TESTING
CERT #803.01, 803.02, 803.05, 803.06

IMPINJ INC TEST REPORT

FOR THE

RFID READER, IPJ-REV

FCC PART 15 SUBPART C SECTIONS 15.207 & 15.247 AND RSS-210 ISSUE 7

TESTING

DATE OF ISSUE: FEBRUARY 23, 2009

PREPARED FOR:

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

P.O. No.: 100974
W.O. No.: 89028

PREPARED BY:

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

Date of test: February 9-12, 2009

Report No.: FC09-014

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ADMINISTRATIVE INFORMATION

DATE OF TEST: February 9-12, 2009

DATE OF RECEIPT: February 9, 2009

REPRESENTATIVE: Mike Thomas

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

TEST LOCATION:
CKC Laboratories, Inc.
110 Olinda Place
Brea, CA 92823

TEST METHOD: ANSI C63.4 (2003), RSS-210 Issue 7 and RSS GEN Issue 2

PURPOSE OF TEST: To perform the testing of the RFID Reader, IPJ-REV with the requirements for FCC Part 15 Subpart C Sections 15.207 & 15.247and RSS-210 devices.

APPROVALS

QUALITY ASSURANCE:

Steve Behm, Director of Engineering Services

Donald Jones, Senior EMC Engineer / Lab Manager

TEST PERSONNEL:

Armando Del Angel, Test Engineer

SUMMARY OF RESULTS

Test	Specification	Results
Voltage Variation	FCC Part 15.31(e)	Pass
Conducted Emissions	FCC Part 15.207	Pass
20dB Bandwidth	FCC Part 15.247(a)	Pass
Frequency Separation	FCC Part 15.247(a)	Pass
Number of Hopping Channels	FCC Part 15.247(a)	Pass
Average Time of Occupancy	FCC Part 15.247(a)	Pass
RF Power Output	FCC Part 15.247(b)	Pass
Antenna Conducted Spurious Emissions	FCC Part 15.247(d)	Pass
OATS Spurious Emissions	FCC Part 15.209/15.247(d)	Pass
Bandedge		Pass
99% Bandwidth	RSS-210 Issue 7 and RSS GEN Issue 2	Pass

CONDITIONS DURING TESTING

No modifications to the EUT were necessary during testing.

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

FCC 15.33(a) Frequency Ranges Tested
15.207 Conducted Emissions: 150 kHz – 30 MHz
15.209/15.247 Radiated Emissions: 9 kHz – 19 GHz

EUT Operating Frequency
The EUT was operating in the 902-928 MHz band.

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

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

EQUIPMENT UNDER TEST

Circular Patch Antenna
Manuf: Cushcraft
Model: S90289CLJ
Serial: 092436

RFID Reader
Manuf: Impinj Inc.
Model: IPJ-REV
Serial: 940-08-21-0006

AC/DC Adaptor
Manuf: CUI
Model: DSA-60W-20
Serial: ETS240250UC-P11P-DB

Antenna Cable
Manuf: Manhattan/CDT
Model: M4213
Serial: 1354 E12091

Mini-Guardrail
Manuf: Impinj Inc.
Model: IPJ-A0303-0000E
Serial: 0069

Brickyard Antenna
Manuf: CSL
Model: CS777-2
Serial: V25078 EP00090

Guardwall Antenna
Manuf: Impinj Inc.
Model: IPJ-A0402-USA
Serial: 0116

PERIPHERAL DEVICES

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

Wireless G Router
Manuf: Belkin
Model: F5D7230-4
Serial: 2028723009696

Laptop Computer
Manuf: Dell
Model: Latitude
Serial: 6497402833

Switch POE
Manuf: NETGEAR
Model: FS108P
Serial: 1DL1863H0073E

REPORT OF EMISSIONS MEASUREMENTS

TESTING PARAMETERS

TEMPERATURE AND HUMIDITY DURING TESTING

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

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 dBµV/m, the spectrum analyzer reading in dBµV 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. 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. When conducted emissions testing was performed, a 10 dB external attenuator was used with internal offset correction in the analyzer.

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 "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the highest readings, this is indicated as a "QP" or an "Ave" on the appropriate rows of the data sheets. 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/receiver readings were recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the measuring device called "peak hold," the measuring device had the ability to measure transients 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

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the quasi-peak detector.

Average

For certain frequencies, average measurements may be made using the spectrum analyzer/receiver. 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.

FCC 15.31(e) - VOLTAGE VARIATIONS

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Mag Loop	2156	06/04/2008	06/04/2010	AN00052
Antenna	2453	12/22/2008	12/22/2010	AN01994
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
Horn Antenna, Active 18-26GHz	1114018	11/13/2008	11/13/2010	2742
Heliax cable	N/A	07/22/2008	07/22/2010	AN05545
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03123
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03122
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03121
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Pasternack Coax		07/20/2007	07/20/2009	AN05425
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271
Filter	2	05/01/2008	05/01/2010	2750
Filter	311SH10-3000/T10000-0/0	12/02/2008	12/02/2010	3116
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

The Unit is an RF reader. It is connected directly to the spectrum analyzer through a special cable provided by the customer due to the fact that it will provide the required attenuation for the unit to comply with the limit in this situation.

