

## MEASUREMENT AND TECHNICAL REPORT

DIRECTED ELECTRONICS INCORPORATED  
 1 Viper Way  
 Vista, CA 92083

**DATE: 01 August 2005**

<b>This Report Concerns:</b>	Original Grant: <input checked="" type="checkbox"/>	Class II Change: <input type="checkbox"/>
<b>Equipment Type:</b>	Car Alarm Remote Transmitter T42, Model T42	
<b>Deferred grant requested per 47 CFR 0.457(d)(1)(ii)?</b>	Yes: <input type="checkbox"/> <b>Defer until:</b> <input type="text"/>	No: <input checked="" type="checkbox"/>
<b>Company Name agrees to notify the Commission by:</b> of the intended date of announcement of the product so that the grant can be issued on that date.	<input type="text" value="N/A"/>	
<b>Transition Rules Request per 15.37?</b>	Yes: <input type="checkbox"/>	No: <input checked="" type="checkbox"/>
(*) FCC Part 15, Paragraph(s) <b>15.205, 15.231(a), 15.231(b), and 15.231(c)</b>		
<b>Report Prepared by:</b>	<b>TÜV AMERICA, INC</b> 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 Fax: 858 546 0364	

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**1.0 GENERAL INFORMATION**

**1.1 Product Description**

None

**1.2 Related Submittal Grant**

None

**1.3 Tested System Details**

The FCC ID's for all equipment, plus descriptions of all cables used in the tested system are:

None

**1.4 Test Methodology**

Purpose of Test: To demonstrate compliance with the following tests.

Test Summary					
Test Description	Paragraph Number	Summary of Results			Pass/Fail
		Low Channel	Mid Channel	High Channel	
Deactivation	15.231(a)		110 mS		Pass
Radiated Spurious Emissions	15.231(b) / 15.205		-2.8 dB @ 433.86 MHz		Pass
Bandwidth	15.231(c)		378 kHz		Pass

Testing was performed according to the procedures in FCC/ANSI C63.4 and CSA 108.8-M1983.

**1.5 Test Facility**

The open area test site and conducted measurement data were tested by:

TÜV AMERICA, INC  
 10040 Mesa Rim Road  
 San Diego, CA 92121-2912  
 Phone: 858 678 1400  
 Fax: 858 546 0364

The Test Site Data and performance comply with ANSI C63.4 and are registered with the FCC, 7435 Oakland Mills Road, Columbia Maryland 21046. All Measurement Data is acquired according to the content of FCC Measurement Procedure and ANSI C63.4, unless supplemented with additional requirements as noted in the test report.

**2.0 SYSTEM TEST CONFIGURATION**

**2.1 Justification**

The EUT was initially tested for FCC emissions in the following configuration:

See Test Setup Photos Exhibit

**2.2 EUT Exercise Software**

None

**2.3 Special Accessories**

None

**2.4 Equipment Modifications**

None

**2.5 Configuration of Test System**

See Test Setup Photos Exhibit

**3.0 DEACTIVATION EQUIPMENT/DATA**

**Test Conditions: DEACTIVATION: FCC Part 15.231(a)**

**The following measurements were performed at the San Diego Testing Facility:**

- Test not applicable

■ - SR 2, Shielded Room, 12' x 24' x 10', Metal Chamber

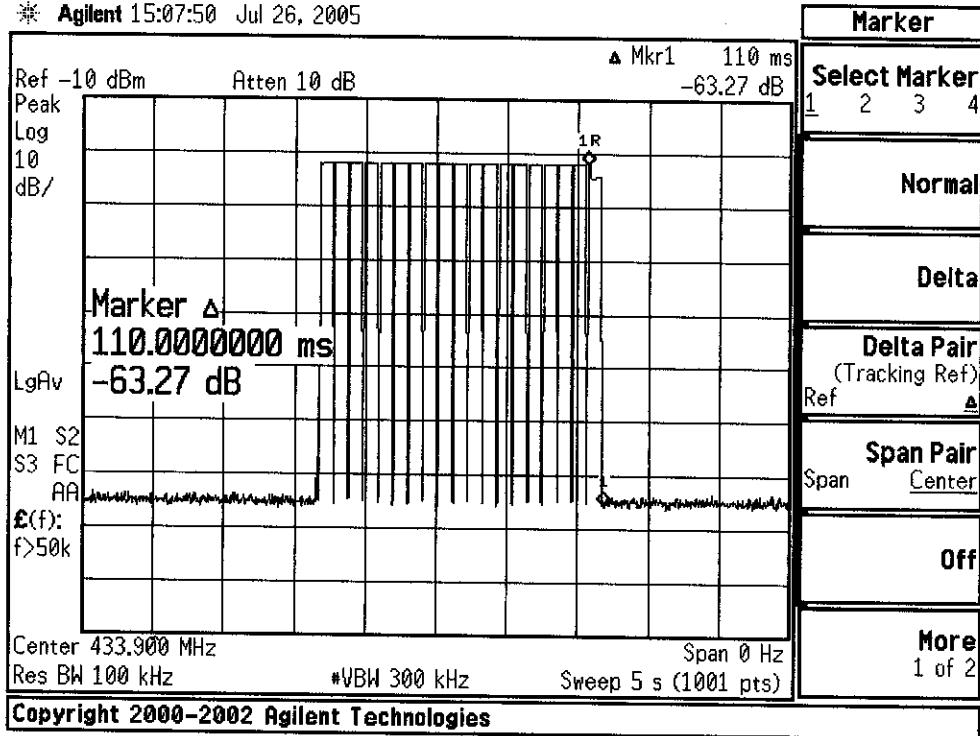
**Test Equipment Used:**

<b>Model No.</b>	<b>Prop. No.</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Serial No.</b>	<b>Date Cal'ed</b>
E3611A	6455	DC Power Supply	Hewlett Packard	KR73012529	VBU*
E4446A	6823	Spectrum Analyzer	Agilent	US44300486	04/05
3478A	6792	Digital Multimeter	Hewlett Packard	2911A70964	06/05

**Remarks:** One year calibration cycle for all test equipment and sites. (\*) Verified Before Use.

**FCC Part 15.231(a)**

\* Agilent 15:07:50 Jul 26, 2005



**Deactivation time from release 110 mS**

**Limit 5 S**

**4.0 RADIATED SPURIOUS EMISSIONS EQUIPMENT/DATA**

**Test Conditions: RADIATED SPURIOUS EMISSIONS: FCC Part 15.231(b) and 15.205**

**The following measurements were performed at the San Diego Testing Facility:**

- Test not applicable

■ - Roof (Small Open Area Test Site)

**Test Equipment Used:**

<b>Model No.</b>	<b>Prop. No.</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Serial No.</b>	<b>Date Cal'ed</b>
CBL6111	460	Bilog Antenna	Chase Electronics	1013	VBU*
3115	798	Double Ridged Waveguide Antenna	EMCO	9908-5927	06/05
E4440A	6814	Spectrum Analyzer	Hewlett Packard	MY42510441	12/04
8566B	744	Spectrum Analyzer	Hewlett Packard	2618A02913	02/05
3146	6641	Log Periodic Antenna	EMCO	106X	06/05
E3611A	6455	DC Power Supply	Hewlett Packard	KR73012529	VBU*
3478A	6792	Digital Multimeter	Hewlett Packard	2911A70964	06/05

**Remarks:** One year calibration cycle for all test equipment and sites. (\*) Verified Before Use.

REPORT No: SC503188 TESTER: Harry Ward SPEC: FCC Part 15 para 15.231(b)  
 CUSTOMER: Directed TEST DIST: 3 Meters  
 E U T: T42 Transmitter TEST SITE: Roof  
 EUT MODE: Transmit BICONICAL: 491  
 DATE: July 26, 2005 LOG: 243  
 NOTES: Duty Cycle= 52% OTHER: NONE  
 above 1GHz: RBW & VBW 1 MHz for Pk; AVG = PK - 20LOG(Duty Cycle)  
 below 1GHz: RBW & VBW 100 kHz for Pk; AVG = PK - 20LOG(Duty Cycle)  
 CF = Antenna Factor + Cable Loss - Preampifier Gain + Preselector Loss

v\_beta231

FREQ (MHz)	VERT. (dBuv)		HORIZ (dBuv)		CF (dB/m)	MAX LEVEL (dBuV/m)		SPEC LIMIT (dBuV/m)		MARGIN (dB)		EUT Rotation	Antenna Height
	pk	DCav	pk	DCav		pk	av	pk	av	pk	av		
433.860	1.0	-4.7	66.8	61.1	16.9	83.7	78.0	100.8	80.8	-17.1	-2.8		
867.720	1.0	-4.7	29.1	23.4	23.5	52.6	46.9	80.8	60.8	-28.2	-13.9		
1301.580	1.0	-4.7	39.9	34.2	2.8	42.7	37.0	80.8	60.8	-38.2	-23.8		
1735.440	1.0	-4.7	39.7	34.0	3.2	42.9	37.3	80.8	60.8	-37.9	-23.6		
2169.300	1.0	-4.7	39.9	34.2	3.7	43.6	37.9	80.8	60.8	-37.3	-22.9		
2603.160	1.0	-4.7	39.4	33.7	4.1	43.5	37.9	80.8	60.8	-37.3	-23.0		
3037.020	1.0	-4.7	40.3	34.6	4.8	45.1	39.4	80.8	60.8	-35.8	-21.5		
3470.880	1.0	-4.7	38.9	33.2	5.4	44.3	38.6	80.8	60.8	-36.6	-22.2		
3904.740	1.0	-4.7	39.4	33.7	5.8	45.2	39.5	80.8	60.8	-35.6	-21.3		
4338.600	1.0	-4.7	40.3	34.6	6.0	46.3	40.6	80.8	60.8	-34.6	-20.2		



**5.0 BANDWIDTH EQUIPMENT/DATA**

**Test Conditions: BANDWIDTH: FCC Part 15.231(c)**

**The following measurements were performed at the San Diego Testing Facility:**

- Test not applicable

■ - SR 2, Shielded Room, 12' x 24' x 10', Metal Chamber

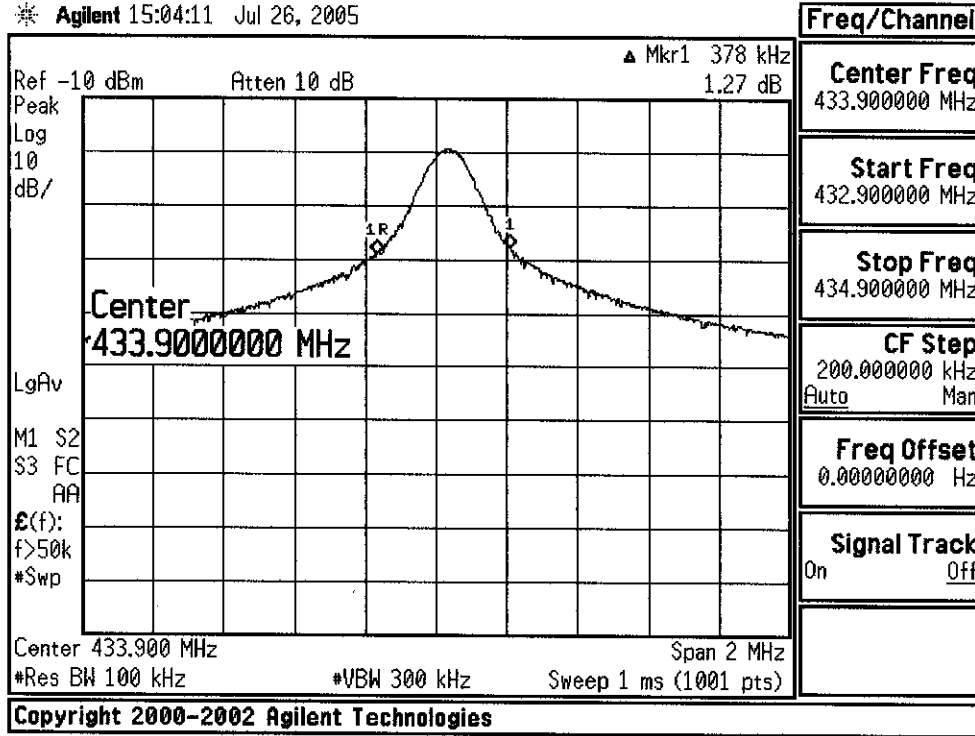
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3478A	6792	Digital Multimeter	Hewlett Packard	2911A70964	06/05

**Remarks:** One year calibration cycle for all test equipment and sites. (\*) Verified Before Use.

**FCC Part 15.231(c)**

\* Agilent 15:04:11 Jul 26, 2005



20 dB bandwidth 378 kHz

Limit ≤1.08 MHz

**6.0 ATTESTATION STATEMENT**

**GENERAL REMARKS:**

**SUMMARY:**

All tests were performed per CFR 47, Part(s) 15.205, 15.231(a), 15.231(b), and 15.231(c)

■ - Performed

The Equipment Under Test

■ - **Fulfills** the requirements of CFR 47, Part(s) 15.205, 15.231(a), 15.231(b), and 15.231(c)

Testing Start Date: 26 July 2005

Testing End Date: 29 July 2005

**- TÜV AMERICA, INC. -**

Reviewing Engineer:



David Gray  
(EMC Engineer In Charge)

Test Engineer:



Harry Ward  
(Bluetooth/Radio Product Manager)