

MEASUREMENT AND TECHNICAL REPORT

DIRECTED ELECTRONICS INCORPORATED
 1 Viper Way
 Vista, CA 92083

DATE: 03 November 2004

This Report Concerns:	Original Grant: <input checked="" type="checkbox"/>	Class II Change: <input type="checkbox"/>
Equipment Type:	471A Motion Activated Transmitter	
Deferred grant requested per 47 CFR 0.457(d)(1)(ii)?	Yes: <input type="checkbox"/> Defer until: <input type="text"/>	No: <input checked="" type="checkbox"/>
Company Name agrees to notify the Commission by: 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"/>	
Transition Rules Request per 15.37?	Yes: <input type="checkbox"/>	No: <input checked="" type="checkbox"/>
(*) FCC Part 15, Paragraph(s) 15.231(a), 15.231(b), and 15.231(c)		
Report Prepared by:	TÜV AMERICA, INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 Fax: 858 546 0364	

TABLE OF CONTENTS

	Pages
1.0 GENERAL INFORMATION	<u>3</u>
1.1 Product Description	<u>3</u>
1.2 Related Submittal Grant	<u>3</u>
1.3 Tested System Details	<u>3</u>
1.4 Test Methodology	<u>3</u>
1.5 Test Facility	<u>3</u>
2.0 SYSTEM TEST CONFIGURATION	<u>4</u>
2.1 Justification	<u>4</u>
2.2 EUT Exercise Software	<u>4</u>
2.3 Special Accessories	<u>4</u>
2.4 Equipment Modifications	<u>4</u>
2.5 Configuration of Test System	<u>4</u>
3.0 DEACTIVATION EQUIPMENT/DATA	
FIELD STRENGTH OF EMISSIONS, DUTY CYCLE EQUIPMENT/DATA	
EMISSION BANDWIDTH EQUIPMENT/DATA	<u>5 – 13</u>
4.0 ATTESTATION STATEMENT	<u>14</u>

1.0 GENERAL INFORMATION

1.1 Product Description

471A Motion Activated Transmitter

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	FCC CFR 47#	PASS/FAIL
Deactivation	15.231(a)	Pass
Field Strength of Emissions, Duty Cycle	15.231(b)	Pass
Emission Bandwidth	15.231(c)	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 Test Conditions: DEACTIVATION: FCC Part 15.231(a)
 FIELD STRENGTH OF EMISSIONS, DUTY CYCLE: FCC Part 15.231(b)
 EMISSIONS BANDWIDTH: FCC Part 15.231(c)**

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

- Test not applicable

- - Roof (Small Open Area Test Site)
- - SR-3, Shielded Room, 12' x 20' x 8', Metal Chamber

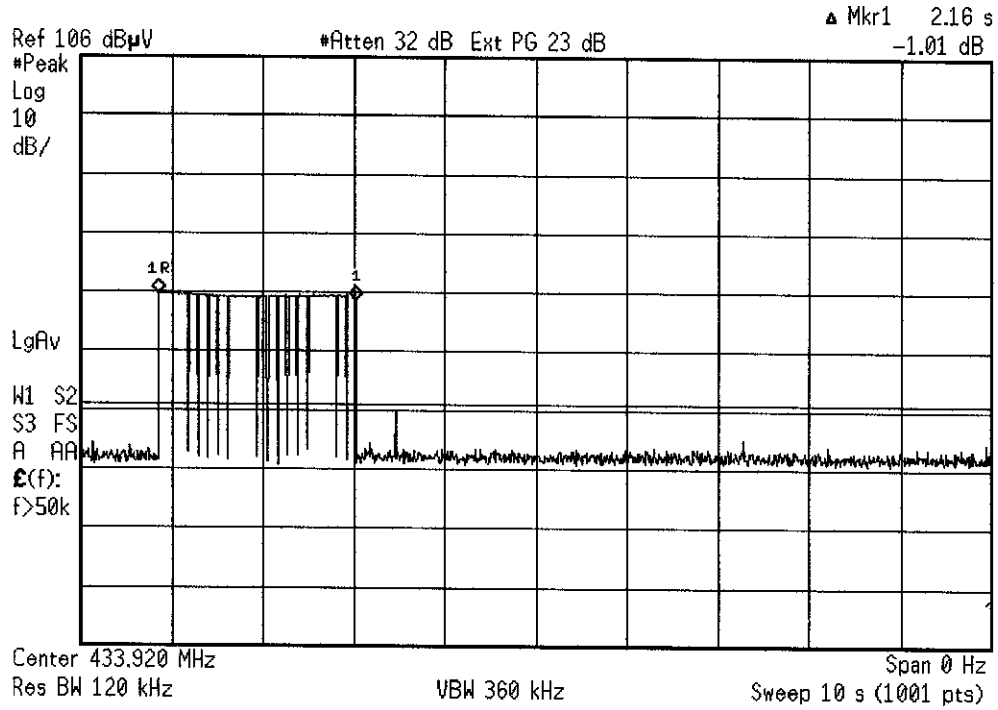
Test Equipment Used:

