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## FCC PART 15 SCANNING RECEIVER

|                             |  |
|-----------------------------|--|
| <b>Applicant</b>            | VERTEX STANDARD CO., LTD.  |
| <b>Address</b>              | 4-8-8 NAKAMEGURO, MEGURO-KU  |
|                             | TOKYO 153-8644<br>JAPAN  |
| <b>FCC ID:</b>              | K6620415X20  |
| <b>Model Number</b>         | VX-8GR   |
| <b>Product Description</b>  | AMATEUR RADIO WITH SCANNING RECEIVER                                   |
| <b>Date Sample Received</b> | 3/22/2010  |
| <b>Date Tested</b>          | 3/30/2010  |
| <b>Tested By</b>            | Nam Nguyen   |
| <b>Approved By</b>          | Mario de Aranzeta  |
| <b>Report Number</b>        | 634AUT10TestReport.doc   |
| <b>Test Results</b>         | <input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL |

**THE ATTACHED REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN APPROVAL OF TIMCO ENGINEERING, INC.**



Certificate # 0955-01



**TABLE OF CONTENTS**

GENERAL REMARKS ..... 3  
GENERAL INFORMATION ..... 4  
TEST EQUIPMENT LIST ..... 5  
TEST PROCEDURE ..... 6  
RADIATED SPURIOUS EMISSIONS ..... 7  
POWER LINE CONDUCTED INTERFERENCE ..... 13  
38 dB REJECTION RATIO ..... 14

APPLICANT: VERTEX STANDARD CO., LTD.  
FCC ID: K6620415X20  
REPORT #: V\VERTEX\_STANDARD\634AUT10\634AUT10TestReport.doc



**GENERAL REMARKS**

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**Summary**

The device under test does:

- fulfill the general approval requirements as identified in this test report
- not fulfill the general approval requirements as identified in this test report

**Attestations**

This equipment has been tested in accordance with the standards identified in this test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report.

All instrumentation and accessories used to test products for compliance to the indicated standards are calibrated regularly in accordance with ISO 17025 requirements.



Testing Certificate # 0955-01

I attest that the necessary measurements were made, under my supervision, at:

Timco Engineering Inc.  
849 NW State Road 45  
Newberry, Fl 32669



**Authorized Signatory Name:**

Mario de Aranzeta C.E.T.  
Compliance Engineer/ Lab. Supervisor

**Date:** 3/31/2010

APPLICANT: VERTEX STANDARD CO., LTD.  
FCC ID: K6620415X20  
REPORT #: V\VERTEX\_STANDARD\634AUT10\634AUT10TestReport.doc



**GENERAL INFORMATION**

|   |  |
|---|--|
| The test results relate only to the items tested. |  |
| <b>DUT Description</b>                            | AMATEUR RADIO WITH SCANNING RECEIVER                             |
| <b>FCC ID</b>                                     | K6620415X20  |
| <b>Model Number</b>                               | VX-8GR   |
| <b>DUT Power Source</b>                           | <input type="checkbox"/> 110-120Vac/50- 60Hz                     |
|   | <input type="checkbox"/> DC Power                                |
|   | <input checked="" type="checkbox"/> Battery Operated Exclusively |
| <b>Test Item</b>                                  | <input type="checkbox"/> Prototype                               |
|   | <input checked="" type="checkbox"/> Pre-Production               |
|   | <input type="checkbox"/> Production                              |
| <b>Modifications to DUT</b>                       | None   |
| <b>Test Standards</b>                             | FCC Part 15, Subpart B, ANSI C63.4-2003                          |

APPLICANT: VERTEX STANDARD CO., LTD.

