TEST REPORT

Report Number: 100653916MPK-001
Project Number: G100653916
February 27, 2012

Testing performed on the
Scanner Receiver Analog
Model Number: PSR-120
FCC ID: ADV0908900
IC: 5088A-PSR120
to

FCC Part 15, Subpart B
RSS-215

Class: B

for

GRE America

Test Performed by:	Test Authorized by:
Intertek	GRE America
1365 Adams Court	425 Harbor Blvd. Suite B
Menlo Park, CA 94025	Belmont, CA 94002
USA	USA

Prepared by: _____ **Date:** February 27, 2012
Edmund Cruz

Reviewed by: _____ **Date:** February 27, 2012
Krishna K Vemuri

VERIFICATION OF COMPLIANCE
Report No. 100653916MPK-001

Verification is hereby issued to the named APPLICANT and is VALID ONLY for the equipment identified hereon for use under the rules and regulations listed below.

Equipment Under Test:	Scanner Receiver Analog
Trade Name:	GRE America
Model No.:	PSR-120
Serial No.	000015
Applicant:	GRE America
Contact:	Mr. Raj Gounder
Address:	425 Harbor Blvd. Suite B Belmont, CA 94002
Country	USA
Tel. number:	650-591-1400
Fax number:	650-591-2001
Applicable Regulation:	FCC Part 15, Subpart B RSS-215
Equipment Class:	Class B
Date of Test:	February 17 to 27, 2012

We attest to the accuracy of this report:

Edmund Cruz
Project Engineer

Krishna Vemuri
Senior Staff EMC Engineer

TABLE OF CONTENTS

1.0 General Description

1.1 Product Description

The Equipment Under Test (EUT) is a Scanner Receiver Analog, model PSR-120.

Refer to the attached specifications sheets in Appendix B for more details.

A production version of the sample was received on February 17, 2012 in good condition. As declared by the Applicant, it is identical to production units.

1.2 Related Submittal(s) Grants

This is a single application for certification of a Scanner Receiver Analog.

1.3 Test Methodology

Both conducted (if applicable) and radiated emission measurements were performed according to the procedures in ANSI C63.4. All radiated measurements were performed in a semi-anechoic chamber. Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the **"Data Section"** of this Application.

1.4 Test Facility

The test site and conducted measurement facility used to collect the radiated data is Site 1, a 10 meter semi-anechoic chamber. This test facility and site measurement data have been fully placed on file with the FCC and A2LA accredited.

1.5 Summary of Test Results

Model: PSR-120
FCC ID: ADV0908900
IC: 5088A-PSR120

TEST	REFERENCE	REFERENCE	RESULTS
Radiated Emission	15.109	RSS-215, Section 5.1 RSS-GEN, Section 6.1	Complies
AC Line Conducted Emission	15.107	RSS-GEN, Section 7.2.4	Complies
Antenna Conducted Emission	15.111	RSS-GEN, Section 6.2	Complies
FCC Part 15.121 Requirement	15.121		Complies[1]

[1] Refer to file: GRE PSR-120 REPORT FOR FCC RULE PART 15.121.pdf

2.0 System Test Configuration

2.1 Justification

The tests were performed according to the test procedure as outlined in CFR47 Part 15.31, ANSI C63.4, RSS-GEN and RSS-215.

For emission testing, the equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). During testing, all cables were manipulated to produce worst-case emissions.

For the measurements, the EUT is placed on top of a non-conductive table. If the EUT attaches to peripherals, they are connected and operational (as typical as possible).

For radiated emission measurements, the signal is maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance. All readings are extrapolated back to the equivalent three-meter reading using inverse scaling with distance if measured at a closer distance.

2.2 EUT Exercising Software

The unit was setup to receive continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing.

2.3 Mode of Operation

The EUT was tested in two modes:

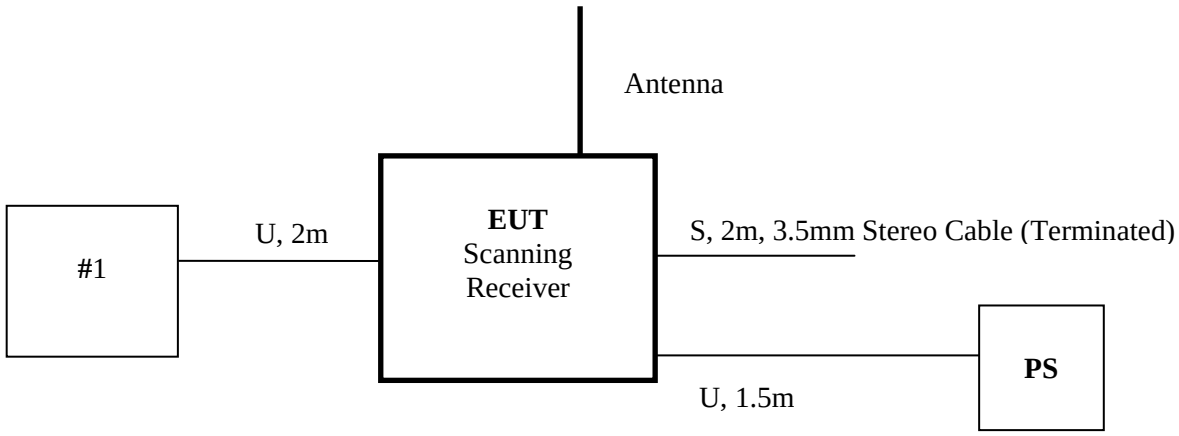
Test Mode 1: The EUT was set to constantly receive at the low, middle and high channels of each band.

