



FCC PART 22 and 90

## TEST REPORT

For

### Hytera Communications Corporation Limited

Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road, Nanshan District, Shenzhen,  
518057 China

**FCC ID: YAMPD79XISU1**

<b>Report Type:</b> Class II Permissive Change	<b>Product Type:</b> Is Digital Radio
<b>Report Number:</b> <u>RDG161020003-00A1</u>	
<b>Report Date:</b> <u>2016-12-21</u>	
Jesse Huang	
<b>Reviewed By:</b> <u>Manager</u>	
<b>Prepared By:</b> Bay Area Compliance Laboratories Corp. (Kunshan) No.248 Chenghu Road, Kunshan, Jiangsu province, China Tel: +86-0512-86175000 Fax: +86-0512-88934268 <a href="http://www.baclcorp.com.cn">www.baclcorp.com.cn</a>	

**Note:** This test report is prepared for the customer shown above and for the equipment described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp.

## **TABLE OF CONTENTS**

<b>GENERAL INFORMATION.....</b>	<b>3</b>
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT) .....	3
OBJECTIVE .....	3
RELATED SUBMITTAL(S)/GRANT(S).....	3
TEST METHODOLOGY .....	3
MEASUREMENT UNCERTAINTY.....	4
TEST FACILITY .....	4
<b>SYSTEM TEST CONFIGURATION.....</b>	<b>5</b>
DESCRIPTION OF TEST CONFIGURATION .....	5
EQUIPMENT MODIFICATIONS .....	5
SUPPORT EQUIPMENT LIST AND DETAILS .....	5
EXTERNAL I/O CABLE.....	5
BLOCK DIAGRAM OF TEST SETUP .....	5
<b>SUMMARY OF TEST RESULTS .....</b>	<b>6</b>
<b>TEST EQUIPMENT LIST .....</b>	<b>7</b>
<b>FCC §1.1307(b) &amp; §2.1093 - RF EXPOSURE.....</b>	<b>8</b>
APPLICABLE STANDARD .....	8
<b>FCC §2.1053 &amp; §22.861 &amp; §90.210 - RADIATED SPURIOUS EMISSIONS.....</b>	<b>9</b>
APPLICABLE STANDARD .....	9
TEST PROCEDURE .....	9
TEST DATA .....	9

## GENERAL INFORMATION

---

### Product Description for Equipment under Test (EUT)

The Hytera Communications Corporation Limited's product, model number: PD715IS U(1) or the "EUT" in this report was a Is Digital Radio, which was measured approximately: 141mm (L) x 55 mm (W) x39mm (H), rated with input voltage: DC 7.4V battery.

*Note: The series product, model PD712IS U(1), PD716IS U(1), PD718IS U(1) and PD715IS U(1), they have the same appearance, PCB, Material to the testing product's model, and only named differently. Model PD715IS U(1) was selected for fully testing, which was explained in the attached product similarity declaration letter.*

*\* All measurement and test data in this report was gathered from production sample serial number: 161020003 (Assigned by BACL, Kunshan). The EUT supplied by the applicant was received on 2016-10-20.*

### Objective

This test report is prepared on behalf of *Hytera Communications Corporation Limited.* in accordance with Part 2, Part 22 and Part 90 of the Federal Communication Commissions rules.

This is a CIIPC application of the device; the differences between the original device and the current one are as follows:

1. Changing the model number from "PD795IS U(1), PD792IS U(1), PD796IS U(1), PD798IS U(1)" to "PD715IS U(1), PD712IS U(1), PD716IS U(1), PD718IS U(1)".
2. Changing the appearance of EUT, which removing the keyboard and screen with the same main board.

For the change made to the device, the test item "RADIATED SPURIOUS EMISSIONS" were performed.

### Related Submittal(s)/Grant(s)

No related submittal(s).

### Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of federal Regulations Title 47 Part 2, Sub-part J as well as the following individual parts:

Part 22 – Public Mobile Service  
Part 90 – Private Land Mobile Radio Service

Applicable Standards: TIA 603-D.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Kunshan). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

**Measurement Uncertainty**

Item		Uncertainty
Radiated emission	30MHz~1GHz	±5.91dB
	Above 1G	±4.92dB
Temperature		±1.0°C
Humidity		±6%

**Test Facility**

The test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the Chenghu Lake Road, Kunshan Development Zone No.248, Kunshan, Jiangsu, China

Test site at Bay Area Compliance Laboratories Corp. (Kunshan) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 06, 2014. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 815570. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

## SYSTEM TEST CONFIGURATION

### Description of Test Configuration

The system was configured for testing in a test mode which has been done in the factory.

### Equipment Modifications

No modification was made to the EUT tested.

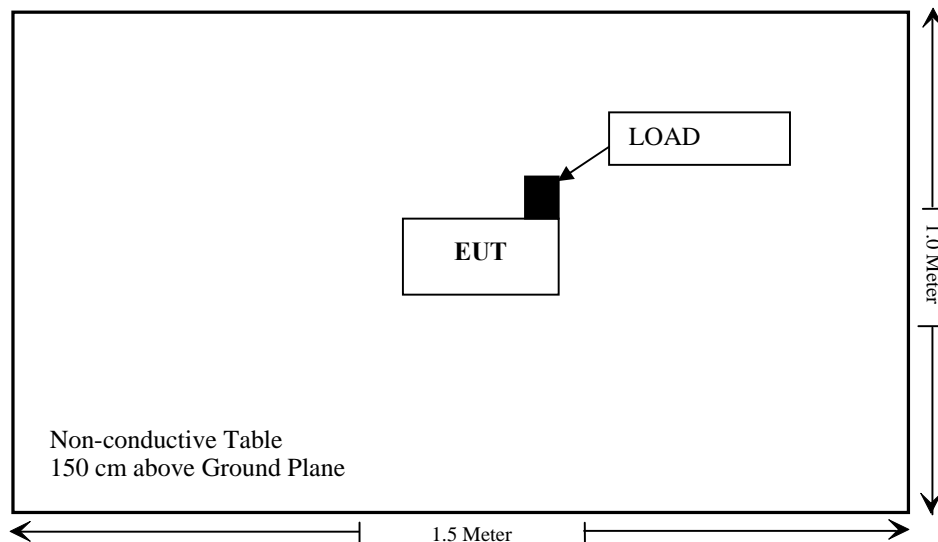
### Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
N/A	50 ohm Load	N/A	N/A

