

# APPLICATION CERTIFICATION On Behalf of ZHUHAI HONOR TECHNOLOGY CO.LTD

Portable printer
Model No.: XP-P100,XP-P200,XP-P300,XP-P400,
XP-P500,XP-P600,XP-P800,XP-P810,XP-P820,XP-P830

FCC ID: 2AEBCXP-P

Prepared for : ZHUHAI HONOR TECHNOLOGY CO.LTD

Address : 5th Floor, 2 Building, No.613 Huawei Road, Xiangzhou

District, Zhuhai, China

Prepared by : ACCURATE TECHNOLOGY CO. LTD

Address : F1, Bldg. A, Changyuan New Material Port, Keyuan Rd.

Science & Industry Park, Nanshan, Shenzhen, Guangdong

P.R. China

Report Number : ATE20150286

Date of Test : Feb 04-Mar 03,2015

Date of Report : Mar 04,2015



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# **Test Report Certification**

Applicant : ZHUHAI HONOR TECHNOLOGY CO.LTD

Manufacturer : ZHUHAI HONOR TECHNOLOGY CO.LTD

EUT Description : Portable printer

(A) MODEL NO.: XP-P100,XP-P200,XP-P300,XP-P400, XP-P500,XP-P600,XP-P800,XP-P810,XP-P820,XP-P830

(B) SERIAL NO.: N/A

(C) POWER SUPPLY: DC 7.4V (Battery) & AC 120V(Adapter)

(D) Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.247 ANSI C63.4- 2009

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.247 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test :	Feb 04-Mar 03,2015
Date of Report:	Mar 04,2015
Prepared by :	2-2 sharp
	(Eric Zhang, Engineer)
Approved & Authorized Signer:	Lemil
	( Sean Liu, Manager)



# 1. GENERAL INFORMATION

#### 1.1.Description of Device (EUT)

EUT : Portable printer

Model Number : XP-P100, XP-P200, XP-P300, XP-P400, XP-P500

XP-P600, XP-P800, XP-P810, XP-P820, XP-P830 Note: These samples are same except for the model number is difference. So we prepare the XP-P100 for test

Frequency Band : 2402MHz-2480MHz

Number of Channels : 79

Modulation type : GFSK Antenna Gain : 0dBi

Antenna type : PCB Antenna

Power Supply : DC 7.4V (Battery) & AC 120V(Adapter)
Applicant : ZHUHAI HONOR TECHNOLOGY CO.LTD

Address : 5th Floor, 2 Building, No.613 Huawei Road, Xiangzhou

District, Zhuhai, China

Manufacturer : ZHUHAI HONOR TECHNOLOGY CO.LTD

Address : 5th Floor, 2 Building, No.613 Huawei Road, Xiangzhou

District, Zhuhai, China

Date of sample received: Feb 04, 2015

Date of Test : Feb 04-Mar 03,2015



# 1.2.Description of Test Facility

EMC Lab : Accredited by TUV Rheinland Shenzhen

Listed by FCC

The Registration Number is 752051

Listed by Industry Canada

The Registration Number is 5077A-2

Accredited by China National Accreditation Committee

for Laboratories

The Certificate Registration Number is L3193

Name of Firm : ACCURATE TECHNOLOGY CO. LTD

Site Location : F1, Bldg. A, Changyuan New Material Port, Keyuan Rd.

Science & Industry Park, Nanshan, Shenzhen, Guangdong

P.R. China

#### 1.3. Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2

Radiated emission expanded uncertainty = 3.08dB, k=2

(9kHz-30MHz)

Radiated emission expanded uncertainty = 4.42dB, k=2

(30MHz-1000MHz)

Radiated emission expanded uncertainty = 4.06dB, k=2

(Above 1GHz)



# 2. MEASURING DEVICE AND TEST EQUIPMENT

**Table 1: List of Test and Measurement Equipment** 

Kind of equipment	Manufacturer	Туре	S/N	Calibrated dates	Cal. Interval
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 10, 2015	1 Year
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 10, 2015	1 Year
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 10, 2015	1 Year
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 10, 2015	1 Year
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 15, 2015	1 Year
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 15, 2015	1 Year
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 15, 2015	1 Year
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1067	Jan. 15, 2015	1 Year
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 10, 2015	1 Year
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 10, 2015	1 Year



# 3. OPERATION OF EUT DURING TESTING

3.1.Operating Mode

The mode is used: Transmitting mode

Low Channel: 2402MHz Middle Channel: 2441MHz High Channel: 2480MHz

Hopping

3.2. Configuration and peripherals

EUT

(EUT: Portable printer)



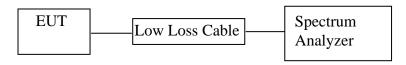
# 4. TEST PROCEDURES AND RESULTS

FCC Rules	<b>Description of Test</b>	Result
Section 15.207	Conducted Emission Test	Compliant
Section 15.247(a)(1)	20dB Bandwidth Test	Compliant
Section 15.247(a)(1)	Carrier Frequency Separation Test	Compliant
Section 15.247(a)(1)(iii)	Number Of Hopping Frequency Test	Compliant
Section 15.247(a)(1)(iii)	Dwell Time Test	Compliant
Section 15.247(b)(1)	Maximum Peak Output Power Test	Compliant
Section 15.247(d) Section 15.209	Radiated Emission Test	Compliant
Section 15.247(d)	Band Edge Compliance Test	Compliant
Section 15.203	Antenna Requirement	Compliant



#### 5. 20DB BANDWIDTH TEST

# 5.1.Block Diagram of Test Setup



(EUT: Portable printer)

#### 5.2. The Requirement For Section 15.247(a)(1)

Section 15.247(a)(1): Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

#### 5.3.EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 5.4. Operating Condition of EUT

- 5.4.1. Setup the EUT and simulator as shown as Section 5.1.
- 5.4.2. Turn on the power of all equipment.
- 5.4.3.Let the EUT work in TX (Hopping off) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.



#### 5.5.Test Procedure

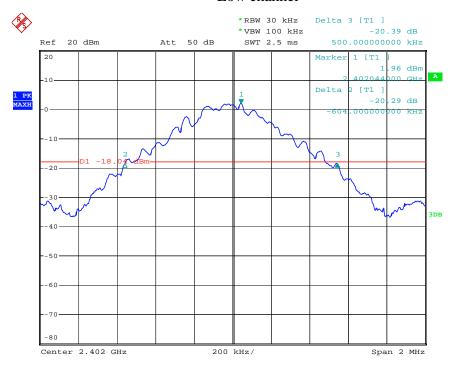
- 5.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 5.5.2.Set RBW of spectrum analyzer to 30 kHz and VBW to 100 kHz.
- 5.5.3.The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

#### 5.6.Test Result

Channel	Frequency (MHz)	20dB Bandwidth (MHz)	Result
Low	2402	1.104	Pass
Middle	2441	1.048	Pass
High	2480	1.048	Pass

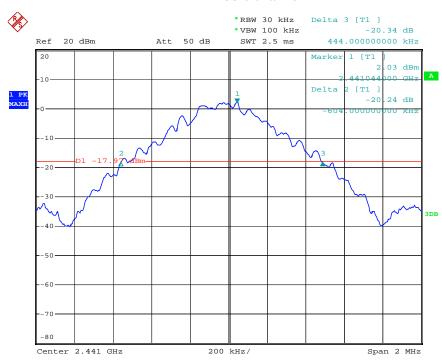
The spectrum analyzer plots are attached as below.

