

APPLICATION CERTIFICATION
On Behalf of
Shenzhen Leader Digital-tech Weitong Co., Ltd.

MID
Model No.: GN3X

FCC ID: ZDYGN3X

Prepared for : Shenzhen Leader Digital-tech Weitong Co., Ltd.
Address : 4 Floor, Dongjiang Environmental Building, Central
Nanshan District, Shenzhen, China

Prepared by : ACCURATE TECHNOLOGY CO. LTD
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Report Number : ATE20120033
Date of Test : January 9-February 2, 2012
Date of Report : February 9, 2012

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Test Report Certification

Measurement Procedure Used:

**FCC Rules and Regulations Part 15 Subpart C Section 15.247
ANSI C63.4: 2003**

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.247 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test : January 9-February 2, 2012

Prepared by :

(Engineer)

Approved & Authorized Signer :

Sean -

(Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT : MID
 Model Number : GN3X
 (Note: X=1-9
 These samples are same except for the appearance is
 difference. So we prepare the GN32 for FCC test.)
 Frequency Band (Bluetooth) : 2402MHz-2480MHz
 Frequency Band (Wifi) : 2412-2462MHz
 Number of Channels : 79
 Antenna Gain : 0dBi
 Power Supply : DC 7.4V (Li-polymer battery);
 AC 120V/60Hz (Adaptor input)
 Adapter : Model number: FLD181-120150-11B25B
 Input: AC 100-240V; 50/60Hz 0.5A
 Output: DC 12V; 1.5A
 Output line: Non-shielded, Non-detachable, 1.4m
 Applicant : Shenzhen Leader Digital-tech Weitong Co., Ltd.
 Address : 4 Floor, Dongjiang Environmental Building, Central
 Nanshan District, Shenzhen, China
 Manufacturer : Shenzhen Leader Digital-tech Weitong Co., Ltd.
 Address : 4 Floor, Dongjiang Environmental Building, Central
 Nanshan District, Shenzhen, China
 Date of sample received : January 9, 2012
 Date of Test : January 9-February 2, 2012

1.2. Accessory and Auxiliary Equipment

Notebook PC : Manufacturer: SONY
 M/N: PCG-663P
 S/N: 28123170 7202526

1.3.Description of Test Facility

EMC Lab	: Accredited by TUV Rheinland Shenzhen
	Listed by FCC The Registration Number is 752051
	Listed by Industry Canada The Registration Number is 5077A-2
	Accredited by China National Accreditation Committee for Laboratories The Certificate Registration Number is L3193
Name of Firm	: ACCURATE TECHNOLOGY CO. LTD
Site Location	: F1, Bldg. A, Changyuan New Material Port, Keyuan Rd. Science & Industry Park, Nanshan, Shenzhen, Guangdong P.R. China

1.4.Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2

Radiated emission expanded uncertainty = 3.08dB, k=2
(9kHz-30MHz)

Radiated emission expanded uncertainty = 4.42dB, k=2
(30MHz-1000MHz)

Radiated emission expanded uncertainty = 4.06dB, k=2
(Above 1GHz)

2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

Kind of equipment	Manufacturer	Type	S/N	Calibrated date	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 7, 2012	Jan. 7, 2013
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 7, 2012	Jan. 7, 2013
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 7, 2012	Jan. 7, 2013
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 7, 2012	Jan. 7, 2013
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 7, 2012	Jan. 7, 2013
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 7, 2012	Jan. 7, 2013
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 7, 2012	Jan. 7, 2013
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 7, 2012	Jan. 7, 2013
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 7, 2012	Jan. 7, 2013
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 7, 2012	Jan. 7, 2013

3. OPERATION OF EUT DURING TESTING

3.1.Operating Mode

The mode is used: Transmitting mode

Low Channel: 2402MHz

Middle Channel: 2441MHz

High Channel: 2480MHz

Hopping

Charging

3.2.Configuration and peripherals

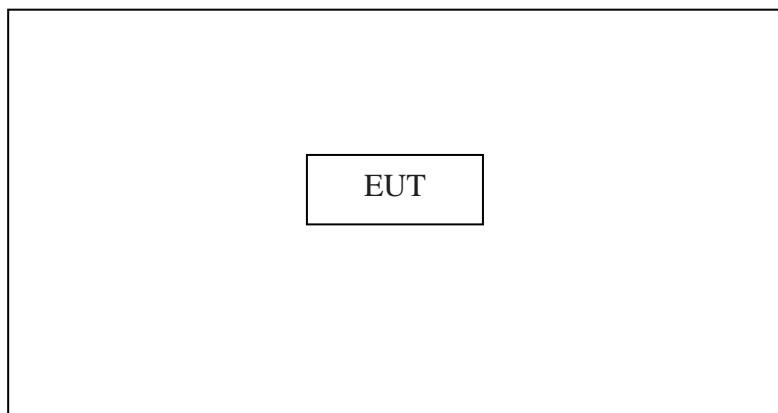


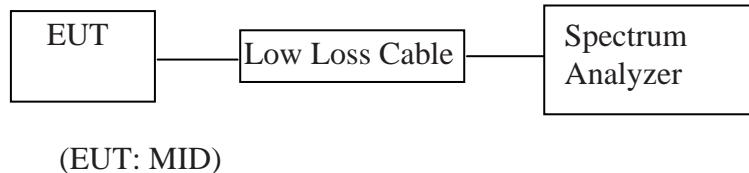
Figure 1 Setup: Transmitting mode

4. TEST PROCEDURES AND RESULTS

FCC Rules	Description of Test	Result
Section 15.247(a)(1)	20dB Bandwidth Test	Compliant
Section 15.247(a)(1)	Carrier Frequency Separation Test	Compliant
Section 15.247(a)(1)(iii)	Number Of Hopping Frequency Test	Compliant
Section 15.247(a)(1)(iii)	Dwell Time Test	Compliant
Section 15.247(b)(1)	Maximum Peak Output Power Test	Compliant
Section 15.247(d)	Band Edge Compliance Test	Compliant
Section 15.247(d) Section 15.209	Radiated Spurious Emission Test	Compliant
Section 15.247(d)	Conducted Spurious Emission Test	Compliant
Section 15.207	AC Power Line Conducted Emission Test	Compliant
Section 15.203	Antenna Requirement	Compliant

5. 20DB BANDWIDTH TEST

5.1. Block Diagram of Test Setup



5.2. The Requirement For Section 15.247(a)(1)

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.

5.3. EUT Configuration on Measurement

The following equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

5.3.1. MID (EUT)

Model Number	:	GN32
Serial Number	:	N/A
Manufacturer	:	Shenzhen Leader Digital-tech Weitong Co., Ltd.

5.4. Operating Condition of EUT

5.4.1. Setup the EUT and simulator as shown as Section 5.1.

5.4.2. Turn on the power of all equipment.

5.4.3. Let the EUT work in TX(Hopping off) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, 2480MHz TX frequency to transmit.

5.5. Test Procedure

- 5.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 5.5.2. Set RBW of spectrum analyzer to 30kHz and VBW to 100kHz.
- 5.5.3. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

5.6. Test Result

PASS.

Date of Test:	January 14, 2012	Temperature:	25°C
EUT:	MID	Humidity:	50%
Model No.:	GN32	Power Supply:	AC 120V/60Hz
Test Mode:	TX	Test Engineer:	Kai

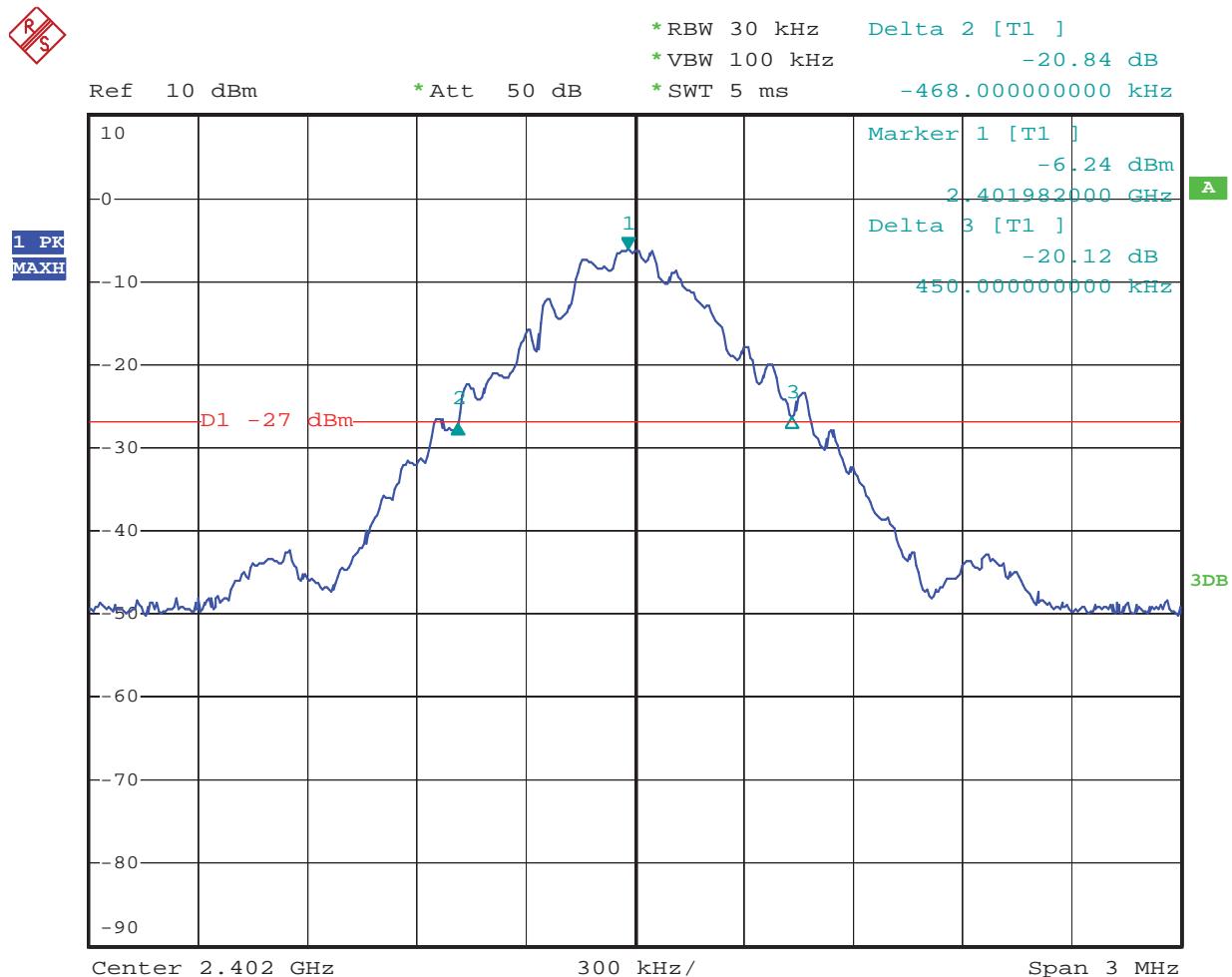
Channel	Frequency (MHz)	20dB Bandwidth (MHz)	Limit (MHz)
Low	2402	0.918	N/A
Middle	2441	0.978	N/A
High	2480	0.978	N/A

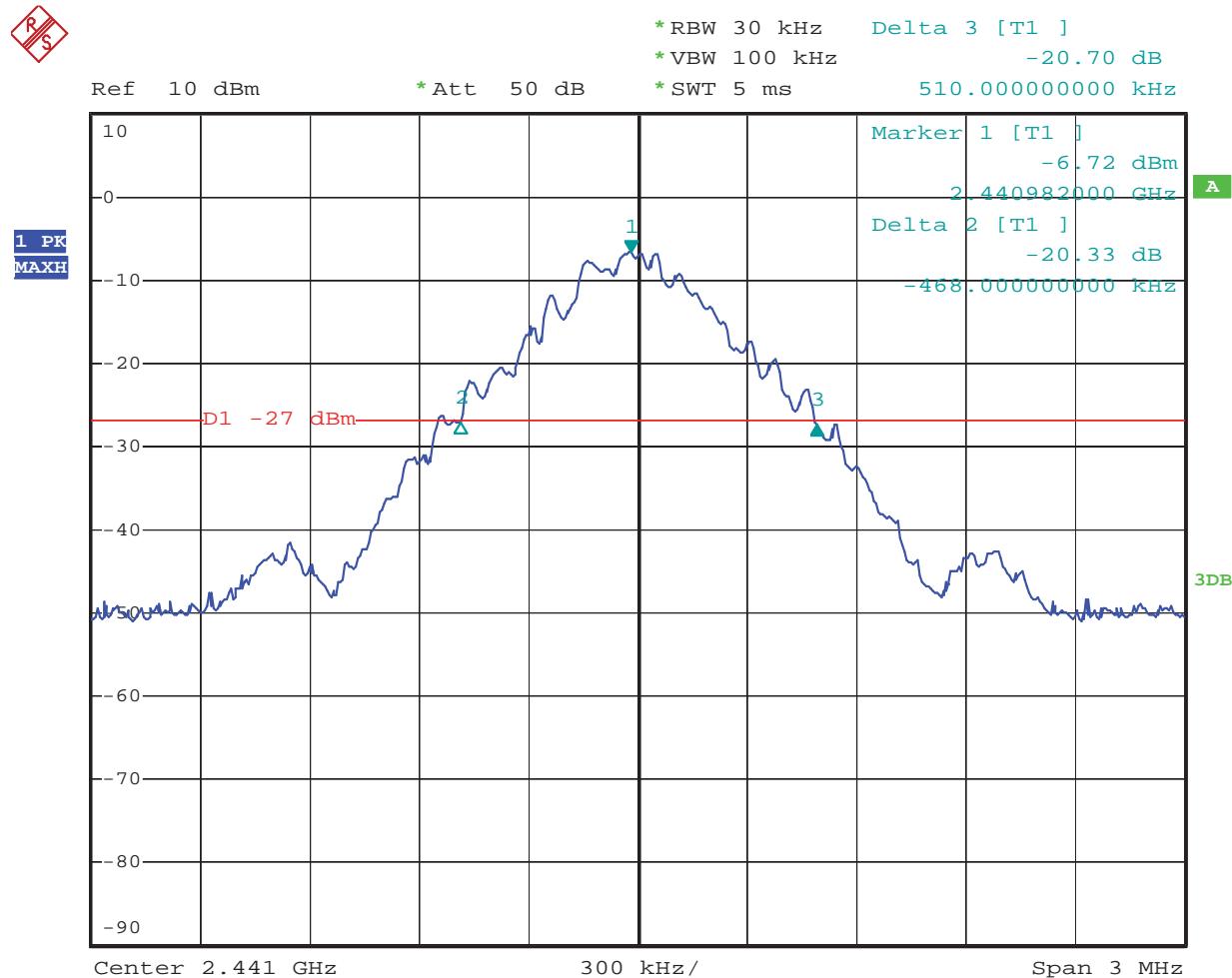
Note: N/A: 1) The 20 dB bandwidth of the hopping channel is not limit.

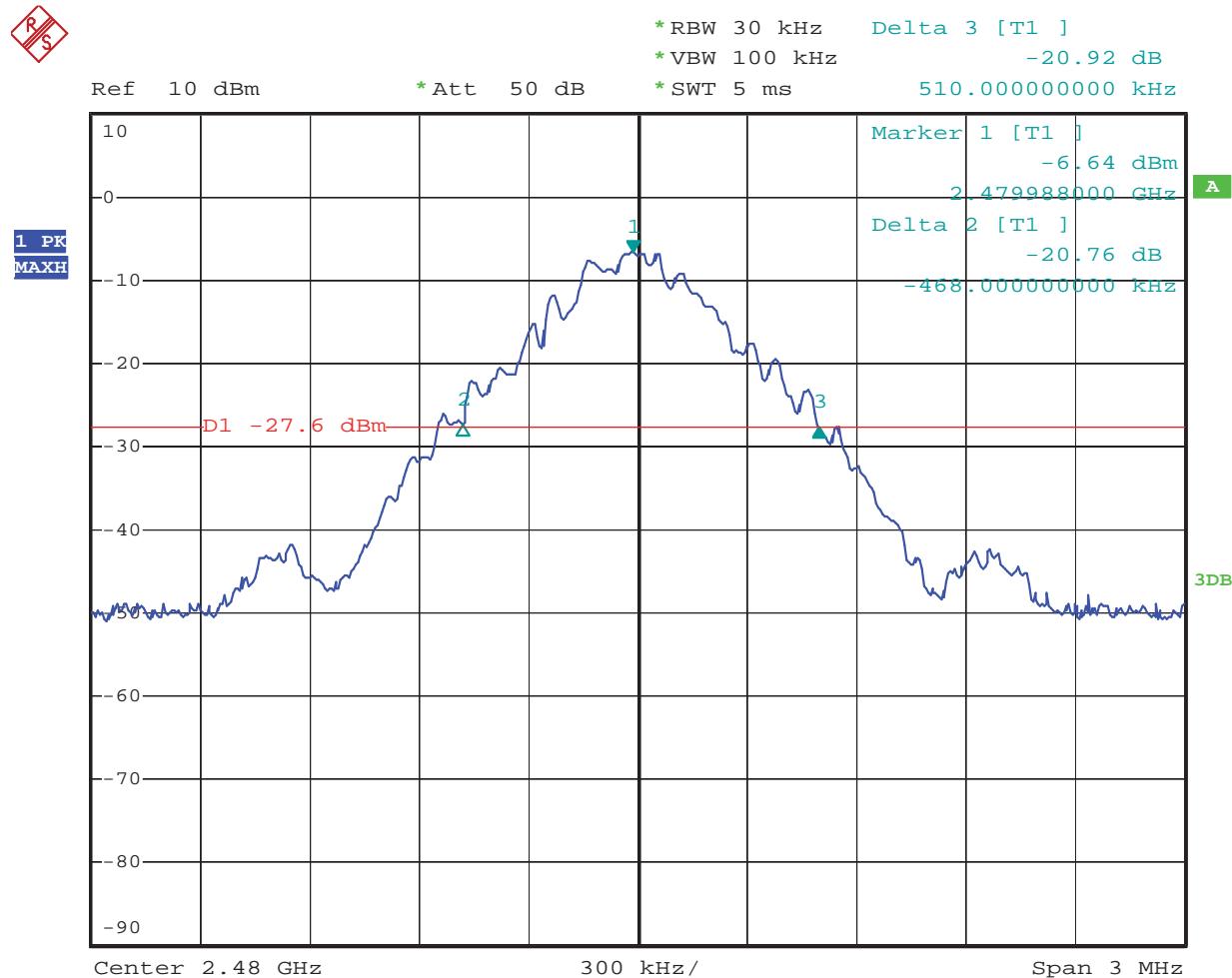
- 2) The data of 20 dB bandwidth of the hopping channel is limit of carrier frequencies separated

The spectrum analyzer plots are attached as below.

"Spectrum analyzer" is R/S

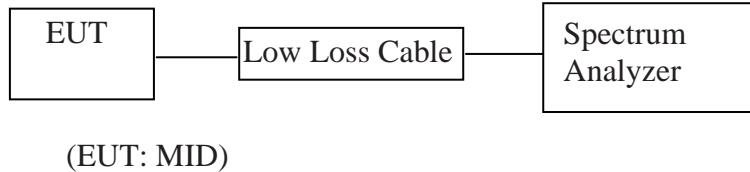






6. CARRIER FREQUENCY SEPARATION TEST

6.1. Block Diagram of Test Setup



6.2. The Requirement For Section 15.247(a)(1)

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. 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. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudorandomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

6.3. EUT Configuration on Measurement

The following equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.3.1. MID (EUT)

Model Number	:	GN32
Serial Number	:	N/A
Manufacturer	:	Shenzhen Leader Digital-tech Weitong Co., Ltd.

6.4. Operating Condition of EUT

6.4.1. Setup the EUT and simulator as shown as Section 6.1.

6.4.2. Turn on the power of all equipment.

6.4.3. Let the EUT work in TX (Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, 2480MHz TX frequency to transmit.

6.5. Test Procedure

- 6.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 6.5.2. Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz. Adjust Span to 3 MHz.
- 6.5.3. Set the adjacent channel of the EUT maxhold another trace.
- 6.5.4. Measurement the channel separation

6.6. Test Result

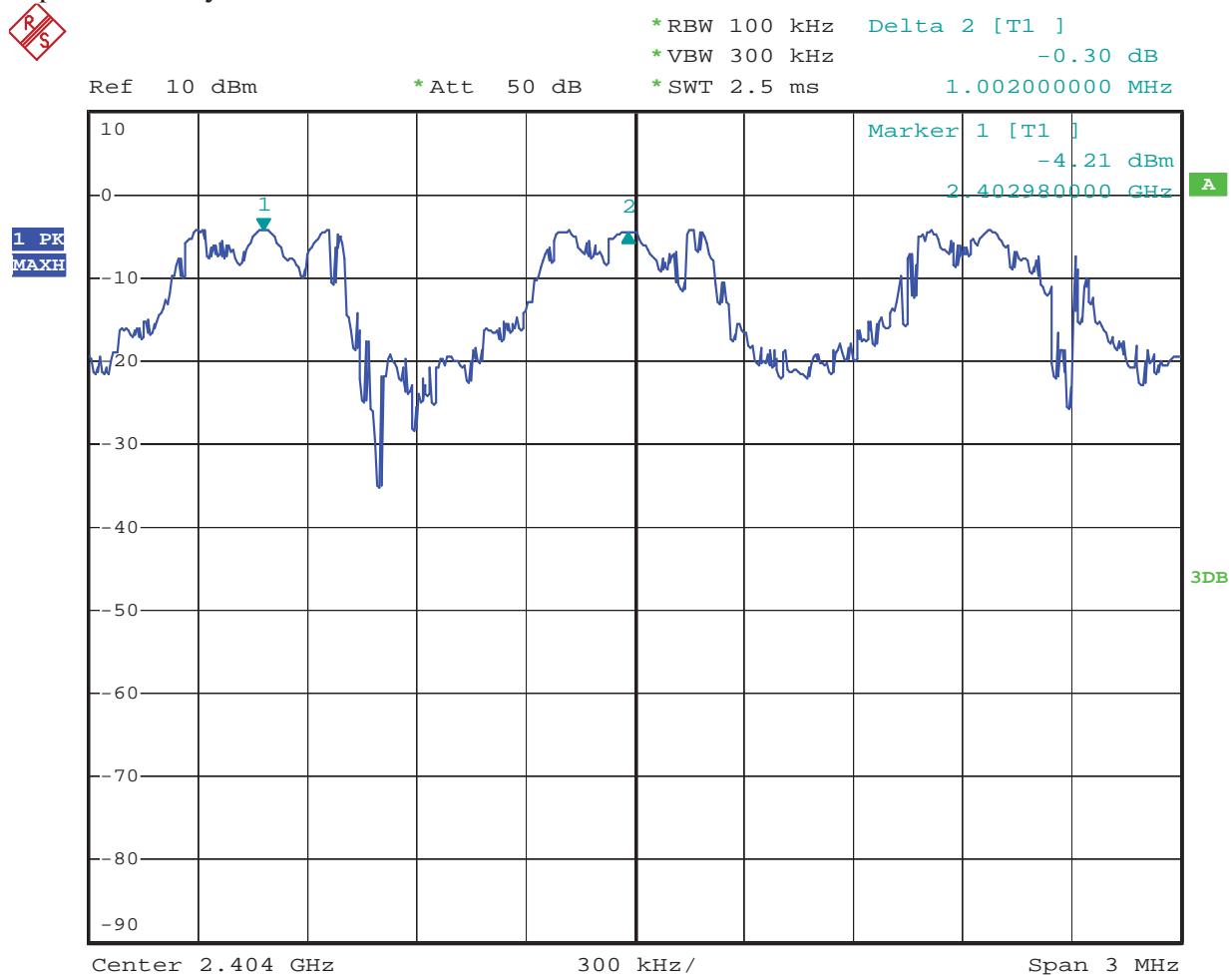
PASS.

