

Elliott Laboratories Inc. www.elliottlabs.com

684 West Maude Avenue Sunnyvale, CA 94085-3518 408-245-3499 Fax

408-245-7800 Phone

Electromagnetic Emissions Test Report and Application for Grant of Equipment Authorization pursuant to

Industry Canada RSS-Gen Issue 1 / RSS 210 Issue 6 FCC Part 15 Subpart B (Receivers) FCC Part 15 Subpart C

on the

Savi Technology, Inc. Transmitter Model: ST-614 and ST-615

UPN:	2404A-614T
FCC ID:	KL7-614T-V1

GRANTEE: Savi Technology, Inc. 615 Tasman Drive Sunnyvale, CA 94089-1707

TEST SITE: Elliott Laboratories, Inc. 684 W. Maude Ave Sunnyvale, CA 94086

REPORT DATE: August 3, 2006

FINAL TEST DATE:

July 10 and July 17, 2006

AUTHORIZED SIGNATORY:

Mark Briggs

Principal Engineer



Elliott Laboratories, Inc. is accredited by the A2LA, certificate number 2016-01, to perform the test(s) listed in this report. This report shall not be reproduced, except in its entirety, without the written approval of Elliott Laboratories, Inc.

TABLE OF CONTENTS

TABLE OF CONTENTS 2 SCOPE 4 OBJECTIVE 5 STATEMENT OF COMPLIANCE 5 TEST RESULTS SUMMARY 6 MOMENTARILY OPERATED DEVICES - CONTROL SIGNALS 6 MOMENTARILY OPERATED DEVICES - CONTROL SIGNALS OR SIGNALS AT PREDETERMINED 7 INTERVALS 6 GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS 8 GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS 8 GENERAL 10 EQUIPMENT UNDER TEST (EUT) DETAILS 10 ENCLOSURE 10 MODIFICATIONS 10 SUPPORT EQUIPMENT 10 EUT INTERFACE PORTS 10 EUT OPERATION 11 ANTENNAS SCONSIDERATIONS 12 CONDUCTED EMISSIONS CONSIDERATIONS 12 CONDUCTED EMISSIONS CONSIDERATIONS 12 MANUENT CONTROL COMPUTER 13 INSTRUMENT CONTROL COMPUTER 13	COVER PAGE	1
SCOPE	TABLE OF CONTENTS	2
SUOPE 4 OBJECTIVE 5 STATEMENT OF COMPLIANCE 5 TEST RESULTS SUMMARY 6 MOMENTARILY OPERATED DEVICES - CONTROL SIGNALS 6 MOMENTARILY OPERATED DEVICES - DATA SIGNALS OR SIGNALS AT PREDETERMINED 1 INTERVALS 6 GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS 8 GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS 8 MEASUREMENT UNCERTAINTIES 9 EQUIPMENT UNDER TEST (EUT) DETAILS 10 GENERAL 10 IONDIFICATIONS 10 SUPPORT EQUIPMENT. 10 EUT OPERATION 10 EUT OPERATION 10 EUT OPERATION 11 ANTENNA SYSTEM 11 ANTENNA SYSTEM 12 GENERAL INFORMATION 12 CONDUCTED EMISSIONS CONSIDERATIONS. 12 RADIATED ARES STREM 13 INSTRUMENT INSTRUMENTATION 13 RECEIVER SYSTEM 13 ILLE EMISSIONS CONSIDERATIONS. 12 CONDUCTED EMISSIONS CONSIDERATIONS. 12 CONDUCTED EMISSIONS CONSIDERATIO		
OBJECTIVE 5 STATEMENT OF COMPLIANCE 5 TEST RESULTS SUMMARY. 6 MOMENTARILY OPERATED DEVICES - CONTROL SIGNALS OR SIGNALS AT PREDETERMINED 6 INTERVALS 7 REID DEVICES OPERATING IN THE 433.5 - 434.5MHZ BANDS 7 REID DEVICES OPERATING IN THE 433.5 - 434.5MHZ BANDS 8 GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS 8 MEASUREMENT UNCERTAINTIES 9 EQUIPMENT UNDER TEST (EUT) DETAILS 10 GENERAL 10 EUTOPRET EQUIPMENT 10 MODIFICATIONS 10 BUPPORT EQUIPMENT 10 EUT OPERATION 11 ANTENNA SYSTEM 11 ANTENNA SYSTEM 11 ANTENNA SYSTEM 12 GENERAL INFORMATION 12 GENERAL INFORMATION 12 GENERAL INFORMATION 12 RADIATED EMISSIONS CONSIDERATIONS 12 RADIATED EMISSIONS CONSIDERATIONS 12 RADIATED EMISSIONS CONSIDERATIONS 12 MEASUREMENT INSTRUMENT ATION 13 INFERIMEDANCE STABULZATION NETWORK (LISN) 13 <td>SCOPE</td> <td>4</td>	SCOPE	4
STATEMENT OF COMPLIANCE 5 TEST RESULTS SUMMARY 6 MOMENTARILY OPERATED DEVICES - CONTROL SIGNALS 6 MOMENTARILY OPERATED DEVICES - DATA SIGNALS OR SIGNALS AT PREDETERMINED 7 RED DEVICES OPERATING IN THE 433.5 - 434.SMH2 BANDS 8 GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS 8 MEASUREMENT UNCERTAINTIES 9 EQUIPMENT UNDER TEST (EUT) DETAILS 10 GENERAL 10 IONDIFICATIONS 10 SUPPORT EQUIPMENT 10 BUT OPERATION 10 SUPPORT EQUIPMENT 10 BUT OPERATION 10 SUPPORT EQUIPMENT 10 BUT INTERFACE PORTS 10 BUT OPERATION 11 ANTENNA SYSTEM 11 TEST SITE 12 GENERAL INFORMATION 12 CONDUCTED EMISSIONS CONSIDERATIONS 12 MEASUREMENT INSTRUMENTATION 13 RECEIVER SYSTEM 13 INSTRUMENT CONTROL COMPUTER 13 INSTRUMENT CONTROL COMPUTER 13 INSTRUMENT CONTROL COMPUTER 13 I	OBJECTIVE	5
TEST RESULTS SUMMARY 6 MOMENTARILY OPERATED DEVICES - CONTROL SIGNALS OR SIGNALS AT PREDETERMINED 6 MOMENTARILY OPERATED DEVICES - DATA SIGNALS OR SIGNALS AT PREDETERMINED 7 RFID DEVICES OPERATING IN THE 433.5 - 434.5MHZ BANDS 8 GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS. 8 GENERAL REQUIREMENT SAPPLICABLE TO ALL BANDS. 8 MEASUREMENT UNCERTAINTIES 9 EQUIPMENT UNDER TEST (EUT) DETAILS 10 GENERAL 10 FINCLOSURE 10 MODIFICATIONS 10 EUT INTERFACE PORTS 10 EUT OPERATION 11 ANTENNA SYSTEM 11 ANTENNA SYSTEM 12 GENERAL INFORMATION 12 CONDUCTED EMISSIONS CONSIDERATIONS 12 RADIATED EMISSIONS CONSIDERATIONS 12 REASUREMENT INSTRUMENTATION 13 RECEIVER SYSTEM 13 INSTRUMENT CONTROL COMPUTER 13 INSTRUMENT CONTROL COMPUTER 13 INSTRUMENT CONTROL COMPUTER 13 INSTRUMENT CONTROL COMPUTER 14 INSTRUMENT CONTROL COMPUTER 15 <td>STATEMENT OF COMPLIANCE</td> <td>5</td>	STATEMENT OF COMPLIANCE	5
TEST RESULTS SUMMARY. 6 MOMENTARILY OPERATED DEVICES - CONTROL SIGNALS 6 MOMENTARILY OPERATED DEVICES - DATA SIGNALS OR SIGNALS AT PREDETERMINED 7 NTFRVALS. 7 RFID DEVICES OPERATING IN THE 433.5 - 434.5MHZ BANDS 8 GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS. 8 MEASUREMENT UNCERTAINTIES 9 EQUIPMENT UNDER TEST (EUT) DETAILS 10 GENERAL 10 ENCLOSURE 10 MODDIFICATIONS 10 SUPPORT EQUIPMENT. 10 EUT OPERATION 11 ANTENNA SYSTEM 11 ANTENNA SYSTEM 11 TEST SITE 12 GENERAL INFORMATION 12 CONDUCTED EMISSIONS CONSIDERATIONS 12 RADIATED EMISSIONS CONSIDERATIONS 12 RADIATED EMISSIONS CONSIDERATIONS 13 INSTRUMENT CONTROL COMPUTER 13 INSTRUMENT CONTROL COMPUTER 13 INSTRUMENT CONTROL COMPUTER 14 ANTENNA MAST AND EQUIPMENT TURNTABLE 14 ANTENNA MAST AND EQUIPMENT TURNTABLE 14 ANTENNA MAST AND EQUIPME		
MOMENTARILY OPERATED DEVICES - CONTROL SIGNALS 6 MOMENTARILY OPERATED DEVICES - DATA SIGNALS OR SIGNALS AT PREDETERMINED 7 INTERVALS 7 RFID DEVICES OPERATING IN THE 433.5 - 434.5MH2 BANDS 8 GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS. 8 MEASUREMENT UNCERTAINTIES 9 EQUIPMENT UNCERTAINTIES 9 EQUIPMENT UNCERTAINTIES 10 GENERAL 10 ENCLOSURE 10 MODIFICATIONS 10 SUPPORT EQUIPMENT 10 EUT INTERFACE PORTS 10 EUT INTERFACE PORTS 10 EUT OPERATION 11 ANTENNA SYSTEM 11 TEST SITE 12 GENERAL INFORMATION 12 CONDUCTED EMISSIONS CONSIDERATIONS 12 RADIATED EMISSIONS CONSIDERATIONS 12 RADIATED EMISSIONS CONSIDERATIONS 12 RADIATED EMISSIONS CONSIDERATIONS 12 MEASUREMENT INSTRUMENTATION 13 INSTRUMENT CONTROL COMPUTER 13 INSTRUMENT CONTROL COMPUTER 13 INSTRUMENT CONTROL COMPUTER 13	TEST RESULTS SUMMARY	6
MOMENTARILY OPERATED DEVICES - DATA SIGNALS OR SIGNALS AT PREDETERMINED INTERVALS 7 RFID DEVICES OPERATING IN THE 433.5 - 434.5MHZ BANDS 8 GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS 8 MEASUREMENT UNCERTAINTIES 9 EQUIPMENT UNDER TEST (EUT) DETAILS 10 GENERAL 10 ENCLOSURE 10 MODIFICATIONS 10 BUPPORT EQUIPMENT 10 BUT INTERFACE PORTS 10 EUT OPERATION 11 ANTENNA SYSTEM 11 TEST SITE 12 GENERAL INFORMATION 12 CONDUCTED EMISSIONS CONSIDERATIONS 12 CONDUCTED EMISSIONS CONSIDERATIONS 12 RADIATED EMISSIONS CONSIDERATIONS 12 RADIATED EMISSIONS CONSIDERATIONS 12 RADIATED EMISSIONS CONSIDERATIONS 13 INSTRUMENT CONTROL COMPUTER 13 INSTRUMENT CONTROL COMPUTER 13 INSTRUMENT CONTROL COMPUTER 13 INSTRUMENT CONTROL COMPUTER 14 ANTENNAS 14 ANTENNAS 14 INSTRUMENT CA	MOMENTARILY OPERATED DEVICES – CONTROL SIGNALS	6
INTERVALS	MOMENTARILY OPERATED DEVICES – DATA SIGNALS OR SIGNALS AT PREDETERMINED	
RFID DEVICES OPERATING IN THE 433.5 - 434.5ML2 BANDS 8 GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS 8 EQUIPMENT UNCERTAINTIES 9 EQUIPMENT UNCERTAINTIES 9 EQUIPMENT UNDER TEST (EUT) DETAILS 10 GENERAL 10 ENCLOSURE 10 MODIFICATIONS 10 SUPPORT EQUIPMENT 10 EUT INTERFACE PORTS 10 EUT OPERATION 11 TEST SITE 12 GENERAL INFORMATION 12 CONDUCTED EMISSIONS CONSIDERATIONS 12 CONDUCTED EMISSIONS CONSIDERATIONS 12 RADIATED EMISSIONS CONSIDERATIONS 12 MEASUREMENT INSTRUMENTATION 13 RECEIVER SYSTEM 13 INSTRUMENT CONTROL COMPUTER 13 INSTRUMENT CONTROL COMPUTER 13 INSTRUMENT CALIBRATION 14 ANTENNAS 14 ANTENNAS 15 EUT AND CABLE PLACEMENT 15 EUT AND CABLE PLACEMENT 15 CONDUCTED EMISSIONS 15 RADIATED EMISSIONS 15	INTERVALS	7
GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS \$\$ MEASUREMENT UNCERTAINTIES 9 EQUIPMENT UNDER TEST (EUT) DETAILS 10 GENERAL 10 EQUIPMENT UNDER TEST (EUT) DETAILS 10 EQUIPMENT UNDER TEST (EUT) DETAILS 10 EQUIPMENT 10 EUT INTERFACE PORTS 10 EUT INTERFACE PORTS 10 EUT OPERATION 11 ANTENNA SYSTEM 11 TEST SITE 12 GENERAL INFORMATION 12 CONDUCTED EMISSIONS CONSIDERATIONS 12 RADIATED EMISSIONS CONSIDERATIONS 12 MEASUREMENT INSTRUMENTATION 13 INSTRUMENT CONTROL COMPUTER 13 INSTRUMENT CONTROL COMPUTER 13 INSTRUMENT CONTROL COMPUTER 13 INSTRUMENT CALIBRATION 14 ANTENNAS 14 ANTENNAS 15 EUT AND CABLE PLACEMENT 15 RADIATED EMISSIONS 15	RFID DEVICES OPERATING IN THE 433.5 – 434.5MHZ BANDS	8
MEASUREMENT UNCERTAINTIES 9 EQUIPMENT UNDER TEST (EUT) DETAILS 10 GENERAL 10 ENCLOSURE 10 MODIFICATIONS 10 SUPPORT EQUIPMENT 10 EUT INTERFACE PORTS 10 EUT OPERATION 11 TEST SITE 12 GENERAL INFORMATION 12 CONDUCTED EMISSIONS CONSIDERATIONS 12 RADIATED EMISSIONS CONSIDERATIONS 12 RADIATED EMISSIONS CONSIDERATIONS 12 RADIATED EMISSIONS CONSIDERATIONS 12 RADIATED EMISSIONS CONSIDERATIONS 13 INSTRUMENT CONTROL COMPUTER 13 INSTRUMENT CONTROL COMPUTER 13 ILDER SYSTEM 13 ILTERSYATTENUATORS 14 ANTENNAS 14 ANTENNAS 14 ANTENNAS 15 EUT AND CABLE PLACEMENT 15 CONDUCTED EMISSIONS 15 RADIATED ENISSIONS 15 RADIATED EMISSIONS 16 BANDWIDTH MEASUREMENTS 15 CONDUCTED EMISSIONS 16	GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS	8
EQUIPMENT UNDER TEST (EUT) DETAILS10GENERAL10ENCLOSURE10MODIFICATIONS10SUPPORT EQUIPMENT10EUT INTERFACE PORTS10EUT OPERATION11ANTENNA SYSTEM11TEST SITE12GENERAL INFORMATION12CONDUCTED EMISSIONS CONSIDERATIONS12RADIATED EMISSIONS CONSIDERATIONS12RADIATED EMISSIONS CONSIDERATIONS12MEASUREMENT INSTRUMENTATION13RECEIVER SYSTEM13ILINE IMPEDANCE STABILIZATION NETWORK (LISN)13FILTERS/ATTENUATORS14ANTENNA MAST AND EQUIPMENT TURNTABLE14INSTRUMENT CALIBRATION15EUT AND CABLE PLACEMENT15CONDUCTED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GENRADIATED EMISSIONS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS19RADIATED EMISSIONS - MOMENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - RADIATED EMISSIONS21SAMPLE CALCULATIONS - RADIATED EMISSIONS	MEASUREMENT UNCERTAINTIES	9
EQUIPMENT UNDER TEST (EUT) DETAILS10GENERAL10ENCLOSURE10MODIFICATIONS10SUPPORT EQUIPMENT10EUT INTERFACE PORTS10EUT OPERATION11ANTENNA SYSTEM11TEST SITE12GENERAL INFORMATION12CONDUCTED EMISSIONS CONSIDERATIONS12RADIATED EMISSIONS CONSIDERATIONS12RADIATED EMISSIONS CONSIDERATIONS12MEASUREMENT INSTRUMENTATION13RECEIVER SYSTEM13INSTRUMENT CONTROL COMPUTER13ILINE IMPEDANCE STABILIZATION NETWORK (LISN)13FILTERS/ATTENUATORS14ANTENNAS14ANTENNAS14ANTENNAS15EUT AND CABLE PLACEMENT15CONDUCTED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS16BANDWIDTH MEASUREMENTS16BANDWIDTH MEASUREMENTS16RADIATED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS PACIFICATION LIMITS19RADIATED SPURIOUS EM		10
GENERAL10ENCLOSURE10MODIFICATIONS10SUPPORT EQUIPMENT10EUT INTERFACE PORTS10EUT INTERFACE PORTS10EUT OPERATION11ANTENNA SYSTEM11TEST SITE12GENERAL INFORMATION12CONDUCTED EMISSIONS CONSIDERATIONS12RADIATED EMISSIONS CONSIDERATIONS12RADIATED EMISSIONS CONSIDERATIONS12MEASUREMENT INSTRUMENTATION13RECEIVER SYSTEM13INSTRUMENT CONTROL COMPUTER13LINE IMPEDANCE STABILIZATION NETWORK (LISN)13FILTERS/ATTENUATORS14ANTENNA14ANTENNA14INSTRUMENT CALIBRATION14TEST PROCEDURES15EUT AND CABLE PLACEMENT15CONDUCTED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS16BANDWIDTH MEASUREMENTS16BANDWIDTH MEASUREMENTS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18CONDUCTED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMI	EQUIPMENT UNDER TEST (EUT) DETAILS	10
ENCLOSURE10MODIFICATIONS10SUPPORT EQUIPMENT10EUT INTERFACE PORTS10EUT OPERATION11ANTENNA SYSTEM11TEST SITE12GENERAL INFORMATION12CONDUCTED EMISSIONS CONSIDERATIONS12RADIATED EMISSIONS CONSIDERATIONS12MEASUREMENT INSTRUMENTATION13RECEIVER SYSTEM13INSTRUMENT CONTROL COMPUTER13INSTRUMENT CONTROL COMPUTER13ILINE IMPEDANCE STABILIZATION NETWORK (LISN)13FILTERS/ATTENUATORS14ANTENNAS14ANTENNAS14INSTRUMENT CALIBRATION15EUT AND CABLE PLACEMENT15EUT AND CABLE PLACEMENT15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS PRECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS PECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS PECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS SPECIFICATION LI	GENERAL	10
MODIFICATIONS10SUPPORT EQUIPMENT10EUT INTERFACE PORTS10EUT OPERATION11ANTENNA SYSTEM11TEST SITE12GENERAL INFORMATION12CONDUCTED EMISSIONS CONSIDERATIONS12RADIATED EMISSIONS CONSIDERATIONS12MEASUREMENT INSTRUMENTATION13RECEIVER SYSTEM13INSTRUMENT CONTROL COMPUTER13INSTRUMENT CONTROL COMPUTER13INSTRUMENT CONTROL COMPUTER14ANTENNA44ANTENNA14ANTENNA MAST AND EQUIPMENT TURNTABLE14INSTRUMENT CALIBRATION15EUT AND CABLE PLACEMENT15CONDUCTED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN18GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS - MOMENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVER	ENCLOSURE	10
SUPPORT EQUIPMENT 10 EUT INTERFACE PORTS 10 EUT INTERFACE PORTS 10 EUT OPERATION 11 ANTENNA SYSTEM 11 TEST SITE 12 GENERAL INFORMATION 12 CONDUCTED EMISSIONS CONSIDERATIONS 12 RADIATED EMISSIONS CONSIDERATIONS 12 MEASUREMENT INSTRUMENTATION 13 RECEIVER SYSTEM 13 IINSTRUMENT CONTROL COMPUTER 13 LINE IMPEDANCE STABILIZATION NETWORK (LISN) 13 FILTERS/ATTENUATORS 14 ANTENNAS 14 ANTENNAS 14 INSTRUMENT CALIBRATION 15 EUT AND CABLE PLACEMENT 15 CONDUCTED EMISSIONS 15 RADIATED EMISSIONS 15 RADIATED EMISSIONS 15 RADIATED EMISSIONS 15 RADIATED EMISSIONS SPECIFICATION LIMITS 16 BANDWIDTH MEASUREMENTS 17 SPECIFICATION LIMITS AND SAMPLE CALCULATIONS 18 CONDUCTED EMISSIONS SPECIFICATION LIMITS 19 RADIATED EMISSIONS SPECIFICATION LIMITS	MODIFICATIONS	10
EUTINTERFACE PORTS10EUTONTERFACE11ANTENNA SYSTEM11TEST SITE12GENERAL INFORMATION12CONDUCTED EMISSIONS CONSIDERATIONS12RADIATED EMISSIONS CONSIDERATIONS12MEASUREMENT INSTRUMENTATION13RECEIVER SYSTEM13ILINE INPEDANCE STABILIZATION NETWORK (LISN)13FILTERS/ATTENUATORS14ANTENNAS14ANTENNAS14ANTENNAS14ANTENNAS15EUT AND CABLE PLACEMENT15CONDUCTED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18CONDUCTED EMISSIONS SPECIFICATION LIMITS:19RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS - MOMENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22	SUPPORT EQUIPMENT.	10
Let I OPERATION 11 ANTENNA SYSTEM 11 TEST SITE 12 GENERAL INFORMATION 12 CONDUCTED EMISSIONS CONSIDERATIONS 12 RADIATED EMISSIONS CONSIDERATIONS 12 MEASUREMENT INSTRUMENTATION 13 RECEIVER SYSTEM 13 INSTRUMENT CONTROL COMPUTER 13 ILINE IMPEDANCE STABILIZATION NETWORK (LISN) 13 FILTERS/ATTENUATORS 14 ANTENNAS 14 ANTENNAS 14 INSTRUMENT CALIBRATION 15 CONDUCTED EMISSIONS 15 RADIATED EMISSIONS 15 RADIATED EMISSIONS 15 RADIATED EMISSIONS 16 BANDWIDTH MEASUREMENTS 17 SPECIFICATION LIMITS AND SAMPLE CALCULATIONS 18 CONDUCTED EMISSIONS SPECIFICATION LIMITS 19 RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS	EUT ODED ATION	10
Test site12GENERAL INFORMATION12CONDUCTED EMISSIONS CONSIDERATIONS12RADIATED EMISSIONS CONSIDERATIONS12MEASUREMENT INSTRUMENTATION13RECEIVER SYSTEM13INSTRUMENT CONTROL COMPUTER13LINE IMPEDANCE STABILIZATION NETWORK (LISN)13FILTERS/ATTENUATORS14ANTENNAS14ANTENNAS14INSTRUMENT CALIBRATION15EUT AND CABLE PLACEMENT15CONDUCTED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS16BANDWIDTH MEASUREMENTS18CONDUCTED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS - MOMENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22	EUTOPERATION ANTENNA SYSTEM	11
TEST SITE12GENERAL INFORMATION12CONDUCTED EMISSIONS CONSIDERATIONS12RADIATED EMISSIONS CONSIDERATIONS12MEASUREMENT INSTRUMENTATION13RECEIVER SYSTEM13INSTRUMENT CONTROL COMPUTER13LINE IMPEDANCE STABILIZATION NETWORK (LISN)13FILTERS/ATTENUATORS14ANTENNAS14ANTENNAS14INSTRUMENT CALIBRATION15EUT AND CABLE PLACEMENT15CONDUCTED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18CONDUCTED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - RADIATED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22		
GENERAL INFORMATION12CONDUCTED EMISSIONS CONSIDERATIONS12RADIATED EMISSIONS CONSIDERATIONS12 MEASUREMENT INSTRUMENTATION 13RECEIVER SYSTEM13INSTRUMENT CONTROL COMPUTER13LINE IMPEDANCE STABILIZATION NETWORK (LISN)13FILTERS/ATTENUATORS14ANTENNAS14ANTENNAS14INSTRUMENT CALIBRATION14INSTRUMENT CALIBRATION15EUT AND CABLE PLACEMENT15CONDUCTED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18CONDUCTED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - RADIATED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22	TEST SITE	12
CONDUCTED EMISSIONS CONSIDERATIONS12RADIATED EMISSIONS CONSIDERATIONS12 MEASUREMENT INSTRUMENTATION 13RECEIVER SYSTEM13INSTRUMENT CONTROL COMPUTER13LINE IMPEDANCE STABILIZATION NETWORK (LISN)13FILTERS/ATTENUATORS14ANTENNAS14ANTENNAS14INSTRUMENT CALIBRATION14INSTRUMENT CALIBRATION14ITEST PROCEDURES15EUT AND CABLE PLACEMENT15CONDUCTED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RACELIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22	GENERAL INFORMATION	12
RADIATED EMISSIONS CONSIDERATIONS.12 MEASUREMENT INSTRUMENTATION 13RECEIVER SYSTEM13INSTRUMENT CONTROL COMPUTER13LINE IMPEDANCE STABILIZATION NETWORK (LISN)13FILTERS/ATTENUATORS14ANTENNAS14ANTENNAS14INSTRUMENT CALIBRATION14INSTRUMENT CALIBRATION14 TEST PROCEDURES 15EUT AND CABLE PLACEMENT15CONDUCTED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN18GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS - MOMENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22	CONDUCTED EMISSIONS CONSIDERATIONS	12
MEASUREMENT INSTRUMENTATION13RECEIVER SYSTEM13INSTRUMENT CONTROL COMPUTER13LINE IMPEDANCE STABILIZATION NETWORK (LISN)13FILTERS/ATTENUATORS14ANTENNAS14ANTENNAS14INSTRUMENT CALIBRATION14INSTRUMENT CALIBRATION15EUT AND CABLE PLACEMENT15CONDUCTED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN18GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS - MOMENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - RADIATED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22	RADIATED EMISSIONS CONSIDERATIONS	12
RECEIVER SYSTEM13INSTRUMENT CONTROL COMPUTER13LINE IMPEDANCE STABILIZATION NETWORK (LISN)13FILTERS/ATTENUATORS14ANTENNAS14ANTENNAS14INSTRUMENT CALIBRATION14INSTRUMENT CALIBRATION14ITEST PROCEDURES15EUT AND CABLE PLACEMENT15CONDUCTED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN18GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS = 00MENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - RADIATED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22	MEASUREMENT INSTRUMENTATION	13
INSTRUMENT CONTROL COMPUTER13LINE IMPEDANCE STABILIZATION NETWORK (LISN)13FILTERS/ATTENUATORS14ANTENNAS14ANTENNAS14ANTENNA MAST AND EQUIPMENT TURNTABLE14INSTRUMENT CALIBRATION14 TEST PROCEDURES 15EUT AND CABLE PLACEMENT15CONDUCTED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN18GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS - MOMENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22	RECEIVER SYSTEM	
LINE IMPEDANCE STABILIZATION NETWORK (LISN)13FILTERS/ATTENUATORS14ANTENNAS14ANTENNAS14ANTENNA MAST AND EQUIPMENT TURNTABLE14INSTRUMENT CALIBRATION14 TEST PROCEDURES 15EUT AND CABLE PLACEMENT15CONDUCTED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS16BANDWIDTH MEASUREMENTS16CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN18CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN18GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS – MOMENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - RADIATED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22	INSTRUMENT CONTROL COMPUTER	13
FILTERS/ATTENUATORS14ANTENNAS14ANTENNA MAST AND EQUIPMENT TURNTABLE14INSTRUMENT CALIBRATION14TEST PROCEDURES15EUT AND CABLE PLACEMENT15CONDUCTED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN18GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS - MOMENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - RADIATED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22	LINE IMPEDANCE STABILIZATION NETWORK (LISN)	13
ANTENNAS14ANTENNA MAST AND EQUIPMENT TURNTABLE14INSTRUMENT CALIBRATION14TEST PROCEDURES15EUT AND CABLE PLACEMENT15CONDUCTED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN18GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS – MOMENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - RADIATED EMISSIONS21SAMPLE CALCULATIONS - RELD STRENGTH TO EIRP CONVERSION22	FILTERS/ATTENUATORS	14
ANTENNA MAST AND EQUIPMENT TURNTABLE	ANTENNAS	14
INSTRUMENT CALIBRATION14 TEST PROCEDURES 15EUT AND CABLE PLACEMENT15CONDUCTED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN18GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS – MOMENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - RADIATED EMISSIONS21SAMPLE CALCULATIONS - RADIATED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22	ANTENNA MAST AND EQUIPMENT TURNTABLE	14
TEST PROCEDURES.15EUT AND CABLE PLACEMENT15CONDUCTED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN18GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS – MOMENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - RADIATED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22	INSTRUMENT CALIBRATION	14
EUT AND CABLE PLACEMENT15CONDUCTED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN18GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS - MOMENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - RADIATED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22	TEST PROCEDURES	15
CONDUCTED EMISSIONS15RADIATED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN18GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS – MOMENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - RADIATED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22	EUT AND CABLE PLACEMENT	
RADIATED EMISSIONS15RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN18GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS – MOMENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - RADIATED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22	CONDUCTED EMISSIONS	15
RADIATED EMISSIONS16BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN18GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS – MOMENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - RADIATED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22	RADIATED EMISSIONS	15
BANDWIDTH MEASUREMENTS17SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN18GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS – MOMENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - RADIATED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22	RADIATED EMISSIONS	16
SPECIFICATION LIMITS AND SAMPLE CALCULATIONS18CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN18GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS – MOMENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - RADIATED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22	BANDWIDTH MEASUREMENTS	17
CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN18GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS – MOMENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - RADIATED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22	SPECIFICATION LIMITS AND SAMPLE CALCULATIONS	18
GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS19RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS19RADIATED SPURIOUS EMISSIONS – MOMENTARILY OPERATED DEVICES20SAMPLE CALCULATIONS - CONDUCTED EMISSIONS21SAMPLE CALCULATIONS - RADIATED EMISSIONS21SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION22	CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN	18
RECEIVER RADIATED SPORIOUS EMISSIONS SPECIFICATION LIMITS 19 RADIATED SPURIOUS EMISSIONS – MOMENTARILY OPERATED DEVICES 20 SAMPLE CALCULATIONS - CONDUCTED EMISSIONS 21 SAMPLE CALCULATIONS - RADIATED EMISSIONS 21 SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION 22	GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS	19
SAMPLE CALCULATIONS - CONDUCTED EMISSIONS 21 SAMPLE CALCULATIONS - RADIATED EMISSIONS 21 SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION 22	REVELVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS	19 20
SAMPLE CALCULATIONS - RADIATED EMISSIONS	SAMPLE CALCULATIONS - CONDUCTED EMISSIONS	20 21
SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION	SAMPLE CALCULATIONS - RADIATED EMISSIONS	
	SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION	22

TABLE OF CONTENTS (Continued)

EXHIBIT 1: Test Equipment Calibration Data	.1
EXHIBIT 2: Test Measurement Data	.2
EXHIBIT 3: Photographs of Test Configurations	.3
EXHIBIT 4: Detailed Photographs	.4
EXHIBIT 5: Block Diagram	.5
EXHIBIT 6: Schematic Diagrams	.6
EXHIBIT 7: Theory of Operation	.7
EXHIBIT 8: Advertising Literature	.8
EXHIBIT 9: Operator's Manual	9
EXHIBIT 8: Advertising Literature EXHIBIT 9: Operator's Manual	.8 .9

SCOPE

An electromagnetic emissions test has been performed on the Savi Technology, Inc. model ST-614 and ST-615 pursuant to the following rules:

Industry Canada RSS-Gen Issue 1 RSS 210 Issue 6 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment" FCC Part 15 Subpart B (Receivers) FCC Part 15 Subpart C

Conducted and radiated emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in the following reference standards and as outlined in Elliott Laboratories test procedures:

ANSI C63.4:2003 RSS-212 Issue 1 Test Facilities and Test Methods for Radio Equipment

The intentional radiator above has been tested in a simulated typical installation to demonstrate compliance with the relevant Industry Canada performance and procedural standards.

Final system data was gathered in a mode that tended to maximize emissions by varying orientation of EUT, orientation of power and I/O cabling, antenna search height, and antenna polarization.

Every practical effort was made to perform an impartial test using appropriate test equipment of known calibration. All pertinent factors have been applied to reach the determination of compliance.

The test results recorded herein are based on a single type test of the Savi Technology, Inc. model ST-614 and ST-615 and therefore apply only to the tested sample. The sample was selected and prepared by Eugene Schlindwein of Savi Technology, Inc.

OBJECTIVE

The primary objective of the manufacturer is compliance with the regulations outlined in the previous section.

Prior to marketing in the USA, all unlicensed transmitters and transceivers require certification. Receive-only devices operating between 30 MHz and 960 MHz are subject to either certification or a manufacturer's declaration of conformity, with all other receive-only devices exempt from the technical requirements.

Prior to marketing in Canada, Class I transmitters, receivers and transceivers require certification. Class II devices are required to meet the appropriate technical requirements but are exempt from certification requirements.

Certification is a procedure where the manufacturer submits test data and technical information to a certification body and receives a certificate or grant of equipment authorization upon successful completion of the certification body's review of the submitted documents. Once the equipment authorization has been obtained, the label indicating compliance must be attached to all identical units, which are subsequently manufactured.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product which may result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing or I/O cable changes, etc.).

STATEMENT OF COMPLIANCE

The tested sample of Savi Technology, Inc. model ST-614 and ST-615 complied with the requirements of the following regulations:

Industry Canada RSS-Gen Issue 1 RSS 210 Issue 6 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment" FCC Part 15 Subpart B (Receivers) FCC Part 15 Subpart C

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product which may result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing or I/O cable changes, etc.).

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.231 (a) (1)	RSS 210 A1.1.1 (1)	Duration of manually activated transmissions	No manually activated transmissions	< 5 seconds	Complies
15.231 (a) (2)	RSS 210 A1.1.1 (2)	Duration of automatically activated transmissions	Response to Hello: 10ms Read response: 5s or less	< 5 seconds	Complies
15.231 (a) (3)	RSS 210 A1.1.1 (3)	Transmissions at predetermined / regular intervals	No predetermined transmissions	Such transmissions are not permitted	Complies
15.231 (a) (4)	RSS 210 A1.1.1 (4)	Pendency of transmissions used during emergencies	Not applicable		Complies
15.231 (b)	RSS 210 Table 4	Fundamental Signal Strength	76.4dBµV/m (6606.9µV/m) @ 433.976MHz	Refer to table in limits section	Complies
15.231 (b) / 15.209	RSS 210 Table 2 / 4	Radiated Spurious Emissions, 30 MHz – 4339 MHz	42.6dBµV/m (134.9µV/m) @ 2169.9MHz	Refer to table in limits section	Complies
15.231 (c)	RSS 210 A1.1.3	Bandwidth	433 kHz	< 0.5% of operating frequency	Complies
15.231 (d)	RSS 210 A1.1.4	Frequency Stability - 40.66 – 40.70 MHz band	Not applicable to this device as it does not operate in the 40.66-40.70 MHz sub-band.		N/A

TEST RESULTS SUMMARY MOMENTARILY OPERATED DEVICES – CONTROL SIGNALS

Note 1 – Refer to the operational description included with this application for detailed description and timing diagrams for transmission duration.

Note 2 - As the device is intended for hand-held operation it was tested in all three orthogonal orientations.

-					
FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.231 (e)	RSS 210 A1.1.5	Duration of transmissions	All transmissions are less than 1 second in duration	< 1 second	Complies
15.231 (e)	RSS 210 A1.1.5	Period between transmissions	Beacon mode and short read mode: 10ms duration and quiet period of 10s Long read mode 1s duration and quiet period of 30s or more	> 30 times duration of signal and > 10s	Complies
15.231 (e)	RSS 210 Table 5	Fundamental Signal Strength	68.4dBµV/m (2630.3µV/m) @ 433.976MHz	Refer to table in limits section	Complies
15.231 (e) / 15.209	RSS 210 Table 5	Radiated Spurious Emissions, 30 MHz – 4339 MHz	42.6dBµV/m (134.9µV/m) @ 2169.9MHz	Refer to table in limits section	Complies
15.231 (c)	RSS 210 A1.1.3	Bandwidth	433 kHz	< 0.5% of operating frequency	Complies
15.231 (d)	RSS 210 A1.1.4	Frequency Stability - 40.66 – 40.70 MHz band	Not applicable to this device as it does not operate in the 40.66-40.70 MHz sub-band.		N/A

MOMENTARILY OPERATED DEVICES – DATA SIGNALS OR SIGNALS AT PREDETERMINED INTERVALS

Note 1 – Refer to the operational description included with this application for detailed description and timing diagrams for transmission duration.

Note 2 - As the device is intended for hand-held operation it was tested in all three orthogonal orientations.

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.240 (a)	RSS 210 A5	Location of operation	The tag is triggered by a reader to send transmissions under 15.240.	Must be limited to commercial and industrial areas	Complies
15.240 (f)	-	Information to user	and location of these Readers is applicable to the Readers and not the Tag.	Notification of geographic limitations	Complies
15.240 (b)	RSS 210 A5 (1)	Duration of transmissions	Tag read response: 60s or less with 10s silent period between transmissions	< 60s with 10s silent period	Complies
15.240 (b)	RSS 210 A5 (2)	Fundamental Signal Strength	76.4dBµV/m (6606.9µV/m) @ 433.976MHz	11000uV/m avg 55000uV/m pk	Complies
15.240 (c) / 15.209	RSS 210 Table 2	Radiated Spurious Emissions, 30 MHz – 4339 MHz	42.6dBμV/m (134.9μV/m) @ 2169.9MHz	Table 2	Complies
	RSP 100 RSS GEN 4.4.1	99% Bandwidth	260 kHz	Information only	N/A

RFID DEVICES OPERATING IN THE 433.5 – 434.5MHz BANDS

GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS

FCC Rule	RSS	Description	Measured Value /	Limit /	Result
Part	Rule part	Description	Comments	Requirement	(margin)
15.203	-	RF Connector	Integral antenna	Unique antenna	Complies
15.109	RSS GEN 7.2.3	Receiver spurious emissions	24.8dBμV/m (17.4μV/m) @		Complies (-21.2dB)
15.207	RSS GEN Table 2	AC Conducted Emissions	Not applicable – the de powered and has no pr powered, directly or indi mains powered	vice is battery rovision to be rectly, from AC er.	N/A

MEASUREMENT UNCERTAINTIES

ISO Guide 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level and were calculated in accordance with UKAS document LAB 34.

Measurement Type	Frequency Range (MHz)	Calculated Uncertainty (dB)
Conducted Emissions	0.15 to 30	± 2.4
Radiated Emissions	30 to 1000	± 3.6
Radiated Emissions	1000 to 40000	± 6.0

EQUIPMENT UNDER TEST (EUT) DETAILS

GENERAL

The Savi Technology, Inc. models ST-614 and ST-615 are RF Tagging device which are designed to identify the container to which it is attached to the Savi System. The two devices are electrically identical; the only difference between the ST-614 and the ST-615 is the color of the plastic enclosure.

Normally, the EUT would be mounted to a container or similar piece of equipment. The EUT was treated as table-top equipment during testing to simulate the end user environment.

A response from the EUT is initiated by either a 123 kHz initiation signal from a Savi SignPost or a 433.92 MHz signal from a Savi Reader. Upon receiving the initiation signal the EUT transmits a signal at 433.92 MHz. This signal is comprised of SignPost ID and Tag ID when initiated by a SignPost signal.

The sample was received on July 10, 2006 and tested on July 10 and July 17, 2006. The EUT consisted of the following component(s):

Manufacturer	Model	Description	Serial Number	FCC ID
Savi Technology	ST-614 / ST-615	RFID tag	6500045	

ENCLOSURE

The EUT enclosure is primarily constructed of plastic. EUT measures approximately 2.5cm wide by 2.0cm deep by 17.0cm high.

MODIFICATIONS

The EUT did not require modifications during testing in order to comply with emissions specifications.

SUPPORT EQUIPMENT

No support equipment was used during emissions testing.

EUT INTERFACE PORTS

The EUT has not interface ports for connection during normal operation.

EUT OPERATION

The transmitter was continuously transmitting a modulated signal during radiated emissions tests. For receive mode tests the EUT was in receive mode with the LO and receiver circuit active.

ANTENNA SYSTEM

The antenna system used with the Savi Technology, Inc. model ST-614 and ST-615 consists of an integral antenna for the 433.92 MHz transceiver and another integral antenna for the 123kHz transceiver.

TEST SITE

GENERAL INFORMATION

Final test measurements were taken on July 10 and July 17, 2006 at the Elliott Laboratories Open Area Test Site #2 located at 684 West Maude Avenue, Sunnyvale, California. Pursuant to section 2.948 of the FCC's Rules and section 3.3 of RSP-100, construction, calibration, and equipment data has been filed with the Commission.

ANSI C63.4:2003 recommends that ambient noise at the test site be at least 6 dB below the allowable limits. Ambient levels are below this requirement with the exception of predictable local TV, radio, and mobile communications traffic. The test site contains separate areas for radiated and conducted emissions testing. Considerable engineering effort has been expended to ensure that the facilities conform to all pertinent requirements of ANSI C63.4:2003 and RSS 212.

CONDUCTED EMISSIONS CONSIDERATIONS

Conducted emissions testing is performed in conformance with ANSI C63.4:2003 and RSS 212. Measurements are made with the EUT connected to the public power network through a nominal, standardized RF impedance, which is provided by a line impedance stabilization network, known as a LISN. A LISN is inserted in series with each current-carrying conductor in the EUT power cord.

RADIATED EMISSIONS CONSIDERATIONS

The FCC has determined that radiation measurements made in a shielded enclosure are not suitable for determining levels of radiated emissions. Radiated measurements are performed in an open field environment or in a semi-anechoic chamber. The test sites are maintained free of conductive objects within the CISPR defined elliptical area incorporated in ANSI C63.4:2003 guidelines and meet the Normalized Site Attenuation (NSA) requirements of ANSI C63.4:2003 / RSS 212.

MEASUREMENT INSTRUMENTATION

RECEIVER SYSTEM

An EMI receiver as specified in CISPR 16-1 is used for emissions measurements. The receivers used can measure over the frequency range of 9 kHz up to 2000 MHz. These receivers allow both ease of measurement and high accuracy to be achieved. The receivers have Peak, Average, and CISPR (Quasi-peak) detectors built into their design so no external adapters are necessary. The receiver automatically sets the required bandwidth for the CISPR detector used during measurements. If the repetition frequency of the signal being measured is below 20Hz, peak measurements are made in lieu of Quasi-Peak measurements.

For measurements above the frequency range of the receivers, a spectrum analyzer is utilized because it provides visibility of the entire spectrum along with the precision and versatility required to support engineering analysis. Average measurements above 1000MHz are performed on the spectrum analyzer using the linear-average method with a resolution bandwidth of 1 MHz and a video bandwidth of 10 Hz, unless the signal is pulsed in which case the average (or video) bandwidth of the measuring instrument is reduced to onset of pulse desensitization and then increased.

INSTRUMENT CONTROL COMPUTER

The receivers utilize either a Rohde & Schwarz EZM Spectrum Monitor/Controller or contain an internal Spectrum Monitor/Controller to view and convert the receiver measurements to the field strength at an antenna or voltage developed at the LISN measurement port, which is then compared directly with the appropriate specification limit. This provides faster, more accurate readings by performing the conversions described under Sample Calculations within the Test Procedures section of this report. Results are printed in a graphic and/or tabular format, as appropriate. A personal computer is used to record all measurements made with the receivers.

The Spectrum Monitor provides a visual display of the signal being measured. In addition, the controller or a personal computer run automated data collection programs which control the receivers. This provides added accuracy since all site correction factors, such as cable loss and antenna factors are added automatically.

LINE IMPEDANCE STABILIZATION NETWORK (LISN)

Line conducted measurements utilize a fifty microhenry Line Impedance Stabilization Network as the monitoring point. The LISN used also contains a 250 uH CISPR adapter. This network provides for calibrated radio frequency noise measurements by the design of the internal low pass and high pass filters on the EUT and measurement ports, respectively.

FILTERS/ATTENUATORS

External filters and precision attenuators are often connected between the receiving antenna or LISN and the receiver. This eliminates saturation effects and non-linear operation due to high amplitude transient events.

ANTENNAS

A loop antenna is used below 30 MHz. For the measurement range 30 MHz to 1000 MHz either a combination of a biconical antenna and a log periodic or a bi-log antenna is used. Above 1000 MHz, horn antennas are used. The antenna calibration factors to convert the received voltage to an electric field strength are included with appropriate cable loss and amplifier gain factors to determine an overall site factor, which is then programmed into the test receivers or incorporated into the test software.

ANTENNA MAST AND EQUIPMENT TURNTABLE

The antennas used to measure the radiated electric field strength are mounted on a nonconductive antenna mast equipped with a motor-drive to vary the antenna height. Measurements below 30 MHz are made with the loop antenna at a fixed height of 1m above the ground plane.

ANSI C63.4:2003 and RSS 212 specify that the test height above ground for table mounted devices shall be 80 centimeters. Floor mounted equipment shall be placed on the ground plane if the device is normally used on a conductive floor or separated from the ground plane by insulating material from 3 to 12 mm if the device is normally used on a non-conductive floor. During radiated measurements, the EUT is positioned on a motorized turntable in conformance with this requirement.

INSTRUMENT CALIBRATION

All test equipment is regularly checked to ensure that performance is maintained in accordance with the manufacturer's specifications. All antennas are calibrated at regular intervals with respect to tuned half-wave dipoles. An exhibit of this report contains the list of test equipment used and calibration information.

TEST PROCEDURES

EUT AND CABLE PLACEMENT

The regulations require that interconnecting cables be connected to the available ports of the unit and that the placement of the unit and the attached cables simulate the worst case orientation that can be expected from a typical installation, so far as practicable. To this end, the position of the unit and associated cabling is varied within the guidelines of ANSI C63.4:2003, and the worst-case orientation is used for final measurements.

CONDUCTED EMISSIONS

Conducted emissions are measured at the plug end of the power cord supplied with the EUT. Excess power cord length is wrapped in a bundle between 30 and 40 centimeters in length near the center of the cord. Preliminary measurements are made to determine the highest amplitude emission relative to the specification limit for all the modes of operation. Placement of system components and varying of cable positions are performed in each mode. A final peak mode scan is then performed in the position and mode for which the highest emission was noted on all current carrying conductors of the power cord.



A preliminary scan of the radiated emissions is perfromed in which all significant EUT frequencies are identified with the system in a nominal configuration. At least two scans are performed, one scan for each antenna polarization (horizontal and vertical; loop parallel and perpendicular to the EUT). During the preliminary scans, the EUT is rotated through 360°, the antenna height is varied (for measurements above 30 MHz) and cable positions are varied to determine the highest emission relative to the limit. Preliminary scans may be performed in a fully anechoic chamber for the purposes of identifying the frequencies of the highest emissions from the EUT.

A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

Final maximization is a phase in which the highest amplitude emissions identified in the spectral search are viewed while the EUT azimuth angle is varied from 0 to 360 degrees relative to the receiving antenna. The azimuth, which results in the highest emission is then maintained while varying the antenna height from one to four meters (for measurements above 30 MHz, measurements below 30 MHz are made with the loop antenna at a fixed height of 1m). The result is the identification of the highest amplitude for each of the highest peaks. Each recorded level is corrected in the receiver using appropriate factors for cables, connectors, antennas, and preamplifier gain.



Typical Test Configuration for Radiated Field Strength Measurements



The ground plane extends beyond the ellipse defined in CISPR 16 / CISPR 22 / ANSI C63.4 and is large enough to accommodate test distances (d) of 3m and 10m. Refer to the test data tables for the actual measurement distance.



Test Configuration for Radiated Field Strength Measurements OATS- Plan and Side Views

BANDWIDTH MEASUREMENTS

The 6dB, 20dB and/or 26dB signal bandwidth is measured in using the bandwidths recommended by ANSI C63.4. When required, the 99% bandwidth is measured using the methods detailed in RSS GEN.

SPECIFICATION LIMITS AND SAMPLE CALCULATIONS

The limits for conducted emissions are given in units of microvolts, and the limits for radiated emissions are given in units of microvolts per meter at a specified test distance. Data is measured in the logarithmic form of decibels relative to one microvolt, or dB microvolts (dBuV). For radiated emissions, the measured data is converted to the field strength at the antenna in dB microvolts per meter (dBuV/m). The results are then converted to the linear forms of uV and uV/m for comparison to published specifications.

For reference, converting the specification limits from linear to decibel form is accomplished by taking the base ten logarithm, then multiplying by 20. These limits in both linear and logarithmic form are as follows:

CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(a), RSS GEN

The table below shows the limits for the emissions on the AC power line from an intentional radiator and a receiver.

Frequency (MHz)	Average Limit (dBuV)	Quasi Peak Limit (dBuV)
0.150 to 0.500	Linear decrease on logarithmic frequency axis between 56.0 and 46.0	Linear decrease on logarithmic frequency axis between 66.0 and 56.0
0.500 to 5.000	46.0	56.0
5.000 to 30.000	50.0	60.0

GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS The table below shows the limits for the spurious emissions from transmitters that fall in restricted bands¹ (with the exception of transmitters operating under FCC Part 15 Subpart D and RSS 210 Annex 9), the limits for all emissions from a low power device operating under the general rules of RSS 310 (tables 3 and 4), RSS 210 (table 2) and FCC Part 15

Subpart C section 15.209.

Frequency Range (MHz)	Limit (uV/m)	Limit (dBuV/m @ 3m)
0.009-0.490	2400/F _{KHz} @ 300m	67.6-20*log ₁₀ (F _{KHz}) @ 300m
0.490-1.705	24000/F _{KHz} @ 30m	87.6-20*log ₁₀ (F _{KHz}) @ 30m
1.705 to 30	30 @ 30m	29.5 @ 30m
30 to 88	100 @ 3m	40 @ 3m
88 to 216	150 @ 3m	43.5 @ 3m
216 to 960	200 @ 3m	46.0 @ 3m
Above 960	500 @ 3m	54.0 @ 3m

RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS

The table below shows the limits for the spurious emissions from receivers as detailed in FCC Part 15.109, RSS 210 Table 2, RSS GEN Table 1 and RSS 310 Table 3. Note that receivers operating outside of the frequency range 30 MHz – 960 MHz are exempt from the requirements of 15.109.

Frequency Range (MHz)	Limit (uV/m @ 3m)	Limit (dBuV/m @ 3m)
30 to 88	100	40
88 to 216	150	43.5
216 to 960	200	46.0
Above 960	500	54.0

¹ The restricted bands are detailed in FCC 15.203, RSS 210 Table 1 and RSS 310 Table 2

RADIATED SPURIOUS EMISSIONS - MOMENTARILY OPERATED DEVICES

The table below shows the limits for both the fundamental and spurious emissions for control signals. The limits for data signals, or signals with predetermined transmissions, are given in the second table

Operating Frequency (MHz)	Fundamental Field Strength (microvolts/m)	Spurious Emissions (microvolts/m)
70 - 130	1250	125
130 - 174	1250 - 3750	125 - 375
174 – 260	3750	375
260 - 470	3750 - 12,500	375 - 1250
Above 470	12,500	1250

Spurious Emissions Limits – Control Signals

Operating Frequency (MHz)	Fundamental Field Strength (microvolts/m)	Spurious Emissions (microvolts/m)
70 - 130	500	50
130 - 174	500 - 1500	50 - 150
174 - 260	1500	150
260 - 470	1500 - 5000	150 - 500
Above 470	5000	500

Spurious Emissions Limits – Data Signals

SAMPLE CALCULATIONS - CONDUCTED EMISSIONS

Receiver readings are compared directly to the conducted emissions specification limit (decibel form) as follows:

$$R_r - S = M$$

where:

 $R_r = Receiver Reading in dBuV$

S = Specification Limit in dBuV

M = Margin to Specification in +/- dB

SAMPLE CALCULATIONS - RADIATED EMISSIONS

Receiver readings are compared directly to the specification limit (decibel form). The receiver internally corrects for cable loss, preamplifier gain, and antenna factor. The calculations are in the reverse direction of the actual signal flow, thus cable loss is added and the amplifier gain is subtracted. The Antenna Factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

A distance factor, when used for electric field measurements above 30MHz, is calculated by using the following formula:

$$F_d = 20*LOG_{10} (D_m/D_s)$$

where:

 F_d = Distance Factor in dB D_m = Measurement Distance in meters D_s = Specification Distance in meters

For electric field measurements below 30MHz the extrapolation factor is either determined by making measurements at multiple distances or a theoretical value is calculated using the formula:

$$F_d = 40*LOG_{10} (D_m/D_s)$$

Measurement Distance is the distance at which the measurements were taken and Specification Distance is the distance at which the specification limits are based. The antenna factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

The margin of a given emission peak relative to the limit is calculated as follows:

$$R_c = R_r + F_d$$

and

 $M = R_c - L_s$

where:

 R_r = Receiver Reading in dBuV/m

- F_d = Distance Factor in dB
- R_c = Corrected Reading in dBuV/m
- L_S = Specification Limit in dBuV/m
- M = Margin in dB Relative to Spec

SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION

Where the radiated electric field strength is expressed in terms of the equivalent isotropic radiated power (eirp), or where a field strength measurement of output power is made in lieu of a direct measurement, the following formula is used to convert between eirp and field strength at a distance of 3m from the equipment under test:

 $E = \frac{1000000 \sqrt{30 P}}{3}$ microvolts per meter

where P is the eirp (Watts)

EXHIBIT 1: Test Equipment Calibration Data

1 Page

Radiated Emissions, 30 - 4,400 MHz, 10-Jul-06 Engineer: Mehran Birgani

Manufacturer	Description	Model #	Asset #	Cal Due
Elliott Laboratories	Biconical Antenna, 30-300 MHz	DM-105-T1	382	25-Oct-06
EMCO	Antenna, Horn, 1-18 GHz	3115	487	24-May-08
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	870	13-Jan-07
Filtek	Filter, 1 GHz High Pass	HP12/1000-5BA	957	24-Apr-07
Hewlett Packard	EMC Spectrum Analyzer, 9 KHz - 22 GHz	8593EM	1319	17-Apr-07
Rohde & Schwarz	Test Receiver, 0.009-2750 MHz	ESN	1332	23-Aug-06
EMCO	Log Periodic Antenna, 0.2-2 GHz	3148	1595	26-Jun-07

EXHIBIT 2: Test Measurement Data

15 Pages

Elliot	t	EM	C Test Data
Client:	Savi	Job Number:	J64318
Model:	ST-614 & ST-615	T-Log Number:	T64586
		Account Manager:	Esther Zhu
Contact:	Eugene Schlindwein		
Emissions Spec:	FCC 15.231(a/e); FCC 15.240	Class:	-
Immunity Spec:	-	Environment:	-

EMC Test Data

For The

Savi

Model

ST-614 & ST-615

Date of Last Test: 7/17/2006

Elliott EMC Test Data Job Number: J64318 Client: Savi Model: ST-614 & ST-615 T-Log Number: T64586 Account Manager: Esther Zhu Contact: Eugene Schlindwein Emissions Spec: FCC 15.231(a/e); FCC 15.240 Class: Immunity Spec: Environment: **EUT INFORMATION** General Description The EUT is an RF Tagging device which is designed to identify the container to which it is attached to the Savi System. Normally, the EUT would be mounted to a container or similar piece of equipment. The EUT was treated as table-top equipment during testing to simulate the end user environment. A response from the EUT is initiated by a 123 kHz signal from a Savi SignPost or 433.92 MHz signal from a Savi Reader. Upon receiving the initiation signal the EUT transmits a signal at 433.92 MHz. This signal is comprised of SignPost ID and Tag ID. A response from the EUT is initiated by a 433.92 MHz Savi Reader signal. Upon receiving the initiation signal the EUT transmits a signal at 433.92 MHz. This signal is comprised of Tag ID. Equipment Under Test Model Serial Number FCC ID Manufacturer Description Savi Technology ST-614 RFID tag 6500045 None yet Savi Technology ST-615 RFID tag 6500045 None yet **EUT Antenna** The antenna is integral to the device. EUT Enclosure The EUT enclosure is primarily constructed of plastic. EUT measures approximately 2.5cm wide by 2.0cm deep by 17.0cm hiah. The difference between ST-614 and ST-615 is the color of enclosure. Modification History Mod. # Test Date Modification None 1 --Modifications applied are assumed to be used on subsequent tests unless otherwise stated as a further modification.

Elliot	t		EM	C Test Data
Client:	Savi		Joh Number:	164318
Model:	ST_61/ & ST_615		T-L og Number:	T64586
Widdei.	01-014 & 01-013		Account Manager:	Esther Zhu
Contact:	Fugene Schlindwein			
Emissions Spect	ECC 15 231(a/e): ECC 15	240	Class [.]	_
Immunity Spec:	-	.240	Environment:	-
	Tee	. Oo afia watio		
	Tes		10 # I	
	LO	cal Support Equipm	ient	
Manufacturer	Model	Description	Serial Number	FCC ID
None	-	-	-	-
	Ren	note Support Equip	ment	
Manufacturer	Model	Description	Serial Number	FCC ID
None	-	-	-	-
Port	Inte Connected To	Prface Cabling and P	Ports Cable(s) Shielded or Unshield	led Length(m)
None	-	-	-	
The transmitter was cor EUT was in receive mo	EUT Oper ntinuously transmitting a m de with the LO and receive	ration During Emiss odulated signal during rad er circuit active.	ions Tests diated emissions tests. For	receive mode tests the

EMC Test Data

Client: Savi

Elliott

Model: ST-614 & ST-615

Contact: Eugene Schlindwein

T-Log Number: T64586 Account Manager: Esther Zhu

Job Number: J64318

Class:

Spec: FCC 15.231(a/e); FCC 15.240

Radiated Emissions (ST-614)

Test Specifics

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Config. Used: 1 Config Change: None

EUT Voltage: Battery

Date of Test: 7/17/2006 Test Engineer: Mehran Birgani Test Location: SVOATS #2

General Test Configuration

The EUT was located on the turntable for radiated emissions testing.

Note, **preliminary** testing indicates that the emissions were maximized by orientation of the EUT and elevation of the measurement antenna. **Maximized** testing indicated that the emissions were maximized by orientation of the EUT, elevation of the measurement antenna, <u>and</u> manipulation of the EUT's interface cables.

Note, for testing above 1 GHz, the FCC specifies the limit as an average measurement. In addition, the FCC states that the peak reading of any emission above 1 GHz, can not exceed the average limit by more than 20 dB.

Ambient Conditions:

	7/17/2006	7/10/2006
Temperature (°C):	30	21
Rel. Humidity (%):	33	65

Modifications Made During Testing:

The output power from the EUT was dropped to setting 129

Deviations From The Standard

No deviations were made from the requirements of the standard.

Elliott

EMC Test Data

Client:SaviJob Number:J64318Model:ST-614 & ST-615T-Log Number:T64586Account Manager:Esther ZhuContact:Eugene SchlindweinEsther ZhuSpec:FCC 15.231(a/e); FCC 15.240Class:-

Summary of Results

Run #	Test Performed	Limit	Result	Margin
19	RE 133.02MHz Eundamental	15 231(a) / RSS 210	Dace	76.4dBµV/m
īά		13.23 (a) / 1133 210	F 855	433.976MHz (-4.4dB)
				68.4dBµV/m
1a	RE, 433.92MHz, Fundamental	15.231(e) / RSS 210	Pass	(2630.3µV/m) @
				433.976MHz (-4.5dB)
				76.4dBµV/m
1a	RE, 433.92MHz, Fundamental	15.240 / RSS-210	Pass	(6606.9µV/m) @
				433.976MHz (-4.4dB)
4			_	42.6dBµV/m (134.9µV/m)
1b	RE, 1x Spurious Emissions	FCC 15.209	Pass	@ 2169.9MHz (-11.4dB)
				24 8dBuV/m (17 4uV/m)
2	RE, RxSpurious Emissions	15.109 & RSS-GEN	Pass	@ 858.01MHz (-21.2dB)
3	Bandwidth (20dB)	15.231 / RSS 210	Pass	433 kHz
3	Bandwidth (99%)	RSS-GEN	N/A	260 kHz

Elliott EMC Test Data Client: Savi Job Number: J64318 T-Log Number: T64586 Model: ST-614 & ST-615 Account Manager: Esther Zhu Contact: Eugene Schlindwein Spec: FCC 15.231(a/e); FCC 15.240 Class: -Run #1: Radiated Emissions, 30 MHz - 4.3 GHz Date of Test: 7/17/2006 Config. Used: 1 Test Engineer: Mehran Birgani Config Change: None Test Location: SVOATS #2 EUT Voltage: Battery Run #1a: Fundamental Mesaurement of 433.923 Operation under 15.231(e) FCC 15.231(e) Frequency Level Pol Detector Azimuth Height Comments MHz dBµV/m V/H Limit Margin Pk/QP/Ava degrees meters 433.976 V 72.9 -4.5 212 68.4 1.1 Upright Avg 433.976 88.4 V 92.9 -4.5 Pk 212 1.1 Upright 433.976 88.2 Η 92.9 -4.7 Pk 320 1.0 Side 68.2 Η 72.9 -4.7 320 1.0 433.976 Avg Side Н -6.7 Pk 1.0 433.976 86.2 92.9 12 Flat Η 72.9 Avg 12 1.0 433.976 66.2 -6.7 Flat V 92.9 -7.5 Pk 76 1.1 433.976 85.4 Flat ٧ 72.9 -7.5 76 1.1 433.976 65.4 Avg Flat 433.976 80.8 Η 92.9 -12.1 Ρk 256 1.4 Upright 433.976 60.8 Н 72.9 -12.1 Avg 256 1.4 Upright 433.976 V 92.9 -15.3 Pk 120 2.8 Side 77.6

Note 1: Duty cycle is 10% . A -20dB correction was used to determine the average level from the peak reading

Avg

120

2.8

Side

-15.3

Operation under 15.231(a)

57.6

٧

72.9

433.976

operation u		/ (a)						
Frequency	Level	Pol	FCC 15	5.231(a)	Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
433.976	76.4	V	80.8	-4.4	Avg	212	1.1	Upright
433.976	88.4	V	100.8	-12.4	Pk	212	1.1	Upright
Note 1:	Duty cycle	; is 25%	<u>. A -12dB cc</u>	prrection wa	is used to de	termine the a	average leve	I from the peak reading
Note 2:	Peak read	lings mar	de using a re	eceiver and	measureme	nt bandwidth	set to 120k	ίHz.
Operation u	nder 15.24	40						
Frequency	Level	Pol	FCC 1	15.240	Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
433.976	76.4	V	80.8	-4.4	Avg	212	1.1	Upright
433.976	88.4	V	94.8	-6.4	Pk	212	1.1	Upright
Note 1:	Note 1: Duty cycle is 25% . A -12dB correction was used to determine the average level from the peak reading							
Note 2:	Peak read	lings mar	de using a re	eceiver and	measureme	nt bandwidth	set to 120k	Hz.

EMC Test Data

E	Elliott	EMC Test Data			
Client:	Savi	Job Number:	J64318		
Model	ST 614 8 ST 615	T-Log Number:	T64586		
wouer.	- 10-10 ۵ ۵ ۱-۵۱۵ - ۵۱۵ - ۵۱۵ - ۵۱۵ - ۵۱۵ - ۵۱۵ - ۵۱۵ - ۵۱۵ - ۵۱۵ - ۵۱۵ - ۵۱۵ - ۵۱۵ - ۵۱۵ - ۵۱۵ - ۵۱۵ - ۵۱۵ - ۵ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰	Account Manager:	Esther Zhu		
Contact:	Eugene Schlindwein				
Spec:	FCC 15.231(a/e); FCC 15.240	Class:	-		

Run #1b: Spurious Emissions, 30-4400 MHz (Tx Mode)

Note - by accounting for worst case duty cycle and using the more stringent limits of 15.209 for all spurious emissions the measurements below demonstrate compliance of each operating mode with the appropriate requirements (15.231(a), 15.231(e) or 15.240).

Frequency	Level	Pol	FCC ²	15.209	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2169.870	42.6	V	54.0	-11.4	Avg	86	2.5	Side
3905.760	39.2	Н	54.0	-14.8	Avg	39	1.0	Upright
2169.860	39.1	V	54.0	-14.9	Avg	360	2.4	Flat
2169.830	38.8	V	54.0	-15.2	Avg	48	1.1	Upright
2169.840	38.8	Н	54.0	-15.2	Avg	67	1.0	Flat
867.951	30.5	Н	46.0	-15.5	QP	336	1.0	Flat
2169.850	38.5	Н	54.0	-15.5	Avg	142	1.3	Side
2169.830	38.1	Н	54.0	-15.9	Avg	244	1.3	Upright
1301.890	35.3	V	54.0	-18.7	Avg	345	1.4	Flat
2169.870	54.6	Н	74.0	-19.4	PK	86	2.5	Side
1301.920	34.0	V	54.0	-20.0	Avg	350	1.0	Side
1301.890	33.3	Н	54.0	-20.7	Avg	50	2.0	Upright
3905.760	51.2	Н	74.0	-22.8	PK	39	1.0	Upright
2169.860	51.1	Н	74.0	-22.9	PK	360	2.4	Flat
2169.830	50.8	Н	74.0	-23.2	PK	48	1.1	Upright
2169.840	50.8	V	74.0	-23.2	PK	67	1.0	Flat
2169.850	50.5	V	74.0	-23.5	PK	142	1.3	Side
1301.890	30.5	V	54.0	-23.5	Avg	253	1.0	Upright
1301.860	30.5	Н	54.0	-23.5	Avg	315	2.2	Side
2169.830	50.1	V	74.0	-23.9	PK	244	1.3	Upright
1301.890	47.3	V	74.0	-26.7	PK	345	1.4	Flat
1301.920	46.0	V	74.0	-28.0	PK	350	1.0	Side
1301.890	45.3	Н	74.0	-28.7	PK	50	2.0	Upright
1301.890	42.5	V	74.0	-31.5	PK	253	1.0	Upright
1301.860	42.5	Н	74.0	-31.5	PK	315	2.2	Side
Note 1	Worst cas	e duty cy	cle for all th	nree operati	onal modes i	s 25% . A -12	2dB correcti	on was used to determine the average
NOLE I.	level from the peak reading. All three orientations evaluated and all readings within 20dB of the limit were recorded.							

E		tt						EN	//C Test Data
Client:	Savi						J	lob Number:	J64318
							T-L	og Number:	T64586
Model:	SI-614 &	SI-615					Accou	nt Manager:	Esther Zhu
Contact:	Eugene S	chlindwe	in 					•	
Spec:	FCC 15.23	31(a/e); I	-CC 15.240					Class:	-
Run #2: Sp	ourious E	missio	ns, Receiv	/e Mode, 3	30MHz - 20	00 MHz			
Dat Test Test	e of Test: Engineer: Location:	7/10/200 Mehran SVOATS)6 Birgani S #2		C Coi E	config. Used: nfig Change: EUT Voltage:	1 None Battery		
Frequency	Level	Pol	FCC 1	15.109	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters		
858.011	24.8	Н	46.0	-21.2	QP	0	1.0	Upright, Noi	ise Floor
858.011	24.8	Н	46.0	-21.2	QP	0	1.0	Side, Noise	Floor
858.011	24.7	V	46.0	-21.3	QP	0	1.0	Upright, Noi	ise Floor
858.011	24.7	V	46.0	-21.3	QP	0	1.0	Side, Noise	Floor
858.011	24.6	V	46.0	-21.4	QP	0	1.0	Flat, Noise	Floor
867.951	24.5	V	46.0	-21.5	QP	50	1.0	Side	
858.011	24.4	H	46.0	-21.6	QP	0	1.0	Flat, Noise	Floor
429.005	17.5	V	46.0	-28.5	QP	0	1.0	Opright, No	ISE FIOOR
429.005	17.4	H	46.0	-28.0	QP OD	0	1.0	Side, Noise	Floor
429.005	17.4	V	40.0	-20.0		0	1.0	Side, Noise	FI00r
429.005	17.3	П V	40.0	-20.7		0	1.0	Elat Noiso	Eleer
429.003	17.3	V H	40.0	-20.7		0	1.0	Flat, Noise	Floor
423.005	17.2	11	40.0	-20.0	QI	U	1.0	1 lat, 10036	1 1001
Note 1:	Peak read	inas are	compared t	o the avera	ae limit				



	111				
1 CE				El	MC Test Data
Client:	Savi			Job Number:	J64318
Model:	ST-614 & ST-615			T-Log Number:	T64586
Cantaati	Eugono Soblindurain			Account Manager:	Esther Zhu
Spec:	FCC 15.231(a/e); FCC 1	5.240		Class:	-
opool					
		Radiated En	nissions (S	ST-614)	
Test Spec	ifics				
	Objective: The objective of specification list	of this test session is to sted above.	perform final qualif	ication testing of the EU	T with respect to the
Dat	te of Test: 7/10/2006		Config. Used:	1	
Test	Engineer: Mehran Birgar	i	Config Change:	None	
Test	Location: SVOATS #2		EUT Voltage:	Battery	
General T The EUT v	est Configuration vas located on the turntab	le for radiated emission	s testing.		
Note, prel i measurem the measu	iminary testing indicates ent antenna. Maximized rement antenna, <u>and</u> mar	that the emissions were testing indicated that th nipulation of the EUT's i	maximized by oriente emissions were nterface cables.	entation of the EUT and maximized by orientatio	elevation of the n of the EUT, elevation of
Note, for te reading of	esting above 1 GHz, the F any emission above 1 GH	CC specifies the limit a lz, can not exceed the a	s an average meas average limit by mo	surement. In addition, th rre than 20 dB.	ne FCC states that the peak
Ambient C	Conditions:	Temperature:	21 °C		
		Rel. Humidity:	65 %		
Modificati No modific	ons Made During Te	esting: EUT during testing			
Deviation: No deviation	s From The Standar	d equirements of the stan	dard.		

Elliott

EMC Test Data

Client:SaviJob Number:J64318Model:ST-614 & ST-615T-Log Number:T64586Account Manager:Esther ZhuContact:Eugene SchlindweinEsther ZhuSpec:FCC 15.231(a/e); FCC 15.240Class:-

Summary of Results

		-	
Test Performed	Limit	Result	Margin
			69.6dBµV/m
RE, 433.92MHz, Fundamental	15.231(a) / RSS 210	Pass	(3020.0µV/m) @
			433.976MHz (-11.2dB)
			69.6dBµV/m
RE, 433.92MHz, Fundamental	15.231(e) / RSS 210	Pass	(3020.0µV/m) @
			433.976MHz (-3.3dB)
			89.6dBµV/m
RE, 433.92MHz, Fundamental	15.240 / RSS-210	Pass	(30199.5µV/m) @
			433.976MHz (-5.2dB)
			51.5dBuV/m (375.8uV/m)
RE, Tx Spurious Emissions	FCC 15.209	Pass	Ø 2160 0MHz (₂2 5dB)
			@ 2109.3MI12 (-2.30D)
DE DySpurious Emissions	15 100 8 DSS CEN	Deee	24.8dBµV/m (17.4µV/m)
RE, RESpurious Emissions	15. 109 & ROO-GEN	Pass	@ 858.01MHz (-21.2dB)
Bandwidth (20dB)	15.231 / RSS 210	Pass	433 kHz
Bandwidth (99%)	RSS-GEN	N/A	260 kHz
	Test Performed RE, 433.92MHz, Fundamental RE, 433.92MHz, Fundamental RE, 433.92MHz, Fundamental RE, Tx Spurious Emissions RE, RxSpurious Emissions Bandwidth (20dB) Bandwidth (99%)	Test PerformedLimitRE, 433.92MHz, Fundamental15.231(a) / RSS 210RE, 433.92MHz, Fundamental15.231(e) / RSS 210RE, 433.92MHz, Fundamental15.240 / RSS-210RE, Tx Spurious EmissionsFCC 15.209RE, RxSpurious Emissions15.109 & RSS-GENBandwidth (20dB)15.231 / RSS 210Bandwidth (99%)RSS-GEN	Test PerformedLimitResultRE, 433.92MHz, Fundamental15.231(a) / RSS 210PassRE, 433.92MHz, Fundamental15.231(e) / RSS 210PassRE, 433.92MHz, Fundamental15.240 / RSS-210PassRE, Tx Spurious EmissionsFCC 15.209PassRE, RxSpurious Emissions15.109 & RSS-GENPassBandwidth (20dB)15.231 / RSS 210PassBandwidth (99%)RSS-GENN/A

E	Ellio	ott						El	MC Test Data	
Client:	Savi				Job Number: J64318					
	OT 044 0	OT 045			T-L	.og Number:	T64586			
Model:	SI-614 &	ST-615			Accou	nt Manager:	Esther Zhu			
Contact:	Eugene S	chlindwe	in							
Spec:	FCC 15.23	31(a/e); I	FCC 15.240					Class:	-	
Run #1a· F	#1a: Fundamental Mesaurement of 433 923									
Oneration u	nder 15 23	اللاللة الألك 14(م)	Suuremen	1 01 400.07	20					
Frequency	l evel	Pol	FCC 15	5.231(e)	Detector	Azimuth	Height	Comments		
MHz	dBuV/m	V/H	Limit	Margin	Pk/QP/Ava	dearees	meters			
433.976	69.6	V	72.9	-3.3	Ava	10	1.0	Upriaht		
433,976	89.6	V	92.9	-3.3	Pk	10	1.0	Upright		
433,976	88.1	Н	92.9	-4.8	Pk	0	2.0	Side		
433,976	68.1	Н	72.9	-4.8	Ανα	0	2.0	Side		
433 976	86.2	Н	92.9	-6.7	Pk	360	2.5	Flat		
433 976	66.2	н	72.9	-6.7	Ava	360	2.5	Flat		
433 976	85.8	V	92.9	_7 1	Pk	67	1.0	Flat		
133 076	65.8	V	72.0	7.1	Δνα	67	1.0	Flat		
433.970	82.4	н	02.0	-10.5	Avy Dk	27/	3.4	Unright		
433.370	62.4	Н	72.0	-10.5	Δνα	274	3.4	Upright		
433.976	77.0	V	02.0	15.0	Dk	71	1.0	Sido		
433.370	57.9	V	72.0	-15.0	Δνα	71	1.0	Side		
400.070	01.5	v	12.5	-10.0	Aig	11	1.0	0100		
Note 1 [.]	Duty cycle	is 10%	A -20dB co	prrection wa	is used to de	termine the a	average leve	el from the p	eak reading	
Operation u	nder 15.23	31(a)						<u> </u>		
Frequency	Level	Pol	FCC 15	5.231(a)	Detector	Azimuth	Heiaht	Comments		
MHz	dBuV/m	V/H	Limit	Margin	Pk/QP/Ava	dearees	meters			
433.976	69.6	V	80.8	-11.2	Ava	10	1.0	Upriaht		
433.976	89.6	V	100.8	-11.2	Pk	10	1.0	Upright		
					•					
Note 1:	Duty cycle	e is 25%	. A -12dB co	prrection wa	is used to de	termine the a	average leve	el from the p	eak reading	
Note 2:	Peak read	lings ma	de using a r	eceiver and	measureme	nt bandwidth	set to 120k	KHz.		
Operation u	nder 15.24	10								
Frequency	Level	Pol	FCC 1	15.240	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters			
433.976	89.6	V	94.8	-5.2	Pk	10	1.0	Upright		
433.976	69.6	V	80.8	-11.2	Avg	10	1.0	Upright		
					. <u> </u>					
Note 1:	Duty cycle	is 25%	. A -12dB co	prrection wa	is used to de	termine the a	average leve	el from the p	eak reading	
Note 2:	Peak readings made using a receiver and measurement bandwidth set to 120kHz.									
		-								

Elliott

EMC Test Data

Client:	Savi	Job Number:	J64318
Model:	ST 614 8 ST 615	T-Log Number:	T64586
	31-014 & 31-013	Account Manager:	Esther Zhu
Contact:	Eugene Schlindwein		
Spec:	FCC 15.231(a/e); FCC 15.240	Class:	-

Run #1b: Other Spurious Emissions, 30-4400 MHz (Tx Mode)

Note - by accounting for worst case duty cycle and using the more stringent limits of 15.209 for all spurious emissions the measurements below demonstrate compliance of each operating mode with the appropriate requirements (15.231(a), 15.231(e) or 15.240).

Frequency	Level	Pol	FCC 1	15.209	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2169.860	51.5	Н	54.0	-2.5	Avg	72	2.3	Side
2169.860	46.7	Н	54.0	-7.3	Avg	360	2.3	Flat
2169.870	45.9	Н	54.0	-8.1	Avg	134	2.3	Upright
2169.870	45.2	V	54.0	-8.8	Avg	274	1.7	Flat
1301.900	45.1	Н	54.0	-8.9	Avg	115	1.4	Upright
2169.870	44.0	V	54.0	-10.0	Avg	89	1.1	Side
1301.900	43.8	V	54.0	-10.2	Avg	158	1.0	Side
2169.860	63.5	Н	74.0	-10.5	PK	72	2.3	Side
2169.850	41.1	V	54.0	-12.9	Avg	273	1.8	Upright
1301.900	40.1	Н	54.0	-13.9	Avg	225	2.4	Side
1301.900	39.8	V	54.0	-14.2	Avg	67	1.0	Flat
1301.890	39.1	V	54.0	-14.9	Avg	140	1.0	Upright
3905.750	39.1	Н	54.0	-14.9	Avg	85	1.1	Upright
2169.860	58.7	Н	74.0	-15.3	PK	360	2.3	Flat
1301.900	38.2	Н	54.0	-15.8	Avg	215	2.1	Flat
2169.870	57.9	Н	74.0	-16.1	PK	134	2.3	Upright
2169.870	57.2	V	74.0	-16.8	PK	274	1.7	Flat
867.951	29.1	Н	46.0	-16.9	QP	355	1.8	Flat
1301.900	57.1	Н	74.0	-16.9	PK	115	1.4	Upright
2169.870	56.0	V	74.0	-18.0	PK	89	1.1	Side
867.951	27.8	Н	46.0	-18.2	QP	10	2.0	Side
1301.900	55.8	V	74.0	-18.2	PK	158	1.0	Side
867.951	26.2	Н	46.0	-19.8	QP	10	2.0	Upright
2169.850	53.1	V	74.0	-20.9	PK	273	1.8	Upright
867.951	24.8	V	46.0	-21.2	QP	117	1.0	Upright
1301.900	52.1	Н	74.0	-21.9	PK	225	2.4	Side
1301.900	51.8	V	74.0	-22.2	PK	67	1.0	Flat
867.951	23.7	V	46.0	-22.3	QP	10	1.0	Flat
1301.890	51.1	V	74.0	-22.9	PK	140	1.0	Upright
3905.750	51.1	Н	74.0	-22.9	PK	85	1.1	Upright
1301.900	50.2	Н	74.0	-23.8	PK	215	2.1	Flat
Note 1:	Note 1: Worst case duty cycle for all three operational modes is 25%. A -12dB correction was used to determine the average level from the peak reading. All three orientations evaluated and all readings within 20dB of the limit were recorded.							

Client: Savi Job Number: J64318 Model: ST-614 & ST-615 T-Log Number: T64586 Account Manager: Esther Zhu Spec: FCC 15.231(a/e); FCC 15.240 Class: - Run #2: Spurious Emissions, Receive Mode, 30MHz - 2000 MHz Class: - Class: - Frequency Level Pol FCC 15.109 Detector Azimuth Height Comments MHz 4BµV/m VH Limit Margin PK0P/Avg degrees meters S80.011 24.8 H 46.0 -21.2 QP 0 1.0 Upright. Noise Floor 858.011 24.7 V 46.0 -21.3 QP 0 1.0 Upright. Noise Floor 858.011 24.5 V 46.0 -21.6 QP 0 1.0 Side. Noise Floor 429.005 17.5 V 46.0 -21.6 QP 0 1.0 Side. Noise Floor 429.005 17.4 H 46.0 -28.6 QP 0 1.0 Side. Noise Floor	6F		tt						El	MC Test Data		
Model: ST-614 & ST-615 T-Log Number: T64586 Contact: Eugene Schlindwein Spec: CC 15.231 (ale); FCC 15.240 Class - Run #2: Spurious Emissions, Receive Mode, 30MHz - 2000 MHz Class - Class - Frequency Level Pol FCC 15.109 Detector Azimuth Height Comments MHz dBµV/m V/H Limit Margin Pk/OP/Avg degrees meters 858.011 24.8 H 46.0 -21.2 QP 0 1.0 Side, Noise Floor 858.011 24.6 V 46.0 -21.3 QP 0 1.0 Side, Noise Floor 858.011 24.6 V 46.0 -21.6 QP 0 1.0 Flat, Noise Floor 858.011 24.6 V 46.0 -21.6 QP 0 1.0 Upright, Noise Floor 429.005 17.3 H 46.0 -28.6 QP 0 1.0 Upright, Noise Floor<	Client:	t: Savi							Job Number:	J64318		
Model: Spec: FCC 15.231 (a/e); FCC 15.240 Class: Run #2: Spurious Emissions, Receive Mode, 30MHz - 2000 MHz Class: Comments Frequency Level Pol FCC 15.109 Detector Account/Manager: MHz dby/W VHI Limit Margin Phi/OP/Avg degrees meters 858.011 24.8 H 46.0 -21.2 QP 0 1.0 Upright, Noise Floor 858.011 24.7 V 46.0 -21.3 QP 0 1.0 Upright, Noise Floor 858.011 24.7 V 46.0 -21.3 QP 0 1.0 Upright, Noise Floor 858.011 24.5 V 46.0 -21.6 QP 0 1.0 Side, Noise Floor 858.011 24.5 V 46.0 -28.6 QP 0 1.0 Bright, Noise Floor 429.005 17.4 H 46.0 -28.6 QP 0 1.0 Dright, Noise Floor <td></td> <td colspan="7"></td> <td>og Number:</td> <td>T64586</td>									og Number:	T64586		
Contact Eugene Speci- FCC 15.231(ale): FCC 15.240 Class: Run #2: Spurious Emissions, Receive Mode, 30MHz - 2000 MHz Class: Class: Frequency Level Pol FCC 15.109 Detector Azimuth Height Comments MHz dBµV/m V/H Limit Margin Pk/0P/Avg degrees meters 358.011 24.8 H 46.0 -21.2 QP 0 1.0 Upright, Noise Floor 658.011 24.7 V 46.0 -21.3 QP 0 1.0 Upright, Noise Floor 858.011 24.6 V 46.0 -21.6 QP 0 1.0 Bide, Noise Floor 858.011 24.6 V 46.0 -28.6 QP 0 1.0 Bide, Noise Floor 429.005 17.5 V 46.0 -28.6 QP 0 1.0 Bide, Noise Floor 429.005 17.4 H 46.0 -28.7 QP 0 1.0	Model:	ST-614 & ST-615							int Manager:	Esther Zhu		
Spec. FCC 15 231 (a/e); FCC 15 240 Class. Run #2: Spurious Emissions, Receive Mode, 30MHz - 2000 MHz Frequency Level Pol FCC 15.109 Detector Azimuth Height Comments MHz dBµU/m V/H Limit Margin Pk/CP/Avg degrees meters 858.011 24.8 H 46.0 -21.2 OP 0 1.0 Upright, Noise Floor 858.011 24.7 V 46.0 -21.3 OP 0 1.0 Side, Noise Floor 858.011 24.7 V 46.0 -21.3 OP 0 1.0 Side, Noise Floor 858.011 24.6 V 46.0 -21.6 OP 0 1.0 Side Noise Floor 858.011 24.4 H 46.0 -21.6 OP 0 1.0 Floor 24.00 429.005 17.5 V 46.0 -28.6 OP 0 1.0 Side, Noise Floor <t< td=""><td>Contact:</td><td colspan="7">Eugene Schlindwein</td><td>Ū</td><td></td></t<>	Contact:	Eugene Schlindwein							Ū			
Run #2: Spurious Emissions, Receive Mode, 30MHz - 2000 MHz Frequency Level Pol FCC 15.109 Detector Azimuth Height Comments 858.011 24.8 H 46.0 -21.2 QP 0 1.0 Upright, Noise Floor 858.011 24.8 H 46.0 -21.2 QP 0 1.0 Upright, Noise Floor 858.011 24.7 V 46.0 -21.3 QP 0 1.0 Side, Noise Floor 858.011 24.6 V 46.0 -21.5 QP 0 1.0 Flat, Noise Floor 858.011 24.6 V 46.0 -21.6 QP 0 1.0 Flat, Noise Floor 429.005 17.5 V 46.0 -28.5 QP 0 1.0 Upright, Noise Floor 429.005 17.4 H 46.0 -28.7 QP 0 1.0 Upright, Noise Floor 429.005 17.3 H 46.0 -28.7	Spec:	FCC 15.231(a/e); FCC 15.240							Class:	-		
Frequency Level Pol FCC 15.109 Detector Azimuth Height Comments MHz dBµV/m V/H Limit Margin Pk/QP/Avg degrees meters 858.011 24.8 H 46.0 -21.2 QP 0 1.0 Upright, Noise Floor 858.011 24.8 H 46.0 -21.3 QP 0 1.0 Upright, Noise Floor 858.011 24.7 V 46.0 -21.3 QP 0 1.0 Side, Noise Floor 858.011 24.6 V 46.0 -21.6 QP 50 1.0 Side Noise Floor 858.011 24.5 V 46.0 -21.6 QP 0 1.0 Upright, Noise Floor 429.005 17.5 V 46.0 -28.6 QP 0 1.0 Upright, Noise Floor 429.005 17.4 V 46.0 -28.7 QP 0 1.0 Upright, Noise Floor	Run #2: S	purious E	missio	ns, Receiv	ve Mode, 3	30MHz - 200	00 MHz					
HHz dBjt/m VH Limit PROCP/Avg degrees meters 858.011 24.8 H 46.0 -21.2 QP 0 1.0 Upright, Noise Floor 858.011 24.8 H 46.0 -21.2 QP 0 1.0 Upright, Noise Floor 858.011 24.7 V 46.0 -21.3 QP 0 1.0 Upright, Noise Floor 858.011 24.6 V 46.0 -21.4 QP 0 1.0 Flet, Noise Floor 858.011 24.6 V 46.0 -21.6 QP 0 1.0 Flet, Noise Floor 858.011 24.6 V 46.0 -21.6 QP 0 1.0 Upright, Noise Floor 429.005 17.4 H 46.0 -28.6 QP 0 1.0 Upright, Noise Floor 429.005 17.4 V 46.0 -28.7 QP 0 1.0 Upright, Noise Floor 429.005 <	Frequency	l evel	Pol	FCC ²	15 109	Detector	Azimuth	Height	Comments			
858.011 24.8 H 46.0 -21.2 QP 0 1.0 Upright, Noise Floor 858.011 24.8 H 46.0 -21.2 QP 0 1.0 Side, Noise Floor 858.011 24.7 V 46.0 -21.3 QP 0 1.0 Side, Noise Floor 858.011 24.7 V 46.0 -21.3 QP 0 1.0 Side, Noise Floor 858.011 24.6 V 46.0 -21.5 QP 0 1.0 Side, Noise Floor 867.951 24.5 V 46.0 -28.5 QP 0 1.0 Side, Noise Floor 429.005 17.5 V 46.0 -28.6 QP 0 1.0 Side, Noise Floor 429.005 17.3 H 46.0 -28.7 QP 0 1.0 Side, Noise Floor 429.005 17.3 H 46.0 -28.7 QP 0 1.0 Flat, Noise Floor	MHz	dBuV/m	V/H	Limit	Margin	Pk/QP/Ava	dearees	meters	Commente			
858.011 24.8 H 46.0 -21.2 QP 0 1.0 Side, Noise Floor 858.011 24.7 V 46.0 -21.3 QP 0 1.0 Upright, Noise Floor 858.011 24.6 V 46.0 -21.4 QP 0 1.0 Side, Noise Floor 867.951 24.5 V 46.0 -21.4 QP 0 1.0 Flat, Noise Floor 858.011 24.4 H 46.0 -21.6 QP 0 1.0 Upright, Noise Floor 429.005 17.5 V 46.0 -28.6 QP 0 1.0 Upright, Noise Floor 429.005 17.4 V 46.0 -28.6 QP 0 1.0 Side, Noise Floor 429.005 17.3 H 46.0 -28.7 QP 0 1.0 Upright, Noise Floor 429.005 17.2 H 46.0 -28.8 QP 0 1.0 Flat, Noise Floor <tr< td=""><td>858.011</td><td>24.8</td><td>H</td><td>46.0</td><td>-21.2</td><td>QP</td><td>0</td><td>1.0</td><td>Upright, No</td><td>ise Floor</td></tr<>	858.011	24.8	H	46.0	-21.2	QP	0	1.0	Upright, No	ise Floor		
858.011 24.7 V 46.0 -21.3 QP 0 1.0 Upright, Noise Floor 858.011 24.6 V 46.0 -21.4 QP 0 1.0 Side, Noise Floor 858.011 24.6 V 46.0 -21.4 QP 0 1.0 Side, Noise Floor 858.011 24.4 H 46.0 -21.6 QP 0 1.0 Flat, Noise Floor 429.005 17.5 V 46.0 -28.6 QP 0 1.0 Side, Noise Floor 429.005 17.4 H 46.0 -28.6 QP 0 1.0 Upright, Noise Floor 429.005 17.3 H 46.0 -28.7 QP 0 1.0 Upright, Noise Floor 429.005 17.3 V 46.0 -28.8 QP 0 1.0 Flat, Noise Floor 429.005 17.2 H 46.0 -28.8 QP 0 1.0 Flat, Noise Floor </td <td>858.011</td> <td>24.8</td> <td>Н</td> <td>46.0</td> <td>-21.2</td> <td>QP</td> <td>0</td> <td>1.0</td> <td>Side, Noise</td> <td>Floor</td>	858.011	24.8	Н	46.0	-21.2	QP	0	1.0	Side, Noise	Floor		
858.011 24.7 V 46.0 -21.3 QP 0 1.0 Side, Noise Floor 867.951 24.5 V 46.0 -21.5 QP 50 1.0 Side 858.011 24.4 H 46.0 -21.5 QP 50 1.0 Side 858.011 24.4 H 46.0 -28.5 QP 0 1.0 Flat, Noise Floor 429.005 17.5 V 46.0 -28.6 QP 0 1.0 Upright, Noise Floor 429.005 17.4 H 46.0 -28.7 QP 0 1.0 Upright, Noise Floor 429.005 17.3 H 46.0 -28.7 QP 0 1.0 Upright, Noise Floor 429.005 17.2 H 46.0 -28.8 QP 0 1.0 Flat, Noise Floor 429.005 17.2 H 46.0 -28.8 QP 0 1.0 Flat, Noise Floor Note 1: Peak readings are	858.011	24.7	V	46.0	-21.3	QP	0	1.0	Upright, No	ise Floor		
858.011 24.6 V 46.0 -21.4 QP 0 1.0 Flat, Noise Floor 867.951 24.5 V 46.0 -21.5 QP 50 1.0 Flat, Noise Floor 429.005 17.5 V 46.0 -28.5 QP 0 1.0 Upright, Noise Floor 429.005 17.4 H 46.0 -28.6 QP 0 1.0 Side, Noise Floor 429.005 17.4 V 46.0 -28.6 QP 0 1.0 Side, Noise Floor 429.005 17.3 H 46.0 -28.7 QP 0 1.0 Upright, Noise Floor 429.005 17.3 H 46.0 -28.7 QP 0 1.0 Flat, Noise Floor 429.005 17.2 H 46.0 -28.8 QP 0 1.0 Flat, Noise Floor 429.005 17.2 H 46.0 -28.8 QP 0 1.0 Flat, Noise Floor <td>858.011</td> <td>24.7</td> <td>V</td> <td>46.0</td> <td>-21.3</td> <td>QP</td> <td>0</td> <td>1.0</td> <td>Side, Noise</td> <td>e Floor</td>	858.011	24.7	V	46.0	-21.3	QP	0	1.0	Side, Noise	e Floor		
867.951 24.5 V 46.0 -21.5 QP 50 1.0 Side 858.011 24.4 H 46.0 -21.6 QP 0 1.0 Flat, Noise Floor 429.005 17.5 V 46.0 -28.6 QP 0 1.0 Upright, Noise Floor 429.005 17.4 H 46.0 -28.6 QP 0 1.0 Side, Noise Floor 429.005 17.4 V 46.0 -28.6 QP 0 1.0 Side, Noise Floor 429.005 17.3 H 46.0 -28.7 QP 0 1.0 Flat, Noise Floor 429.005 17.3 V 46.0 -28.8 QP 0 1.0 Flat, Noise Floor 429.005 17.2 H 46.0 -28.8 QP 0 1.0 Flat, Noise Floor	858.011	24.6	V	46.0	-21.4	QP	0	1.0	Flat, Noise	Floor		
858.011 24.4 H 46.0 -21.6 QP 0 1.0 Flat, Noise Floor 429.005 17.4 H 46.0 -28.6 QP 0 1.0 Upright, Noise Floor 429.005 17.4 H 46.0 -28.6 QP 0 1.0 Side, Noise Floor 429.005 17.4 H 46.0 -28.7 QP 0 1.0 Side, Noise Floor 429.005 17.3 H 46.0 -28.7 QP 0 1.0 Upright, Noise Floor 429.005 17.3 V 46.0 -28.8 QP 0 1.0 Flat, Noise Floor 429.005 17.2 H 46.0 -28.8 QP 0 1.0 Flat, Noise Floor	867.951	24.5	V	46.0	-21.5	QP	50	1.0	Side			
429.005 17.5 V 46.0 -28.5 QP 0 1.0 Upright, Noise Floor 429.005 17.4 H 46.0 -28.6 QP 0 1.0 Side, Noise Floor 429.005 17.4 V 46.0 -28.6 QP 0 1.0 Side, Noise Floor 429.005 17.3 H 46.0 -28.7 QP 0 1.0 Upright, Noise Floor 429.005 17.2 H 46.0 -28.8 QP 0 1.0 Floor 429.005 17.2 H 46.0 -28.8 QP 0 1.0 Floor 429.005 17.2 H 46.0 -28.8 QP 0 1.0 Flat, Noise Floor	858.011	24.4	Н	46.0	-21.6	QP	0	1.0	Flat, Noise	Floor		
429.005 17.4 H 46.0 -28.6 QP 0 1.0 Side, Noise Floor 429.005 17.3 H 46.0 -28.7 QP 0 1.0 Upright, Noise Floor 429.005 17.3 H 46.0 -28.7 QP 0 1.0 Upright, Noise Floor 429.005 17.3 V 46.0 -28.7 QP 0 1.0 Upright, Noise Floor 429.005 17.3 V 46.0 -28.8 QP 0 1.0 Flat, Noise Floor 429.005 17.2 H 46.0 -28.8 QP 0 1.0 Flat, Noise Floor	429.005	17.5	V	46.0	-28.5	QP	0	1.0	Upright, No	Upright, Noise Floor		
429.005 17.4 V 46.0 -28.6 QP 0 1.0 Side, Noise Floor 429.005 17.3 H 46.0 -28.7 QP 0 1.0 Upright, Noise Floor 429.005 17.3 V 46.0 -28.7 QP 0 1.0 Flat, Noise Floor 429.005 17.2 H 46.0 -28.8 QP 0 1.0 Flat, Noise Floor 429.005 17.2 H 46.0 -28.8 QP 0 1.0 Flat, Noise Floor	429.005	17.4	Н	46.0	-28.6	QP	0	1.0	Side, Noise	e Floor		
429.005 17.3 H 46.0 -28.7 QP 0 1.0 Upright, Noise Floor 429.005 17.3 V 46.0 -28.7 QP 0 1.0 Flat, Noise Floor 429.005 17.2 H 46.0 -28.8 QP 0 1.0 Flat, Noise Floor A29.005 17.2 H 46.0 -28.8 QP 0 1.0 Flat, Noise Floor	429.005	17.4	V	46.0	-28.6	QP	0	1.0	Side, Noise	Side, Noise Floor		
429.005 17.3 V 46.0 -28.7 QP 0 1.0 Flat, Noise Floor 429.005 17.2 H 46.0 -28.8 QP 0 1.0 Flat, Noise Floor Note 1: Peak readings are compared to the average limit	429.005	17.3	H	46.0	-28.7	QP	0	1.0	Upright, No	Upright, Noise Floor		
429.005 17.2 H 46.0 -28.8 QP 0 1.0 Flat, Noise Floor Note 1: Peak readings are compared to the average limit	429.005	17.3	<u>V</u>	46.0	-28.7	QP	0	1.0	Flat, Noise Floor			
Note 1: Peak readings are compared to the average limit	429.005	17.2	Н	46.0	-28.8	QP	0	1.0	Flat, Noise	Floor		
Note 1. Peak readings are compared to the average innit	Note 1	Dook road	ingo oro	aamnarad	the ever	ao limit						
		reakieau	ings are	compared								

