

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

| Description & Manufacturer | Model No. | Serial No. | Calibrated Until |
|----------------------------|-----------|------------|------------------|
| R&S SPECTRUM ANALYZER | FSEK30 | 100049 | Jul. 16, 2002 |

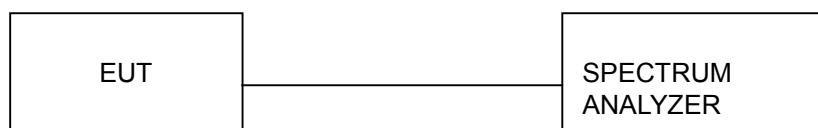
NOTE: 1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.5.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3 kHz RBW and 30 kHz VBW, set sweep time = span/3 kHz. The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span/3 kHz for a full response of the mixer in the spectrum analyzer.

4.5.4 TEST SETUP



4.5.5 EUT OPERATING CONDITION

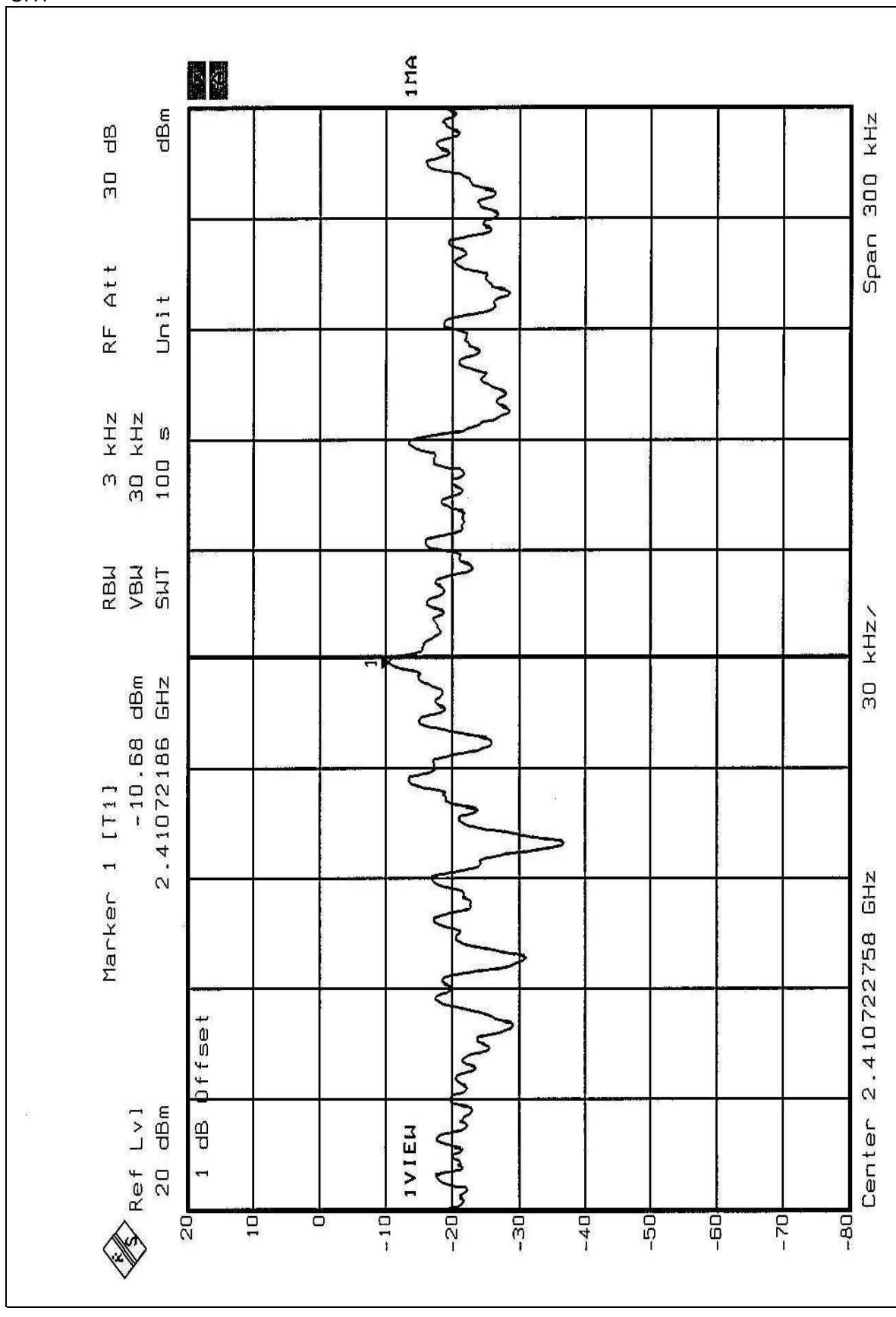
Same as Item 3.4.5

4.5.6 TEST RESULTS

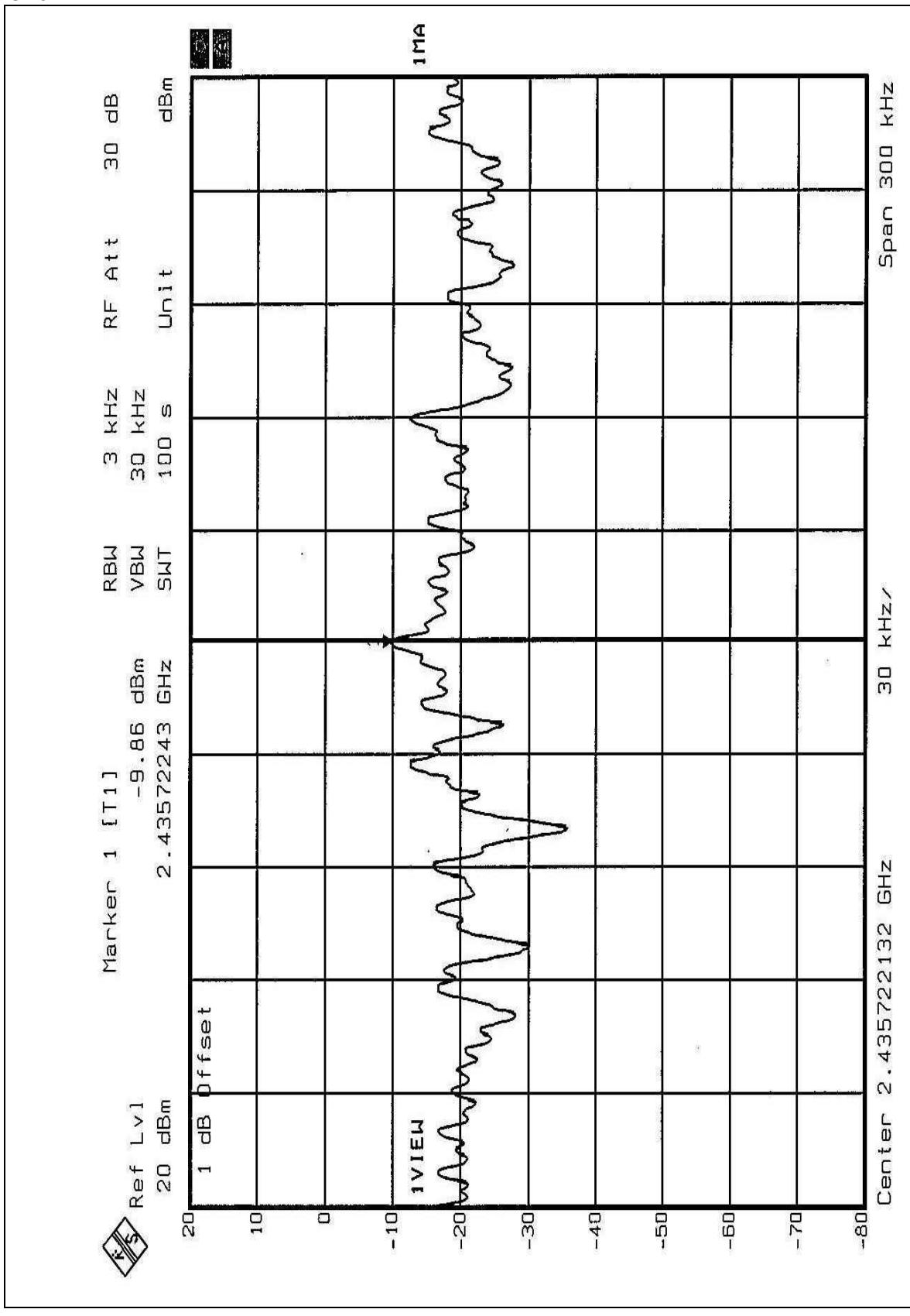
| | | | |
|-------------------------------|-----------------------------|---------------------------------|----------------------------|
| EUT | 11Mbps Wireless USB Adapter | MODEL | NWH4010 |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | ENVIRONMENTAL CONDITIONS | 20 deg. C, 55%RH, 1005 hPa |
| TESTED BY: Bruce Shiau | | | |

