH**  
**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.





**Operation Mode: Transmitting under Low Channel (2402MHz)**

Frequency (MHz)	Level@3m (dB $\mu$ V/m)	Antenna Polarity	Limit@3m (dB $\mu$ V/m)
2402	96.17 (PK) /88.32 (AV)	V	Fundamental Frequency
2402	100.46 (PK) /92.25 (AV)	H	
4804	42.65(PK)	H	74(Peak)/ 54(AV)
4804	40.49(PK)	V	
7206	--	H/V	74(Peak)/ 54(AV)
9608	--	H/V	74(Peak)/ 54(AV)
12010	--	H/V	74(Peak)/ 54(AV)
14412	--	H/V	74(Peak)/ 54(AV)
16814	--	H/V	74(Peak)/ 54(AV)
19216	--	H/V	74(Peak)/ 54(AV)
21618	--	H/V	74(Peak)/ 54(AV)
24020	--	H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit  
2. Remark “---” means that the emissions level is too low to be measured

**Operation Mode: Transmitting g under Middle Channel (2441MHz)**

Frequency (MHz)	Level@3m (dB $\mu$ V/m)	Antenna Polarity	Limit@3m (dB $\mu$ V/m)
2442	96.23 (PK) /87.26 (AV)	H	Fundamental Frequency
2442	99.24 (PK) /88.55 (AV)	V	
4884	41.45(PK)	H	74(Peak)/ 54(AV)
4884	40.91(PK)	V	
7326	--	H/V	74(Peak)/ 54(AV)
9768	--	H/V	74(Peak)/ 54(AV)
12210	--	H/V	74(Peak)/ 54(AV)
14652	--	H/V	74(Peak)/ 54(AV)
17094	--	H/V	74(Peak)/ 54(AV)
19536	--	H/V	74(Peak)/ 54(AV)
21978	--	H/V	74(Peak)/ 54(AV)
24420	--	H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit  
2. Remark “---” means that the emissions level is too low to be measured

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 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.



**Operation Mode: Transmitting under High Channel**

Frequency (MHz)	Level@3m (dB $\mu$ V/m)	Antenna Polarity	Limit@3m (dB $\mu$ V/m)
2480	100.71 (PK) /91.90 (AV)	H	Fundamental Frequency
2480	97.24 (PK) /88.76 (AV)	V	
4960	41.36(PK)	H/V	74(Peak)/ 54(AV)
4960	42.41(PK)		
7440	--	H/V	74(Peak)/ 54(AV)
9920	--	H/V	74(Peak)/ 54(AV)
12400	--	H/V	74(Peak)/ 54(AV)
14880	--	H/V	74(Peak)/ 54(AV)
17360	--	H/V	74(Peak)/ 54(AV)
19840	--	H/V	74(Peak)/ 54(AV)
22320	--	H/V	74(Peak)/ 54(AV)
24800	--	H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

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

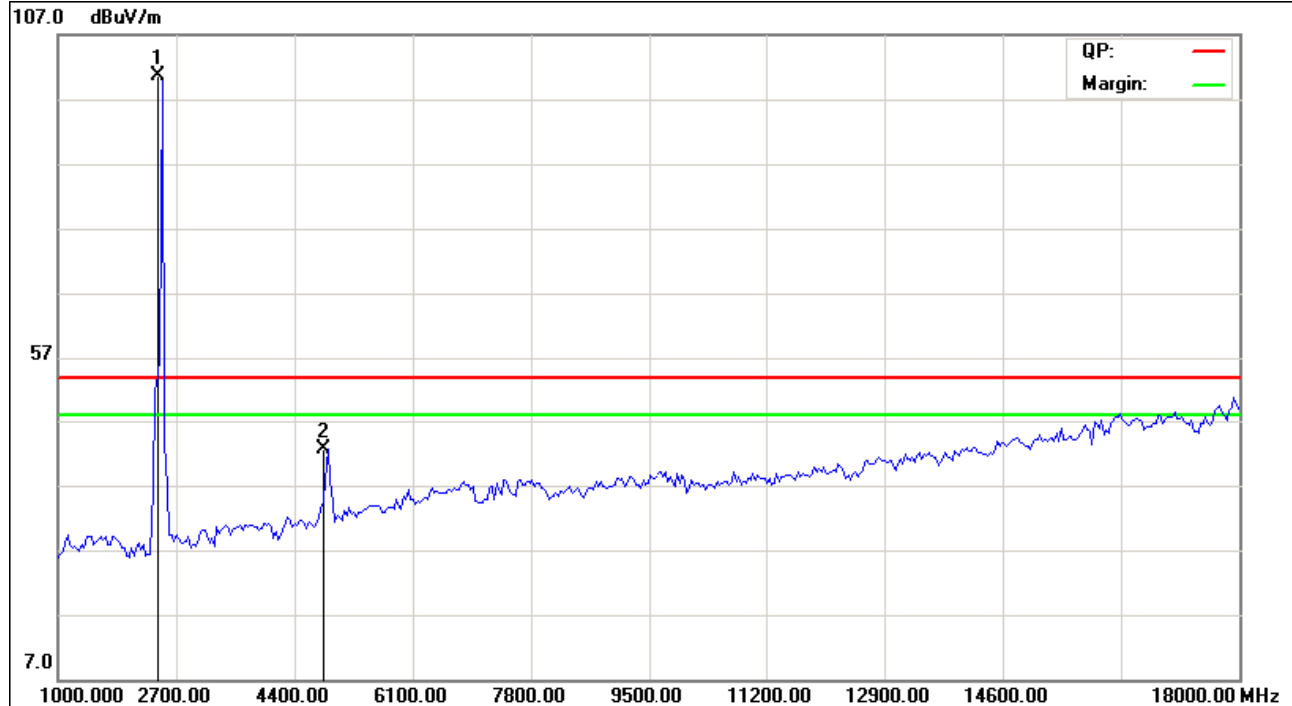
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show 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.

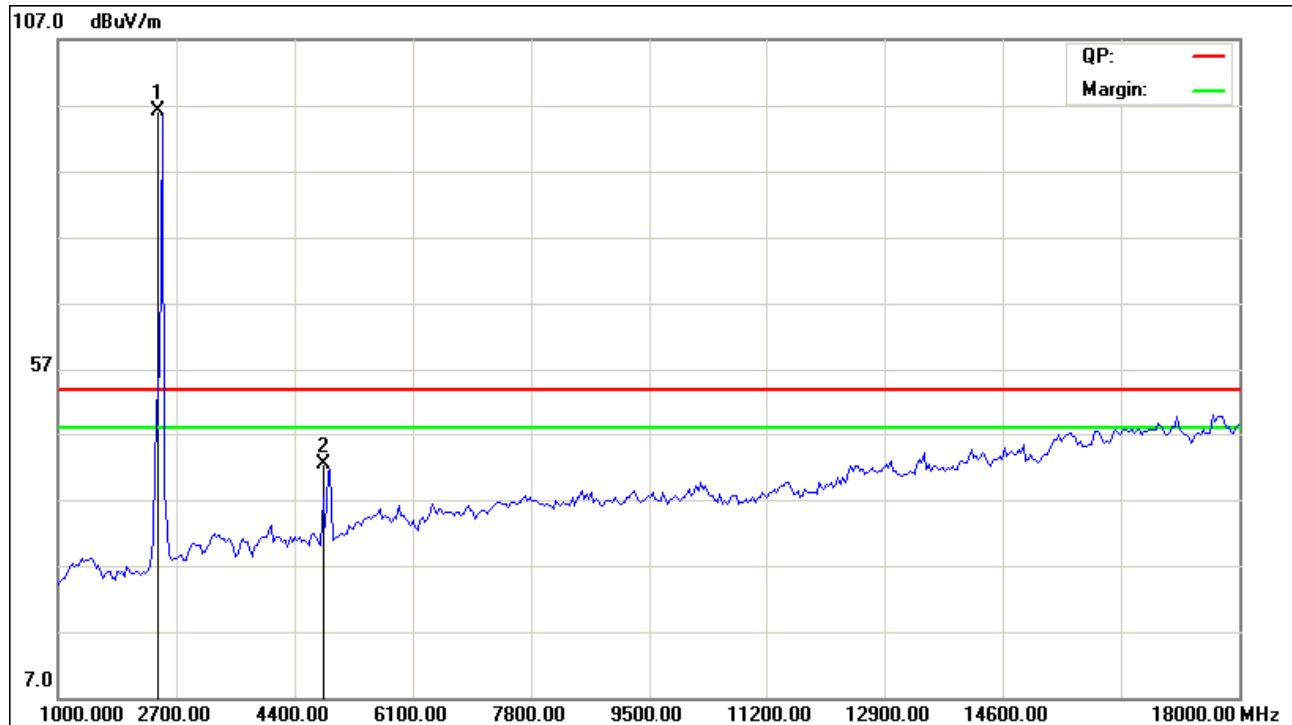


Please refer to the following test plots for details:

**Low Channel: Horizontal**



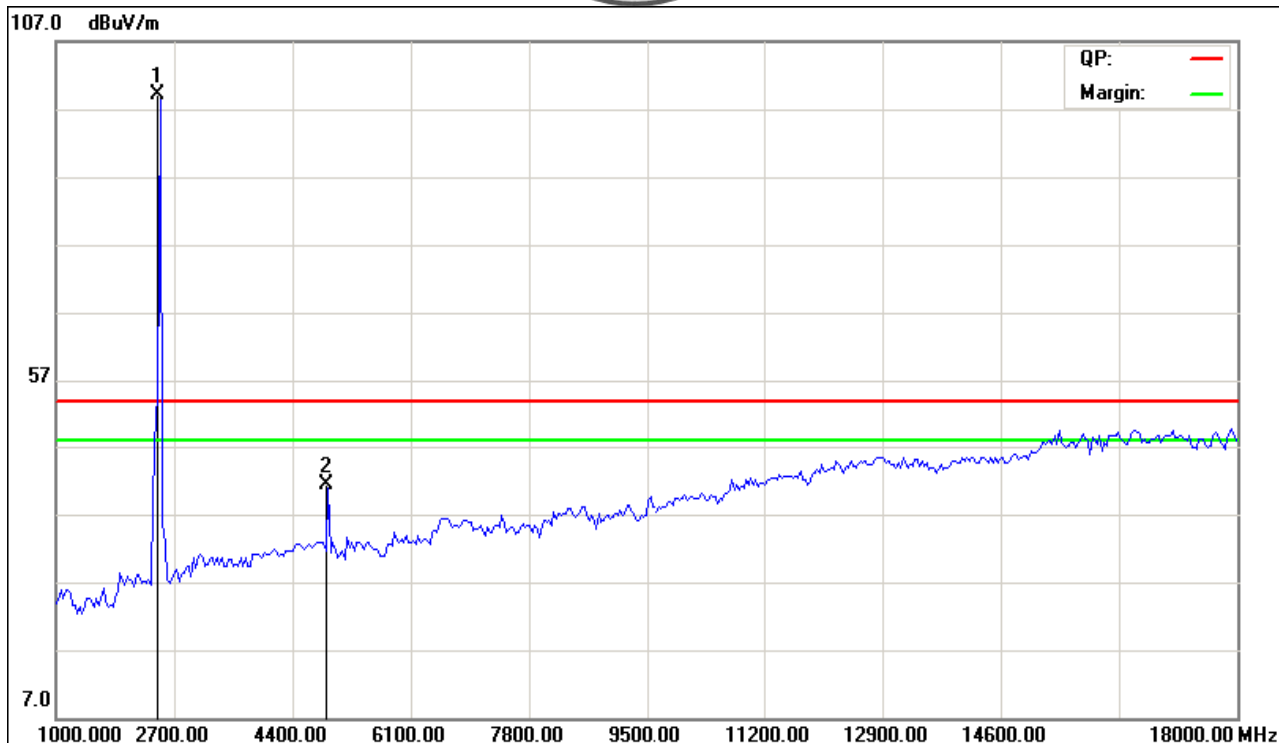
**Low Channel : Vertical**



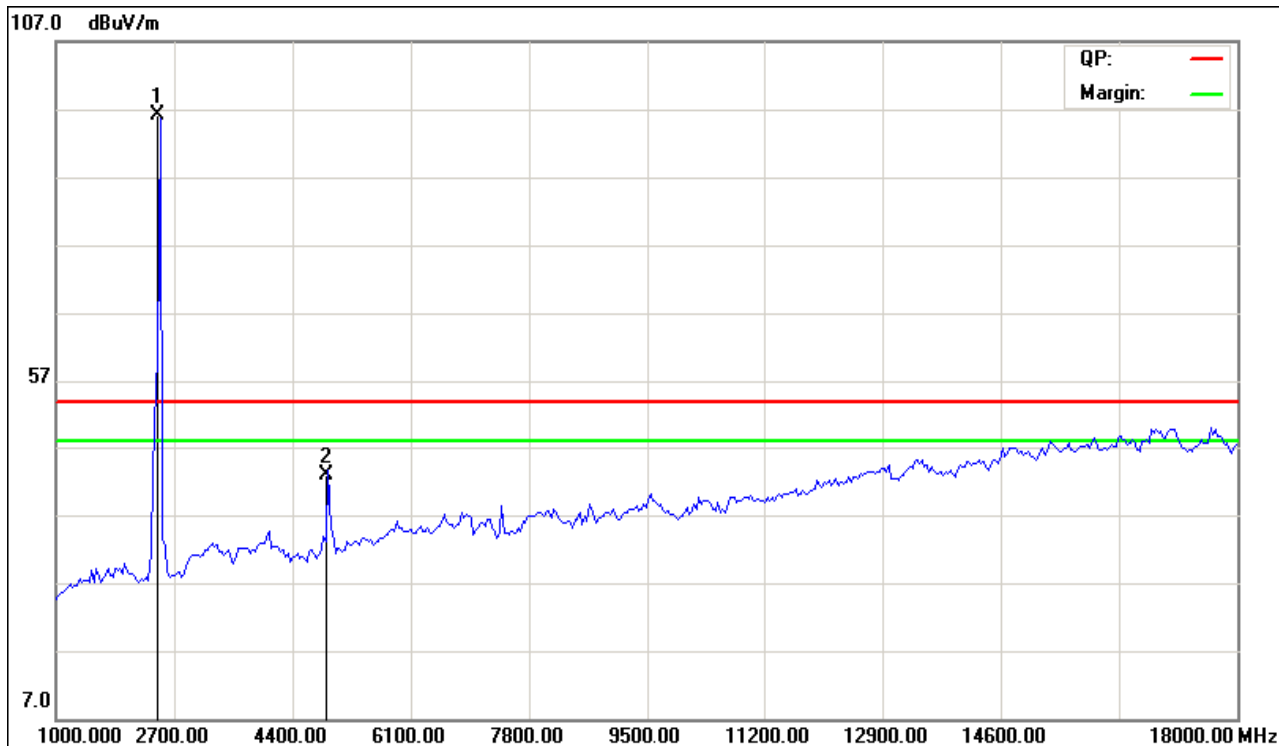
The report refers only to the sample tested and does not apply to the bulk.  
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be 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.



