



**FCC 47 CFR PART 15 SUBPART C**

**UPDATE TEST REPORT**

**For**

**Wireless Router**

**Model: WR750R; \*\*WR760R**

**Trade Name: PRO-NETS; Speed Com+; Jet Com**

*Issued to*

**PRO-NETS TECHNOLOGY CORPORATION  
15F., No. 669, Bannan Rd., Zhonghe Dist.,  
New Taipei City 23557, Taiwan R.O.C.**

*Issued by*

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Testing Laboratory  
0363

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**Revision History**

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	September 8, 2010	Initial Issue	All	Sabrina Wang
01	May 6, 2011	See the following Note Rev. (01)	All	Jill Shiau

**Note:**

Rev. (01):

- 1. Applicant adds one Adapter and on model number with original except USB Port. Due to the change do not influence the RF characteristics, and also after the preliminary scan, only radiated emission below 1GHz and AC line conducted emission were tested and documented in the report.  
(Please refer to have \*\* mark items on this report)*
- 2. Other information, please refer to the T100820204 and this test report.*



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# 1. TEST RESULT CERTIFICATION

**Applicant:** PRO-NETS TECHNOLOGY CORPORATION  
 15F., No. 669, Bannan Rd., Zhonghe Dist.,  
 New Taipei City 23557, Taiwan R.O.C.

**Manufacturer:** PRO-NETS TECHNOLOGY CORPORATION  
 15F., No. 669, Bannan Rd., Zhonghe Dist.,  
 New Taipei City 23557, Taiwan R.O.C.

**Equipment Under Test:** Wireless Router

**Trade Name:** PRO-NETS; Speed Com+; Jet Com

**Model:** WR750R; \*\*WR760R

**Date of Test:** April 15 ~ 27, 2011

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 47 CFR Part 15 Subpart C	No non-compliance noted


### We hereby certify that:

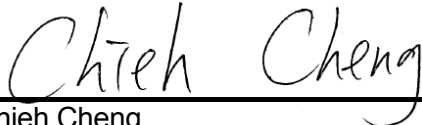
The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4: 2003 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247.

The test results of this report relate only to the tested sample EUT identified in this report.

**Approved by:**

**Reviewed by:**

  
 \_\_\_\_\_  
 Stan Lin  
 Supervisor

  
 \_\_\_\_\_  
 Chieh Cheng  
 Engineer



## 2. EUT DESCRIPTION

<b>Product</b>	Wireless Router		
<b>Trade Name</b>	PRO-NETS; Speed Com+; Jet Com		
<b>Model Number</b>	WR750R; **WR760R		
<b>Model Discrepancy</b>	N/A		
<b>EUT Power Rating</b>	9VDC, 0.5A; **5V, 2A		
<b>Power Adapter</b>	GOE	<b>Model</b>	GOE
	** SHENZHEN	<b>Model</b>	FM050020-US
<b>Power Adapter Power Rating</b>	<b>For GOE</b> I/P: 100-240VAC, 60/50Hz, 0.3A O/P: 9VDC, 0.5A <b>**For FM050020-US</b> I/P: 100-240VAC, 50/60Hz, 0.6A O/P: 5VDC, 2A		
<b>Operating Frequency Range</b>	2412 ~ 2462 MHz		
<b>Transmit Power</b>	IEEE 802.11b mode: 16.10 dBm IEEE 802.11g mode: 20.24 dBm draft 802.11n 20 MHz Channel mode: 19.50 dBm draft 802.11n 40 MHz Channel mode: 18.58 dBm		
<b>Modulation Technique</b>	IEEE 802.11b mode: DSSS (1, 2, 5.5 and 11 Mbps) IEEE 802.11g mode: OFDM (6, 9, 12, 18, 24, 36, 48 and 54 Mbps) draft 802.11n 20 MHz Channel mode: OFDM (6.5, 7.2, 13, 14.4, 14.44, 19.5, 21.7, 26, 28.89, 28.9, 39, 43.3, 43.33 52, 57.78, 57.8, 58.5, 65.0, 72.2, 78, 86.67, 104, 115.56, 117, 130, 144.44 Mbps) draft 802.11n 40 MHz Channel mode: OFDM (13.5, 15, 27, 30, 40.5, 45, 54, 60, 81, 90, 108, 120, 121.5, 135, 150, 162, 180, 216, 240, 243, 270, 300 Mbps)		
<b>Number of Channels</b>	IEEE 802.11b/g mode: 11 Channels draft 802.11n 20 MHz Channel mode: 11 Channels draft 802.11n 40 MHz Channel mode: 7 Channels		
<b>Antenna Specification</b>	Dipole Antenna / Gain: 2.0 dBi		

**Remark:**

1. The sample selected for test was production product and was provided by manufacturer.
2. This submittal(s) (test report) is intended for FCC ID: **RXZ-WR750R** filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.