| CHANNEL NUMBER | CHANNEL FREQUENCY (MHz) | RF POWER LEVEL IN 3 kHz BW (dBm) | MAXIMUM LIMIT (dBm) | PASS/FAIL |
|----------------|--------------------------|----------------------------------|---------------------|-----------|
| 1 | 2412 | -10.68 | 8 | PASS |
| 6 | 2437 | -9.86 | 8 | PASS |
| 11 | 2462 | -10.76 | 8 | PASS |

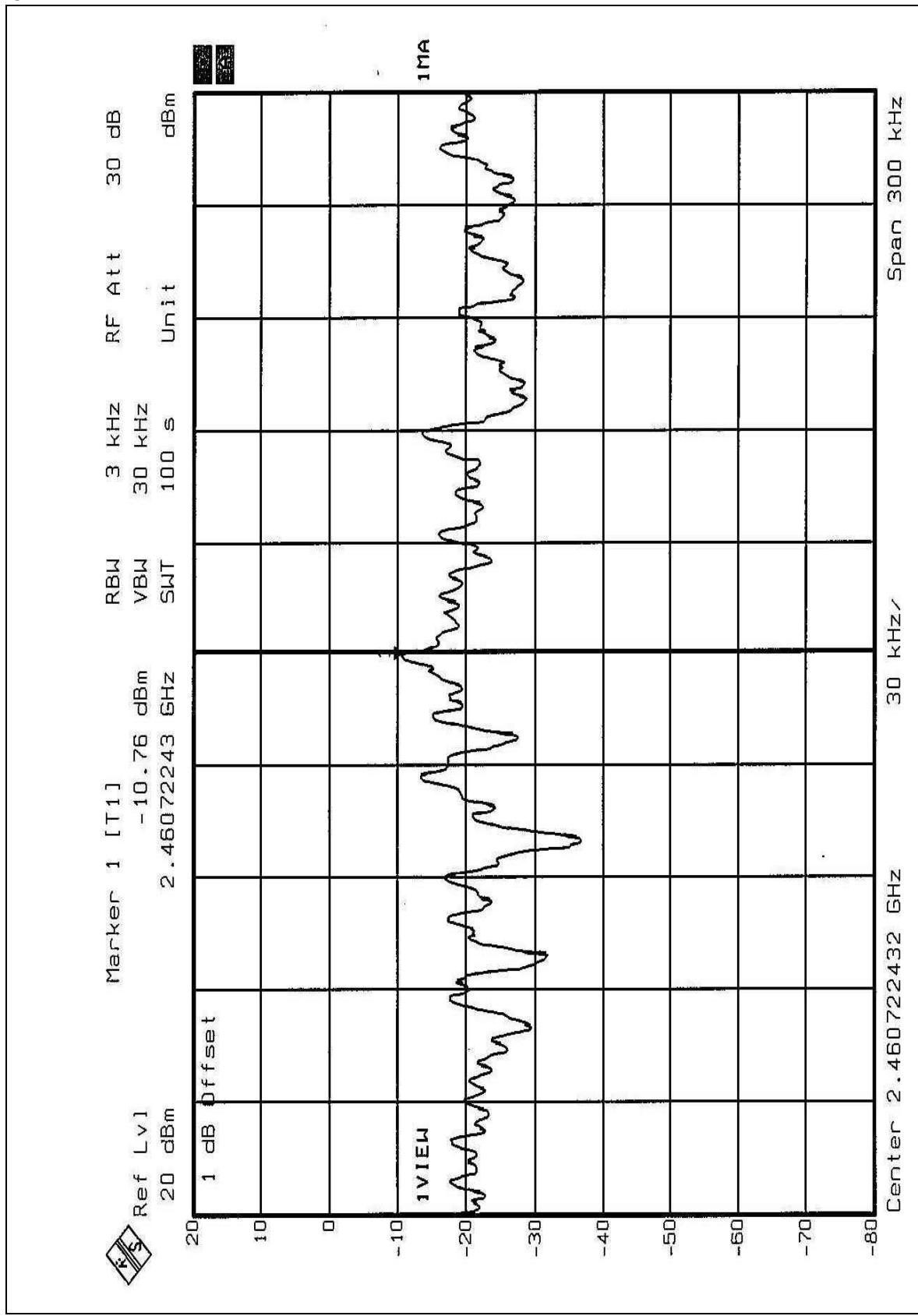
CH1



CH6



CH11



4.6 BAND EDGES MEASUREMENT

4.6.1 LIMITS OF BAND EDGES MEASUREMENT

Below -20dB of the highest emission level of operating band (in 100KHz Resolution Bandwidth).

