



RF Exposure Evaluation

Report No.: SRMC2010-H072-E0005

Product Name: Digital Mobile Radio

Product Model: MD780

MD782

MD785

MD786

MD788

Applicant: Hytera Communications Corporation Ltd.

Manufacture: Hytera Communications Corporation Ltd.

Specification: FCC Part2.1091

OET Bulletin 65 Supplement C[June 2001]

FCC ID: YAMMD78XU1

The State Radio Monitoring Center

State Radio Spectrum Monitoring and Testing Center

No.80 Beilishi Road Xicheng District Beijing, China

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1. General information

1.1 Notes of the test report

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The test results relate only to individual items of the samples which have been tested.

1.2 Information about the testing laboratory

Company: The State Radio Monitoring Center
State Radio Spectrum Monitoring and Testing Center
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1.3 Applicant's details

Company: Hytera Communications Corporation Ltd.
Address: Hytera Tower, Hi-Tech Industrial Park North,
Nanshan District, 518057
City: Shenzhen
Country or Region: P.R.China
Grantee Code: YAM
Contacted person: Suzi Lan
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Email: lany@hyt.com.cn

1.4 Manufacturer's details

Company: Hytera Communications Corporation Ltd.
Address: Hytera Tower, Hi-Tech Industrial Park North,
Nanshan District, 518057
City: Shenzhen
Country or Region: P.R.China
Grantee Code: YAM
Contacted person: Suzi Lan
Tel: +86-755-26972999
Fax: +86-755-86137130
Email: lany@hyt.com.cn

1.5 Application details

Date of reception of test sample: 1st Feb 2010
 Date of test: 1st Feb 2010 to 24th June 2010

1.6 Reference specification

FCC Part2.1091, OET Bulletin 65 Supplement C [June 2001]

1.7 Information of EUT

1.7.1 General information

Name of EUT	Digital Mobile Radio
FCC ID	YAMMD78XU1
Frequency range	400MHz ~ 470MHz
Rated output power	46.5dBm
Modulation type	Analog Voice: FM
	Digitized Voice/Data: 4FSK
Emission Designator	Analog Voice: 16K0F3E 11K0F3E
	Digitized Voice/Data: 7K60FXD 7K60FXW
Channel Bandwidth	Analog Voice: 25KHz 12.5kHz
	Digitized Voice/Data: 12.5kHz
Antenna type	External
Antenna gain	5dBi
Power Supply	External DC power supply
Rated Power Supply Voltage	13.6Vd.c.
Extreme Temperature	Lowest: -30°C
	Highest: +50°C
Extreme Voltage	Minimum: 10.8Vd.c.
	Maximum: 15.6Vd.c.
HW Version	V1.00.00.432
SW Version	MD780_P3A

1.7.2 EUT details


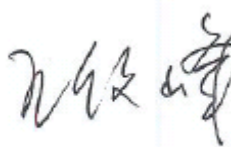
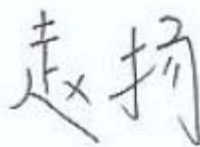
Name	Model	Serial Number
Digital Mobile Radio	MD780	10421K0002

Note: The Digital Mobile Radio MD780, MD782, MD785, MD786 and MD788 are all the same on every functional aspect. They just named differently due to the marketing purposes. Therefore, this report is just to provide the test values of MD780. And the results could represent all the features which other product models have.

2. Test information

2.1 Summary of the calculation results

No.	Test case	FCC reference	Verdict
1	MPE Calculation	FCC Part2.1091, OET Bulletin 65 Supplement [June 2001]	Pass

This Test Report Is Issued by: Mr. Song Qizhu, Director of the test lab 	Checked By: 
Tested By: 	Issued date: 2010.06.24

2.2 Calculation result

2.2.1 Maximum Permissible Exposure (MPE)

Limit:

FCC LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

(A) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	100*	6
3.0-30	1842/f	4.89/f	(900/f ²) *	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	100*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

Calculation procedure:

Predication of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = PG / 4\pi R^2$$

Where: S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an

isotropic radiator

R=distance to the center of radiation of the antenna

As declared by the Applicant, the EUT transmits with the maximum source-based Duty Cycle of 50%-see the User manual, and the EUT is a wireless device used in a mobile application, at least 100cm from any body part of the user or nearby persons; from the peak EUT RF output power, the minimum mobile separation distance, R=100cm, as well as the gain of the used antenna is 5.0dBi, the RF power density can be obtained.

TEST RESULTS

For 25 KHz Channel Spacing

Frequency (MHz)	Minimum Separation Distance (cm)	Output Power (dBm)	Output Power (mW)	Antenna Gain (Nemeric)	Power Density Limit (mW/cm ²)	Power Density At 100 cm (mW/cm ²)	Test Results
400.0250	100.00	45.53	35727.00	3.1623	1.3333	0.8991	Compliance
435.0000	100.00	45.87	38637.00	3.1623	1.4500	0.9723	Compliance
469.9750	100.00	45.39	34594.00	3.1623	1.5666	0.8705	Compliance

For 12.5 KHz Channel Spacing

Frequency (MHz)	Minimum Separation Distance (cm)	Output Power (dBm)	Output Power (mW)	Antenna Gain (Nemeric)	Power Density Limit (mW/cm ²)	Power Density At 100 cm (mW/cm ²)	Test Results
400.0250	100.00	45.53	35727.00	3.1623	1.3333	0.8991	Compliance
435.0000	100.00	45.83	38282.00	3.1623	1.4500	0.9634	Compliance
469.9750	100.00	45.33	34119.00	3.1623	1.5666	0.8586	Compliance

For 12.5 KHz Channel Spacing (Digital)

Frequency (MHz)	Minimum Separation Distance (cm)	Output Power (dBm)	Output Power (mW)	Antenna Gain (Nemeric)	Power Density Limit (mW/cm ²)	Power Density At 100 cm (mW/cm ²)	Test Results
400.0250	100.00	45.57	36058.00	3.1623	1.3333	0.9074	Compliance
435.0000	100.00	45.67	36098.00	3.1623	1.4500	0.9285	Compliance
469.9750	100.00	45.35	34277.00	3.1623	1.5666	0.8626	Compliance