FCC ID: K6620415X20

REPORT #: V\VERTEX\_STANDARD\634AUT10\634AUT10TestReport.doc



**TEST EQUIPMENT LIST**

| <b>Device</b>                         | <b>Manufacturer</b> | <b>Model</b>     | <b>Serial Number</b>     | <b>Cal/Char Date</b> | <b>Due Date</b> |
|---------------------------------------|---------------------|------------------|--------------------------|----------------------|-----------------|
| 3-Meter Semi-Anechoic Chamber         | Panashield          | N/A              | N/A                      | Listed<br>5/11/07    | 5/10/10         |
| AC Voltmeter                          | HP                  | 400FL            | 2213A14499               | CAL<br>3/23/09       | 3/23/11         |
| Antenna: Dipole Kit                   | Electro-Metrics     | TDA-30/1-4       | 153                      | CHAR<br>6/10/09      | 6/10/11         |
| Frequency Counter                     | HP                  | 5385A            | 3242A07460               | CAL<br>5/26/09       | 5/26/11         |
| Hygro-Thermometer                     | Extech              | 445703           | 0602                     | CAL<br>1/30/09       | 1/30/11         |
| Modulation Analyzer                   | HP                  | 8901A            | 3435A06868               | CAL<br>5/26/09       | 5/26/11         |
| Digital Multimeter                    | Fluke               | FLUKE-77-3       | 79510405                 | CAL<br>5/18/09       | 5/18/11         |
| Analyzer Tan Tower Preamplifier       | HP                  | 8449B-H02        | 3008A00372               | CAL<br>11/21/09      | 11/21/11        |
| Analyzer Tan Tower Quasi-Peak Adapter | HP                  | 85650A           | 3303A01690               | CAL<br>11/22/09      | 11/22/11        |
| Analyzer Tan Tower RF Preselector     | HP                  | 85685A           | 3221A01400               | CAL<br>11/21/09      | 11/21/11        |
| Analyzer Tan Tower Spectrum Analyzer  | HP                  | 8566B Opt<br>462 | 3138A07786<br>3144A20661 | CAL<br>11/24/09      | 11/24/11        |
| Temperature Chamber                   | Tenney Engineering  | TTRC             | 11717-7                  | CHAR<br>4/25/08      | 4/25/10         |

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FCC ID: K6620415X20

REPORT #: V\VERTEX\_STANDARD\634AUT10\634AUT10TestReport.doc



**TEST PROCEDURE**

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**Radiation Interference:** The test procedure used was ANSI Standard C63.4-2003 using a spectrum analyzer with a pre-selector. The bandwidth of the spectrum analyzer was 100 kHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The video bandwidth was always greater than or equal to the RBW.

**Formula Of Conversion Factors:** The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBμV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the Preselector was accounted for in the Spectrum Analyzer Meter Reading.

**Example:**

|            |               |              |          |                    |
|------------|---------------|--------------|----------|--------------------|
| Freq (MHz) | Meter Reading | + ACF        | +CL      | = FS               |
| 33         | 20 dBμV       | + 10.36 dB/m | +0.40 dB | =30.36 dBμV/m @ 3m |

**ANSI C63.4-2003 Section 10.1.7 Measurement Procedures:** The unit under test was placed on a table 80 cm high and with dimensions of 1mby 1.5m. The table used for radiated measurements is capable of continuous rotation. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and verticals planes.

If powerline conducted testing was required for this device, the situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI C63.4-2003 with the EUT 40 cm from the vertical ground wall.

APPLICANT: VERTEX STANDARD CO., LTD.

FCC ID: K6620415X20

REPORT #: V\VERTEX\_STANDARD\634AUT10\634AUT10TestReport.doc



**RADIATED SPURIOUS EMISSIONS**

**Rules Part No.:** 15.109

**Requirements:**

| Frequency | Limits                          |
|-----------|---------------------------------|
| 30 – 88   | 40.0 dBμV/m measured @ 3 meters |
| 80 – 216  | 43.5 dBμV/m measured @ 3 meters |
| 216 – 960 | 46.0 dBμV/m measured @ 3 meters |
| Above 960 | 54.0 dBμV/m measured @ 3 meters |

**Test Procedure:** The procedure used was ANSI C63.4-2003. The frequency was scanned from 30 MHz to 1.0 GHz. When an emission was found, the table was rotated to produce the maximum signal strength.

