

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT**INTENTIONAL RADIATOR CERTIFICATION TO
FCC PART 15 SUBPART C REQUIREMENT**

OF

Product Name: ThermoSensor
Brand Name: Cadi Scientific
Model Name: TSS-9XX
FCC ID: VPE-TSS900
Report No.: ER/2007/70047
Issue Date: Jan. 29, 2008
FCC Rule Part: §15.249
Prepared for: Cadi Scientific Pte. Ltd.
**1003 Bukit Merah Central #04-40 Singapore
159836**
Prepared by: SGS Taiwan Ltd.
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VERIFICATION OF COMPLIANCE

Applicant: Cadi Scientific Pte. Ltd.
 1003 Bukit Merah Central #04-40 Singapore 159836

Product Description: SmartNode

Brand Name: Cadi Scientific

FCC ID Number: VPE-TSS900

Model No.: TSS-9XX

Model Difference: N/A

File Number: ER/2007/70047

Date of test: Jan. 17, 2008 ~ Jan. 26, 2008

Date of EUT Received: Jan. 17, 2008

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory. 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 conducted and radiated emission limits of FCC Rules Part 15.249.

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

| | | | |
|---------------------|---|-------------|---------------|
| Test By: |  | Date | Jan. 29, 2008 |
| | <i>Jason Wu/Asst. Supervisor</i> | | |
| Prepared By: |  | Date | Jan. 29, 2008 |
| | <i>Elisa Chen/Asst. Supervisor</i> | | |
| Approved By: |  | Date | Jan. 29, 2008 |
| | <i>Vincent Su/Manager</i> | | |

Version

| Version No. | Date |
|-------------|---------------|
| 00 | Jan. 29, 2008 |
| 01 | Feb. 12, 2008 |
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1. GENERAL INFORMATION

1.1 Product Description

The Cadi Scientific Pte. Ltd., Model: TSS-9XX (referred to as the EUT in this report) is a ThermoSensor.

A major technical descriptions of EUT is described as following:

A). Operation Frequency: 919.8MHz, 925MHz, 2 channels

B). Modulation Type: DSSS (GFSK)

C). Power Supply: 3Vdc battery

D). Antenna Designation: Micro-strip Antenna, -18dBi, and no consideration of replacement.
Please see EUT photo for details.

1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: **VPE-TSS900** filing to comply with Section 15.249 of the FCC Part 15, Subpart C Rules.

1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 (2003). Radiated testing was performed at an antenna to EUT distance 3 meters.

1.4 Test Facility

The measurement facilities used to collect the 3m Radiated Emission and AC power line conducted data are located on the address of SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003. FCC Registration Number are: 990257 and 236194, Canada Registration Number: 4620A-1

1.5 Special Accessories

Not available for this EUT intended for grant.

1.6 Equipment Modifications

Not available for this EUT intended for grant.

2. System Test Configuration

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The Transmitter was operated in the engineering operating mode. the Tx frequency was fixed which was for the purpose of the measurements.

2.3 Test Procedure

2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the requirements in Section 7 and 13 of ANSI C63.4-2003. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and Average detector mode.

2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 8 and 13 of ANSI C63.4-2003.

2.4 Limitation

(1) Conducted Emission

According to section 15.207(a) Conducted Emission Limits is as following.

| Frequency (MHz) | Conducted Limit (dBuV) | |
|-----------------|------------------------|---------|
| | Quasi-Peak | Average |
| 0.15 – 0.5 | 66 - 56 | 56 - 46 |
| 0.5 – 5 | 56 | 46 |
| 5 - 30 | 60 | 50 |

(2) Radiated Emission 15.249(a)

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following.

| Frequency (MHz) | Field strength of Fundamental | Field strength of Harmonics | Distance (m) |
|------------------|-------------------------------|-----------------------------|--------------|
| 902 - 928 | 50 mV/m (94dBuV/m) | 500 uV/m (54dBuV/m) | 3 |
| 2400 – 2483.5 | 50 mV/m (94dBuV/m) | 500 uV/m (54dBuV/m) | 3 |
| 5725 – 5875 | 50 mV/m (94dBuV/m) | 500 uV/m (54dBuV/m) | 3 |
| 24.0 – 24.25 GHz | 250 mV/m (107.95dBuV/m) | 2500 uV/m (67.95dBuV/m) | 3 |

(3) Radiated Emission 15.249 (d)

Emission Radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in Section 15.209 as below, whichever is the lesser attenuation.

| Frequency (MHz) | Field strength $\mu\text{V/m}$ | Distance (m) | Field strength at 3m $\text{dB}\mu\text{V/m}$ |
|-----------------|--------------------------------|--------------|---|
| 1.705-30 | 30 | 30 | 69.54 |
| 30-88 | 100 | 3 | 40 |
| 88-216 | 150 | 3 | 43.5 |
| 216-960 | 200 | 3 | 46 |
| Above 960 | 500 | 3 | 54 |

(4) Radiated Emission 15.249(e)

For frequencies above 1000MHz, the above field strength limits are based on average limits. The peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20dB under any condition of modulation.

