

# FCC PART 90 TYPE APPROVAL EMI MEASUREMENT AND TEST REPORT

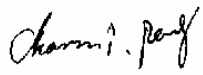
For

## Shenzhen HYT Science & Technology Co., Ltd

HYT Tower, Shenzhen Hi-Tech Industrial Park North, Beihuan Rd., Nanshan District, Shenzhen, P.R.C.

**FCC ID: R74TC-1688P**

May 15, 2006

|                                                                                                                                                                                                                                                     |                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| <b>This Report Concerns:</b><br><input checked="" type="checkbox"/> Original Report                                                                                                                                                                 | <b>Equipment Type:</b><br>Two-way radio |
| <b>Test Engineer:</b> Charmi Peng                                                                                                                                |                                         |
| <b>Report No.:</b> RSZ06042002                                                                                                                                                                                                                      |                                         |
| <b>Test Date:</b> May 11-15, 2006                                                                                                                                                                                                                   |                                         |
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approval, or endorsement by NVLAP, NIST or any agency of the US Government.

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## GENERAL INFORMATION

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### Product Description for Equipment Under Test (EUT)

The *Shenzhen HYT Science & Technology Co., Ltd's* product, model number: TC-1688P or the "EUT" as referred to in this report is a Two-way radio. The EUT is measured approximately 5 cm L x 3 cmW x 16 cmH, rated input voltage: DC 3.6 V battery.

*\* The test data gathered are from production sample, serial number: 0604037. Provided by the manufacturer, we received the EUT on 2006-4-20.*

### Objective

This Type approval report is prepared on behalf of *Shenzhen HYT Science & Technology Co., Ltd* in accordance with Part 2, and Part 90 of the Federal Communication Commissions rules.

### Related Submittal(s)/Grant(s)

No related submittal(s).

### Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of federal Regulations Title 47 Part 2, Sub-part J as well as the following individual parts:

Part 90 – Private Land Mobile Radio Service

Applicable Standards: TIA EIA 137-A, TIA EIA 98-C, TIA603-C and ANSI 63.4-2003, American National Standard for Method of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All emissions measurement was performed and Bay Area Compliance Lab Corp. (ShenZhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

### Test Facility

The Test site used by Bay Area Compliance Lab Corp. (ShenZhen) to collect test data is located in the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone, ShenZhen, Guangdong 518038, P.R.China.

Test site at Bay Area Compliance Lab Corp. (ShenZhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 04, 2004. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179 and Industrial Canada registration test site No.: 5500A. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Lab Corp. (ShenZhen) is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200707-0). The current scope of accreditations can be found at <http://ts.nist.gov/ts/htdocs/210/214/scopes/2007070.htm>

**Local Support Equipment List and Details**

| Manufacturer | Description     | Model  | Serial Number | FCC ID |
|--------------|-----------------|--------|---------------|--------|
| NANYAN       | Audio Generator | NY2201 | 007727        |        |

## **SYSTEM TEST CONFIGURATION**

---

### **Description of Test Configuration**

The system was configured for testing in a typical fashion (as normally used by a typical user).

### **Equipment Modifications**

Bay Area Compliance Lab Corp. (ShenZhen) has not done any modification on the EUT.

