CKC LABORATORIES, INC. Testing the Future

ADDENDUM TO IMPINJ INC. TEST REPORT FC06-010A

FOR THE

RFID READER, IPJ-R1000

FCC PART 15 SUBPART C SECTIONS 15.209 AND 15.247

COMPLIANCE

DATE OF ISSUE: JUNE 13, 2006

PREPARED FOR:

Impinj Inc.
701 N. 34th Street
Seattle, WA 98103

PREPARED BY:

Mary Ellen Clayton
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

P.O. No.: 01143
W.O. No.: 83127

Date of test: June 8, 2006

Report No.: FC06-010B

TABLE OF CONTENTS

ADMINISTRATIVE INFORMATION

DATE OF TEST:	June 8, 2006
DATE OF RECEIPT:	June 8, 2006
MANUFACTURER:	Impinj Inc. 701 N. 34th Street Seattle, WA 98103
REPRESENTATIVE:	William Ashley
TEST LOCATION:	CKC Laboratories, Inc. 22116 23rd Drive S.E., Suite A Bothell, WA 98021-4413
TEST METHOD:	ANSI C63.4 (2003)
PURPOSE OF TEST:	To demonstrate the compliance of the Speedway Reader, IPJ-R1000, with the requirements for FCC part 15 Subpart B sections 15.107 & 15.109 Class B, Subpart C Sections 15.207, 15.209 &15.247 and RSS-210 devices. **Addendum A** is to clarify the plot on page 21. **Addendum B** is to demonstrate the compliance of the RFID Reader, IPJ-R1000, with partial re-testing for FCC Part 15 Subpart C Sections 15.209 and 15.247 after component changes in the EUT.

CONDITIONS FOR COMPLIANCE
No modifications to the EUT were necessary to comply.

APPROVALS

Steve Behm, Director of Engineering Services

QUALITY ASSURANCE:

Joyce Walker, Quality Assurance Administrative Manager

TEST PERSONNEL:

Ryan Rutledge, EMC Test Technologist

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The customer declares the EUT tested by CKC Laboratories was representative of a production unit.

FCC 15.31(m) Number Of Channels
This device was tested on three channels.

FCC 15.33(a) Frequency Ranges Tested
15.209/15.247 Radiated Emissions: 1-10 GHz

FCC SECTION 15.35: ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
RADIATED EMISSIONS	1000 MHz	10 GHz	1 MHz

EUT Operating Frequency
The EUT was operating at 902-928 MHz.

EQUIPMENT UNDER TEST

RFID Reader

Manuf:	Impinj Inc.
Model:	IPJ-R1000
Serial:	40306200055
FCC ID:	TWYIPJR1000

PERIPHERAL DEVICES

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

Laptop

Manuf:	Compaq
Model:	Presario V2000
Serial:	NA

Power Supply

Manuf:	CUI Inc
Model:	DSA-60W-20
Serial:	NA
P/N:	DTS240250UC-P11P-DB

Antenna

Manuf:	Cushcraft
Model:	S9028PCRJ
Serial:	NA

REPORT OF MEASUREMENTS

The following tables report the six highest worst case levels recorded during the tests performed on the EUT. All readings taken are peak readings unless otherwise noted. The data sheets from which these tables were compiled are contained in Appendix C.

Table 1: FCC 15.209/15.247(c) Six Highest Radiated Emission Levels: 1-10 GHz

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	HPF dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
2708.256	34.3	29.4	-33.7	6.5	12.6	49.1	54.0	-4.9	VA-L
2708.256	31.8	29.4	-33.7	6.5	12.6	46.6	54.0	-7.4	HA-L
2745.748	35.9	29.5	-33.6	6.5	9.1	47.4	54.0	-6.6	VA-M
5416.499	38.7	34.3	-33.1	9.6	0.2	49.7	54.0	-4.3	VA-L
5491.498	38.1	34.4	-33.1	9.5	0.2	49.1	54.0	-4.9	VA-M
7222.000	32.7	36.3	-33.8	11.6	0.1	46.9	54.0	-7.1	V-L

Test Method: ANSI C63.4 (2003)
Spec Limit: FCC Part 15 Subpart C Section 15.209/15.247(c)
Test Distance: 3 Meters

NOTES:
H = Horizontal Polarization
V = Vertical Polarization
A = Average Reading
L = Low Channel
M = Mid Channel

COMMENTS: Device operating with modulation, measuring harmonics from 1 GHz to 10 GHz. Measuring harmonics from low, mid and high channels.

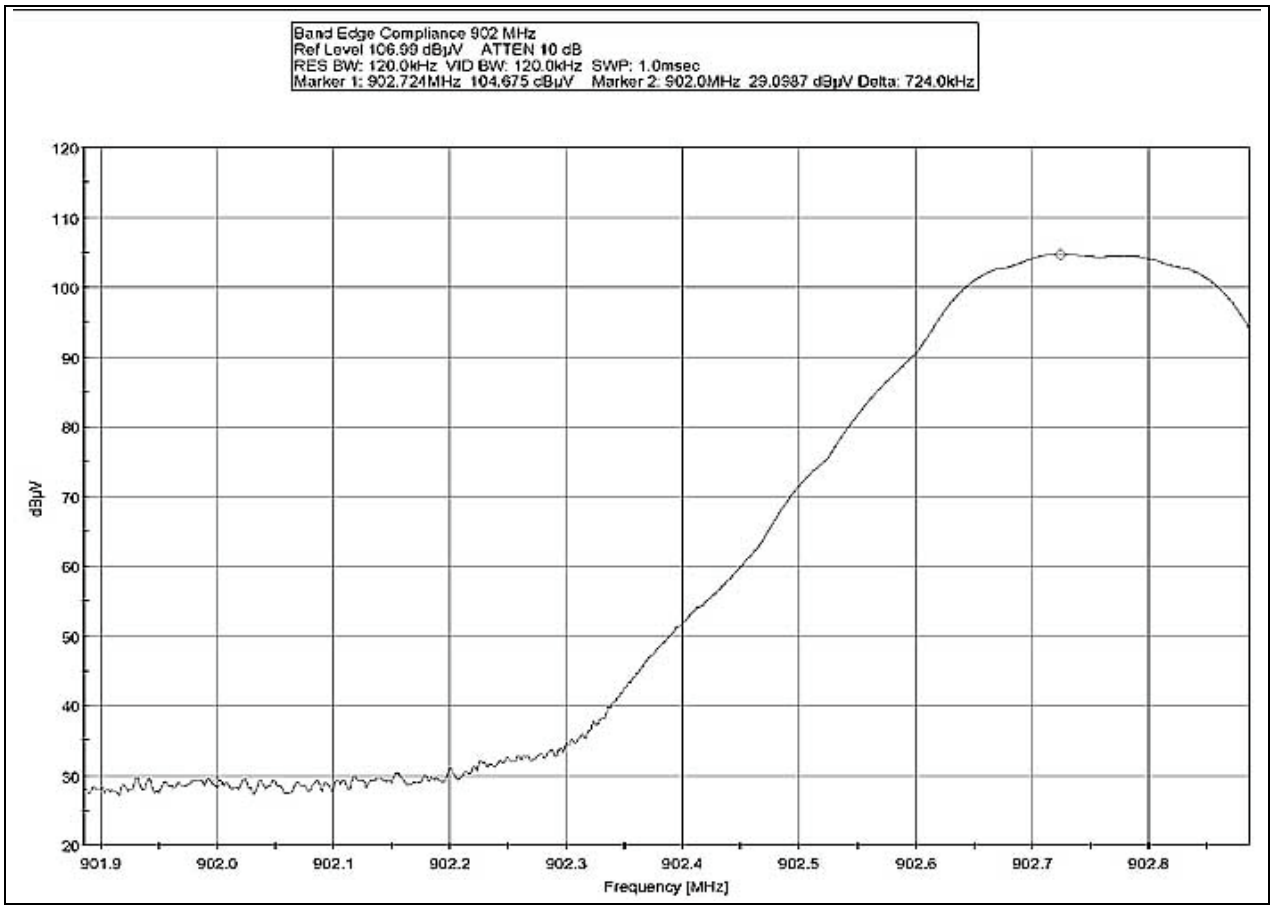
Table 2: FCC 15.247(b)(1) Fundamental Emission Levels									
	METER	CORRECTION FACTORS				CORRECTED	SPEC		
FREQUENCY MHz	READING dBµV	Att dB	Amp dB	Cable dB	Dist dB	READING dBµV/m	LIMIT dBµV/m	MARGIN dB	NOTES
902.746	18.5	9.9		1.2		29.6	30.0	-0.4	R
915.250	18.6	9.9		1.2		29.7	30.0	-0.3	R
927.248	18.5	9.9		1.2		29.6	30.0	-0.4	R

