Impinj, Inc.

ADDENDUM TEST REPORT FOR 93909-18

Impinj IPJ-RS500 23dBm Reader SIP Model: IPJ-RS500GX

Tested To The Following Standards:

FCC Part 15 Subpart C Sections 15.247 & RSS-210 Issue 8

Report No.: 93909-18B

Date of issue: Feburary 7, 2014



This test report bears the accreditation symbol indicating that the testing performed herein meets the test and reporting requirements of ISO/IEC 17025 under the applicable scope of EMC testing for CKC Laboratories, Inc.

We strive to create long-term, trust based relationships by providing sound, adaptive, customer first testing services. We embrace each of our customers' unique EMC challenges, not as an interruption to set processes, but rather as the reason we are in business.

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ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

Impinj, Inc. 701 N. 34th Street Seattle, WA 98103 **REPORT PREPARED BY:**

Morgan Tramontin CKC Laboratories, Inc. 5046 Sierra Pines Drive Mariposa, CA 95338

Project Number: 93909

REPRESENTATIVE: Mike Thomas Customer Reference Number: 111063-1

July 16, 2013

DATE OF EQUIPMENT RECEIPT: DATE(S) OF TESTING:

July 16 – November 8, 2013

Revision History

Original: Testing of the Impinj IPJ-RS500 23dBm Reader SIP, IPJ-RS500GX to FCC Part 15 Subpart C Sections 15.247 & RSS-210 Issue 8.

Addendum A: To add Conducted Emissions, Conducted Band Edge, Carrier frequency Separation, Channel Separation / Hopping and Time of Occupancy sections and data to the report. To replace RF Power Output data with updated data.

Addendum B: Corrected Conducted Emissions test equipment.

Report Authorization

The test data contained in this report documents the observed testing parameters pertaining to and are relevant for only the sample equipment tested in the agreed upon operational mode(s) and configuration(s) as identified herein. Compliance assessment remains the client's responsibility. This report may not be used to claim product endorsement by A2LA or any government agencies. This test report has been authorized for release under quality control from CKC Laboratories, Inc.

Steve -7 Be

Steve Behm Director of Quality Assurance & Engineering Services CKC Laboratories, Inc.



Test Facility Information



Our laboratories are configured to effectively test a wide variety of product types. CKC utilizes first class test equipment, anechoic chambers, data acquisition and information services to create accurate, repeatable and affordable test results.

TEST LOCATION(S): CKC Laboratories, Inc. 22116 23rd Drive S.E., Suite A Bothell, WA 98021-4413

Software Versions

CKC Laboratories Proprietary Software	Version
EMITest Emissions	5.00.14
Immunity	5.00.07

Site Registration & Accreditation Information

Location	CB #	TAIWAN	CANADA	FCC	JAPAN
Bothell	US0081	SL2-IN-E-1145R	3082C-1	318736	A-0148



SUMMARY OF RESULTS

Standard / Specification: FCC Part 15.247 & RSS-210 Issue 8

Description	Test Procedure/Method	Results
Conducted Emissions	FCC Part 15 Subpart C Section 15.207 / DA 00-705	Pass
20dB & 99% Occupied Bandwidth	FCC Part 15 Subpart C Section 15.247(a)(1)(I) / DA 00-705 RSS-210	Pass
Carrier Frequency Separation	FCC Part 15 Subpart C Section 15.247(a)(1) / DA 00-705	Pass
Channel Separation / Hopping	FCC Part 15 Subpart C Section 15.247(a)(1 / DA 00-705	Pass
Average Time of Occupancy	FCC Part 15 Subpart C Section 15.247 (a)(1)(i) / DA 00-705	Pass
RF Power Output	FCC Part 15 Subpart C Section 15.247 (b)(2) / DA 00-705	Pass
Conducted Spurious Emissions & Band Edge	FCC Part 15 Subpart C Section15.247(d) / DA 00-705 RSS-210	Pass
Radiated Spurious Emissions & Band Edge	FCC Part 15 Subpart C Section15.247(d) / DA 00-705 RSS-210	Pass
-		

Conditions During Testing

This list is a summary of the conditions noted for or modifications made to the equipment during testing.

Summary of Conditions
None



EQUIPMENT UNDER TEST (EUT)

EQUIPMENT UNDER TEST

Impinj IPJ-RS500 23dBm Reader SIP

Manuf: Impinj Inc. Model: IPJ-RS500GX Serial: IMPH12000100051210

Mini Guardrail Antenna

Manuf: Impinj, Inc. Model: IMP-A0303-000 Serial: None

Impinj IPJ-RS500 23dBm Reader SIP

Manuf: Impinj Inc. Model: IPJ-RS500GX Serial: 010137130071

<u>Antenna</u>

Manuf: Laird Technologies Model: S9025PR Serial: None

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

Development Platform

Manuf: Impinj, Inc. Model: IPJ-E4000 Rev 2.01 Serial: None

Battery Pack

Manuf: Tenergy Model: TN270 Serial: None

Laptop

Manuf: Dell Model: Latitude D610 Serial: CN-0M7181-48643-662-2613 Battery Manuf: Tenergy

Model: 18650 Serial: None

Battery

Manuf: Tenergy Model: 18650 Serial: None

DC Power Supply

Manuf: Agilent Model: E3631A Serial: None



FCC PART 15 SUBPART C

This report contains EMC emissions test results under United States Federal Communications Commission (FCC) 47 CFR 15C requirements for Unlicensed Radio Frequency Devices, Subpart C - Intentional Radiators.

15.207 AC Conducted Emissions

Test Data Sheets

Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer:	Impinj Inc.		
Specification:	15.207 AC Mains - Average		
Work Order #:	93909	Date:	11/8/2013
Test Type:	Conducted Emissions	Time:	11:34:17
Equipment:	Impinj IPJ-RS500 23dBm Reader SIP	Sequence#:	12
Manufacturer:	Impinj Inc.	Tested By:	Steven Pittsford
Model:	IPJ-RS500GX		120V 60Hz
S/N:	010137130071		

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05435	Attenuator	PE7015-10	10/5/2012	10/5/2014
T2	ANP05546	Cable	Heliax	3/27/2013	3/27/2015
T3	ANP05547	Cable	Heliax	9/7/2012	9/7/2014
T4	AN01311	50uH LISN-Line	3816/2	12/9/2011	12/9/2013
	AN01311	50uH LISN-Neutral	3816/2	12/9/2011	12/9/2013
	AN02871	Spectrum Analyzer	E4440A	4/11/2013	4/11/2015
T5	AN02611	High Pass Filter	HE9615-150K-	4/18/2012	4/18/2014
			50-720B		

_Equipment Under Test (* = EUT):								
Function	Manufacturer	Model #	S/N					
Impinj IPJ-RS500 23dBm Reader SIP*	Impinj Inc.	IPJ-RS500GX	010137130071					

Support Devices:			
Function	Manufacturer	Model #	S/N
Development platform	Impinj, Inc.	IPJ-E4000 Rev 2.01	
Laptop	Dell	Latitude D610	CN-0M7181-48643-662-
			2613
DC Power Supply	Agilent	E3631A	



Test Conditions / Notes:

The EUT seeking modular approval is placed in the center of the turntable on a table 80cm above the ground plane, installed on a support host PCB as intended for final installation.

A laptop located inside the chamber sends test command to the EUT via the support host PCB. The EUT is set in constant transmit mode.

EUT is powered by a power supply connected to the mains network.

Emission profile of the EUT rotated along three orthogonal axes was investigated. Recorded data represent worse case emission.

Test method in accordance with FCC document: DA 00-705

Temperature: 23°C Pressure: 102.4kPa Humidity: 37% Freq: 0.15-30MHz

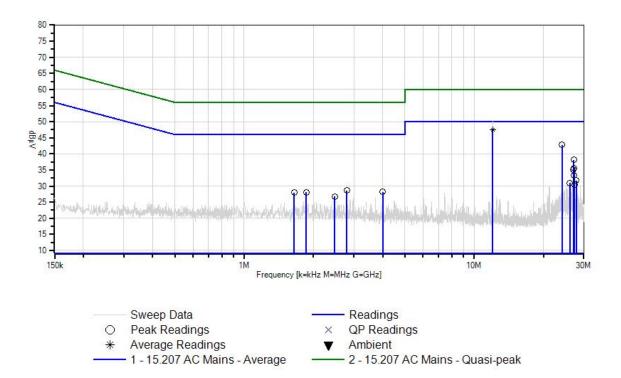
Ext Attn: 0 dB

	Attn: U dB										
	rement Data:		eading lis	ted by ma	argin.			Test Lead	1: Line		
#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5								
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	12.037M	37.8	+9.0	+0.1	+0.1	+0.4	+0.0	47.4	50.0	-2.6	Line
	Ave		+0.0								
^	12.040M	40.9	+9.0	+0.1	+0.1	+0.4	+0.0	50.5	50.0	+0.5	Line
			+0.0								
3	24.066M	32.8	+9.1	+0.0	+0.1	+0.7	+0.0	42.8	50.0	-7.2	Line
			+0.1								
4	27.074M	27.9	+9.1	+0.0	+0.1	+0.8	+0.0	38.1	50.0	-11.9	Line
			+0.2								
5	27.184M	25.4	+9.1	+0.0	+0.1	+0.8	+0.0	35.6	50.0	-14.4	Line
			+0.2								
6	26.965M	25.0	+9.1	+0.0	+0.1	+0.8	+0.0	35.1	50.0	-14.9	Line
			+0.1								
7	27.170M	23.2	+9.1	+0.0	+0.1	+0.8	+0.0	33.4	50.0	-16.6	Line
			+0.2								
8	27.115M	23.1	+9.1	+0.0	+0.1	+0.8	+0.0	33.3	50.0	-16.7	Line
Ű	2/11/2001	20.1	+0.2	10.0	10.1	10.0	10.0	00.0	20.0	10.7	Line
9	2.799M	19.2	+9.0	+0.0	+0.1	+0.1	+0.0	28.6	46.0	-17.4	Line
	2.799101	17.2	+0.2	10.0	10.1	10.1	10.0	20.0	10.0	17.1	Line
10	4.011M	18.8	+9.0	+0.0	+0.1	+0.2	+0.0	28.2	46.0	-17.8	Line
10	4.011101	10.0	+0.1	10.0	10.1	10.2	10.0	20.2	40.0	17.0	Line
11	1.864M	18.7	+9.0	+0.0	+0.1	+0.1	+0.0	28.1	46.0	-17.9	Line
11	1.004111	10.7	+9.0 +0.2	± 0.0	± 0.1	± 0.1	± 0.0	20.1	40.0	-17.7	Line
10	1.651M	196		+0.0	+0.1	+0.1		28.0	46.0	19.0	Line
12	1.651M	18.6	+9.0	+0.0	+0.1	+0.1	+0.0	28.0	46.0	-18.0	Line
			+0.2								



13	27.766M	21.4	+9.1	+0.1	+0.1	+0.8	+0.0	31.7	50.0	-18.3	Line
			+0.2								
14	26.074M	20.9	+9.1	+0.0	+0.1	+0.8	+0.0	31.0	50.0	-19.0	Line
			+0.1								
15	2.480M	17.4	+9.0	+0.0	+0.1	+0.1	+0.0	26.8	46.0	-19.2	Line
			+0.2								
16	27.259M	20.2	+9.1	+0.0	+0.1	+0.8	+0.0	30.4	50.0	-19.6	Line
			+0.2								

CKC Laboratories, Inc. Date: 11/8/2013 Time: 11:34:17 Impinj Inc. WO#: 93909 Test Lead: Line 120V 60Hz Sequence#: 12 Line Impinj Inc. Impinj IPJ-RS500 23dBm Reader SIP P/N: IPJ-RS500GX





Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: Specification:	Impinj Inc. 15.207 AC Mains - Average		11/0/2012
Work Order #:	93909	Date:	11/8/2013
Test Type:	Conducted Emissions	Time:	11:40:20
Equipment:	Impinj IPJ-RS500 23dBm Reader SIP	Sequence#:	13
Manufacturer:	Impinj Inc.	Tested By:	Steven Pittsfe
Model:	IPJ-RS500GX		120V 60Hz
S/N:	010137130071		

Test Equipment:

1 cor Bqu	-pe				
ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05435	Attenuator	PE7015-10	10/5/2012	10/5/2014
T2	ANP05546	Cable	Heliax	3/27/2013	3/27/2015
T3	ANP05547	Cable	Heliax	9/7/2012	9/7/2014
	AN01311	50uH LISN-Line	3816/2	12/9/2011	12/9/2013
T4	AN01311	50uH LISN-Neutral	3816/2	12/9/2011	12/9/2013
T5	AN02871	Spectrum Analyzer	E4440A	4/11/2013	4/11/2015
T6	AN02611	High Pass Filter	HE9615-150K-	4/18/2012	4/18/2014
			50-720B		

Pittsford

Equipment Under Test (* = EUT):

lanufacturer	Model #	S/N
npinj Inc.	IPJ-RS500GX	010137130071

Support Devices:

Support Dericesi			
Function	Manufacturer	Model #	S/N
Development platform	Impinj, Inc.	IPJ-E4000 Rev 2.01	
Laptop	Dell	Latitude D610	CN-0M7181-48643-662-
			2613
DC Power Supply	Agilent	E3631A	

Test Conditions / Notes:

The EUT seeking modular apporval is placed in the center of the turntable on a table 80cm above the ground plane, installed on a support host PCB as intended for final installation.

A laptop located inside the chamber sends test command to the EUT via the support host PCB. The EUT is set in constant transmit mode.

EUT is powered by a power supply connected to the mains network.

Emission profile of the EUT rotated along three orthogonal axes was investigated. Recorded data represent worse case emission.

Test method in accordance with FCC document: DA 00-705

Temperature: 23°C Pressure: 102.4kPa Humidity: 37% Freq: 0.15-30MHz

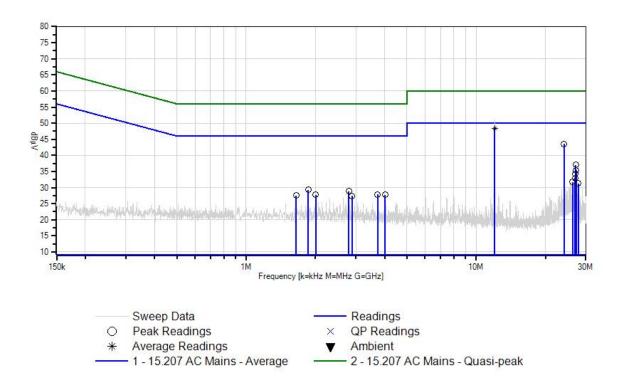


Ext Attn: 0 dB

Measur	rement Data:	Re	0	ted by ma	urgin.			Test Lead	d: Neutral		
#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	ID	ID	T 11			ID	
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	12.040M	38.7	+9.0	+0.1	+0.1	+0.4	+0.0	48.3	50.0	-1.7	Neutr
	Ave	41.6	+0.0	+0.0	0.1	0.4	0.0	51.0	50.0	1.0	N T
~	12.040M	41.6	+9.0	+0.1	+0.1	+0.4	+0.0	51.2	50.0	+1.2	Neutr
3	24.080M	33.6	+0.0 +9.1	+0.0	+0.1	+0.7	+0.0	43.6	50.0	-6.4	Neutr
5	24.080M	55.0	+9.1 +0.0	+0.0 +0.1	+0.1	+0.7	+0.0	45.0	30.0	-0.4	Neutr
4	27.074M	26.8	+0.0 +9.1	+0.1 +0.0	+0.1	+0.8	+0.0	37.0	50.0	-13.0	Neutr
+	27.07411	20.8	+9.1 +0.0	+0.0 +0.2	+0.1	+0.0	± 0.0	57.0	50.0	-15.0	incuti
5	27.184M	25.2	+9.1	+0.2 $+0.0$	+0.1	+0.8	+0.0	35.4	50.0	-14.6	Neutr
5	27.10 111	20.2	+0.0	+0.2	10.1	10.0	10.0	55.1	50.0	1 110	riouu
6	26.971M	24.2	+9.1	+0.0	+0.1	+0.8	+0.0	34.3	50.0	-15.7	Neutr
-			+0.0	+0.1							
7	1.860M	19.9	+9.0	+0.0	+0.1	+0.1	+0.0	29.3	46.0	-16.7	Neutr
			+0.0	+0.2							
8	26.889M	22.8	+9.1	+0.0	+0.1	+0.8	+0.0	32.9	50.0	-17.1	Neutr
			+0.0	+0.1							
9	2.795M	19.5	+9.0	+0.0	+0.1	+0.1	+0.0	28.9	46.0	-17.1	Neutr
			+0.0	+0.2							
10	3.727M	18.5	+9.0	+0.0	+0.1	+0.2	+0.0	27.9	46.0	-18.1	Neutr
			+0.0	+0.1							
11	2.008M	18.4	+9.0	+0.0	+0.1	+0.1	+0.0	27.8	46.0	-18.2	Neutr
			+0.0	+0.2						10.0	
12	26.225M	21.6	+9.1	+0.0	+0.1	+0.8	+0.0	31.7	50.0	-18.3	Neutr
10	4.0101	10.2	+0.0	+0.1	.0.1	.0.0	.0.0	27.7	16.0	10.2	NT (
13	4.016M	18.3	+9.0	+0.0 +0.1	+0.1	+0.2	+0.0	27.7	46.0	-18.3	Neutr
14	1.651M	18.1	+0.0 +9.0	+0.1 +0.0	+0.1	+0.1	+0.0	27.5	46.0	-18.5	Neutr
14	1.031101	10.1	+9.0 +0.0	+0.0 +0.2	± 0.1	± 0.1	+0.0	21.3	40.0	-10.3	ineuti
15	2.889M	18.0	+0.0 +9.0	+0.2 +0.0	+0.1	+0.1	+0.0	27.4	46.0	-18.6	Neutr
1.5	2.007141	10.0	+9.0 +0.0	+0.0 +0.2	10.1	10.1	10.0	27.7	-0.0	-10.0	reun
16	27.766M	21.0	+9.1	+0.2 $+0.1$	+0.1	+0.8	+0.0	31.3	50.0	-18.7	Neutr
10	27.700141	21.0	+0.0	+0.1 $+0.2$	10.1	10.0	10.0	51.5	50.0	10.7	roun
L											



CKC Laboratories, Inc. Date: 11/8/2013 Time: 11:40:20 Impinj Inc. WO#: 93909 Test Lead: Neutral 120V 60Hz Sequence#: 13 Neutral Impinj Inc. Impinj IPJ-RS500 23dBm Reader SIP P/N: IPJ-RS500GX





Test Setup Photos





20dB & 99% Occupied Bandwidth

<u>Test Data</u>

Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer:	Impinj Inc.		
Specification:	FCC15.247 -20dB Bandwidth.		
Work Order #:	93909	Date:	7/16/2013
Test Type:	Conducted Emissions	Time:	09:02:21
Equipment:	Impinj IPJ-RS500 23dBm Reader SIP	Sequence#:	1
Manufacturer:	Impinj Inc.	Tested By:	Steven Pittsford
Model:	IPJ-RS500GX		3.7VDC
S/N:	IMPH12000100051210		

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	ANP06130	Attenuator	18N20W-10	8/18/2011	8/18/2013
	ANP06217	Attenuator	768-10	3/22/2012	3/22/2014
	AN03227	Cable	32026-29080-	3/29/2013	3/29/2015
			29080-84		
	AN02673	Spectrum Analyzer	E4446A	5/11/2012	5/11/2014

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Impinj IPJ-RS500 23dBm Reader SIP*	Impinj Inc.	IPJ-RS500GX	IMPH12000100051210

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D610	CN-0M7181-48643-662-
			2613
Development platform	Impinj, Inc.	IPJ-E4000 Rev 2.01	
Battery Pack	Tenergy	TN270	
Battery	Tenergy	18650	
Battery	Tenergy	18650	

Summary

Channel	OBW -20dB	99% OBW
Low	81.4kHz	79.0kHz
Mid	82.2kHz	79.7kHz
High	81.0kHz	79.0kHz



Test Conditions / Notes:

The EUT is seeking modular approval and is placed on the test bench, installed on a support host PCB. The laptop sends test command to the EUT via the support host PCB. The EUT is set in constant transmit mode.

Transmit Frequencies: 902.75MHz, 915.25MHz, 927.25MHz Firmware setting = 23dBm, 23dBm, 23dBm Emission profile evaluated at the antenna port. Test method in accordance with FCC document: DA 00-705. 15.31(e) compliance: a freshly charged battery is installed. Temperature: 23°C Pressure: 101.6kPa Humidity: 38%



Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: Specification:	Impinj Inc. RSS-210 99% Bandwidth.		
-			7/1//0010
Work Order #:	93909	Date:	7/16/2013
Test Type:	Conducted Emissions	Time:	09:02:21
Equipment:	Impinj IPJ-RS500 23dBm Reader SIP	Sequence#:	1
Manufacturer:	Impinj Inc.	Tested By:	Steven Pittsford
Model:	IPJ-RS500GX		3.7VDC
S/N:	IMPH12000100051210		

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	ANP06130	Attenuator	18N20W-10	8/18/2011	8/18/2013
	ANP06217	Attenuator	768-10	3/22/2012	3/22/2014
	AN03227	Cable	32026-29080-	3/29/2013	3/29/2015
			29080-84		
	AN02673	Spectrum Analyzer	E4446A	5/11/2012	5/11/2014

Equipment Under Test (* = EUT):

Equipment Onder Test (- LUI).		
Function	Manufacturer	Model #	S/N
Impinj IPJ-RS500 23dBm	Impinj Inc.	IPJ-RS500GX	IMPH12000100051210
Reader SIP*			
Support Devices:			
Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D610	CN-0M7181-48643-662-
			2613

		2015
Development platform	Impinj, Inc.	IPJ-E4000 Rev 2.01
Battery Pack	Tenergy	TN270
Battery	Tenergy	18650
Battery	Tenergy	18650

Summary

Channel	OBW -20dB	99% OBW
Low	81.4kHz	79.0kHz
Mid	82.2kHz	79.7kHz
High	81.0kHz	79.0kHz

Test Conditions / Notes:

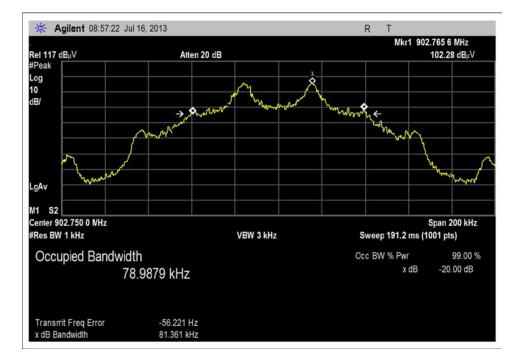
The EUT is seeking modular approval and is placed on the test bench, installed on a support host PCB. The laptop sends test command to the EUT via the support host PCB. The EUT is set in constant transmit mode.

Transmit Frequencies: 902.75MHz, 915.25MHz, 927.25MHz Firmware setting = 23dBm, 23dBm, 23dBm Emission profile evaluated at the antenna port.

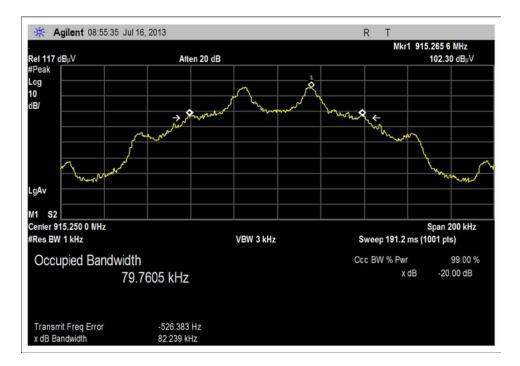
Test method in accordance with FCC document: DA 00-705. 15.31(e) compliance: a freshly charged battery is installed. Temperature: 23°C Pressure: 101.6kPa Humidity: 38%



Test Plots

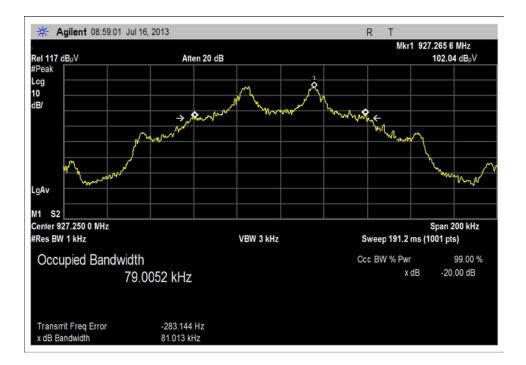


Low Channel



Mid Channel





High Channel



Test Setup Photos



Overall Test Setup

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15.247(a)(1) Carrier Frequency Separation

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer:	Impinj Inc.	
Specification:	15.247(a)(1)	
Work Order #:	93909	Da
Test Type:	Conducted Emissions	Tin
Equipment:	Impinj IPJ-RS500 23dBm Reader SIP	Sequence
Manufacturer:	Impinj Inc.	Tested I
Model:	IPJ-RS500GX	
S/N:	IMPH12000100051210	

Date: 7/16/2012 Time: 09:02:21 Sequence#: 1 Tested By: Steven Pittsford 3.7VDC

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	ANP06130	Attenuator	18N20W-10	8/18/2011	8/18/2013
	ANP06217	Attenuator	768-10	3/22/2012	3/22/2014
	AN03227	Cable	32026-29080-	3/29/2013	3/29/2015
			29080-84		
	AN02673	Spectrum Analyzer	E4446A	5/11/2012	5/11/2014

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Impinj IPJ-RS500 23dBm Reader SIP*	Impinj Inc.	IPJ-RS500GX	IMPH12000100051210

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D610	CN-0M7181-48643-662- 2613
Development platform	Impinj, Inc.	IPJ-E4000 Rev 2.01	2015
Battery Pack	Tenergy	TN270	
Battery	Tenergy	18650	
Battery	Tenergy	18650	

Test Conditions / Notes:

The EUT seeking modular approval is placed on the test bench, installed on a support host PCB. A laptop sends test command to the EUT via the support host PCB.

Frequency: 902-928MHz, Firmware setting = 23dBm

Emission profile evaluated at the antenna port.

Test method in accordance with FCC document: DA 00-705

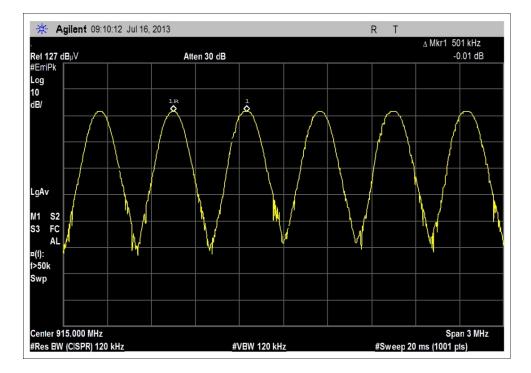
15.31(e) compliance: a freshly charged battery is installed

Temperature: 24°C, Pressure: 101.5kPa, Humidity: 38%

15.247(a)(1) For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.



<u>Test Data</u>



Frequency Separation, Channel Separation = 500kHz



Test Setup Photos





15.247(a)(1) Channel Separation / Hopping

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: Specification:	Impinj Inc. 15.247(a)(1)		
Work Order #:	93909	Date:	7/16/2012
Test Type:	Conducted Emissions	Time:	09:02:21
Equipment:	Impinj IPJ-RS500 23dBm Reader SIP	Sequence#:	1
Manufacturer:	Impinj Inc.	Tested By:	Steven Pittsford
Model:	IPJ-RS500GX		3.7VDC
S/N:	IMPH12000100051210		

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	ANP06130	Attenuator	18N20W-10	8/18/2011	8/18/2013
	ANP06217	Attenuator	768-10	3/22/2012	3/22/2014
	AN03227	Cable	32026-29080-29080-84	3/29/2013	3/29/2015
	AN02673	Spectrum Analyzer	E4446A	5/11/2012	5/11/2014

Equipment Under Test (* = EUT):			
Function	Manufacturer	Model #	S/N
Impinj IPJ-RS500 23dBm Reader SIP*	Impinj Inc.	IPJ-RS500GX	IMPH12000100051210

Support Devices:			
Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D610	CN-0M7181-48643-662-
			2613
Development platform	Impinj, Inc.	IPJ-E4000 Rev 2.01	
Battery Pack	Tenergy	TN270	
Battery	Tenergy	18650	
Battery	Tenergy	18650	

Test Conditions / Notes:

The EUT seeking modular approval is placed on the test bench, installed on a support host PCB. A laptop sends test command to the EUT via the support host PCB.

Frequency: 902-928MHz Firmware setting = 23dBm

Emission profile evaluated at the antenna port. Test method in accordance with FCC document: DA 00-705.

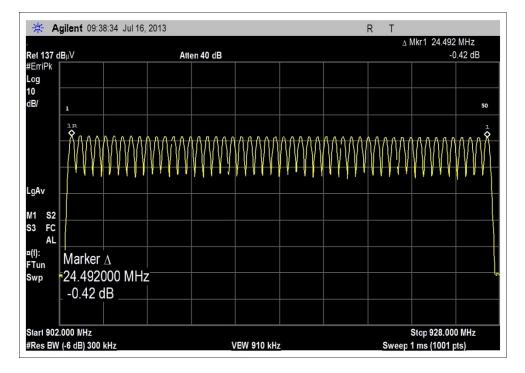
15.31(e) compliance: a freshly charged battery is installed

Temperature: 24°C, Pressure: 101.5kPa, Humidity: 38%

15.247(a)(1) For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.



<u>Test Data</u>



Total number of hopping channel = 50



Test Setup Photos





15.247(a)(1)(i) Average Time of Occupancy

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer:	Impinj Inc.		
Specification:	15.247(a)(1)(i)		
Work Order #:	93909	Date:	7/16/2012
Test Type:	Conducted Emissions	Time:	09:02:21
Equipment:	Impinj IPJ-RS500 23dBm Reader SIP	Sequence#:	1
Manufacturer:	Impinj Inc.	Tested By:	Steven Pittsford
Model:	IPJ-RS500GX		3.7VDC
S/N:	IMPH12000100051210		

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	ANP06130	Attenuator	18N20W-10	8/18/2011	8/18/2013
	ANP06217	Attenuator	768-10	3/22/2012	3/22/2014
	AN03227	Cable	32026-29080-	3/29/2013	3/29/2015
			29080-84		
	AN02673	Spectrum Analyzer	E4446A	5/11/2012	5/11/2014

Equipment Under Test (* = EUT):

Equipment Onder Test (- LUI).		
Function	Manufacturer	Model #	S/N
Impinj IPJ-RS500 23dBm Reader SIP*	Impinj Inc.	IPJ-RS500GX	IMPH12000100051210

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D610	CN-0M7181-48643-662-
			2613
Development platform	Impinj, Inc.	IPJ-E4000 Rev 2.01	
Battery Pack	Tenergy	TN270	
Battery	Tenergy	18650	
Battery	Tenergy	18650	



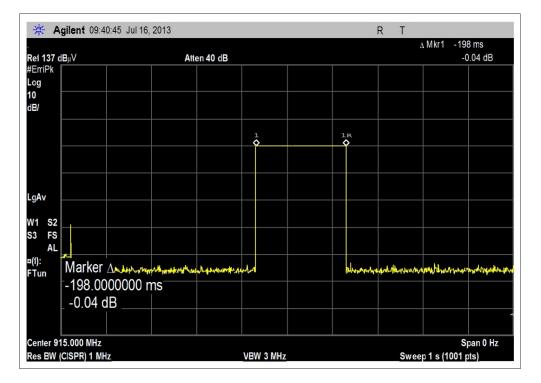
Test Conditions / Notes:

The EUT is seeking modular approval and is placed on the test bench, installed on a support host PCB. The laptop sends test command to the EUT via the support host PCB.