### Configuration of Test Setup



Lie

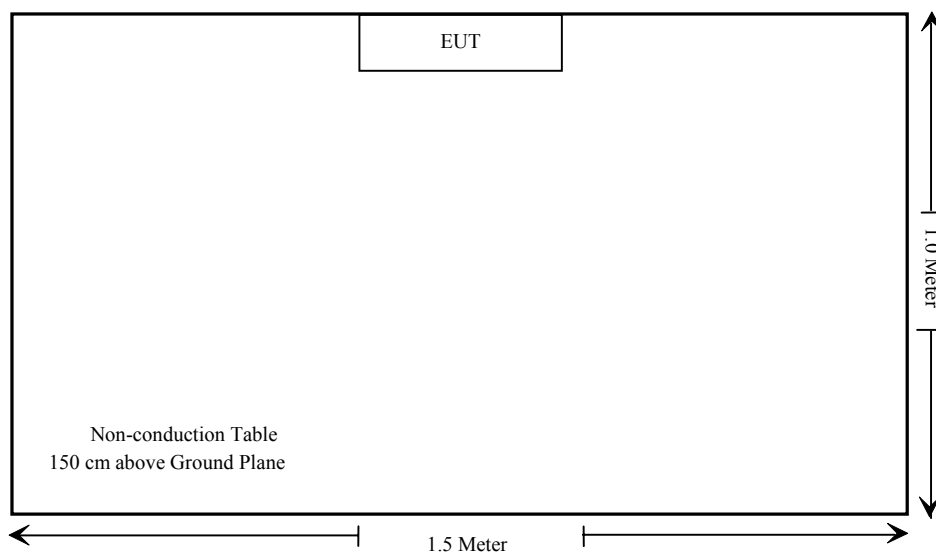


Side



Stand

### Block Diagram of Test Setup



**SUMMARY OF TEST RESULTS**

| FCC RULES            | DESCRIPTION OF TEST          | RESULT     |
|----------------------|------------------------------|------------|
| §1.1307              | RF Exposure                  | Compliant  |
| §2.1046,<br>§90.205  | RF Output Power              | Compliant  |
| §2.1047<br>§90.207   | Modulation Characteristic    | Compliant  |
| §2.1049,<br>§90.209  | Occupied Bandwidth           | Compliant  |
| §2.1053<br>§90.210   | Spurious Radiated Emissions  | Compliant* |
| § 2.1055<br>§ 90.213 | Frequency stability          | Compliant  |
| § 90.214             | Transient Frequency Behavior | Compliant  |

\* Within the measurement uncertainty

## §1.1307(b) (1) RF EXPOSURE

### Standard Applicable

According to § 1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to FCC Exclusion list, In the following table, fGHz is mid-band frequency in GHz, and d is the distance to a person's body, excluding hands, wrists, feet, and ankles.

| Exposure category  | <u>low threshold</u>                                                                                              | <u>high threshold</u>                                 |
|--------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| general population | $(60/f_{\text{GHz}}) \text{ mW}, d < 2.5 \text{ cm}$<br>$(120/f_{\text{GHz}}) \text{ mW}, d \geq 2.5 \text{ cm}$  | $(900/f_{\text{GHz}}) \text{ mW}, d < 20 \text{ cm}$  |
| occupational       | $(375/f_{\text{GHz}}) \text{ mW}, d < 2.5 \text{ cm}$<br>$(900/f_{\text{GHz}}) \text{ mW}, d \geq 2.5 \text{ cm}$ | $(2250/f_{\text{GHz}}) \text{ mW}, d < 20 \text{ cm}$ |

Routine SAR evaluation refers to that specifically required by § 2.1093, using measurements or computer simulation. When routine SAR evaluation is not required, portable transmitters with output power greater than the applicable low threshold require SAR evaluation to qualify for TCB approval.

### Measurement Result:

This is a portable device and the Max peak output power is  $179\text{mW} < 1616\text{mW} = (375/0.464\text{GHz})\text{mW} \times 2$

**The SAR measurement is not necessary.**

## §2.1046, and §90.205 - RF OUTPUT POWER

### Applicable Standard

According to FCC §2.1046, and §90.205, maximum ERP is dependent upon the station's antenna HAAT and required service area.

### Test Equipment List and Details

| Manufacturer   | Description       | Model       | Serial Number | Calibration Date | Calibration Due Date |
|----------------|-------------------|-------------|---------------|------------------|----------------------|
| SUNOL SCIENCES | Horn Antenna      | DRH-118     | A052604       | 2005-7-20        | 2006-7-20            |
| SUNOL SCIENCES | Broadband Antenna | JB1         | A040904-1     | 2006-4-28        | 2007-4-28            |
| SUNOL SCIENCES | Broadband Antenna | JB1         | A040904-2     | 2006-4-28        | 2007-4-28            |
| Agilent        | Spectrum Analyzer | 8564E       | 3943A01781    | 2005-12-8        | 2006-12-08           |
| HP             | Signal Generator  | HP8657A     | 2849U00982    | 2006-2-28        | 2007-2-28            |
| Giga-tronics   | Signal Generator  | 1026        | 270801        | 2006-2-28        | 2007-2-28            |
| A.H. System    | Horn Antenna      | SAS-200/571 | 135           | 2006-4-28        | 2007-4-28            |

\* **Statement of Tractability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed per the NVLAP requirements, traceable to NIST.