Test Method: ANSI C63.4 (2003)
Spec Limit: FCC Part 15 Subpart C Section 15.247(b)(1)

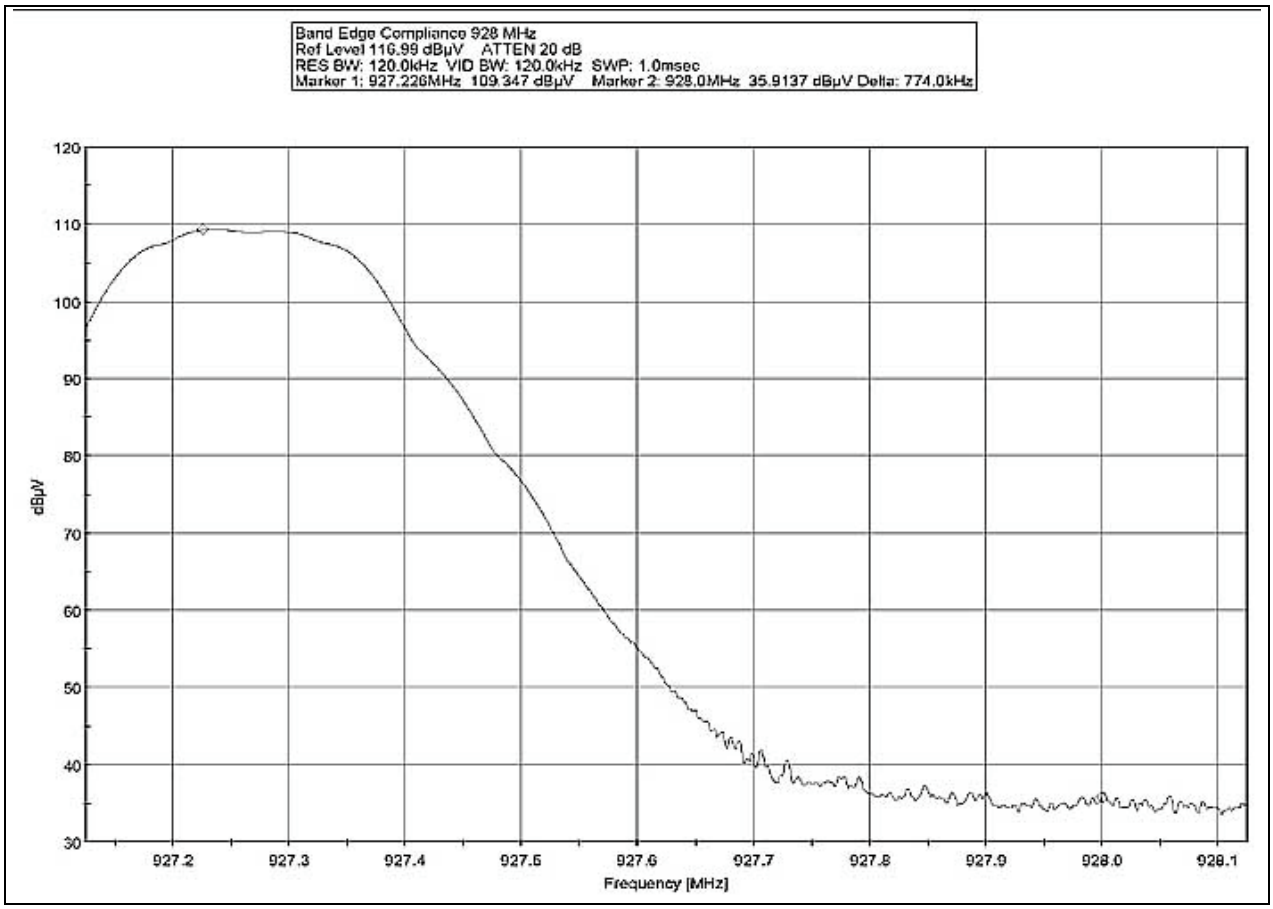
NOTES: R = RF Output port

COMMENTS: Device operating without modulation, measuring carrier output power. Measuring conducted power output at low, mid and high channels. Measurements and spec in terms of dBm.