### Middle Channel : Horizontal



### Middle Channel :: Vertical



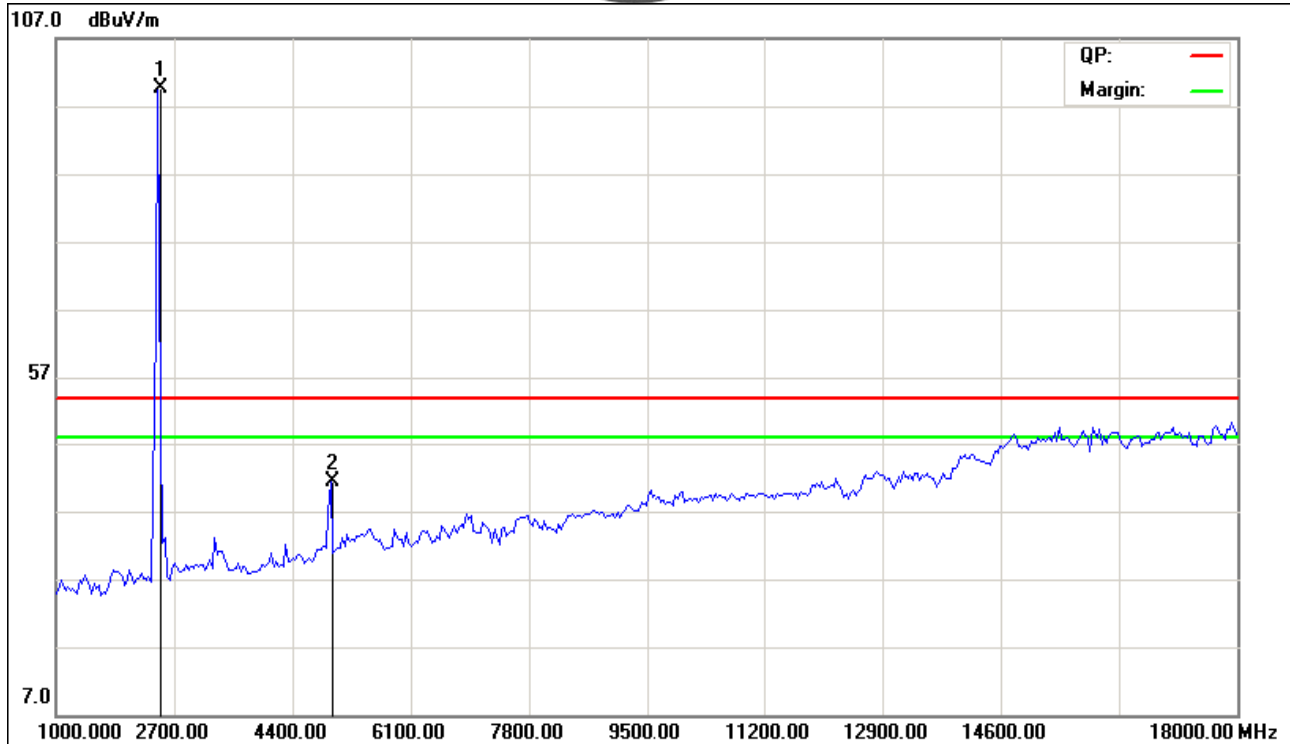
The report refers only to the sample tested and does not apply to the bulk.

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.

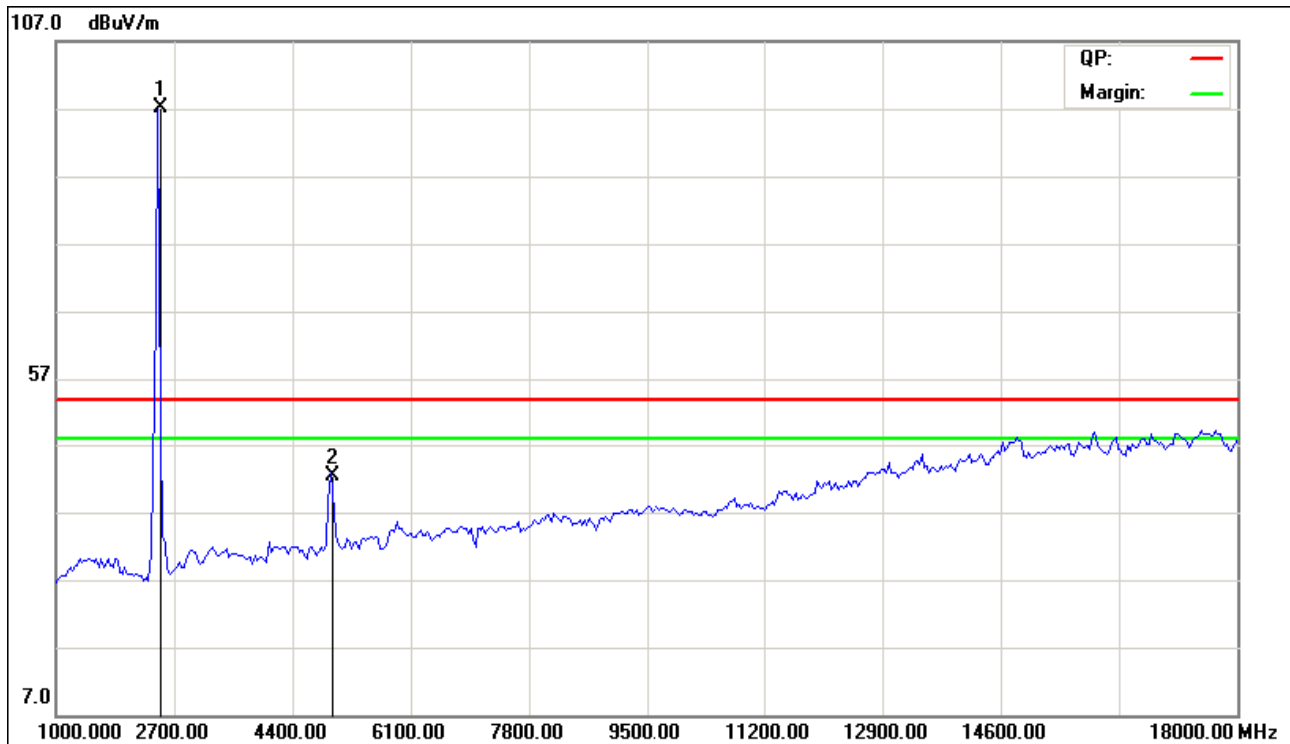
In the event of the improper use of the report, the Shenzhen Timeway Technology Consulting Co., Ltd. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



### High Channel : Horizontal



### High Channel : Vertical



**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.



## 7.0 20dB Bandwidth Measurement

### 7.1 Regulation

According to §15.247(b)(1), for frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts. According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### 7.2 Limits of 20dB Bandwidth Measurement

N/A

### 7.3 Test Procedure.

1. Check the calibration of the measuring instrument (spectrum analyzer) using either an internal calibrator or a known signal from an external generator.
2. Set the spectrum analyzer as follows: Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel RBW > the 20 dB bandwidth of the emission being measured VBW ≥ RBW Sweep = auto Detector function = peak Trace = max hold
3. Measure the highest amplitude appearing on spectral display and record the level to calculate results. 6. Repeat above procedures until all frequencies measured were complete.

### 7.4 Test Result

EUT		Keyboard		Model		GL-X10BT	
Mode		Keep Transmitting		Input Voltage		DC 3.7V	
Temperature		24 deg. C,		Humidity		56% RH	
Channel	Channel Frequency (MHz)	20 dB Bandwidth (kHz)		Maximum Limit (kHz)		Pass/ Fail	
Low	2402	1152.3		--		Pass	
Middle	2442	1132.3		--		Pass	
High	2480	1132.3		--		Pass	

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

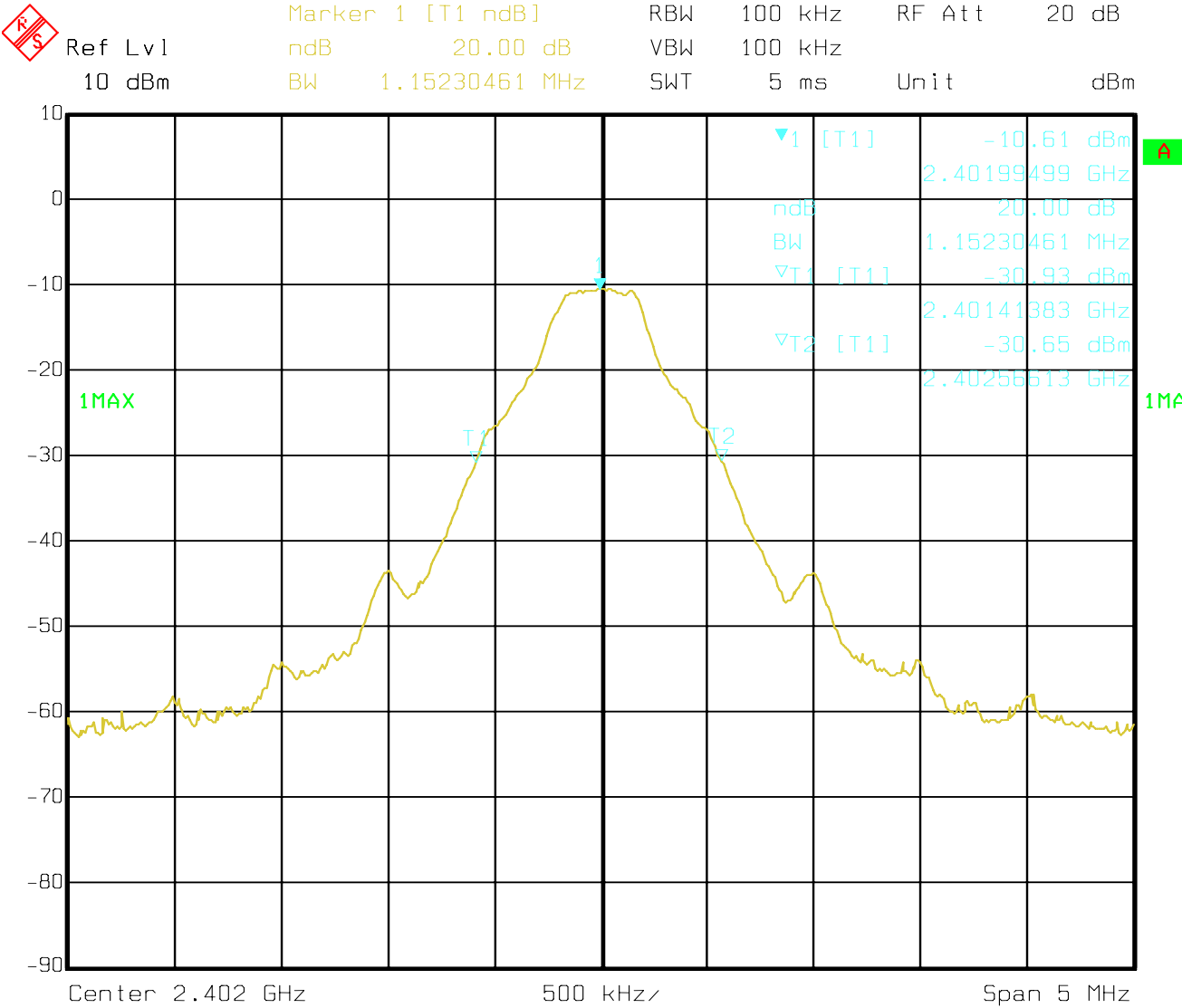
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show 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.