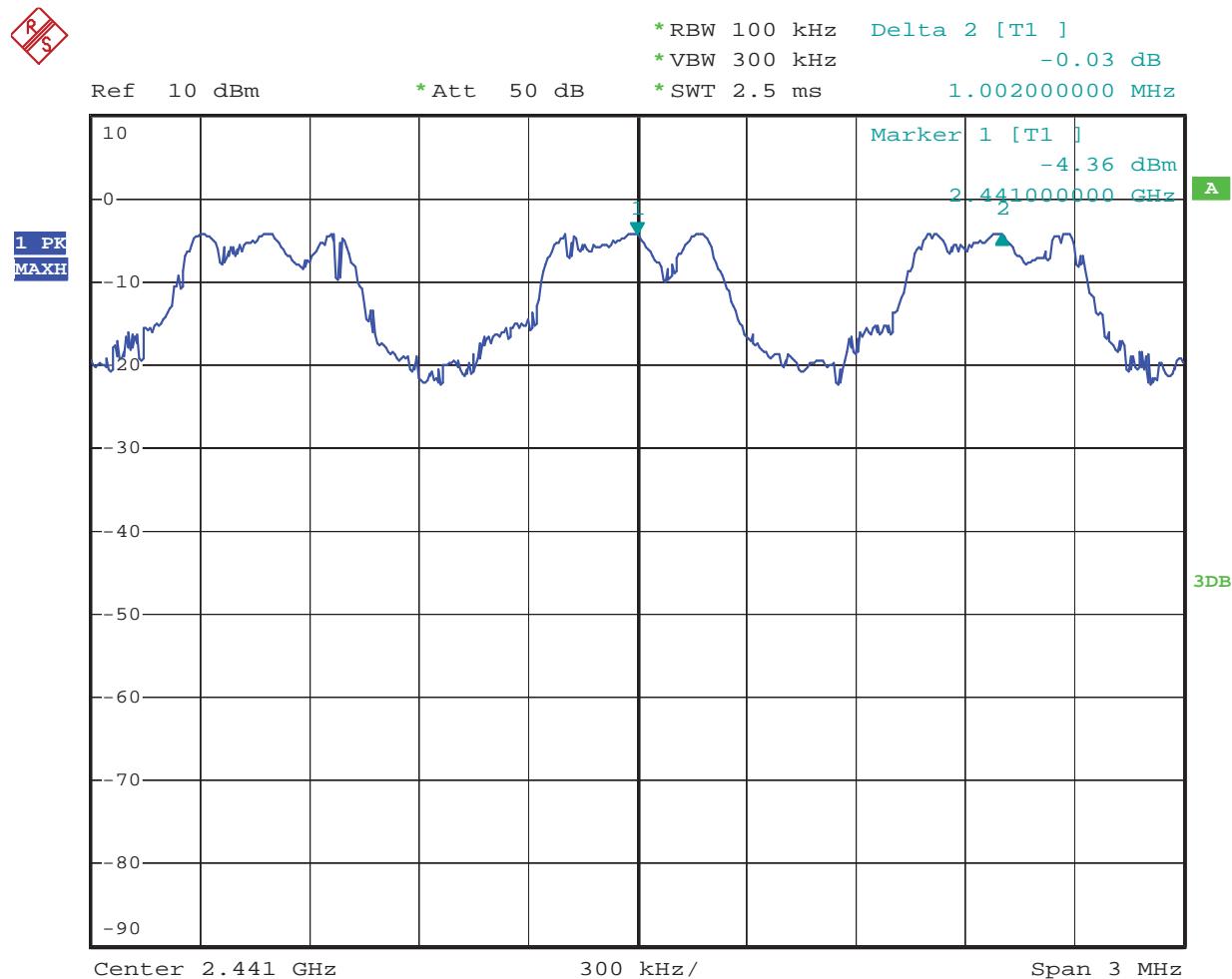
Date of Test:	January 14, 2012	Temperature:	25°C
EUT:	MID	Humidity:	50%
Model No.:	GN32	Power Supply:	AC 120V/60Hz
Test Mode:	Hopping	Test Engineer:	Kai

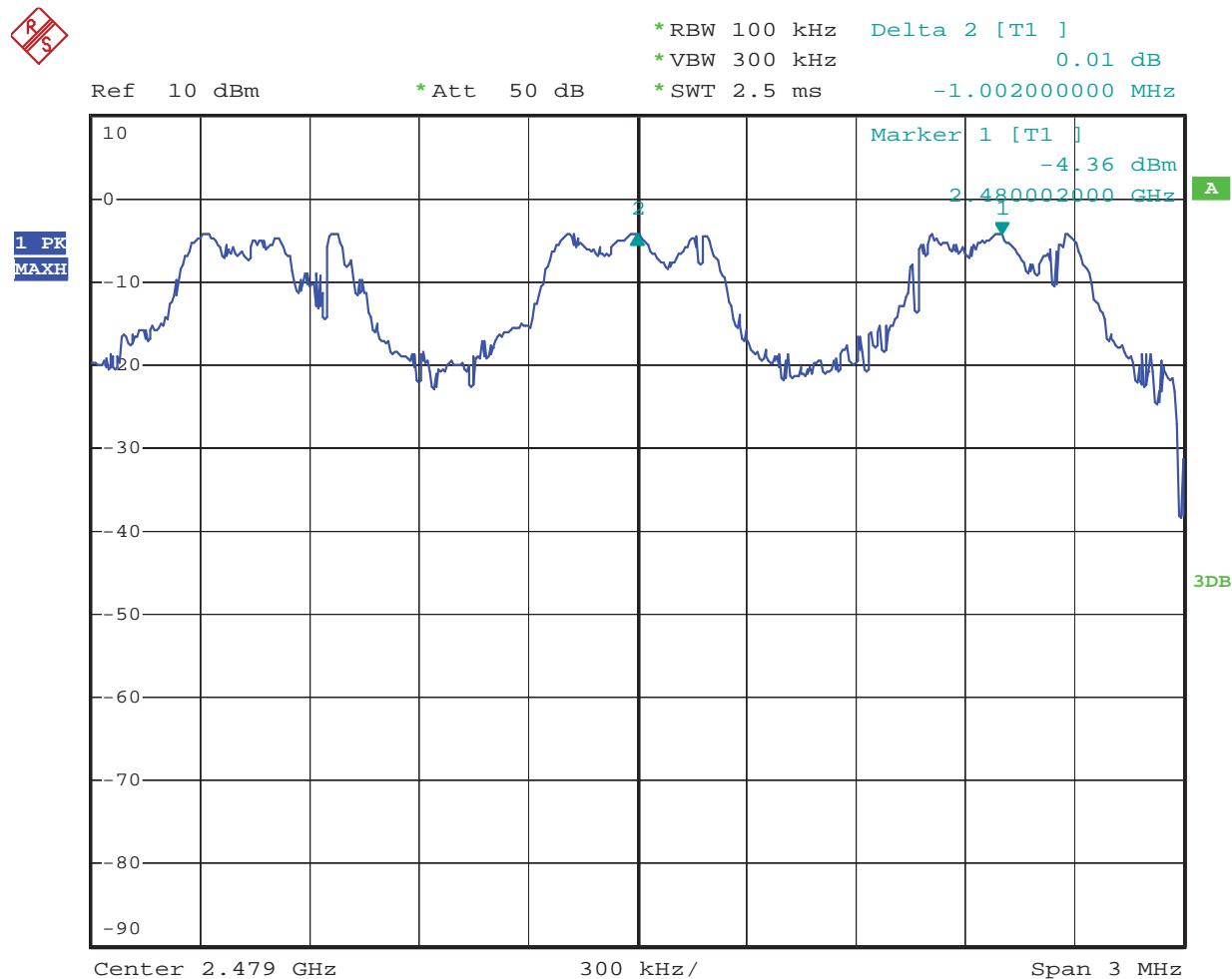
Channel	Channel Frequency (MHz)	Channel separation (MHz)	Limit
Low	2402	1.002	> the 20dB Bandwidth or 25kHz (whichever is greater)
Middle	2441	1.002	> the 20dB Bandwidth or 25kHz (whichever is greater)
High	2480	1.002	> the 20dB Bandwidth or 25kHz (whichever is greater)

The spectrum analyzer plots are attached as below.

"Spectrum analyzer" is R/S

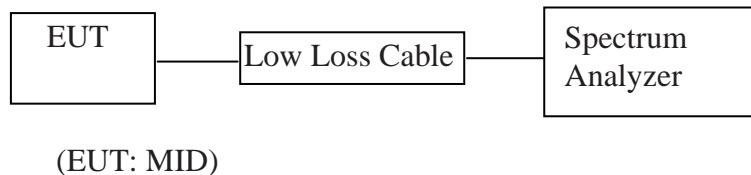






7. NUMBER OF HOPPING FREQUENCY TEST

7.1. Block Diagram of Test Setup



7.2. The Requirement For Section 15.247(a)(1)(iii)

Section 15.247(a)(1)(iii): Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

7.3. EUT Configuration on Measurement

The following equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

7.3.1. MID (EUT)

Model Number	:	GN32
Serial Number	:	N/A
Manufacturer	:	Shenzhen Leader Digital-tech Weitong Co., Ltd.

7.4. Operating Condition of EUT

7.4.1. Setup the EUT and simulator as shown as Section 7.1.

7.4.2. Turn on the power of all equipment.

7.4.3. Let the EUT work in TX (Hopping on) modes measure it.

7.5. Test Procedure

7.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

7.5.2. Set the spectrum analyzer as Span=30MHz, RBW=300kHz, VBW=300kHz.

7.5.3. Max hold, view and count how many channel in the band.

7.6. Test Result

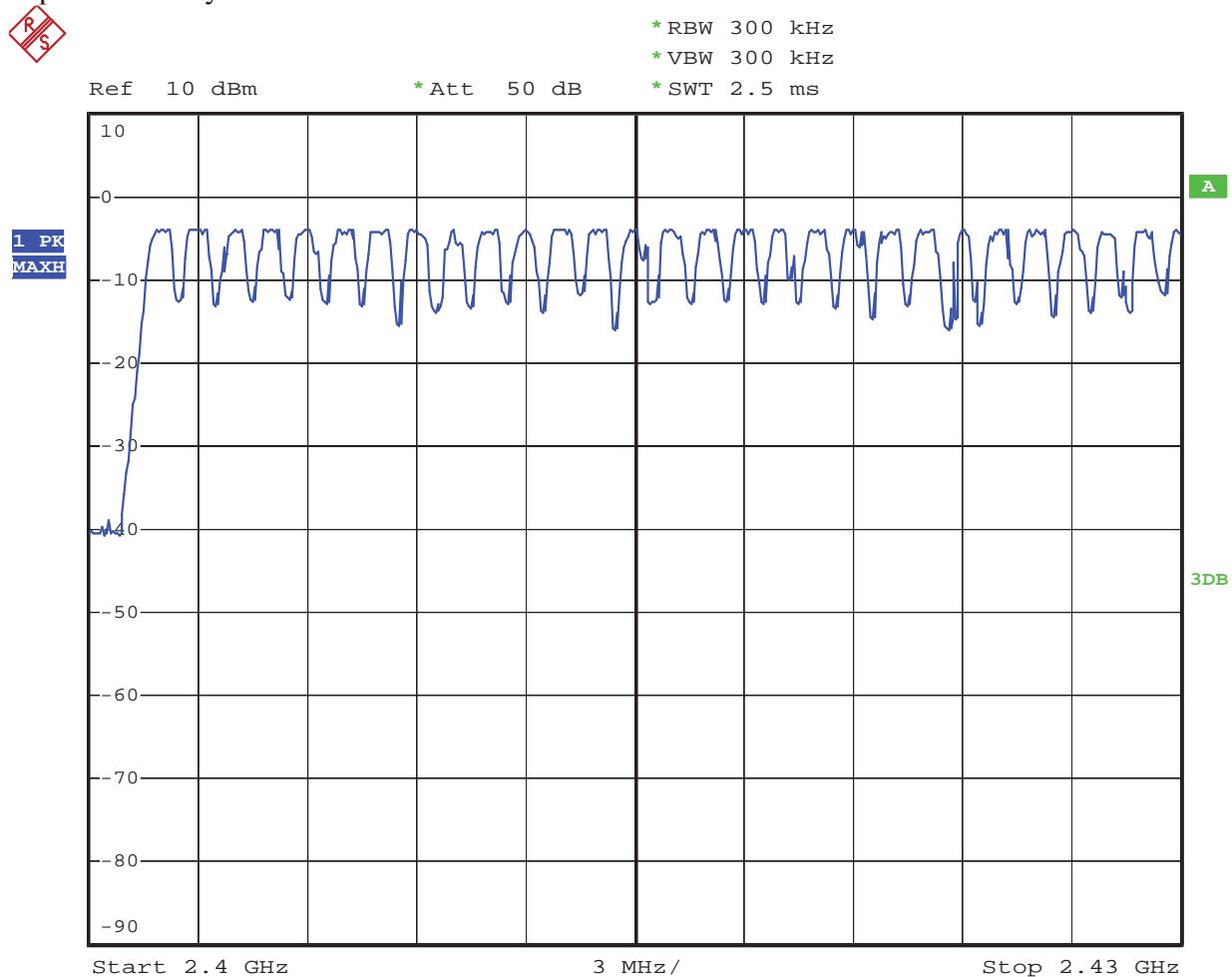
PASS.

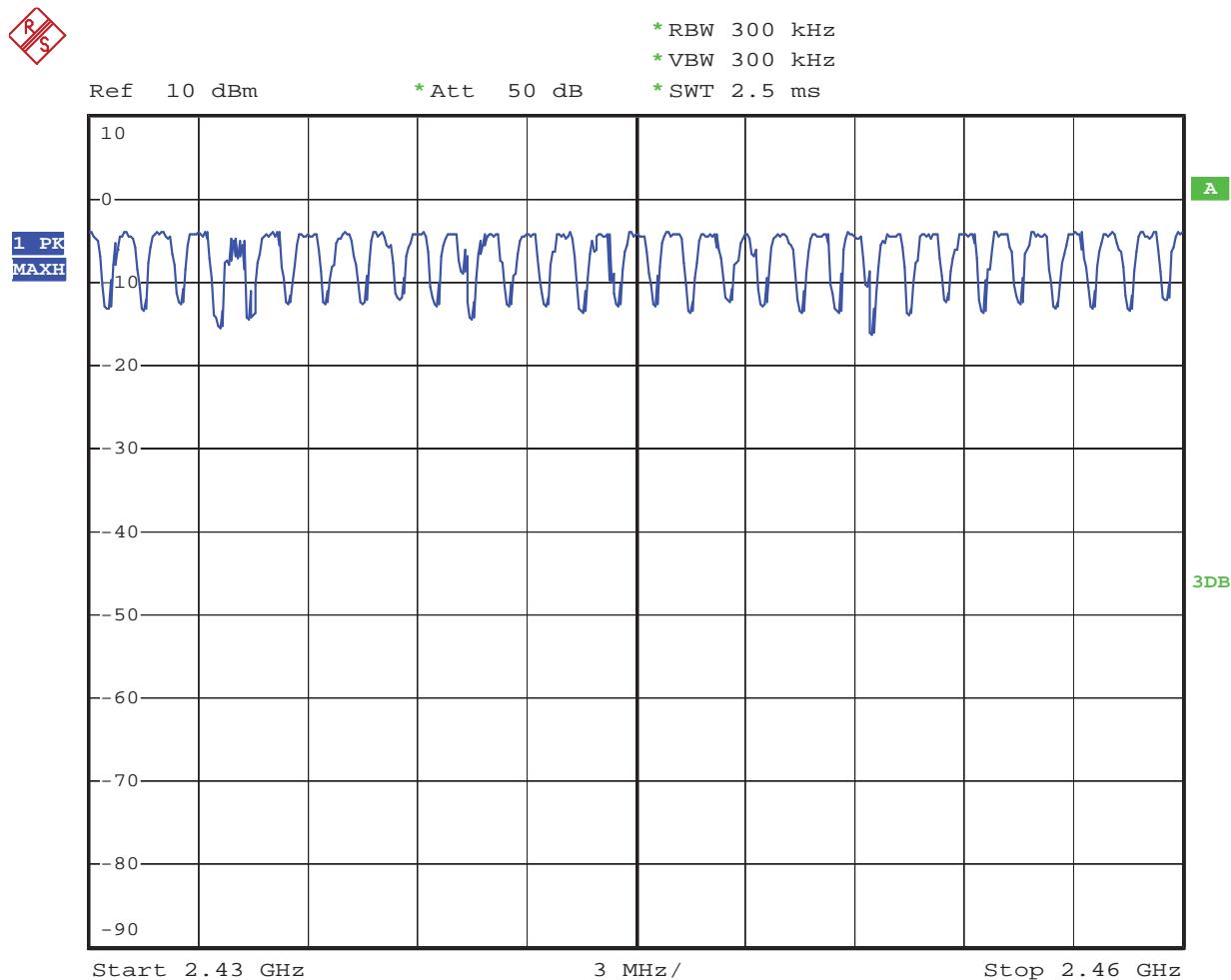
Date of Test:	<u>January 14, 2012</u>	Temperature:	<u>25°C</u>
EUT:	<u>MID</u>	Humidity:	<u>50%</u>
Model No.:	<u>GN32</u>	Power Supply:	<u>AC 120V/60Hz</u>
Test Mode:	<u>Hopping</u>	Test Engineer:	<u>Kai</u>

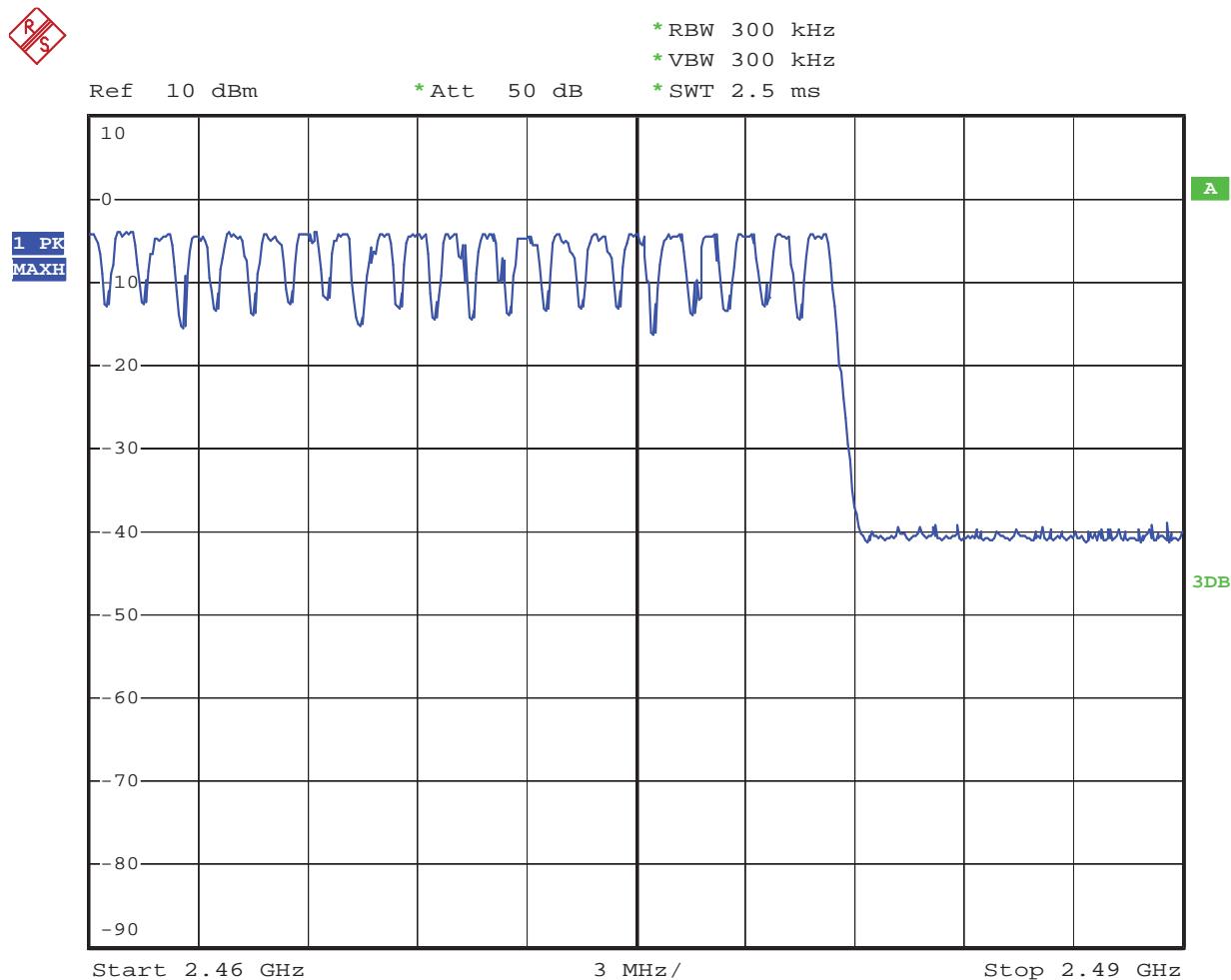
Total number of hopping channel	Measurement result (CH)	Limit (CH)
	79	>15

The spectrum analyzer plots are attached as below.

"Spectrum analyzer" is R/S

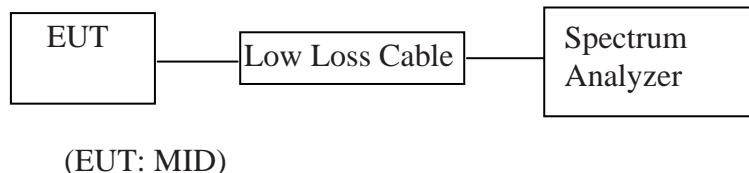






8. DWELL TIME TEST

8.1. Block Diagram of Test Setup



8.2. The Requirement For Section 15.247(a)(1)(iii)

Section 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.

8.3. EUT Configuration on Measurement

The following equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

8.3.1. MID (EUT)

Model Number	:	GN32
Serial Number	:	N/A
Manufacturer	:	Shenzhen Leader Digital-tech Weitong Co., Ltd.