The EUT will be in transmitting mode throughout the test in the LOW, MEDIUM and HIGH channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 32.5 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 902.75, 915.25 & 927.25

Test Setup Photos

AC/DC converter

Frequency (MHz)	Voltage	30dBm	32.5dBm w/ cable	Limit (dBuV)
902.75	+15%	136.5dBuV	136.6dBuV	137.0
902.75	Nominal	136.8dBuV	136.6dBuV	137.0
902.75	-15%	136.5dBuV	136.6dBuV	137.0
915.25	+15%	137.0dBuV	136.9dBuV	137.0
915.25	Nominal	136.6dBuV	136.9dBuV	137.0
915.25	-15%	136.9dBuV	136.6dBuV	137.0
927.25	+15%	136.8dBuV	136.4dBuV	137.0
927.25	Nominal	136.7dBuV	136.4dBuV	137.0
927.25	-15%	136.8dBuV	136.4dBuV	137.0

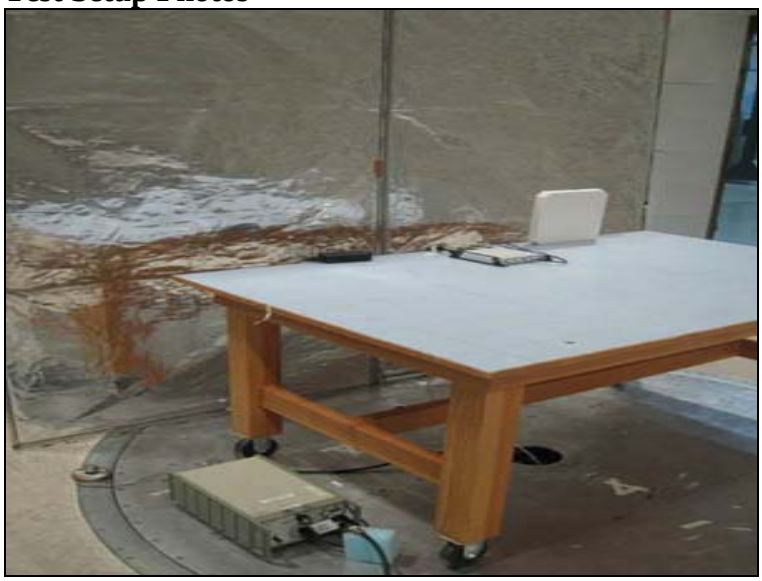
POE

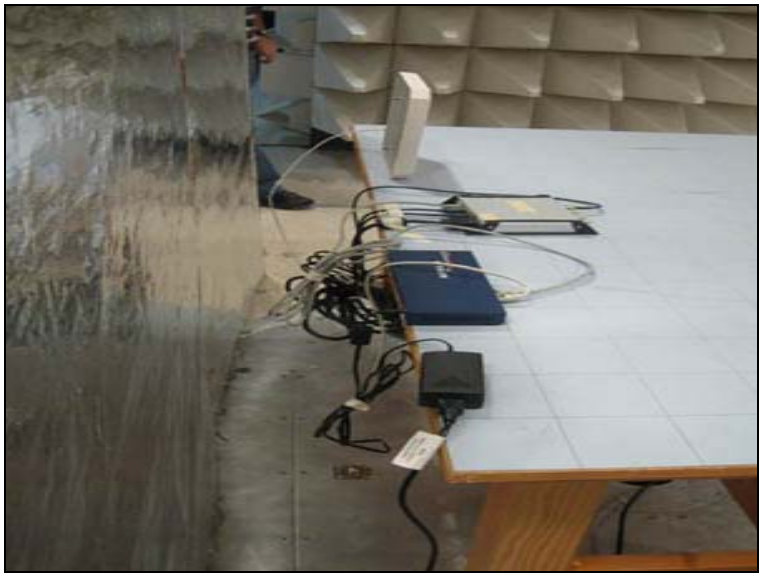
Frequency (MHz)	Voltage	30dBm	Limit (dBuV)
902.75	+15%	136.5dBuV	137.0
902.75	Nominal	136.5dBuV	137.0
902.75	-15%	136.4dBuV	137.0
915.25	+15%	136.6dBuV	137.0
915.25	Nominal	136.6dBuV	137.0
915.25	-15%	136.6dBuV	137.0
927.25	+15%	136.6dBuV	137.0
927.25	Nominal	136.7dBuV	137.0
927.25	-15%	136.7dBuV	137.0

Notes: The unit is connected directly to the PSA and depending on the power output the measurement will be taken in the RF port or in the end of the cable. The unit's AC/DC converter & POE will be connected to a programmable power supply so we can vary the voltage from 85% to 115% of the nominal voltage.

FCC 15.207 – AC CONDUCTED EMISSIONS

Test Setup Photos





Test Data Sheets

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

Customer: **Impinj Inc**
Specification: **FCC 15.207 - AVE**
Work Order #: **89028** Date: 2/12/2009
Test Type: **Conducted Emissions** Time: 10:32:49 AM
Equipment: **RFID Reader** Sequence#: 2
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV 110V 60Hz
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Agilent E4440A	MY46186330	01/31/2008	01/31/2010	AN02872
Attenuator	9912	03/21/2008	03/21/2010	ANP05503
Filter	G7752	07/21/2008	07/21/2010	AN02611
EMCO LISN	9606-1049	06/01/2007	06/01/2009	AN01492

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

Function	Manufacturer	Model #	S/N
Circular patch antenna	Cushcraft	S90289CLJ	092436
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB
Antenna cable	Manhattan/CDT	M4213	1354 E12091

Support Devices:

Function	Manufacturer	Model #	S/N
Wireless G Router	Belkin	F5D7230-4	2028723009696
Laptop Computer	Dell	Latitude	6497402833

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing AC conducted emissions per FCC 15.207.

