


## TEST REPORT

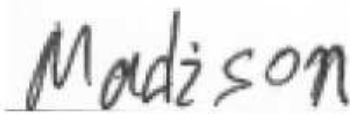

<b>Applicant</b>	Asian Express Holding Limited.
<b>Address</b>	4F, -4, No.669 Jingping Rd., Zhonghe City, TaiPei county 235, Taiwan R.O.C

<b>Manufacturer or Supplier</b>	Asian Express Holding Limited.	
<b>Address</b>	4F, -4, No.669 Jingping Rd., Zhonghe City, TaiPei county 235, Taiwan R.O.C	
<b>Product</b>	Propel Outdoor Helicopter	
<b>Brand Name</b>	N/A	
<b>Model</b>	15018-PPL-B-BK	
<b>Additional Model &amp; Model Difference</b>	See Item 2.1	
<b>Date of tests</b>	Nov. 2 ~ Nov.16, 2011	

The submitted sample of the above equipment has been tested for according to the requirements of the following standards:

**FCC Part 15, Subpart C(Section 15.235)**

**CONCLUSION: The submitted sample was found to COMPLY with the test requirement**

Tested by Madison Luo Project Engineer / EMC Department	Approved by Sam Tung Manager / EMC Department
	
	Date: Nov. 19, 2011

This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification



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**Test Report No.: FC111031N027  
FCC ID: VLE15018-PPL-B-2**

## **Table of Contents**

RELEASE CONTROL RECORD .....	3
1 SUMMARY OF TEST RESULTS .....	4
1.1 MEASUREMENT UNCERTAINTY .....	4
2 GENERAL INFORMATION .....	5
2.1 GENERAL DESCRIPTION OF EUT .....	5
2.2 DESCRIPTION OF TEST MODES .....	5
2.3 DESCRIPTION OF SUPPORT UNITS .....	6
3 EMISSION TEST .....	7
3.1 CONDUCTED EMISSION MEASUREMENT .....	7
3.2 RADIATED EMISSION MEASUREMENT .....	7
3.2.1 TEST INSTRUMENTS .....	8
3.2.2 TEST PROCEDURE .....	9
3.2.3 DEVIATION FROM TEST STANDARD .....	10
3.2.4 TEST SETUP .....	10
3.2.5 EUT OPERATING CONDITIONS .....	10
3.2.6 TEST RESULTS .....	11
3.2.7 TEST RESULTS .....	12
3.3 26DB BANDWIDTH OF FUNDAMENTAL EMISSION .....	13
3.3.1 LIMITS FOR 26DB BANDWIDTH OF FUNDAMENTAL EMISSION: .....	13
3.3.2 TEST INSTRUMENTS .....	13
3.3.3 TEST PROCEDURE .....	13
3.3.4 TEST RESULTS .....	14
4 PHOTOGRAPHS OF TEST CONFIGURATION .....	15
5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB.....	16



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**Test Report No.: FC111031N027**

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
Original release	N/A	Nov. 19, 2011

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## 1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart B			
Standard Section	Test Item	Result	Remark
15.207	Conducted Emission Test	N/A	-
15.209	Radiated Emission Test (30MHz ~ 1GHz)	PASS	Meets Class B Limit Minimum passing margin is -9.27 dBat 332.37MHz
15.235	26dB Bandwidth	PASS	-

**Note :** 1. The maximum emission levels were compared with the requirements in section 15.209, 15.235 of FCC Part 15 regulation.

### 1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emission	0.15MHz ~ 30MHz	+/- 2.56 dB
Radiated emissions	30MHz ~ 1GHz	+/- 3.58 dB



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Test Report No.: FC111031N027

FCC ID: VLE15018-PPL-B-2

## 2 GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

<b>PRODUCT</b>	Propel Outdoor Helicopter
<b>MODEL NO.</b>	15018-PPL-B-BK
<b>POWER SUPPLY</b>	DC 9V (“AAA” size battery x 6)
<b>DATA CABLE SUPPLIED</b>	N/A
<b>OPERATING FREQUENCY</b>	49.86MHz

#### NOTE:

1. The EUT is a Wireless remote.
2. For a more detailed features description, please refer to the manufacturer’s specifications or the User's Manual.

### 2.2 DESCRIPTION OF TEST MODES

The EUT was tested under the following modes, the final worst mode were marked in boldface and recorded in this report.