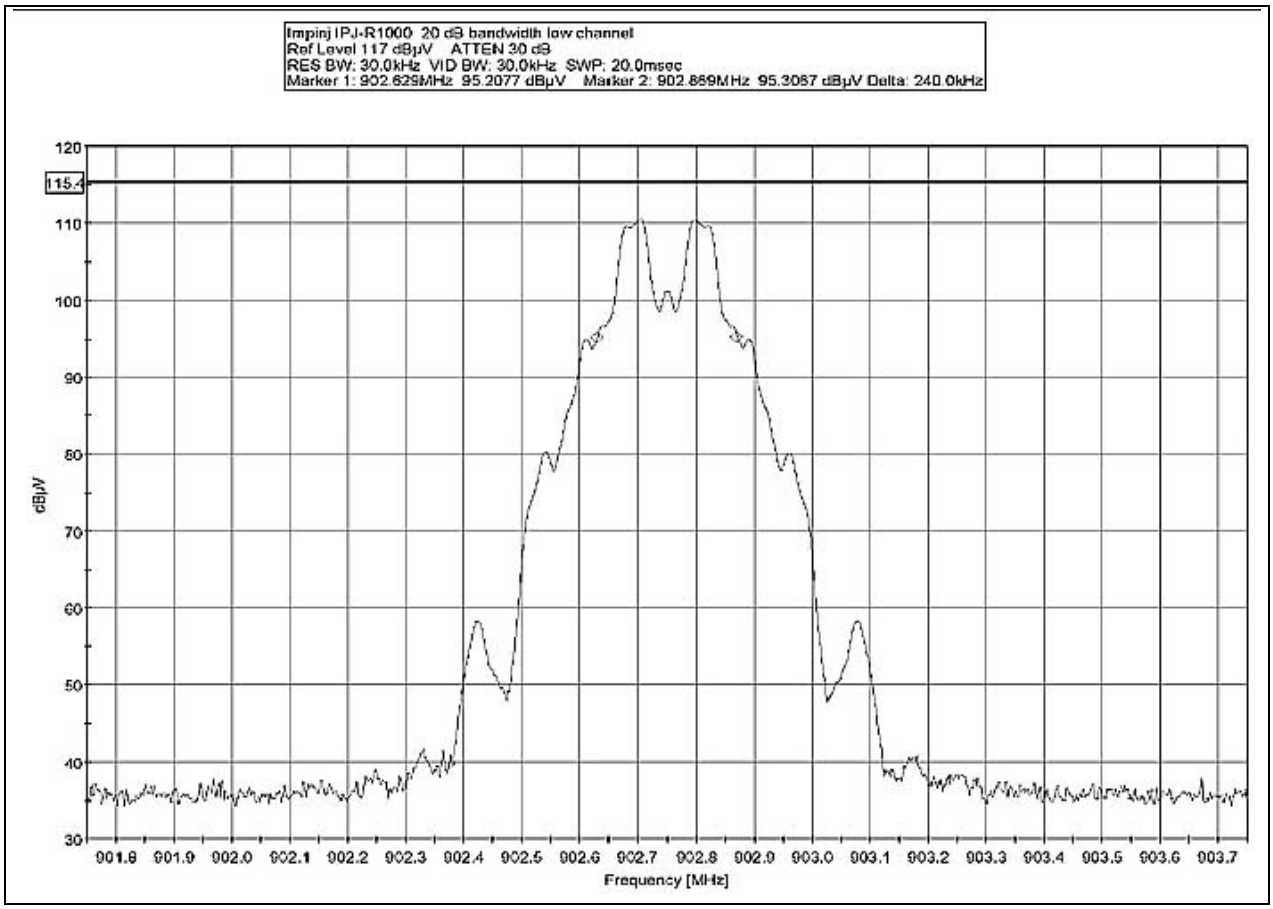
BANDEDGE 902 MHz



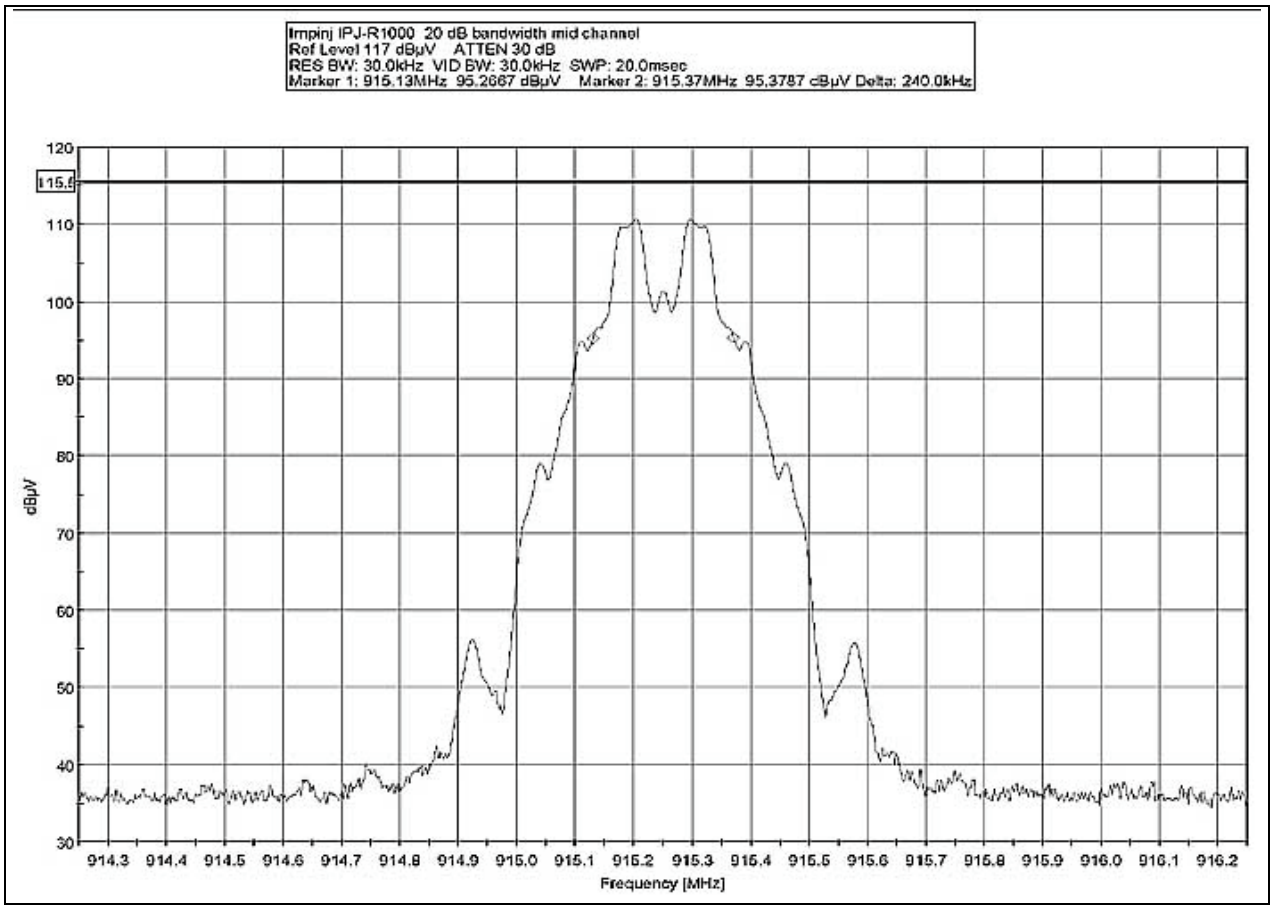
BANDEDGE 928 MHz



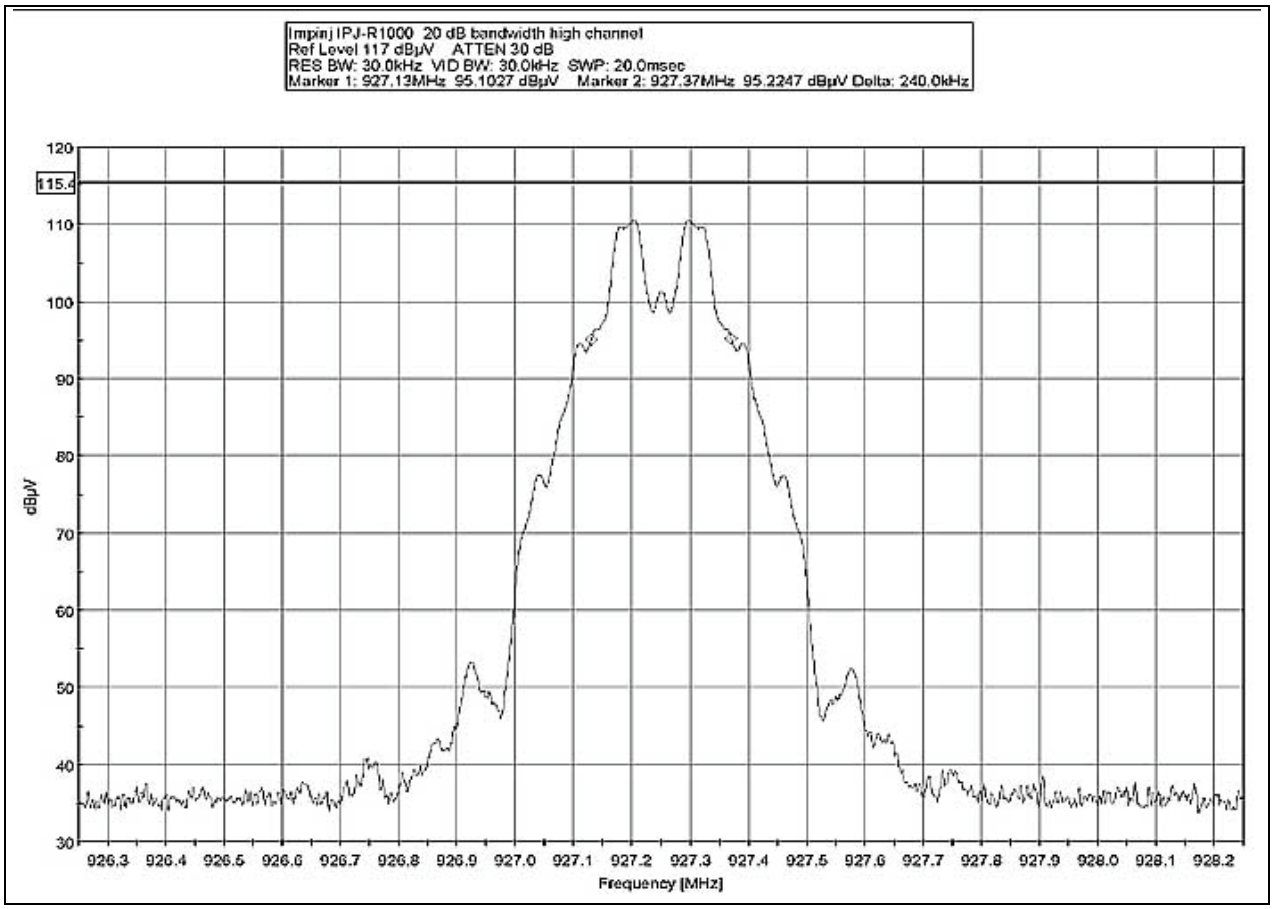
20dB BANDWIDTH - LOW CHANNEL