- Remark:
1. Emission level in $\text{dB}\mu\text{V/m} = 20 \log (\mu\text{V/m})$
 2. Measurement was performed at an antenna to the closed point of EUT distance of meters.
 3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of ξ 15.205
 4. Emission spurious frequency which appearing within the Restricted Bands specified in provision of ξ 15.205, then the general radiated emission limits in ξ 15.209 apply.

2.5 Configuration of Tested System

Fig. 2-1 Configuration of TX

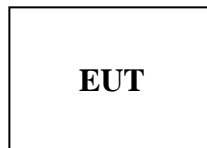


Table 2-2 Equipment Used in Tested System

| Item | Equipment | Mfr/Brand | Model/ Type No. | FCC ID | Series No. | Data Cable | Power Cord |
|------|-----------|-----------|--------------------|--------|------------|------------|------------|
| 1. | N/A | | | | | | |

Note: All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.

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

3. Summary of Test Results

| FCC Rules | Description Of Test | Result |
|---------------|-----------------------------|-----------|
| §15.207 | Conducted Emission | N/A |
| §15.249(a)(e) | Radiated Emission | Compliant |
| §15.249(d) | 26dB band width Measurement | Compliant |

Description of test modes

Frequency 919.8MHz and 925MHz are chosen for full testing.

4. Conducted Emissions Test

4.1 Measurement 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.

4.2 Test SET-UP (Block Diagram of Configuration)

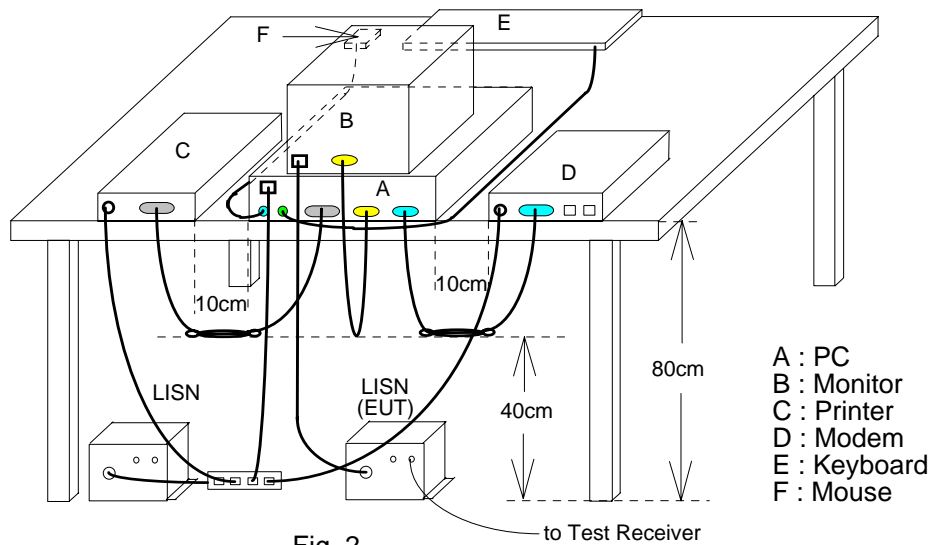


Fig. 2

4.3 Measurement Equipment Used:

| Conducted Emission Test Site | | | | | |
|------------------------------|------------|--------------|---------------|------------|------------|
| EQUIPMENT TYPE | MFR | MODEL NUMBER | SERIAL NUMBER | LAST CAL. | CAL DUE. |
| EMC Analyzer | HP | 8594EM | 3624A00203 | 09/02/2007 | 09/03/2008 |
| EMI Test Receiver | R&S | ESCS30 | 828985/004 | 06/09/2007 | 06/10/2008 |
| Transient Limiter | HP | 11947A | 3107A02062 | 09/02/2007 | 09/03/2008 |
| LISN | Rolf-Heine | NNB-2/16Z | 99012 | 12/31/2007 | 12/30/2008 |
| LISN | Rolf-Heine | NNB-2/16Z | 99013 | 12/24/2007 | 12/23/2008 |
| Coaxial Cables | N/A | No. 3, 4 | N/A | 12/01/2007 | 12/01/2208 |