Frequency: 902-928MHz Firmware setting = 23dBm Emission profile evaluated at the antenna port. Test method in accordance with FCC document: DA 00-705. 15.31(e) compliance: a freshly charged battery is installed.

Temperature: 24°C Pressure: 101.5kPa Humidity: 38%

15.247(a)(1) For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.



<u>Test Data</u>

Average Time of Occupancy Event duration = 198ms



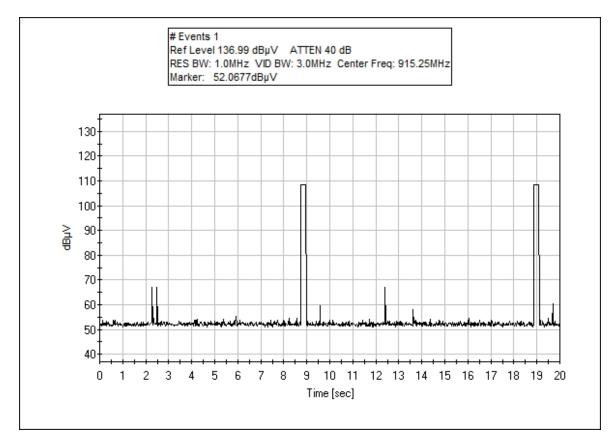


Figure 1: Number of events in 20sec



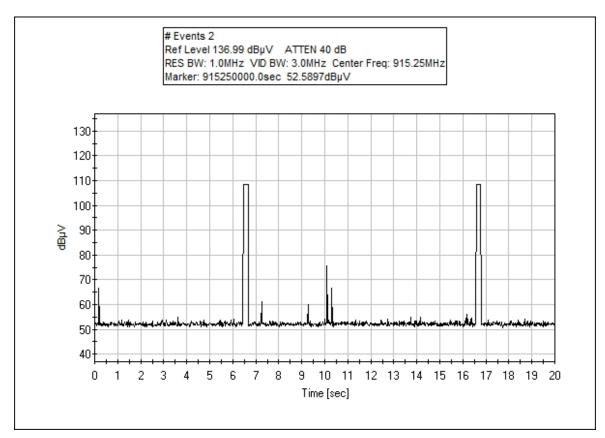


Figure 2: Number of events in 20sec



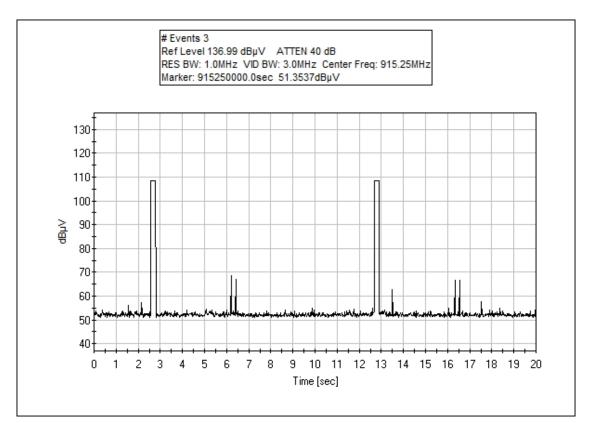


Figure 3: Number of events in 20sec



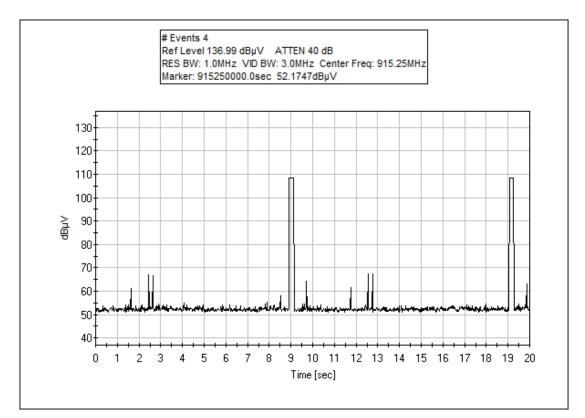


Figure 4: Number of events in 20sec



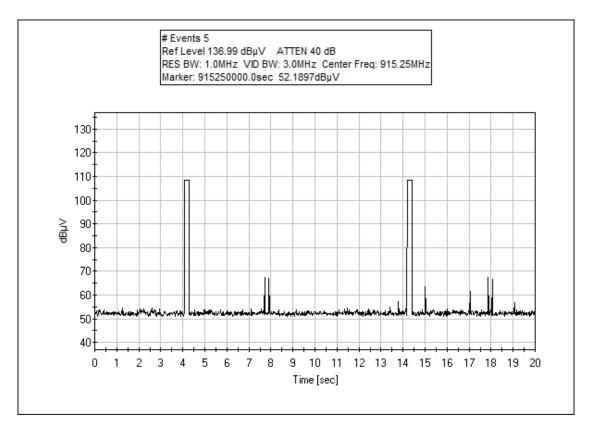


Figure 5: Number of events in 20sec

Limit: On time shall not exceed 0.4 second, per 20sec interval

Five separate sweeps at 20 second were acquired, averaging 2 events per 20 second sweep.

Each events on time = 198ms,

Ave Time of occupancy = $\frac{0.198sec}{event} * \frac{2 \text{ evnets}}{20 \text{ sec interval}} = \frac{0.396sec}{20 \text{ sec interval}}$



Test Setup Photos



Overall Test Setup



15.247(b)(2) RF Power Output

Test Data

Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: Specification:	Impinj Inc. 15.247(b)(2) RF Output power			
Work Order #: Test Type: Equipment: Manufacturer: Model: S/N: Test Equipment	Impinj Inc. IPJ-RS500C 010137130C	-RS500 23dBm Reade	r SIP Seque	Date: 11/8/2013 Time: 09:02:21 hce#: 1 1 By: Steven Pittsfo 3.7VDC	rd
ID Asse	et #	Description	Model	Calibration Date	Cal Due Date
ANG	3181	Attenuator	PE7015-20	1/4/2012	1/4/2014
ANF	P 05749	Attenuator	PE7010-20	1/4/2012	1/4/2014
ANC	3227	Cable	32026-29080- 29080-84	3/29/2013	3/29/2015
ANC	2673	Spectrum Analyzer	E4446A	5/11/2012	5/11/2014

Equipment Under Test (* = EUT):

Equipment Chaer 1051 (- 101).		
Function	Manufacturer	Model #	S/N
Impinj IPJ-RS500 23dBm Reader SIP*	Impinj Inc.	IPJ-RS500GX	010137130071

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D610	CN-0M7181-48643-662-
			2613
Development platform	Impinj, Inc.	IPJ-E4000 Rev 2.01	
DC Power Supply	Agilent	E3631A	

Summary: No change in power while varying supply voltage from 85% to 115% of the nominal rated supply voltage.

	Power (dBm)	Power (Watts)
Low channel	23.0dBm	0.200W
Mid channel	23.0dBm	0.200W
High channel	22.4dBm	0.174W



Test Conditions / Notes:

The EUT seeking modular approval is placed on the test bench, installed on a support host PCB. A laptop sends test command to the EUT via the support host PCB. The EUT is set in constant transmit mode.

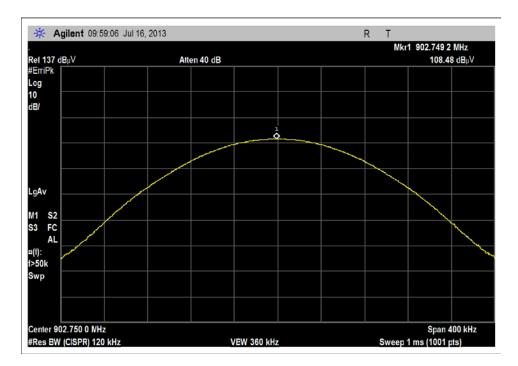
Transmit Frequencies: 902.75MHz, 915.25MHz, 927.25MHz Firmware setting = 23dBm, 23dBm, 23dBm

Emission profile evaluated at the antenna port.

Evaluated per 15.31(e): supply voltage varied between 85% and 115% of the nominal rated supply voltage.

Test method in accordance with FCC document: DA 00-705

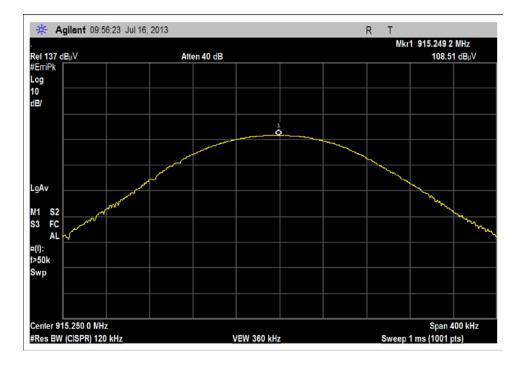
Temperature: 23°C Pressure: 102.4kPa Humidity: 35%



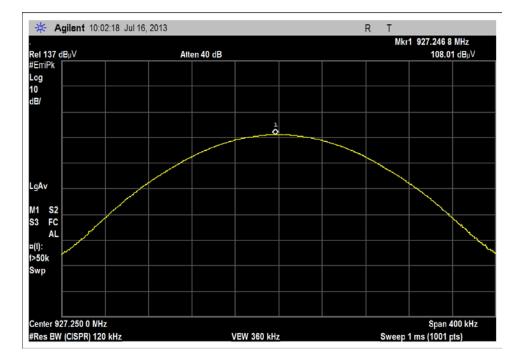
<u>Test Plots</u>

Low





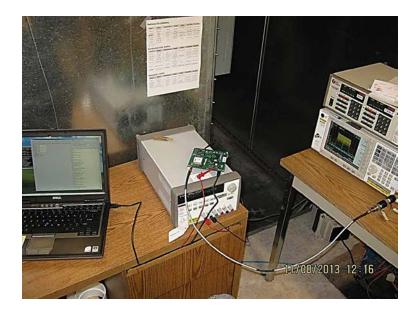
Mid



High



Test Setup Photos





15.247(d) / RSS-210 Conducted Spurious Emissions

Test Data Sheets

Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: Specification:	Impinj Inc. FCC Part 15.247(d) & RSS-210 Conducte	ed Spurious em	ission.
Work Order #:	93909	Date:	7/16/2013
Test Type:	Conducted Emissions	Time:	09:02:21
Equipment:	Impinj IPJ-RS500 23dBm Reader SIP	Sequence#:	1
Manufacturer:	Impinj Inc.	Tested By:	Steven Pittsford
Model:	IPJ-RS500GX		3.7VDC
S/N:	IMPH12000100051210		

Test Equipment:

	<i>P</i>				
ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	ANP06130	Attenuator	18N20W-10	8/18/2011	8/18/2013
	ANP06217	Attenuator	768-10	3/22/2012	3/22/2014
	AN03227	Cable	32026-29080-	3/29/2013	3/29/2015
			29080-84		
	AN02673	Spectrum Analyzer	E4446A	5/11/2012	5/11/2014

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Impinj IPJ-RS500 23dBm	Impinj Inc.	IPJ-RS500GX	IMPH12000100051210
Reader SIP*			

Support Devices:

support 2 critecor			
Function	Manufacturer	Model #	S/N
Laptop	Dell	Latitude D610	CN-0M7181-48643-662-
			2613
Development platform	Impinj, Inc.	IPJ-E4000 Rev 2.01	
Battery Pack	Tenergy	TN270	
Battery	Tenergy	18650	
Battery	Tenergy	18650	

Test Conditions / Notes:

The EUT is seeking modular approval and is placed on the test bench, installed on a support host PCB. The laptop sends test command to the EUT via the support host PCB.

Frequency: 9kHz-9.28GHz: RBW=100k VBW=300k

Transmit Frequencies evaluated: 902.75MHz, 915.25MHz, 927.25MHz & All channels hopping.

Firmware setting = 23dBm, 23dBm, 23dBm

Emission profile evaluated at the antenna port.

Test method in accordance with FCC document: DA 00-705.

15.31(e) compliance: a freshly charged battery is installed.

Temperature: 24°C

Pressure: 101.5kPa

Humidity: 38%



Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: Specification:	Impinj Inc. Band Edge Compliance FCC Part 15.247	& RSS-210	
Work Order #:	93909	Date:	11/8/2013
Test Type:	Conducted Emissions	Time:	10:56:00
Equipment:	Impinj IPJ-RS500 23dBm Reader SIP	Sequence#:	1
Manufacturer:	Impinj Inc.	Tested By:	Steven Pittsford
Model:	IPJ-RS500GX		3.7VDC
S/N:	010137130071		

Test Equipment:

1 1 1	1				
ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN03181	Attenuator	PE7015-20	1/4/2012	1/4/2014
	ANP05749	Attenuator	PE7010-20	1/4/2012	1/4/2014
	AN03227	Cable	32026-29080-	3/29/2013	3/29/2015
			29080-84		
	AN02673	Spectrum Analyzer	E4446A	5/11/2012	5/11/2014

Equipment Under Test (*	Equipment Under Test (* = EUT):									
Function	Manufacturer	Model #	S/N							
Impinj IPJ-RS500 23dBm Reader SIP*	Impinj Inc.	IPJ-RS500GX	010137130071							
Support Devices:										
Function	Manufacturer	Model #	S/N							
Laptop	Dell	Latitude D610	CN-0M7181-48643-662-							
			2613							
Development platform	Impinj, Inc.	IPJ-E4000 Rev 2.01								
DC Power Supply	Agilent	E3631A								

Test Conditions / Notes:

The EUT seeking modular approval is placed on the test bench, installed on a support host PCB. A laptop sends test command to the EUT via the support host PCB.

Frequency: 9kHz-9.28GHz: RBW=100k VBW=300k

Transmit Frequencies evaluated: All channels hopping

Emission profile evaluated at the antenna port.

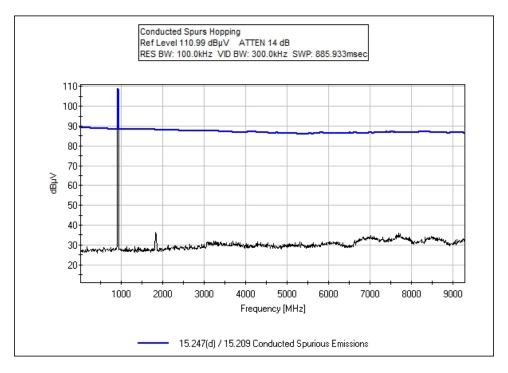
Test method in accordance with FCC document: DA 00-705

Evaluated per 15.31(e): supply voltage varied between 85% and 115% of the nominal rated supply voltage.

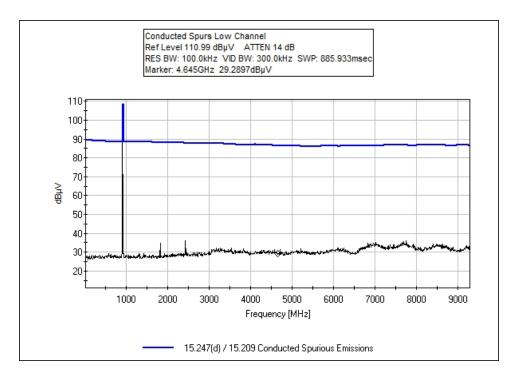
Temperature: 23°C Pressure: 102.4kPa Humidity: 36%



Test Plots

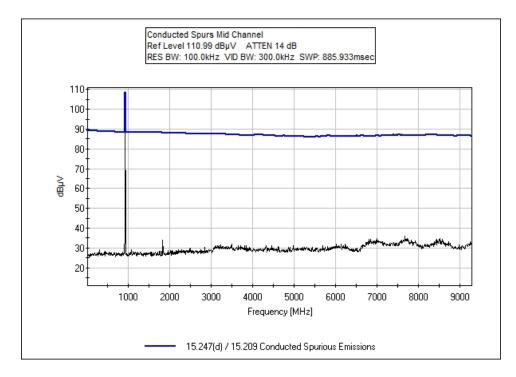


Conducted Spurs Hopping

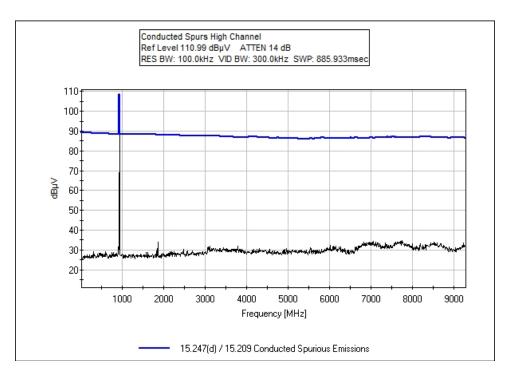


Low Channel



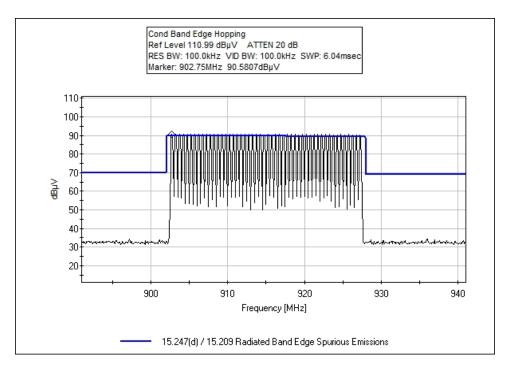


Mid Channel

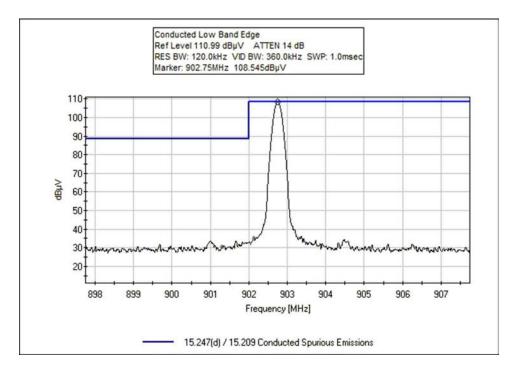


High Channel



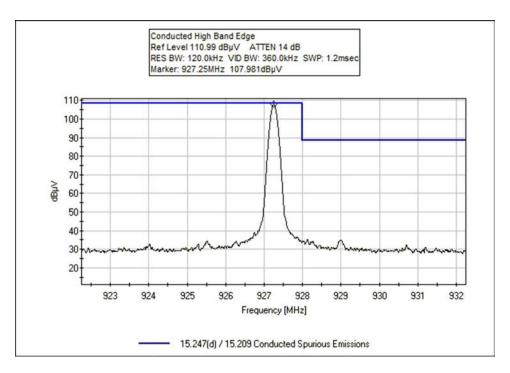


Conducted Band Edge Hopping



Low Band Edge





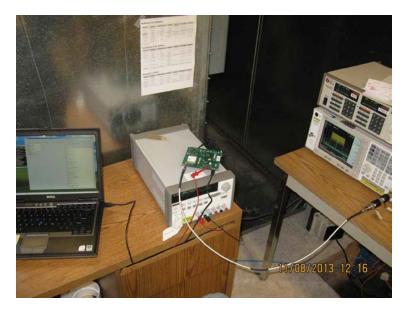
High Band Edge



Test Setup Photos



Overall Test Setup Photo



Conducted Band Edge



15.247(d) / RSS-210 Radiated Spurious Emissions

Test Data Sheets

Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: Specification:	Impinj Inc. 15.247(d) / 15.209 Radiated Spurious Emi	ssions	
Work Order #:	93909	Date:	7/17/2013
Test Type:	Maximized Emissions	Time:	10:57:55
Equipment:	Impinj IPJ-RS500 23dBm Reader SIP	Sequence#:	11
Manufacturer:	Impinj Inc.	Tested By:	Steven Pittsford
Model:	IPJ-RS500GX		
S/N:			

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02308	Preamp	8447D	4/3/2012	4/3/2014
T2	AN01996	Biconilog Antenna	CBL6111C	3/2/2012	3/2/2014
T3	ANP05360	Cable	RG214	12/3/2012	12/3/2014
T4	ANP05366	Cable	RG-214	10/14/2011	10/14/2013
T5	AN02673	Spectrum Analyzer	E4446A	5/11/2012	5/11/2014
T6	ANP05435	Attenuator	PE7015-10	10/5/2012	10/5/2014
T7	ANP05546	Cable	Heliax	3/27/2013	3/27/2015
T8	AN01467	Horn Antenna-ANSI	3115	10/19/2011	10/19/2013
		C63.5 Calibration			
T9	AN03123	Cable	32026-2-29801-	10/14/2011	10/14/2013
			12		
T10	ANP05965	Cable	Various	8/26/2011	8/26/2013
T11	AN03170	High Pass Filter	HM1155-11SS	9/6/2011	9/6/2013
T12	AN02115	Preamp	83051A	11/12/2012	11/12/2014
T13	AN00052	Loop Antenna	6502	5/16/2012	5/16/2014

Equipment Under Test (* = EUT):

	 (_).		
Function	Manufacturer	Model #	S/N
Impinj IPJ-RS500 23dBm	Impinj Inc.	IPJ-RS500GX	
Reader SIP*			
Antenna	Laird Technologies	S9025PR	
Support Devices:			
Function	Manufacturer	Model #	S/N
Development platform	Impinj, Inc.	IPJ-E4000 Rev 2.01	
Battery	Tenergy	18650	
Battery Pack	Tenergy	TN270	
Battery	Tenergy	18650	



Test Conditions / Notes:

The EUT is seeking modular approval and is placed in the center of the turntable on a Styrofoam table 80cm above the ground plane, installed on a support host PCB as intended for final installation. The laptop located outside the chamber sends test command to the EUT via the support host PCB. The EUT is set in constant transmit mode.

Freq: 902.75MHz, 915.25MHz, 927.25MHz Measured Power= 23.0dBm, 23.0dBm, 22.6dBm Firmware setting = 23dBm, 23dBm, 23dBm

Emission profile evaluated with Laird Antenna 5.5dBi with a 30cm cable between EUT and the antenna.

Frequency range of measurement = 9 kHz- 10GHz. 9 kHz -150 kHz;RBW=200 Hz=VBW 150 kHz-30 MHz;RBW=9 kHz=VBW 30 MHz-1000 MHz;RBW=120 kHz=VBWz, 1000 MHz-10,000 MHz;RBW=1 MHz=VBW

15.31(e) compliance: a freshly charged battery is installed.

Emission profile of the EUT rotated along three orthogonal axes was investigated. Recorded data represent worse case emission.

Test method in accordance with FCC document: DA 00-705

Temperature: 24°C Pressure: 101.5kPa Humidity: 37%

Ext Attn: 0 dB

		_					_				
Measu	rement Data:	Re	eading lis	ted by ma	argin.		Te	est Distanc	e: 3 Meters		
#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	-	•	T5	T6	T7	T8			-	•	
			Т9	T10	T11	T12					
			T13								
	MHz	dBµV	dB	dB	dB	dB	Table	$dB\mu V/m$	$dB\mu V/m$	dB	Ant
1	928.000M	34.2	-27.3	+23.0	+2.1	+2.3	+0.0	44.7	46.0	-1.3	Vert
	QP		+0.0	+9.6	+0.8	+0.0	360		X-Axis		150
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
^	928.000M	38.5	+0.0	+0.0	+0.0	+0.0	+0.0	40.4	46.0	-5.6	Vert
			+0.0	+0.0	+0.8	+0.0			X-Axis		131
			+0.0	+1.1	+0.0	+0.0					
			+0.0								
3	336.420M	42.1	-27.3	+14.3	+1.1	+1.2	+0.0	41.5	46.0	-4.5	Horiz
	QP		+0.0	+9.7	+0.4	+0.0	360		Z-Axis		150
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
^	336.420M	48.8	-27.3	+14.3	+1.1	+1.2	+0.0	48.2	46.0	+2.2	Horiz
			+0.0	+9.7	+0.4	+0.0	360		Z-Axis		100
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
L											



642.800M	35.2	-28.3	+20.3	+1.7	+1.8	+0.0	41.0	46.0	-5.0	Vert
		+0.0	+9.7			255		X-Axis		101
			+0.0	+0.0	+0.0					
3614.650M	47.6						48.2		-5.8	Vert
						360		Low X-Axis		118
			+2.2	+0.3	-33.3					
8344.840M	35.0						48.0		-6.0	Vert
						376		High X-Axis		124
			+3.8	+0.2	-31.3					
	40.3						39.9		-6.1	Horiz
QP						360		Z-Axis		150
			+0.0	+0.0	+0.0					
341.700M	45.3		+14.5				44.9		-1.1	Horiz
						41		Z-Axis		100
			+0.0	+0.0	+0.0					
8128.895M	35.4					+0.0	47.9		-6.1	Vert
								Low X-Axis		114
			+3.7	+0.2	-31.3					
3610.660M	47.2					+0.0	47.8		-6.2	Horiz
								Low X-Axis		118
			+2.2	+0.3	-33.3					
7417.290M	35.6						47.8		-6.2	Vert
						264		High Z-Axis		124
			+3.6	+0.2	-31.4					
9273.030M	35.0						47.6		-6.4	Horiz
						376		High X-Axis		124
			+4.0	+0.2	-31.5					
	40.2						39.6		-6.4	Horiz
QP					+0.0	44		X-Axis		105
			+0.0	+0.0	+0.0					
336.200M	46.5	-27.3	+14.3	+1.1	+1.2	+0.0	45.9		-0.1	Horiz
						43		X-Axis		99
			+0.0	+0.0	+0.0					
8345.045M	34.3						47.3		-6.7	Horiz
						370		High Z-Axis		124
			+3.8	+0.2	-31.3					
		+0.0								
991.800M	35.0		+24.2				47.3		-6.7	Vert
						375		Z-Axis		99
			+0.0	+0.0	+0.0					
		+0.0								
	3614.650M 8344.840M 341.700M 2P 341.700M 8128.895M 3610.660M 7417.290M 9273.030M 336.200M	3614.650M 47.6 8344.840M 35.0 341.700M 40.3 341.700M 45.3 341.700M 45.3 8128.895M 35.4 3610.660M 47.2 7417.290M 35.6 9273.030M 35.0 336.200M 40.2 2P 336.200M 46.5 8345.045M 34.3	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$



r										
18 678.400M	32.9	-28.2	+20.6	+1.7	+1.9	+0.0	39.2	46.0	-6.8	Vert
QP		+0.0	+9.7	+0.6	+0.0	360		Z-Axis		150
		+0.0	+0.0	+0.0	+0.0					
		+0.0								
^ 678.400M	35.7	-28.2	+20.6	+1.7	+1.9	+0.0	42.0	46.0	-4.0	Vert
		+0.0	+9.7	+0.6	+0.0	375		Z-Axis		99
		+0.0	+0.0	+0.0	+0.0					
20.025244034		+0.0	0.0	0.0	0.0	0.0			6.0	
20 9273.140M	34.6	+0.0	+0.0	+0.0	+0.0	+0.0	47.2	54.0	-6.8	Horiz
		+0.0	+0.0	+3.3	+35.8	376		High Z-Axis		124
		+0.8	+4.0	+0.2	-31.5					
01 7410 21014	24.6	+0.0	.0.0	.0.0	. 0. 0	. 0. 0	16.0	54.0	7.0	X 7 (
21 7418.310M	34.6	+0.0	+0.0	+0.0	+0.0	+0.0	46.8	54.0	-7.2	Vert
		+0.0	+0.0	+3.2	+36.0	376		High X-Axis		124
		+0.6	+3.6	+0.2	-31.4					
22 517 500 4	24.0	+0.0	10.4	. 1 . 7	.1.6	.0.0	20.4	46.0	7.6	17
22 517.500M	34.9	-28.2	+18.4	+1.5	+1.6	+0.0	38.4	46.0 V Avia	-7.6	Vert
		+0.0	+9.7	+0.5	+0.0			Y-Axis		126
		+0.0	+0.0	+0.0	+0.0					
23 334.765M	38.9	+0.0 -27.3	+14.3	+1.1	+1.2		38.3	16.0	-7.7	Homia
	30.9		+14.3 +9.7		$^{+1.2}_{+0.0}$	+0.0	30.3	46.0 Z-Axis	-/./	Horiz 100
QP		$^{+0.0}_{+0.0}$	+9.7 +0.0	+0.4 +0.0	+0.0 +0.0	360		Z-AXIS		100
		$^{+0.0}_{+0.0}$	± 0.0	± 0.0	+0.0					
^ 334.820M	46.4	-27.3	+14.3	+1.1	+1.2	+0.0	45.8	46.0	-0.2	Horiz
554.620M	40.4	+0.0	+14.3 +9.7	$^{+1.1}_{+0.4}$	+1.2 $+0.0$	+0.0 360	43.8	Z-Axis	-0.2	100
		+0.0 +0.0	+9.7 +0.0	+0.4 +0.0	+0.0 +0.0	300		Z-AXIS		100
		+0.0 $+0.0$	± 0.0	± 0.0	± 0.0					
^ 334.700M	43.5	-27.3	+14.3	+1.1	+1.2	+0.0	42.9	46.0	-3.1	Horiz
554.700101	45.5	+0.0	+14.3 +9.7	$^{+1.1}_{+0.4}$	+1.2 $+0.0$	+0.0 23	42.7	40.0 Y-Axis	-3.1	99
		+0.0	+0.0	+0.4	+0.0	25		1-1113		
		+0.0	10.0	10.0	10.0					
26 381.500M	37.6	-27.7	+15.7	+1.2	+1.3	+0.0	38.2	46.0	-7.8	Horiz
QP	57.0	+0.0	+9.7	+0.4	+0.0	360	50.2	Z-Axis	7.0	150
×1		+0.0 +0.0	+9.7 +0.0	+0.4 +0.0	+0.0 $+0.0$	500				150
		+0.0	10.0	10.0	10.0					
^ 381.500M	43.1	-27.7	+15.7	+1.2	+1.3	+0.0	43.7	46.0	-2.3	Horiz
201.200101		+0.0	+9.7	+0.4	+0.0	41		Z-Axis	2.5	100
		+0.0	+0.0	+0.4	+0.0	••				100
		+0.0	. 0.0	. 0.0	. 0.0					
28 343.200M	37.6	-27.3	+14.5	+1.1	+1.2	+0.0	37.2	46.0	-8.8	Horiz
QP	57.0	+0.0	+9.7	+0.4	+0.0	360	51.2	Y-Axis	0.0	150
X-		+0.0	+0.0	+0.0	+0.0	200				
		+0.0								
^ 343.200M	42.8	-27.3	+14.5	+1.1	+1.2	+0.0	42.4	46.0	-3.6	Horiz
5 15.200101	.2.0	+0.0	+9.7	+0.4	+0.0	23		Y-Axis	2.0	99
		+0.0	+0.0	+0.4	+0.0					<i>,,</i>
		+0.0	10.0	10.0	10.0					
30 8128.895M	32.6	+0.0	+0.0	+0.0	+0.0	+0.0	45.1	54.0	-8.9	Horiz
20 0120.070111	22.0	+0.0	+0.0	+3.2	+36.0			Low X-Axis	0.7	114
		+0.0	+3.7	+0.2	-31.3			IN / I / I/IID		
		+0.0			01.0					
		10.0								



