



TESTING LABORATORY  
CERTIFICATE #4820.01



## MAXIMUM PERMISSIBLE EXPOSURE TEST REPORT

For

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**FCC ID: Y4GCS800D**

<b>Report Type:</b> Original Report	<b>Product Name:</b> Mobile Radio
<b>Report Number:</b> RDG190511001-20A	
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## FCC §1.1310 & FCC §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

### Product Description for Equipment under Test (EUT)

<b>EUT Name:</b>	Mobile Radio
<b>EUT Model:</b>	CS800D
<b>Operation Frequency:</b>	136-174 MHz 400-470 MHz
<b>Output Power( Conducted):</b>	136-174 MHz: High: 45W, Low: 25W 400-470 MHz: High:40W, Low: 25W
<b>Modulation Type:</b>	FM/4FSK
<b>Channel Spacing:</b>	12.5/25kHz
<b>Rated Input Voltage:</b>	DC13.8V from DC battery
<b>External Dimension:</b>	184mm(L)*159mm(W)*44mm(H)
<b>Serial Number:</b>	190511001
<b>EUT Received Date:</b>	2019/5/14

### Antenna Information:

Manufacturer	Antenna Type	Model No.	Length (cm)	Antenna Gain
Covalue	Monopole Antenna	Unknown	80	0 dBi@136-174MHz 0 dBi@400-470MHz

### 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 <sup>2</sup> )	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 <sup>2</sup> )*	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6

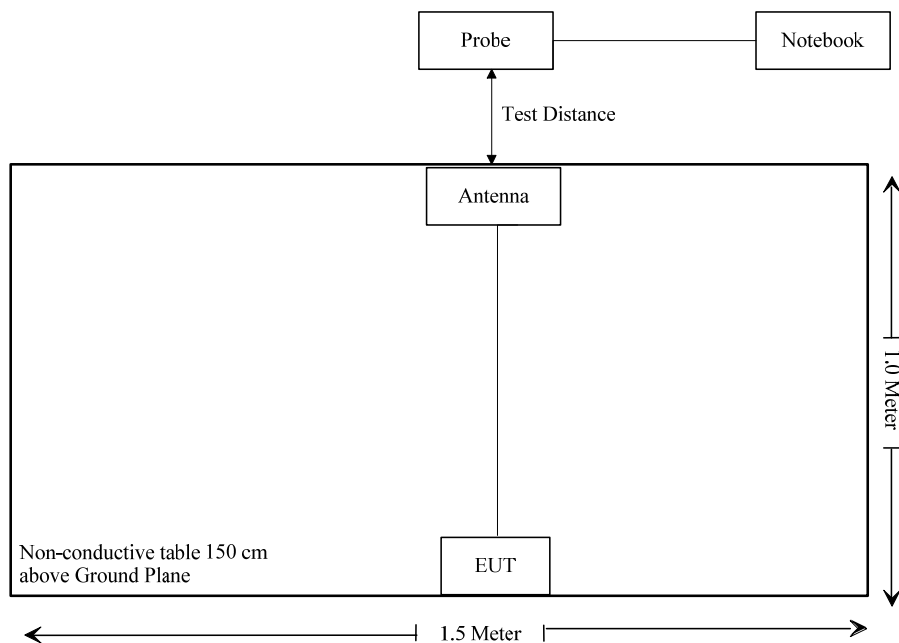
f = frequency in MHz;

\* = 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	2019-2-29	2021-2-28

\* **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**

<b>Temperature:</b>	25.7 °C
<b>Relative Humidity:</b>	36 %
<b>ATM Pressure:</b>	100.9 kPa

*The testing was performed by Vern Shen on 2019-06-18 .*

Test Mode:VHF-FM(150.7275MHz)

Measuring Probe Height (cm)	Power Density (mW/cm <sup>2</sup> )				
	Distance (20cm)	Distance (30cm)	Distance (50cm)	Distance (70cm)	Distance (100cm)
80	0.081	0.058	0.059	0.056	0.054
90	0.083	0.065	0.06	0.059	0.057
100	0.082	0.076	0.072	0.066	0.059
110	0.084	0.081	0.077	0.076	0.073
120	0.108	0.074	0.078	0.075	0.075
130	0.168	0.083	0.08	0.079	0.076
140	0.239	0.111	0.114	0.098	0.088
150	0.299	0.151	0.141	0.112	0.102
160	0.301	0.187	0.168	0.139	0.115
170	0.286	0.209	0.167	0.137	0.12
180	0.266	0.216	0.167	0.136	0.115
190	0.238	0.206	0.156	0.129	0.114
200	0.205	0.192	0.142	0.123	0.108
210	0.172	0.166	0.14	0.116	0.098
220	0.142	0.14	0.105	0.089	0.074
230	0.116	0.112	0.095	0.082	0.071
240	0.095	0.091	0.083	0.074	0.063
250	0.073	0.061	0.06	0.056	0.056
260	0.062	0.059	0.056	0.057	0.057
270	0.059	0.055	0.054	0.058	0.056
280	0.057	0.056	0.055	0.054	0.055