4.4 Measurement Result: N/A

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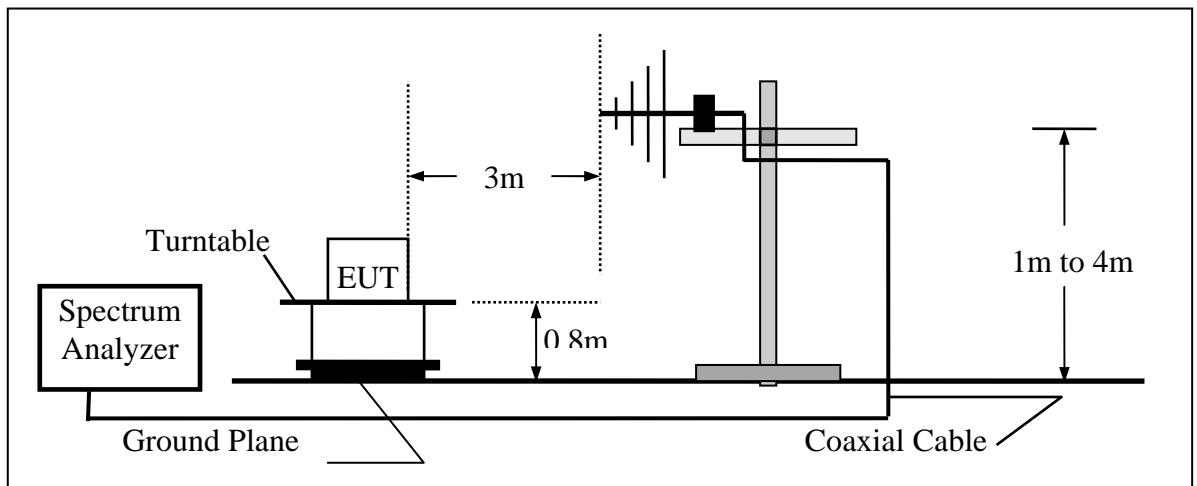
5. Radiated Emission Test

5.1 Measurement Procedure

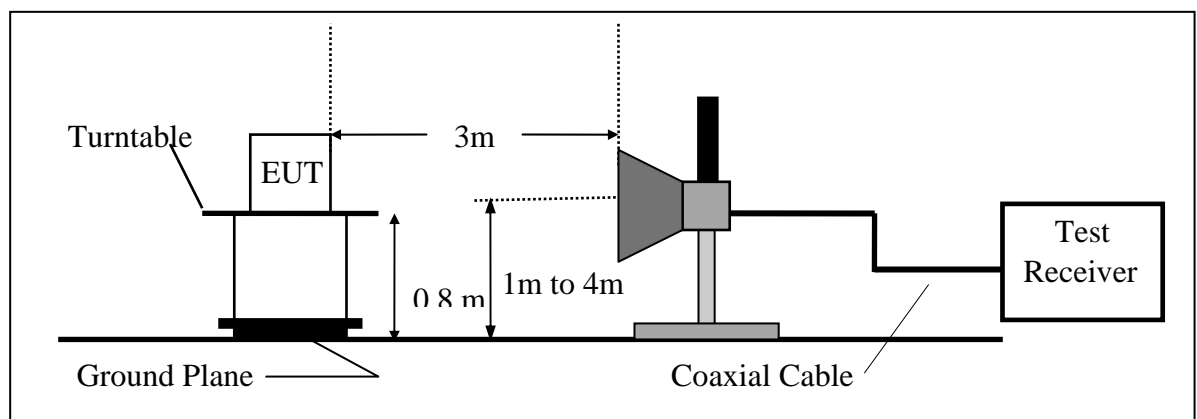
1. The EUT was placed on a turntable that is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measured were complete.