The Unit is an RF reader. It is located in the back edge of the test table.
All its ports are being exercised. It is being powered by an AC/DC converter.
It is connected to a laptop outside the chamber through a shielded ethernet cable.
The antenna is located on the wooden table.
The EUT will be in transmitter mode throughout the test.
Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting: 32.5 dBm
Operating frequency: 902-928MHz.
Frequency range of measurement = 150kHz - 30MHz, RBW=1kHz, VBW=1kHz.

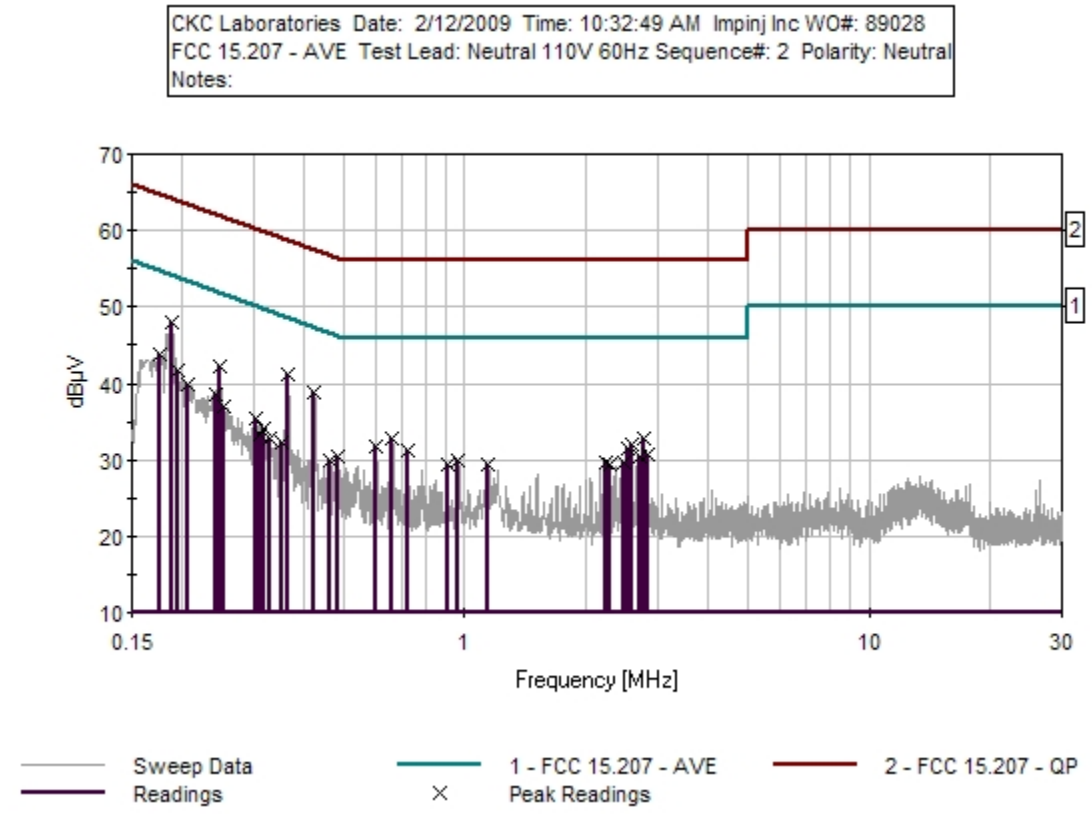
Transducer Legend:

T1=CAB-ANP05371	T2=FIL-AN02611-072108
T3=CAB-ANP05366	T4=ATT-ANP5503-032108
T5=CAB-ANP05360	T6=CDN-AN01492-060107 - Neutral