**For the All test**, the EUT was tested under the following modes:

<b>Test Result</b>	<b>Description of Test Mode</b>
1	<b>TX Mode</b>



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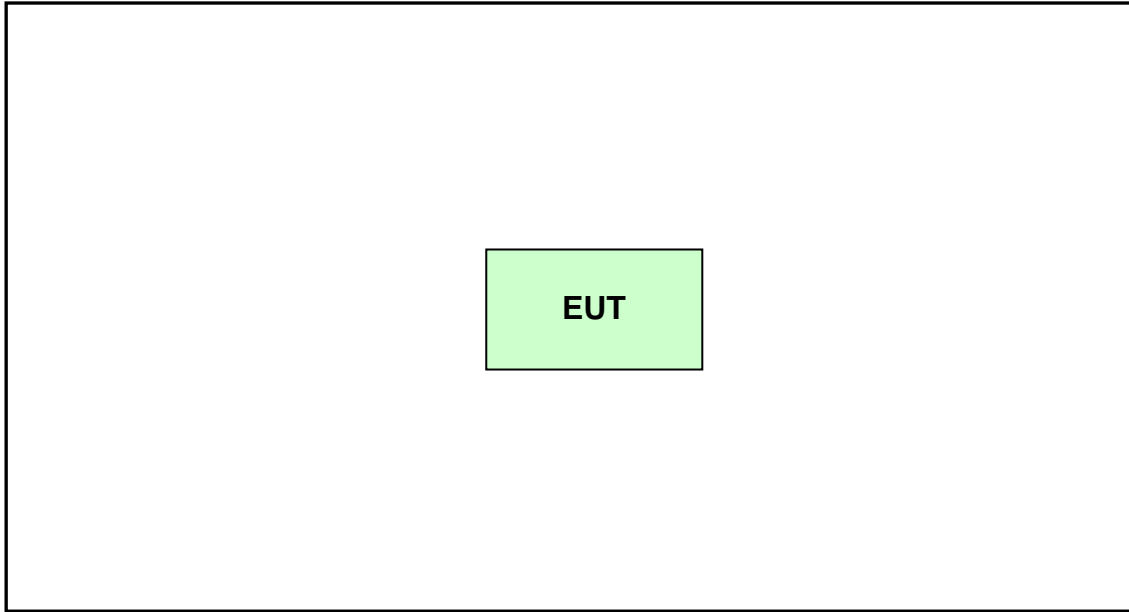
Test Report No.: FC111031N027

FCC ID: VLE15018-PPL-B-2

## 2.3 DESCRIPTION OF SUPPORT UNITS

N/A

### TEST CONFIGURATION





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Test Report No.: FC111031N027

FCC ID: VLE15018-PPL-B-2

### 3 EMISSION TEST

#### 3.1 CONDUCTED EMISSION MEASUREMENT

The EUT'S power provide by battery. no data about this item test.

#### 3.2 RADIATED EMISSION MEASUREMENT

Limits for Field Strength of Fundamental Emissions [FCC 47CFR 15.235]:

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission [Peak] [ $\mu\text{V}/\text{m}$ ]	Field Strength of Fundamental Emission [Average] [ $\mu\text{V}/\text{m}$ ]
49.82 – 49.90	100,000 (100 dB $\mu\text{V}/\text{m}$ )	10,000 (80 dB $\mu\text{V}/\text{m}$ )

Limits for Radiated Emissions [FCC 47 CFR 15.209]:

Frequency Range [MHz]	Quasi-Peak Limits [ $\mu\text{V}/\text{m}$ ]
1.705-30	300
30-88	100
88-216	150
216-960	200
Above960	500

Note: (1) The lower limit shall apply at the transition frequencies.

(2) Emission level (dB $\mu\text{V}/\text{m}$ ) = 20 log Emission level (uV/m).

(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.



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Test Report No.: FC111031N027  
FCC ID: VLE15018-PPL-B-2

### 3.2.1 TEST INSTRUMENTS

Frequency Range 30MHz~1GHz

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
EMI Test Receiver	ESVD	847398/003	May 25,11	May 25,12
Bilog Antenna	CBL 6111D	30643	Jul 24,11	Jul 24,12
Spectrum Analyzer	8593E	3448U00806	May 25,11	May 25,12
3m Semi-anechoic Chamber	9m*6m*6m	NSEMC003	May 2,11	May 2,12
Signal Amplifier	8447D	2944A10488	May 2,11	May 2,12
RF Cable	IMRO-400	966 Cable 1#	May 2,11	May 2,12

- NOTE:** 1. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to CEPREI/CHINA and NIM/CHINA.  
2. The test was performed at 966 Chamber..