**Test Data:**

Band A:

| Tuned Frequency MHz | Emission Frequency MHz | Meter Reading dBμV | Ant. Polarity | Coax Loss dB | Correction Factor dB | Field Strength dBμV/m | Margin dB |
|---------------------|------------------------|--------------------|---------------|--------------|----------------------|-----------------------|-----------|
| 108                 | 155.25                 | 4.3                | H             | 0.72         | 16.31                | 21.33                 | 22.17     |
| 108                 | 155.25                 | 4.8                | V             | 0.72         | 17.29                | 22.81                 | 20.69     |
| 108                 | 310.5                  | 9.7                | H             | 1.11         | 15.19                | 26                    | 20        |
| 108                 | 310.5                  | 10.2               | V             | 1.11         | 15.08                | 26.39                 | 19.61     |
| 108                 | 465.75                 | 10.9               | V             | 1.27         | 17.02                | 29.19                 | 16.81     |
| 122.5               | 169.75                 | 4.5                | V             | 0.78         | 16.03                | 21.31                 | 22.19     |
| 122.5               | 169.75                 | 6.6                | H             | 0.78         | 15.63                | 23.01                 | 20.49     |
| 122.5               | 339.5                  | 6.7                | H             | 1.14         | 14.81                | 22.65                 | 23.35     |
| 122.5               | 339.5                  | 9.1                | V             | 1.14         | 14.6                 | 24.84                 | 21.16     |
| 122.5               | 509.25                 | 3.8                | H             | 1.33         | 18.73                | 23.86                 | 22.14     |
| 122.5               | 509.25                 | 10.6               | V             | 1.33         | 18.46                | 30.39                 | 15.61     |
| 137                 | 184.25                 | 4.8                | V             | 0.84         | 14.25                | 19.89                 | 23.61     |
| 137                 | 184.25                 | 8.9                | H             | 0.84         | 13.36                | 23.1                  | 20.4      |
| 137                 | 368.5                  | 6.7                | V             | 1.17         | 15.06                | 22.93                 | 23.07     |
| 137                 | 368.5                  | 7.2                | H             | 1.17         | 15.17                | 23.54                 | 22.46     |

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FCC ID: K6620415X20

REPORT #: V\VERTEX\_STANDARD\634AUT10\634AUT10TestReport.doc



**TEST DATA CONTD.**

| Tuned Frequency MHz | Emission Frequency MHz | Meter Reading dBμV | Ant. Polarity | Coax Loss dB | Correction Factor dB | Field Strength dBμV/m | Margin dB |
|---------------------|------------------------|--------------------|---------------|--------------|----------------------|-----------------------|-----------|
| 150                 | 197.25                 | 6.5                | V             | 0.89         | 16.58                | 23.97                 | 19.53     |
| 150                 | 197.25                 | 11.6               | H             | 0.89         | 16.03                | 28.52                 | 14.98     |
| 150                 | 394.5                  | 6.1                | H             | 1.19         | 15.94                | 23.23                 | 22.77     |
| 150                 | 394.5                  | 11.5               | V             | 1.19         | 15.65                | 28.34                 | 17.66     |
| 174                 | 126.75                 | 3.7                | H             | 0.68         | 11.96                | 16.34                 | 27.16     |
| 174                 | 126.75                 | 4.9                | V             | 0.68         | 12.62                | 18.2                  | 25.3      |
| 174                 | 253.5                  | 4.1                | V             | 1.01         | 12.64                | 17.75                 | 28.25     |
| 174                 | 253.5                  | 6.1                | H             | 1.01         | 12.64                | 19.75                 | 26.25     |
| 174                 | 380.25                 | 5.4                | H             | 1.18         | 15.41                | 21.99                 | 24.01     |
| 174                 | 380.25                 | 7.3                | V             | 1.18         | 15.31                | 23.79                 | 22.21     |
| 174                 | 507                    | 7.8                | H             | 1.32         | 18.53                | 27.65                 | 18.35     |
| 174                 | 507                    | 12.5               | V             | 1.32         | 18.32                | 32.14                 | 13.86     |
| 198                 | 150.75                 | 4.2                | H             | 0.7          | 16.13                | 21.03                 | 22.47     |
| 198                 | 150.75                 | 5.6                | V             | 0.7          | 17.22                | 23.52                 | 19.98     |
| 198                 | 301.5                  | 9.7                | V             | 1.1          | 14.51                | 25.31                 | 20.69     |
| 198                 | 301.5                  | 12.1               | H             | 1.1          | 14.52                | 27.72                 | 18.28     |
| 198                 | 452.25                 | 4.8                | H             | 1.25         | 16.88                | 22.93                 | 23.07     |
| 198                 | 452.25                 | 10.9               | V             | 1.25         | 16.67                | 28.82                 | 17.18     |
| 222                 | 174.75                 | 3.8                | V             | 0.8          | 15.24                | 19.84                 | 23.66     |
| 222                 | 174.75                 | 4.6                | H             | 0.8          | 14.56                | 19.96                 | 23.54     |
| 222                 | 349.5                  | 7.8                | H             | 1.15         | 14.99                | 23.94                 | 22.06     |
| 222                 | 349.5                  | 9.1                | V             | 1.15         | 14.6                 | 24.85                 | 21.15     |
| 222                 | 524.25                 | 6.1                | H             | 1.37         | 18.73                | 26.2                  | 19.8      |
| 222                 | 524.25                 | 6.3                | V             | 1.37         | 18.05                | 25.72                 | 20.28     |
| 300                 | 347.25                 | 4.7                | V             | 1.15         | 14.6                 | 20.45                 | 25.55     |
| 300                 | 347.25                 | 5                  | H             | 1.15         | 14.95                | 21.1                  | 24.9      |
| 350                 | 397.25                 | 3.7                | V             | 1.2          | 15.67                | 20.57                 | 25.43     |
| 350                 | 397.25                 | 4                  | H             | 1.2          | 16.02                | 21.22                 | 24.78     |
| 420                 | 372.75                 | 4.4                | V             | 1.17         | 15.16                | 20.73                 | 25.27     |
| 420                 | 372.75                 | 5.5                | H             | 1.17         | 15.26                | 21.93                 | 24.07     |
| 445                 | 397.75                 | 6.1                | H             | 1.2          | 16.03                | 23.33                 | 22.67     |