Test Mode 2: The EUT was set to constantly scan all bands.

2.4 Support Equipment List and Description

Item #	Description	Model No.	Serial No.
1	Headphones	Not Labeled	Not Labeled

2.5 Equipment Setup Block Diagram



PS: GRECOM ACADAPTER, Model: 41-060-0500

U: Unshielded
S: Shielded
m: meter

2.6 Equipment Modification

Intertek Testing Services installed no modifications.

3.0 Emission Test Results

AC line conducted emission measurements were performed from 0.15 MHz to 30 MHz. Analyzer resolution is 10 kHz or greater.

Radiated emission measurements and antenna conducted emission measurements were performed from 30 MHz to 10,000 MHz. Analyzer resolution is 100 kHz or greater for frequencies from 30 MHz to 1000 MHz, 1 MHz - for frequencies above 1000 MHz.

Preliminary tests were performed to determine the worst-case emission with the EUT tuned to the low, middle and high channels of each band. From these preliminary measurements the EUT was tuned to the frequency with the highest emission and the final scan was performed using the automated test software.

The same procedure was used to determine the worst-case emission level with the EUT setup in scanning mode for each band.

The final recorded data reflects the worst-case result.

A sample calculation and data tables of the emissions are included.

All measurements were performed with peak detection unless otherwise specified.

3.1 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CF - AG + DF

Where FS = Field Strength in dB(µV/m)
RA = Receiver Amplitude (including preamplifier) in dB(µV)
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB(1/m)
AG = Amplifier Gain in dB
DF = Distance Factor in dB

Assume a receiver reading of 52.0 dB(µV) is obtained. The antennas factor of 7.4 dB(1/m) and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving field strength of 32 dB(µV/m). This value in dB(µV/m) was converted to its corresponding level in µV/m.

RA = 52.0 dB(µV)
AF = 7.4 dB(1/m)
CF = 1.6 dB
AG = 29.0 dB
DF = 0 dB
FS = 52 +7.4 +1.6 –29.0 + 0 = 32 dB(µV/m)
Level in µV/m = Common Antilogarithm [(32 dB(µV/m)/20] = 39.8 µV/m

3.2 Radiated Emission Data

Tested By:	Edmund Cruz
Test Date:	February 17, 2012

The results on the following page(s) were obtained when the device was tested in the condition described in Section 2.

Results:	**Complies**

3.2 Test Data (Continued)

FCC Part 15.109 Class B and RSS-GEN Radiated Emissions Data

Intertek
Radiated Emissions 30 MHz - 1000 MHz
FCC Part 15 Class B (QP)