#### Low channel

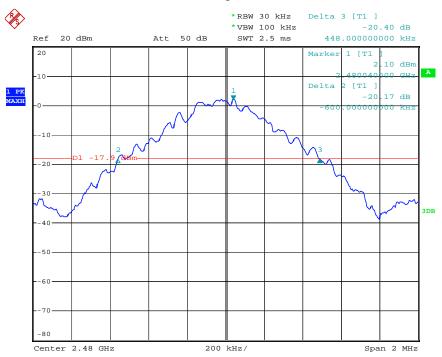




#### Middle channel



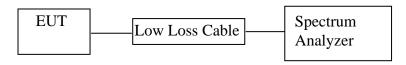
## High channel





# 6. CARRIER FREQUENCY SEPARATION TEST

#### 6.1.Block Diagram of Test Setup



(EUT: Portable printer)

#### 6.2. The Requirement For Section 15.247(a)(1)

Section 15.247(a)(1): Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudorandomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

#### 6.3.EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 6.4. Operating Condition of EUT

- 6.4.1. Setup the EUT and simulator as shown as Section 6.1.
- 6.4.2. Turn on the power of all equipment.
- 6.4.3.Let the EUT work in TX (Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.



#### 6.5. Test Procedure

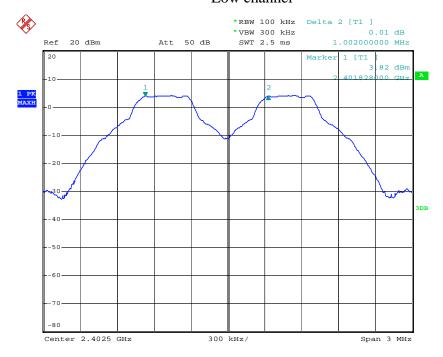
- 6.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.
- $6.5.2. Set\ RBW$  of spectrum analyzer to  $100\ kHz$  and VBW to  $300\ kHz.$  Adjust Span to  $3\ MHz.$
- 6.5.3.Set the adjacent channel of the EUT maxhold another trace.
- 6.5.4. Measurement the channel separation

#### 6.6.Test Result

Channel	Frequency (MHz)	Channel Separation(MHz)	Limit (MHz)	Result
Low	2402 2403	1.002	25KHz or2/3* 20dB bandwidth	PASS
Middle	2440 2441	0.996	25KHz or2/3*20dB bandwidth	PASS
High	2479 2480	1.002	25KHz or2/3* 20dB bandwidth	PASS

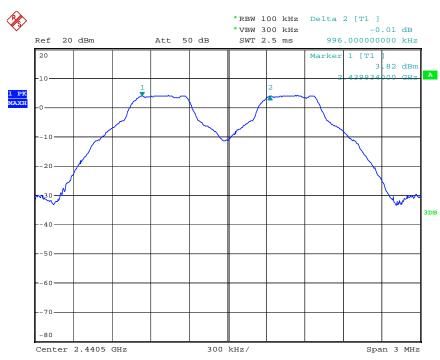
The spectrum analyzer plots are attached as below.

#### Low channel

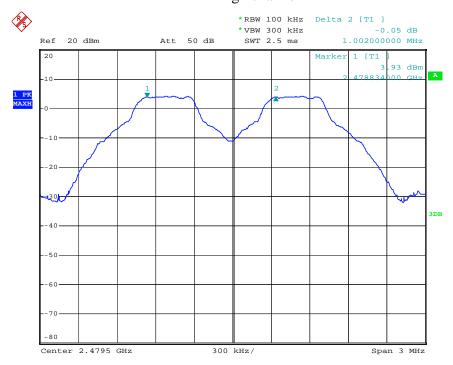




#### Middle channel



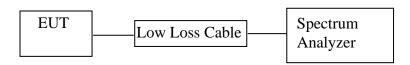
#### High channel





# 7. NUMBER OF HOPPING FREQUENCY TEST

# 7.1.Block Diagram of Test Setup



(EUT: Portable printer)

# 7.2. The Requirement For Section 15.247(a)(1)(iii)

Section 15.247(a)(1)(iii): Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

# 7.3.EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

# 7.4. Operating Condition of EUT

- 7.4.1. Setup the EUT and simulator as shown as Section 7.1.
- 7.4.2. Turn on the power of all equipment.
- 7.4.3.Let the EUT work in TX (Hopping on) modes measure it.



#### 7.5.Test Procedure

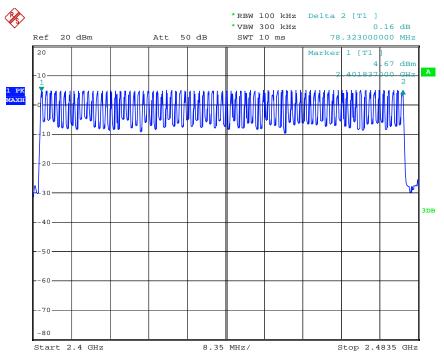
- 7.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 7.5.2.Set the spectrum analyzer as Span=83.5MHz, RBW=100 kHz, VBW=300 kHz.
- 7.5.3.Max hold, view and count how many channel in the band.

#### 7.6.Test Result

Total number of	Measurement result(CH)	Limit(CH)
hopping channel	79	≥15

The spectrum analyzer plots are attached as below.

#### Number of hopping channels

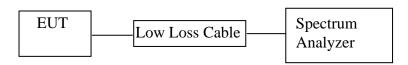


FCC ID: 2AEBCXP-P



#### 8. DWELL TIME TEST

#### 8.1.Block Diagram of Test Setup



(EUT: Portable printer)

#### 8.2. The Requirement For Section 15.247(a)(1)(iii)

Section 15.247(a)(1)(iii): Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

#### 8.3.EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 8.4. Operating Condition of EUT

- 8.4.1. Setup the EUT and simulator as shown as Section 8.1.
- 8.4.2. Turn on the power of all equipment.
- 8.4.3.Let the EUT work in TX (Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.



#### 8.5.Test Procedure

- 8.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 8.5.2.Set center frequency of spectrum analyzer = operating frequency.
- 8.5.3.Set the spectrum analyzer as RBW=1MHz, VBW=1MHz, Span=0Hz.
- 8.5.4.Repeat above procedures until all frequency measured were complete.

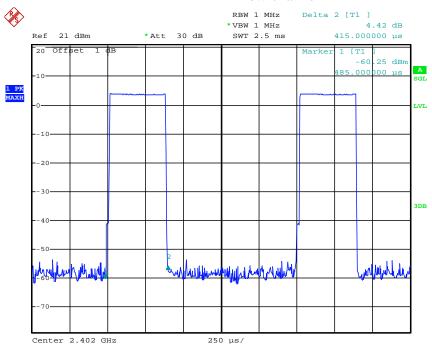
#### 8.6.Test Result

Mode	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)
	2402	0.415	132.80	400
DH1	2441	0.410	131.20	400
	2480	0.415	132.80	400
A period to	ransmit time = $0.4 \times 79$ =	31.6 Dwell time = $pu$	alse time $\times$ (1600/(2*)	79))×31.6
	2402	1.680	268.80	400
DH3	2441	1.695	271.20	400
	2480	1.680	268.80	400
A period to	ransmit time = $0.4 \times 79 =$	31.6 Dwell time = $pv$	ulse time $\times$ (1600/(4*'	79))×31.6
	2402	2.960	315.73	400
DH5	2441	2.960	315.73	400
	2480	2.960	315.73	400
A period transmit time = $0.4 \times 79 = 31.6$ Dwell time = pulse time $\times (1600/(6*79)) \times 31.6$				

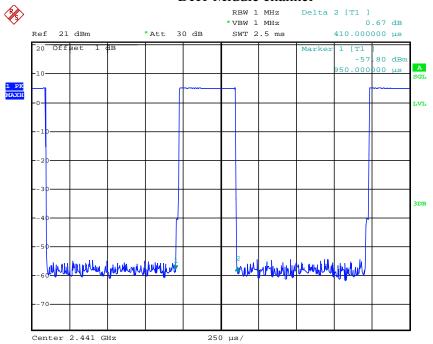
The spectrum analyzer plots are attached as below.



