



TEST REPORT

For

WuYi JinYue Engine Science and Technology

229# XinXing RD
Wuyi City, Zhejiang Province
China

Date: October 22, 2012
Report No.: 10959-1E
Revision No.: 0
Project No.: 10959
Equipment: Remote Controller
Model No.: Remote

ONE STOP GLOBAL CERTIFICATION SOLUTIONS



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Prepared by:	LabTest Certification Inc.	Client:	WuYi JinYue Engine Science & Tech.
Date Issued:	October 22, 2012	Report No.:	10959-1E
Project No:	10959	Revision No.:	0

TABLE OF CONTENTS

TEST REPORT	3
General product information:	5
Frequencies	5
List of ancillary and/or support equipment provided by the applicant	5
Description of Interface Cables for Testing	5
Software and Firmware	5
Worst-case configuration and mode of operation during testing	5
Modifications Required for Compliance	5
Test Equipment Verified for function	5
Measurement Uncertainty	6
Markings	6
Test Summary	7
AC Power Line Conducted Emission	8
Test Limits	8
Test Results	8
Summary of the operation of RF Transmission	9
Test Limits	9
Reviewed Results:	9
Field Strength of Fundamental – Intentional Radiator	11
Test Limits	11
Test Setup	12
Setup Block Diagram	12
Test Setup in Chamber	12
Test Results:	13
Field Strength of Spurious Emission	15
Test Limits	15
Test Setup	16
Test Results:	16
Radiated Emission; Intentional Radiators	24
Test Limits	24
Test Results:	24
The Bandwidth of the emission	35
Test Limits	35
Test Setup	35
Test Results:	35
APPENDIX A: Test Equipment Used	37
APPENDIX B: EUT photos	38
APPENDIX C: Test setup photos	40
APPENDIX D: ISO 17025:2005 Accreditation Certificate	43

Prepared by: LabTest Certification Inc.
 Date Issued: October 22, 2012
 Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
 Report No.: 10959-1E
 Revision No.: 0

TEST REPORT	
FCC15 and RSS-210	
Report reference No.....:	10959-1E
Report Revision History:	✓ Rev. 0: Oct. 22, 2012
Tested by (printed name and signature)	Jeremy Lee 
Approved by (printed name and signature)	Kavinder Dhillon, Eng.L 
Date of issue	October 22, 2012
Note: By signing this report, both the Testing Technician and the Reviewer hereby declare to abide by the applicable LabTest policies: 1.) Statement of Independence # 3014 (LabTest Employees), 2.) Independence, Impartiality, and Integrity #1039, clause 11 (Engineering Service Subcontractors), or 3.) Independence, Impartiality, and Integrity #1019, clause 3.5 (Testing Subcontractors).	
Testing Laboratory Name	LabTest Certification Inc.
Address	3133 – 20800 Westminster Hwy, Richmond, B.C. V6V 2W3
FCC Site Registration No.....:	373387
IC Site Registration No.:	5970A-2
Test Location Name	LabTest Certification Inc.
Address	3133 – 20800 Westminster Hwy, Richmond, B.C. V6V 2W3
Applicant's Name	Wuyi Jinyue Engine Science and Technology
Address	229# XinXing RD, Wuyi City, Zhejiang Province, China
Manufacturer's Name	Same as Applicant
Address	Same as Applicant
Test specification	
Standards	✓ FCC15.231:2010 ✓ RSS-210, Issue 8, December 2010
Testing	
Date of receipt of test item	Sep. 04, 2012
Date(s) of performance of test	Sep. 04 to Oct. 15, 2012
Test item description	
Trademark	N/A
Model and/or type reference	Remote
FCC & IC ID.....:	FCC ID: QSQ-REMOTE, IC ID: 10716A-REMOTE
Serial numbers	N/A

Prepared by: LabTest Certification Inc.
 Date Issued: October 22, 2012
 Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
 Report No.: 10959-1E
 Revision No.: 0

Electrical Rating(s): Two AAA Alkaline batteries

Product descriptions

Application for	433MHz Data Transmitter Module
Operating Frequency	433.92 MHz
Equipment mobility	Yes
Nominal Voltages for	<input checked="" type="checkbox"/> stand-alone equipment <input type="checkbox"/> combined (or host) equipment <input type="checkbox"/> test jig
Supply Voltage	_____ AC _____ Amps _____ Hz _____ 3V _____ DC _____ Amps
If DC Power	<input type="checkbox"/> Internal Power Supply <input type="checkbox"/> Host system is supplied the DC power <input checked="" type="checkbox"/> Battery <ul style="list-style-type: none"> <input type="checkbox"/> Nickel Cadmium <input checked="" type="checkbox"/> Alkaline <input type="checkbox"/> Nickel-Metal Hydride <input type="checkbox"/> Lithium-Ion <input type="checkbox"/> Lead Acid (Vehicle regulated) <input type="checkbox"/> Other
Size of equipment(H X D X W, mm).....	110 X 50 X 24
Mass of equipment (g).....	50, without Batteries
Operating Temperature Range	- °C to + °C

Test case verdicts

Test case does not apply to the test object :	N/A
Test item does meet the requirement	Pass
Test item does not meet the requirement ..	Fail

General remarks

"This report is not valid as a CB Test Report unless appended by an approved CB Testing Laboratory and appended to a CB Test Certificate.

The test result presented in this report relate only to the object(s) tested.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.

"(see appended table)" refers to a table appended to the report.

☐ Throughout this report a comma is used as the decimal separator.

☒ Throughout this report a period is used as the decimal separator.

Prepared by: LabTest Certification Inc.
Date Issued: October 22, 2012
Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
Report No.: 10959-1E
Revision No.: 0

General product information:

The EUT is a Remote controller for Golf Cart.

Frequencies

Module	Description	Frequencies
N/A		

List of ancillary and/or support equipment provided by the applicant

Model No.	Description	Manufacturer	Approvals/Standards
None			

Description of Interface Cables for Testing

Description	Cable Type	Cable length	Ferrite
None			

ARRANGEMENT OF INTERFACE CABLES: All interface cables were positioned for worst-case maximum emissions within the manner assumed to be a typical operation condition (please reference photographs).

Software and Firmware

Description	Version
None	

Worst-case configuration and mode of operation during testing

For the testing, the device was modified to continuously turning on the signal every one second.

Modifications Required for Compliance

None

Test Equipment Verified for function

Model #	Description	Checked Function	Results
E7405	Spectrum Analyzer	Frequency and Amplitude	Connected 50MHz and -

Prepared by: LabTest Certification Inc.
Date Issued: October 22, 2012
Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
Report No.: 10959-1E
Revision No.: 0

			20dBm Cal_siganl and checked OK.
PA-103	Pre-Amplifier, 1 to 1,000MHz	Gain at 30 and 1,000Mhz	Gains are normal.
8449B	Pre-Amplifier, 1 to 26.5GHz	Gain at 1 to 26.5GHz	Gains were normal.
JB1	Anatenna, 30 to 1000MHz	Checked structure	Normal – no damage.
SAS-571	Anatenna, 1 to 18GHz	Checked structure	Normal – no damage
Onset HOBO	Humidity/ Temperature Logger	Compared room Temp. and Hum. with another data logger	Working normally

Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests:

Parameter	Uncertainty(dB)
Radiated Emission, 30 to 1,000MHz	4.67
Radiated Emission, 1 to 18GHz	4.65

Uncertainty figures are valid to a confidence level of 95%.

Markings

--

You should refer to the clause of FCC Part 2 Section 2.295 & 2.296 and FCC Part 15 Section 15.19 for information to be contained on the label as well as information about the label. Any other statements or labelling requirements may appear on a separate label at the option of the applicant/grantee. The label has to be including FCC IC/IC ID, Product Number and Manufacturer Info.

According to FCC Section 2.925(a),

(a) Each equipment covered in an application for equipment authorization shall bear a nameplate or label listing the following:

(1) FCC Identifier consisting of the two elements in the exact order specified in §2.926. The FCC Identifier shall be preceded by the term *FCC ID* in capital letters on a single line, and shall be a type size large enough to be legible without the aid of magnification.

Example: FCC ID XXX123. XXX-Grantee Code 123-Equipment Product Code"

According to FCC Section 15.19(a)(3),

This device shall bear the following statement in a conspicuous location on the device:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Prepared by: LabTest Certification Inc.
Date Issued: October 22, 2012
Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
Report No.: 10959-1E
Revision No.: 0

Note: Some jurisdictions in Canada require Cautions and Warnings to also be in French. It is the responsibility of the Customer to provide bilingual marking, where applicable, in accordance with the requirements of the local regulatory authorities. It is the responsibility of the Customer to determine this requirement and have bilingual wording added to the "Markings".

Test Summary

When configured and operated as specified in this report, the product was found to comply with the requirements as indicated below.

Test Type	Regulation	Measurement Method	Result
AC Power Line Conducted Emission	15.207(a) RSS-Gen	ANSI C63.4:2009 & ANSI C63.10:2009, Clause 6.2	N/A ¹⁾
Field Strength of Fundamental -Intentional radiator	15.231, 15.205, 15.209 & RSS-210	ANSI C63.4:2009 & ANSI C63.10:2009, Clause 6.5 & 6.6	PASS
Field Strength of Spurious Emissions -Intentional radiator	15.249, 15.205, 15.209 & RSS-210	ANSI C63.4:2009 & ANSI C63.10:2009, Clause 6.5 & 6.6	PASS
Radiated Emissions-Intentional radiators	15.209 and RSS-210	ANSI C63.4:2009 & ANSI C63.10:2009, Clause 6.5	PASS
The Bandwidth of the emission	15.231 and RSS-210	ANSI C63.10:2009, Clause 6.9	PASS

Note1): The EUT is operated by internal two AAA batteries. This test was exempted by no connection to AC Power Line.

Prepared by: LabTest Certification Inc.
Date Issued: October 22, 2012
Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
Report No.: 10959-1E
Revision No.: 0

AC Power Line Conducted Emission

Test Date	Sep. 06, 2012
Sample Number	1027228
Tested By	Jeremy Lee

Test Limits

FCC 15.207(a):

Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequencies ranges.

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15–0.5	66 to 56*	56 to 46*
0.5–5	56	46
5–30	60	50

*Decreases with the logarithm of the frequency.

Test Results

The test was exempted because there is no public utility (AC) power line connection.

Prepared by: LabTest Certification Inc.
Date Issued: October 22, 2012
Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
Report No.: 10959-1E
Revision No.: 0

Summary of the operation of RF Transmission

Regulation	FCC15.231:2010
Intentional Radiating Frequency	433.92MHz
Sample Number	1027228
Reviewed By	Jeremy LEE

Test Limits

Section 15.231 Periodic operation in the band 40.66 - 40.70 MHz and above 70 MHz.

(a) The provisions of this section are restricted to periodic operation within the band 40.66–40.70 MHz and above 70 MHz. Except as shown in paragraph (e) of this section, the intentional radiator is restricted to the transmission of a control signal such as those used with alarm systems, door openers, remote switches, etc. Continuous transmissions, voice, video and the radio control of toys are not permitted. Data is permitted to be sent with a control signal. The following conditions shall be met to comply with the provisions for this periodic operation:

(1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

(2) A transmitter activated automatically shall cease transmission within 5 seconds after activation.

(3) Periodic transmissions at regular predetermined intervals are not permitted. However, polling or supervision transmissions, including data, to determine system integrity of transmitters used in security or safety applications are allowed if the total duration of transmissions does not exceed more than two seconds per hour for each transmitter. There is no limit on the number of individual transmissions, provided the total transmission time does not exceed two seconds per hour.

(4) Intentional radiators which are employed for radio control purposes during emergencies involving fire, security, and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm condition

(5) Transmission of set-up information for security systems may exceed the transmission duration limits in paragraphs (a)(1) and (a)(2) of this section, provided such transmissions are under the control of a professional installer and do not exceed ten seconds after a manually operated switch is released or a transmitter is activated automatically. Such set-up information may include data.

Reviewed Results:

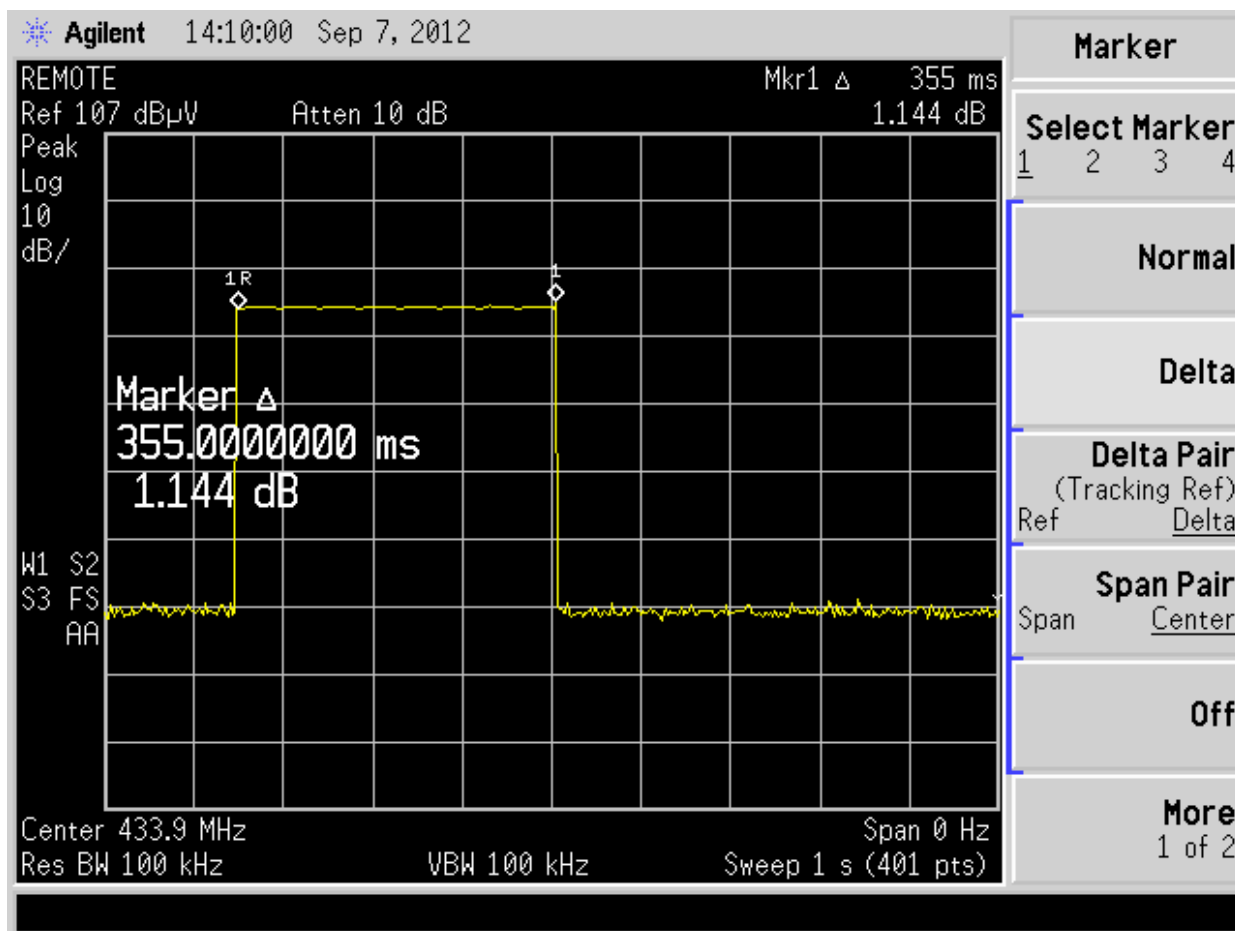
X **Pass** **Fail** **N/A**

Rule Part No.	Description of Rule	Yes	No	N/A
Pt 15.231(a)	Continuous transmission		X	
Pt 15.231(a)	Control Signals		X	
Pt 15.231(a)	Data transmission with control signal	X		
Pt 15.231(a)(1)	Manually operated	X		
	Automatically deactivate within 5 seconds of being released	X		
Pt 15.231(a)(2)	Automatically operated		X	
	Deactivate within 5 seconds after activation			X

Prepared by:	LabTest Certification Inc.	Client:	WuYi JinYue Engine Science & Tech.
Date Issued:	October 22, 2012	Report No.:	10959-1E
Project No:	10959	Revision No.:	0

Pt 15.231(a)(3)	Periodic transmission at regular predetermined intervals		X	
	Polling or supervision transmission, including data, to determine system integrity or transmitters used in security or safety applications requires no total duration of transmission not exceeding 2s/hr.		X	
Pt 15.231(a)(4)	Operation involving fire, security, or safety of life, when activated to signal an alarm, may operate during the pendency of the alarm condition.		X	

- Measured result of the Turned-on and off time.