8.4. Operating Condition of EUT

8.4.1. Setup the EUT and simulator as shown as Section 8.1.

8.4.2. Turn on the power of all equipment.

8.4.3. Let the EUT work in TX (Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, 2480MHz TX frequency to transmit.

8.5. Test Procedure

8.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

8.5.2. Set center frequency of spectrum analyzer = operating frequency.

8.5.3. Set the spectrum analyzer as RBW=100kHz, VBW=300kHz, Span=0Hz, Adjust Sweep=31.6s.

8.5.4. Set the spectrum analyzer as RBW=1MHz, VBW=3MHz, Span=0Hz, Adjust Sweep=3ms. Get the pulse time.

8.5.5. Repeat above procedures until all frequency measured were complete.

8.6. Test Result

PASS.

Date of Test:	January 14, 2012	Temperature:	25°C
EUT:	MID	Humidity:	50%
Model No.:	GN32	Power Supply:	AC 120V/60Hz
Test Mode:	Hopping	Test Engineer:	Kai

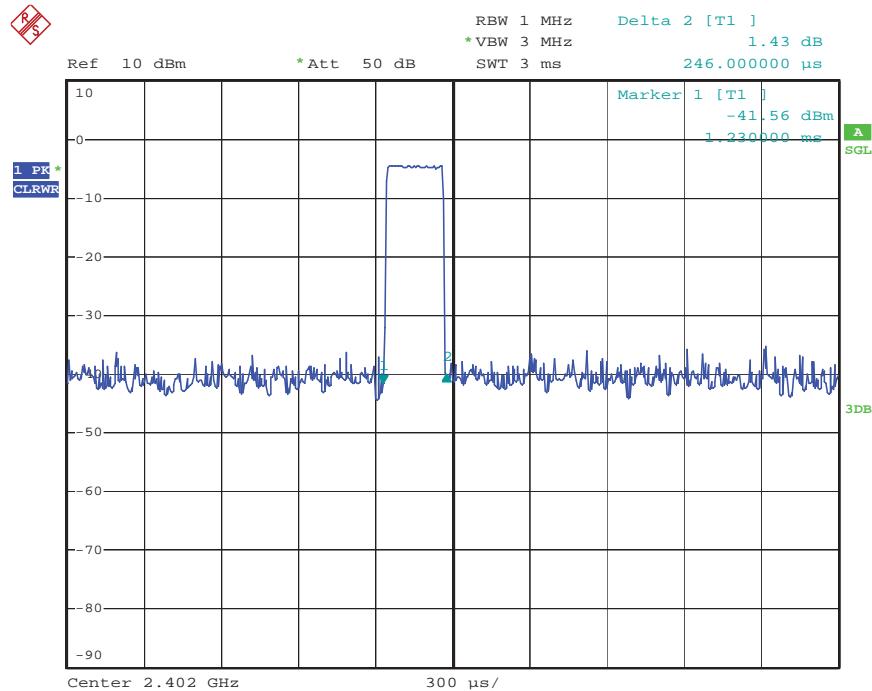
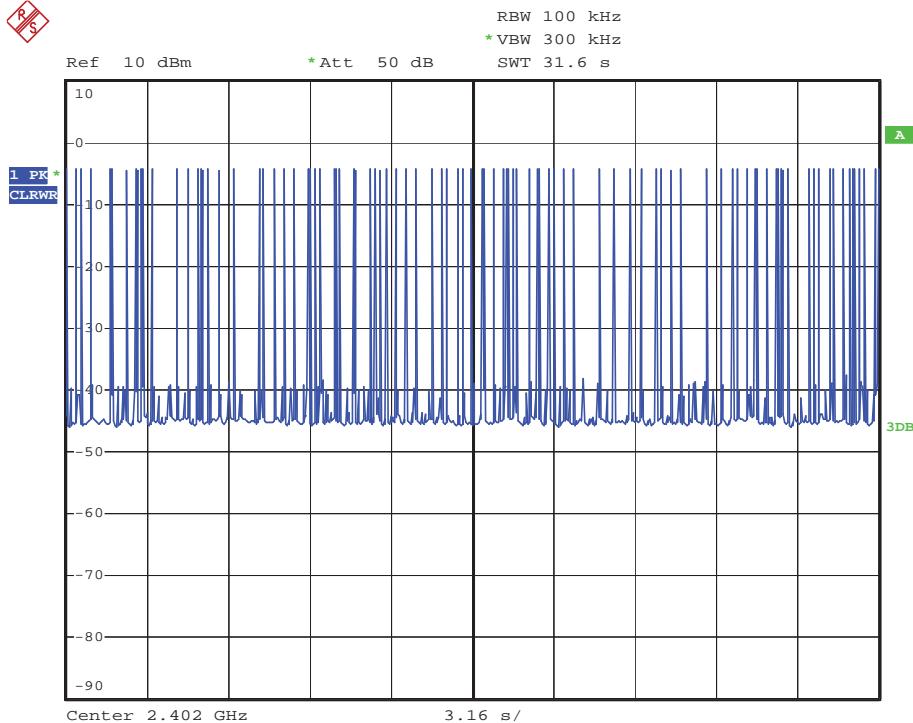
A period transmit time = $0.4 \times 79 = 31.6$

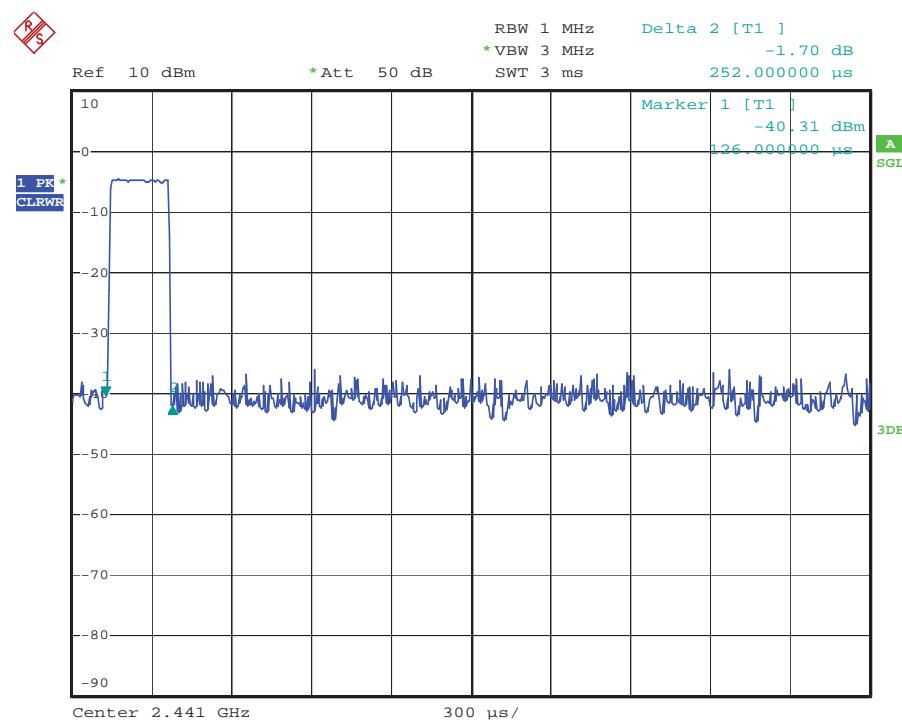
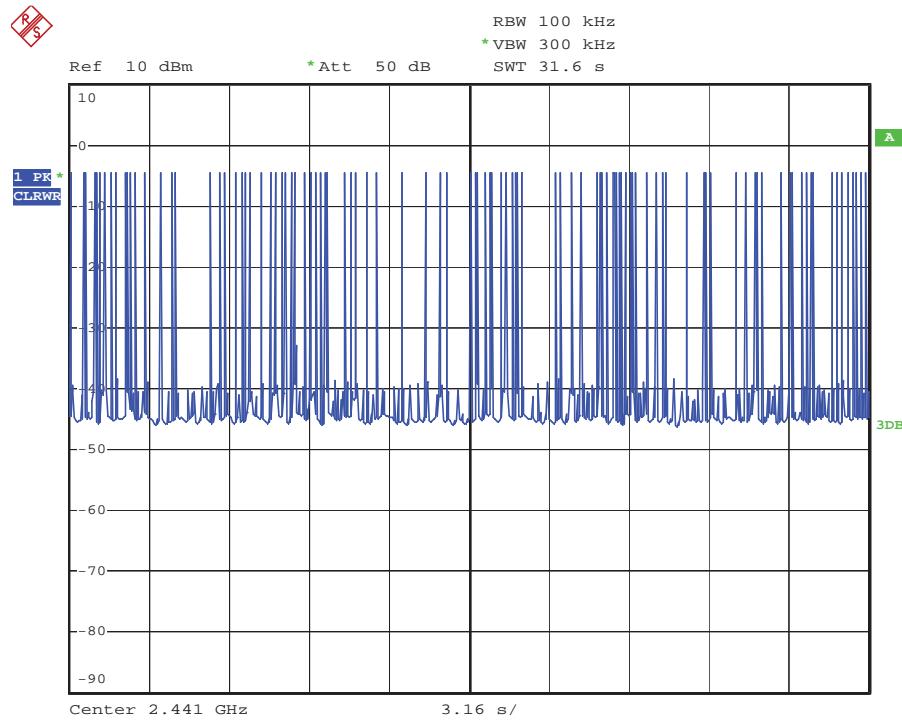
Dwell time = pulse time \times burst (in 31.6 sec.)

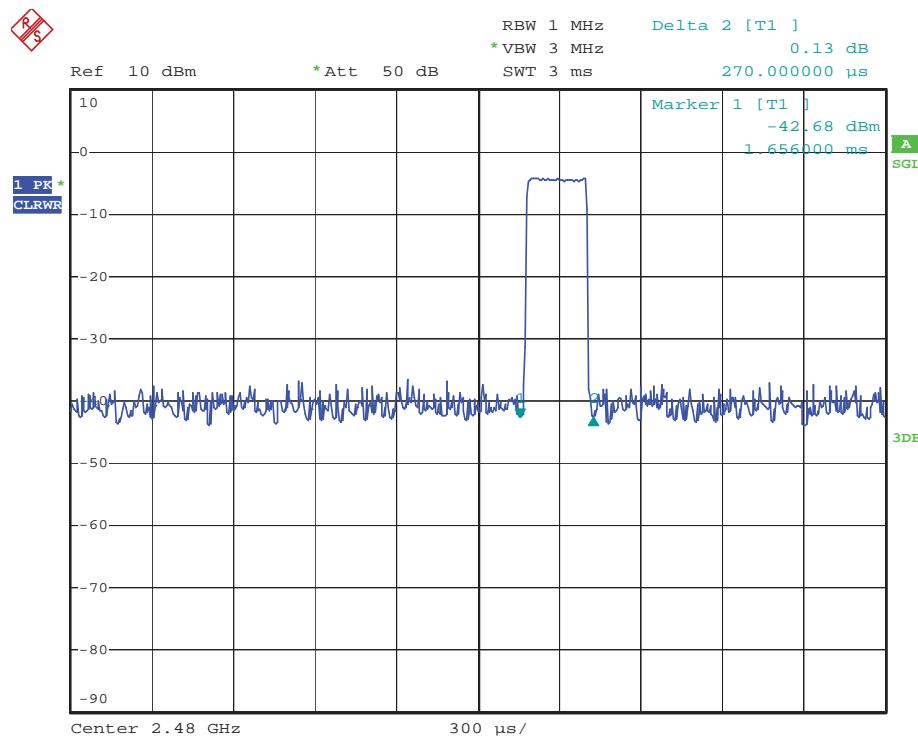
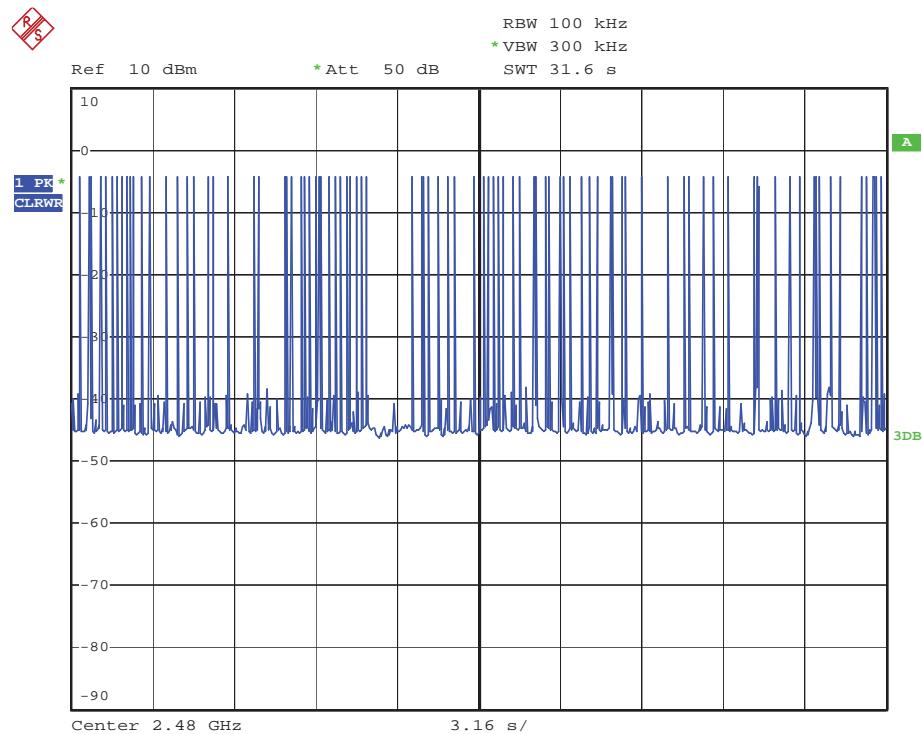
Channel	Channel Frequency (MHz)	Pulse Time (ms)	Burst (in 31.6 sec.)	Dwell Time (ms)	Limit (ms)
Low	2402	0.246	96	23.616	400
Middle	2441	0.252	104	26.208	400
High	2480	0.270	91	24.570	400

The spectrum analyzer plots are attached as below.

"Spectrum analyzer" is R/S

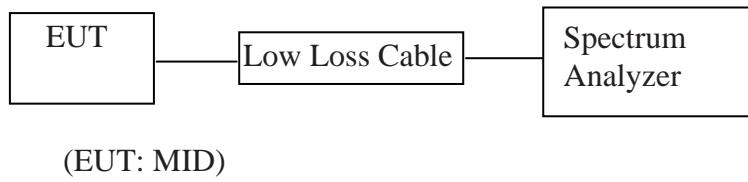






9. MAXIMUM PEAK OUTPUT POWER TEST

9.1. Block Diagram of Test Setup



9.2. The Requirement For Section 15.247(b)(1)

Section 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.

9.3. EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

9.3.1. MID (EUT)

Model Number : GN32
 Serial Number : N/A
 Manufacturer : Shenzhen Leader Digital-tech Weitong Co., Ltd.

9.4. Operating Condition of EUT

9.4.1. Setup the EUT and simulator as shown as Section 9.1.

9.4.2. Turn on the power of all equipment.

9.4.3. Let the EUT work in TX (Hopping off) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, 2480MHz TX frequency to transmit.

9.5. Test Procedure

9.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

9.5.2. Set RBW of spectrum analyzer to 1MHz and VBW to 3MHz.

9.5.3. Measurement the maximum peak output power.

9.6. Test Result

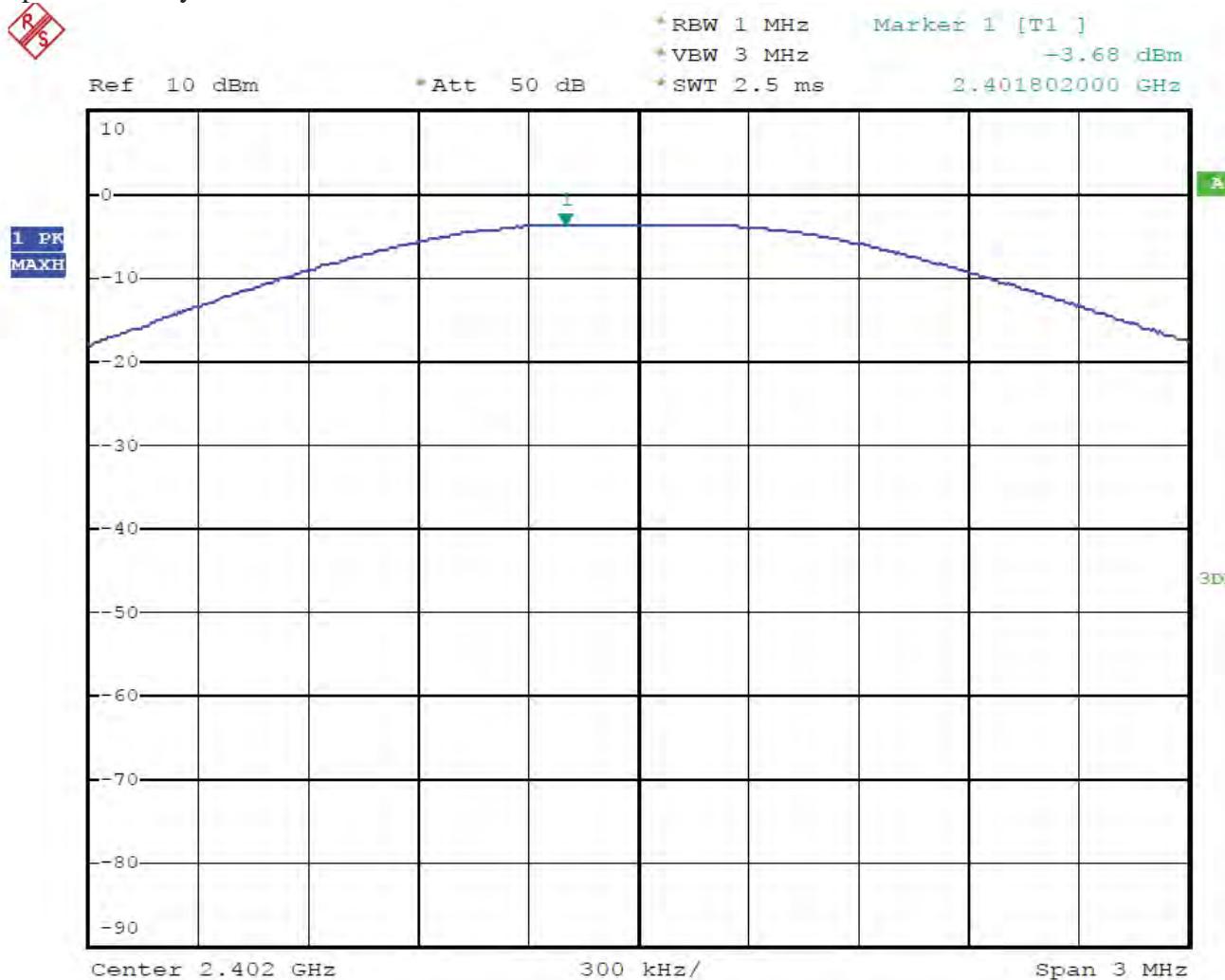
PASS.

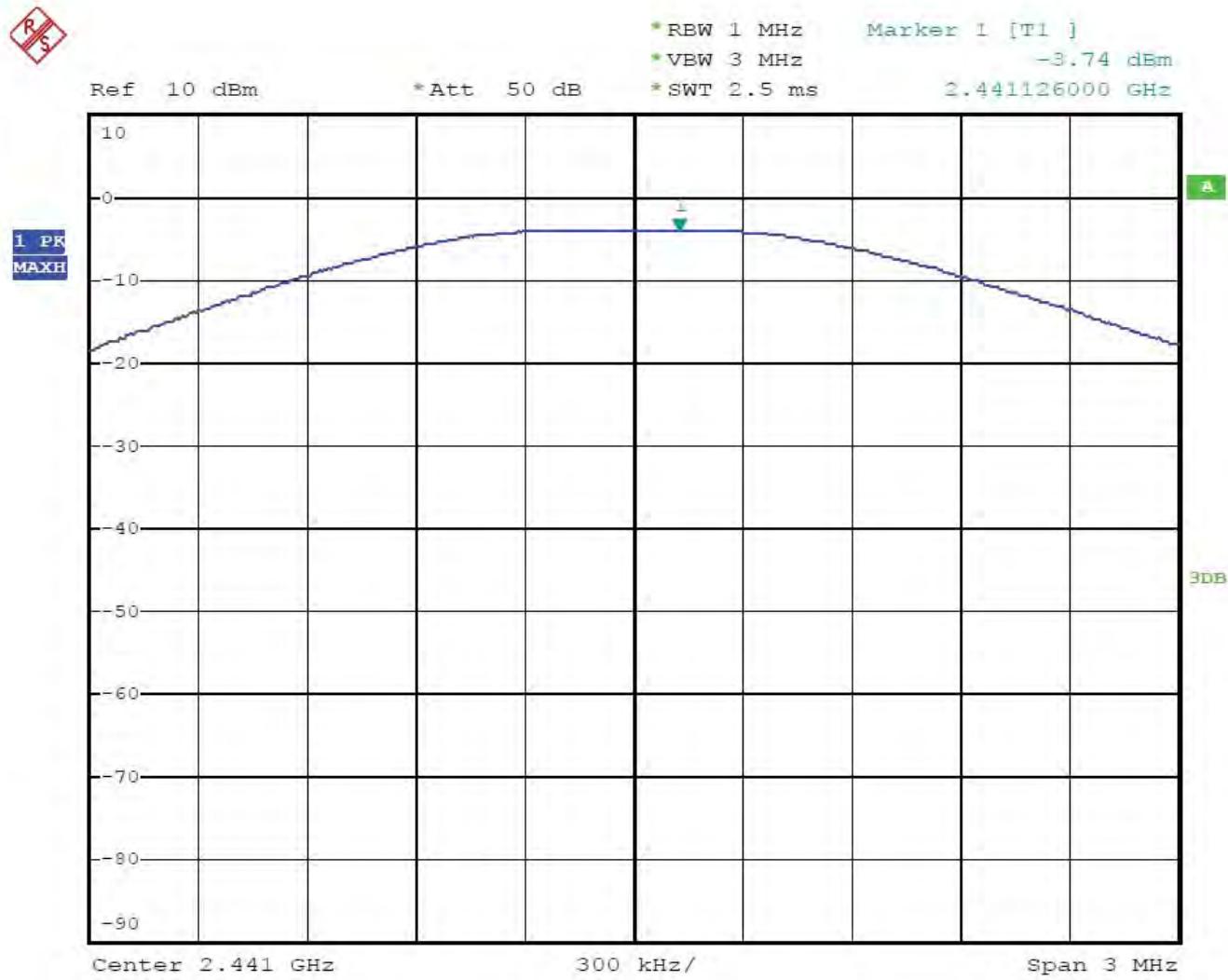
Date of Test:	January 14, 2012	Temperature:	25°C
EUT:	MID	Humidity:	50%
Model No.:	GN32	Power Supply:	AC 120V/60Hz
Test Mode:	TX	Test Engineer:	Kai

