



TESTING LABORATORY
CERTIFICATE #4820.01



MAXIMUM PERMISSIBLE EXPOSURE TEST REPORT

For

Hytera Communications Corporation Limited

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FCC ID: YAMMD78XIVHF

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:	MD780i VHF
Multiple Models:	MD782i VHF, MD785i VHF, MD786i VHF, MD788i VHF
FCC ID:	YAMMD78XIVHF
Rated Input Voltage:	13.6V DC
External Dimension:	200mm(L)*174mm(W)*60mm(H)
Serial Number:	180911007
EUT Received Date:	2018.09.11

Antenna Information:

Manufacturer	Antenna Type	Model No.	Length (cm)	Antenna Gain (dBi)
Hytera	Monopole Antenna	TQC-150CII	118	3@136-174MHz

Note: The series product, models MD780i VHF, MD782i VHF, MD785i VHF, MD786i VHF, MD788i VHF are electrically identical, The difference between them please refer to the declaration letter for details. For marketing purpose, we selected MD780i VHF for fully testing.

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 (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E , H 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

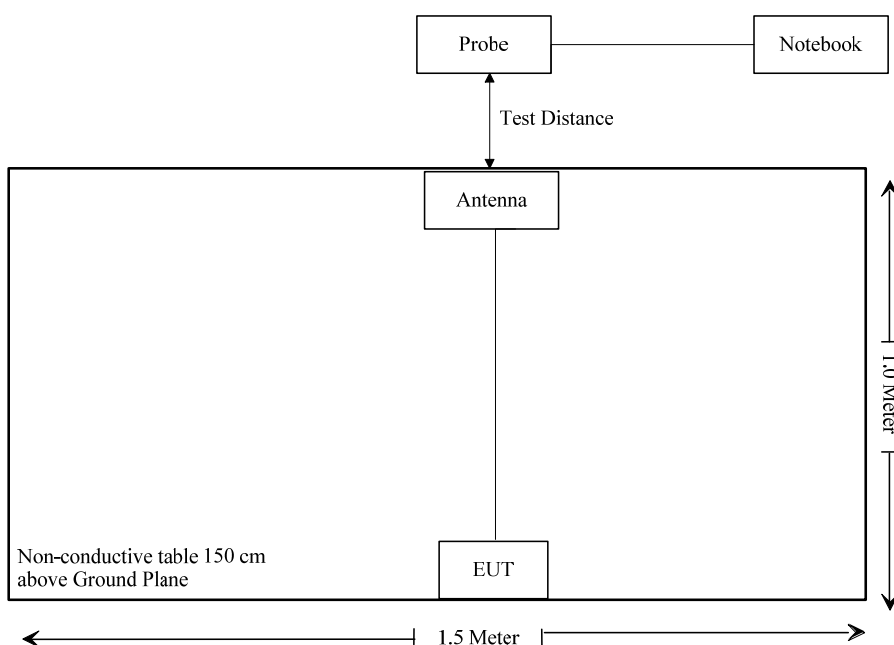
f = frequency in MHz;

* = Plane-wave equivalent power density;

Test Procedure

1. Place the EUT`s antenna was vertical polarization on the table.
2. The EUT was set to transmit at the frequency at maximum RF power.
3. The Distance between the test probe and the investigated EUT`s antenna equal to the distance be specified as safety distance in the user manual.
4. Power density measurements were taken at different heights of the probe from the ground (0.8 to 2.8 meters) while rotating versus azimuth (from 0° to 360°) the antenna.
5. adjusted the distance between the test probe and the tested antenna to the real safe distance, R_{real} , such that the measured highest power density in the “worst case” position was the same or slightly less than the test limit.
6. The measurement results of final measurements conducted at the chosen azimuth and different heights of the probe above the ground.

