Shenzhen Huatongwei International Inspection Co., Ltd.
Keji S.12th , Road, Hi-tech Industrial Park, Shenzhen, Guangdong, China
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FCC TEST REPORT

Part 15 Subpart C

FCC ID .....:	**TWNZF01-B**
Report Reference No.....:	**WE10020004**
Compiled by (position+printed name+signature)..:	File administrators Wenliang Li
Supervised by (position+printed name+signature)..:	Test Engineer Cary Li
Approved by (position+printed name+signature)..:	Manager Jimmy Li
Date of issue.....:	Feb 26, 2010
Testing Laboratory Name .....:	**Shenzhen Huatongwei International Inspection Co., Ltd**
Address.....:	Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Applicant's name.....:	**Pro-Lite, Inc.**
Address.....:	3505 Cadillac Ave. Building D
Manufacturer's name .....:	**NINGBO YOUWON TECHNOLOGY ELECTRONICS CO., LTD**
Address.....:	#928, XUEYUAN ROAD, LUGANG VILLAGE, GAOQIAO TOWN, NINGBO
Test specification:	
Standard .....:	**FCC Part Subpart 15C 2008 – Intentional Radiators**
	ANSI C63.4 - 2003
TRF Originator.....:	Shenzhen Huatongwei International Inspection CO., Ltd
Master TRF.....:	Dated 2006-06

Equipment Under Test ..... :	**Wireless Module**
Trade Mark .....:	/
Model/Type reference.....:	ZF01-B
Listed Models .....:	/
Result.....:	**Complied**

T E S T R E P O R T

Test Report No. :	WE10020004	Feb 26, 2010 Date of issue

Equipment under Test : Wireless Module

Model /Type : ZF01-B

Listed Models : /

Applicant : **Pro-Lite, Inc.**

Address : 3505 Cadillac Ave. Building D

Manufacturer : **NINGBO YOUWON TECHNOLOGY ELECTRONICS CO., LTD**

Address : #928, XUEYUAN ROAD, LUGANG VILLAGE, GAOQIAO TOWN, NINGBO

SUMMARY OF STANDARDS AND RUSELT

No.	Test Item	Test Standards and Procedure	Result
1	AC Conducted Emission	FCC Subpart 15C § 15.207	Complied
2	Radiated Emission	FCC Subpart 15C § 15.209 FCC Subpart 15C § 15.231(e) ANSI C63.4-2003 section 13.1.4	Complied
3	Deactivation Time	FCC Subpart 15C § 15.231(e)	Complied
4	20dB Bandwidth	FCC Subpart 15C § 15.231(c) ANSI C63.4-2003 section 13.1.7	Complied
5	Antenna Requirement	FCC Subpart 15C § 15.203	Complied

NOTE: 1),The detailed test rusult please see section 4.
2),The test report merely corresponds to the test sample.
3),It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Contents

1. TEST STANDARDS

The tests were performed according to following standards:

FCC Rules Part 15 Subpart C (2008) – Intentional Radiators

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 9kHz to 40GHz

2. SUMMARY

2.1. General Remarks

Date of receipt of test sample	:	Feb 3, 2010
Testing commenced on	:	Feb 4, 2010
Testing concluded on	:	Feb 26, 2010

2.2. Equipment Under Test Power Supply

Power supply voltage : ☐ 120V / 60 Hz ☐ 115V / 60Hz
☐ 12 V DC ☐ 24 V DC
☒ Other (specified in blank below)

DC 5V from host

2.3. Short description of the Equipment under Test

Product Name	:	Wireless Module
Model Number	:	ZF01-B
Operation Frequency	:	433.05 MHz
Modulation Technology	:	GFSK
Transmitter Type	:	Periodic Transmitter
Sample Type	:	Module

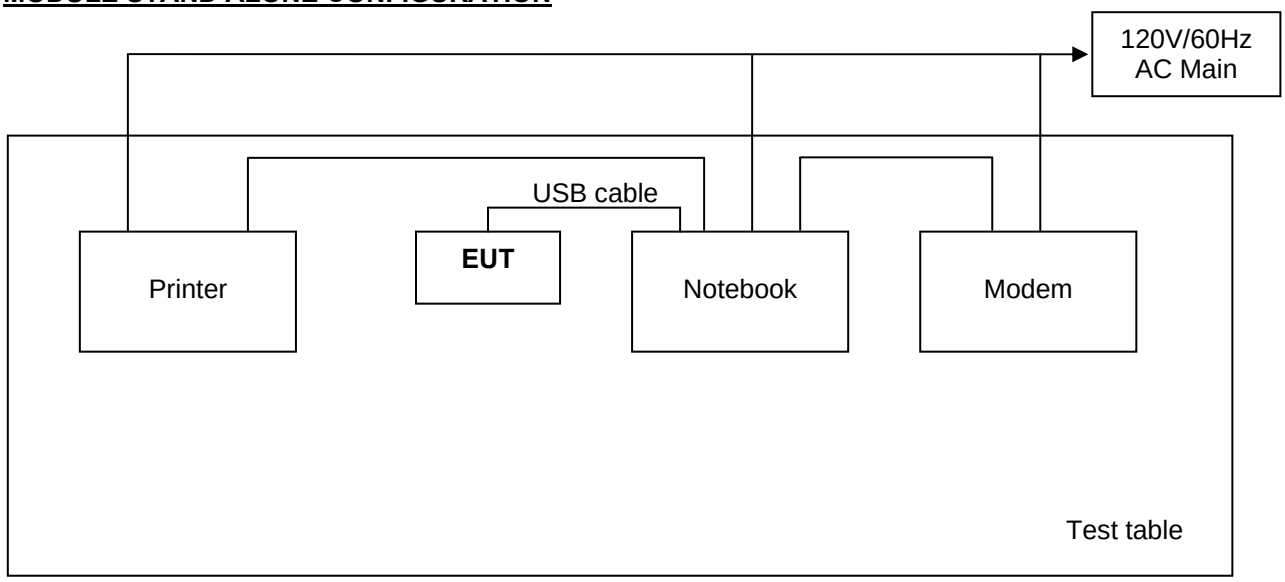
Note: The module be used in series host. About more details, refer to the test photos and user's manual.

2.4. EUT operation mode

The EUT has been tested under typical operating mode(TX mode).

2.5. Configuration of Tested System

MODULE STAND ALONE CONFIGURATION

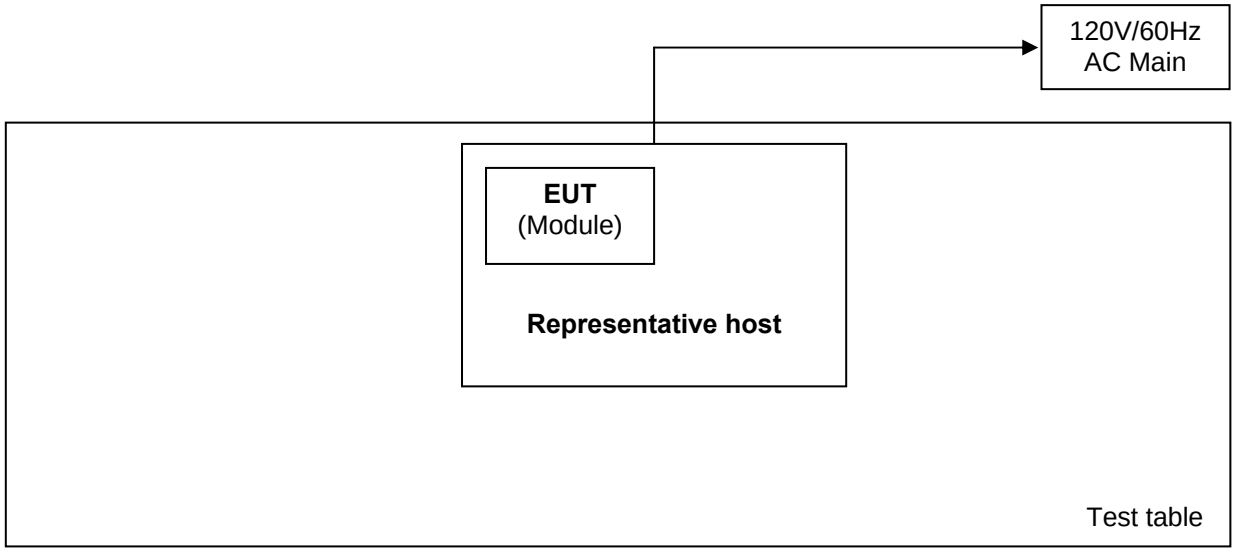


Equipment Used in Tested System

No.	Equipment	Manufacturer	Model No.	Serial No.
1	Notebook	AUSU	I9100L	59NP009727
2	Printer	HP	Laserjet 1000 series	/
3	Modem	D-Link	DSL-300	/

Note: For actual sample please see test setup photos and EUT external photos.

MODULE WITH HOST CONFIGURATION



Equipment Used in Tested System

No.	Equipment	Manufacturer	Model No.	Serial No.
1	Host	YOUWON	/	/

2.6. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: **TWNZF01-B** filing to comply with the FCC Part 15 Subpart C 15.231(e) Rules 2008.

2.7. Modifications

No modifications were implemented to meet testing criteria.

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Shenzhen Huatongwei International Inspection Co., Ltd
Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Phone: 86-755-26715686 Fax: 86-755-26748089

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 (2003) and CISPR Publication 22.

3.2. Test Facility

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

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories, Date of Registration: August 02, 2007. Valid time is until March 29, 2012.

A2LA-Lab Cert. No. 2243.01

Shenzhen Huatongwei International Inspection Co., Ltd, EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. Valid time is from Aug 24, 2005 to Sept 30, 2009.

FCC-Registration No.: 662850

Shenzhen Huatongwei International Inspection Co., Ltd, EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 662850, Renewal date September, 2009.

IC-Registration No.: 5377

The 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377 on November 28th, 2005.