Model No.	Prop. No.	Description	Manufacturer	Serial No.	Date Cal'ed
3115	251	Double Ridge Guide Antenna	EMCO	2495	01/04
E4440A	6814	Spectrum Analyzer	Agilent	MY42510441	08/04
87405A	6501	Pre-amplifier	Hewlett Packard	3207A00276	VBU*
CBL6111	6521	Bilog Antenna	Chase Electronics	1013	VBU*
3146	6670	Log Periodic Antenna	EMCO	1063	07/04
3115	6679	Double Ridge Guide Antenna	EMCO	--	VBU*
8566B	744	Spectrum Analyzer	Hewlett Packard	--	01/04
--	6786	Preamplifier	Miteq	--	VBU*

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

FCC Part 15.231(a): Deactivation (Manual Push-Button Mode)

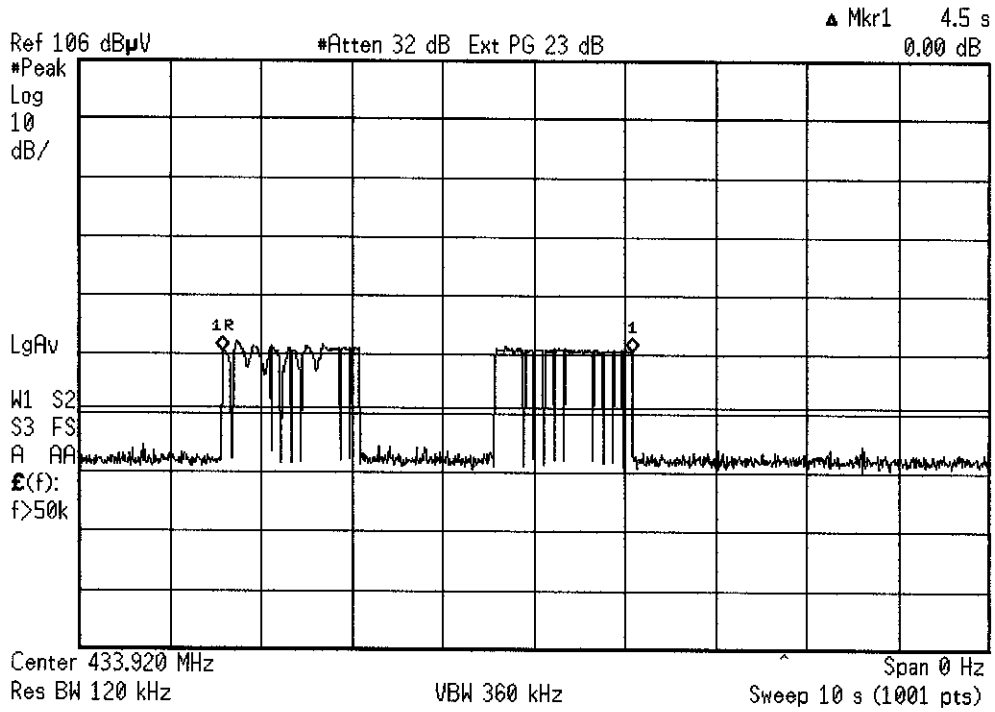
* Agilent 19:31:43 Oct 26, 2004



No activity noted after deactivation.

FCC Part 15.231(a): Deactivation (Manual Push-Button Mode)

Agilent 19:34:33 Oct 26, 2004



No activity noted after deactivation.