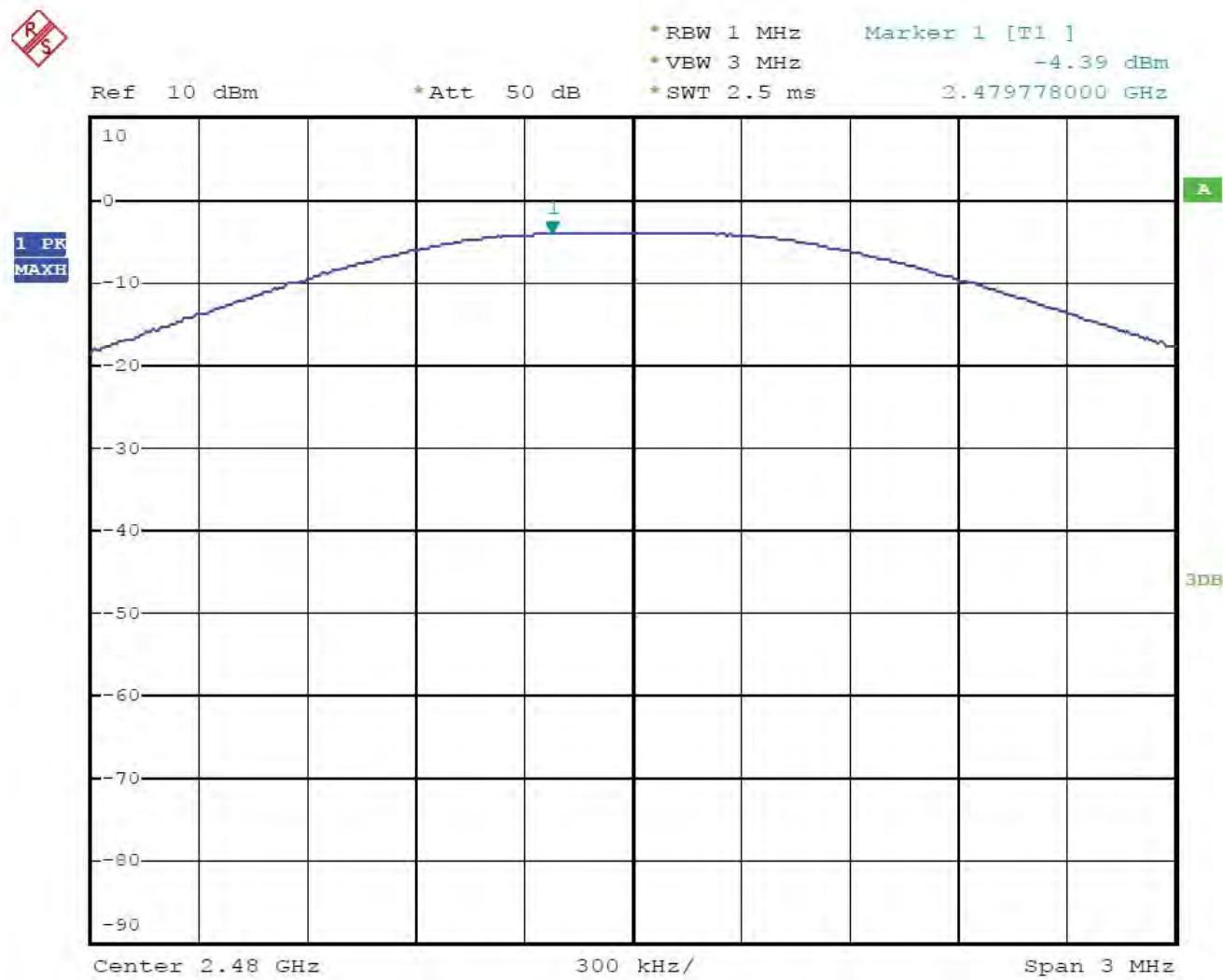
Channel	Frequency (MHz)	Peak Output Power (dBm)	Peak Output Power (mW)	Limits dBm / W
Low	2402	-3.68	0.429	30 dBm / 1 W
Middle	2441	-3.74	0.423	30 dBm / 1 W
High	2480	-4.39	0.364	30 dBm / 1 W

The spectrum analyzer plots are attached as below.

"Spectrum analyzer" is R/S

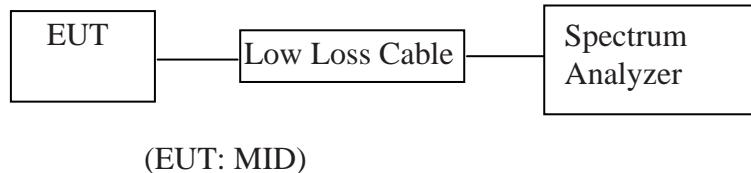






10. BAND EDGE COMPLIANCE TEST

10.1. Block Diagram of Test Setup



10.2. The Requirement For Section 15.247(d)

Section 15.247(d): 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 Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

10.3. EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

10.3.1. MID (EUT)

Model Number	:	GN32
Serial Number	:	N/A
Manufacturer	:	Shenzhen Leader Digital-tech Weitong Co., Ltd.

10.4. Operating Condition of EUT

10.4.1. Setup the EUT and simulator as shown as Section 10.1.

10.4.2. Turn on the power of all equipment.

10.4.3. Let the EUT work in TX (Hopping off, Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2480MHz TX frequency to transmit.

10.5. Test Procedure

Conducted Band Edge:

10.5.1. The transmitter output was connected to the spectrum analyzer via a low loss cable.

10.5.2. Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz.

Radiate Band Edge:

10.5.3. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.

10.5.4. The turntable was rotated for 360 degrees to determine the position of maximum emission level.

10.5.5. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

10.5.6. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

RBW=1MHz, VBW=1MHz

10.5.7. The band edges was measured and recorded.

10.6. Test Result

Pass

Conducted test

Date of Test:	January 14, 2012	Temperature:	25°C
EUT:	MID	Humidity:	50%
Model No.:	GN32	Power Supply:	AC 120V/60Hz
Test Mode:	TX (Hopping off)	Test Engineer:	Kai

Conducted test

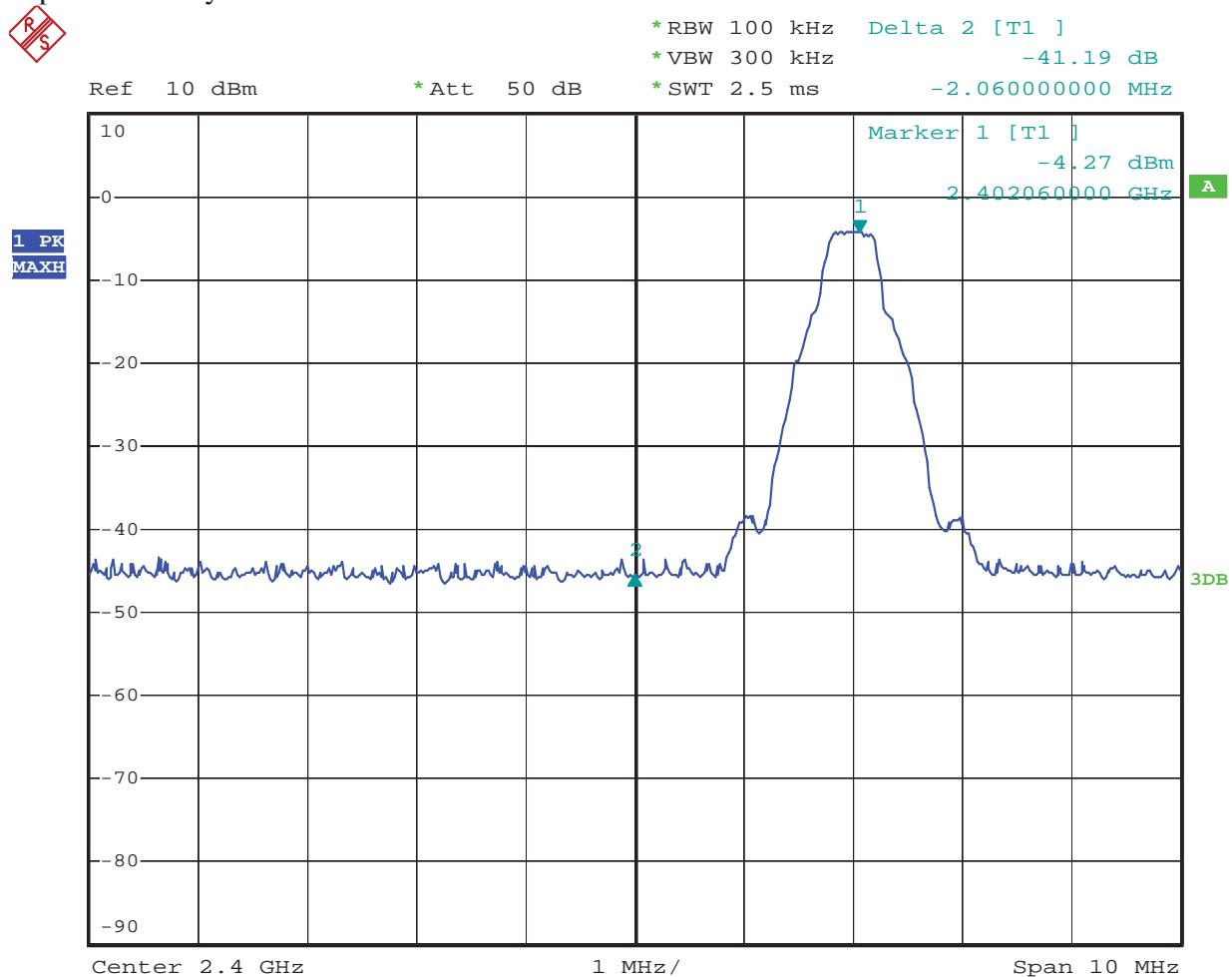
Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
2402	41.19	> 20dBc
2480	41.40	> 20dBc

Date of Test:	January 14, 2012	Temperature:	25°C
EUT:	MID	Humidity:	50%
Model No.:	GN32	Power Supply:	DC 7.4V
Test Mode:	TX (Hopping on)	Test Engineer:	Kai

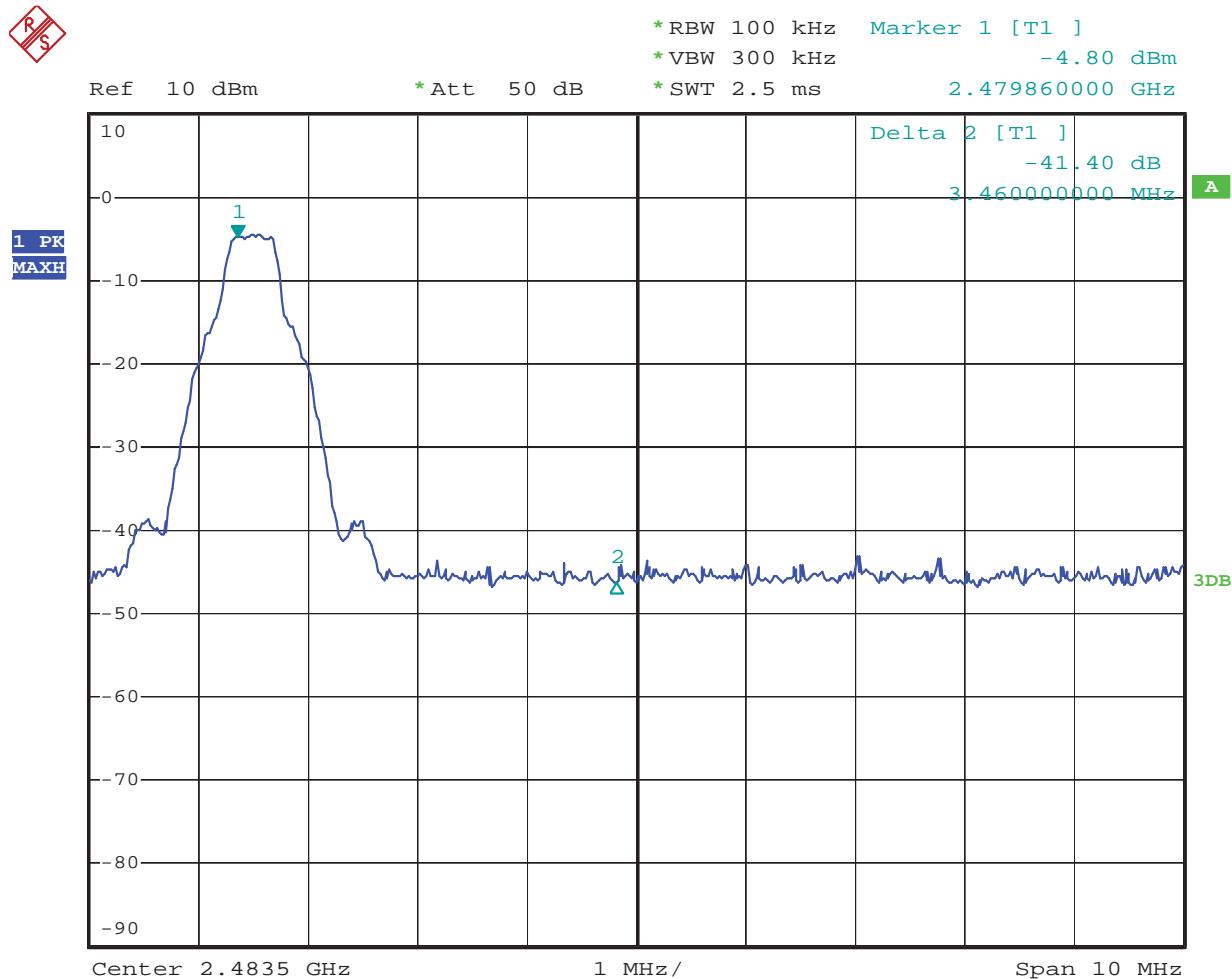
Conducted test

Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
2402	41.16	> 20dBc
2480	40.94	> 20dBc

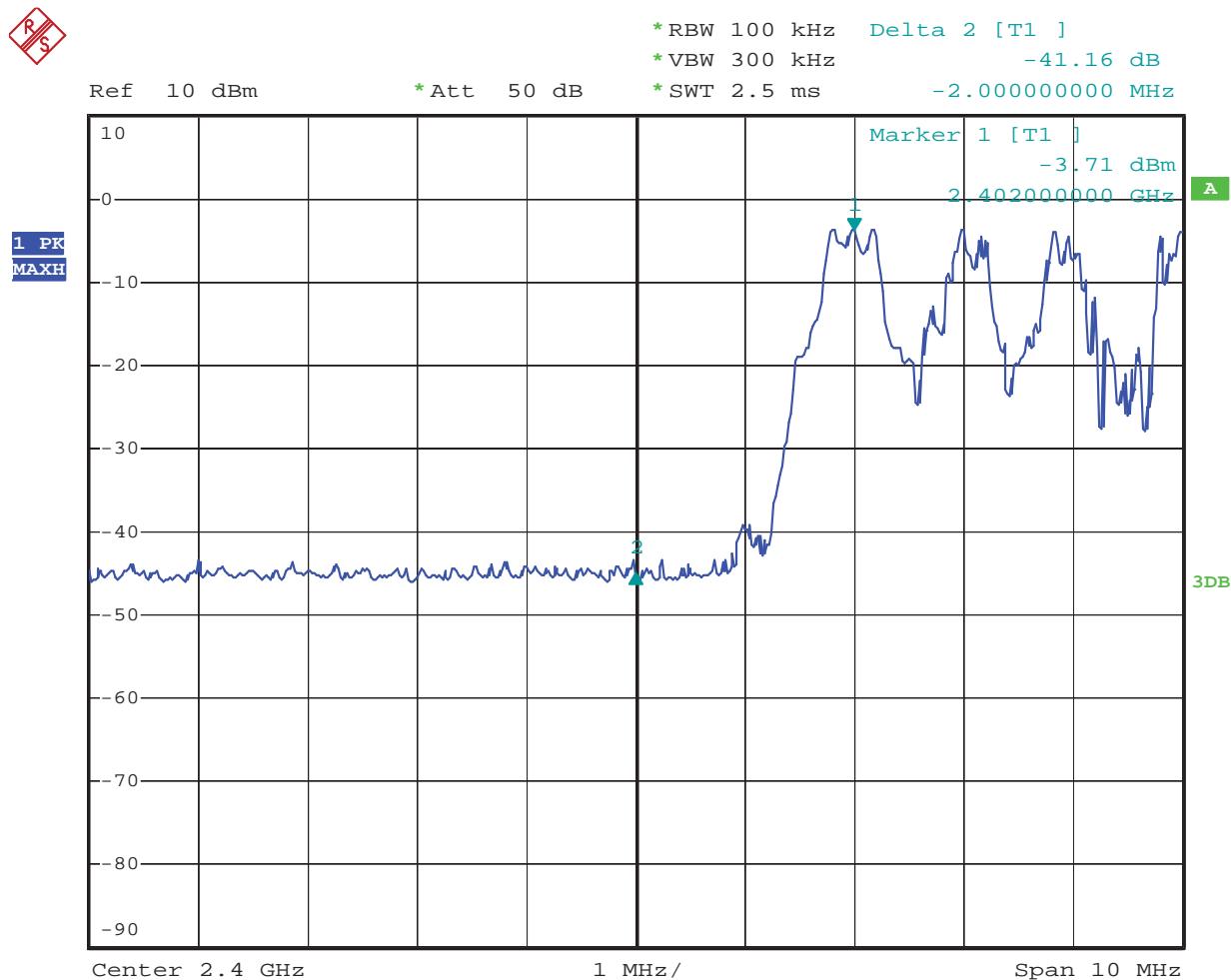
"Spectrum analyzer" is R/S



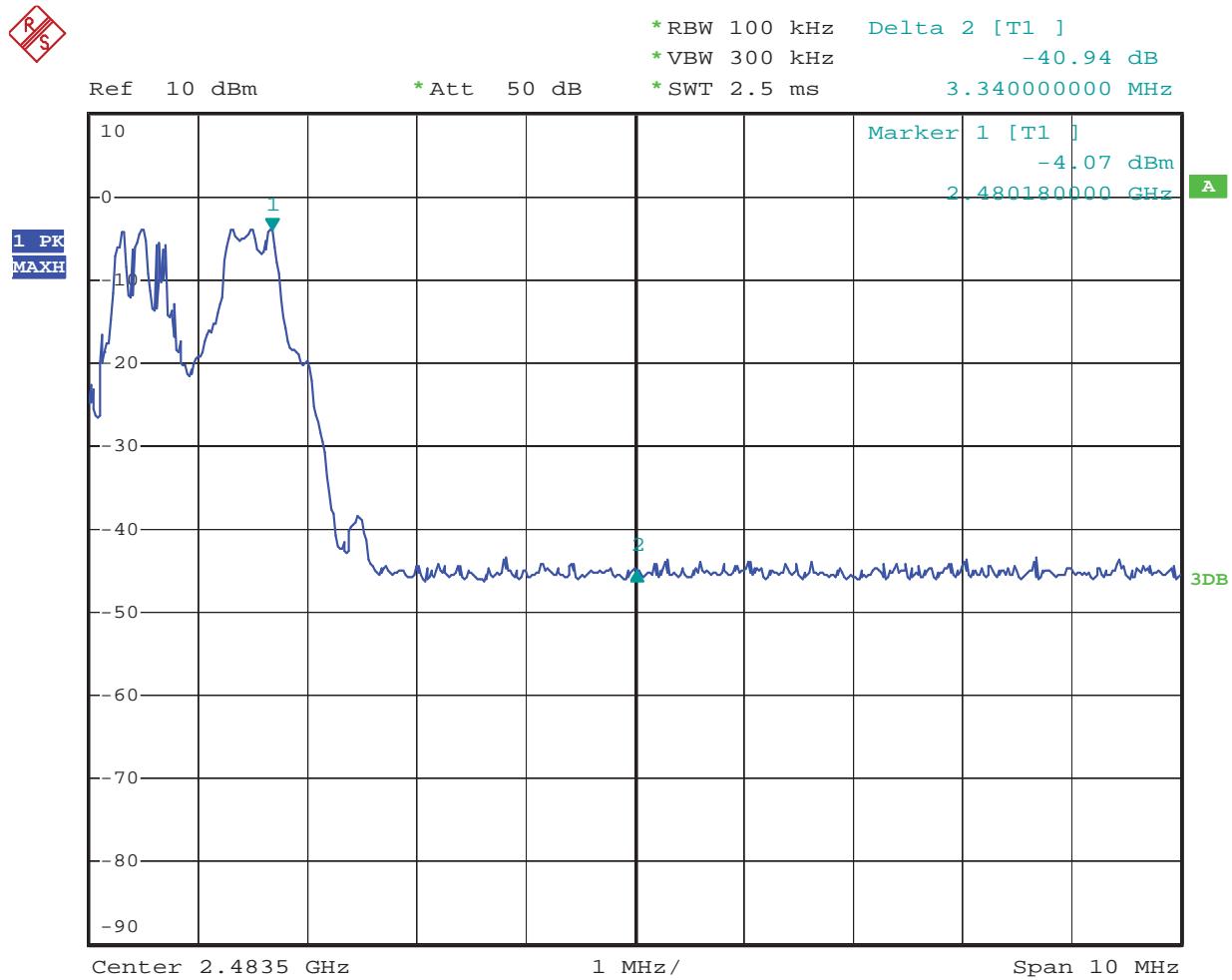
Date: 22.NOV.2011 18:12:29



Date: 22.NOV.2011 18:15:42



Date: 22.NOV.2011 18:27:52



Date: 22.NOV.2011 18:30:50

Radiated Band Edge Result

Date of Test: <u>January 18, 2012</u>	Temperature: <u>25°C</u>
EUT: <u>MID</u>	Humidity: <u>50%</u>
Model No.: <u>GN32</u>	Power Supply: <u>AC 120V/60Hz</u>
Test Mode: <u>TX (2402MHz)</u>	Test Engineer: <u>Kai</u>

Frequency (MHz)	Reading(dB μ V/m)		Factor(dB) Corr.	Result(dB μ V/m)		Limit(dB μ V/m)		Margin(dB)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
-	-	-	-	-	-	-	-	-	-	Vertical
-	-	-	-	-	-	-	-	-	-	Horizontal

Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

3. Display the measurement of peak values.

Date of Test: <u>January 18, 2012</u>	Temperature: <u>25°C</u>
EUT: <u>MID</u>	Humidity: <u>50%</u>
Model No.: <u>GN32</u>	Power Supply: <u>AC 120V/60Hz</u>
Test Mode: <u>TX (2480MHz)</u>	Test Engineer: <u>Kai</u>

Frequency (MHz)	Reading(dB μ V/m)		Factor(dB) Corr.	Result(dB μ V/m)		Limit(dB μ V/m)		Margin(dB)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
-	-	-	-	-	-	-	-	-	-	Vertical
-	-	-	-	-	-	-	-	-	-	Horizontal

Note:

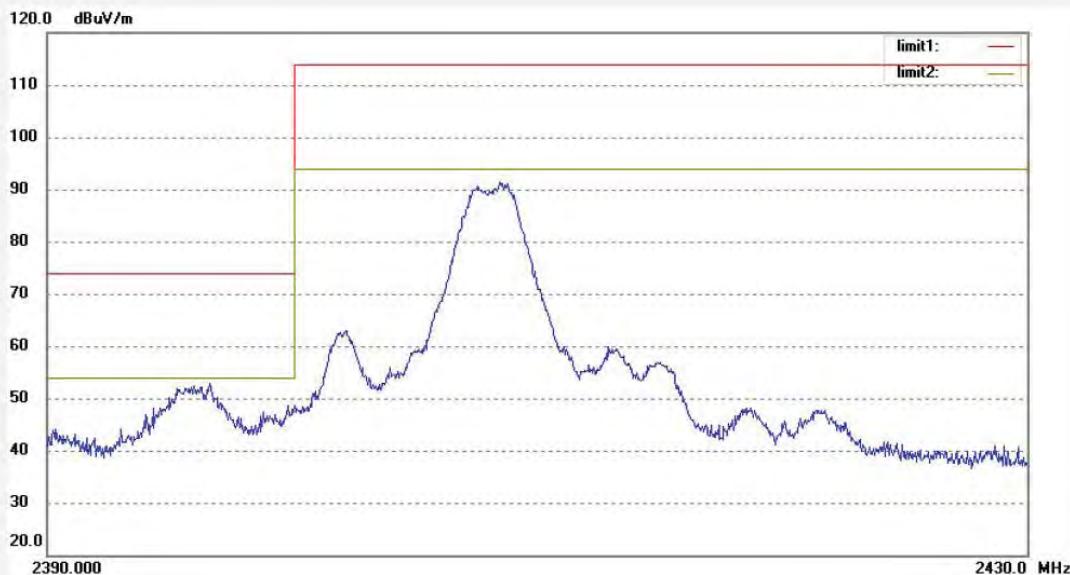
1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:
Result = Reading + Corrected Factor
3. Display the measurement of peak values.