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FCC ID: K6620415X20

REPORT #: V\VERTEX\_STANDARD\634AUT10\634AUT10TestReport.doc





**TEST DATA C ONTD.**

| Tuned Frequency MHz | Emission Frequency MHz | Meter Reading dBμV | Ant. Polarity | Coax Loss dB | Correction Factor dB/m | Field Strength dBμV/m | Margin dB |
|---------------------|------------------------|--------------------|---------------|--------------|------------------------|-----------------------|-----------|
| 445                 | 397.75                 | 8.2                | V             | 1.2          | 15.68                  | 25.08                 | 20.92     |
| 470                 | 422.75                 | 7.2                | H             | 1.22         | 16.28                  | 24.7                  | 21.3      |
| 470                 | 422.75                 | 12.3               | V             | 1.22         | 16.03                  | 29.55                 | 16.45     |
| 540                 | 492.75                 | 8.1                | H             | 1.29         | 17.61                  | 27                    | 19        |
| 540                 | 492.75                 | 12.3               | V             | 1.29         | 17.76                  | 31.35                 | 14.65     |
| 635                 | 682.25                 | 4.7                | H             | 1.68         | 21                     | 27.38                 | 18.62     |
| 635                 | 682.25                 | 5.4                | V             | 1.68         | 20.5                   | 27.58                 | 18.42     |
| 635                 | 2,046.70               | 12.3               | H             | 2.93         | 31.32                  | 46.55                 | 7.45      |
| 635                 | 2,046.75               | 11.5               | V             | 2.93         | 31.32                  | 45.75                 | 8.25      |
| 635                 | 2,729.00               | 8.7                | V             | 3.41         | 32.55                  | 44.66                 | 9.34      |
| 635                 | 4,093.50               | 10.4               | H             | 4.55         | 33.69                  | 48.64                 | 5.36      |
| 803                 | 755.75                 | 7.5                | V             | 1.81         | 20.66                  | 29.97                 | 16.03     |
| 803                 | 755.75                 | 8                  | H             | 1.81         | 21.6                   | 31.41                 | 14.59     |
| 803                 | 1,511.50               | 9.7                | H             | 2.51         | 28.07                  | 40.28                 | 13.72     |
| 803                 | 1,511.50               | 11.7               | V             | 2.51         | 28.07                  | 42.28                 | 11.72     |
| 803                 | 3,023.00               | 14.4               | V             | 3.62         | 32.61                  | 50.63                 | 3.37      |
| 803                 | 3,023.00               | 17.3               | H             | 3.62         | 32.61                  | 53.53                 | 0.47      |
| 803                 | 4,534.50               | 10.8               | H             | 4.77         | 34.1                   | 49.67                 | 4.33      |
| 900                 | 852.75                 | 13.5               | H             | 1.93         | 22.66                  | 38.09                 | 7.91      |
| 900                 | 852.75                 | 14.4               | V             | 1.93         | 22.18                  | 38.51                 | 7.49      |
| 900                 | 1,705.50               | 9.2                | H             | 2.66         | 29.32                  | 41.18                 | 12.82     |
| 900                 | 1,705.50               | 12.9               | V             | 2.66         | 29.32                  | 44.88                 | 9.12      |
| 900                 | 2,558.20               | 8                  | V             | 3.29         | 32.51                  | 43.8                  | 10.2      |
| 900                 | 3,411.00               | 9.8                | H             | 3.97         | 32.76                  | 46.53                 | 7.47      |
| 1,000.00            | 952.75                 | 8.6                | H             | 2.03         | 23.38                  | 34.01                 | 11.99     |
| 1,000.00            | 952.75                 | 11.3               | V             | 2.03         | 22.58                  | 35.91                 | 10.09     |
| 1,000.00            | 1,905.50               | 8.7                | V             | 2.82         | 30.6                   | 42.12                 | 11.88     |
| 1,000.00            | 1,905.50               | 9                  | H             | 2.82         | 30.6                   | 42.42                 | 11.58     |
| 1,000.00            | 2,858.20               | 11.2               | V             | 3.5          | 32.57                  | 47.27                 | 6.73      |
| 1,000.00            | 3,811.00               | 11.7               | H             | 4.33         | 33.3                   | 49.33                 | 4.67      |