REPORT No: SC404945 TESTER: Jim Owen SPEC: FCC Part 15 para 15.231(b)
 CUSTOMER: Directed Electronics TEST DIST: 3 Meters
 EUT: 471A Motion Activated Transmitter TEST SITE: Roof
 EUT MODE: Transmitting Continuous BICONICAL: N/A
 DATE: October 27, 2004 LOG: 244
 NOTES: Duty Cycle= 56% OTHER: 251
 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 - Preamp/Filter Gain + Preselector Loss

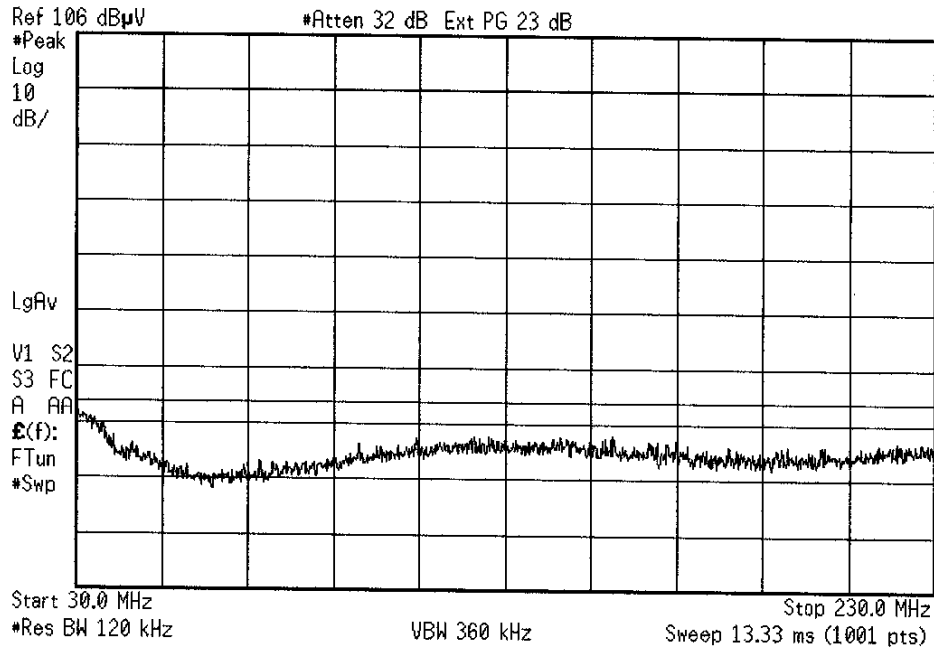
v.belaz31

FREQ (MHz)	VERT. (dBuV)		HORZ (dBuV)		CF (dB/m)	MAX LEVEL (dBuV/m)		SPEC LIMIT (dBuV/m)		MARGIN (dB)		EUT Rotation	Antenna Height	Notes
	pk	DCav	pk	DCav		pk	av	pk	av	pk	av			
433.920	49.8	44.8	68.0	63.0	16.4	84.4	79.3	100.8	80.8	-16.4	-1.5	135	1	
867.840	34.7	29.7	42.1	37.1	22.7	64.8	59.8	80.8	60.8	-16.0	-1.0	204	1	
1301.760	60.2	55.2	60.3	55.3	-11.1	49.2	44.2	74.0	54.0	-24.8	-9.8	267	1	
1735.680	70.7	65.7	69.4	64.4	-7.9	62.8	57.8	80.8	60.8	-18.0	-3.1	266	1	
2169.600	45.0	40.0	43.7	38.7	-5.2	39.8	34.8	80.8	60.8	-41.0	-26.0	266	1	
2603.600	39.6	34.6	39.9	34.9	-3.3	36.6	31.6	80.8	60.8	-44.2	-29.3			ambient
3037.440	38.3	33.3	38.3	33.3	-2.0	36.3	31.3	80.8	60.8	-44.5	-29.5			ambient
3471.360	38.0	33.0	38.0	33.0	-0.7	37.3	32.3	80.8	60.8	-43.5	-28.5			ambient
3905.280	38.6	33.6	39.2	34.2	0.5	39.7	34.7	74.0	54.0	-34.3	-19.3			ambient
4339.200	40.2	35.2	39.2	34.2	0.3	40.5	35.5	74.0	54.0	-33.5	-18.5			ambient

Pre-scans (pages 9 and 10)