### Test Procedure

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load, which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to teeth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = 10 lg (TXpwr in Watts/0.001)-the absolute level

Spurious attenuation limit in dB = 50 + 10 Log<sub>10</sub> (power out in Watts) for EUT with a 12.5 KHz channel bandwidth.

**Test Data****Environmental Conditions**

|                    |          |
|--------------------|----------|
| Temperature:       | 25 ° C   |
| Relative Humidity: | 50%      |
| ATM Pressure:      | 1005mbar |

*The testing was performed by Charmi Peng on 2006-5-11.*

Test Result: Pass

*Test Mode: Transmitting*

| Indicated     |             | Table        | Test Antenna |           | Substituted   |           |           | Antenna Gain Correction | Cable Loss dB | Absolute Level | FCC            |
|---------------|-------------|--------------|--------------|-----------|---------------|-----------|-----------|-------------------------|---------------|----------------|----------------|
| Frequency MHz | Ampl dBuV/m | Angle Degree | Height Meter | Polar H/V | Frequency MHz | Level dBm | Polar H/V |                         |               | dBm            | Output power W |
| CH2           |             |              |              |           |               |           |           |                         |               |                |                |
| 464.5125      | 97.61       | 270          | 1.0          | H         | 464.5125      | 22.3      | H         | 0                       | 5.07          | 17.23          | 0.053          |
| 464.5125      | 107.74      | 45           | 1.2          | V         | 464.5125      | 27.6      | V         | 0                       | 5.07          | 22.53          | 0.179          |

**§2.1047, and §90.207 - MODULATION CHARACTERISTIC****Applicable Standard**

§2.1047 &amp; §90.207:

- (a) Equipment which utilizes voice modulated communication shall show the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz. for equipment which is required to have a low pass filter, the frequency response of the filter, or all of the circuitry installed between the modulation limited and the modulated stage shall be supplied.
- (b) Equipment which employs modulation limiting, a curve showing the percentage of modulation versus the modulation input voltage shall be supplied.

**Test Equipment List and Details**

| Manufacturer  | Description         | Model  | Serial Number | Calibration Date | Calibration Due Date |
|---------------|---------------------|--------|---------------|------------------|----------------------|
| Rohde&Schwarz | Spectrum Analyzer   | FSEM30 | 849720/019    | 2005-12-21       | 2006-12-21           |
| HP            | Modulation Analyzer | 8901B  | 3438A05208    | 2006-2-28        | 2007-2-28            |
| NANYAN        | Audio Generator     | NY2201 | 019829        | 2005-12-23       | 2006-12-23           |

\* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

**Test Procedure**

Test Method: TIA/EIA-603 2.2.3

**Test Data****Environmental Conditions**

|                    |          |
|--------------------|----------|
| Temperature:       | 25 ° C   |
| Relative Humidity: | 50%      |
| ATM Pressure:      | 1005mbar |