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 Date Issued: October 22, 2012
 Project No: 10959

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 Report No.: 10959-1E
 Revision No.: 0

Field Strength of Fundamental – Intentional Radiator

Regulation	FCC15.231:2010
Intentional Radiating Frequency	433.92MHz
Detecting Method	Quasi Peak Detector
IF Bandwidth	120kHz
Temperature	23.0 to 24.0 °C
Relative Humidity	50.0 to 53.0 %
Barometric Pressure:	102.3 to 102.4 kPa
Test Date	Sep. 04, 2012
Sample Number	1027228
Calibrated Test Equipment (ID)	266, 272, 371
Reference Equipment (ID) (Calibration not required)	124, 374
Electrical Rating	3 VDC, Internal battery
Tested By	Jeremy LEE

Use the barometric pressure reported at: <http://www.theweathernetwork.com/weather/cabc0248>

Test Limits

FCC 15.231:

(b) In addition to the provisions of Section 15.205, the field strength of emissions from intentional radiators operated under this Section shall not exceed the following:

Funda- mental fre- quency (MHz)	Field strength of funda- mental (microvolts/ meter)	Field strength of spurious emissions (microvolts/meter)
40.66– 40.70.	2,250	225
70–130	1,250	125
130–174	¹ 1,250 to 3,750	¹ 125 to 375
174–260	3,750	375
260–470	¹ 3,750 to 12,500	¹ 375 to 1,250
Above 470	12,500	1,250

¹ Linear interpolations.

(1) The above field strength limits are specified at a distance of 3 meters. The tighter limits apply at the band edges.

(2) Intentional radiators operating under the provisions of this section shall demonstrate compliance with the limits on the field strength of emissions, as shown in the above table, based on the average value of the measured emissions. As an alternative, compliance with the limits in the above table may be based on the use of measurement instrumentation with a CISPR quasi-peak detector. The specific method of measurement employed shall be specified in the application for equipment authorization. If average emission measurements are employed, the provisions in § 15.35 for averaging pulsed emissions and for limiting peak emissions apply. Further, compliance with the provisions of § 15.205 shall be demonstrated using the measurement instrumentation specified in that section.

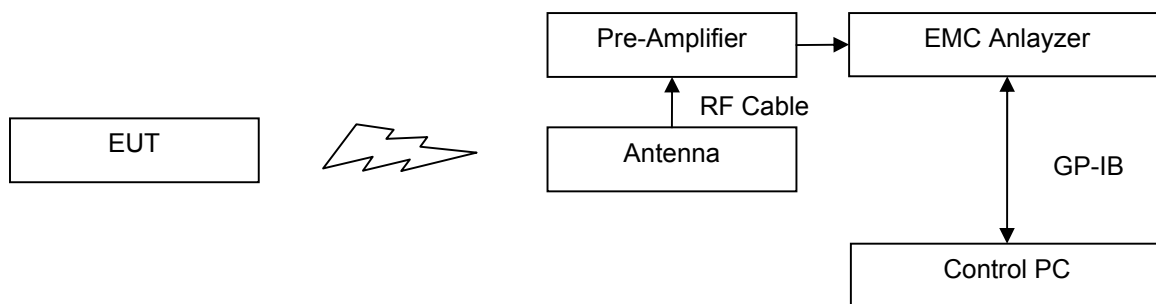
Test Setup

The test was performed in accordance with **FCC 15.31, 15.33, 15.35 and ANSI C63.10, 2009.**

The test setup for Field Strength of Fundamental was shown in Figure - 1.

- a) The EUT was placed on a wooden table, and it was put on the turning ground plate.
- b) The EUT was set up on 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna supporter.
- c) The EUT was continually on its RF Transmitter. It was modified to transmit in 1000ms intervals for this testing.
- d) It was measured with a receiver - Spectrum analyzer, was software controlled.
- e) The test was preformed three different orthogonal planes, X, Y and Z, the photos were attached in Appendix C.

Setup Block Diagram



Test Setup in Chamber

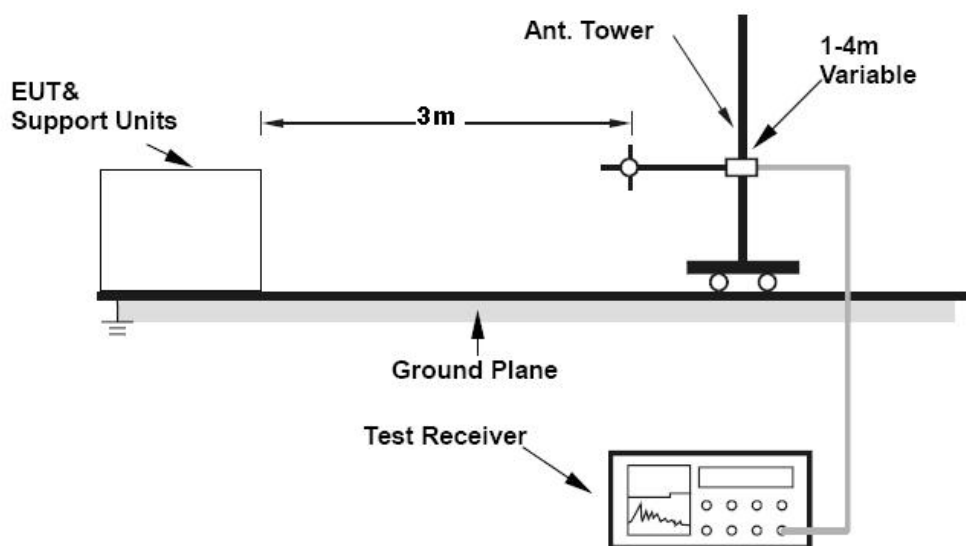


Figure – 1 Test setup for Radiated emissions in Chamber

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 Date Issued: October 22, 2012 Report No.: 10959-1E
 Project No: 10959 Revision No.: 0

Test Results:

Measured level (dBuV/m) = Quasi-Peak detected level (dBuV) + Cable Loss(dB)
 + Antenna Factor (dB/m) - Pre-amplifier's Gain (dB)

X Pass Fail N/A

Fundamental Frequency (MHz)	Limit (dBuV/m)	Measured (dBuV/m)	Margin (dB)	Orthogonal Plane	Pol.	Results
433.92	80.14	71.89	8.25	X	H	PASS
		61.07	19.07		V	PASS
		57.77	22.37	Y	H	PASS
		71.39	8.75		V	PASS
		73.79	6.35	Z	H	PASS
		51.29	28.85		V	PASS

- Table of Field Strength of Fundamental; Quasi Peak Detecting, Antenna was used a JB1, Orthogonal X

LabTest Certification Inc.
 Intentional Radiated Emissions
 FCC15.231, 205 & 209, 3 meters, X-Direction_Horizontal

Operator: Jeremy Lee

03:32:34 PM, Tuesday, September 04, 2012

Model #: Remote
 Contact: Mike Xu
 Company: Wuyi Jinyue

Frequency	Measured	AntFactor	PathLoss	Emission	Limit	Margin	T/T	Tower	POL
MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	Degree	cm	
433.9272000 MHz	84.91	16.98	-30.00	71.89	80.14	8.26	313.0	101.3	H
867.8875000 MHz	43.83	22.50	-28.50	37.83	61.94	24.11	22.0	101.3	H
Project #: 10959, Sample #: 1027228									
Temp.: 23.8 C, Hum.: 51.0 %									
Barometer Pres.: 102.3 kPa									

LabTest Certification Inc.
 Intentional Radiated Emissions
 FCC15.231, 205 & 209, 3 meters, X-Direction_Vertical

Operator: Jeremy Lee

03:32:34 PM, Tuesday, September 04, 2012

Model #: Remote
 Contact: Mike Xu
 Company: Wuyi Jinyue

Frequency	Measured	AntFactor	PathLoss	Emission	Limit	Margin	T/T	Tower	POL
MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	Degree	cm	
433.9377000 MHz	74.59	16.48	-30.00	61.07	80.14	19.08	136.3	232.3	V
867.9640000 MHz	42.25	21.80	-28.50	35.55	61.94	26.39	184.5	100.8	V
Project #: 10959, Sample #: 1027228									
Temp.: 23.8 C, Hum.: 51.0 %									
Barometer Pres.: 102.3 kPa									

- Table of Field Strength of Fundamental; Quasi Peak Detecting, Antenna was used a JB1, Orthogonal Y

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 Date Issued: October 22, 2012 Report No.: 10959-1E
 Project No: 10959 Revision No.: 0

LabTest Certification Inc.
 Intentional Radiated Emissions
 FCC15.231, 205 & 209, 3 meters, Y-Direction_Horizontal

Operator: Jeremy Lee

Model #: Remote
 Contact: Mike Xu
 Company: Wuyi Jinyue

01:29:20 PM, Tuesday, September 04, 2012

Frequency MHz	Measured dBuV	AntFactor dB/m	PathLoss dB	Emission dBuV/m	Limit dBuV/m	Margin dB	T/T Degree	Tower cm	POL
433.8870000 MHz	70.80	16.98	-30.00	57.77	80.14	22.37	197.0	106.4	H
867.8284000 MHz	42.31	22.50	-28.50	36.31	61.94	25.63	345.8	381.5	H
Project #: 10959, Sample #: 1027228									
Temp.: 23.0 C, Hum.: 53.0 %									
Barometer Pres.: 102.4 kPa									

LabTest Certification Inc.
 Intentional Radiated Emissions
 FCC15.231, 205 & 209, 3 meters, Y-Direction_Vertical

Operator: Jeremy Lee

Model #: Remote
 Contact: Mike Xu
 Company: Wuyi Jinyue

01:29:20 PM, Tuesday, September 04, 2012

Frequency MHz	Measured dBuV	AntFactor dB/m	PathLoss dB	Emission dBuV/m	Limit dBuV/m	Margin dB	T/T Degree	Tower cm	POL
433.8901000 MHz	84.92	16.48	-30.00	71.39	80.14	8.75	90.0	127.2	V
867.9472000 MHz	42.32	21.80	-28.50	35.62	61.94	26.32	278.0	101.2	V
Project #: 10959, Sample #: 1027228									
Temp.: 23.0 C, Hum.: 53.0 %									
Barometer Pres.: 102.4 kPa									

- Table of Field Strength of Fundamental; Quasi Peak Detecting, Antenna was used a JB1 , Orthogonal Z

LabTest Certification Inc.
 Intentional Radiated Emissions
 FCC15.231, 205 & 209, 3 meters, Z-Direction_Horizontal

Operator: Jeremy Lee

Model #: Remote
 Contact: Mike Xu
 Company: Wuyi Jinyue

04:20:04 PM, Tuesday, September 04, 2012

Frequency MHz	Measured dBuV	AntFactor dB/m	PathLoss dB	Emission dBuV/m	Limit dBuV/m	Margin dB	T/T Degree	Tower cm	POL
433.8900000 MHz	86.82	16.98	-30.00	73.79	80.14	6.35	203.3	101.9	H
867.8764000 MHz	43.07	22.50	-28.50	37.07	61.94	24.87	118.5	100.6	H
Project #: 10959, Sample #: 1027228									
Temp.: 24.0 C, Hum.: 50.0 %									
Barometer Pres.: 102.3 kPa									

LabTest Certification Inc.
 Intentional Radiated Emissions
 FCC15.231, 205 & 209, 3 meters, Z-Direction_Vertical

Operator: Jeremy Lee

Model #: Remote
 Contact: Mike Xu
 Company: Wuyi Jinyue

04:20:04 PM, Tuesday, September 04, 2012

Frequency MHz	Measured dBuV	AntFactor dB/m	PathLoss dB	Emission dBuV/m	Limit dBuV/m	Margin dB	T/T Degree	Tower cm	POL
433.8726000 MHz	74.82	16.48	-30.00	61.29	80.14	18.85	145.0	100.9	V
867.8980000 MHz	42.19	21.80	-28.50	35.49	61.94	26.45	203.8	100.9	V
Project #: 10959, Sample #: 1027228									
Temp.: 24.0 C, Hum.: 50.0 %									
Barometer Pres.: 102.3 kPa									

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 Date Issued: October 22, 2012
 Project No: 10959

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 Report No.: 10959-1E
 Revision No.: 0

Field Strength of Spurious Emission

Regulation	FCC15.231: 2010
Intentional Radiating Frequency	433.92MHz
Detecting Method	Average and Quasi-Peak Detector
IF Bandwidth	1MHz and 120kHz
Temperature	23.0 to 24.8 °C
Relative Humidity	47.0 to 53.0 %
Barometric Pressure:	101.8 to 102.4 kPa
Test Date	Sep. 06, 2012
Sample Number	1027228
Calibrated Test Equipment (ID)	266, 227-3, 272, 273, 371
Reference Equipment (ID) (Calibration not required)	124, 374
Electrical Rating	3VDC, Internal battery
Tested By	Jeremy LEE

Use the barometric pressure reported at: <http://www.theweathernetwork.com/weather/cabc0248>

Test Limits

FCC 15.231:

(b) In addition to the provisions of Section 15.205, the field strength of emissions from intentional radiators operated under this Section shall not exceed the following:

Funda- mental fre- quency (MHz)	Field strength of funda- mental (microvolts/ meter)	Field strength of spurious emissions (microvolts/meter)
40.66– 40.70.	2,250	225
70–130	1,250	125
130–174	¹ 1,250 to 3,750	¹ 125 to 375
174–260	3,750	375
260–470	¹ 3,750 to 12,500	¹ 375 to 1,250
Above 470	12,500	1,250

¹ Linear interpolations.

(1) The above field strength limits are specified at a distance of 3 meters. The tighter limits apply at the band edges.

(2) Intentional radiators operating under the provisions of this section shall demonstrate compliance with the limits on the field strength of emissions, as shown in the above table, based on the average value of the measured emissions. As an alternative, compliance with the limits in the above table may be based on the use of measurement instrumentation with a CISPR quasi-peak detector. The specific method of measurement employed shall be specified in the application for equipment authorization. If average emission measurements are employed, the provisions in § 15.35 for averaging pulsed emissions and for limiting peak emissions apply. Further, compliance with the provisions of § 15.205 shall be demonstrated using the measurement instrumentation specified in that section.

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(3) The limits on the field strength of the spurious emissions in the above table are based on the fundamental frequency of the intentional radiator. Spurious emissions shall be attenuated to the average (or, alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in § 15.209, whichever limit permits a higher field strength.

FCC 15.205:

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

- 1 Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
- 2 Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

(c) Except as provided in paragraphs (d) and (e), regardless of the field strength limits specified elsewhere in this Subpart, the provisions of this Section apply to emissions from any intentional radiator.

Test Setup

The test was performed in accordance with **FCC 15.31, 15.33, 15.35, 15.205, 15.209:2010 and ANSI C63.10: 2009.**

The test setup for Field Strength of Fundamental is shown in Figure - 1.