Test Figure:

1. Condition: Low Channel

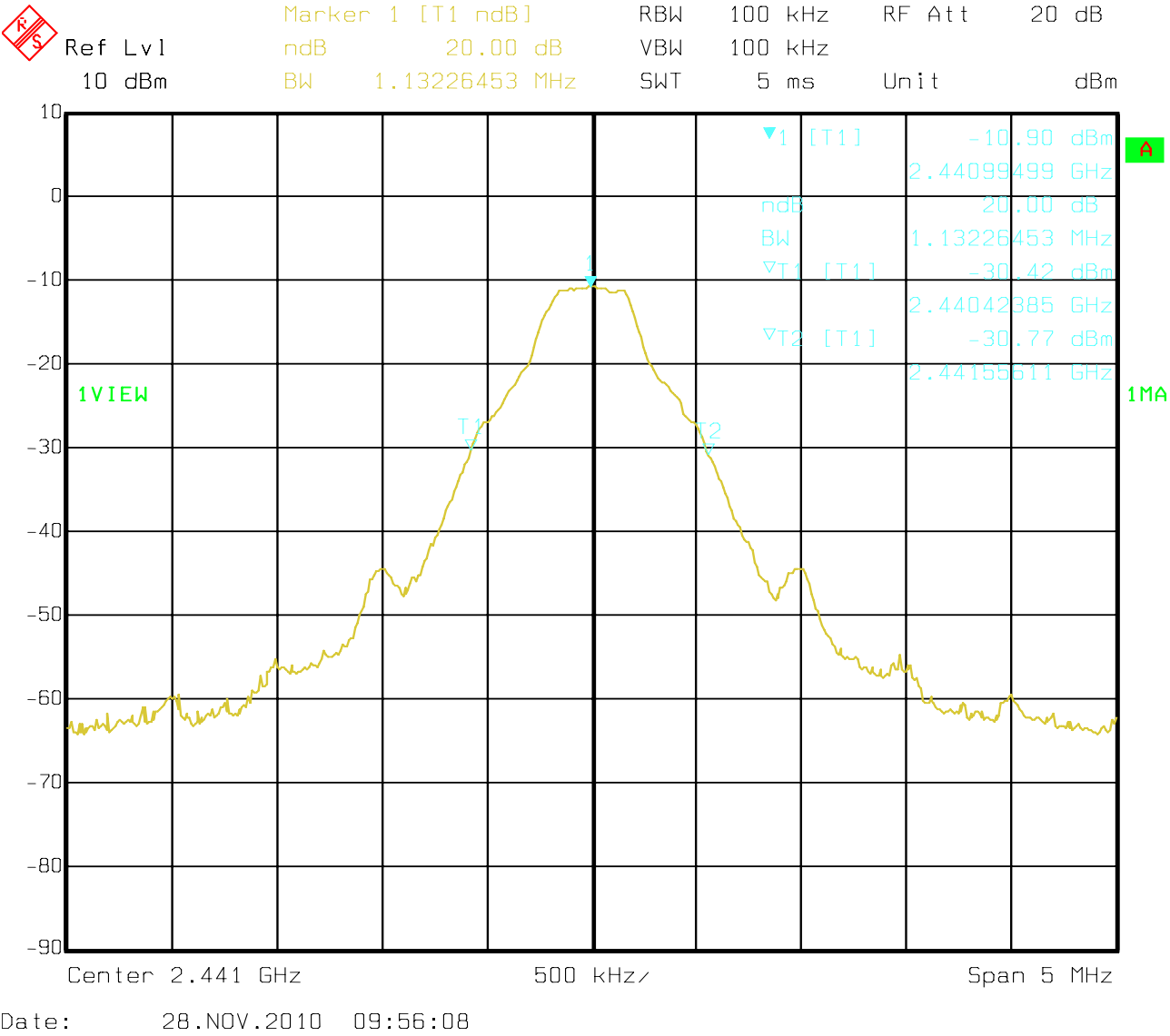


Date: 28.NOV.2010 09:51:26

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.



2. Condition: Middle Channel

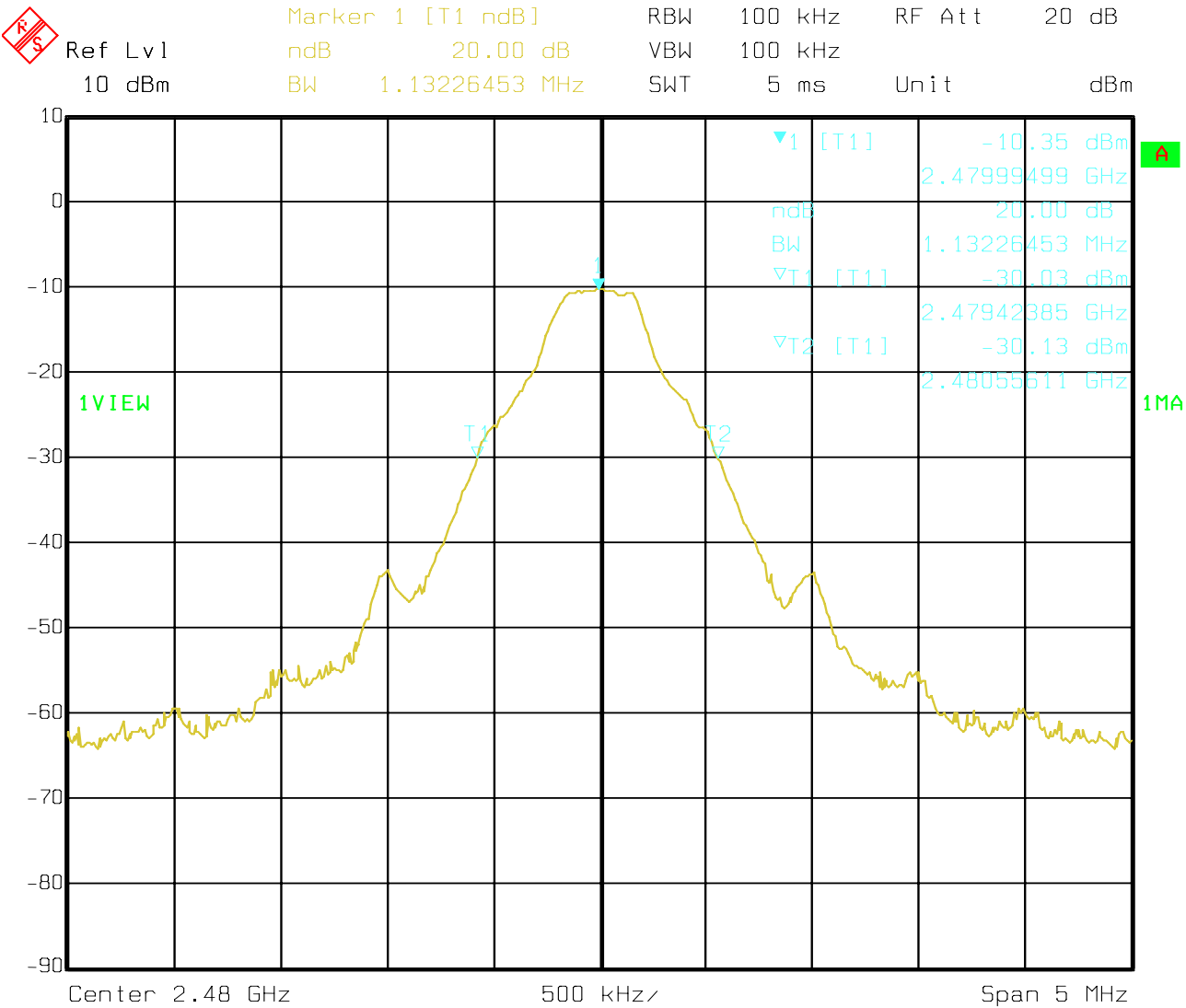


The report refers only to the sample tested and does not apply to the bulk.  
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced in its entirety or in part and it may not be used for 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. High Channel



Date: 28.NOV.2010 09:58:13

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 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. Maximum Peak Output Power

### 8.1 Regulation

According to §15.247(b)(1), for frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5MHz band:0.125 watts. According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### 8.2 Limits of Maximum Peak Output Power

The Maximum Peak Output Power Measurement is 20.97dBm.

### 8.3 Test Procedure

1. Check the calibration of the measuring instrument (spectrum analyzer) using either an internal calibrator or a known signal from an external generator.
2. Set the spectrum analyzer as follows: Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel; RBW > the 20 dB bandwidth of the emission being measured; VBW  $\geq$  RBW; Sweep = auto; Detector function = peak; Trace = max hold
3. Measure the highest amplitude appearing on spectral display and record the level to calculate results.
4. Repeat above procedures until all frequencies measured were complete.

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.



#### 8.4 Test Results

EUT		Keyboard		Model	GL-X10BT
Mode		Keep Transmitting		Input Voltage	DC 3.7V
Temperature		24 deg. C,		Humidity	56% RH
Channel	Channel Frequency (MHz)	Peak Power Output (dBm)	Peak Power Limit (dBm)	Pass/ Fail	
Low	2402	-7.19	20.97	Pass	
Middle	2442	-7.19	20.97	Pass	
High	2480	-6.69	20.97	Pass	

Note: 1. the result basic equation calculation as follow:

$$\text{Peak Power Output} = \text{Peak Power Reading} + \text{Cable loss} + \text{Attenuator}$$

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.



## 9. Carrier Frequency Separation

### 9.1 Regulation

According to §15.247(a)(1), frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

### 9.2 Limits of Carrier Frequency Separation

The Maximum Power Spectral Density Measurement is 25kHz or two-thirds of the 20dB bandwidth of the hopping Channel which is great.

### 9.3 Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Set the spectrum analyzer as follows: Span = wide enough to capture the peaks of two adjacent channels: Resolution (or IF) Bandwidth (RBW)  $\geq$  1% of the span; Video (or Average) Bandwidth (VBW)  $\geq$  RBW; Sweep = auto; Detector function = peak; Trace = max hold
3. Measure the separation between the peaks of the adjacent channels using the marker-delta function.
4. Repeat above procedures until all frequencies measured were complete.

### 9.4 Test Result

EUT	Keyboard		Model	GL-X10BT
Mode	Keep Transmitting		Input Voltage	DC 3.7V
Temperature	24 deg. C,		Humidity	56% RH
Channel	Channel Frequency (MHz)	Carrier Frequency Separation	Limit	Pass/ Fail
Middle	2442	1.0MHz	$\geq$ 25 kHz or 20 dB bandwidth	Pass

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

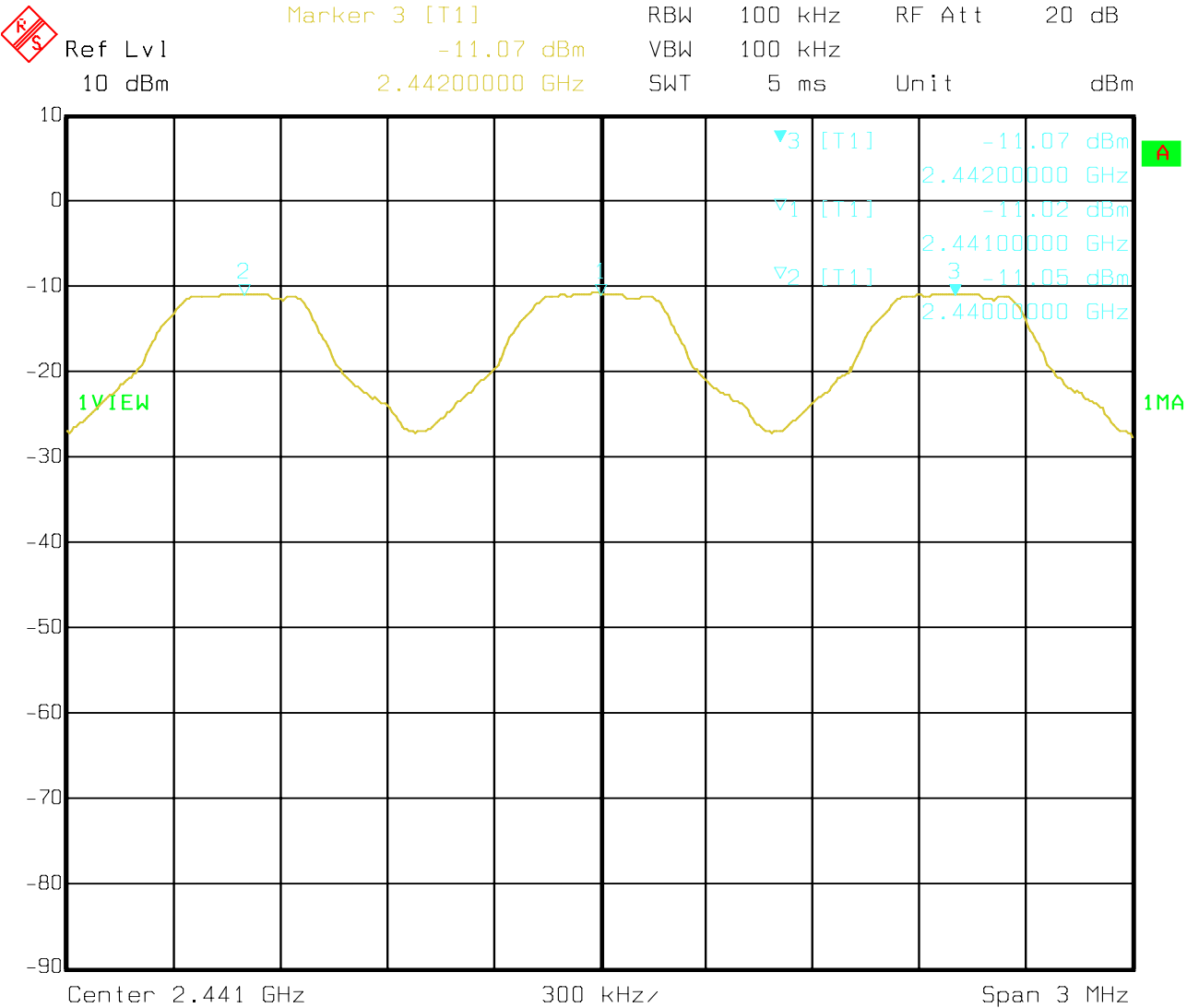
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send 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 rights to withdraw it and to adopt any other remedies which may be appropriate.



