

FCC PART 15.247
EMI MEASUREMENT AND TEST REPORT
For
INTEC INC.

5255 N.W, 159TH ST., MIAMI, FL33014 USA

FCC ID: RDDG6252

August 26, 2005

This Report Concerns: ☒ Original Report	Equipment Type: WIRELESS DANCE MAT
Test Engineer: Jandy Su 	
Report No.: RSZ05080803	
Test Date: August 11-25, 2005	
Reviewed By: Chris Zeng 	
Prepared By: Bay Area Compliance Lab Corp. (ShenZhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone, ShenZhen, Guangdong 518038, P.R.China Tel: +86-755-33320018 Fax: +86-755-33320008	

Note: The test report is specially limited to the above company and this particular sample only. It may not be duplicated without prior written consent of Bay Area Compliance Lab Corp. (ShenZhen). This report **must not** be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the US Government.

TABLE OF CONTENTS

GENERAL INFORMATION.....	4
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	4
OBJECTIVE	4
RELATED SUBMITTAL(S)/GRANT(S).....	4
TEST METHODOLOGY	4
TEST FACILITY	4
SYSTEM TEST CONFIGURATION.....	5
DESCRIPTION OF TEST CONFIGURATION	5
EQUIPMENT MODIFICATIONS	5
CONFIGURATION OF TEST SETUP	6
BLOCK DIAGRAM OF TEST SETUP	6
SUMMARY OF TEST RESULTS	7
§15.203 - ANTENNA APPLICATION	8
APPLICABLE STANDARD	8
§15.205, §15.209- RADIATED EMISSION.....	9
APPLICABLE STANDARD	9
MEASUREMENT UNCERTAINTY	9
EUT SETUP.....	9
EMI TEST RECEIVER & SPECTRUM ANALYZER SETUP	10
TEST EQUIPMENT LIST AND DETAILS.....	10
TEST PROCEDURE	10
CORRECTED AMPLITUDE & MARGIN CALCULATION	10
TEST RESULTS SUMMARY	11
TEST DATA	11
§15.247(a)(1)-CHANNEL SEPARATION TEST	16
APPLICABLE STANDARD	16
TEST EQUIPMENT LIST AND DETAILS.....	16
TEST PROCEDURE	16
TEST DATA	16
§15.247(a)(1) 20dB BANDWIDTH TESTING	18
APPLICABLE STANDARD	18
TEST EQUIPMENT LIST AND DETAILS.....	18
TEST PROCEDURE	18
TEST DATA	18
§15.247(a)(1)(iii)-QUANTITY OF HOPPING CHANNEL TEST	22
APPLICABLE STANDARD	22
TEST EQUIPMENT LIST AND DETAILS.....	22
TEST PROCEDURE	22
TEST DATA	22
§15.247(a)(1)(iii) -TIME OF OCCUPANCY (DWELL TIME).....	24
APPLICABLE STANDARD	24
TEST EQUIPMENT LIST AND DETAILS.....	24
TEST PROCEDURE	24
TEST DATA	24
§15.247(b)(1) - PEAK OUTPUT POWER MEASUREMENT	31
APPLICABLE STANDARD	31
TEST EQUIPMENT LIST AND DETAILS.....	31
TEST PROCEDURE	31
TEST DATA	31
§15.247(d)- BAND EDGES TESTING.....	35

APPLICABLE STANDARD35

TEST EQUIPMENT LIST AND DETAILS.....35

TEST PROCEDURE35

TEST DATA35

GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *INTEC INC.*'s product, model number: G6252 or the "EUT" as referred to in this report is a WIRELESS DANCE MAT. The EUT is measured approximately 90.0 cm L x 82.0cm W x 3.0cm H, rated input voltage: DC 6V battery.

** The test data gathered are from production sample, serial number: 10804926062527, provided by the manufacturer.*

Objective

This Type approval report is prepared on behalf of *INTEC INC.* in accordance with Part 2, Subpart J, and Part 15, Subparts A, B and C of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209, and 15.247 rules.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All radiated and conducted emissions measurement was performed at Bay Area Compliance Lab Corp. (ShenZhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The Test site used by Bay Area Compliance Lab Corp. (ShenZhen) to collect test data is located in the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone, ShenZhen, Guangdong 518038, P.R.China.

Test site at Bay Area Compliance Lab Corp. (ShenZhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 04, 2004. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Lab Corp. (ShenZhen) is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200707-0). The current scope of accreditations can be found at <http://ts.nist.gov/ts/htdocs/210/214/scopes/2007070.htm>

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a typical fashion (as normally used by a typical user).

Equipment Modifications

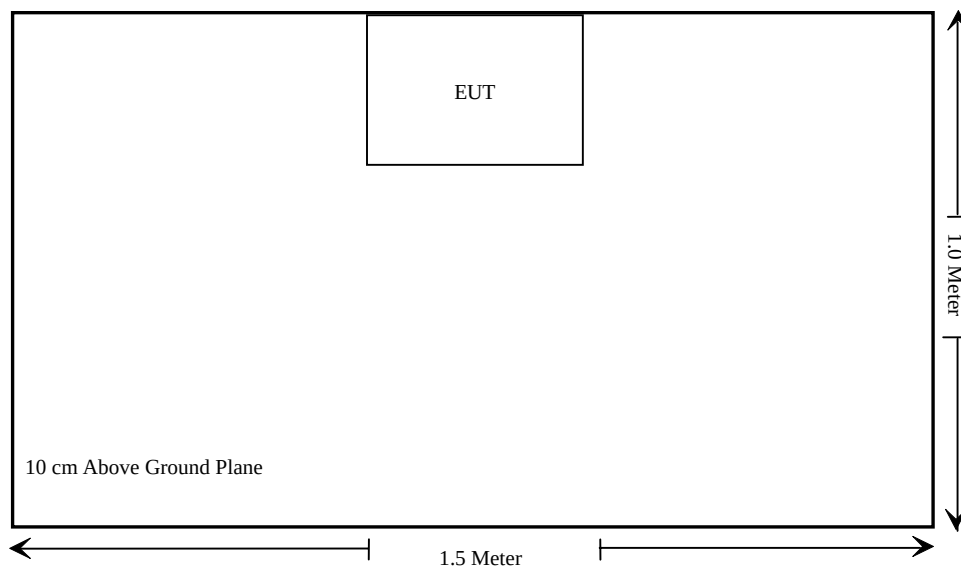
Bay Area Compliance Lab Corp. (ShenZhen) has not done any modification on the EUT.

Configuration of Test Setup



EUT

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.203	Antenna Requirement	Compliant
§15.205&§15.209	Radiated Emission	Compliant *
§15.247(a)(1)	Channel Separation Test	Compliant
§15.247(a)(1)	20dB Bandwidth testing	Compliant
§15.247(a)(1)(iii)	Time of occupancy (Dwell Time)	Compliant
§15.247(a)(1)(iii)	Quantity of hopping channel Test	Compliant
§15.247(b)(1)	Peak Output Power Measurement	Compliant
§15.247(d)	Band edges testing	Compliant

* Within measurement uncertainty

§15.203 - ANTENNA APPLICATION

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.

This product has a PCB permanent antenna, fulfill the requirement of this section.

Test Result: Pass

§15.205, §15.209, §15.247- RADIATED EMISSION

Applicable Standard

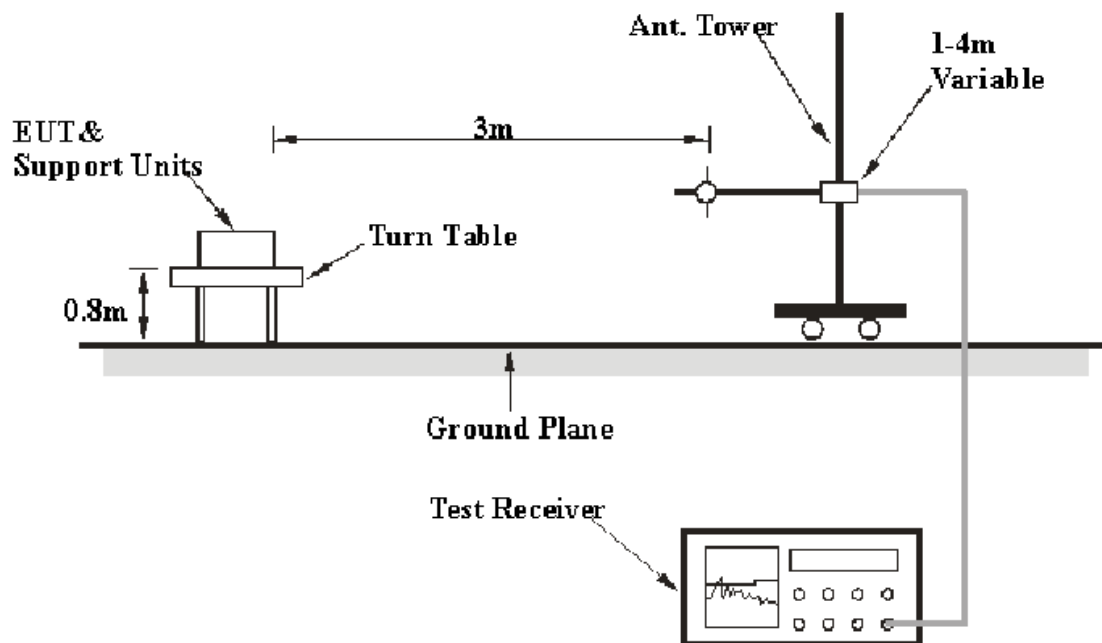
According to FCC §15.247 (D)

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at Bay Area Compliance Lab Corp. (ShenZhen) is ± 4.4 dB.

EUT Setup



The radiated emission tests were performed in the 3-meter Chamber, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC 15.209 & FCC 15.247 limits.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

<i>Frequency Range</i>	<i>RBW</i>	<i>Video B/W</i>
30 – 1000 MHz	100 kHz	100 kHz
1000 MHz – 25 GHz	1 MHz	1 MHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
A.H. System	Horn Antenna	SAS-200/571	135	2005-4-28	2006-4-28
HP	Amplifier	HP8447D	2944A09795	2004-9-1	2005-8-31
HP	Preamplifier	8449B	3008A00277	2004-9-1	2005-8-31
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2004-11-10	2005-11-10
Rohde&Schwarz	EMI Test Receiver	ESCI	100028	2004-9-15	2005-9-15
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2005-4-28	2006-4-28

* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the PK&AV detection mode.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Meter reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Meter Reading} + \text{Antenna Loss} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the limit for Class B. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{Standard Limit}$$

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, section 15.205, 15.209, and 15.247, with the worst margin reading of:

-12.5 dB at 9608.3 MHz in the **Horizontal** polarization, Low Channel

-13.41 dB at 7324.2 MHz in the **Vertical** polarization, Middle Channel

-15.11 dB at 7446.3 MHz in the **Vertical** polarization, High Channel

-3.48 dB at 893.850 MHz in the **Vertical** polarization, Unintentional Emission

Test Data

Environmental Conditions

Temperature:	27 °C
Relative Humidity:	50 %
ATM Pressure:	1009 mbar

The testing was performed by Jandy Su on 2005-8-11

Test mode: Transmitting

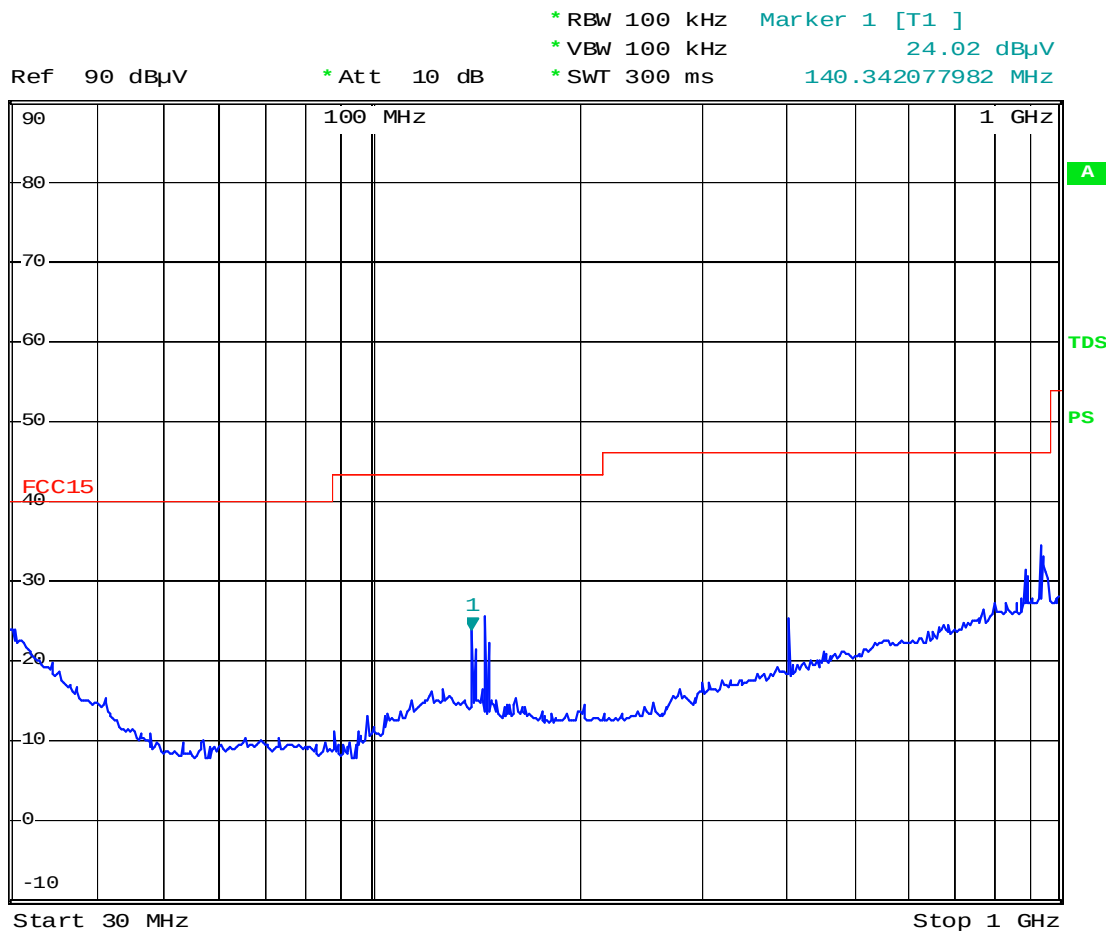
INDICATED		TABL E	ANTENNA		CORRECTION FACTOR			CORRECTEI AMPLITUDE	FCC Part 15.209 & FCC Part 15.247		
Frequency	Meter Reading	Angle	Height	Pola r	Antenna Loss	Cable Loss	Amplifier Gain	Corr. Ampl.	Limit	Margin	PK/AV
MHz	dBμV/m	Degree	Meter	H/ V	dB	dB	dB	dBμV/m	dBμV/m	dB	
Low Channel											
2402.0	62.90	45	1	h	28.1	3.7	35.16	59.54			AV (Fundamental)
2402.0	62.70	180	1.2	v	28.1	3.7	35.16	59.34			AV (Fundamental)
2402.0	64.64	45	1.2	h	28.1	3.7	35.16	61.28			PK (Fundamental)
2402.0	64.52	270	1	v	28.1	3.7	35.16	61.16			PK (Fundamental)
9608.3	31.10	45	1.2	h	37.6	7.3	34.50	41.50	54	-12.50	AV (Harmonics)
7206.7	32.40	60	1.2	v	35.8	6.1	34.11	40.19	54	-13.81	AV (Harmonics)
9608.3	29.50	270	1	v	37.6	7.3	34.50	39.90	54	-14.10	AV (Harmonics)
4804.2	33.60	45	1	v	33.8	5.2	33.00	39.60	54	-14.4	AV (Harmonics)
7206.7	30.50	60	1	h	35.8	6.1	34.11	38.29	54	-15.71	AV (Harmonics)
4804.2	31.60	45	1	h	33.8	5.2	33.00	37.60	54	-16.4	AV (Harmonics)
7206.7	42.90	180	1.2	h	35.8	6.1	34.11	50.69	74	-23.31	PK (Harmonics)
4804.2	44.21	90	1.2	h	33.8	5.2	33.00	50.21	74	-23.79	PK (Harmonics)
4804.2	43.37	45	1	v	33.8	5.2	33.00	49.37	74	-24.63	PK (Harmonics)
7206.7	41.25	90	1.2	v	35.8	6.1	34.11	49.04	74	-24.96	PK (Harmonics)
9608.3	38.64	180	1.2	v	37.6	7.3	34.50	49.04	74	-24.96	PK (Harmonics)
9608.3	37.82	0	1	h	37.6	7.3	34.50	48.22	74	-25.78	PK (Harmonics)

Continues

INDICATED		TABL E	ANTENNA		CORRECTION FACTOR			CORRECTED AMPLITUDE	FCC Part 15.209 & FCC Part 15.247		
Frequency	Meter Reading	Angle	Height	Pola r	Antenna Loss	Cable Loss	Amplifier Gain	Corr. Ampl.	Limit	Margin	PK/AV
MHz	dBμV/m	Degree	Meter	H/ V	dB	dB	dB	dBμV/m	dBμV/m	dB	
Middle Channel											
2441.0	62.00	45	1	h	28.1	3.7	35.16	58.64			AV (Fundamental)
2441.0	64.22	180	1.2	v	28.1	3.7	35.16	60.86			AV (Fundamental)
2441.0	64.22	45	1.2	h	28.1	3.7	35.16	60.86			PK (Fundamental)
2441.0	64.63	270	1	v	28.1	3.7	35.16	61.27			PK (Fundamental)
7324.2	32.80	60	1.2	v	35.8	6.1	34.11	40.59	54	-13.41	AV (Harmonics)
7324.2	32.30	60	1	h	35.8	6.1	34.11	40.09	54	-13.91	AV (Harmonics)
4882.1	33.42	45	1	v	33.8	5.2	33.00	39.42	54	-14.58	AV (Harmonics)
9764.5	27.42	270	1	v	37.6	7.3	34.50	37.82	54	-16.18	AV (Harmonics)
4882.1	31.40	45	1	h	33.8	5.2	33.00	37.40	54	-16.60	AV (Harmonics)
9764.5	26.80	45	1.2	h	37.6	7.3	34.50	37.20	54	-16.80	AV (Harmonics)
7324.2	42.58	180	1.2	h	35.8	6.1	34.11	50.37	74	-23.63	PK (Harmonics)
4882.1	43.62	45	1	v	33.8	5.2	33.00	49.62	74	-24.38	PK (Harmonics)
7324.2	41.58	90	1.2	v	35.8	6.1	34.11	49.37	74	-24.63	PK (Harmonics)
9764.5	38.45	180	1.2	v	37.6	7.3	34.50	48.85	74	-25.15	PK (Harmonics)
9764.5	38.42	0	1	h	37.6	7.3	34.50	48.82	74	-25.18	PK (Harmonics)
4882.1	41.63	90	1.2	h	33.8	5.2	33.00	47.63	74	-26.37	PK (Harmonics)
High Channel											
2481.0	62.10	45	1	h	28.1	3.7	35.16	58.74			AV (Fundamental)
2481.0	62.70	180	1.2	v	28.1	3.7	35.16	59.34			AV (Fundamental)
2481.0	64.63	45	1.2	h	28.1	3.7	35.16	61.27			PK (Fundamental)
2481.0	63.89	270	1	v	28.1	3.7	35.16	60.53			PK (Fundamental)
7443.3	31.10	60	1.2	v	35.8	6.1	34.11	38.89	54	-15.11	AV (Harmonics)
4962.1	32.10	45	1	h	33.8	5.2	33.00	38.10	54	-15.90	AV (Harmonics)
9928.5	26.70	270	1	v	37.6	7.3	34.50	37.10	54	-16.90	AV (Harmonics)
4964.1	30.80	45	1	v	33.8	5.2	33.00	36.80	54	-17.20	AV (Harmonics)
9928.5	26.20	45	1.2	h	37.6	7.3	34.50	36.60	54	-17.40	AV (Harmonics)
7443.3	26.60	60	1	h	35.8	6.1	34.11	34.39	54	-19.61	AV (Harmonics)
7443.3	43.65	90	1.2	v	35.8	6.1	34.11	51.44	74	-22.56	PK (Harmonics)
4962.1	44.11	90	1.2	h	33.8	5.2	33.00	50.11	74	-23.89	PK (Harmonics)
4962.1	42.72	45	1	v	33.8	5.2	33.00	48.72	74	-25.28	PK (Harmonics)
7443.3	39.28	180	1.2	h	35.8	6.1	34.11	47.07	74	-26.93	PK (Harmonics)
9924.5	28.40	0	1	h	37.6	7.3	34.50	38.80	74	-35.20	PK (Harmonics)
9924.5	27.42	180	1.2	v	37.6	7.3	34.50	37.82	74	-36.18	PK (Harmonics)

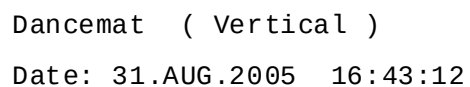
30 -1000MHz

INDICATED		TABLE	ANTENNA		CORRECTION FACTOR			CORRECTED AMPLITUDE	FCC Part 15.209		
Frequency MHz	Meter Reading dBμV/m	Angle Degree	Height Meter	Polar H/ V	Antenna Loss dB	Cable Loss dB	Amplifier Gain dB	Corr. Ampl. dBμV/m	Limit dBμV/m	Margin dB	PK/AV
893.850	44.52	180	1.2	V	22.6	3.50	28.1	42.52	46.0	-3.48	PK
31.070	34.34	60	1	V	24.1	0.56	28.8	30.20	40.0	-9.80	PK
945.440	36.09	90	1	V	23.4	3.60	27.7	35.39	46.0	-10.61	PK
938.000	35.43	45	1.2	H	23.1	3.60	27.7	34.43	46.0	-11.57	PK
30.420	28.24	60	1.2	H	24.1	0.56	28.8	24.10	40.0	-15.90	PK
31.950	28.01	60	1.2	V	24.1	0.56	28.8	23.87	40.0	-16.13	PK
140.340	37.62	270	1	H	13.8	1.10	28.5	24.02	43.5	-19.48	PK
404.670	35.32	45	1	H	16.1	2.10	28.3	25.22	46.0	-20.78	PK
148.440	36.24	45	1.2	H	13.4	1.10	28.5	22.24	43.5	-21.26	PK
142.320	34.90	90	1.2	H	13.8	1.10	28.5	21.30	43.5	-22.20	PK
506.480	30.32	45	1.2	V	18.0	2.40	28.6	22.12	46.0	-23.88	PK
142.320	29.73	60	1	V	13.8	1.10	28.5	16.13	43.5	-27.37	PK

1 PK
MAXH

Dancemat (Horizontal)

Date: 31.AUG.2005 16:50:26



§15.247(a)(1)-CHANNEL SEPARATION TEST

Applicable Standard

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20dB 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 20dB bandwidth of the hopping channel, whichever is greater provided the systems operate with an output power no greater than 125 mW.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100028	2004-9-15	2005-9-15

* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

1. Set the EUT in transmitting mode, spectrum Bandwidth was set at 100 kHz, maxhold the channel.
2. Set the adjacent channel of the EUT maxhold another truce
3. Measure the channel separation.