ACA

Shenzhen Huatongwei International Inspection Co., Ltd, EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

NEMKO-Aut. No.: ELA125

Shenzhen Huatongwei International Inspection Co., Ltd has been assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025:2005 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA-10, the Authorization is valid through April 25, 2009.

VCCI

The 3m Semi-anechoic chamber (12.2m×7.95m×6.7m) and Shielded Room (8m×4m×3m) of Shenzhen Huatongwei International Inspection Co., Ltd has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2484. Date of Registration: December 20, 2006. Valid time is until December 19, 2009.

Main Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-2726. Date of Registration: December 20, 2006. Valid time is until December 19, 2009.

DNV

Shenzhen Huatongwei International Inspection Co Ltd has been found to comply with the requirements of DNV towards subcontractor of EMC and safety testing services in conjunction with the EMC and Low voltage Directives and in the voluntary field. The acceptance is based on a formal quality Audit and follow-ups according to relevant parts of ISO/IEC Guide 17025(2005), in accordance with the requirements of the DNV Laboratory Quality Manual towards subcontractors. Valid time is until 09 July, 2010.

3.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	22 ° C
Humidity:	65 %
Atmospheric pressure:	950-1050mbar

3.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.24dB	(1)
Radiated Emission	1~12.75GHz	5.16dB	(1)
20dB Bandwidth	/	0.25dB	(1)
Deactivation Time	/	0.5ms	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.5. Equipments Used during the Test

Conducted Emisssions					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	100106	2009/11
2	Artificial Mains	ROHDE & SCHWARZ	ESH2-Z5	100028	2009/11
3	Pulse Limiter	ROHDE & SCHWARZ	ESHSZ2	100044	2009/11
4	EMI Test Software	ROHDE & SCHWARZ	ESK1	N/A	2009/11
5	Single Balanced Telecom Pair ISN	FCC	FCC-TLISN-T2-02	20371	2009/11
6	Two Balanced Telecom Pairs ISN	FCC	FCC-TLISN-T4-02	20373	2009/11

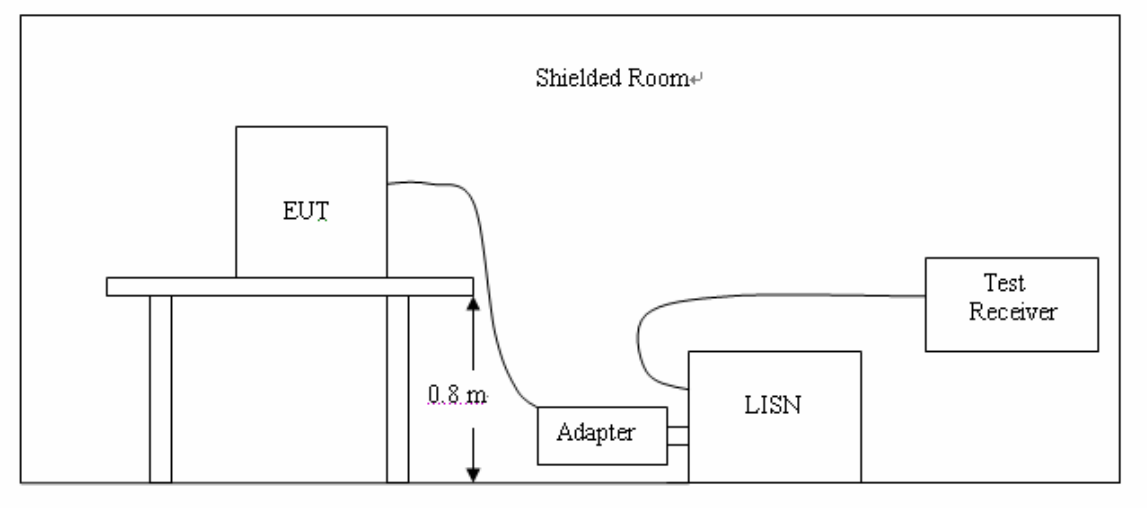
Radiated Emissions					
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ULTRA-BROADBAND ANTENNA	ROHDE & SCHWARZ	HL562	100015	2008/11
2	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESI 26	100009	2008/11
3	RF TEST PANEL	ROHDE & SCHWARZ	TS / RSP	335015/ 0017	2008/11
4	TURNTABLE	ETS	2088	2149	2008/11
5	ANTENNA MAST	ETS	2075	2346	2008/11
6	EMI TEST SOFTWARE	ROHDE & SCHWARZ	ESK1	N/A	2008/11
7	HORN ANTENNA	ROHDE & SCHWARZ	HF906	N/A	2008/06/

20dB Bandwidth & Deactivation Time & Duty Cycle					
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESCI	100106	2008/11
2	RECEIVER ANTENNA	/	/	/	/

4. TEST CONDITIONS AND RESULTS

4.1. AC Conducted Emission

TEST CONFIGURATION



TEST PROCEDURE

1 The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4.
2 Support equipment, if needed, was placed as per ANSI C63.4.
3 All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
4 The EUT received DC 6V from adaptor input 120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5 All support equipments received AC power from a second LISN, if any.
6 The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7 Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
8 During the above scans, the emissions were maximized by cable manipulation.

CONDUCTED LIMIT

According to FCC Subpart 15 B §15.207 AC Conducted Emission Limits is as following：

Frequency fange (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.1~ 0.5	66 to 56*	56 to 46*
0.5 ~ 5	56	46
5 ~ 30	60	50
* Decreasing linearly with the logarithm of the frequency		

TEST RESULTS

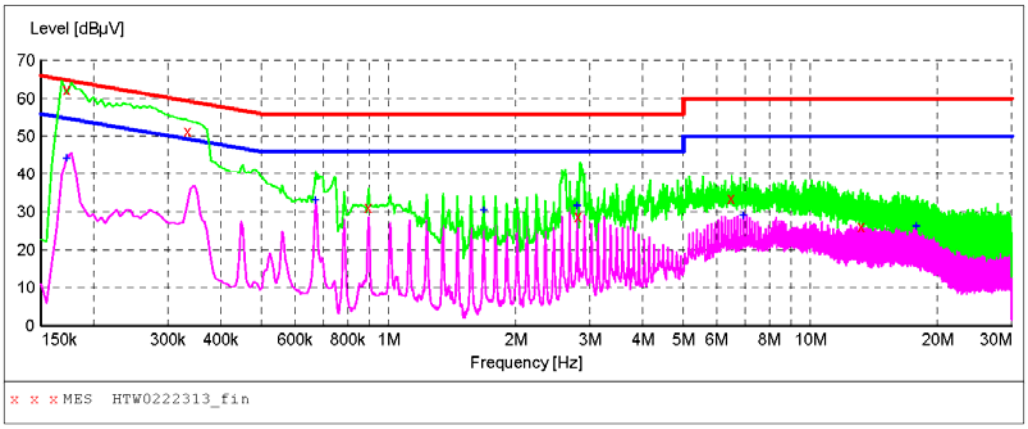
TEST DATA OF STAND ALONE

L Line

```
EUT:                  Wireless Module
Manufacturer:         Pro-Lite,Inc.
Operating Condition:  TX Mode
Test Site:            3# SHIELDED ROOM
Operator:             Cary
Test Specification:   AC 120V/60Hz
Comment:              M/N:ZF01-B
Start of Test:        2/23/2010 / 10:52:23AM
```

SCAN TABLE: "Voltage (9K-30M)FIN"

Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "HTW0222313_fin"

2/23/2010 10:54AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.172500	61.50	10.1	65	3.5	QP	L1	GND
0.334500	51.30	10.1	59	7.7	QP	L1	GND
0.897000	31.20	10.1	56	24.8	QP	L1	GND
2.809500	28.80	10.2	56	27.2	QP	L1	GND
6.499500	33.60	10.2	60	26.4	QP	L1	GND
13.204500	26.20	10.6	60	33.8	QP	L1	GND

MEASUREMENT RESULT: "HTW0222313_fin2"

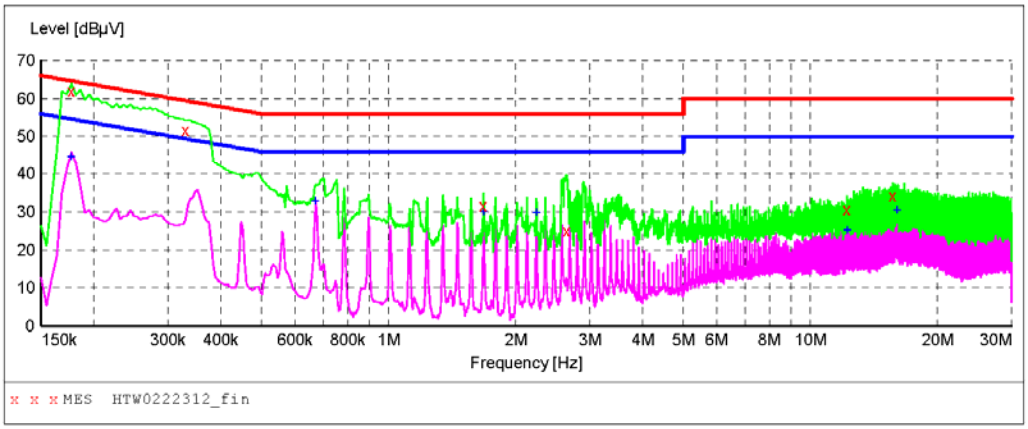
2/23/2010 10:54AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.172500	44.50	10.1	55	10.5	AV	L1	GND
0.672000	32.90	10.1	46	13.1	AV	L1	GND
1.680000	30.40	10.2	46	15.6	AV	L1	GND
2.800500	31.50	10.2	46	14.5	AV	L1	GND
6.945000	29.00	10.2	50	21.0	AV	L1	GND
17.812500	26.10	10.7	50	23.9	AV	L1	GND