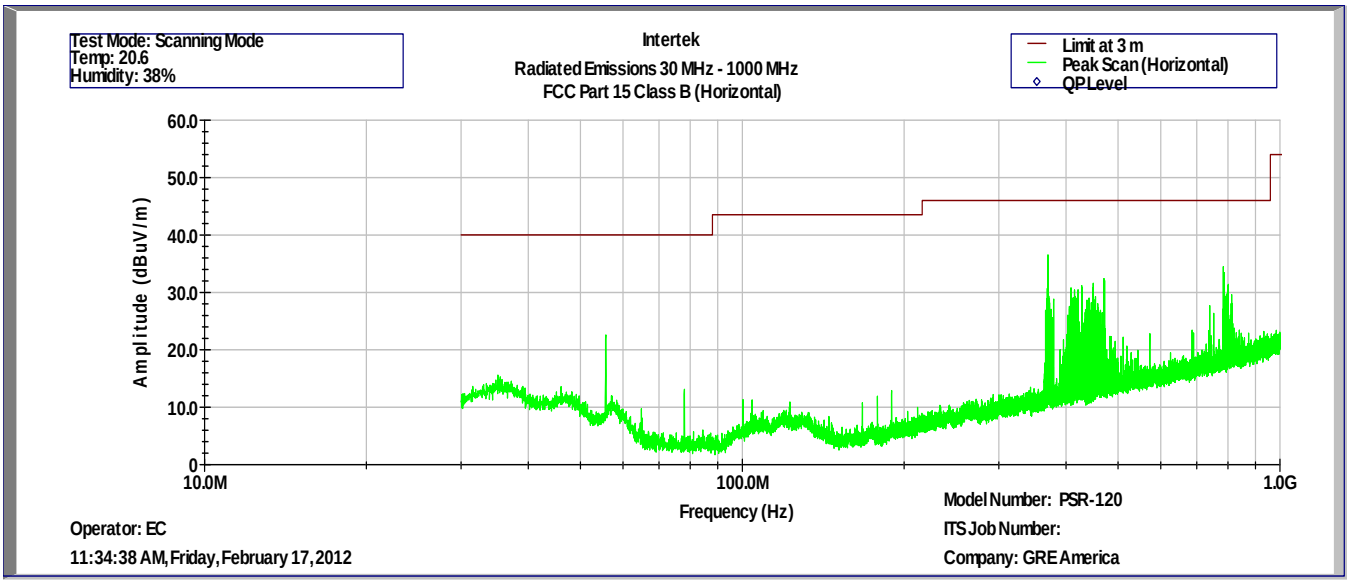
Operator: EC
February 17, 2012

Model Number:PSR-120
Company: GRE

Tuned Frequency	Measured Frequency	Quasi Pk FS	Limit@3m	RA	AG	CF	AF	Margin
MHz	MHz	dB(uV/m)	dB(uV/m)	dB(uV)	dB	dB	dB(1/m)	dB
25	405.8	31.9	46.0	46.3	32.0	1.6	16.1	-14.1
45	425.8	33.5	46.0	47.1	32.0	1.6	16.8	-12.5
54	434.8	36.3	46.0	50.5	32.0	1.6	16.2	-9.7
88	468.8	32.9	46.0	46.0	32.1	1.7	17.3	-13.1
100	480.8	29.5	46.0	42.5	32.1	1.7	17.3	-16.5
107.9	488.7	31.3	46.0	44.1	32.1	1.7	17.5	-14.7
108	488.8	28.6	46.0	41.5	32.1	1.7	17.6	-17.4
110	490.8	28.1	46.0	40.8	32.1	1.7	17.6	-17.9
136.99166	517.8	32.2	46.0	44.5	32.1	1.8	18.0	-13.8
137	517.8	27.4	46.0	39.7	32.1	1.8	18.0	-18.6
150	530.8	27.0	46.0	38.7	32.2	1.8	18.7	-19.0
174	554.8	24.4	46.0	36.3	32.2	1.8	18.5	-21.6
380	760.8	36.8	46.0	45.9	32.2	2.2	20.9	-9.2
410	790.8	37.2	46.0	45.6	32.2	2.3	21.5	-8.8
512	892.8	31.9	46.0	38.8	31.7	2.4	22.4	-14.1
806	425.2	31.6	46.0	45.2	32.0	1.6	16.8	-14.4
815	434.2	29.4	46.0	43.5	32.0	1.6	16.3	-16.6
823.9875	443.2	32.1	46.0	46.3	32.0	1.6	16.2	-13.9
849	468.2	32.9	46.0	46.0	32.1	1.7	17.3	-13.1
860	479.2	28.6	46.0	41.6	32.1	1.7	17.3	-17.4
868.9875	488.2	28.3	46.0	41.1	32.1	1.7	17.5	-17.7
894	513.2	27.4	46.0	39.8	32.1	1.8	18.0	-18.6
920	539.2	30.3	46.0	42.3	32.2	1.8	18.3	-15.7
960	579.2	17.2	46.0	28.5	32.2	1.9	19.0	-28.8
1240	859.2	28.2	46.0	35.9	31.9	2.4	21.9	-17.8
1275	894.2	32.3	46.0	39.1	31.7	2.4	22.5	-13.7
1300	919.2	32.9	46.0	39.1	31.6	2.5	22.9	-13.1

Test Mode: Tuned Frequency
Temp: 22.5C
Humidity: 45.7%

3.2 Test Data (Continued)



Intertek
Radiated Emissions 30 MHz- 1000 MHz
FCC Part 15 Class B (Pk-Horizontal)