Limit

FCC Part 15, Subpart C Section 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.

FREQUENCY RANGE (MHz)	Limit (kHz)
902-928	>25kHz
2400-2483.5	>25kHz
5725-5850	>25kHz

Test Data

Environmental Conditions

Temperature:	27 °C
Relative Humidity:	50 %
ATM Pressure:	1009 mbar

The testing was performed by Jandy Su on 2005-8-25

Test Result: Pass

Test mode: Transmitting

The result has been complied with the §15.247a(1), see the following plot:

CHANNEL	CHANNEL FREQUENCY (MHz)	SEPARATION READ VALUE (kHz)	SEPARATION LIMIT 20dB BW*2/3 (kHz)
Low Channel	2402.00	1000	655.48
Adjacency Channel	2403.00		
Middle Channel	2441.00	1000	644.93
Adjacency Channel	2442.00		
Adjacency Channel	2481.00	1000	651.30
High Channel	2481.00		



Ref Lvl

0 dBm

Marker 1 [T1]

-47.76 dBm

2.40199599 GHz

RBW 100 kHz

RF Att

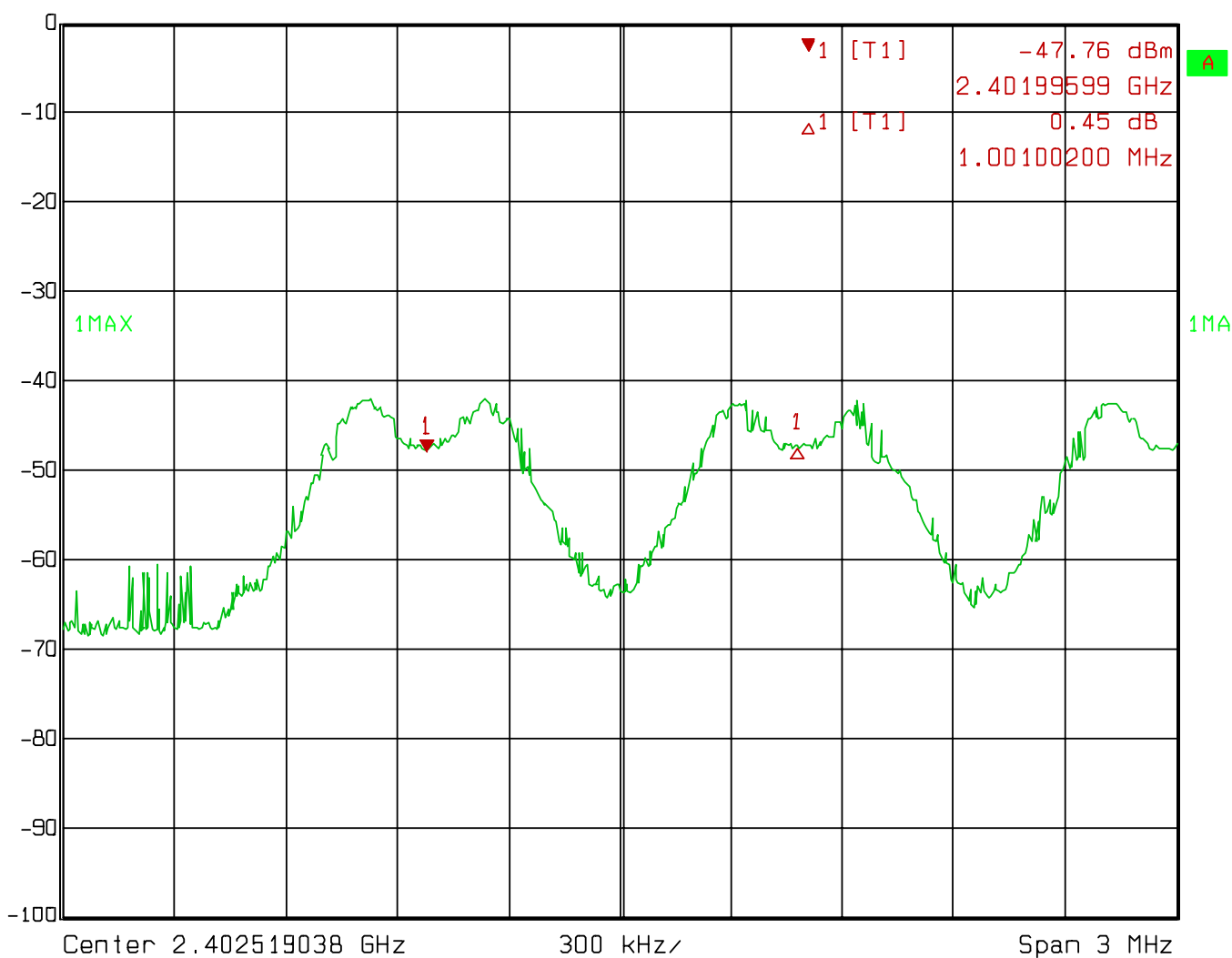
20 dB

VBW 100 kHz

SWT 5 ms

Unit

dBm



Date: 24.AUG.2005 14:53:41

§15.247(a)(1) 20dB BANDWIDTH TESTING

Applicable Standard

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20dB Bandwidth of the hopping channel, whichever is greater.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100028	2004-9-15	2005-9-15

*** Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

1. Check the calibration of the measuring instrument using a known signal from an external generator.
2. Position the EUT without connection to the tunable table. Turn on the EUT. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

Test Data

Environmental Conditions

Temperature:	27 °C
Relative Humidity:	50 %
ATM Pressure:	1009 mbar

The testing was performed by Jandy Su on 2005-8-25.

Test Result: Pass

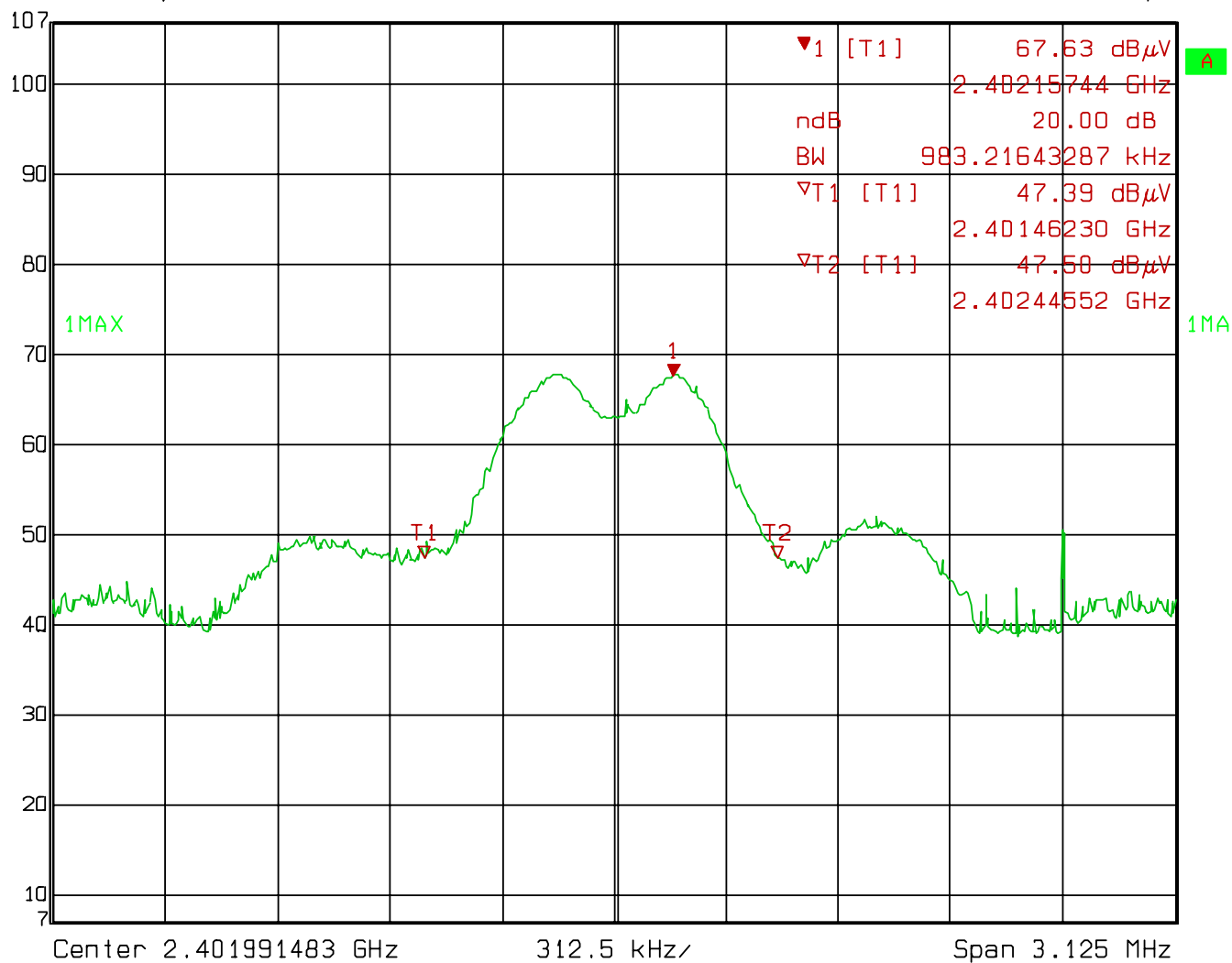
Test mode: Transmitting

The result has been complied with the §15.247(a)(1), see the following plot:

Channel	Channel frequency (MHz)	20dB Bandwidth (KHz)	Limit (KHz)
Low channel	2402	983.22	<1000
Middle channel	2441	967.40	<1000
High channel	2481	976.95	<1000



Ref Lvl 107 dB μ V
Marker 1 [T1 ndB] 20.00 dB
BW 983.21643287 kHz
RBW 100 kHz
VBW 100 kHz
SWT 500 ms
RF Att 20 dB
Unit dB μ V



