

FCC PART 90

TEST REPORT

For

Hytera Communications Co., Ltd.

HYT Tower, Hi-Tech Industrial Park North, Nanshan District, Shenzhen, Guangdong, China

FCC ID: YAMPD78XGU5H

| | |
|--|--|
| Report Type: Class II Permissive Change | Product Type: Digital Portable Radio |
| Test Engineer: <u>Bell Hu</u> <i>Bell Hu</i> | |
| Report Number: <u>RSZ131225003-00A1</u> | |
| Report Date: <u>2014-01-16</u> | |
| Reviewed By: <u>RF Engineer</u> <i>Jimmy Xiao</i> | |
| Prepared By: Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn | |

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.

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Hytera Communications Co., Ltd.*'s product, model number: *PD782G U5 (FCC ID: YAMPD78XGU5H)* or the "EUT" in this report was a *Digital Portable Radio*, rated with input voltage: DC 7.4V battery.

Note: The product, series model PD782G U5, PD785G U5, PD786G U5, PD788G U5, HD785G U5 are electrically identical, they are just different in model number due to market purposes, which was explained in the attached declaration letter. And the model PD782G U5 was selected for fully testing.

**All measurement and test data in this report was gathered from production sample serial number: 1312121 (Assigned by BACL, Shenzhen). The EUT supplied by applicant was received on 2013-12-08.*

Objective

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

This is a CIIPC application of the device for adding emission mask of G, H and J.

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 90 – Private Land Mobile Radio Service

Applicable Standards: TIA 603-D and ANSI 63.4-2009.

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

Measurement uncertainty with radiated emission is 5.91 dB for 30MHz-1GHz. And 4.92 dB for above 1GHz, 1.95dB for conducted measurement.

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) 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 December 06, 2010. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. 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.

SUMMARY OF TEST RESULTS

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

Compliance*: Please refer to the report number TRE13030165 granted on 2013-05-23,
with FCC ID: YAMPD78XGU5H.

FCC §2.1049, §90.209 & §90.210 – EMISSION MASK**Applicable Standard**

FCC §2.1049, §90.209 and §90.210

Emission Mask G. For transmitters that are not equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

- (1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 10 kHz, but no more than 250 percent of the authorized bandwidth: At least $116 \log (fd/6.1)$ dB, or $50 + 10 \log (P)$ dB, or 70 dB, whichever is the lesser attenuation;
- (2) On any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth: At least $43 + 10 \log (P)$ dB.

Emission Mask H. For transmitters that are not equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

- (1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of 4 kHz or less: Zero dB.
- (2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 4 kHz, but no more than 8.5 kHz: At least $107 \log (fd/4)$ dB;
- (3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 8.5 kHz, but no more than 15 kHz: At least $40.5 \log (fd/1.16)$ dB;
- (4) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 15 kHz, but no more than 25 kHz: At least $116 \log (fd/6.1)$ dB;
- (5) On any frequency removed from the center of the authorized bandwidth by more than 25 kHz: At least $43 + \log (P)$ dB.

Emission Mask J. For transmitters that are not equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power of the transmitter (P) as follows:

- (1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 2.5 kHz, but no more than 6.25 kHz: At least $53 \log (fd/2.5)$ dB;
- (2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 6.25 kHz, but no more than 9.5 kHz: At least $103 \log (fd/3.9)$ dB;
- (3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 9.5 kHz: At least $157 \log (fd/5.3)$ dB, or $50 + 10 \log (P)$ dB or 70 dB, whichever is the lesser attenuation.

Test Equipment List and Details

| Manufacturer | Description | Model No. | Serial No. | Calibration Date | Calibration Due Date |
|--------------|-----------------|-----------|------------|------------------|----------------------|
| R&S | Signal analyzer | FSV | - | 2013-11-28 | 2014-11-27 |

Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

The resolution bandwidth of the spectrum analyzer was set at 300 Hz and the spectrum was recorded in the frequency band ± 50 kHz from the carrier frequency.