- a) The EUT was placed on a wooden table, and it was put on the turning ground plate.
- b) The EUT was set up on 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna supporter.
- c) The EUT was continually on its RF Transmitter. It was modified to transmit in 1000ms intervals for this testing.
- d) It was measured with a receiver - spectrum analyzer, was software controlled.
- e) The test was preformed three different orthogonal planes, X, Y and Z, the photos were attached in Appendix C.

Test Results:

Emission level (dBuV/m) = Average detected level (dBuV) + Cable Loss(dB)
+ Antenna Factor (dB/m) - Pre-amplifier's Gain (dB)

X **Pass** **Fail** **N/A**

Harmonic Frequency (MHz)	Detector	Limit (dBuV/m)	Measured (dBuV/m)	Margin (dB)	Orthogonal Plane	Pol.	Results
867.84	Quasi-Peak	61.94	37.83	24.11	X	H	PASS
1301.76	Peak	74.00	43.78	30.22	Y	H	PASS
	Averaging	54.00	30.30	23.70	Y	H	PASS
1735.68	Peak	81.94	47.29	34.65	X	H	PASS
	Averaging	61.94	33.66	28.28	Y	V	PASS

Page 16 of 46

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DCN: 1034, Rev 4

Prepared by: LabTest Certification Inc.
 Date Issued: October 22, 2012
 Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
 Report No.: 10959-1E
 Revision No.: 0

2169.60	Peak	81.94	50.97	30.97	Y	V	PASS
	Averaging	61.94	36.76	25.18	Z	V	PASS
2603.52	Peak	81.94	53.19	28.75	Z	H	PASS
	Averaging	61.94	39.72	22.22	Y	V	PASS
3037.44	Peak	81.94	56.21	25.73	Y	V	PASS
	Averaging	61.94	42.55	19.39	Y	V	PASS
3471.36	Peak	81.94	57.77	24.17	Y	H	PASS
	Averaging	61.94	43.87	18.07	Y	V	PASS
3905.28	Peak	74.00	56.99	17.01	X	V	PASS
	Averaging	54.00	43.18	10.82	Y	V	PASS
4339.20	Peak	74.00	56.51	17.49	Y	V	PASS
	Averaging	54.00	42.89	11.11	Y	V	PASS

Prepared by: LabTest Certification Inc. Client: WuYi JinYue Engine Science & Tech.
 Date Issued: October 22, 2012 Report No.: 10959-1E
 Project No: 10959 Revision No.: 0

- Field Strengt of Spurious Emission; 2nd harmonic, Quasi-peak Detecting, Antenna was used JB1, Orthogonal X

LabTest Certification Inc. Intentional Radiated Emissions FCC15.231, 205 & 209, 3 meters, X-Direction_Horizontal										
Operator: Jeremy Lee										
03:32:34 PM, Tuesday, September 04, 2012										
Frequency	Measured	AntFactor	PathLoss	Emission	Limit	Margin	T/T	Tower	POL	
MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	Degree	cm		
433.9272000 MHz	84.91	16.98	-30.00	71.89	80.14	8.26	313.0	101.3	H	
867.8875000 MHz	43.83	22.50	-28.50	37.83	61.94	24.11	22.0	101.3	H	
Project #: 10959, Sample #: 1027228										
Temp.: 23.8 C, Hum.: 51.0 %										
Barometer Pres.:102.3 kPa										

LabTest Certification Inc. Intentional Radiated Emissions FCC15.231, 205 & 209, 3 meters, X-Direction_Vertical										
Operator: Jeremy Lee										
03:32:34 PM, Tuesday, September 04, 2012										
Frequency	Measured	AntFactor	PathLoss	Emission	Limit	Margin	T/T	Tower	POL	
MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	Degree	cm		
433.9377000 MHz	74.59	16.48	-30.00	61.07	80.14	19.08	136.3	232.3	V	
867.9640000 MHz	42.25	21.80	-28.50	35.55	61.94	26.39	184.5	100.8	V	
Project #: 10959, Sample #: 1027228										
Temp.: 23.8 C, Hum.: 51.0 %										
Barometer Pres.:102.3 kPa										

- Field Strengt of Spurious Emission; 2nd harmonic, Quasi-peak Detecting, Antenna was used JB1 , Orthogonal Y

LabTest Certification Inc. Intentional Radiated Emissions FCC15.231, 205 & 209, 3 meters, Y-Direction_Horizontal										
Operator: Jeremy Lee										
01:29:20 PM, Tuesday, September 04, 2012										
Frequency	Measured	AntFactor	PathLoss	Emission	Limit	Margin	T/T	Tower	POL	
MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	Degree	cm		
433.8870000 MHz	70.80	16.98	-30.00	57.77	80.14	22.37	197.0	106.4	H	
867.8284000 MHz	42.31	22.50	-28.50	36.31	61.94	25.63	345.8	381.5	H	
Project #: 10959, Sample #: 1027228										
Temp.: 23.0 C, Hum.: 53.0 %										
Barometer Pres.:102.4 kPa										

LabTest Certification Inc. Intentional Radiated Emissions FCC15.231, 205 & 209, 3 meters, Y-Direction_Vertical										
Operator: Jeremy Lee										
01:29:20 PM, Tuesday, September 04, 2012										
Frequency	Measured	AntFactor	PathLoss	Emission	Limit	Margin	T/T	Tower	POL	
MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	Degree	cm		
433.8901000 MHz	84.92	16.48	-30.00	71.39	80.14	8.75	90.0	127.2	V	
867.9472000 MHz	42.32	21.80	-28.50	35.62	61.94	26.32	278.0	101.2	V	
Project #: 10959, Sample #: 1027228										
Temp.: 23.0 C, Hum.: 53.0 %										
Barometer Pres.:102.4 kPa										

Prepared by: LabTest Certification Inc.
 Date Issued: October 22, 2012
 Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
 Report No.: 10959-1E
 Revision No.: 0

- Field Strength of Spurious Emission; 2nd harmonic, Quasi-peak Detecting, Antenna was used JB1, Orthogonal Z

LabTest Certification Inc.
 Intentional Radiated Emissions
 FCC15.231, 205 & 209, 3 meters, Z-Direction_Horizontal

Operator: Jeremy Lee

Model #: Remote
 Contact: Mike Xu
 Company: Wuyi Jinyue

04:20:04 PM, Tuesday, September 04, 2012

Frequency	Measured	AntFactor	PathLoss	Emission	Limit	Margin	T/T	Tower	POL
MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	Degree	cm	
433.890000 MHz	86.82	16.98	-30.00	73.79	80.14	6.35	203.3	101.9	H
867.876400 MHz	43.07	22.50	-28.50	37.07	61.94	24.87	118.5	100.6	H
Project #: 10959, Sample #: 1027228									
Temp.: 24.0 C, Hum.: 50.0 %									
Barometer Pres.: 102.3 kPa									

LabTest Certification Inc.
 Intentional Radiated Emissions
 FCC15.231, 205 & 209, 3 meters, Z-Direction_Vertical

Operator: Jeremy Lee

Model #: Remote
 Contact: Mike Xu
 Company: Wuyi Jinyue

04:20:04 PM, Tuesday, September 04, 2012

Frequency	Measured	AntFactor	PathLoss	Emission	Limit	Margin	T/T	Tower	POL
MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	Degree	cm	
433.872600 MHz	74.82	16.48	-30.00	61.29	80.14	18.85	145.0	100.9	V
867.898000 MHz	42.19	21.80	-28.50	35.49	61.94	26.45	203.8	100.9	V
Project #: 10959, Sample #: 1027228									
Temp.: 24.0 C, Hum.: 50.0 %									
Barometer Pres.: 102.3 kPa									

- Field Strength of Spurious Emissions; 3rd to 10th harmonics, Peak Detecting, Antenna was used SAS-571, Orthogonal X

LabTest Certification Inc.
 Intentional Radiated Emissions-Harmonics
 FCC15.231, 205 & 209, 3 meters, Peak Detector_ X-Direction_Horizontal

Operator: Jeremy Lee

Model #: Remote
 Contact: Mike Xu
 Company: Wuyi Jinyue

11:32:34 AM, Thursday, September 06, 2012

Frequency	Measured_PK	AntFactor	PathLoss	Emission_PK	Limit_PK	Margin_PK	T/T	Tower	POL
Hz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	Degree	cm	
1.3017375 GHz	43.71	24.51	-25.66	42.56	74.00	31.44	32.8	100.6	H
1.7358675 GHz	45.26	25.68	-23.64	47.29	81.94	34.65	247.0	100.6	H
2.1701375 GHz	43.56	27.64	-21.67	49.53	81.94	32.41	39.3	101.3	H
2.6037550 GHz	43.59	29.54	-20.69	52.45	81.94	29.49	274.5	101.3	H
3.0368475 GHz	42.92	30.50	-18.49	54.93	81.94	27.01	121.0	101.1	H
3.4718275 GHz	43.58	30.32	-17.25	56.66	81.94	25.28	108.3	101.1	H
3.9048550 GHz	42.79	31.60	-18.01	56.38	74.00	17.62	268.8	101.3	H
4.3400000 GHz	42.58	31.47	-18.05	56.00	74.00	18.00	345.8	101.3	H
Project #: 10959, Sample #: 1027228									
Temp.: 23.8 C, Hum.: 51.0 %									
Barometer Pres.: 102.3 kPa									

Prepared by: LabTest Certification Inc.
 Date Issued: October 22, 2012
 Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
 Report No.: 10959-1E
 Revision No.: 0

Labtest Certification Inc.
 Intentional Radiated Emissions-Harmonics
 FCC15.231, 205 & 209, 3 meters, Peak Detector_ X-Direction_Vertical

Operator: Jeremy Lee

11:32:34 AM, Thursday, September 06, 2012

Model #: Remote
 Contact: Mike Xu
 Company: Wuyi Jinyue

Frequency Hz	Measured_PK dBuV	AntFactor dB/m	PathLoss dB	Emission_PK dBuV/m	Limit_PK dBuV/m	Margin_PK dB	T/T Degree	Tower cm	POL
1.3022500 GHz	44.36	24.54	-25.66	43.25	74.00	30.75	50.0	101.2	V
1.7355550 GHz	45.11	25.73	-23.64	47.20	81.94	34.74	28.5	101.2	V
2.1699150 GHz	44.06	27.72	-21.67	50.11	81.94	31.83	186.0	101.1	V
2.6039350 GHz	43.95	29.58	-20.69	52.85	81.94	29.09	18.3	101.1	V
3.0378025 GHz	43.87	30.66	-18.49	56.04	81.94	25.90	194.3	101.2	V
3.4713950 GHz	44.42	30.42	-17.25	57.59	81.94	24.35	348.8	101.2	V
3.9047475 GHz	43.37	31.63	-18.01	56.99	74.00	17.01	280.8	101.1	V
4.3395175 GHz	42.37	31.52	-18.05	55.84	74.00	18.16	348.5	101.1	V
Project #: 10959, Sample #: 1027228									
Temp.: 23.8 C, Hum.: 51.0 %									
Barometer Pres.:102.3 kPa									

- Field Strengt of Spurious Emissions; 3rd to 10th harmonics, Average Detecting, Antenna was used SAS-571, Orthogonal X

LabTest Certification Inc.
 Intentional Radiated Emissions-Harmonics
 FCC15.231, 205 & 209, 3 meters, Averaging Detector_ X-Direction_Horizontal

Operator: Jeremy Lee

11:32:34 AM, Thursday, September 06, 2012

Model #: Remote
 Contact: Mike Xu
 Company: Wuyi Jinyue

Frequency Hz	Measured_AVG dBuV	AntFactor dB/m	PathLoss dB	Emission_AVG dBuV/m	Limit_AVG dBuV/m	Margin_AVG dB	T/T Degree	Tower cm	POL
1.3017375 GHz	29.89	24.51	-25.66	28.74	54.00	25.26	32.8	100.6	H
1.7358675 GHz	31.11	25.68	-23.64	33.15	61.94	28.79	247.0	100.6	H
2.1701375 GHz	30.04	27.64	-21.67	36.01	61.94	25.93	39.3	101.3	H
2.6037550 GHz	30.34	29.54	-20.69	39.20	61.94	22.74	274.5	101.3	H
3.0368475 GHz	29.80	30.50	-18.49	41.81	61.94	20.13	121.0	101.1	H
3.4718275 GHz	30.16	30.32	-17.25	43.24	61.94	18.70	108.3	101.1	H
3.9048550 GHz	29.18	31.60	-18.01	42.77	54.00	11.23	268.8	101.3	H
4.3400000 GHz	28.67	31.47	-18.05	42.09	54.00	11.91	345.8	101.3	H
Project #: 10959, Sample #: 1027228									
Temp.: 23.8 C, Hum.: 51.0 %									
Barometer Pres.:102.3 kPa									

LabTest Certification Inc.
 Intentional Radiated Emissions-Harmonics
 FCC15.231, 205 & 209, 3 meters, Averaging Detector_ X-Direction_Vertical

Operator: Jeremy Lee

11:32:34 AM, Thursday, September 06, 2012

Model #: Remote
 Contact: Mike Xu
 Company: Wuyi Jinyue

Frequency Hz	Measured+AVG dBuV	AntFactor dB/m	PathLoss dB	Emission_AVG dBuV/m	Limit_AVG dBuV/m	Margin_AVG dB	T/T Degree	Tower cm	POL
1.3022500 GHz	30.51	24.54	-25.66	29.40	54.00	24.60	50.0	101.2	V
1.7355550 GHz	30.92	25.73	-23.64	33.01	61.94	28.93	28.5	101.2	V
2.1699150 GHz	29.92	27.72	-21.67	35.97	61.94	25.97	186.0	101.1	V
2.6039350 GHz	30.33	29.58	-20.69	39.23	61.94	22.71	18.3	101.1	V
3.0378025 GHz	29.79	30.66	-18.49	41.96	61.94	19.98	194.3	101.2	V
3.4713950 GHz	30.20	30.42	-17.25	43.37	61.94	18.57	348.8	101.2	V
3.9047475 GHz	29.06	31.63	-18.01	42.68	54.00	11.32	280.8	101.1	V
4.3395175 GHz	28.71	31.52	-18.05	42.18	54.00	11.82	348.5	101.1	V
Project #: 10959, Sample #: 1027228									
Temp.: 23.8 C, Hum.: 51.0 %									
Barometer Pres.:102.3 kPa									

Prepared by: LabTest Certification Inc.
 Date Issued: October 22, 2012
 Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
 Report No.: 10959-1E
 Revision No.: 0

- Field Strengt of Spurious Emissions; 3rd to 10th harmonics, Peak Detecting, Antenna was used SAS-571, Orthogonal Y

LabTest Certification Inc. Intentional Radiated Emissions-Harmonics									
FCC15.231, 205 & 209, 3 meters, Peak Detector_ Y-Direction_Horizontal									
Operator: Jeremy Lee								Model #: Remote	
01:03:13 PM, Thursday, September 06, 2012								Contact: Mike Xu	
								Company: Wuyi Jinyue	
Frequency	Measured_PK	AntFactor	PathLoss	Emission_PK	Limit_PK	Margin_PK	T/T	Tower	POL
Hz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	Degree	cm	
1.3009750 GHz	44.93	24.51	-25.66	43.78	74.00	30.22	177.5	102.9	H
1.7354275 GHz	44.93	25.67	-23.64	46.96	81.94	34.98	222.3	101.9	H
2.1693425 GHz	43.99	27.64	-21.68	49.95	81.94	31.99	225.8	100.9	H
2.6040600 GHz	44.26	29.54	-20.69	53.12	81.94	28.82	286.8	105.3	H
3.0379725 GHz	43.97	30.51	-18.48	55.99	81.94	25.95	117.8	105.0	H
3.4714025 GHz	44.69	30.33	-17.25	57.77	81.94	24.17	283.5	104.9	H
3.9055950 GHz	43.30	31.60	-18.01	56.89	74.00	17.11	82.0	103.9	H
4.3392875 GHz	42.56	31.47	-18.05	55.98	74.00	18.02	346.3	103.0	H
Project #: 10959, Sample #: 1027228									
Temp.: 24.4 C, Hum.: 49.0 %									
Barometer Pres.: 101.9 kPa									