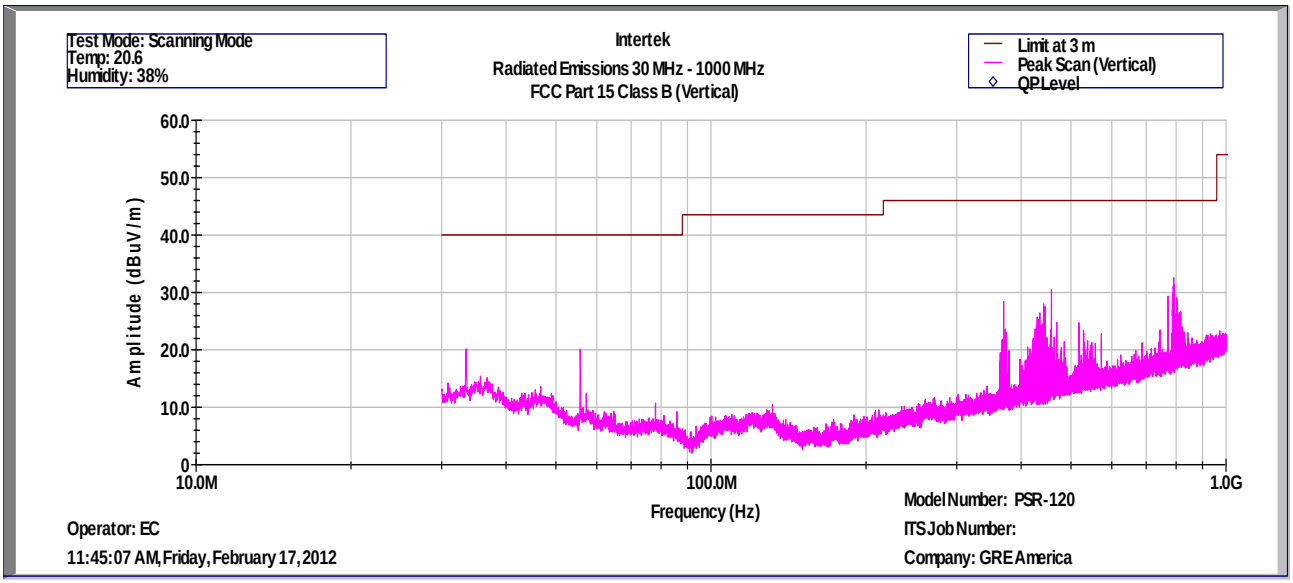
Operator: EC
February 17, 2012

Model Number: PSR-120
Company: GRE

Frequency (Hz)	Peak FS dB(uV/m)	Limit@3m dB(uV/m)	Margin dB	RA dB(uV)	AG dB	CF dB	AF dB(1/m)
3.701E+08	36.5	46.0	-9.5	51.4	32.0	1.5	15.6
7.843E+08	34.5	46.0	-11.5	42.9	32.2	2.3	21.5
7.876E+08	33.4	46.0	-12.6	41.9	32.2	2.3	21.5
4.707E+08	32.4	46.0	-13.6	45.4	32.1	1.7	17.3
7.872E+08	32.2	46.0	-13.8	40.6	32.2	2.3	21.5
4.720E+08	32.0	46.0	-14.0	45.1	32.1	1.7	17.3

Test Mode: Scanning Mode
Temp: 22.5C
Humidity: 45.7%

3.2 Test Data (Continued)



Intertek
Radiated Emissions 30 MHz- 1000 MHz
FCC Part 15 Class B (Pk-Vertical)