Test Plots

Middle Channel



Date: 28.NOV.2010 10:19:28

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 advertizing. 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. Number of Hopping Channels

### 10.1 Regulation

According to §15.247(a)(1)(iii), frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used. According to §15.247(b)(1), for frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

### 10.2 Limits of Number of Hopping Channels

The frequency hopping systems in the 2400-2483.5MHz band shall use at least 15 channels.

### 10.3 Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Set the spectrum analyzer as follows: Span = the frequency band of operation; RBW  $\geq$  1% of the span; VBW  $\geq$  RBW; Sweep = auto; Detector function = peak; Trace = max hold
3. Record the number of hopping channels.

### 10.4 Test Result

EUT	Keyboard	Model	GL-X10BT
Mode	Keep Transmitting	Input Voltage	DC 3.7V
Temperature	24 deg. C,	Humidity	56% RH
Operating Frequency	Number of hopping channels	Limit	Pass/ Fail
2402-2480MHz	79	$\geq 15$	Pass

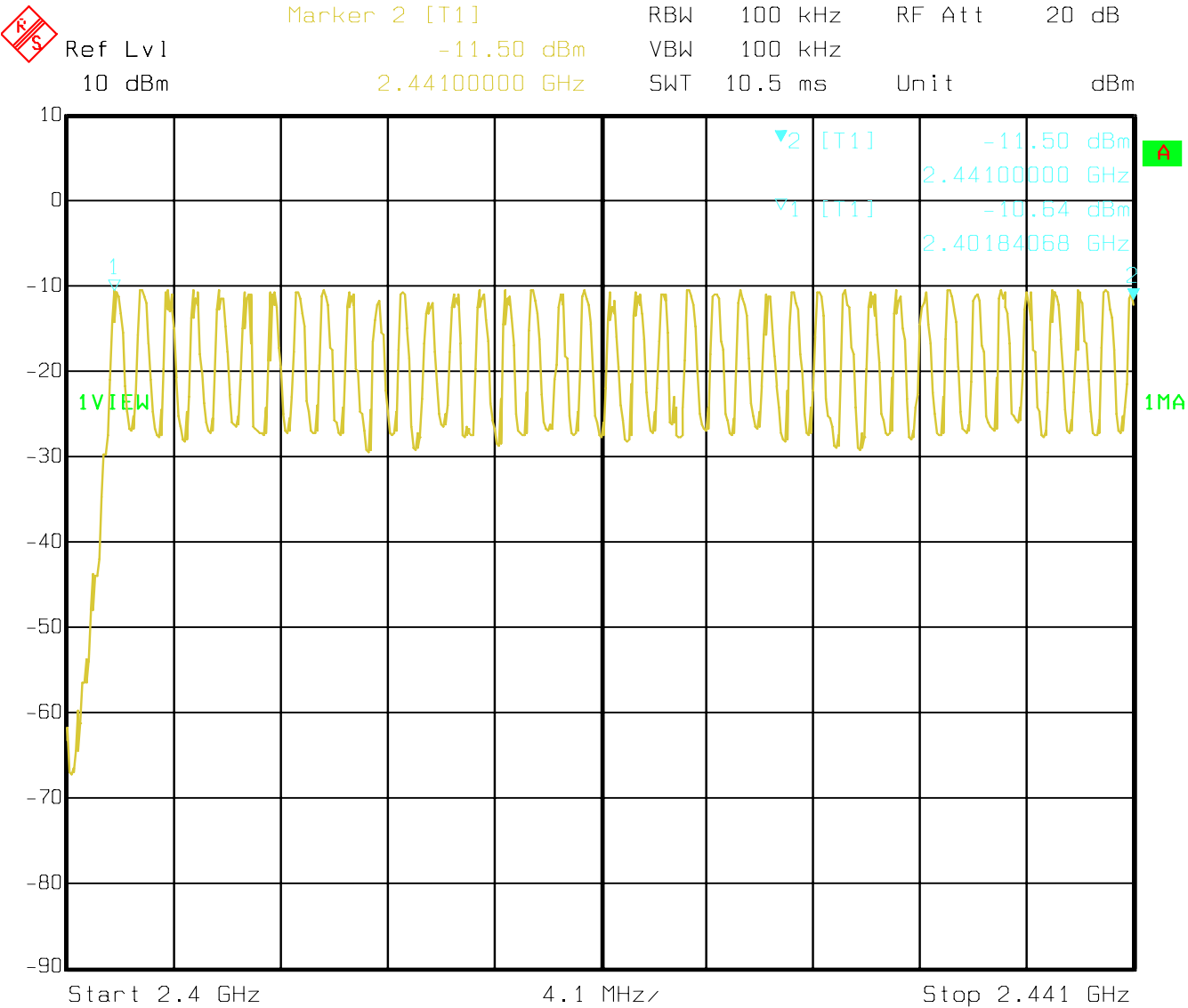
The report refers only to the sample tested and does not apply to the bulk.

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 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.

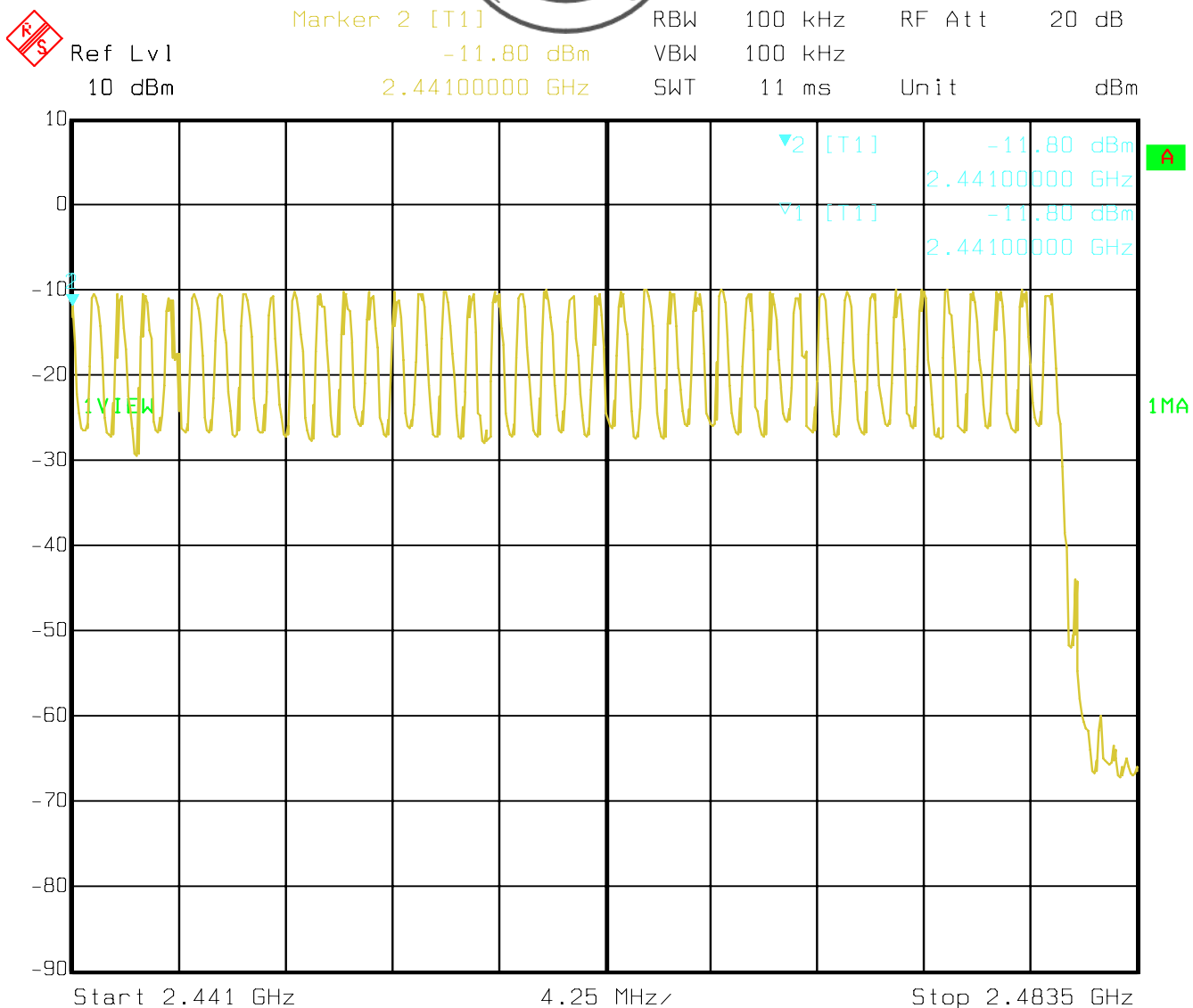


Test Plot



Date: 28.NOV.2010 10:55:53

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 advertizing. 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.



Date: 28.NOV.2010 11:02:34

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.





## **11. Time of Occupancy (Dwell Time)**

### **11.1 Regulation**

According to §15.247(a)(1)(iii), frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

### **11.2 Limits of Carrier Frequency Separation**

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed

### **11.3 Test Procedure**

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Set the spectrum analyzer as follows: Span = zero span, centered on a hopping channel; RBW = 1 MHz; VBW  $\geq$  RBW; Sweep = as necessary to capture the entire dwell time per hopping channel; Detector function = peak; Trace = max hold
3. Measure the dwell time using the marker-delta function.
4. Repeat above procedures until all frequencies measured were complete.
5. Repeat this test for different modes of operation (e.g., data rate, modulation format, etc.), if 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 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.



#### 11.4 Test Result

EUT	Keyboard		Model	GL-X10BT
Mode	Keep Transmitting		Input Voltage	DC 3.7V
Temperature	24 deg. C,		Humidity	56% RH
Channel	Reading	Hopping Rate	Actual	Limit
Low	3.0462	266.667 hop/s	0.324	0.4s
Middle	3.0462	266.667 hop/s	0.324	0.4s
High	3.0462	266.667 hop/s	0.324	0.4s

Actual = Reading  $\times$  (Hopping rate / Number of channels)  $\times$  Test period, Test period = 0.4 [seconds / channel]  $\times$  79 [channel] = 31.6 [seconds] NOTE: The EUT makes worst case 1600 hops per second or 1 time slot has a length of 625 $\mu$ s with 79 channels. A DH5 Packet needs 5 time slot for transmitting and 1 time slot for receiving. Then the EUT makes worst case 266.667 hops per second with 79 channels. And the DH5 is the worst case.

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

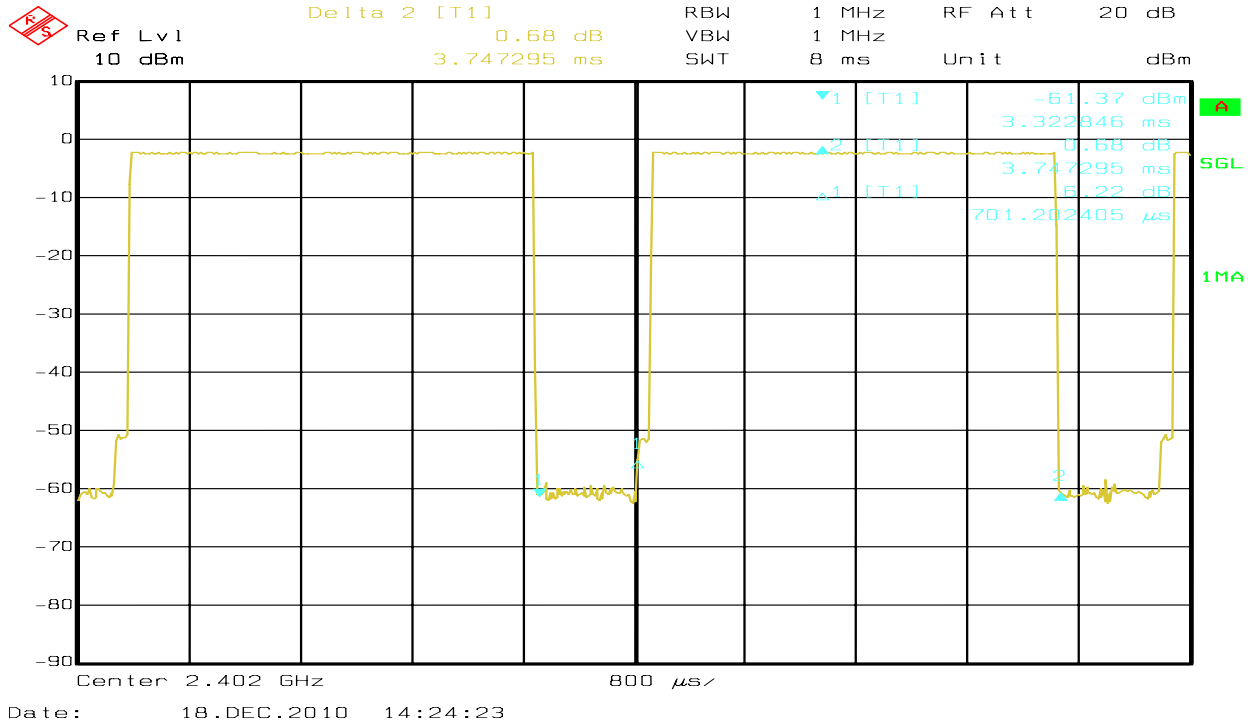
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show 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.

