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FCC PART 15 SUB PART B

Applicant	DELTA SYSTEMS INC.
Address	10036 Aurora - Hudson Road 1734 Frost Road Streetsboro, OH 44241 USA
FCC ID	R932031500
IC Label	6268A-2031500
Model Number	2031-500
Product Description	433.92MHz RECEIVER
Date Sample Received	11/10/2006
Date Tested	11/15/06
Tested By	Richard Block
Approved By	Mario de Aranzeta
Report Number	3115AUT6TestReport.doc
Test Results	☒ PASS ☐ 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 COMPLIANCE

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

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

Authorized by: Mario de Aranzeta

Function: Engineer

Date: November 18, 2006

Tested by: Richard Block

Date: November 15, 2006

REPORT SUMMARY

Disclaimer	The test result only related to the item tested.
Purpose of Test Report	To demonstrate the DUT in compliance with FCC Par15.109 technical requirements for a 433.92 MHz receiver.
Applicable Rule(s)	FCC Part 15.109, ANSI C63.4
Related Report	No related report

TEST ENVIRONMENT AND SYSTEM

Test Facility	The test sites used by Timco Engineering Inc. is located at 849 NW State Road 45 Newberry, FL 32669 USA.
Test Condition:	The DUT was tested in the laboratory in an environment with normal temperature and humidity. The temperature was 26°C with a relative humidity of 50%.
Test Exercise (e.g software description, test signal, etc.):	The DUT was placed in continuous receiving mode of operation.
Supporting Peripheral Equipment	Not applicable. The device is a stand-alone remote control receiver
Deviation to the standard(s)	No deviation from the standard(s).
Modification to the DUT:	No modification was made to the DUT.

DUT SPECIFICATION

Manufacturer	Delta Systems		
Description	Receiver		
FCC ID	R932031500		
IC Label	IC: 6268A-2031500		
Model Name	2031-500		
Operating Frequency	433.92MHz		
DUT Power Source	☐ 110–120Vac/50– 60Hz		
	☐ DC Power		
	☒ Battery Operated Exclusively		
Test Item	☐ Prototype	☒ Pre-Production	☐ Production
Type of Equipment	☐ Fixed	☐ Mobile	☒ Portable
Antenna	Integrated		

TEST EQUIPMENT LIST

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
3/10-Meter OATS	TEI	N/A	N/A	Listed 3/27/04	3/26/07
3-Meter OATS	TEI	N/A	N/A	Listed 1/11/06	1/10/09
Antenna: Biconnical	Eaton	94455-1	1057	CAL 12/12/05	12/12/07
Antenna: Biconnical	Eaton	94455-1	1096	CAL 10/11/06	10/11/08
Antenna: Biconnical	Electro-Metrics	BIA-25	1171	CAL 4/29/05	4/29/07
Analyzer Blue Tower Quasi-Peak Adapter	HP	85650A	2811A01279	CAL 4/13/05	4/13/07
Analyzer Blue Tower RF Preselector	HP	85685A	2926A00983	CAL 9/5/05	9/5/07
Analyzer Blue Tower Spectrum Analyzer	HP	8568B	2928A04729 2848A18049	CAL 4/13/05	4/13/07
LISN	Electro-Metrics	ANS-25/2	2604	CAL 10/5/06	10/5/08
LISN	Electro-Metrics	EM-7820	2682	CAL 4/28/05	4/28/07
Antenna: Log-Periodic	Eaton	96005	1243	CAL 12/14/05	12/14/07

TEST PROCEDURE

Radiation Interference: The test procedure used was ANSI STANDARD C63.4-2003 using an Agilent spectrum analyzer with a pre-selector. The bandwidth of the spectrum analyzer was 100 kHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The video bandwidth was always greater than or equal to the RBW.

Formula Of Conversion Factors: The field strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the preselector was accounted for in the spectrum analyzer meter reading.

Example:

Freq (MHz)	Meter Reading + ACF	+CL	= FS
33	20 dBuV + 10.36 dB/m	+0.40 dB	=30.36 dBuV/m @ 3m

ANSI C63.4-2003 Section 10.1.7 Measurement Procedures: The procedure used was ANSI C63.4-2003. The frequency was scanned from 30 MHz to 1.0 GHz. The unit under test was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The table used for radiated measurements is capable of continuous rotation. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

RADIATED SPURIOUS EMISSIONS

Rules Part No.: 15.109

Requirements:

Frequency	Limits
30 – 88	40.0 dB μ V/m measured @ 3 meters
80 – 216	43.5 dB μ V/m measured @ 3 meters
216 – 960	46.0 dB μ V/m measured @ 3 meters
Above 960	54.0 dB μ V/m measured @ 3 meters

Test Data:

Emission Frequency MHz	Meter Reading dB μ V	Ant. Polarity V/H	Coax Loss dB	Correction Factor dB/m	Field Strength dB μ V/m	Margin dB
381.41	9.8	V	1.18	15.34	26.32	19.68
419.49	9.4	V	1.22	15.99	26.61	19.39
429.06	7.1	V	1.23	16.09	24.42	21.58

Note: No emissions were found above 500 MHz

POWER LINE CONDUCTED INTERFERENCE

Rules Part No.: Part 15.107

Requirements:

Frequency (MHz)	Quasi Peak Limits (dBuV)	Average Limits (dBuV)
0.15 – 0.5	66 – 56	56 – 46
0.5 – 5.0	56	46
5.0 – 30	60	50

Test Data: Not applicable because the DUT is battery operated exclusively.