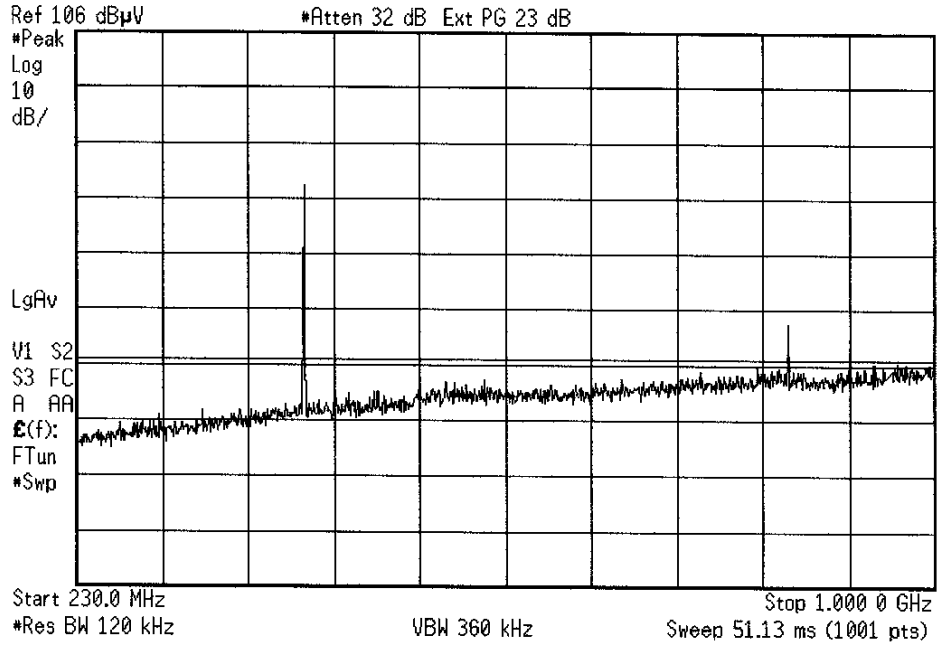
FCC Part 15.231(b): Field Strength of Emissions

* Agilent 19:23:59 Oct 26, 2004



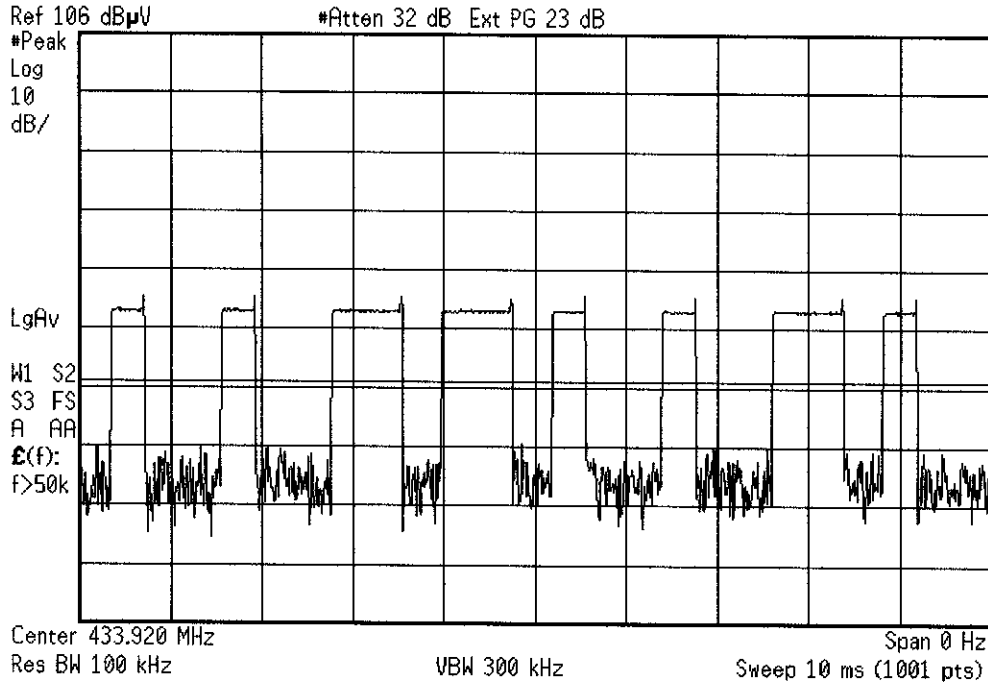
FCC Part 15.231(b): Field Strength of Emissions