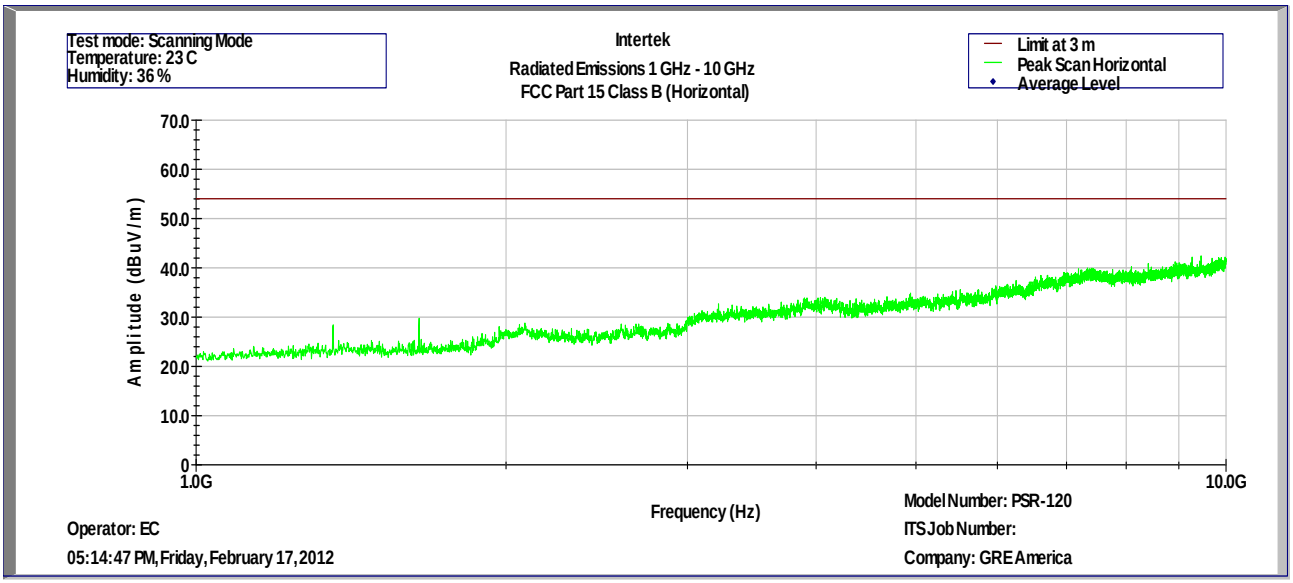
Operator: EC
February 17, 2012

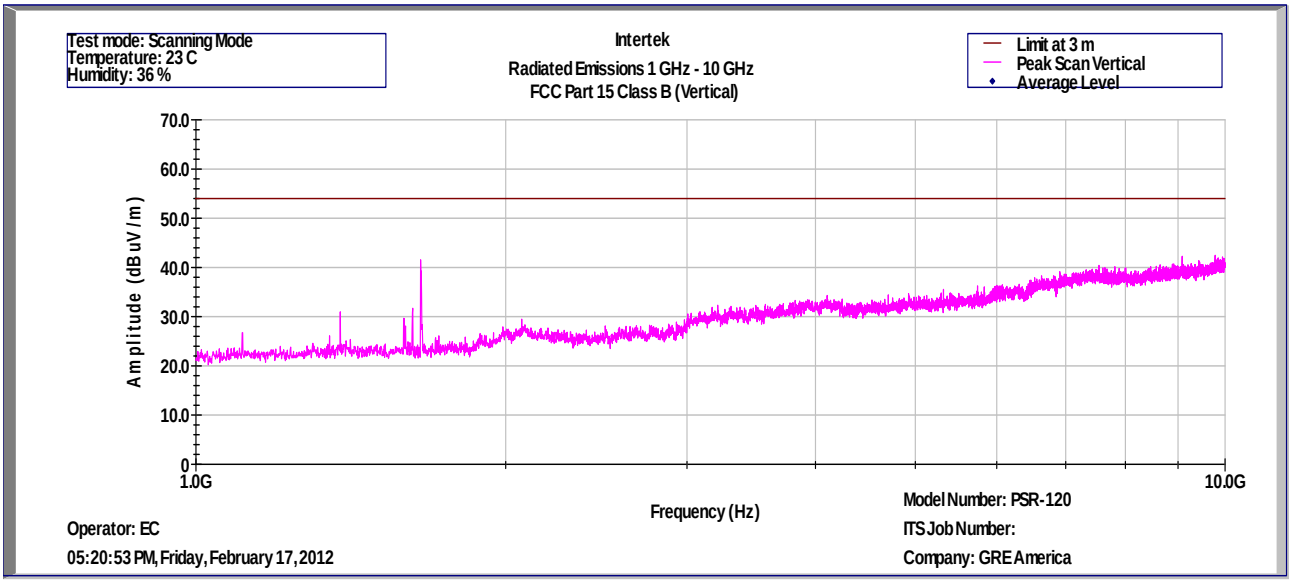
Model Number: PSR-120
Company: GRE

Frequency (Hz)	Pk FS dB(uV/m)	Limit@3m dB(uV/m)	Margin dB	RA dB(uV)	PA dB	CF dB	AF dB(1/m)
7.916E+08	32.5	46	-13.5	40.9	32.2	2.3	21.5
7.927E+08	31.3	46	-14.7	39.6	32.2	2.3	21.6
7.898E+08	31.1	46	-14.9	39.5	32.2	2.3	21.5
4.582E+08	30.5	46	-15.5	43.7	32.0	1.7	17.2
7.934E+08	30.2	46	-15.8	38.5	32.2	2.3	21.6
7.879E+08	29.7	46	-16.3	38.1	32.2	2.3	21.5