31	9025.380M	31.3	+0.0	+0.0	+0.0	+0.0	+0.0	44.8		-9.2	Horiz
			+0.0	+0.0	+3.0	+37.0	360		Low Z-Axis		112
			+0.8	+3.9	+0.2	-31.4					
	411 20014	25.4	+0.0	164	1.0	1.4	0.0	26.0	16.0	0.0	
32	411.200M	35.4	-27.9	+16.4	+1.3	+1.4	+0.0	36.8	46.0	-9.2	Horiz
			+0.0	+9.7	+0.5	+0.0	28		Y-Axis		99
			$^{+0.0}_{+0.0}$	+0.0	+0.0	+0.0					
22	335.399M	37.3	-27.3	+14.2	+1.1	+1.2	+0.0	36.7	46.0	-9.3	Horiz
		57.5	+0.0	+14.3 +9.7	$^{+1.1}_{+0.4}$	$^{+1.2}_{+0.0}$	+0.0 44	50.7	40.0 X-Axis	-9.5	нопz 99
	QP		+0.0 +0.0	+9.7 +0.0	+0.4 +0.0	+0.0 +0.0	44		A-AXIS		99
			$^{+0.0}_{+0.0}$	+0.0	+0.0	+0.0					
^	335.396M	42.4	-27.3	+14.3	+1.1	+1.2	+0.0	41.8	46.0	-4.2	Horiz
	555.570IVI	42.4	+0.0	+14.3 +9.7	+1.1 +0.4	+1.2 $+0.0$	+0.0 44	41.0	40.0 X-Axis	-4.2	99
			+0.0 +0.0	+9.7 +0.0	+0.4 +0.0	+0.0 +0.0	44		Λ-ΑλΙδ		77
			+0.0	10.0	10.0	10.0					
35	334.819M	36.9	-27.3	+14.3	+1.1	+1.2	+0.0	36.3	46.0	-9.7	Vert
	QP	50.7	+0.0	+14.3 +9.7	$^{+1.1}_{+0.4}$	+1.2 +0.0	10.0	50.5	Z-Axis	-9.1	145
	QI		+0.0	+0.0	+0.4	+0.0					145
			+0.0	10.0	10.0	10.0					
^	334.800M	41.1	-27.3	+14.3	+1.1	+1.2	+0.0	40.5	46.0	-5.5	Vert
	22 11000111	11.1	+0.0	+9.7	+0.4	+0.0	285	10.2	Z-Axis	0.0	160
			+0.0	+0.0	+0.0	+0.0	205				100
			+0.0								
37	9031.645M	30.8	+0.0	+0.0	+0.0	+0.0	+0.0	44.2	54.0	-9.8	Vert
			+0.0	+0.0	+3.0	+36.9	324		Low X-Axis	,	103
			+0.8	+3.9	+0.2	-31.4	-				
			+0.0								
38	9027.870M	30.7	+0.0	+0.0	+0.0	+0.0	+0.0	44.2	54.0	-9.8	Horiz
			+0.0	+0.0	+3.0	+37.0	360		Low Y-Axis		116
			+0.8	+3.9	+0.2	-31.4					
			+0.0								
39	6490.495M	34.7	+0.0	+0.0	+0.0	+0.0	+0.0	44.0	54.0	-10.0	Horiz
			+0.0	+0.0	+2.4	+34.4	376		High X-Axis		119
			+0.5	+3.4	+0.3	-31.7					
			+0.0								
	335.276M	36.6	-27.3	+14.3	+1.1	+1.2	+0.0	36.0	46.0	-10.0	Horiz
	QP		+0.0	+9.7		+0.0	69		Y-Axis		99
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
41	119.600M	38.5	-27.8	+11.6	+0.7	+0.6	+0.0	33.1		-10.4	Horiz
			+0.0	+9.3	+0.2	+0.0	360		Z-Axis		100
			+0.0	+0.0	+0.0	+0.0					
	100 0003 6	20.2	+0.0	11.5	.	0.4	0.0		12 -	10.5	
42	123.000M	38.2	-27.8	+11.7	+0.7	+0.6	+0.0	32.9		-10.6	Horiz
			+0.0	+9.3	+0.2	+0.0	43		X-Axis		118
			+0.0	+0.0	+0.0	+0.0					
40	7222 54024	21.0	+0.0	.0.0	.0.0		.0.0	40.0	54.0	11.1	NZ -
43	7322.540M	31.0	+0.0	+0.0	+0.0	+0.0	+0.0	42.9		-11.1	Vert
			+0.0	+0.0	+3.1	+35.9			Mid Y-Axis		116
			+0.5	+3.6	+0.2	-31.4					
			+0.0								



44	6491.185M	33.6	+0.0	+0.0	+0.0	+0.0	+0.0	42.9	54.0 -11.1	Vert
			+0.0	+0.0	+2.4	+34.4	129		High Z-Axis	115
			+0.5	+3.4	+0.3	-31.7				
			+0.0							
	5416.500M	35.6	+0.0	+0.0	+0.0	+0.0	+0.0	42.7	54.0 -11.3	Vert
	Ave		+0.0	+0.0	+2.4	+33.2	237		Low X-Axis	118
			+0.5	+2.9	+0.3	-32.2				
			+0.0							
^	5416.500M	45.7	+0.0	+0.0	+0.0	+0.0	+0.0	52.8	54.0 -1.2	Vert
			+0.0	+0.0	+2.4	+33.2			Low X-Axis	118
			+0.5	+2.9	+0.3	-32.2				
17	100 00014	07.4	+0.0	11.7	0.7	0.6	0.0	22.1	40.5 11.4	
47	123.000M	37.4	-27.8	+11.7	+0.7	+0.6	+0.0	32.1	43.5 -11.4	Horiz
			+0.0	+9.3	+0.2	+0.0	23		Y-Axis	99
			+0.0	+0.0	+0.0	+0.0				
40	0151 00015	20.4	+0.0	.0.0	.0.0		.0.0	10.4	54.0 11.5	II. '
48	9151.099M	29.4	+0.0	+0.0	+0.0	+0.0	+0.0	42.4	54.0 -11.6	Horiz
			+0.0	+0.0 +3.9	+3.1 +0.2	+36.4			Mid Z-Axis	116
			+0.8	+3.9	+0.2	-31.4				
40	9031.645M	28.8	+0.0 +0.0	+0.0	+0.0	+0.0	+0.0	42.2	54.0 -11.8	Horiz
49	9031.04JW	20.0	+0.0 $+0.0$	+0.0 $+0.0$	+0.0 $+3.0$	+36.9	+0.0 85	42.2	Low X-Axis	111
			+0.0 $+0.8$	+0.0 +3.9	+0.2	-31.4	85		LOW A-AXIS	111
			+0.8 $+0.0$	τ3.9	+0.2	-51.4				
50	964.600M	30.5	-27.2	+23.7	+2.1	+2.4	+0.0	41.9	54.0 -12.1	Vert
	QP	50.5	+0.0	+23.7	+0.8	+2.4 +0.0	+0.0 360	71.7	X-Axis	150
	QI		+0.0	+0.0	+0.0	+0.0	500		A A A A B	150
			+0.0	10.0	10.0	10.0				
^	964.600M	35.3	-27.2	+23.7	+2.1	+2.4	+0.0	46.7	54.0 -7.3	Vert
	2011000111	0010	+0.0	+9.6	+0.8	+0.0	360		X-Axis	101
			+0.0	+0.0	+0.0	+0.0				
			+0.0							
52	7419.180M	29.7	+0.0	+0.0	+0.0	+0.0	+0.0	41.9	54.0 -12.1	Horiz
			+0.0	+0.0	+3.2	+36.0	239		High Y-Axis	119
			+0.6	+3.6	+0.2	-31.4				-
			+0.0							
53	5563.960M	34.2	+0.0	+0.0	+0.0	+0.0	+0.0	41.6	54.0 -12.4	Vert
			+0.0	+0.0	+2.4	+33.5			High Y-Axis	119
			+0.4	+2.9	+0.3	-32.1				
			+0.0							
54	7321.763M	29.4	+0.0	+0.0	+0.0	+0.0	+0.0	41.3	54.0 -12.7	Vert
			+0.0	+0.0	+3.1	+35.9	239		Mid Z-Axis	116
			+0.5	+3.6	+0.2	-31.4				
			+0.0							
55	7321.170M	29.2	+0.0	+0.0	+0.0	+0.0	+0.0	41.1	54.0 -12.9	Horiz
			+0.0	+0.0	+3.1	+35.9	8		Mid X-Axis	120
			+0.5	+3.6	+0.2	-31.4				
			+0.0							
56	8344.560M	28.1	+0.0	+0.0	+0.0	+0.0	+0.0	41.1	54.0 -12.9	Horiz
			+0.0	+0.0	+3.0	+36.4	341		High Y-Axis	119
			+0.9	+3.8	+0.2	-31.3				
			+0.0							



57 7221.920M	29.3	+0.0	+0.0	+0.0	+0.0	+0.0	41.0	54.0 -13.0	Horiz
		+0.0	+0.0	+3.0	+35.7	214		Low Z-Axis	116
		+0.6	+3.6	+0.3	-31.5				
		+0.0							
58 5562.635M	33.6	+0.0	+0.0	+0.0	+0.0	+0.0	41.0	54.0 -13.0	Vert
		+0.0	+0.0	+2.4	+33.5	-16		High Z-Axis	116
		+0.4	+2.9	+0.3	-32.1				
		+0.0							
59 7220.140M	29.4	+0.0	+0.0	+0.0	+0.0	+0.0	41.0	54.0 -13.0	Horiz
		+0.0	+0.0	+3.0	+35.6	190		Low Y-Axis	116
		+0.6	+3.6	+0.3	-31.5				
		+0.0							
60 7226.145M	29.2	+0.0	+0.0	+0.0	+0.0	+0.0	40.9	54.0 -13.1	Horiz
		+0.0	+0.0	+3.0	+35.7	267		Low X-Axis	111
		+0.6	+3.6	+0.3	-31.5				
		+0.0							
61 9151.549M	27.7	+0.0	+0.0	+0.0	+0.0	+0.0	40.7	54.0 -13.3	Horiz
		+0.0	+0.0	+3.1	+36.4			Mid Y-Axis	116
		+0.8	+3.9	+0.2	-31.4				
		+0.0							
62 6491.210M	31.3	+0.0	+0.0	+0.0	+0.0	+0.0	40.6	54.0 -13.4	Horiz
		+0.0	+0.0	+2.4	+34.4	52		High Y-Axis	119
		+0.5	+3.4	+0.3	-31.7			•	
		+0.0							
63 6405.868M	31.3	+0.0	+0.0	+0.0	+0.0	+0.0	40.6	54.0 -13.4	Horiz
		+0.0	+0.0	+2.4	+34.4	129		Mid X-Axis	120
		+0.5	+3.3	+0.4	-31.7				
		+0.0							
64 8125.030M	27.9	+0.0	+0.0	+0.0	+0.0	+0.0	40.4	54.0 -13.6	Vert
		+0.0	+0.0	+3.2	+36.0	360		Low Y-Axis	116
		+0.7	+3.7	+0.2	-31.3				
		+0.0							
65 7226.145M	28.7	+0.0	+0.0	+0.0	+0.0	+0.0	40.4	54.0 -13.6	Vert
		+0.0	+0.0	+3.0	+35.7	349		Low X-Axis	114
		+0.6	+3.6	+0.3	-31.5				
		+0.0							
66 8122.810M	27.6	+0.0	+0.0	+0.0	+0.0	+0.0	40.1	54.0 -13.9	Vert
		+0.0	+0.0	+3.2		360		Low Z-Axis	116
		+0.7	+3.7	+0.2	-31.3				
		+0.0							
67 9151.690M	26.9	+0.0	+0.0	+0.0	+0.0	+0.0	39.9	54.0 -14.1	Horiz
		+0.0	+0.0	+3.1	+36.4	73		Mid X-Axis	116
		+0.8	+3.9	+0.2	-31.4				
		+0.0							
68 4514.000M	36.4	+0.0	+0.0	+0.0	+0.0	+0.0	39.9	54.0 -14.1	Horiz
		+0.0	+0.0	+1.9	+31.2			Low X-Axis	118
		+0.3	+2.6	+0.3	-32.8				-
		+0.0							
69 9272.440M	27.2	+0.0	+0.0	+0.0	+0.0	+0.0	39.8	54.0 -14.2	Vert
		+0.0	+0.0	+3.3	+35.8	360		High Y-Axis	119
		+0.8	+4.0	+0.2	-31.5			0	-
		+0.0							



70	8235.813M	27.1	+0.0	+0.0	+0.0	+0.0	+0.0	39.8	54.0 -14.2	Vert
			+0.0	+0.0	+3.1	+36.2	120		Mid Z-Axis	116
			+0.8	+3.7	+0.2	-31.3				
			+0.0							
71	8236.440M	27.0	+0.0	+0.0	+0.0	+0.0	+0.0	39.7	54.0 -14.3	Vert
			+0.0	+0.0	+3.1	+36.2			Mid X-Axis	116
			+0.8	+3.7	+0.2	-31.3				
			+0.0							
72	6406.807M	30.4	+0.0	+0.0	+0.0	+0.0	+0.0	39.7	54.0 -14.3	Horiz
. –			+0.0	+0.0	+2.4	+34.4	360		Mid Z-Axis	116
			+0.5	+3.3	+0.4	-31.7	200			110
			+0.0	1010		0117				
73	5563.245M	32.2	+0.0	+0.0	+0.0	+0.0	+0.0	39.6	54.0 -14.4	Horiz
15	5505.2 15101	52.2	+0.0	+0.0	+2.4	+33.5	10.0	57.0	High X-Axis	119
			+0.0	+2.9	+0.3	-32.1			Ingli A-Axis	11)
			+0.4	12.9	10.5	-52.1				
74	2723.400M	40.8	+0.0 $+0.0$	+0.0	+0.0	+0.0	+0.0	39.6	54.0 -14.4	Horiz
/4	2723.400M	40.0	$^{+0.0}_{+0.0}$	$^{+0.0}_{+0.0}$	+0.0 $+1.4$	+0.0 +27.2	± 0.0	59.0	Low X-Axis	113
			+0.0 +0.5	+0.0 +2.1	+1.4 $+0.3$	-32.7			LOW A-AXIS	115
				± 2.1	+0.3	-32.1				
75	4626 00014	25.6	+0.0			10.0	10.0	20.5	54.0 -14.5	Haria
15	4636.080M	35.6	+0.0	+0.0	+0.0	+0.0	+0.0	39.5		Horiz
			+0.0	+0.0	+2.0	+31.5			High X-Axis	119
			+0.1	+2.6	+0.3	-32.6				
	2500 (50) (10 5	+0.0	0.0	0.0	0.0	0.0	20.4		
76	2708.650M	40.7	+0.0	+0.0	+0.0	+0.0	+0.0	39.4	54.0 -14.6	Vert
			+0.0	+0.0	+1.4	+27.1			Low X-Axis	99
			+0.5	+2.1	+0.3	-32.7				
			+0.0							
77	8237.340M	26.4	+0.0	+0.0	+0.0	+0.0	+0.0	39.1	54.0 -14.9	Horiz
			+0.0	+0.0	+3.1	+36.2			Mid Y-Axis	116
			+0.8	+3.7	+0.2	-31.3				
			+0.0							
78	6323.395M	29.5	+0.0	+0.0	+0.0	+0.0	+0.0	38.8	54.0 -15.2	Horiz
			+0.0	+0.0	+2.4	+34.5	70		Low X-Axis	111
			+0.5	+3.3	+0.4	-31.8				
			+0.0							
79	6319.965M	29.5	+0.0	+0.0	+0.0	+0.0	+0.0	38.8	54.0 -15.2	Vert
			+0.0	+0.0	+2.4	+34.5	8		Low Z-Axis	116
			+0.5	+3.3	+0.4	-31.8				
			+0.0							
80	4637.705M	34.8	+0.0	+0.0	+0.0	+0.0	+0.0	38.7	54.0 -15.3	Vert
			+0.0	+0.0	+2.0	+31.5	27		High Y-Axis	119
			+0.1	+2.6	+0.3	-32.6				
			+0.0							
81	6405.814M	29.4	+0.0	+0.0	+0.0	+0.0	+0.0	38.7	54.0 -15.3	Vert
			+0.0	+0.0	+2.4	+34.4	360		Mid Y-Axis	120
			+0.5	+3.3	+0.4	-31.7	-			-
			+0.0							
82	5492.307M	31.4	+0.0	+0.0	+0.0	+0.0	+0.0	38.6	54.0 -15.4	Horiz
02	2 1/2.00/101	21.1	+0.0	+0.0	+2.4	+33.3	360	20.0	Mid Z-Axis	116
			+0.0	+2.9	+0.3	-32.1	500		1110 L 1 1410	110
			+0.4	12.7	10.5	54.1				
L			10.0							



83	3708.720M	37.6	+0.0	+0.0	+0.0	+0.0	+0.0	38.6	54.0 -15.4	Horiz
			+0.0	+0.0	+1.7	+29.6			High X-Axis	119
			+0.4	+2.1	+0.4	-33.2				
			+0.0							
84	6319.410M	29.3	+0.0	+0.0	+0.0	+0.0	+0.0	38.5	54.0 -15.5	Vert
			+0.0	+0.0	+2.4	+34.5			Low Y-Axis	104
			+0.5	+3.3	+0.3	-31.8				
			+0.0							
85	4636.150M	34.5	+0.0	+0.0	+0.0	+0.0	+0.0	38.4	54.0 -15.6	Horiz
			+0.0	+0.0	+2.0	+31.5	-16		High Z-Axis	116
			+0.1	+2.6	+0.3	-32.6				
0.6	2505 02515		+0.0	0.0			0.0	20.2		
86	3707.935M	37.2	+0.0	+0.0	+0.0	+0.0	+0.0	38.2	54.0 -15.8	Horiz
			+0.0	+0.0	+1.7	+29.6	-16		High Z-Axis	116
			+0.4	+2.1	+0.4	-33.2				
	5 404 0000 F	20.0	+0.0		0.0		0.0	00.1	F4.0 4.5 °	X 7
87	5491.288M	30.9	+0.0	+0.0	+0.0	+0.0	+0.0	38.1	54.0 -15.9	Vert
			+0.0	+0.0	+2.4	+33.3	360		Mid X-Axis	120
			+0.4	+2.9	+0.3	-32.1				
00	5490.567M	30.9	+0.0 +0.0	+0.0		+0.0	+0.0	38.1	54.0 -15.9	Vert
00	3490.307M	50.9	+0.0 +0.0	+0.0 +0.0	$^{+0.0}_{+2.4}$		+0.0 360	56.1	Mid Y-Axis	120
			+0.0 +0.4	+0.0 +2.9	+2.4 +0.3	+33.3 -32.1	300		MIG I-AXIS	120
			+0.4 +0.0	+2.9	+0.3	-32.1				
80	3708.980M	36.8	+0.0 +0.0	+0.0	+0.0	+0.0	+0.0	37.8	54.0 -16.2	Horiz
69	3708.380101	50.8	+0.0 $+0.0$	+0.0 $+0.0$	+0.0 $+1.7$	+29.6	+0.0 226	57.0	High Y-Axis	119
			+0.0 +0.4	+0.0 +2.1	+1.7 +0.4	-33.2	220		Iligii 1-Axis	119
			+0.4	12,1	10.4	55.2				
90	162.800M	33.0	-27.5	+10.2	+0.8	+0.8	+0.0	27.0	43.5 -16.5	Horiz
70	102.000101	55.0	+0.0	+9.4	+0.3	+0.0	23	27.0	Y-Axis	99
			+0.0	+0.0	+0.0	+0.0				
			+0.0							
91	2781.155M	37.6	+0.0	+0.0	+0.0	+0.0	+0.0	36.7	54.0 -17.3	Horiz
			+0.0	+0.0	+1.5	+27.4	360		High Y-Axis	115
			+0.5	+2.1	+0.3	-32.7	•		0	
			+0.0							
92	2782.990M	37.6	+0.0	+0.0	+0.0	+0.0	+0.0	36.7	54.0 -17.3	Vert
			+0.0	+0.0	+1.5	+27.4			High X-Axis	119
			+0.5	+2.1	+0.3	-32.7			C	
			+0.0							
93	5416.180M	29.4	+0.0	+0.0	+0.0	+0.0	+0.0	36.5	54.0 -17.5	Vert
			+0.0	+0.0	+2.4	+33.2			Low Z-Axis	116
			+0.5	+2.9	+0.3	-32.2				
			+0.0							
94	61.800M	34.8	-28.0	+5.4	+0.5	+0.4	+0.0	22.5	40.0 -17.5	Vert
			+0.0	+9.2	+0.2	+0.0	362		Y-Axis	295
			+0.0	+0.0	+0.0	+0.0				
			+0.0							
95	2782.005M	37.4	+0.0	+0.0	+0.0	+0.0	+0.0	36.5	54.0 -17.5	Vert
			+0.0	+0.0	+1.5	+27.4	-14		High Z-Axis	116
			+0.5	+2.1	+0.3	-32.7				
1			+0.0							



96	1805.900M	41.5	+0.0	+0.0	+0.0	+0.0	+0.0	35.5		Horiz
			+0.0	+0.0	+1.2	+24.7	360		Low X-Axis	99
			+0.3	+1.6	+0.5	-34.3				
			+0.0							
97	4575.308M	31.5	+0.0	+0.0	+0.0	+0.0	+0.0	35.2	54.0 -18.8	Vert
			+0.0	+0.0	+2.0	+31.4	360		Mid X-Axis	120
			+0.1	+2.6	+0.3	-32.7				
			+0.0							
98	4575.512M	31.5	+0.0	+0.0	+0.0	+0.0	+0.0	35.2	54.0 -18.8	Horiz
			+0.0	+0.0	+2.0	+31.4	360		Mid Y-Axis	120
			+0.1	+2.6	+0.3	-32.7				
			+0.0							
99	4575.188M	31.4	+0.0	+0.0	+0.0	+0.0	+0.0	35.1	54.0 -18.9	Horiz
,,,	1979.1000	51.1	+0.0	+0.0	+2.0	+31.4	360	55.1	Mid Z-Axis	116
			+0.0	+2.6	+0.3	-32.7	500		Mild Z TAIS	110
			+0.1	12.0	10.5	52.7				
100	2660 599M	24.5						25.1	54.0 -18.9	Uoria
100	3660.588M	34.5	+0.0	+0.0	+0.0	+0.0	+0.0	35.1	Mid X-Axis	
			+0.0	+0.0	+1.7	+29.4	360		MIIU A-AXIS	120
			+0.4	+2.1	+0.3	-33.3				
101	0 (70 (00) (21.1	+0.0	0.0		0.0	0.0	25.0	5 4.0 10.0	
101	3659.620M	34.4	+0.0	+0.0	+0.0	+0.0	+0.0	35.0		Horiz
			+0.0	+0.0	+1.7	+29.4	360		Mid Y-Axis	120
			+0.4	+2.1	+0.3	-33.3				
			+0.0							
102	5416.750M	27.3	+0.0	+0.0		+0.0	+0.0	34.4	54.0 -19.6	
			+0.0	+0.0	+2.4	+33.2			Low Y-Axis	104
			+0.5	+2.9	+0.3	-32.2				
			+0.0							
103	3659.938M	33.4	+0.0	+0.0	+0.0	+0.0	+0.0	34.0	54.0 -20.0	Vert
			+0.0	+0.0	+1.7	+29.4	360		Mid Z-Axis	116
			+0.4	+2.1	+0.3	-33.3				
			+0.0							
104	1805.500M	39.4	+0.0	+0.0	+0.0	+0.0	+0.0	33.4	54.0 -20.6	Vert
			+0.0	+0.0	+1.2	+24.7	360		Low X-Axis	120
			+0.3	+1.6	+0.5	-34.3	200			
			+0.0	. 1.0		0.1.5				
105	2744.766M	34.1	+0.0	+0.0	+0.0	+0.0	+0.0	33.0	54.0 -21.0	Vert
105	2177.1001 v1	5-7.1	+0.0 $+0.0$	+0.0 $+0.0$					Mid X-Axis	112
			+0.0 +0.5	+0.0 +2.1	+1.4 $+0.3$	+27.3 -32.7	5-71		1110 21 - AAIS	112
			+0.3 +0.0	1 2.1	10.5	-34.1				
104	2744 60114	22.0					+0.0	207	54.0 -21.3	Vort
100	2744.691M	33.8	+0.0	+0.0	+0.0	+0.0		32.7		Vert
			+0.0	+0.0	+1.4	+27.3	360		Mid Z-Axis	116
			+0.5	+2.1	+0.3	-32.7				
105	0745 45035		+0.0	0.0	0.0	0.0	0.0		5 4.0 2 4.0	X 7
107	2745.453M	33.3	+0.0	+0.0	+0.0	+0.0	+0.0	32.2	54.0 -21.8	Vert
			+0.0	+0.0	+1.4	+27.3	360		Mid Y-Axis	120
			+0.5	+2.1	+0.3	-32.7				
			+0.0							
108	3612.560M	31.6	+0.0	+0.0	+0.0	+0.0	+0.0	32.2	54.0 -21.8	Horiz
			+0.0	+0.0	+1.7	+29.3	360		Low Y-Axis	121
			+0.4	+2.2	+0.3	-33.3				
			+0.0							



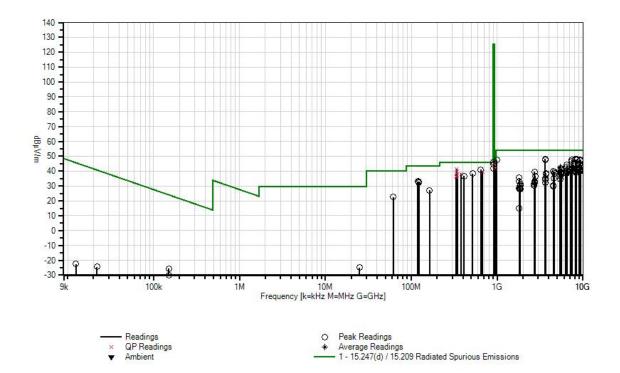
109	3612.730M	31.4	+0.0	+0.0	+0.0	+0.0	+0.0	32.0	54.0 -22.0	Vert
			+0.0	+0.0	+1.7	+29.3	164		Low Z-Axis	194
			+0.4	+2.2	+0.3	-33.3				
			+0.0							
110	2705.900M	32.6	+0.0	+0.0	+0.0	+0.0	+0.0	31.3	54.0 -22.7	Vert
			+0.0	+0.0	+1.4	+27.1	92		Low Y-Axis	110
			+0.5	+2.1	+0.3	-32.7				
			+0.0							
111	1854.335M	36.3	+0.0	+0.0	+0.0	+0.0	+0.0	31.1	54.0 -22.9	Vert
			+0.0	+0.0	+1.2	+25.2	360		High Y-Axis	119
			+0.3	+1.6	+0.4	-33.9				
			+0.0							
112	2707.085M	31.8	+0.0	+0.0	+0.0	+0.0	+0.0	30.5	54.0 -23.5	Vert
			+0.0	+0.0	+1.4	+27.1	295		Low Z-Axis	283
			+0.5	+2.1	+0.3	-32.7				
			+0.0							
113	4511.690M	27.0	+0.0	+0.0	+0.0	+0.0	+0.0	30.5	54.0 -23.5	Horiz
			+0.0	+0.0	+1.9	+31.2			Low Z-Axis	112
			+0.3	+2.6	+0.3	-32.8				
			+0.0							
114	1855.655M	35.5	+0.0	+0.0	+0.0	+0.0	+0.0	30.3	54.0 -23.7	Vert
			+0.0	+0.0	+1.2	+25.2	272		High X-Axis	119
			+0.3	+1.6	+0.4	-33.9			e	
			+0.0							
115	4514.000M	26.5	+0.0	+0.0	+0.0	+0.0	+0.0	30.0	54.0 -24.0	Horiz
			+0.0	+0.0	+1.9	+31.2			Low Y-Axis	121
			+0.3	+2.6	+0.3	-32.8				
			+0.0							
116	1828.815M	35.4	+0.0	+0.0	+0.0	+0.0	+0.0	29.7	54.0 -24.3	Horiz
			+0.0	+0.0	+1.2	+24.9	360		Mid X-Axis	99
			+0.3	+1.6	+0.4	-34.1				
			+0.0							
117	1829.966M	34.5	+0.0	+0.0	+0.0	+0.0	+0.0	28.8	54.0 -25.2	Horiz
			+0.0	+0.0	+1.2	+24.9	218		Mid Z-Axis	116
			+0.3	+1.6	+0.4	-34.1				-
			+0.0							
118	1805.570M	34.2	+0.0	+0.0	+0.0	+0.0	+0.0	28.2	54.0 -25.8	Vert
			+0.0	+0.0	+1.2	+24.7			Low Y-Axis	103
			+0.3	+1.6	+0.5	-34.3				-
			+0.0							
119	1854.675M	33.4	+0.0	+0.0	+0.0	+0.0	+0.0	28.2	54.0 -25.8	Horiz
			+0.0	+0.0	+1.2	+25.2	360		High Z-Axis	116
			+0.3	+1.6	+0.4	-33.9	-		0	-
			+0.0							
120	1830.203M	33.6	+0.0	+0.0	+0.0	+0.0	+0.0	27.9	54.0 -26.1	Horiz
			+0.0	+0.0	+1.2	+24.9	41		Mid Y-Axis	116
			+0.3	+1.6	+0.4	-34.1				
			+0.0	11.0		2 1.1				
121	1803.950M	21.0	+0.0	+0.0	+0.0	+0.0	+0.0	15.0	54.0 -39.0	Horiz
	2000.900111	_1.0	+0.0	+0.0	+1.2	+24.7	360	10.0	Low Z-Axis	400
			+0.3	+1.6	+0.5	-34.3	200		2011 21 MID	.00
			+0.0	11.0	10.0	5 1.5				
L			10.0							



