



Certificate of Conformity

The products

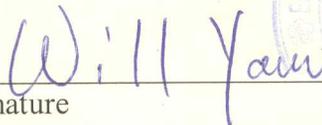
EUT: 802.11g 54Mbps ADSL Modem Router
TRADE NAME: TRENDware
MODEL NO.: TEW-435BRM

which produced by

TRENDware International, Inc.
3135 Kashiwa Street, Torrance, CA90505 U.S.A

Regulation Applied : FCC Rules and Regulations Part 15 Subpart B (2002) / CISPR 22 ET
Docket No. 95-19 (Doc Procedure)

I HEREBY CERTIFY THAT : The data shown in this report were made in accordance with the procedures given in ANSI C63.4 and the energy emitted by the device was founded to be within the limits applicable. I assume full responsibility for accuracy and completeness of these data.



Signature
Will Yauo
Manager of EMC Testing Department II
Electronics Testing Center, Taiwan

Report Number :ET93R-02-042

- Note:1.The result of the testing report relate only to the item tested.**
2.The testing report shall not be reproduced expect in full, without the written approval of ETC.
3.The report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

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 NVLAP LAB CODE :
200133-0



FEDERAL COMMUNICATIONS COMMISSION

Declaration of Conformity (DoC)

The following equipment:

Product Name : 802.11g 54Mbps ADSL Modem Router

Trade Name : TRENDware

Model Number : TEW-435BRM

is herewith confirmed to comply with the requirements of FCC Part 15 Rules.

The operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesire operation.

The result of electromagnetic emission has been evaluated by ETC EMI

Laboratory (NVLAP LAB CODE:200133-0) and showed in the test

report: ET93R-02-042

It is understood that each unit marketed is identical to the device as tested, and any changes to the device which could adversely affect the emission characteristics will require retest.

The following importer/manufacturer is responsible for this declaration:

Company Name : _____

Company Address : _____

Telephone : _____ Facsimile : _____

Person in responsible for marking this declaration:

Name (Full Name) Position/Title

Legal Signature) Date

自我符合宣告書請依上述文件製作

宣告者須在美國當地，故所填之公司地址、電話、傳真必須是在美國當地。

FCC Doc Label 樣本參考

一般產品或系統標示如下

CPU Board 或 Power Supply 標示如下

| | |
|------------------------|--|
| Trade Name | Model Number |
| | Tested To Comply With FCC Standards |
| FOR HOME OR OFFICE USE | |

| | |
|------------------------|---|
| Trade Name | Model Number |
| | Assembled From Tested Components (Complete System Not Tested) |
| FOR HOME OR OFFICE USE | |

EMI TEST REPORT

of

E.U.T. : 802.11g 54Mbps ADSL Modem

Router

MODEL : TEW-435BRM

for

APPLICANT : TRENDware International, Inc.

ADDRESS : 3135 Kashiwa Street, Torrance, CA90505 U.S.A

Test Performed by

ELECTRONICS TESTING CENTER, TAIWAN
 NO. 34, LIN 5, DING FU TSUN, LINKOU HSIANG,
 TAIPEI HSIEN, TAIWAN, R.O.C.

Tel:(02)26023052 Fax:(02)26010910

http : // www.etc.org.tw ; e-mail : etcemi@seed.net.tw

Report Number : ET93R-02-042

TEST REPORT

Applicant : TRENDware International, Inc.
3135 Kashiwa Street, Torrance, CA90505 U.S.A

Manufacturer : TRENDware International, Inc.
3135 Kashiwa Street, Torrance, CA90505 U.S.A

Description of EUT :

- a) Type of EUT : 802.11g 54Mbps ADSL Modem Router
b) Trade Name : TRENDware
c) Model No. : TEW-435BRM
d) Power Supply : Adapter I/P: 120Vac/60Hz ; O/P: 15Vdc, 1A

Regulation Applied : FCC Rules and Regulations Part 15 Subpart B (2002) / CISPR 22
ET Docket No. 95-19 (Doc Procedure)

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3. The report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

Issued Date : Feb. 13, 2004

Test Engineer : Kevin Lee
(Kevin Lee)

Approve & Authorized : Will Yau
Will Yauo, Manager
EMC Dept. II of ELECTRONICS
TESTING CENTER, TAIWAN



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1 GENERAL INFORMATION

1.1 Product Description and Operation

The TEW-435BRM router provides the following features :

1. A powerful, true firewall
2. Content filtering
3. Auto Sensing and Auto Uplink™ LAN Ethernet connections
4. Extensive Internet protocol support
5. Easy, Web-based setup for installation and management

1.2 Test Methodology

For TEW-435BRM, both conducted and radiated emissions were performed according to the procedures in ANSI C63.4 (1992).

1.3 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located on the roof top of Building at No.34, Lin 5, Ding Fu Tsun, Linkou Hsiang, Taipei Hsien, Taiwan, R.O.C.

This site has been fully described in a report submitted to your office, and accepted in a letter dated Feb. 10, 2000.

2 PROVISIONS APPLICABLE

2.1 Definition

Unintentional radiator:

A device that intentionally generates and radio frequency energy for use within the device, or that sends radio frequency signals by conduction to associated equipment via connecting wiring, but which is not intended to emit RF energy by radiation or induction.

Class B Digital Device :

A digital device which is marketed for use in a residential environment notwithstanding use in a commercial, business or industrial environment. Example of such devices that are marketed for the general public.

Note : A manufacturer may also qualify a device intended to be marketed in a commercial, business, or industrial environment as a Class B digital device, and in fact is encouraged to do so, provided the device complies with the technical specifications for a Class B Digital Device. In the event that a particular type of device has been found to repeatedly cause harmful interference to radio communications, the Commission may classify such a digital device as a Class B Digital Device, Regardless of its intended use.

2.2 Requirement for Compliance

(1) Conducted Emission Requirement

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 150kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50µH/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 MHz | Quasi Peak dB µ V | Average dB µ V |
|------------------|----------------------|-------------------|
| 0.15 - 0.5 | 66-56* | 56-46* |
| 0.5 - 5.0 | 56 | 46 |
| 5.0 - 30.0 | 60 | 50 |

* Decreases with the logarithm of the frequency

(2) Radiated Emission Requirement

For unintentional device, according to FCC §15.109(a), the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

| Frequency MHz | Distance Meters | Radiated dB µ V/m | Radiated µ V/m |
|------------------|--------------------|----------------------|-------------------|
| 30 - 88 | 3 | 40.0 | 100 |
| 88 - 216 | 3 | 43.5 | 150 |
| 216 - 960 | 3 | 46.0 | 200 |
| Above 960 | 3 | 54.0 | 500 |

For unintentional device, according to CISPR Line Conducted Emission Limits class B is as following:

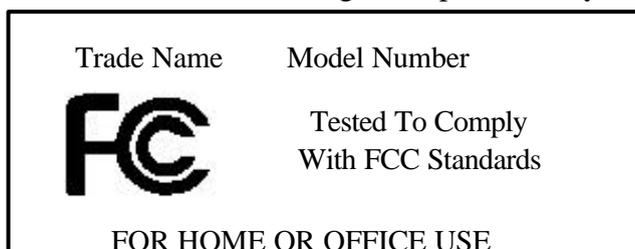
| Frequency MHz | Distance Meters | Radiated dB µ V/m |
|------------------|--------------------|----------------------|
| 30 to 230 | 10 | 30 |
| 230 to 1000 | 10 | 37 |

2.3 Labeling Requirement

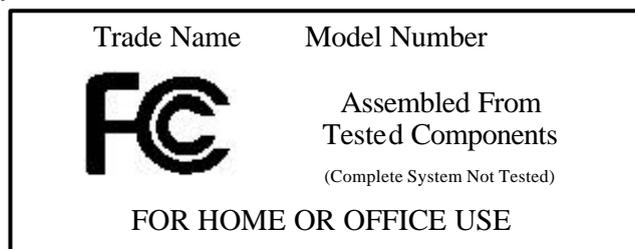
Products subject to authorization under a Declaration of Conformity shall be labeled as follows:

(1) The label shall be located in a conspicuous location on the device and shall contain the unique identification described in Section 2.1074 of this chapter and the following logo:

(i) IF the product is authorized based on testing of the product or system:



(ii) If the product is authorized based on assembly using separately authorized components, in accordance with Section 15.101(c)(2) or (c)(3), and the resulting product is not separately tested:



(2) Label text and information should be in a size of type large enough to be readily legible, consistent with the dimensions of the equipment and the label. However, the type size for the text is not required to be larger than eight point.

(3) When the device is so small or for such used that it is not practicable to place the statement specified under paragraph (b)(1) of this section on it, such as for a CPU board or a plug-in circuit board peripheral device, the text associated with the logo may be placed in a prominent location in the instruction manual or pamphlet supplied to the user. However, the unique identification (trade name and model number) and the logo must be displayed on the device.

(4) The label shall not be a stick-on, paper label. The label on these products shall be permanently affixed to the product and shall be readily visible to the purchaser at the time of purchase, as described in Section 2.925(d) of this chapter. "Permanently affixed" means that the label is etched, engraved, stamped, silkscreened, indelibly printed, or otherwise permanently marked on a permanently attached part of the equipment or an a nameplate of metal, plastic, or other material fastened to the equipment by welding, riveting, or a permanent adhesive. The label must be designed to the last the expected lifetime of the equipment in the environment in which the equipment may be operated and must not be readily detachable.

2.4 User Information

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual.

The Federal Communications Commission Radio Frequency Interference Statement includes the following paragraph.

This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

3. SYSTEM TEST CONFIGURATION

3.1 Justification

The system was configured for testing in a typical fashion, as a customer would normally use it.

For radiated emission measuring, the EUT was rotated to obtain the maximum level of radiated emissions. The antenna was varied in height from 1 to 4 meters above ground to obtain the maximum signal strength. Measurement was performed under the condition that a computer program was exercised to simulate data communication of EUT. Three highest emissions were verified with varying placement of the connected cable to maximize the emission from EUT.

3.2 Devices for Tested System

| Device | Model No. | Manufacturer | Description |
|-----------------------------------|------------------|-------------------------------|--|
| 802.11g 54Mbps ADSL Modem Router* | TEW -435BRM | TRENDware International, Inc. | 1.2m Unshielded Cable |
| NotebookPC | Thinkkpad X21 | IBM | 1.8m Unshielded AC Power Cord |
| Print | Stylus photo 700 | EPSON | 1.2m Shielded Cable |
| Mouse | M-S42 | ACER | 1.5m Unshielded Cable |
| Modem | 1200AT | SMARTEAM | 1.0m Unshielded AC Power Cord 1.0m Shielded data line |

Remark “*” means equipment under test.

3.3 Deviation Statement

(If any deviation from additions to or exclusions from test method must be stated)

N/A

4 RADIATED EMISSION MEASUREMENT

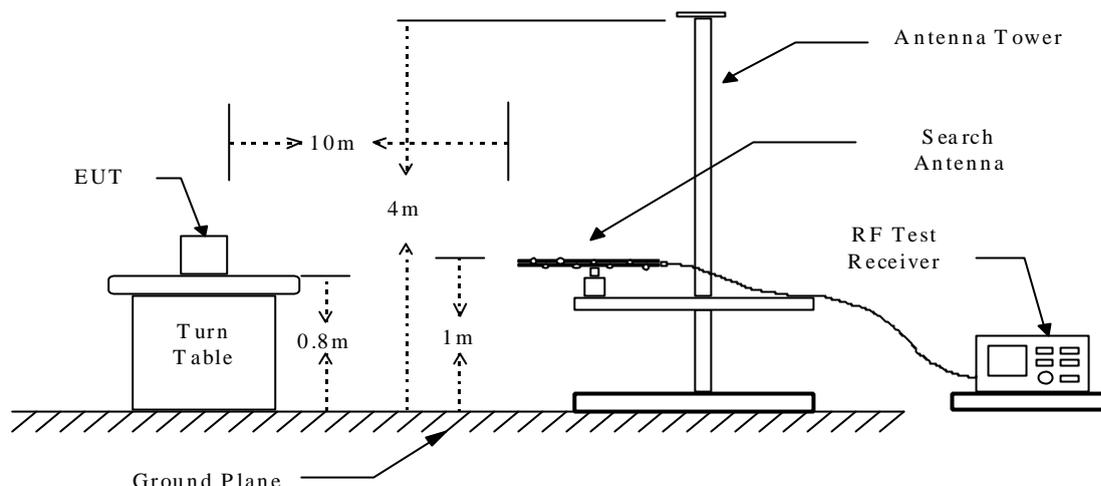
4.1 Applicable Standard

For unintentional radiator digital devices, the radiated emission shall comply with § 15.109(a). And according to § 15.109 (g), as an alternative to the radiated emission limits is CISPR 22.