Block Diagram of Test Setup



Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Due Date
ETS-LINDGREN	Field Probe	HI-6005	00069461	2016-2-29	2019-2-28

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

Test Data**Environmental Conditions**

Temperature:	25.7 °C
Relative Humidity:	36 %
ATM Pressure:	100.9 kPa

The testing was performed by Vern Shen on 2018-10-18 .

Test Mode:VHF-FM(150.8125MHz)

Measuring Probe Height (cm)	Power Density (mW/cm ²)				
	Distance (20cm)	Distance (30cm)	Distance (50cm)	Distance (70cm)	Distance (100cm)
80	0.0030	0.0045	0.0023	0.0028	0.0029
90	0.0050	0.0050	0.0030	0.0030	0.0030
100	0.0070	0.0070	0.0050	0.0040	0.0039
110	0.0080	0.0090	0.0080	0.0050	0.0040
120	0.0100	0.0130	0.0130	0.0060	0.0050
130	0.0300	0.0250	0.0190	0.0080	0.0060
140	0.0330	0.0660	0.0300	0.0100	0.0070
150	0.1490	0.1300	0.0410	0.0130	0.0080
160	0.7280	0.1800	0.0510	0.0150	0.0090
170	0.5300	0.1700	0.0550	0.0790	0.0100
180	0.2600	0.1200	0.0600	0.0210	0.0110
190	0.1130	0.0940	0.0590	0.0240	0.0120
200	0.1500	0.1000	0.0640	0.0250	0.0130
210	0.3200	0.1300	0.0670	0.0250	0.0132
220	0.4290	0.1400	0.0636	0.0240	0.0130
230	0.3400	0.1280	0.0580	0.0220	0.0120
240	0.0860	0.0870	0.0460	0.0190	0.0110
250	0.0560	0.0560	0.0330	0.0160	0.0100
260	0.0450	0.0370	0.0230	0.0120	0.0080
270	0.0260	0.0220	0.0150	0.0090	0.0070
280	0.0150	0.0140	0.0100	0.0070	0.0060

Test Mode:VHF-4FSK(150.8125 MHz)

Measuring Probe Height (cm)	Power Density (mW/cm ²)				
	Distance (20cm)	Distance (30cm)	Distance (50cm)	Distance (70cm)	Distance (100cm)
80	0.0037	0.0031	0.0031	0.0018	0.0021
90	0.0055	0.0050	0.0040	0.0024	0.0022
100	0.0084	0.0074	0.0060	0.0027	0.0032
110	0.0130	0.0090	0.0070	0.0046	0.0039
120	0.0250	0.0130	0.0100	0.0045	0.0051
130	0.0450	0.0311	0.0170	0.0074	0.0060
140	0.1400	0.1324	0.0240	0.0090	0.0035
150	0.3500	0.1365	0.0330	0.0130	0.0080
160	0.5331	0.1602	0.0400	0.0150	0.0096
170	0.3700	0.1701	0.0450	0.0200	0.0110
180	0.1790	0.1200	0.0350	0.0230	0.0120
190	0.0672	0.0536	0.0490	0.0270	0.0130
200	0.1000	0.0887	0.0480	0.0280	0.0140
210	0.2400	0.1302	0.0380	0.0290	0.0150
220	0.3100	0.1410	0.0540	0.0160	0.0140
230	0.2450	0.1102	0.0510	0.0250	0.0130
240	0.1370	0.0870	0.0340	0.0230	0.0130
250	0.0764	0.0670	0.0240	0.0170	0.0100
260	0.0430	0.0340	0.0210	0.0130	0.0090
270	0.0250	0.0220	0.0040	0.0100	0.0080
280	0.0160	0.0130	0.0090	0.0050	0.0040

Test Result Summary:

Maximum Power Density (mW/cm ²)	0.728
Measured Conducted Output Power (W)	51.40
Maximum Rated Power Including Tolerance (W)	52
Scaled Maximum Power Density(50% duty Cycle) (mW/cm ²)	0.37
Limit(mW/cm ²)	1.0
Safety Distance (cm)	20
Result	Compliance

Test Setup Photo



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