Measurement Data: Reading listed by margin. Test Lead: Neutral

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	187.815k	37.5	+0.0 +0.0	+0.2 +0.2	+0.0	+10.1	+0.0	48.0	54.1	-6.1	Neutr
2	363.071k	30.6	+0.1 +0.1	+0.1 +0.2	+0.0	+10.1	+0.0	41.2	48.7	-7.5	Neutr
3	423.429k	28.3	+0.1 +0.1	+0.1 +0.2	+0.0	+10.1	+0.0	38.9	47.4	-8.5	Neutr
4	247.446k	31.6	+0.0 +0.0	+0.2 +0.2	+0.0	+10.1	+0.0	42.1	51.8	-9.7	Neutr
5	176.907k	33.3	+0.0 +0.0	+0.3 +0.2	+0.0	+10.1	+0.0	43.9	54.6	-10.7	Neutr
6	195.814k	31.3	+0.0 +0.0	+0.2 +0.2	+0.0	+10.1	+0.0	41.8	53.8	-12.0	Neutr
7	661.953k	22.1	+0.1 +0.1	+0.2 +0.2	+0.0	+10.1	+0.0	32.8	46.0	-13.2	Neutr
8	207.449k	29.5	+0.0 +0.0	+0.2 +0.2	+0.0	+10.1	+0.0	40.0	53.3	-13.3	Neutr
9	2.774M	22.0	+0.1 +0.1	+0.1 +0.2	+0.1	+10.1	+0.0	32.7	46.0	-13.3	Neutr
10	240.901k	28.1	+0.0 +0.0	+0.2 +0.2	+0.0	+10.1	+0.0	38.6	52.1	-13.5	Neutr
11	2.591M	21.2	+0.1 +0.1	+0.1 +0.2	+0.1	+10.1	+0.0	31.9	46.0	-14.1	Neutr
12	602.322k	21.0	+0.1 +0.1	+0.2 +0.2	+0.0	+10.1	+0.0	31.7	46.0	-14.3	Neutr
13	254.718k	26.6	+0.0 +0.0	+0.2 +0.2	+0.0	+10.1	+0.0	37.1	51.6	-14.5	Neutr
14	2.532M	20.8	+0.1 +0.1	+0.1 +0.2	+0.1	+10.1	+0.0	31.5	46.0	-14.5	Neutr
15	305.622k	25.0	+0.0 +0.0	+0.1 +0.2	+0.0	+10.1	+0.0	35.4	50.1	-14.7	Neutr
16	723.766k	20.5	+0.0 +0.1	+0.2 +0.2	+0.1	+10.1	+0.0	31.2	46.0	-14.8	Neutr
17	2.833M	19.9	+0.1 +0.1	+0.1 +0.2	+0.1	+10.1	+0.0	30.6	46.0	-15.4	Neutr
18	317.257k	23.6	+0.1 +0.1	+0.1 +0.2	+0.0	+10.1	+0.0	34.2	49.8	-15.6	Neutr
19	2.714M	19.7	+0.1 +0.1	+0.1 +0.2	+0.1	+10.1	+0.0	30.4	46.0	-15.6	Neutr
20	485.242k	19.8	+0.1 +0.1	+0.2 +0.2	+0.0	+10.1	+0.0	30.5	46.2	-15.7	Neutr
21	962.260k	19.1	+0.0 +0.1	+0.2 +0.2	+0.1	+10.1	+0.0	29.8	46.0	-16.2	Neutr
22	2.230M	18.9	+0.1 +0.1	+0.1 +0.2	+0.1	+10.1	+0.0	29.6	46.0	-16.4	Neutr

23	2.468M	18.9	+0.1 +0.1	+0.1 +0.2	+0.1	+10.1	+0.0	29.6	46.0	-16.4	Neutr
24	902.721k	18.8	+0.0 +0.1	+0.2 +0.2	+0.1	+10.1	+0.0	29.5	46.0	-16.5	Neutr
25	310.713k	23.0	+0.0 +0.0	+0.1 +0.2	+0.0	+10.1	+0.0	33.4	50.0	-16.6	Neutr
26	327.438k	22.3	+0.1 +0.1	+0.1 +0.2	+0.0	+10.1	+0.0	32.9	49.5	-16.6	Neutr
27	465.607k	19.3	+0.1 +0.1	+0.2 +0.2	+0.0	+10.1	+0.0	30.0	46.6	-16.6	Neutr
28	1.145M	18.7	+0.0 +0.1	+0.2 +0.2	+0.1	+10.1	+0.0	29.4	46.0	-16.6	Neutr
29	2.293M	18.7	+0.1 +0.1	+0.1 +0.2	+0.1	+10.1	+0.0	29.4	46.0	-16.6	Neutr
30	354.345k	21.6	+0.1 +0.1	+0.1 +0.2	+0.0	+10.1	+0.0	32.2	48.9	-16.7	Neutr



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

Customer: **Impinj Inc**
Specification: **FCC 15.207 - AVE**
Work Order #: **89028** Date: 2/12/2009
Test Type: **Conducted Emissions** Time: 11:32:45
Equipment: **RFID Reader** Sequence#: 3
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV 110V 60Hz
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Agilent E4440A	MY46186330	01/31/2008	01/31/2010	AN02872
Attenuator	9912	03/21/2008	03/21/2010	ANP05503
Filter	G7752	07/21/2008	07/21/2010	AN02611
EMCO LISN	9606-1049	06/01/2007	06/01/2009	AN01492

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

Function	Manufacturer	Model #	S/N
Circular patch antenna	Cushcraft	S90289CLJ	092436
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006

Support Devices:

Function	Manufacturer	Model #	S/N
Wireless G Router	Belkin	F5D7230-4	2028723009696
Laptop Computer	Dell	Latitude	6497402833
Switch POE	NETGEAR	FS108P	1DL1863H0073E

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing AC conducted emissions per FCC 15.207.

The Unit is an RF reader. It is located in the back edge of the test table.
All its ports are being exercised. It is being powered by POE.
It is connected to a laptop outside the chamber through a shielded ethernet cable.
The antenna is located on the wooden table.
The EUT will be in transmitter mode throughout the test.
Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting: 30.0 dBm

Operating frequency: 902-928MHz.
Frequency range of measurement = 150kHz - 30MHz, RBW=1kHz, VBW=1kHz.