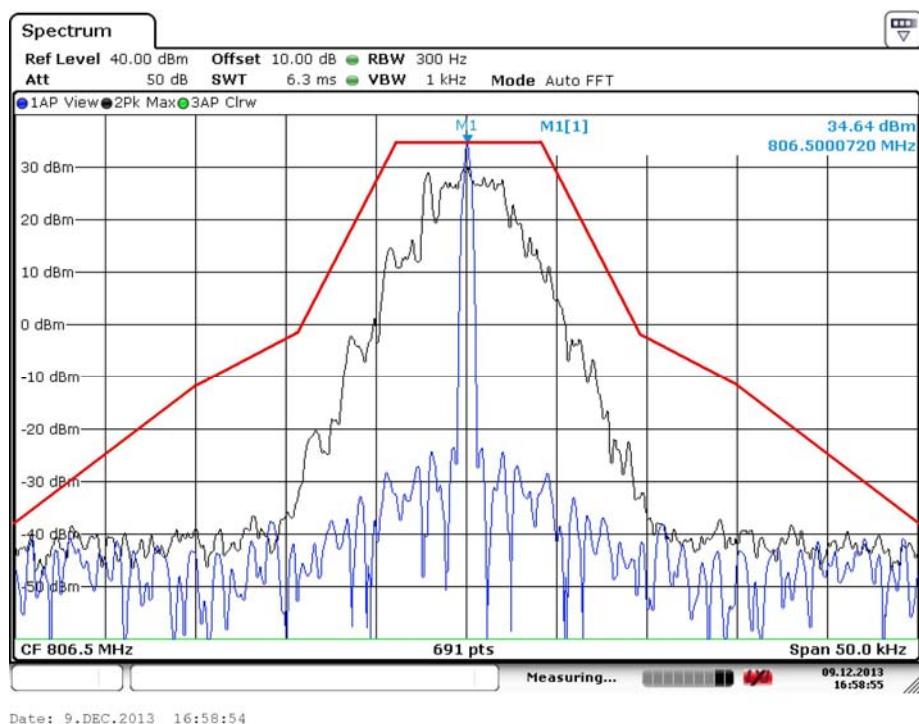
Test Data

Environmental Conditions

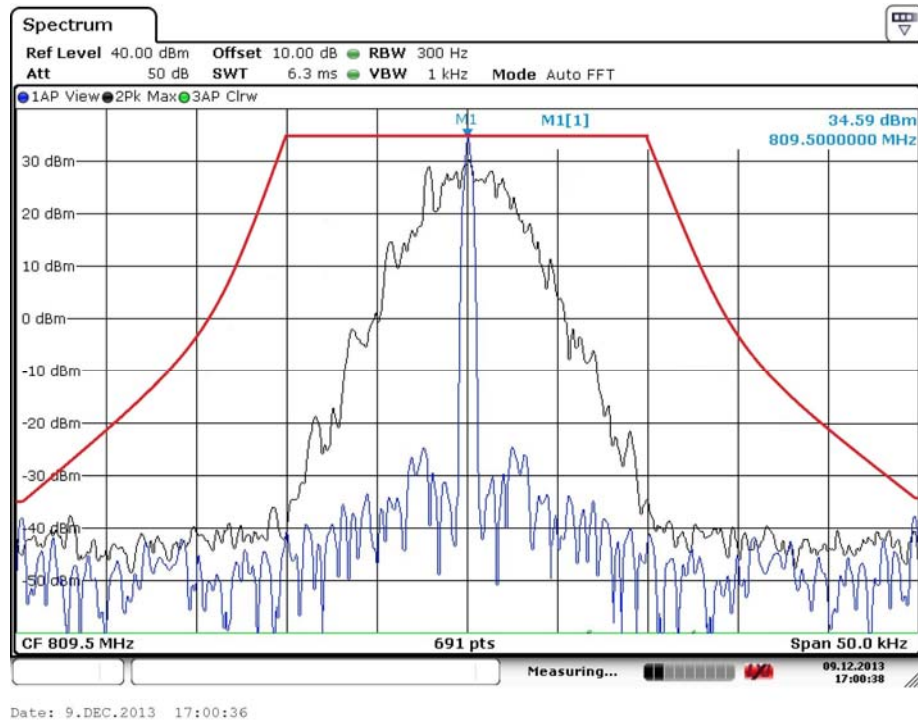
| | |
|--------------------|-----------|
| Temperature: | 22 °C |
| Relative Humidity: | 35 % |
| ATM Pressure: | 101.0 kPa |

The testing was performed by Bell Hu on 2013-12-09.