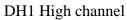
#### DH1 Low channel

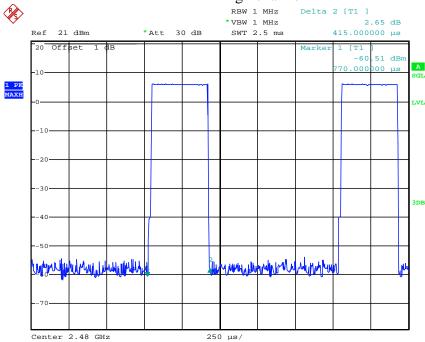


#### DH1 Middle channel

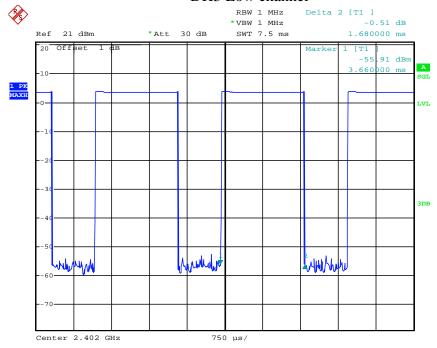






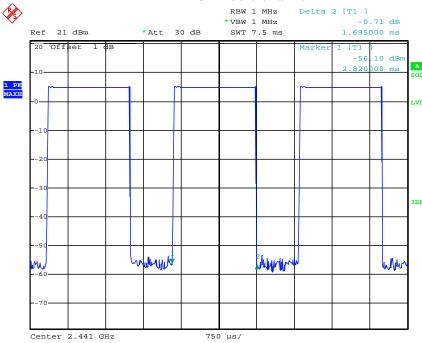


#### DH3 Low channel

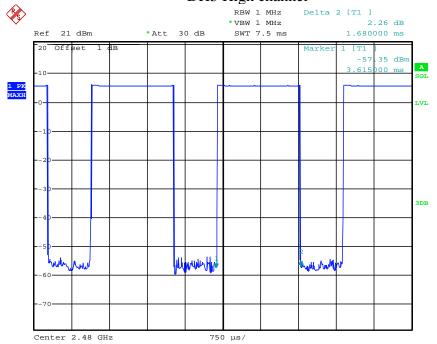




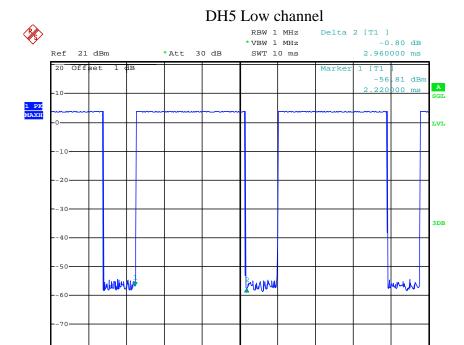
#### DH3 Middle channel



# DH3 High channel



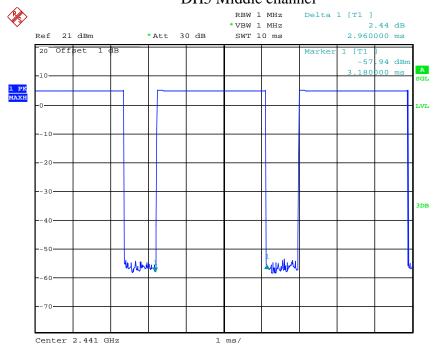




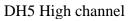
Center 2.402 GHz

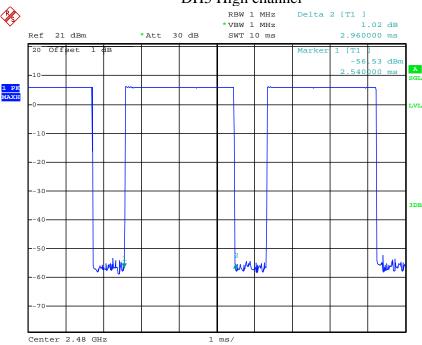
#### DH5 Middle channel

1 ms/





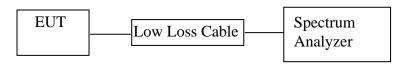






#### 9. MAXIMUM PEAK OUTPUT POWER TEST

#### 9.1.Block Diagram of Test Setup



(EUT: Portable printer)

# 9.2. The Requirement For Section 15.247(b)(1)

Section 15.247(b)(1): For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

#### 9.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 9.4. Operating Condition of EUT

- 9.4.1. Setup the EUT and simulator as shown as Section 9.1.
- 9.4.2. Turn on the power of all equipment.
- 9.4.3.Let the EUT work in TX (Hopping off) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.



#### 9.5.Test Procedure

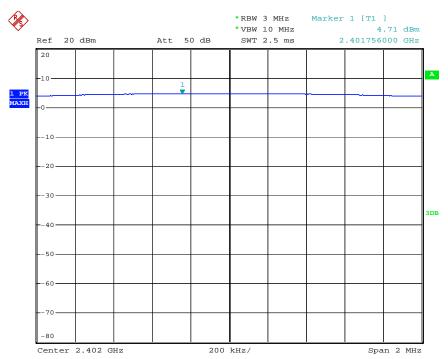
- 9.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 9.5.2.Set RBW of spectrum analyzer to 3MHz and VBW to 10MHz
- 9.5.3.Measurement the maximum peak output power.

#### 9.6.Test Result

Channel	Frequency (MHz)	Peak Output Power (dBm)	Limits dBm / W
Low	2402	4.71	21/0.125
Middle	2441	3.80	21/0.125
High	2480	4.83	21/0.125

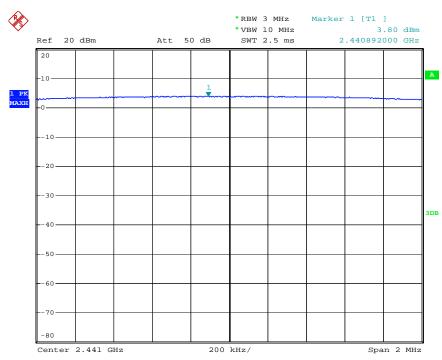
The spectrum analyzer plots are attached as below.



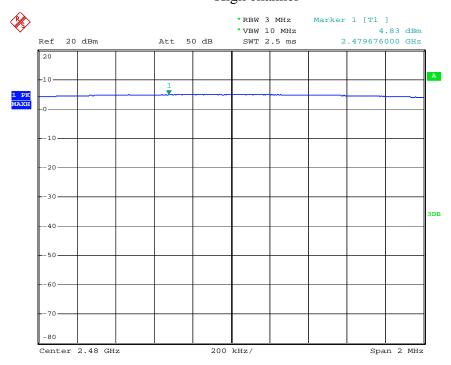




#### Middle channel



# High channel





#### 10. RADIATED EMISSION TEST

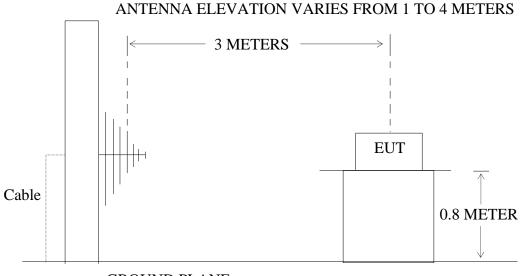
#### 10.1.Block Diagram of Test Setup

10.1.1.Block diagram of connection between the EUT and simulators

EUT

(EUT: Portable printer)