* Agilent 19:25:42 Oct 26, 2004



FCC Part 15.231(b): Duty Cycle

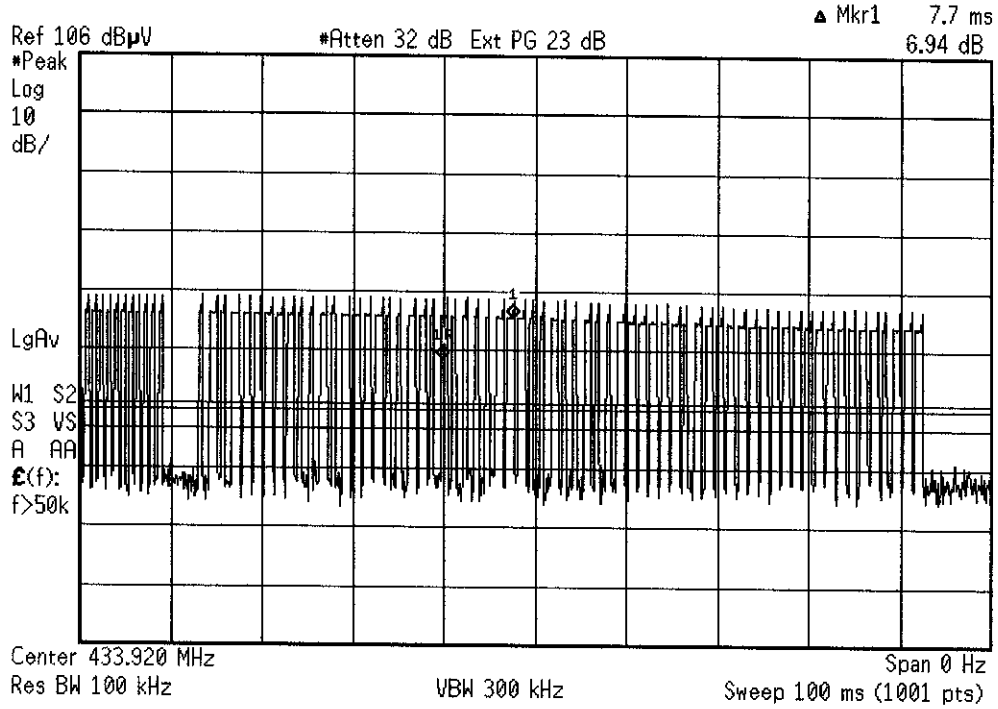
* Agilent 19:38:42 Oct 26, 2004



$370\mu s (5)$
 $770\mu s (3)$ } $10ms$

FCC Part 15.231(b): Duty Cycle

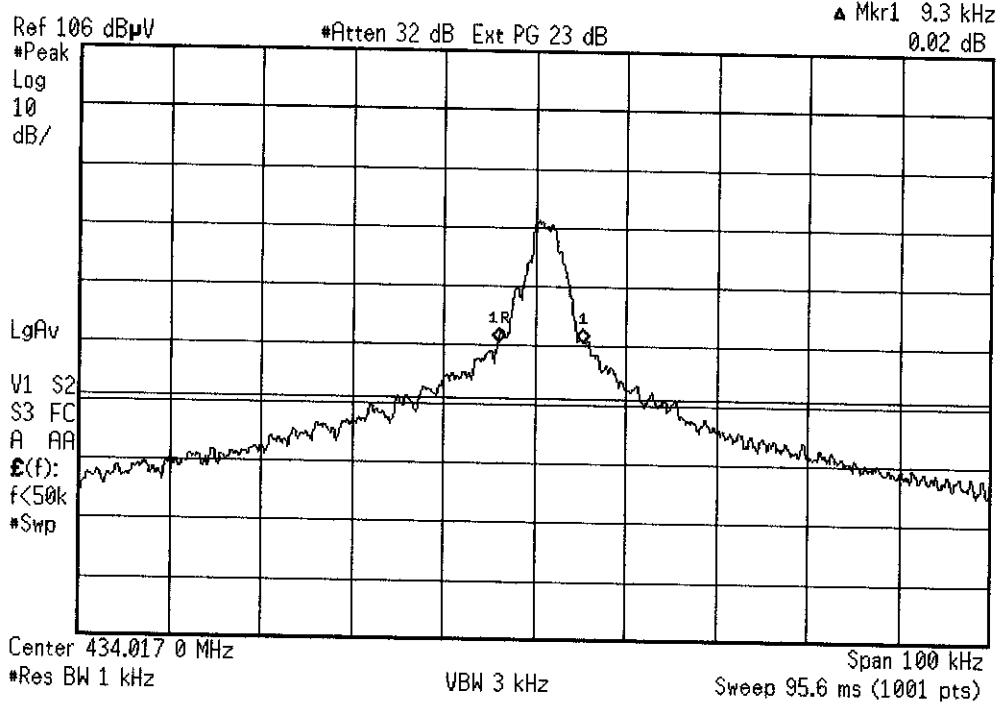
Agilent 19:46:31 Oct 26, 2004



*56% Duty Cycle
- 5.03 dB*

FCC Part 15.231(c): Emission Bandwidth

* Agilent 19:55:12 Oct 26, 2004



4.0 ATTESTATION STATEMENT

GENERAL REMARKS:

SUMMARY:

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

■ - Performed

The Equipment Under Test

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

Testing Start Date: 26 October 2004

Testing End Date: 27 October 2004

- **TÜV AMERICA, INC.** -

Responsible Engineer:



Jim Owen
(EMC Manager)