LabTest Certification Inc. Intentional Radiated Emissions-Harmonics									
FCC15.231, 205 & 209, 3 meters, Peak Detector_ Y-Direction_Vertical									
Operator: Jeremy Lee								Model #: Remote	
01:03:13 PM, Thursday, September 06, 2012								Contact: Mike Xu	
								Company: Wuyi Jinyue	
Frequency	Measured_PK	AntFactor	PathLoss	Emission_PK	Limit_PK	Margin_PK	T/T	Tower	POL
Hz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	Degree	cm	
1.3023050 GHz	44.75	24.54	-25.65	43.64	74.00	30.36	327.8	101.3	V
1.7365250 GHz	44.99	25.74	-23.64	47.09	81.94	34.85	295.5	101.0	V
2.1699425 GHz	44.92	27.72	-21.67	50.97	81.94	30.97	185.3	100.9	V
2.6037325 GHz	44.02	29.59	-20.69	52.92	81.94	29.02	339.0	105.5	V
3.0375900 GHz	44.04	30.65	-18.49	56.21	81.94	25.73	331.0	104.6	V
3.4706725 GHz	44.42	30.42	-17.25	57.59	81.94	24.35	47.5	103.9	V
3.9058200 GHz	43.12	31.63	-18.01	56.74	74.00	17.26	9.5	103.0	V
4.3392125 GHz	43.04	31.52	-18.05	56.51	74.00	17.49	107.8	103.0	V
Project #: 10959, Sample #: 1027228									
Temp.: 24.4 C, Hum.: 49.0 %									
Barometer Pres.: 101.9 kPa									

- Field Strengt of Spurious Emissions; 3rd to 10th harmonics, Average Detecting, Antenna was used SAS-571, Orthogonal Y

LabTest Certification Inc. Intentional Radiated Emissions-Harmonics									
FCC15.231, 205 & 209, 3 meters, Averaging Detector_ Y-Direction_Horizontal									
Operator: Jeremy Lee								Model #: Remote	
01:03:13 PM, Thursday, September 06, 2012								Contact: Mike Xu	
								Company: Wuyi Jinyue	
Frequency	Measured_AVG	AntFactor	PathLoss	Emission_AVG	Limit_AVG	Margin_AVG	T/T	Tower	POL
Hz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	Degree	cm	
1.3009750 GHz	31.45	24.51	-25.66	30.30	54.00	23.70	177.5	102.9	H
1.7354275 GHz	31.35	25.67	-23.64	33.38	61.94	28.56	222.3	101.9	H
2.1693425 GHz	30.49	27.64	-21.68	36.45	61.94	25.49	225.8	100.9	H
2.6040600 GHz	30.75	29.54	-20.69	39.61	61.94	22.33	286.8	105.3	H
3.0379725 GHz	30.12	30.51	-18.48	42.14	61.94	19.80	117.8	105.0	H
3.4714025 GHz	30.66	30.33	-17.25	43.74	61.94	18.20	283.5	104.9	H
3.9055950 GHz	29.52	31.60	-18.01	43.11	54.00	10.89	82.0	103.9	H
4.3392875 GHz	29.13	31.47	-18.05	42.55	54.00	11.45	346.3	103.0	H
Project #: 10959, Sample #: 1027228									
Temp.: 24.4 C, Hum.: 49.0 %									
Barometer Pres.: 101.9 kPa									

Prepared by: LabTest Certification Inc.
 Date Issued: October 22, 2012
 Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
 Report No.: 10959-1E
 Revision No.: 0

LabTest Certification Inc.
 Intentional Radiated Emissions-Harmonics
 FCC15.231, 205 & 209, 3 meters, Averaging Detector_ Y-Direction_Vertical

Operator: Jeremy Lee

01:03:13 PM, Thursday, September 06, 2012

Model #: Remote
 Contact: Mike Xu
 Company: Wuyi Jinyue

Frequency Hz	Measured+AVG dBuV	AntFactor dB/m	PathLoss dB	Emission_AVG dBuV/m	Limit_AVG dBuV/m	Margin_AVG dB	T/T Degree	Tower cm	POL
1.3023050 GHz	30.97	24.54	-25.65	29.86	54.00	24.14	327.8	101.3	V
1.7365250 GHz	31.56	25.74	-23.64	33.66	61.94	28.28	295.5	101.0	V
2.1699425 GHz	30.48	27.72	-21.67	36.53	61.94	25.41	185.3	100.9	V
2.6037325 GHz	30.82	29.59	-20.69	39.72	61.94	22.22	339.0	105.5	V
3.0375900 GHz	30.38	30.65	-18.49	42.55	61.94	19.39	331.0	104.6	V
3.4706725 GHz	30.70	30.42	-17.25	43.87	61.94	18.07	47.5	103.9	V
3.9058200 GHz	29.56	31.63	-18.01	43.18	54.00	10.82	9.5	103.0	V
4.3392125 GHz	29.42	31.52	-18.05	42.89	54.00	11.11	107.8	103.0	V
Project #: 10959, Sample #: 1027228									
Temp.: 24.4 C, Hum.: 49.0 %									
Barometer Pres.: 101.9 kPa									

- Field Strength of Spurious Emissions; 3rd to 10th harmonics, Peak Detecting, Antenna was used SAS-571, Orthogonal Z

LabTest Certification Inc.
 Intentional Radiated Emissions-Harmonics
 FCC15.231, 205 & 209, 3 meters, Peak Detector_ Z-Direction_Horizontal

Operator: Jeremy Lee

03:04:53 PM, Thursday, September 06, 2012

Model #: Remote
 Contact: Mike Xu
 Company: Wuyi Jinyue

Frequency Hz	Measured_PK dBuV	AntFactor dB/m	PathLoss dB	Emission_PK dBuV/m	Limit_PK dBuV/m	Margin_PK dB	T/T Degree	Tower cm	POL
1.3016525 GHz	44.66	24.51	-25.66	43.51	74.00	30.49	212.0	102.9	H
1.7352550 GHz	44.92	25.67	-23.64	46.95	81.94	34.99	343.0	101.6	H
2.1699000 GHz	44.05	27.64	-21.67	50.02	81.94	31.92	258.0	100.8	H
2.6033575 GHz	44.33	29.55	-20.69	53.19	81.94	28.75	242.8	103.2	H
3.0366350 GHz	43.82	30.50	-18.49	55.82	81.94	26.12	41.5	102.9	H
3.4711175 GHz	43.79	30.33	-17.25	56.87	81.94	25.07	219.8	102.0	H
3.9054175 GHz	42.92	31.60	-18.01	56.51	74.00	17.49	234.5	102.0	H
4.3399500 GHz	42.67	31.47	-18.05	56.09	74.00	17.91	216.8	102.0	H
Project #: 10959, Sample #: 1027228									
Temp.: 24.8 C, Hum.: 47.0 %									
Barometer Pres.: 101.8 kPa									

LabTest Certification Inc.
 Intentional Radiated Emissions-Harmonics
 FCC15.231, 205 & 209, 3 meters, Peak Detector_ Z-Direction_Vertical

Operator: Jeremy Lee

03:04:53 PM, Thursday, September 06, 2012

Model #: Remote
 Contact: Mike Xu
 Company: Wuyi Jinyue

Frequency Hz	Measured_PK dBuV	AntFactor dB/m	PathLoss dB	Emission_PK dBuV/m	Limit_PK dBuV/m	Margin_PK dB	T/T Degree	Tower cm	POL
1.3024325 GHz	44.87	24.54	-25.65	43.76	74.00	30.24	25.8	102.0	V
1.7355725 GHz	44.97	25.73	-23.64	47.06	81.94	34.88	141.8	101.9	V
2.1689900 GHz	43.82	27.73	-21.68	49.87	81.94	32.07	326.0	100.9	V
2.6043800 GHz	43.70	29.58	-20.68	52.60	81.94	29.34	294.8	102.9	V
3.0371850 GHz	44.05	30.65	-18.49	56.21	81.94	25.73	244.0	101.8	V
3.4704875 GHz	43.85	30.42	-17.25	57.03	81.94	24.91	83.3	101.0	V
3.9060400 GHz	42.76	31.63	-18.01	56.38	74.00	17.62	153.8	100.5	V
4.3392050 GHz	42.25	31.52	-18.05	55.72	74.00	18.28	261.0	105.5	V
Project #: 10959, Sample #: 1027228									
Temp.: 24.8 C, Hum.: 47.0 %									
Barometer Pres.: 101.8 kPa									

Prepared by: LabTest Certification Inc.
 Date Issued: October 22, 2012
 Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
 Report No.: 10959-1E
 Revision No.: 0

- Field Strengt of Spurious Emissions; 3rd to 10th harmonics, Average Detecting, Antenna was used SAS-571, Orthogonal Z

LabTest Certification Inc. Intentional Radiated Emissions-Harmonics FCC15.231, 205 & 209, 3 meters, Averaging Detector_ Z-Direction_Horizontal									
Operator: Jeremy Lee					Model #: Remote				
03:04:53 PM, Thursday, September 06, 2012					Contact: Mike Xu				
					Company: Wuyi Jinyue				
Frequency	Measured_AVG	AntFactor	PathLoss	Emission_AVG	Limit_AVG	Margin_AVG	T/T	Tower	POL
Hz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	Degree	cm	
1.3016525 GHz	31.07	24.51	-25.66	29.92	54.00	24.08	212.0	102.9	H
1.7352550 GHz	31.11	25.67	-23.64	33.14	61.94	28.80	343.0	101.6	H
2.1699000 GHz	30.27	27.64	-21.67	36.24	61.94	25.70	258.0	100.8	H
2.6033575 GHz	30.51	29.55	-20.69	39.37	61.94	22.57	242.8	103.2	H
3.0366350 GHz	30.27	30.50	-18.49	42.27	61.94	19.67	41.5	102.9	H
3.4711175 GHz	30.69	30.33	-17.25	43.77	61.94	18.17	219.8	102.0	H
3.9054175 GHz	29.43	31.60	-18.01	43.02	54.00	10.98	234.5	102.0	H
4.3399500 GHz	29.13	31.47	-18.05	42.55	54.00	11.45	216.8	102.0	H
Project #: 10959, Sample #: 1027228									
Temp.: 24.8 C, Hum.: 47.0 %									
Barometer Pres.: 101.8 kPa									

LabTest Certification Inc. Intentional Radiated Emissions-Harmonics FCC15.231, 205 & 209, 3 meters, Averaging Detector_ Z-Direction_Vertical									
Operator: Jeremy Lee					Model #: Remote				
03:04:53 PM, Thursday, September 06, 2012					Contact: Mike Xu				
					Company: Wuyi Jinyue				
Frequency	Measured+AVG	AntFactor	PathLoss	Emission_AVG	Limit_AVG	Margin_AVG	T/T	Tower	POL
Hz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	Degree	cm	
1.3024325 GHz	30.74	24.54	-25.65	29.63	54.00	24.37	25.8	102.0	V
1.7355725 GHz	31.40	25.73	-23.64	33.49	61.94	28.45	141.8	101.9	V
2.1689900 GHz	30.71	27.73	-21.68	36.76	61.94	25.18	326.0	100.9	V
2.6043800 GHz	30.72	29.58	-20.68	39.62	61.94	22.32	294.8	102.9	V
3.0371850 GHz	30.29	30.65	-18.49	42.45	61.94	19.49	244.0	101.8	V
3.4704875 GHz	30.55	30.42	-17.25	43.72	61.94	18.22	83.3	101.0	V
3.9060400 GHz	29.09	31.63	-18.01	42.71	54.00	11.29	153.8	100.5	V
4.3392050 GHz	28.65	31.52	-18.05	42.12	54.00	11.88	261.0	105.5	V
Project #: 10959, Sample #: 1027228									
Temp.: 24.8 C, Hum.: 47.0 %									
Barometer Pres.: 101.8 kPa									

Prepared by: LabTest Certification Inc.
Date Issued: October 22, 2012
Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
Report No.: 10959-1E
Revision No.: 0

Radiated Emission; Intentional Radiators

Regulation	FCC15.209:2010
Detecting Method	Quasi Peak Detector
IF Bandwidth	200Hz(Under 150kHz) and 9kHz(over 150kHz)
Temperature	21.2 to 25.6 °C
Relative Humidity	43.0 to 57.0 %
Barometric Pressure:	101.8 to 101.9 kPa
Test Date	Sep. 06 & Oct. 15, 2012
Sample Number	1027228
Calibrated Test Equipment (ID)	266, 272, 371
Reference Equipment (ID) (Calibration not required)	124, 374
Electrical Rating	3VDC, Internal battery
Tested By	Jeremy LEE

Use the barometric pressure reported at: <http://www.theweathernetwork.com/weather/cabc0248>

Test Limits

FCC 15.209:

(a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength (microvolts/meter)	Measure- ment dis- tance (meters)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30
30–88	100 **	3
88–216	150 **	3
216–960	200 **	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54–72 MHz, 76–88 MHz, 174–216 MHz or 470–806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.

Test Results:

Emission level (dBuV/m) = Quasi-Peak detected level (dBuV) + Cable Loss (dB) + Antenna Factor (dB/m)

Prepared by: LabTest Certification Inc.
Date Issued: October 22, 2012
Project No: 10959

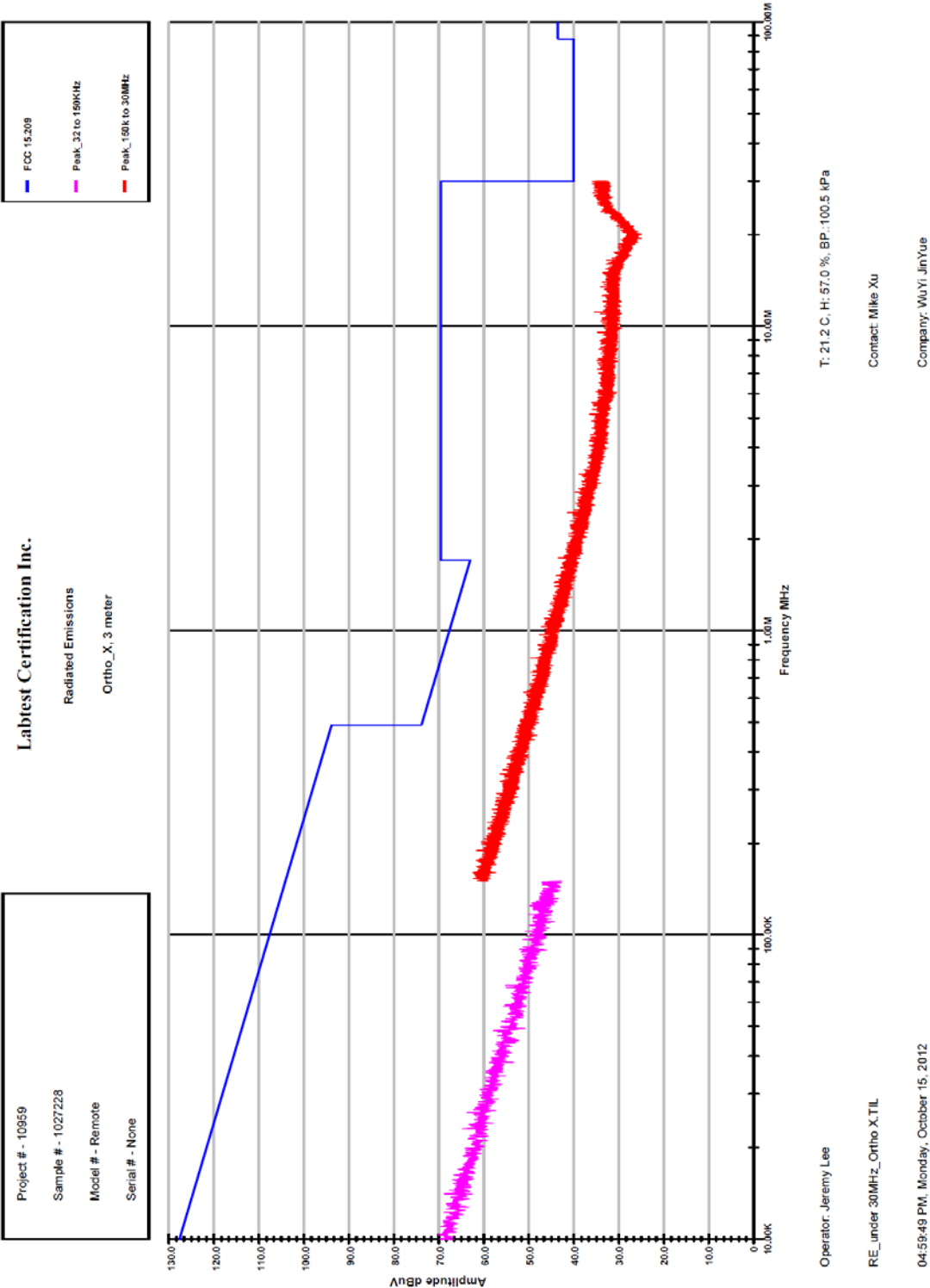
Client: WuYi JinYue Engine Science & Tech.
Report No.: 10959-1E
Revision No.: 0