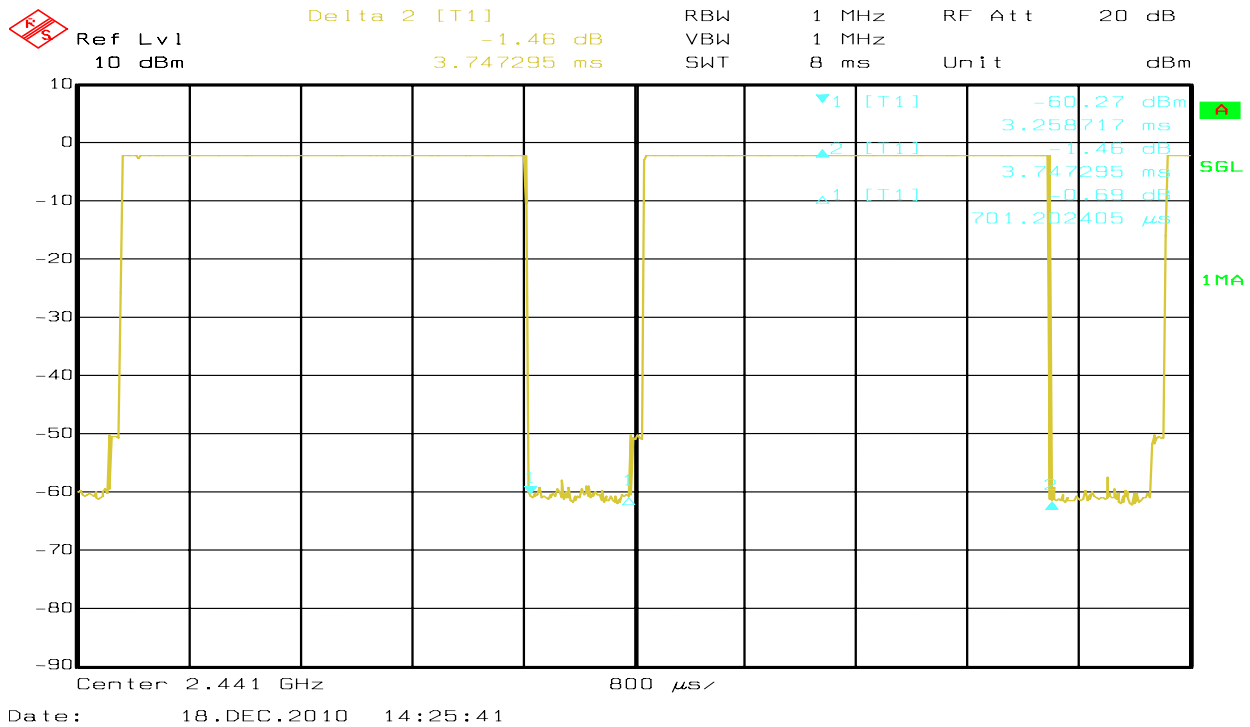


Test Plots:

Low Channel: DH5



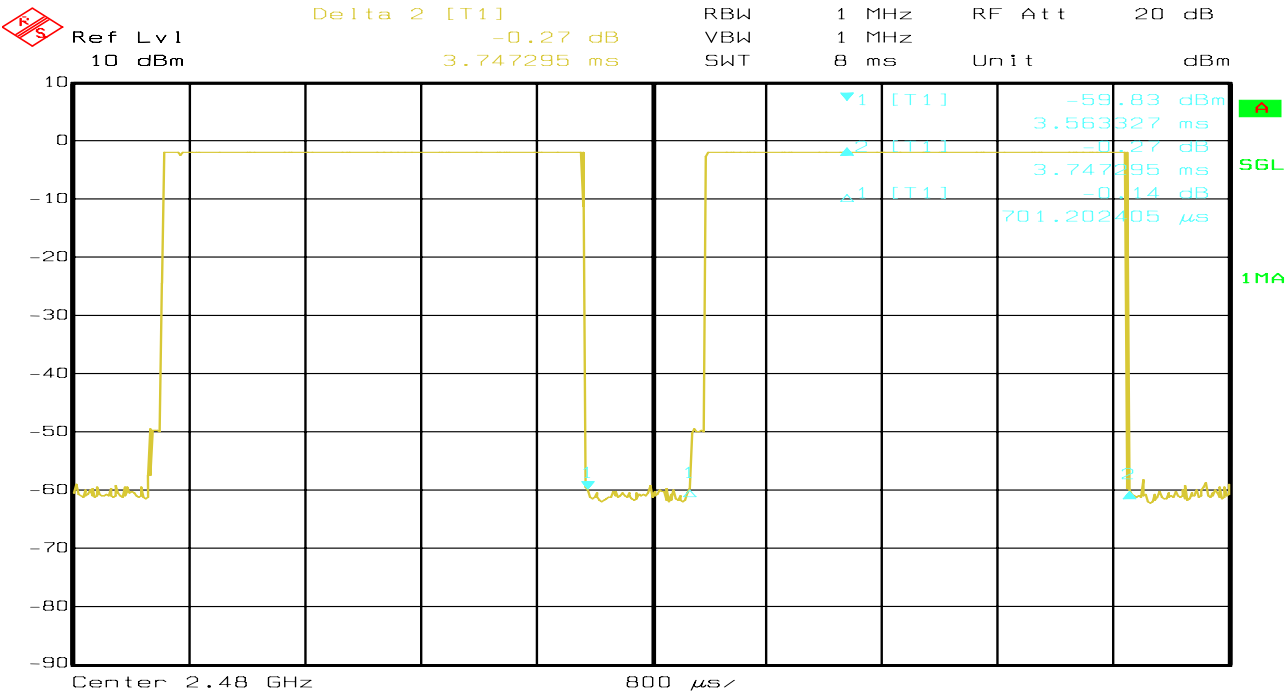
Middle Channel: DH5



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.