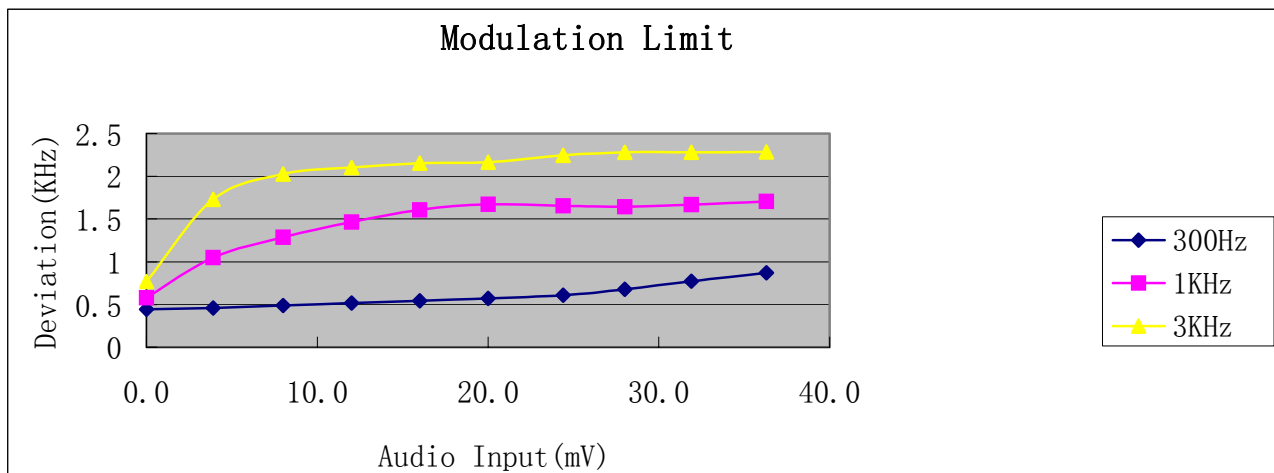
*The testing was performed by Charmi Peng on 2006-5-11.*

Test Result: Pass

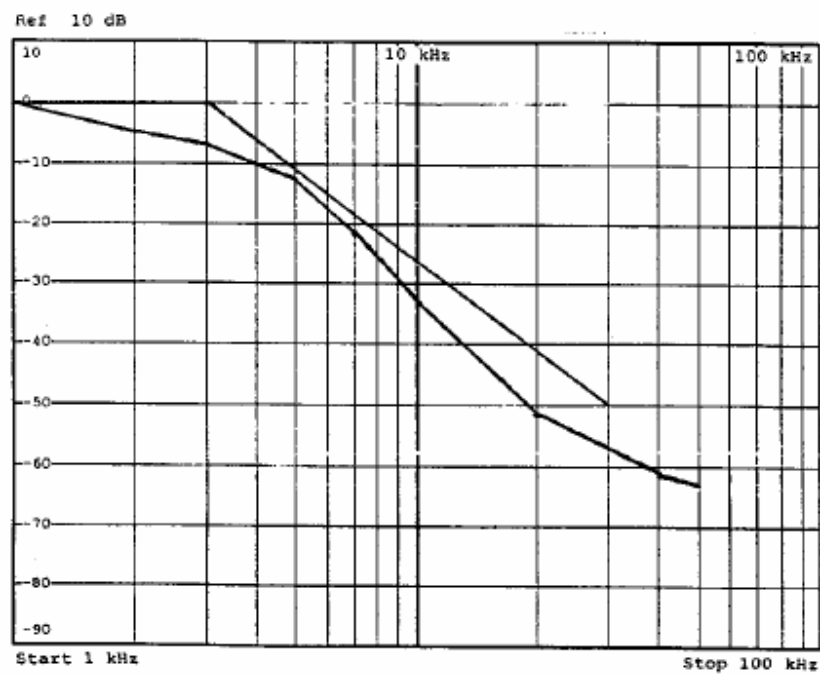
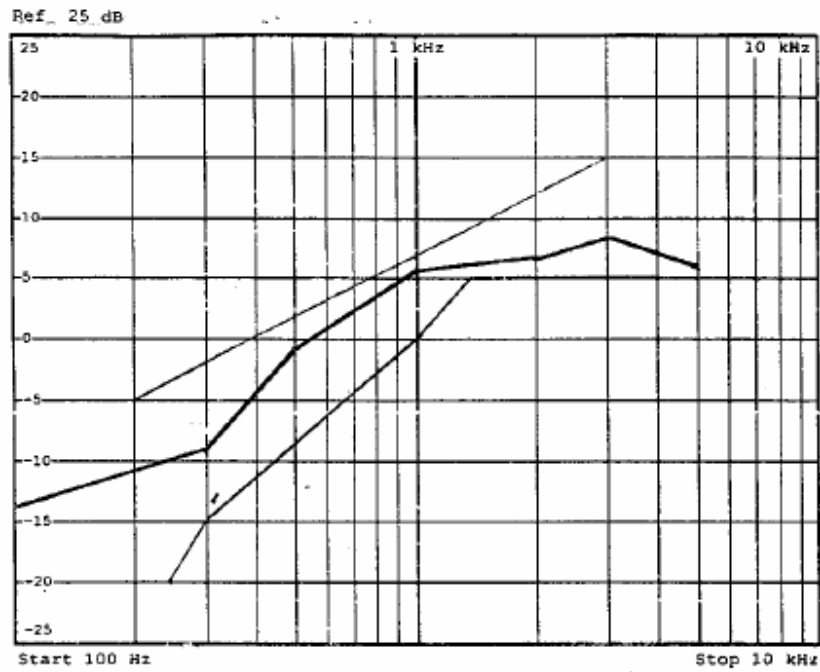
*Test Mode: Transmitting*