4.2 Measurement Procedure

1. Setup the configuration per figure 1.
2. For emission frequencies measured below 1 GHz, a pre-scan is performed in a shielded chamber to determine the accurate frequencies of higher emissions will be checked on a open test site.
3. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0° to 360° with a speed as slow as possible, and keep the azimuth that highest emission is indicated on the spectrum analyzer. Vary the antenna position again and record the highest value as a final reading. A RF test receiver is also used to confirm emissions measured.
4. Repeat step 3 until all frequencies need to be measured were complete.
5. Repeat step 4 with search antenna in vertical polarized orientations.
6. Check the three frequencies of highest emission with varying the placement of cables associated with EUT to obtain the worse case and record the result.

Figure 1 : Frequencies measured below 1 GHz configuration



4.3 Measuring Instrument

The following instrument are used for radiated emissions measurement :

| Equipment | Manufacturer | Model No. | Serial No. | Next Cal. Date |
|----------------------|-----------------|-----------|--------------|----------------|
| Spectrum Analyzer | Advantest | R3271 | 43052001-001 | 11/19/2004 |
| RF Test Receiver | Rohde & Schwarz | ESBI | 1005400052 | 05/31/2004 |
| RF Test Receiver | Rohde & Schwarz | ESVS 30 | 843710/008 | 08/09/2004 |
| Log periodic Antenna | EMCO | 3146 | 4526 | 10/05/2004 |
| Biconical Antenna | EMCO | 3110B | 2486 | 11/05/2004 |
| Preamplifier | Hewlett-Packard | 8447D | 2727A05401 | 09/29/2004 |
| Bilog Antenna | Chase | CBL6111C | 2653 | 01/13/2005 |

Note: The standards used to perform this calibration are traceable to NML/ROC, NIST/USA and NPL/UK.

Measuring instrument setup in measured frequency band when specified detector function is used :

| Frequency Band (MHz) | Instrument | Function | Resolution bandwidth | Video Bandwidth |
|----------------------|-------------------|------------|----------------------|-----------------|
| 30 to 1000 | RF Test Receiver | Quasi-Peak | 120 kHz | N/A |
| | Spectrum Analyzer | Peak | 100 kHz | 100 kHz |
| Above 1000 | Spectrum Analyzer | Peak | 1 MHz | 1 MHz |
| | Spectrum Analyzer | Average | 1 MHz | 10 Hz |

4.4 Radiated Emission Data

A. 802.11b

 Operation Mode : Working

 Test Date : Oct. 24, 2003 Temperature : 25 Humidity : 60 %

| Emission Frequency (MHz) | Meter Reading (dB μ V) | | Corr'd Factor (dB) | Results (dB μ V/m) | | AH (m) | | DRT degree | | Limit @10m (dB μ V/m) | Margin (dB) |
|----------------------------------|---------------------------------|------|----------------------------|-----------------------------|-------|-------------|------|---------------|------|---------------------------------|------------------|
| | Hor. | Ver. | | Hor. | Ver. | Hor. | Ver. | Hor. | Ver. | | |
| | 187.950 | 39.4 | | 43.0 | -14.0 | 25.4 | 29.0 | 1.0 | 1.5 | | |
| 219.270 | 39.3 | 38.5 | -12.9 | 26.4 | 25.6 | 1.0 | 1.0 | 36 | 217 | 30.0 | -3.6 |
| 250.590 | 44.6 | 44.7 | -9.2 | 35.4 | 35.5 | 1.2 | 1.1 | 99 | 196 | 37.0 | -1.5 |
| 375.600 | 41.6 | 37.1 | -6.3 | 35.3 | 30.8 | 1.1 | 1.3 | 75 | 185 | 37.0 | -1.7 |
| 624.800 | 35.0 | 32.4 | -2.6 | 32.4 | 29.8 | 1.2 | 1.0 | 63 | 143 | 37.0 | -4.6 |
| 878.900 | 33.2 | 29.8 | 1.6 | 34.8 | 31.4 | 1.0 | 1.0 | 82 | 115 | 37.0 | -2.2 |

B. 802.11g

 Operation Mode : Working

 Test Date : Oct. 24, 2003 Temperature : 25 Humidity : 60 %

| Emission Frequency (MHz) | Meter Reading (dB μ V) | | Corr'd Factor (dB) | Results (dB μ V/m) | | AH (m) | | DRT degree | | Limit @10m (dB μ V/m) | Margin (dB) |
|----------------------------------|---------------------------------|------|----------------------------|-----------------------------|-------|-------------|------|---------------|------|---------------------------------|------------------|
| | Hor. | Ver. | | Hor. | Ver. | Hor. | Ver. | Hor. | Ver. | | |
| | 185.950 | 38.2 | | 42.0 | -14.0 | 24.2 | 28.0 | 1.0 | 1.2 | | |
| 218.230 | 38.4 | 37.2 | -13.0 | 25.4 | 24.2 | 1.0 | 1.0 | 36 | 98 | 30.0 | -4.6 |
| 248.320 | 43.7 | 42.6 | -9.4 | 34.3 | 33.2 | 1.2 | 1.0 | 14 | 69 | 37.0 | -2.7 |
| 377.620 | 40.3 | 37.4 | -6.2 | 34.1 | 31.2 | 1.0 | 1.0 | 28 | 179 | 37.0 | -2.9 |
| 628.330 | 34.5 | 32.9 | -2.7 | 31.8 | 30.2 | 1.0 | 1.2 | 152 | 248 | 37.0 | -5.2 |
| 875.210 | 28.6 | 30.5 | 1.6 | 30.2 | 32.1 | 1.0 | 1.0 | 162 | 312 | 37.0 | -4.9 |

Note :

1. Remark “---“ means that the emissions from EUT are too weak to be measured.
2. AH means antenna height, DRT means degrees of rotation of turntable.
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.

4.5 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor, High Pass Filter Loss and Cable Loss, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation calculation is as follows:

$$\mathbf{Result = Reading + Corrected Factor}$$

where

Corrected Factor = Antenna FACTOR + Cable Loss + High Pass Filter Loss - Amplifier Gain

4.6 Photos of Radiation Measuring Setup



5 CONDUCTED EMISSION MEASUREMENT

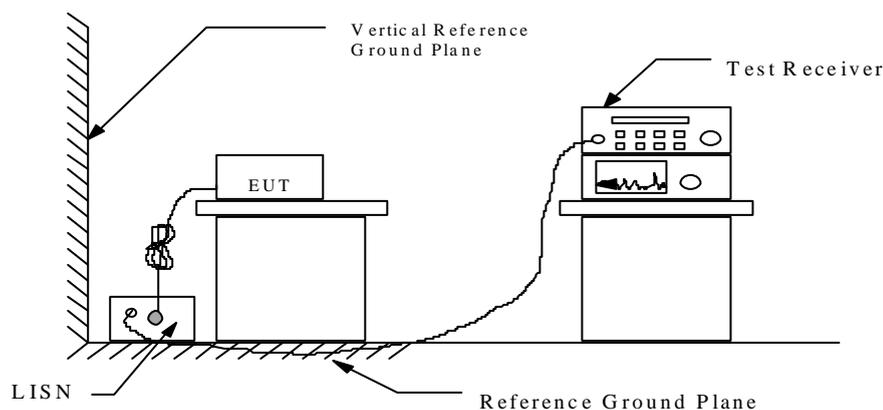
5.1 Standard Applicable

For unintentional digital devices, Line Conducted Emission Limits are in accordance to § 15.107(a) .

5.2 Measurement Procedure

1. Setup the configuration per figure 2.
2. A preliminary scan with a spectrum monitor is performed to identify the frequency of emission that has the highest amplitude relative to the limit by operating the EUT in selected modes of operation, typical cable positions, and with a typical system configuration.
3. Record the 6 or 8 highest emissions relative to the limit.
4. Measure each frequency obtained from step 3 by a test receiver set on quasi peak detector function, and then record the accuracy frequency and emission level. If all emissions measured in the specified band are attenuated more than 20 dB from the limit, this step would be ignored, and the peak detector function would be used.
5. Confirm the highest three emissions with variation of the EUT cable configuration and record the final data.
6. Repeat all above procedures on measuring each operation mode of EUT.

Figure 2 : Conducted emissions measurement configuration



5.3 Conducted Emission Data

A. 802.11b

a) Channel Low

Operation Mode : Transmitting / Receiving

 Test Date : Oct. 24, 2003

 Temperature : 25

 Humidity : 50 %

| Freq. (MHz) | Meter Reading (dB μ V) | | | | Factor (dB) | Limit (dB μ V) | | Result (dB μ V) | | | |
|----------------|-------------------------------|------|------------|------|----------------|-----------------------|---------------|------------------------|------|------------|------|
| | Q.P Value | | AVG. Value | | | Q.P Value | AVG. Value | Q.P Value | | AVG. Value | |
| | N | L1 | N | L1 | | | | N | L1 | N | L1 |
| 3.0742 | 39.5 | 39.4 | ---- | ---- | 0.6 | 56.0 | 46.0 | 40.1 | 40.0 | ---- | ---- |
| 4.0468 | 48.5 | 49.1 | 32.8 | 35.9 | 0.6 | 56.0 | 46.0 | 49.1 | 49.7 | 33.4 | 36.5 |
| 4.2148 | 38.1 | 35.4 | ---- | ---- | 0.6 | 56.0 | 46.0 | 38.7 | 36.0 | ---- | ---- |
| 4.2265 | 50.2 | 45.8 | 37.1 | ---- | 0.6 | 56.0 | 46.0 | 50.8 | 46.4 | 37.7 | ---- |
| 4.9921 | 40.1 | 34.4 | ---- | ---- | 0.6 | 56.0 | 46.0 | 40.7 | 35.0 | ---- | ---- |
| 5.0000 | 41.7 | 42.1 | ---- | ---- | 0.6 | 56.0 | 46.0 | 42.3 | 42.7 | ---- | ---- |

b) Channel Mid

Operation Mode : Transmitting / Receiving

 Test Date : Oct. 24, 2003

 Temperature : 25

 Humidity : 50 %

| Freq. (MHz) | Meter Reading (dB μ V) | | | | Factor (dB) | Limit (dB μ V) | | Result (dB μ V) | | | |
|----------------|-------------------------------|------|------------|------|----------------|-----------------------|---------------|------------------------|------|------------|------|
| | Q.P Value | | AVG. Value | | | Q.P Value | AVG. Value | Q.P Value | | AVG. Value | |
| | N | L1 | N | L1 | | | | N | L1 | N | L1 |
| 0.1500 | 41.6 | 41.1 | ---- | ---- | 0.2 | 66.0 | 56.0 | 41.8 | 41.3 | ---- | ---- |
| 3.8515 | 45.4 | 47.1 | ---- | 36.6 | 0.6 | 56.0 | 46.0 | 46.0 | 47.7 | ---- | 37.2 |
| 4.0273 | 38.7 | 41.7 | ---- | ---- | 0.6 | 56.0 | 46.0 | 39.3 | 42.3 | ---- | ---- |
| 4.2382 | 50.1 | 51.1 | 39.6 | ---- | 0.6 | 56.0 | 46.0 | 50.7 | 51.7 | 40.2 | ---- |
| 4.4609 | 35.1 | 33.6 | ---- | 40.7 | 0.6 | 56.0 | 46.0 | 35.7 | 34.2 | ---- | 41.3 |
| 4.8085 | 36.3 | 40.2 | ---- | ---- | 0.6 | 56.0 | 46.0 | 36.9 | 40.8 | ---- | ---- |

Note : 1. Please see appendix 1 for Plotted Data

2. The expanded uncertainty of the conducted emission tests is 2.45 dB.

c) Channel High

Operation Mode : Transmitting / Receiving

 Test Date : Oct. 24, 2003

 Temperature : 25

 Humidity : 50 %

| Freq. (MHz) | Meter Reading (dB μ V) | | | | Factor (dB) | Limit (dB μ V) | | Result (dB μ V) | | | |
|----------------|-------------------------------|------|------------|------|----------------|-----------------------|---------------|------------------------|------|------------|------|
| | Q.P Value | | AVG. Value | | | Q.P Value | AVG. Value | Q.P Value | | AVG. Value | |
| | N | L1 | N | L1 | | | | N | L1 | N | L1 |
| 3.0859 | 39.7 | 39.4 | ---- | ---- | 0.6 | 56.0 | 46.0 | 40.3 | 40.0 | ---- | ---- |
| 3.8789 | 34.5 | 36.1 | ---- | ---- | 0.6 | 56.0 | 46.0 | 35.1 | 36.7 | ---- | ---- |
| 4.0546 | 51.8 | 52.8 | 41.5 | 42.8 | 0.6 | 56.0 | 46.0 | 52.4 | 53.4 | 42.1 | 43.4 |
| 4.0625 | 43.4 | 45.8 | ---- | ---- | 0.6 | 56.0 | 46.0 | 44.0 | 46.4 | ---- | ---- |
| 4.2343 | 42.1 | 39.5 | ---- | ---- | 0.6 | 56.0 | 46.0 | 42.7 | 40.1 | ---- | ---- |
| 4.8281 | 39.9 | 42.6 | ---- | ---- | 0.6 | 56.0 | 46.0 | 40.5 | 43.2 | ---- | ---- |