X **Pass** **Fail** **N/A**

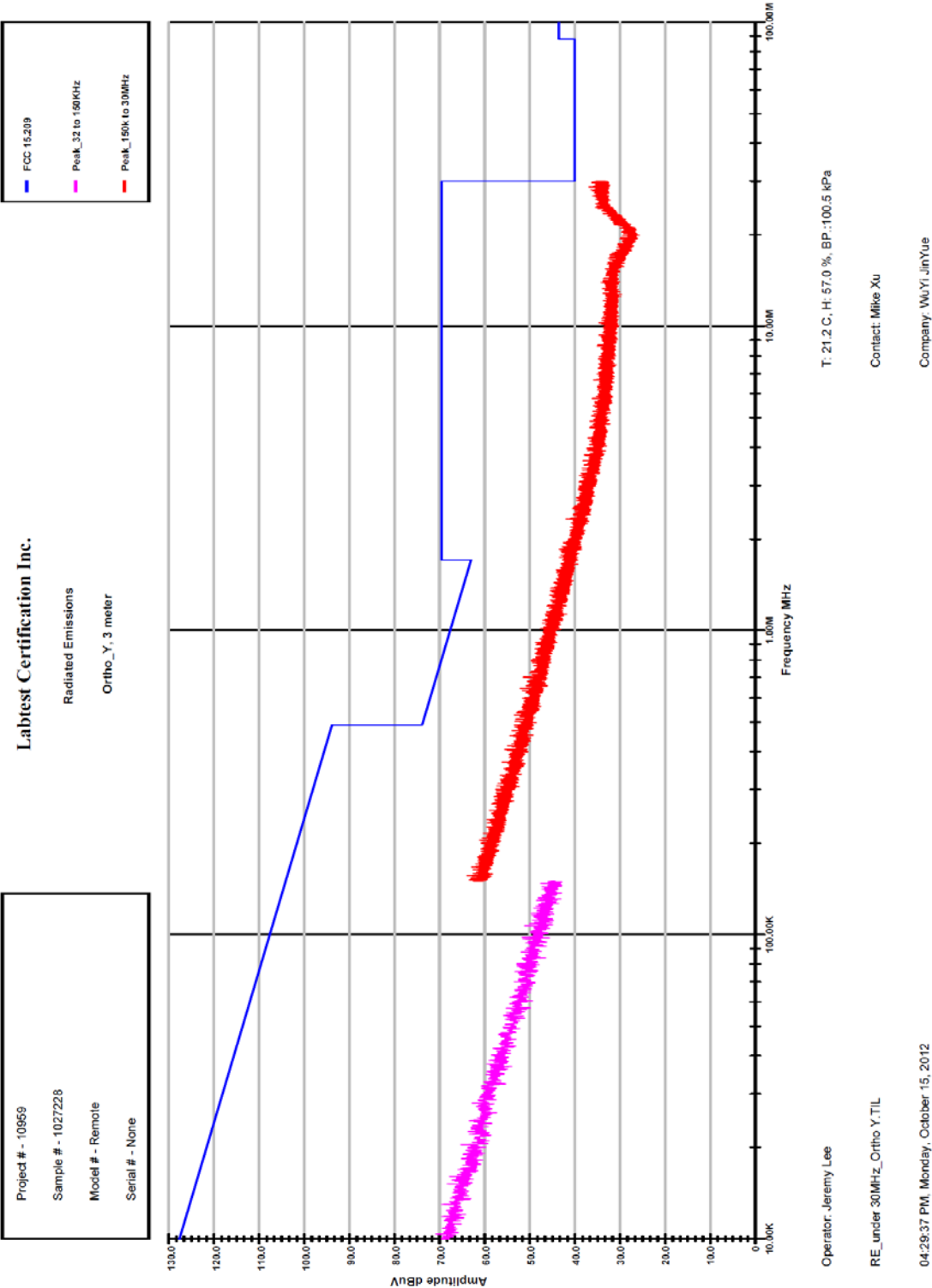
Frequency (kHz)	Limit (dBuV/m)	Measured (dBuV/m)	Margin (dB)	Orthogonal Plane	Pol. Of Antenna	Results
55.2604	+40.00	+24.78*	15.22	Y	V	PASS
306.7531	+ 46.00	+32.35*	13.65	Y	V	PASS
867.7364	+ 46.00	+ 34.11*	11.89	X	H	PASS
887.5406	+ 46.00	+32.30*	13.70	Y	V	PASS

Note *) The measuerd levels were detected by Peak Detector.

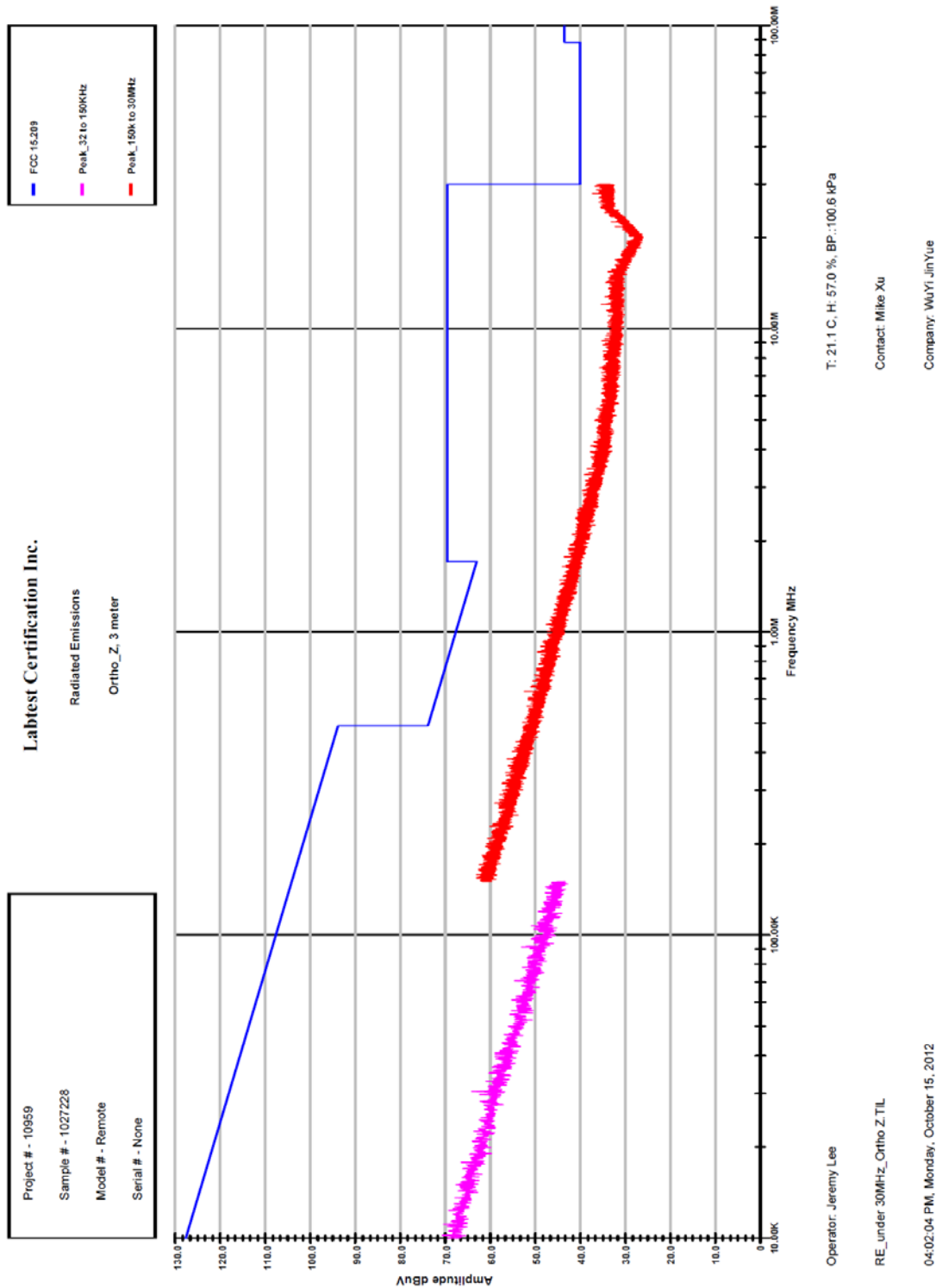
- Graph of Radiated Emissions: 9kHz to 30MHz, Peak detecting, On RF Transmitter, Antenna was used AL-130, Orthogonal X.



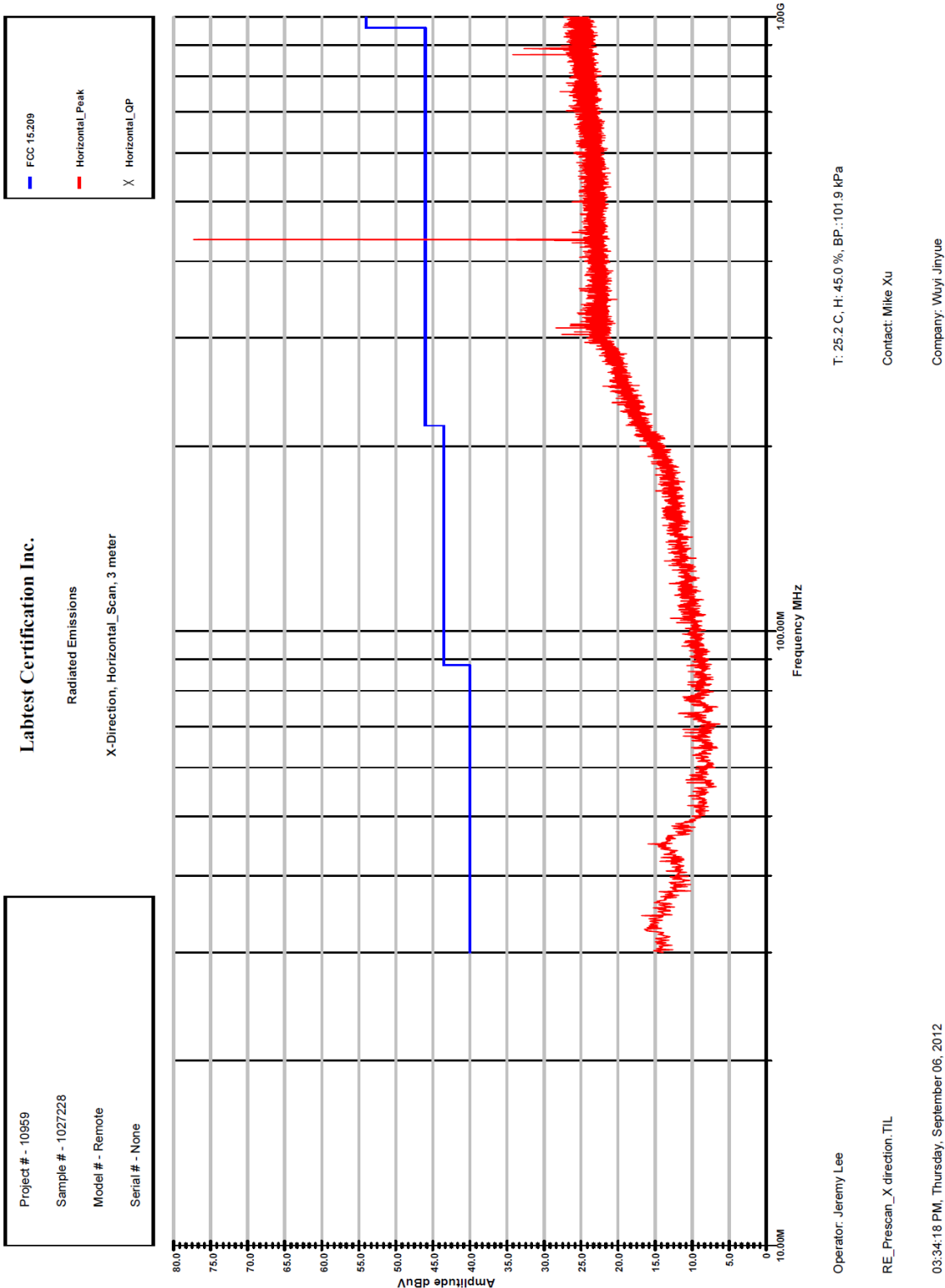
- Graph of Radiated Emissions: 9kHz to 30MHz, Peak detecting, On RF Transmitter, Antenna was used AL-130, Orthogonal Y.