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Test Report No.: FC111031N027

FCC ID: VLE15018-PPL-B-2

### 3.2.2 TEST PROCEDURE

The basic test procedure was in accordance with ANSI C63.4 (section 12).

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters Semi-anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using new battery. The turntable was rotated to maximize the emission level.
- g. For below 30MHz, a loop antenna with its vertical plane is place 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.

#### NOTE:

1. The resolution bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
3. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
4. Margin value = Emission level – Limit value.
5. Fundamental AV value =PK value + duty cycle.
6. The Peak reading value also meets average limit and measurement with the average detector is unnecessary.



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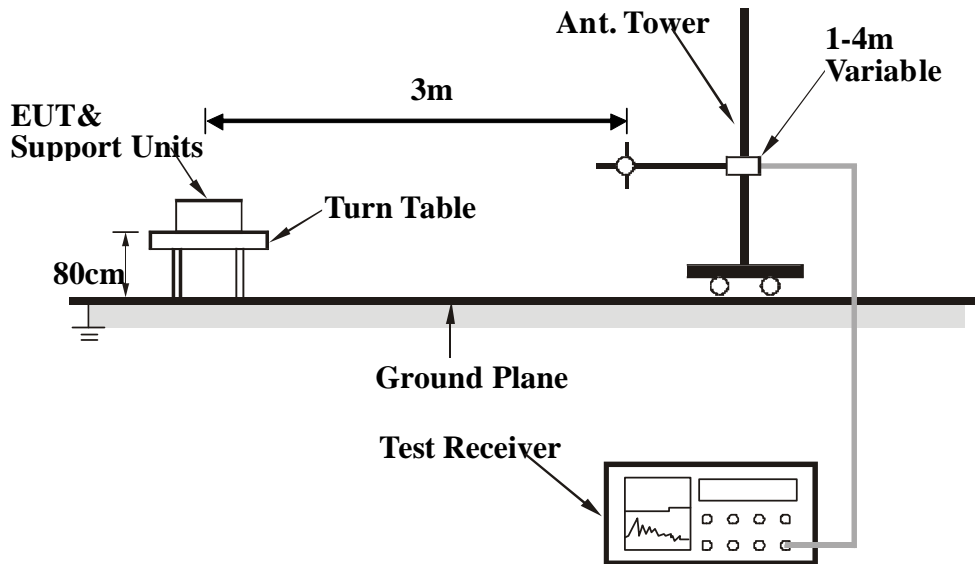
Test Report No.: FC111031N027

FCC ID: VLE15018-PPL-B-2

### 3.2.3 DEVIATION FROM TEST STANDARD

No deviation

### 3.2.4 TEST SETUP



### 3.2.5 EUT OPERATING CONDITIONS

- Turned on the power of all equipment.
- EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.



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Test Report No.: FC111031N027