100	150.0001-	45.0					80.0	25 5	24.1	40 C	Domo
122	150.000k	45.0	+0.0	+0.0	+0.0	+0.0	-80.0	-25.5	24.1	-49.6	Perpe
			+0.0	+0.0	+0.0	+0.0	360				123
			+0.0	+0.0	+0.0	+0.0					
102	150 0001	40.5	+9.5		.0.0		20.0	20.0	24.1	511	Damal
123	150.000k	40.5	+0.0	+0.0	+0.0	+0.0	-80.0	-30.0	24.1	-54.1	Paral
			+0.0	+0.0	+0.0	+0.0	360				123
			+0.0	+0.0	+0.0	+0.0					
104	24.00014	0.2	+9.5	.0.0	.0.0	.0.0	40.0	247	20.5	54.0	D1
124	24.980M	9.3	+0.0	+0.0	+0.0	+0.0	-40.0	-24.7	29.5	-54.2	Paral
			+0.0	+0.0	+0.0	+0.0	360				123
			+0.0	+0.2	+0.0	+0.0					
105	21.0251	12.0	+5.8	0.0	0.0	0.0	00.0	24.4	10.0	(5.0	D 1
125	21.925k	43.8	+0.0	+0.0	+0.0	+0.0	-80.0	-24.4	40.8	-65.2	Paral
			+0.0	+0.0	+0.0	+0.0	360				123
			+0.0	+0.0	+0.0	+0.0					
10.6	10 5051	10.0	+11.8	0.0	0.0	0.0	00.0	22.5	15 6	60.1	D
126	12.525k	42.3	+0.0	+0.0	+0.0	+0.0	-80.0	-22.5	45.6	-68.1	Perpe
			+0.0	+0.0	+0.0	+0.0	360				123
			+0.0	+0.0	+0.0	+0.0					
107	012 00014	262	+15.2		0.1		0.0	16.0	125.0	70.0	T 7 .
127	912.000M	36.3	-27.4	+22.6	+2.1	+2.3	+0.0	46.2	125.2	-79.0	Vert
			+0.0	+9.6	+0.7	+0.0	360		X-Axis		101
			+0.0	+0.0	+0.0	+0.0					
100	011 0001 5	24.0	+0.0	22.6	0.1	2.0	0.0	44.5	105.0	00.5	T 7 .
128	911.900M	34.8	-27.4	+22.6	+2.1	+2.3	+0.0	44.7	125.2	-80.5	Vert
			+0.0	+9.6	+0.7	+0.0			Y-Axis		126
			+0.0	+0.0	+0.0	+0.0					
			+0.0					·			
129	911.900M	32.1	-27.4	+22.6	+2.1	+2.3	+0.0	42.0	125.2	-83.2	Horiz
			+0.0	+9.6	+0.7	+0.0	28		Y-Axis		99
			+0.0	+0.0	+0.0	+0.0					
			+0.0								



CKC Laboratories, Inc. Date: 7/17/2013 Time: 10:57:55 Impinj Inc. WO#: 93909 Test Distance: 3 Meters Sequence#: 11 Horiz Impinj Inc. Impinj IPJ-RS500 23dBm Reader SIP P/N: IPJ-RS500GX





Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: Specification:	Impinj Inc. 15.247(d) / 15.209 Radiated Spurious Em	issions	
Work Order #:	93909	Date:	7/17/2013
Test Type:	Maximized Emissions	Time:	10:56:25
Equipment:	Impinj IPJ-RS500 23dBm Reader SIP	Sequence#:	10
Manufacturer:	Impinj Inc.	Tested By:	Steven Pittsford
Model:	IPJ-RS500GX		
S/N:	IMPH12000100051210		

Test Equipment:

1000 2404					
ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02308	Preamp	8447D	4/3/2012	4/3/2014
T2	AN01996	Biconilog Antenna	CBL6111C	3/2/2012	3/2/2014
T3	ANP05360	Cable	RG214	12/3/2012	12/3/2014
T4	ANP05366	Cable	RG-214	10/14/2011	10/14/2013
T5	AN02673	Spectrum Analyzer	E4446A	5/11/2012	5/11/2014
T6	ANP05546	Cable	Heliax	3/27/2013	3/27/2015
T7	AN02115	Preamp	83051A	11/12/2012	11/12/2014
T8	AN01467	Horn Antenna-ANSI	3115	10/19/2011	10/19/2013
		C63.5 Calibration			
T9	AN03123	Cable	32026-2-29801-	10/14/2011	10/14/2013
			12		
T10	ANP05965	Cable	Various	8/26/2011	8/26/2013
T11	AN00052	Loop Antenna	6502	5/16/2012	5/16/2014

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Mini Guardrail Antenna	Impinj, Inc.	IMP-A0303-000	
Impinj IPJ-RS500 23dBm	Impinj Inc.	IPJ-RS500GX	
Reader SIP			

Support Devices:

Function	Manufacturer	Model #	S/N
Battery	Tenergy	18650	
Battery Pack	Tenergy	TN270	
Battery	Tenergy	18650	
Development platform	Impinj, Inc.	IPJ-E4000 Rev 2.0	1



Test Conditions / Notes:

The EUT is seeking modular approval and is placed in the center of the turntable on a Styrofoam table 80cm above the ground plane, installed on a support host PCB as intended for final installation. The laptop located outside the chamber sends test command to the EUT via the support host PCB. The EUT is set in constant transmit mode.

Freq: 902.75MHz, 915.25MHz, 927.25MHz Measured Power= 23.0dBm, 23.0dBm, 22.6dBm Firmware setting = 23dBm, 23dBm, 23dBm

Emission profile evaluated with Mini Guardrail Antenna -20dBi with a 30cm cable between EUT and the antenna.

Frequency range of measurement = 9 kHz- 10 GHz. 9 kHz -150 kHz;RBW=200 Hz=VBW 150 kHz-30 MHz;RBW=9 kHz=VBW 30 MHz-1000 MHz;RBW=120 kHz=VBWz, 1000 MHz-10,000 MHz;RBW=1 MHz=VBW

15.31(e) compliance: a freshly charged battery is installedEmission profile of the EUT rotated along three orthogonal axes was investigated. Recorded data represent worse case emission.Test method in accordance with FCC document: DA 00-705.

Temperature: 24°C Pressure: 101.5kPa Humidity: 37%

Ext Attn: 0 dB

	rement Data:	Re	eading lis	ted by ma	argin.		Te	est Distanc	e: 3 Meters		
#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
			T9	T10	T11						
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	338.420M	50.7	-27.3	+14.4	+1.1	+1.2	+0.0	40.5	46.0	-5.5	Horiz
(QP		+0.0	+0.4	+0.0	+0.0	44		X-Axis		99
			+0.0	+0.0	+0.0						
^	338.420M	55.4	-27.3	+14.4	+1.1	+1.2	+0.0	45.2	46.0	-0.8	Horiz
			+0.0	+0.4	+0.0	+0.0	138		X-Axis		99
			+0.0	+0.0	+0.0						
3	394.800M	48.3	-27.8	+16.1	+1.3	+1.4	+0.0	39.8	46.0	-6.2	Horiz
			+0.0	+0.5	+0.0	+0.0			Z-Axis		100
			+0.0	+0.0	+0.0						
4	344.320M	48.8	-27.4	+14.6	+1.1	+1.2	+0.0	38.7	46.0	-7.3	Horiz
(QP		+0.0	+0.4	+0.0	+0.0			Z-Axis		100
	-		+0.0	+0.0	+0.0						
^	344.300M	55.0	-27.4	+14.6	+1.1	+1.2	+0.0	44.9	46.0	-1.1	Horiz
			+0.0	+0.4	+0.0	+0.0			Z-Axis		100
			+0.0	+0.0	+0.0						
6	406.400M	46.6	-27.9	+16.3	+1.3	+1.4	+0.0	38.2	46.0	-7.8	Horiz
			+0.0	+0.5	+0.0	+0.0	287		Y-Axis		100
			+0.0	+0.0	+0.0						
7	338.920M	48.3	-27.3	+14.4	+1.1	+1.2	+0.0	38.1	46.0	-7.9	Horiz
(QP		+0.0	+0.4	+0.0	+0.0	5		Y-Axis		99
			+0.0	+0.0	+0.0						



^ 33	8.900M	53.5	-27.3	+14.4	+1.1	+1.2	+0.0	43.3	46.0 -2.7	Horiz
			+0.0	+0.4	+0.0	+0.0	355		Y-Axis	100
			+0.0	+0.0	+0.0					
9 12	4.600M	48.6	-27.8	+11.7	+0.7	+0.6	+0.0	34.0	43.5 -9.5	Horiz
			+0.0	+0.2	+0.0	+0.0	288		Z-Axis	99
			+0.0	+0.0	+0.0					
10 12	2.680M	47.8	-27.8	+11.7	+0.7	+0.6	+0.0	33.2	43.5 -10.3	Horiz
			+0.0	+0.2	+0.0	+0.0	360		X-Axis	152
			+0.0	+0.0	+0.0					
11 33	9.100M	45.7	-27.3	+14.4	+1.1	+1.2	+0.0	35.5	46.0 -10.5	Vert
			+0.0	+0.4	+0.0	+0.0	89		Y-Axis	100
			+0.0	+0.0	+0.0					
12 12	9.700M	46.9	-27.8	+11.7	+0.7	+0.6	+0.0	32.4	43.5 -11.1	Horiz
			+0.0	+0.3	+0.0	+0.0	360		Y-Axis	99
			+0.0	+0.0	+0.0					
13 927	2.505M	30.3	+0.0	+0.0	+0.0	+0.0	+0.0	42.7	54.0 -11.3	Horiz
			+0.0	+3.3	-31.5	+35.8	360		High Y-Axis	121
14 004	C 7001 6	20.0	+0.8	+4.0	+0.0	0.0	0.0	10 6	54.0 11.4	T 7 .
14 834	15.780M	29.8	+0.0	+0.0	+0.0	+0.0	+0.0	42.6	54.0 -11.4	Vert
			+0.0	+3.0	-31.3	+36.4	360		High Z-Axis	121
15 024	C (20) (20.6	+0.9	+3.8	+0.0	. 0. 0	. 0. 0	40.4	540 11 <i>C</i>	
15 834	5.620M	29.6	+0.0	+0.0	+0.0	+0.0	+0.0	42.4	54.0 -11.6	Horiz
			+0.0	+3.0	-31.3	+36.4	290		High Y-Axis	115
16 002	A 700M	20.0	+0.9	+3.8	+0.0	.0.0	.0.0	40.0	54.0 11.7	II.
16 902	26.790M	29.0	+0.0	+0.0	+0.0	+0.0	+0.0	42.3	54.0 -11.7	Horiz
			+0.0	+3.0	-31.4	+37.0	360		Low Y-Axis	119
17 027	2 (10) 1	29.9	+0.8 +0.0	+3.9 +0.0	+0.0 +0.0	+0.0	+0.0	42.3	54.0 -11.7	Hanin
17 927	73.640M	29.9	+0.0 +0.0	+0.0 +3.3	+0.0 -31.5		+0.0	42.3	High Z-Axis	Horiz 121
			+0.0 +0.8	+3.3 +4.0	+0.0	+35.8			nigii Z-Axis	121
18 834	6.505M	29.1	+0.0	+4.0 +0.0	+0.0 +0.0	+0.0	+0.0	41.9	54.0 -12.1	Horiz
10 034	10.JUJIVI	29.1	$^{+0.0}_{+0.0}$	+0.0 +3.0	-31.3	+36.4	+0.0 262	41.9	High X-Axis	110112
			+0.0 +0.9	+3.0 $+3.8$	+0.0	+30.4	202		Ingli A-Axis	114
19 7/1	8.120M	29.7	+0.0	+0.0	+0.0	+0.0	+0.0	41.7	54.0 -12.3	Horiz
17 /41	0.12011	29.1	+0.0	+3.2	-31.4	+36.0	360	41.7	High Y-Axis	115
			+0.6	+3.6	+0.0	150.0	500		Ingh I Taxis	115
20 741	6.520M	29.5	+0.0	+0.0	+0.0	+0.0	+0.0	41.5	54.0 -12.5	Vert
20 / 11	0.020101	_/.5	+0.0	+3.2	-31.4	+36.0		11.5	High Z-Axis	121
			+0.6	+3.6	+0.0		200			121
21 915	52.040M	28.5	+0.0	+0.0	+0.0	+0.0	+0.0	41.3	54.0 -12.7	Horiz
			+0.0	+3.1	-31.4	+36.4	360		Mid Z-Axis	119
			+0.8	+3.9	+0.0		-			-
22 927	1.825M	28.8	+0.0	+0.0	+0.0	+0.0	+0.0	41.3	54.0 -12.7	Horiz
			+0.0	+3.3	-31.5	+35.8	335		High X-Axis	114
			+0.9	+4.0	+0.0				2	
23 34	2.600M	43.3	-27.3	+14.5	+1.1	+1.2	+0.0	33.2	46.0 -12.8	Vert
			+0.0	+0.4	+0.0	+0.0	358		Z-Axis	102
			+0.0	+0.0	+0.0					
24 915	52.515M	28.4	+0.0	+0.0	+0.0	+0.0	+0.0	41.2	54.0 -12.8	Vert
			+0.0	+3.1	-31.4	+36.4	105		Mid X-Axis	121
			+0.8	+3.9	+0.0					



25	165.800M	16.2	-27.5	+10.0	+0.8	+0.8	+0.0	30.6	43.5 -12.9	Horiz
23	103.800101	40.2	+0.0	+10.0 +0.3	+0.8 $+0.0$	+0.8 +0.0			45.5 -12.9 X-Axis	152
			+0.0 $+0.0$	+0.3 +0.0	$^{+0.0}_{+0.0}$	+0.0	300		Λ-ΑλΙδ	152
26	7418.600M	29.0	+0.0	+0.0	+0.0	+0.0	+0.0	41.0	54.0 -13.0	Vert
20	7410.000141	27.0	+0.0	+3.2	-31.4	+36.0	10.0	41.0	High X-Axis	
			+0.6	+3.6	+0.0	150.0			Ingli X AXIS	124
27	7222.380M	29.6	+0.0	+0.0		+0.0	+0.0	41.0	54.0 -13.0	Vert
27	7222.50011	27.0	+0.0	+3.0	-31.5	+35.7	108		Low Y-Axis	
			+0.6	+3.6	+0.0	155.7	100		Low I TIMIS	117
28	9151.215M	28.2	+0.0	+0.0		+0.0	+0.0	41.0	54.0 -13.0	Vert
	, 1011210111	_0	+0.0	+3.1	-31.4	+36.4	360		Mid Y-Axis	119
			+0.8	+3.9	+0.0					
29	7322.540M	29.2	+0.0	+0.0		+0.0	+0.0	40.9	54.0 -13.1	Vert
		_,	+0.0	+3.1	-31.4	+35.9			Mid Z-Axis	119
			+0.5	+3.6	+0.0					-
30	9026.115M	27.6	+0.0	+0.0		+0.0	+0.0	40.9	54.0 -13.1	Vert
			+0.0	+3.0	-31.4	+37.0			Low X-Axis	
			+0.8	+3.9	+0.0					
31	8237.265M	28.3	+0.0	+0.0		+0.0	+0.0	40.8	54.0 -13.2	Vert
			+0.0	+3.1	-31.3	+36.2	268		Mid Z-Axis	119
			+0.8	+3.7	+0.0					
32	8236.000M	28.2	+0.0	+0.0		+0.0	+0.0	40.7	54.0 -13.3	Horiz
			+0.0	+3.1	-31.3	+36.2			Mid X-Axis	121
			+0.8	+3.7	+0.0					
33	7222.410M	29.2	+0.0	+0.0	+0.0	+0.0	+0.0	40.6	54.0 -13.4	Vert
			+0.0	+3.0	-31.5	+35.7			Low X-Axis	123
			+0.6	+3.6	+0.0					
34	9026.775M	27.2	+0.0	+0.0	+0.0	+0.0	+0.0	40.5	54.0 -13.5	Horiz
			+0.0	+3.0	-31.4	+37.0	360		Low Z-axis	119
			+0.8	+3.9	+0.0					
35	7222.480M	29.0	+0.0	+0.0	+0.0	+0.0		40.4	54.0 -13.6	
			+0.0	+3.0	-31.5	+35.7	360		Low Z-axis	119
			+0.6	+3.6	+0.0					
36	8125.525M	28.0	+0.0	+0.0			+0.0	40.3	54.0 -13.7	
			+0.0	+3.2		+36.0			Low X-Axis	123
			+0.7	+3.7	+0.0					
37	8237.225M	27.7		+0.0	+0.0	+0.0			54.0 -13.8	
				+3.1		+36.2	360		Mid Y-Axis	119
			+0.8	+3.7	+0.0					
38	8126.040M	27.9	+0.0	+0.0	+0.0	+0.0	+0.0	40.2		
			+0.0	+3.2	-31.3	+36.0	360		Low Z-axis	119
			+0.7	+3.7	+0.0					
39	7321.130M	28.4	+0.0	+0.0	+0.0	+0.0	+0.0	40.1		
			+0.0	+3.1	-31.4	+35.9			Mid X-Axis	121
	BOOM (1977)		+0.5	+3.6	+0.0					
40	7321.665M	28.2	+0.0	+0.0	+0.0	+0.0	+0.0	39.9		
			+0.0	+3.1	-31.4	+35.9	360		Mid Y-Axis	119
	000000	20.2	+0.5	+3.6	+0.0				140	
41	397.900M	39.3	-27.8	+16.1	+1.3	+1.4	+0.0	30.8		
			+0.0	+0.5	+0.0	+0.0	360		Z-Axis	102
			+0.0	+0.0	+0.0					



40	9124 04014	26.4	.0.0	.0.0	.0.0	.0.0	.0.0	20.7	54.0 15.2	Mant
42	8124.040M	26.4	+0.0	+0.0	+0.0	+0.0	+0.0	38.7		Vert
			+0.0	+3.2	-31.3	+36.0	360		Low Y-Axis	119
42	C 402 000M	20.0	+0.7	+3.7	+0.0	.0.0	.0.0	20.0	54.0 16.0	Maria
43	6492.080M	29.0	+0.0	+0.0	+0.0	+0.0	+0.0	38.0		Vert
			+0.0	+2.4	-31.7	+34.4			High X-Axis	124
4.4	5415 200M	21.0	+0.5	+3.4	+0.0			20.0	54.0 16.0	Vart
44	5415.280M	31.2	+0.0	+0.0	+0.0	+0.0	+0.0	38.0	54.0 -16.0	Vert
			+0.0	+2.4	-32.2	+33.2	268		Low Z-axis	119
15	242 00014	40.0	+0.5	+2.9 +14.6	+0.0	+1.2	+0.0	29.9	46.0 -16.1	Vert
45	343.900M	40.0	-27.4 +0.0		+1.1	+1.2		29.9		100
			$^{+0.0}_{+0.0}$	$^{+0.4}_{+0.0}$	$^{+0.0}_{+0.0}$	+0.0	228		X-Axis	100
16	5416.250M	21.1						37.9	54.0 -16.1	Horiz
40	5410.250M	31.1	$^{+0.0}_{+0.0}$	+0.0 +2.4	+0.0 -32.2	+0.0 +33.2	+0.0	57.9	54.0 -10.1 Low Y-Axis	
			+0.0 +0.5	+2.4 +2.9	+0.0	+33.2			LOW I-AXIS	119
47	164.400M	42.7	-27.5	+2.9 +10.1	+0.0 +0.8	+0.8	+0.0	27.2	43.5 -16.3	Horiz
47	104.400101	42.7	+0.0	+10.1 +0.3	+0.8 $+0.0$	+0.8 +0.0	+0.0 360	21.2	45.5 -10.5 Z-Axis	99
			$^{+0.0}_{+0.0}$	+0.3 +0.0	$^{+0.0}_{+0.0}$	+0.0	300		Z-AXIS	99
18	5563.795M	30.1	+0.0 +0.0	+0.0 +0.0	+0.0 +0.0	+0.0	+0.0	37.2	54.0 -16.8	Horiz
40	5505.795IM	50.1	$^{+0.0}_{+0.0}$	+0.0 +2.4	+0.0 -32.1	+0.0 +33.5	+0.0	57.2	High X-Axis	120
			+0.0 +0.4	+2.4 +2.9	+0.0	+55.5			Iligii A-Axis	120
/0	5416.360M	30.4	+0.4 +0.0	+2.9 +0.0	+0.0	+0.0	+0.0	37.2	54.0 -16.8	Horiz
49	J410.300M	50.4	$^{+0.0}_{+0.0}$	+0.0 +2.4	-32.2	+0.0 +33.2	± 0.0	57.2	Low X-Axis	123
			+0.0 +0.5	+2.4 +2.9	+0.0	TJJ.2			LOW A-AAIS	125
50	5490.445M	30.3	+0.0	+2.9 +0.0	+0.0	+0.0	+0.0	37.2	54.0 -16.8	Horiz
50	J490.445101	50.5	+0.0 +0.0	+0.0 +2.4	-32.1	+33.3	± 0.0	57.2	Mid Y-Axis	117
			+0.0 +0.4	+2.4 +2.9	+0.0	+55.5			WILU I -AAIS	117
51	5564.040M	30.1	+0.4 +0.0	+2.9 +0.0	+0.0	+0.0	+0.0	37.2	54.0 -16.8	Vert
51	5504.040101	50.1	+0.0	+2.4	-32.1	+33.5	10.0	51.2	High Z-Axis	126
			+0.0	+2.9	+0.0	155.5				120
52	6405.455M	28.2	+0.0	+0.0	+0.0	+0.0	+0.0	37.1	54.0 -16.9	Vert
52	01001100111	20.2	+0.0	+2.4	-31.7	+34.4	10.0	57.1	Mid X-Axis	121
			+0.5	+3.3	+0.0				1.1.0 11 1 1.1.15	
53	6489.270M	28.1	+0.0	+0.0	+0.0	+0.0	+0.0	37.1	54.0 -16.9	Horiz
	0.00,12,10111	2011	+0.0	+2.4	-31.7	+34.4	1010	0,11	High Z-Axis	126
			+0.5	+3.4	+0.0					
54	221.170M	43.5	-27.2	+10.6	+0.9	+0.9	+0.0	29.0	46.0 -17.0	Horiz
			+0.0	+0.3	+0.0		136		X-Axis	121
			+0.0	+0.0	+0.0		-			
55	5491.365M	30.1	+0.0	+0.0	+0.0	+0.0	+0.0	37.0	54.0 -17.0	Horiz
			+0.0	+2.4	-32.1	+33.3			Mid X-Axis	114
			+0.4	+2.9	+0.0					
56	6405.960M	28.0	+0.0	+0.0	+0.0	+0.0	+0.0	36.9	54.0 -17.1	Vert
1			+0.0	+2.4	-31.7	+34.4	248		Mid Y-Axis	119
			+0.5	+3.3	+0.0					
57	6319.000M	28.0	+0.0	+0.0	+0.0	+0.0	+0.0	36.9	54.0 -17.1	Vert
			+0.0	+2.4	-31.8	+34.5			Low X-Axis	123
			+0.5	+3.3	+0.0					
58	6407.180M	28.0	+0.0	+0.0	+0.0	+0.0	+0.0	36.9	54.0 -17.1	Horiz
			+0.0	+2.4	-31.7	+34.4			Mid X-Axis	114
			+0.5	+3.3	+0.0					
	-									



59	128.000M	40.8	-27.8	+11.7	+0.7	+0.6	+0.0	26.3		Vert
			+0.0	+0.3	+0.0	+0.0	195		Y-Axis	100
			+0.0	+0.0	+0.0					
60	6318.435M	27.9	+0.0	+0.0	+0.0	+0.0	+0.0	36.8	54.0 -17.2	Horiz
			+0.0	+2.4	-31.8	+34.5	360		Low Z-axis	119
			+0.5	+3.3	+0.0					
61	162.500M	41.4	-27.5	+10.3	+0.8	+0.8	+0.0	26.1	43.5 -17.4	Horiz
			+0.0	+0.3	+0.0	+0.0	244		Y-Axis	99
			+0.0	+0.0	+0.0					
62	5563.480M	29.5	+0.0	+0.0	+0.0	+0.0	+0.0	36.6	54.0 -17.4	Horiz
			+0.0	+2.4	-32.1	+33.5			High Y-Axis	115
			+0.4	+2.9	+0.0					
63	5490.745M	29.6	+0.0	+0.0	+0.0	+0.0	+0.0	36.5	54.0 -17.5	Vert
			+0.0	+2.4	-32.1	+33.3			Mid Z-Axis	119
			+0.4	+2.9	+0.0					
64	6318.890M	27.5	+0.0	+0.0	+0.0	+0.0	+0.0	36.4	54.0 -17.6	Vert
			+0.0	+2.4	-31.8	+34.5			Low Y-Axis	119
			+0.5	+3.3	+0.0					
65	4515.205M	32.9	+0.0	+0.0	+0.0	+0.0	+0.0	36.1	54.0 -17.9	Horiz
			+0.0	+1.9	-32.8	+31.2			Low X-Axis	119
			+0.3	+2.6	+0.0					
66	4637.335M	32.5	+0.0	+0.0	+0.0	+0.0	+0.0	36.1	54.0 -17.9	Horiz
			+0.0	+2.0	-32.6	+31.5			High Z-Axis	118
			+0.1	+2.6	+0.0					
67	4637.435M	32.4	+0.0	+0.0	+0.0	+0.0	+0.0	36.0	54.0 -18.0	Vert
			+0.0	+2.0	-32.6	+31.5	219		High Z-Axis	120
			+0.1	+2.6	+0.0					
68	6406.405M	27.0	+0.0	+0.0	+0.0	+0.0	+0.0	35.9		Horiz
			+0.0	+2.4	-31.7	+34.4			Mid Z-Axis	119
			+0.5	+3.3	+0.0					
69	3612.445M	35.4	+0.0	+0.0	+0.0	+0.0	+0.0	35.7	54.0 -18.3	Vert
			+0.0	+1.7	-33.3	+29.3	297		Low Z-axis	119
			+0.4	+2.2	+0.0					
70	4512.995M	32.5	+0.0	+0.0	+0.0	+0.0	+0.0	35.7	54.0 -18.3	Horiz
			+0.0	+1.9	-32.8	+31.2			Low Y-Axis	119
			+0.3	+2.6	+0.0					
71	855.400M	28.1	-27.6	+22.2	+2.0	+2.2	+0.0	27.6	46.0 -18.4	Horiz
			+0.0	+0.7	+0.0	+0.0	323		X-Axis	101
			+0.0	+0.0	+0.0					
72	4577.055M	32.1	+0.0	+0.0	+0.0	+0.0	+0.0	35.5		Vert
			+0.0	+2.0	-32.7	+31.4			Mid X-Axis	114
			+0.1	+2.6	+0.0					
73	4577.250M	32.0	+0.0	+0.0	+0.0	+0.0	+0.0	35.4	54.0 -18.6	Vert
			+0.0	+2.0	-32.7	+31.4	2		Mid Z-Axis	119
:	0.80 8055 5	<u> </u>	+0.1	+2.6	+0.0					
74	872.700M	27.6	-27.5	+22.3	+2.0	+2.2	+0.0	27.3		Vert
			+0.0	+0.7	+0.0	+0.0	79		X-Axis	101
		e - 1	+0.0	+0.0	+0.0	_				
75	3610.400M	35.0	+0.0	+0.0	+0.0	+0.0	+0.0	35.3		Horiz
			+0.0	+1.7	-33.3	+29.3	360		Low X-Axis	119
			+0.4	+2.2	+0.0					