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 F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
 Science & Industry Park,Nanshan Shenzhen,P.R.China

 Site: 966 chamber
 Tel:+86-0755-26503290
 Fax:+86-0755-26503396

Job No.:	Bob #601	Polarization:	Horizontal
Standard:	FCC Part 15 PEAK 2.4G	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2012/01/18
Temp.(C)/Hum.(%)	24 C / 48 %	Time:	6/38/47
EUT:	MID	Engineer Signature:	Bob
Mode:	TX 2402MHz	Distance:	
Model:	GN32		
Manufacturer:	Leader Digital-tech Weitong		
Note:	Report No.:ATE20120035		



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark


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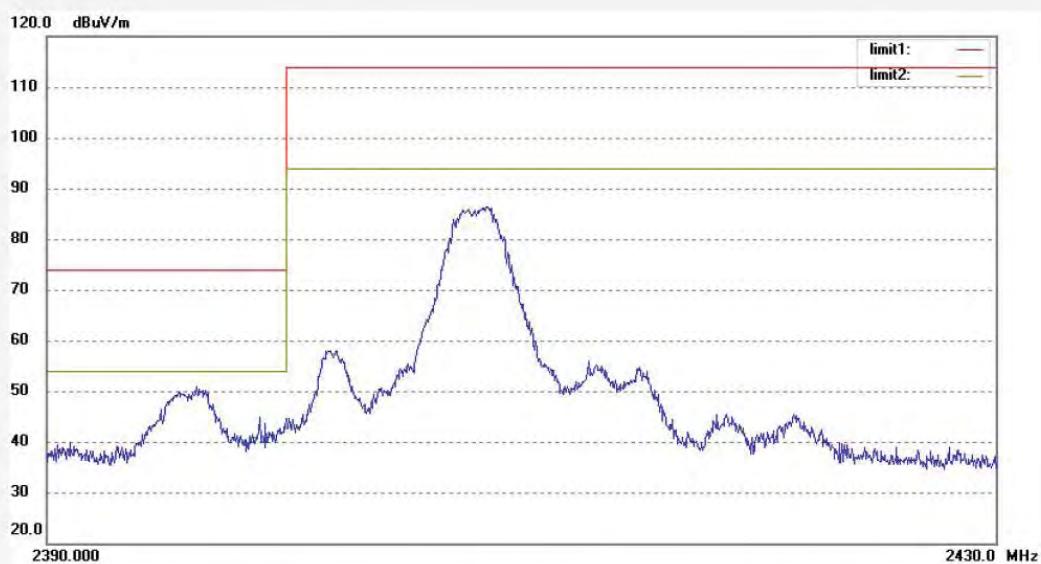
 F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
 Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.:	Bob #600	Polarization:	Vertical
Standard:	FCC Part 15 PEAK 2.4G	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2012/01/18
Temp.(C)/Hum.(%)	24 C / 48 %	Time:	6/36/51
EUT:	MID	Engineer Signature:	Bob
Mode:	TX 2402MHz	Distance:	
Model:	GN32		
Manufacturer:	Leader Digital-tech Weitong		
Note:	Report No.:ATE20120035		



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark


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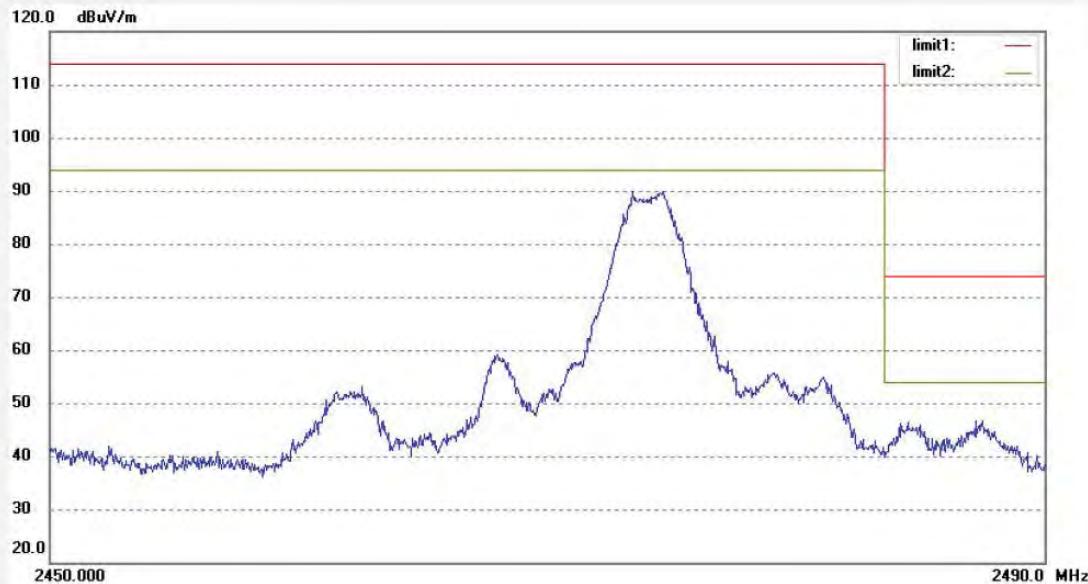
 F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
 Science & Industry Park,Nanshan Shenzhen,P.R.China

 Site: 966 chamber
 Tel:+86-0755-26503290
 Fax:+86-0755-26503396

 Job No.: Bob #602
 Standard: FCC Part 15 PEAK 2.4G
 Test item: Radiation Test
 Temp. (C)/Hum.(%) 24 C / 48 %
 EUT: MID
 Mode: TX 2480MHz
 Model: GN32
 Manufacturer: Leader Digital-tech Weitong

 Polarization: Horizontal
 Power Source: AC 120V/60Hz
 Date: 2012/01/18
 Time: 6/40/43
 Engineer Signature: Bob
 Distance:

Note: Report No.:ATE20120035



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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 Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: Bob #603

Polarization: Vertical

Standard: FCC Part 15 PEAK 2.4G

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2012/01/18

Temp.(C)/Hum.(%) 24 C / 48 %

Time: 6/43/14

EUT: MID

Engineer Signature: Bob

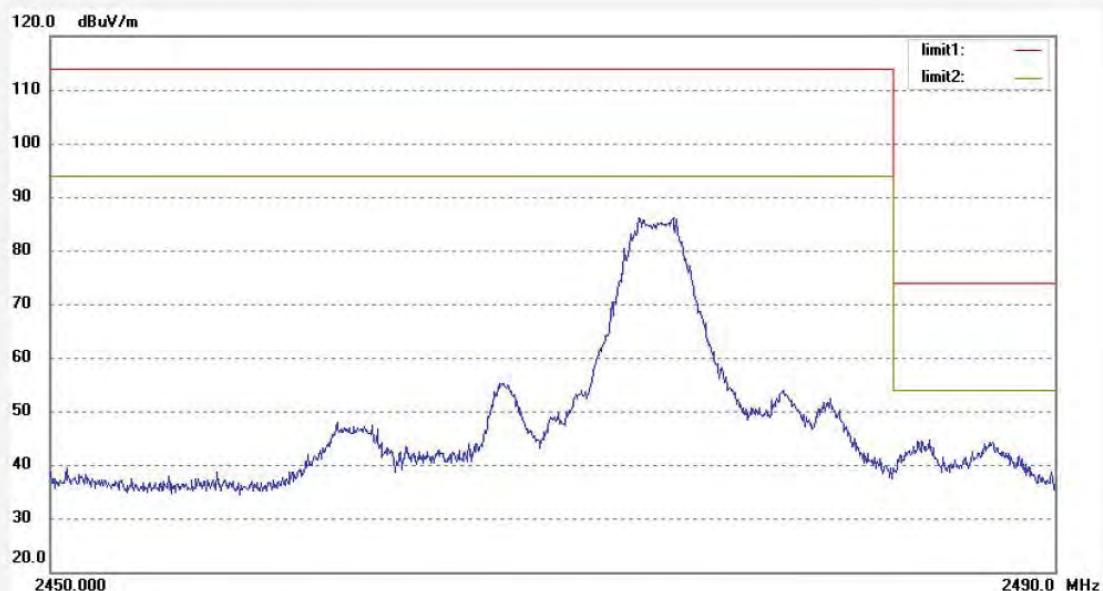
Mode: TX 2480MHz

Distance:

Model: GN32

Manufacturer: Leader Digital-tech Weitong

Note: Report No.:ATE20120035

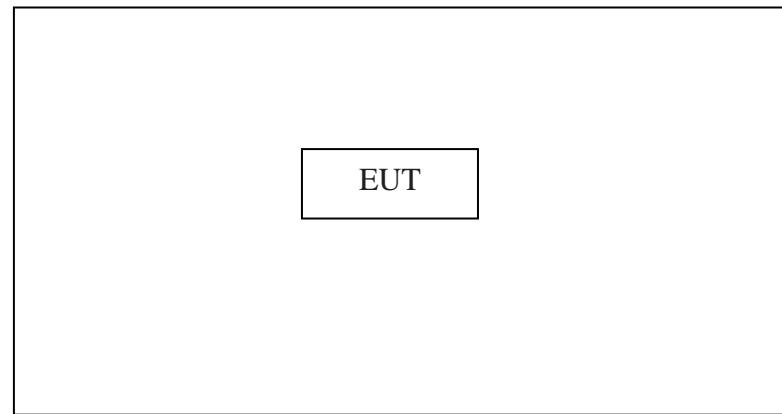


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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11. RADIATED SPURIOUS EMISSION TEST

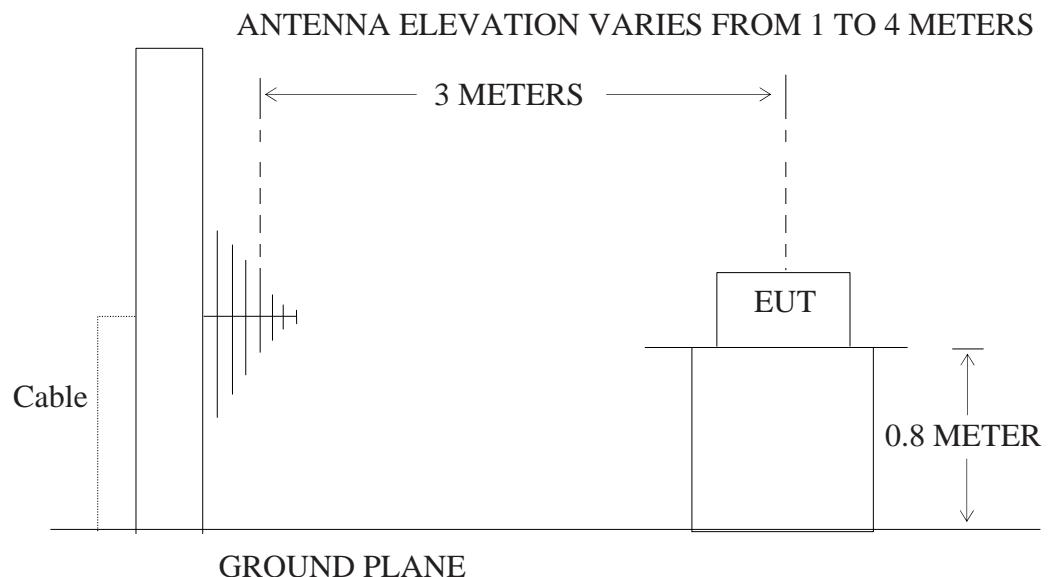
11.1. Block Diagram of Test Setup

11.1.1. Block diagram of connection between the EUT and simulators



(EUT: MID)

11.1.2. Semi-Anechoic Chamber Test Setup Diagram



(EUT: MID)

11.2.The Limit For Section 15.247(d)

Section 15.247(d): 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 Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

11.3.Restricted bands of operation

11.3.1.FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(²)
13.36-13.41			

¹Until February 1, 1999, this restricted band shall be 0.490-0.510

²Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

11.4. Configuration of EUT on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

11.4.1. MID (EUT)

Model Number	:	GN32
Serial Number	:	N/A
Manufacturer	:	Shenzhen Leader Digital-tech Weitong Co., Ltd.

11.5. Operating Condition of EUT

11.5.1. Setup the EUT and simulator as shown as Section 11.1.

11.5.2. Turn on the power of all equipment.

11.5.3. Let the EUT work in TX (Hopping off) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, 2480MHz TX frequency to transmit.

11.6. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The bandwidth of test receiver (R&S ESI26) is set at 120kHz in 30-1000MHz, and set at 1MHz in above 1000MHz.

The frequency range from 30MHz to 25000MHz is checked.

The final measurement in band 9-90kHz, 110-490kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

The field strength is calculated by adding the antenna factor, and cable loss, and subtracting the amplifier gain from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

11.7.The Field Strength of Radiation Emission Measurement Results
PASS.

Date of Test: <u>January 20, 2012</u>	Temperature: <u>25°C</u>
EUT: <u>MID</u>	Humidity: <u>50%</u>
Model No.: <u>GN32</u>	Power Supply: <u>AC 120V/60Hz</u>
Test Mode: <u>TX (2402MHz)</u>	Test Engineer: <u>Kai</u>

For 30MHz-1000MHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading (dB μ V/m)	Factor Corr. (dB)	Result	Limit	Margin	Polarization
			QP	QP	QP	
153.9254	25.27	14.56	39.83	43.50	-3.67	Vertical
218.1194	24.12	16.63	40.75	46.00	-5.25	
500.1302	17.20	23.99	41.19	46.00	-4.81	
153.9254	24.19	14.56	38.75	43.50	-4.75	Horizontal
192.9837	22.62	16.04	38.66	43.50	-4.84	
278.3546	21.98	18.28	40.26	46.00	-5.74	

For 1GHz-25GHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading(dB μ V/m)		Factor Corr. (dB)	Result(dB μ V/m)		Limit(dB μ V/m)		Margin(dB μ V/m)		Polarizati on
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
-	-	-	-	-	-	-	-	-	-	Vertical
-	-	-	-	-	-	-	-	-	-	Horizontal

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

2. *: Denotes restricted band of operation.

Date of Test: <u>January 20, 2012</u>	Temperature: <u>25°C</u>
EUT: <u>MID</u>	Humidity: <u>50%</u>
Model No.: <u>GN32</u>	Power Supply: <u>AC 120V/60Hz</u>
Test Mode: <u>TX (2441MHz)</u>	Test Engineer: <u>Kai</u>

For 30MHz-1000MHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading (dB μ V/m)	Factor Corr. (dB)	Result	Limit	Margin	Polarization
			QP	QP	QP	
168.0540	24.53	14.70	39.23	43.50	-4.27	Vertical
182.9379	24.25	15.87	40.12	43.50	-3.38	
694.4763	15.08	26.44	41.52	46.00	-4.48	
208.4701	23.70	16.29	39.99	43.50	-3.51	Horizontal
218.1194	24.21	16.63	40.84	46.00	-5.16	
236.3095	23.18	16.80	39.98	46.00	-6.02	

For 1GHz-25GHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading(dB μ V/m)		Factor Corr. (dB)	Result(dB μ V/m)		Limit(dB μ V/m)		Margin(dB μ V/m)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
-	-	-	-	-	-	-	-	-	-	Vertical
-	-	-	-	-	-	-	-	-	-	Horizontal

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

2. *: Denotes restricted band of operation.

Date of Test: <u>January 20, 2012</u>	Temperature: <u>25°C</u>
EUT: <u>MID</u>	Humidity: <u>50%</u>
Model No.: <u>GN32</u>	Power Supply: <u>AC 120V/60Hz</u>
Test Mode: <u>TX (2480MHz)</u>	Test Engineer: <u>Kai</u>

For 30MHz-1000MHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading (dB μ V/m)	Factor Corr. (dB)	Result	Limit	Margin	Polarization
			QP	QP	QP	
172.1887	23.26	15.17	38.43	43.50	-5.07	Vertical
236.3095	21.73	16.50	38.23	46.00	-7.77	
555.2269	14.27	25.33	39.60	46.00	-6.40	
183.9379	24.02	15.98	40.00	43.50	-3.50	Horizontal
218.1194	23.35	16.63	39.98	46.00	-6.02	
694.4763	14.18	26.44	40.62	46.00	-5.38	

For 1GHz-25GHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading(dB μ V/m)		Factor Corr. (dB)	Result(dB μ V/m)		Limit(dB μ V/m)		Margin(dB μ V/m)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
-	-	-	-	-	-	-	-	-	-	Vertical
-	-	-	-	-	-	-	-	-	-	Horizontal

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

2. *: Denotes restricted band of operation.



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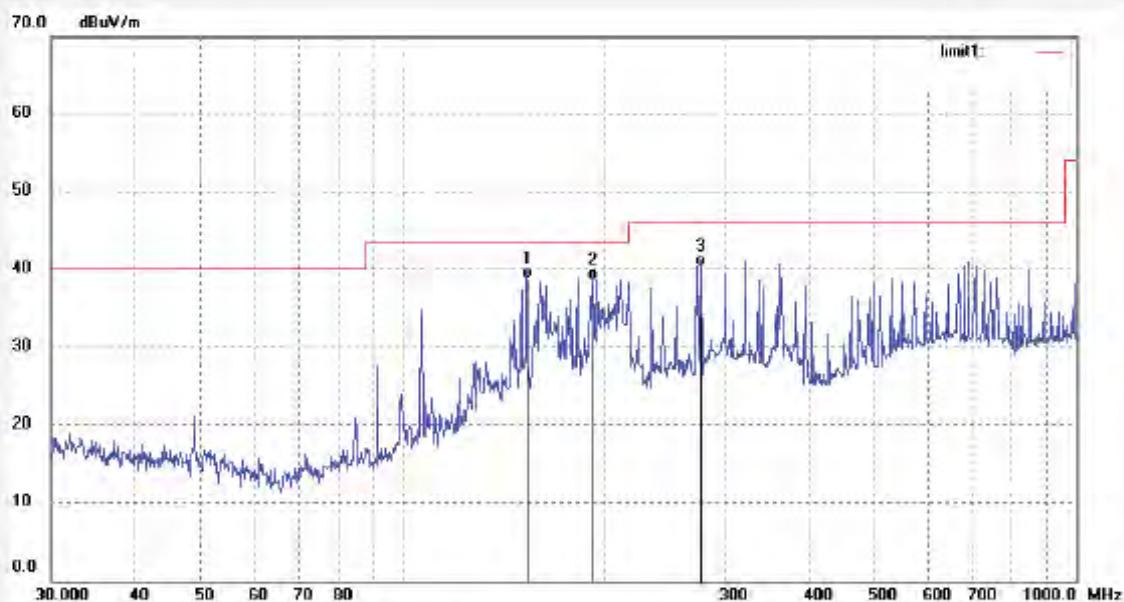
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: Bob #1484
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 24 C / 48 %
EUT: MID
Mode: TX 2402MHz
Model: GN32
Manufacturer: Leader Digital-tech Weitong

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 2012/01/20
Time: 8/41/12
Engineer Signature: Bob
Distance: 3m

Note: Report No.:ATE20120035



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	153.9254	24.19	14.56	38.75	43.50	-4.75	QP			
2	192.9837	22.62	16.04	38.66	43.50	-4.84	QP			
3	278.3546	21.98	18.28	40.26	46.00	-5.74	QP			

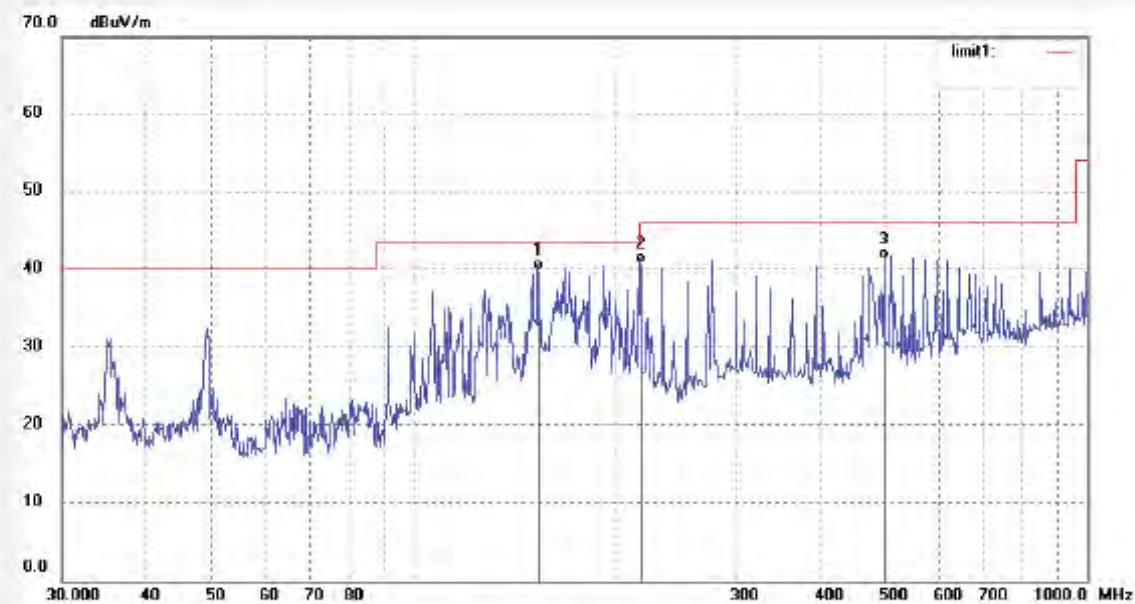


ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.:	Bob #1485	Polarization:	Vertical
Standard:	FCC Class B 3M Radiated	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2012/01/20
Temp. (C)/Hum.(%)	24 C / 48 %	Time:	8/44/25
EUT:	MID	Engineer Signature:	Bob
Mode:	TX 2402MHz	Distance:	3m
Model:	GN32		
Manufacturer:	Leader Digital-tech Weitong		
Note:	Report No.:ATE20120035		