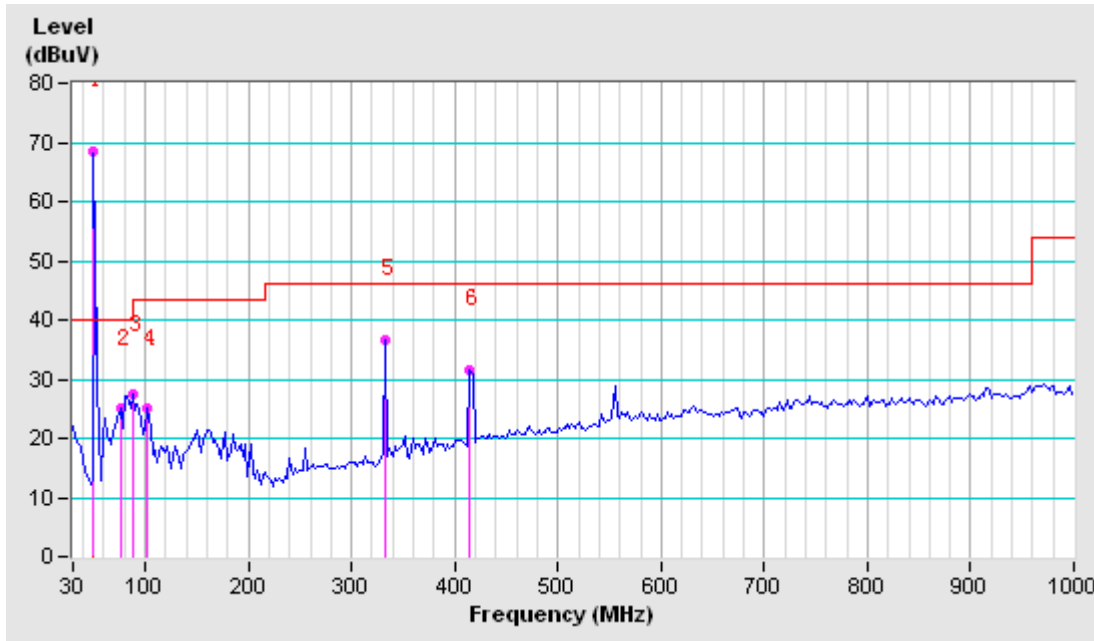
FCC ID: VLE15018-PPL-B-2

### 3.2.6 TEST RESULTS

<b>TEST MODE</b>	TX Mode	<b>FREQUENCY RANGE</b>	30-1000MHz
<b>INPUT POWER</b>	DC 9V	<b>DETECTOR FUNCTION &amp; RESOLUTION BANDWIDTH</b>	Quasi-Peak, 120kHz
<b>ENVIRONMENTAL CONDITIONS</b>	25 deg. C, 55% RH,	<b>TESTED BY:</b> Madison	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*49.86 PK	68.40	100	-31.60	271	100	56.41	11.99
2	*49.86 AV	-	80	-	-	-	-	-
3	75.96 QP	25.00	40.00	-15.00	231	157	15.42	9.58
4	88.05 QP	27.29	43.50	-16.21	231	157	16.36	10.93
5	102.57 QP	24.92	43.50	-18.58	398	229	11.97	12.95
<b>6</b>	<b>332.37 QP</b>	<b>36.73</b>	<b>46.00</b>	<b>-9.27</b>	<b>350</b>	<b>259</b>	<b>20.50</b>	<b>16.23</b>
7	414.61 QP	31.48	46.00	-14.52	314	284	12.51	18.97

- REMARKS:**
- 1.The emission levels of other frequencies were very low against the limit.
  2. "-": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. "\*" : Fundamental



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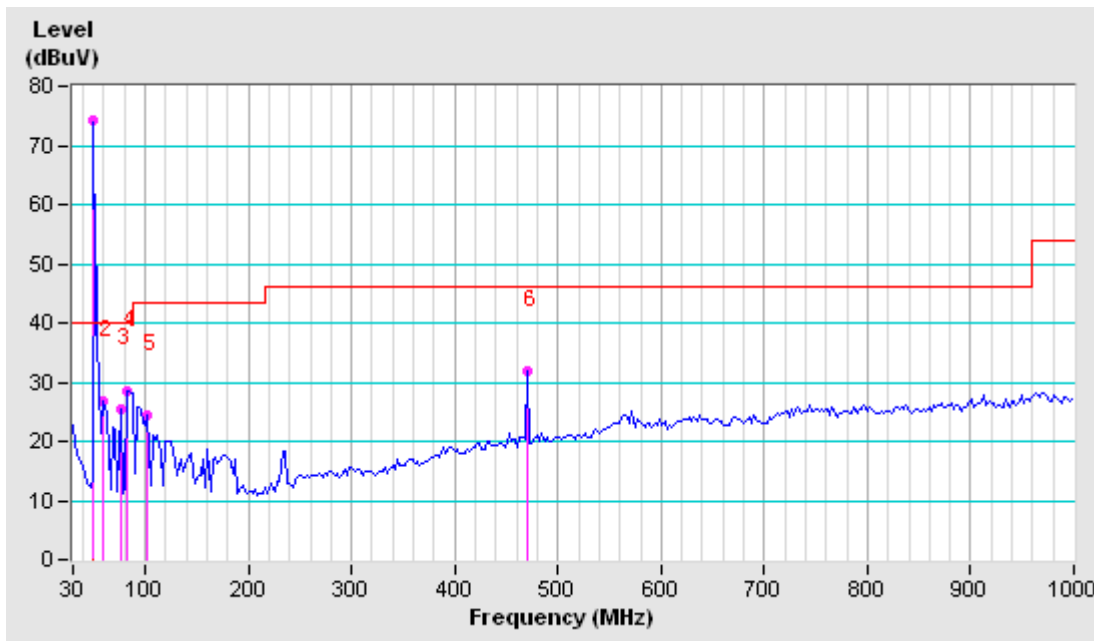
FCC ID: VLE15018-PPL-B-2