Note : 1. Please see appendix 1 for Plotted Data

2. The expanded uncertainty of the conducted emission tests is 2.45 dB.

B. 802.11g

a) Channel Low

Operation Mode : Transmitting / Receiving

 Test Date : Oct. 24, 2003

 Temperature : 25

 Humidity : 60 %

| Freq. (MHz) | Meter Reading (dB μ V) | | | | Factor (dB) | Limit (dB μ V) | | Result (dB μ V) | | | |
|----------------|-------------------------------|------|------------|------|----------------|-----------------------|---------------|------------------------|------|------------|------|
| | Q.P Value | | AVG. Value | | | Q.P Value | AVG. Value | Q.P Value | | AVG. Value | |
| | N | L1 | N | L1 | | | | N | L1 | N | L1 |
| 3.074 | 37.5 | 39.2 | ---- | ---- | 0.6 | 56.0 | 46.0 | 38.1 | 39.8 | ---- | ---- |
| 4.046 | 44.2 | 43.2 | ---- | ---- | 0.6 | 56.0 | 46.0 | 44.8 | 43.8 | ---- | ---- |
| 4.214 | 38.1 | 33.2 | ---- | ---- | 0.6 | 56.0 | 46.0 | 38.7 | 33.8 | ---- | ---- |
| 4.226 | 44.2 | 43.1 | ---- | ---- | 0.6 | 56.0 | 46.0 | 44.8 | 43.7 | ---- | ---- |
| 4.992 | 38.1 | 37.2 | ---- | ---- | 0.6 | 56.0 | 46.0 | 38.7 | 37.8 | ---- | ---- |
| 5.000 | 40.7 | 39.1 | ---- | ---- | 0.6 | 56.0 | 46.0 | 41.3 | 39.7 | ---- | ---- |

b) Channel Mid

Operation Mode : Transmitting / Receiving

 Test Date : Oct. 24, 2003

 Temperature : 25

 Humidity : 60 %

| Freq. (MHz) | Meter Reading (dB μ V) | | | | Factor (dB) | Limit (dB μ V) | | Result (dB μ V) | | | |
|----------------|-------------------------------|------|------------|------|----------------|-----------------------|---------------|------------------------|------|------------|------|
| | Q.P Value | | AVG. Value | | | Q.P Value | AVG. Value | Q.P Value | | AVG. Value | |
| | N | L1 | N | L1 | | | | N | L1 | N | L1 |
| 0.150 | 40.6 | 40.2 | ---- | ---- | 0.2 | 66.0 | 56.0 | 40.8 | 40.4 | ---- | ---- |
| 3.851 | 43.2 | 44.1 | ---- | ---- | 0.6 | 56.0 | 46.0 | 43.8 | 44.7 | ---- | ---- |
| 4.027 | 37.2 | 38.2 | ---- | ---- | 0.6 | 56.0 | 46.0 | 37.8 | 38.8 | ---- | ---- |
| 4.238 | 45.0 | 44.8 | ---- | ---- | 0.6 | 56.0 | 46.0 | 45.6 | 45.4 | ---- | ---- |
| 4.460 | 37.1 | 34.6 | ---- | ---- | 0.6 | 56.0 | 46.0 | 37.7 | 35.2 | ---- | ---- |
| 4.808 | 34.2 | 38.1 | ---- | ---- | 0.6 | 56.0 | 46.0 | 34.8 | 38.7 | ---- | ---- |

Note : 1. Please see appendix 1 for Plotted Data

2. The expanded uncertainty of the conducted emission tests is 2.45 dB.

c) Channel High

Operation Mode : Transmitting / Receiving

 Test Date : Oct. 24, 2003

 Temperature : 25

 Humidity : 50 %

| Freq. (MHz) | Meter Reading (dB μ V) | | | | Factor (dB) | Limit (dB μ V) | | Result (dB μ V) | | | |
|----------------|-------------------------------|------|------------|------|----------------|-----------------------|---------------|------------------------|------|------------|------|
| | Q.P Value | | AVG. Value | | | Q.P Value | AVG. Value | Q.P Value | | AVG. Value | |
| | N | L1 | N | L1 | | | | N | L1 | N | L1 |
| 3.085 | 37.2 | 36.1 | ---- | ---- | 0.6 | 56.0 | 46.0 | 37.8 | 36.7 | ---- | ---- |
| 3.878 | 33.5 | 35.2 | ---- | ---- | 0.6 | 56.0 | 46.0 | 34.1 | 35.8 | ---- | ---- |
| 4.054 | 44.1 | 39.8 | ---- | ---- | 0.6 | 56.0 | 46.0 | 44.7 | 40.4 | ---- | ---- |
| 4.062 | 41.2 | 40.4 | ---- | ---- | 0.6 | 56.0 | 46.0 | 41.8 | 41.0 | ---- | ---- |
| 4.234 | 41.8 | 40.1 | ---- | ---- | 0.6 | 56.0 | 46.0 | 42.4 | 40.7 | ---- | ---- |
| 4.828 | 38.9 | 37.2 | ---- | ---- | 0.6 | 56.0 | 46.0 | 39.5 | 37.8 | ---- | ---- |

Note : 1. Please see appendix 1 for Plotted Data

2. The expanded uncertainty of the conducted emission tests is 2.45 dB.

5.4 Result Data Calculation

The result data is calculated by adding the LISN Factor to the measured reading. The basic equation with a sample calculation is as follows:

$$RESULT = READING + LISN FACTOR$$

Assume a receiver reading of 22.5 dB μ V is obtained, and LISN Factor is 0.1 dB, then the total of field strength is 22.6 dB μ V.

$$RESULT = 22.5 + 0.1 = 22.6 \text{ dB } \mu \text{ V}$$

$$\begin{aligned} \text{Level in } \mu \text{ V} &= \text{Common Antilogarithm}[(22.6 \text{ dB } \mu \text{ V})/20] \\ &= 13.48 \mu \text{ V} \end{aligned}$$

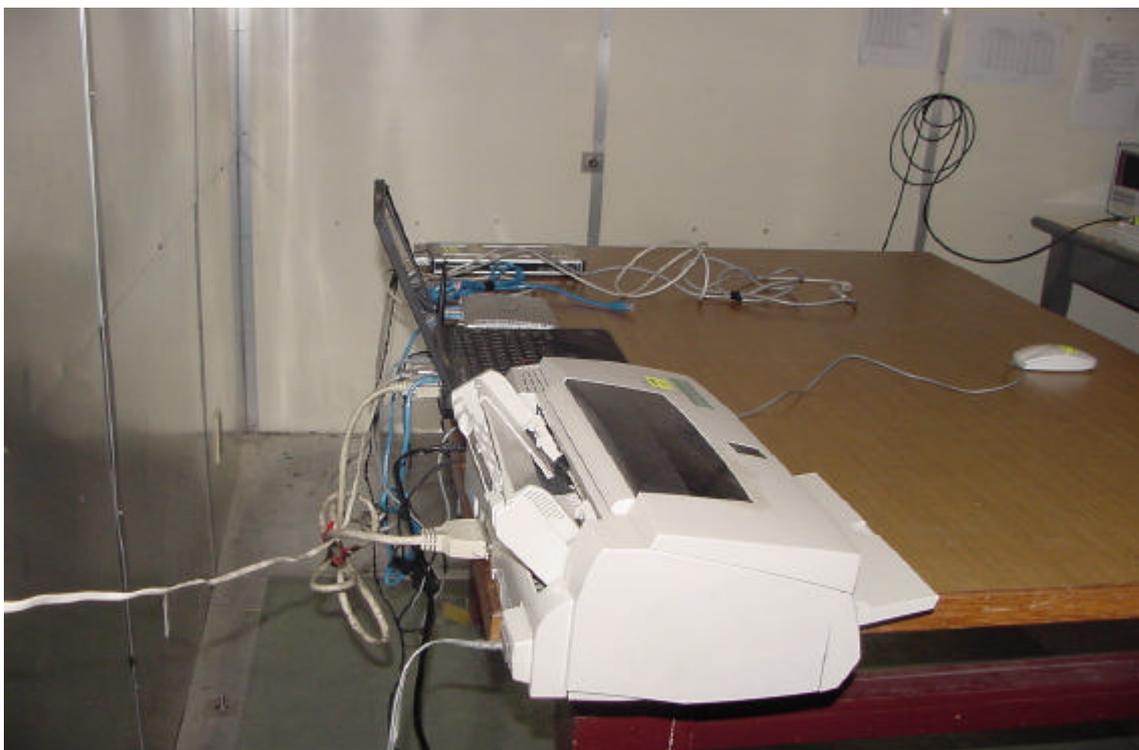
5.5 Conducted Measurement Equipment

The following test equipment are used during the conducted test .

| Equipment | Manufacturer | Model No. | Serial No. | Nest Cal. Date |
|--------------------------------------|-------------------|---------------|------------|----------------|
| EMI Test Receiver | Rohde and Schwarz | ESCS30 | 830986/026 | 01/12/2005 |
| Line Impedance Stabilization network | Rohde and Schwarz | ESH2-Z5 | 881362/009 | 09/03/2004 |
| Line Impedance Stabilization network | Shibasoku | 563 | M-54354001 | 08/05/2004 |
| Shielded Room | Riken | ---- | ---- | N/A |
| Monitor | IBM | E54 | ---- | N/A |
| Printer | HP | LASERJET 1000 | ---- | N/A |
| Computer | ACER | Veriton 7500G | ---- | N/A |

Note: The standards used to perform this calibration are traceable to NML/ROC and NIST/USA.