4.6.2 TEST INSTRUMENTS

| Description & Manufacturer | Model No. | Serial No. | Calibrated Until |
|----------------------------|-----------|------------|------------------|
| R&S SPECTRUM ANALYZER | FSEK30 | 100049 | Jul. 16, 2002 |

NOTE:

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low loss cable. Set both RBW and VBW of spectrum analyzer to 100 kHz with suitable frequency span including 100 kHz bandwidth from band edge. The band edges was measured and recorded.

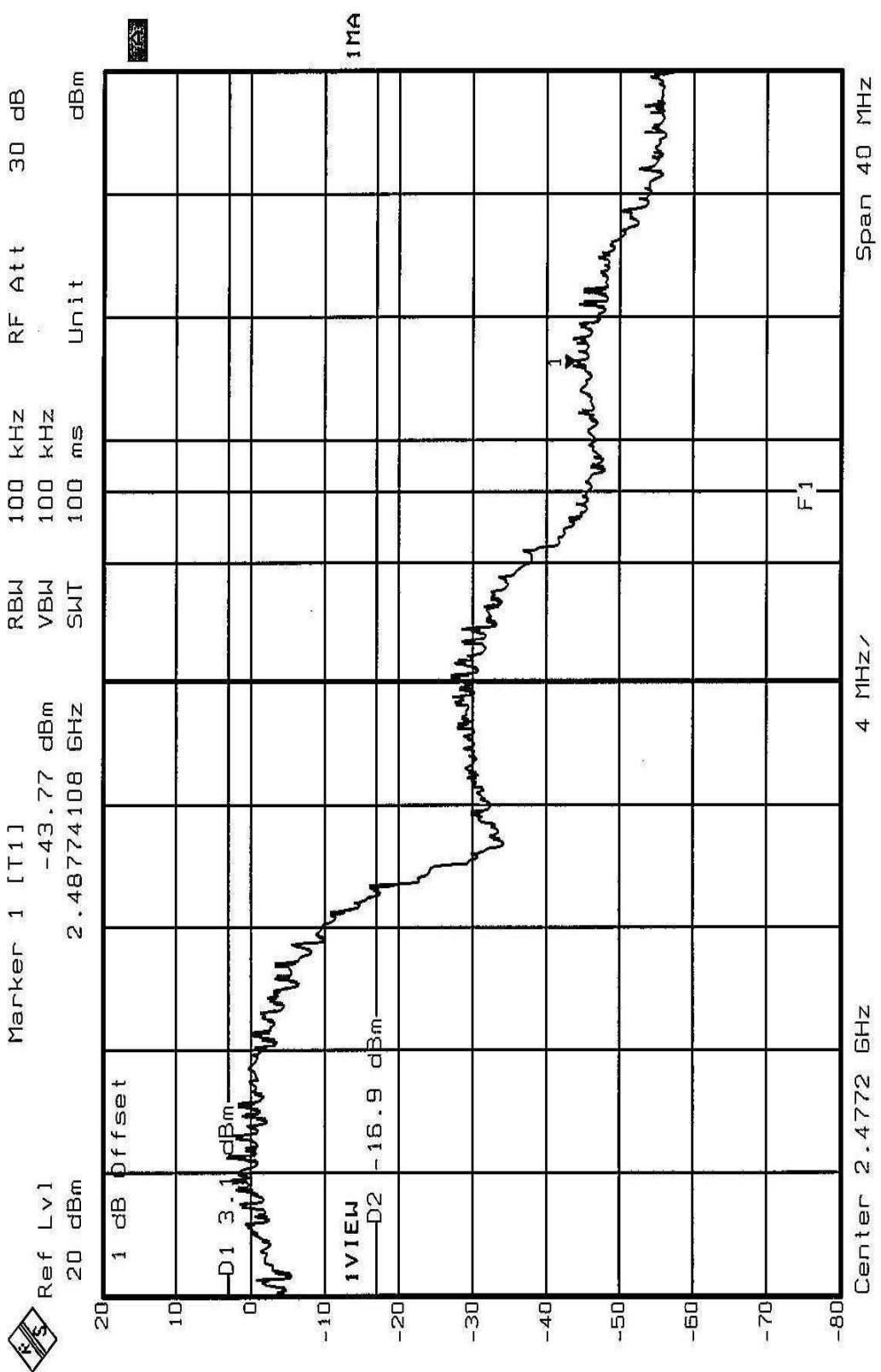
4.6.4 EUT OPERATING CONDITION

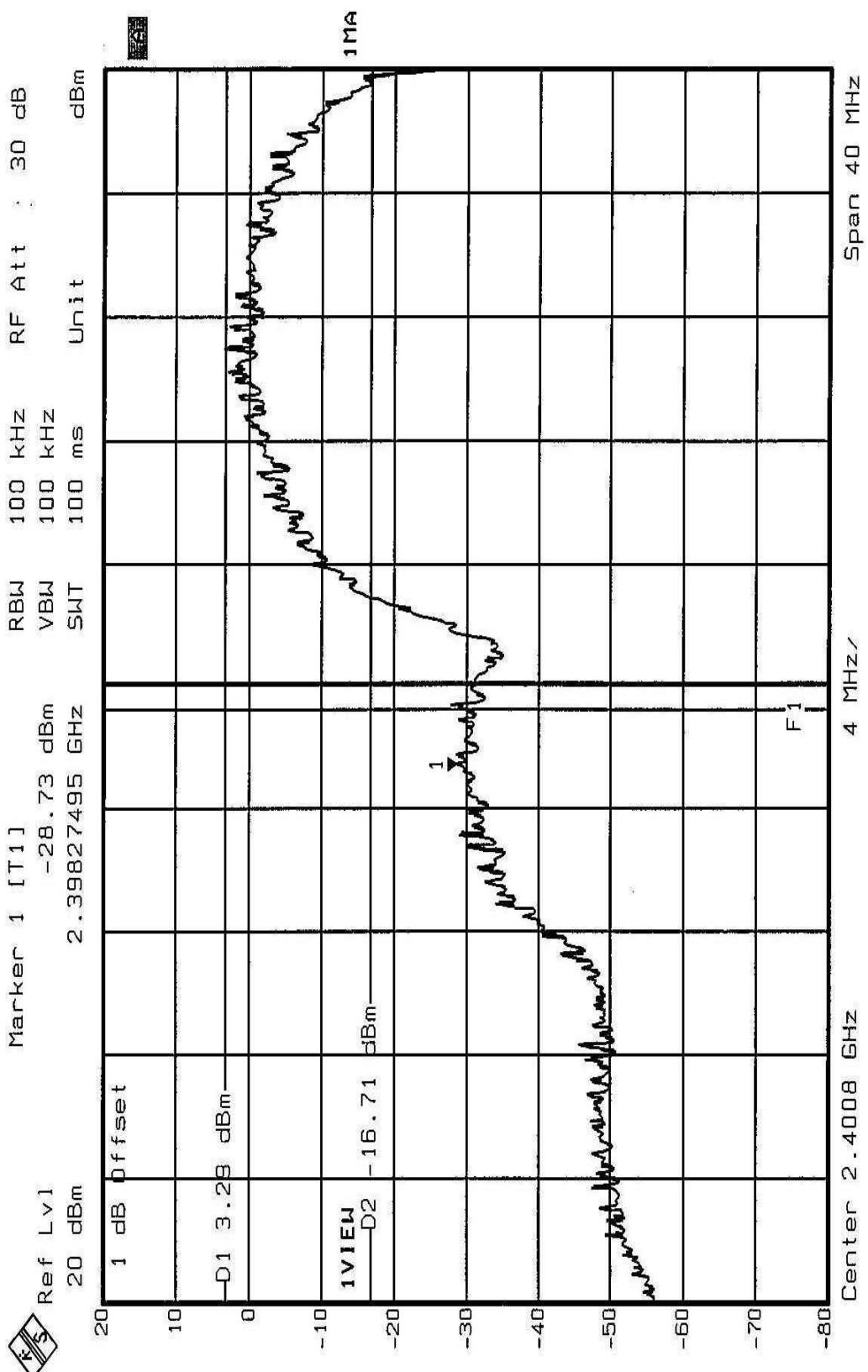
Same as Item 3.4.5

4.6.5 TEST RESULTS

The spectrum plots are attached on the following 2 pages. D2 line indicates the highest level, D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).