N Line

EUT: Wireless Module
Manufacturer: Pro-Lite,Inc.
Operating Condition: TX Mode
Test Site: 3# SHIELDED ROOM
Operator: Cary
Test Specification: AC 120V/60Hz
Comment: M/N:ZF01-B
Start of Test: 2/23/2010 / 10:49:15AM

SCAN TABLE: "Voltage (9K-30M)FIN"
Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "HTW0222312_fin"

2/23/2010 10:51AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.177000	61.40	10.1	65	3.6	QP	N	GND
0.330000	51.70	10.1	60	8.3	QP	N	GND
1.680000	31.60	10.2	56	24.4	QP	N	GND
2.643000	24.90	10.2	56	31.1	QP	N	GND
12.210000	30.60	10.6	60	29.4	QP	N	GND
15.684000	34.20	10.7	60	25.8	QP	N	GND

MEASUREMENT RESULT: "HTW0222312_fin2"

2/23/2010 10:51AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.177000	44.60	10.1	55	10.0	AV	N	GND
0.672000	32.80	10.1	46	13.2	AV	N	GND
1.680000	29.90	10.2	46	16.1	AV	N	GND
2.242500	29.80	10.2	46	16.2	AV	N	GND
12.214500	25.10	10.6	50	24.9	AV	N	GND
16.021500	30.40	10.7	50	19.6	AV	N	GND

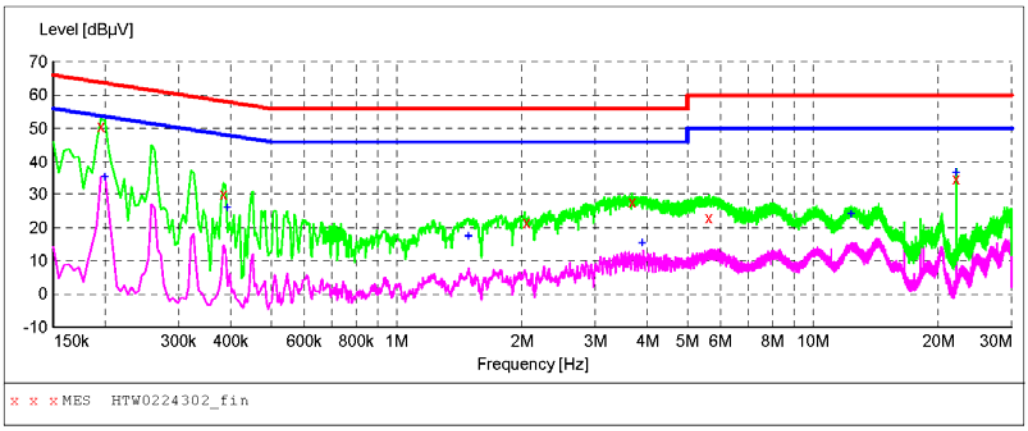
TEST DATA WITH HOST

L Line

```
EUT:                    Wireless Module
Manufacturer:           Pro-Lite,Inc.
Operating Condition:    TX Mode
Test Site:              3# SHIELDED ROOM
Operator:               Cary
Test Specification:     AC 120V/60Hz
Comment:                M/N:ZF01-B
Start of Test:          2/24/2010 / 8:50:04AM
```

SCAN TABLE: "Voltage (9K-30M)FIN"

Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "HTW0224302_fin"

2/24/2010 8:52AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.195000	50.60	10.1	64	13.4	QP	L1	GND
0.384000	29.90	10.1	58	28.1	QP	L1	GND
2.053500	21.40	10.2	56	34.6	QP	L1	GND
3.687000	27.60	10.2	56	28.4	QP	L1	GND
5.622000	22.80	10.2	60	37.2	QP	L1	GND
22.119000	34.60	10.8	60	25.4	QP	L1	GND

MEASUREMENT RESULT: "HTW0224302_fin2"

2/24/2010 8:52AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.199500	35.10	10.1	54	18.9	AV	L1	GND
0.393000	25.80	10.1	48	22.2	AV	L1	GND
1.491000	17.30	10.2	46	28.7	AV	L1	GND
3.885000	15.40	10.2	46	30.6	AV	L1	GND
12.354000	24.10	10.6	50	25.9	AV	L1	GND
22.119000	36.40	10.8	50	13.6	AV	L1	GND