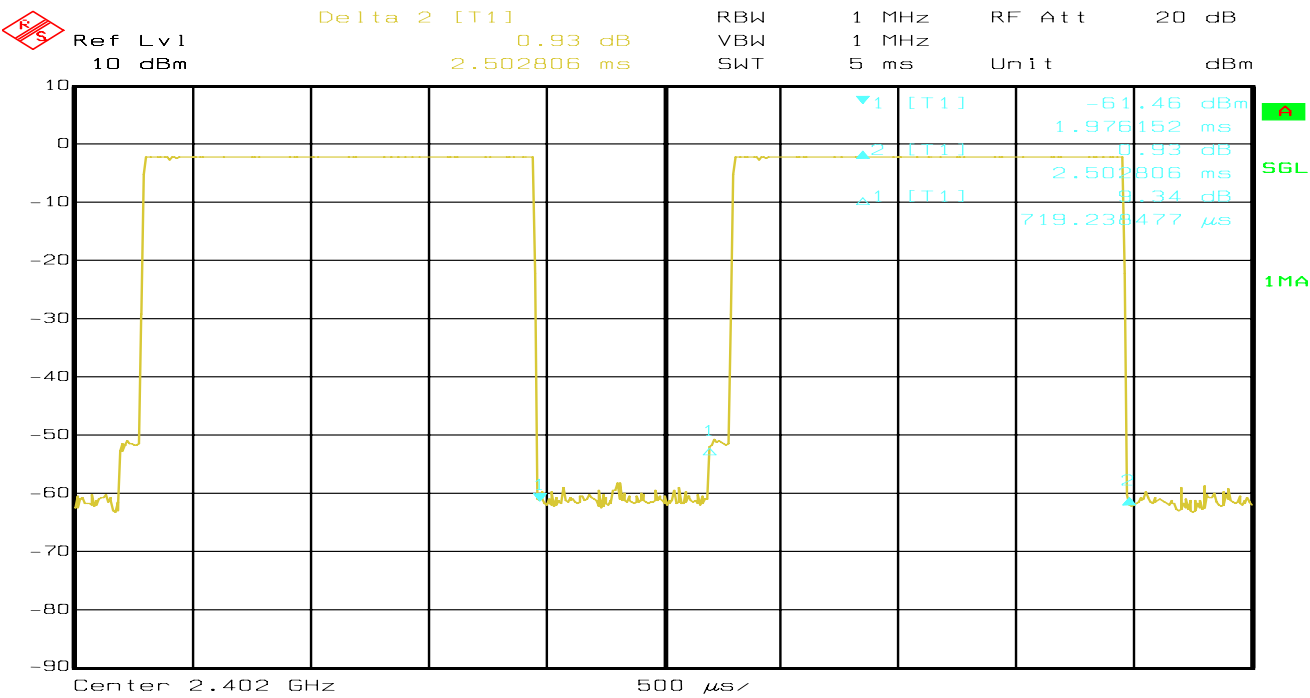


High Channel: DH5



Date: 18.DEC.2010 14:27:07

Low Channel: DH3

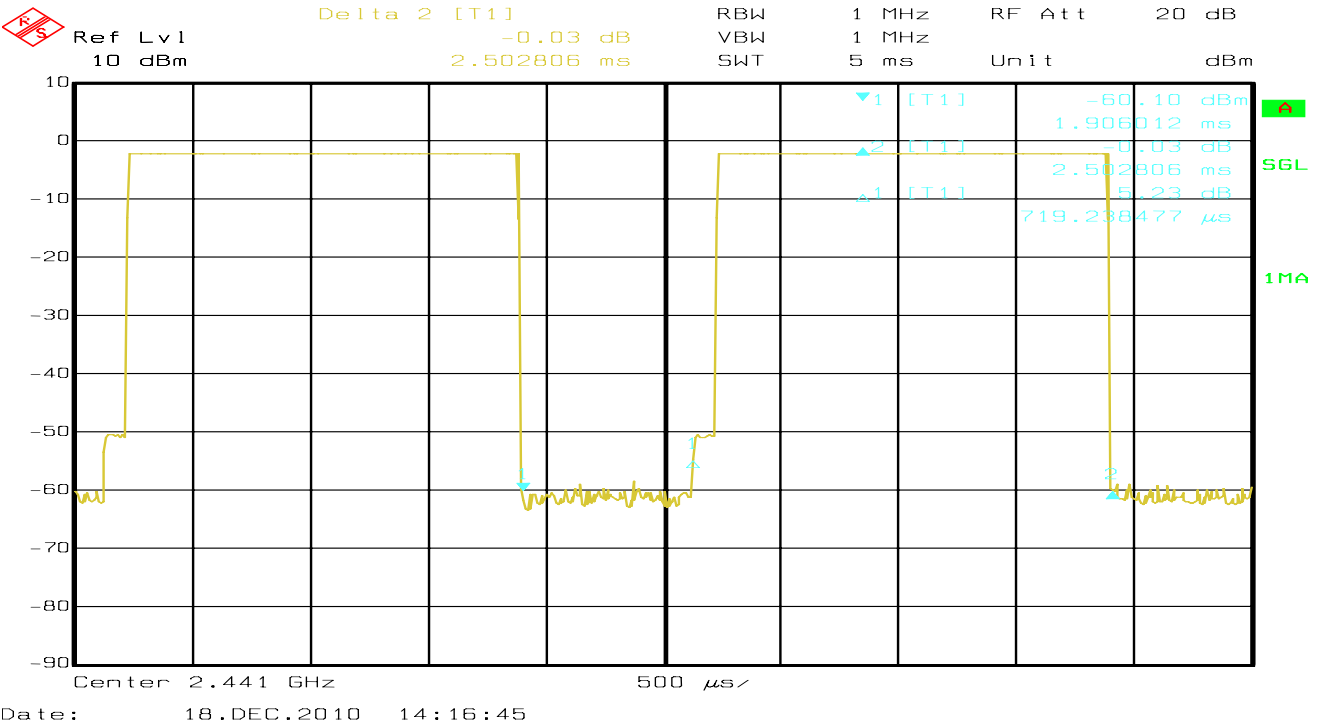


Date: 18.DEC.2010 14:18:08

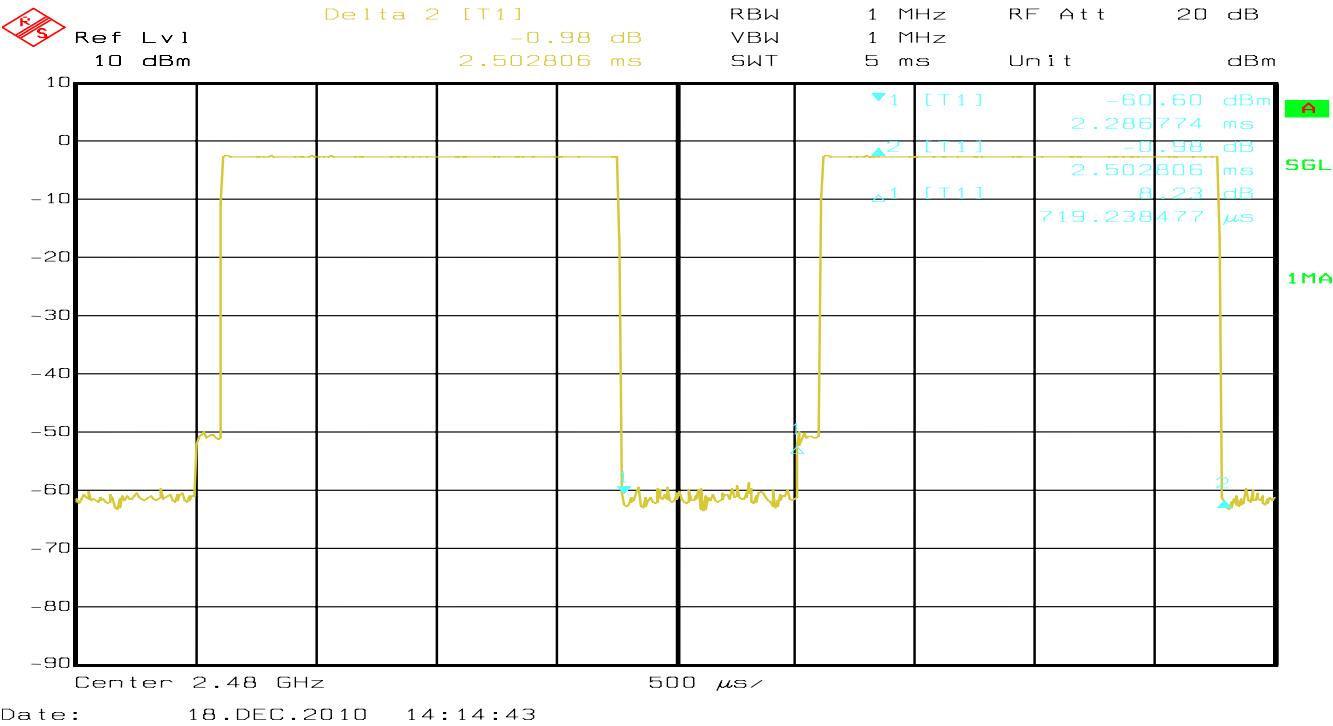
The report refers only to the sample tested and does not apply to the bulk.  
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be 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.



Middle Channel: DH3



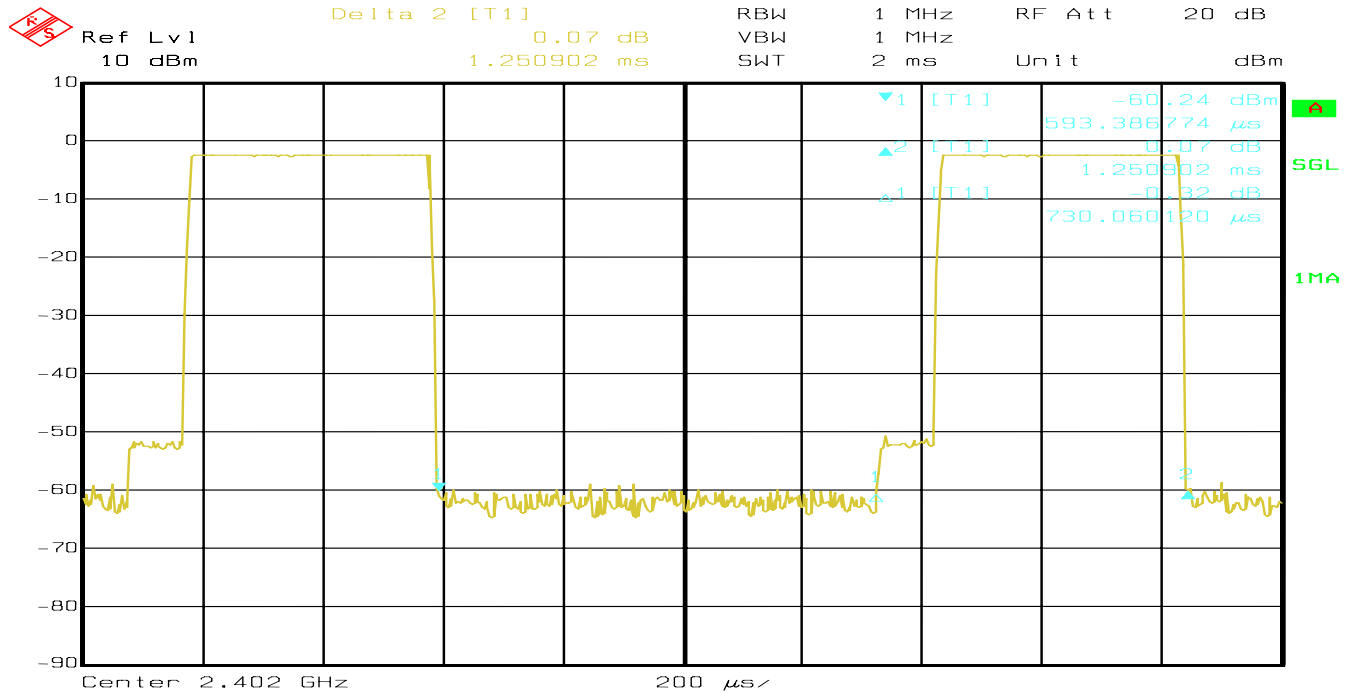
High Channel: DH3



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.

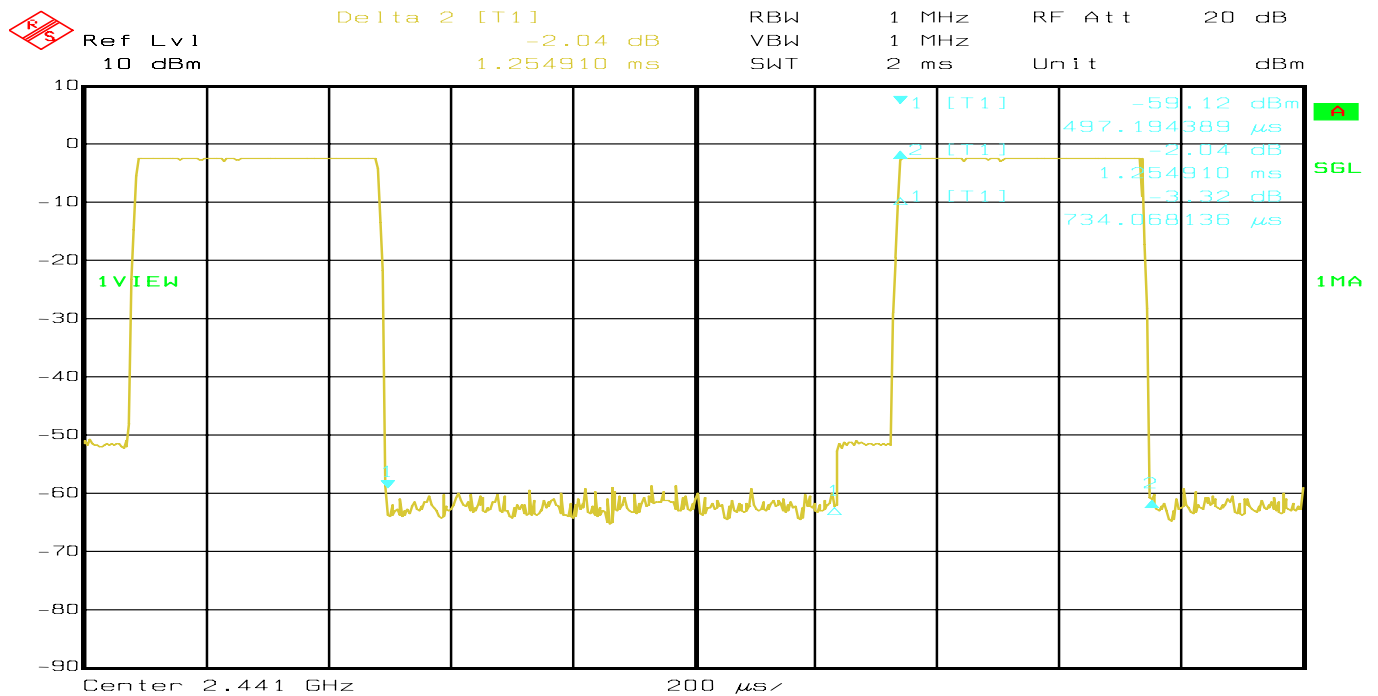


Low Channel: DH1



Date: 18.DEC.2010 14:05:33

Middle Channel: DH1



Date: 18.DEC.2010 14:07:17

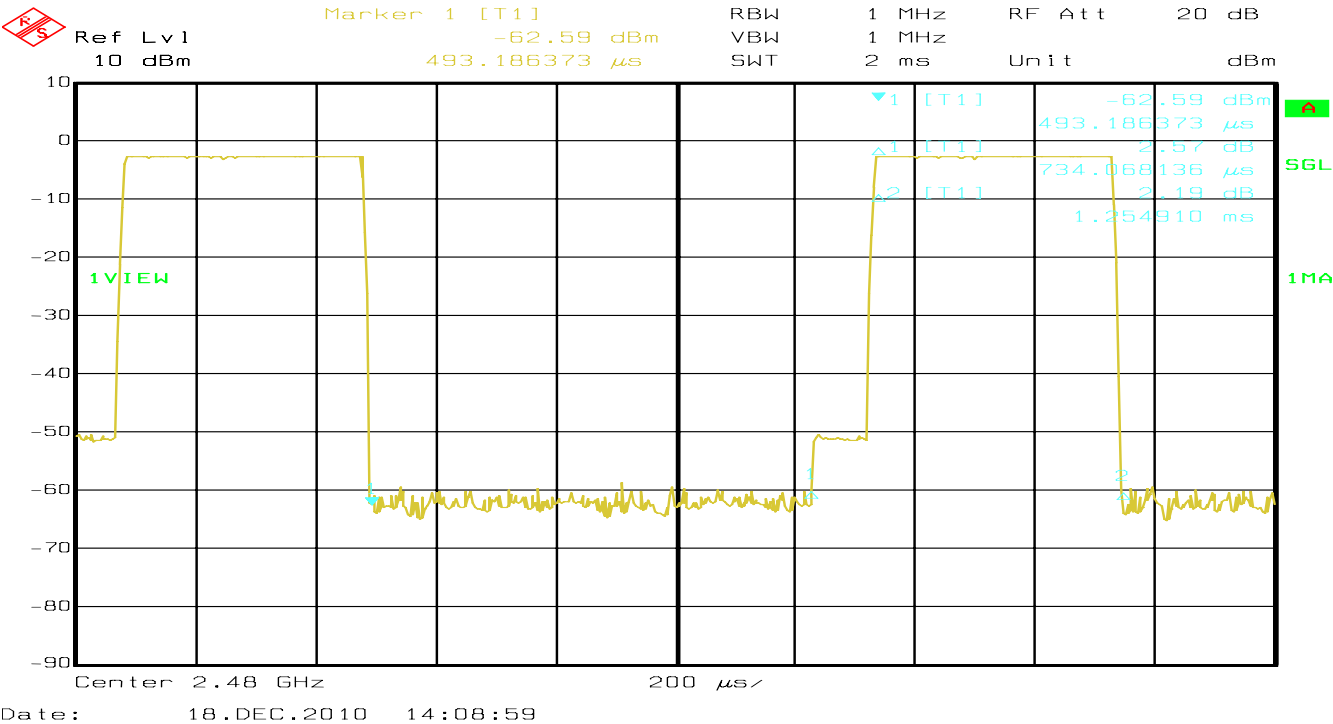
The report refers only to the sample tested and does not apply to the bulk.

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.



High Channel: DH1:

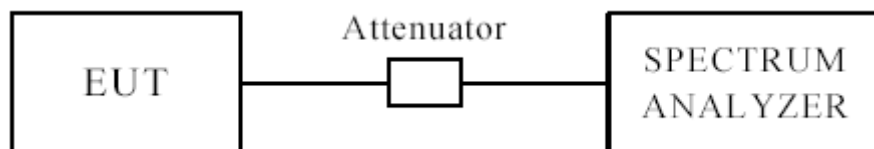


The report refers only to the sample tested and does not apply to the bulk.  
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be 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.