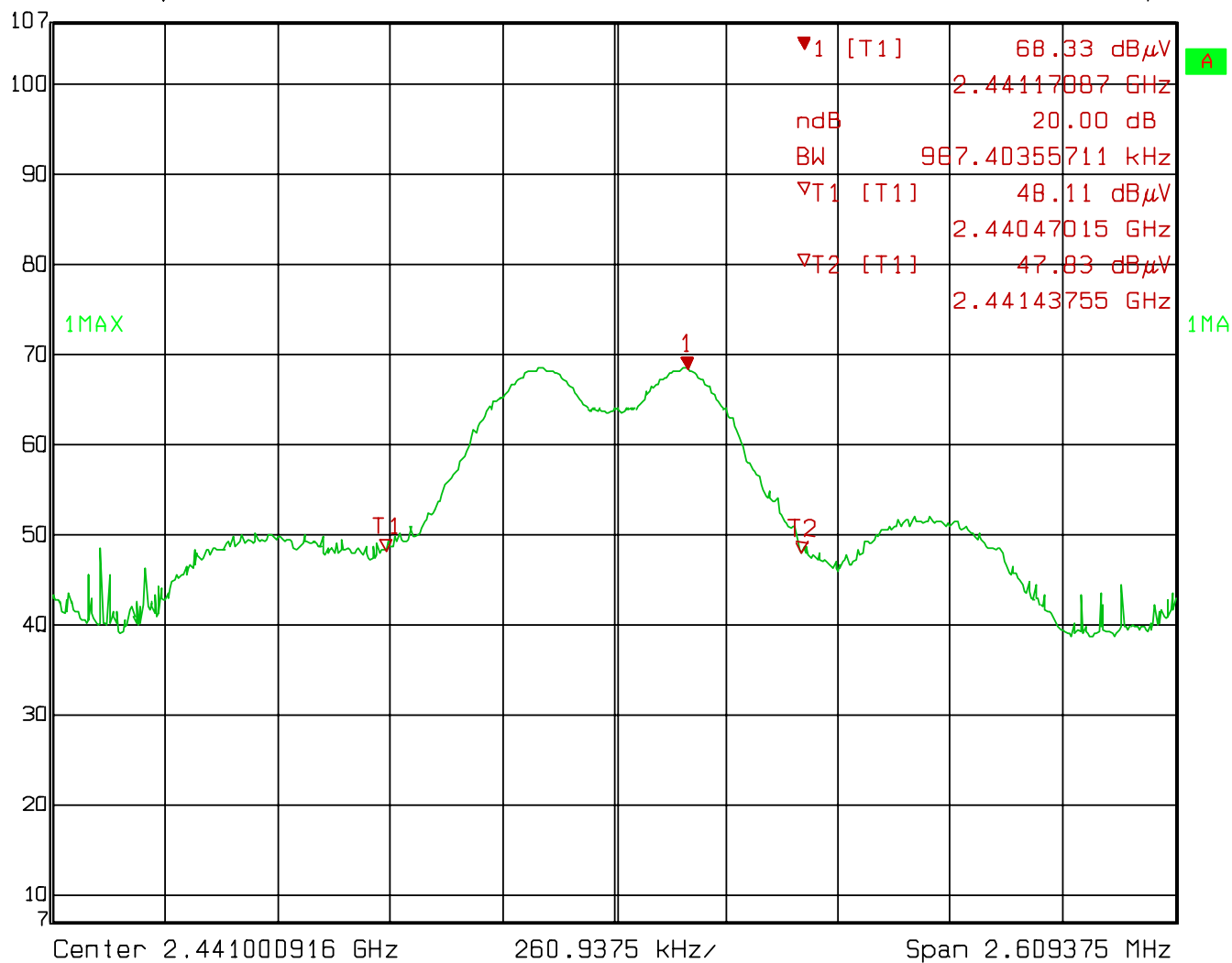
Date: 25.AUG.2005 16:25:30



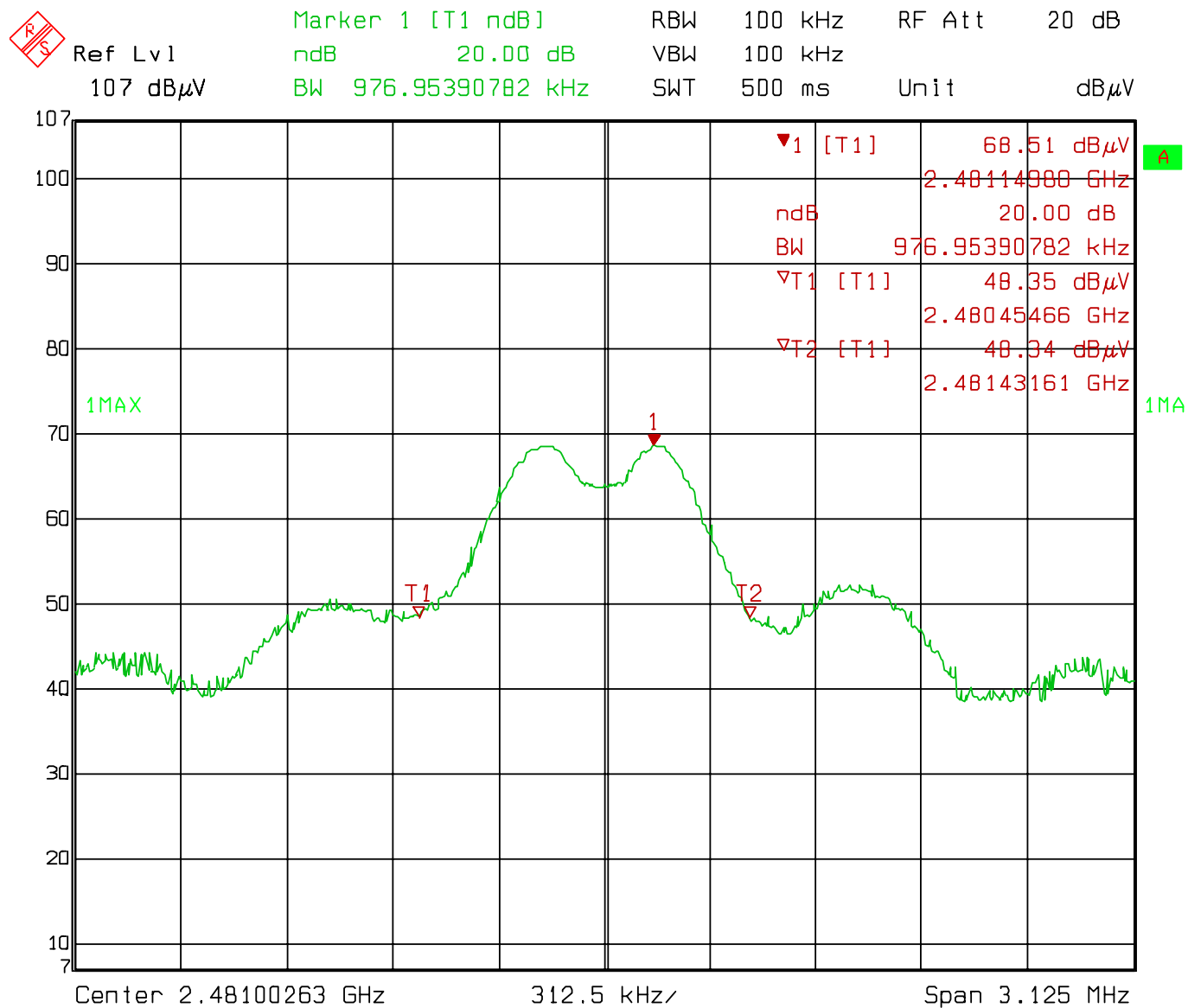
Ref Lvl
107 dB μ V

Marker 1 [T1 ndB]
ndB 20.00 dB
BW 967.40355711 kHz

RBW 100 kHz RF Att 20 dB
VBW 100 kHz
SWT 500 ms Unit dB μ V



Date: 25.AUG.2005 16:20:59



Date: 25.AUG.2005 16:33:58

§15.247(a)(1)(iii)-QUANTITY OF HOPPING CHANNEL TEST**Applicable Standard**

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.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2004-9-15	2005-9-15

* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
2. Set the EUT in transmitting mode from first channel to last.
3. By using the Max-Hold function record the Quantity of the channel.

Limit

FCC Part 15, Subpart C Section 15.247

FREQUENCY RANGE (MHz)	Limit (Quantity of Hopping Channel)			
	20 dB bandwidth <250 kHz	20 dB bandwidth >250 kHz	20 dB bandwidth <1 MHz	20 dB bandwidth >1 MHz
902-928	50	25	N/A	N/A
2400-2483.5	N/A	N/A	15	15
5725-5850	N/A	N/A	75	N/A

Test Data**Environmental Conditions**

Temperature:	27 °C
Relative Humidity:	50 %
ATM Pressure:	1009 mbar

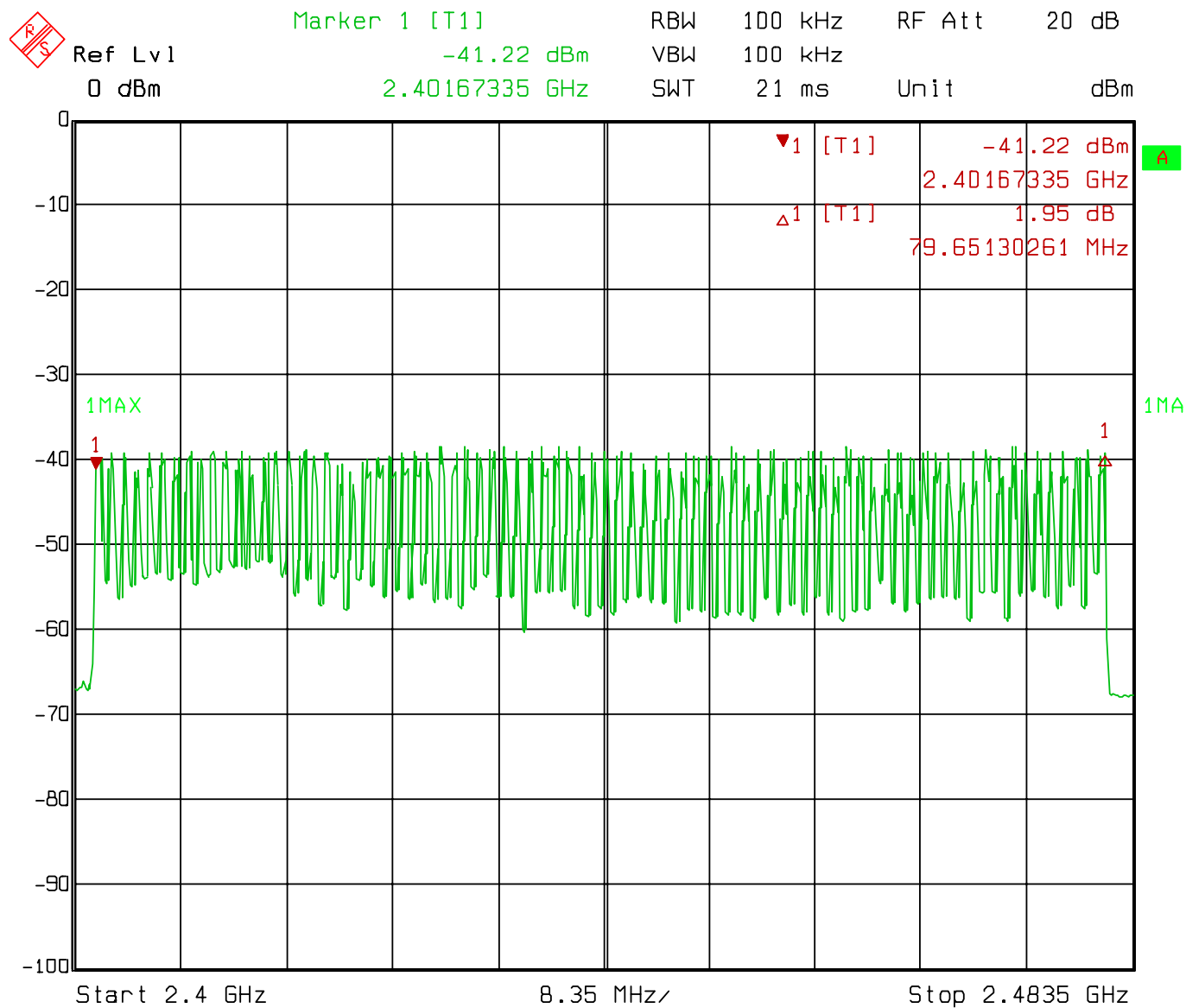
The testing was performed by Jandy Su on 2005-8-25.

Test Result: Pass

Test mode: Transmitting

The frequency hopping systems operating in 2.4~2.4835 GHz band employ 80 nonoverlapping channels.

Hopping Channel Frequency Range (MHz)	Quantity OF hopping Channel Read Value (Channel)	Quantity Of Hopping channel limit (Channel)
2402 ~ 2481	80	>15



Date: 24.AUG.2005 14:38:06

§15.247(a)(1)(iii) -TIME OF OCCUPANCY (DWELL TIME)

Applicable Standard

Frequency hopping systems in the 2400-2483.5 MHz 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.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2004-9-15	2005-9-15

* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

The EUT was worked in channel hopping; Spectrum SPAN was set as 0. Sweep was set as 0.4 X channel no.(s), The quantity of False was get from single sweep. In addition, the time of single Pluses was tested.