N Line

```
EUT:                    Wireless Module
Manufacturer:           Pro-Lite,Inc.
Operating Condition:    TX Mode
Test Site:              3# SHIELDED ROOM
Operator:               Cary
Test Specification:     AC 120V/60Hz
Comment:                M/N:ZF01-B
Start of Test:          2/24/2010 / 8:54:13AM
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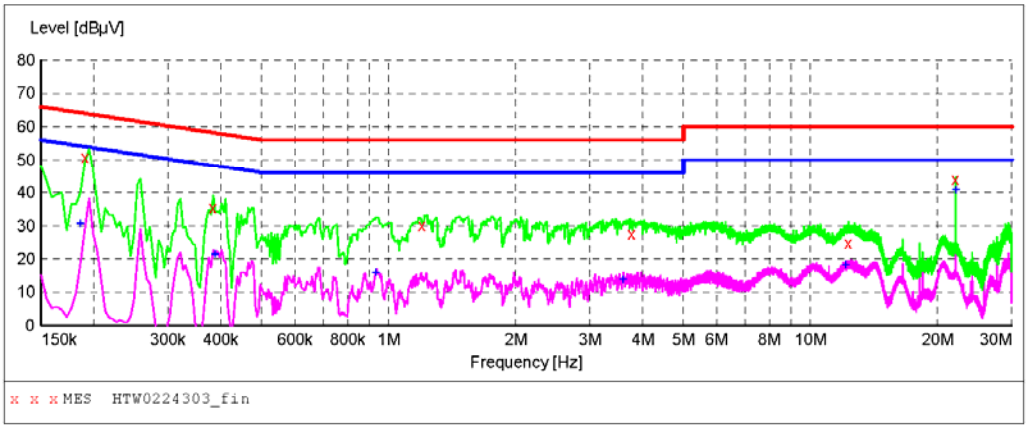
SCAN TABLE: "Voltage (9K-30M)FIN"

Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "HTW0224303_fin"

2/24/2010 8:56AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.190500	50.70	10.1	64	13.3	QP	N	GND
0.384000	35.40	10.1	58	22.8	QP	N	GND
1.203000	30.20	10.2	56	25.8	QP	N	GND
3.772500	27.50	10.2	56	28.5	QP	N	GND
12.291000	24.90	10.6	60	35.1	QP	N	GND
22.119000	43.80	10.8	60	16.2	QP	N	GND

MEASUREMENT RESULT: "HTW0224303_fin2"

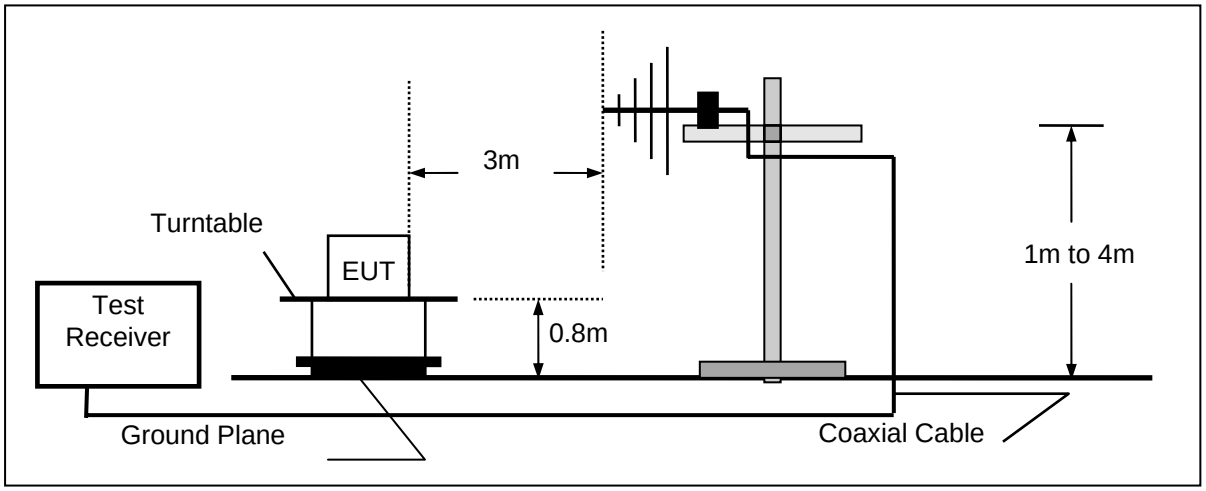
2/24/2010 8:56AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.186000	30.50	10.1	54	23.7	AV	N	GND
0.388500	21.40	10.1	48	26.7	AV	N	GND
0.933000	15.80	10.1	46	30.2	AV	N	GND
3.601500	13.70	10.2	46	32.3	AV	N	GND
12.165000	18.20	10.6	50	31.8	AV	N	GND
22.119000	40.70	10.8	50	9.3	AV	N	GND

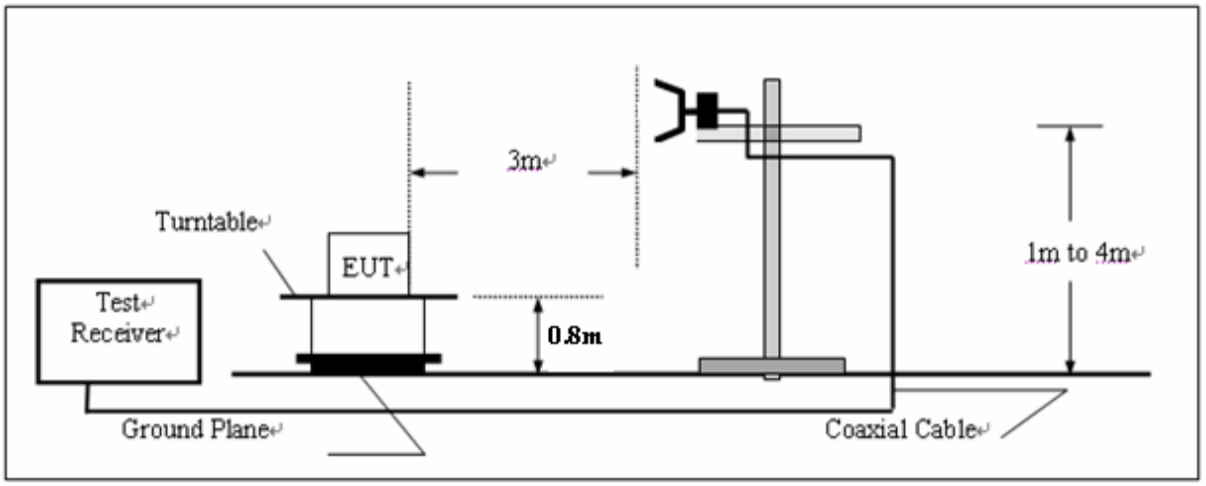
4.2. Radiated Emission

TEST CONFIGURATION

Radiated Emission Test Set-Up, Frequency range 30 - 1000MHz



Radiated Emission Test Set-Up, Frequency range 1GHz - 5GHz



TEST PROCEDURE

1, The EUT was placed on a turn table which is 0.8m above ground plane.
2, Connect the EUT to the USB port of Notebook, and EUT will transmit automatic at 433.05MHz.
3, Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0℃ to 360℃ to acquire the highest emissions from EUT.
4, And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
5, Repeat above procedures until all frequency measurements have been completed.

RADIATION LIMIT

For periodic transmitter, according to § 15.231(e), the field strength of fundamental from device at a distance of 3 meters shall not exceed the following values：

Fundamental frequency (MHz)	Distance (Meters)	Field strength of fundamental (dBμV/m)	
		AV	Peak
433.05	3	72.87	92.87
Note: For the band 260-470MHz,uV/m at 3 meters = 16.6667(F) – 2833.333 Where F is fundamental frequency 433.05MHz			

For periodic transmitter, according to § 15.231(e), the field strength radiated emissions from device at a distance of 3 meters shall not exceed the following values：

Fundamental frequency (MHz)	Distance (Meters)	Field strength of spurious emission	
		(μV/m)	(dBμV/m)
40.66-40.70	3	100	40
70-130	3	50	34
130-174	3	50 to 150	34 to 43.5
174-260	3	150	43.5
260-470	3	150 to 500	43.5 to 54
Above 470	3	500	54
Note: 1, For other bands limit pls refer 15.209 2, The limit beolw 1GHz based CISPR quasi-peak detector, the limit above 1GHz based average detector and peak limit is 74dBuV/m.			

FCC Part 15B § 15.209, all spurious emissions shall comply with the limits of table as follow:

Frequency (MHz)	Distance (Meters)	Radiated (μV/m)	Radiated (dBμV/m)
30-88	3	100	40.0
88-216	3	150	43.5
216-960	3	200	46.0
Above 960	3	500	54.0

Note: The sprious emissions shall be bttenuated to the average limits shown in above table or to the general limits shown in section 15.209, which limit permits a higher field strength.

TEST RESULTS

The emissions from 1GHz to 5GHz are peak measured peak and average level, below 1GHz measured QPlevel, detailed test data please see the following pages.

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

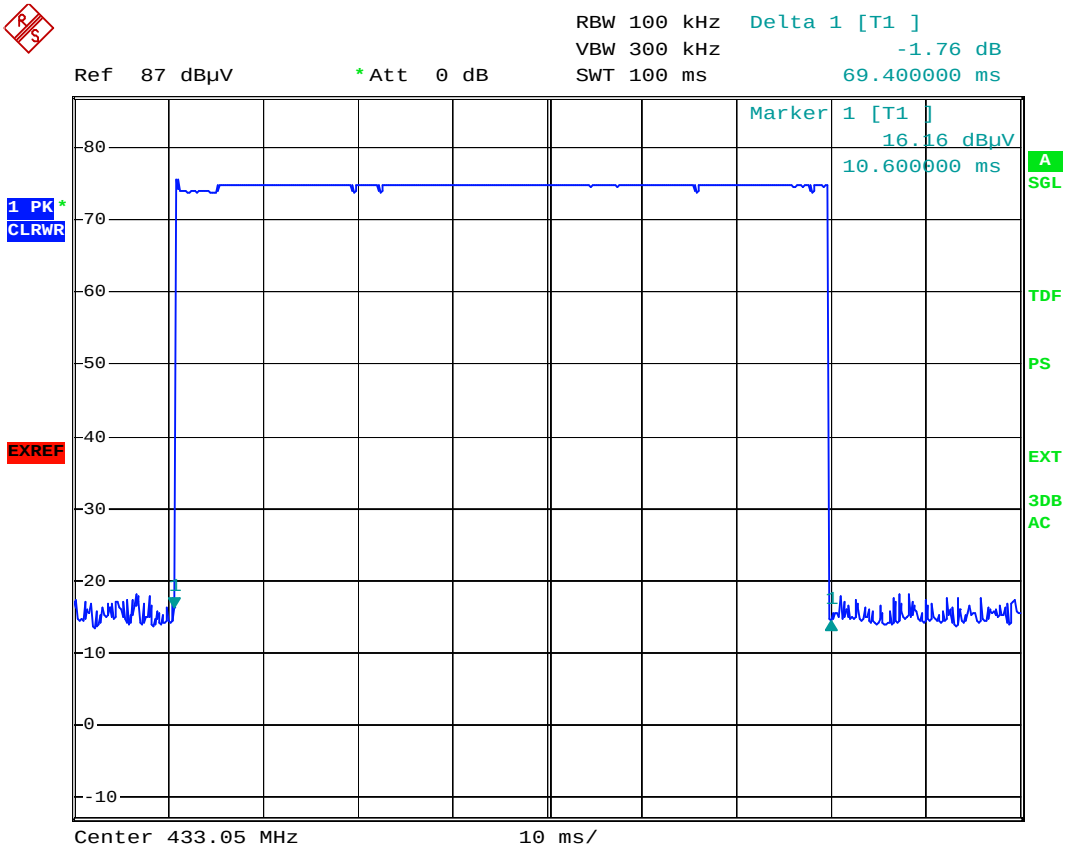
Where FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude	AG = Amplifier Gain
AF = Antenna Factor	

Duty Cycle Correction Factor

Duty Cycle = TX on/100ms X 100% = 69.4 ms/100ms X 100% = 69.4%

Duty Cycle Correction Factor = 20log(Duty Cycle) = -3.17

The pulses of 100ms = 1 times



Time of a pulse = 69.4ms

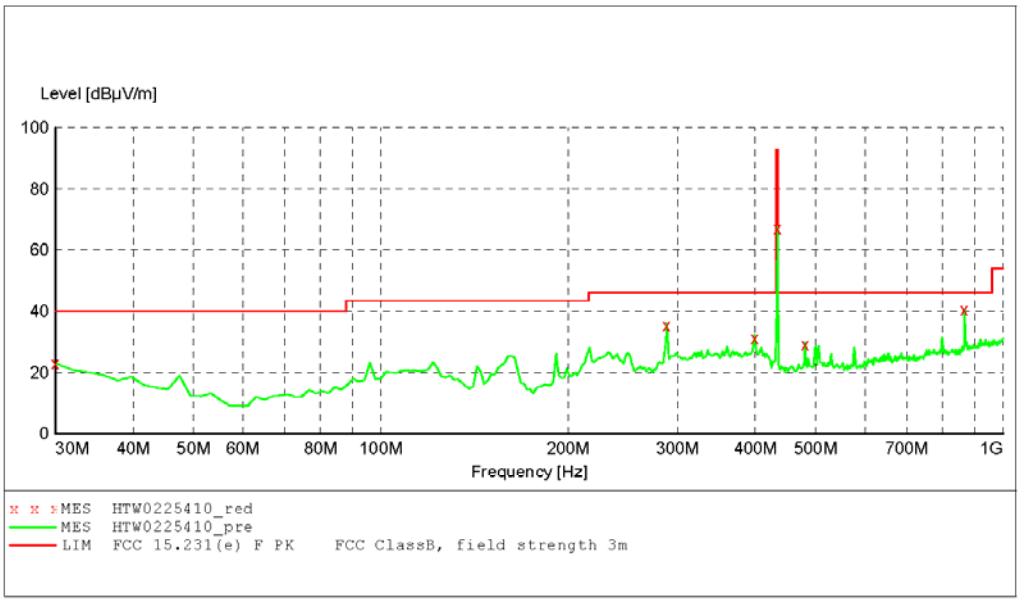
TEST DATA OF STAND ALONE

30MHz to 1GHz Test Data

