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# OET Bulletin 65 (MPE) Test Report

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Report No.: AGC02X130604F7

**FCC ID** : PH3-DR438H  
**IC** : 3070C-DR438H  
**PRODUCT DESIGNATION** : UHF FM MOBILE TRANSCEIVER  
**BRAND NAME** : ALINCO  
**TEST MODEL** : DR-438  
**CLIENT** : Alinco, Inc. Electronics Division  
**DATE OF ISSUE** : July 03, 2013  
**STANDARD(S)** : OET Bulletin 65  
**REPORT VERSION** : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd



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### Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	July 02, 2013	Valid	Original Report

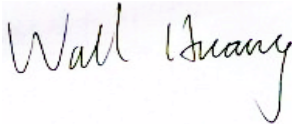
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### 1. TEST RESULT CERTIFICATION

<b>Applicant Name:</b>	Alinco, Inc. Electronics Division
<b>Address:</b>	Yodoyabashi Dai-Bldg 13F, 4-4-9 Koraibashi, Chuo-Ku, Osaka 541-0043, Japan
<b>Manufacturer Name:</b>	Alinco, Inc. Electronics Division
<b>Address:</b>	Yodoyabashi Dai-Bldg 13F, 4-4-9 Koraibashi, Chuo-Ku, Osaka 541-0043, Japan
<b>Product Designation</b>	UHF FM MOBILE TRANSCEIVER
<b>Brand Name</b>	ALINCO
<b>Test Model</b>	DR-438
<b>Hardware Version:</b>	V1.0
<b>Software Version:</b>	V1.0
<b>Test Standard</b>	OET Bulletin 65
<b>File Number:</b>	AGC02X130604F7
<b>Date of Test:</b>	Jun.22, 2013 to Jun.28, 2013

We (AGC), Attestation of Global Compliance (Shenzhen) Co., Ltd. for compliance with the requirements set forth in the FCC Standard OET Bulletin 65 (Edition 97-01) Supplement C (Edition 01-01). The results of testing in this report apply to the product/system which was tested only.

Tested by   
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Checked By   
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Authorized By   
\_\_\_\_\_  
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## 2. TECHNICAL INFORMATION

Note: the following data is based on the information by the applicant.

### EUT DESCRIPTION

The EUT is a Two-way Radio designed for voice communication. It is designed by way of utilizing the FM modulation achieves the system operating.

A major technical description of EUT is described as following:

Communication Type	Voice / Tone only
Modulation	FM
Emission Type	11K $\phi$ F3E
Emission Bandwidth	10.14KHz
Peak Frequency Deviation	1.89KHz
Audio Frequency Response	10.94dB
Maximum Transmitter Power	45.96dBm(Max)
Output power Modification	40W (It was fixed by the manufacturer, any individual can't arbitrarily change it)
Antenna Designation	Detachable
Power Supply	DC 13.8V by DC source
Limiting Voltage	DC 11.73V
Operation Frequency Range and Channel	Frequency Range: 400.000MHz to 470.000MHz Channel Separation: 12.5KHz
	Top Channel: 400.025MHz Centre Channel: 435.000MHz Bottom Channel:479.975MHz
Frequency Tolerance	0.232ppm

### **3. RF EXPOSURE MEASUREMENT**

#### **3.1 INTRODUCTION**

Human exposure to RF emissions from mobile devices (47 CFR §2.1091) may be evaluated based on the MPE limits adopted by the FCC for electric and magnetic field strength and/or power density, as appropriate, since exposures are assumed to occur at distances of 20 cm or more from persons.

The 1992 ANSI/IEEE standard (See Listed limit table) specifies a minimum separation distance of 20 cm for performing reliable field measurements to determine adherence to MPE limits.

If the minimum separation distance between a transmitter and nearby persons is more than 20 cm under normal operating conditions, compliance with MPE limits may be determined at such distance from the transmitter. When applicable, operation instructions and prominent warning labels may be used to alert the exposed persons to maintain a specified distance from the transmitter or to limit their exposure durations and usage conditions to ensure compliance.

**3.2 FCC LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)**

**LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE**

Frequency Range (MHz)	E-field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (Minutes)
0.3 -- 1.34	614	1.63	(100)*	30
1.34 -- 30	824/f	2.19/f	(180/f <sup>2</sup> )*	30
30 -- 300	27.5	0.073	0.2	30
300 -- 1500	--	--	f/1500	30
1500 -- 100,000	--	--	1.0	30

\*Note:

1. f= Frequency in MHz \* Plane-wave Equivalent Power Density
2. The averaging time for General Population/Uncontrolled exposure to fixed transmitters is not applicable for mobile and portable transmitters. See 47 CFR §§2.1091 and 2.1093 on source-based time-averaging requirement for mobile and portable transmitters.

#### **4. CLASSIFICATION OF THE ASSESSMENT METHODS**

According to user manual, The antenna of the product, under normal use condition is at least 0.2m away from the body of the user. Warning statement to the user for keeping at least 1m separation distance and the prohibition of operating to a person has been printed on the user's manual. So, this product under normal use is located on electromagnetic far field between the human body.

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

Where:

S=power density

P=power input to antenna

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

#### **5. EUT OPERATION CONDITION**

Make the EUT to transmit at lowest, middle and highest channel individually.



## 6. TEST RESULTS

Note: report the worst result in this part

Antenna Gain=0dBi (Numeric 1.0),  $\pi=3.141$ , Duty cycle=50%

Frequency	Output Power	Output Power	Correct Power	Power Density	Power Density Limit	Result
MHz	dBm	mW	mW	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	Pass/Fail
400.025	45.96	39445	19722	0.17	0.27	Pass

**Note:** The output power is refer to AGC02X130604F2.

Correct Power=Output Power\*Duty cycle.

According to the user manual, the minimum separate distance which used for MPE calculate is 1m.