Test Mode: Scanning Mode
Temp: 22.5C
Humidity: 45.7%

3.2 Test Data (Continued)





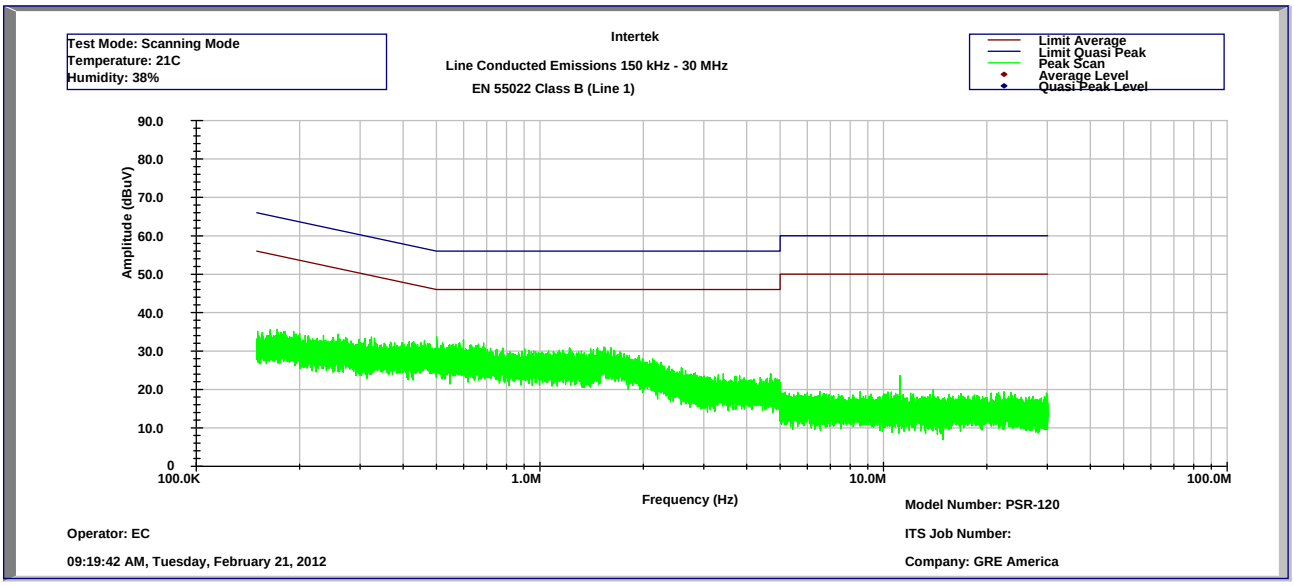
3.3 AC Line Conducted Emission Data

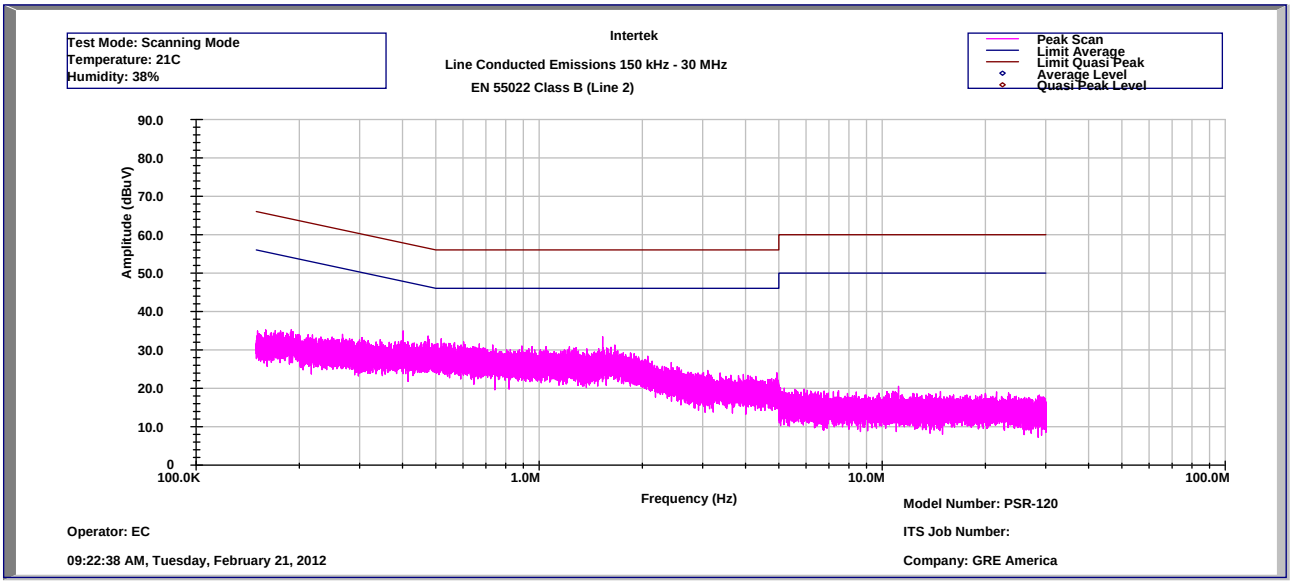
Tested By:	Edmund Cruz
Test Date:	February 21, 2012

The results on the following page(s) were obtained when the device was tested in the condition described in Section 2.

Results:	**Complies**

3.3 Test Data


Test Mode: Scanning Mode
Temperature: 21C
Humidity: 38%
Intertek
Line Conducted Emissions 150 kHz - 30 MHz
EN 55022 Class B (Line 1)
Limit Average
Limit Quasi Peak
Peak Scan
Average Level
Quasi Peak Level
Amplitude (dBuV)
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0
100.0K
1.0M
10.0M
100.0M
Frequency (Hz)
Model Number: PSR-120
ITS Job Number:
Company: GRE America
Operator: EC
09:19:42 AM, Tuesday, February 21, 2012


Test Mode: Scanning Mode
Temperature: 21C
Humidity: 38%
Intertek
Line Conducted Emissions 150 kHz - 30 MHz
EN 55022 Class B (Line 2)
Peak Scan
Limit Average
Limit Quasi Peak
Average Level
Quasi Peak Level
Amplitude (dBuV)
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0
100.0K
1.0M
10.0M
100.0M
Frequency (Hz)
Model Number: PSR-120
ITS Job Number:
Company: GRE America
Operator: EC
09:22:38 AM, Tuesday, February 21, 2012