5.2 Test SET-UP (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(B) Radiated Emission Test Set-UP Frequency Over 1 GHz



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5.3 Measurement Equipment Used:

| 966 Chamber | | | | | |
|-------------------|--------------|---------------------|---------------|------------|------------|
| EQUIPMENT TYPE | MFR | MODEL NUMBER | SERIAL NUMBER | LAST CAL. | CAL DUE. |
| Spectrum Analyzer | Agilent | E4446A | MY43360126 | 03/29/2007 | 03/28/2008 |
| Spectrum Analyzer | Agilent | E7405A | US41160416 | 08/27/2007 | 08/26/2008 |
| Bilog Antenna | SCHWAZBECK | VULB9163 | 152 | 06/03/2007 | 06/02/2008 |
| Horn antenna | Schwarzbeck | BBHA 9120D | 309/320 | 08/16/2007 | 08/15/2008 |
| Horn antenna | Schwarzbeck | BBHA 9170 | 184/185 | 07/04/2007 | 07/03/2008 |
| Pre-Amplifier | HP | 8447D | 2944A09469 | 07/19/2007 | 07/18/2008 |
| Pre-Amplifier | HP | 8449B | 3008A00578 | 02/26/2007 | 02/25/2008 |
| Turn Table | HD | DT420 | N/A | N.C.R | N.C.R |
| Antenna Tower | HD | MA240-N | 240/657 | N.C.R | N.C.R |
| Controller | HD | HD100 | N/A | N.C.R | N.C.R |
| Low Loss Cable | HUBER+SUHNER | SUCOFLEX 104PEA-10M | 10m | 10/09/2007 | 10/08/2008 |
| Low Loss Cable | HUBER+SUHNER | SUCOFLEX 104PEA-3M | 3m | 10/09/2007 | 10/08/2008 |
| Site NSA | SGS | 966 chamber | N/A | 11/17/2007 | 11/16/2008 |

5.4 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 | |

5.5 Measurement Result

Radiated Spurious Emission Measurement Result (below 1GHz)

| | | | |
|-----------------------|-------------|-----------|---------------|
| Operation Mode | TX (X-axis) | Test Date | Jan. 22, 2008 |
| Fundamental Frequency | 919.8MHz | Test By | Jason |
| Temperature | 25 °C | Pol | Ver./Hor |
| Humidity | 65 % | | |

| Freq. (MHz) | Ant.Pol. H/V | Detector Mode (PK/QP) | Reading (dBuV) | Factor (dB) | Actual FS (dBuV/m) | Limit3m (dBuV/m) | Safe Margin (dB) |
|----------------|-----------------|-----------------------------|-------------------|----------------|-----------------------|---------------------|------------------------|
| 30.97 | V | Peak | 48.20 | -14.90 | 33.30 | 40.00 | -6.70 |
| 58.13 | V | Peak | 43.17 | -14.66 | 28.51 | 40.00 | -11.49 |
| 96.93 | V | Peak | 46.75 | -17.16 | 29.59 | 43.50 | -13.91 |
| 138.64 | V | Peak | 37.06 | -13.80 | 23.26 | 43.50 | -20.24 |
| 201.69 | V | Peak | 39.36 | -15.55 | 23.81 | 43.50 | -19.69 |
| 315.18 | V | Peak | 35.00 | -12.66 | 22.34 | 46.00 | -23.66 |
| 30.00 | H | Peak | 52.01 | -14.97 | 37.04 | 40.00 | -2.96 |
| 36.79 | H | Peak | 45.80 | -14.36 | 31.44 | 40.00 | -8.56 |
| 58.13 | H | Peak | 41.59 | -14.66 | 26.93 | 40.00 | -13.07 |
| 75.59 | H | Peak | 42.27 | -17.13 | 25.14 | 40.00 | -14.86 |
| 96.93 | H | Peak | 45.83 | -17.16 | 28.67 | 43.50 | -14.83 |
| 390.84 | H | Peak | 37.63 | -10.31 | 27.32 | 46.00 | -18.68 |

Remark :

- (1) Measuring frequencies from 30 MHz to the 1GHz °
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz, VBW=300KHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

| | | | |
|-----------------------|-------------|-----------|---------------|
| Operation Mode | TX (X-axis) | Test Date | Jan. 22, 2008 |
| Fundamental Frequency | 925MHz | Test By | Jason |
| Temperature | 25 °C | Pol | Ver./Hor |
| Humidity | 65 % | | |