For 12.5 kHz Channel Bandwidth:

| Audio Input (mV) | 300Hz Deviation (kHz) | 1kHz Deviation (kHz) | 3kHz Deviation (kHz) |
|------------------|-----------------------|----------------------|----------------------|
| 0.0              | 0.443                 | 0.581                | 0.768                |
| 4.0              | 0.459                 | 1.051                | 1.732                |
| 8.0              | 0.489                 | 1.288                | 2.027                |
| 12.0             | 0.519                 | 1.465                | 2.101                |
| 16.0             | 0.542                 | 1.607                | 2.152                |
| 20.0             | 0.571                 | 1.671                | 2.165                |
| 24.0             | 0.608                 | 1.653                | 2.246                |
| 28.0             | 0.678                 | 1.645                | 2.283                |
| 32.0             | 0.772                 | 1.669                | 2.282                |
| 36.0             | 0.871                 | 1.705                | 2.284                |



## Audio Low Filter Characteristic



## **§2.1049, and § 90.209 – OCCUPIED BANDWIDTH**

### **Applicable Standard**

§2.1049, §90.209 and §90.210

Emission Mask D—12.5 kHz channel bandwidth equipment. For transmitters designed to operate with a 12.5 kHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

- 1) For any frequency removed from the center of the authorized bandwidth  $f_0$  to 5.625kHz removed from  $f_0$ , 0dB.
- 2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency ( $f_d$  in kHz) of more than 5.626kHz but no more than 12.5kHz, at least 7.27 ( $f_d - 2.88$ kHz) dB.
- 3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency ( $f_d$  in kHz) of more than 12.5kHz at least:

$$50 + 10 \log P = 50 + 10 \log(0.87) = 49.40 \text{ dB}$$

### **Test Equipment List and Details**

| Manufacturer  | Description         | Model  | Serial Number | Calibration Date | Calibration Due Date |
|---------------|---------------------|--------|---------------|------------------|----------------------|
| Rohde&Schwarz | EMI Test Receiver   | ESCI   | 100035        | 2005-8-17        | 2006-8-17            |
| HP            | Modulation Analyzer | 8901B  | 3438A05208    | 2006-2-28        | 2007-2-28            |
| NANYAN        | Audio Generator     | NY2201 | 019829        | 2005-12-23       | 2006-12-23           |

\* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

## Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

The resolution bandwidth of the spectrum analyzer was set at 300 Hz and the spectrum was recorded in the frequency band  $\pm 50$  KHz from the carrier frequency.

## Test Data

### Environmental Conditions

|                    |          |
|--------------------|----------|
| Temperature:       | 25 ° C   |
| Relative Humidity: | 50%      |
| ATM Pressure:      | 1005mbar |

*The testing was performed by Charmi Peng on 2006-5-11.*

Test Result: Pass.