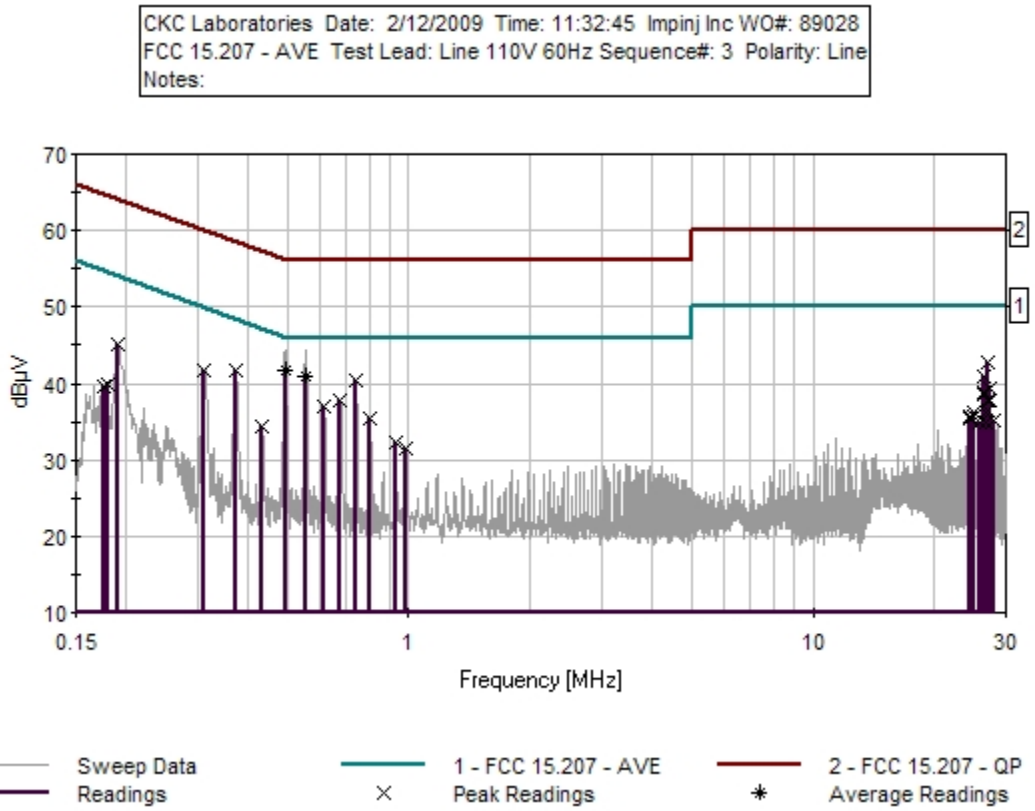
Transducer Legend:

T1=CAB-ANP05371	T2=FIL-AN02611-072108
T3=CAB-ANP05366	T4=ATT-ANP5503-032108
T5=CAB-ANP05360	T6=CDN-AN01492-060107 - Line

Measurement Data: Reading listed by margin. Test Lead: Line

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	494.048k	31.1	+0.1	+0.2	+0.0	+10.1	+0.0	41.7	46.1	-4.4	Line
	Ave		+0.1	+0.1							
^	494.048k	34.0	+0.1	+0.2	+0.0	+10.1	+0.0	44.6	46.1	-1.5	Line
			+0.1	+0.1							
3	556.911k	30.4	+0.1	+0.2	+0.0	+10.1	+0.0	41.0	46.0	-5.0	Line
	Ave		+0.1	+0.1							
^	556.911k	34.0	+0.1	+0.2	+0.0	+10.1	+0.0	44.6	46.0	-1.4	Line
			+0.1	+0.1							
5	741.219k	29.8	+0.0	+0.2	+0.1	+10.1	+0.0	40.4	46.0	-5.6	Line
			+0.1	+0.1							
6	372.525k	31.3	+0.1	+0.1	+0.0	+10.1	+0.0	41.8	48.4	-6.6	Line
			+0.1	+0.1							
7	27.163M	30.8	+0.2	+0.2	+0.3	+10.1	+0.0	42.8	50.0	-7.2	Line
			+0.3	+0.9							
8	312.167k	31.5	+0.0	+0.1	+0.0	+10.1	+0.0	41.8	49.9	-8.1	Line
			+0.0	+0.1							
9	678.679k	27.2	+0.1	+0.2	+0.0	+10.1	+0.0	37.8	46.0	-8.2	Line
			+0.1	+0.1							
10	190.724k	34.6	+0.0	+0.2	+0.0	+10.1	+0.0	45.0	54.0	-9.0	Line
			+0.0	+0.1							
11	617.593k	26.4	+0.1	+0.2	+0.0	+10.1	+0.0	37.0	46.0	-9.0	Line
			+0.1	+0.1							
12	26.608M	28.9	+0.2	+0.2	+0.3	+10.1	+0.0	40.9	50.0	-9.1	Line
			+0.3	+0.9							
13	803.031k	24.8	+0.0	+0.2	+0.1	+10.1	+0.0	35.4	46.0	-10.6	Line
			+0.1	+0.1							
14	27.341M	27.3	+0.2	+0.2	+0.3	+10.1	+0.0	39.3	50.0	-10.7	Line
			+0.3	+0.9							
15	26.492M	26.8	+0.2	+0.2	+0.3	+10.1	+0.0	38.8	50.0	-11.2	Line
			+0.3	+0.9							
16	26.553M	26.5	+0.2	+0.2	+0.3	+10.1	+0.0	38.5	50.0	-11.5	Line
			+0.3	+0.9							
17	27.218M	25.8	+0.2	+0.2	+0.3	+10.1	+0.0	37.8	50.0	-12.2	Line
			+0.3	+0.9							
18	27.410M	25.7	+0.2	+0.2	+0.3	+10.1	+0.0	37.8	50.0	-12.2	Line
			+0.3	+1.0							
19	432.883k	23.7	+0.1	+0.2	+0.0	+10.1	+0.0	34.3	47.2	-12.9	Line
			+0.1	+0.1							
20	26.944M	24.4	+0.2	+0.2	+0.3	+10.1	+0.0	36.4	50.0	-13.6	Line
			+0.3	+0.9							
21	923.985k	21.7	+0.0	+0.2	+0.1	+10.1	+0.0	32.3	46.0	-13.7	Line
			+0.1	+0.1							
22	24.902M	24.3	+0.2	+0.2	+0.3	+10.1	+0.0	36.2	50.0	-13.8	Line
			+0.3	+0.8							