#### 10.1.2. Anechoic Chamber Test Setup Diagram



GROUND PLANE (EUT: Portable printer)

#### 10.2. The Limit For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).



#### 10.3. Restricted bands of operation

#### 10.3.1.FCC Part 15.205 Restricted bands of operation

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

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
<sup>1</sup> 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	$\binom{2}{}$
13.36-13.41			

Until February 1, 1999, this restricted band shall be 0.490-0.510

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

#### 10.4. Configuration of EUT on Measurement

The equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

<sup>&</sup>lt;sup>2</sup>Above 38.6



#### 10.5.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4- 2009 on radiated emission measurement.

The final measurement in band 9-90 kHz, 110-490 kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

RBW (120 kHz), VBW (300 kHz) for QP detector below 1GHz Peak detector above 1GHz RBW (1 MHz), VBW (3MHz) for Peak measurement RBW (1 MHz), VBW (10Hz) for AV measurement

If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

The field strength is calculated by adding the antenna factor, and cable loss, and subtracting the amplifier gain from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor Where Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain

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## 10.6. The Field Strength of Radiation Emission Measurement Results

#### Note:

1. The fundamental radiated emissions were reduced by 2.4G Band Reject Filter in the attached plots.

2. The 18-25GHz emissions are not reported, because the levels are too low against the limit.



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F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China

P.R.China Fax:+86-0755-26503396
Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 15/03/02/
Time: 10/02/19
Engineer Signature:
Distance: 3m

Job No.: CARRY2015 #58

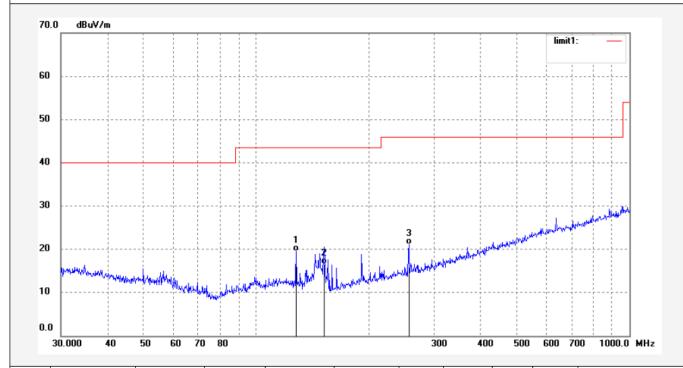
Standard: FCC Class B 3M Radiated

Test item: Radiation Test

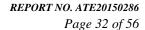
Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Portable printer
Mode: TX 2402MHz
Model: XP-P100
Manufacturer: HONOR

Note: Report NO.:ATE20150286



	No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
	1	128.1129	33.27	-13.81	19.46	43.50	-24.04	QP			
	2	152.1297	31.74	-15.14	16.60	43.50	-26.90	QP			
Γ	3	256.5210	31.88	-10.74	21.14	46.00	-24.86	QP			







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Job No.: CARRY2015 #59 Polarization: Vertical

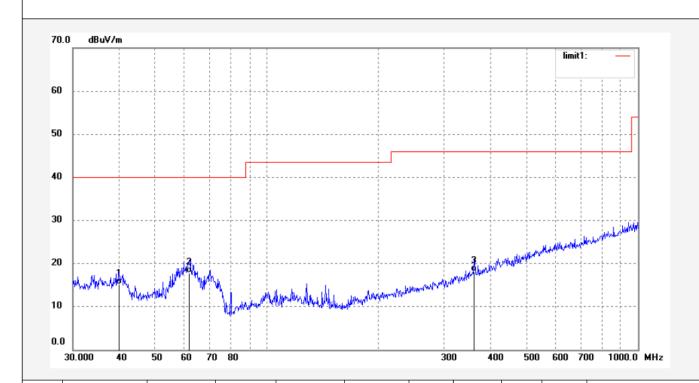
Standard: FCC Class B 3M Radiated Power Source: AC 120V/60Hz

Test item: Radiation Test Date: 15/03/02/
Temp.( C)/Hum.(%) 23 C / 48 % Time: 10/03/14

EUT: Portable printer Engineer Signature:
Mode: TX 2402MHz Distance: 3m

Mode: TX 2402MHz
Model: XP-P100
Manufacturer: HONOR

Note: Report NO.:ATE20150286



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	39.9942	26.74	-11.54	15.20	40.00	-24.80	QP			
2	61.7781	32.36	-14.58	17.78	40.00	-22.22	QP			
3	361.7139	25.77	-7.60	18.17	46.00	-27.83	QP			





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Job No.: CARRY2015 #60

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Portable printer Mode: TX 2441MHz

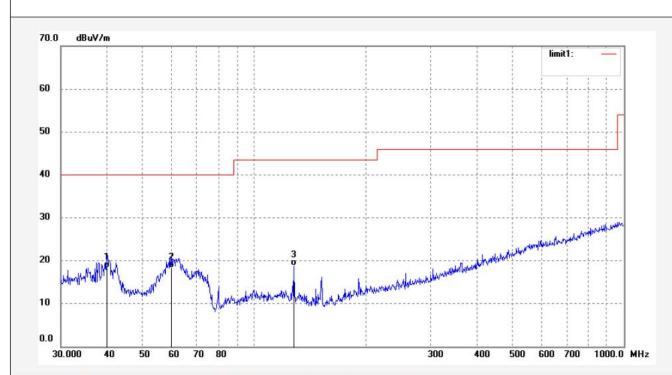
Model: XP-P100 Manufacturer: HONOR

Note: Report NO.:ATE20150286

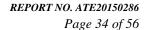
Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 15/03/02/ Time: 10/05/10 Engineer Signature: Distance: 3m



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	39.9941	29.85	-11.54	18.31	40.00	-21.69	QP			
2	59.8588	32.19	-13.91	18.28	40.00	-21.72	QP			
3	128.1126	32.62	-13.81	18.81	43.50	-24.69	QP			







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Job No.: CARRY2015 #61

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Portable printer
Mode: TX 2441MHz
Model: XP-P100
Manufacturer: HONOR

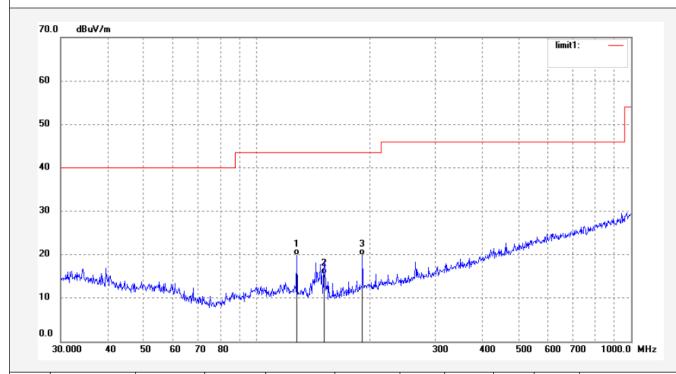
Note: Report NO.:ATE20150286

Polarization: Horizontal

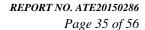
Power Source: AC 120V/60Hz

Date: 15/03/02/ Time: 10/06/14 Engineer Signature:

Distance: 3m



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	128.1126	33.67	-13.81	19.86	43.50	-23.64	QP			
2	151.5971	30.60	-15.14	15.46	43.50	-28.04	QP			
3	191.7450	32.37	-12.59	19.78	43.50	-23.72	QP			