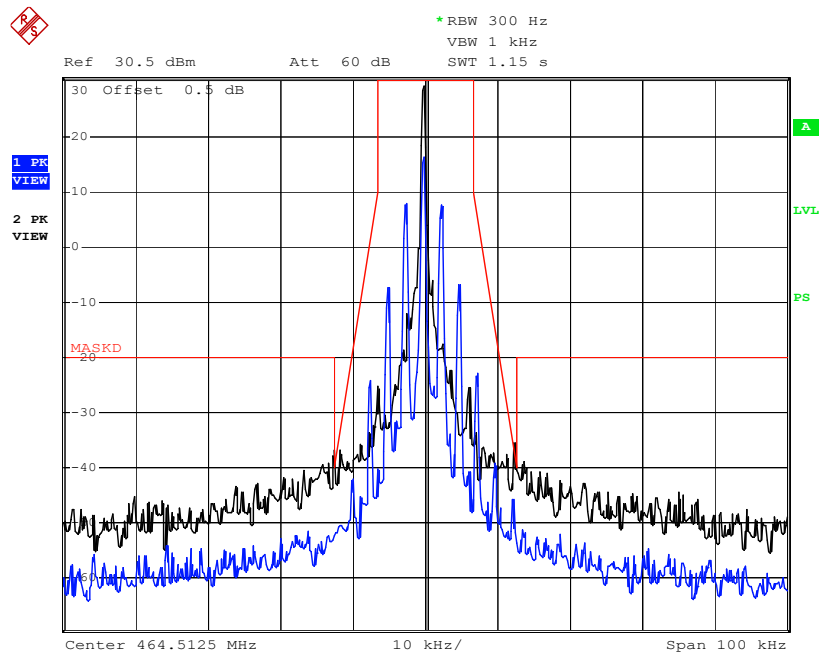
*Test Mode: Transmitting*

Please refer to the hereinafter plots.

Emission Designator:

For 12.5KHz Channel Spacing:  $2M+2D = 2x3+2x2.5 = 11K0F3E$

## Emission Mask D for 12.5 KHz Channel Bandwidth



HYT Two-way radio M/N:TC-1688P Emission mask Narrowband Mask

D

Date: 11.MAY.2006 14:18:27

## §2.1053 and §90.210 - RADIATED SPURIOUS EMISSION

### Applicable Standard

§2.1053 and §90.210

### Test Equipment List and Details

| Manufacturer   | Description       | Model       | Serial Number | Calibration Date | Calibration Due Date |
|----------------|-------------------|-------------|---------------|------------------|----------------------|
| SUNOL SCIENCES | Horn Antenna      | DRH-118     | A052604       | 2005-7-20        | 2006-7-20            |
| SUNOL SCIENCES | Broadband Antenna | JB1         | A040904-1     | 2006-4-28        | 2007-4-28            |
| SUNOL SCIENCES | Broadband Antenna | JB1         | A040904-2     | 2006-4-28        | 2007-4-28            |
| Agilent        | Spectrum Analyzer | 8564E       | 3943A01781    | 2005-12-08       | 2006-12-08           |
| HP             | Signal Generator  | HP8657A     | 2849U00982    | 2006-2-28        | 2007-2-28            |
| Giga-tronics   | Signal Generator  | 1026        | 270801        | 2006-2-28        | 2007-2-28            |
| A.H. System    | Horn Antenna      | SAS-200/571 | 135           | 2006-4-28        | 2007-4-28            |

\* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

### Test Procedure

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load, which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to teeth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = 10 lg (TXpwr in Watts/0.001)-the absolute level

Spurious attenuation limit in dB = 50 + 10 Log<sub>10</sub> (power out in Watts) for EUT with a 12.5KHz channel bandwidth.

### Test Results Summary

*For Narrowband 12.5 kHz:* -1.63 dB at 1858.05 MHz,

**Test Data****Environmental Conditions**

|                    |          |
|--------------------|----------|
| Temperature:       | 25 ° C   |
| Relative Humidity: | 50%      |
| ATM Pressure:      | 1005mbar |

The testing was performed by Simon Mo on 2006-5-11.