## 12 Out of Band Measurement

### 12.1 Test Setup



**The restricted band requirement based on radiated emission test; please see the clause 6 for the test setup**

### 12.2 Limits of Out of Band Emissions Measurement

1. Below  $-20\text{dB}$  of the highest emission level of operating band (in 100kHz Resolution Bandwidth).
2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

### 12.3 Test Procedure

For signals in the restricted bands above and below the 2.4-2.483GHz allocated band a measurement was made of the amplitude of the spurious emissions with respect to the intentional signals. The relative amplitude, in dBc, was applied to the average and peak field strength of the intentional signal made on the OATS to calculate the field strength of the unintentional signals.

The spectrum plots (Peak RBW=VBW=1MHz; Average RBW=1MHz, VBW=10Hz) are attached on the following pages.

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.



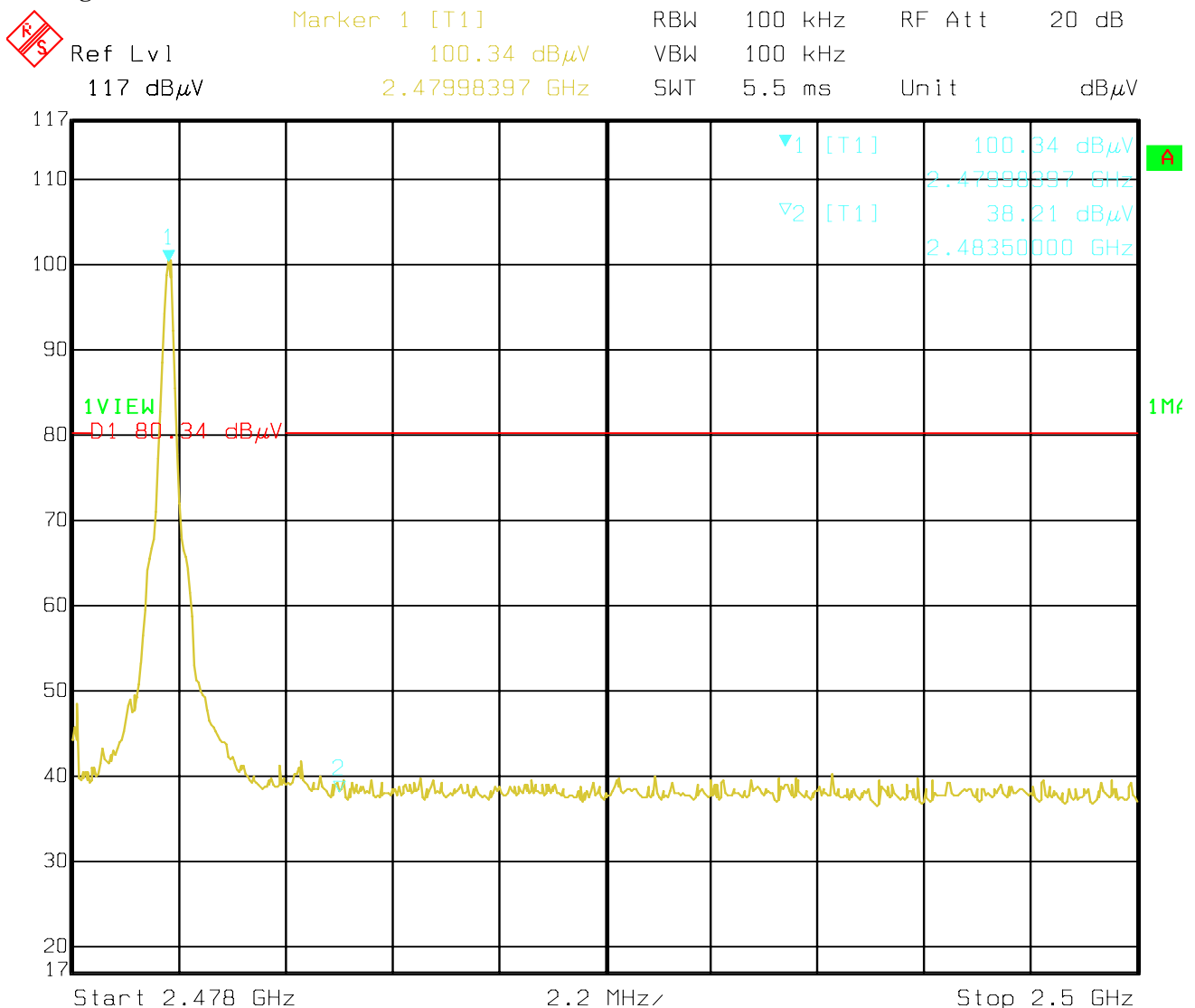




#### 12.4 Out of Band Test Result

Product:	Keyboard		Test Mode:	High Channel
Mode	Keeping Transmitting Under High CH		Input Voltage	DC 3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
The Max. FS in Restrict Band 2483.5MHz	PK (dBμV/m)	38.7(V) 38.9(H)	Limit	74(dBμV/m)
	AV(dBμV/m)	--		54(dBμV/m)

#### Test Figure:



Date: 28.NOV.2010 11:51:55

**Note: The Max. FS in Restrict Band are measured in conventional method.**

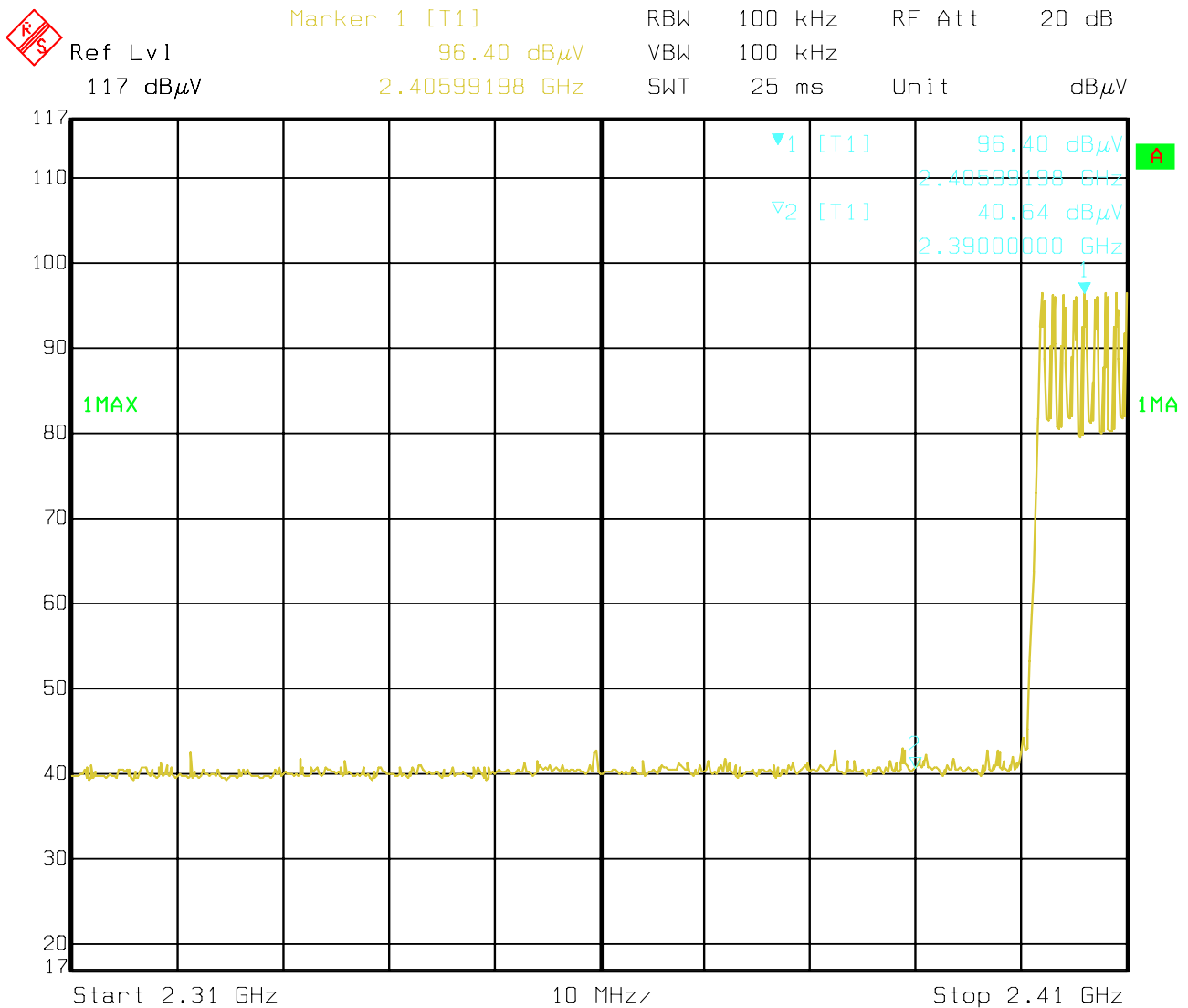
The report refers only to the sample tested and does not apply to the bulk.  
 This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be 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.



#### 12.4 Out of Band Test Result

Product:	Keyboard		Test Mode:	Hopping mode
Mode	Hopping Mode		Input Voltage	DC 3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
The Max. FS in Restrict Band	PK (dBμV/m)	38.2(V) 38.6(H)	Limit	74(dBμV/m)
	AV(dBμV/m)	--		54(dBμV/m)

#### Test Figure:



Date: 28.NOV.2010 11:21:38

**Note: The Max. FS in Restrict Band are measured in conventional method.**

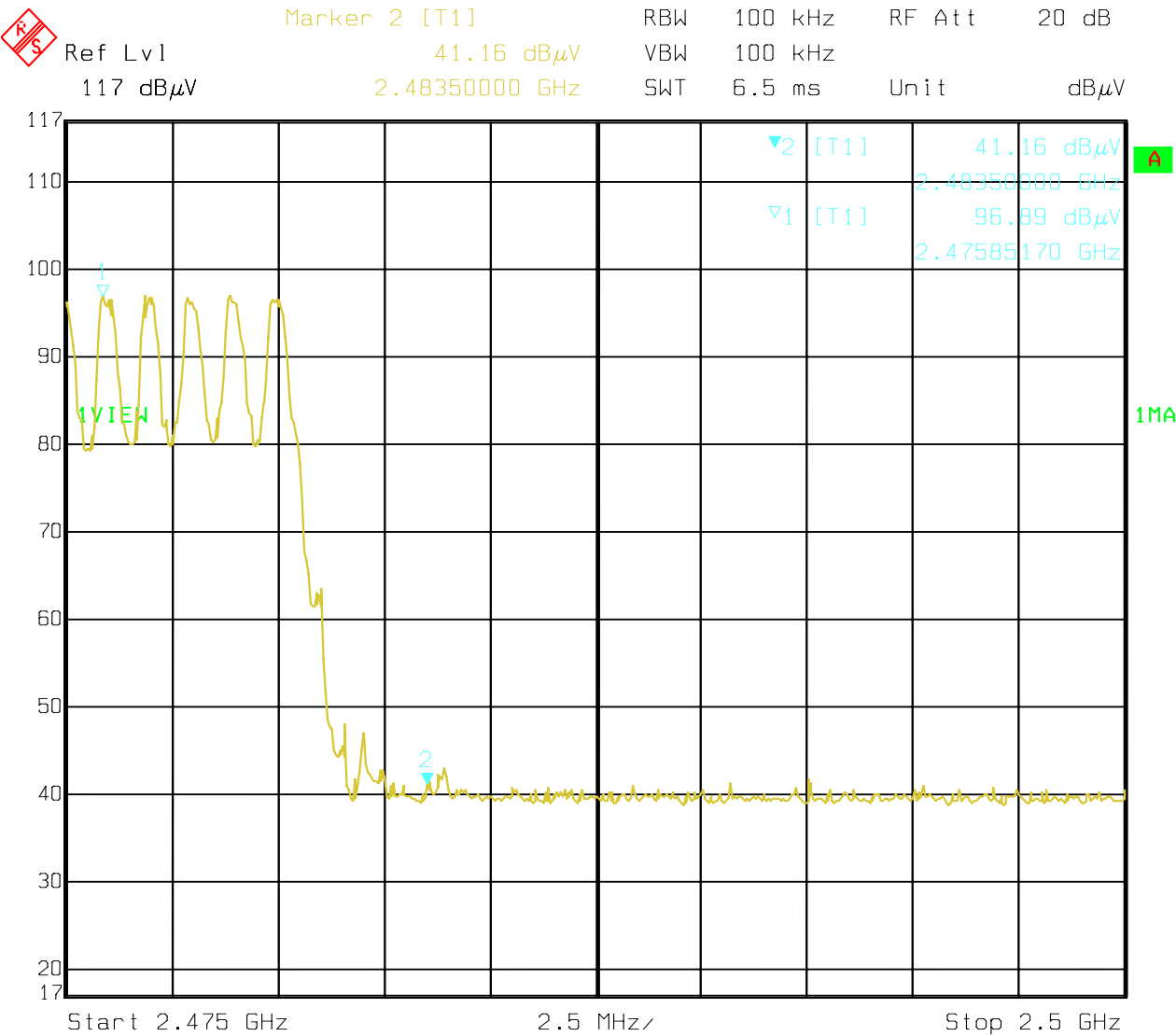
The report refers only to the sample tested and does not apply to the bulk.  
 This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be 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.