```
EUT:                  Wireless Module
Manufacturer:         Pro-Lite,Inc.
Operating Condition:  TX Mode
Test Site:            3M CHAMBER
Operator:             Cary
Test Specification:   AC 120V/60Hz
Comment:              M/N:ZF01-B
Start of Test:        2/25/2010 / 9:33:15AM
```

SWEEP TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	HL562 09



MEASUREMENT RESULT: "HTW0225410_red"

2/25/2010 9:34AM

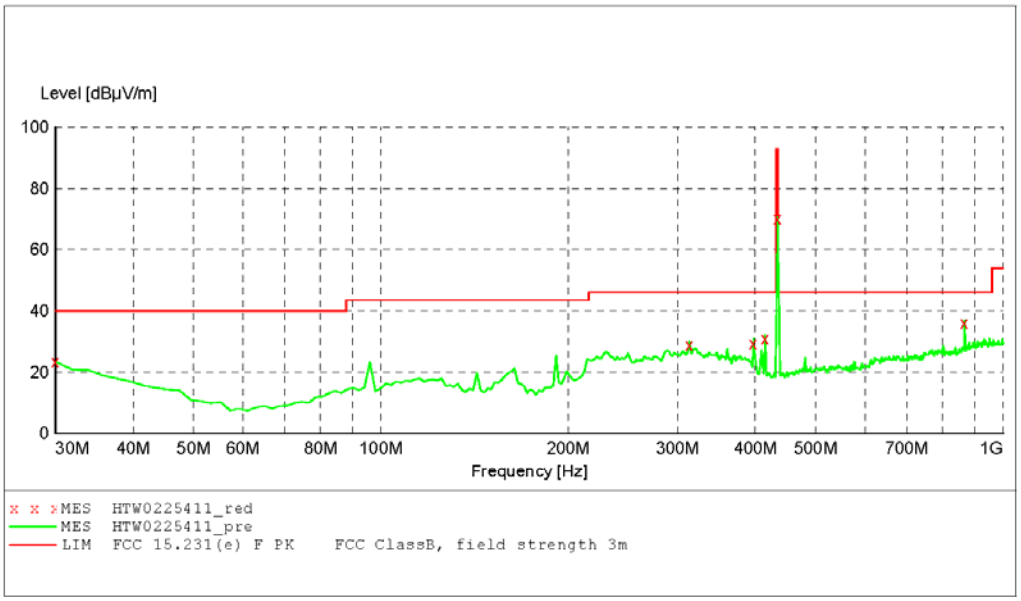
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	23.00	-4.7	40.0	17.0	QP	100.0	0.00	VERTICAL
288.540000	35.30	-11.1	46.0	10.7	QP	100.0	258.00	VERTICAL
399.340000	31.20	-8.8	46.0	14.8	QP	100.0	165.00	VERTICAL
433.050000	66.70	-8.2	92.9	26.2	Peak	100.0	137.00	VERTICAL
480.980000	29.10	-6.4	46.0	16.9	QP	100.0	238.00	VERTICAL
867.815631	40.60	0.2	46.0	5.4	QP	100.0	137.00	VERTICAL

Frequency (MHz)	Field strength (dBµV/m)	Limit (dBµV/m)	Duty Cycle Correction Factor	Result (dB)	Margin (dB)	Det.
433.05	66.70	92.87	/	66.70	26.17	Peak
	66.70	72.87	-3.17	63.53	9.34	AV
Note: Result = Field Strength + Duty Cycle Corrcetion Factor						

```
EUT:                  Wireless Module
Manufacturer:         Pro-Lite,Inc.
Operating Condition:  TX Mode
Test Site:            3M CHAMBER
Operator:             Cary
Test Specification:   AC 120V/60Hz
Comment:              M/N:ZF01-B
Start of Test:        2/25/2010 / 9:34:52AM
```

SWEEP TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	HL562 09



MEASUREMENT RESULT: "HTW0225411_red"

2/25/2010 9:36AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	23.40	-4.7	40.0	16.6	QP	100.0	77.00	HORIZONTAL
313.810000	28.90	-10.8	46.0	17.1	QP	100.0	299.00	HORIZONTAL
397.400000	29.40	-8.8	46.0	16.6	QP	100.0	29.00	HORIZONTAL
414.890000	31.00	-8.5	46.0	15.0	QP	100.0	238.00	HORIZONTAL
433.050000	70.00	-8.2	92.9	22.9	Peak	100.0	305.00	HORIZONTAL
867.820000	36.20	0.2	46.0	9.8	QP	100.0	0.00	HORIZONTAL

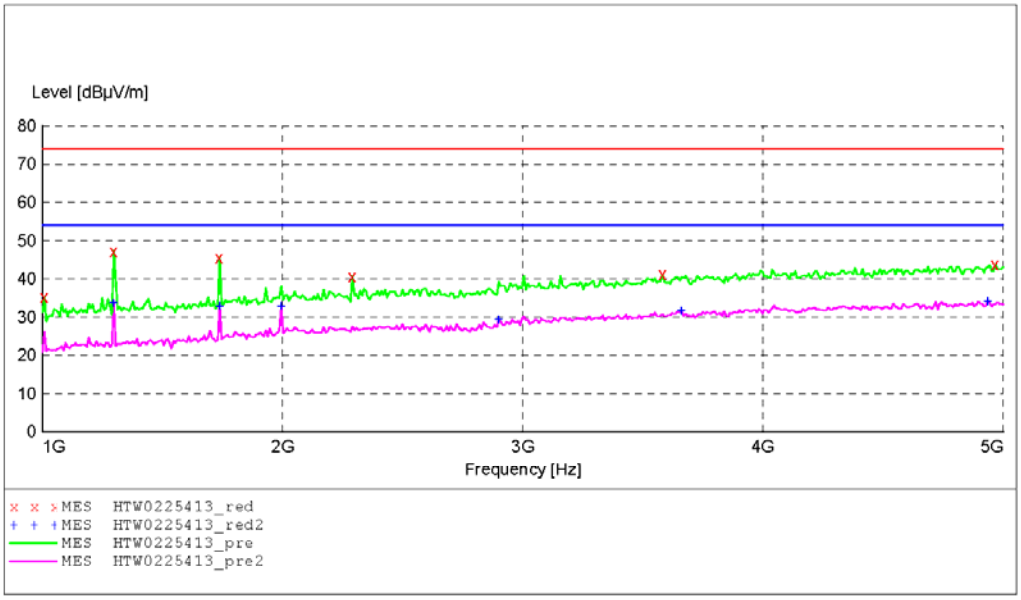
Frequency (MHz)	Field strength (dBµV/m)	Limit (dBµV/m)	Duty Cycle Correction Factor	Result (dB)	Margin (dB)	Det.
433.05	70.00	92.87	/	70.00	22.87	Peak
	70.00	72.87	-3.17	66.83	6.04	AV
Note: Result = Field Strength + Duty Cycle Corrcetion Factor						

1GHz to 5GHz Test Data

```
EUT:                  Wireless Module
Manufacturer:         Pro-Lite,Inc.
Operating Condition:  TX Mode
Test Site:            3M CHAMBER
Operator:             Cary
Test Specification:   AC 120V/60Hz
Comment:              M/N:ZF01-B
Start of Test:        2/25/2010 / 9:37:59AM
```

SWEEP TABLE: "test (1G-18G) P"

Short Description:		EN 55022 Field Strength			
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	18.0 GHz	MaxPeak Average	Coupled	1 MHz	HF906(2007)



MEASUREMENT RESULT: "HTW0225413_red"

2/25/2010 9:39AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
1008.016032	35.30	-10.2	74.0	38.7	Peak	100.0	346.00	VERTICAL
1296.593186	47.30	-8.1	74.0	26.7	Peak	100.0	125.00	VERTICAL
1737.474950	45.60	-6.4	74.0	28.4	Peak	100.0	203.00	VERTICAL
2290.581162	40.70	-3.9	74.0	33.3	Peak	100.0	89.00	VERTICAL
3581.162325	41.20	0.4	74.0	32.8	Peak	100.0	63.00	VERTICAL
4967.935872	43.80	3.9	74.0	30.2	Peak	100.0	203.00	VERTICAL

MEASUREMENT RESULT: "HTW0225413_red2"

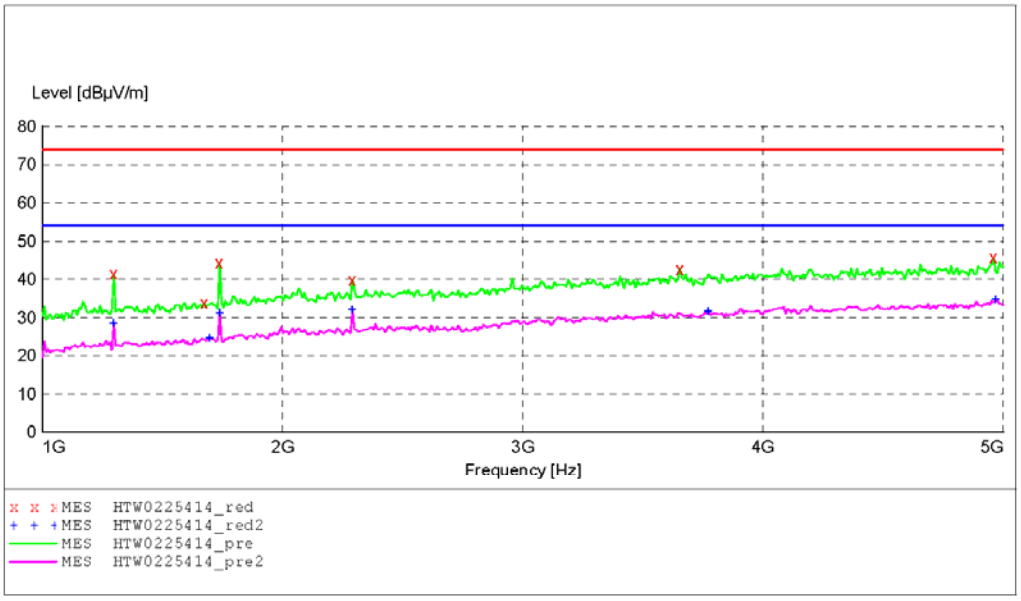
2/25/2010 9:39AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
1296.593186	33.60	-8.1	54.0	20.4	AV	100.0	125.00	HORIZONTAL
1737.474950	32.80	-6.4	54.0	21.2	AV	100.0	203.00	HORIZONTAL
1993.987976	32.80	-4.7	54.0	21.2	AV	100.0	192.00	HORIZONTAL
2899.799599	29.30	-2.4	54.0	24.7	AV	100.0	317.00	HORIZONTAL
3661.322645	31.50	0.6	54.0	22.5	AV	100.0	346.00	HORIZONTAL
4935.871743	34.00	3.8	54.0	20.0	AV	100.0	355.00	HORIZONTAL

