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FCC PART 90 and IC RSS-119
CLASS II PERMISSIVE CHANGE
TEST REPORT

APPLICANT	NEPTUNE TECHNOLOGY GROUP INC.
	1600 ALABAMA HIGHWAY 239
	TALLAHASSEE, AL 36078
FCC ID	P2SR450
IC CERTIFICATION	4171B-R450
MODEL NUMBER	R450
PRODUCT DESCRIPTION	METER READING TRANSCEIVER
DATE SAMPLE RECEIVED	9/30/2008
DATE TESTED	10/1/2008
TESTED BY	RICHARD BLOCK
APPROVED BY	MARIO DE ARANZETA
TIMCO REPORT NO.	1535AUT8TestReport.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.





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Applicant: NEPTUNE TECHNOLOGY GROUP INC.

FCC ID: P2SR450

IC: 4171B-R450

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GENERAL REMARKS

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

The purpose of this Class II Permissive change filing is to add a low power mode on the device for field programming of the device. This special low power mode will operate in the same licensed band of frequencies as listed on the original grant of certification but below the power limit that requires a license.

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: 10/1/2008

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GENERAL INFORMATION

DUT Specification

DUT Description	METER READING TRANSCEIVER
FCC ID	P2SR450
IC Certification	4171B-R450
Model Number	R450
Type of Emission	11K2F1D
Type of Equipment	<input type="checkbox"/> Fixed
	<input type="checkbox"/> Mobile
	<input checked="" type="checkbox"/> Portable
Test Conditions	The temperature was 26°C with a relative humidity of 50%.
Modification to the DUT	None
Test Exercise	The DUT was placed in continuous transmit mode.
Applicable Standards	ANSI/TIA 603-C:2004, FCC CFR 47 Part 90
Test Facility	Timco Engineering Inc. at 849 NW State Road 45 Newberry, FL 32669 USA.

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EQUIPMENT LIST

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
3-Meter Semi-Anechoic Chamber	Panashield	N/A	N/A	Listed 5/11/07	5/10/10
AC Voltmeter	HP	400FL	2213A14499	CAL 12/29/06	12/29/08
Coaxial Cable #64	Semflex Inc.	60637	Timco #64	CHAR 3/30/07	3/30/09
Antenna: Dipole Kit	Electro-Metrics	TDA-30/1-4	152	CAL 3/3/06	3/3/09
Antenna: Dipole Kit	Electro-Metrics	TDA-30/1-4	153	CHAR 4/5/06	4/5/09
Frequency Counter	HP	5385A	2730A03025	CAL 7/6/07	7/6/09
Hygro-Thermometer	Extech	445703	0602	CAL 11/15/07	11/15/09
Antenna: Log-Periodic	Electro-Metrics	LPA-25	1122	CAL 12/1/06	12/1/08
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
Analyzer Tan Tower Preamplifier	HP	8449B-H02	3008A00372	CAL 11/30/07	11/30/09
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
Temperature Chamber	Tenney Engineering	TTRC	11717-7	CHAR 4/25/08	4/25/10

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TEST PROCEDURE

Power Line Conducted Interference: The procedure used was ANSI/TIA 603-C:2004, using a 50uH LISN. Both lines were observed with the UUT transmitting. The bandwidth of the spectrum analyzer was 10 kHz with an appropriate sweep speed.

Bandwidth 20 dB: The measurements were made with the spectrum analyzer's resolution bandwidth (RBW) = 1 MHz and the video bandwidth (VBW) = 3 MHz and the span set as shown on plot.

Power Output: The RF power output was measured at the antenna feed point using a peak power meter.

Antenna Conducted Emissions: The RBW = 100 kHz, VBW = 300 kHz and the span set to 10.0 MHz and the spectrum was scanned from 30 MHz to the 10th harmonic of the fundamental. Above 1 GHz the resolution bandwidth was 1 MHz and the VBW = 3 MHz and the span to 50 MHz.