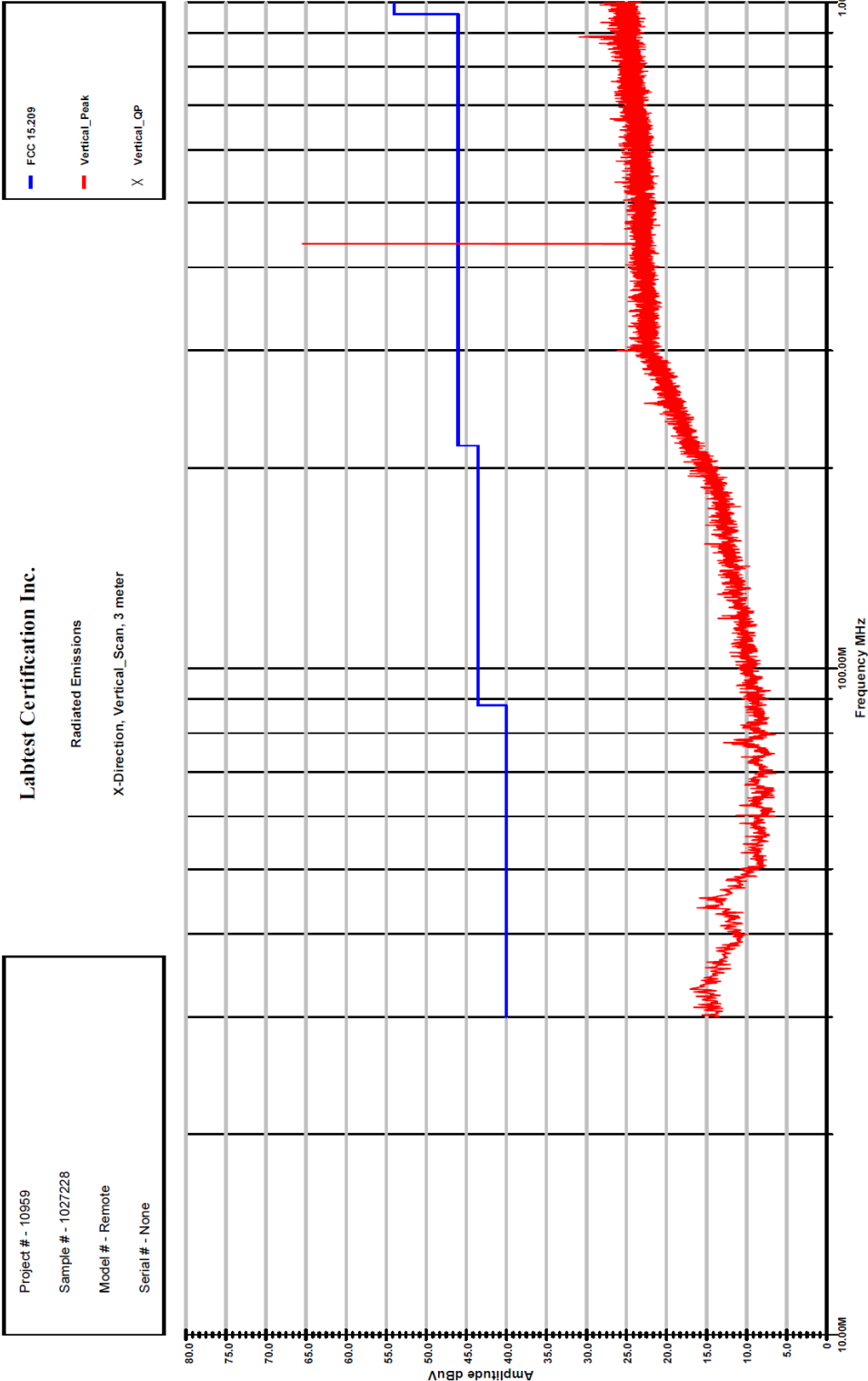
- Graph of Radiated Emissions: 9kHz to 30MHz, Peak detecting, On RF Transmitter, Antenna was used AL-130, Orthogonal Z.



- Test results of Radiated Emission; On RF Transmitter , Orthogonal X, Horizontal



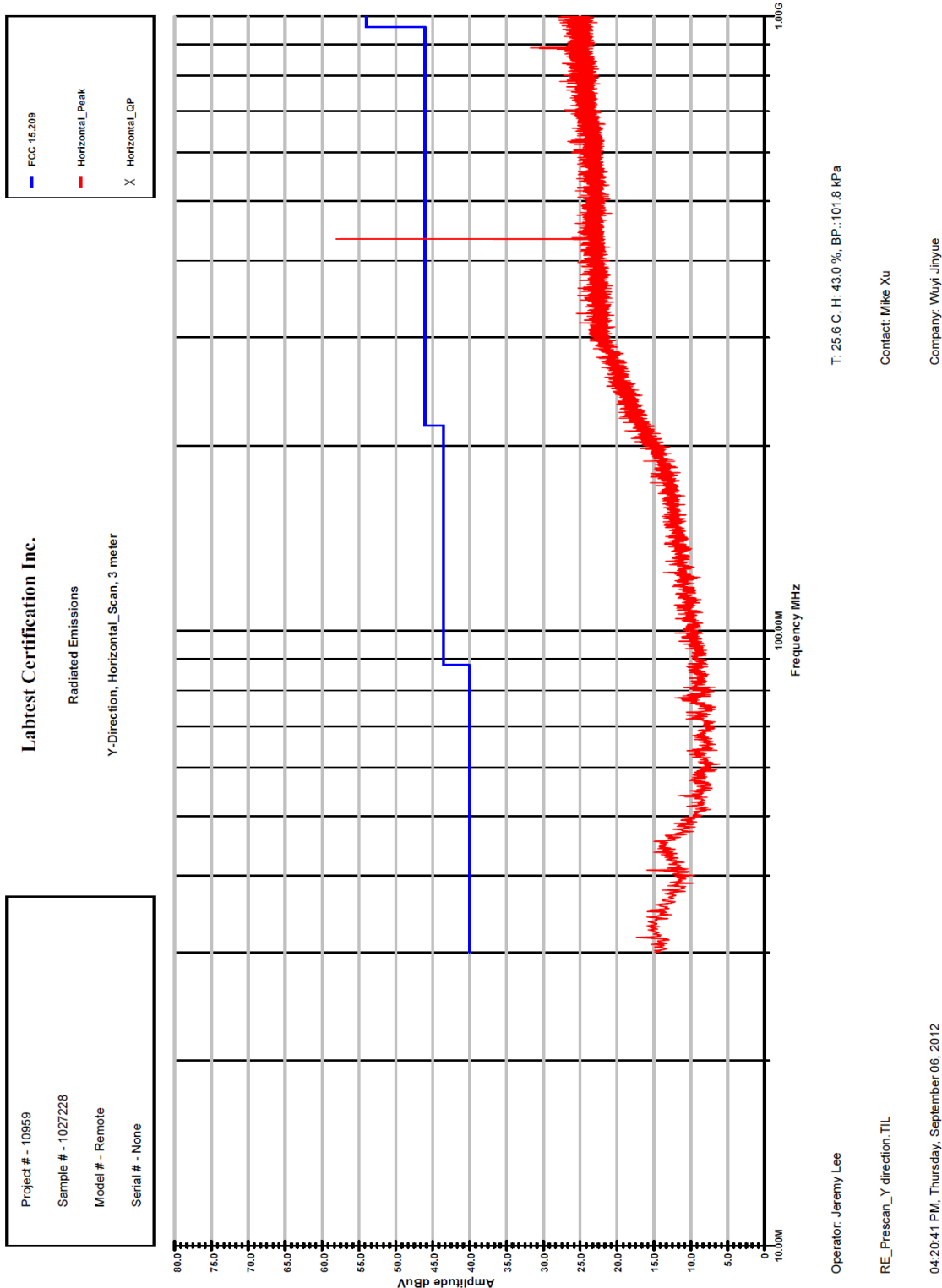
- Test results of Radiated Emission; On RF Transmitter , Orthogonal X, Vertical



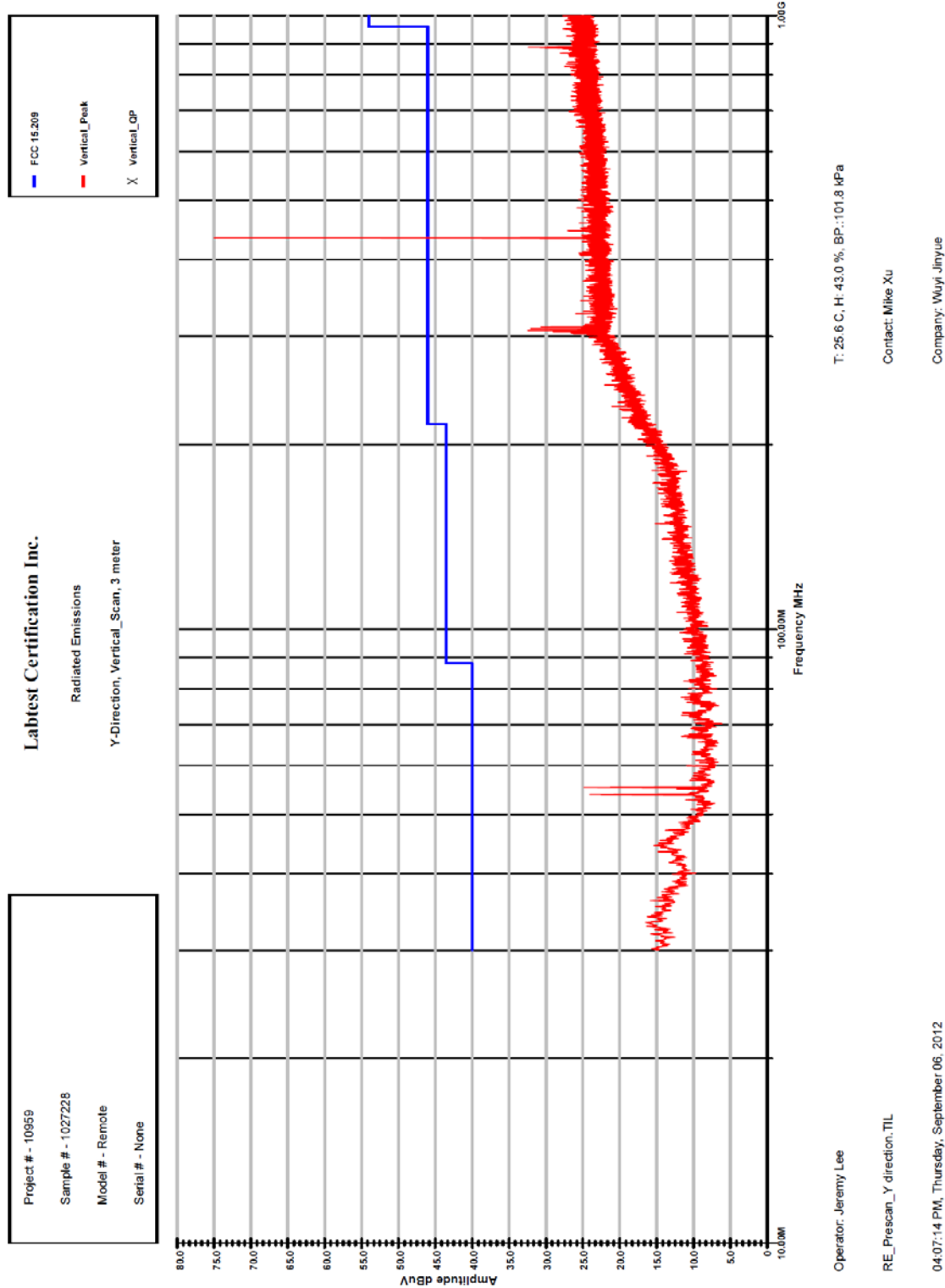
T: 25.2 C, H: 45.0 %, BP: 101.9 kPa
Contact: Mike Xu
Company: WuYi JinYue

Operator: Jeremy Lee
RE_Prescan_X direction.TIL
03:49:44 PM, Thursday, September 06, 2012

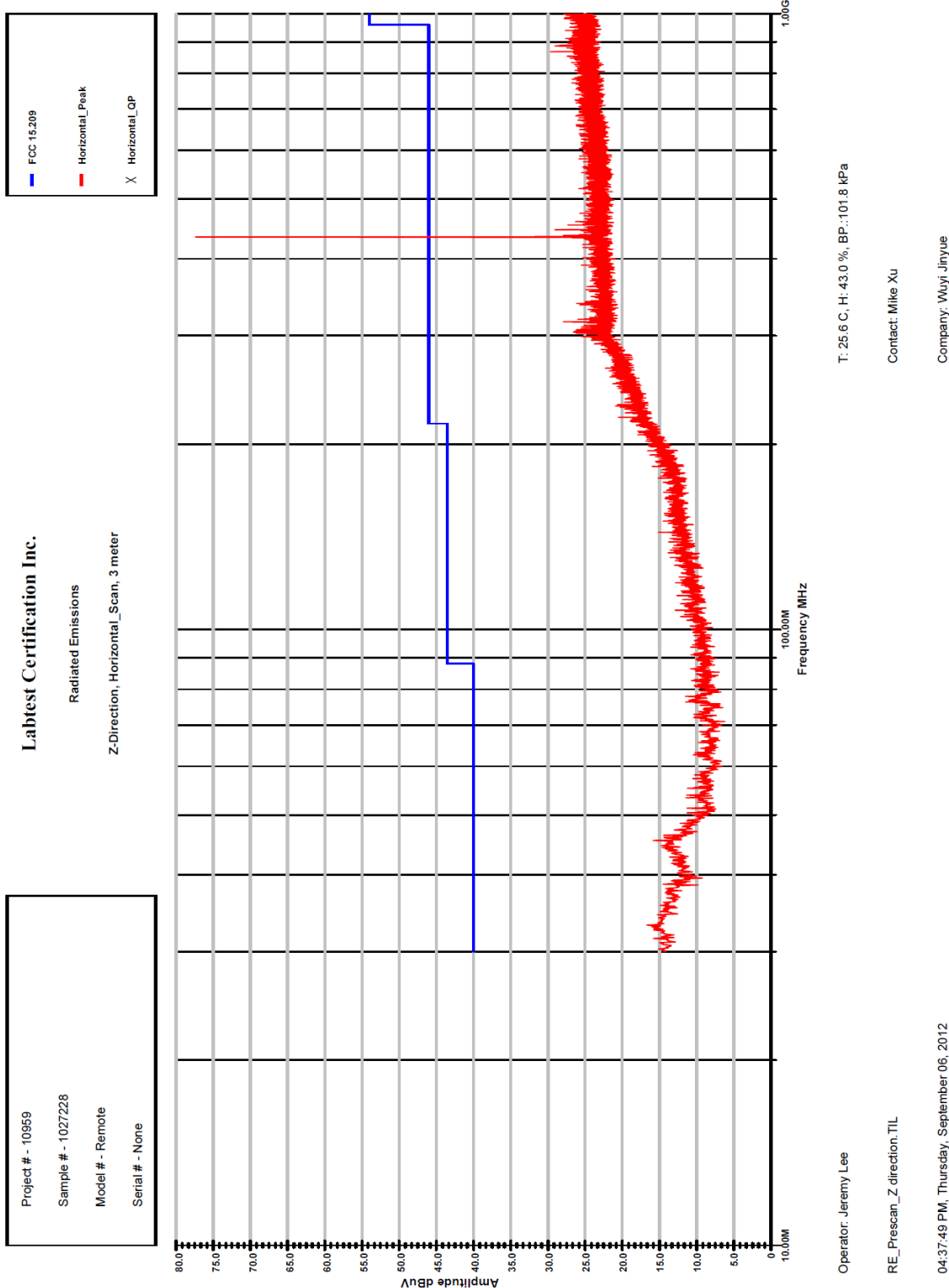
- Test results of Radiated Emission; On RF Transmitter, Orthogonal Y, Horizontal