```
EUT:                  Wireless Module
Manufacturer:         Pro-Lite,Inc.
Operating Condition:  TX Mode
Test Site:            3M CHAMBER
Operator:             Cary
Test Specification:   AC 120V/60Hz
Comment:              M/N:ZF01-B
Start of Test:        2/25/2010 / 9:40:29AM
```

SWEEP TABLE: "test (1G-18G) P"

Short Description:		EN 55022 Field Strength			
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	18.0 GHz	MaxPeak Average	Coupled	1 MHz	HF906(2009)



MEASUREMENT RESULT: "HTW0225414_red"

2/25/2010 9:41AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
1296.593186	41.40	-8.1	74.0	32.6	Peak	100.0	103.00	HORIZONTAL
1673.346693	33.80	-6.8	74.0	40.2	Peak	100.0	239.00	HORIZONTAL
1737.474950	44.40	-6.4	74.0	29.6	Peak	100.0	166.00	HORIZONTAL
2290.581162	39.90	-3.9	74.0	34.1	Peak	100.0	19.00	HORIZONTAL
3653.306613	42.80	0.6	74.0	31.2	Peak	100.0	19.00	HORIZONTAL
4959.919840	45.70	3.9	74.0	28.3	Peak	100.0	287.00	HORIZONTAL

MEASUREMENT RESULT: "HTW0225414_red2"

2/25/2010 9:41AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
1296.593186	28.50	-8.1	54.0	25.5	AV	100.0	103.00	HORIZONTAL
1697.394790	24.60	-6.6	54.0	29.4	AV	100.0	239.00	HORIZONTAL
1737.474950	31.20	-6.4	54.0	22.8	AV	100.0	183.00	HORIZONTAL
2290.581162	32.00	-3.9	54.0	22.0	AV	100.0	19.00	HORIZONTAL
3773.547094	31.60	0.8	54.0	22.4	AV	100.0	313.00	HORIZONTAL
4967.935872	34.70	3.9	54.0	19.3	AV	100.0	356.00	HORIZONTAL

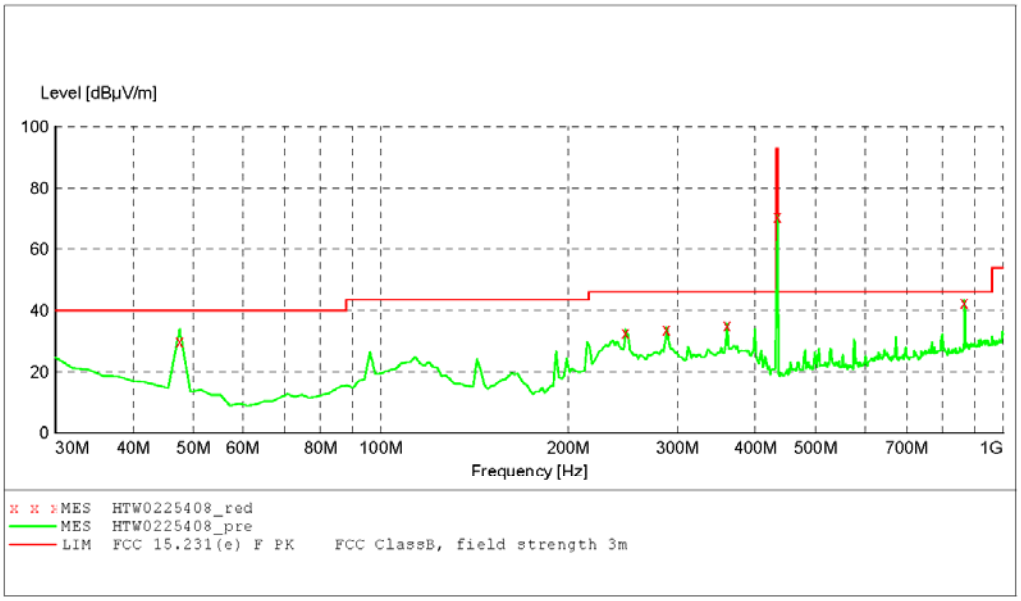
TEST DATA WITH HOST

30MHz to 1GHz Test Data

```
EUT:                  Wireless Module
Manufacturer:         Pro-Lite,Inc.
Operating Condition:  TX Mode
Test Site:            3M CHAMBER
Operator:             Cary
Test Specification:   AC 120V/60Hz
Comment:              M/N:ZF01-B
Start of Test:        2/25/2010 / 9:27:43AM
```

SWEEP TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	HL562 09



MEASUREMENT RESULT: "HTW0225408_red"

2/25/2010 9:29AM

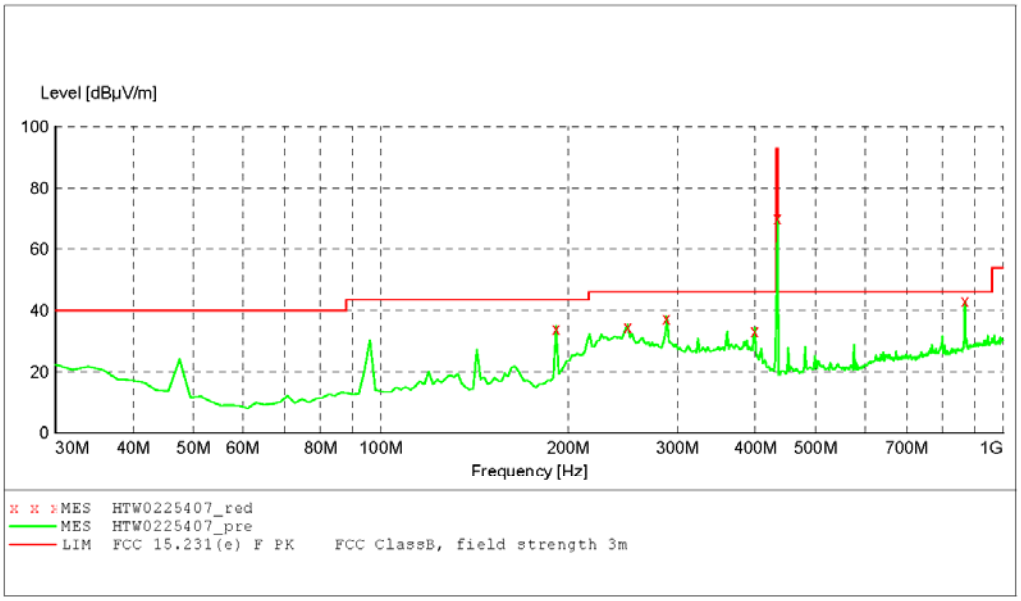
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
47.450000	31.80	-14.6	40.0	8.2	QP	100.0	92.00	VERTICAL
247.720000	32.70	-12.5	46.0	13.3	QP	100.0	217.00	VERTICAL
288.540000	33.80	-11.1	46.0	12.2	QP	100.0	163.00	VERTICAL
360.460000	35.00	-9.5	46.0	11.0	QP	100.0	211.00	VERTICAL
433.050000	71.20	-8.2	92.9	21.7	Peak	100.0	191.00	VERTICAL
867.820000	41.8	0.2	46.0	4.2	QP	100.0	197.00	VERTICAL

Frequency (MHz)	Field strength (dBµV/m)	Limit (dBµV/m)	Duty Cycle Correction Factor	Result (dB)	Margin (dB)	Det.
433.05	71.2	92.87	/	71.2	21.67	Peak
	71.2	72.87	-3.17	68.03	4.84	AV
Note: Result = Field Strength + Duty Cycle Corrcetion Factor						

```
EUT:                  Wireless Module
Manufacturer:         Pro-Lite,Inc.
Operating Condition:  TX Mode
Test Site:            3M CHAMBER
Operator:             Cary
Test Specification:   AC 120V/60Hz
Comment:              M/N:ZF01-B
Start of Test:        2/25/2010 / 9:25:17AM
```

SWEEP TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	HL562 09



MEASUREMENT RESULT: "HTW0225407_red"

2/25/2010 9:27AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
191.340000	34.10	-16.0	43.5	9.4	QP	100.0	171.00	HORIZONTAL
249.660000	34.50	-12.4	46.0	11.5	QP	100.0	224.00	HORIZONTAL
288.580000	37.50	-11.1	46.0	8.5	QP	100.0	272.00	HORIZONTAL
399.390000	33.10	-9.5	46.0	12.9	QP	100.0	83.00	HORIZONTAL
433.050000	69.30	-8.6	92.9	23.6	Peak	100.0	252.00	HORIZONTAL
867.820000	42.60	0.2	46.0	3.4	QP	100.0	332.00	HORIZONTAL

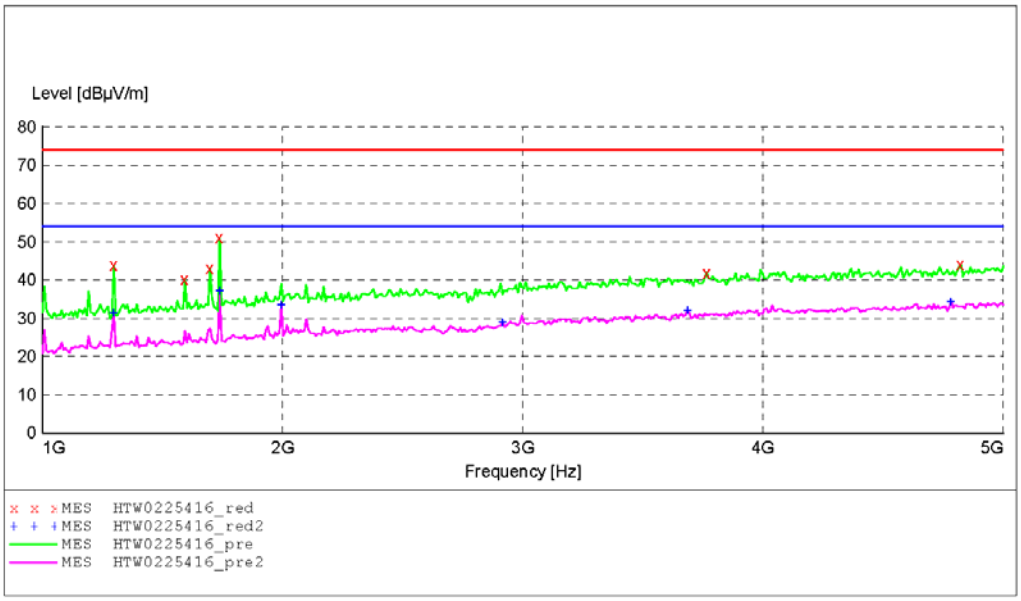
Frequency (MHz)	Field strength (dBµV/m)	Limit (dBµV/m)	Duty Cycle Correction Factor	Result (dB)	Margin (dB)	Det.
433.05	69.30	92.87	/	69.30	29.17	Peak
	69.30	72.87	-4.6	66.13	6.74	AV
Note: Result = Field Strength + Duty Cycle Corrcetion Factor						

1GHz to 5GHz Test Data