Limit

FCC Part 15, Subpart C Section 15.247.

FREQUENCY RANGE (MHz)	LIMIT (ms)		
	20dB bandwidth <250kHz (50 Channel)	20dB bandwidth >250kHz (50 Channel)	20dB bandwidth <1 MHz (75 Channel)
902-928	400(20s)	400(10s)	N/A
2400-2483.5	N/A	N/A	400(30s)
5725-5850	N/A	N/A	400(30s)

Test Data

Environmental Conditions

Temperature:	27 °C
Relative Humidity:	50 %
ATM Pressure:	1009 mbar

The testing was performed by Jandy Su on 2005-8-25.

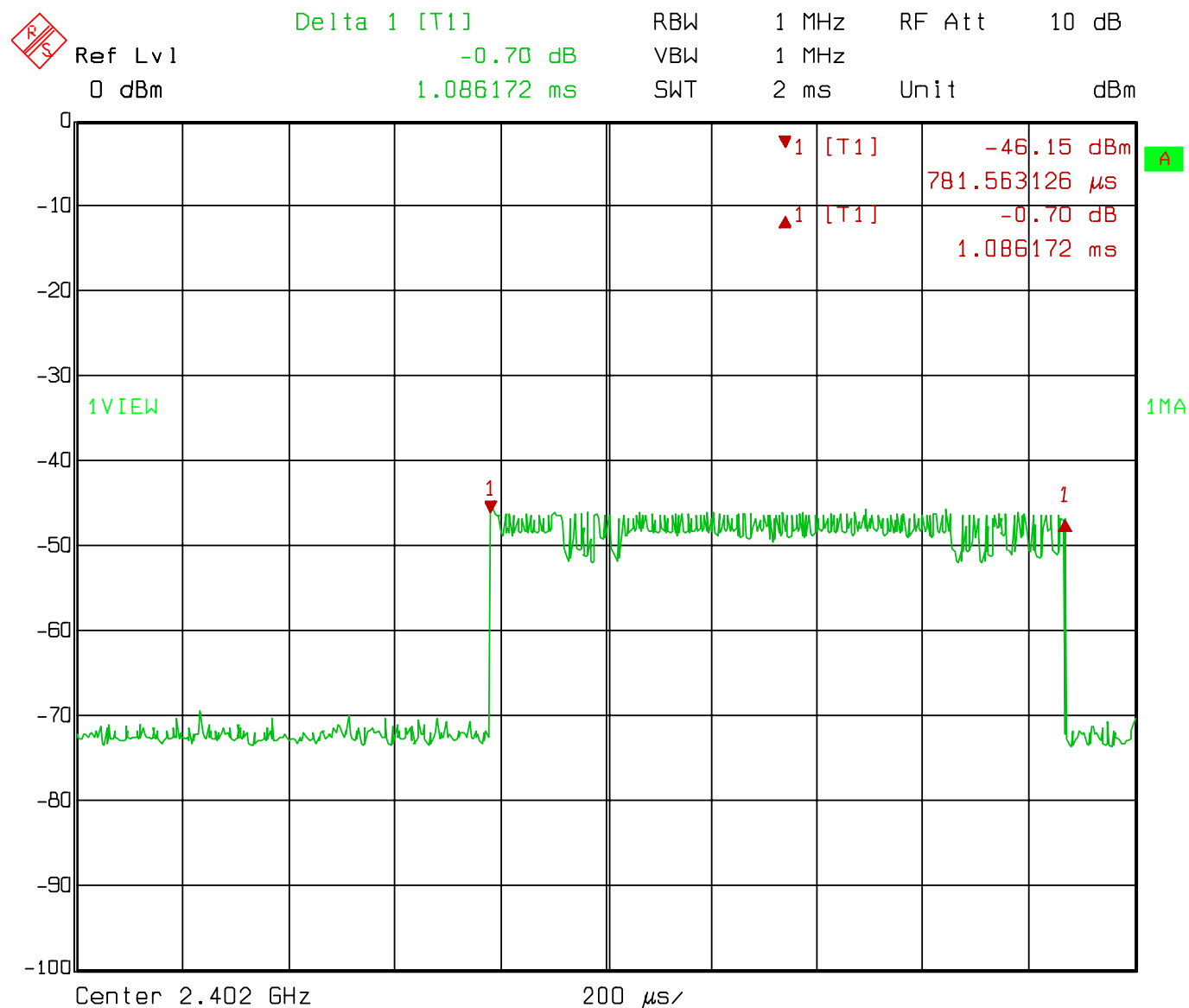
Test Result: Pass

Test mode: Transmitting

The result has been complied with the §15.247(a)(1)(iii), see the following plot:

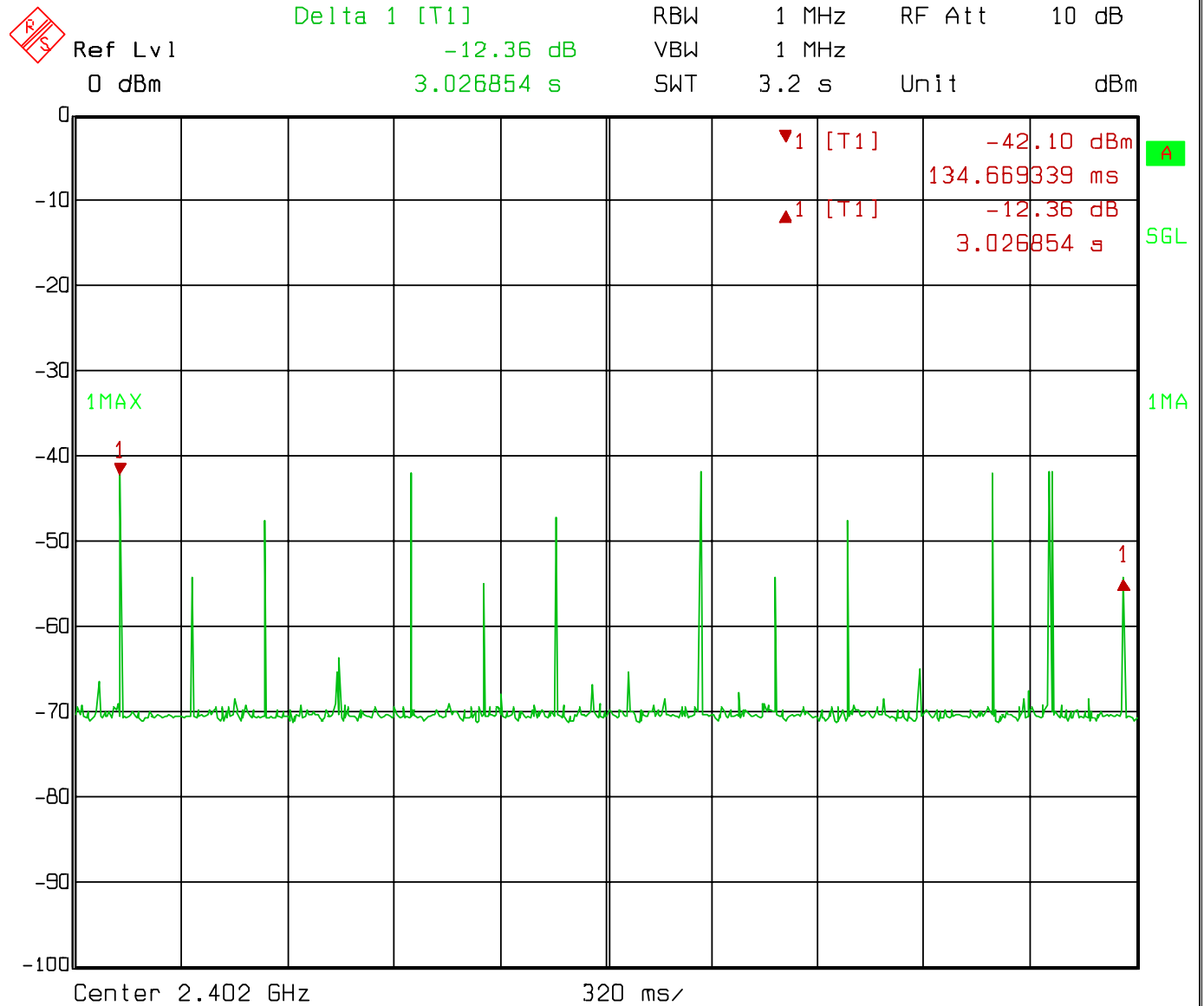
Channel	Frequency MHz	Pulse Wide m Sec	Quantity Pulse per 3.2 Sec	Dwell Time m Sec	Limit Sec
Low channel	2402	1.09	12	13.80	0.4
Middle channel	2441	1.09	20	21.80	0.4
High channel	2481	1.08	21	22.68	0.4