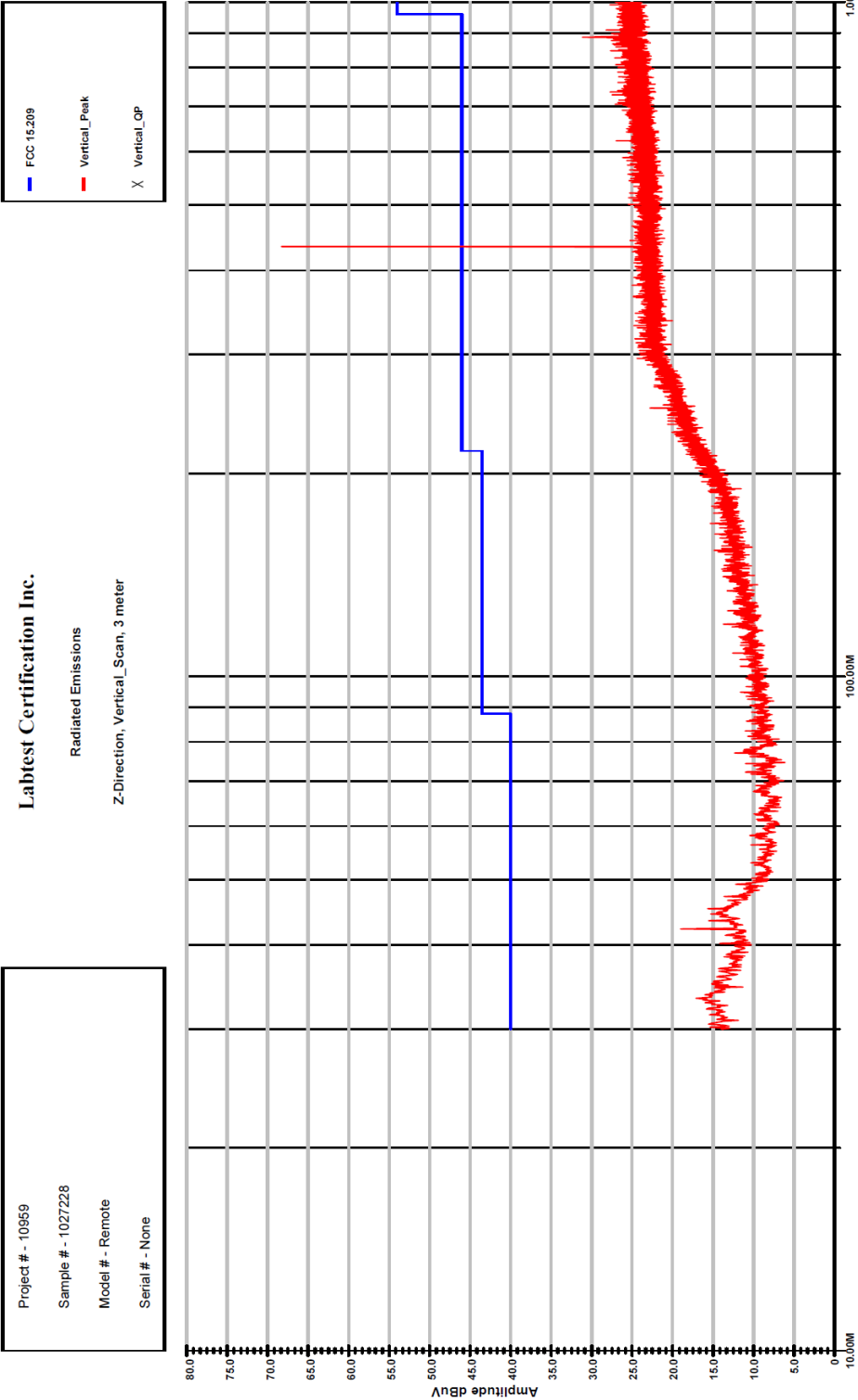
- Test results of Radiated Emission; On RF Transmitter, Orthogonal Y, Vertical



- Test results of Radiated Emission; On RF Transmitter, Orthogonal Z, Horizontal



- Test results of Radiated Emission; On RF Transmitter, Orthogonal Z, Vertical



T: 25.6 C, H: 43.0 %, BP.: 101.8 kPa
Contact: Mike Xu
Company: Wuyi Jinyue

Operator: Jeremy Lee
RE_Prescan_Z direction.TIL
04:52:36 PM, Thursday, September 06, 2012

Prepared by: LabTest Certification Inc.
Date Issued: October 22, 2012
Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
Report No.: 10959-1E
Revision No.: 0

The Bandwidth of the emission

Regulation	FCC15.231: 2010
Temperature	25.5 °C
Relative Humidity	46.0 %
Barometric Pressure:	102.1 kPa
Test Date	Sep. 07, 2012
Sample Number	1027228
Calibrated Test Equipment (ID)	266, 272, 371
Reference Equipment (ID) (Calibration not required)	124, 374
Electrical Rating	3VDC, Internal battery
Tested By	Jeremy LEE

Use the barometric pressure reported at: <http://www.theweathernetwork.com/weather/cabc0248>

Test Limits

FCC 15.231:

(c) The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20dB down from the modulated carrier.

Test Setup

The test was performed in accordance with **ANSI C63.10: 2009**.

The setup for Bandwidth of the emission measurements is shown in Figure - 1.

- a) The EUT was placed on a wooden table.
- b) It was measured with a receiver - spectrum analyzer.

Test Results:

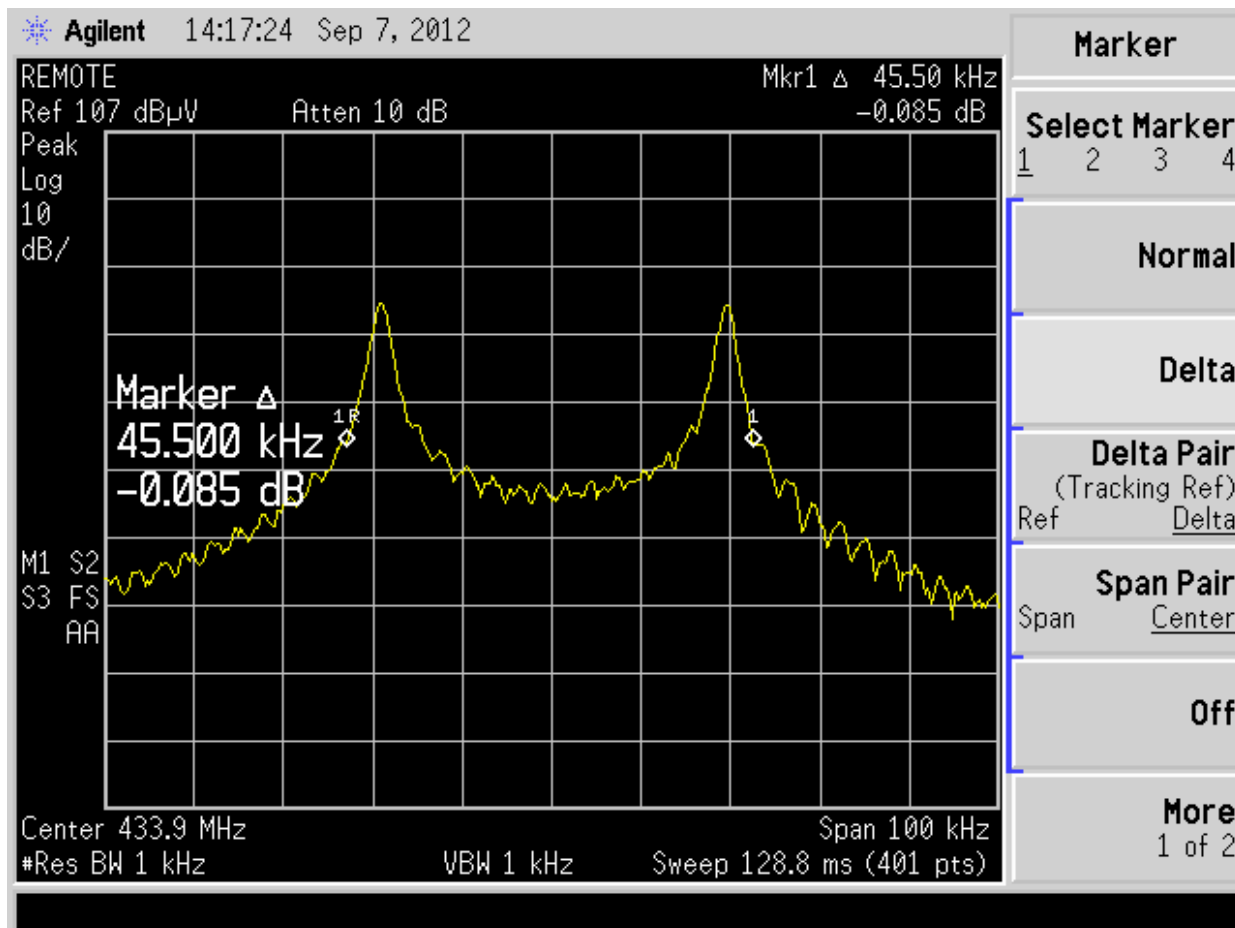
X **Pass** **Fail** **N/A**

Center Frequency (MHz)	Limit(<0.25%, kHz)	Measured(kHz)	Results
433.92	< 1084.8	45.5	PASS

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Date Issued: October 22, 2012
Project No: 10959

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Report No.: 10959-1E
Revision No.: 0

- Measured result of the Bandwidth of the emission(20dBc method).



Prepared by: LabTest Certification Inc.
 Date Issued: October 22, 2012
 Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
 Report No.: 10959-1E
 Revision No.: 0

APPENDIX A: Test Equipment Used

ID No.	Description	Manufacturer	Model	Serial No.	Calibration Date	Calibration Due Date	Calibration Certificate No:	Calibration Laboratory
124	Pre-Amplifier	Com-Power	PA-103	161118	N/A	N/A	N/A	N/A
227-3	Horn Antenna	A.H. Systems	SAS-571	936	12-Jul-2012	12-Jul-2013	2012062215	Liberty Labs
241	Active Loop Antenna	AL-130	Com-Power	17075	01-Nov-2011	01-Nov-2012	071075A	Com-Power
266	Humidity/ Temperature Logger	Onset HOBO	U14-001	2436907	19-Dec-2011	19-Dec-2012	327420	Wescan
272	EMC Analyzer	Agilent	E7405A	US41110263	11-May-2012	11-May-2013	1-4321111743-1	Agilent
273	RF Preamplifier	Agilent	8449B	3008A02264	28-Mar-2012	28-Mar-2013	2008120104207	Micro Precision
371	EMC Broadband Antenna	Sunol	JB1	A022012	07-Mar-2012	07-Mar-2013	2012022808	Liberty Labs
374	EMC Shielded Enclosure	USC	USC-26	111811	N/A	N/A	N/A	N/A

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Date Issued: October 22, 2012
Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
Report No.: 10959-1E
Revision No.: 0

APPENDIX B: EUT photos

- EUT: Top View



- EUT: Bottom View

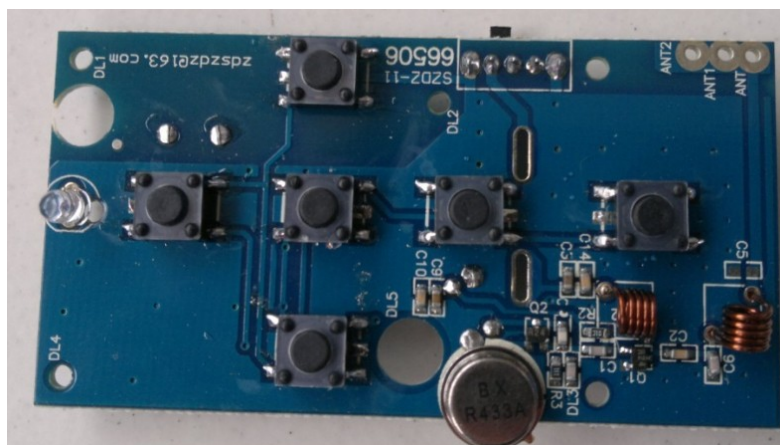


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Date Issued: October 22, 2012
Project No: 10959

Client:
Report No.:
Revision No.:

WuYi JinYue Engine Science & Tech.
10959-1E
0

- EUT: Inside Top View



- EUT: Inside Bottom View

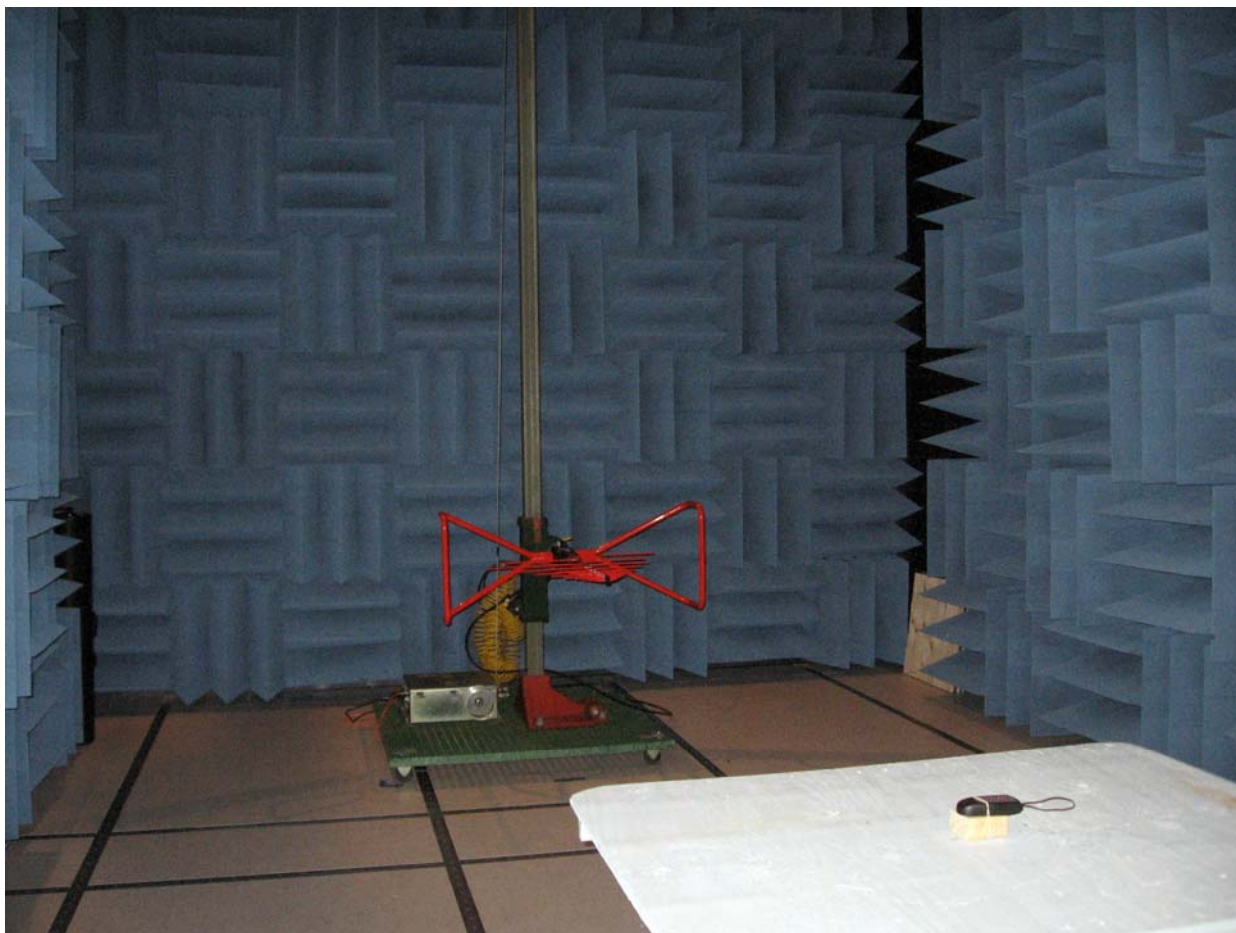


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Date Issued: October 22, 2012
Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
Report No.: 10959-1E
Revision No.: 0