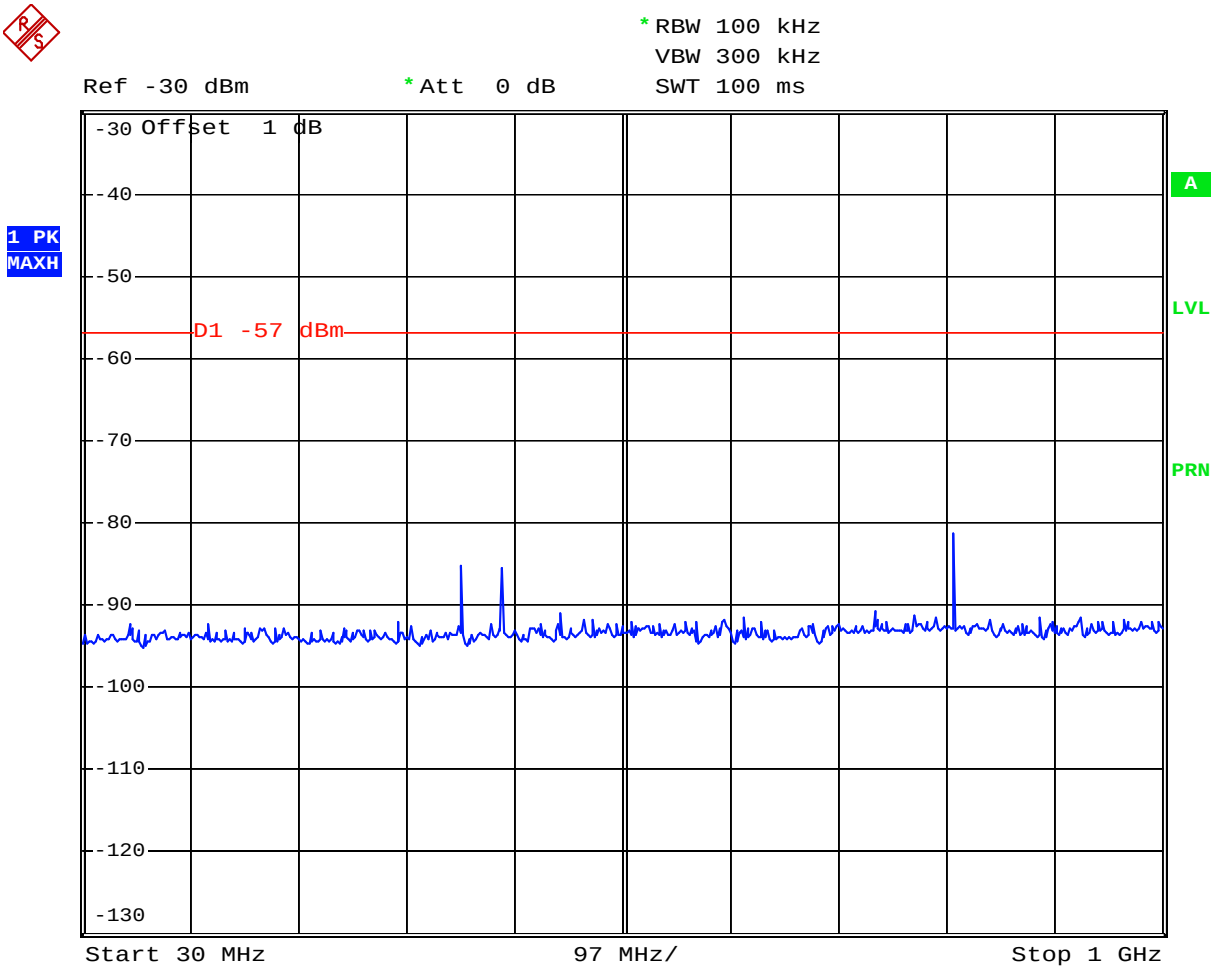
3.4 Antenna Conducted Emission Data

Tested By:	Edmund Cruz
Test Date:	February 27, 2012

The results on the following page(s) were obtained when the device was tested in the condition described in Section 2.

Results:	**Complies**

Note: Tests were performed with the EUT operating in the low, middle and high channels. The worst-case emissions were detected in the low channel and are presented in this report.



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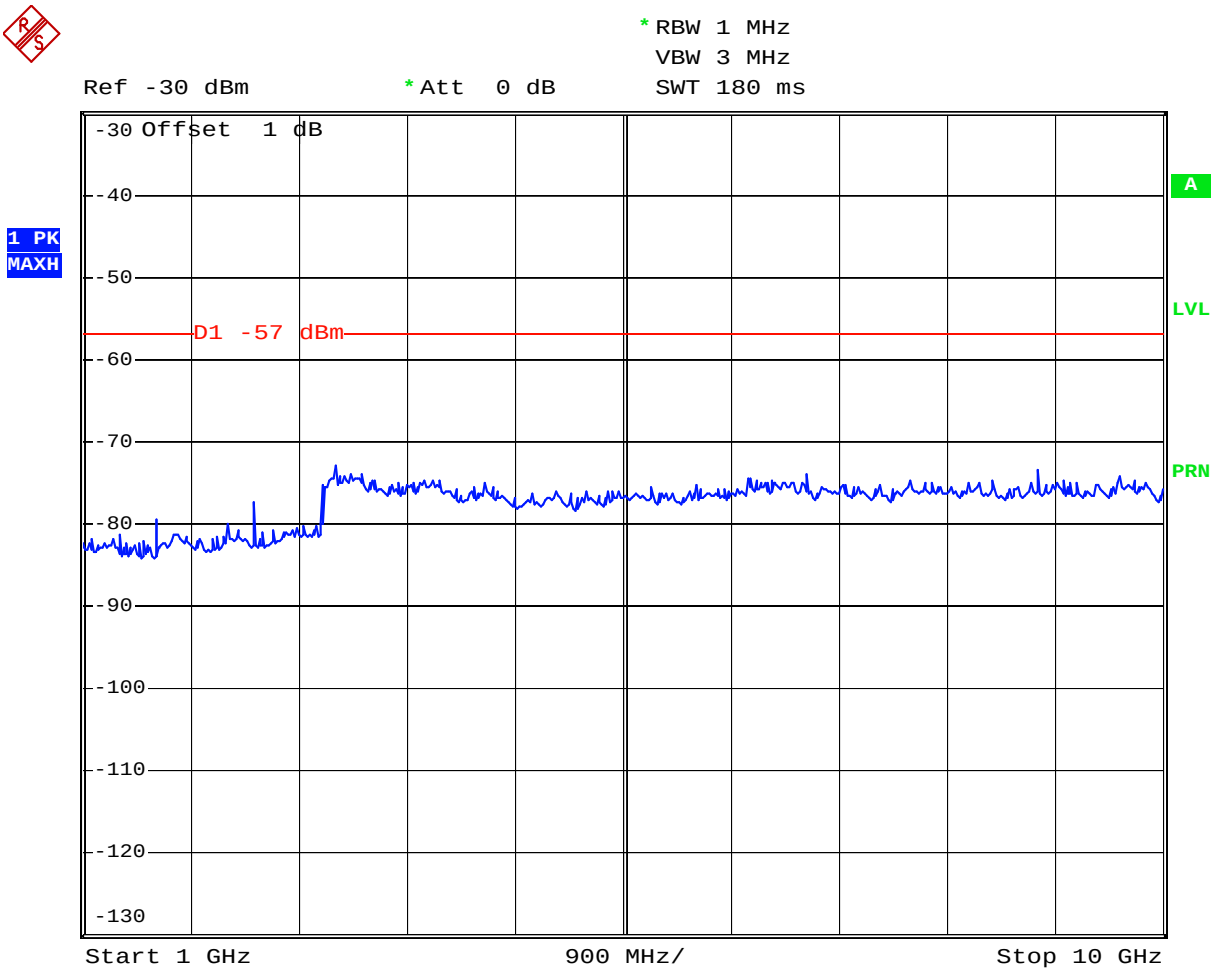