5.6 Photos of Conduction Measuring Setup



APPENDIX 1 : PLOTTED DATA FOR CONDUCTED EMISSION

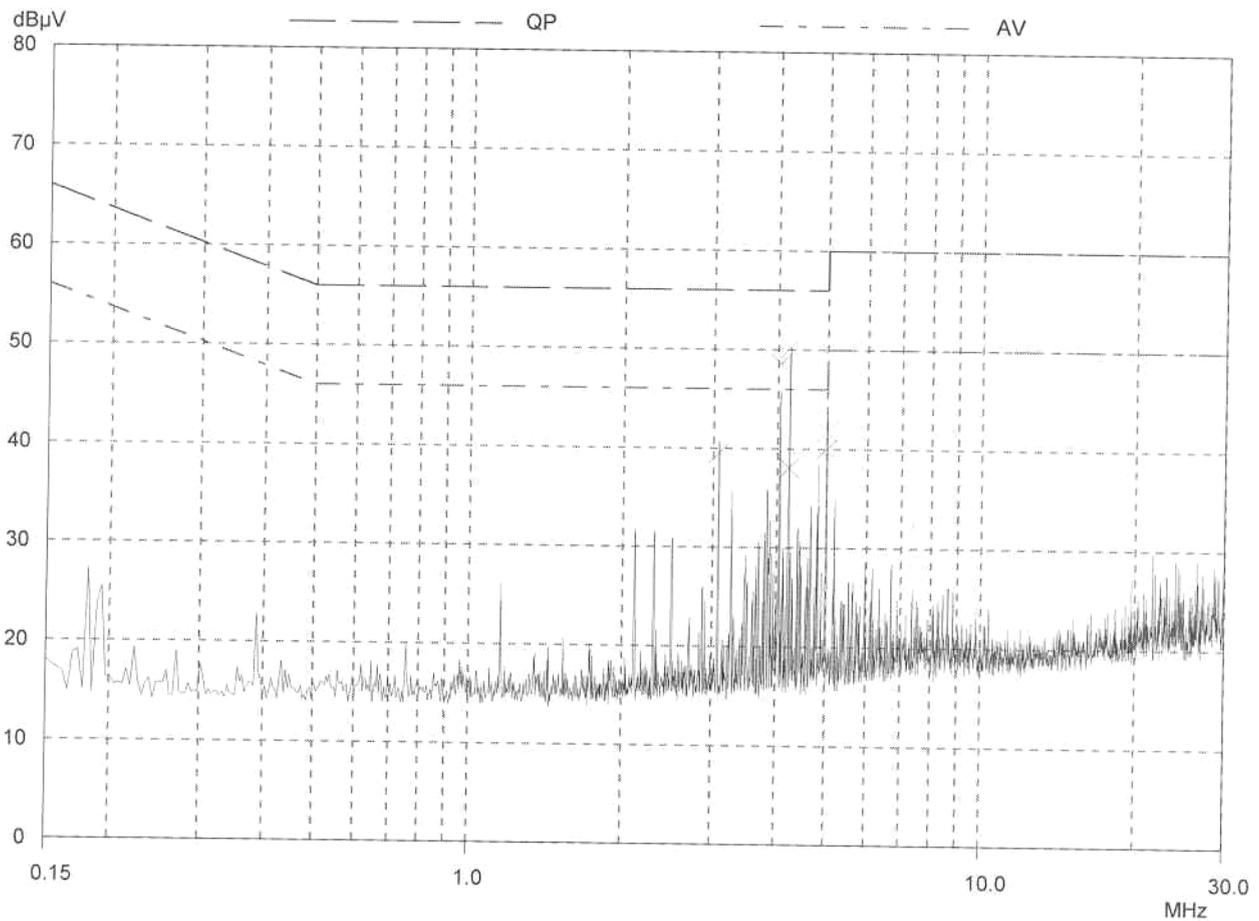
802.11b

CONDUCTION EMISSION TEST

Peak Value

EUT: TEW-435BRM
 Manuf:
 Op Cond: CH LO
 Operator:
 Test Spec:
 Comment: N

Final Measurement: Detector: X QP
 Meas Time: 1sec
 Peaks: 8
 Acc Margin: 25 dB



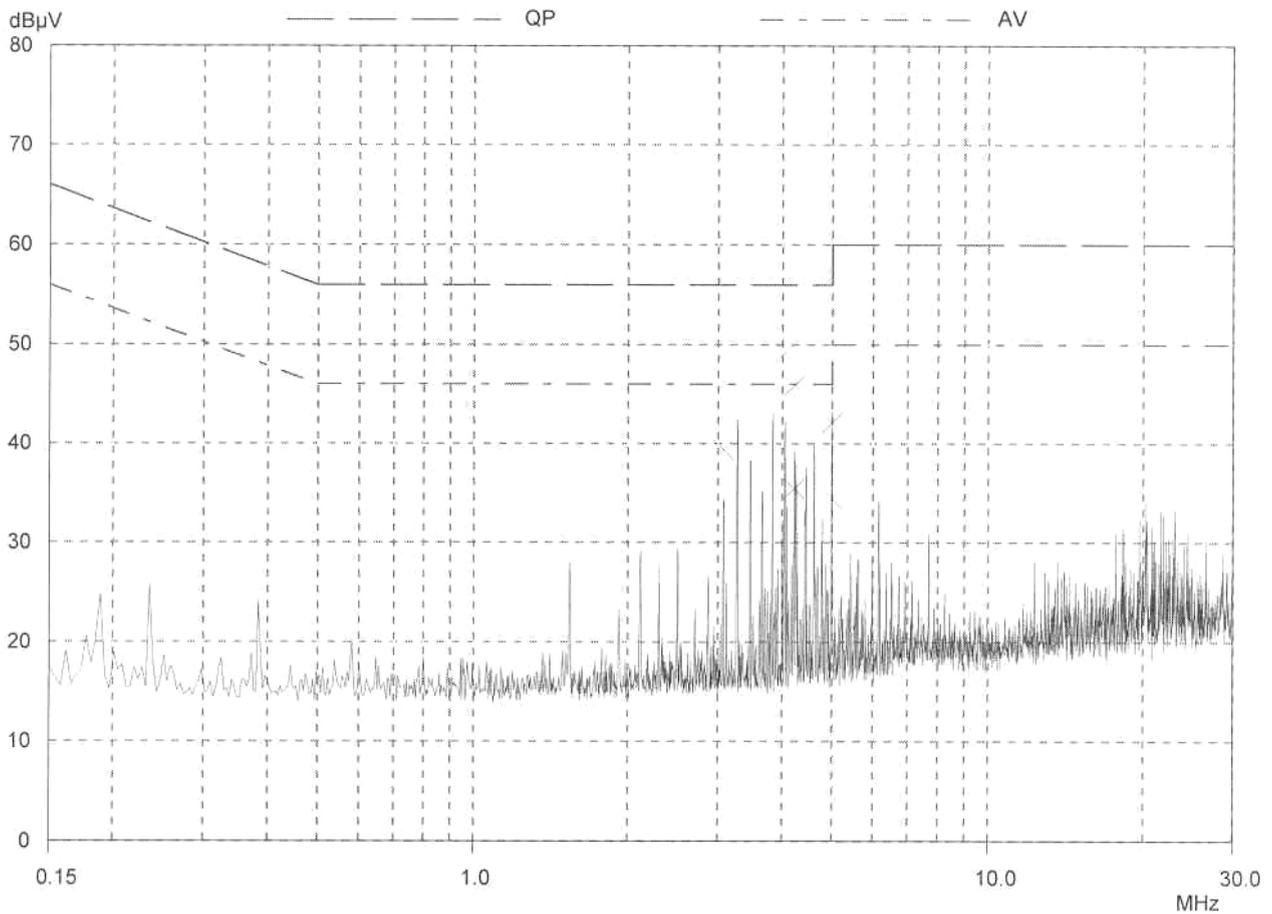
CONDUCTION EMISSION TEST

Peak Value

EUT: TEW-435BRM
 Manuf:
 Op Cond: CH LO
 Operator:
 Test Spec:
 Comment:

L1

Final Measurement: Detector: X QP
 Meas Time: 1sec
 Peaks: 8
 Acc Margin: 25 dB



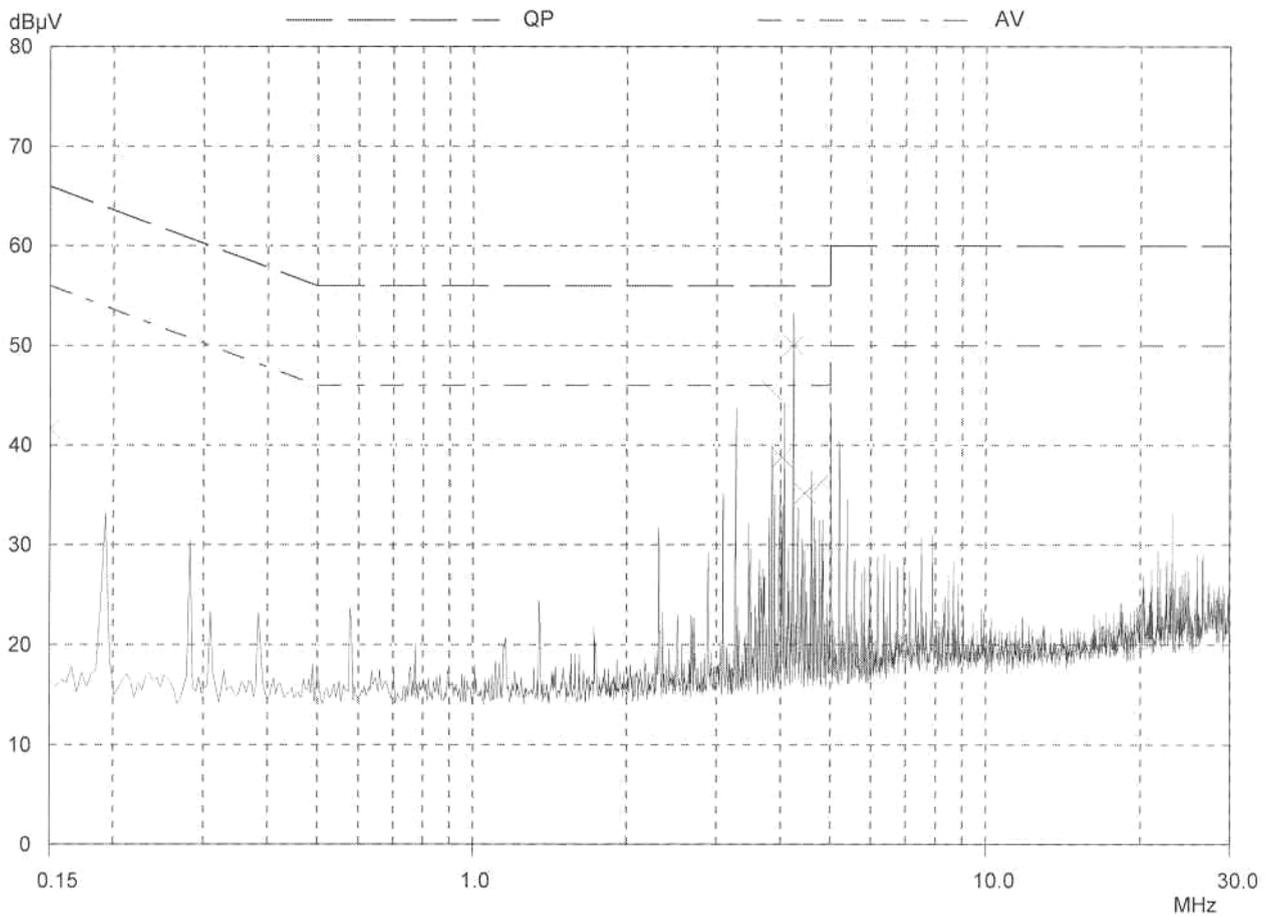
CONDUCTION EMISSION TEST

Peak Value

EUT: TEW-435BRM
 Manuf:
 Op Cond: CH MID
 Operator:
 Test Spec:
 Comment:

N

Final Measurement: Detector: X QP
 Meas Time: 1sec
 Peaks: 8
 Acc Margin: 25 dB

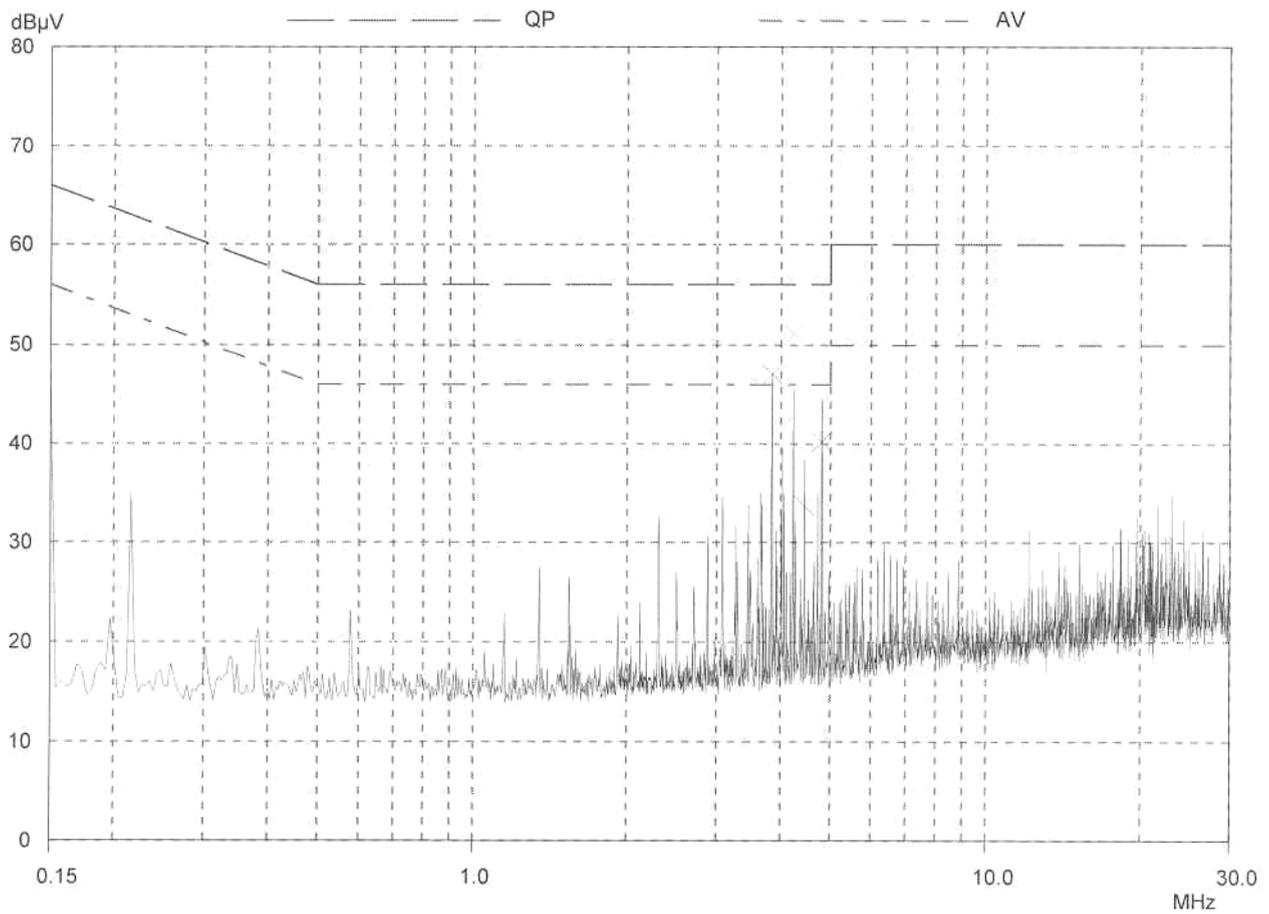


CONDUCTION EMISSION TEST

Peak Value

EUT: TEW-435BRM
 Manuf:
 Op Cond: CH MID
 Operator:
 Test Spec:
 Comment: L1

Final Measurement: Detector: X QP
 Meas Time: 1sec
 Peaks: 8
 Acc Margin: 25 dB

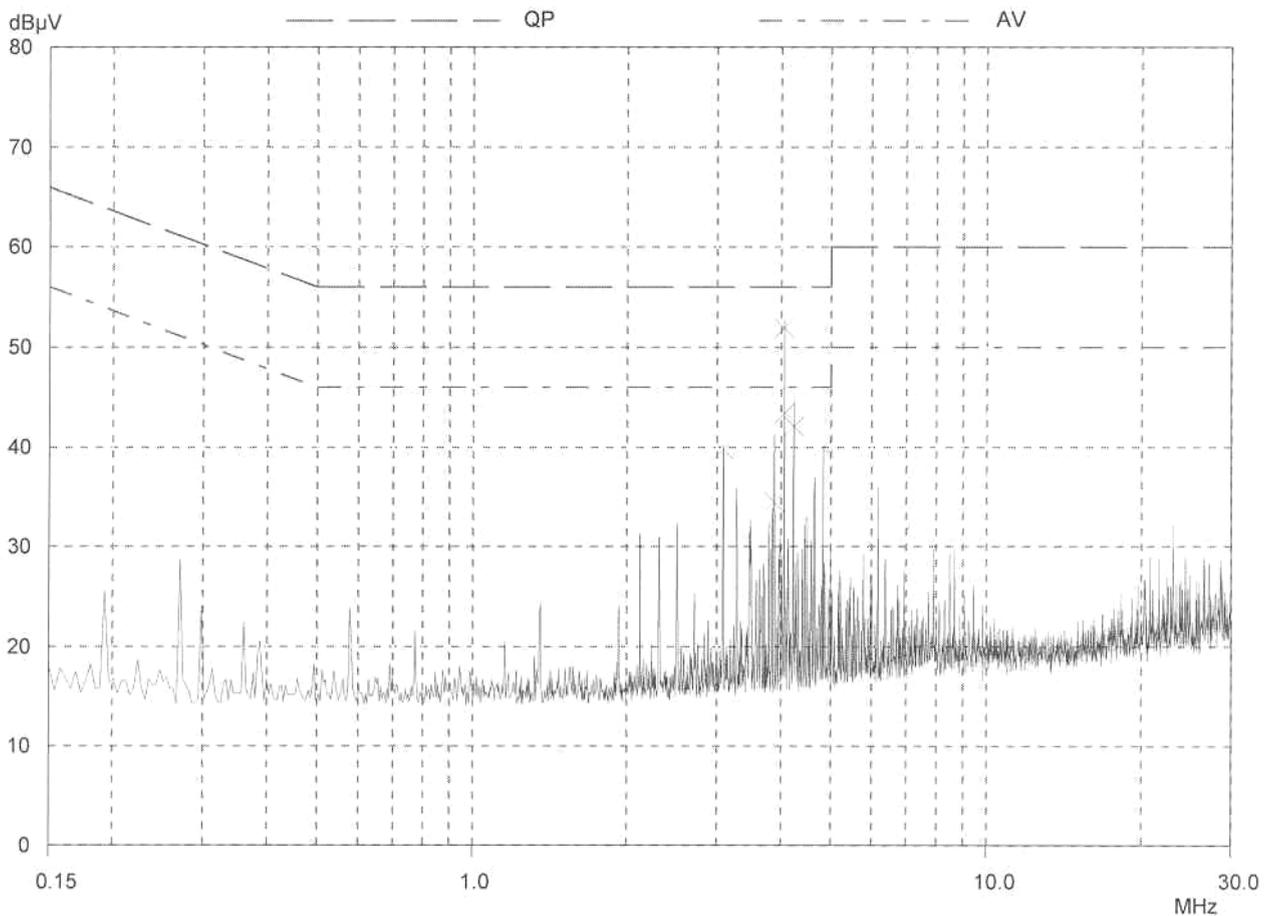


CONDUCTION EMISSION TEST

Peak Value

EUT: TEW-435BRM
 Manuf:
 Op Cond: CH HIGH
 Operator:
 Test Spec:
 Comment:
 N

Final Measurement: Detector: X QP
 Meas Time: 1sec
 Peaks: 8
 Acc Margin: 25 dB

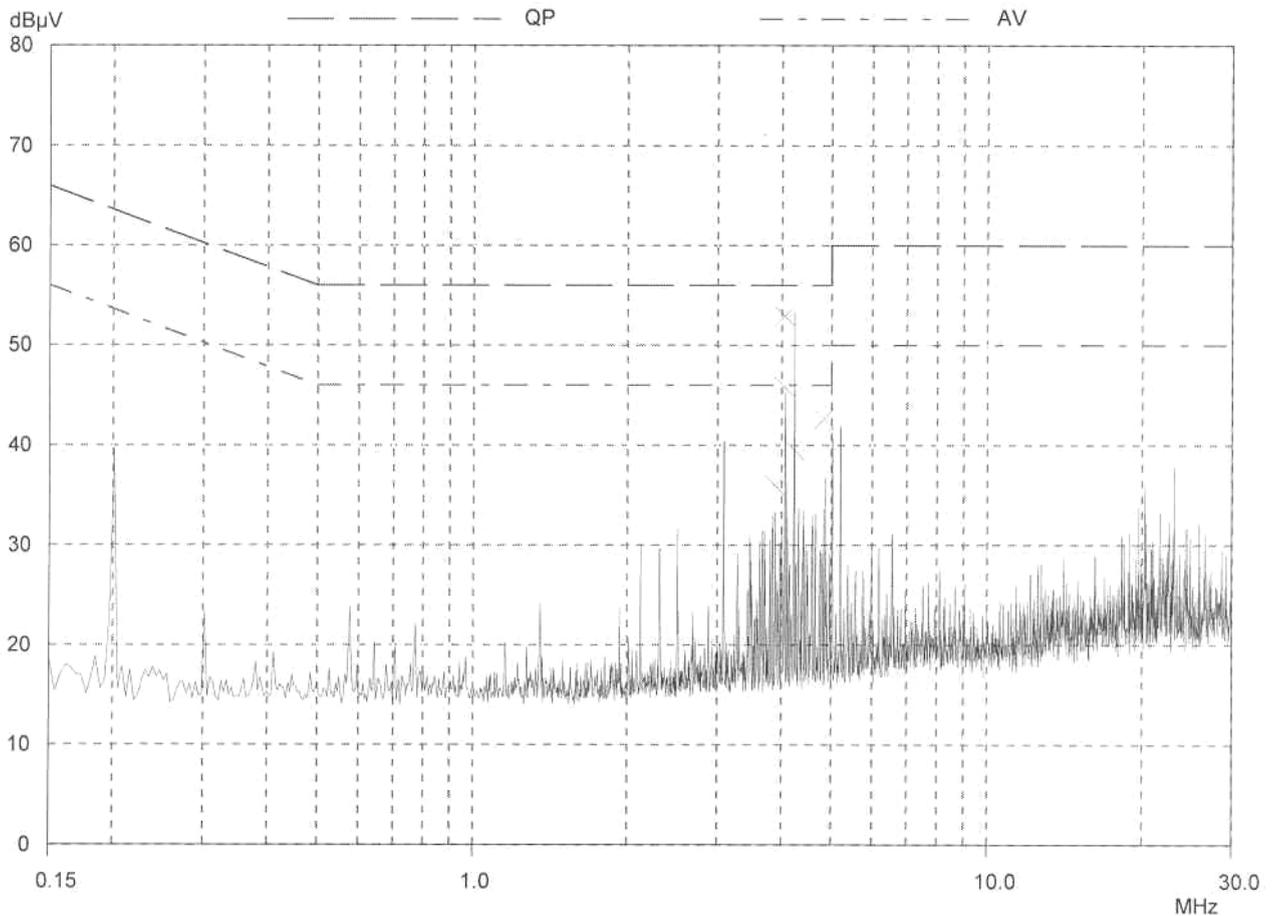


CONDUCTION EMISSION TEST

Peak Value

EUT: TEW-435BRM
 Manuf:
 Op Cond: CH HIGH
 Operator:
 Test Spec:
 Comment: L1

Final Measurement: Detector: X QP
 Meas Time: 1sec
 Peaks: 8
 Acc Margin: 25 dB