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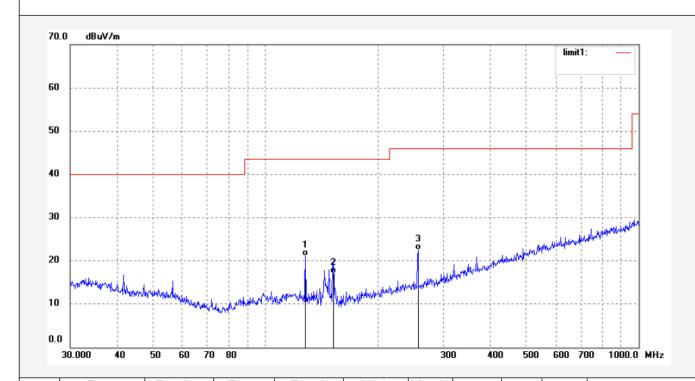
Job No.: CARRY2015 #62 Polarization: Horizontal

Standard: FCC Class B 3M Radiated Power Source: AC 120V/60Hz

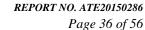
Test item: Radiation Test Date: 15/03/02/
Temp.( C)/Hum.(%) 23 C / 48 % Time: 10/07/02
EUT: Portable printer Engineer Signature:
Mode: TX 2480MHz Distance: 3m

Mode: TX 2480MHz
Model: XP-P100
Manufacturer: HONOR

Note: Report NO.:ATE20150286



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	128.1126	34.91	-13.81	21.10	43.50	-22.40	QP			
2	152.1297	32.14	-15.14	17.00	43.50	-26.50	QP			
3	256.5210	33.18	-10.74	22.44	46.00	-23.56	QP			







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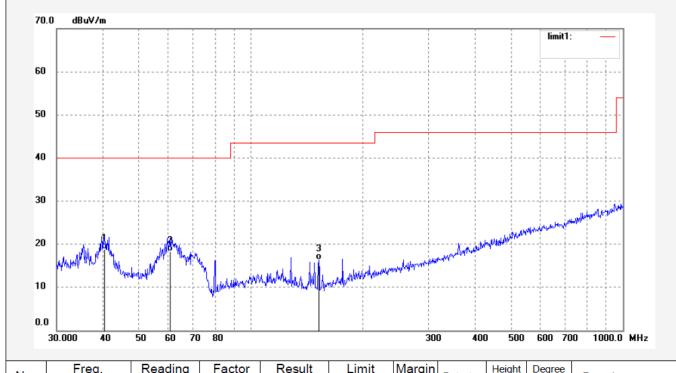
Job No.: CARRY2015 #63 Polarization: Vertical

Standard: FCC Class B 3M Radiated Power Source: AC 120V/60Hz

Test item: Radiation Test Date: 15/03/02/
Temp.( C)/Hum.(%) 23 C / 48 % Time: 10/08/09
EUT: Portable printer Engineer Signature:
Mode: TX 2480MHz Distance: 3m

Mode: TX 2480MHz
Model: XP-P100
Manufacturer: HONOR

Note: Report NO.:ATE20150286



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	40.4172	30.43	-11.63	18.80	40.00	-21.20	QP			
2	60.4919	32.48	-14.12	18.36	40.00	-21.64	QP			
3	152.1297	31.55	-15.14	16.41	43.50	-27.09	QP			





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Job No.: CARRY2015 #49

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Portable printer
Mode: TX 2402MHz
Model: XP-P100

Manufacturer: HONOR

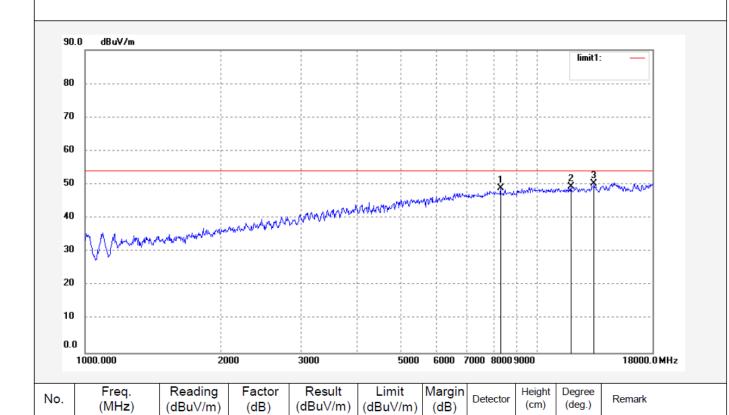
Note: Report NO.:ATE20150286

Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 15/03/02/ Time: 9/23/33 Engineer Signature:

Distance: 3m



1

2

3

8295.823

11871.710

13365.322

41.41

37.89

10.79

7.53

11.51

39.44

48.94

49.40

50.23

54.00

54.00

54.00

-5.06

-4.60

-3.77

peak

peak

peak

Site: 2# Chamber Tel:+86-0755-26503290

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Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 15/03/02/ Time: 9/24/18

Engineer Signature:
Distance: 3m

Job No.: CARRY2015 #50

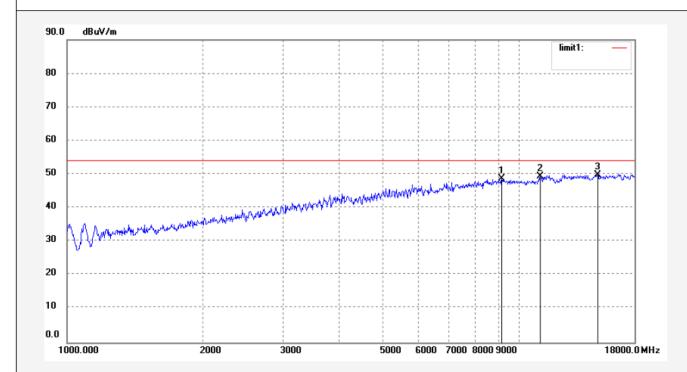
Standard: FCC Class B 3M Radiated

Test item: Radiation Test

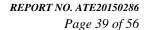
Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Portable printer
Mode: TX 2402MHz
Model: XP-P100

Manufacturer: HONOR



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	9152.479	40.80	7.93	48.73	54.00	-5.27	peak			
2	11140.310	39.69	9.65	49.34	54.00	-4.66	peak			
3	14916.942	8.53	41.35	49.88	54.00	-4.12	peak			







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Job No.: CARRY2015 #51 Polarization: Vertical

Standard: FCC Class B 3M Radiated Power Source: AC 120V/60Hz

Test item: Radiation Test Date: 15/03/02/
Temp.( C)/Hum.(%) 23 C / 48 % Time: 9/24/59
EUT: Portable printer Engineer Signature:

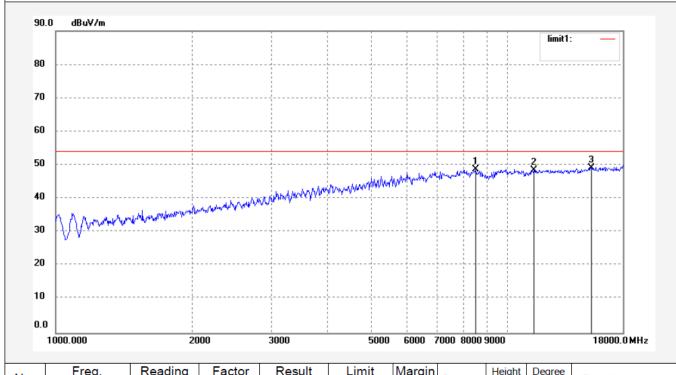
EUT: Portable printer Engineer Signa

Mode: TX 2441MHz Distance: 3m

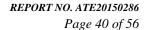
Model: XP-P100

Note: Report NO.:ATE20150286

Manufacturer: HONOR



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	8489.882	40.87	7.92	48.79	54.00	-5.21	peak			
2	11433.909	38.04	10.53	48.57	54.00	-5.43	peak			
3	15265.885	8.64	40.57	49.21	54.00	-4.79	peak			