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FCC ID: K6620415X20

REPORT #: V\VERTEX\_STANDARD\634AUT10\634AUT10TestReport.doc



Band B:

| Tuned Frequency MHz | Emission Frequency MHz | Meter Reading dBμV | Ant. Polarity | Coax Loss dB | Correction Factor dB/m | Field Strength dBμV/m | Margin dB |
|---------------------|------------------------|--------------------|---------------|--------------|------------------------|-----------------------|-----------|
| 108                 | 154.35                 | 3.7                | V             | 0.72         | 17.29                  | 21.71                 | 21.79     |
| 108                 | 154.35                 | 4.1                | H             | 0.72         | 16.27                  | 21.09                 | 22.41     |
| 108                 | 308.7                  | 10.4               | V             | 1.11         | 15.01                  | 26.52                 | 19.48     |
| 108                 | 308.7                  | 14.5               | H             | 1.11         | 15.1                   | 30.71                 | 15.29     |
| 108                 | 463.05                 | 8.8                | V             | 1.26         | 16.96                  | 27.02                 | 18.98     |
| 122.5               | 168.85                 | 3.8                | H             | 0.78         | 15.74                  | 20.32                 | 23.18     |
| 122.5               | 168.85                 | 4.4                | V             | 0.78         | 16.14                  | 21.32                 | 22.18     |
| 122.5               | 337.7                  | 16.5               | H             | 1.14         | 14.82                  | 32.46                 | 13.54     |
| 122.5               | 337.7                  | 19.4               | V             | 1.14         | 14.58                  | 35.12                 | 10.88     |
| 122.5               | 506.55                 | 8.5                | H             | 1.32         | 18.49                  | 28.31                 | 17.69     |
| 122.5               | 506.55                 | 15.2               | V             | 1.32         | 18.29                  | 34.81                 | 11.19     |
| 137                 | 183.35                 | 7.4                | V             | 0.83         | 14.3                   | 22.53                 | 20.97     |
| 137                 | 183.35                 | 14.4               | H             | 0.83         | 13.43                  | 28.66                 | 14.84     |
| 137                 | 366.7                  | 14.1               | H             | 1.17         | 15.13                  | 30.4                  | 15.6      |
| 137                 | 366.7                  | 21.7               | V             | 1.17         | 15                     | 37.87                 | 8.13      |
| 137                 | 550.05                 | 7.6                | H             | 1.45         | 18.6                   | 27.65                 | 18.35     |
| 137                 | 550.05                 | 10.6               | V             | 1.45         | 18.1                   | 30.15                 | 15.85     |
| 150                 | 196.35                 | 10.3               | V             | 0.89         | 16.31                  | 27.5                  | 16        |
| 150                 | 196.35                 | 18.1               | H             | 0.89         | 15.78                  | 34.77                 | 8.73      |
| 150                 | 392.7                  | 12.4               | H             | 1.19         | 15.88                  | 29.47                 | 16.53     |
| 150                 | 392.7                  | 23.8               | V             | 1.19         | 15.63                  | 40.62                 | 5.38      |
| 174                 | 127.65                 | 5.4                | H             | 0.68         | 12.19                  | 18.27                 | 25.23     |
| 174                 | 127.65                 | 7.4                | V             | 0.68         | 12.84                  | 20.92                 | 22.58     |
| 174                 | 255.3                  | 6.4                | V             | 1.01         | 12.71                  | 20.12                 | 25.88     |
| 174                 | 255.3                  | 7.1                | H             | 1.01         | 12.71                  | 20.82                 | 25.18     |
| 174                 | 382.95                 | 12.7               | H             | 1.18         | 15.52                  | 29.4                  | 16.6      |
| 174                 | 382.95                 | 14.4               | V             | 1.18         | 15.39                  | 30.97                 | 15.03     |
| 174                 | 510.6                  | 9.3                | V             | 1.33         | 18.49                  | 29.12                 | 16.88     |
| 198                 | 151.65                 | 5.2                | V             | 0.71         | 17.23                  | 23.14                 | 20.36     |
| 198                 | 151.65                 | 5.8                | H             | 0.71         | 16.17                  | 22.68                 | 20.82     |
| 198                 | 303.3                  | 9.7                | V             | 1.1          | 14.63                  | 25.43                 | 20.57     |

