



TESTING LABORATORY
CERTIFICATE #4820.01



MAXIMUM PERMISSIBLE EXPOSURE TEST REPORT

For

Hytera Communications Corporation Limited

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

FCC ID: YAMHM78XUVS

Report Type: Original Report	Product Name: DIGITAL MOBILE RADIO
Report Number: DG2210621-24437E-20A	
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Reviewed By:	Ivan Cao Assistant Manager 
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.12, Pulong East 1 st Road, Tangxia Town, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

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FCC §1.1310 & FCC §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Product Description for Equipment under Test (EUT)

EUT Name:	DIGITAL MOBILE RADIO
EUT Model:	HM782 Uv
Mutiple Models:	HM780 Uv, HM786 Uv, HM788 Uv, HM785 Uv, HDM782 Uv, HDM785 Uv, HDM786 Uv, HDM788 Uv
Modulation Type:	Bluetooth/BLE:GFSK, $\pi/4$ -DQPSK, 8DPSK UHF:FM,4FSK
Frequency Range:	UHF:350-470MHz Bluetooth/BLE:2402-2480 MHz
Rated Output Power: (Conducted)	UHF:High Power Level: 50W (High Power),1W(Low Power) Bluetooth:5 dBm BLE:2 dBm
Rated Input Voltage:	DC 13.6V from battery
Serial Number:	DG2210621-24437E-RF-S1
EUT Received Date:	2021.06.22
EUT Received Status:	Good

Note: The series product, models HM780 Uv, HM786 Uv, HM788 Uv, HM785 Uv, HDM782 Uv, HDM785 Uv, HDM786 Uv, HDM788 Uv and HM782 Uv are electrically identical, the model HM782 Uv was fully tested. The differences between them please refer to the declaration letter for details.

Accessary Antenna Information:

Manufacturer	Antenna Type	Model No.	Antenna Gain (dBi)	Antenna Cable Loss (dB)
Hytera	Monopole Antenna	TQC-400FG-W	1.0 dBi	2.0

Declarations

BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol “▲”. Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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Applicable Standard

According to 1.1307 (b)(1), 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for Maximum Permissible Exposure (MPE)

Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
(i) Limits for Occupational/Controlled Exposure				
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

Limits for Maximum Permissible Exposure (MPE)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (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;

MPE Calculation

Prediction of power density at the distance of the applicable MPE limit

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

Where: S = power density (in appropriate units, e.g. mW/cm²);

P = power input to the antenna (in appropriate units, e.g., mW);

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 (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

MPE Results**UHF:**

Frequency (MHz)	Antenna Gain (dBi)	Cable Loss (dB)	Maximum Average output power including Tune-up Tolerance (dBm)	Operation Duty Cycle (%)	Evaluation Distance (cm)	Power Density (mW/cm ²)	Power Density Limit (mW/cm ²)
350-470	1.0	2.0	47	50	40	0.99	1.167

Result: The device meet FCC MPE at 40 cm distance

Bluetooth:

Frequency (MHz)	Antenna Gain		Conducted output power including Tune-up Tolerance		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
	(dBi)	(numeric)	(dBm)	(mW)			
2402-2480	0.00	1.00	5.00	3.16	20.00	0.0006	1.0

Simultaneous Transmission:

The Bluetooth and UHF can transmit simultaneously:

$$\sum_i \frac{S_i}{S_{Limit,i}}$$

$$= S_{BT}/S_{limit-BT} + S_{UHF}/S_{limit-UHF}$$

$$= 0.0006/1 + 0.99/1.167$$

$$= 0.85$$

$$< 1.0$$

Result: Compliance

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