NOTE: The band edge emission plot on the following 2 pages shows 46.87dB delta between carrier maximum power and local maximum emission in restrict band (2.48774GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.6 (Page 25) is 95.9dB_uV/m, so the maximum field strength in restrict band is $95.9 - 46.87 = 49.03$ dB_uV/m which is under 54 dB_uV/m limit.





4.7 ANTENNA REQUIREMENT

4.7.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR 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. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.7.2 ANTENNA CONNECTED CONSTRUCTION

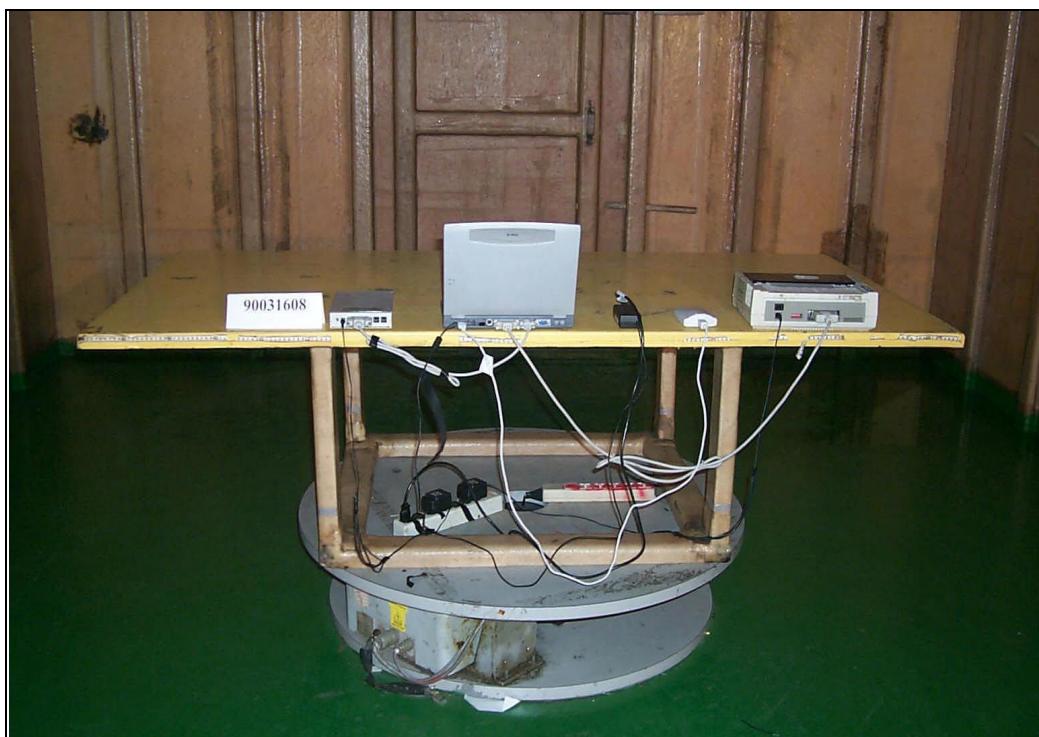
The antenna used in this product is Inverted F Antenna. There is no antenna connector. The maximum Gain of the antenna is -1dBi only.

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST



RADIATED EMISSION TEST



6 INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025, Guide 25 or EN 45001:

| | |
|--------------------|-----------------|
| USA | FCC, NVLAP, UL |
| Germany | TUV Rheinland |
| Japan | VCCI |
| New Zealand | MoC |
| Norway | NEMKO |
| R.O.C. | BSMI, DGT, CNLA |

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site:

www.adt.com.tw/index.5/phtml.

If you have any comments, please feel free to contact us at the following:

Lin Kou EMC Lab:

Tel: 886-2-26052180
Fax: 886-2-26052943

Hsin Chu EMC Lab:

Tel: 886-35-935343
Fax: 886-35-935342

Lin Kou Safety Lab:

Tel: 886-2-26093195
Fax: 886-2-26093184

Lin Kou RF&Telecom Lab

Tel: 886-3-3270910
Fax: 886-3-3270892

Email: service@mail.adt.com.tw

Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.