		0.0		0.0	0.0	0.0		5 4.0 40 .7	
76 6490.730M	26.3	+0.0	+0.0	+0.0	+0.0	+0.0	35.3		Vert
		+0.0	+2.4	-31.7	+34.4	342		High Y-Axis	115
77 4576 015) (21.0	+0.5	+3.4	+0.0	.0.0	. 0. 0	25.0	54.0 10.0	
77 4576.215M	31.8	+0.0	+0.0	+0.0	+0.0	+0.0	35.2	54.0 -18.8	Horiz
		+0.0	+2.0	-32.7	+31.4	32		Mid Y-Axis	117
70 4575 22014	21.0	+0.1	+2.6	+0.0	.0.0	. 0. 0	25.0	540 100	TT '
78 4575.320M	31.8	+0.0	+0.0	+0.0	+0.0	+0.0	35.2	54.0 -18.8	Horiz
		+0.0	+2.0	-32.7	+31.4	227		Mid Z-Axis	124
70 4627 22514	21.6	+0.1	+2.6	+0.0	.0.0	.0.0	25.0	540 100	NZ
79 4637.325M	31.6	+0.0	+0.0	+0.0	+0.0	+0.0	35.2	54.0 -18.8	Vert
		+0.0	+2.0	-32.6	+31.5	99		High Y-Axis	115
90 4514 100M	21.0	+0.1	+2.6	+0.0			25.1	5 4.0 19.0	Vert
80 4514.190M	31.9	+0.0	+0.0	+0.0	+0.0	+0.0	35.1	54.0 -18.9	Vert
		+0.0 +0.3	+1.9 +2.6	-32.8	+31.2			Low Z-axis	119
91 2610 745M	24.0			+0.0		10.0	35.1	54.0 -18.9	Vert
81 3610.745M	34.8	$^{+0.0}_{+0.0}$	+0.0	+0.0	+0.0 +29.3	+0.0	35.1	54.0 -18.9 Low Y-Axis	Vert
		+0.0 +0.4	$^{+1.7}_{+2.2}$	-33.3 +0.0	+29.5			LOW I-AXIS	119
82 4637.100M	31.4	+0.4 +0.0			+0.0	+0.0	35.0	54.0 -19.0	Vert
82 4057.100M	51.4	+0.0 +0.0	$^{+0.0}_{+2.0}$	+0.0 -32.6	+0.0 +31.5	+0.0	55.0	High X-Axis	120
		+0.0 $+0.1$	+2.0 +2.6	-32.0 +0.0	+31.3			nigii A-Axis	120
83 3609.775M	34.6	+0.1 +0.0	+2.0 +0.0	+0.0 +0.0	+0.0	+0.0	34.9	54.0 -19.1	Horiz
85 5009.775IVI	54.0	+0.0 +0.0	+0.0 +1.7	+0.0 -33.3	+0.0 +29.3	+0.0 360	54.9	Low Z-axis	119
		+0.0 $+0.4$	+1.7 +2.2	+0.0	+29.3	500		LOW Z-axis	119
84 3661.545M	34.4	+0.4 +0.0	+2.2 +0.0	+0.0 +0.0	+0.0	+0.0	34.7	54.0 -19.3	Horiz
04 J001.J4JW	54.4	+0.0 $+0.0$	+0.0 +1.7	-33.3	+0.0 +29.4	+0.0 297	54.7	Mid Z-Axis	124
		+0.0 $+0.4$	+1.7 +2.1	+0.0	+2 7.4	291		MIU Z-AXIS	124
85 3660.360M	34.4	+0.0	+2.1 +0.0	+0.0	+0.0	+0.0	34.7	54.0 -19.3	Vert
85 5000.500M	54.4	+0.0 +0.0	+0.0 $+1.7$	-33.3	+0.0 +29.4	220	54.7	Mid Y-Axis	117
		+0.0 $+0.4$	+1.7 +2.1	+0.0	⊤ ∠ 9.4	220		WILL I -AXIS	11/
86 3707.885M	34.0	+0.0	+2.1 +0.0	+0.0	+0.0	+0.0	34.6	54.0 -19.4	Vert
00 <i>3707</i> .005WI	54.0	+0.0	+1.7	-33.2	+29.6	353	54.0	High Y-Axis	112
		+0.0	+2.1	+0.0	129.0	555		Ingli 1-Axis	112
87 221.300M	41.0	-27.2	+10.6	+0.9	+0.9	+0.0	26.5	46.0 -19.5	Horiz
07 221.500141	41.0	+0.0	+0.3	+0.9	+0.9	360	20.5	Y-Axis	99
		+0.0	+0.0	+0.0	10.0	500		1 / 1415	,,
88 3708.525M	33.7	+0.0	+0.0	+0.0	+0.0	+0.0	34.3	54.0 -19.7	Horiz
00 0700.020101	22.1	+0.0	+1.7	-33.2	+29.6	10.0	51.5	High Z-Axis	118
		+0.0	+2.1	+0.0	/.0				
89 3709.200M	33.6	+0.0	+0.0	+0.0	+0.0	+0.0	34.2	54.0 -19.8	Vert
		+0.0	+1.7	-33.2	+29.6	9		High X-Axis	120
		+0.4	+2.1	+0.0				0	-
90 218.000M	40.7	-27.2	+10.4	+0.9	+0.9	+0.0	26.0	46.0 -20.0	Horiz
	- / -	+0.0	+0.3	+0.0	+0.0	360		Z-Axis	99
		+0.0	+0.0	+0.0					
91 3709.570M	33.4	+0.0	+0.0	+0.0	+0.0	+0.0	34.0	54.0 -20.0	Vert
		+0.0	+1.7	-33.2	+29.6	324		High Z-Axis	120
		+0.4	+2.1	+0.0					-
92 2745.830M	35.2	+0.0	+0.0	+0.0	+0.0	+0.0	33.8	54.0 -20.2	Horiz
		+0.0	+1.4	-32.7	+27.3	360		Mid Y-Axis	121
		+0.5	+2.1	+0.0					
L									



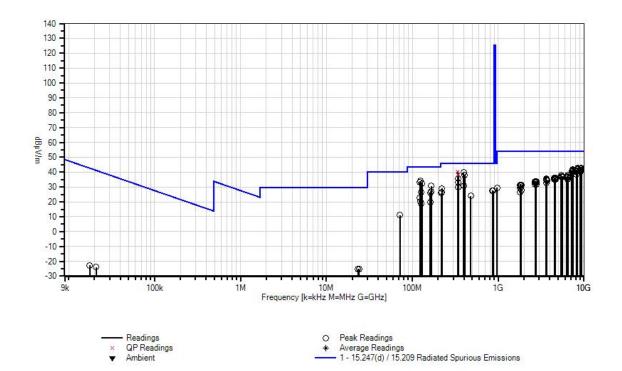
0.0	2502 (00) (25.0	0.0	0.0		0.0	0.0			
93	2782.680M	35.0	+0.0	+0.0	+0.0	+0.0	+0.0	33.8		Horiz
			+0.0	+1.5	-32.7	+27.4	64		High Y-Axis	112
			+0.5	+2.1	+0.0					
94	2706.920M	35.3	+0.0	+0.0	+0.0	+0.0	+0.0	33.7		Vert
			+0.0	+1.4	-32.7	+27.1	360		Low X-Axis	119
			+0.5	+2.1	+0.0					
95	122.610M	37.5	-27.8	+11.7	+0.7	+0.6	+0.0	22.9		Vert
			+0.0	+0.2	+0.0	+0.0	125		X-Axis	99
			+0.0	+0.0	+0.0					
96	2781.670M	34.6	+0.0	+0.0	+0.0	+0.0	+0.0	33.4		Horiz
			+0.0	+1.5	-32.7	+27.4	360		High Z-Axis	120
			+0.5	+2.1	+0.0					
97	2708.150M	34.7	+0.0	+0.0	+0.0	+0.0	+0.0	33.1	54.0 -20.9	Vert
			+0.0	+1.4	-32.7	+27.1	65		Low Y-Axis	119
			+0.5	+2.1	+0.0					
98	2745.725M	34.5	+0.0	+0.0	+0.0	+0.0	+0.0	33.1	54.0 -20.9	Horiz
			+0.0	+1.4	-32.7	+27.3	360		Mid X-Axis	114
			+0.5	+2.1	+0.0					
99	3660.975M	32.3	+0.0	+0.0	+0.0	+0.0	+0.0	32.6	54.0 -21.4	Vert
			+0.0	+1.7	-33.3	+29.4	360		Mid X-Axis	114
			+0.4	+2.1	+0.0					
100	2744.855M	33.9	+0.0	+0.0	+0.0	+0.0	+0.0	32.5	54.0 -21.5	Horiz
			+0.0	+1.4	-32.7	+27.3	360		Mid Z-Axis	119
			+0.5	+2.1	+0.0					-
101	479.400M	31.0	-28.2	+17.7	+1.4	+1.5	+0.0	23.9	46.0 -22.1	Vert
101		0110	+0.0	+0.5	+0.0	+0.0	1010	2019	Y-Axis	100
			+0.0	+0.0	+0.0	10.0			1 1 1 1 1 5	100
102	2708.035M	33.2	+0.0	+0.0	+0.0	+0.0	+0.0	31.6	54.0 -22.4	Vert
102	2700.03510	55.2	+0.0	+1.4	-32.7	+27.1	360	51.0	Low Z-axis	119
			+0.5	+2.1	+0.0	127.1	500		Low Z uxis	117
103	2781.730M	32.8	+0.0	+0.0	+0.0	+0.0	+0.0	31.6	54.0 -22.4	Vert
105	2701.750101	52.0	+0.0	+1.5	-32.7	+27.4	266	51.0	High X-Axis	120
			+0.0 $+0.5$	+1.3 +2.1	+0.0	<i>⊤∠1.</i> 4	200		Ingli A-Axis	120
104	1806.275M	37.8	+0.0	+2.1 +0.0	+0.0	+0.0	+0.0	31.3	54.0 -22.7	Horiz
104	1600.275101	57.0	+0.0 $+0.0$	+0.0 +1.2	-34.3	+0.0 +24.7	+0.0 360	51.5	Low Y-Axis	119
						+24.7	300		LOW I-AXIS	119
105	1854.480M	26 0	+0.3 +0.0	+1.6 +0.0	+0.0			31.2	54.0 -22.8	Horiz
105	1004.480M	36.8			+0.0	+0.0	+0.0			
			+0.0	+1.2		+25.2	360		High X-Axis	120
100	1920 07514	27.2	+0.3	+1.6	+0.0	.0.0	10.0	21.0	54.0 22.0	Vari
106	1829.975M	37.3	+0.0	+0.0	+0.0	+0.0	+0.0	31.2	54.0 -22.8	Vert
			+0.0	+1.2	-34.1	+24.9	360		Mid Y-Axis	121
107	1052 (20) 5	267	+0.3	+1.6	+0.0	. 0. 0	.0.0	21.1	540 22 0	X 7 ·
107	1853.620M	36.7	+0.0	+0.0	+0.0	+0.0	+0.0	31.1	54.0 -22.9	Vert
			+0.0	+1.2	-33.9	+25.2	323		High Y-Axis	112
1.5-	1000		+0.3	+1.6	+0.0	0.5	<u> </u>	• • •		** :
108	1829.995M	36.7	+0.0	+0.0	+0.0	+0.0	+0.0	30.6	54.0 -23.4	Horiz
			+0.0	+1.2	-34.1	+24.9	360		Mid X-Axis	114
			+0.3	+1.6	+0.0					
109	124.600M	34.7	-27.8	+11.7	+0.7	+0.6	+0.0	20.1	43.5 -23.4	Vert
			+0.0	+0.2	+0.0	+0.0	360		Z-Axis	102
			+0.0	+0.0	+0.0					



110				10.0				10.0			
110	162.500M	35.1	-27.5	+10.3	+0.8	+0.8	+0.0	19.8		-23.7	Vert
			+0.0	+0.3	+0.0	+0.0	322		Y-Axis		100
			+0.0	+0.0	+0.0						
111	1831.330M	36.0	+0.0	+0.0	+0.0	+0.0	+0.0	29.9	54.0	-24.1	Vert
			+0.0	+1.2	-34.1	+24.9	360		Mid Z-Axis	8	119
			+0.3	+1.6	+0.0						
112	1806.100M	36.1	+0.0	+0.0	+0.0	+0.0	+0.0	29.6		-24.4	Horiz
			+0.0	+1.2	-34.3	+24.7	360		Low X-Axi	is	119
			+0.3	+1.6	+0.0						
113	973.700M	27.7	-27.2	+23.8	+2.1	+2.4	+0.0	29.6	54.0	-24.4	Vert
			+0.0	+0.8	+0.0	+0.0	168		X-Axis		101
			+0.0	+0.0	+0.0						
114	127.900M	33.5	-27.8	+11.7	+0.7	+0.6	+0.0	19.0	43.5	-24.5	Vert
			+0.0	+0.3	+0.0	+0.0	42		X-Axis		100
			+0.0	+0.0	+0.0						
115	1854.420M	33.5	+0.0	+0.0	+0.0	+0.0	+0.0	27.9	54.0	-26.1	Horiz
			+0.0	+1.2	-33.9	+25.2	360		High Z-Ax		120
			+0.3	+1.6	+0.0				C		
116	1805.285M	33.1	+0.0	+0.0	+0.0	+0.0	+0.0	26.6	54.0	-27.4	Horiz
			+0.0	+1.2	-34.3	+24.7	360		Low Z-axis	3	119
			+0.3	+1.6	+0.0						
117	71.720M	31.8	-28.0	+6.1	+0.5	+0.4	+0.0	11.0	40.0	-29.0	Vert
			+0.0	+0.2	+0.0	+0.0	360		X-Axis	_,	99
			+0.0	+0.0	+0.0		200				
118	200.000k	40.0	+0.0	+0.0	+0.0	+0.0	-80.0	-30.5	21.6	-52.1	Paral
110	200.000K	10.0	+0.0	+0.0	+0.0	+0.0	360	50.5	21.0	52.1	123
			+0.0	+0.0	+9.5	10.0	500				125
119	23.280M	8.2	+0.0	+0.0	+0.0	+0.0	-40.0	-25.2	29.5	-54.7	Paral
117	25.200101	0.2	+0.0	+0.0	+0.0	+0.0	360	23.2	27.5	54.7	123
			+0.0	+0.2	+6.4	10.0	500				125
120	24.030M	8.4	+0.0	+0.2	+0.0	+0.0	-40.0	-25.2	29.5	-54.7	Perpe
120	27.030101	0.4	+0.0 $+0.0$	+0.0 +0.0	+0.0 +0.0	+0.0 +0.0	-40.0 360	-23.2	29.5	-54.7	123
1			+0.0 $+0.0$	+0.0 +0.2	+6.2	± 0.0	500				123
121	150.000k	39.9	+0.0 +0.0	+0.2 +0.0	+0.2 $+0.0$	+0.0	-80.0	-30.6	24.1	-54.7	Perpe
121	130.000K	39.9	+0.0 +0.0	+0.0 +0.0	+0.0 +0.0	+0.0 +0.0	-80.0 360	-30.0	24.1	-34.7	123
			$^{+0.0}_{+0.0}$	+0.0 +0.0	+0.0 +9.5	+0.0	300				123
100	20.0951-	44.0				10.0	80.0	22.0	41.0	65 1	Dorral
122	20.985k	44.0	+0.0	+0.0	+0.0	+0.0	-80.0	-23.9	41.2	-65.1	Paral
			+0.0	+0.0	+0.0	+0.0	360				123
100	17 (051	44.0	+0.0	+0.0	+12.1		00.0	00.5	12.5	<i>(</i> 7 0	D
123	17.695k	44.3	+0.0	+0.0	+0.0	+0.0	-80.0	-22.6	42.6	-65.2	Perpe
			+0.0	+0.0	+0.0	+0.0	230				123
			+0.0	+0.0	+13.1	10.0	250				125



CKC Laboratories, Inc. Date: 7/17/2013 Time: 10:56:25 Impinj Inc. WO#: 93909 Test Distance: 3 Meters Sequence#: 10 Perpendicular Impinj Inc. Impinj IPJ-RS500 23dBm Reader SIP P/N: IPJ-RS500GX





Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: Specification:	Impinj Inc. RSS-210 Radiated Spurious Emissions		
Work Order #:	93909	Date:	7/17/2013
Test Type:	Maximized Emissions	Time:	10:57:55
Equipment:	Impinj IPJ-RS500 23dBm Reader SIP	Sequence#:	11
Manufacturer:	Impinj Inc.	Tested By:	Steven Pittsford
Model:	IPJ-RS500GX		
S/N:			

Test Equipment:

1 Cor Lyng					
ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02308	Preamp	8447D	4/3/2012	4/3/2014
T2	AN01996	Biconilog Antenna	CBL6111C	3/2/2012	3/2/2014
T3	ANP05360	Cable	RG214	12/3/2012	12/3/2014
T4	ANP05366	Cable	RG-214	10/14/2011	10/14/2013
T5	AN02673	Spectrum Analyzer	E4446A	5/11/2012	5/11/2014
T6	ANP05435	Attenuator	PE7015-10	10/5/2012	10/5/2014
T7	ANP05546	Cable	Heliax	3/27/2013	3/27/2015
T8	AN01467	Horn Antenna-ANSI	3115	10/19/2011	10/19/2013
		C63.5 Calibration			
T9	AN03123	Cable	32026-2-29801-	10/14/2011	10/14/2013
			12		
T10	ANP05965	Cable	Various	8/26/2011	8/26/2013
T11	AN03170	High Pass Filter	HM1155-11SS	9/6/2011	9/6/2013
T12	AN02115	Preamp	83051A	11/12/2012	11/12/2014
T13	AN00052	Loop Antenna	6502	5/16/2012	5/16/2014

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Impinj IPJ-RS500 23dBm	Impinj Inc.	IPJ-RS500GX	
Reader SIP*			
Antenna	Laird Technologies	S9025PR	

Support Devices:

Function	Manufacturer	Model #	S/N
Development platform	Impinj, Inc.	IPJ-E4000 Rev 2.01	
Battery	Tenergy	18650	
Battery Pack	Tenergy	TN270	
Battery	Tenergy	18650	



Test Conditions / Notes:

The EUT is seeking modular approval is placed in the center of the turntable on a Styrofoam table 80cm above the ground plane, installed on a support host PCB as intended for final installation. The laptop located outside the chamber sends test command to the EUT via the support host PCB. The EUT is set in constant transmit mode.

Freq: 902.75MHz, 915.25MHz, 927.25MHz Measured Power= 23.0dBm, 23.0dBm, 22.6dBm Firmware setting = 23dBm, 23dBm, 23dBm

Emission profile evaluated with Laird Antenna 5.5dBi with a 30cm cable between EUT and the antenna

Frequency range of measurement = 9 kHz- 10GHz. 9 kHz -150 kHz;RBW=200 Hz=VBW 150 kHz-30 MHz;RBW=9 kHz=VBW 30 MHz-1000 MHz;RBW=120 kHz=VBWz, 1000 MHz-10,000 MHz;RBW=1 MHz=VBW

15.31(e) compliance: a freshly charged battery is installedEmission profile of the EUT rotated along three orthogonal axes was investigated. Recorded data represent worse case emission.Test method in accordance with FCC document: DA 00-705

Temperature: 24°C Pressure: 101.5kPa Humidity: 37%

Ext Attn: 0 dB

	_					_				
irement Data:			ted by ma							
Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
		T5	T6	T7	T8					
		T9	T10	T11	T12					
		T13								
MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
928.000M	34.2	-27.3	+23.0	+2.1	+2.3	+0.0	44.7	46.0	-1.3	Vert
QP		+0.0	+9.6	+0.8	+0.0	360		X-Axis		150
		+0.0	+0.0	+0.0	+0.0					
		+0.0								
928.000M	38.5	+0.0	+0.0	+0.0	+0.0	+0.0	40.4	46.0	-5.6	Vert
		+0.0	+0.0	+0.8	+0.0			X-Axis		131
		+0.0	+1.1	+0.0	+0.0					
		+0.0								
336.420M	42.1	-27.3	+14.3	+1.1	+1.2	+0.0	41.5	46.0	-4.5	Horiz
QP		+0.0	+9.7	+0.4	+0.0	360		Z-Axis		150
		+0.0	+0.0	+0.0	+0.0					
		+0.0								
336.420M	48.8	-27.3	+14.3	+1.1	+1.2	+0.0	48.2	46.0	+2.2	Horiz
		+0.0	+9.7	+0.4	+0.0	360		Z-Axis		100
		+0.0	+0.0	+0.0	+0.0					
		+0.0								
642.800M	35.2	-28.3	+20.3	+1.7	+1.8	+0.0	41.0	46.0	-5.0	Vert
		+0.0	+9.7	+0.6	+0.0	255		X-Axis		101
		+0.0	+0.0	+0.0	+0.0					
		+0.0								
	<u>urement Data:</u> Freq 928.000M QP 928.000M 336.420M QP 336.420M	<u>urement Data:</u> Rd Freq Rdng <u>MHz</u> dBµV 928.000M 34.2 QP 928.000M 38.5 336.420M 42.1 QP 336.420M 48.8	urement Data: Reading list Freq Rdng T1 T5 T9 T13 MHz $dB\mu V$ dB 928.000M 34.2 -27.3 QP +0.0 +0.0 928.000M 38.5 +0.0 9336.420M 42.1 -27.3 QP +0.0 +0.0 336.420M 48.8 -27.3 90 +0.0 +0.0 642.800M 35.2 -28.3 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0	rement Data:Reading listed by maFreqRdngT1T2FreqRdngT1T2T5T6T9T10T13T13T10MHzdB μ VdBdB928.000M34.2-27.3+23.0QP+0.0+9.6+0.0+0.0+0.0928.000M38.5+0.0+0.0928.000M38.5+0.0+0.0928.000M38.5+0.0+0.0928.000M38.5+0.0+0.0928.000M38.5+0.0+0.0928.000M38.5+0.0+0.0936.420M42.1-27.3+14.3QP+0.0+0.0+0.0336.420M48.8-27.3+14.3 μ .0+0.0+0.0642.800M35.2-28.3+20.3 μ .0+9.7+0.0+9.7 μ .0+0.0+0.0642.800M35.2-28.3 μ .0+9.7 μ .0+0.0 μ	rement Data:Reading listed by margin.FreqRdngT1T2T3T6T7T9T10T11T13T13T1T13MHzdB μ VdBdBdB928.000M34.2-27.3+23.0+2.1QP+0.0+9.6+0.8 00 +0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0936.420M42.1-27.3+14.3+1.1QP+0.0+0.0+0.0+0.0336.420M48.8-27.3+14.3+1.1+0.0+0.0+0.0+0.0+0.0642.800M35.2-28.3+20.3+1.7+0.0+0.0+0.0+0.0+0.0642.800M35.2-28.3+20.3+1.7+0.0+0.0+0.0+0.0+0.0642.800M35.2-28.3+20.3+1.7+0.0+0.0+0.0+0.0+0.0+0.0+0.0+0.0+0.0+0.0+0.0+0.0+0.0+0.0+0.0+0.0+0.0+0.0+0.0+0.0+0.0+0	rement Data:Reading listed by margin.FreqRdngT1T2T3T4T5T6T7T8T9T10T11T12T13T1T12MHzdB μ VdBdBdBdB928.000M34.2-27.3+23.0+2.1+2.3QP+0.0+9.6+0.8+0.0 $+0.0$ +0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0936.420M48.8-27.3+14.3+1.1+1.2QP+0.0+9.7+0.4+0.0 40.0 +0.0+0.0+0.0+0.0 40.0 +0.0+0.0+0.0+0.0 $42.800M$ 35.2-28.3+20.3+1.7+1.8 40.0 +9.7+0.6+0.0+0.0+0.0 $642.800M$ 35.2-28.3+20.3+1.7+1.8 40.0 <t< td=""><td>rement Data:Reading listed by margin.TeFreqRdngT1T2T3T4DistT5T6T7T8T9T10T11T12TableMHzdBμVdBdBdBdBTable928.000M34.2-27.3+23.0+2.1+2.3+0.0QP+0.0+9.6+0.8+0.0360+0.0+0.0+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0936.420M42.1-27.3+14.3+1.1+1.2+0.0936.420M48.8-27.3+14.3+1.1+1.2+0.0936.420M48.8-27.3+14.3+1.1+1.2+0.0936.420M35.2-28.3+20.3+1.7+1.8+0.0942.800M35.2-28.3+20.3+1.7+1.8+0.0942.800M35.2-28.3+20.3+1.7+1.8<td< td=""><td>Test DistanceIrement Data:Reding listed by margin.Test DistanceFreqRdngT1T2T3T4DistCorrT5T6T7T8T9T10T11T12T12T13T13T13T12T340.0$48\mu V$928.000M34.2-27.3+23.0+2.1+2.3+0.0$44.7$QP+0.0+9.6+0.8+0.036044.7928.000M38.5+0.0+0.0+0.0+0.040.4+0.0+0.0+0.0+0.0+0.040.4+0.0+0.0+0.0+0.0+0.040.4928.000M38.5+0.0+0.0+0.0+0.040.4+0.0+0.0+0.0+0.0+0.0+0.040.4928.000M38.5+0.0+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0+0.0936.420M42.1-27.3+14.3+1.1+1.2+0.041.5QP+0.0+9.7+0.4+0.0360-336.420M48.8-27.3+14.3+1.1+1.2+0.048.2+0.0+0.0+0.0+0.0+0.0+0.0</td><td>Terement Data:Test Distance: 3 MetersFreqRdngT1T2T3T4DistCorrSpecT5T6T7T8T9T10T11T12T12T3T4DistCorrSpecMHzdBµVdBdBdBdBdBTabledBµV/mdBµV/mdBµV/m928.000M34.2-27.3+23.0+2.1+2.3+0.044.746.0QP+0.0+9.6+0.8+0.0360X-Axis+0.0+0.0+0.0+0.0+0.0+0.040.446.0QP+0.0+0.0+0.0+0.0+0.0+0.446.0236.420M42.1-27.3+14.3+1.1+1.2+0.041.546.0QP+0.0+9.7+0.4+0.0360Z-Axis+0.0336.420M48.8-27.3+14.3+1.1+1.2+0.048.246.0336.420M48.8-27.3+14.3+1.1+1.2+0.048.246.0</td></td<><td>Test Distance: 3 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VdBdBdBdBTable928.000M34.2-27.3+23.0+2.1+2.3+0.0QP+0.0+9.6+0.8+0.0360+0.0+0.0+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0936.420M42.1-27.3+14.3+1.1+1.2+0.0936.420M48.8-27.3+14.3+1.1+1.2+0.0936.420M48.8-27.3+14.3+1.1+1.2+0.0936.420M35.2-28.3+20.3+1.7+1.8+0.0942.800M35.2-28.3+20.3+1.7+1.8+0.0942.800M35.2-28.3+20.3+1.7+1.8 <td< td=""><td>Test DistanceIrement Data:Reding listed by margin.Test DistanceFreqRdngT1T2T3T4DistCorrT5T6T7T8T9T10T11T12T12T13T13T13T12T340.0$48\mu V$928.000M34.2-27.3+23.0+2.1+2.3+0.0$44.7$QP+0.0+9.6+0.8+0.036044.7928.000M38.5+0.0+0.0+0.0+0.040.4+0.0+0.0+0.0+0.0+0.040.4+0.0+0.0+0.0+0.0+0.040.4928.000M38.5+0.0+0.0+0.0+0.040.4+0.0+0.0+0.0+0.0+0.0+0.040.4928.000M38.5+0.0+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0+0.0936.420M42.1-27.3+14.3+1.1+1.2+0.041.5QP+0.0+9.7+0.4+0.0360-336.420M48.8-27.3+14.3+1.1+1.2+0.048.2+0.0+0.0+0.0+0.0+0.0+0.0</td><td>Terement Data:Test Distance: 3 MetersFreqRdngT1T2T3T4DistCorrSpecT5T6T7T8T9T10T11T12T12T3T4DistCorrSpecMHzdBµVdBdBdBdBdBTabledBµV/mdBµV/mdBµV/m928.000M34.2-27.3+23.0+2.1+2.3+0.044.746.0QP+0.0+9.6+0.8+0.0360X-Axis+0.0+0.0+0.0+0.0+0.0+0.040.446.0QP+0.0+0.0+0.0+0.0+0.0+0.446.0236.420M42.1-27.3+14.3+1.1+1.2+0.041.546.0QP+0.0+9.7+0.4+0.0360Z-Axis+0.0336.420M48.8-27.3+14.3+1.1+1.2+0.048.246.0336.420M48.8-27.3+14.3+1.1+1.2+0.048.246.0</td></td<> <td>Test Distance: 3 MetersFreqRdngT1T2T3T4DistCorrSpecMarginT5T6T7T8T1T12T3T4DistCorrSpecMarginT9T10T11T12T12T1T12T1T12T13T10T11T12MHzdBµVdBdBdBdBTabledBµV/mdBµV/mdB928.000M34.2-27.3+23.0+2.1+2.3+0.044.746.0-1.3QP+0.0+9.6+0.8+0.0360X-Axis-1.3928.000M38.5+0.0+0.0+0.0+0.040.446.0-5.6+0.0+0.0+0.0+0.0+0.0+0.0-1.3X-Axis-2.6928.000M38.5+0.0+0.0+0.0+0.0+0.0X-Axis-5.6+0.0+0.0+0.0+0.0+0.0+0.0X-Axis-4.5QP+0.0+0.1+0.0+0.0+0.0-2.4-4.5-4.5QP+0.0+9.7+0.4+0.0360Z-Axis-4.5QP+0.0+9.7+0.4+0.0360Z-Axis-2.4QP+0.0+9.7+0.4+0.0360Z-Axis-2.4QP+0.0+9.7+0.4+0.0360Z-Axis-2.4QP+0.0+9.7+0.4+0.0<td< td=""></td<></td>	Test DistanceIrement Data:Reding listed by margin.Test DistanceFreqRdngT1T2T3T4DistCorrT5T6T7T8T9T10T11T12T12T13T13T13T12T340.0 $48\mu V$ 928.000M34.2-27.3+23.0+2.1+2.3+0.0 44.7 QP+0.0+9.6+0.8+0.036044.7928.000M38.5+0.0+0.0+0.0+0.040.4+0.0+0.0+0.0+0.0+0.040.4+0.0+0.0+0.0+0.0+0.040.4928.000M38.5+0.0+0.0+0.0+0.040.4+0.0+0.0+0.0+0.0+0.0+0.040.4928.000M38.5+0.0+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0+0.0928.000M38.5+0.0+0.0+0.0+0.0+0.0936.420M42.1-27.3+14.3+1.1+1.2+0.041.5QP+0.0+9.7+0.4+0.0360-336.420M48.8-27.3+14.3+1.1+1.2+0.048.2+0.0+0.0+0.0+0.0+0.0+0.0	Terement Data:Test Distance: 3 MetersFreqRdngT1T2T3T4DistCorrSpecT5T6T7T8T9T10T11T12T12T3T4DistCorrSpecMHzdBµVdBdBdBdBdBTabledBµV/mdBµV/mdBµV/m928.000M34.2-27.3+23.0+2.1+2.3+0.044.746.0QP+0.0+9.6+0.8+0.0360X-Axis+0.0+0.0+0.0+0.0+0.0+0.040.446.0QP+0.0+0.0+0.0+0.0+0.0+0.446.0236.420M42.1-27.3+14.3+1.1+1.2+0.041.546.0QP+0.0+9.7+0.4+0.0360Z-Axis+0.0336.420M48.8-27.3+14.3+1.1+1.2+0.048.246.0336.420M48.8-27.3+14.3+1.1+1.2+0.048.246.0	Test Distance: 3 MetersFreqRdngT1T2T3T4DistCorrSpecMarginT5T6T7T8T1T12T3T4DistCorrSpecMarginT9T10T11T12T12T1T12T1T12T13T10T11T12MHzdBµVdBdBdBdBTabledBµV/mdBµV/mdB928.000M34.2-27.3+23.0+2.1+2.3+0.044.746.0-1.3QP+0.0+9.6+0.8+0.0360X-Axis-1.3928.000M38.5+0.0+0.0+0.0+0.040.446.0-5.6+0.0+0.0+0.0+0.0+0.0+0.0-1.3X-Axis-2.6928.000M38.5+0.0+0.0+0.0+0.0+0.0X-Axis-5.6+0.0+0.0+0.0+0.0+0.0+0.0X-Axis-4.5QP+0.0+0.1+0.0+0.0+0.0-2.4-4.5-4.5QP+0.0+9.7+0.4+0.0360Z-Axis-4.5QP+0.0+9.7+0.4+0.0360Z-Axis-2.4QP+0.0+9.7+0.4+0.0360Z-Axis-2.4QP+0.0+9.7+0.4+0.0360Z-Axis-2.4QP+0.0+9.7+0.4+0.0 <td< td=""></td<>