23	26.855M	24.2	+0.2 +0.3	+0.2 +0.9	+0.3	+10.1	+0.0	36.2	50.0	-13.8	Line
24	24.532M	23.9	+0.2 +0.3	+0.2 +0.8	+0.3	+10.1	+0.0	35.8	50.0	-14.2	Line
25	987.776k	21.0	+0.0 +0.1	+0.2 +0.1	+0.1	+10.1	+0.0	31.6	46.0	-14.4	Line
26	24.964M	23.7	+0.2 +0.3	+0.2 +0.8	+0.3	+10.1	+0.0	35.6	50.0	-14.4	Line
27	179.815k	29.4	+0.0 +0.0	+0.3 +0.1	+0.0	+10.1	+0.0	39.9	54.5	-14.6	Line
28	24.354M	23.5	+0.2 +0.3	+0.2 +0.8	+0.3	+10.1	+0.0	35.4	50.0	-14.6	Line
29	27.896M	23.1	+0.2 +0.3	+0.2 +1.0	+0.3	+10.1	+0.0	35.2	50.0	-14.8	Line
30	176.907k	29.2	+0.0 +0.0	+0.3 +0.1	+0.0	+10.1	+0.0	39.7	54.6	-14.9	Line
31	25.875M	22.9	+0.2 +0.3	+0.2 +0.9	+0.3	+10.1	+0.0	34.9	50.0	-15.1	Line
32	26.670M	22.9	+0.2 +0.3	+0.2 +0.9	+0.3	+10.1	+0.0	34.9	50.0	-15.1	Line



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

Customer: **Impinj Inc**
Specification: **FCC 15.207 - AVE**
Work Order #: **89028** Date: 2/12/2009
Test Type: **Conducted Emissions** Time: 11:37:34
Equipment: **RFID Reader** Sequence#: 4
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV 110V 60Hz
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Agilent E4440A	MY46186330	01/31/2008	01/31/2010	AN02872
Attenuator	9912	03/21/2008	03/21/2010	ANP05503
Filter	G7752	07/21/2008	07/21/2010	AN02611
EMCO LISN	9606-1049	06/01/2007	06/01/2009	AN01492

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

Function	Manufacturer	Model #	S/N
Circular patch antenna	Cushcraft	S90289CLJ	092436
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006

Support Devices:

Function	Manufacturer	Model #	S/N
Wireless G Router	Belkin	F5D7230-4	2028723009696
Laptop Computer	Dell	Latitude	6497402833
Switch POE	NETGEAR	FS108P	1DL1863H0073E

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing AC conducted emissions per FCC 15.207.

The Unit is an RF reader. It is located in the back edge of the test table.
All its ports are being exercised. It is being powered by POE.
It is connected to a laptop outside the chamber through a shielded ethernet cable.
The antenna is located on the wooden table.
The EUT will be in transmitter mode throughout the test.
Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting: 30.0 dBm

Operating frequency: 902-928MHz.
Frequency range of measurement = 150kHz - 30MHz, RBW=1kHz, VBW=1kHz.

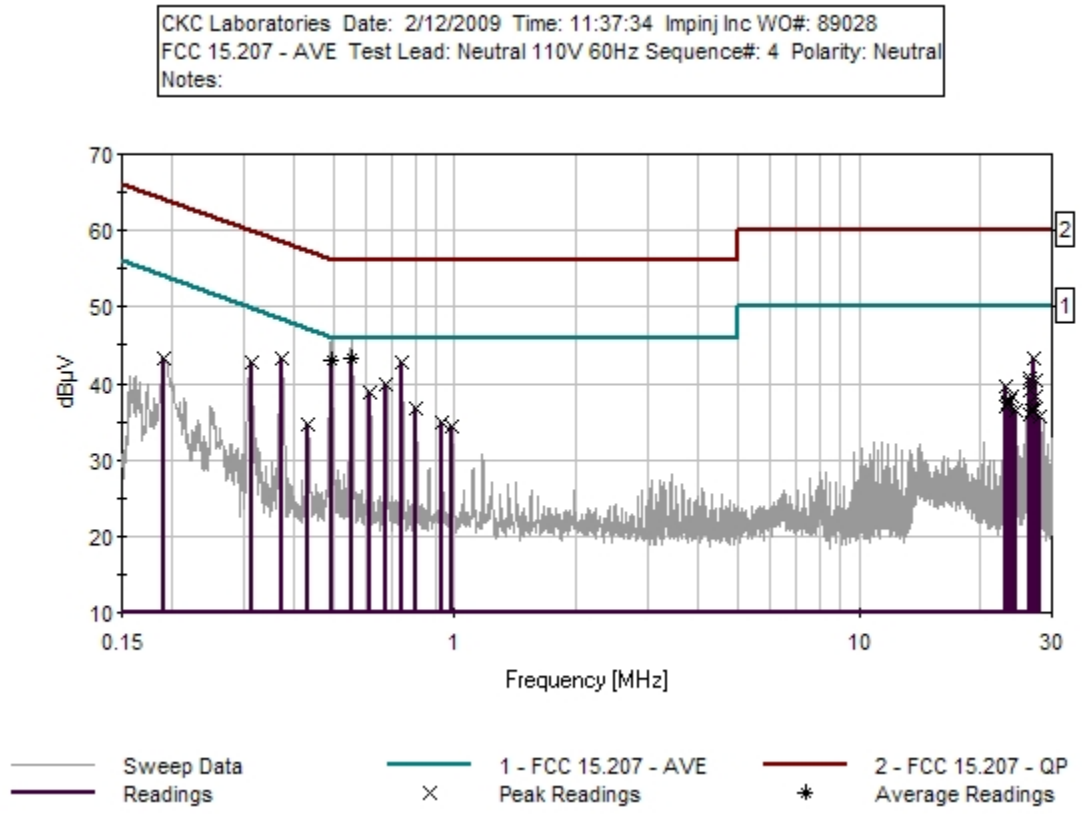
Transducer Legend:

T1=CAB-ANP05371	T2=FIL-AN02611-072108
T3=CAB-ANP05366	T4=ATT-ANP5503-032108
T5=CAB-ANP05360	T6=CDN-AN01492-060107 - Neutral

Measurement Data: Reading listed by margin. Test Lead: Neutral

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	554.840k	32.6	+0.1	+0.2	+0.0	+10.1	+0.0	43.3	46.0	-2.7	Neutr
	Ave		+0.1	+0.2							
^	554.840k	35.5	+0.1	+0.2	+0.0	+10.1	+0.0	46.2	46.0	+0.2	Neutr
			+0.1	+0.2							
3	493.487k	32.2	+0.1	+0.2	+0.0	+10.1	+0.0	42.9	46.1	-3.2	Neutr
	Ave		+0.1	+0.2							
^	493.487k	35.2	+0.1	+0.2	+0.0	+10.1	+0.0	45.9	46.1	-0.2	Neutr
			+0.1	+0.2							
5	739.763k	32.1	+0.0	+0.2	+0.1	+10.1	+0.0	42.8	46.0	-3.2	Neutr
			+0.1	+0.2							
6	372.524k	32.6	+0.1	+0.1	+0.0	+10.1	+0.0	43.2	48.4	-5.2	Neutr
			+0.1	+0.2							
7	677.223k	29.2	+0.1	+0.2	+0.0	+10.1	+0.0	39.9	46.0	-6.1	Neutr
			+0.1	+0.2							
8	27.163M	31.0	+0.2	+0.2	+0.3	+10.1	+0.0	43.3	50.0	-6.7	Neutr
			+0.3	+1.2							
9	312.893k	32.3	+0.0	+0.1	+0.0	+10.1	+0.0	42.7	49.9	-7.2	Neutr
			+0.0	+0.2							
10	615.411k	28.0	+0.1	+0.2	+0.0	+10.1	+0.0	38.7	46.0	-7.3	Neutr
			+0.1	+0.2							
11	803.030k	26.0	+0.0	+0.2	+0.1	+10.1	+0.0	36.7	46.0	-9.3	Neutr
			+0.1	+0.2							
12	26.608M	28.4	+0.2	+0.2	+0.3	+10.1	+0.0	40.7	50.0	-9.3	Neutr
			+0.3	+1.2							
13	27.341M	28.1	+0.2	+0.2	+0.3	+10.1	+0.0	40.4	50.0	-9.6	Neutr
			+0.3	+1.2							
14	26.492M	27.9	+0.2	+0.2	+0.3	+10.1	+0.0	40.2	50.0	-9.8	Neutr
			+0.3	+1.2							
15	23.130M	27.5	+0.2	+0.2	+0.3	+10.1	+0.0	39.7	50.0	-10.3	Neutr
			+0.3	+1.1							
16	191.450k	32.9	+0.0	+0.2	+0.0	+10.1	+0.0	43.4	54.0	-10.6	Neutr
			+0.0	+0.2							
17	26.553M	26.8	+0.2	+0.2	+0.3	+10.1	+0.0	39.1	50.0	-10.9	Neutr
			+0.3	+1.2							
18	923.985k	24.2	+0.0	+0.2	+0.1	+10.1	+0.0	34.9	46.0	-11.1	Neutr
			+0.1	+0.2							
19	23.867M	26.2	+0.2	+0.2	+0.3	+10.1	+0.0	38.4	50.0	-11.6	Neutr
			+0.3	+1.1							
20	27.403M	26.0	+0.2	+0.2	+0.3	+10.1	+0.0	38.4	50.0	-11.6	Neutr
			+0.3	+1.3							
21	987.776k	23.6	+0.0	+0.2	+0.1	+10.1	+0.0	34.3	46.0	-11.7	Neutr
			+0.1	+0.2							
22	23.744M	25.5	+0.2	+0.2	+0.3	+10.1	+0.0	37.7	50.0	-12.3	Neutr
			+0.3	+1.1							