```
EUT:                  Wireless Module
Manufacturer:         Pro-Lite,Inc.
Operating Condition:  TX Mode
Test Site:            3M CHAMBER
Operator:             Cary
Test Specification:   AC 120V/60Hz
Comment:              M/N:ZF01-B
Start of Test:        2/25/2010 / 9:44:37AM
```

SWEEP TABLE: "test (1G-18G) P"

Short Description:		EN 55022 Field Strength			
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	18.0 GHz	MaxPeak Average	Coupled	1 MHz	HF906(2009)



MEASUREMENT RESULT: "HTW0225416_red"

2/25/2010 9:46AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
1296.593186	43.90	-8.1	74.0	30.1	Peak	100.0	172.00	VERTICAL
1593.186373	40.30	-7.3	74.0	33.7	Peak	100.0	114.00	VERTICAL
1697.394790	43.20	-6.6	74.0	30.8	Peak	100.0	105.00	VERTICAL
1737.474950	51.10	-6.4	74.0	22.9	Peak	100.0	295.00	VERTICAL
3765.531062	41.90	0.8	74.0	32.1	Peak	100.0	75.00	VERTICAL
4823.647295	44.10	3.3	74.0	29.9	Peak	100.0	146.00	VERTICAL

MEASUREMENT RESULT: "HTW0225416_red2"

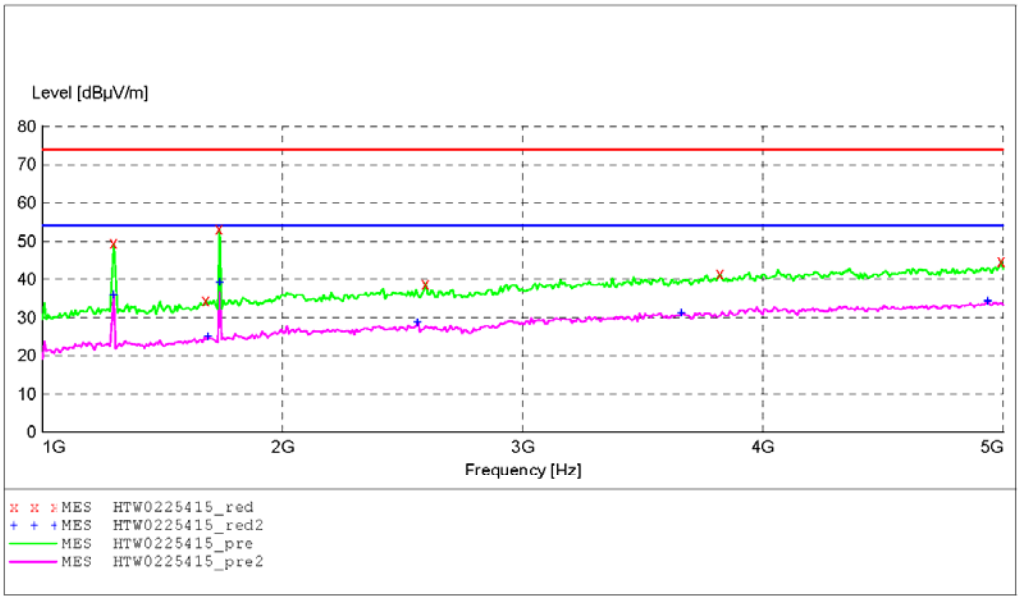
2/25/2010 9:46AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
1296.593186	31.40	-8.1	54.0	22.6	AV	100.0	172.00	HORIZONTAL
1737.474950	37.20	-6.4	54.0	16.8	AV	100.0	306.00	HORIZONTAL
1993.987976	33.50	-4.7	54.0	20.5	AV	100.0	249.00	HORIZONTAL
2915.831663	28.90	-2.3	54.0	25.1	AV	100.0	45.00	HORIZONTAL
3685.370741	32.00	0.6	54.0	22.0	AV	100.0	280.00	HORIZONTAL
4783.567134	34.30	3.1	54.0	19.7	AV	100.0	337.00	HORIZONTAL