APPENDIX C: Test setup photos

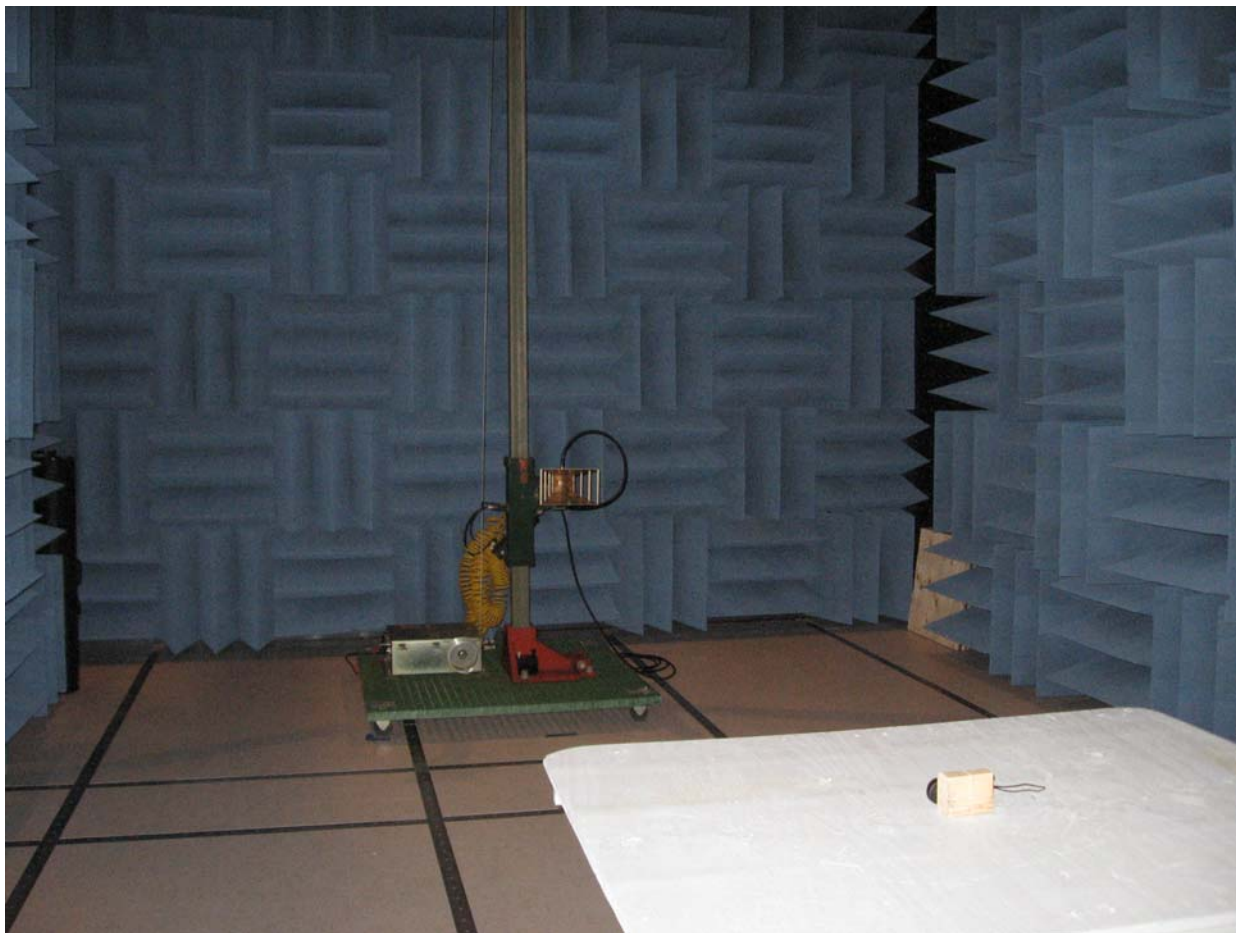
- Test configuration for Field Strength measurement #1



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Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
Report No.: 10959-1E
Revision No.: 0

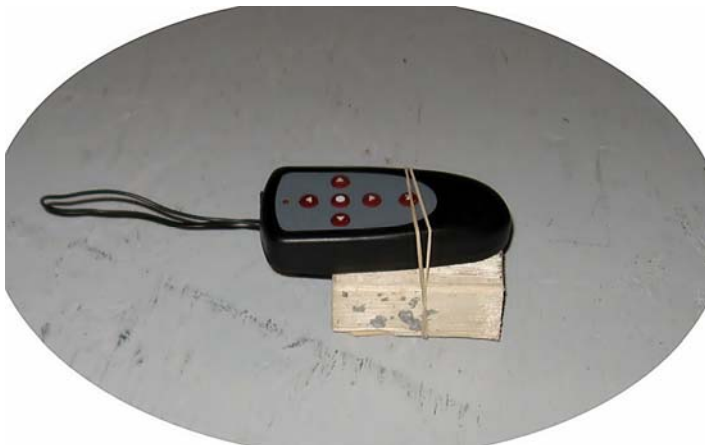
- Test configuration for Field Strength measurement #2



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Date Issued: October 22, 2012
Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
Report No.: 10959-1E
Revision No.: 0

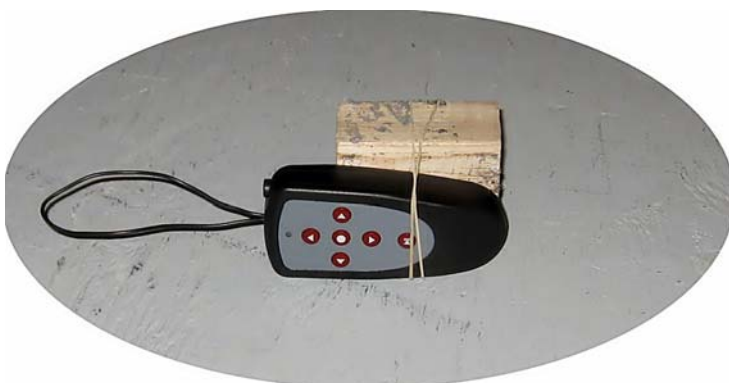
- Set-up for Orthogonal X



- Set-up for Orthogonal Y



- Set-up for Orthogonal Z



Prepared by: LabTest Certification Inc.
Date Issued: October 22, 2012
Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
Report No.: 10959-1E
Revision No.: 0

APPENDIX D: ISO 17025:2005 Accreditation Certificate

<p>International Accreditation Service</p> <h1>CERTIFICATE OF ACCREDITATION</h1> <p><i>This is to signify that</i></p> <p>LABTEST CERTIFICATION, INC. 3133-20800 WESTMINSTER HIGHWAY RICHMOND, BRITISH COLUMBIA V6V 2W3 CANADA</p> <p>Testing Laboratory TL-367 (Revised May 9, 2012)</p> <p>has met the requirements of the IAS Accreditation Criteria for Testing Laboratories (AC89), has demonstrated compliance with ANS/ISO/IEC Standard 17025:2005, <i>General requirements for the competence of testing and calibration laboratories</i>, and has been accredited, commencing May 5, 2011, for the test methods listed in the approved scope of accreditation.</p> <div><div><p>Patrick V. McCullen Vice President</p></div><div><p>C. P. Ramani, P.E. President</p></div></div> <div></div> <p>Print Date: 05/23/2012</p> <p><small>(see attached scope of accreditation for fields of testing and accredited test methods)</small></p> <p><small>This accreditation certificate supersedes any IAS accreditation certificate bearing an earlier date. The certificate becomes invalid upon suspension, cancellation or revocation of accreditation. See the IAS Accreditation Listings on the web at www.iasonline.org for current accreditation information, or contact IAS directly at (562) 364-8201.</small></p>	
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11-04577

Prepared by: LabTest Certification Inc.
Date Issued: October 22, 2012
Project No: 10959

Client: WuYi JinYue Engine Science & Tech.
Report No.: 10959-1E
Revision No.: 0

International Accreditation Service	
SCOPE OF ACCREDITATION	
LabTest Certification, Inc. TL-367 (Revised May 9, 2012)	
LabTest Certification, Inc. 3133-20800 Westminster Hwy. Richmond, British Columbia V6V 2W3 Canada	Kavinder Dhillon QMS Manager (604) 247-0444
FIELDS OF TESTING	ACCREDITED TEST METHODS
Gas and Plumbing	ANSI Standards Z21.1, Z21.15, Z21.19/1.6, Z21.50, Z21.57, Z21.58, Z21.97 and Z21.89/CGA1.18; CSA Standards B45 Series, B125, B140.0, B140.1, B140.3, B140.4, B140.8 and B140.9.3; CGA 1.16; AS 4551/Ag101, AS 4553/AG 103, AS 4563 and AS 2658; EN Standards 30-1-1, 30-1-2, 30-1-3, 30-1-4, 30-2-1 and 30-2-2
Electrical, EMC and Electro-mechanical	AS 4268.1, 4268.2; AS/NZS 1044, 1053, 2064, 3548, 3652, 4051, 4251.1, 4251.2, 62040.2; 60335.1; AS/NZS 60598.1, AS/NZS 60950.1, AS/NZS 60745.1, AS/NZS 60730.1; CISPR 11 / EN55011; CISPR 14 / EN55014, CISPR 15 / EN55015, CISPR 22 / EN55022, CISPR 24 / EN55024, EN 12895, 301 489, 300 386, 50083-2, 50090-2-2, 50091-2, 50121-1, 50121-2, 50121-3-1, 50121-3-2, 50121-4, 50121-5, 50130-4, 50263, 50270, 50293, 50295, 50370-1, 50370-2, 50428, 50470-1, 55012, 55013, 55103-1, 55103-2, 55103-3, 60204-31, 60439-1, 60669-2-1, 60669-2-2, 60669-2-3, 60730-1, 60730-2-11, 60730-2-13, 60730-2-14, 60730-2-18, 60730-2-5, 60730-2-6, 60730-2-7, 60730-2-8, 60730-2-9, 60870-2-1, 60945, 61204-3, 61326, 61347-1 Part 1, 61543, 61547, 61547, 617:2001, 618, 619, 620 and 62040-2; FCC Part 15, 18; GB 13837 (CISPR 13); GB 4943, 9254, 7000.1, 7000.10, 7000.11, 7000.12, 2313, 8898, 15143, 14045, 17743, 13836 and 13837; GB/T 9383; GB/T 17618; GB 17625.1, 2; GB/T 17626.2 and 17626.4 and 17626.5

May 5, 2011
Commencement Date


ACCREDITED


C. P. Ramani, P.E.
President

Print Date: 05/23/2012

Page 2 of 4

This accreditation certificate supersedes any IAS accreditation certificate bearing an earlier date. The certificate becomes invalid upon suspension, cancellation or revocation of accreditation.
See the IAS Accreditation Listings on the web at www.iasonline.org for current accreditation information, or contact IAS directly at (562) 364-8201.

11-04680

Prepared by:	LabTest Certification Inc.	Client:	WuYi JinYue Engine Science & Tech.
Date Issued:	October 22, 2012	Report No.:	10959-1E
Project No:	10959	Revision No.:	0

International Accreditation Service SCOPE OF ACCREDITATION

LabTest Certification, Inc. TL-367
(Revised May 9, 2012)

FIELDS OF TESTING	ACCREDITED TEST METHODS
Electrical, EMC and Electro-mechanical (cont)	GB/T 17626.6, 17626.8, 17626.11; GB 4343.1 (CISPR 14.1), 4343.2 (CISPR 14.2), GB 4824; HKTA 1001, 1005, 1007 and 1022; ICES-001, 003; JIS T 0601-1-2; IEC/EN/AS/KN: 60601-1-2; IEC/EN/AS/KN/JIS C: 61000-3-2, 61000-3-3, 61000-4-2, 61000-4-3, 61000-4-4, 61000-4-5, 61000-4-6, 61000-4-8, 61000-4-9, 61000-4-11, 61000-4-12, 61000-4-13, 61000-6-1, 61000-6-2, 61000-6-3 and 61000-6-4; IEC/EN/AS/KN: 61326; RSS-130, 136, 138, 182, 187, 210, 213, 215, 243 and 310; MIL-STD-461E; MIL-STD-462D; KN60601-1-2; KN301 489; KN22, 24; YD 1032; YD/T 965, 968, 993, 1103; CSA Standards C22.2 No. 0, .1, .17, .4, 6, 8, 9, 10, 12, 14, 15, 18, 24, 36, 37, 40, 43, 53, 61, 66-1-06, 63, 64, 66.1, 66.2, 66.3, 68, 71.1, 71.2, 72, 73, 81, 85, 89, 94, 99, 100, 101, 104, 107.1, 107.2, 108, 109, 110, 112, 113, 114, 117, 122, 125, 139, 141, 147, 148, 149, 156, 157, 158, 164, 166, 167, 168, 169, 173, 177, 184, 187, 191, 195, 205, 207, 213, 217, 218.1, 218.2, 223, 224, 225, 231, 234, 236, 243, 247, 250 and 60065; CSA Standards E60079-0, -1 (except Explosion Proof Test), -6, -11, -15, E60335-1, -2, E60730-1, -2, E60745-1, -2, E61010-1, -2, E742, Z240 RV Series 08; IEC/EN Standards 60335-1, -2, 60730-1, -2, 60745-1, -2, 61010-1, -2, 60601-1, -2, 60065, 60079-0, -6, -11, -15 and 60950-1, -2; IEC/EN 60529; 60945, 60598-1, -2, 61347-1; UL Standards 48, 50, 73, 197, 499, 507, 508, 508A, 676, 745-1, 751, 763, 778, 858, 867, 875, 924, 935, 982, 987, 998, 1004, 1012, 1026, 1261, 1310, 1431, 1472, 5085-2_1; 5085-3; 1563, 1564, 1585, 1598, 1647, 1795, 1993, 1995, UL/CSA 5085-1_1

May 5, 2011
Commencement Date



C. P. Ramani
C. P. Ramani, P.E.
President

Print Date: 05/23/2012

Page 3 of 4

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11-04680

Prepared by:	LabTest Certification Inc.	Client:	WuYi JinYue Engine Science & Tech.
Date Issued:	October 22, 2012	Report No.:	10959-1E
Project No:	10959	Revision No.:	0

International Accreditation Service	
SCOPE OF ACCREDITATION	
LabTest Certification, Inc. TL-367 (Revised May 9, 2012)	
FIELDS OF TESTING	ACCREDITED TEST METHODS
Electrical, EMC and Electro-mechanical (cont)	6500, 8750, 2388; 60079-0, 60079-1, 60079-6, 60079-11, 60079-15, 60335-1, 60335-2, 60601-1, 60601-2, 60730-1, 60730-2, 60745-1, 60745-2, 60950-1, 61010-1 and 61010-2; ISO EN Standards 60601-1-2 Part 1-2, 61000-3-2 (Equipment input current less than or equal to 16 Amps/Phase) and 61000-4-3; ANSI Standards C63.4 and C63.7 (only to 26.5GHz)
Environmental and Energy	IEC/EN Standards 60068-2-1, 2-2, 2-6, 2-30, 2-27, 2-14, 2-64, 60092-101, 60695-2-2; MIL-STD-810: Method 500.4, 501.4, 502.4, 503.4, 506.4, 507.4, 510.4, 512.4 and 514.5; RTCA-DO-160E: Section 4, 5, 6, 7, 2, 8, 10, 12, 16, 17 and 25; CSA Standard P4; CAN/CSA Standards C-300 and C-814; Qualification Criteria for Bottled Water Cooler Version 1.1 - May 2004; Qualification Criteria for Compact Fluorescent Lamps Version 3.0 - October 2003; Qualification Criteria for Decorative Light Strings Version 1.3 - March 9, 2007; Qualification Criteria for Residential Light Fixtures Version 4.0; Qualification Criteria for Home Audio and DVD Equipment; ISO Standards 9806-1, 9806-2 and 9806-3; SRCC 100-08, SRCC TM-1, SRCC-150; CSA Standards F378 and F379, EN Standards 12975-1 and 12975-2
Maritime	ABYC Standards A-3, A-7, A-26, A-27, A-28, A-30, A-31, E-2, E-11, H-2, P-14, P-17, P-18, P-21, P-22, P-24 and P-27; EN Standards 28846, 28848, 28849, 29775, 60092-507; EN ISO 10133, 12216, 13297, 13929, 14895, 15083, 8847, 8849, 10239, 10240, 10592; 1995/A1, 11105, 11192 and 9097:1994/A1; IACS E1 - E21; 21005; DNV 2.4, BV: Rules for Classification of Steel Ships - Part C, Chapter 3, Section 6.2 Type Approval; ABS Part 4, Chapter 9, Section 7, Lloyds Type Approval Systems - Test Specification Number 1; GL VI-Part 7 Section 3 - Section - B Test Requirements, Chapter 2
Appliances	CSA Standard B 140.0-3

May 5, 2011
Commencement Date



ACCREDITED



C. P. Ramani, P.E.
President

Print Date: 05/23/2012

Page 4 of 4

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