Pulse occupancy time low channel



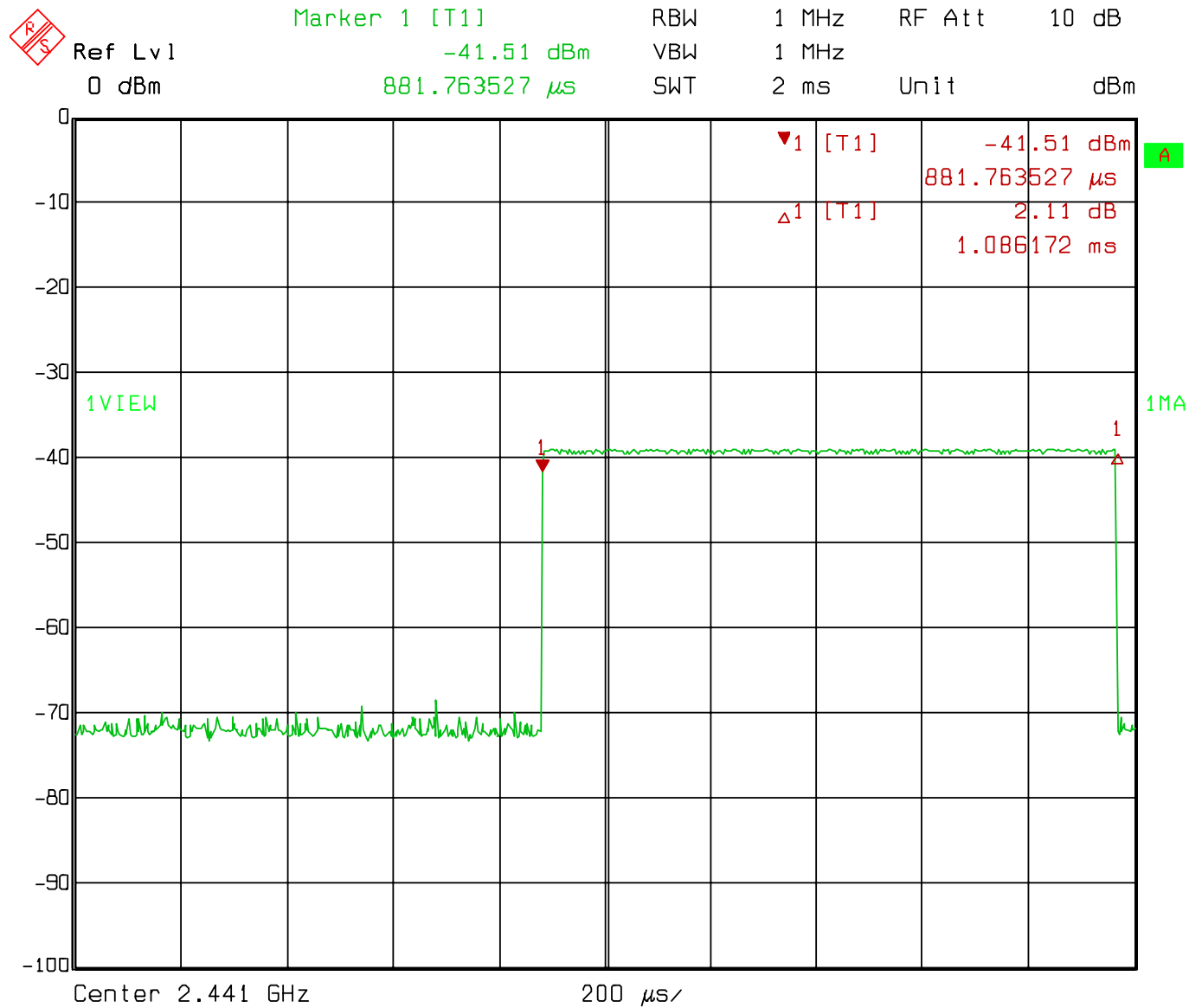
Date: 24.AUG.2005 15:19:07

Time of Occupancy (Dwell Time) low channel



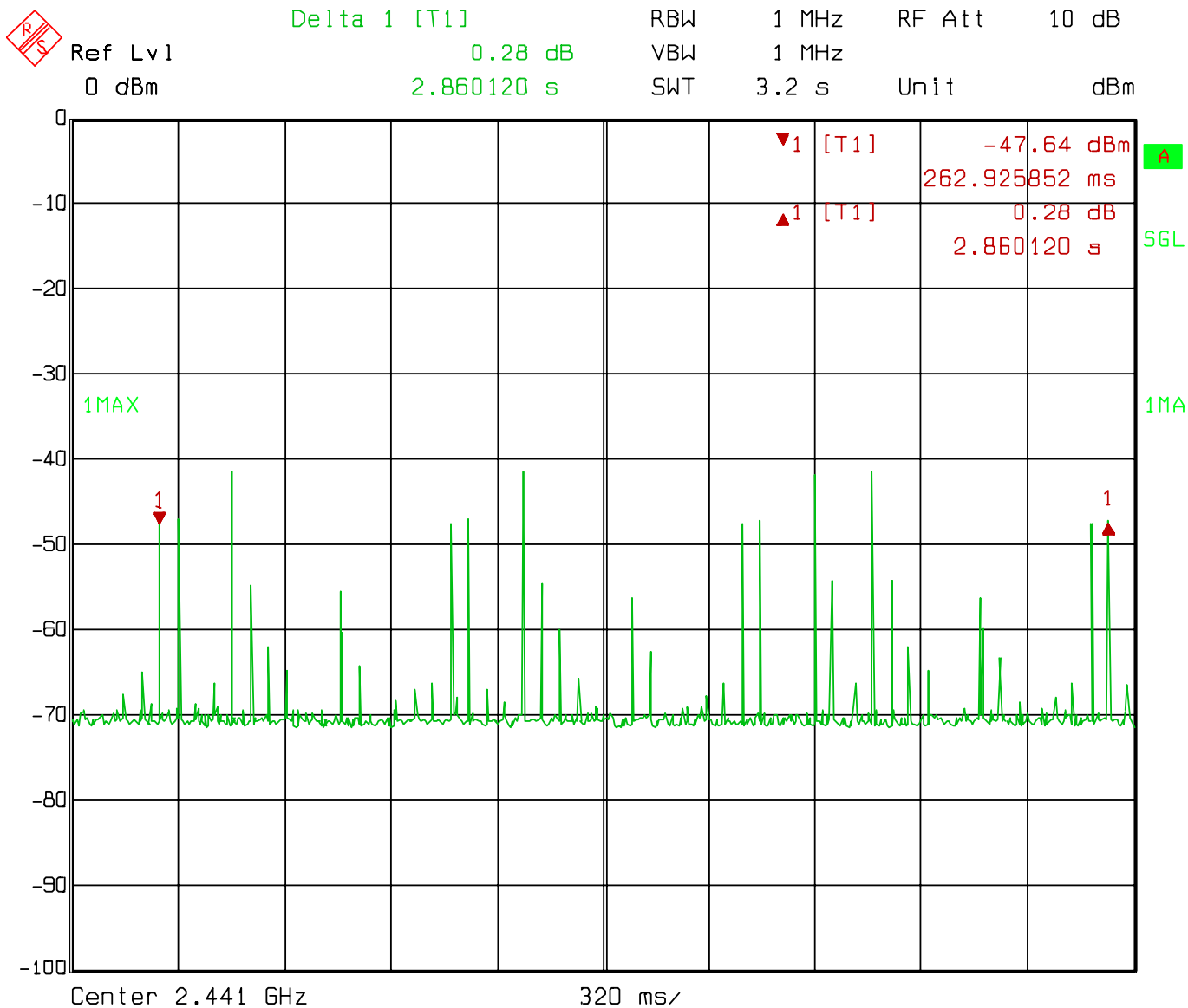
Date: 24.AUG.2005 15:00:04

Pulse occupancy time middle channel



Date: 24.AUG.2005 15:23:00

Time of Occupancy (Dwell Time) middle channel



Date: 24.AUG.2005 15:03:39

Pulse occupancy time high channel

Ref Lvl
0 dBm

Delta 1 [T1]

-1.83 dB

1.082164 ms

RBW

1 MHz

RF Att

10 dB

VBW

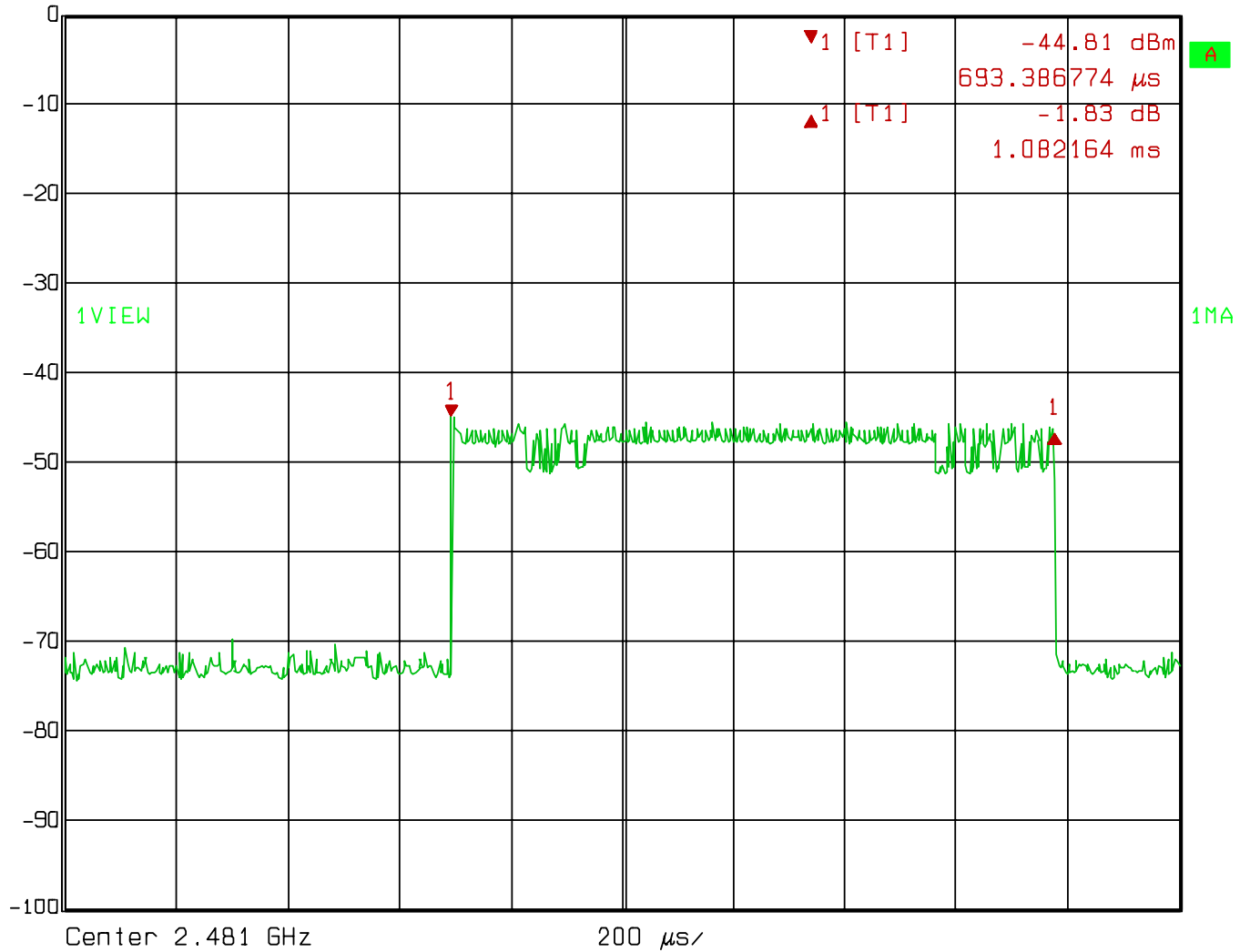
1 MHz

SWT

2 ms

Unit

dBm

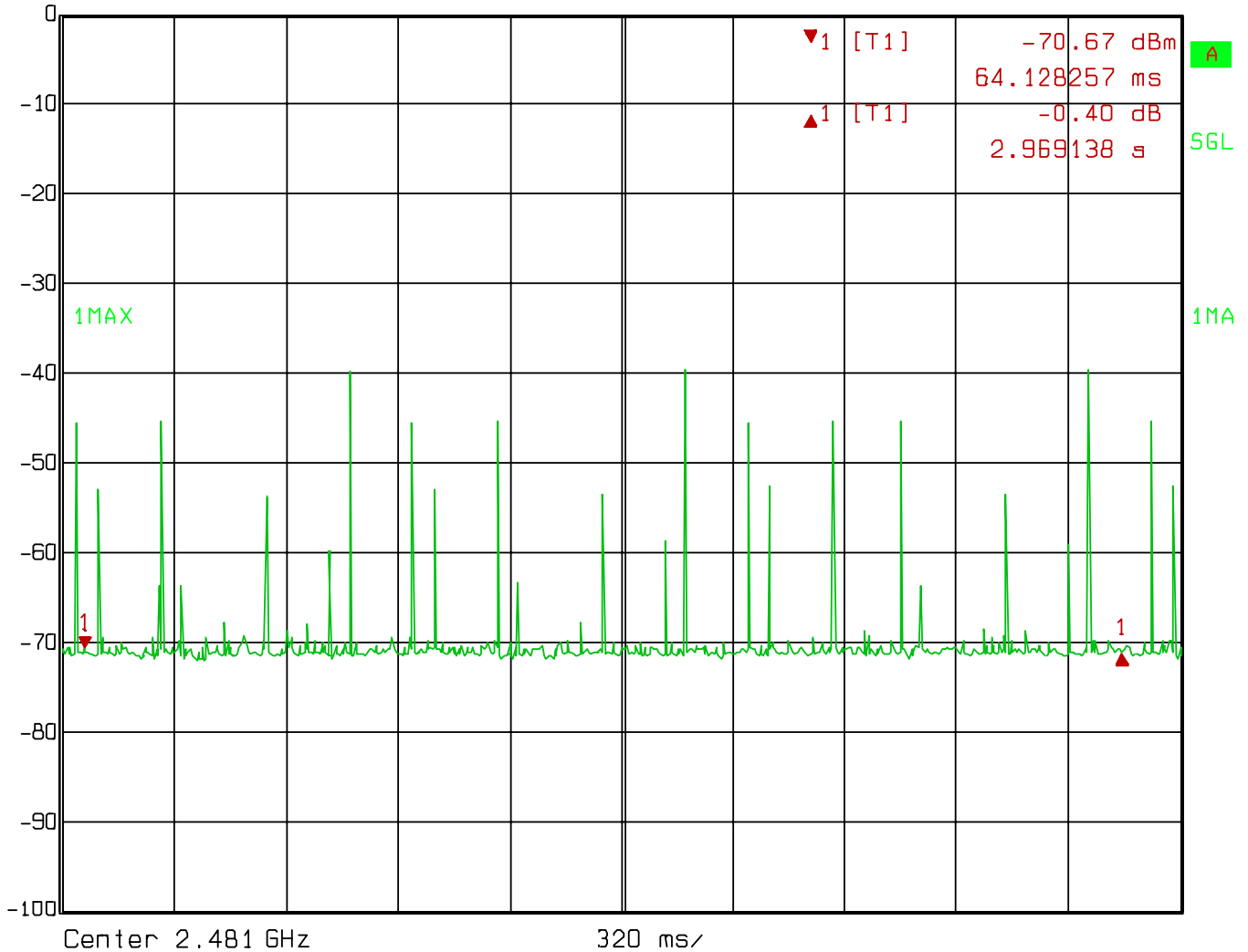


Date: 24.AUG.2005 15:24:40

Time of Occupancy (Dwell Time) high channel



Ref Lvl 0 dBm
Delta 1 [T1] -0.40 dB
2.969138 s
RBW 1 MHz
VBW 1 MHz
SWT 3.2 s
RF Att 10 dB
Unit dBm



Date: 24.AUG.2005 15:15:08

§15.247(b)(1) - PEAK OUTPUT POWER MEASUREMENT**Applicable Standard**

(b) The maximum peak conducted output power of the intentional radiator shall not exceed the following:

(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.

