



TESTING LABORATORY
CERTIFICATE #4820.01



MAXIMUM PERMISSIBLE EXPOSURE TEST REPORT

For

Hytera Communications Corporation Limited

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FCC ID: YAMHM78XU2

Report Type: Original Report	Product Name: DIGITAL MOBILE RADIO
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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 U2
Mutiple Models:	HM780 U2, HM786 U2, HM788 U2, HM785 U2
Modulation Type:	FM, 4FSK
Channel Spacing:	12.5 kHz / 25 kHz
Frequency Range:	450-527 MHz
Rated Output Power: (Conducted)	High Power Level: 50W Low Power Level: 1W
Rated Input Voltage:	DC 10.8~15.6V
Serial Number:	RDG201022008-RF-S1
EUT Received Date:	2020.10.23
EUT Received Status:	Good

Note: The series product, models HM780 U2, HM786 U2, HM788 U2, HM785 U2 and HM782 U2 are electrically identical, The difference between them please refer to the declaration letter for details. Model HM782 U2 was performed full test.

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

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)
450-527	1	2.0	47.2	50	35	1.35	1.5

Result: The device meet FCC MPE at 35 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	1.00	3	2.00	20.00	0.001	1.0

Simultaneous Transmission:

The Bluetooth and UHF can transmit simultaneously:

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

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

$$=0.001/1+1.35/1.5$$

$$=0.9$$

$$< 1.0$$

Result: Compliance

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