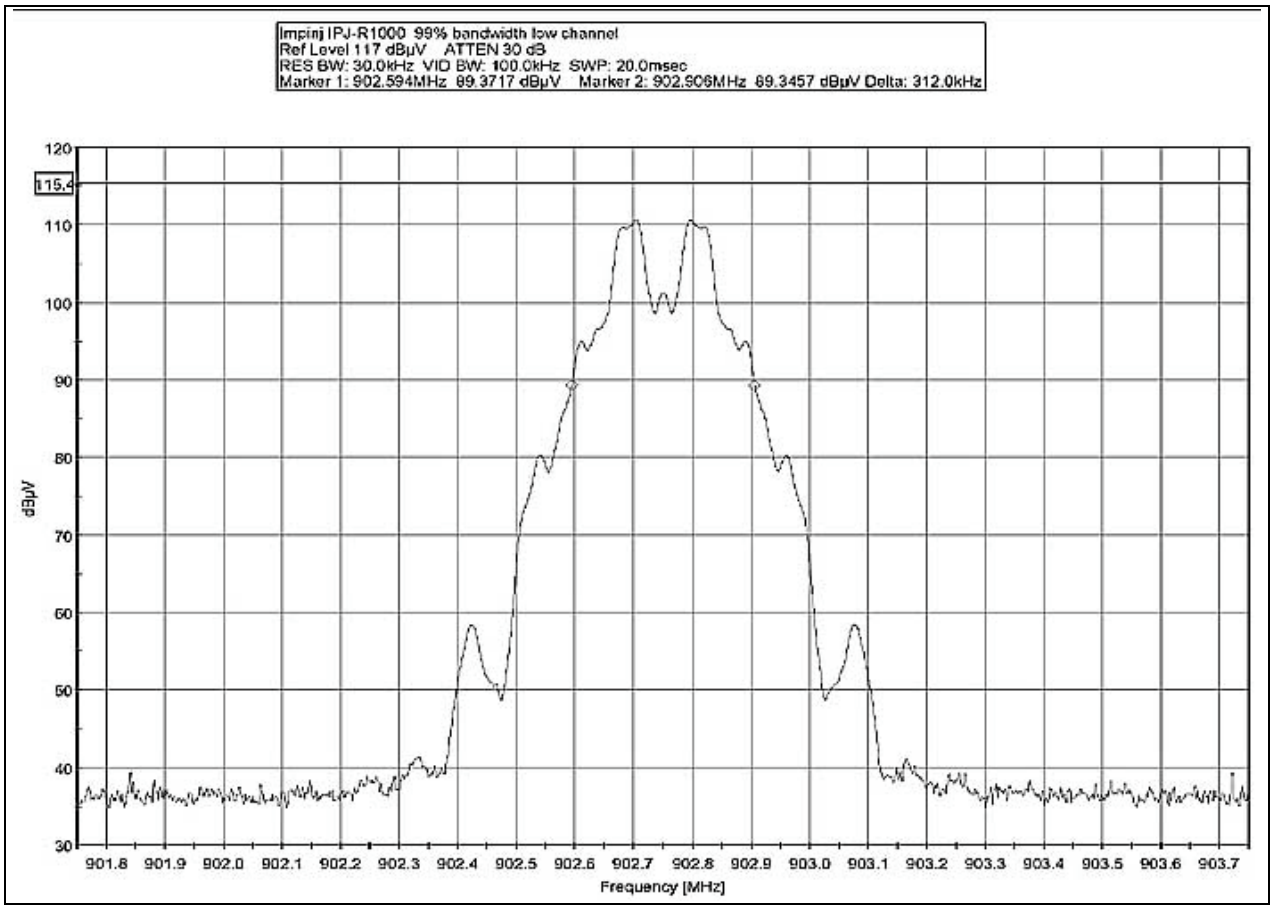
20dB BANDWIDTH - MID CHANNEL



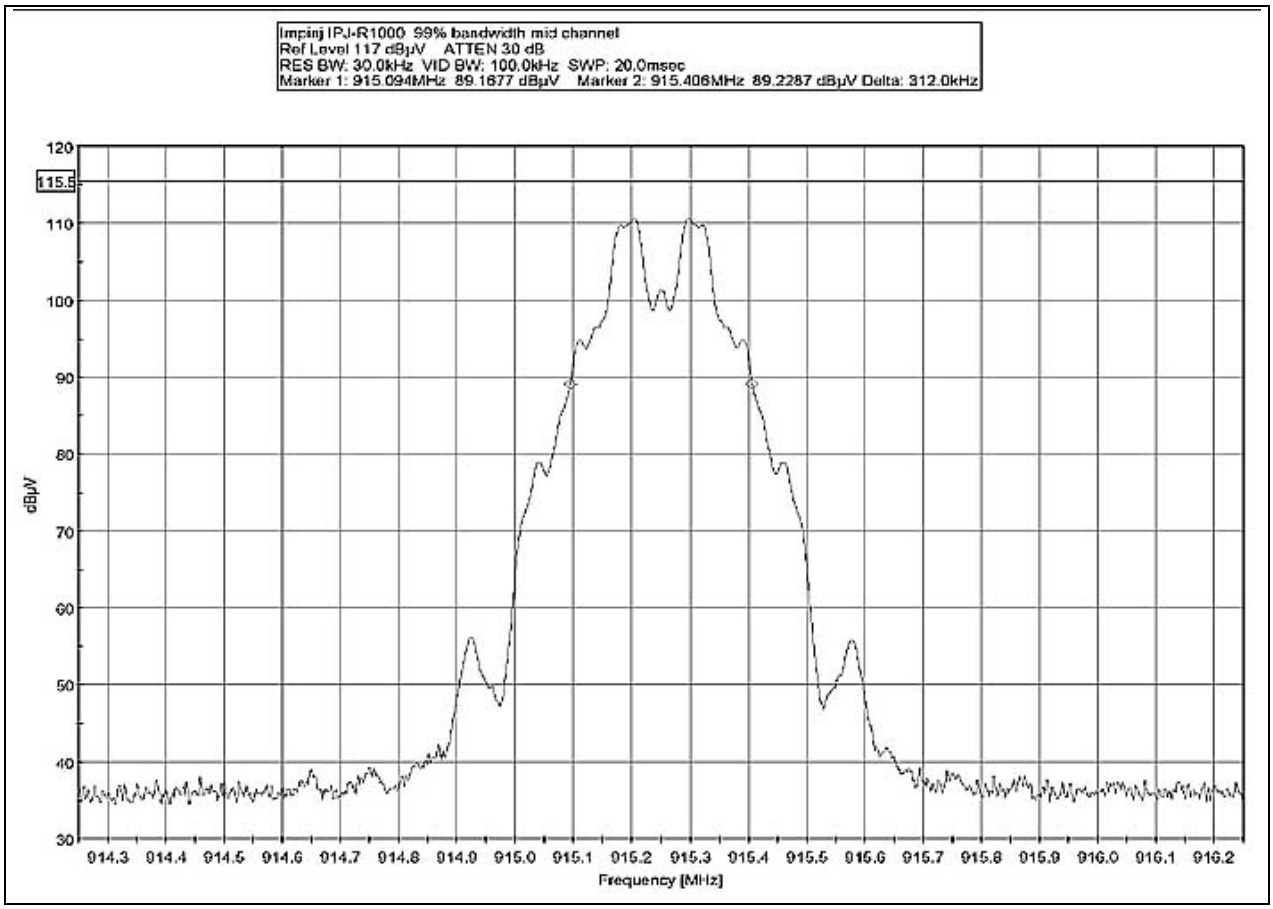
20dB BANDWIDTH - HIGH CHANNEL



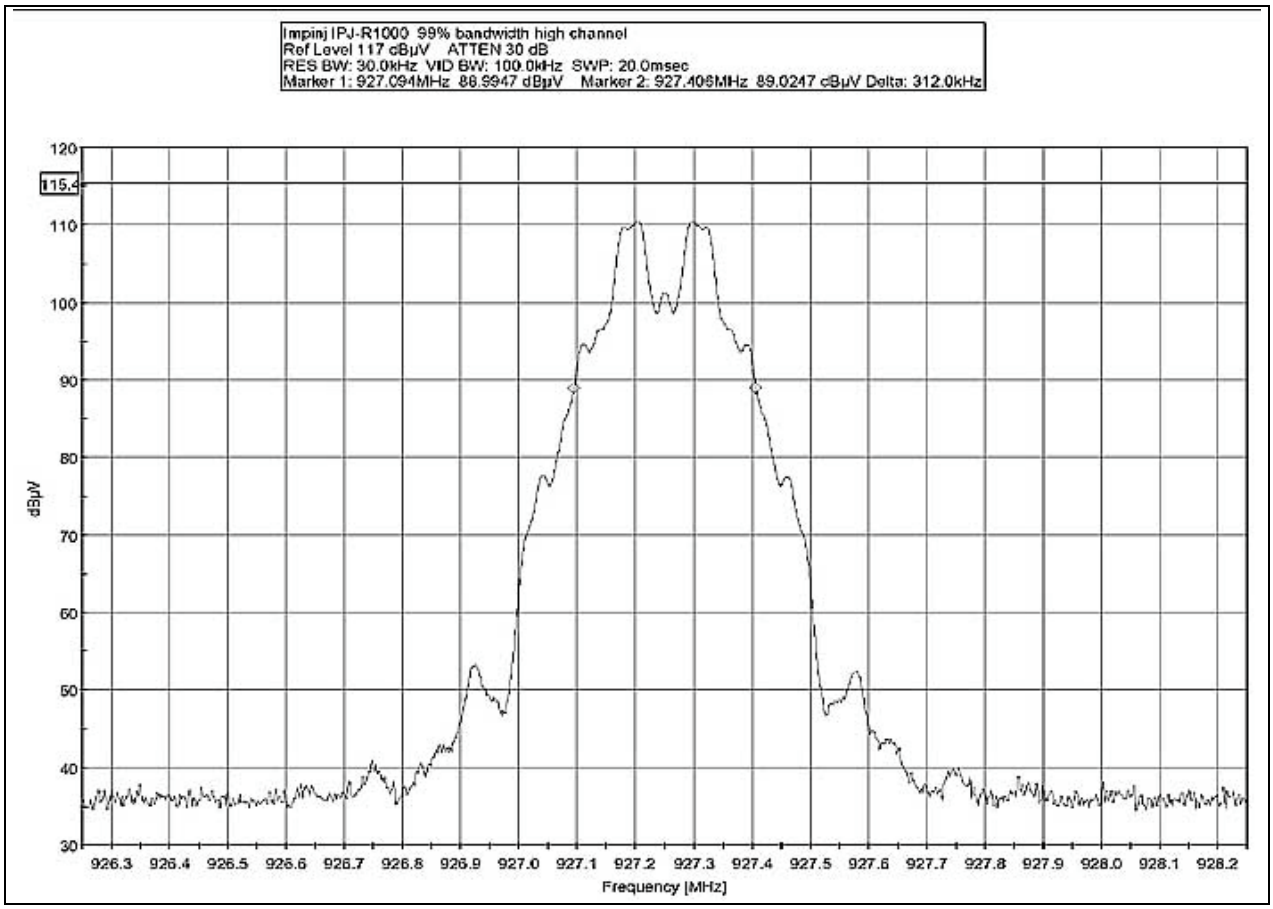
99% BANDWIDTH - LOW CHANNEL



99% BANDWIDTH - MID CHANNEL



99% BANDWIDTH - HIGH CHANNEL



TEMPERATURE AND HUMIDITY DURING TESTING

The temperature during testing was within +15°C and + 35°C.
The relative humidity was between 20% and 75%.