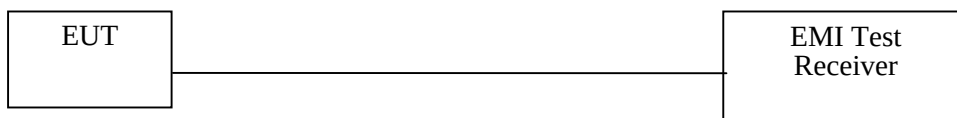
Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde&Schwarz	EMI Test Receiver	ESCI	100028	2004-9-15	2005-9-15

* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the UFL port of EUT to a Peak Power Meter.

**Test Data****Environmental Conditions**

Temperature:	27 °C
Relative Humidity:	50 %
ATM Pressure:	1009 mbar

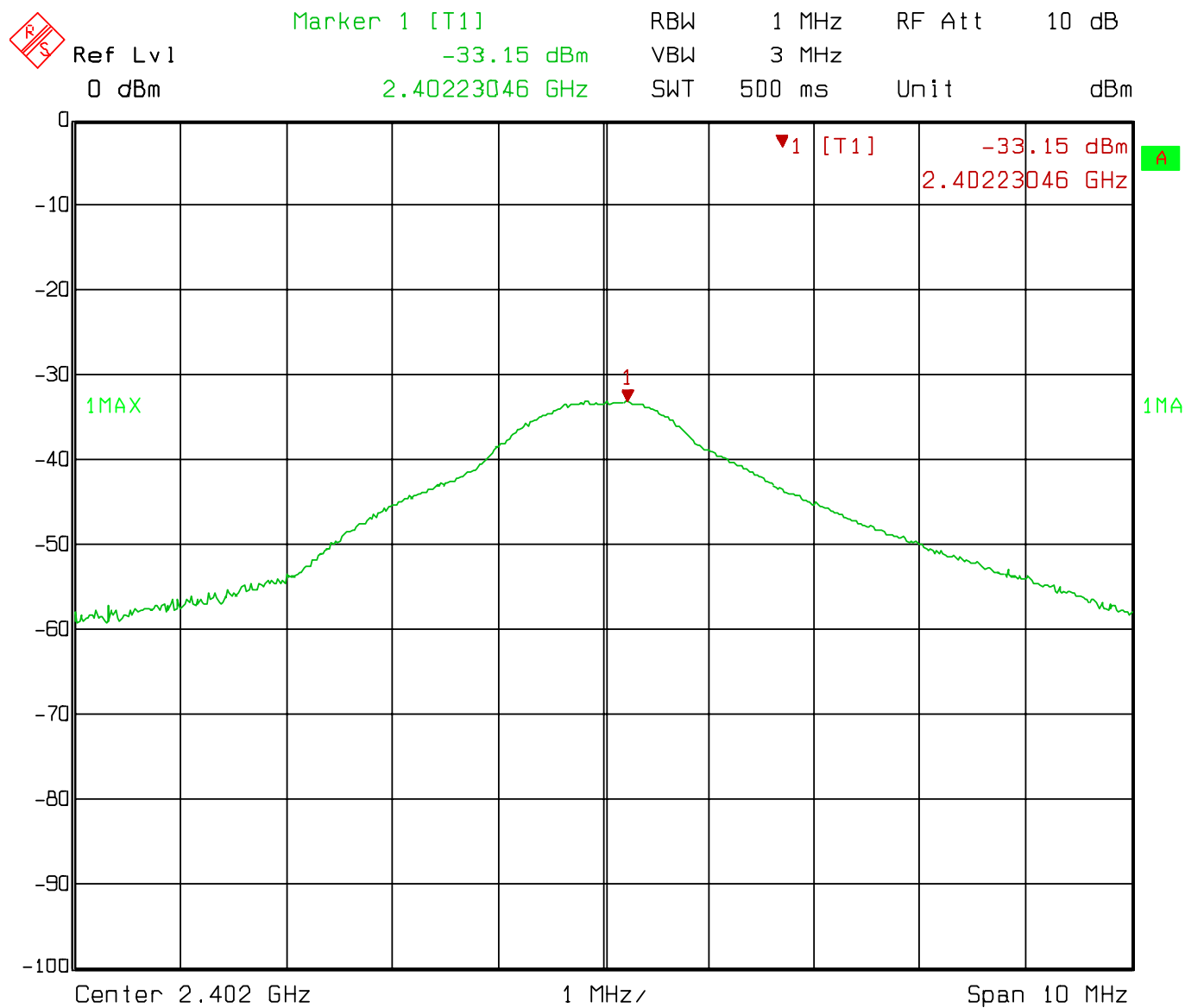
The testing was performed by Jandy Su on 2005-8-25

Test Result: Pass

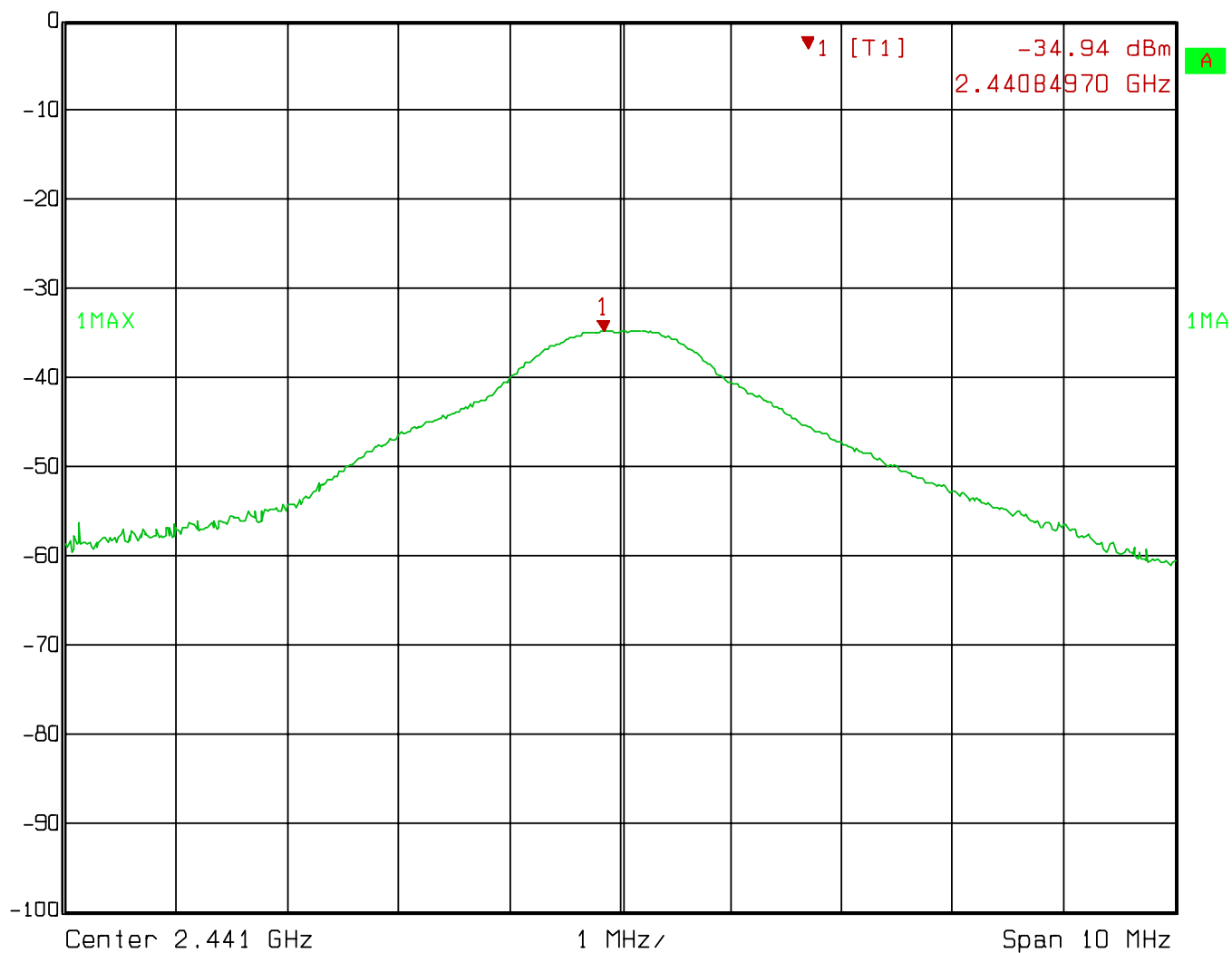
Test mode: Transmitting

The result has been complied with the 15.247(b)(1), see the following plot:

CHANNLE	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER OUTPUT IN μ W	PEAK POWER LIMIT (mW)
Low Channel	2402.00	-33.15	0.48	125
Middle Channel	2441.00	-34.94	0.32	125
High Channel	2481.00	-39.49	0.11	125



Date: 25.AUG.2005 17:01:26

Ref Lvl
0 dBmMarker 1 [T1]
-34.94 dBm
2.44084970 GHzRBW 1 MHz RF Att 10 dB
VBW 3 MHz
SWT 500 ms Unit dBm

Date: 25.AUG.2005 16:58:06



Ref Lvl

0 dBm

Marker 1 [T1]