| Freq. (MHz) | Ant.Pol. H/V | Detector Mode (PK/QP) | Reading (dBuV) | Factor (dB) | Actual FS (dBuV/m) | Limit3m (dBuV/m) | Safe Margin (dB) |
|----------------|-----------------|-----------------------------|-------------------|----------------|-----------------------|---------------------|------------------------|
| 36.79 | V | Peak | 50.11 | -14.36 | 35.75 | 40.00 | -4.25 |
| 56.19 | V | Peak | 49.81 | -14.63 | 35.18 | 40.00 | -4.82 |
| 80.44 | V | Peak | 47.87 | -17.84 | 30.03 | 40.00 | -9.97 |
| 96.93 | V | Peak | 47.88 | -17.16 | 30.72 | 43.50 | -12.78 |
| 169.68 | V | Peak | 45.42 | -13.97 | 31.45 | 43.50 | -12.05 |
| 206.54 | V | Peak | 46.28 | -15.39 | 30.89 | 43.50 | -12.61 |
| 30.00 | H | Peak | 51.99 | -14.97 | 37.02 | 40.00 | -2.98 |
| 36.79 | H | Peak | 45.99 | -14.36 | 31.63 | 40.00 | -8.37 |
| 58.13 | H | Peak | 43.47 | -14.66 | 28.81 | 40.00 | -11.19 |
| 75.59 | H | Peak | 41.44 | -17.13 | 24.31 | 40.00 | -15.69 |
| 96.93 | H | Peak | 45.86 | -17.16 | 28.70 | 43.50 | -14.80 |
| 237.58 | H | Peak | 37.65 | -14.22 | 23.43 | 46.00 | -22.57 |

Remark :

- (1) Measuring frequencies from 30 MHz to the 1GHz。
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz, VBW=300KHz.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode: TX (X-axis) Test Date : Jan. 22, 2008
 Fundamental Frequency: 919.8MHz Test By: Jason
 Temperature : 25 °C Pol: Vertical
 Humidity : 65 %

| Freq. (MHz) | Ant.Pol. H/V | Peak Reading (dBuV) | AV Reading (dBuV) | Factor (dB) | Actual Peak FS (dBuV/m) | Actual AV FS (dBuV/m) | Peak Limit at 3m (dBuV/m) | AV Limit at 3m (dBuV/m) | Margin (dB) | |
|-------------|--------------|---------------------|-------------------|-------------|-------------------------|-----------------------|---------------------------|-------------------------|-------------|---|
| 919.8 | V | 52.09 | -- | -1.04 | 51.05 | -- | 114.00 | 94.00 | -42.95 | F |
| 1839.6 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 2759.4 | V | 40.04 | -- | -0.19 | 39.85 | -- | 74.00 | 54.00 | -14.15 | H |
| 3679.2 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 4599.0 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 5518.8 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 6438.6 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 7358.4 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 8278.2 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 9198.0 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |

Remark :

- (1) Measuring frequencies from 30MHz to the 10th of fundamental frequency .
- (2) Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB
- (3) "F" denotes fundamental frequency; "H" denotes harmonics frequency. "S" denotes spurious frequency.
- (4) Datas of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) Spectrum Peak mode IF bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.
- (6) Spectrum AV mode IF B bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode: TX (X-axis) Test Date : Jan. 22, 2008
 Fundamental Frequency: 919.8MHz Test By: Jason
 Temperature : 25 °C Pol: Horizontal
 Humidity : 65 %

| Freq. (MHz) | Ant. Pol. H/V | Peak Reading (dBuV) | AV Reading (dBuV) | Factor (dB) | Actual Peak FS (dBuV/m) | Actual AV FS (dBuV/m) | Peak Limit at 3m (dBuV/m) | AV Limit at 3m (dBuV/m) | Margin (dB) | |
|-------------|---------------|---------------------|-------------------|-------------|-------------------------|-----------------------|---------------------------|-------------------------|-------------|---|
| 919.8 | H | 63.53 | -- | -1.04 | 62.49 | -- | 114.00 | 94.00 | -31.51 | F |
| 1839.6 | H | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 2759.4 | H | 45.48 | -- | -0.19 | 45.29 | -- | 74.00 | 54.00 | -8.71 | H |
| 3679.2 | H | 38.48 | -- | 2.66 | 41.14 | -- | 74.00 | 54.00 | -12.86 | H |
| 4599.0 | H | 35.52 | -- | 5.55 | 41.07 | -- | 74.00 | 54.00 | -12.93 | H |
| 5518.8 | H | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 6438.6 | H | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 7358.4 | H | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 8278.2 | H | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 9198.0 | H | -- | -- | | | -- | 74.00 | 54.00 | | H |

Remark:

- (1) Measuring frequencies from 30MHz to the 10th of fundamental frequency .
- (2) Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB
- (3) "F" denotes fundamental frequency; "H" denotes harmonics frequency. "S" denotes spurious frequency.
- (4) Datas of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) Spectrum Peak mode IF bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.
- (6) Spectrum AV mode IF B bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode: TX (X-axis)
 Fundamental Frequency: 925MHz
 Temperature : 25 °C
 Humidity : 65 %

Test Date : Jan. 22, 2008
 Test By: Jason
 Pol: Vertical

| Freq. (MHz) | Ant. Pol. H/V | Peak Reading (dBuV) | AV Reading (dBuV) | Factor (dB) | Actual Peak (dBuV/m) | Actual AV FS (dBuV/m) | Peak Limit at 3m (dBuV/m) | QP Limit at 3m (dBuV/m) | Margin (dB) | |
|-------------|---------------|---------------------|-------------------|-------------|----------------------|-----------------------|---------------------------|-------------------------|-------------|---|
| 925.0 | V | 58.64 | -- | -1.04 | 57.60 | -- | 114.00 | 94.00 | -36.40 | F |
| 1850.0 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 2775.0 | V | 39.44 | -- | -0.14 | 39.30 | -- | 74.00 | 54.00 | -14.70 | H |
| 3700.0 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 4625.0 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 5550.0 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 6475.0 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 7400.0 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 8325.0 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 9250.0 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |

Remark:

- (1) Measuring frequencies from 30MHz to the 10th of fundamental frequency .
- (2) Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB
- (3) "F" denotes fundamental frequency; "H" denotes harmonics frequency. "S" denotes spurious frequency.
- (4) Datas of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) Spectrum Peak mode IF bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.
- (6) Spectrum AV mode IF B bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode: TX (X-axis) Test Date : Jan. 22, 2008
 Fundamental Frequency: 925MHz Test By: Jason
 Temperature : 25 °C Pol: Horizontal
 Humidity : 65 %

| Freq. (MHz) | Ant.Pol. H/V | Peak | AV | Factor (dB) | Actual | Actual | Peak Limit | QP Limit | Margin (dB) | |
|----------------|-----------------|-------------------|-------------------|----------------|---------------------|-------------------|-------------------|-------------------|----------------|---|
| | | Reading (dBuV) | Reading (dBuV) | | Peak FS (dBuV/m) | AV FS (dBuV/m) | at 3m (dBuV/m) | at 3m (dBuV/m) | | |
| 925.0 | H | 70.41 | -- | -1.04 | 69.37 | -- | 114.00 | 94.00 | -24.63 | F |
| 1850.0 | H | 37.56 | -- | -4.28 | 33.28 | -- | 74.00 | 54.00 | -20.72 | H |
| 2775.0 | H | 45.09 | -- | -0.14 | 44.95 | -- | 74.00 | 54.00 | -9.05 | H |
| 3700.0 | H | 38.70 | -- | 2.65 | 41.35 | -- | 74.00 | 54.00 | -12.65 | H |
| 4625.0 | H | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 5550.0 | H | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 6475.0 | H | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 7400.0 | H | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 8325.0 | H | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 9250.0 | H | -- | -- | | | -- | 74.00 | 54.00 | | H |

Remark :

- (1) Measuring frequencies from 30MHz to the 10th of fundamental frequency .
- (2) Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB
- (3) “F” denotes fundamental frequency; “H” denotes harmonics frequency. “S” denotes spurious frequency.
- (4) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) Spectrum Peak mode IF bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.
- (6) Spectrum AV mode IF B bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode: TX (Y-axis)
 Fundamental Frequency: 925MHz
 Temperature : 25 °C
 Humidity : 65 %

Test Date : Jan. 22, 2008
 Test By: Jason
 Pol: Vertical

| Freq. (MHz) | Ant. Pol. H/V | Peak Reading (dBuV) | AV Reading (dBuV) | Factor (dB) | Actual Peak (dBuV/m) | Actual AV FS (dBuV/m) | Peak Limit at 3m (dBuV/m) | QP Limit at 3m (dBuV/m) | Margin (dB) | |
|-------------|---------------|---------------------|-------------------|-------------|----------------------|-----------------------|---------------------------|-------------------------|-------------|---|
| 925.0 | V | 70.55 | -- | -1.04 | 69.51 | -- | 94.00 | 94.00 | -24.49 | F |
| 1850.0 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 2775.0 | V | 46.27 | -- | -0.14 | 46.13 | -- | 74.00 | 54.00 | -7.87 | H |
| 3700.0 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 4625.0 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 5550.0 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 6475.0 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 7400.0 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 8325.0 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 9250.0 | V | -- | -- | | | -- | 74.00 | 54.00 | | H |

