



RF EXPOSURE REPORT

For

Alinco Incorporated, Electronics Division

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FCC ID: PH3-DR-B185TMKII

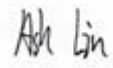
Report Type: Original Report	Product Name: VHF FM TRANSCEIVER
Report Number:	2507Y80731E-RF-03
Report Date:	2025-12-31
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REPORT REVISION HISTORY

Number of Revisions	Report No.	Version	Issue Date	Description
0	2507Y80731E-RF-03	R1V1	2025-12-31	Initial Release

GENERAL INFORMATION**Product Description for Equipment under Test (EUT)**

Product Name:	VHF FM TRANSCEIVER
Tested Model:	DR-B185TMKII
Multiple Model(s):	N/A
Trade Mark:	ALINCO
Power Supply:	DC 13.8V from vehicle system or DC source
EUT Received Status:	Good
<i>Note:</i> 1. The Maximum Antenna Gain was declared by manufacturer. 2. The EUT supplied by the applicant was received on 2025-10-10.	

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Xiamen) to collect test data is located on the Unit 102, No. 902 Meifeng South Road, Binhai West Avenue, Science and Technology Innovation Park, Torch High tech Zone Xiamen.

Bay Area Compliance Laboratories Corp. (Xiamen) Lab is accredited to ISO/IEC 17025 by A2LA (Certificate Number: 7134.01) and the lab has been recognized as the FCC accredited lab under the KDB 974614 D01, the FCC Designation No. : CN1384.

TEST EQUIPMENT LIST

Test Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Broadband Field Meter	narda	NBM-550	E-0696	2024/9/13	2027/9/12
E-Field probe	narda	EF 0391	D-1748	2024/9/13	2027/9/12

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

FCC§15.247 (i), §1.1307(b)(1) & §2.1091 – MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to FCC §1.1307(b)(1) & §2.1091, systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

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.

Calculated Formulary

Predication of MPE limit at a given distance

$S = PG/4\pi R^2$ = 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, the power gain factor, is normally numeric gain;

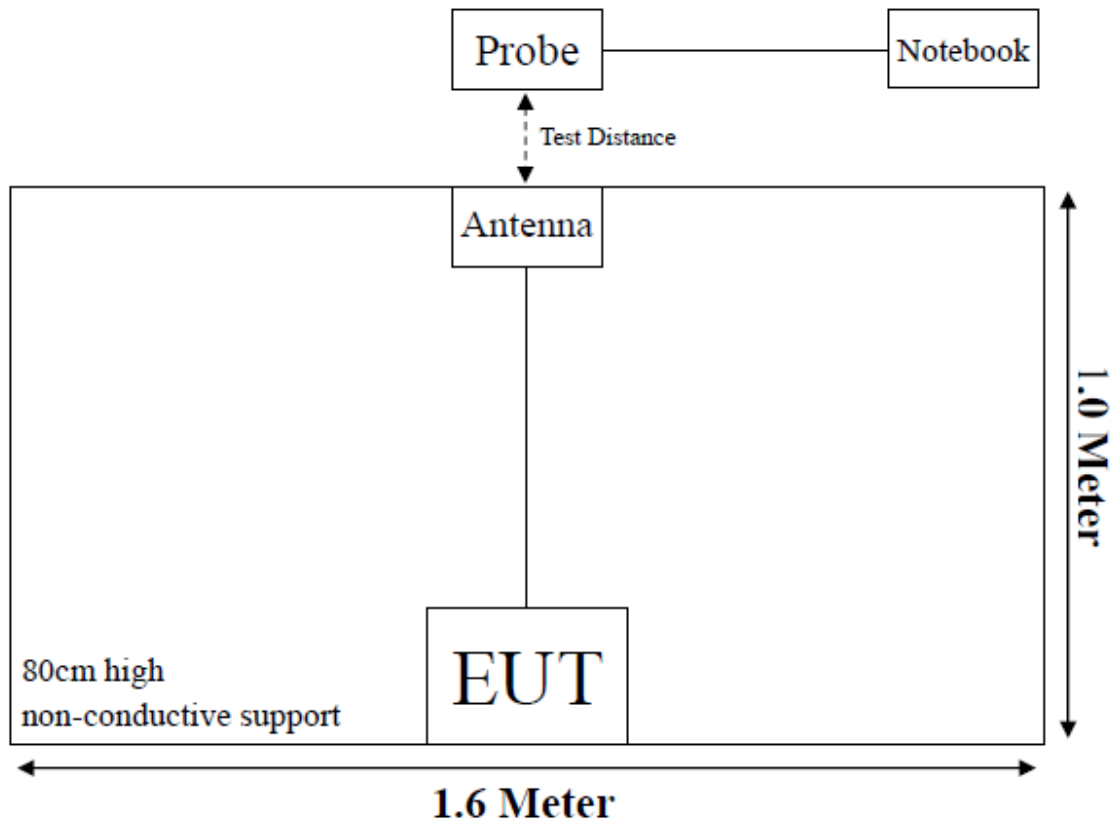
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

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

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

MPE 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 Data**

Test Mode:	Transmitting	Test Engineer:	Lucas Lin
Test Date:	2025-11-26~2025-11-27	Test Result:	Pass