```
EUT:                  Wireless Module
Manufacturer:         Pro-Lite,Inc.
Operating Condition:  TX Mode
Test Site:            3M CHAMBER
Operator:             Cary
Test Specification:   AC 120V/60Hz
Comment:              M/N:ZF01-B
Start of Test:        2/25/2010 / 9:42:30AM
```

SWEEP TABLE: "test (1G-18G) P"

Short Description:		EN 55022 Field Strength			
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	18.0 GHz	MaxPeak Average	Coupled	1 MHz	HF906(2009)



MEASUREMENT RESULT: "HTW0225415_red"

2/25/2010 9:43AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
1296.593186	49.40	-8.1	74.0	24.6	Peak	100.0	40.00	HORIZONTAL
1681.362725	34.40	-6.7	74.0	39.6	Peak	100.0	234.00	HORIZONTAL
1737.474950	53.10	-6.4	74.0	20.9	Peak	100.0	31.00	HORIZONTAL
2595.190381	38.90	-3.2	74.0	35.1	Peak	100.0	227.00	HORIZONTAL
3821.643287	41.40	1.0	74.0	32.6	Peak	100.0	104.00	HORIZONTAL
4991.983968	44.70	4.0	74.0	29.3	Peak	100.0	337.00	HORIZONTAL

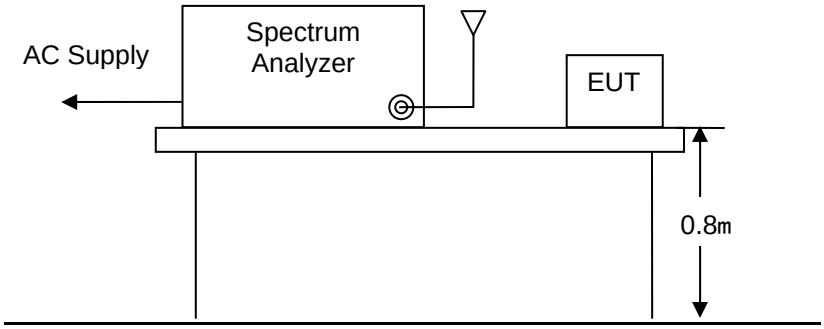
MEASUREMENT RESULT: "HTW0225415_red2"

2/25/2010 9:43AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
1296.593186	35.90	-8.1	54.0	18.1	AV	100.0	40.00	HORIZONTAL
1689.378758	24.90	-6.7	54.0	29.1	AV	100.0	162.00	HORIZONTAL
1737.474950	39.30	-6.4	54.0	14.7	AV	100.0	31.00	HORIZONTAL
2563.126253	28.70	-3.2	54.0	25.3	AV	100.0	358.00	HORIZONTAL
3661.322645	31.20	0.6	54.0	22.8	AV	100.0	197.00	HORIZONTAL
4935.871743	34.30	3.8	54.0	19.7	AV	100.0	180.00	HORIZONTAL

4.3. Deactivation Time

TEST CONFIGURATION



TEST PROCEDURE

1 The EUT was placed on a wooded table which is 0.8m height and close to receiver antenna of spectrum analyzer.
2 The spectrum analyzer resolution bandwidth was set to 100kHz and video bandwidht was set to 300kHz to encompass all significant spectral components during the test. The spectrum analyzer was operated in linear scale and zero span mode after tuning to the transmitter carrier frequency.

Limit

For periodic transmitter, according to FCC Part 15C § 15.231(e)

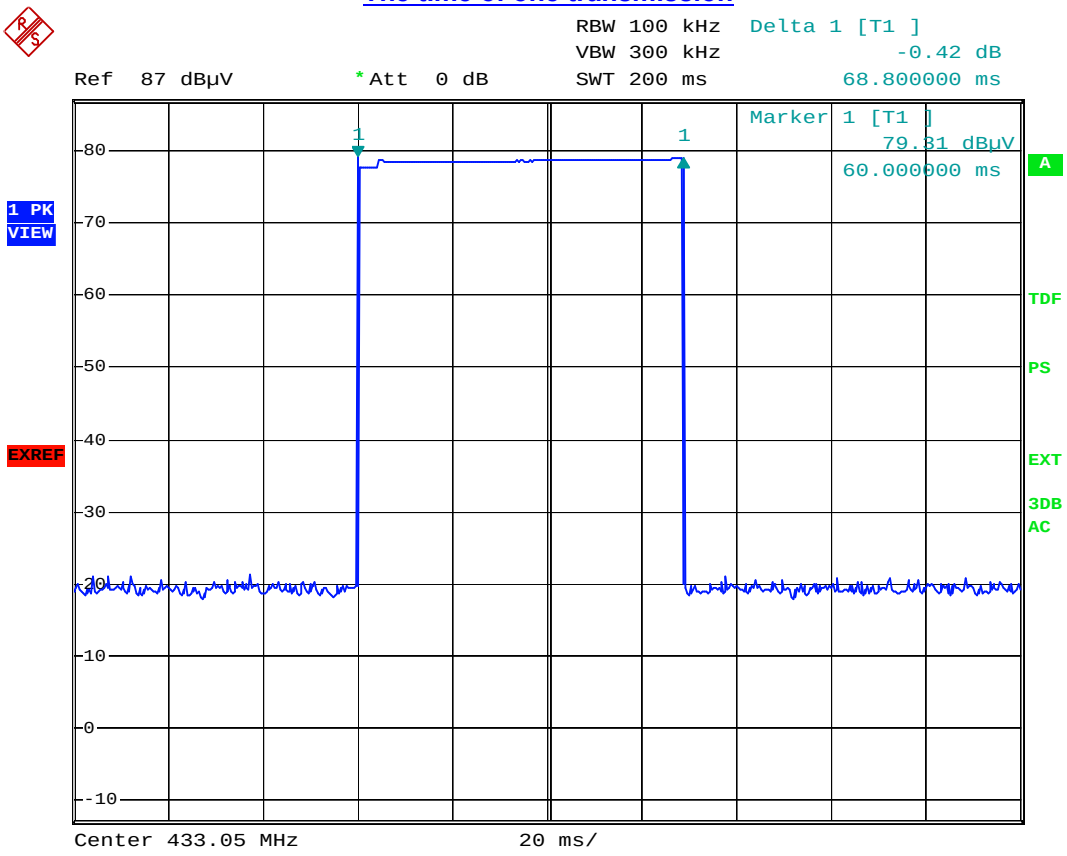
Item	Limit (second)
One transmission time	not greater than 1 second
Transmission period	at least 30 times the duration of the transmssion but in no case less than 10 second

TEST RESULTS

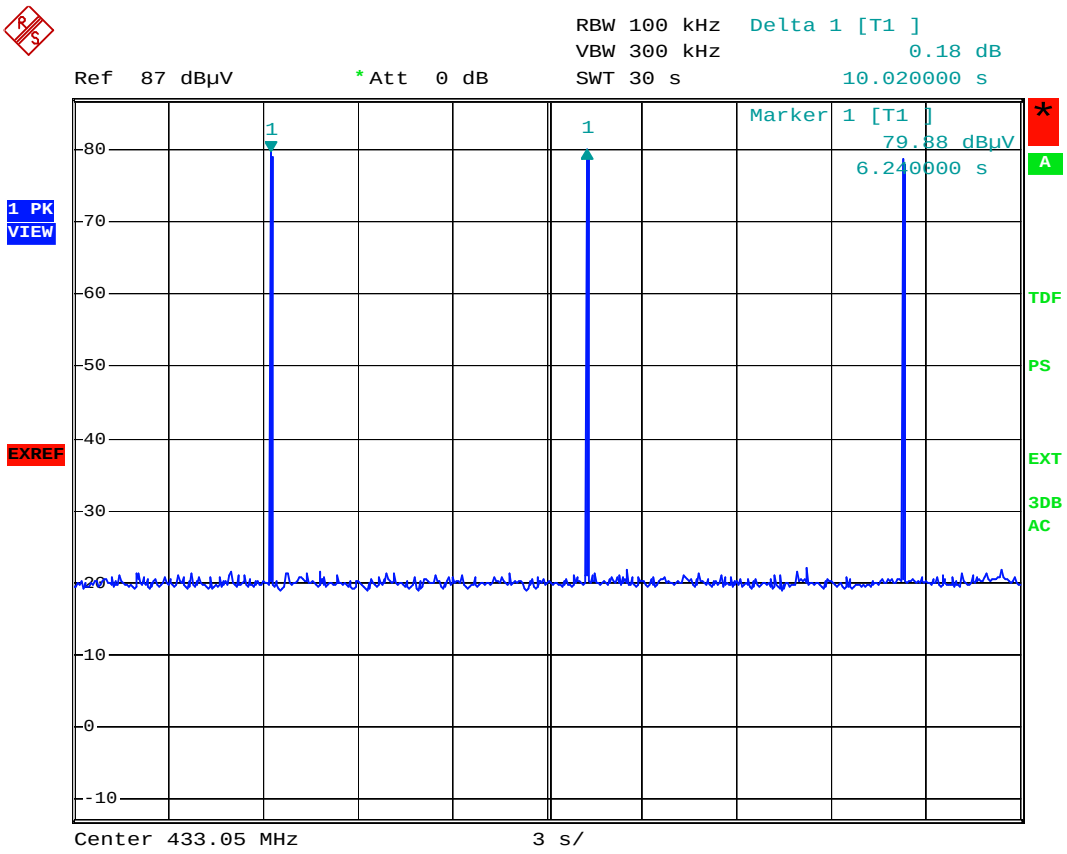
EUT statement: The transmitter was automatically activated, and the carrier frequency 433.05MHz:

Frequency (MHz)	One transmission time (second)	Transmission period (second)	Result
433.05	0.0688	10.02	Pass

The time of one transmission

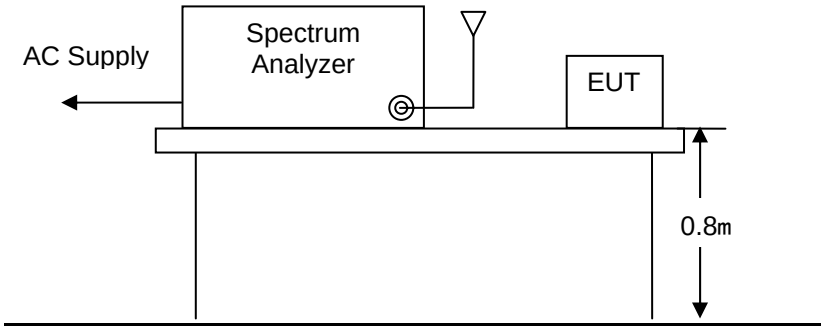


The time of transmission period



4.4. 20dB Bandwidth

TEST CONFIGURATION



TEST PROCEDURE

1 The EUT was placed on a wooded table which is 0.8m height and close to receiver antenna of spectrum analyzer.
2 The spectrum analyzer resolution bandwidth was set to 100kHz and video bandwidht was set to 300kHz to encompass all significant spectral components during the test. The detector was set to peak and hold mode to clearly observe the components.

Limit

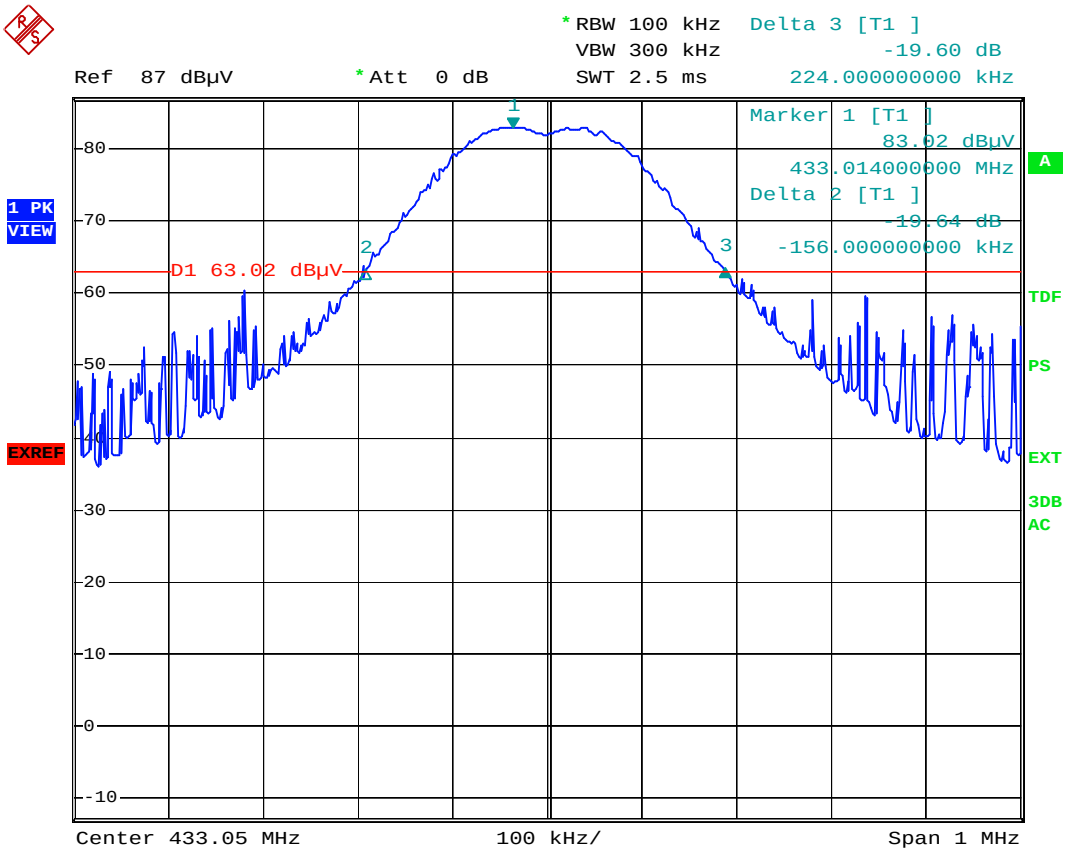
According to FCC Part 15C § 15.231(c)

The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70MHz and below 900MHz.

TEST RESULTS

Frequency (MHz)	Measurement Bandwidth (KHz)	Limit (kHz)	Result
433.05	380	1085	Pass

20dB Bandwidth



4.5. Antenna Requirement

According to FCC Part 15C § 15.203,

a), An intentional radiator shall be de-signed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.
b), The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

The EUT use of a nonstandard antenna connector(SMA-B), so the EUT meets the requirements of antenna.
Detial please see the photos as following: