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## FCC PART 95 CLASS II PERMISSIVE CHANGE FRS/GMRS TRANSCEIVER TEST REPORT

APPLICANT	COBRA ELECTRONICS CORPORATION
	6500 WEST CORTLAND STREET CHICAGO IL 60707 USA
FCC ID	BBOCX700
IC CERT #	906B-CXR700
PRODUCT DESCRIPTION	FRS/GMRS TRANSCEIVER
DATE SAMPLE RECEIVED	1/7/2009
DATE TESTED	1/8/2009
TESTED BY	Nam Nguyen
APPROVED BY	Mario de Aranzeta
TIMCO REPORT NO.	35UT9TestReport.doc
TEST RESULTS	<input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL

**THE ATTACHED REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN APPROVAL OF TIMCO ENGINEERING, INC.**



Certificate # 0955-01

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**STATEMENT OF CONTINUED COMPLIANCE**

The test results relate only to the items tested.

**Summary**

The device under test does:

- fulfill the requirements as identified in this test report
- not fulfill the requirements as identified in this test report

This equipment has been tested in accordance with the standards identified in this test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report.

No modifications were made to the equipment during testing in order to demonstrate continued compliance with these standards.

I attest that measurements were made, by me, or under my supervision, at TIMCO ENGINEERING, INC. 849 N.W. State Road 45, Newberry, Florida 32669.

**Authorized Signatory Name:** Mario de Aranzeta C.E.T.



**Signature:**

**Date:** 1/8/2009

**GENERAL INFORMATION**

**DUT Specification**

<b>DUT Description</b>	FRS/GMRS TRANSCEIVER
<b>FCC ID</b>	BBOCX700
<b>IC Cert #</b>	906B-CXR700
<b>Model Number</b>	
<b>Operating Frequency</b>	462.5500-462.7250, 462.5625-467.7125
<b>No. of Channels</b>	22
<b>Type of Emission</b>	10K5F3E
<b>Modulation</b>	FM
<b>DUT Power Source</b>	<input type="checkbox"/> 110-120Vac/50- 60Hz
	<input type="checkbox"/> DC Power
	<input checked="" type="checkbox"/> Battery Operated Exclusively
<b>Test Item</b>	<input type="checkbox"/> Prototype
	<input checked="" type="checkbox"/> Pre-Production
	<input type="checkbox"/> Production
<b>Type of Equipment</b>	<input type="checkbox"/> Fixed
	<input type="checkbox"/> Mobile
	<input checked="" type="checkbox"/> Portable
<b>Antenna</b>	Fixed (not removable)
<b>Test Facility</b>	Timco Engineering Inc. located at 849 NW State Road 45 Newberry, FL 32669 USA.
<b>Modifications</b>	None
<b>Test Exercise</b>	The DUT was placed in continuous transmit mode of operation
<b>Applicable Standards</b>	ANSI/TIA 603-C:2004, ANSI 63.4:2003 FCC CFR 47 Part 2 and Part 95,
<b>Laboratory Environmental Conditions</b>	TEMPERATURE: 76 F HUMIDY: 55%

Applicant: COBRA ELECTRONICS CORPORATION  
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 Report: Y:\C\COBRA\35UT9\35UT9TestReportRev.doc

## TEST PROCEDURES

**Power Output:** RF power was conducted per ANSI/TIA 603-C:2004 using the substitution method.

**Radiation Interference:** The test procedure used was ANSI/TIA 603-C:2004 using an Agilent spectrum receiver with pre-selector. The bandwidth (RBW) of the spectrum receiver was 100 kHz up to 1 GHz and 1 MHz above 1 GHz with an appropriate sweep speed. The VBW above 1 GHz was 3 MHz. The analyzer was calibrated in dB above a micro volt at the output of the antenna.

**RF POWER OUTPUT**

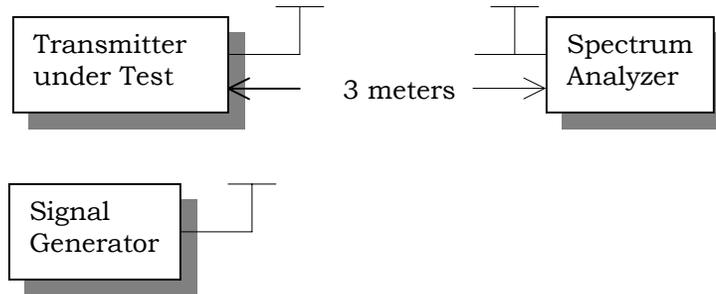
**Rule Part No.:** 2.1033(c)(6)(7), 2.1046(a), Part 95, RSS-210

**Requirements:** Power output shall not exceed 0.50 Watts effective radiated power for the FRS channels. There can be no provisions for increasing the power or varying the power. No GMRS channel, under any condition of modulation, shall exceed:

1. 50W Carrier power (average TP during one modulated RF cycle) when transmitting emissions type A1D, F1D, G1D, A3E, F3E, or G3E.
2. 50W peak envelope TP when transmitting emission type H1D, J1D, R1D, H3E, J3E, or R3E.

