



# Test Report

For

**Applicant** : TRANWO TECHNOLOGY CORP.

**Equipment Type** : GigaAir (Transmitter)

**Model** : GigaAir 10T

**FCC ID** : O6LGIGAAIR-10T

**Report No. :** 007H029FI



# Test Report Certification

## QuieTek Corporation

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Accredited by NIST(NVLAP), VCCI, BSMI, DNV, TUV

Applicant : TRANWO TECHNOLOGY CORP.  
Address : 2F, No.45, Shian Jeng 2nd Rd., Jubei City, Hsinchu, Taiwan,  
R.O.C.  
Equipment Type : GigaAir (Transmitter)  
Model : GigaAir 10T  
FCC ID. : O6LGIGAAIR-10T  
Measurement Standard : FCC Part 15 Subpart C Paragraph 15.249  
Measurement Procedure : ANSI C63.4 /1992  
Operation Voltage : 120VAC/60Hz  
Test Result : Complied  
Test Date : August 1, 2000  
Report No. : 007H029FI



The Test Results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Documented by: Kim Hung

Test Engineer: Sean Chang

Approved: Gene Chang

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Handwritten signature of Sean Chang in black ink.

Handwritten signature of Gene Chang in black ink.



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## 1. General Information

### 1.1 EUT Description

Applicant : TRANWO TECHNOLOGY CORP.  
Address : 2F, No.45, Shian Jeng 2nd Rd., Jubei City,  
Hsinchu, Taiwan, R.O.C.  
Equipment Type : GigaAir (Transmitter)  
Model : GigaAir 10T  
FCC ID : O6LGIGAAIR-10T  
Operation Voltage : 120VAC/60Hz  
Frequency Range : 2412 MHz to 2473MHz  
Channel Number : 4  
Frequency of each Channel : Channel 1: 2434MHz, Channel 2: 2453MHz,  
Working Frequency Channel 3: 2473MHz, Channel 4: 2412MHz  
Type of Modulation : FM  
Operator Selection of : Manual Switch  
Operating Frequency  
RCA Cable : Non-shielded, 1.5m  
Power Adapter : AHEAD, MW35-090030  
Cable Out: Non-shielded, 1.8m

- Remark :
1. This device is a 2.4GHz Wireless AV Sender included a 2.4GHz transmitting function.
  2. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.249 for non-spread spectrum devices.
  3. This device is a composite device in accordance with Part 15 regulations. The function receiving was, measured and made a test report that the report number is 007H029F under Verification.



## 1.2 Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards ) are:

### 1.2.1 GigaAir (Transmitter)(EUT)

Model Number : GigaAir 10T  
Serial Number : N/A  
FCC ID : O6LGIGAAIR-10T  
Manufacturer : TRANWO TECHNOLOGY CORP.  
RCA Cable : Non-shielded, 1.5m  
Power Adapter : AHEAD, MW35-090030  
Cable Out: Non-shielded, 1.8m

### 1.2.2 GigaAir(RX)

Model Number : GigaAir 10R  
Serial Number : N/A  
FCC ID : Verification  
Manufacturer : TRANWO TECHNOLOGY CORP.  
RCA Cable : Non-shielded, 1.5m  
Power Adapter : AHEAD, MW35-090030  
Cable Out: Non-shielded, 1.8m

### 1.2.3 Television

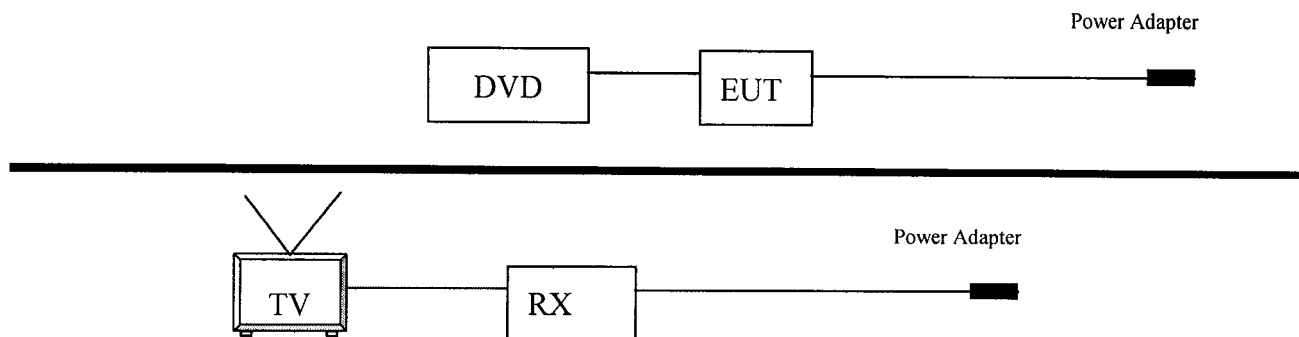
Model Number : PVM-14M2U  
Serial Number : 2018559  
FCC ID : DoC  
Manufacturer : SONY  
Power Cord : Non-Shielded, 1.8m

### 1.2.4 DVD

Model Number : DVP-K800D  
Serial Number : 960E411  
FCC ID : AN06282  
Manufacturer : SONY  
Data Cable(S) : Shielded, 1.2m  
Power Cord : Non-Shielded, 1.8m



### 1.3 EUT Configuration



### 1.4 EUT Exercise Software

The EUT exercise program used during conducted testing was designed to exercise the EUT in a manner similar to a typical use. The exercise sequence is listed as below:

- 1.4.1 Setup the EUT and display as shown on 1.3.
- 1.4.2 Turn on the power of all equipment.
- 1.4.3 The EUT will transmit the radio signal from transmitter.
- 1.4.4 Repeat the above procedure 1.4.2 to 1.4.3

### 1.5 Test performed

Conducted emissions were investigated over the frequency range from **0.15MHz to 30MHz** using a receiver bandwidth of 9kHz.

Radiated emissions were investigated over the frequency range from **30MHz to 1000MHz** using a receiver bandwidth of 120kHz and the frequency range from **1GHz to 24GHz** using a receiver bandwidth of 1MHz.

Radiated testing was performed at an antenna to EUT distance of 3 meters.

## 1.6 Test Facility

Ambient conditions in the laboratory:

| Items                      | Required (IEC 68-1) | Actual   |
|----------------------------|---------------------|----------|
| Temperature (°C)           | 15-35               | 20-35    |
| Humidity (%RH)             | 25-75               | 50-65    |
| Barometric pressure (mbar) | 860-1060            | 950-1000 |

Site Description: November 3, 1998 File on  
Federal Communications Commission  
FCC Engineering Laboratory  
7435 Oakland Mills Road  
Columbia, MD 21046  
Reference 31040/SIT1300F2



September 30, 1998 Accreditation on NVLAP  
NVLAP Lab Code: 200347-0

February 23, 1999 Accreditation on DNV  
Statement No. : 413-99-LAB11



December 8, 1998 Registration on VCCI  
Registration No. for No.2 Shielded Room C-858  
Registration No. for No.1 Open Area Test Site R-823  
Registration No. for No.2 Open Area Test Site R-835



January 04, 1999 Accreditation on TÜV Rheinland  
Certificate No.: I9865712-9901



Name of firm : QuieTek Corporation

Site location : No.75-1, Wang-Yeh Valley, Yung-Hsing Tsuen,  
Chiung-Lin, Hsin-Chu County, Taiwan, R.O.C.



## 2. Conducted Emission

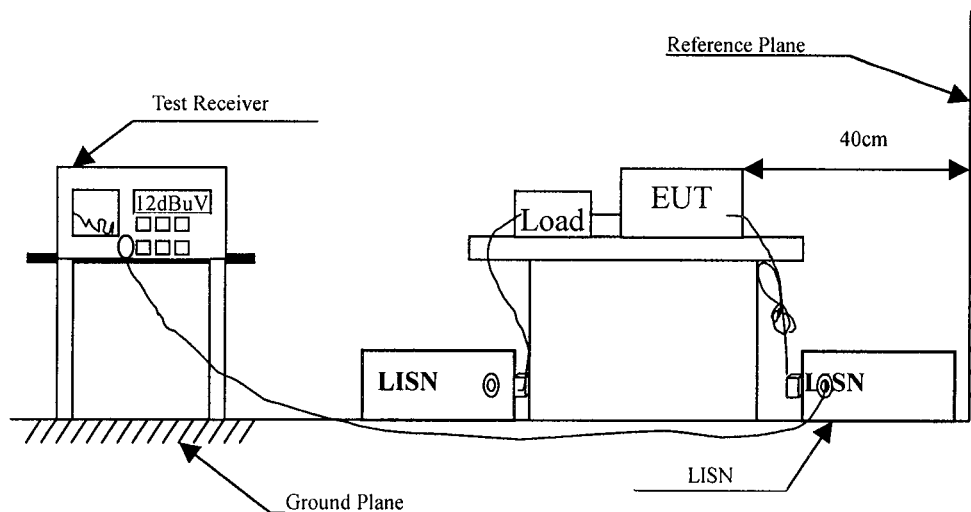
### 2.1 Test Equipment List

The following test equipment are used during the conducted emission test:

| Item | Instrument         | Manufacturer | Type No./Serial No | Last Cal. | Remark      |
|------|--------------------|--------------|--------------------|-----------|-------------|
| 1    | Test Receiver      | R & S        | ESCS 30/825442/17  | May, 2000 |             |
| 2    | L.I.S.N.           | R & S        | ESH3-Z5/825016/6   | May, 2000 | EUT         |
| 3    | L.I.S.N.           | Kyoritsu     | KNW-407/8-1420-3   | May, 2000 | Peripherals |
| 4    | Pulse Limiter      | R & S        | ESH3-Z2            | N/A       |             |
| 5    | N0.2 Shielded Room |              |                    | N/A       |             |

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

### 2.2 Test Setup



### 2.3 Limits

| FCC Part 15 Paragraph 15.207 (dBuV) |        |      |
|-------------------------------------|--------|------|
| Frequency<br>MHz                    | Limits |      |
|                                     | uV     | dBuV |
| 0.45 - 30                           | 250    | 48.0 |

## 2.4 Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4 /1992 on conducted measurement.

The bandwidth of the field strength meter (R & S Test Receiver ESCS 30) is set at 9kHz.

## 2.5 Test Results

The conducted emission from the EUT is measured and shown in Attachment 1. The acceptance criterion was met and the EUT passed the test.



### 3. Radiated Emission

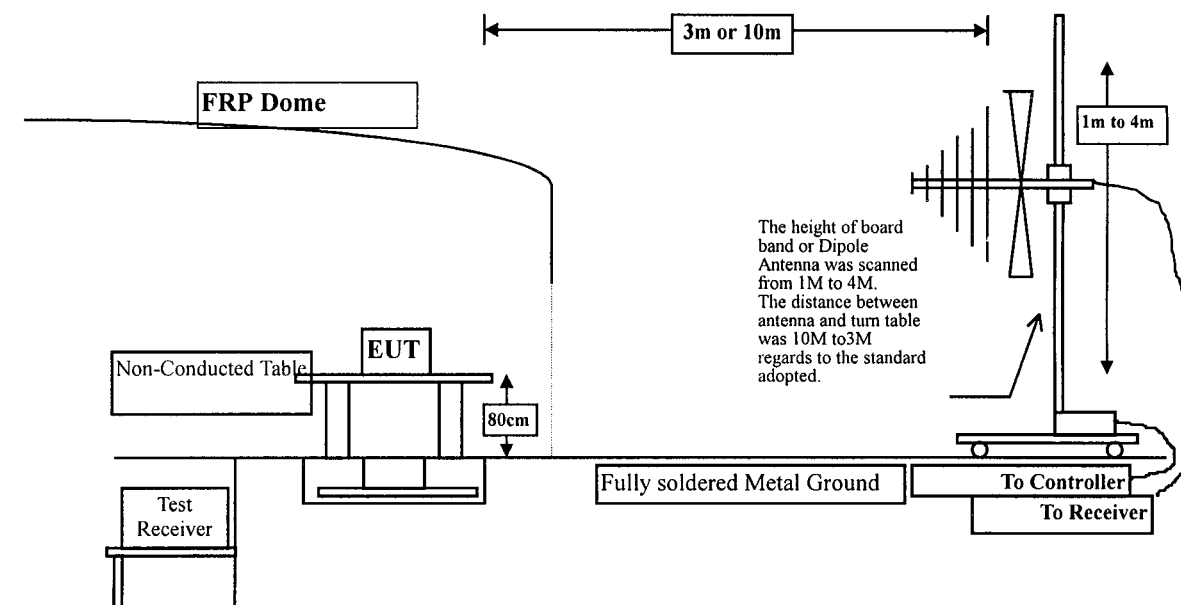
#### 3.1 Test Equipment

The following test equipment are used during the radiated emission test:

| Test Site |   | Equipment         | Manufacturer | Model No./Serial No. | Last Cal.  |
|-----------|---|-------------------|--------------|----------------------|------------|
| Site # 1  | X | Test Receiver     | R & S        | ESCS 30 / 825442/14  | May, 2000  |
|           |   | Spectrum Analyzer | Advantest    | R3261C / 71720140    | May, 2000  |
|           |   | Pre-Amplifier     | HP           | 8447D/3307A01812     | May, 2000  |
|           | X | Bilog Antenna     | Chase        | CBL6112B / 12452     | Sep., 1999 |
|           | X | Horn Antenna      | EM           | EM6917 / 103325      | May, 2000  |
| Site # 2  | X | Test Receiver     | R & S        | ESCS 30 / 825442/17  | May, 2000  |
|           |   | Spectrum Analyzer | Advantest    | R3261C / 71720609    | May, 2000  |
|           |   | Pre-Amplifier     | HP           | 8447D/3307A01814     | May, 2000  |
|           | X | Bilog Antenna     | Chase        | CBL6112B / 2455      | Sep., 1999 |
|           | X | Horn Antenna      | EM           | EM6917 / 103325      | May, 2000  |

- Note:
1. All equipment upon which need to calibrated are with calibration period of 1 year.
  2. Mark "X" test instruments are used to measure the final test results.

#### 3.2 Test Setup



### 3.3 Limits

#### ➤ Fundamental and Harmonics Emission Limits

| Frequency<br>MHz | Field Strength of Fundamental<br>(mV/m @3m) | Field Strength of Fundamental<br>(dBuV/m @3m) | Field Strength of Harmonics<br>(uV/m @3m) | Field Strength of Harmonics<br>(dBuV/m @3m) |
|------------------|---------------------------------------------|-----------------------------------------------|-------------------------------------------|---------------------------------------------|
| 2400-2483.5      | 50                                          | 94 (Average)<br>114 (Peak)                    | 500                                       | 54 (Average)<br>74 (Peak)                   |

#### ➤ General Radiated Emission Limits

Emissions 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 paragraph 15.209, whichever is the lesser attenuation.

| Frequency<br>MHz | 50dB below of the fundamental<br>(dBuV/m @3m) | 15.209 Limits<br>(dBuV/m @3m) | General Radiated Limits<br>(dBuV/m @3m) |
|------------------|-----------------------------------------------|-------------------------------|-----------------------------------------|
| 30-88            | 40                                            | 40                            | 40                                      |
| 88-216           | 43.5                                          | 43.5                          | 43.5                                    |
| 216-960          | 44                                            | 46                            | 46                                      |
| Above 960        | 44                                            | 54                            | 54                                      |

- Remarks :
1. RF Line Voltage (dBuV) = 20 log RF Line Voltage (uV)
  2. In the Above Table, the tighter limit applies at the band edges.
  3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

### **3.4 Test Procedure**

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters . The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4 /1992 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter (R&S Test Receiver ESCS 30 ) is 120 kHz and above 1GHz is 1MHz.

### **3.5 Test Results**

The radiated emission from the EUT is measured and shown in Attachment 1. The acceptance criterion was met and the EUT passed the test.



#### **4. EMI Reduction Method During Compliance Testing**

No modification was made during testing.



## 5. Attachment

|                                        |                     |
|----------------------------------------|---------------------|
| Attachment 1: Summary of Test Results  | Number of Pages: 14 |
| Attachment 2: EUT Test Photographs     | Number of Pages: 3  |
| Attachment 3: EUT Detailed Photographs | Number of Pages: 10 |

## Attachment 1 : Summary of Test Results

The test results in the emission were performed according to the requirements of measurement standard and process. QuieTek Corporation is assumed full responsibility for the accuracy and completeness of these measurements. The test data of the emission are listed as the attached data.

All the tests were carried out with the EUT in normal operation, which was defined as:

- (1) Channel 1
- (2) Channel 2
- (3) Channel 4

**The EUT passed all the tests.**

The uncertainty is calculated in accordance with NAMAS NIS 81, The total uncertainty for this test is as follows:

➤ **Emission Test**

- Uncertainty in the Conducted Emission Test:  $< \pm 2.0 \text{ dB}$
- Uncertainty in the field strength measured:  $< \pm 4.0 \text{ dB}$



## CONDUCTED EMISSION DATA

|              |                  |             |              |
|--------------|------------------|-------------|--------------|
| Date of Test | : August 1, 2000 | EUT         | : GigaAir    |
| Test Mode    | : Channel 1      | Detect Mode | : Quasi-Peak |

| Frequency | Cable | LISN   | Reading Level | Measurement Level | Limits |
|-----------|-------|--------|---------------|-------------------|--------|
|           | Loss  | Factor | Line1         | Line1             |        |
| MHz       | dB    | dB     | dBuV          | dBuV              | dBuV   |
| 0.489     | 0.06  | 0.10   | 30.90         | 31.06             | 48.00  |
| 0.525     | 0.07  | 0.10   | 27.03         | 27.20             | 48.00  |
| 0.728     | 0.08  | 0.10   | 27.78         | 27.96             | 48.00  |
| *0.759    | 0.09  | 0.10   | 32.17         | 32.36             | 48.00  |
| 1.001     | 0.10  | 0.10   | 28.86         | 29.06             | 48.00  |
| 18.798    | 0.35  | 0.43   | 9.09          | 9.87              | 48.00  |

| Frequency | Cable | LISN   | Reading Level | Measurement Level | Limits |
|-----------|-------|--------|---------------|-------------------|--------|
|           | Loss  | Factor | Line2         | Line2             |        |
| MHz       | dB    | dB     | dBuV          | dBuV              | dBuV   |
| 0.495     | 0.06  | 0.10   | 26.55         | 26.71             | 48.00  |
| *0.716    | 0.08  | 0.10   | 28.14         | 28.32             | 48.00  |
| 1.055     | 0.10  | 0.10   | 26.72         | 26.93             | 48.00  |
| 1.122     | 0.11  | 0.11   | 25.04         | 25.25             | 48.00  |
| 19.556    | 0.35  | 0.44   | 18.90         | 19.70             | 48.00  |
| 29.722    | 0.40  | 0.60   | 12.03         | 13.02             | 48.00  |

**Remarks :**

1. “ \* ” means that this data is the worst emission level.
2. The average measurement was not performed when the peak measured data under the limit of average detection.



## CONDUCTED EMISSION DATA

|              |                  |             |              |
|--------------|------------------|-------------|--------------|
| Date of Test | : August 1, 2000 | EUT         | : GigaAir    |
| Test Mode    | : Channel 2      | Detect Mode | : Quasi-Peak |

| Frequency | Cable | LISN   | Reading Level | Measurement Level | Limits |
|-----------|-------|--------|---------------|-------------------|--------|
|           | Loss  | Factor | Line1         | Line1             |        |
| MHz       | dB    | dB     | dBuV          | dBuV              | dBuV   |
| 0.523     | 0.07  | 0.10   | 27.88         | 28.05             | 48.00  |
| *0.563    | 0.07  | 0.10   | 31.85         | 32.02             | 48.00  |
| 0.650     | 0.08  | 0.10   | 28.28         | 28.46             | 48.00  |
| 0.723     | 0.08  | 0.10   | 31.79         | 31.97             | 48.00  |
| 19.505    | 0.35  | 0.44   | 17.97         | 18.76             | 48.00  |
| 29.591    | 0.40  | 0.60   | 13.13         | 14.12             | 48.00  |

| Frequency | Cable | LISN   | Reading Level | Measurement Level | Limits |
|-----------|-------|--------|---------------|-------------------|--------|
|           | Loss  | Factor | Line2         | Line2             |        |
| MHz       | dB    | dB     | dBuV          | dBuV              | dBuV   |
| *0.493    | 0.06  | 0.10   | 29.23         | 29.39             | 48.00  |
| 0.723     | 0.08  | 0.10   | 27.65         | 27.83             | 48.00  |
| 0.985     | 0.10  | 0.10   | 28.30         | 28.50             | 48.00  |
| 19.615    | 0.35  | 0.44   | 17.90         | 18.70             | 48.00  |
| 24.022    | 0.38  | 0.52   | 12.58         | 13.47             | 48.00  |
| 29.923    | 0.40  | 0.60   | 10.14         | 11.14             | 48.00  |

**Remarks :**

1. “ \* ” means that this data is the worst emission level.
2. The average measurement was not performed when the peak measured data under the limit of average detection.



## CONDUCTED EMISSION DATA

|              |                |             |            |
|--------------|----------------|-------------|------------|
| Date of Test | August 1, 2000 | EUT         | GigaAir    |
| Test Mode    | Channel 4      | Detect Mode | Quasi-Peak |

| Frequency | Cable | LISN   | Reading Level | Measurement Level | Limits |
|-----------|-------|--------|---------------|-------------------|--------|
|           | Loss  | Factor | Line1         | Line1             |        |
| MHz       | dB    | dB     | dBuV          | dBuV              | dBuV   |
| *0.477    | 0.06  | 0.10   | 30.59         | 30.75             | 48.00  |
| 0.589     | 0.07  | 0.10   | 27.44         | 27.61             | 48.00  |
| 0.790     | 0.09  | 0.10   | 31.87         | 32.06             | 48.00  |
| 11.060    | 0.29  | 0.23   | 16.77         | 17.29             | 48.00  |
| 20.298    | 0.36  | 0.46   | 18.06         | 18.87             | 48.00  |
| 25.507    | 0.38  | 0.54   | 8.42          | 9.34              | 48.00  |

| Frequency | Cable | LISN   | Reading Level | Measurement Level | Limits |
|-----------|-------|--------|---------------|-------------------|--------|
|           | Loss  | Factor | Line2         | Line2             |        |
| MHz       | dB    | dB     | dBuV          | dBuV              | dBuV   |
| *0.567    | 0.07  | 0.10   | 28.84         | 29.01             | 48.00  |
| 0.669     | 0.08  | 0.10   | 28.24         | 28.42             | 48.00  |
| 1.036     | 0.10  | 0.10   | 28.40         | 28.60             | 48.00  |
| 7.671     | 0.25  | 0.19   | 18.42         | 18.86             | 48.00  |
| 19.837    | 0.35  | 0.45   | 17.44         | 18.24             | 48.00  |
| 29.922    | 0.40  | 0.60   | 10.08         | 11.08             | 48.00  |

**Remarks :**

1. “ \* ” means that this data is the worst emission level.
2. The average measurement was not performed when the peak measured data under the limit of average detection.



## General Radiated Emission Data

|              |                |           |             |
|--------------|----------------|-----------|-------------|
| Date of Test | August 1, 2000 | EUT       | GigaAir     |
| Test Mode    | Channel 1      | Test Site | Open Site 2 |

| Freq.    | Cable | Probe  | PreAMP | Reading | Measurement | Margin | Limit  | Ant | Turn |
|----------|-------|--------|--------|---------|-------------|--------|--------|-----|------|
|          | Loss  | Factor |        | Level   | HORIZONTAL  |        |        |     |      |
| MHz      | dB    | dB/m   | dB     | dBuV    | dBuV/m      | dB     | dBuV/m | cm  | deg  |
| 52.310   | 1.11  | 6.17   | 26.00  | 36.80   | 18.08       | 21.92  | 40.00  | 0   | 0    |
| *106.630 | 1.33  | 12.64  | 26.00  | 33.20   | 21.17       | 18.83  | 40.00  | 0   | 0    |
| 114.390  | 1.36  | 12.60  | 26.00  | 32.40   | 20.37       | 19.63  | 40.00  | 0   | 0    |
| 303.540  | 2.14  | 13.56  | 26.00  | 30.60   | 20.30       | 26.70  | 47.00  | 0   | 0    |
| 544.100  | 3.13  | 18.85  | 26.00  | 30.00   | 25.98       | 21.02  | 47.00  | 0   | 0    |
| 745.860  | 3.96  | 20.29  | 26.00  | 29.80   | 28.05       | 18.95  | 47.00  | 0   | 0    |

| Freq.   | Cable | Probe  | PreAMP | Reading | Measurement | Margin | Limit  | Ant | Turn |
|---------|-------|--------|--------|---------|-------------|--------|--------|-----|------|
|         | Loss  | Factor |        | Level   | VERTICAL    |        |        |     |      |
| MHz     | dB    | dB/m   | dB     | dBuV    | dBuV/m      | dB     | dBuV/m | cm  | deg  |
| *30.970 | 1.02  | 16.69  | 26.00  | 38.60   | 30.31       | 9.69   | 40.00  | 0   | 0    |
| 52.310  | 1.11  | 8.24   | 26.00  | 39.20   | 22.54       | 17.46  | 40.00  | 0   | 0    |
| 115.360 | 1.37  | 11.72  | 26.00  | 31.60   | 18.69       | 21.31  | 40.00  | 0   | 0    |
| 243.400 | 1.89  | 12.93  | 26.00  | 29.20   | 18.02       | 28.98  | 47.00  | 0   | 0    |
| 503.360 | 2.96  | 17.30  | 26.00  | 30.00   | 24.26       | 22.74  | 47.00  | 0   | 0    |
| 695.420 | 3.75  | 19.77  | 26.00  | 29.40   | 26.92       | 20.08  | 47.00  | 0   | 0    |

### Remarks:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ \* ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss



## General Radiated Emission Data

|              |   |                |           |   |             |
|--------------|---|----------------|-----------|---|-------------|
| Date of Test | : | August 1, 2000 | EUT       | : | GigaAir     |
| Test Mode    | : | Channel 2      | Test Site | : | Open Site 2 |

| Freq.    | Cable | Probe  | PreAMP | Reading | Measurement | Margin | Limit  | Ant | Turn |
|----------|-------|--------|--------|---------|-------------|--------|--------|-----|------|
|          | Loss  | Factor |        | Level   | HORIZONTAL  |        |        |     |      |
| MHz      | dB    | dB/m   | dB     | dBuV    | dBuV/m      | dB     | dBuV/m | cm  | deg  |
| 50.370   | 1.10  | 7.24   | 26.00  | 37.20   | 19.54       | 20.46  | 40.00  | 0   | 0    |
| 108.570  | 1.34  | 12.55  | 26.00  | 33.00   | 20.89       | 19.11  | 40.00  | 0   | 0    |
| *128.940 | 1.42  | 12.64  | 26.00  | 33.60   | 21.66       | 18.34  | 40.00  | 0   | 0    |
| 319.060  | 2.20  | 14.22  | 26.00  | 29.60   | 20.03       | 26.97  | 47.00  | 0   | 0    |
| 461.650  | 2.79  | 17.37  | 26.00  | 30.60   | 24.76       | 22.24  | 47.00  | 0   | 0    |
| 599.390  | 3.36  | 18.96  | 26.00  | 30.80   | 27.12       | 19.88  | 47.00  | 0   | 0    |

| Freq.   | Cable | Probe  | PreAMP | Reading | Measurement | Margin | Limit  | Ant | Turn |
|---------|-------|--------|--------|---------|-------------|--------|--------|-----|------|
|         | Loss  | Factor |        | Level   | VERTICAL    |        |        |     |      |
| MHz     | dB    | dB/m   | dB     | dBuV    | dBuV/m      | dB     | dBuV/m | cm  | deg  |
| *30.970 | 1.02  | 16.69  | 26.00  | 39.40   | 31.11       | 8.89   | 40.00  | 0   | 0    |
| 52.310  | 1.11  | 8.24   | 26.00  | 37.60   | 20.94       | 19.06  | 40.00  | 0   | 0    |
| 108.570 | 1.34  | 12.10  | 26.00  | 32.00   | 19.44       | 20.56  | 40.00  | 0   | 0    |
| 242.430 | 1.89  | 12.86  | 26.00  | 31.60   | 20.35       | 26.65  | 47.00  | 0   | 0    |
| 264.740 | 1.98  | 13.75  | 26.00  | 31.00   | 20.73       | 26.27  | 47.00  | 0   | 0    |
| 572.230 | 3.24  | 19.25  | 26.00  | 29.00   | 25.49       | 21.51  | 47.00  | 0   | 0    |

### Remarks:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ \* ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss



## General Radiated Emission Data

|              |                |           |             |
|--------------|----------------|-----------|-------------|
| Date of Test | August 1, 2000 | EUT       | GigaAir     |
| Test Mode    | Channel 4      | Test Site | Open Site 2 |

| Freq.    | Cable | Probe  | PreAMP | Reading | Measurement | Margin | Limit  | Ant | Turn |
|----------|-------|--------|--------|---------|-------------|--------|--------|-----|------|
|          | Loss  | Factor |        | Level   | Horizontal  |        |        |     |      |
| MHz      | dB    | dB/m   | dB     | dBuV    | dBuV/m      | dB     | dBuV/m | cm  | deg  |
| 56.190   | 1.12  | 5.94   | 26.00  | 36.00   | 17.06       | 22.94  | 40.00  | 0   | 0    |
| 77.530   | 1.21  | 9.46   | 26.00  | 32.20   | 16.87       | 23.13  | 40.00  | 0   | 0    |
| *115.360 | 1.37  | 12.70  | 26.00  | 33.20   | 21.27       | 18.73  | 40.00  | 0   | 0    |
| 262.800  | 1.97  | 13.59  | 26.00  | 30.00   | 19.56       | 27.44  | 47.00  | 0   | 0    |
| 300.630  | 2.13  | 13.53  | 26.00  | 29.60   | 19.26       | 27.74  | 47.00  | 0   | 0    |
| 594.540  | 3.34  | 18.91  | 26.00  | 29.80   | 26.05       | 20.95  | 47.00  | 0   | 0    |

| Freq.   | Cable | Probe  | PreAMP | Reading | Measurement | Margin | Limit  | Ant | Turn |
|---------|-------|--------|--------|---------|-------------|--------|--------|-----|------|
|         | Loss  | Factor |        | Level   | Vertical    |        |        |     |      |
| MHz     | dB    | dB/m   | dB     | dBuV    | dBuV/m      | dB     | dBuV/m | cm  | deg  |
| 49.400  | 1.10  | 8.47   | 26.00  | 35.40   | 18.97       | 21.03  | 40.00  | 0   | 0    |
| *57.160 | 1.13  | 7.90   | 26.00  | 36.40   | 19.42       | 20.58  | 40.00  | 0   | 0    |
| 113.420 | 1.36  | 11.88  | 26.00  | 32.00   | 19.24       | 20.76  | 40.00  | 0   | 0    |
| 262.800 | 1.97  | 13.65  | 26.00  | 30.20   | 19.82       | 27.18  | 47.00  | 0   | 0    |
| 349.130 | 2.33  | 15.41  | 26.00  | 30.00   | 21.74       | 25.26  | 47.00  | 0   | 0    |
| 594.540 | 3.34  | 19.05  | 26.00  | 29.80   | 26.19       | 20.81  | 47.00  | 0   | 0    |

### Remarks:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ \* ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss



## Fundamental Radiated Emission Data

|              |   |                |           |   |             |
|--------------|---|----------------|-----------|---|-------------|
| Date of Test | : | August 1, 2000 | EUT       | : | GigaAir     |
| Test Mode    | : | Normal         | Test Site | : | Open Site 2 |

| Freq. | Cable | Probe  | PreAMP | Reading | Measurement | Margin | Limit  | Ant | Turn |
|-------|-------|--------|--------|---------|-------------|--------|--------|-----|------|
| MHz   | Loss  | Factor | dB     | Level   | Horizontal  | dB     | dBuV/m | cm  | deg  |

### Peak Detector

#### Channel 1

|          |      |       |       |       |       |       |        |   |   |
|----------|------|-------|-------|-------|-------|-------|--------|---|---|
| 2433.920 | 3.86 | 29.31 | 34.90 | 86.53 | 84.79 | 29.21 | 114.00 | 0 | 0 |
|----------|------|-------|-------|-------|-------|-------|--------|---|---|

#### Channel 2

|          |      |       |       |       |       |       |        |   |   |
|----------|------|-------|-------|-------|-------|-------|--------|---|---|
| 2452.860 | 3.88 | 29.35 | 34.90 | 85.72 | 84.04 | 29.96 | 114.00 | 0 | 0 |
|----------|------|-------|-------|-------|-------|-------|--------|---|---|

#### Channel 4

|          |      |       |       |       |       |       |        |   |   |
|----------|------|-------|-------|-------|-------|-------|--------|---|---|
| 2412.420 | 3.84 | 29.26 | 34.90 | 91.00 | 89.20 | 24.80 | 114.00 | 0 | 0 |
|----------|------|-------|-------|-------|-------|-------|--------|---|---|

| Freq. | Cable | Probe  | PreAMP | Reading | Measurement | Margin | Limit  | Ant | Turn |
|-------|-------|--------|--------|---------|-------------|--------|--------|-----|------|
| MHz   | Loss  | Factor | dB     | Level   | Vertical    | dB     | dBuV/m | cm  | deg  |

### Peak Detector

#### Channel 1

|          |      |       |       |       |       |       |        |   |   |
|----------|------|-------|-------|-------|-------|-------|--------|---|---|
| 2433.920 | 3.86 | 29.31 | 34.90 | 90.99 | 89.25 | 24.75 | 114.00 | 0 | 0 |
|----------|------|-------|-------|-------|-------|-------|--------|---|---|

#### Channel 2

|          |      |       |       |       |       |       |        |   |   |
|----------|------|-------|-------|-------|-------|-------|--------|---|---|
| 2452.900 | 3.88 | 29.35 | 34.90 | 92.66 | 90.98 | 23.02 | 114.00 | 0 | 0 |
|----------|------|-------|-------|-------|-------|-------|--------|---|---|

#### Channel 4

|          |      |       |       |       |       |       |        |   |   |
|----------|------|-------|-------|-------|-------|-------|--------|---|---|
| 2412.430 | 3.84 | 29.26 | 34.90 | 88.77 | 86.97 | 27.03 | 114.00 | 0 | 0 |
|----------|------|-------|-------|-------|-------|-------|--------|---|---|

Remarks:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ \* ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss
4. The average measurement was not performed when the peak measured data under the limit of average detection.

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## Harmonic Radiated Emission Data

|              |   |                |           |   |             |
|--------------|---|----------------|-----------|---|-------------|
| Date of Test | : | August 1, 2000 | EUT       | : | GigaAir     |
| Test Mode    | : | Channel 1      | Test Site | : | Open Site 2 |

| Freq. | Cable | Probe  | PreAMP | Reading | Measurement | Margin | Limit  | Ant | Turn |
|-------|-------|--------|--------|---------|-------------|--------|--------|-----|------|
|       | Loss  | Factor |        | Level   | Horizontal  |        |        |     |      |
| MHz   | dB    | dB/m   | dB     | dBuV    | dBuV/m      | dB     | dBuV/m | cm  | deg  |

**Peak Detector:**

|          |       |       |       |       |        |       |       |   |   |
|----------|-------|-------|-------|-------|--------|-------|-------|---|---|
| 4867.990 | 6.32  | 33.56 | 34.75 | 44.33 | 49.46  | 24.54 | 74.00 | 0 | 0 |
| 7301.990 | 8.38  | 36.31 | 34.90 | 41.88 | 51.66  | 22.34 | 74.00 | 0 | 0 |
| 9735.900 | 10.24 | 37.45 | 35.10 | 45.41 | 58.00  | 16.00 | 74.00 | 0 | 0 |
| 12169.89 | 11.98 | 39.17 | 34.56 | 41.80 | <58.38 | 15.62 | 74.00 | 0 | 0 |
| 14604.16 | 13.60 | 40.55 | 34.44 | 41.16 | <60.87 | 13.13 | 74.00 | 0 | 0 |

**Average:**

|          |       |       |       |       |        |      |       |   |   |
|----------|-------|-------|-------|-------|--------|------|-------|---|---|
| 9735.910 | 10.24 | 37.45 | 35.10 | 39.41 | 52.00  | 2.00 | 54.00 | 0 | 0 |
| 12169.89 | 11.98 | 39.17 | 34.56 | 28.50 | <45.08 | 8.92 | 54.00 | 0 | 0 |
| 14604.16 | 13.60 | 40.55 | 34.44 | 28.86 | <48.57 | 5.43 | 54.00 | 0 | 0 |

**Remarks:**

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ \* ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss
4. The average measurement was not performed when the peak measured data under the limit of average detection.

## Harmonic Radiated Emission Data

|              |   |                |           |   |             |
|--------------|---|----------------|-----------|---|-------------|
| Date of Test | : | August 1, 2000 | EUT       | : | GigaAir     |
| Test Mode    | : | Channel 1      | Test Site | : | Open Site 2 |

| Freq. | Cable | Probe  | PreAMP | Reading | Measurement | Margin | Limit  | Ant | Turn |
|-------|-------|--------|--------|---------|-------------|--------|--------|-----|------|
|       | Loss  | Factor |        | Level   | Vertical    |        |        |     |      |
| MHz   | dB    | dB/m   | dB     | dBuV    | dBuV/m      | dB     | dBuV/m | cm  | deg  |

**Peak Detector:**

|          |       |       |       |       |        |       |       |   |   |
|----------|-------|-------|-------|-------|--------|-------|-------|---|---|
| 4868.020 | 6.32  | 33.56 | 34.75 | 46.84 | 51.97  | 22.03 | 74.00 | 0 | 0 |
| 7302.190 | 8.38  | 36.31 | 34.90 | 46.12 | 55.90  | 18.10 | 74.00 | 0 | 0 |
| 9735.910 | 10.24 | 37.45 | 35.10 | 44.00 | 56.59  | 17.41 | 74.00 | 0 | 0 |
| 12169.98 | 11.98 | 39.17 | 34.56 | 41.45 | <58.03 | 15.97 | 74.00 | 0 | 0 |
| 14603.76 | 13.60 | 40.55 | 34.44 | 41.49 | <61.20 | 12.80 | 74.00 | 0 | 0 |

**Average:**

|          |       |       |       |       |        |      |       |   |   |
|----------|-------|-------|-------|-------|--------|------|-------|---|---|
| 7301.950 | 8.38  | 36.31 | 34.90 | 41.04 | 50.82  | 3.18 | 54.00 | 0 | 0 |
| 9735.870 | 10.24 | 37.45 | 35.10 | 35.27 | 47.86  | 6.14 | 54.00 | 0 | 0 |
| 12169.98 | 11.98 | 39.17 | 34.56 | 28.59 | <45.17 | 8.83 | 54.00 | 0 | 0 |
| 14603.76 | 13.60 | 40.55 | 34.44 | 28.66 | <48.37 | 5.63 | 54.00 | 0 | 0 |

**Remarks:**

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ \* ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss
4. The average measurement was not performed when the peak measured data under the limit of average detection.



## Harmonic Radiated Emission Data

|              |   |                |           |   |             |
|--------------|---|----------------|-----------|---|-------------|
| Date of Test | : | August 1, 2000 | EUT       | : | GigaAir     |
| Test Mode    | : | Channel 2      | Test Site | : | Open Site 2 |

| Freq. | Cable Loss | Probe Factor | PreAMP | Reading Level | Measurement Horizontal | Margin | Limit  | Ant | Turn |
|-------|------------|--------------|--------|---------------|------------------------|--------|--------|-----|------|
| MHz   | dB         | dB/m         | dB     | dBuV          | dBuV/m                 | dB     | dBuV/m | cm  | deg  |

### Peak Detector:

|          |       |       |       |       |        |       |       |   |   |
|----------|-------|-------|-------|-------|--------|-------|-------|---|---|
| 4905.870 | 6.35  | 33.60 | 34.74 | 45.85 | 51.07  | 22.93 | 74.00 | 0 | 0 |
| 7358.750 | 8.42  | 36.36 | 34.90 | 42.79 | 52.67  | 21.33 | 74.00 | 0 | 0 |
| 9811.990 | 10.29 | 37.46 | 35.10 | 45.54 | 58.19  | 15.81 | 74.00 | 0 | 0 |
| 12264.89 | 12.05 | 39.21 | 34.48 | 41.85 | <58.63 | 15.37 | 74.00 | 0 | 0 |
| 14717.95 | 13.68 | 40.30 | 34.49 | 40.91 | <60.40 | 13.60 | 74.00 | 0 | 0 |

### Average:

|          |       |       |       |       |        |      |       |   |   |
|----------|-------|-------|-------|-------|--------|------|-------|---|---|
| 9811.830 | 10.29 | 37.46 | 35.10 | 38.27 | 50.92  | 3.08 | 54.00 | 0 | 0 |
| 12264.89 | 12.05 | 39.21 | 34.48 | 28.20 | <44.98 | 9.02 | 54.00 | 0 | 0 |
| 14717.95 | 13.68 | 40.30 | 34.49 | 28.48 | <47.97 | 6.03 | 54.00 | 0 | 0 |

### Remarks:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ \* ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss
4. The average measurement was not performed when the peak measured data under the limit of average detection.



## Harmonic Radiated Emission Data

|              |   |                |           |   |             |
|--------------|---|----------------|-----------|---|-------------|
| Date of Test | : | August 1, 2000 | EUT       | : | GigaAir     |
| Test Mode    | : | Channel 2      | Test Site | : | Open Site 2 |

| Freq. | Cable | Probe  | PreAMP | Reading | Measurement | Margin | Limit  | Ant | Turn |
|-------|-------|--------|--------|---------|-------------|--------|--------|-----|------|
|       | Loss  | Factor |        | Level   | Vertical    |        |        |     |      |
| MHz   | dB    | dB/m   | dB     | dBuV    | dBuV/m      | dB     | dBuV/m | cm  | deg  |

**Peak Detector:**

|          |       |       |       |       |        |       |       |   |   |
|----------|-------|-------|-------|-------|--------|-------|-------|---|---|
| 4905.860 | 6.35  | 33.60 | 34.74 | 45.69 | 50.91  | 23.09 | 74.00 | 0 | 0 |
| 7358.730 | 8.42  | 36.36 | 34.90 | 43.16 | 53.04  | 20.96 | 74.00 | 0 | 0 |
| 9811.840 | 10.29 | 37.46 | 35.10 | 43.05 | 55.70  | 18.30 | 74.00 | 0 | 0 |
| 12265.05 | 12.05 | 39.21 | 34.48 | 40.94 | <57.72 | 16.28 | 74.00 | 0 | 0 |
| 14718.11 | 13.68 | 40.30 | 34.49 | 41.95 | <61.44 | 12.56 | 74.00 | 0 | 0 |

**Average:**

|          |       |       |       |       |        |      |       |   |   |
|----------|-------|-------|-------|-------|--------|------|-------|---|---|
| 9811.800 | 10.29 | 37.46 | 35.10 | 33.12 | 45.77  | 8.23 | 54.00 | 0 | 0 |
| 12264.74 | 12.04 | 39.20 | 34.50 | 28.52 | <45.26 | 8.74 | 54.00 | 0 | 0 |
| 14718.08 | 13.68 | 40.30 | 34.49 | 28.25 | <47.74 | 6.26 | 54.00 | 0 | 0 |

**Remarks:**

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ \* ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss
4. The average measurement was not performed when the peak measured data under the limit of average detection.



## Harmonic Radiated Emission Data

|              |                  |           |   |             |
|--------------|------------------|-----------|---|-------------|
| Date of Test | : August 1, 2000 | EUT       | : | GigaAir     |
| Test Mode    | : Channel 4      | Test Site | : | Open Site 2 |

| Freq. | Cable | Probe  | PreAMP | Reading | Measurement | Margin | Limit  | Ant | Turn |
|-------|-------|--------|--------|---------|-------------|--------|--------|-----|------|
|       | Loss  | Factor |        | Level   | Horizontal  |        |        |     |      |
| MHz   | dB    | dB/m   | dB     | dBuV    | dBuV/m      | dB     | dBuV/m | cm  | deg  |

**Peak Detector:**

|          |       |       |       |       |        |       |       |   |   |
|----------|-------|-------|-------|-------|--------|-------|-------|---|---|
| 4824.680 | 6.27  | 33.50 | 34.77 | 46.30 | 51.30  | 22.70 | 74.00 | 0 | 0 |
| 7237.320 | 8.32  | 36.24 | 34.90 | 42.34 | 52.00  | 22.00 | 74.00 | 0 | 0 |
| 9649.500 | 10.18 | 37.43 | 35.10 | 44.55 | 57.06  | 16.94 | 74.00 | 0 | 0 |
| 12061.89 | 11.91 | 39.13 | 34.65 | 41.10 | <57.49 | 16.51 | 74.00 | 0 | 0 |
| 14473.84 | 13.53 | 40.80 | 34.34 | 39.91 | <59.89 | 14.11 | 74.00 | 0 | 0 |

**Average:**

|          |       |       |       |       |        |      |       |   |   |
|----------|-------|-------|-------|-------|--------|------|-------|---|---|
| 9649.790 | 10.18 | 37.43 | 35.10 | 36.81 | 49.32  | 4.68 | 54.00 | 0 | 0 |
| 12061.89 | 11.91 | 39.13 | 34.65 | 28.01 | <44.40 | 9.60 | 54.00 | 0 | 0 |
| 14473.84 | 13.53 | 40.80 | 34.34 | 28.16 | <48.14 | 5.86 | 54.00 | 0 | 0 |

Remarks:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ \* ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss
4. The average measurement was not performed when the peak measured data under the limit of average detection.



## Harmonic Radiated Emission Data

|              |   |                |           |   |             |
|--------------|---|----------------|-----------|---|-------------|
| Date of Test | : | August 1, 2000 | EUT       | : | GigaAir     |
| Test Mode    | : | Channel 4      | Test Site | : | Open Site 2 |

| Freq. | Cable | Probe  | PreAMP | Reading | Measurement | Margin | Limit  | Ant | Turn |
|-------|-------|--------|--------|---------|-------------|--------|--------|-----|------|
|       | Loss  | Factor |        | Level   | Vertical    |        |        |     |      |
| MHz   | dB    | dB/m   | dB     | dBuV    | dBuV/m      | dB     | dBuV/m | cm  | deg  |

**Peak Detector:**

|          |       |       |       |       |        |       |       |   |   |
|----------|-------|-------|-------|-------|--------|-------|-------|---|---|
| 4825.010 | 6.27  | 33.50 | 34.77 | 45.56 | 50.56  | 23.44 | 74.00 | 0 | 0 |
| 7237.380 | 8.32  | 36.24 | 34.90 | 43.58 | 53.24  | 20.76 | 74.00 | 0 | 0 |
| 9649.870 | 10.18 | 37.43 | 35.10 | 42.82 | 55.33  | 18.67 | 74.00 | 0 | 0 |
| 12061.88 | 11.91 | 39.13 | 34.65 | 41.52 | <57.91 | 16.09 | 74.00 | 0 | 0 |
| 14474.07 | 13.53 | 40.80 | 34.34 | 41.15 | <61.13 | 12.87 | 74.00 | 0 | 0 |

**Average:**

|          |       |       |       |       |        |      |       |   |   |
|----------|-------|-------|-------|-------|--------|------|-------|---|---|
| 9649.850 | 10.18 | 37.43 | 35.10 | 35.03 | 47.54  | 6.46 | 54.00 | 0 | 0 |
| 12061.88 | 11.91 | 39.13 | 34.65 | 28.20 | <44.59 | 9.41 | 54.00 | 0 | 0 |
| 14471.07 | 13.53 | 40.80 | 34.34 | 28.48 | <48.46 | 5.54 | 54.00 | 0 | 0 |

**Remarks:**

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ \* ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss
4. The average measurement was not performed when the peak measured data under the limit of average detection.