EUT SETUP

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the photographs in Appendix A. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables. The corrected data was then compared to the applicable emission limits to determine compliance.

The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available I/O ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. I/O cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The radiated emissions data of the EUT was taken with the HP Spectrum Analyzer. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in Table A.

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 dBµV/m, the spectrum analyzer reading in dBµV was corrected by using the following formula in Table A. This reading was then compared to the applicable specification limit to determine compliance.

TABLE A: 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 in Table A were used to collect both the radiated emissions data for the EUT. The horn antenna was used for frequencies above 1000 MHz.

The HP spectrum analyzer was used for all measurements. Table B shows the analyzer bandwidth settings that were used in designated frequency bands. During radiated testing, the measurements were made with 0 dB of attenuation, a reference level of 97 dBµV, and a vertical scale of 10 dB per division.

SPECTRUM ANALYZER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the Tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the six highest readings, this is indicated as a "Q" or an "A" in the appropriate table. 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 test engineer recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the analyzer called "peak hold," the analyzer had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the analyzer made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the HP Quasi-Peak Adapter for the HP Spectrum Analyzer. The detailed procedure for making quasi peak measurements contained in the HP Quasi-Peak Adapter manual were followed.

Average

For certain frequencies, average measurements may be made using the spectrum analyzer. To make these measurements, the test engineer reduces the video bandwidth on the analyzer until the modulation of the signal is filtered out. At this point the analyzer is set into the linear mode and the scan time is reduced.

EUT TESTING

Antenna Conducted Emissions

For measuring the signal strength on the RF output port of the EUT, the spectrum analyzer was connected directly to the EUT. The sweep time of the analyzer was adjusted so that the spectrum analyzer readings were always in a calibrated range. All readings within 20 dB of the limit were recorded.

Radiated Emissions

The EUT was mounted on a nonconductive, rotating table 80 cm above the conductive grid. The nonconductive table dimensions were 1 meter by 1.5 meters.

During the preliminary radiated scan, the EUT was powered up and operating in its defined FCC test mode. For frequencies exceeding 1000 MHz, the horn antenna was used. Care was taken to ensure that no frequencies were missed within the FM and TV bands.

A thorough scan of all frequencies was made manually using a small frequency span, rotating the turntable and raising and lowering the antenna from one to four meters as needed. The test engineer maximized the readings with respect to the table rotation, antenna height and configuration of EUT. Maximizing of the EUT was achieved by monitoring the spectrum analyzer on a closed circuit television monitor.

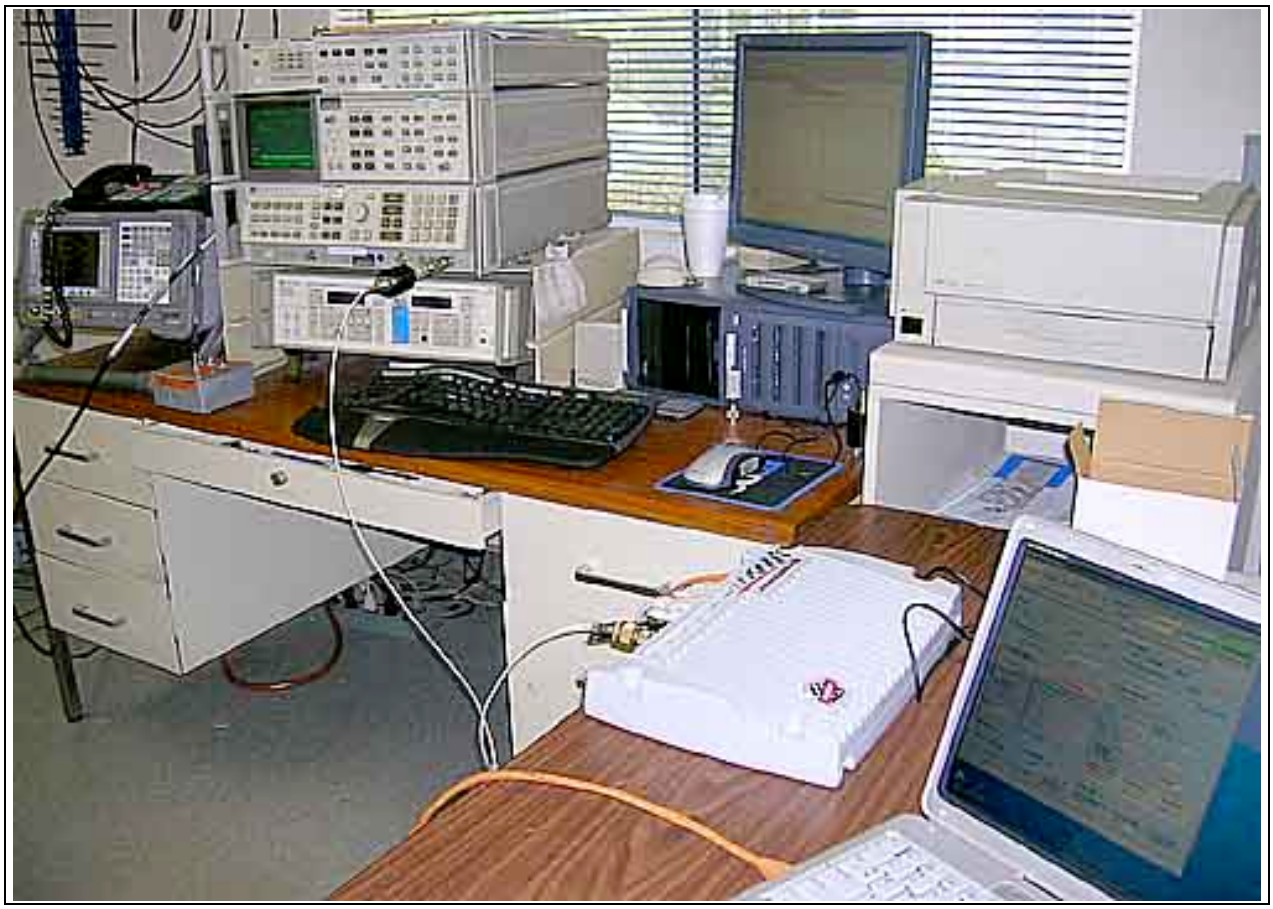
APPENDIX A

TEST SETUP PHOTOGRAPHS

PHOTOGRAPH SHOWING RADIATED EMISSIONS

Radiated Emissions - Back View

PHOTOGRAPH SHOWING DIRECT CONNECT POWER



APPENDIX B

TEST EQUIPMENT LIST

Bandedge

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A	S/N: US44300407	12/01/2005	12/01/2007	AN02660
Bothell 5m Cable Set	S/N: P05444	11/28/2005	11/28/2007	ANP05444
HP 8447D PreAmp	S/N: 2944A08601	07/13/2004	07/13/2006	AN01517
Chase BILOG	S/N: 2453	02/02/2005	02/02/2007	AN01994