6 3614.650M	47.6	+0.0	+0.0	+0.0	+0.0	+0.0	48.2	54.0	-5.8	Vert
		+0.0	+0.0	+1.7	+29.3	360		Low X-Axis		118
		+0.4	+2.2	+0.3	-33.3					
		+0.0								
7 8344.840M	35.0	+0.0	+0.0	+0.0	+0.0	+0.0	48.0	54.0	-6.0	Vert
		+0.0	+0.0	+3.0	+36.4	376		High X-Axis		124
		+0.9	+3.8	+0.2	-31.3					
		+0.0								
8 341.700M	40.3	-27.3	+14.5	+1.1	+1.2	+0.0	39.9	46.0	-6.1	Horiz
QP		+0.0	+9.7	+0.4	+0.0	360		Z-Axis		150
		+0.0	+0.0	+0.0	+0.0					
A 241 5003 6	15.0	+0.0				0.0		16.0		
^ 341.700M	45.3	-27.3	+14.5	+1.1	+1.2	+0.0	44.9	46.0	-1.1	Horiz
		+0.0	+9.7	+0.4	+0.0	41		Z-Axis		100
		+0.0	+0.0	+0.0	+0.0					
10 0100 00535	25.4	+0.0		.0.0			47.0	54.0	<u>(1</u>	X 7 ·
10 8128.895M	35.4	+0.0	+0.0	+0.0	+0.0	+0.0	47.9	54.0	-6.1	Vert
		+0.0	+0.0	+3.2	+36.0			Low X-Axis		114
		+0.7	+3.7	+0.2	-31.3					
11 2610 COM	47.0	+0.0		10.0			17 0	540	()	Hanin
11 3610.660M	47.2	+0.0	+0.0	+0.0	+0.0	+0.0	47.8	54.0	-6.2	Horiz
		$^{+0.0}_{+0.4}$	+0.0	+1.7	+29.3			Low X-Axis		118
		+0.4 +0.0	+2.2	+0.3	-33.3					
12 7417.290M	35.6	+0.0 $+0.0$	+0.0	+0.0	+0.0	+0.0	47.8	54.0	-6.2	Vert
12 /41/.290101	55.0	+0.0 $+0.0$	+0.0 +0.0	+0.0 +3.2	+0.0 +36.0	+0.0 264	47.0	High Z-Axis	-0.2	124
		+0.0 $+0.6$	+0.0 +3.6	+0.2	-31.4	204		Tingii Z-Axis		124
		+0.0 $+0.0$	+3.0	± 0.2	-31.4					
13 9273.030M	35.0	+0.0	+0.0	+0.0	+0.0	+0.0	47.6	54.0	-6.4	Horiz
15 9275.050W	55.0	+0.0 $+0.0$	+0.0 $+0.0$	+0.0 +3.3	+35.8	+0.0 376	47.0	High X-Axis	-0.4	124
		+0.8	+4.0	+0.2	-31.5	570		Ingil A-AAIs		124
		+0.0	14.0	10.2	51.5					
14 336.200M	40.2	-27.3	+14.3	+1.1	+1.2	+0.0	39.6	46.0	-6.4	Horiz
QP	10.2	+0.0	+9.7	+0.4	+0.0	44	57.0	X-Axis	0.1	105
×*		+0.0	+0.0	+0.0	+0.0	• •				105
		+0.0	. 5.0	. 5.0	. 0.0					
^ 336.200M	46.5	-27.3	+14.3	+1.1	+1.2	+0.0	45.9	46.0	-0.1	Horiz
220.2001.1	. 5.0	+0.0	+9.7	+0.4	+0.0	43	,	X-Axis		99
		+0.0	+0.0	+0.0	+0.0					
		+0.0								
16 8345.045M	34.3	+0.0	+0.0	+0.0	+0.0	+0.0	47.3	54.0	-6.7	Horiz
		+0.0	+0.0	+3.0	+36.4	370		High Z-Axis		124
		+0.9	+3.8	+0.2	-31.3	-		0		
		+0.0								
17 991.800M	35.0	-27.1	+24.2	+2.2	+2.5	+0.0	47.3	54.0	-6.7	Vert
		+0.0	+9.6	+0.9	+0.0	375		Z-Axis		99
		+0.0	+0.0	+0.0	+0.0					
		+0.0								
18 678.400M	32.9	-28.2	+20.6	+1.7	+1.9	+0.0	39.2	46.0	-6.8	Vert
QP		+0.0	+9.7	+0.6	+0.0	360		Z-Axis		150
		+0.0	+0.0	+0.0	+0.0					
		+0.0								
		+0.0								



^ 678.40	0M 35.7		+20.6	+1.7	+1.9	+0.0	42.0	46.0	-4.0	Vert
		+0.0	+9.7	+0.6	+0.0	375		Z-Axis		99
		+0.0	+0.0	+0.0	+0.0					
		+0.0							1.0	
20 9273.14	0M 34.6		+0.0	+0.0	+0.0	+0.0	47.2	54.0	-6.8	Horiz
		+0.0	+0.0	+3.3	+35.8	376		High Z-Axis		124
		+0.8	+4.0	+0.2	-31.5					
21 7410 21	0.1 0.1 6	+0.0	0.0	0.0	0.0	0.0	16.0	54.0	7.0	X 7 .
21 7418.31	0M 34.6		+0.0	+0.0	+0.0	+0.0	46.8	54.0	-7.2	Vert
		+0.0	+0.0	+3.2	+36.0	376		High X-Axis		124
		+0.6	+3.6	+0.2	-31.4					
22 517 50	014 24.0	+0.0	. 10.4	.1.7	.1.6	.0.0	20.4	16.0	7.6	X 7 /
22 517.50	0M 34.9		+18.4	+1.5	+1.6	+0.0	38.4	46.0	-7.6	Vert
		+0.0	+9.7	+0.5	+0.0			Y-Axis		126
		+0.0	+0.0	+0.0	+0.0					
22 224 75	<u>5M 20.0</u>	+0.0	.14.2	. 1 1	.1.0	.0.0	20.2	46.0	77	II. '
23 334.76	5M 38.9		+14.3	+1.1	+1.2	+0.0	38.3	46.0	-7.7	Horiz
QP		+0.0	+9.7	+0.4	+0.0	360		Z-Axis		100
		+0.0	+0.0	+0.0	+0.0					
^ 334.82	OM 46.4	+0.0	1112	.11	+1.0		150	46.0	-0.2	Uor!-
^ 334.82	0M 46.4	-27.3 +0.0	+14.3	+1.1	+1.2	+0.0	45.8		-0.2	Horiz
		+0.0 +0.0	+9.7	+0.4	+0.0	360		Z-Axis		100
		+0.0 +0.0	+0.0	+0.0	+0.0					
^ 334.70	OM 425		+14.3	+1.1	+1.2		42.9	16.0	-3.1	Homin
^ 334.70	0M 43.5	-27.3 +0.0	+14.5	$^{+1.1}_{+0.4}$	$^{+1.2}_{+0.0}$	+0.0 23	42.9	46.0 Y-Axis	-3.1	Horiz 99
		+0.0 +0.0	+9.7 +0.0	+0.4 +0.0	+0.0 +0.0	25		I -AXIS		99
		+0.0 +0.0	+0.0	+0.0	+0.0					
26 381.50	0M 37.6		+15.7	+1.2	+1.3	+0.0	38.2	46.0	-7.8	Horiz
26 381.50 QP	0101 57.0	-27.7 +0.0	+13.7 +9.7	$^{+1.2}_{+0.4}$	$^{+1.5}_{+0.0}$	+0.0 360	38.2	Z-Axis	-7.0	150
Qr		+0.0 +0.0	+9.7 +0.0	+0.4 +0.0	+0.0 $+0.0$	300		Z-AXIS		150
		+0.0 +0.0	± 0.0	± 0.0	± 0.0					
^ 381.50	0M 43.1	-27.7	+15.7	+1.2	+1.3	+0.0	43.7	46.0	-2.3	Horiz
361.50	0111 45.1	+0.0	+13.7 +9.7	+1.2 $+0.4$	+1.3 $+0.0$	+0.0 41	43.7	Z-Axis	-2.3	100
		+0.0 +0.0	+9.7 +0.0	+0.4 +0.0	+0.0 +0.0	41		L-AAI5		100
		+0.0 +0.0	± 0.0	± 0.0	± 0.0					
28 343.20	0M 37.6		+14.5	+1.1	+1.2	+0.0	37.2	46.0	-8.8	Horiz
28 343.20 QP	JIVI 37.0	+0.0	+14.3 +9.7	$^{+1.1}_{+0.4}$	+1.2 $+0.0$		51.2	40.0 Y-Axis	-0.0	150
		$^{+0.0}_{+0.0}$	+9.7 +0.0	+0.4 +0.0	+0.0 +0.0	500		1 -17113		150
		+0.0 $+0.0$	10.0	10.0	10.0					
^ 343.20	0M 42.8		+14.5	+1.1	+1.2	+0.0	42.4	46.0	-3.6	Horiz
545.20	42.0	+0.0	+14.3 +9.7	+1.1 +0.4	+1.2 $+0.0$	+0.0 23	72.4	40.0 Y-Axis	-5.0	99
		+0.0	+0.0	+0.4	+0.0	23				,,
		+0.0	10.0	10.0	10.0					
30 8128.89	5M 32.6		+0.0	+0.0	+0.0	+0.0	45.1	54.0	-8.9	Horiz
50 0120.07	5.01 52.0	+0.0	+0.0	+3.2	+36.0	10.0	13.1	Low X-Axis	0.7	114
		+0.0	+3.7	+0.2	-31.3			2010 21 21413		117
		+0.7	10.1	10.2	51.5					
31 9025.38	0M 31.3		+0.0	+0.0	+0.0	+0.0	44.8	54.0	-9.2	Horiz
51 7025.50	51.5	+0.0	+0.0	+3.0	+37.0		1.0	Low Z-Axis	1.4	112
		+0.8	+3.9	+0.2	-31.4	500				114
		+0.0	10.7	10.2	J 1. f					
		10.0								



	05.4		1 4 4	1.0		0.0	260	14.0	0.0	
32 411.200M	35.4	-27.9	+16.4	+1.3	+1.4	+0.0	36.8		-9.2	Horiz
		+0.0	+9.7	+0.5	+0.0	28		Y-Axis		99
		+0.0	+0.0	+0.0	+0.0					
22 225 200M	27.2	+0.0	+14.2	. 1 1	+1.2		36.7	46.0	0.2	Harin
33 335.399M QP	37.3	-27.3 +0.0	+14.3 +9.7	$^{+1.1}_{+0.4}$	$^{+1.2}_{+0.0}$	$^{+0.0}_{-44}$	50.7	46.0 X-Axis	-9.3	Horiz 99
Qr		$^{+0.0}_{+0.0}$	+9.7 +0.0	+0.4 +0.0	+0.0 +0.0	44		A-A115		77
		+0.0 $+0.0$	± 0.0	± 0.0	± 0.0					
^ 335.396M	42.4	-27.3	+14.3	+1.1	+1.2	+0.0	41.8	46.0	-4.2	Horiz
555.570101	12.1	+0.0	+9.7	+0.4	+0.0	44	11.0	X-Axis	1.2	99
		+0.0	+0.0	+0.0	+0.0	••		11 1 1115		,,,
		+0.0								
35 334.819M	36.9	-27.3	+14.3	+1.1	+1.2	+0.0	36.3	46.0	-9.7	Vert
QP		+0.0	+9.7	+0.4	+0.0			Z-Axis		145
		+0.0	+0.0	+0.0	+0.0					
		+0.0								
^ 334.800M	41.1	-27.3	+14.3	+1.1	+1.2	+0.0	40.5	46.0	-5.5	Vert
		+0.0	+9.7	+0.4	+0.0	285		Z-Axis		160
		+0.0	+0.0	+0.0	+0.0					
		+0.0								
37 9031.645M	30.8	+0.0	+0.0	+0.0	+0.0	+0.0	44.2		-9.8	Vert
		+0.0	+0.0	+3.0	+36.9	324		Low X-Axis		103
		+0.8	+3.9	+0.2	-31.4					
		+0.0								
38 9027.870M	30.7	+0.0	+0.0	+0.0	+0.0	+0.0	44.2		-9.8	Horiz
		+0.0	+0.0	+3.0	+37.0	360		Low Y-Axis		116
		+0.8	+3.9	+0.2	-31.4					
39 6490.495M	34.7	+0.0	+0.0	+0.0	+0.0	+0.0	44.0	54.0 -	10.0	Horiz
39 0490.495M	34.7	$^{+0.0}_{+0.0}$	$^{+0.0}_{+0.0}$	+0.0 +2.4	+0.0 +34.4	+0.0 376	44.0	High X-Axis	10.0	119
		+0.0 +0.5	+0.0 +3.4	+2.4 +0.3	+34.4 -31.7	570		High A-Axis		119
		+0.3 $+0.0$	+3.4	± 0.5	-31.7					
40 335.276M	36.6	-27.3	+14.3	+1.1	+1.2	+0.0	36.0	46.0 -	10.0	Horiz
QP	50.0	+0.0	+9.7	+0.4	+0.0	69	50.0	Y-Axis	10.0	99
×*		+0.0	+0.0	+0.4	+0.0	07				
		+0.0		. 0.0	. 0.0					
41 119.600M	38.5	-27.8	+11.6	+0.7	+0.6	+0.0	33.1	43.5 -	10.4	Horiz
		+0.0	+9.3	+0.2		360		Z-Axis		100
		+0.0	+0.0	+0.0	+0.0					
		+0.0								
42 123.000M	38.2	-27.8	+11.7	+0.7	+0.6	+0.0	32.9		10.6	Horiz
		+0.0	+9.3	+0.2	+0.0	43		X-Axis		118
		+0.0	+0.0	+0.0	+0.0					
		+0.0								
43 7322.540M	31.0	+0.0	+0.0	+0.0	+0.0	+0.0	42.9		11.1	Vert
		+0.0	+0.0	+3.1	+35.9			Mid Y-Axis		116
		+0.5	+3.6	+0.2	-31.4					
	26 5	+0.0		0.0		0.0	12.0	5 4 0	11.4	X 7
44 6491.185M	33.6	+0.0	+0.0	+0.0	+0.0	+0.0	42.9		11.1	Vert
		+0.0	+0.0	+2.4	+34.4	129		High Z-Axis		115
		+0.5	+3.4	+0.3	-31.7					
		+0.0								



1										
	416.500M	35.6	+0.0	+0.0	+0.0	+0.0	+0.0	42.7	54.0 -11.3	Vert
Av	/e		+0.0	+0.0	+2.4	+33.2	237		Low X-Axis	118
			+0.5	+2.9	+0.3	-32.2				
			+0.0							
^ 54	416.500M	45.7	+0.0	+0.0	+0.0	+0.0	+0.0	52.8	54.0 -1.2	Vert
			+0.0	+0.0	+2.4	+33.2			Low X-Axis	118
			+0.5	+2.9	+0.3	-32.2				
			+0.0							
47 1	23.000M	37.4	-27.8	+11.7	+0.7	+0.6	+0.0	32.1	43.5 -11.4	Horiz
			+0.0	+9.3	+0.2	+0.0	23		Y-Axis	99
			+0.0	+0.0	+0.0	+0.0				
			+0.0							
48 91	151.099M	29.4	+0.0	+0.0	+0.0	+0.0	+0.0	42.4	54.0 -11.6	Horiz
			+0.0	+0.0	+3.1	+36.4			Mid Z-Axis	116
			+0.8	+3.9	+0.2	-31.4				
			+0.0							
49 90	031.645M	28.8	+0.0	+0.0	+0.0	+0.0	+0.0	42.2	54.0 -11.8	Horiz
			+0.0	+0.0	+3.0	+36.9	85		Low X-Axis	111
			+0.8	+3.9	+0.2	-31.4				
			+0.0							
50 9	964.600M	30.5	-27.2	+23.7	+2.1	+2.4	+0.0	41.9	54.0 -12.1	Vert
QF	D		+0.0	+9.6	+0.8	+0.0	360		X-Axis	150
			+0.0	+0.0	+0.0	+0.0				
			+0.0							
^ ç	964.600M	35.3	-27.2	+23.7	+2.1	+2.4	+0.0	46.7	54.0 -7.3	Vert
			+0.0	+9.6	+0.8	+0.0	360		X-Axis	101
			+0.0	+0.0	+0.0	+0.0				
			+0.0							
52 74	419.180M	29.7	+0.0	+0.0	+0.0	+0.0	+0.0	41.9	54.0 -12.1	Horiz
			+0.0	+0.0	+3.2	+36.0	239		High Y-Axis	119
			+0.6	+3.6	+0.2	-31.4				
			+0.0							
53 55	563.960M	34.2	+0.0	+0.0	+0.0	+0.0	+0.0	41.6	54.0 -12.4	Vert
			+0.0	+0.0	+2.4	+33.5			High Y-Axis	119
			+0.4	+2.9	+0.3	-32.1			•	
			+0.0							
54 73	321.763M	29.4	+0.0	+0.0	+0.0	+0.0	+0.0	41.3	54.0 -12.7	Vert
			+0.0	+0.0		+35.9	239		Mid Z-Axis	116
			+0.5	+3.6	+0.2	-31.4				
			+0.0							
55 73	321.170M	29.2	+0.0	+0.0	+0.0	+0.0	+0.0	41.1	54.0 -12.9	Horiz
			+0.0	+0.0	+3.1	+35.9	8		Mid X-Axis	120
			+0.5	+3.6	+0.2	-31.4				
			+0.0							
56 83	344.560M	28.1	+0.0	+0.0	+0.0	+0.0	+0.0	41.1	54.0 -12.9	Horiz
			+0.0	+0.0	+3.0	+36.4	341		High Y-Axis	119
			+0.9	+3.8	+0.2	-31.3			0	-
			+0.0							
57 70	221.920M	29.3	+0.0	+0.0	+0.0	+0.0	+0.0	41.0	54.0 -13.0	Horiz
			+0.0	+0.0	+3.0	+35.7	214		Low Z-Axis	116
			+0.6	+3.6	+0.3	-31.5				110
			+0.0	. 5.0		21.0				
L			10.0							



58 5562.635M	33.6	+0.0	+0.0	+0.0	+0.0	+0.0	41.0	54.0 -13.0	Vert
		+0.0	+0.0	+2.4	+33.5	-16		High Z-Axis	116
		+0.4	+2.9	+0.3	-32.1				
		+0.0							
59 7220.140M	29.4	+0.0	+0.0	+0.0	+0.0	+0.0	41.0	54.0 -13.0	Horiz
		+0.0	+0.0	+3.0	+35.6	190		Low Y-Axis	116
		+0.6	+3.6	+0.3	-31.5				
		+0.0							
60 7226.145M	29.2	+0.0	+0.0	+0.0	+0.0	+0.0	40.9	54.0 -13.1	Horiz
		+0.0	+0.0	+3.0	+35.7	267		Low X-Axis	111
		+0.6	+3.6	+0.3	-31.5				
		+0.0							
61 9151.549M	27.7	+0.0	+0.0	+0.0	+0.0	+0.0	40.7	54.0 -13.3	Horiz
		+0.0	+0.0	+3.1	+36.4			Mid Y-Axis	116
		+0.8	+3.9	+0.2	-31.4				
		+0.0							
62 6491.210M	31.3	+0.0	+0.0	+0.0	+0.0	+0.0	40.6	54.0 -13.4	Horiz
		+0.0	+0.0	+2.4	+34.4	52		High Y-Axis	119
		+0.5	+3.4	+0.3	-31.7				
		+0.0					10.1		
63 6405.868M	31.3	+0.0	+0.0	+0.0	+0.0	+0.0	40.6	54.0 -13.4	Horiz
		+0.0	+0.0	+2.4	+34.4	129		Mid X-Axis	120
		+0.5	+3.3	+0.4	-31.7				
		+0.0							
64 8125.030M	27.9	+0.0	+0.0	+0.0	+0.0	+0.0	40.4		Vert
		+0.0	+0.0	+3.2	+36.0	360		Low Y-Axis	116
		+0.7	+3.7	+0.2	-31.3				
(5) 500 < 1 (5) 5		+0.0	0.0		0.0	0.0	40.4	5 4.0 10 .6	
65 7226.145M	28.7	+0.0	+0.0	+0.0	+0.0	+0.0	40.4	54.0 -13.6	Vert
		+0.0	+0.0	+3.0	+35.7	349		Low X-Axis	114
		+0.6	+3.6	+0.3	-31.5				
<u>((0100 010) (</u>	27.6	+0.0	0.0	0.0	0.0	0.0	40.1	54.0 10.0	X 7.
66 8122.810M	27.6	+0.0	+0.0	+0.0	+0.0	+0.0	40.1	54.0 -13.9	Vert
		+0.0	+0.0	+3.2	+36.0	360		Low Z-Axis	116
		+0.7	+3.7	+0.2	-31.3				
(7. 0151 (00) K	260	+0.0	0.0	0.0	0.0	0.0	20.0	540 141	
67 9151.690M	26.9	+0.0	+0.0	+0.0	+0.0	+0.0	39.9		Horiz
		+0.0	+0.0		+36.4	73		Mid X-Axis	116
		+0.8	+3.9	+0.2	-31.4				
<u>(0 4514000)</u>	26.4	+0.0			.0.0		20.0	540 141	IL
68 4514.000M	36.4	+0.0	+0.0	+0.0	+0.0	+0.0	39.9	54.0 -14.1	Horiz
		+0.0	+0.0	+1.9	+31.2			Low X-Axis	118
		+0.3	+2.6	+0.3	-32.8				
60 0272 44014	27.2	+0.0			10.0		20.0	54.0 14.2	Vant
69 9272.440M	27.2	+0.0	+0.0	+0.0	+0.0	+0.0	39.8	54.0 -14.2 High Y-Axis	Vert
		+0.0	+0.0	+3.3	+35.8	360		ingii i -Axis	119
		+0.8	+4.0	+0.2	-31.5				
70 025 01214	27.1	+0.0				+0.0	39.8	54.0 14.2	Vont
70 8235.813M	27.1	+0.0	+0.0	+0.0	+0.0	+0.0 120	39.8	54.0 -14.2 Mid 7 Avia	Vert
		$^{+0.0}_{+0.8}$	+0.0 +3.7	+3.1 +0.2	+36.2 -31.3	120		Mid Z-Axis	116
		+0.8 +0.0	±3.7	+0.2	-31.3				
		+0.0							



-										
71	8236.440M	27.0	+0.0	+0.0	+0.0	+0.0	+0.0	39.7	54.0 -14.3	Vert
			+0.0	+0.0	+3.1	+36.2			Mid X-Axis	116
			+0.8	+3.7	+0.2	-31.3				
			+0.0							
72	6406.807M	30.4	+0.0	+0.0	+0.0	+0.0	+0.0	39.7	54.0 -14.3	Horiz
			+0.0	+0.0	+2.4	+34.4	360		Mid Z-Axis	116
			+0.5	+3.3	+0.4	-31.7				
			+0.0							
73	5563.245M	32.2	+0.0	+0.0	+0.0	+0.0	+0.0	39.6	54.0 -14.4	Horiz
			+0.0	+0.0	+2.4	+33.5			High X-Axis	119
			+0.4	+2.9	+0.3	-32.1				
			+0.0							
74	2723.400M	40.8	+0.0	+0.0	+0.0	+0.0	+0.0	39.6	54.0 -14.4	Horiz
			+0.0	+0.0	+1.4	+27.2			Low X-Axis	113
			+0.5	+2.1	+0.3	-32.7				
			+0.0							
75	4636.080M	35.6	+0.0	+0.0	+0.0	+0.0	+0.0	39.5	54.0 -14.5	Horiz
			+0.0	+0.0	+2.0	+31.5			High X-Axis	119
			+0.1	+2.6	+0.3	-32.6				
			+0.0							
76	2708.650M	40.7	+0.0	+0.0	+0.0	+0.0	+0.0	39.4	54.0 -14.6	Vert
			+0.0	+0.0	+1.4	+27.1			Low X-Axis	99
			+0.5	+2.1	+0.3	-32.7				
			+0.0							
77	8237.340M	26.4	+0.0	+0.0	+0.0	+0.0	+0.0	39.1	54.0 -14.9	Horiz
			+0.0	+0.0	+3.1	+36.2			Mid Y-Axis	116
			+0.8	+3.7	+0.2	-31.3				
			+0.0							
78	6323.395M	29.5	+0.0	+0.0	+0.0	+0.0	+0.0	38.8	54.0 -15.2	Horiz
			+0.0	+0.0	+2.4	+34.5	70		Low X-Axis	111
			+0.5	+3.3	+0.4	-31.8				
	(210.0.(2))	2 0 7	+0.0	0.0	0.0	0.0	0.0	20.0		
79	6319.965M	29.5	+0.0	+0.0	+0.0	+0.0	+0.0	38.8	54.0 -15.2	Vert
			+0.0	+0.0	+2.4	+34.5	8		Low Z-Axis	116
			+0.5	+3.3	+0.4	-31.8				
		24.0	+0.0	.0.0	.0.0	. 0. 0	.0.0	20.5	54.0 15.2	X 7 ·
80	4637.705M	34.8	+0.0	+0.0	+0.0	+0.0	+0.0	38.7	54.0 -15.3	Vert
			+0.0	+0.0	+2.0	+31.5	27		High Y-Axis	119
			+0.1	+2.6	+0.3	-32.6				
0.1	6405 01414	20.4	+0.0		100	.0.0	10.0	707	54.0 15.2	Vant
81	6405.814M	29.4	+0.0	+0.0	+0.0	+0.0	+0.0	38.7	54.0 -15.3 Mid V Avia	Vert
			+0.0	+0.0	+2.4	+34.4	360		Mid Y-Axis	120
			+0.5	+3.3	+0.4	-31.7				
00	5492.307M	21 /	+0.0				+0.0	38.6	54.0 -15.4	Ucria
82	J492.30/IVI	31.4	$^{+0.0}_{+0.0}$	$^{+0.0}_{+0.0}$	+0.0	+0.0 +33.3	+0.0 360	30.0		Horiz 116
					+2.4		300		Mid Z-Axis	110
			$^{+0.4}_{+0.0}$	+2.9	+0.3	-32.1				
02	3708.720M	37.6						38.6	54.0 -15.4	Uoria
83	5706.720IVI	37.0	$^{+0.0}_{+0.0}$	$^{+0.0}_{+0.0}$	$^{+0.0}_{+1.7}$	+0.0 +29.6	+0.0	30.0		Horiz 119
			+0.0 +0.4						High X-Axis	119
				+2.1	+0.4	-33.2				
			+0.0							



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94 61.800M 34.8 -28.0 +5.4 +0.5 +0.4 +0.0 22.5 40.0 -17.5 Vert +0.0 +9.2 +0.2 +0.0 362 Y-Axis 295 +0.0 +0.0 +0.0 +0.0 +0.0 100 95 2782.005M 37.4 +0.0 +0.0 +0.0 +0.0 36.5 54.0 -17.5 Vert +0.0 +0.0 +1.5 +27.4 -14 High Z-Axis 116
+0.0 +9.2 +0.2 +0.0 362 Y-Axis 295 +0.0 +0.0 +0.0 +0.0 +0.0 -17.5 Vert 95 2782.005M 37.4 +0.0 +0.0 +0.0 +0.0 36.5 54.0 -17.5 Vert +0.0 +0.0 +1.5 +27.4 -14 High Z-Axis 116
+0.0 +0.0 +0.0 +0.0 +0.0 -0.0 -0.0 -0.0 -0.0 -17.5 Vert 95 2782.005M 37.4 +0.0 +0.0 +0.0 +0.0 36.5 54.0 -17.5 Vert +0.0 +0.0 +1.5 +27.4 -14 High Z-Axis 116
+0.0 95 2782.005M 37.4 +0.0 +0.0 +0.0 +0.0 +0.0 36.5 54.0 -17.5 Vert +0.0 +0.0 +1.5 +27.4 -14 High Z-Axis 116
95 2782.005M 37.4 +0.0 +0.0 +0.0 +0.0 +0.0 36.5 54.0 -17.5 Vert +0.0 +0.0 +1.5 +27.4 -14 High Z-Axis 116
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(0.5) (0.2) (0.2) (0.2) (0.2)
+0.0
96 1805.900M 41.5 +0.0 +0.0 +0.0 +0.0 35.5 54.0 -18.5 Horiz
+0.0 +0.0 +1.2 +24.7 360 Low X-Axis 99
+0.3 $+1.6$ $+0.5$ -34.3
+0.0



97	4575.308M	31.5	+0.0	+0.0	+0.0	+0.0	+0.0	35.2	54.0 -18.8	Vert
			+0.0	+0.0	+2.0	+31.4	360		Mid X-Axis	120
			+0.1	+2.6	+0.3	-32.7				
			+0.0							
98	4575.512M	31.5	+0.0	+0.0	+0.0	+0.0	+0.0	35.2	54.0 -18.8	Horiz
			+0.0	+0.0	+2.0	+31.4	360		Mid Y-Axis	120
			+0.1	+2.6	+0.3	-32.7				
			+0.0							
99	4575.188M	31.4	+0.0	+0.0	+0.0	+0.0	+0.0	35.1	54.0 -18.9	Horiz
			+0.0	+0.0		+31.4			Mid Z-Axis	116
			+0.1	+2.6		-32.7				
			+0.0							
100	3660.588M	34.5	+0.0	+0.0	+0.0	+0.0	+0.0	35.1	54.0 -18.9	Horiz
100	00000000000	0.110	+0.0	+0.0		+29.4	360		Mid X-Axis	120
			+0.4	+2.1		-33.3	200			120
			+0.0	-2.1	10.5	00.0				
101	3659.620M	34.4	+0.0	+0.0	+0.0	+0.0	+0.0	35.0	54.0 -19.0	Horiz
101	2027.020141	5 7.7	+0.0	+0.0		+29.4	360			120
			+0.4	+2.1	+0.3	-33.3	500		Mid I / Mis	120
			+0.0	- 2.1	10.5	55.5				
102	5416.750M	27.3	+0.0	+0.0	+0.0	+0.0	+0.0	34.4	54.0 -19.6	Horiz
102	5410.750101	21.5	+0.0	+0.0		+33.2	10.0		Low Y-Axis	
			+0.5	+2.9	+0.3	-32.2			LOW I-AAIS	104
			+0.0	<i>τ2.9</i>	± 0.5	-32.2				
103	3659.938M	33.4	+0.0 $+0.0$	+0.0	+0.0	+0.0	+0.0	34.0	54.0 -20.0	Vert
105	5057.750WI	55.4	+0.0 +0.0	+0.0 +0.0		+0.0 +29.4			Mid Z-Axis	116
			+0.0 +0.4	+0.0 +2.1	+1.7 +0.3	-33.3	300		WIIU Z-AXIS	110
			+0.4 +0.0	± 2.1	± 0.5	-55.5				
104	1905 5001	39.4	+0.0 +0.0	+0.0		+0.0	+0.0	33.4	54.0 -20.6	Vort
104	1805.500M	39.4								Vert
			+0.0	+0.0		+24.7	300		Low X-Axis	120
			+0.3	+1.6	+0.5	-34.3				
105	274476614	24.1	+0.0	.0.0	. 0. 0	.0.0	. 0. 0	22.0	54.0 01.0	X <i>T</i> (
105	2744.766M	34.1	+0.0	+0.0		+0.0				Vert
			+0.0	+0.0		+27.3	341		Mid X-Axis	112
			+0.5	+2.1	+0.3	-32.7				
10-	0744 -0155	<u> </u>	+0.0	0.0	0.0	0.0	0.0		F 4.0	
106	2744.691M	33.8	+0.0	+0.0		+0.0				Vert
							360		Mid Z-Axis	116
			+0.5	+2.1	+0.3	-32.7				
			+0.0							
107	2745.453M	33.3	+0.0	+0.0		+0.0		32.2		Vert
			+0.0	+0.0		+27.3	360		Mid Y-Axis	120
			+0.5	+2.1	+0.3	-32.7				
L			+0.0							
108	3612.560M	31.6	+0.0	+0.0		+0.0		32.2	54.0 -21.8	Horiz
			+0.0	+0.0	+1.7	+29.3	360		Low Y-Axis	121
			+0.4	+2.2	+0.3	-33.3				
			+0.0							
109	3612.730M	31.4	+0.0	+0.0		+0.0		32.0		Vert
			+0.0	+0.0		+29.3	164		Low Z-Axis	194
			+0.4	+2.2	+0.3	-33.3				
			+0.0							