### 3.2.7 TEST RESULTS

<b>TEST MODE</b>	TX Mode	<b>FREQUENCY RANGE</b>	30-1000MHz
<b>INPUT POWER</b>	DC 9V	<b>DETECTOR FUNCTION &amp; RESOLUTION BANDWIDTH</b>	Quasi-Peak, 120kHz
<b>ENVIRONMENTAL CONDITIONS</b>	25 deg. C, 55% RH,	<b>TESTED BY:</b> Madison	

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*49.86 PK	74.37	100	-25.63	111	175	56.41	11.99
2	*49.86 AV	-	80	-	-	-	-	-
3	59.03 QP	26.83	40.00	-13.17	200	132	16.98	9.85
4	75.96 QP	25.42	40.00	-14.58	135	245	15.84	9.58
5	83.22 QP	28.48	40.00	-11.52	112	206	18.16	10.32
6	102.57 QP	24.46	43.50	-19.04	120	54	11.51	12.95
7	470.25 QP	31.88	46.00	-14.12	200	125	11.78	20.10

- REMARKS:**
1. The emission levels of other frequencies were very low against the limit.
  2. "-": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. "\*" : Fundamental



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### 3.3 26DB BANDWIDTH OF FUNDAMENTAL EMISSION

#### 3.3.1 LIMITS FOR 26DB BANDWIDTH OF FUNDAMENTAL EMISSION:

FREQUENCY (MHz)	26dB Bandwidth	Limits
	[KHz]	[MHz]
49.86	31.54kHz	within 49.82-49.90

#### 3.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer Agilent	E4446A	MY46180622	Apr. 25,11	Apr. 25,12

- NOTE:** 1. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to CEPREI/CHINA and NIM/CHINA.  
2. The test was performed in Shielded Room 20.

#### 3.3.3 TEST PROCEDURE

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.



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FCC ID: VLE15018-PPL-B-2

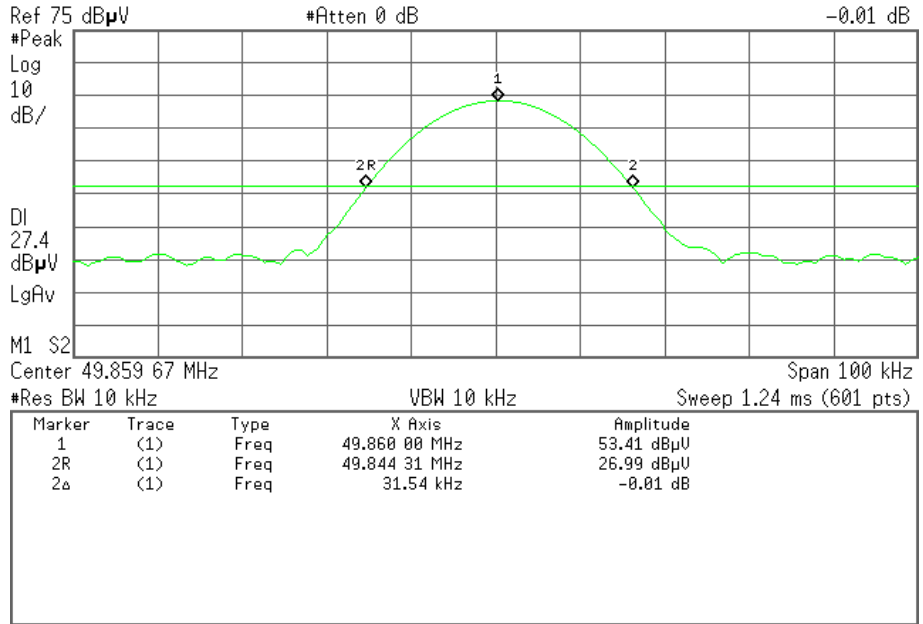
### 3.3.4 TEST RESULTS

#### Test Result of 26dB Bandwidth of Fundamental Emission: PASS

Agilent 11:11:45 Jul 11, 2011

R T

▲ Mkr2 31.54 kHz  
-0.01 dB



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#### **4 PHOTOGRAPHS OF TEST CONFIGURATION**

Please see test setup photo file.

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## **5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB**

No any modifications were made to the EUT by the lab during the test.

**---END---**

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