FCC 15.247 (c) / 15.209 / 15.205

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A	S/N: US44300407	12/01/2005	12/01/2007	AN02660
60" Pasternack 40 GHz Coax	S/N: N/A	05/11/2006	05/11/2008	AN05422
36" Pasternack 40 GHz Coax	S/N: N/A	05/11/2006	05/11/2008	AN05424
Heliax Cable	S/N: 13	03/15/2006	03/15/2008	ANP04085
EMCO 3115 Horn Ant	S/N: 9606-4854	12/13/2005	12/13/2007	AN01412
HP 83017A .5 - 26.5 GHz Pre-amp	S/N: 3123A00464	10/03/2005	10/03/2007	AN01271

FCC 15.247 (b)(1)

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A	S/N: US44300407	12/01/2005	12/01/2007	AN02660
36" Pasternack 40 GHz Coax	S/N: N/A	05/11/2006	05/11/2008	AN05424
Coaxial Attenuator	S/N: C8593	10/03/2005	10/03/2007	AN02136

APPENDIX C
MEASUREMENT DATA SHEETS

Test Location: CKC Laboratories •22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **Impinj Inc**
Specification: **FCC 15.247 (c) / 15.209 / 15.205**
Work Order #: **83127** Date: 6/8/2006
Test Type: **Radiated Scan** Time: 15:06:11
Equipment: **RFID Reader** Sequence#: 1
Manufacturer: Impinj Tested By: Ryan Rutledge
Model: IPJ-R1000
S/N: 40306200055

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
RFID Reader*	Impinj	IPJ-R1000	40306200055

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Compaq	Presario V2000	
Antenna	Cushcraft	S9028PCRJ	NA
Power Supply	CUI Inc	DSA-60W-20	P/N: DTS240250UC-P11P-DB

Test Conditions / Notes:

Device operating with modulation, measuring harmonics from 1 GHz to 10 GHz. Measuring harmonics from low, mid and high channels.

Transducer Legend:

T1=CAB-P04085-031506	T2=AMP 26GHz
T3=ANT-AN01412-121305 Model 3115	T4=Cable ANP05422 - 60"
T5=Cable ANP05424 - 36"	T6=Filter 3GHz HP AN02745

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	5416.499M	38.7	+3.0	-33.1	+34.3	+3.6	+0.0	49.7	54.0	-4.3	Vert
	Ave		+3.0	+0.2			182		Low Channel		175
^	5416.499M	39.7	+3.0	-33.1	+34.3	+3.6	+0.0	50.7	54.0	-3.3	Vert
			+3.0	+0.2			182		Low Channel		175
3	5491.498M	38.1	+2.9	-33.1	+34.4	+3.6	+0.0	49.1	54.0	-4.9	Vert
	Ave		+3.0	+0.2			185		Mid Channel		134
^	5491.498M	38.5	+2.9	-33.1	+34.4	+3.6	+0.0	49.5	54.0	-4.5	Vert
			+3.0	+0.2			185		Mid Channel		134
5	2708.256M	34.3	+2.0	-33.7	+29.4	+2.4	+0.0	49.1	54.0	-4.9	Vert
	Ave		+2.1	+12.6			218		Low Channel		129
^	2708.256M	37.3	+2.0	-33.7	+29.4	+2.4	+0.0	52.1	54.0	-1.9	Vert
			+2.1	+12.6			218		Low Channel		129
7	2745.748M	35.9	+2.0	-33.6	+29.5	+2.4	+0.0	47.4	54.0	-6.6	Vert
	Ave		+2.1	+9.1			167		Mid Channel		145
^	2745.748M	36.9	+2.0	-33.6	+29.5	+2.4	+0.0	48.4	54.0	-5.6	Vert
			+2.1	+9.1			167		Mid Channel		145
9	7222.000M	32.7	+4.0	-33.8	+36.3	+4.2	+0.0	46.9	54.0	-7.1	Vert
			+3.4	+0.1			139		Low Channel		108

10	2708.256M	31.8	+2.0	-33.7	+29.4	+2.4	+0.0	46.6	54.0	-7.4	Horiz
	Ave		+2.1	+12.6			218		Low Channel		196
	^ 2708.256M	35.3	+2.0	-33.7	+29.4	+2.4	+0.0	50.1	54.0	-3.9	Horiz
			+2.1	+12.6			218		Low Channel		196
12	2781.750M	37.7	+2.0	-33.6	+29.5	+2.5	+0.0	46.1	54.0	-7.9	Vert
	Ave		+2.1	+5.9			66		High Channel		106
	^ 2781.750M	38.3	+2.0	-33.6	+29.5	+2.5	+0.0	46.7	54.0	-7.3	Vert
			+2.1	+5.9			66		High Channel		106
14	7221.994M	31.4	+4.0	-33.8	+36.3	+4.2	+0.0	45.6	54.0	-8.4	Horiz
			+3.4	+0.1			209		Low Channel		169
15	7321.998M	30.5	+3.9	-33.7	+36.5	+4.2	+0.0	45.0	54.0	-9.0	Vert
	Ave		+3.5	+0.1			140		Mid Channel		148
	^ 7321.998M	30.4	+3.9	-33.7	+36.5	+4.2	+0.0	44.9	54.0	-9.1	Vert
			+3.5	+0.1			140		Mid Channel		148
17	7417.994M	30.1	+3.8	-33.6	+36.6	+4.2	+0.0	44.7	54.0	-9.3	Vert
			+3.5	+0.1			167		High Channel		127
18	2745.748M	33.0	+2.0	-33.6	+29.5	+2.4	+0.0	44.5	54.0	-9.5	Horiz
	Ave		+2.1	+9.1			149		Mid Channel		145
	^ 2745.748M	33.6	+2.0	-33.6	+29.5	+2.4	+0.0	45.1	54.0	-8.9	Horiz
			+2.1	+9.1			149		Mid Channel		145
20	3611.000M	37.6	+2.4	-33.2	+31.3	+2.9	+0.0	43.8	54.0	-10.2	Vert
	Ave		+2.4	+0.4			200		Low Channel		110
	^ 3611.000M	40.3	+2.4	-33.2	+31.3	+2.9	+0.0	46.5	54.0	-7.5	Vert
			+2.4	+0.4			200		Low Channel		110
22	3708.994M	36.4	+2.4	-33.2	+31.7	+2.9	+0.0	42.9	54.0	-11.1	Vert
	Ave		+2.4	+0.3			200		High Channel		153
	^ 3708.994M	37.3	+2.4	-33.2	+31.7	+2.9	+0.0	43.8	54.0	-10.2	Vert
			+2.4	+0.3			200		High Channel		153
24	5416.499M	31.9	+3.0	-33.1	+34.3	+3.6	+0.0	42.9	54.0	-11.1	Horiz
	Ave		+3.0	+0.2			216		Low Channel		116
	^ 5416.499M	33.0	+3.0	-33.1	+34.3	+3.6	+0.0	44.0	54.0	-10.0	Horiz
			+3.0	+0.2			216		Low Channel		116
26	4576.250M	34.3	+2.7	-33.2	+32.7	+3.3	+0.0	42.8	54.0	-11.2	Vert
	Ave		+2.7	+0.3			188		Mid Channel		132
	^ 4576.250M	35.3	+2.7	-33.2	+32.7	+3.3	+0.0	43.8	54.0	-10.2	Vert
			+2.7	+0.3			188		Mid Channel		132
28	5563.496M	31.6	+2.9	-33.2	+34.4	+3.6	+0.0	42.4	54.0	-11.6	Vert
	Ave		+3.0	+0.1			172		High Channel		175
	^ 5563.496M	32.6	+2.9	-33.2	+34.4	+3.6	+0.0	43.4	54.0	-10.6	Vert
			+3.0	+0.1			172		High Channel		175
30	4513.749M	33.8	+2.7	-33.2	+32.5	+3.2	+0.0	42.0	54.0	-12.0	Vert
	Ave		+2.7	+0.3			180		Low Channel		200
	^ 4513.749M	35.3	+2.7	-33.2	+32.5	+3.2	+0.0	43.5	54.0	-10.5	Vert
			+2.7	+0.3			180		Low Channel		200
32	3661.000M	35.6	+2.4	-33.2	+31.5	+2.9	+0.0	41.9	54.0	-12.1	Vert
	Ave		+2.4	+0.3			167		Mid Channel		121
	^ 3661.000M	36.5	+2.4	-33.2	+31.5	+2.9	+0.0	42.8	54.0	-11.2	Vert
			+2.4	+0.3			167		Mid Channel		121