### External I/O Cable

Cable Description	Length (m)	From Port	To
/	/	/	/

### Block Diagram of Test Setup



**SUMMARY OF TEST RESULTS**

FCC Rules	Description of Test	Results
§1.1307(b), §2.1093	RF Exposure	Compliance
§2.1046; § 22.727; §90.205	RF Output Power	Compliance*
§2.1047;§90.207	Modulation Characteristic	Compliance*
§2.1049;§22.357;§ 22.731; §90.209; §90.210	Occupied Bandwidth & Emission Mask	Compliance*
§2.1051; §22.861;§90.210	Spurious Emission at Antenna Terminal	Compliance*
§2.1053; §22.861;§90.210	Spurious Radiated Emissions	Compliance
§2.1055; § 22.355;§90.213	Frequency Stability	Compliance*
§90.214	Transient Frequency Behavior	Compliance*

Compliance\*: Please referred to FCC ID: YAMPD79XISU1, report No.: RSZ160524001-00, granted on 2016-07-28, which was tested by Bay Area Compliance Laboratories Corp. (Shenzhen).

**TEST EQUIPMENT LIST**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
<b>Radiated Emission Test</b>					
Sonoma Instrument	Amplifier	330	171377	2015-12-12	2016-12-12
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2016-11-11	2017-11-10
Sunol Sciences	Broadband Antenna	JB3	A090314-2	2016-01-09	2019-01-08
Sunol Sciences	Broadband Antenna	JB3	A090314-1	2016-01-09	2019-01-08
Narda	Pre-amplifier	AFS42-00101800	2001270	2016-09-08	2017-09-08
EMCO	Horn Antenna	3116	9510-2384	2015-11-07	2018-11-06
Rohde & Schwarz	Signal Analyzer	FSIQ26	100048	2016-11-11	2017-11-10
ETS	Horn Antenna	3115	6229	2016-01-11	2017-01-10
ETS	Horn Antenna	3115	9311-4159	2016-01-11	2017-01-10
R&S	Auto test Software	EMC32	V 09.10.0	NCR	NCR
haojintech	Coaxial Cable	Cable-1	001	2016-09-08	2017-09-07
haojintech	Coaxial Cable	Cable-2	002	2016-09-08	2017-09-07
haojintech	Coaxial Cable	Cable-3	003	2016-09-08	2017-09-07
MICRO-COAX	Coaxial Cable	Cable-4	004	2015-11-19	2016-11-18
MICRO-COAX	Coaxial Cable	Cable-5	005	2015-11-19	2016-11-18
HP	Signal Generator	E4421B	US38440505	2016-11-11	2017-11-10

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

## **FCC §1.1307(b) & §2.1093 - RF EXPOSURE**

---

### **Applicable Standard**

According to FCC §1.1307(b) and §2.1093, portable device operates Part 90 should be subjected to routine environmental evaluation for RF exposure prior or equipment authorization or use.

**Result:** Compliance.

Please refer to SAR Report Number: RDG161020003-20BA1.



**FCC §2.1053 & §22.861 & §90.210 - RADIATED SPURIOUS EMISSIONS****Applicable Standard**

FCC §2.1053, §22.861 and §90.210

**Test Procedure**

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load, which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to teeth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = 10 lg (TXpwr in Watts/0.001)-the absolute level

Spurious attenuation limit in dB = 50 + 10 Log<sub>10</sub> (power out in Watts) for EUT with a 12.5 kHz channel bandwidth.

**Test Data****Environmental Conditions**

<b>Temperature:</b>	27 °C
<b>Relative Humidity:</b>	53 %
<b>ATM Pressure:</b>	101.0 kPa

*The testing was performed by Layne Li on 2016-11-17.*

*Test Mode: Transmitting*

**30 MHz – 5 GHz:**

Frequency (MHz)	Receiver Reading (dBμV)	Turn Table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 90	
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
Analog Modulation 450.0125MHz, Channel Spacing 12.5kHz										
900.03	33.62	272	2.1	H	-62.4	0.45	5.05	-57.80	-20	37.80
900.03	34.83	327	1.5	V	-61.2	0.45	5.05	-56.60	-20	36.60
1350.04	41.39	112	2.5	H	-60.6	0.27	7.75	-53.12	-20	33.12
1350.04	46.52	82	2.1	V	-61.1	0.27	7.75	-53.62	-20	33.62
Digital Modulation 450.0125MHz, Channel Spacing 12.5kHz										
900.03	35.36	45	2.1	H	-60.6	0.45	5.05	-56.00	-20	36.00
900.03	36.12	108	2.1	V	-59.9	0.45	5.05	-55.30	-20	35.30
1350.04	40.09	260	1.7	H	-61.9	0.27	7.75	-54.42	-20	34.42
1350.04	44.52	195	1.5	V	-63.1	0.27	7.75	-55.62	-20	35.62

**Note:**

Absolute Level = SG Level - Cable loss + Antenna Gain

Margin = Limit- Absolute Level

,

**\*\*\*\*\* END OF REPORT \*\*\*\*\***