Test Mode: Transmitting

For Narrowband 12.5 kHz:

| Indicated     |             | Table        | Test Antenna |           | Substituted   |           |           | Antenna Gain Correction | Cable Loss dB | Absolute Level | FCC       |        |
|---------------|-------------|--------------|--------------|-----------|---------------|-----------|-----------|-------------------------|---------------|----------------|-----------|--------|
| Frequency MHz | Ampl dBuV/m | Angle Degree | Height Meter | Polar H/V | Frequency MHz | Level dBm | Polar H/V |                         |               | dBm            | Limit dBm | Margin |
| CH2           |             |              |              |           |               |           |           |                         |               |                |           |        |
| 1858.05       | 78.17       | 60           | 1.2          | V         | 1858.05       | -17.3     | V         | 6.1                     | 0.43          | -21.63         | -20       | -1.63* |
| 929.025       | 50.32       | 45           | 1.0          | V         | 929.025       | -11.3     | V         | 0                       | 7.62          | -21.92         | -20       | -1.92* |
| 1393.5375     | 83.83       | 45           | 1.0          | V         | 1393.5375     | -28.1     | V         | 6.5                     | 0.33          | -21.93         | -20       | -1.93* |
| 3251.5875     | 74.50       | 45           | 1.0          | H         | 3251.5875     | -30.2     | H         | 6.9                     | 0.57          | -23.87         | -20       | -3.87* |
| 3716.1        | 73.67       | 60           | 1.2          | H         | 3716.1        | -30.4     | H         | 6.6                     | 0.67          | -24.47         | -20       | -4.47  |
| 3251.5875     | 72.50       | 60           | 1.0          | V         | 3251.5875     | -31.0     | V         | 6.9                     | 0.57          | -24.67         | -20       | -4.67  |
| 4180.6125     | 69.50       | 35           | 3.0          | H         | 4180.6125     | -32.5     | H         | 7.0                     | 0.64          | -26.14         | -20       | -6.14  |
| 1858.05       | 79.50       | 45           | 1.2          | H         | 1858.05       | -32.4     | H         | 6.1                     | 0.43          | -26.73         | -20       | -6.73  |
| 2322.5625     | 71.50       | 90           | 1.0          | V         | 2322.5625     | -36.0     | V         | 7.0                     | 0.32          | -29.32         | -20       | -9.32  |
| 1393.5375     | 76.17       | 60           | 1.0          | H         | 1393.5375     | -36.0     | H         | 6.5                     | 0.33          | -29.83         | -20       | -9.83  |
| 929.025       | 42.08       | 90           | 1.0          | H         | 929.025       | -22.9     | H         | 0                       | 7.62          | -30.52         | -20       | -10.52 |
| 4180.6125     | 65.67       | 180          | 1.2          | V         | 4180.6125     | -38.4     | V         | 7.0                     | 0.64          | -32.04         | -20       | -12.04 |
| 2787.075      | 67.83       | 180          | 1.0          | V         | 2787.075      | -39.3     | V         | 7.4                     | 0.51          | -32.41         | -20       | -12.41 |
| 3716.1        | 67.00       | 45           | 1.2          | V         | 3716.1        | -39.4     | V         | 6.6                     | 0.67          | -33.47         | -20       | -13.47 |
| 2787.075      | 64.00       | 45           | 1.0          | H         | 2787.075      | -42.8     | H         | 7.4                     | 0.51          | -35.91         | -20       | -15.91 |
| 2322.5625     | 65.17       | 180          | 1.2          | H         | 2322.5625     | -43.2     | H         | 7.0                     | 0.32          | -36.52         | -20       | -16.52 |
| 4645.125      | 53.83       | 35           | 1.0          | H         | 4645.125      | -52.3     | H         | 8.3                     | 0.68          | -44.68         | -20       | -24.68 |
| 4645.125      | 51.33       | 45           | 1.0          | V         | 4645.125      | -55.7     | V         | 8.3                     | 0.68          | -48.08         | -20       | -28.08 |

\* Within measurement uncertainty.

**§2.1055 (d) and §90.213- FREQUENCY STABILITY****Applicable Standard**

§2.1055 (d)

§90.213

For output power &gt; 2 watts, the limit is 5.0ppm.

**Test Equipment List and Details**

| Manufacturer    | Description       | Model  | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-------------------|--------|---------------|------------------|----------------------|
| NANYAN          | Audio Generator   | NY2201 | 019829        | 2005-12-23       | 2006-12-23           |
| Hewlett-Packard | Frequency Counter | 5342A  | 2317A08289    | 2006-1-26        | 2007-1-26            |

\* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

**Test Procedure**

Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to a f Spectrum Analyzer via feed-through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable exited the chamber through an opening made for the purpose.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the Spectrum Analyzer.

Frequency Stability vs. Voltage: An external variable DC power supply Source. The voltage was set to 115% of the nominal value and was then decreased until the transmitter light no longer illuminated; i.e., the end point. The output frequency was recorded for each voltage.

**Test Data****Environmental Conditions**

|                    |          |
|--------------------|----------|
| Temperature:       | 25 ° C   |
| Relative Humidity: | 50%      |
| ATM Pressure:      | 1005mbar |

*The testing was performed by Charmi Peng on 2006-5-11.*

Test Result: Pass

*Test Mode: Transmitting*

| Reference Frequency: 464.5125 MHz, Limit: 2.5 ppm |                         |                                     |           |
|---------------------------------------------------|-------------------------|-------------------------------------|-----------|
| Environment Temperature<br>(°C)                   | Power Supplied<br>(Vdc) | Frequency Measure with Time Elapsed |           |
|                                                   |                         | MCF (MHz)                           | PPM Error |
| 50                                                | 3.6                     | 464.5122                            | -0.65     |
| 40                                                | 3.6                     | 464.5124                            | -0.22     |
| 30                                                | 3.6                     | 464.5125                            | 0.00      |
| 20                                                | 3.6                     | 464.5125                            | 0.00      |
| 10                                                | 3.6                     | 464.5124                            | -0.22     |
| 0                                                 | 3.6                     | 464.5123                            | -0.43     |
| -10                                               | 3.6                     | 464.5122                            | -0.65     |
| -20                                               | 3.6                     | 464.5122                            | -0.65     |
| -30                                               | 3.6                     | 464.5121                            | -0.86     |

*Frequency Stability versus Input Voltage*

| Reference Frequency: 462.6625 MHz, Limit: 2.5 ppm |                                     |           |
|---------------------------------------------------|-------------------------------------|-----------|
| Power Supplied<br>(Vdc)                           | Frequency Measure with Time Elapsed |           |
|                                                   | Frequency (MHz)                     | PPM Error |
| 3.06                                              | 464.5124                            | -0.22     |

**§90.214 - TRANSIENT FREQUENCY BEHAVIOR****Applicable Standard**

§90.214

**Test Equipment List and Details**

| Manufacturer | Description                   | Model    | Serial Number | Calibration Date | Calibration Due Date |
|--------------|-------------------------------|----------|---------------|------------------|----------------------|
| TEKTRONIX    | Digital Phosphor Oscilloscope | TDS 7104 | B020518       | 2006-1-24        | 2007-1-24            |
| HP           | Modulation Analyzer           | 8901B    | 3438A05208    | 2006-2-28        | 2007-2-28            |
| HP           | Signal Generator              | HP8657A  | 2849U00982    | 2006-2-28        | 2007-2-28            |

\* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

**Test Procedure**

TIA/EIA-603 2.2.19

**Test Data****Environmental Conditions**

|                    |          |
|--------------------|----------|
| Temperature:       | 25 ° C   |
| Relative Humidity: | 50%      |
| ATM Pressure:      | 1005mbar |

*The testing was performed by Charmi Peng on 2006-5-15.*

Test Result: Pass

*Test Mode: Transmitting*

For Narrowband

| Operation Frequency (MHz) | Channel Separation (kHz) | Transient Period (ms) | Transient Frequency | Result |
|---------------------------|--------------------------|-----------------------|---------------------|--------|
| 464.5125                  | 12.5                     | 10                    | <+/-12.5 kHz        | Pass   |
|                           |                          | 25                    | <+/-6.25 kHz        |        |
|                           |                          | 10                    | <+/-12.5 kHz        |        |

Turn on



Turn off