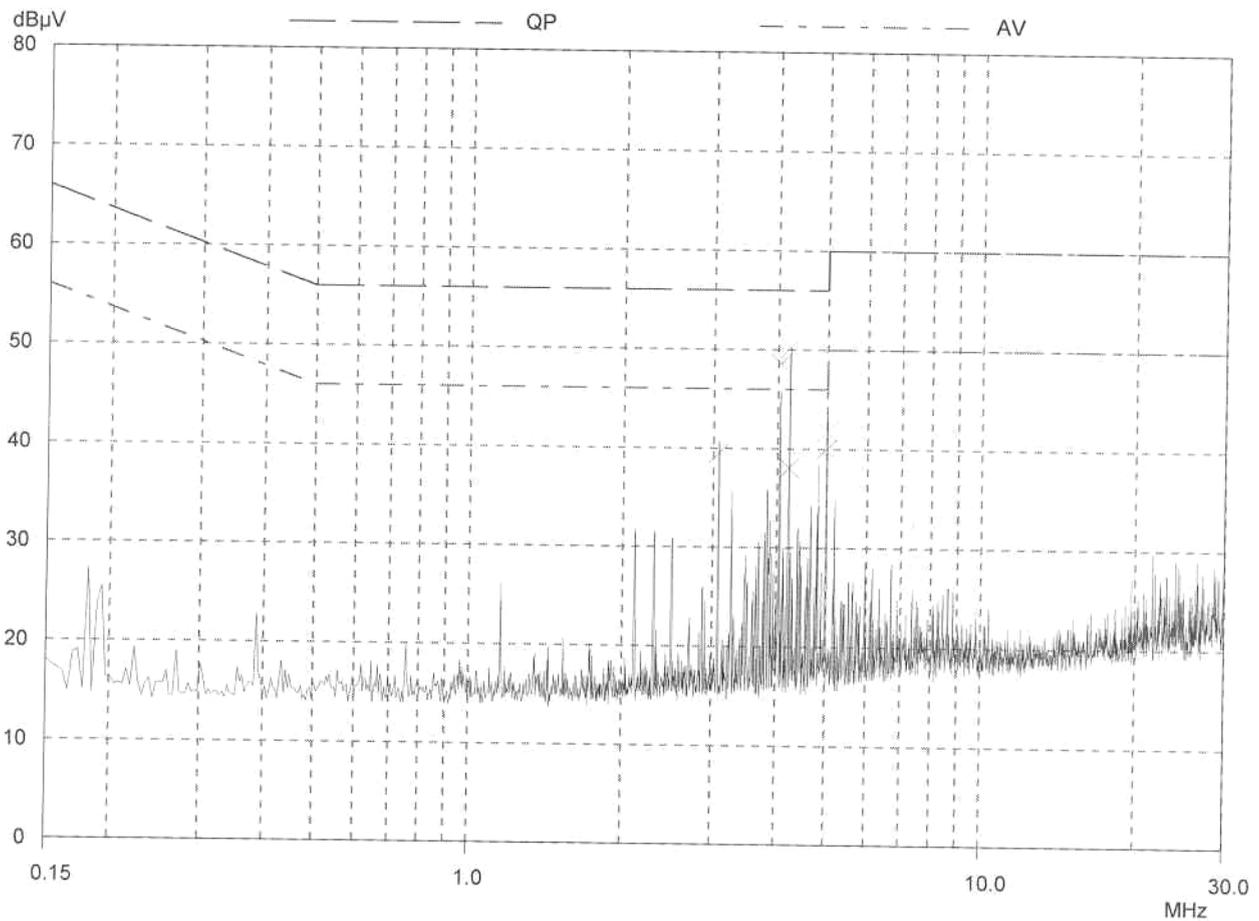
802.11g

CONDUCTION EMISSION TEST

Peak Value

EUT: TEW-435BRM
 Manuf:
 Op Cond: CH LO
 Operator:
 Test Spec:
 Comment: N

Final Measurement: Detector: X QP
 Meas Time: 1sec
 Peaks: 8
 Acc Margin: 25 dB

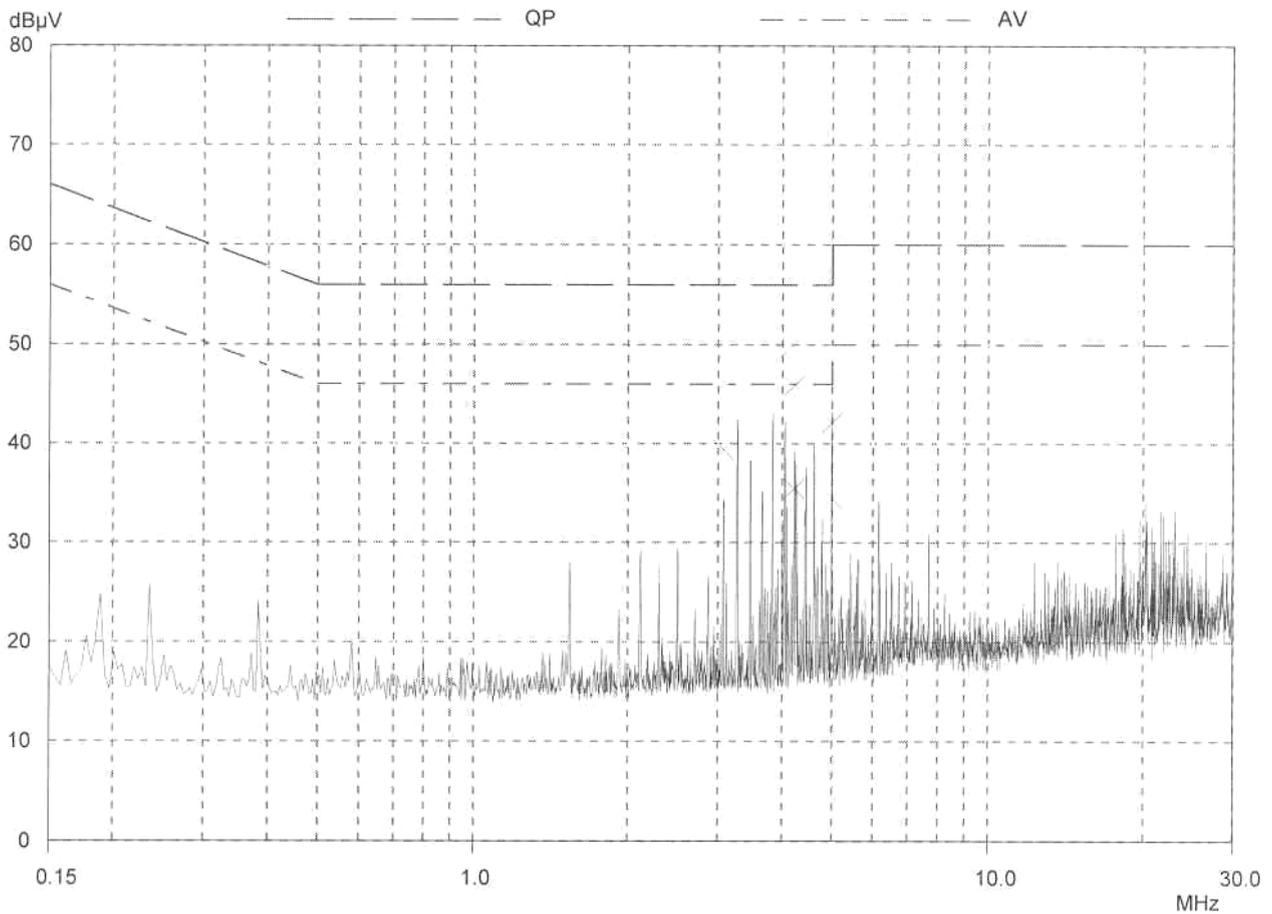


CONDUCTION EMISSION TEST

Peak Value

EUT: TEW-435BRM
 Manuf:
 Op Cond: CH LO
 Operator:
 Test Spec:
 Comment: L1

Final Measurement: Detector: X QP
 Meas Time: 1sec
 Peaks: 8
 Acc Margin: 25 dB

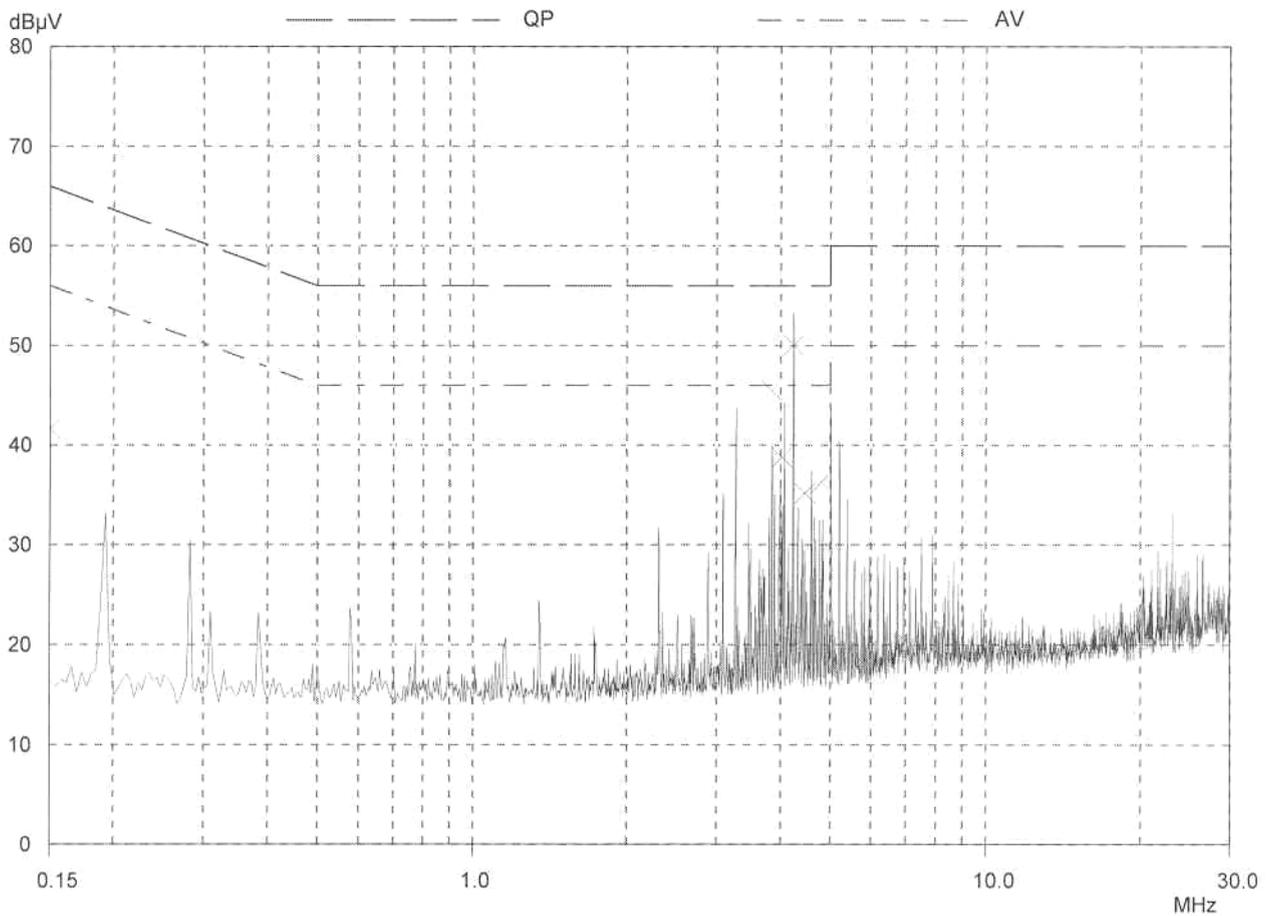


CONDUCTION EMISSION TEST

Peak Value

EUT: TEW-435BRM
 Manuf:
 Op Cond: CH MID
 Operator:
 Test Spec:
 Comment: N

Final Measurement: Detector: X QP
 Meas Time: 1sec
 Peaks: 8
 Acc Margin: 25 dB

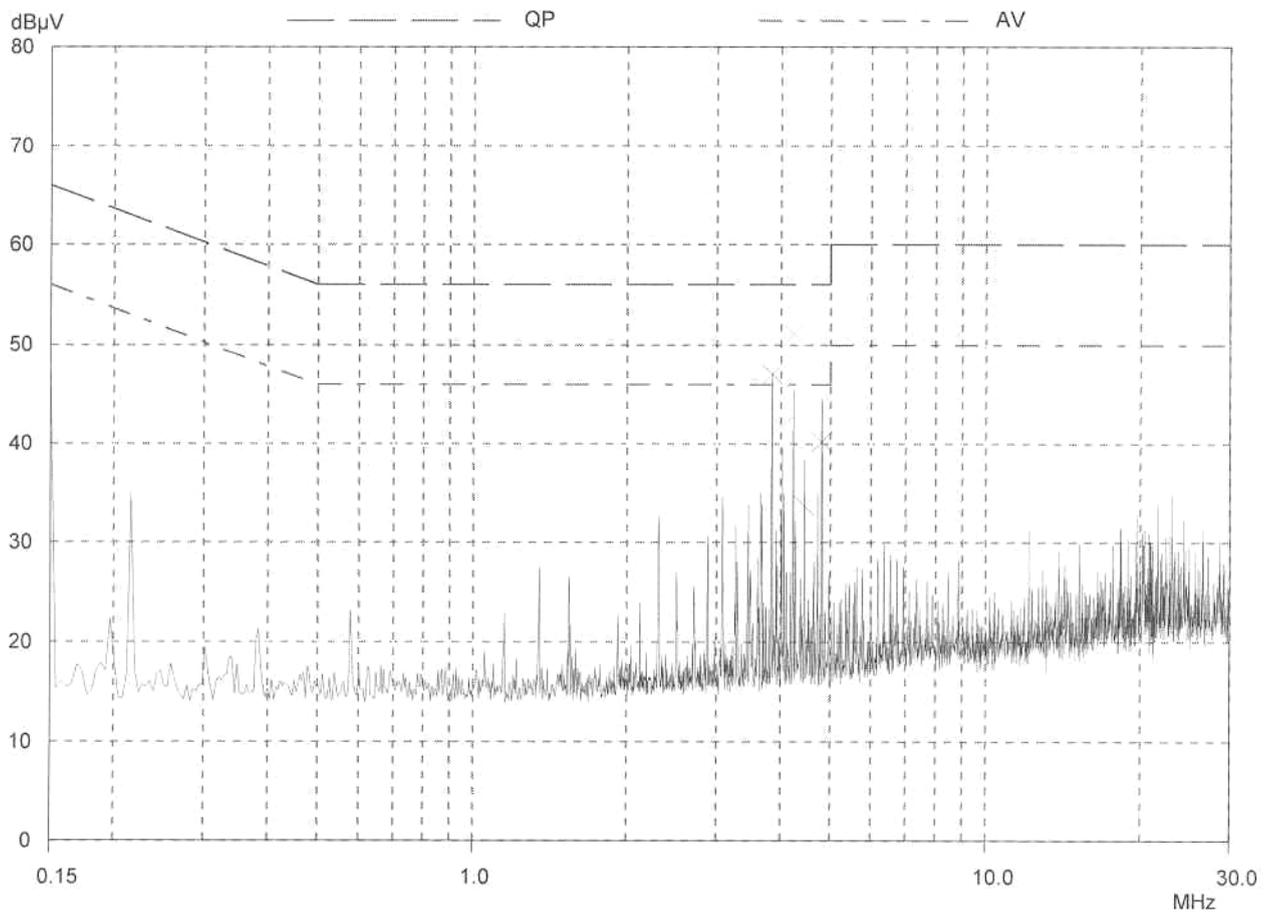


CONDUCTION EMISSION TEST

Peak Value