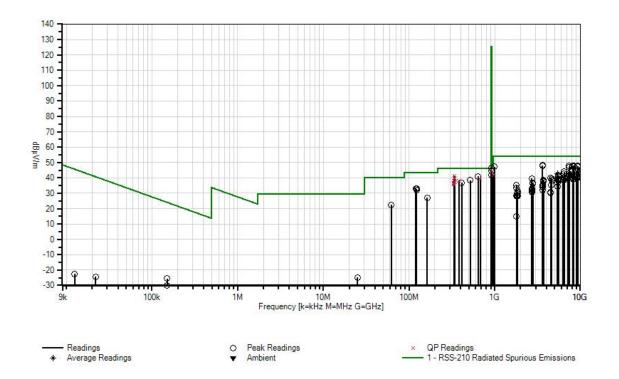
110 2705.900M	32.6	+0.0	+0.0	+0.0	+0.0	+0.0	31.3	54.0 -22.7	Vert
		+0.0	+0.0	+1.4	+27.1	92		Low Y-Axis	110
		+0.5	+2.1	+0.3	-32.7				
		+0.0							
111 1854.335M	36.3	+0.0	+0.0	+0.0	+0.0	+0.0	31.1	54.0 -22.9	Vert
		+0.0	+0.0	+1.2	+25.2	360		High Y-Axis	119
		+0.3	+1.6	+0.4	-33.9				
110 0707 00514	21.0	+0.0	.0.0	.0.0	.0.0	. 0. 0	20.5	54.0 02.5	N <i>T</i> (
112 2707.085M	31.8	+0.0	+0.0	+0.0	+0.0	+0.0	30.5	54.0 -23.5	Vert
		+0.0	+0.0	+1.4	+27.1	295		Low Z-Axis	283
		+0.5	+2.1	+0.3	-32.7				
112 4511 (00)	27.0	+0.0	.0.0	.0.0	.0.0	.0.0	20.5	54.0 22.5	TT
113 4511.690M	27.0	+0.0	+0.0	+0.0	+0.0	+0.0	30.5	54.0 -23.5	Horiz
		+0.0	+0.0	+1.9	+31.2			Low Z-Axis	112
		+0.3	+2.6	+0.3	-32.8				
	25.5	+0.0	.0.0	.0.0	.00		20.2	54.0 22.7	N 7
114 1855.655M	35.5	+0.0	+0.0	+0.0	+0.0	+0.0	30.3	54.0 -23.7	Vert
		+0.0	+0.0	+1.2	+25.2	272		High X-Axis	119
		+0.3	+1.6	+0.4	-33.9				
115 4514 000M	265	+0.0			10.0		20.0	54.0 24.0	Uoria
115 4514.000M	26.5	$^{+0.0}_{+0.0}$	$^{+0.0}_{+0.0}$	+0.0 +1.9	+0.0 +31.2	+0.0	30.0	54.0 -24.0 Low Y-Axis	Horiz 121
								LOW Y-AXIS	121
		+0.3	+2.6	+0.3	-32.8				
116 1828.815M	25 1	+0.0			10.0		29.7	54.0 -24.3	Horiz
110 1628.813IVI	35.4	$^{+0.0}_{+0.0}$	$^{+0.0}_{+0.0}$	$^{+0.0}_{+1.2}$	+0.0 +24.9	+0.0 360	29.7	54.0 -24.3 Mid X-Axis	Horiz 99
		+0.0 +0.3	+0.0 $+1.6$	$^{+1.2}_{+0.4}$	+24.9 -34.1	300		MIU A-AXIS	99
			+1.0	+0.4	-34.1				
117 1829.966M	34.5	+0.0 +0.0	+0.0			+0.0	28.8	54.0 -25.2	Horiz
117 1829.900M	54.5	$^{+0.0}_{+0.0}$	+0.0 +0.0	$^{+0.0}_{+1.2}$	+0.0 +24.9	+0.0 218	20.0	Mid Z-Axis	116
		+0.0 +0.3	+0.0 $+1.6$	$^{+1.2}_{+0.4}$	+24.9 -34.1	210		MIU Z-AXIS	110
		+0.3 $+0.0$	+1.0	+0.4	-34.1				
118 1805.570M	34.2	+0.0 +0.0	+0.0	+0.0	+0.0	+0.0	28.2	54.0 -25.8	Vert
110 1003.370M	34.2	+0.0 +0.0	+0.0 $+0.0$	+0.0 $+1.2$	+0.0 +24.7	± 0.0	20.2	Low Y-Axis	103
		+0.0 +0.3	+0.0 $+1.6$	+1.2 $+0.5$	+24.7			LUW 1-AXIS	105
		+0.3 +0.0	± 1.0	± 0.5	-54.5				
119 1854.675M	33.4	+0.0 $+0.0$	+0.0	+0.0	+0.0	+0.0	28.2	54.0 -25.8	Horiz
117 1034.07311	55.4	+0.0 $+0.0$	+0.0 $+0.0$	+0.0 +1.2	+0.0 +25.2	+0.0 360	20.2	High Z-Axis	116
		+0.0 +0.3	+0.0 +1.6	$^{+1.2}_{+0.4}$	-33.9	500		111gii 2-7113	110
		+0.3 $+0.0$	11.0	10.7	55.7				
120 1830.203M	33.6	+0.0 +0.0	+0.0	+0.0	+0.0	+0.0	27.9	54.0 -26.1	Horiz
120 1030.203101	55.0	+0.0 +0.0	+0.0 +0.0	+0.0 $+1.2$	+0.0 +24.9	+0.0 41	21.7	Mid Y-Axis	116
		+0.0 $+0.3$	+0.0 $+1.6$	+0.4	-34.1	71		1110 I / 1A10	110
		+0.3 $+0.0$	11.0	10.7	57.1				
121 1803.950M	21.0	+0.0 +0.0	+0.0	+0.0	+0.0	+0.0	15.0	54.0 -39.0	Horiz
121 1003.75014	21.0	+0.0 +0.0	+0.0 $+0.0$	+0.0 $+1.2$	+0.0 +24.7	+0.0 360	15.0	Low Z-Axis	400
		+0.0 +0.3	+0.0 $+1.6$	+1.2 $+0.5$	-34.3	500		LUW L-MAIS	00
		+0.3 +0.0	11.0	10.5	-54.5				
122 150.000k	45.0	+0.0	+0.0	+0.0	+0.0	-80.0	-25.5	24.1 -49.6	Perpe
122 130.000K	чJ.0	+0.0 $+0.0$	+0.0 $+0.0$	+0.0 $+0.0$	+0.0 $+0.0$	360	20.0	2 -----/ .0	123
		+0.0 +0.0	+0.0 +0.0	+0.0 $+0.0$	+0.0 +0.0	500			123
		+0.0 +9.5	10.0	10.0	10.0				
		19.0							



123	150.000k	40.5	+0.0	+0.0	+0.0	+0.0	-80.0	-30.0	24.1	-54.1	Paral
120	12010001	10.2	+0.0	+0.0	+0.0	+0.0	360	20.0	2111	0	123
			+0.0	+0.0	+0.0	+0.0	200				120
			+9.5								
124	24.980M	9.3	+0.0	+0.0	+0.0	+0.0	-40.0	-24.7	29.5	-54.2	Paral
121	21.900111	7.0	+0.0	+0.0	+0.0	+0.0	360	2,	27.0	0112	123
			+0.0	+0.2	+0.0	+0.0	200				120
			+5.8		1010						
125	21.925k	43.8	+0.0	+0.0	+0.0	+0.0	-80.0	-24.4	40.8	-65.2	Paral
_			+0.0	+0.0	+0.0	+0.0	360				123
			+0.0	+0.0	+0.0	+0.0					
			+11.8								
126	12.525k	42.3	+0.0	+0.0	+0.0	+0.0	-80.0	-22.5	45.6	-68.1	Perpe
			+0.0	+0.0	+0.0	+0.0	360				123
			+0.0	+0.0	+0.0	+0.0					
			+15.2								
127	912.000M	36.3	-27.4	+22.6	+2.1	+2.3	+0.0	46.2	125.2	-79.0	Vert
			+0.0	+9.6	+0.7	+0.0	360		X-Axis		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
128	911.900M	34.8	-27.4	+22.6	+2.1	+2.3	+0.0	44.7	125.2	-80.5	Vert
			+0.0	+9.6	+0.7	+0.0			Y-Axis		126
			+0.0	+0.0	+0.0	+0.0					
			+0.0								
129	911.900M	32.1	-27.4	+22.6	+2.1	+2.3	+0.0	42.0	125.2	-83.2	Horiz
			+0.0	+9.6	+0.7	+0.0	28		Y-Axis		99
			+0.0	+0.0	+0.0	+0.0					
			+0.0								



CKC Laboratories, Inc. Date: 7/17/2013 Time: 10:57:55 Impinj Inc. WO#: 93909 Test Distance: 3 Meters Sequence#: 11 Horiz Impinj Inc. Impinj IPJ-RS500 23dBm Reader SIP P/N: IPJ-RS500GX





Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: Specification:	Impinj Inc. RSS 210 Redicted Sourious Emissions	
-	RSS-210 Radiated Spurious Emissions	
Work Order #:	93909	Date:
Test Type:	Maximized Emissions	Time:
Equipment:	Impinj IPJ-RS500 23dBm Reader SIP	Sequence#:
Manufacturer:	Impinj Inc.	Tested By:
Model:	IPJ-RS500GX	
S/N:	IMPH12000100051210	

Date:	7/17/2013
Time:	10:56:25
uence#:	10
sted By:	Steven Pittsford

Test Equipment:

	1001 Bqp					
	ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	T1	AN02308	Preamp	8447D	4/3/2012	4/3/2014
	T2	AN01996	Biconilog Antenna	CBL6111C	3/2/2012	3/2/2014
	T3	ANP05360	Cable	RG214	12/3/2012	12/3/2014
	T4	ANP05366	Cable	RG-214	10/14/2011	10/14/2013
	T5	AN02673	Spectrum Analyzer	E4446A	5/11/2012	5/11/2014
	T6	ANP05546	Cable	Heliax	3/27/2013	3/27/2015
	T7	AN02115	Preamp	83051A	11/12/2012	11/12/2014
	T8	AN01467	Horn Antenna-ANSI C63.5 Calibration	3115	10/19/2011	10/19/2013
_	-					
	T9	AN03123	Cable	32026-2-29801-	10/14/2011	10/14/2013
				12		
	T10	ANP05965	Cable	Various	8/26/2011	8/26/2013
	T11	AN00052	Loop Antenna	6502	5/16/2012	5/16/2014

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Mini Guardrail Antenna	Impinj, Inc.	IMP-A0303-000	
Impinj IPJ-RS500 23dBm	Impinj Inc.	IPJ-RS500GX	
Reader SIP			

Support Devices:

Function	Manufacturer	Model #	S/N	
Battery	Tenergy	18650		
Battery Pack	Tenergy	TN270		
Battery	Tenergy	18650		
Development platform	Impinj, Inc.	IPJ-E4000 Rev 2.0)1	



Test Conditions / Notes:

The EUT is seeking modular approval and is placed in the center of the turntable on a Styrofoam table 80cm above the ground plane, installed on a support host PCB as intended for final installation. The laptop located outside the chamber sends test command to the EUT via the support host PCB. The EUT is set in constant transmit mode.

Freq: 902.75MHz, 915.25MHz, 927.25MHz Measured Power= 23.0dBm, 23.0dBm, 22.6dBm Firmware setting = 23dBm, 23dBm, 23dBm

Emission profile evaluated with Mini Guardrail Antenna -20dBi with a 30cm cable between EUT and the antenna.

Frequency range of measurement = 9 kHz- 10 GHz. 9 kHz -150 kHz;RBW=200 Hz=VBW 150 kHz-30 MHz;RBW=9 kHz=VBW 30 MHz-1000 MHz;RBW=120 kHz=VBWz, 1000 MHz-10,000 MHz;RBW=1 MHz=VBW

15.31(e) compliance: a freshly charged battery is installed.

Emission profile of the EUT rotated along three orthogonal axes was investigated. Recorded data represent worse case emission.

Test method in accordance with FCC document: DA 00-705.

Temperature: 24°C Pressure: 101.5kPa Humidity: 37%

Ext Attn: 0 dB

Mogan	<i>leasurement Data:</i> Reading listed by margin.			rain	Test Distance: 3 Meters						
						T 4					D 1
#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
			T9	T10	T11						
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	338.420M	50.7	-27.3	+14.4	+1.1	+1.2	+0.0	40.5	46.0	-5.5	Horiz
(QP		+0.0	+0.4	+0.0	+0.0	44		X-Axis		99
			+0.0	+0.0	+0.0						
^	338.420M	55.4	-27.3	+14.4	+1.1	+1.2	+0.0	45.2	46.0	-0.8	Horiz
			+0.0	+0.4	+0.0	+0.0	138		X-Axis		99
			+0.0	+0.0	+0.0						
3	394.800M	48.3	-27.8	+16.1	+1.3	+1.4	+0.0	39.8	46.0	-6.2	Horiz
			+0.0	+0.5	+0.0	+0.0			Z-Axis		100
			+0.0	+0.0	+0.0						
4	344.320M	48.8	-27.4	+14.6	+1.1	+1.2	+0.0	38.7	46.0	-7.3	Horiz
(QP		+0.0	+0.4	+0.0	+0.0			Z-Axis		100
			+0.0	+0.0	+0.0						
^	344.300M	55.0	-27.4	+14.6	+1.1	+1.2	+0.0	44.9	46.0	-1.1	Horiz
			+0.0	+0.4	+0.0	+0.0			Z-Axis		100
			+0.0	+0.0	+0.0						
6	406.400M	46.6	-27.9	+16.3	+1.3	+1.4	+0.0	38.2	46.0	-7.8	Horiz
			+0.0	+0.5	+0.0	+0.0	287		Y-Axis		100
			+0.0	+0.0	+0.0						



7	220 02014	40.2	07.2	. 1.4.4	. 1. 1	.1.0	.0.0	20.1	46.0 7	0 11
7	00000-0000	48.3	-27.3	+14.4	+1.1	+1.2	+0.0	38.1	46.0 -7	
	QP		+0.0	$^{+0.4}_{+0.0}$	$^{+0.0}_{+0.0}$	+0.0	5		Y-Axis	99
^	338.900M	53.5	+0.0 -27.3	+0.0 +14.4	+0.0 +1.1	+1.2	+0.0	43.3	46.0 -2	.7 Horiz
	556.900IVI	55.5	+0.0	+14.4 +0.4	$^{+1.1}_{+0.0}$	+1.2 $+0.0$	+0.0 355	43.5	Y-Axis -2	100
			+0.0 +0.0	+0.4 +0.0	+0.0 +0.0	± 0.0	555		1-1215	100
9	124.600M	48.6	-27.8	+11.7	+0.0	+0.6	+0.0	34.0	43.5 -9	.5 Horiz
,	124.000101	+0.0	+0.0	+0.2	+0.0	+0.0	288	54.0	Z-Axis	.5 110112 99
			+0.0	+0.2	+0.0	10.0	200			
10	122.680M	47.8	-27.8	+11.7	+0.7	+0.6	+0.0	33.2	43.5 -10	.3 Horiz
10	122.000111	17.0	+0.0	+0.2	+0.0	+0.0	360	55.2	X-Axis	152
			+0.0	+0.0	+0.0					
11	339.100M	45.7	-27.3	+14.4	+1.1	+1.2	+0.0	35.5	46.0 -10	.5 Vert
			+0.0	+0.4	+0.0	+0.0	89		Y-Axis	100
			+0.0	+0.0	+0.0					
12	129.700M	46.9	-27.8	+11.7	+0.7	+0.6	+0.0	32.4	43.5 -11	.1 Horiz
			+0.0	+0.3	+0.0	+0.0	360		Y-Axis	99
			+0.0	+0.0	+0.0					
13	9272.505M	30.3	+0.0	+0.0	+0.0	+0.0	+0.0	42.7	54.0 -11	.3 Horiz
			+0.0	+3.3	-31.5	+35.8	360		High Y-Axis	121
			+0.8	+4.0	+0.0					
14	8345.780M	29.8	+0.0	+0.0	+0.0	+0.0	+0.0	42.6	54.0 -11	.4 Vert
			+0.0	+3.0	-31.3	+36.4	360		High Z-Axis	121
			+0.9	+3.8	+0.0					
15	8345.620M	29.6	+0.0	+0.0	+0.0	+0.0	+0.0	42.4	54.0 -11	
			+0.0	+3.0	-31.3	+36.4	290		High Y-Axis	115
		• • • •	+0.9	+3.8	+0.0					
16	9026.790M	29.0	+0.0	+0.0	+0.0	+0.0	+0.0	42.3		
			+0.0	+3.0	-31.4	+37.0	360		Low Y-Axis	119
17	0072 (40)4	20.0	+0.8	+3.9	+0.0	.0.0	.0.0	40.0	54.0 11	7
1/	9273.640M	29.9	+0.0	+0.0	+0.0	+0.0	+0.0	42.3	54.0 -11	
			+0.0	+3.3	-31.5	+35.8			High Z-Axis	121
10	8346.505M	29.1	+0.8 +0.0	+4.0 +0.0	+0.0 +0.0	+0.0	+0.0	41.9	54.0 -12	.1 Horiz
10	8540.505M	29.1	+0.0 +0.0	+0.0 +3.0	+0.0 -31.3	+0.0	+0.0 262	41.9	High X-Axis	.т попz 114
			+0.0 +0.9	+3.0 +3.8	+0.0	+30.4	202		nigii A-Axis	114
10	7418.120M	29.7	+0.9 +0.0	+3.8 +0.0	+0.0 +0.0	+0.0	+0.0	41.7	54.0 -12	.3 Horiz
19	/ 710.120101	29.1	+0.0 +0.0	+0.0 +3.2		+36.0		71./	High Y-Axis	.5 110112
			+0.6	+3.6	+0.0	10.0	500		111511 1 11115	115
20	7416.520M	29.5	+0.0	+0.0	+0.0	+0.0	+0.0	41.5	54.0 -12	.5 Vert
		->.0	+0.0	+3.2	-31.4	+36.0	360		High Z-Axis	121
			+0.6	+3.6	+0.0	• •			6	
21	9152.040M	28.5	+0.0	+0.0	+0.0	+0.0	+0.0	41.3	54.0 -12	.7 Horiz
			+0.0	+3.1	-31.4	+36.4	360		Mid Z-Axis	119
			+0.8	+3.9	+0.0					
22	9271.825M	28.8	+0.0	+0.0	+0.0	+0.0	+0.0	41.3	54.0 -12	.7 Horiz
			+0.0	+3.3	-31.5	+35.8	335		High X-Axis	114
			+0.9	+4.0	+0.0					
23	342.600M	43.3	-27.3	+14.5	+1.1	+1.2	+0.0	33.2	46.0 -12	.8 Vert
			+0.0	+0.4	+0.0	+0.0	358		Z-Axis	102
1			+0.0	+0.0	+0.0					



24	9152.515M	28.4		+0.0		+0.0	+0.0		54.0 -12.8	
			+0.0	+3.1	-31.4	+36.4	105		Mid X-Axis	121
			+0.8	+3.9	+0.0					
25	165.800M	46.2	-27.5	+10.0	+0.8	+0.8	+0.0		43.5 -12.9	
			+0.0	+0.3	+0.0	+0.0	360		X-Axis	152
			+0.0	+0.0	+0.0					
26	7222.380M	29.6	+0.0	+0.0	+0.0	+0.0	+0.0		54.0 -13.0	Vert
			+0.0	+3.0	-31.5	+35.7	108		Low Y-Axis	119
			+0.6	+3.6	+0.0					
27	7418.600M	29.0	+0.0	+0.0	+0.0	+0.0	+0.0	41.0	54.0 -13.0	Vert
			+0.0	+3.2	-31.4	+36.0			High X-Axis	124
• •		• • •	+0.6	+3.6	+0.0					
28	9151.215M	28.2	+0.0	+0.0		+0.0			54.0 -13.0	
			+0.0	+3.1	-31.4	+36.4	360		Mid Y-Axis	119
• •		• • •	+0.8	+3.9	+0.0					
29	7322.540M	29.2	+0.0	+0.0		+0.0	+0.0	40.9		
			+0.0	+3.1	-31.4	+35.9			Mid Z-Axis	119
•			+0.5	+3.6	+0.0					
30	9026.115M	27.6	+0.0	+0.0		+0.0	+0.0	40.9		
			+0.0	+3.0	-31.4	+37.0			Low X-Axis	123
	0005 0 (5) (20.0	+0.8	+3.9	+0.0	0.0		10.0	54.0 10.0	**
31	8237.265M	28.3	+0.0	+0.0		+0.0				
			+0.0	+3.1	-31.3	+36.2	268		Mid Z-Axis	119
		• • •	+0.8	+3.7	+0.0					
32	8236.000M	28.2	+0.0	+0.0		+0.0	+0.0	40.7		
			+0.0	+3.1	-31.3	+36.2			Mid X-Axis	121
		• • •	+0.8	+3.7	+0.0			10.1		
33	7222.410M	29.2	+0.0	+0.0		+0.0	+0.0			
			+0.0	+3.0	-31.5	+35.7			Low X-Axis	123
~ ~ ~	000 (555) (+0.6	+3.6	+0.0	0.0	0.0	10 7		
34	9026.775M	27.2	+0.0	+0.0		+0.0	+0.0		54.0 -13.5	
			+0.0	+3.0	-31.4	+37.0	360		Low Z-axis	119
27	5000 4000 4	20.0	+0.8	+3.9	+0.0			10.1	5 4.0 10 .6	
35	7222.480M	29.0	+0.0	+0.0	+0.0	+0.0			54.0 -13.6	
			+0.0	+3.0	-31.5	+35.7	360		Low Z-axis	119
2.6	0105 50535	20.0	+0.6	+3.6	+0.0			10.0	54.0 10.5	
36	8125.525M	28.0		+0.0	+0.0				54.0 -13.7	
			+0.0			+36.0			Low X-Axis	123
	010 4 0 4 0 1 4	25.0	+0.7	+3.7	+0.0			10.0	5 4.0 10 .0	* *
37	8126.040M	27.9	+0.0	+0.0	+0.0	+0.0	+0.0	40.2		Vert
			+0.0	+3.2	-31.3	+36.0	360		Low Z-axis	119
20	0007 00514	27.7	+0.7	+3.7	+0.0	0.0	0.0	10.0	54.0 12.0	¥7.
38	8237.225M	27.7	+0.0	+0.0	+0.0	+0.0	+0.0	40.2	54.0 -13.8	Vert
			+0.0	+3.1	-31.3	+36.2	360		Mid Y-Axis	119
20	7201 12034	20.4	+0.8	+3.7	+0.0		.0.0	40.1	54.0 12.0	17
39	7321.130M	28.4	+0.0	+0.0	+0.0	+0.0	+0.0	40.1		Vert
			+0.0	+3.1	-31.4	+35.9			Mid X-Axis	121
40	7201 667 5	00.0	+0.5	+3.6	+0.0	0.0		20.0	F 4.0 111	TT '
40	7321.665M	28.2	+0.0	+0.0	+0.0	+0.0	+0.0	39.9		Horiz
			+0.0	+3.1	-31.4	+35.9	360		Mid Y-Axis	119
			+0.5	+3.6	+0.0					



41	207.00016	20.2	07.0	1 < 1	1.0	1.4	0.0	20.0	16.0 15.0	X 7 .
41	397.900M	39.3	-27.8	+16.1	+1.3	+1.4	+0.0	30.8		Vert
			+0.0	+0.5	+0.0	+0.0	360		Z-Axis	102
12	9124 04014	26.4	+0.0	+0.0	+0.0	.0.0	.0.0	20.7	54.0 15.2	V
42	8124.040M	26.4	+0.0	+0.0	+0.0	+0.0	+0.0	38.7		Vert
			+0.0	+3.2	-31.3	+36.0	360		Low Y-Axis	119
42	C 402 000M	20.0	+0.7	+3.7	+0.0	.0.0	.0.0	20.0	54.0 16.0	V
43	6492.080M	29.0	+0.0	+0.0	+0.0	+0.0	+0.0	38.0		Vert
			+0.0	+2.4	-31.7	+34.4			High X-Axis	124
4.4	5415 290M	21.2	+0.5	+3.4	+0.0			38.0	54.0 -16.0	Vert
44	5415.280M	31.2	$^{+0.0}_{+0.0}$	+0.0	+0.0 -32.2	+0.0 +33.2	$^{+0.0}_{268}$	38.0	54.0 -16.0 Low Z-axis	119
			+0.0 +0.5	+2.4 +2.9	-32.2 +0.0	+33.2	208		LOW Z-axis	119
45	5416.250M	31.1	+0.3 +0.0	+2.9 +0.0	+0.0 +0.0	+0.0	+0.0	37.9	54.0 -16.1	Horiz
43	3410.230M	51.1	+0.0 +0.0	+0.0 +2.4	+0.0 -32.2	+0.0 +33.2	+0.0	57.9	Low Y-Axis	119
			+0.0 +0.5	+2.4 +2.9		+33.2			LOW I-AXIS	119
46	242 00014	40.0	-27.4		+0.0	+1.2	+0.0	20.0	46.0 -16.1	Vert
40	343.900M	40.0	-27.4 +0.0	+14.6 +0.4	$^{+1.1}_{+0.0}$	$^{+1.2}_{+0.0}$	+0.0 228	29.9	40.0 -10.1 X-Axis	100
			$^{+0.0}_{+0.0}$	+0.4 +0.0	$^{+0.0}_{+0.0}$	+0.0	228		A-AXIS	100
47	164.400M	42.7	-27.5			10.8	+0.0	27.2	43.5 -16.3	Horiz
47	104.400101	42.7	+0.0	+10.1 +0.3	+0.8 +0.0	+0.8 +0.0	+0.0 360	21.2	45.5 -10.5 Z-Axis	99
			$^{+0.0}_{+0.0}$	+0.3 +0.0	$^{+0.0}_{+0.0}$	+0.0	300		Z-AXIS	99
10	5416.360M	20.4		+0.0 +0.0			+0.0	37.2	54.0 -16.8	Homia
48	5410.500M	30.4	$^{+0.0}_{+0.0}$	+0.0 +2.4	+0.0 -32.2	+0.0 +33.2	+0.0	37.2	54.0 -10.8 Low X-Axis	Horiz 123
			+0.0 +0.5	+2.4 +2.9	-32.2 +0.0	+33.2			LOW A-AXIS	125
40	5564.040M	30.1	+0.3 +0.0	+2.9 +0.0	+0.0 +0.0	+0.0	+0.0	37.2	54.0 -16.8	Vert
49	5504.040M	50.1	+0.0 +0.0	+0.0 +2.4	+0.0 -32.1	+0.0 +33.5	+0.0	57.2	High Z-Axis	126
				+2.4 +2.9	+0.0	+55.5			nigli Z-Axis	120
50	5490.445M	30.3	+0.4 +0.0	+2.9 +0.0	+0.0 +0.0	+0.0	+0.0	37.2	54.0 -16.8	Horiz
50	3490.443M	50.5	+0.0 +0.0	+0.0 +2.4	+0.0 -32.1	+0.0 +33.3	+0.0	57.2	Mid Y-Axis	117
			+0.0 $+0.4$	+2.4 +2.9	+0.0	+55.5			WILU I -AXIS	117
51	5563.795M	30.1	+0.4 +0.0	+2.9 +0.0	+0.0	+0.0	+0.0	37.2	54.0 -16.8	Horiz
51	5505.795141	50.1	+0.0 $+0.0$	+0.0 +2.4	-32.1	+33.5	± 0.0	57.2	High X-Axis	120
			+0.0 $+0.4$	+2.4	+0.0	+55.5			Ingli A-Axis	120
52	6489.270M	28.1	+0.0	+2.9 +0.0	+0.0	+0.0	+0.0	37.1	54.0 -16.9	Horiz
52	0409.270101	20.1	+0.0 $+0.0$	+0.0 +2.4	-31.7	+34.4	± 0.0	57.1	High Z-Axis	126
			+0.5	+3.4	+0.0	1,54.4				120
53	6405.455M	28.2	+0.0	+0.0	+0.0	+0.0	+0.0	37.1	54.0 -16.9	Vert
55	0100.100101	20.2	+0.0	+2.4		+34.4	10.0	57.1	Mid X-Axis	121
			+0.5	+3.3	+0.0	101.1				141
54	221.170M	43.5	-27.2	+10.6	+0.9	+0.9	+0.0	29.0	46.0 -17.0	Horiz
	22111/0101	13.5	+0.0	+0.3	+0.9	+0.9	136	27.0	X-Axis	121
			+0.0	+0.0	+0.0	. 0.0	100		• • • • • •	
55	5491.365M	30.1	+0.0	+0.0	+0.0	+0.0	+0.0	37.0	54.0 -17.0	Horiz
	2.771000001	2011	+0.0	+2.4	-32.1	+33.3		2710	Mid X-Axis	114
			+0.0	+2.9	+0.0					- • •
56	6405.960M	28.0	+0.0	+0.0	+0.0	+0.0	+0.0	36.9	54.0 -17.1	Vert
	5.02.900001	_0.0	+0.0	+2.4	-31.7	+34.4	248	2017	Mid Y-Axis	119
			+0.5	+3.3	+0.0					/
57	6319.000M	28.0	+0.0	+0.0	+0.0	+0.0	+0.0	36.9	54.0 -17.1	Vert
			+0.0	+2.4	-31.8	+34.5			Low X-Axis	123
			+0.5	+3.3	+0.0					
L										