34	4636.244M	33.2	+2.7	-33.1	+32.8	+3.3	+0.0	41.9	54.0	-12.1	Vert
	Ave		+2.7	+0.3			175		High Channel		200
	^ 4636.244M	34.4	+2.7	-33.1	+32.8	+3.3	+0.0	43.1	54.0	-10.9	Vert
			+2.7	+0.3			175		High Channel		200
36	7417.992M	26.9	+3.8	-33.6	+36.6	+4.2	+0.0	41.5	54.0	-12.5	Horiz
			+3.5	+0.1			360		High Channel		132
37	2781.752M	33.0	+2.0	-33.6	+29.5	+2.5	+0.0	41.4	54.0	-12.6	Horiz
	Ave		+2.1	+5.9			130		High Channel		172
	^ 2781.752M	33.5	+2.0	-33.6	+29.5	+2.5	+0.0	41.9	54.0	-12.1	Horiz
			+2.1	+5.9			130		High Channel		172
39	3610.996M	35.2	+2.4	-33.2	+31.3	+2.9	+0.0	41.4	54.0	-12.6	Horiz
	Ave		+2.4	+0.4			250		Low Channel		185
	^ 3610.996M	36.4	+2.4	-33.2	+31.3	+2.9	+0.0	42.6	54.0	-11.4	Horiz
			+2.4	+0.4			250		Low Channel		185
41	4576.250M	32.0	+2.7	-33.2	+32.7	+3.3	+0.0	40.5	54.0	-13.5	Horiz
	Ave		+2.7	+0.3			120		Mid Channel		189
	^ 4576.250M	32.5	+2.7	-33.2	+32.7	+3.3	+0.0	41.0	54.0	-13.0	Horiz
			+2.7	+0.3			120		Mid Channel		189
43	4636.246M	31.4	+2.7	-33.1	+32.8	+3.3	+0.0	40.1	54.0	-13.9	Horiz
	Ave		+2.7	+0.3			180		High Channel		200
	^ 4636.246M	32.4	+2.7	-33.1	+32.8	+3.3	+0.0	41.1	54.0	-12.9	Horiz
			+2.7	+0.3			180		High Channel		200
45	4513.753M	31.9	+2.7	-33.2	+32.5	+3.2	+0.0	40.1	54.0	-13.9	Horiz
	Ave		+2.7	+0.3			130		Low Channel		196
	^ 4513.753M	34.2	+2.7	-33.2	+32.5	+3.2	+0.0	42.4	54.0	-11.6	Horiz
			+2.7	+0.3			130		Low Channel		196
47	3709.002M	33.5	+2.4	-33.2	+31.7	+2.9	+0.0	40.0	54.0	-14.0	Horiz
	Ave		+2.4	+0.3			263		High Channel		185
	^ 3709.002M	35.3	+2.4	-33.2	+31.7	+2.9	+0.0	41.8	54.0	-12.2	Horiz
			+2.4	+0.3			263		High Channel		185
49	5563.496M	27.7	+2.9	-33.2	+34.4	+3.6	+0.0	38.5	54.0	-15.5	Horiz
	Ave		+3.0	+0.1			180		High Channel		115
	^ 5563.496M	26.7	+2.9	-33.2	+34.4	+3.6	+0.0	37.5	54.0	-16.5	Horiz
			+3.0	+0.1			180		High Channel		115
51	3661.000M	31.8	+2.4	-33.2	+31.5	+2.9	+0.0	38.1	54.0	-15.9	Horiz
	Ave		+2.4	+0.3			153		Mid Channel		121
	^ 3661.000M	32.7	+2.4	-33.2	+31.5	+2.9	+0.0	39.0	54.0	-15.0	Horiz
			+2.4	+0.3			153		Mid Channel		121

Test Location: CKC Laboratories •22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **Impinj Inc**
Specification: **15.247(b)(1) 902-928 MHz**
Work Order #: **83127** Date: 6/8/2006
Test Type: **Conducted Emissions** Time: 14:39:31
Equipment: **RFID Reader** Sequence#: 2
Manufacturer: Impinj Tested By: Ryan Rutledge
Model: IPJ-R1000 120V 60Hz
S/N: 40306200055

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
RFID Reader*	Impinj	IPJ-R1000	40306200055

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Compaq	Presario V2000	
Antenna	Cushcraft	S9028PCRJ	NA
Power Supply	CUI Inc	DSA-60W-20	P/N: DTS240250UC-P11P-DB

Test Conditions / Notes:

Device operating without modulation, measuring carrier output power. Measuring conducted power output at low, mid and high channels. Measurements and spec in terms of dBm.

Transducer Legend:

T1=Atten 10 dB	T2=Cable ANP05424 - 36"

Measurement Data: Reading listed by margin. Test Lead: RF Output port

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBm	Spec dBm	Margin dB	Polar Ant
1	915.250M	18.6	+9.9	+1.2			+0.0	29.7	30.0	-0.3	RF Ou
2	927.248M	18.5	+9.9	+1.2			+0.0	29.6	30.0	-0.4	RF Ou
3	902.746M	18.5	+9.9	+1.2			+0.0	29.6	30.0	-0.4	RF Ou