12.4 Out of Band Test Result

Product:	Keyboard		Test Mode:	Hopping mode
Mode	Hopping Mode		Input Voltage	DC 3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
The Max. FS in Restrict Band	PK (dBμV/m)	39.1 (V) 39.8 (H)	Limit	74(dBμV/m)
	AV(dBμV/m)	--		54(dBμV/m)

Test Figure:



Date: 28.NOV.2010 11:17:43

**Note: The Max. FS in Restrict Band are measured in conventional method.**

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.



### **13.0 Antenna Requirement**

#### **13.1 Standard Applicable**

For intentional device, according to FCC 47 CFR Section 15.203, 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.

And according to FCC 47 CFR Section 15.247 (b), if transmitter antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **13.2 Antenna Connected construction**

The antenna is chip dielectric antenna. The maximum Gain of this antenna is 2.0dBi

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.



## 14.0 RF Exposure

### Applicable Standard

According to §1.1307(b)(5), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

This is a Portable device. **KDB616217 was used as the guidance.**

According to §1.1310 and §2.1093 RF exposure is calculated.

### Measurement Result

This is a laptop and the conducted output power is -6.69dBm (0.214mW), so the EIRP is  $1.585 \times 0.214 = 0.125\text{mW}$  which is lower than low threshold  $60/\text{fGHz mW}$  ( $60/2.462\text{GHz} = 24.37\text{ mW}$ ), and the antenna is 2.0dBi which is less than 6dBi.

**The SAR measurement is not necessary.**

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.



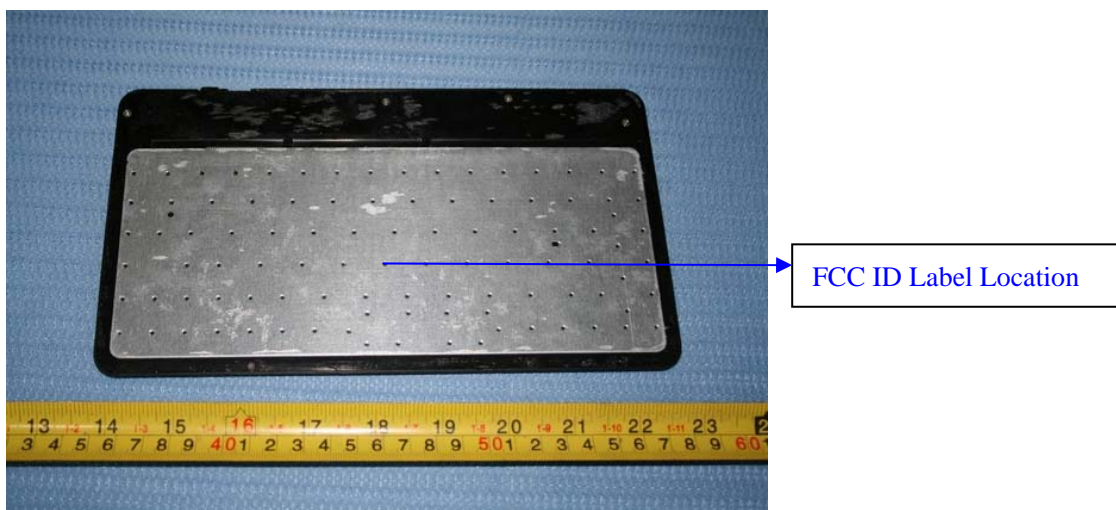
## 15.0 FCC ID Label

### FCC ID: ZDVGOLDLANDX10

**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:



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.



## 16.0 Photo of testing

### 16.1 Conducted test View



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

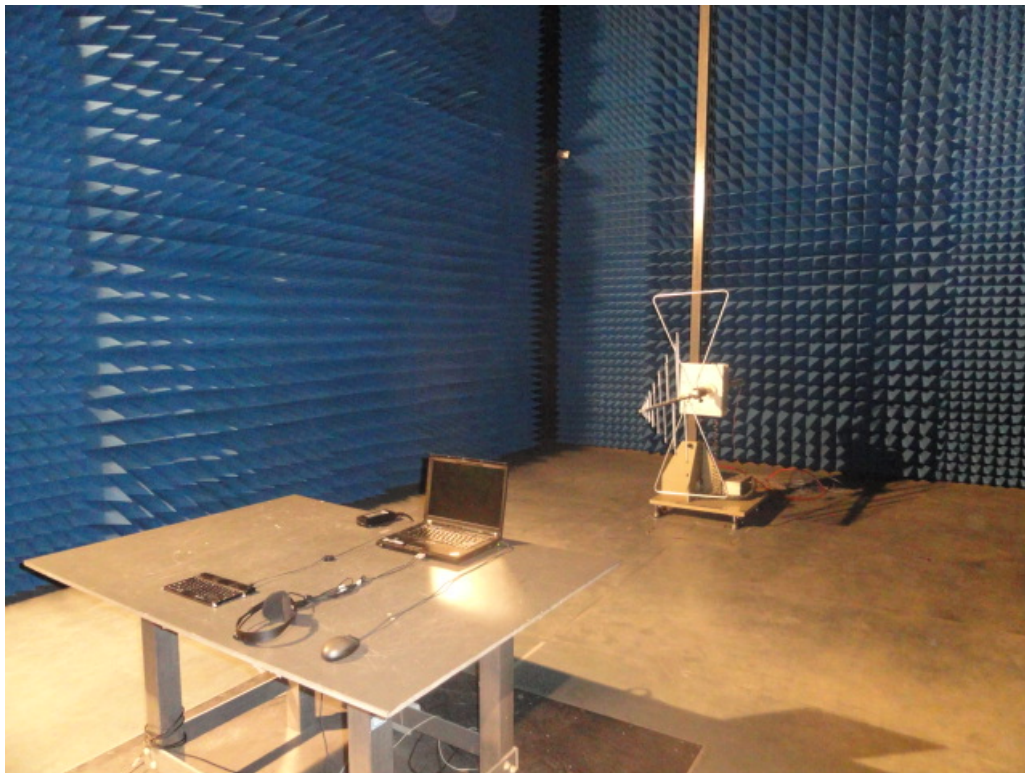
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced in its entirety or in part and it may not be used for advertising. The client to whom the report is issued may, however, show or send 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.





## 16.2 Emission Radiated 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 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.



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 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.



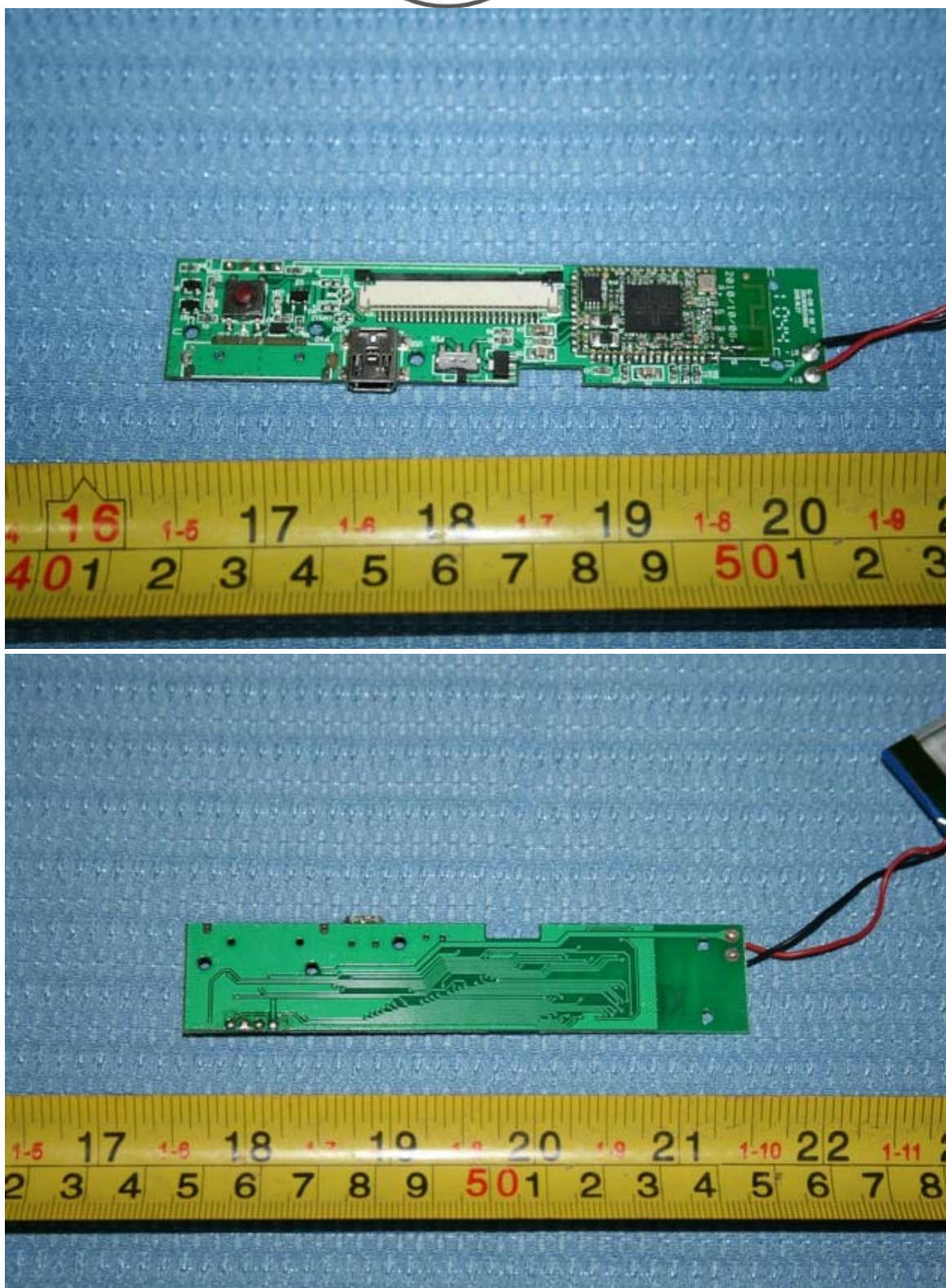


The report refers only to the sample tested and does not apply to the bulk.

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.

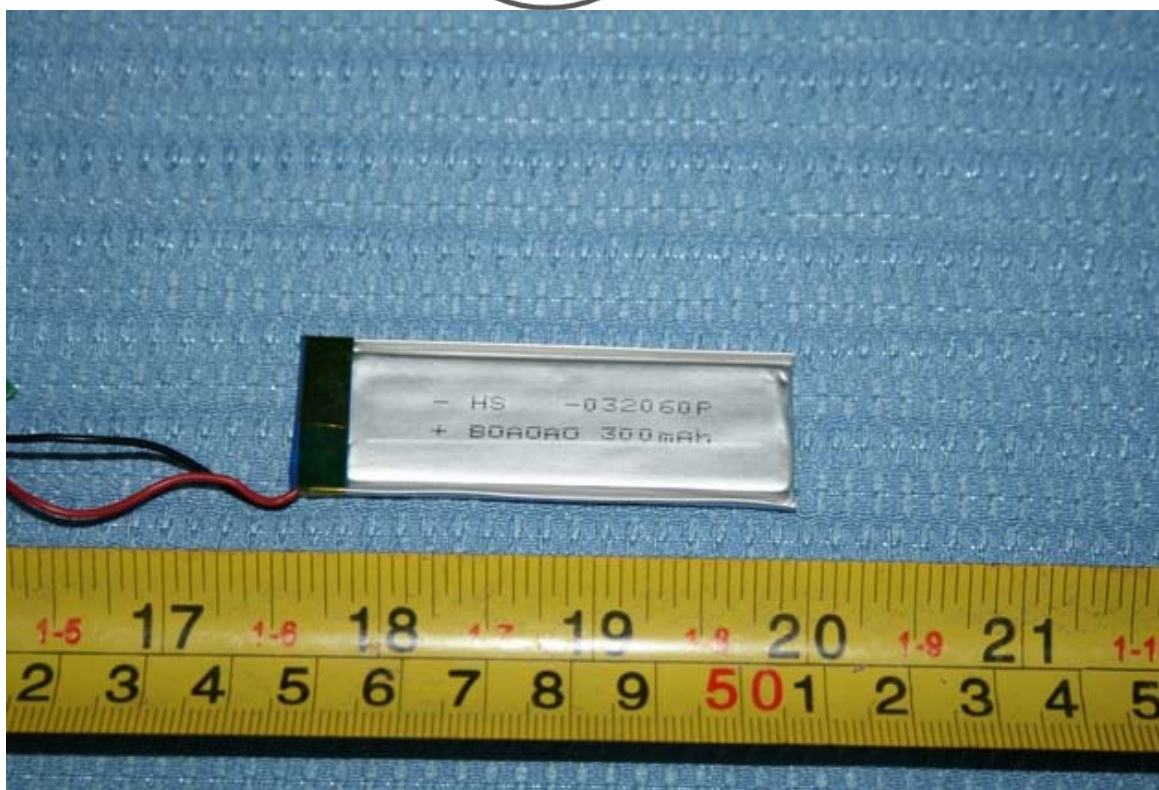




The report refers only to the sample tested and does not apply to the bulk.

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 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 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.