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	153.9254	25.27	14.56	39.83	43.50	-3.67	QP			
2	218.1194	24.12	16.63	40.75	46.00	-5.25	QP			
3	500.1302	17.20	23.99	41.19	46.00	-4.81	QP			

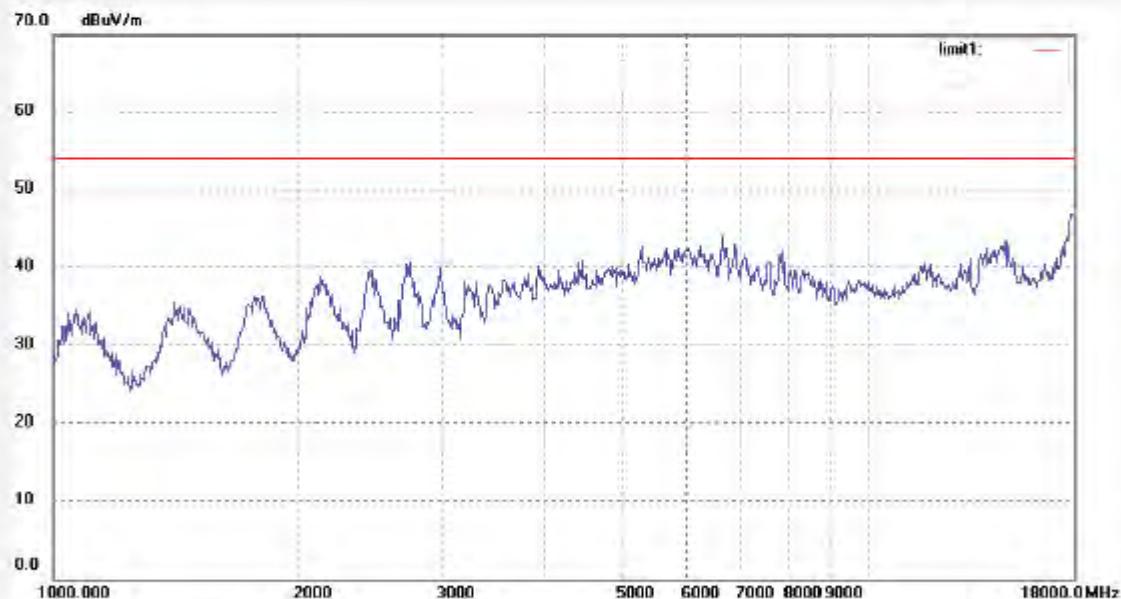


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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.:	Bob #612	Polarization:	Horizontal
Standard:	FCC Class B 3M Radiated	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2012/01/18
Temp.(C)/Hum.(%)	24 C / 48 %	Time:	16:03:19
EUT:	MID	Engineer Signature:	Bob
Mode:	TX 2402MHz	Distance:	3m
Model:	GN32		
Manufacturer:	Leader Digital-tech Weitong		
Note:	Report NO.:ATE20120035		



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark



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Site: 966 chamber

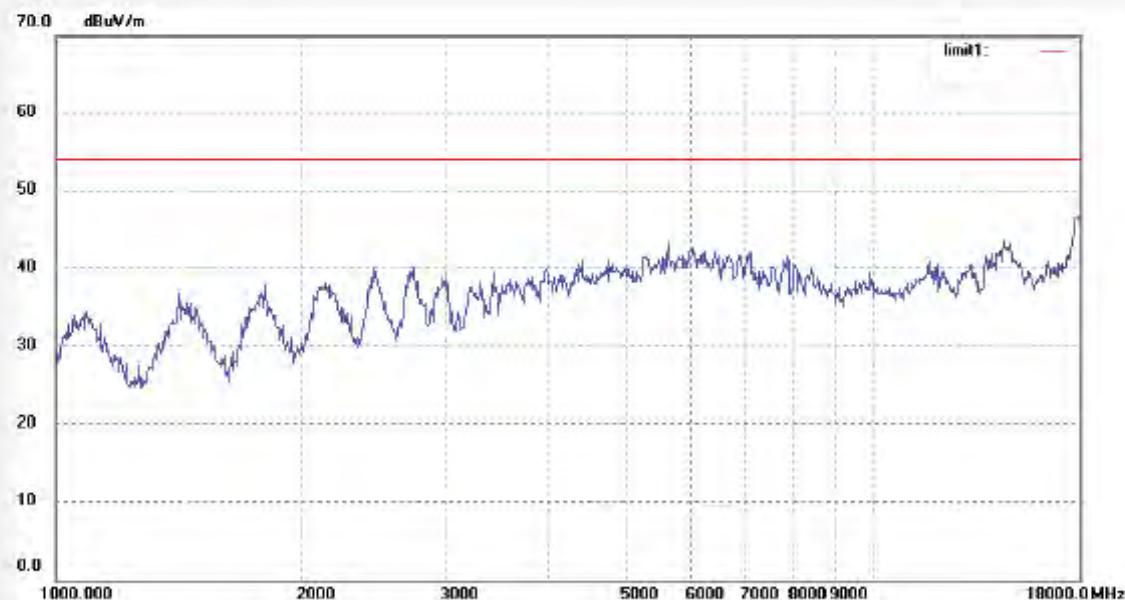
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: Bob #611
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 24 C / 48 %
EUT: MID
Mode: TX 2402MHz
Model: GN32
Manufacturer:Leader Digital-tech Weitong

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 2012/01/18
Time: 16:01:56
Engineer Signature: Bob
Distance: 3m

Note:Report NO.:ATE20120035



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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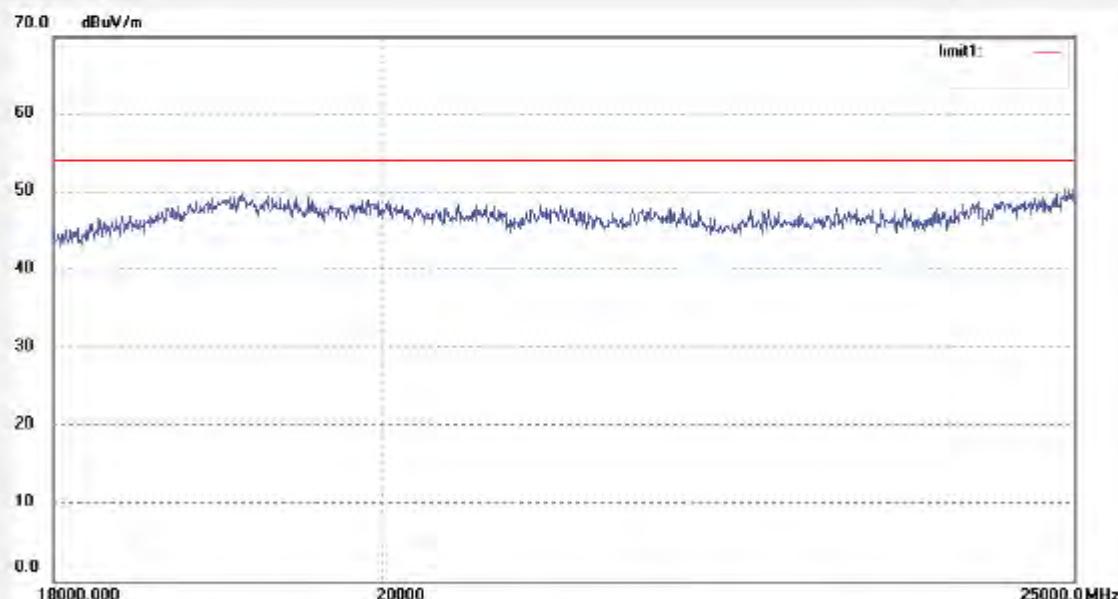
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: Bob #901
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 50 %
EUT: MID
Mode: TX 2402
Model: GN3X
Manufacturer: Leader Digital-tech Weitong

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 2012/01/18
Time: 11:52:09
Engineer Signature: Bob
Distance: 3m

Note:Report No.:ATE20120035



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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Site: 966 chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: Bob #902	Polarization: Vertical									
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz									
Test item: Radiation Test	Date: 2012/01/18									
Temp. (C)/Hum.(%) 25 C / 50 %	Time: 11:56:43									
EUT: MID	Engineer Signature: Bob									
Mode: TX 2402	Distance: 3m									
Model: GN3X										
Manufacturer: Leader Digital-tech Weitong										
Note: Report No.:ATE20120035										
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark



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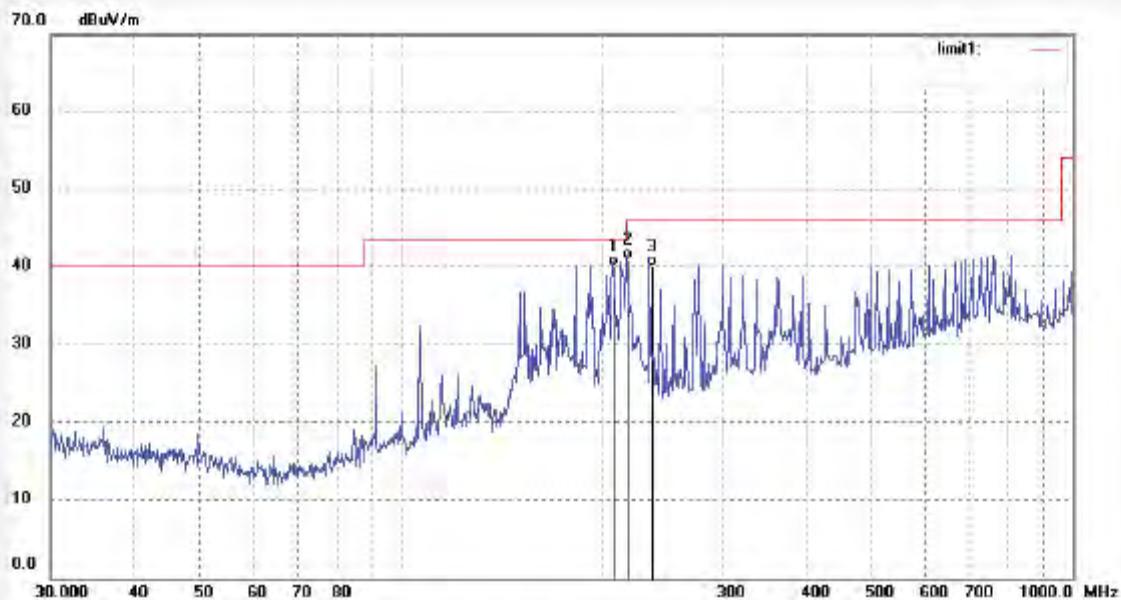
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.:	Bob #1487	Polarization:	Horizontal
Standard:	FCC Class B 3M Radiated	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2012/01/20
Temp.(C)/Hum.(%)	24 C / 48 %	Time:	8/53/47
EUT:	MID	Engineer Signature:	Bob
Mode:	TX 2441MHz	Distance:	3m
Model:	GN32		
Manufacturer:	Leader Digital-tech Weitong		
Note:	Report No.:ATE20120035		



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	208.4701	23.70	16.29	39.99	43.50	-3.51	QP			
2	218.1194	24.21	16.63	40.84	46.00	-5.16	QP			
3	236.3095	23.18	16.80	39.98	46.00	-6.02	QP			



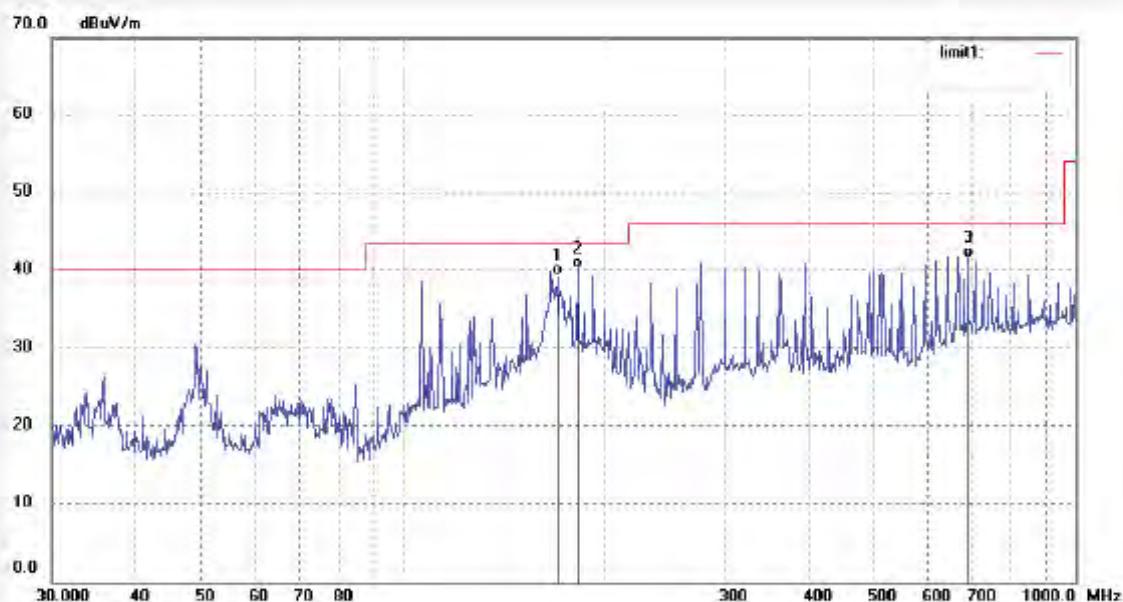
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Site: 966 chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: Bob #1486	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2012/01/20
Temp.(C)/Hum.(%) 24 C / 48 %	Time: 8/49/35
EUT: MID	Engineer Signature: Bob
Mode: TX 2441MHz	Distance: 3m
Model: GN32	
Manufacturer: Leader Digital-tech Weitong	

Note: Report No.:ATE20120035



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	168.0540	24.53	14.70	39.23	43.50	-4.27	QP			
2	182.9379	24.25	15.87	40.12	43.50	-3.38	QP			
3	694.4763	15.08	26.44	41.52	46.00	-4.48	QP			



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Job No.: Bob #617

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2012/01/18

Temp.(C)/Hum.(%) 24 C / 48 %

Time: 16:24:28

EUT: MID

Engineer Signature: Bob

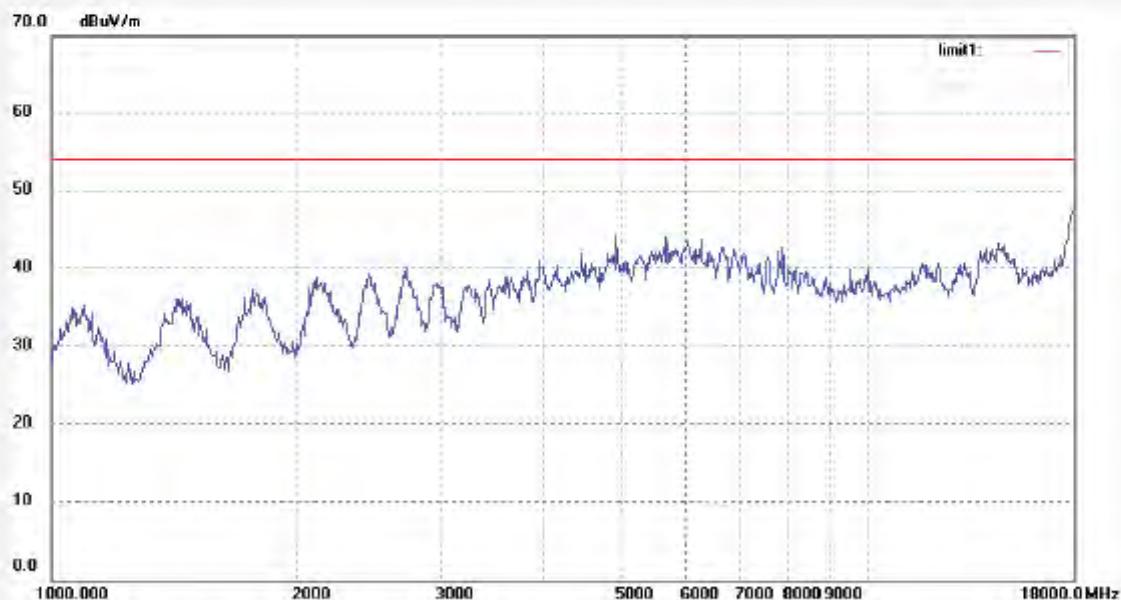
Mode: TX 2441MHz

Distance: 3m

Model: GN32

Manufacturer:Leader Digital-tech Weitong

Note:Report NO.:ATE20120035



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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Site: 966 chamber
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Job No.:	Bob #618	Polarization:	Vertical							
Standard:	FCC Class B 3M Radiated	Power Source:	AC 120V/60Hz							
Test item:	Radiation Test	Date:	2012/01/18							
Temp.(C)/Hum.(%)	24 C / 48 %	Time:	16:25:59							
EUT:	MID	Engineer Signature:	Bob							
Mode:	TX 2441MHz	Distance:	3m							
Model:	GN32									
Manufacturer:	Leader Digital-tech Weitong									
Note:Report NO.:ATE20120035										
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark.



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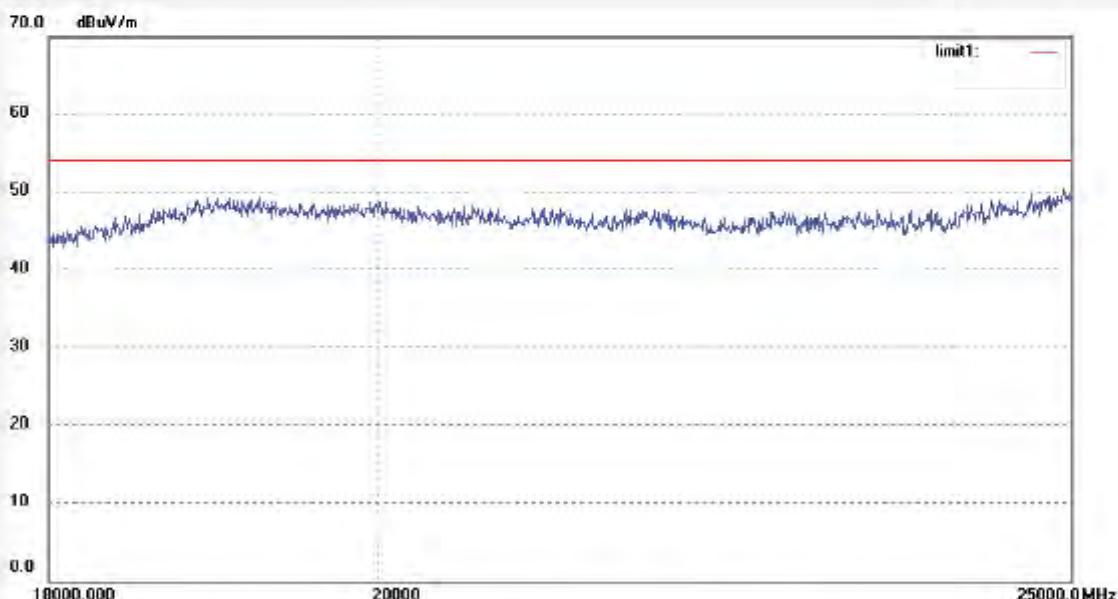
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
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Site: 966 chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: Bob #904
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 50 %
EUT: MID
Mode: TX 2441
Model: GN3X
Manufacturer: Leader Digital-tech Weitong

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 2012/01/18
Time: 12:05:30
Engineer Signature: Bob
Distance: 3m

Note: Report No.:ATE20120035



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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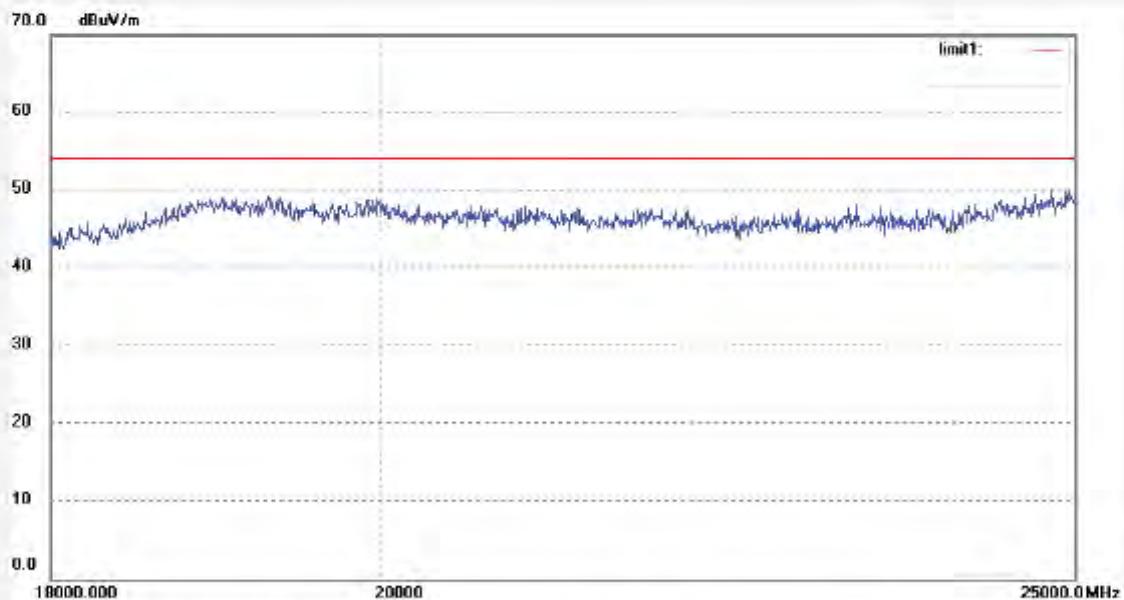
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
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Site: 966 chamber
Tel:+86-0755-26503290
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Job No.: Bob #903
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 50 %
EUT: MID
Mode: TX 2441
Model: GN3X
Manufacturer: Leader Digital-tech Weitong

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 2012/01/18
Time: 12:01:19
Engineer Signature: Bob
Distance: 3m