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Horizontal

Distance: 3m

Job No.: CARRY2015 #52 Polarization:

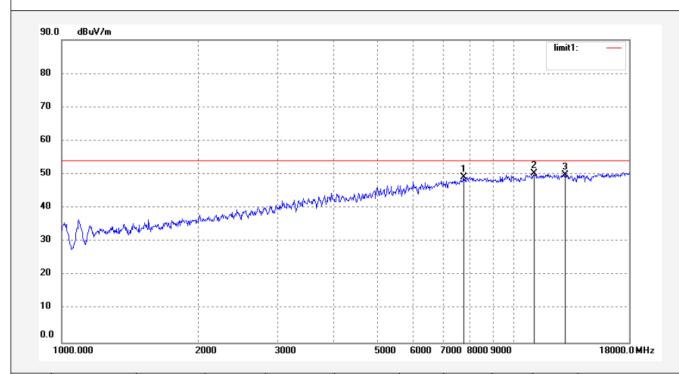
Standard: FCC Class B 3M Radiated Power Source: AC 120V/60Hz

Test item: Radiation Test Date: 15/03/02/
Temp.( C)/Hum.(%) 23 C / 48 % Time: 9/25/35
EUT: Portable printer Engineer Signature:

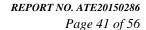
Mode: TX 2441MHz

Model: XP-P100

Manufacturer: HONOR



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	7739.857	43.77	5.43	49.20	54.00	-4.80	peak			
2	11076.096	40.68	9.54	50.22	54.00	-3.78	peak			
3	12984.544	10.93	38.98	49.91	54.00	-4.09	peak			







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Job No.: CARRY2015 #53

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Portable printer
Mode: TX 2480MHz
Model: XP-P100

Model: XP-P100

Manufacturer: HONOR

Note: Report NO.:ATE20150286

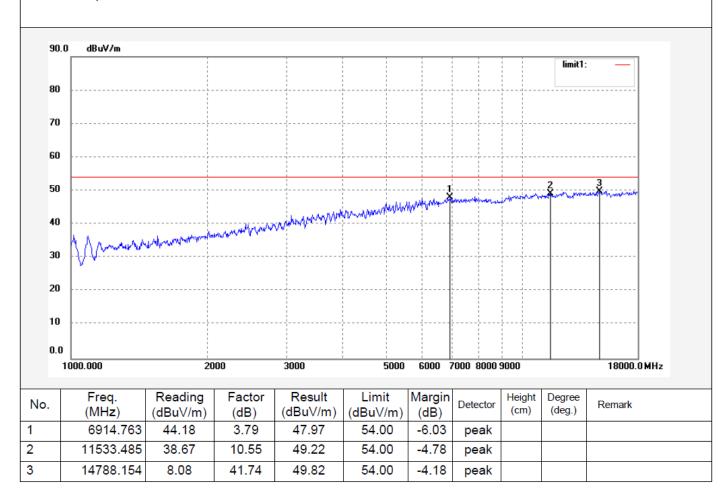
Polarization: Horizontal

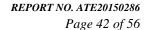
Power Source: AC 120V/60Hz

Date: 15/03/02/ Time: 9/25/51

Engineer Signature:

Distance: 3m









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Job No.: CARRY2015 #54 Polarization: Vertical

Standard: FCC Class B 3M Radiated Power Source: AC 120V/60Hz

 Test item:
 Radiation Test
 Date: 15/03/02/

 Temp.( C)/Hum.(%)
 23 C / 48 %
 Time: 9/27/06

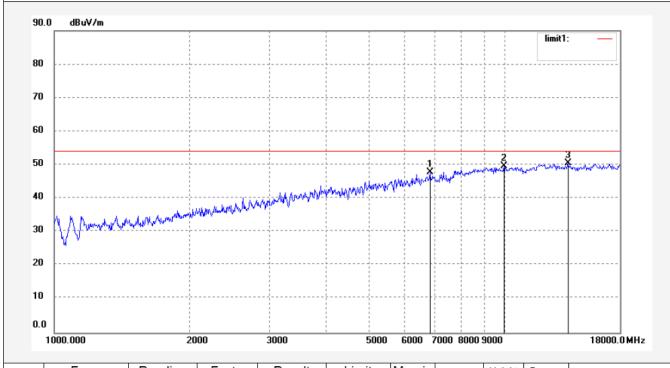
EUT: Portable printer Engineer Signature:

Mode: TX 2480MHz Distance: 3m

Model: XP-P100

Note: Report NO.:ATE20150286

Manufacturer: HONOR

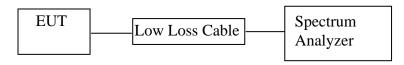


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	6815.551	44.03	3.77	47.80	54.00	-6.20	peak			
2	9952.717	39.93	9.62	49.55	54.00	-4.45	peak			
3	13797.088	10.47	40.08	50.55	54.00	-3.45	peak			



## 11.BAND EDGE COMPLIANCE TEST

## 11.1.Block Diagram of Test Setup



(EUT: Portable printer)

## 11.2. The Requirement For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

## 11.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

## 11.4. Operating Condition of EUT

- 11.4.1. Setup the EUT and simulator as shown as Section 11.1.
- 11.4.2. Turn on the power of all equipment.
- 11.4.3.Let the EUT work in TX (Hopping off, Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2480MHz TX frequency to transmit.



# 11.5.Test Procedure

- 11.5.1.The transmitter output was connected to the spectrum analyzer via a low loss cable.
- 11.5.2.Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz with convenient frequency span including 100 kHz bandwidth from band edge.
- 11.5.3. The band edges was measured and recorded.

# 11.6.Test Result

Channel	Result of Band Edge (dBc)	Limit of Band Edge (dBc)								
GFSK										
Low channel	30.82	> 20dBc								
High channel	29.41	> 20dBc								

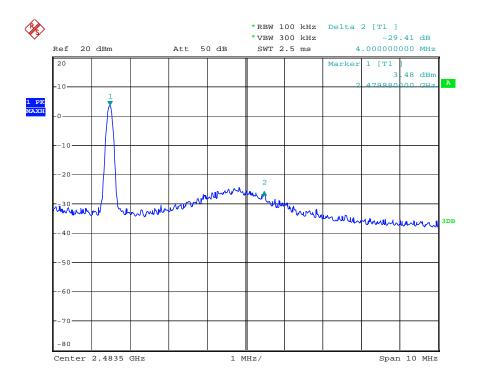


Center 2.4 GHz



500 kHz/

Span 5 MHz



FCC ID: 2AEBCXP-P ACCURATE TECHNOLOGY CO. LTD

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396



## **Radiated Band Edge Result**

Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

3. Display the measurement of peak values.

### Non-hopping mode

Distance: 3m



## ACCURATE TECHNOLOGY CO., LTD.

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Job No.: STAR #3021 Polarization: Vertical

Standard: FCC PK Power Source: AC 120V/60Hz

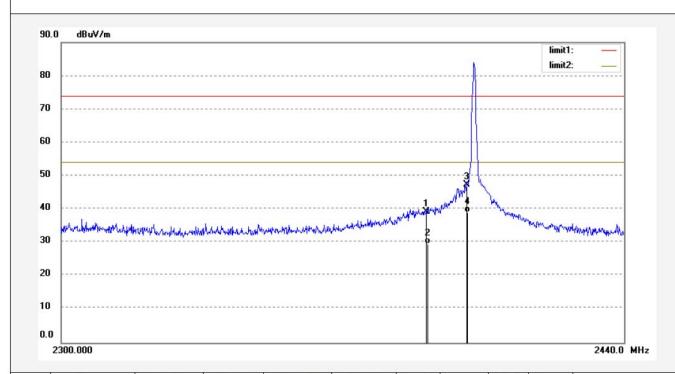
Test item: Radiation Test Date: 15/02/25/
Temp.( C)/Hum.(%) 25 C / 55 % Time: 14/46/17