EUT: TEW-435BRM
 Manuf:
 Op Cond: CH MID
 Operator:
 Test Spec:
 Comment: L1

Final Measurement: Detector: X QP
 Meas Time: 1sec
 Peaks: 8
 Acc Margin: 25 dB

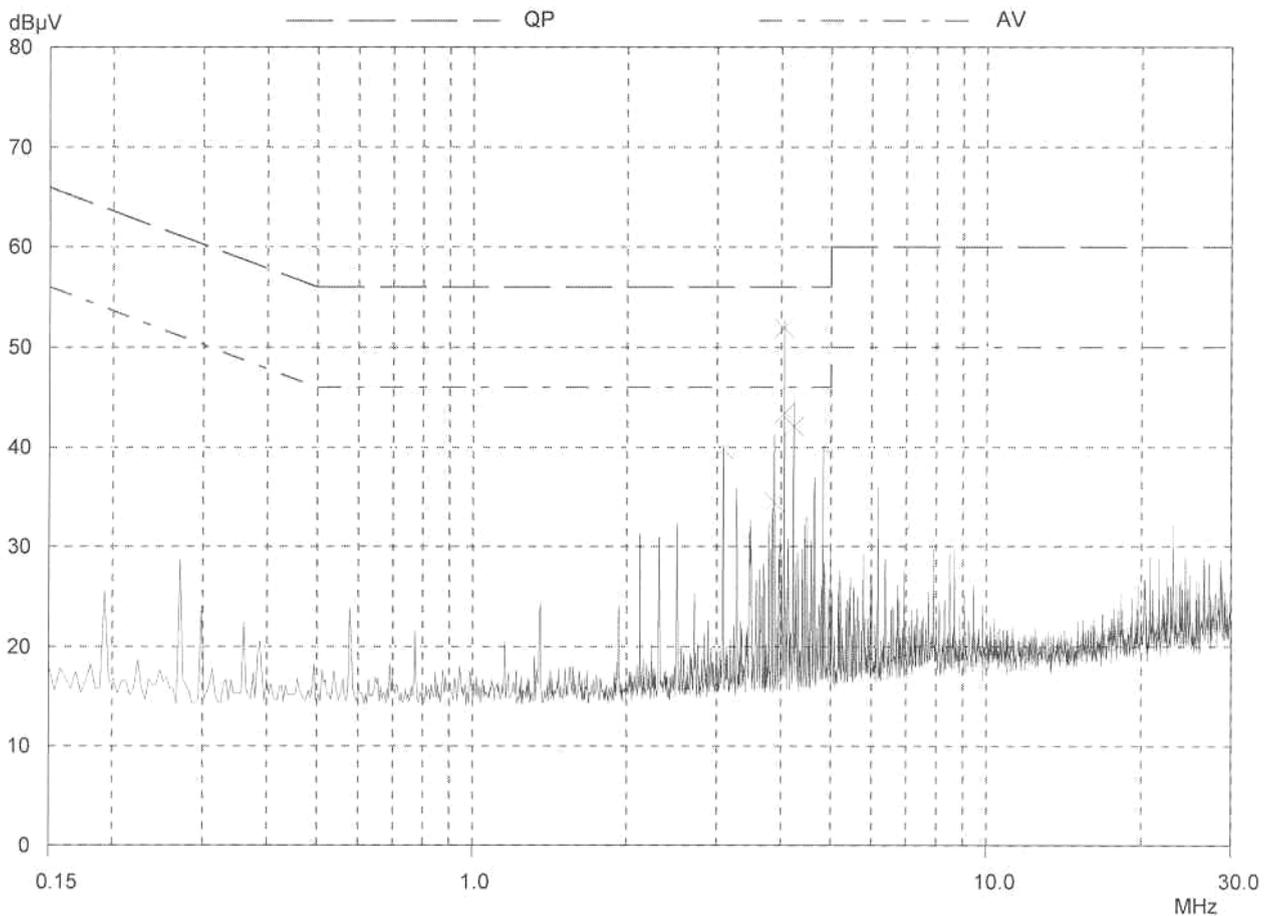


CONDUCTION EMISSION TEST

Peak Value

EUT: TEW-435BRM
 Manuf:
 Op Cond: CH HIGH
 Operator:
 Test Spec:
 Comment:
 N

Final Measurement: Detector: X QP
 Meas Time: 1sec
 Peaks: 8
 Acc Margin: 25 dB

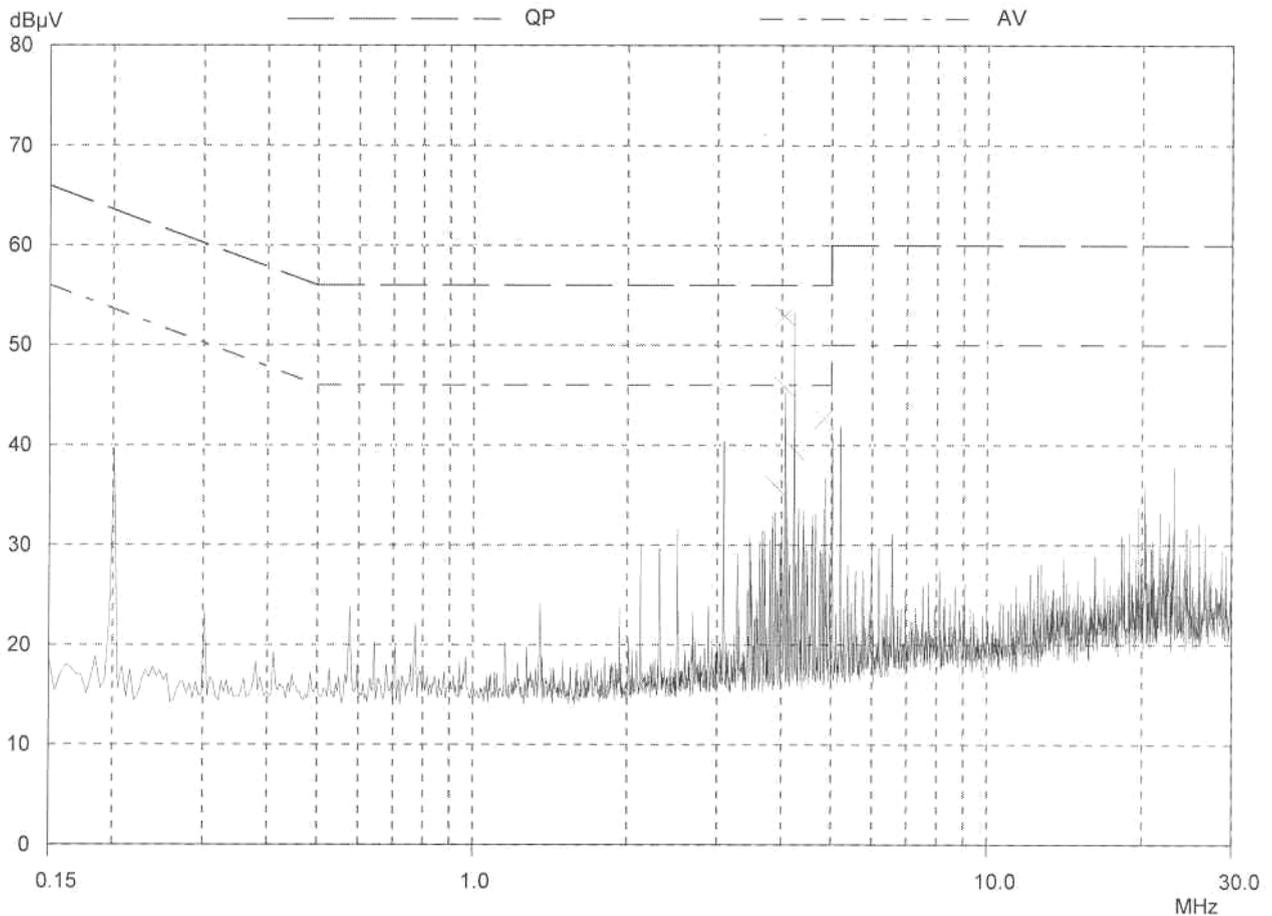


CONDUCTION EMISSION TEST

Peak Value

EUT: TEW-435BRM
 Manuf:
 Op Cond: CH HIGH
 Operator:
 Test Spec:
 Comment: L1

Final Measurement: Detector: X QP
 Meas Time: 1sec
 Peaks: 8
 Acc Margin: 25 dB



CONSTRUCTED PHOTOS of EUT

1. Front View of EUT



2. Bottom View of EUT



CONSTRUCTED PHOTOS of EUT

3. Side View of EUT



4. Side View of EUT



CONSTRUCTED PHOTOS of EUT