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FCC ID: K6620415X20

REPORT #: V\VERTEX\_STANDARD\634AUT10\634AUT10TestReport.doc



**TEST DATA CONTD.**

| Tuned Frequency MHz | Emission Frequency MHz | Meter Reading dB $\mu$ V | Ant. Polarity | Coax Loss dB | Correction Factor dB/m | Field Strength dB $\mu$ V/m | Margin dB |
|---------------------|------------------------|--------------------------|---------------|--------------|------------------------|-----------------------------|-----------|
| 198                 | 303.3                  | 12                       | H             | 1.1          | 14.66                  | 27.76                       | 18.24     |
| 222                 | 175.65                 | 5                        | V             | 0.8          | 15.11                  | 20.91                       | 22.59     |
| 222                 | 175.65                 | 10.6                     | H             | 0.8          | 14.4                   | 25.8                        | 17.7      |
| 222                 | 351.3                  | 11.5                     | H             | 1.15         | 15                     | 27.65                       | 18.35     |
| 222                 | 351.3                  | 18.1                     | V             | 1.15         | 14.63                  | 33.88                       | 12.12     |
| 222                 | 526.95                 | 10.4                     | H             | 1.38         | 18.62                  | 30.4                        | 15.6      |
| 222                 | 526.95                 | 13.3                     | V             | 1.38         | 17.88                  | 32.56                       | 13.44     |
| 300                 | 346.35                 | 12.1                     | V             | 1.15         | 14.6                   | 27.85                       | 18.15     |
| 300                 | 346.35                 | 12.8                     | H             | 1.15         | 14.93                  | 28.88                       | 17.12     |
| 300                 | 692.7                  | 4.4                      | H             | 1.69         | 21                     | 27.09                       | 18.91     |
| 300                 | 692.7                  | 6.5                      | V             | 1.69         | 20.53                  | 28.72                       | 17.28     |
| 300                 | 1,039.05               | 11                       | V             | 2.13         | 27.63                  | 40.76                       | 13.24     |
| 300                 | 1,385.40               | 11.6                     | H             | 2.41         | 27.91                  | 41.92                       | 12.08     |
| 300                 | 1,731.75               | 11.7                     | V             | 2.69         | 29.48                  | 43.87                       | 10.13     |
| 300                 | 1,731.75               | 13.8                     | H             | 2.69         | 29.48                  | 45.97                       | 8.03      |
| 300                 | 2,078.10               | 8.9                      | V             | 2.95         | 31.4                   | 43.25                       | 10.75     |
| 300                 | 2,078.10               | 10                       | H             | 2.95         | 31.4                   | 44.35                       | 9.65      |
| 350                 | 396.35                 | 10.9                     | H             | 1.2          | 15.99                  | 28.09                       | 17.91     |
| 350                 | 396.35                 | 16.5                     | V             | 1.2          | 15.66                  | 33.36                       | 12.64     |
| 350                 | 792.7                  | 11.9                     | V             | 1.89         | 20.93                  | 34.72                       | 11.28     |
| 350                 | 792.7                  | 12.9                     | H             | 1.89         | 21.6                   | 36.39                       | 9.61      |
| 350                 | 1,585.40               | 12.4                     | H             | 2.57         | 28.55                  | 43.52                       | 10.48     |
| 350                 | 1,585.40               | 13.5                     | V             | 2.57         | 28.55                  | 44.62                       | 9.38      |
| 420                 | 373.65                 | 9.5                      | H             | 1.17         | 15.27                  | 25.94                       | 20.06     |
| 420                 | 373.65                 | 14                       | V             | 1.17         | 15.17                  | 30.34                       | 15.66     |
| 420                 | 747.3                  | 9.8                      | H             | 1.79         | 21.52                  | 33.11                       | 12.89     |
| 420                 | 747.3                  | 10.6                     | V             | 1.79         | 20.65                  | 33.04                       | 12.96     |