EUT: Portable printer Engineer Signature:

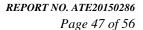
Mode: TX 2402MHz

Model: XP-P100

Manufacturer: HONOR



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	46.02	-6.78	39.24	74.00	-34.76	peak			
2	2390.000	36.30	-6.78	29.52	54.00	-24.48	AVG			
3	2400.000	54.15	-6.76	47.39	74.00	-26.61	peak			
4	2400.000	45.71	-6.76	38.95	54.00	-15.05	AVG			







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Job No.: STAR #3022

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: Portable printer Mode: TX 2402MHz

Model: XP-P100 Manufacturer: HONOR

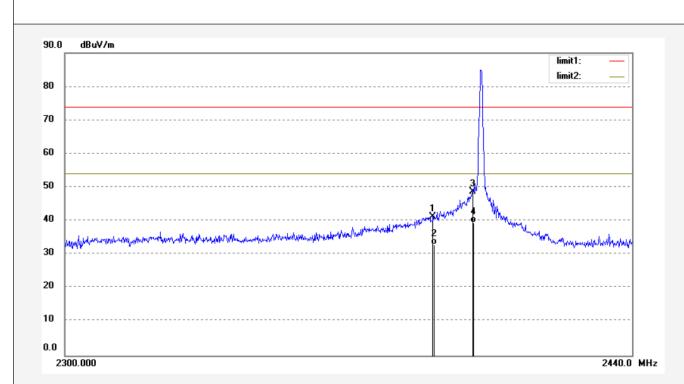
Note: Report No.:ATE20150286

Polarization: Horizontal

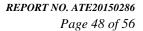
Power Source: AC 120V/60Hz

Date: 15/02/25/ Time: 14/49/56 Engineer Signature:

Distance: 3m



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	48.12	-6.78	41.34	74.00	-32.66	peak			
2	2390.000	39.76	-6.78	32.98	54.00	-21.02	AVG			
3	2400.000	55.45	-6.76	48.69	74.00	-25.31	peak			
4	2400.000	46.14	-6.76	39.38	54.00	-14.62	AVG			







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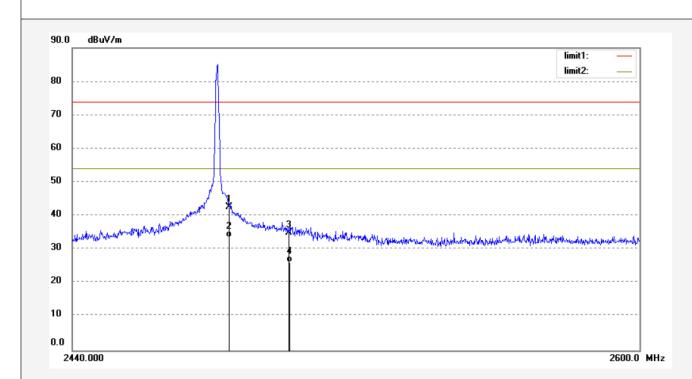
Job No.: STAR #3023 Polarization: Vertical

Standard: FCC PK Power Source: AC 120V/60Hz

Test item: Radiation Test Date: 15/02/25/
Temp.( C)/Hum.(%) 25 C / 55 % Time: 14/52/38

EUT: Portable printer Engineer Signature:
Mode: TX 2480MHz Distance: 3m

Model: XP-P100
Manufacturer: HONOR



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	49.29	-6.54	42.75	74.00	-31.25	peak			
2	2483.500	40.25	-6.54	33.71	54.00	-20.29	AVG			
3	2500.000	41.41	-6.50	34.91	74.00	-39.09	peak			
4	2500.000	32.69	-6.50	26.19	54.00	-27.81	AVG			





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Job No.: STAR #3024

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: Portable printer

Mode: TX 2480MHz Model: XP-P100

Manufacturer: HONOR

Note: Report No.:ATE20150286

Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 15/02/25/ Time: 14/56/46 Engineer Signature:

Distance: 3m

No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	52.26	-6.54	45.72	74.00	-28.28	peak			
2	2483.500	43.56	-6.54	37.02	54.00	-16.98	AVG			
3	2500.000	41.52	-6.50	35.02	74.00	-38.98	peak			
4	2500.000	32.58	-6.50	26.08	54.00	-27.92	AVG			

20

10

0.0

2440.000

2600.0 MHz

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396



### Hopping mode



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Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 15/02/25/
Time: 15/18/17
Engineer Signature:
Distance: 3m

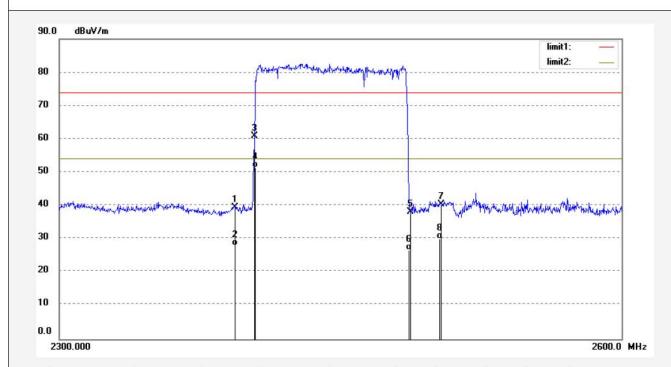
Standard: FCC PK
Test item: Radiation Test

Job No.: STAR #3029

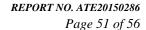
Temp.( C)/Hum.(%) 25 C / 55 %

EUT: Portable printer Mode: HOPPING

Model: XP-P100 Manufacturer: HONOR



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	46.28	-6.78	39.50	74.00	-34.50	peak			
2	2390.000	34.89	-6.78	28.11	54.00	-25.89	AVG			
3	2400.000	67.58	-6.76	60.82	74.00	-13.18	peak			
4	2400.000	58.14	-6.76	51.38	54.00	-2.62	AVG			
5	2483.500	44.59	-6.54	38.05	74.00	-35.95	peak			
6	2483.500	33.24	-6.54	26.70	54.00	-27.30	AVG			
7	2500.000	46.93	-6.50	40.43	74.00	-33.57	peak			
8	2500.000	36.43	-6.50	29.93	54.00	-24.07	AVG			







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Job No.: STAR #3032 Polarization: Vertical

Standard: FCC PK Power Source: AC 120V/60Hz

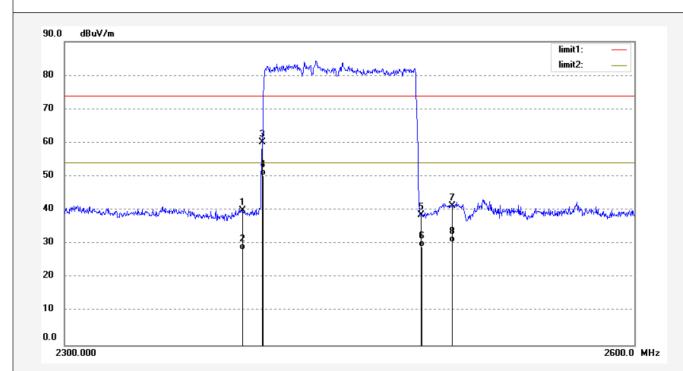
Test item: Radiation Test Date: 15/02/25/
Temp.( C)/Hum.(%) 25 C / 55 % Time: 15/30/37