### 3. INSTRUMENT CALIBRATION

#### 3.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

#### 3.2 MEASUREMENT EQUIPMENT USED

##### Equipment Used for Emissions Measurement

*Remark: Each piece of equipment is scheduled for calibration once a year.*

3M Semi Anechoic Chamber				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY48250064	12/29/2011
Pre-Amplifier	HP	8449B	3008A00965	04/17/2012
Pre-Amplifier	MITEQ	AMF-6F-260400-40-8P	985646	05/23/2011
Horn Antenna	EMCO	3115	9602-4659	05/09/2011
Horn Antenna	EMCO	3116	00026370	10/12/2011
Low Loss Cable	Huber+Suhner	104PEA	24815/4PEA	08/13/2011
Low Loss Cable	Huber+Suhner	104PEA	30956/4PEA	04/17/2012
Site VSWR	SIDT EUROPE	9x6x6	N/A	02/26/2012
Turn Table	CCS	CC-T-1F	N/A	N.C.R
Test S/W	LabVIEW 6.1 (Wugu Chamber EMI Test V1_4.5.3)			

Powerline Conducted Emissions Test Site				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
TEST RECEIVER	R&S	ESHS20	840455/006	02/22/2012
LISN (EUT)	SCHWARZBECK	NSLK 8127	8127527	12/13/2011
LISN	SCHWARZBECK	NSLK 8127	8127526	12/13/2011
BNC CABLE	MIYAZAKI	5D-FB	BNC A5	02/07/2012
THERMO-HYGRO METER	TECPEL	DTM-303	NO.3	11/18/2011
Test S/W	EZ-EMC			



### 3.3 MEASUREMENT UNCERTAINTY

Parameter	Uncertainty
Powerline Conducted Emission	$\pm 1.1900$
3M Semi Anechoic Chamber / 30MHz ~ 1GHz	$\pm 3.8856$
3M Semi Anechoic Chamber / Above 1GHz	$\pm 3.8721$

**Remark:** *This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.*



## **4. FACILITIES AND ACCREDITATIONS**

### **5.1 FACILITIES**

All measurement facilities used to collect the measurement data are located at

No.199, Chunghsen Road, Hsintien City, Taipei Hsien, Taiwan, R.O.C.

Tel: 886-2-2217-0894 / Fax: 886-2-2217-1029

No.11, Wugong 6th Rd., Wugu Industrial Park, Taipei Hsien 248, Taiwan

Tel: 886-2-2299-9720 / Fax: 886-2-2298-4045

No.81-1, Lane 210, Bade 2nd Rd., Lujhu Township, Taoyuan Shien, (338) Taiwan, R.O.C.

Tel: 886-3-324-0332 / Fax: 886-3-324-5235

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

### **5.2 EQUIPMENT**

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."





5.3 TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	A2LA	CFR 47, FCC Part15/18, CISPR 22, EN 55022, ICES-003, AS/NZS CISPR 22, VCCI V-3, EN 55011, CISPR 11, IEC/EN 61000-4-2/3/4/5/6/8/11, EN 61000-6-1/2/3/4, EN 55024, CISPR 24, AS/NZS CISPR 24, AS/NZS 61000.6.2, EN 55014-1/-2, ETSI EN 300 386 v1.3.2/v1.3.3, IEC/EN 61000-3-2, AS/NZS 61000.3.2, IEC/EN 61000-3-3, AS/NZS 61000.3.3	
USA	FCC MRA	3/10 meter Open Area Test Sites to perform FCC Part 15/18 measurements	
Japan	VCCI	3/10 meter Open Area Test Sites and conducted test sites to perform radiated/conducted measurements	
Taiwan	TAF	EN 55014-1, CISPR 14, CNS 13781-1, EN 55013, CISPR 13, CNS 13439, EN 55011, CISPR 11, CNS 13803, PLMN09, IS2045-0, LP0002 FCC Part 27/90, Part 15B/C/D/E, RSS-192/193/210/310 ETSI EN 300 328/ 300 220-1/ 300 220-2/ 301 893/ 301 489-01/ 301 489-03/ 301 489-07 / 301 489-17/ 300 440-1/ 300 440-2 AS/NZS 4268, AS/NZS 4771 CISPR 22, EN 55022, CNS 13438, AS/NZS CISPR 22, VCCI, IEC/EN 61000-4-2/3/4/5/6/8/11, CNS 14676-2/3/4/5/6/8, CNS 14934-2/3, CNS 13783-1, CNS 13439, CNS 13803	
Taiwan	BSMI	CNS 13438, CNS 13783-1, CNS 13439, CNS 14115	SL2-IS-E-0014 / IN-E-0014 /A1-E-0014 /R1-E-0014 /R2-E-0014 /L1-E-0014
Canada	Industry Canada	RSS-Gen Issue 3	

Note: No part of this report may be used to claim or imply product endorsement by A2LA, TAF or other government agency.