| 420                 | 1,494.60               | 11.7                     | V             | 2.5          | 28                     | 42.2                        | 11.8      |
| 420                 | 1,494.60               | 12.3                     | H             | 2.5          | 28                     | 42.8                        | 11.2      |
| 445                 | 398.65                 | 12.3                     | H             | 1.2          | 16.06                  | 29.56                       | 16.44     |
| 445                 | 398.65                 | 18.5                     | V             | 1.2          | 15.69                  | 35.39                       | 10.61     |
| 445                 | 797.3                  | 12.8                     | V             | 1.89         | 20.97                  | 35.66                       | 10.34     |
| 445                 | 797.3                  | 14.4                     | H             | 1.89         | 21.6                   | 37.89                       | 8.11      |

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FCC ID: K6620415X20

REPORT #: V\VERTEX\_STANDARD\634AUT10\634AUT10TestReport.doc



**TEST DATA CONTD.**

| Tuned Frequency MHz | Emission Frequency MHz | Meter Reading dBuV | Ant. Polarity | Coax Loss dB | Correction Factor dB | Field Strength dBuV/m | Margin dB |
|---------------------|------------------------|--------------------|---------------|--------------|----------------------|-----------------------|-----------|
| 445                 | 1,594.60               | 13.1               | V             | 2.58         | 28.61                | 44.29                 | 9.71      |
| 445                 | 1,594.60               | 13.8               | H             | 2.58         | 28.61                | 44.99                 | 9.01      |
| 470                 | 423.65                 | 21.3               | V             | 1.22         | 16.04                | 38.56                 | 7.44      |
| 470                 | 423.65                 | 23.1               | H             | 1.22         | 16.31                | 40.63                 | 5.37      |
| 470                 | 847.3                  | 12.8               | V             | 1.92         | 21.97                | 36.69                 | 9.31      |
| 470                 | 847.3                  | 13.2               | H             | 1.92         | 22.57                | 37.69                 | 8.31      |
| 470                 | 1,694.60               | 12.4               | H             | 2.66         | 29.25                | 44.31                 | 9.69      |
| 470                 | 1,694.60               | 12.8               | V             | 2.66         | 29.25                | 44.71                 | 9.29      |
| 540                 | 493.6                  | 17.2               | H             | 1.29         | 17.64                | 36.13                 | 9.87      |
| 540                 | 493.65                 | 20.8               | V             | 1.29         | 17.77                | 39.86                 | 6.14      |
| 540                 | 987.3                  | 5.6                | H             | 2.08         | 23.95                | 31.63                 | 22.37     |
| 540                 | 987.3                  | 7.2                | V             | 2.08         | 23.15                | 32.43                 | 21.57     |
| 540                 | 1,974.60               | 9.4                | H             | 2.88         | 31.04                | 43.32                 | 10.68     |
| 540                 | 2,468.25               | 8.2                | V             | 3.23         | 32.42                | 43.85                 | 10.15     |
| 540                 | 2,468.25               | 10.9               | H             | 3.23         | 32.42                | 46.55                 | 7.45      |
| 580                 | 533.6                  | 20.6               | V             | 1.4          | 17.84                | 39.84                 | 6.16      |
| 580                 | 533.6                  | 22.6               | H             | 1.4          | 18.43                | 42.43                 | 3.57      |
| 580                 | 1,600.80               | 10.8               | H             | 2.58         | 28.65                | 42.03                 | 11.97     |
| 580                 | 1,600.80               | 11.5               | V             | 2.58         | 28.65                | 42.73                 | 11.27     |
| 580                 | 2,134.40               | 11.2               | H             | 2.99         | 31.55                | 45.74                 | 8.26      |
| 580                 | 2,668.00               | 11.4               | V             | 3.37         | 32.53                | 47.3                  | 6.7       |
| 580                 | 2,668.00               | 11.5               | H             | 3.37         | 32.53                | 47.4                  | 6.6       |