**Method of Measurement:** RF power is measured as ERP as the antenna is permanently attached. The substitution method was used. With a nominal battery voltage, and the transmitter properly adjusted the RF output measures:

**Test Setup Diagram:**



**Test Data:**

OUTPUT POWER: GMRS: .61 W ERP  
FRS: .22 W ERP

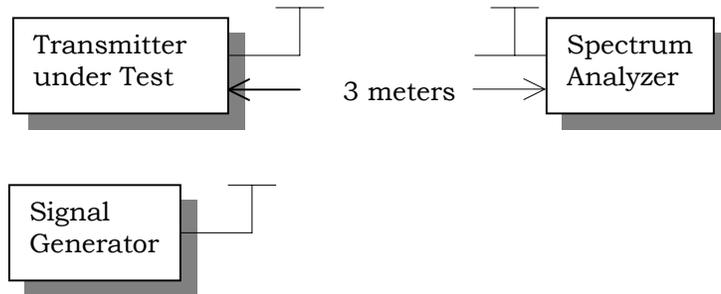
**FIELD STRENGTH OF SPURIOUS EMISSIONS - TX**

**Rule Parts. No.:** Part 2.1053  
95.635(b)(7)

**Requirements:** GMRS:  $43 + 10\log(.61) = 40.85$  dB

**METHOD OF MEASUREMENT:** The tabulated data shows the results of the radiated field strength emissions test. The spectrum was scanned from 30 MHz to at least the tenth harmonic of the fundamental. This test was conducted per ANSI/TIA 603-C:2004 using the substitution method. Measurements were made at the test site of TIMCO ENGINEERING, INC. located at 849 NW State Road 45, Newberry, FL 32669.

**Test Setup Diagram:**



**Test Data (GMRS):**

TF	EF	Ant Polarity	dB below carrier
HIGH POWER			
462.73	925.45	V	47.65
	1388.18	V	54.60
	1850.90	V	53.14
	2313.63	V	74.80
	2776.35	V	69.13
	3239.08	V	70.41
	3701.80	V	77.65
	4164.53	V	60.14
	4627.25	V	70.90

**Rule Parts. No.:** Part 2.1053  
95.635(b)(7)

Requirements: FRS :  $43 + 10\log(.22) = 36.42$  dB

Test Data (FRS):

TF	EF	Ant Polarity	dB below carrier
467.56	935.13	V	47.95
	1402.69	V	46.22
	1870.25	V	47.51
	2337.81	V	69.70
	2805.38	V	72.19
	3272.94	V	64.77
	3740.50	V	71.53
	4208.06	V	60.75
	4675.63	V	61.34

## TEST EQUIPMENT LIST

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
3/10-Meter OATS	TEI	N/A	N/A	Listed 3/20/07	3/19/10
3-Meter OATS	TEI	N/A	N/A	Listed 1/11/06	1/10/09
3-Meter Semi-Anechoic Chamber	Panashield	N/A	N/A	Listed 5/11/07	5/11/10
AC Voltmeter	HP	400FL	2213A14261	CAL 5/14/07	5/14/09
Analyzer Tan Tower Quasi-Peak Adapter	HP	85650A	3303A01690	CAL 11/30/07	11/30/09
Analyzer Tan Tower RF Preselector	HP	85685A	3221A01400	CAL 11/30/07	11/30/09
Analyzer Tan Tower Spectrum Analyzer	HP	8566B Opt 462	3138A07786 3144A20661	CAL 11/30/07	11/30/09
Analyzer Tan Tower Preamplifier	HP	8449B-H02	3008A00372	CAL 11/30/07	11/30/09
Coaxial Cable #64	Semflex Inc.	60637	Timco #64	CHAR 3/30/07	3/30/09
Antenna: Dipole Kit	Electro-Metrics	TDA-30/1-4	152	CAL 3/3/06	3/3/09
Antenna: Dipole Kit	Electro-Metrics	TDA-30/1-4	153	CHAR 4/5/06	4/5/09
Frequency Counter	HP	5385A	2730A03025	CAL 7/6/07	7/6/09
Hygro-Thermometer	Extech	445703	0602	CAL 11/15/07	11/15/09
Antenna: Log-Periodic	Electro-Metrics	LPA-30	409	CAL 7/18/07	7/18/09
Measuring Tape-7.5M	Kraftixx	7.5M PROFI		CHAR 11/13/07	11/13/09
Modulation Analyzer	HP	8901A	3435A06868	CAL 5/9/07	5/9/09
Digital Multimeter	Fluke	FLUKE-77-3	79510405	CAL 5/14/07	5/14/09
System One	Audio Precision	System One	SYS1-45868	CHAR 2/27/08	2/27/10
Temperature Chamber	Tenney Engineering	TTRC	11717-7	CHAR 4/25/08	4/25/10

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