Date: 27.FEB.2012 13:24:16

4.0 List of Test Equipment

Measurement equipment used for emission compliance testing utilized the equipment on the following list.

Equipment	Manufacturer	Model/Type	Serial #	Cal Int	Cal Due
Spectrum Analyzer	Rohde & Schwarz	FSP-40	100030	12	11/09/12
BI-Log Antenna	ARA	LPB-2513/A	1154	12	07/06/12
Pre-Amplifier	Sonoma	310N	293620	12	11/11/12
LISN	FCC	FCC-LISN-50-50-M-H	2012	12	06/28/12

Appendix A – Local Oscillator Frequency Calculation

FCC ID: ADV0908900 / IC No.: 5088A-PSR120

1 LOCAL OSC FREQUENCY CALCULATION

-1 FCC ID: ADV0908900 formula for 1st, 2nd and 3rd Local oscillation frequencies are as follow :

RECEIVING BAND (FR STEP)	FREQ. STEP (kHz)	RECEIVING FREQ. FR (MHz)	1st LOCAL PLL 1 /VCO 1 or VCO 2 (MHz)	2nd LOCAL PLL 2 /VCO 3 (MHz)	3rd LOCAL X' TAL (MHz)
VHF Low	10	25.0000 ~ 26.9600	A = (FR + 380.800) / 0.050	2nd Local = 1st IF - 10.7	11.150
	10	26.9650 ~ 27.4050	= A.xxx (Cut away decimal)		
	5	27.4100 ~ 29.5050	1st Local = A x 0.050		
	5	29.5100 ~ 29.7000	1st IF = 1st Local - FR		
	10	29.7100 ~ 49.8300			
	5	49.8350 ~ 54.0000			
FM Radio	100	88.0000 ~ 107.9000			
VHF High	8.33	108.0000 ~ 136.99166			
	5	137.0000 ~ 137.9950			
	12.5	138.0000 ~ 143.9875			
	5	144.0000 ~ 147.9950	FR DENOTES Frequency Received.		
	12.5	148.0000 ~ 150.7875			
	5	150.8000 ~ 150.8450			
	7.5	150.8525 ~ 154.4975			
	5	154.5150 ~ 154.6400			
	7.5	154.6500 ~ 156.0450			
		156.0500			
	7.5	156.0525 ~ 156.1725			
		156.1750			
	7.5	156.1800 ~ 156.2475			
		156.2500			
		156.2550			
	25	156.2750 ~ 157.4500			
	7.5	157.4700 ~ 160.8225			
		160.8250			
	7.5	160.8300 ~ 161.5725			
	5	161.6000 ~ 161.9750			
	12.5	162.0000 ~ 174.0000			
UHF Low	12.5	380.0000 ~ 380.6750			
	〃	380.6875 ~ 380.8000	A = (FR + 380.600) / 0.050	2nd Local = 1st IF - 10.7	11.150
	〃	380.8125 ~ 380.9250	A = (FR + 380.700) / 0.050		
	〃	380.9375 ~ 419.9875	A = (FR + 380.800) / 0.050		
	5	420.0000 ~ 450.0000	〃		
	6.25	450.00625 ~ 512.0000	〃		
UHF High	12.5	806.0000 ~ 823.9875	A = (FR - 380.800) / 0.050	2nd Local = 1st IF - 10.7	11.150
	〃	849.0000 ~ 868.9875	= A.xxx (Cut away decimal)		
	〃	894.0000 ~ 939.9875	1st Local = A x 0.050		
	6.25	940.0000 ~ 960.0000	1st IF = FR - 1st Local		
	〃	1240.0000 ~ 1300.0000			

Appendix B – PSR-120 Specification

See attached document: PSR-120 Specification.