EUT: Portable printer Engineer Signature:
Mode: HOPPING Distance: 3m

Mode: HOPPING

Model: XP-P100

Manufacturer: HONOR



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	46.74	-6.78	39.96	74.00	-34.04	peak			
2	2390.000	35.10	-6.78	28.32	54.00	-25.68	AVG			
3	2400.000	67.04	-6.76	60.28	74.00	-13.72	peak			
4	2400.000	57.10	-6.76	50.34	54.00	-3.66	AVG			
5	2483.500	45.21	-6.54	38.67	74.00	-35.33	peak			
6	2483.500	35.66	-6.54	29.12	54.00	-24.88	AVG			
7	2500.000	47.76	-6.50	41.26	74.00	-32.74	peak			
8	2500.000	36.91	-6.50	30.41	54.00	-23.59	AVG			



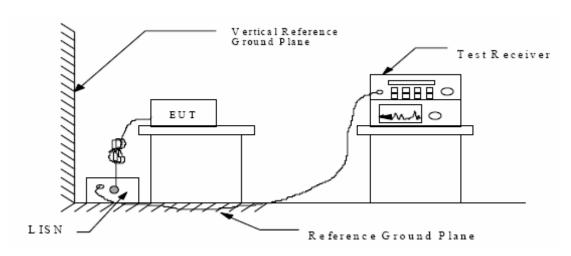
# 12.AC POWER LINE CONDUCTED EMISSION FOR FCC PART

# 15 SECTION 15.207(A)

# 12.1.Block Diagram of Test Setup

12.1.1.Block diagram of connection between the EUT and simulators

## 12.1.2. Shielding Room Test Setup Diagram



(EUT: Portable printer)

## 12.2.The Emission Limit

## 12.2.1.Conducted Emission Measurement Limits According to Section 15.207(a)

Frequency	Limit $dB(\mu V)$						
(MHz)	Quasi-peak Level	Average Level					
0.15 - 0.50	66.0 - 56.0 *	56.0 – 46.0 *					
0.50 - 5.00	56.0	46.0					
5.00 - 30.00	60.0	50.0					

<sup>\*</sup> Decreases with the logarithm of the frequency.



## 12.3. Configuration of EUT on Measurement

The equipment are installed on the Conducted Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

## 12.4. Operating Condition of EUT

- 12.4.1. Setup the EUT and simulator as shown as Section 11.1.
- 12.4.2. Turn on the power of all equipment.
- 12.4.3.Let the EUT work in TX (Operation) mode measure it.

### 12.5.Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4- 2009 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9 kHz.

The frequency range from 150 kHz to 30MHz is checked.

### 12.6. Power Line Conducted Emission Measurement Results



#### CONDUCTED EMISSION STANDARD FCC Part 15B

Portable Printer M/N:XP-P100

Manufacturer: HONOR Operating Condition: BT

Test Site: 1#Shielding Room

Operator: Carry

Test Specification: L 120V/60Hz

Report NO.:ATE20150286 Comment: Start of Test: 2/10/2015 / 9:05:25AM

SCAN TABLE: "V 150K-30MHz fin"
Short Description: \_SUB\_:

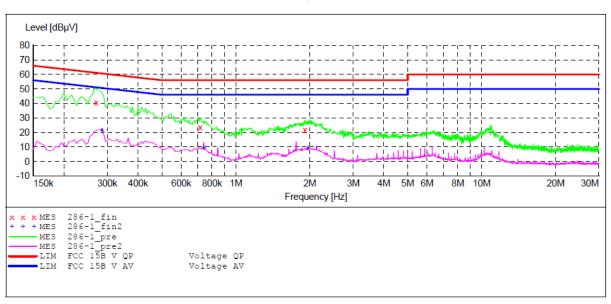
\_\_\_\_\_SUB\_STD\_VTERM2 1.70

Start Stop Step Detector Meas. IF Transducer

Time Bandw.

Frequency Frequency Width 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008

Average



### MEASUREMENT RESULT: "286-1 fin"

2,	/10/2015 9:1	2AM						
	Frequency	Level	Transd	Limit	Margin	Detector	Line	PΕ
	MHz	dΒμV	dB	dΒμV	dB			
	0.070000	40.70	10 6	C1	20.4	0.0	T 1	COLE
	0.270000	40.70	10.6	6Τ	20.4	QP	Ll	GND
	0.715000	23.70	10.8	56	32.3	QP	L1	GND
	1.910000	21.50	11.0	56	34.5	OP	T <sub>1</sub> 1	GND

### MEASUREMENT RESULT: "286-1 fin2"

2/10/2015	9:12AM						
Frequen	cy Level	Transd	Limit	Margin	Detector	Line	PE
M	Hz dBµV	dB	dΒμV	dB			
0.2850	00 21.10	10.6	51	29.6	AV	L1	GND
0.7400	00 8.90	10.8	46	37.1	AV	L1	GND
1.9650	00 9.00	11.0	46	37.0	AV	L1	GND



#### CONDUCTED EMISSION STANDARD FCC Part 15B

Portable Printer M/N:XP-P100

Manufacturer: HONOR Operating Condition: BT

1#Shielding Room Test Site:

Operator: Carry
Test Specification: N 120V/60Hz

Report NO.:ATE20150286 Comment: Start of Test: 2/10/2015 / 9:13:26AM

SCAN TABLE: "V 150K-30MHz fin"

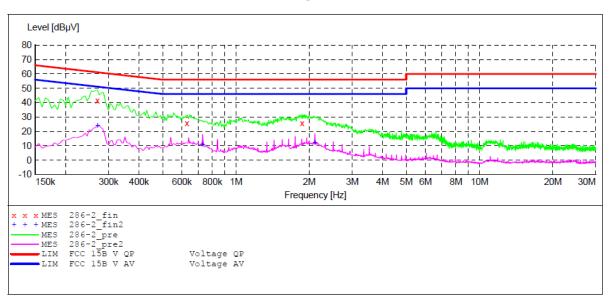
\_SUB\_STD\_VTERM2 1.70 Short Description:

Start Stop Step Detector Meas. IF Transducer

Time Bandw.

Frequency Frequency Width 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s NSLK8126 2008 9 kHz

Average



### MEASUREMENT RESULT: "286-2 fin"

2/10/2015 9·16AM

4/	10/2015 5.1	OAL						
	Frequency MHz	Level dBuV		Limit dBuV	Margin dB	Detector	Line	PE
	0.270000	41 30			19.8	OB	N	GND
						~	IN	GND
	0.630000	25.80	10.8	56	30.2	QP	N	GND
	1.870000	25.80	11.0	56	30.2	QP	N	GND

### MEASUREMENT RESULT: "286-2 fin2"

2/10/201	15 9	9:16A	Μ
Frequ	iency	y	Le

4/	10/2015 9:1	OAM						
	Frequency MHz	Level dBµV		Limit dBµV	Margin dB	Detector	Line	PE
	0.270000	23.90	10.6	51	27.2	AV	N	GND
	0.730000	10.60	10.8	46	35.4	AV	N	GND
	2.110000	12.00	11.0	46	34.0	AV	N	GND



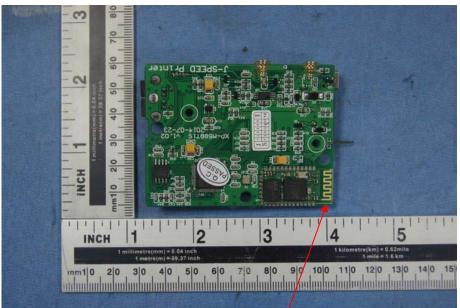
# 13.ANTENNA REQUIREMENT

## 13.1.The Requirement

According to Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

## 13.2.Antenna Construction

The antenna is a permanent attached antenna, no consideration of replacement. The gain is 0dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



Antenna