



849 NW State Road 45
Newberry, FL 32669 USA
Phone: 888.472.2424 or 352.472.5500
Fax: 352.472.2030
Email: info@timcoengr.com
Website: www.timcoengr.com

FCC PART 15

SCANNING RECEIVER

| | | |
|----------------------|--|-------------------------------|
| Applicant | VERTEX STANDARD CO., LTD. | |
| Address | 4-8-8 NAKAMEGURO, MEGURO-KU | |
| | TOKYO 153-8644 JAPAN | |
| FCC ID: | K6620223X20 | |
| Model Number | FT-270R | |
| Product Description | SCANNING RECEIVER | |
| Date Sample Received | 4/23/2009 | |
| Date Tested | 5/6/2009 | |
| Tested By | NAM NGUYEN | |
| Approved By | MARIO DE ARANZETA | |
| Report Number | 856AUT9TestReport.doc | |
| Test Results | <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



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APPLICANT: VERTEX STANDARD CO., LTD.

FCC ID: K6620223X20

REPORT #: V\VERTEX_STANDARD\856AUT9\856AUT9TestReport.doc

GENERAL REMARKS

The attached report shall not be reproduced except in full without the written permission of Timco Engineering Inc.

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

This is a request for a Class II Permissive change. With the change, the device becomes model number FT-270R. Radiated emissions testing was completed and there is no degradation from previously reported data.

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: 5/6/09

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GENERAL INFORMATION

| | |
|---|--|
| The test results relate only to the items tested. | |
| DUT Description | SCANNING RECEIVER |
| FCC ID | K6620223X20 |
| Model Number | FT-270R |
| DUT Power Source | <input type="checkbox"/> 110-120Vac/50- 60Hz |
| | <input type="checkbox"/> DC Power |
| | <input checked="" type="checkbox"/> Battery Operated Exclusively |
| Test Item | <input type="checkbox"/> Prototype |
| | <input checked="" type="checkbox"/> Pre-Production |
| | <input type="checkbox"/> Production |
| Modifications to DUT | None |
| Test Standards | FCC Part 15, Subpart B, ANSI C63.4-2003 |

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TEST EQUIPMENT LIST

| Device | Manufacturer | Model | Serial Number | Cal/Char Date | Due Date |
|---------------------------------------|---------------------|---------------|--------------------------|----------------------|-----------------|
| 3/10-Meter OATS | TEI | N/A | N/A | Listed 3/20/07 | 3/19/10 |
| 3-Meter OATS | TEI | N/A | N/A | Listed 2/5/09 | 2/5/12 |
| 3-Meter Semi-Anechoic Chamber | Panashield | N/A | N/A | Listed 5/11/07 | 5/11/10 |
| Analyzer Tan Tower Quasi-Peak Adapter | HP | 85650A | 3303A01690 | CAL 11/30/07 | 11/30/09 |
| Analyzer Tan Tower RF Preselector | HP | 85685A | 3221A01400 | CAL 11/30/07 | 11/30/09 |
| Analyzer Tan Tower Spectrum Analyzer | HP | 8566B Opt 462 | 3138A07786 3144A20661 | CAL 11/30/07 | 11/30/09 |
| Analyzer Tan Tower Preamplifier | HP | 8449B-H02 | 3008A00372 | CAL 11/30/07 | 11/30/09 |
| Frequency Counter | HP | 5385A | 2730A03025 | CAL 7/6/07 | 7/6/09 |
| Hygro-Thermometer | Extech | 445703 | 0602 | CAL 11/15/07 | 11/15/09 |
| Measuring Tape-7.5M | Kraftixx | 7.5M PROFI | | CHAR 11/13/07 | 11/13/09 |
| Modulation Analyzer | HP | 8901A | 3435A06868 | CAL 5/9/07 | 5/9/09 |
| Digital Multimeter | Fluke | FLUKE-77-3 | 79510405 | CAL 5/14/07 | 5/14/09 |
| System One | Audio Precision | System One | SYS1-45868 | CHAR 2/27/08 | 2/27/10 |
| Temperature Chamber | Tenney Engineering | TTRC | 11717-7 | CHAR 4/25/08 | 4/25/10 |

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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 dB μ V) 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 dB μ V | + 10.36 dB/m | +0.40 dB | =30.36 dB μ V/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 1m by 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 vertical 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.

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RADIATED SPURIOUS EMISSIONS

Rules Part No.: 15.109

Requirements:

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

Test Procedure: The procedure used was ANSI C63.4-2003. The frequency was scanned from 30 MHz to 1 GHz. When an emission was found, the table was rotated to produce the maximum signal strength. The DUT was measured in three (3) orthogonal planes.

Test Data:

| Tuned Frequency MHz | Emission Frequency MHz | Meter Reading dB μ V | Ant. Polarity | Coax Loss dB | Correction Factor dB/m | Field Strength dB μ V/m | Margin dB |
|---------------------|------------------------|--------------------------|---------------|--------------|------------------------|-----------------------------|-----------|
| 174 | 152.3 | 7.5 | H | 0.71 | 13.76 | 21.97 | 21.53 |
| 174 | 152.3 | 9.3 | V | 0.71 | 14.39 | 24.4 | 19.1 |
| 174 | 304.6 | 3.6 | V | 1.1 | 14.72 | 19.42 | 26.58 |
| 174 | 304.6 | 4.5 | H | 1.1 | 14.77 | 20.37 | 25.63 |
| 174 | 761.5 | 4.9 | H | 1.82 | 21.59 | 28.31 | 17.69 |
| 174 | 761.5 | 8.2 | V | 1.82 | 20.72 | 30.74 | 15.26 |

This device was also tested at 137 MHz and 154 MHz but no emissions were found. The only emissions found are listed in the table above.

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POWER LINE CONDUCTED INTERFERENCE

Rules Part No.: Part 15.107

Requirements:

| Frequency (MHz) | Quasi Peak Limits (dBμV) | Average Limits (dBμV) |
|----------------------------|--|---|
| 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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