58	6407.180M	28.0	+0.0	+0.0	+0.0	+0.0	+0.0	36.9		Horiz
			+0.0	+2.4	-31.7	+34.4			Mid X-Axis	114
			+0.5	+3.3	+0.0					
59	6318.435M	27.9	+0.0	+0.0	+0.0	+0.0	+0.0	36.8		Horiz
			+0.0	+2.4	-31.8	+34.5	360		Low Z-axis	119
			+0.5	+3.3	+0.0					
60	128.000M	40.8	-27.8	+11.7	+0.7	+0.6	+0.0	26.3	43.5 -17.2	Vert
			+0.0	+0.3	+0.0	+0.0	195		Y-Axis	100
			+0.0	+0.0	+0.0					
61	5563.480M	29.5	+0.0	+0.0	+0.0	+0.0	+0.0	36.6		Horiz
			+0.0	+2.4	-32.1	+33.5			High Y-Axis	115
			+0.4	+2.9	+0.0					
62	162.500M	41.4	-27.5	+10.3	+0.8	+0.8	+0.0	26.1		Horiz
			+0.0	+0.3	+0.0	+0.0	244		Y-Axis	99
			+0.0	+0.0	+0.0					
63	5490.745M	29.6	+0.0	+0.0	+0.0	+0.0	+0.0	36.5		Vert
			+0.0	+2.4	-32.1	+33.3			Mid Z-Axis	119
			+0.4	+2.9	+0.0					
64	6318.890M	27.5	+0.0	+0.0	+0.0	+0.0	+0.0	36.4	54.0 -17.6	Vert
			+0.0	+2.4	-31.8	+34.5			Low Y-Axis	119
			+0.5	+3.3	+0.0					
65	4637.335M	32.5	+0.0	+0.0	+0.0	+0.0	+0.0	36.1	54.0 -17.9	Horiz
			+0.0	+2.0	-32.6	+31.5			High Z-Axis	118
			+0.1	+2.6	+0.0					
66	4515.205M	32.9	+0.0	+0.0	+0.0	+0.0	+0.0	36.1	54.0 -17.9	Horiz
			+0.0	+1.9	-32.8	+31.2			Low X-Axis	119
			+0.3	+2.6	+0.0					
67	4637.435M	32.4	+0.0	+0.0	+0.0	+0.0	+0.0	36.0	54.0 -18.0	Vert
			+0.0	+2.0	-32.6	+31.5	219		High Z-Axis	120
			+0.1	+2.6	+0.0					
68	6406.405M	27.0	+0.0	+0.0	+0.0	+0.0	+0.0	35.9		Horiz
			+0.0	+2.4	-31.7	+34.4			Mid Z-Axis	119
			+0.5	+3.3	+0.0					
69	3612.445M	35.4	+0.0	+0.0	+0.0	+0.0	+0.0	35.7		Vert
			+0.0	+1.7	-33.3	+29.3	297		Low Z-axis	119
			+0.4	+2.2	+0.0					
70	4512.995M	32.5	+0.0	+0.0	+0.0	+0.0	+0.0	35.7		Horiz
			+0.0	+1.9		+31.2			Low Y-Axis	119
			+0.3	+2.6	+0.0					
71	855.400M	28.1	-27.6	+22.2	+2.0	+2.2	+0.0	27.6		Horiz
			+0.0	+0.7	+0.0	+0.0	323		X-Axis	101
			+0.0	+0.0	+0.0					
72	4577.055M	32.1	+0.0	+0.0	+0.0	+0.0	+0.0	35.5		Vert
			+0.0	+2.0	-32.7	+31.4			Mid X-Axis	114
			+0.1	+2.6	+0.0					
73	4577.250M	32.0	+0.0	+0.0	+0.0	+0.0	+0.0	35.4		Vert
			+0.0	+2.0	-32.7	+31.4	2		Mid Z-Axis	119
			+0.1	+2.6	+0.0					
74	872.700M	27.6	-27.5	+22.3	+2.0	+2.2	+0.0	27.3		Vert
			+0.0	+0.7	+0.0	+0.0	79		X-Axis	101
			+0.0	+0.0	+0.0					



	2610 4003 5	25.0	0.0	0.0	0.0	0.0		25.2	540 10 -	TT ·
75	3610.400M	35.0	+0.0	+0.0	+0.0	+0.0	+0.0	35.3		Horiz
			+0.0	+1.7	-33.3	+29.3	360		Low X-Axis	119
76	C400 720M	26.2	+0.4	+2.2	+0.0	.0.0	.0.0	25.2	54.0 19.7	X7
/6	6490.730M	26.3	+0.0	+0.0	+0.0	+0.0	+0.0	35.3	54.0 -18.7	Vert
			+0.0	+2.4	-31.7	+34.4	342		High Y-Axis	115
77	4627 22514	21.6	+0.5	+3.4	+0.0	.0.0	.0.0	25.0	540 100	XZ
//	4637.325M	31.6	+0.0	+0.0	+0.0	+0.0	+0.0	35.2	54.0 -18.8	Vert
			+0.0	+2.0	-32.6	+31.5	99		High Y-Axis	115
70	4576 015M	21.0	+0.1	+2.6	+0.0			25.0	54.0 -18.8	Hania
/8	4576.215M	31.8	$^{+0.0}_{+0.0}$	+0.0	+0.0 -32.7	+0.0 +31.4	+0.0 32	35.2	54.0 -18.8 Mid Y-Axis	Horiz 117
			+0.0 +0.1	$^{+2.0}_{+2.6}$	+0.0	+31.4	32		MIU I-AXIS	11/
70	4575.320M	31.8	+0.1 +0.0	+2.0 +0.0	+0.0 +0.0	+0.0	+0.0	35.2	54.0 -18.8	Horiz
19	4373.320M	51.0	$^{+0.0}_{+0.0}$	+0.0 +2.0	+0.0 -32.7	+0.0 +31.4	+0.0 227	55.2	Mid Z-Axis	124
			+0.0 $+0.1$	+2.0 +2.6	+0.0	+31.4	221		MIU Z-AXIS	124
80	4514.190M	31.9	+0.1 +0.0	+2.0 +0.0	+0.0	+0.0	+0.0	35.1	54.0 -18.9	Vert
80	4314.190M	51.9	+0.0 +0.0	+0.0 +1.9	-32.8	+0.0 +31.2	± 0.0	55.1	Low Z-axis	119
			+0.0 $+0.3$	+1.9 +2.6	-52.8 +0.0	+31.2			LUW Z-0218	117
81	3610.745M	34.8	+0.3 +0.0	+2.0 +0.0	+0.0 +0.0	+0.0	+0.0	35.1	54.0 -18.9	Vert
01	5010.745IVI	54.0	+0.0 +0.0	+0.0 +1.7	-33.3	+0.0 +29.3	± 0.0	55.1	Low Y-Axis	119
			+0.0 +0.4	+1.7 +2.2	+0.0	T29.5			LOW I-AAIS	119
82	4637.100M	31.4	+0.0	+0.0	+0.0	+0.0	+0.0	35.0	54.0 -19.0	Vert
02	4037.100101	51.4	+0.0	+2.0	-32.6	+31.5	10.0	55.0	High X-Axis	120
			+0.0	+2.6	+0.0	151.5			mgn X Axis	120
83	3609.775M	34.6	+0.1 +0.0	+0.0	+0.0	+0.0	+0.0	34.9	54.0 -19.1	Horiz
05	5007.17514	54.0	+0.0	+1.7	-33.3	+29.3	360	54.7	Low Z-axis	119
			+0.0	+2.2	+0.0	127.5	500		Low Z uxis	11)
84	3661.545M	34.4	+0.0	+0.0	+0.0	+0.0	+0.0	34.7	54.0 -19.3	Horiz
0.		0	+0.0	+1.7	-33.3	+29.4	297	0	Mid Z-Axis	124
			+0.4	+2.1	+0.0	,	_, ,			
85	3660.360M	34.4	+0.0	+0.0	+0.0	+0.0	+0.0	34.7	54.0 -19.3	Vert
			+0.0	+1.7	-33.3	+29.4	220		Mid Y-Axis	117
			+0.4	+2.1	+0.0					
86	3707.885M	34.0	+0.0	+0.0	+0.0	+0.0	+0.0	34.6	54.0 -19.4	Vert
-			+0.0	+1.7	-33.2	+29.6	353		High Y-Axis	112
			+0.4	+2.1	+0.0				C	
87	221.300M	41.0	-27.2	+10.6	+0.9	+0.9	+0.0	26.5	46.0 -19.5	Horiz
			+0.0	+0.3	+0.0	+0.0			Y-Axis	99
			+0.0	+0.0	+0.0					
88	3708.525M	33.7	+0.0	+0.0	+0.0	+0.0	+0.0	34.3	54.0 -19.7	Horiz
			+0.0	+1.7	-33.2	+29.6			High Z-Axis	118
			+0.4	+2.1	+0.0				-	
89	3709.200M	33.6	+0.0	+0.0	+0.0	+0.0	+0.0	34.2	54.0 -19.8	Vert
			+0.0	+1.7	-33.2	+29.6	9		High X-Axis	120
			+0.4	+2.1	+0.0				-	
90	3709.570M	33.4	+0.0	+0.0	+0.0	+0.0	+0.0	34.0	54.0 -20.0	Vert
			+0.0	+1.7	-33.2	+29.6	324		High Z-Axis	120
			+0.4	+2.1	+0.0				-	
	218.000M	40.7	-27.2	+10.4	+0.9	+0.9	+0.0	26.0	46.0 -20.0	Horiz
91	218.000M	10.7								
91	218.000101	10.7	+0.0	+0.3	+0.0	+0.0	360		Z-Axis	99



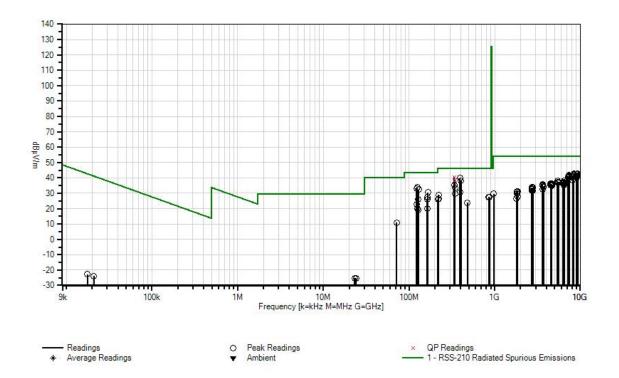
00	0745 02014	25.0	.0.0	.0.0	.0.0	.0.0	. 0. 0	22.0	54.0 20.0	TT '
92	2745.830M	35.2	+0.0	+0.0	+0.0	+0.0	+0.0	33.8		Horiz
			+0.0	+1.4	-32.7	+27.3	360		Mid Y-Axis	121
02	2792 (90) (25.0	+0.5	+2.1	+0.0	.0.0	.0.0	22.0	54.0 20.2	II.
93	2782.680M	35.0	+0.0	+0.0	+0.0	+0.0	+0.0	33.8		Horiz
			+0.0	+1.5	-32.7	+27.4	64		High Y-Axis	112
04	2706 02014	25.2	+0.5	+2.1	+0.0			22.7	54.0 -20.3	Vart
94	2706.920M	35.3	+0.0	+0.0	+0.0	+0.0	+0.0	33.7		Vert
			+0.0	+1.4	-32.7 +0.0	+27.1	360		Low X-Axis	119
05	2781.670M	216	+0.5	+2.1 +0.0		+0.0	+0.0	33.4	54.0 -20.6	Horiz
93	2/81.0/01	34.6	$^{+0.0}_{+0.0}$		+0.0 -32.7	+0.0 +27.4	+0.0 360	55.4		120
			+0.0 +0.5	$^{+1.5}_{+2.1}$	-32.7 +0.0	+27.4	500		High Z-Axis	120
06	122.610M	27.5		+2.1 +11.7		106	+0.0	22.0	43.5 -20.6	Vert
90	122.010M	37.5	-27.8 +0.0	+11.7 +0.2	+0.7 +0.0	+0.6 +0.0	+0.0 125	22.9	45.5 -20.0 X-Axis	99
			$^{+0.0}_{+0.0}$	+0.2 +0.0	$^{+0.0}_{+0.0}$	+0.0	123		A-AXIS	99
07	2708.150M	34.7					+0.0	33.1	54.0 -20.9	Vert
97	2708.130M	54.7	$^{+0.0}_{+0.0}$	+0.0	+0.0 -32.7	+0.0 +27.1	+0.0 65	55.1	54.0 -20.9 Low Y-Axis	119
			+0.0 +0.5	+1.4 +2.1	-32.7 +0.0	+2/.1	03		LOW I-AXIS	119
08	2745.725M	34.5	+0.3 +0.0	+2.1 +0.0	+0.0 +0.0	+0.0	+0.0	33.1	54.0 -20.9	Horiz
98	2745.725IVI	54.5	$^{+0.0}_{+0.0}$	$^{+0.0}_{+1.4}$	+0.0 -32.7	+0.0 +27.3	+0.0 360	55.1	Mid X-Axis	114
			+0.0 +0.5	+1.4 +2.1	-32.7 +0.0	+27.5	500		MIU A-AXIS	114
00	3660.975M	32.3	+0.3 +0.0	+2.1 +0.0	+0.0 +0.0	+0.0	+0.0	32.6	54.0 -21.4	Vert
99	5000.975M	52.5	$^{+0.0}_{+0.0}$	$^{+0.0}_{+1.7}$	-33.3	+0.0 +29.4	+0.0 360	52.0	Mid X-Axis	114
			+0.0 +0.4	+1.7 +2.1	-33.5 +0.0	+29.4	500		MIU A-AXIS	114
100	2744.855M	33.9	+0.4 +0.0	+2.1 +0.0	+0.0 +0.0	+0.0	+0.0	32.5	54.0 -21.5	Horiz
100	2744.833W	55.9	$^{+0.0}_{+0.0}$	$^{+0.0}_{+1.4}$	+0.0 -32.7	+0.0 +27.3	+0.0 360	52.5	Mid Z-Axis	119
			+0.0 +0.5	+1.4 +2.1	+0.0	+21.3	300		MIU Z-AXIS	119
101	479.400M	31.0	-28.2	+2.1 +17.7	+0.0 $+1.4$	+1.5	+0.0	23.9	46.0 -22.1	Vert
101	479.400101	51.0	+0.0	+17.7 +0.5	+1.4 $+0.0$	+1.3 +0.0	± 0.0	23.9	40.0 -22.1 Y-Axis	100
			+0.0 $+0.0$	+0.0	+0.0 $+0.0$	± 0.0			1-4415	100
102	2781.730M	32.8	+0.0	+0.0	+0.0	+0.0	+0.0	31.6	54.0 -22.4	Vert
102	2701.750101	52.0	+0.0 +0.0	+0.0 $+1.5$	-32.7	+0.0 +27.4	+0.0 266	51.0	High X-Axis	120
			+0.5	+1.3 $+2.1$	+0.0	127.7	200		Ingli A-Axis	120
103	2708.035M	33.2	+0.0	+2.1 +0.0	+0.0	+0.0	+0.0	31.6	54.0 -22.4	Vert
105	2708.055101	55.2	+0.0 +0.0	+0.0 $+1.4$	-32.7	+0.0 +27.1	-0.0 360	51.0	Low Z-axis	119
			+0.5	+2.1	+0.0	127.1	500		LOW Z uxis	11)
104	1806.275M	37.8	+0.0	+0.0	+0.0	+0.0	+0.0	31.3	54.0 -22.7	Horiz
104	1000.275141	57.0	+0.0	+1.2		+24.7			Low Y-Axis	119
			+0.3	+1.2 $+1.6$	+0.0		200		2500 I TIMB	
105	1854.480M	36.8	+0.0	+0.0	+0.0	+0.0	+0.0	31.2	54.0 -22.8	Horiz
100		2010	+0.0	+1.2	-33.9	+25.2	360		High X-Axis	120
			+0.3	+1.2	+0.0		0		0	
106	1829.975M	37.3	+0.0	+0.0	+0.0	+0.0	+0.0	31.2	54.0 -22.8	Vert
100		27.00	+0.0	+1.2	-34.1	+24.9	360		Mid Y-Axis	121
			+0.3	+1.2	+0.0					
107	1853.620M	36.7	+0.0	+0.0	+0.0	+0.0	+0.0	31.1	54.0 -22.9	Vert
		2 017	+0.0	+1.2	-33.9	+25.2	323		High Y-Axis	112
			+0.3	+1.2	+0.0	_			0	
108	1829.995M	36.7	+0.0	+0.0	+0.0	+0.0	+0.0	30.6	54.0 -23.4	Horiz
			+0.0	+1.2	-34.1	+24.9	360		Mid X-Axis	114
			+0.3	+1.6	+0.0		•			
L										



109	124.600M	34.7	-27.8	+11.7	+0.7	+0.6	+0.0	20.1		-23.4	Vert
			+0.0	+0.2	+0.0	+0.0	360		Z-Axis		102
			+0.0	+0.0	+0.0						
110	162.500M	35.1	-27.5	+10.3	+0.8	+0.8	+0.0	19.8		-23.7	Vert
			+0.0	+0.3	+0.0	+0.0	322		Y-Axis		100
			+0.0	+0.0	+0.0						
111	1831.330M	36.0	+0.0	+0.0	+0.0	+0.0	+0.0	29.9		-24.1	Vert
			+0.0	+1.2	-34.1	+24.9	360		Mid Z-Axi	S	119
			+0.3	+1.6	+0.0						
112	973.700M	27.7	-27.2	+23.8	+2.1	+2.4	+0.0	29.6		-24.4	Vert
			+0.0	+0.8	+0.0	+0.0	168		X-Axis		101
			+0.0	+0.0	+0.0						
113	1806.100M	36.1	+0.0	+0.0	+0.0	+0.0	+0.0	29.6		-24.4	Horiz
			+0.0	+1.2	-34.3	+24.7	360		Low X-Ax	18	119
11/	107 0001 5	22.5	+0.3	+1.6	+0.0	.0.7	.0.0	10.0	10 5	245	X 7 ·
114	127.900M	33.5	-27.8	+11.7	+0.7	+0.6	+0.0	19.0		-24.5	Vert
			+0.0	+0.3	+0.0	+0.0	42		X-Axis		100
117	1054 42034	22.5	+0.0	+0.0	+0.0	.0.0	.0.0	27.0	54.0	26.1	
115	1854.420M	33.5	+0.0	+0.0	+0.0	+0.0	+0.0	27.9		-26.1	Horiz
			+0.0	+1.2	-33.9	+25.2	360		High Z-Ax	18	120
116	1005 20514	22.1	+0.3	+1.6	+0.0			26.6	54.0	27.4	Harin
110	1805.285M	33.1	$^{+0.0}_{+0.0}$	$^{+0.0}_{+1.2}$	+0.0	+0.0	+0.0	26.6	54.0 Low Z-axi	-27.4	Horiz 119
			+0.0 +0.3	$^{+1.2}_{+1.6}$	-34.3 +0.0	+24.7	360		LOW Z-axi	8	119
117	71.720M	31.8	-28.0	+1.0 +6.1	+0.0 +0.5	+0.4	+0.0	11.0	40.0	-29.0	Vert
11/	/1./20101	51.0	-28.0 +0.0	+0.1 +0.2	+0.3 +0.0	+0.4 $+0.0$	+0.0 360	11.0	X-Axis	-29.0	99
			$^{+0.0}_{+0.0}$	+0.2 +0.0	+0.0 +0.0	± 0.0	300		A-AX15		77
118	200.000k	40.0	+0.0	+0.0	+0.0	+0.0	-80.0	-30.5	21.6	-52.1	Paral
110	200.000K	40.0	+0.0 +0.0	+0.0 $+0.0$	+0.0	+0.0 +0.0	360	-30.5	21.0	-52.1	123
			+0.0	+0.0	+9.5	10.0	500				125
119	24.030M	8.4	+0.0	+0.0	+0.0	+0.0	-40.0	-25.2	29.5	-54.7	Perpe
117	24.050101	0.4	+0.0	+0.0	+0.0	+0.0	360	23.2	27.5	54.7	123
			+0.0	+0.2	+6.2	10.0	200				125
120	23.280M	8.2	+0.0	+0.0	+0.0	+0.0	-40.0	-25.2	29.5	-54.7	Paral
120		0.2	+0.0	+0.0	+0.0	+0.0	360	20.2	_>	e 117	123
			+0.0	+0.2	+6.4						
121	150.000k	39.9	+0.0	+0.0	+0.0	+0.0	-80.0	-30.6	24.1	-54.7	Perpe
			+0.0	+0.0	+0.0		360				123
			+0.0	+0.0	+9.5						
122	20.985k	44.0	+0.0	+0.0	+0.0	+0.0	-80.0	-23.9	41.2	-65.1	Paral
			+0.0	+0.0	+0.0	+0.0	360				123
			+0.0	+0.0	+12.1						
123	17.695k	44.3	+0.0	+0.0	+0.0	+0.0	-80.0	-22.6	42.6	-65.2	Perpe
			+0.0	+0.0	+0.0	+0.0	230				123
			+0.0	+0.0	+13.1						
·											



CKC Laboratories, Inc. Date: 7/17/2013 Time: 10:56:25 Impinj Inc. WO#: 93909 Test Distance: 3 Meters Sequence#: 10 Perpendicular Impinj Inc. Impinj IPJ-RS500 23dBm Reader SIP P/N: IPJ-RS500GX





Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: Specification:	Impinj Inc. Band Edge Compliance FCC Part 15.247	& RSS-210	
Work Order #:	93909	Date:	7/16/2013
Test Type:	Maximized Emissions	Time:	11:32:01
Equipment:	Impinj IPJ-RS500 23dBm Reader SIP	Sequence#:	5
Manufacturer:	Impinj Inc.	Tested By:	Steven Pittsford
Model:	IPJ-RS500GX		
S/N:	IMPH12000100051210		

Test Conditions / Notes:

The EUT is seeking modular approval is placed in the center of the turntable on a Styrofoam table 80cm above the ground plane, installed on a support host PCB as intended for final installation. The laptop located outside the chamber sends test command to the EUT via the support host PCB.

Frequency: 902-928MHz

Freq: 902.75MHz, 915.25MHz, 927.25MHz Firmware setting = 23dBm, 23dBm, 23dBm

Emission profile evaluated with Laird Antenna 5.5dBi and Mini Guardrail Antenna with a 30cm cable between EUT and the antenna.

30MHz-1000 MHz;RBW=120 kHz,VBW=120 kHz

15.31(e) compliance: a freshly charged battery is installed.

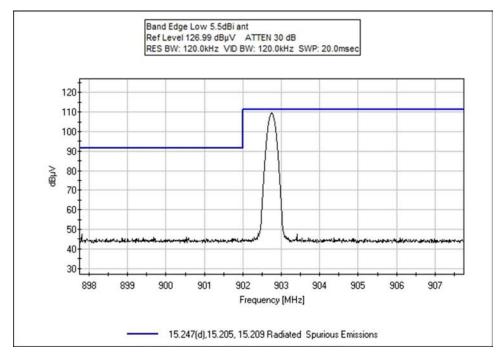
Emission profile of the EUT rotated along three orthogonal axes was investigated. Recorded data represent worse case emission.

Test method in accordance with FCC document: DA 00-705.

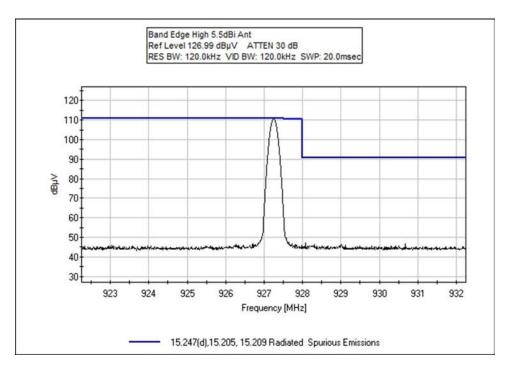
Temperature: 24°C Pressure: 101.5kPa Humidity: 37%



Test Plots

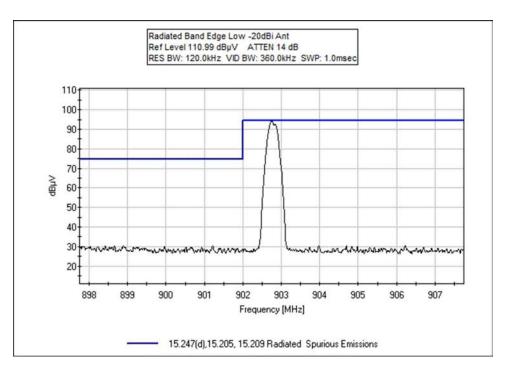


Low 5.5dBi Band Edge

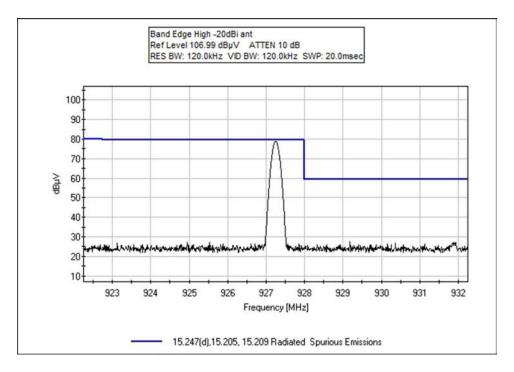


High 5.5dBi Band Edge





Low -20dBi Band Edge



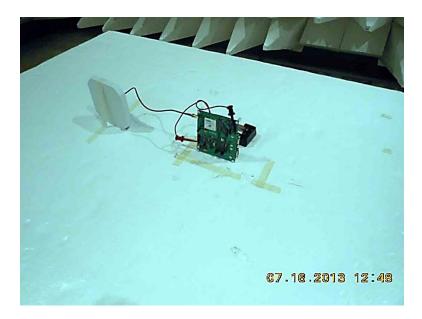
High -20dBi Band Edge



Test Setup Photos

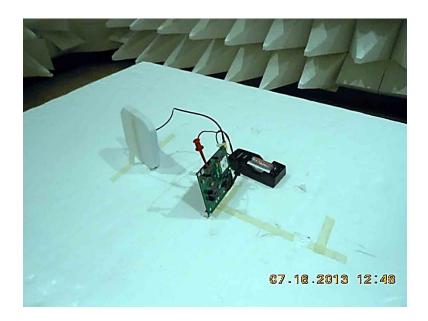


5.5dBi, X-Axis

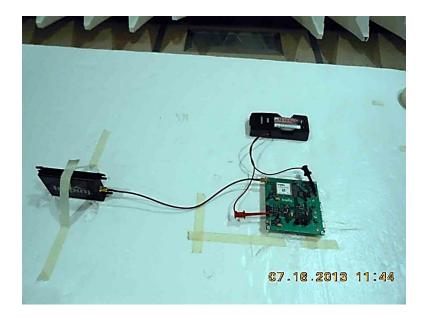


5.5dBi, Y-Axis



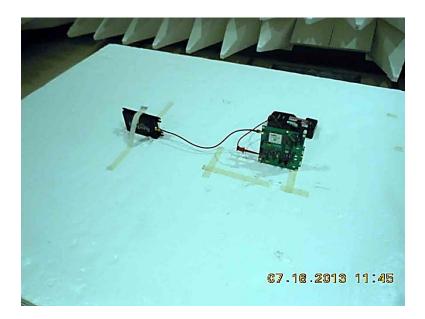


5.5dBi, Z-Axis

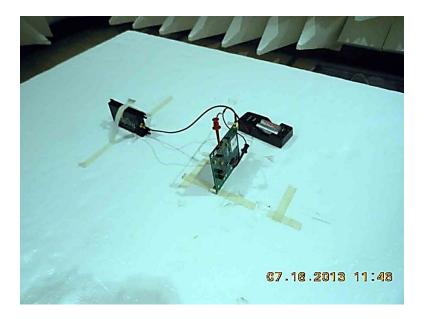


-20dBi, X-Axis





-20dBi, Y-Axis



-20dBi, Z-Axis



SUPPLEMENTAL INFORMATION

Measurement Uncertainty

Uncertainty Value	Parameter
4.73 dB	Radiated Emissions
3.34 dB	Mains Conducted Emissions
3.30 dB	Disturbance Power

The reported measurement uncertainties are calculated based on the worst case of all laboratory environments from CKC Laboratories, Inc. test sites. Only those parameters which require estimation of measurement uncertainty are reported. The reported worst case measurement uncertainty is less than the maximum values derived in CISPR 16-4-2. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2. Compliance is deemed to occur provided measurements are below the specified limits.

Emissions Test Details

TESTING PARAMETERS

Unless otherwise indicated, the following configuration parameters are used for equipment setup: The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dB μ V/m, the spectrum analyzer reading in dB μ V was corrected by using the following formula. This reading was then compared to the applicable specification limit.



	SAMPLE CALCULATIONS									
	Meter reading	(dBµV)								
+	Antenna Factor	(dB)								
+	Cable Loss	(dB)								
-	Distance Correction	(dB)								
-	Preamplifier Gain	(dB)								
=	Corrected Reading	(dBµV/m)								

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. Unless otherwise specified, the following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used.

MEASURING	MEASURING EQUIPMENT BANDWIDTH SETTINGS PER FREQUENCY RANGE									
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING							
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz							
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz							
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz							
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz							
RADIATED EMISSIONS	1000 MHz	>1 GHz	1 MHz							

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "positive peak" detector mode. Whenever a "quasi-peak" or "average" reading was recorded, the measurement was annotated with a "QP" or an "Ave" on the appropriate rows of the data sheets. In cases where quasi-peak or average limits were employed and data exists for multiple measurement types for the same frequency then the peak measurement was retained in the report for reference, however the numbering for the affected row was removed and an arrow or carrot ("^") was placed in the far left-hand column indicating that the row above takes precedence for comparison to the limit. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the spectrum analyzer or receiver recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature called "peak hold," the measurement device had the ability to measure intermittent or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

Quasi-peak measurements were taken using the quasi-peak detector when the true peak values exceeded or were within 2 dB of a quasi-peak specification limit. Additional QP measurements may have been taken at the discretion of the operator.

Average

Average measurements were taken using the average detector when the true peak values exceeded or were within 2 dB of an average specification limit. Additional average measurements may have been taken at the discretion of the operator. If the specification or test procedure requires trace averaging, then the averaging was performed using 100 samples or as required by the specification. All other average measurements are performed using video bandwidth averaging. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear mode and the scan time is reduced.