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FCC ID: K6620415X20

REPORT #: V\VERTEX\_STANDARD\634AUT10\634AUT10TestReport.doc



**POWER LINE CONDUCTED INTERFERENCE**

**Rules Part No.:** Part 15.107

**Requirements:**

| <b>Frequency<br/>(MHz)</b> | <b>Quasi Peak Limits<br/>(dB<math>\mu</math>V)</b> | <b>Average Limits<br/>(dB<math>\mu</math>V)</b> |
|----------------------------|--|---|
| 0.15 – 0.5                 | 66 – 56  | 56 – 46   |
| 0.5 – 5.0                  | 56   | 46  |
| 5.0 – 30                   | 60   | 50  |

**Test Procedure:** ANSI Standard C63.4-2003. The spectrum was scanned from 0.15 to 30 MHz.

**Test Data:** Not applicable.

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FCC ID: K6620415X20

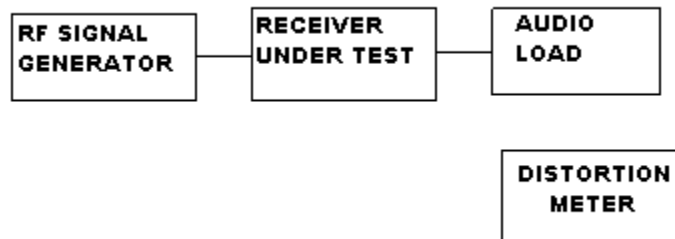
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## 38 dB REJECTION RATIO

**RULES PART NUMBER:** 15.121(b)

**REQUIREMENTS:** 38dB REJECTION RATIO TO SENSITIVITY OF THE RECEIVER.

### TEST SET-UP



- a. Equipment connected as illustrated
- b. A standard signal was applied to the receiver input terminals.
- c. Receiver output audio output was adjusted for rated output.
- d. The RF Signal generator was adjusted to the lowest level to produce a 12dB SINAD without the audio output dropping more than 3dB. Make note of sensitivity level.
- e. This was done across the different bands to establish a reference level. The reference taken was the worse case sensitivity.
- f. The output of the signal generator was then adjusted to a level of 60dB above the reference level at a frequency of 824.5MHz.
- g. With the level set 60dB above the level measured in step e.
- h. Set squelch on receiver to threshold, the signal level required to open the squelch must be lower than the level measured in step d.
- i. Cause the receiver to scan or step-it through its complete range of frequencies.
- j. If receiver stops or unsquelches on any frequency, record the frequency and then adjust the level until a 12dB SINAD is produced. This level must be greater than 38dB above the level in step e.
- k. Repeat steps f through j for frequencies 836.0, 848.5, 869.1, 881.0, & 893.5MHz.

**TEST RESULTS:** The DUT meets the 38dB REJECTION RATIO.

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FCC ID: K6620415X20

REPORT #: V\VERTEX\_STANDARD\634AUT10\634AUT10TestReport.doc