Radiation Interference: The test procedure used was ANSI/TIA 603-C:2004, using an Agilent spectrum receiver with pre-selector. The bandwidth (RBW) of the spectrum ANSI/TIA 603-C:2004, receiver was 100 kHz up to 1 GHz and 1 MHz above 1 GHz with an appropriate sweep speed. The VBW above 1 GHz was 3 MHz. The analyzer was calibrated in dB above a microvolt at the output of the antenna.

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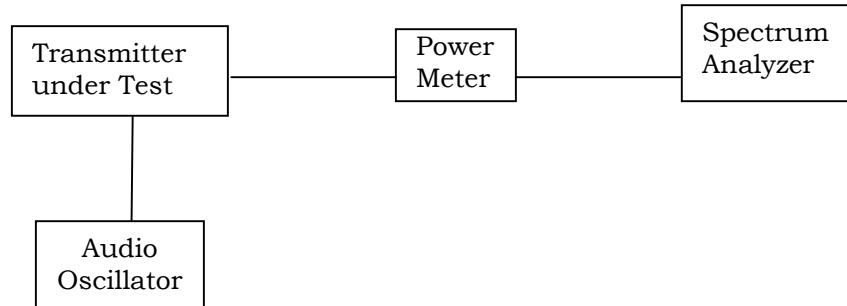
RF POWER OUTPUT

Rule Part No.: Part 2.1046(a), Part 90

Test Requirements:

Method of Measurement: RF power is measured by connecting a 50-ohm, resistive wattmeter to the RF output connector. With a nominal battery voltage, and the transmitter properly adjusted the RF output measures:

Test Setup Diagram:



Test Data:

OUTPUT POWER: HIGH – 0.001 Watts
LOW - 0.001 Watts

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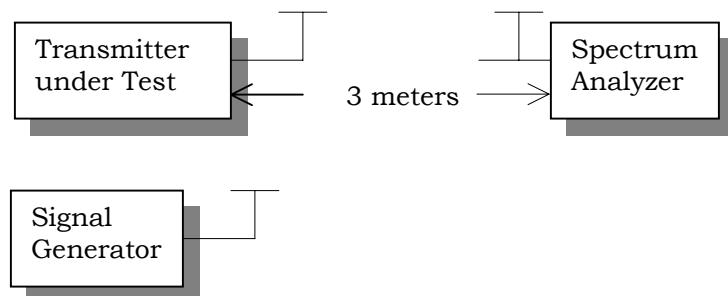
FIELD STRENGTH OF SPURIOUS EMISSIONS

Rule Parts. No.: Part 2.1053

Requirements: 12.5kHz Channel Spacing = $50 + 10\log(.001) = 20 \text{ dBc}$

METHOD OF MEASUREMENT: The tabulated data shows the results of the radiated field strength emissions test. The spectrum was scanned from 30 MHz to at least the tenth harmonic of the fundamental. This test was conducted per ANSI/TIA 603-C: 2004 using the substitution method. Measurements were made at the test site of TIMCO ENGINEERING, INC. located at 849 NW State Road 45, Newberry, FL 32669.

Test Setup Diagram:



Test Data:

Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
450.00	0	0
900.00	H	43
1350.00	H	31
1800.00	V	25
2250.00	H	39
2700.00	H	46
3150.00	H	45
3600.00	H	37
4050.00	H	44
4500.00	V	36

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Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
457.50	0	0
915.00	H	41
1372.50	H	31
1830.00	V	21
2287.50	H	39
2745.00	H	45
3202.50	H	45
3660.00	H	36
4117.50	H	44
4575.00	V	36

Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
470.00	0	0
940.00	H	41
1410.00	H	33
1880.00	V	22
2350.00	H	39.54
2820.00	H	46
3290.00	H	45
3760.00	H	38
4230.00	H	47
4700.00	V	36

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