5. Top View of EUT



6. Rear View of EUT



CONSTRUCTED PHOTOS of EUT

7. Internal View of EUT

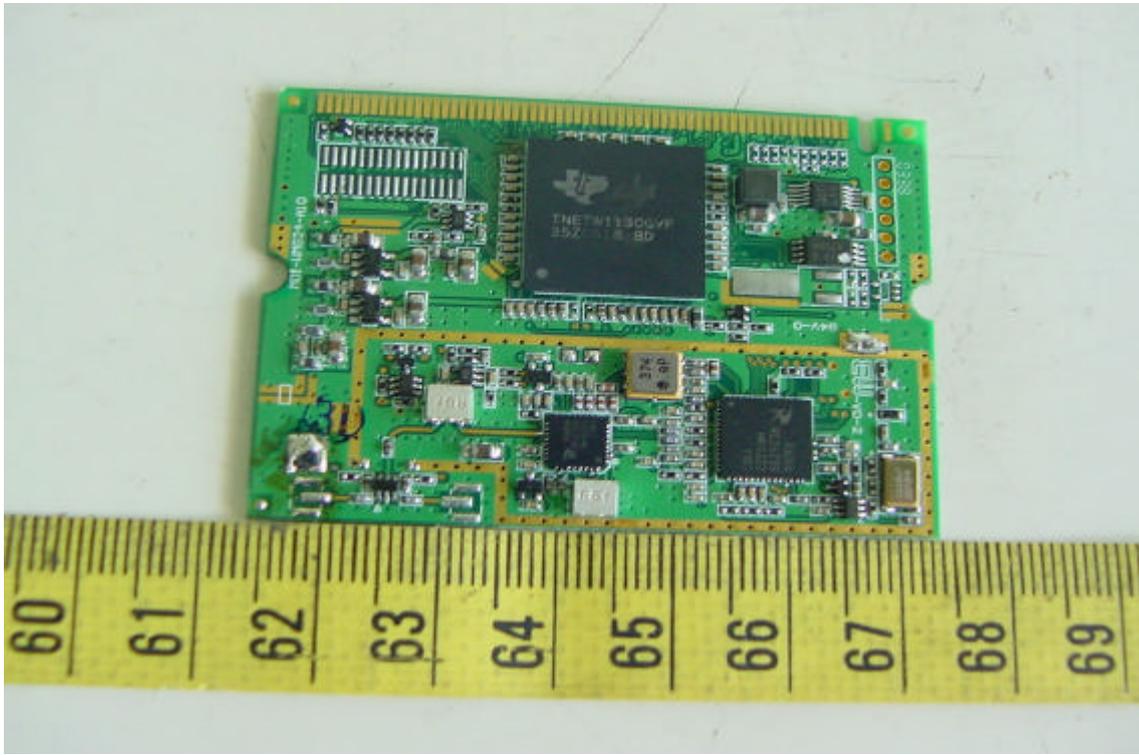


8. Component View of Main PCB

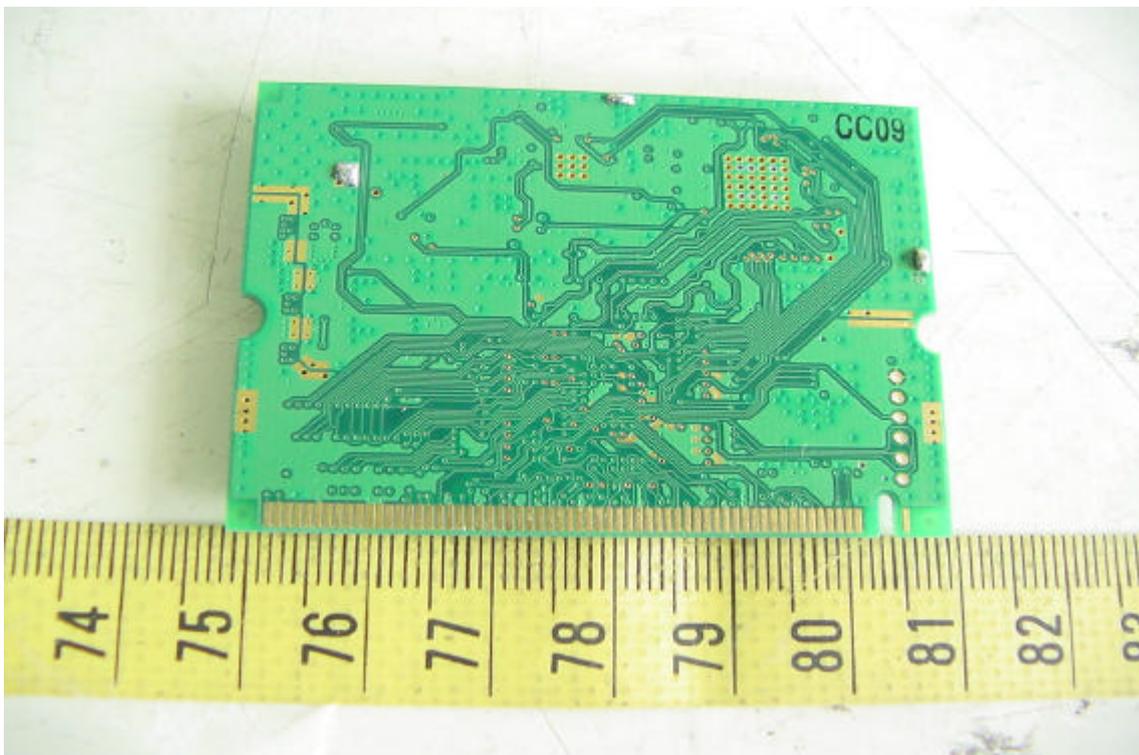


CONSTRUCTED PHOTOS of EUT

9. Component View of Main PCB

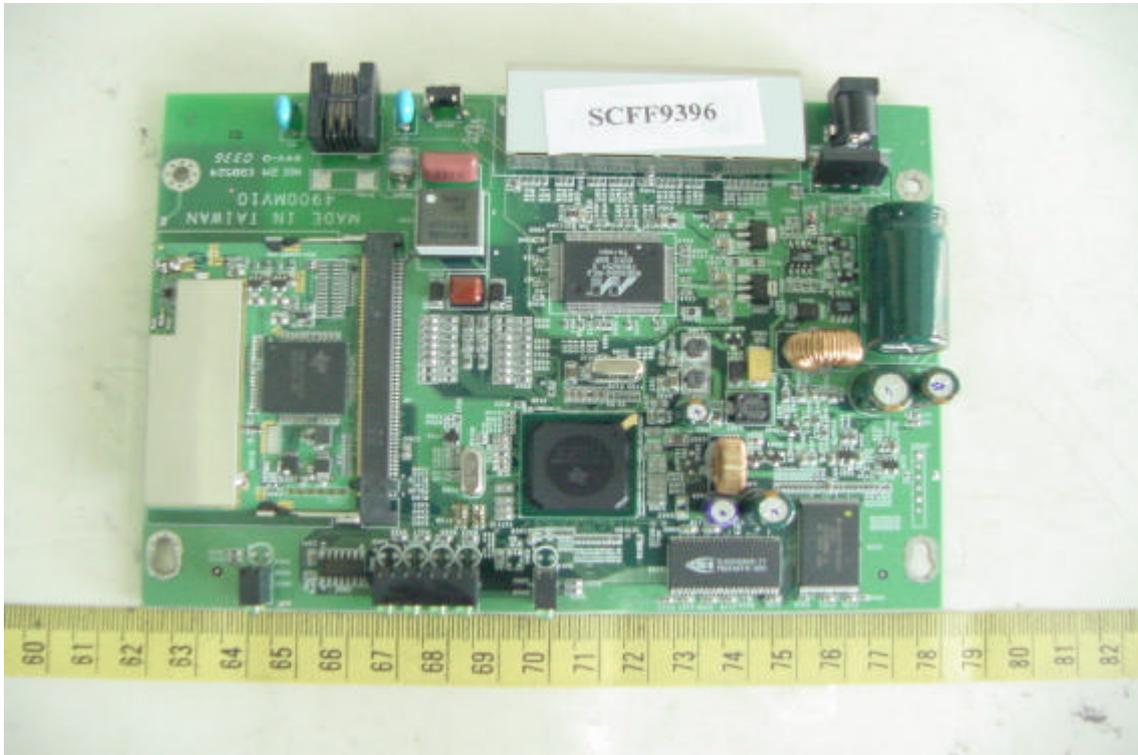


10. Solder View of Main PCB

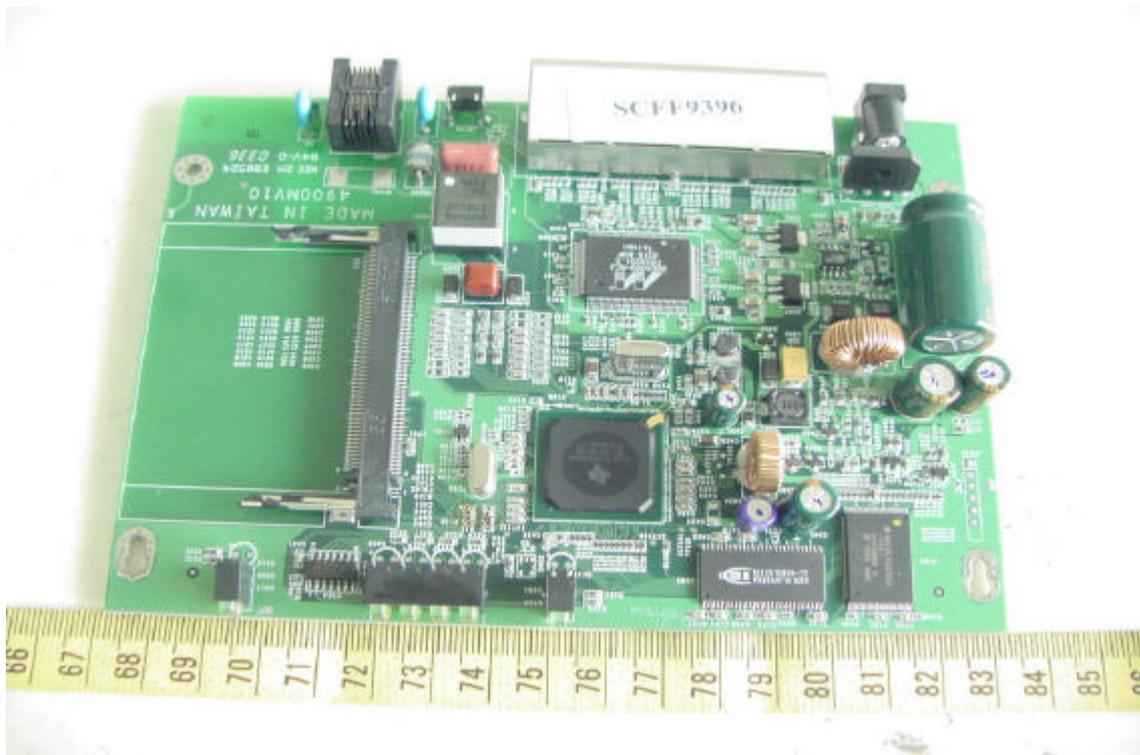


CONSTRUCTED PHOTOS of EUT

11. Component View of Main PCB

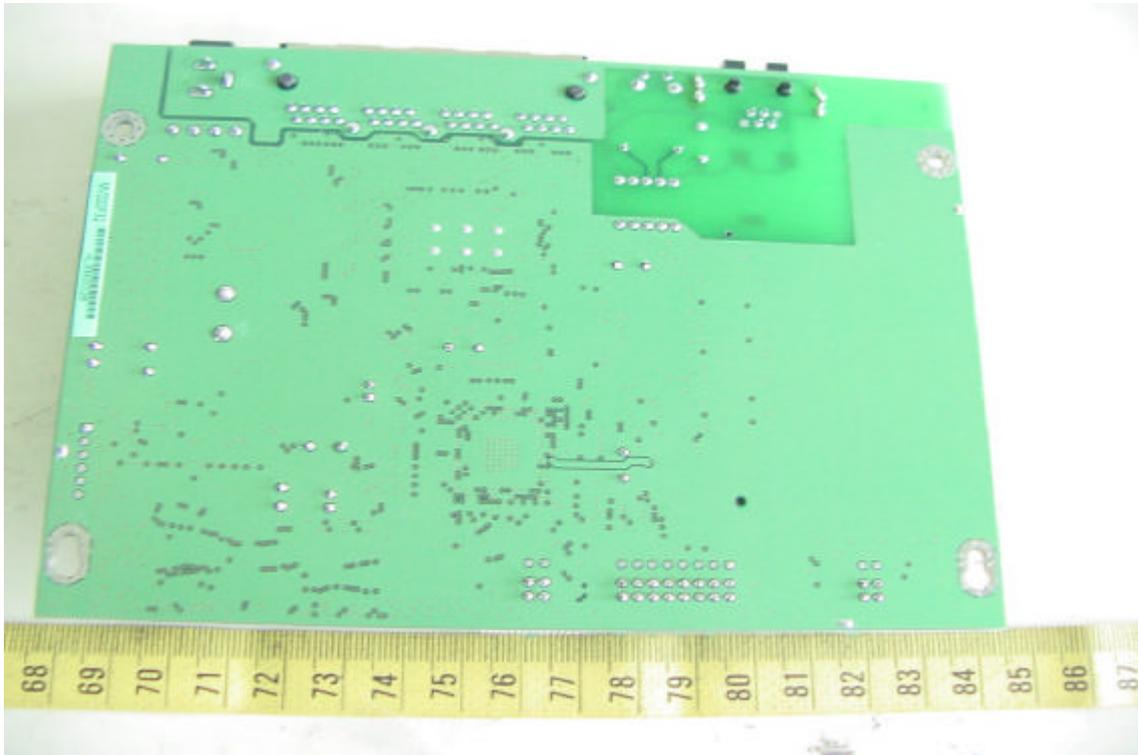


12. Component View of Main PCB



CONSTRUCTED PHOTOS of EUT

13. Solder View of Main PCB



CONSTRUCTED PHOTOS of EUT

14. Front View of Adaptor

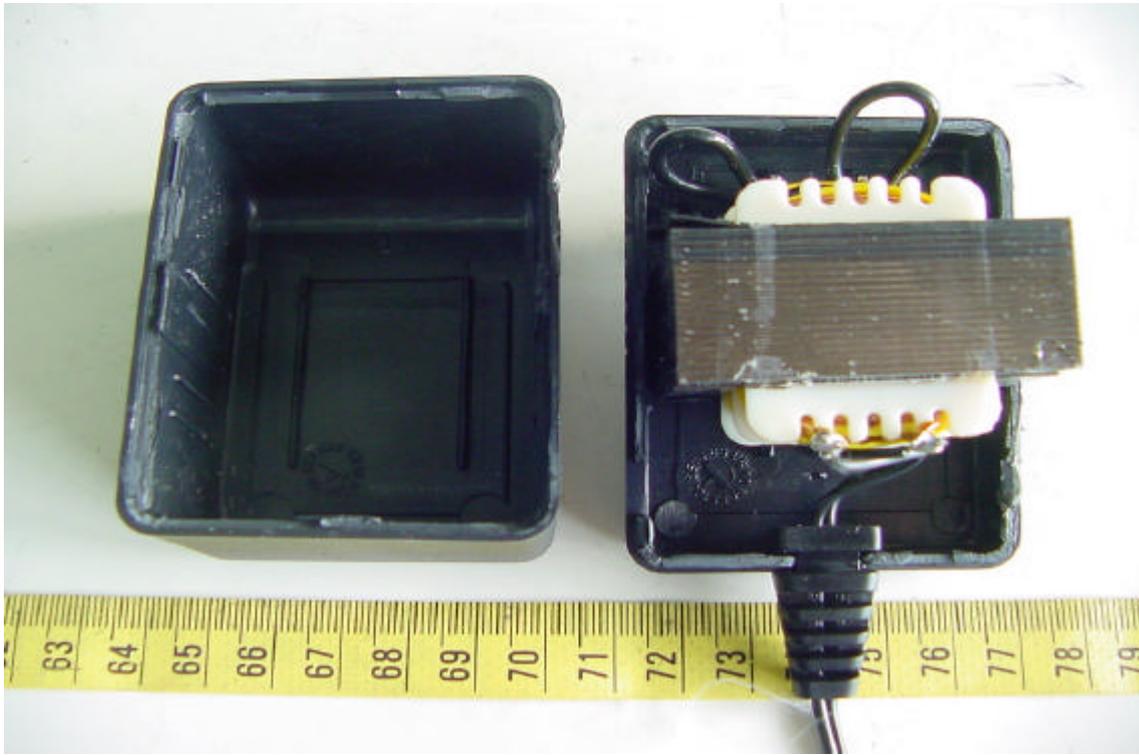


15. Rear View of Adaptor



CONSTRUCTED PHOTOS of EUT

16. Internal View of Adaptor



17. Internal View of Adaptor