Environment Conditions:					
Temperature: (°C)	22.4~22.5	Relative Humidity: (%)	46~49	ATM Pressure: (kPa)	100.1

Please refer to below table and plots:

For 144.0125MHz

Measuring Probe Height (cm)	Power Density(mW/cm ²)				
	50cm	60cm	70cm	80cm	90cm
80	0.045	0.031	0.022	0.013	0.011
90	0.062	0.053	0.043	0.034	0.031
100	0.078	0.064	0.047	0.035	0.036
110	0.086	0.071	0.050	0.048	0.045
120	0.097	0.079	0.054	0.042	0.047
130	0.137	0.104	0.082	0.067	0.051
140	0.245	0.147	0.125	0.103	0.087
150	0.301	0.221	0.179	0.132	0.106
160	0.346	0.293	0.217	0.154	0.125
170	0.374	0.299	0.267	0.189	0.135
180	0.351	0.285	0.241	0.191	0.128
190	0.273	0.233	0.195	0.142	0.127
200	0.189	0.165	0.148	0.114	0.102
210	0.164	0.139	0.115	0.101	0.087
220	0.211	0.177	0.156	0.134	0.112
230	0.253	0.218	0.179	0.154	0.133
240	0.288	0.241	0.219	0.184	0.157
250	0.205	0.165	0.143	0.129	0.101
260	0.172	0.158	0.134	0.112	0.098
270	0.132	0.111	0.092	0.084	0.086
280	0.084	0.064	0.051	0.043	0.046
290	0.054	0.035	0.029	0.022	0.018
300	0.031	0.024	0.014	0.011	0.013

Test Result Summary:

Maximum Power Density (mW/cm²)	0.374
Measured Conducted Output Power (W)	90
Maximum Rated Power Including Tolerance (W)	90
Scaled Maximum Power Density(50% duty Cycle) (mW/cm²)	0.187
Limit (mW/cm²)	0.200
Safety Distance (cm)	50
Result	Compliant

For 147.9875MHz

Measuring Probe Height (cm)	Power Density(mW/cm ²)				
	50cm	60cm	70cm	80cm	90cm
80	0.054	0.043	0.027	0.019	0.022
90	0.069	0.059	0.046	0.035	0.037
100	0.085	0.070	0.053	0.046	0.042
110	0.094	0.078	0.059	0.051	0.049
120	0.105	0.091	0.062	0.054	0.045
130	0.153	0.134	0.098	0.062	0.064
140	0.255	0.168	0.131	0.114	0.099
150	0.322	0.234	0.199	0.148	0.124
160	0.363	0.312	0.235	0.177	0.143
170	0.394	0.305	0.278	0.198	0.155
180	0.367	0.294	0.255	0.203	0.179
190	0.284	0.246	0.208	0.165	0.147
200	0.185	0.162	0.142	0.127	0.111
210	0.169	0.131	0.105	0.097	0.085
220	0.215	0.195	0.162	0.145	0.119
230	0.264	0.226	0.184	0.166	0.140
240	0.281	0.265	0.222	0.194	0.152
250	0.224	0.161	0.140	0.121	0.118
260	0.182	0.148	0.126	0.104	0.093
270	0.144	0.122	0.098	0.081	0.084
280	0.095	0.075	0.067	0.054	0.066
290	0.057	0.041	0.031	0.019	0.022
300	0.036	0.021	0.012	0.010	0.010

Test Result Summary:

Maximum Power Density (mW/cm²)	0.394
Measured Conducted Output Power (W)	90
Maximum Rated Power Including Tolerance (W)	90
Scaled Maximum Power Density(50% duty Cycle) (mW/cm²)	0.197
Limit (mW/cm²)	0.200
Safety Distance (cm)	50
Result	Compliant

For Bluetooth/BLE:

Mode	Frequency (MHz)	★Antenna Gain		★Tune-up Output Power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
BT	2402-2480	3.24	2.11	4.5	2.82	20	0.0012	1.0
BLE	2402-2480	3.24	2.11	4.0	2.51	20	0.0011	1.0

Result: Compliant.

The Stand-alone Maximum Permissible Exposure was compliant at the distance more than 20cm.

BT/BLE can't transmit simultaneously.

For Simultaneous transmission:

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

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

$$= 0.197/0.2 + 0.0012/1.0$$

$$= 0.99 \leq 1$$

Result: The device meet FCC MPE at 50 cm distance for General Population/Uncontrolled use.

EUT PHOTOGRAPHS

Please refer to the attachment 2507Y80731E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and 2507Y80731E-RF-INP EUT INTERNAL PHOTOGRAPHS.

Declarations

1. Bay Area Compliance Laboratories Corp. (Xiamen) is not responsible for authenticity of any information provided by the applicant. Information from the applicant that may affect test results are marked with an asterisk “★”.
2. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested.
3. Unless required by the rule provided by the applicant or product regulations, then decision rule in this report did not consider the uncertainty.
4. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor $k=2$ with the 95% confidence interval.
5. This report cannot be reproduced except in full, without prior written approval of Bay Area Compliance Laboratories Corp. (Xiamen).
6. This report is valid only with a valid digital signature. The digital signature may be available only under the adobe software above version 7.0.

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