-39.49 dBm

2.48115131 GHz

RBW

1 MHz

RF Att

10 dB

VBW

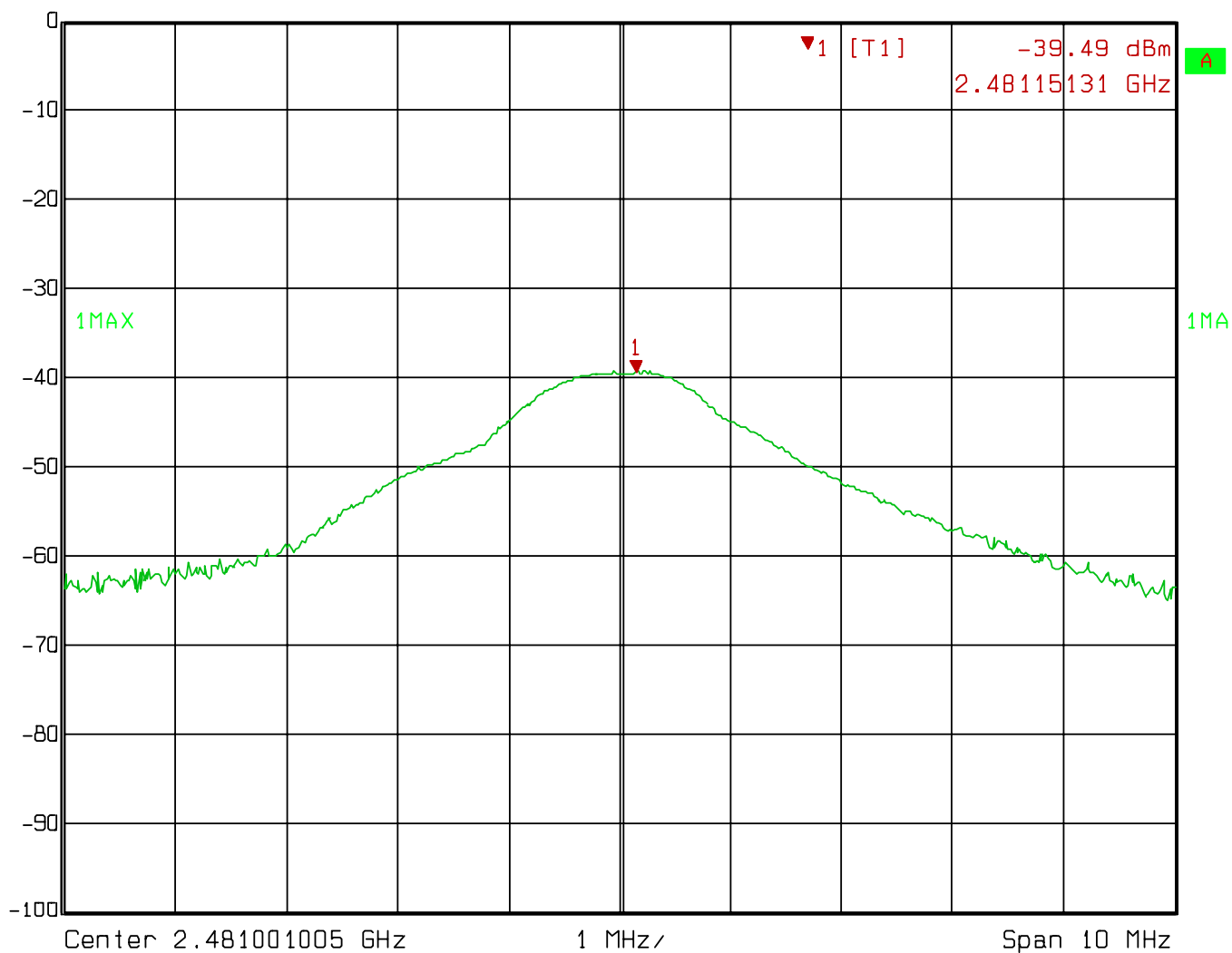
3 MHz

SWT

500 ms

Unit

dBm



Date: 25.AUG.2005 16:52:38

§15.247(d)- BAND EDGES TESTING

Applicable Standard

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2004-9-15	2005-9-15

* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

1. Check the calibration of the measuring instrument using a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Start 2.4 G Hz, stop 2.4835 GHz, and make sure the instrument is operated in its linear range.
3. Set both RBW and VBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100kHz bandwidth from band edge.
4. Measure the frequency edge point amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the edge frequency.

Test Data

Environmental Conditions

Temperature:	27 °C
Relative Humidity:	50 %
ATM Pressure:	1009 mbar

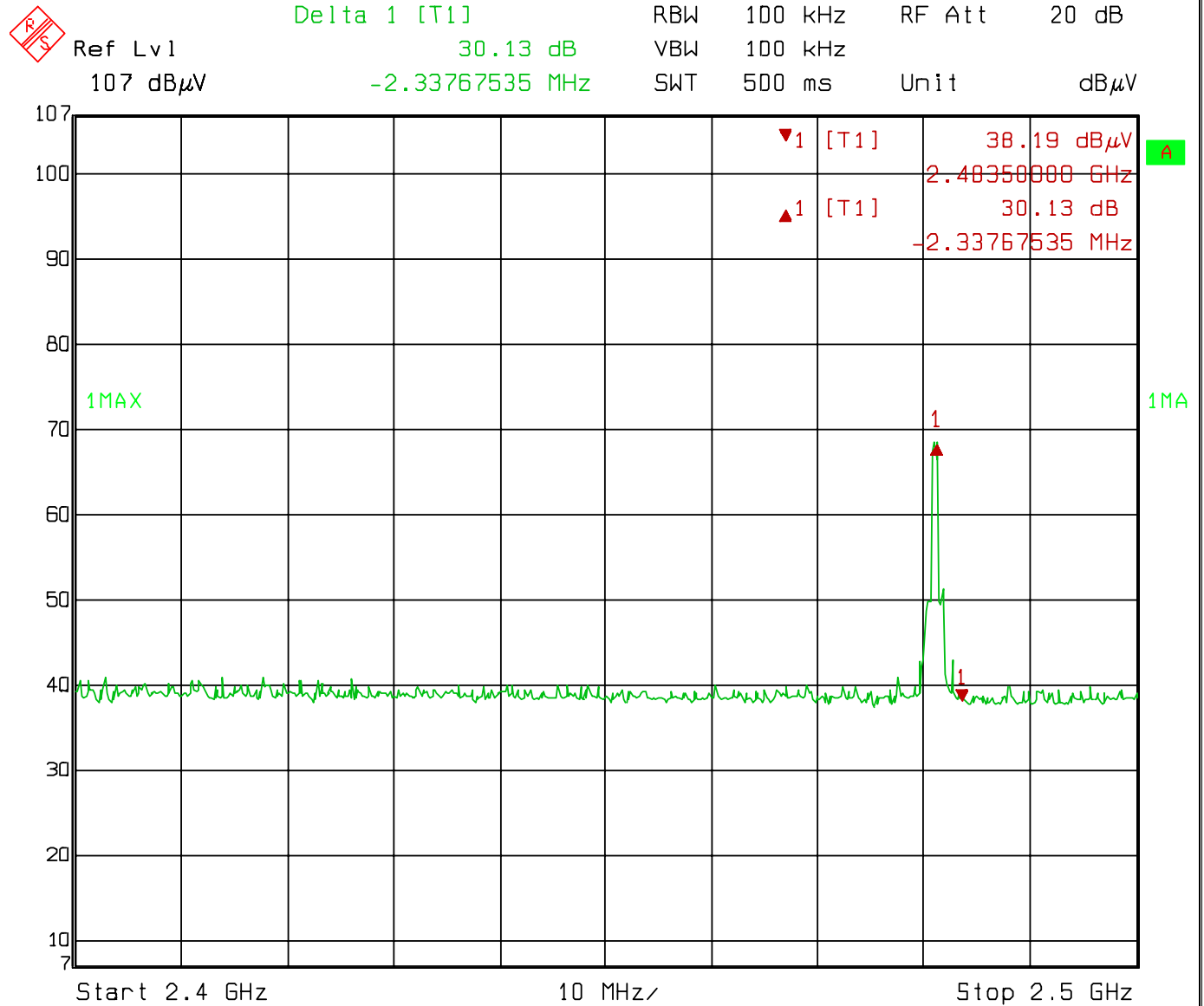
The testing was performed by Jandy Su on 2005-8-25

Test Result: Pass

Test mode: Transmitting

The result has been complied with the 15.247(d), see the following plot:

Frequency MHz	Emission dB μ V/m	Limit dB μ V/m
2483.50	38.19	54
2400.00	41.70	54



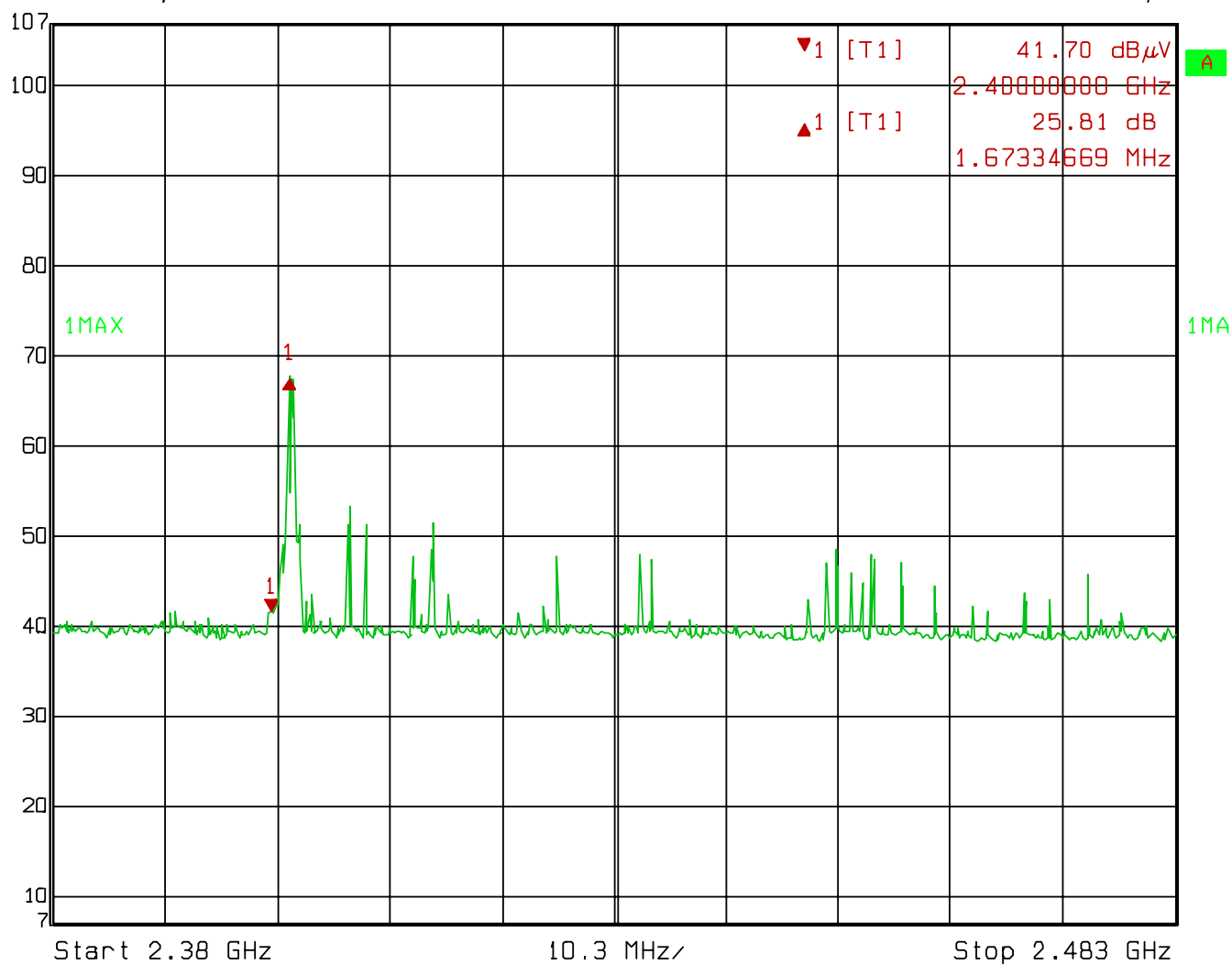
Date: 25.AUG.2005 16:31:57



Ref Lvl
107 dB μ V

Delta 1 [T1]
25.81 dB
1.67334669 MHz

RBW 100 kHz RF Att 20 dB
VBW 100 kHz
SWT 500 ms Unit dB μ V



Date: 25.AUG.2005 16:28:27