

RUBICOM SYSTEMS, INC.

FCC INTENTIONAL RADIATOR
TEST REPORT
FOR THE
SUMMATION RESEARCH, INC.
SERIES 300 DIGITAL TELEMETRY SYSTEM

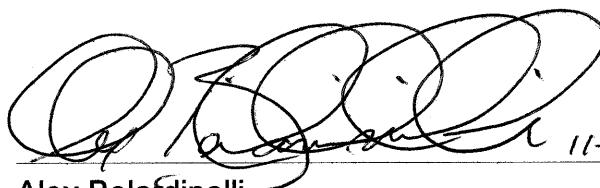


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THIS REPORT SHALL NOT BE REPRODUCED
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APPROVAL OF THE TESTING LABORATORY

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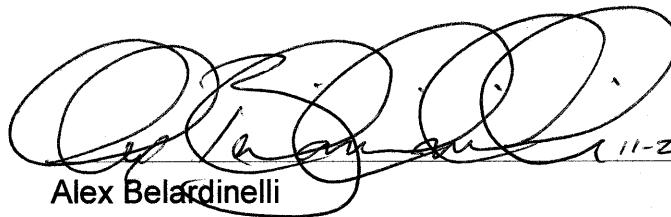
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CERTIFICATION

Rubicom Systems, Inc. (RSI) certifies the information obtained in this report was performed consistent with the requirements of ANSI C63.4-1992. The Summation Research, Inc., Series 300 Digital Telemetry System complies with the requirements of CFR 47 Part 15.249 Subpart C for intentional radiators.

This data was obtained while testing a Series 300 Digital Telemetry System, s/n: 0002 furnished by Summation Research, Inc. and described in Paragraph 1.3 of this document. Any modifications, other than those listed in Figure 1.4-1, to the unit as tested may invalidate the data and void this certification.

Joseph G. Barbee
President

ABSTRACT

This report presents test results of the emanations found emitting from the Summation Research, Inc., Series 300 Digital Telemetry System and the comparison of these emissions to the requirements of the FCC, Title 47, Part 15.249 Subpart B for intentional Transmitter.

This testing was performed on a 3-meter open area test site at Rubicom Systems, Inc. The testing was performed for Summation Research, Inc. under purchase order 99-5500446 and is filed under JA-1679 at RSI. The results of this test effort demonstrate compliance of the Series 300 Digital Telemetry System to the CFR Title 47, Part 15.249 Subpart B, intentional transmitters.

The unit under test was a Series 300 Digital Telemetry System, s/n: 0002.

1.0 INTRODUCTION

1.1 Purpose

The purpose of this report is to show compliance of the Summation Research, Inc. Series 300 Digital Telemetry System to the requirements of the FCC Rules and Regulations (CFR Title 47, Part 15.249) for intentional transmitters operating in the 902-928MHz range. The tests were performed on a three meter site.

1.2 Requirements

The test requirements are as follows:

RADIATED (15.209a) (15.205)

<u>Freq. (MHz)</u>	3 Meter Field Strength μ V/M	3 Meter $\text{dB}\mu$ V/M
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
960 - Above	500	54 Avg 74 Peak

CONDUCTED

<u>Freq. (MHz)</u>	<u>μVolts</u>	<u>$\text{dB} > \mu$V</u>
.450-30MHz	250	48

RADIATED (CFR 15.249a)

	Field Strength 3 Meter	3 Meter $\text{dB}\mu$ V/m
Fundamental	50 Millivolts	94
Harmonics	500 Microvolts	54

1.3 Unit Under Test Description

The Series 300 Digital Telemetry System is described in Appendix B (Summation Sales Brochure).

The unit was powered by 9VDC supplied by a 9 volt battery. The receiver was powered by an AC/DC transformer CUI-Stack p/n: DTS 120250U/AC1-P5.

1.4 Summary of Results

Data is presented in Paragraph 6.0. The Series 300 Digital Telemetry System was found to be compliant to the requirements of CFR Title 47, Part 15.249. These results were found after the modifications listed in Table 1.4-1 were implemented.

Filtering added to the power line on the under side of the board	
Supplier:	Panasonic
Part Number:	ECS-T1AX105R
Qty. Used:	2
Supplier:	Inductor Warehouse
Part Number:	28F0248-60T
Qty. Used:	1

Filtering directly on J1 Power Inlet	
Supplier:	Panasonic
Part Number:	ECS-T1AX105R
Qty. Used:	1
Supplier:	Panasonic
Part Number:	ECS-T1AX106R
Qty. Used:	1

Filtering directly on U13 Power	
Supplier:	Panasonic
Part Number:	ECS-T1AX106R
Qty. Used:	1

BNC CH1 and CH2 Connectors	
Supplier:	AMP
Part Number:	413879-1

TABLE 4.1-1

DB9 Remote Connector	
Supplier:	AMP
Part Number:	869522-6

DB25 Digital Connector	
Supplier:	AMP
Part Number:	869464-6

36 Pin Champ Analog Connector	
Supplier:	AMP
Part Number:	555233-1
Capacitance Value added to each signal line on connector is 820pF (CK05BX821K) 18ea.	

Ferrite Beads added to the Power Line	
Supplier:	Inductor Warehouse
Part Number:	28F0248-6T0
Qty. Used:	1
Also:	
Supplier:	Steward
Part Number:	28C0236-OEW

*All Board Mounting Standoffs are Grounded

TABLE 1.4-1 (Cont.)

2.0 APPLICABLE DOCUMENTS

The following documents form a part of this report to the extent expressed herein:

FCC Code of Federal Regulations Title 47, Part 15,

FCC Procedure for Measuring RF Emissions from Computing Devices FCC/OET MP-4, July 1987

ANSI C63.4-1992

FCC Characteristics of Open Field Test Sites Bulletin OET 55, October 1989