Remark:

- (1) Measuring frequencies from 30MHz to the 10th of fundamental frequency .
- (2) Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB
- (3) "F" denotes fundamental frequency; "H" denotes harmonics frequency. "S" denotes spurious frequency.
- (4) Datas of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) Spectrum Peak mode IF bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.
- (6) Spectrum AV mode IF B bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

| | | | |
|------------------------|-------------|-------------|---------------|
| Operation Mode: | TX (Y-axis) | Test Date : | Jan. 22, 2008 |
| Fundamental Frequency: | 925MHz | Test By: | Jason |
| Temperature : | 25 °C | Pol: | Horizontal |
| Humidity : | 65 % | | |

| Freq. (MHz) | Ant.Pol. H/V | Peak Reading (dBuV) | A V Reading (dBuV) | Factor (dB) | Actual Peak FS (dBuV/m) | Actual AV FS (dBuV/m) | Peak Limit at 3m (dBuV/m) | QP Limit at 3m (dBuV/m) | Margin (dB) | |
|-------------|--------------|---------------------|--------------------|-------------|-------------------------|-----------------------|---------------------------|-------------------------|-------------|---|
| 925.0 | H | 56.53 | -- | -1.04 | 55.49 | -- | 94.00 | 94.00 | -38.51 | F |
| 1850.0 | H | 39.63 | -- | -4.28 | 35.35 | -- | 74.00 | 54.00 | -18.65 | H |
| 2775.0 | H | 42.15 | -- | -0.14 | 42.01 | -- | 74.00 | 54.00 | -11.99 | H |
| 3700.0 | H | 39.64 | -- | 2.65 | 42.29 | -- | 74.00 | 54.00 | -11.71 | H |
| 4625.0 | H | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 5550.0 | H | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 6475.0 | H | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 7400.0 | H | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 8325.0 | H | -- | -- | | | -- | 74.00 | 54.00 | | H |
| 9250.0 | H | -- | -- | | | -- | 74.00 | 54.00 | | H |

Remark :

- (1) Measuring frequencies from 30MHz to the 10th of fundamental frequency .
- (2) Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB
- (3) “F” denotes fundamental frequency; “H” denotes harmonics frequency. “S” denotes spurious frequency.
- (4) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) Spectrum Peak mode IF bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.
- (6) Spectrum AV mode IF B bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

6. 26 dB Band Width Measurement

6.1 Measurement Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set ETU normal operating mode.
3. Set SPA Center Frequency = fundamental frequency, RBW, VBW = 100KHz, Span = 3MHz.
4. Set SPA Max hold. Mark peak, -26dB.

6.2 Test SET-UP (Block Diagram of Configuration)

Same as 4.2 Radiated Emission Measurement.

6.3 Measurement Equipment Used:

Same as 4.2 Radiated Emission Measurement.