## 5. SETUP OF EQUIPMENT UNDER TEST

### 5.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

### 5.2 SUPPORT EQUIPMENT

Radiated Emission measurement (Below 1GHz) measurement:							
No.	Device Type	Brand	Model	Series No.	FCC ID	Data Cable	Power Cord
1.	Traveling Disk	SILICON POWER	LuxMini 720	N/A	FCC DoC	Unshielded, 1.8m	N/A

Power line conducted emission measurement:							
No.	Device Type	Brand	Model	Series No.	FCC ID	Data Cable	Power Cord
1.	iPod	Apple	A1112	N/A	FCC DoC	N/A	N/A

**Remark:** Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.



## 6. FCC PART 15.247 REQUIREMENTS

### 6.1 RADIATED EMISSIONS

#### LIMIT

1. According to §15.209(a), except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (µV/m)	Measurement Distance (m)
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500	3

**Remark:** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

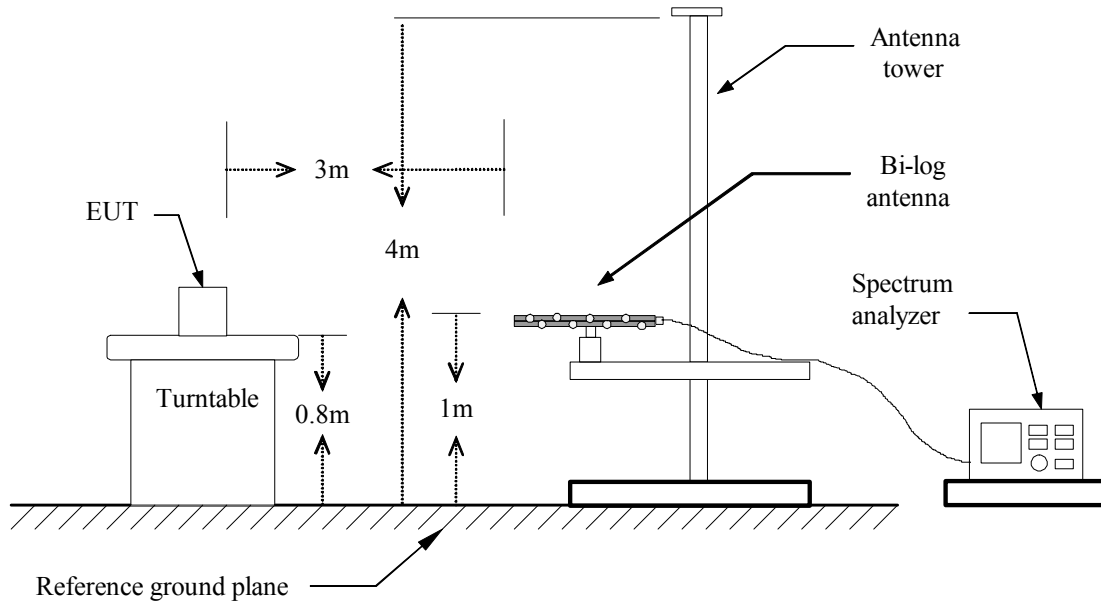
2. In the emission table above, the tighter limit applies at the band edges.

Frequency (MHz)	Field Strength (µV/m at 3-meter)	Field Strength (dBµV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

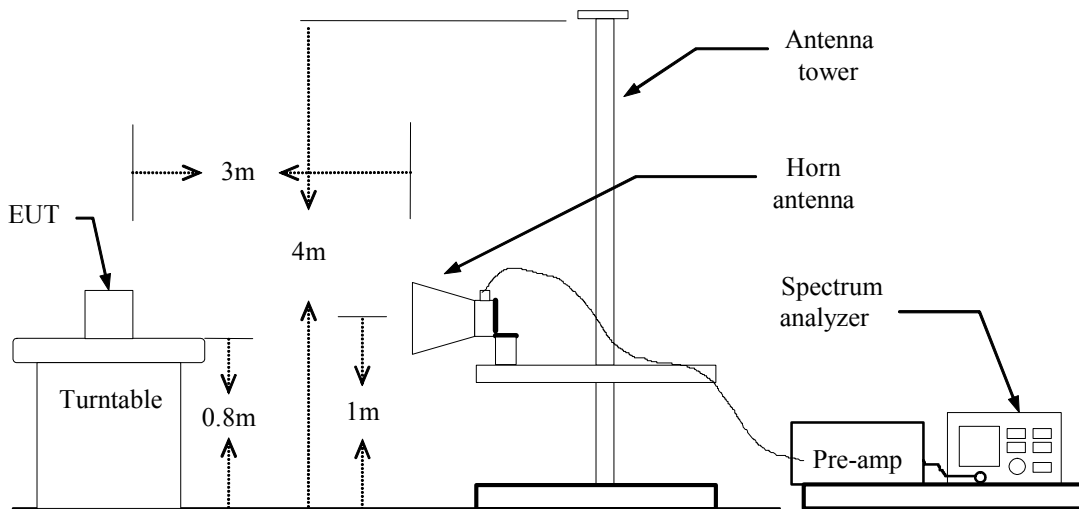


## TEST CONFIGURATION

### Below 1 GHz



### Above 1 GHz





## **TEST PROCEDURE**

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:

Below 1GHz:

RBW=100kHz / VBW=300kHz / Sweep=AUTO

Above 1GHz:

(a) PEAK: RBW=VBW=1MHz / Sweep=AUTO

(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

7. Repeat above procedures until the measurements for all frequencies are complete.

## **TEST RESULTS**

*No non-compliance noted.*







## 6.2 POWERLINE CONDUCTED EMISSIONS

### LIMIT

According to §15.207(a), except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50  $\mu$ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency Range (MHz)	Limits (dB $\mu$ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

\* Decreases with the logarithm of the frequency.

### TEST CONFIGURATION

See test photographs attached in Appendix II for the actual connections between EUT and support equipment.

### TEST PROCEDURE

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

### TEST RESULTS

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

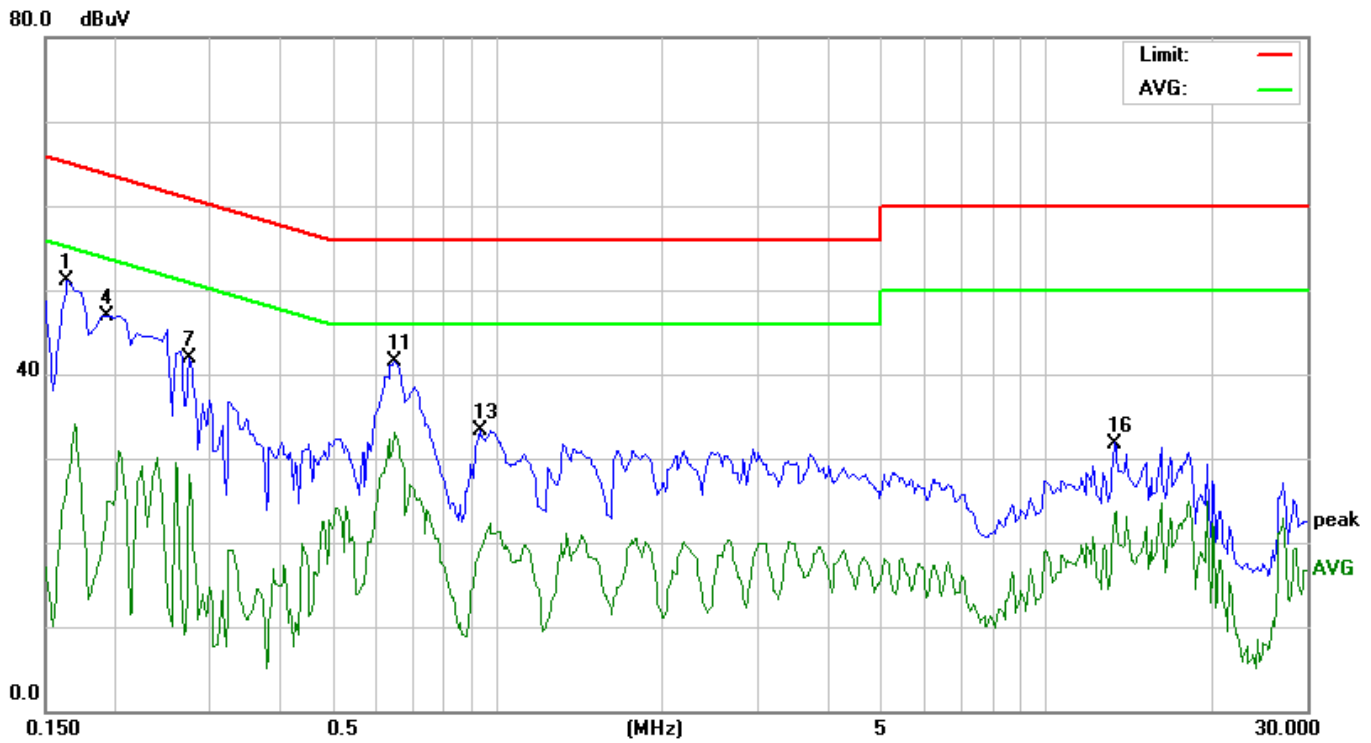






## Test Plots

### Conducted emissions (Line 1)



### Conducted emissions (Line 2)