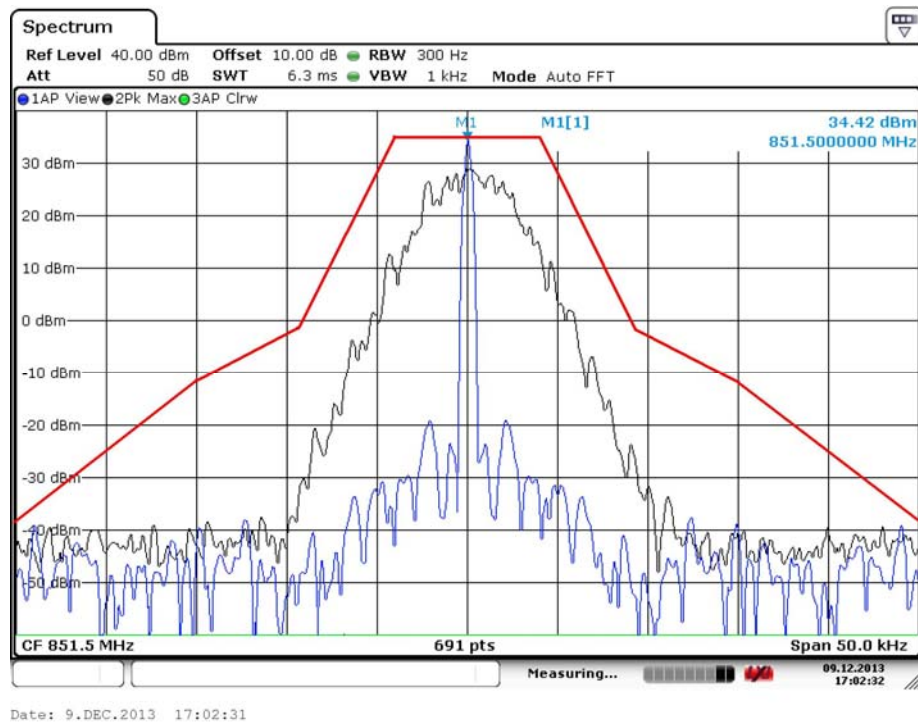
806.5 MHz, Emission Mask H



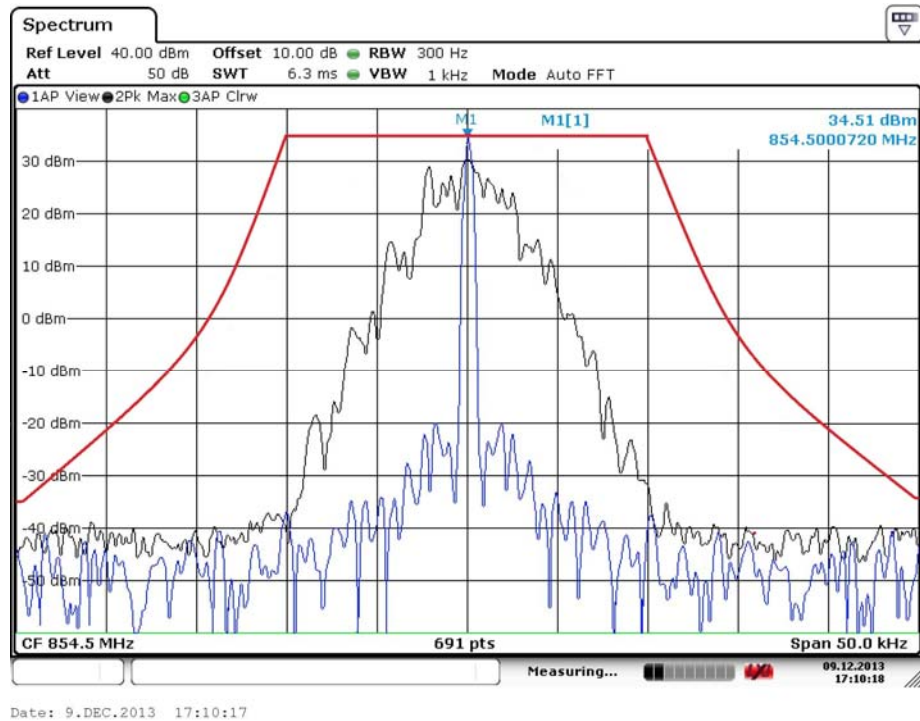
809.5 MHz, Emission Mask G



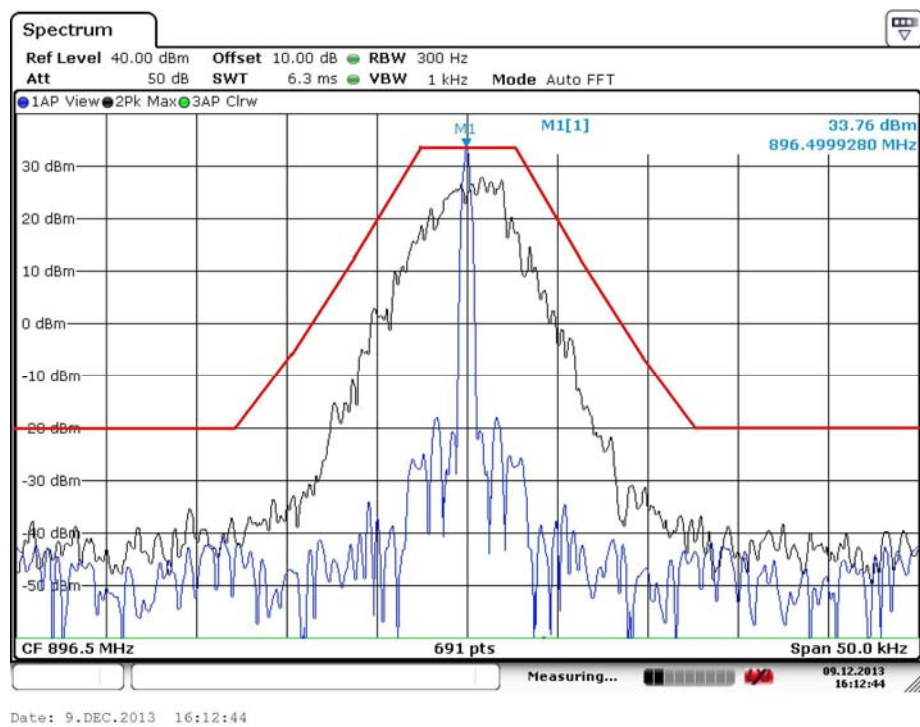
851.5 MHz, Emission Mask H



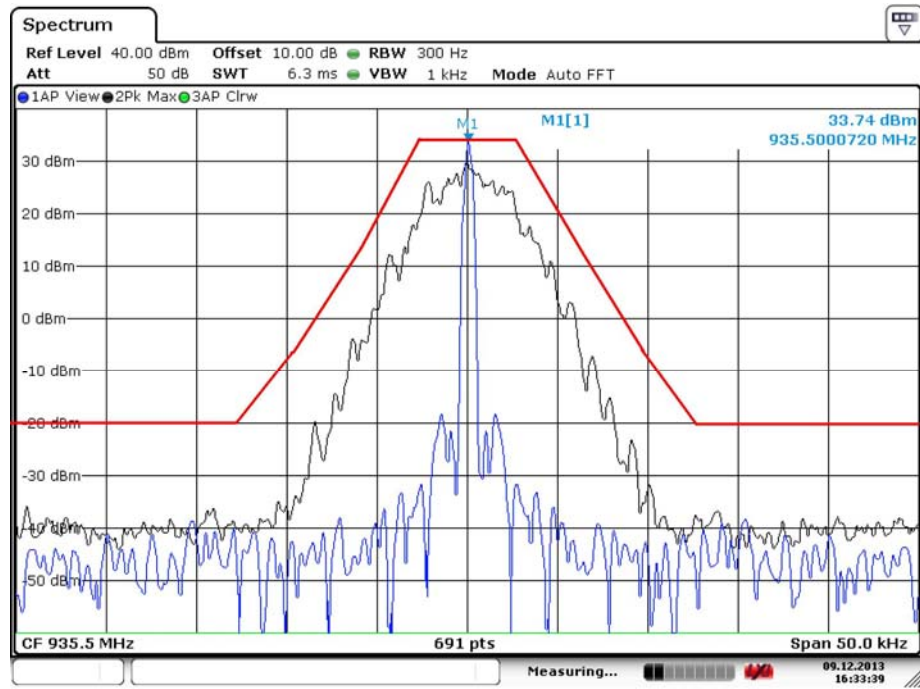
854.5 MHz, Emission Mask G



896.5 MHz, Emission Mask J



935.5 MHz, Emission Mask J



PRODUCT SIMILARITY DECLARATION LETTER



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2014-1-16

Product Similarity Declaration

To Whom It May Concern,

We, Hytera Communications Corporation Ltd., hereby declare that our Portable Mobile Radio, Model Number: PD785G U5/PD786G U5/PD788G U5/HD785G are electrically identical with that PD782G U5 was certified by BACL.

There are named differently due to market purpose.

Please contact me if you have any question.

Signature:

A handwritten signature in black ink, appearing to read "Lei Xiong", with a stylized flourish at the end.

Lei Xiong

General Director

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