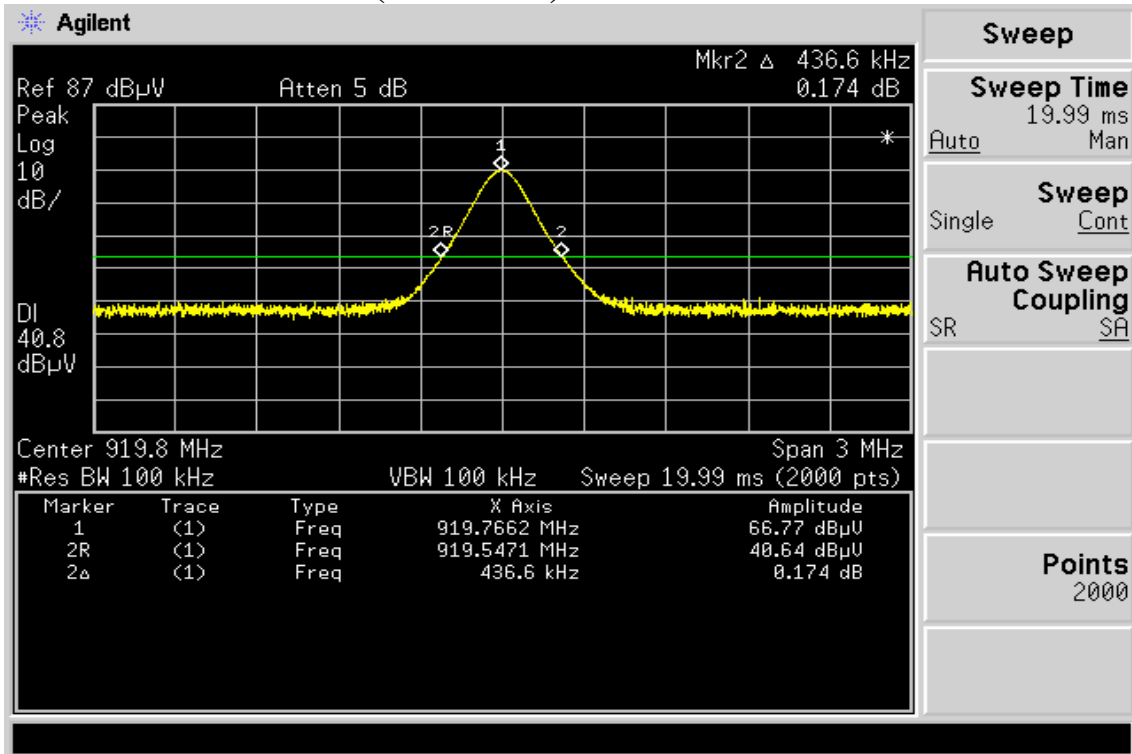
6.4 Measurement Results:

919.8 Channel = 436.6kHz

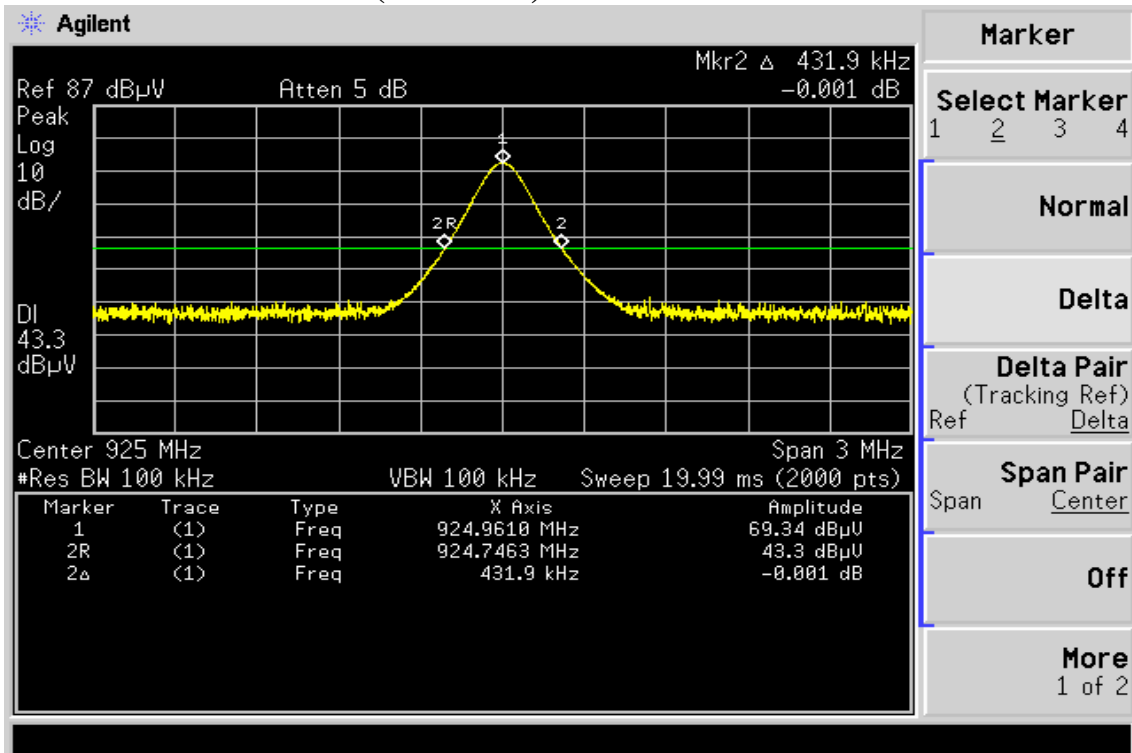
925Channel = 431.9kHz

Refer to attached data chart.

26dB Band Width test Plot (919.8MHz)



26dB Band Width test Plot (925 MHz)



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