Note: Report No.:ATE20120035



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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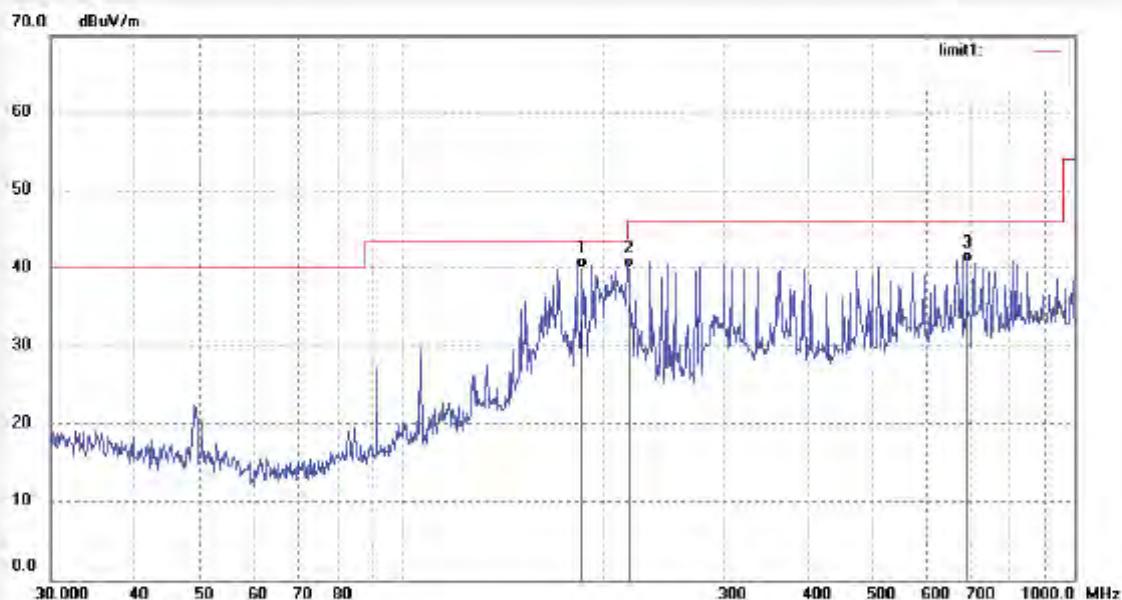


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Site: 966 chamber
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Job No.:	Bob #1488	Polarization:	Horizontal
Standard:	FCC Class B 3M Radiated	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2012/01/20
Temp. (C)/Hum.(%)	24 C / 48 %	Time:	8/56/48
EUT:	MID	Engineer Signature:	Bob
Mode:	TX 2480MHz	Distance:	3m
Model:	GN32		
Manufacturer:	Leader Digital-tech Weitong		
Note:	Report No.:ATE20120035		



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	183.9379	24.02	15.98	40.00	43.50	-3.50	QP			
2	218.1194	23.35	16.63	39.98	46.00	-6.02	QP			
3	694.4763	14.18	26.44	40.62	46.00	-5.38	QP			

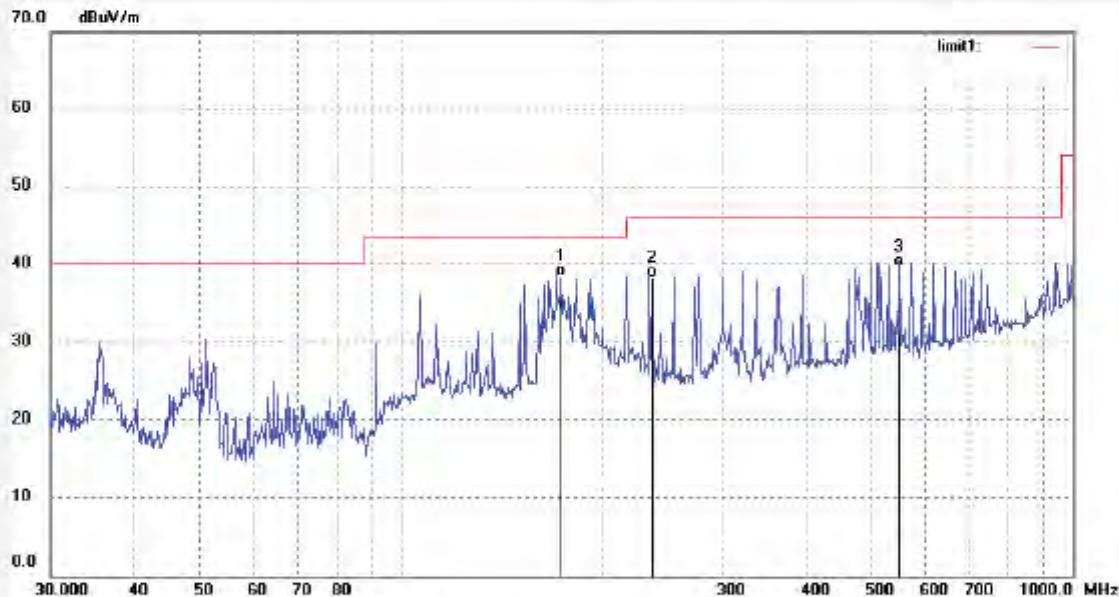


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Job No.: Bob #1489	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2012/01/20
Temp.(C)/Hum.(%) 24 C / 48 %	Time: 8/59/56
EUT: MID	Engineer Signature: Bob
Mode: TX 2480MHz	Distance: 3m
Model: GN32	
Manufacturer: Leader Digital-tech Weitong	
Note: Report No.:ATE20120035	



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	172.1887	23.26	15.17	38.43	43.50	-5.07	QP			
2	236.3095	21.73	16.50	38.23	46.00	-7.77	QP			
3	555.2269	14.27	25.33	39.60	46.00	-6.40	QP			



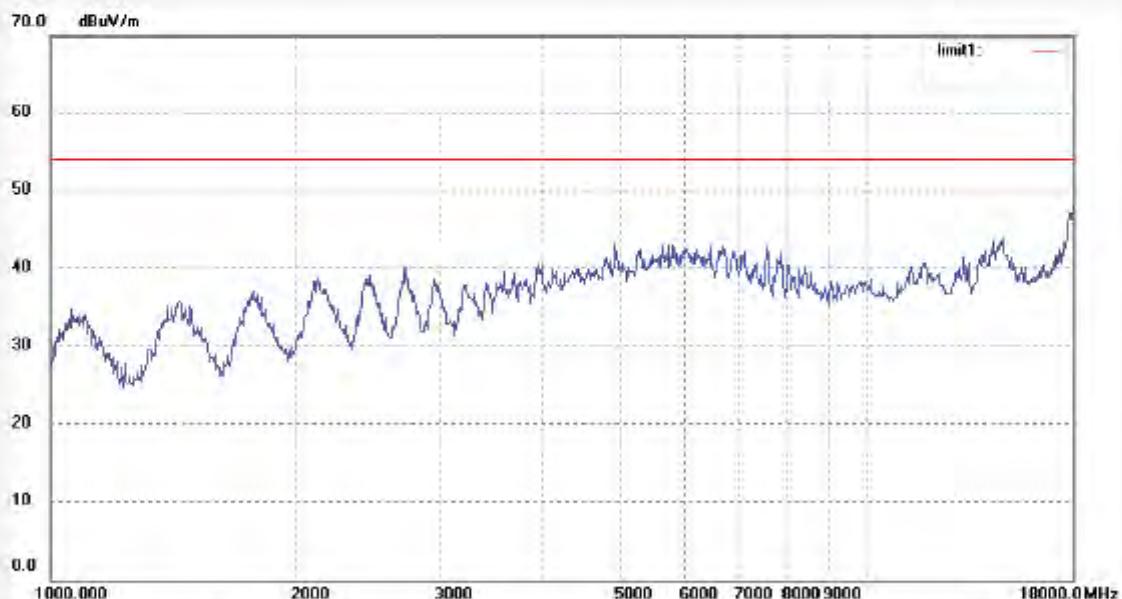
ACCURATE TECHNOLOGY CO., LTD.

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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: Bob #622	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2012/01/18
Temp. (C)/Hum. (%) 24 C / 48 %	Time: 16:31:20
EUT: MID	Engineer Signature: Bob
Mode: TX 2480MHz	Distance: 3m
Model: GN32	
Manufacturer:Leader Digital-tech Weitong	

Note:Report NO.:ATE20120035



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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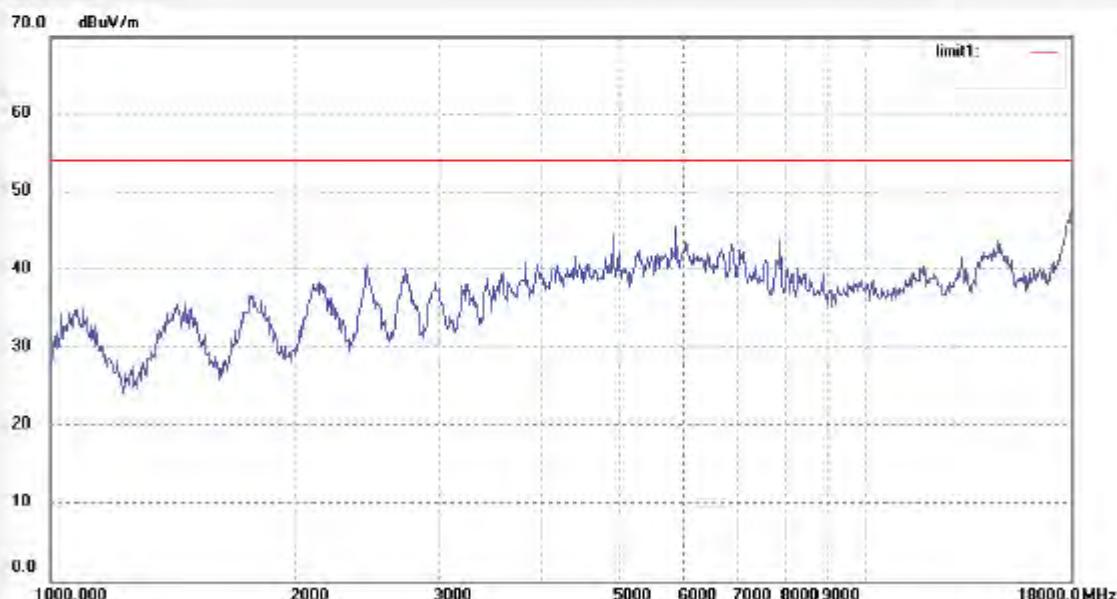
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: Bob #621
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp. (C) / Hum. (%) 24 C / 48 %
EUT: MID
Mode: TX 2480MHz
Model: GN32
Manufacturer: Leader Digital-tech Weitong

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 2012/01/18
Time: 16:29:46
Engineer Signature: Bob
Distance: 3m

Note: Report NO.:ATE20120035



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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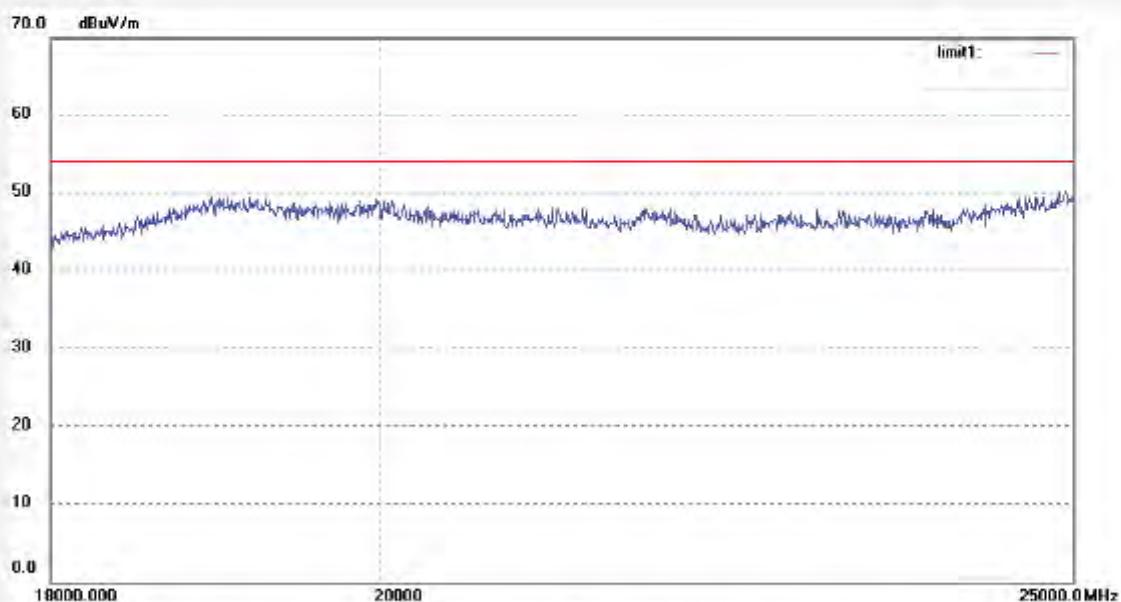
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: Bob #905
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 50 %
EUT: MID
Mode: TX 2480
Model: GN3X
Manufacturer: Leader Digital-tech Weitong

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 2012/01/18
Time: 12:10:41
Engineer Signature: Bob
Distance: 3m

Note: Report No.:ATE20120035



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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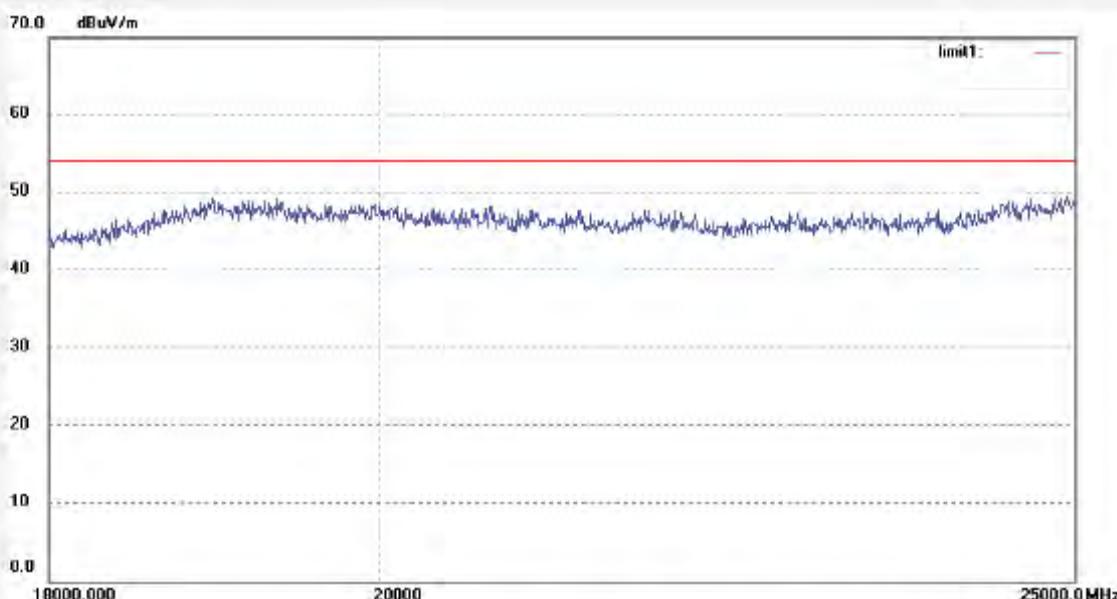
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
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Site: 966 chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: Bob #906
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp. (C)/Hum.(%) 25 C / 50 %
EUT: MID
Mode: TX 2480
Model: GN3X
Manufacturer: Leader Digital-tech Weitong

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 2012/01/18
Time: 12:15:08
Engineer Signature: Bob
Distance: 3m

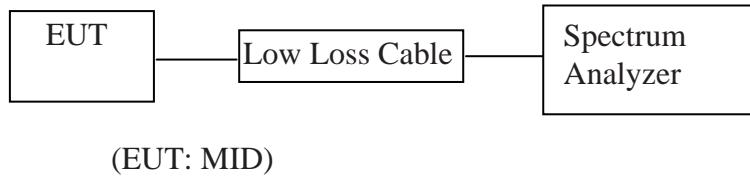
Note: Report No.:ATE20120035



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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12.CONDUCTED SPURIOUS EMISSION COMPLIANCE TEST

12.1.Block Diagram of Test Setup



12.2.The Requirement For Section 15.247(d)

Section 15.247(d): 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 Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

12.3.EUT Configuration on Measurement

The following equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

12.3.1.MID (EUT)

Model Number	:	GN32
Serial Number	:	N/A
Manufacturer	:	Shenzhen Leader Digital-tech Weitong Co., Ltd.

12.4.Operating Condition of EUT

12.4.1.Setup the EUT and simulator as shown as Section 12.1.

12.4.2.Turn on the power of all equipment.

12.4.3.Let the EUT work in TX (Hopping off) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, 2480MHz TX frequency to transmit.

12.5.Test Procedure

12.5.1.The transmitter output was connected to the spectrum analyzer via a low loss cable.

12.5.2.Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz.

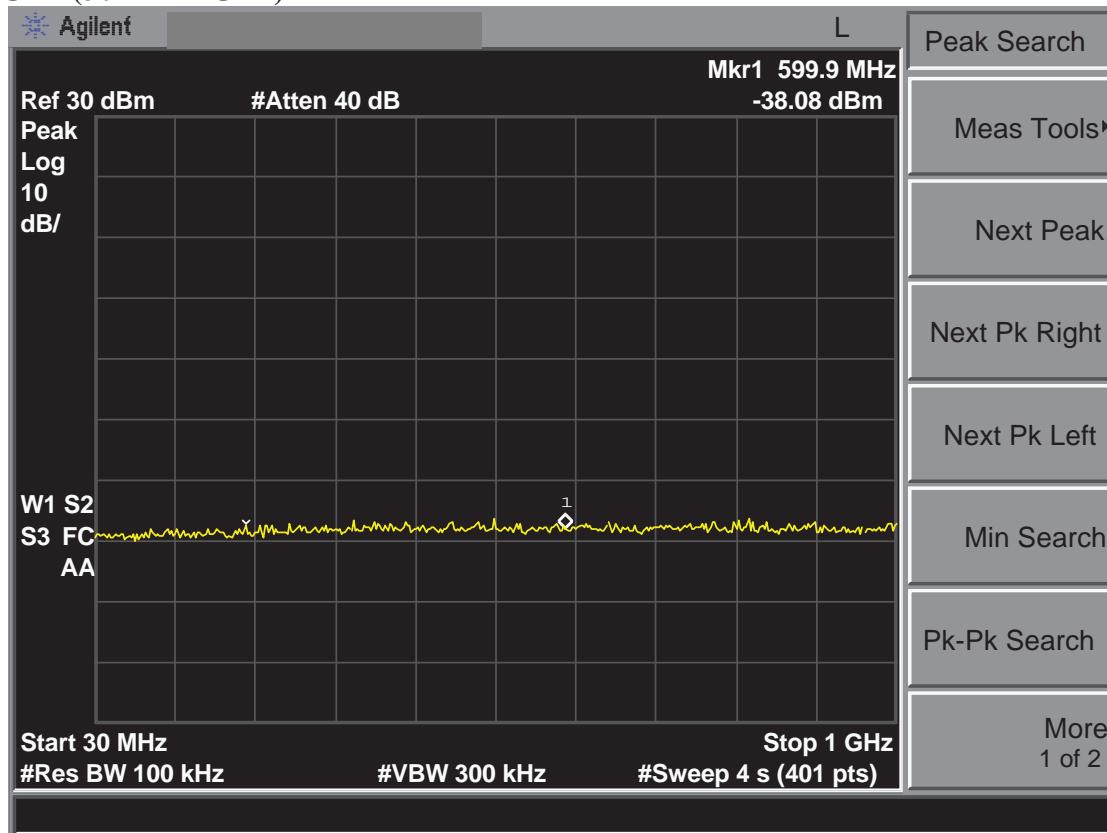
12.5.3.The Conducted Spurious Emission was measured and recorded.

12.6.Test Result

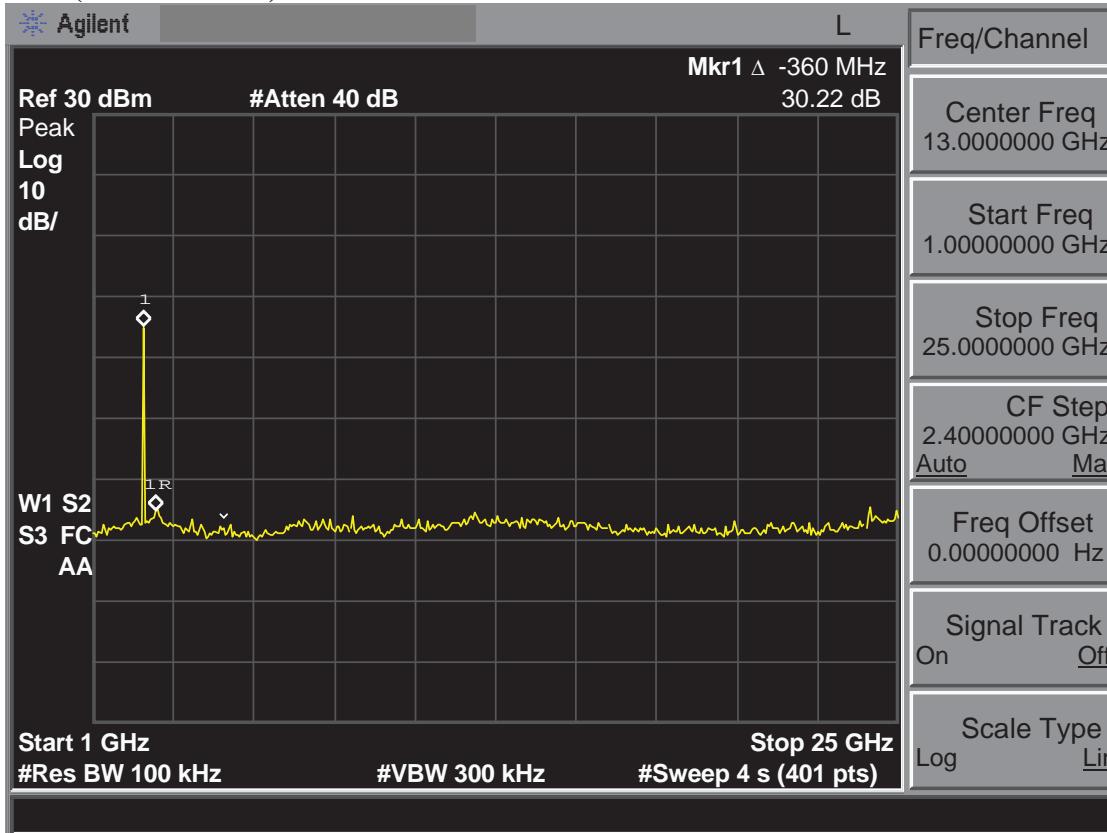
Pass.

The spectrum analyzer plots are attached as below.