Test Mode: VHF-4FSK(150.7275MHz)

Measuring Probe Height (cm)	Power Density (mW/cm <sup>2</sup> )				
	Distance (20cm)	Distance (30cm)	Distance (50cm)	Distance (70cm)	Distance (100cm)
80	0.069	0.053	0.055	0.056	0.051
90	0.079	0.069	0.069	0.059	0.056
100	0.093	0.065	0.062	0.058	0.057
110	0.083	0.066	0.087	0.077	0.066
120	0.093	0.055	0.085	0.076	0.086
130	0.166	0.087	0.089	0.078	0.091
140	0.234	0.106	0.118	0.106	0.104
150	0.284	0.151	0.149	0.108	0.114
160	<b>0.309</b>	0.201	0.16	0.128	0.131
170	0.291	0.22	0.182	0.148	0.129
180	0.284	0.2	0.177	0.125	0.112
190	0.223	0.201	0.174	0.141	0.106
200	0.213	0.197	0.15	0.132	0.122
210	0.172	0.156	0.158	0.131	0.112
220	0.135	0.129	0.122	0.102	0.08
230	0.099	0.127	0.108	0.092	0.076
240	0.111	0.072	0.097	0.093	0.072
250	0.086	0.072	0.062	0.064	0.063
260	0.076	0.078	0.061	0.057	0.057
270	0.071	0.07	0.065	0.058	0.052
280	0.075	0.074	0.053	0.053	0.054

Test Mode:UHF-FM(453.2125MHz)

Measuring Probe Height (cm)	Power Density (mW/cm <sup>2</sup> )				
	Distance (20cm)	Distance (30cm)	Distance (50cm)	Distance (70cm)	Distance (100cm)
80	0.118	0.106	0.101	0.087	0.076
90	0.124	0.116	0.111	0.095	0.077
100	0.163	0.132	0.126	0.096	0.081
110	0.196	0.167	0.135	0.104	0.092
120	0.203	0.177	0.154	0.124	0.105
130	0.325	0.228	0.199	0.137	0.112
140	0.546	0.325	0.204	0.168	0.145
150	0.697	0.416	0.368	0.216	0.191
160	0.706	0.463	0.395	0.225	0.184
170	0.674	0.377	0.36	0.203	0.177
180	0.601	0.336	0.317	0.193	0.169
190	0.521	0.321	0.308	0.189	0.154
200	0.397	0.28	0.267	0.18	0.138
210	0.217	0.179	0.166	0.143	0.113
220	0.179	0.156	0.138	0.125	0.101
230	0.165	0.134	0.123	0.114	0.098
240	0.154	0.133	0.119	0.109	0.087
250	0.134	0.127	0.108	0.1	0.076
260	0.119	0.114	0.103	0.089	0.07
270	0.113	0.107	0.096	0.08	0.067
280	0.107	0.099	0.089	0.076	0.065

Test Mode:UHF-4FSK(453.2125MHz)

Measuring Probe Height (cm)	Power Density (mW/cm <sup>2</sup> )				
	Distance (20cm)	Distance (30cm)	Distance (50cm)	Distance (70cm)	Distance (100cm)
80	0.12	0.111	0.102	0.091	0.074
90	0.128	0.118	0.114	0.094	0.082
100	0.168	0.128	0.129	0.1	0.082
110	0.195	0.169	0.138	0.107	0.095
120	0.204	0.174	0.15	0.12	0.104
130	0.32	0.229	0.201	0.139	0.113
140	0.55	0.328	0.205	0.168	0.148
150	0.693	0.418	0.365	0.217	0.189
160	0.704	0.464	0.394	0.22	0.182
170	0.673	0.376	0.356	0.202	0.174
180	0.605	0.333	0.314	0.194	0.166
190	0.525	0.319	0.306	0.188	0.152
200	0.4	0.275	0.268	0.181	0.14
210	0.221	0.176	0.165	0.146	0.111
220	0.179	0.159	0.136	0.129	0.106
230	0.16	0.135	0.121	0.111	0.101
240	0.157	0.133	0.123	0.113	0.089
250	0.138	0.123	0.106	0.095	0.076
260	0.12	0.111	0.105	0.086	0.072
270	0.112	0.103	0.095	0.081	0.072
280	0.106	0.102	0.092	0.079	0.066

## Test Result Summary:

Bands	V Band (136-174 MHz)	U Band (400-470 MHz)
Maximum Power Density (mW/cm <sup>2</sup> )	0.309	0.706
Measured Conducted Output Power (W)	47.2	40.74
Maximum Rated Power Including Tolerance (W)	48	41
Scaled Maximum Power Density(50% duty Cycle) (mW/cm <sup>2</sup> )	0.16	0.36
Limit(mW/cm <sup>2</sup> )	1.0	1.33
Safety Distance (cm)	20	20
Result	Compliance	



## TEST SETUP PHOTO

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