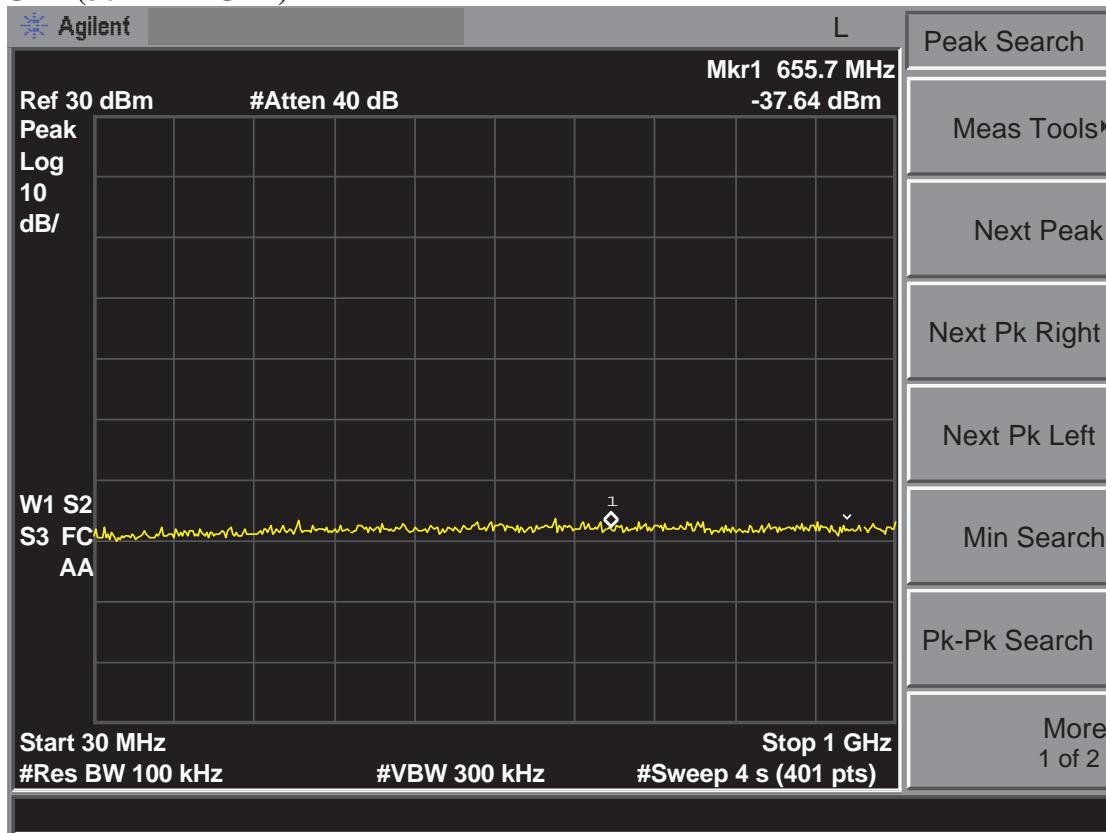
"Spectrum analyzer" is Agilent
TX 2402GHz (30MHz-1GHz)



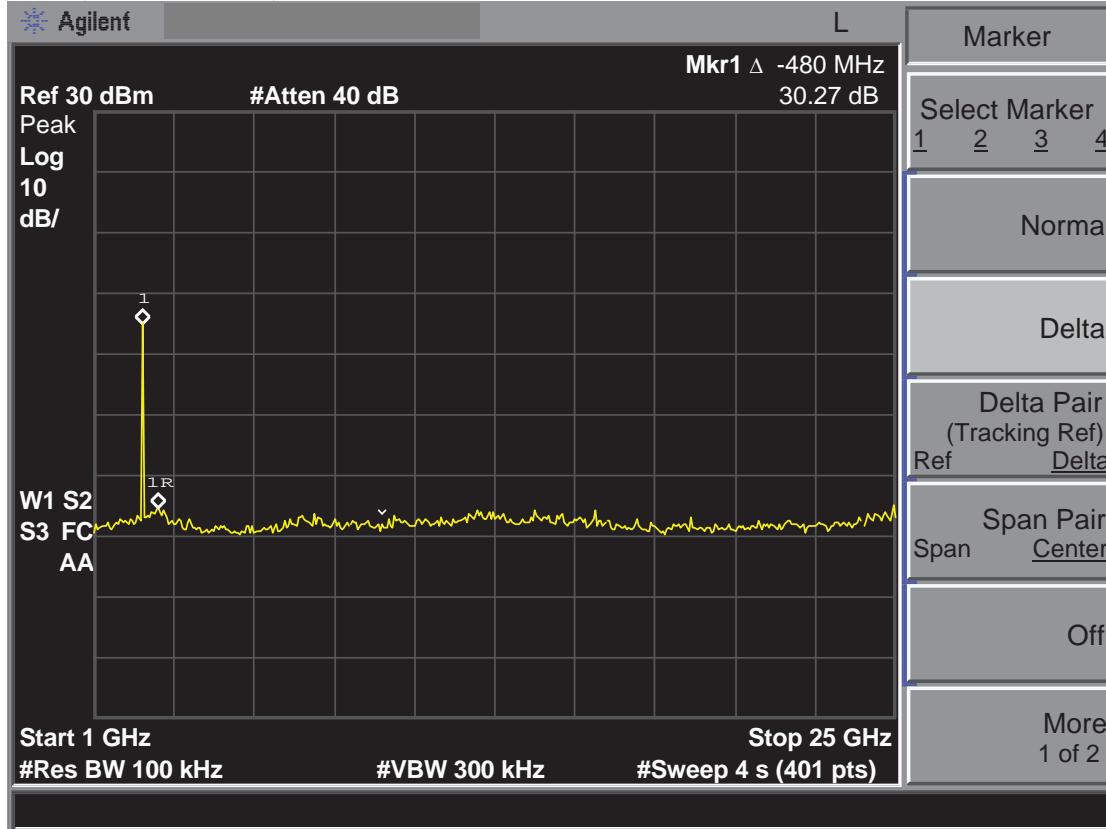
TX 2402GHz (1GHz-25GHz)



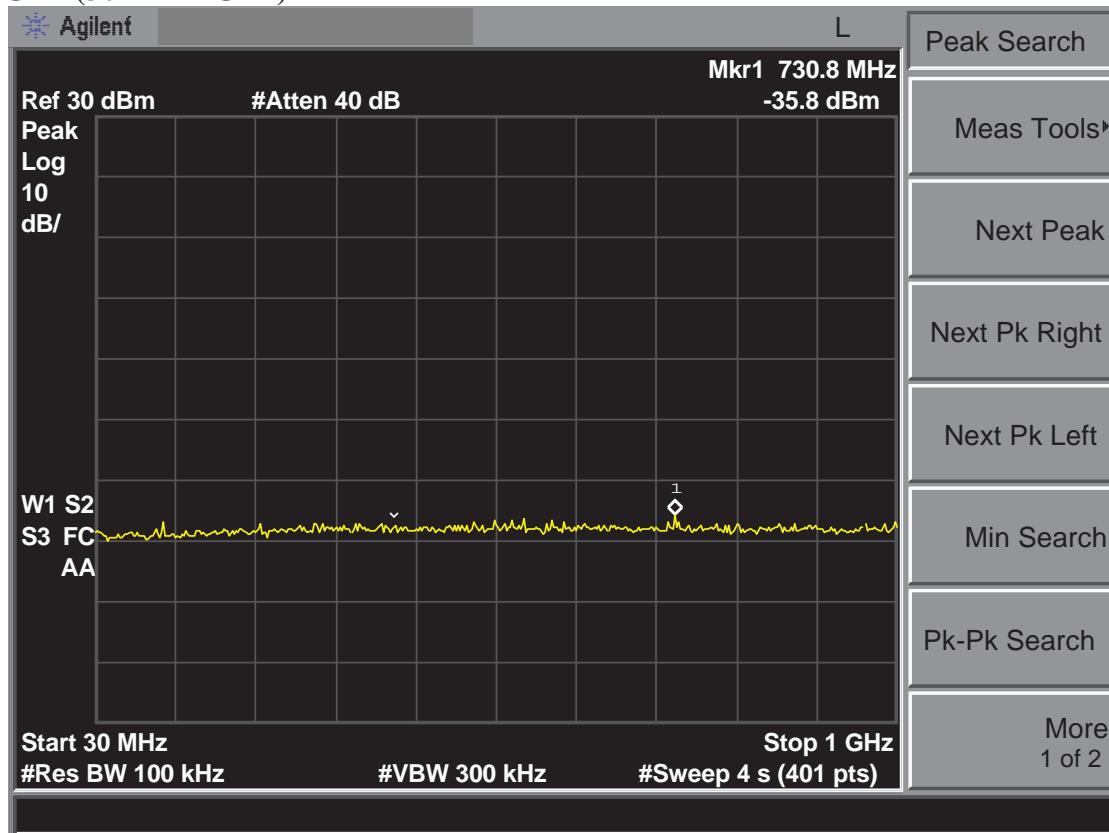
TX 2441GHz (30MHz-1GHz)



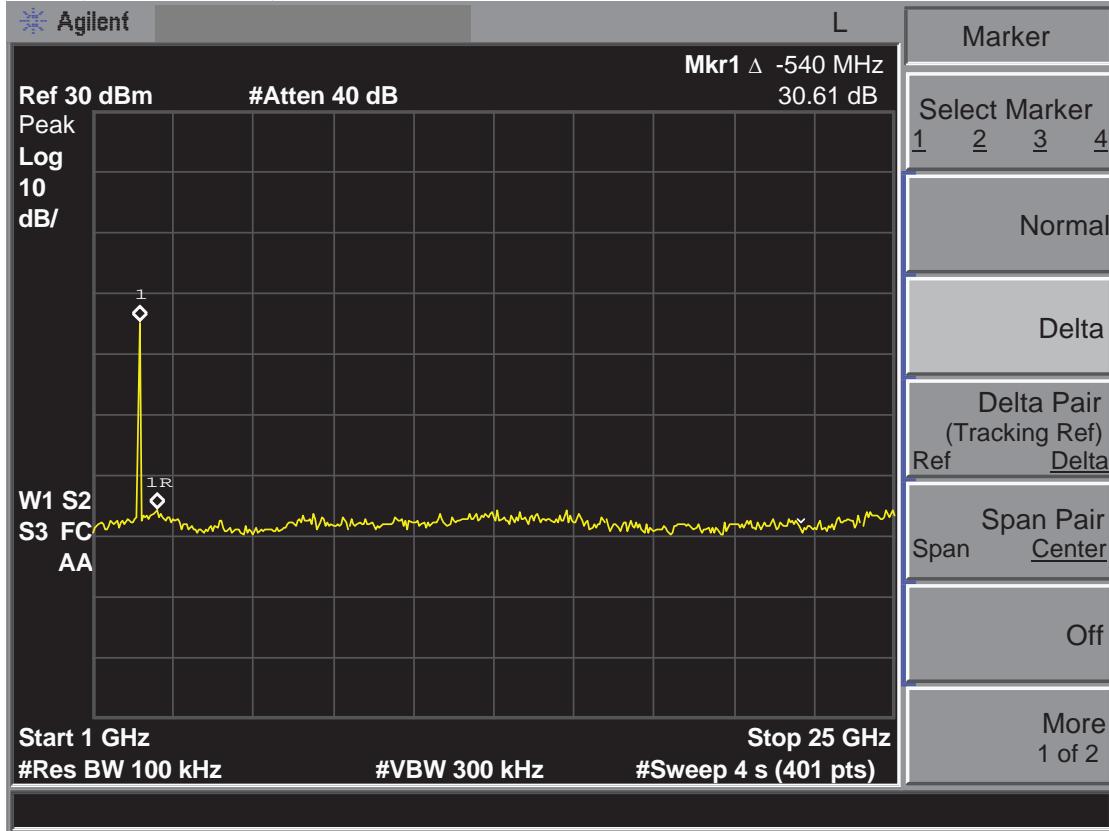
TX 2441GHz (1GHz-25GHz)



TX 2480GHz (30MHz-1GHz)



TX 2480GHz (1GHz-25GHz)

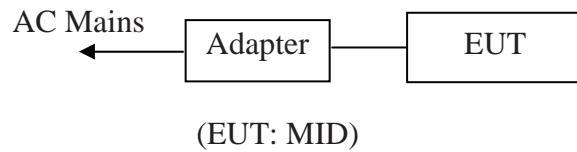


13.AC POWER LINE CONDUCTED EMISSION FOR FCC PART

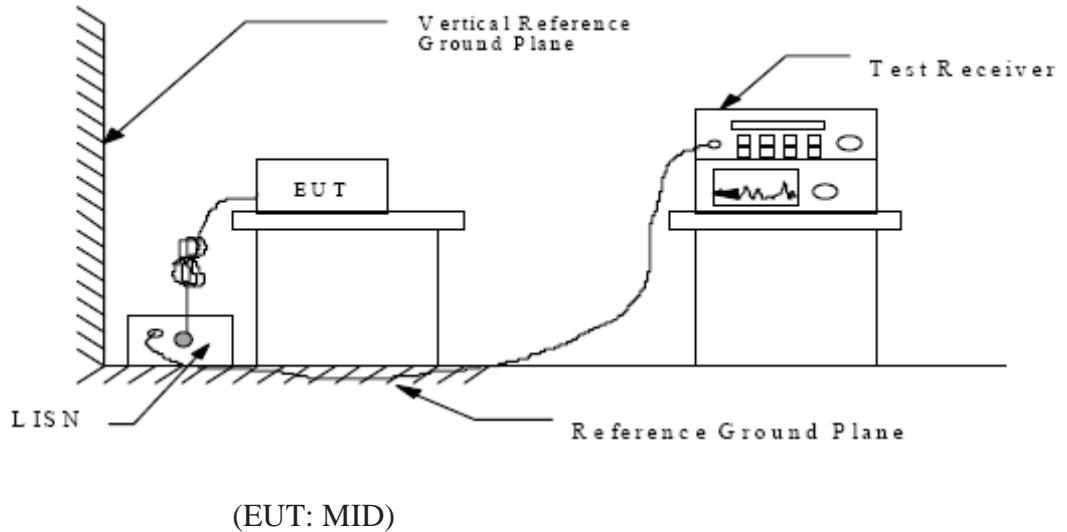
15 SECTION 15.207(A)

13.1.Block Diagram of Test Setup

13.1.1.Block diagram of connection between the EUT and simulators



13.1.2.Shielding Room Test Setup Diagram



13.2.The Emission Limit

13.2.1.Conducted Emission Measurement Limits According to Section 15.207(a)

Frequency (MHz)	Limit dB(μ V)	
	Quasi-peak Level	Average Level
0.15 - 0.50	66.0 - 56.0 *	56.0 - 46.0 *
0.50 - 5.00	56.0	46.0
5.00 - 30.00	60.0	50.0

* Decreases with the logarithm of the frequency.

13.3. Configuration of EUT on Measurement

The following equipment are installed on the Conducted Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

13.3.1. MID (EUT)

Model Number	:	GN32
Serial Number	:	N/A
Manufacturer	:	Shenzhen Leader Digital-tech Weitong Co., Ltd.

13.4. Operating Condition of EUT

13.4.1. Setup the EUT and simulator as shown as Section 13.1.

13.4.2. Turn on the power of all equipment.

13.4.3. Let the EUT work in (Charging) mode measure it.

13.5. Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2003 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

13.6. Power Line Conducted Emission Measurement Results

PASS.

The frequency range from 150kHz to 30MHz is checked.

Date of Test:	January 19, 2012	Temperature:	25°C
EUT:	MID	Humidity:	50%
Model No.:	GN32	Power Supply:	AC 120V/ 60Hz
Test Mode:	Charging	Test Engineer:	Kai

Frequency (MHz)	Result (dB μ V)	Limit (dB μ V)	Margin (dB)	Detector	Line
0.338664	36.30	59	22.7	QP	Neutral
0.606584	34.60	56	21.4	QP	
1.419618	31.20	56	24.8	QP	
4.393517	30.90	56	25.1	QP	
12.305810	41.80	60	18.2	QP	
12.503887	37.10	60	22.9	QP	
0.337314	35.80	49	13.2	AV	
0.405309	36.20	48	11.8	AV	
2.025219	24.10	46	20.9	AV	
4.323918	23.20	46	22.8	AV	
11.966695	30.00	50	20.0	AV	
12.503887	27.70	50	22.3	AV	
0.334632	36.70	59	22.3	QP	Live
0.604167	34.50	56	21.5	QP	
2.082610	24.10	56	31.9	QP	
2.150194	24.50	56	31.5	QP	
12.256783	35.30	60	24.7	QP	
12.654535	34.50	60	25.5	QP	
0.334632	35.10	49	13.9	AV	
0.402085	35.10	48	12.9	AV	
1.144329	29.00	46	17.0	AV	
3.362432	13.10	46	32.9	AV	
11.777127	21.60	50	28.4	AV	
12.654535	25.90	50	24.1	AV	

25.90Emissions attenuated more than 20 dB below the permissible value are not reported.

The spectral diagrams are attached as below.

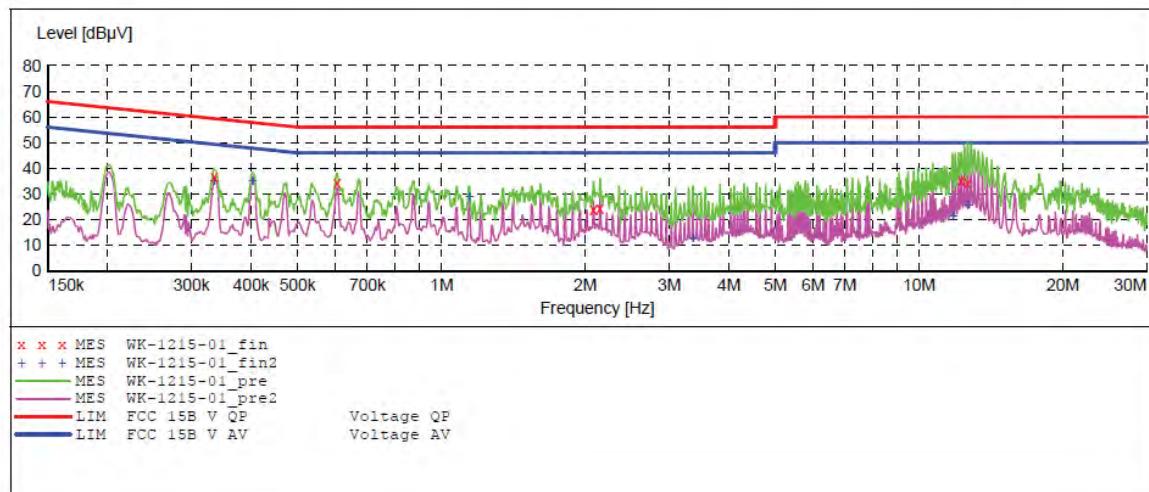
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: MID M/N:GN32
 Manufacturer: Leader Digital-tech Weitong
 Operating Condition: Charging
 Test Site: 1#Shielding Room
 Operator: Bob
 Test Specification: L 120V/60Hz
 Comment: Mains port
 Report NO.:ATE20120035

SCAN TABLE: "V 150K-30MHz fin"

Short Description: SUB STD VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 0.8 % QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "WK-1215-01_fin"

1/19/2012 10:07AM	Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
	0.334632	36.70	11.7	59	22.3	QP	L1	GND
	0.604167	34.50	12.0	56	21.5	QP	L1	GND
	2.082610	24.10	11.7	56	31.9	QP	L1	GND
	2.150194	24.50	11.6	56	31.5	QP	L1	GND
	12.256783	35.30	11.2	60	24.7	QP	L1	GND
	12.654535	34.50	11.2	60	25.5	QP	L1	GND

MEASUREMENT RESULT: "WK-1215-01_fin2"

1/19/2012 10:07AM	Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
	0.334632	35.10	11.7	49	13.9	AV	L1	GND
	0.402085	35.10	11.8	48	12.9	AV	L1	GND
	1.144329	29.00	11.8	46	17.0	AV	L1	GND
	3.362432	13.10	11.5	46	32.9	AV	L1	GND
	11.777127	21.60	11.2	50	28.4	AV	L1	GND
	12.654535	25.90	11.2	50	24.1	AV	L1	GND

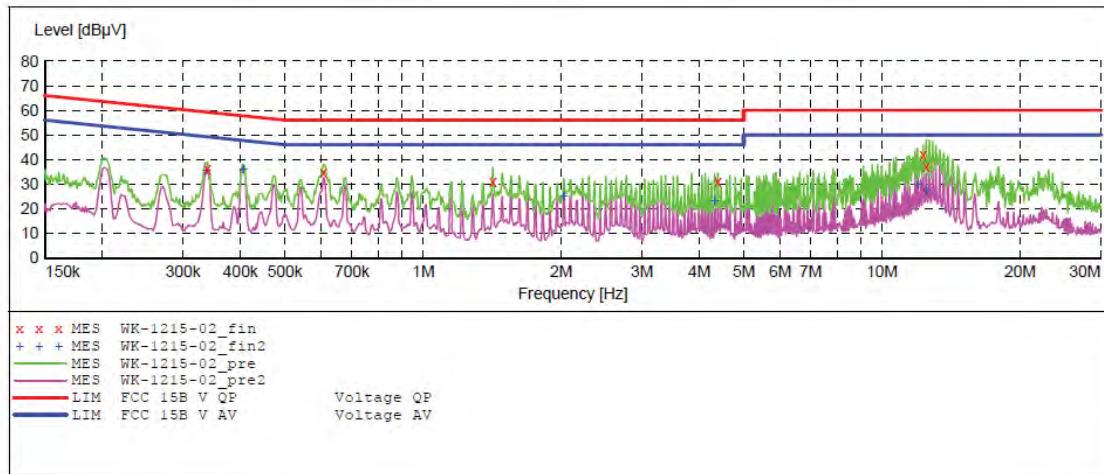
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: MID M/N:GN32
 Manufacturer: Leader Digital-tech Weitong
 Operating Condition: Charging
 Test Site: 1#Shielding Room
 Operator: Bob
 Test Specification: N 120V/60Hz
 Comment: Mains port
 Report NO.:ATE20120035

SCAN TABLE: "V 150K-30MHz fin"

Short Description: SUB STD VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 0.8 % QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "WK-1215-02_fin"

1/19/2012 10:10AM

Frequency MHz	Level dB μ V	Transd dB	Limit dB μ V	Margin dB	Detector	Line	PE
0.338664	36.30	11.7	59	22.7	QP	N	GND
0.606584	34.60	12.0	56	21.4	QP	N	GND
1.419618	31.20	11.7	56	24.8	QP	N	GND
4.393517	30.90	11.5	56	25.1	QP	N	GND
12.305810	41.80	11.2	60	18.2	QP	N	GND
12.503887	37.10	11.2	60	22.9	QP	N	GND

MEASUREMENT RESULT: "WK-1215-02_fin2"

1/19/2012 10:10AM

Frequency MHz	Level dB μ V	Transd dB	Limit dB μ V	Margin dB	Detector	Line	PE
0.337314	35.80	11.7	49	13.2	AV	N	GND
0.405309	36.20	11.8	48	11.8	AV	N	GND
2.025219	25.10	11.7	46	20.9	AV	N	GND
4.323918	23.20	11.5	46	22.8	AV	N	GND
11.966695	30.00	11.2	50	20.0	AV	N	GND
12.503887	27.70	11.2	50	22.3	AV	N	GND

14. ANTENNA REQUIREMENT

14.1. The Requirement

According to 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.

14.2. Antenna Construction

Device is equipped with unique antenna, which isn't displaced by other antenna. Therefore, the equipment complies with the antenna requirement of Section 15.203.