23	433.609k	24.0	+0.1 +0.1	+0.2 +0.2	+0.0	+10.1	+0.0	34.7	47.2	-12.5	Neutr
24	23.436M	25.3	+0.2 +0.3	+0.2 +1.1	+0.3	+10.1	+0.0	37.5	50.0	-12.5	Neutr
25	23.374M	25.1	+0.2 +0.3	+0.2 +1.1	+0.3	+10.1	+0.0	37.3	50.0	-12.7	Neutr
26	23.067M	24.9	+0.2 +0.3	+0.2 +1.1	+0.3	+10.1	+0.0	37.1	50.0	-12.9	Neutr
27	27.218M	24.8	+0.2 +0.3	+0.2 +1.2	+0.3	+10.1	+0.0	37.1	50.0	-12.9	Neutr
28	26.923M	24.2	+0.2 +0.3	+0.2 +1.2	+0.3	+10.1	+0.0	36.5	50.0	-13.5	Neutr
29	24.354M	24.2	+0.2 +0.3	+0.2 +1.1	+0.3	+10.1	+0.0	36.4	50.0	-13.6	Neutr
30	26.855M	24.1	+0.2 +0.3	+0.2 +1.2	+0.3	+10.1	+0.0	36.4	50.0	-13.6	Neutr
31	26.457M	23.6	+0.2 +0.3	+0.2 +1.2	+0.3	+10.1	+0.0	35.9	50.0	-14.1	Neutr
32	27.876M	23.3	+0.2 +0.3	+0.2 +1.3	+0.3	+10.1	+0.0	35.7	50.0	-14.3	Neutr



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

Customer: **Impinj Inc**
Specification: **FCC 15.207 - AVE**
Work Order #: **89028** Date: 2/12/2009
Test Type: **Conducted Emissions** Time: 10:28:14 AM
Equipment: **RFID Reader** Sequence#: 1
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV 110V 60Hz
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Agilent E4440A	MY46186330	01/31/2008	01/31/2010	AN02872
Attenuator	9912	03/21/2008	03/21/2010	ANP05503
Filter	G7752	07/21/2008	07/21/2010	AN02611
EMCO LISN	9606-1049	06/01/2007	06/01/2009	AN01492

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

Function	Manufacturer	Model #	S/N
Circular patch antenna	Cushcraft	S90289CLJ	092436
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB
Antenna cable	Manhattan/CDT	M4213	1354 E12091

Support Devices:

Function	Manufacturer	Model #	S/N
Wireless G Router	Belkin	F5D7230-4	2028723009696
Laptop Computer	Dell	Latitude	6497402833

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing AC conducted emissions per FCC 15.207.

The Unit is an RF reader. It is located in the back edge of the test table.
All its ports are being exercised. It is being powered by an AC/DC converter.
It is connected to a laptop outside the chamber through a shielded ethernet cable.
The antenna is located on the wooden table.
The EUT will be in transmitter mode throughout the test.
Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting: 32.5 dBm

Operating frequency: 902-928MHz.
Frequency range of measurement = 150kHz - 30MHz, RBW=1kHz, VBW=1kHz.

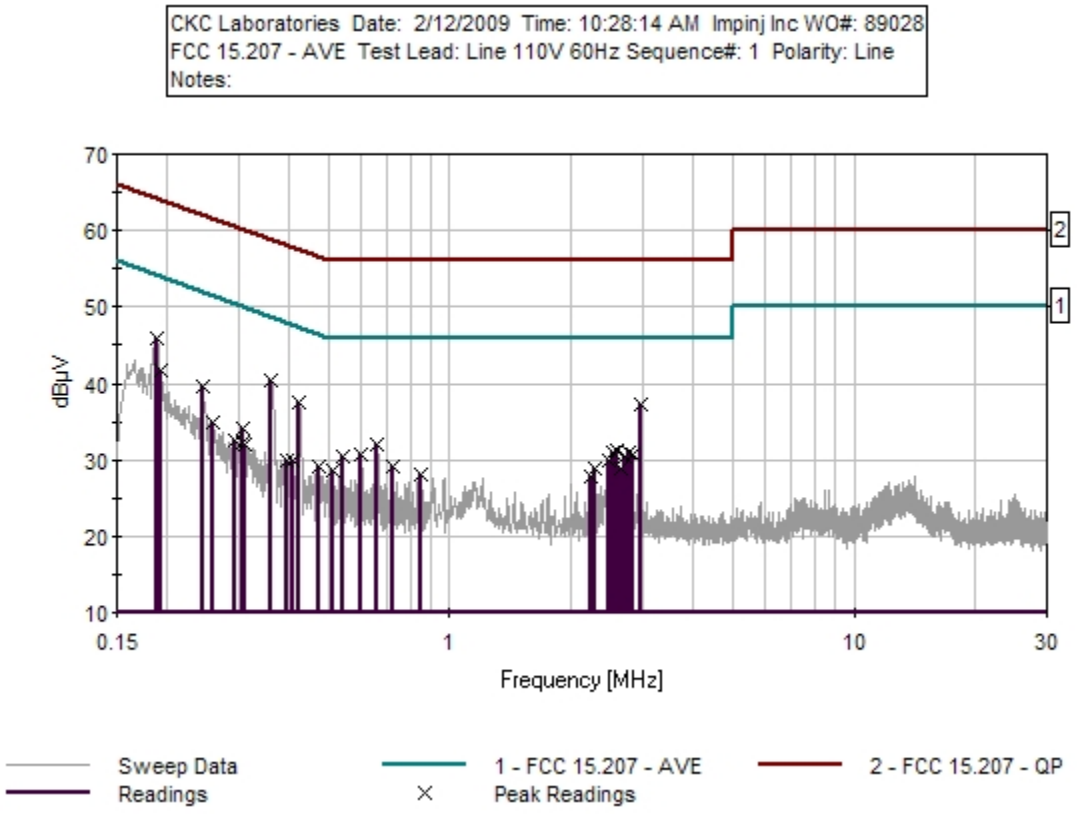
Transducer Legend:

T1=CAB-ANP05371	T2=FIL-AN02611-072108
T3=CAB-ANP05366	T4=ATT-ANP5503-032108
T5=CAB-ANP05360	T6=CDN-AN01492-060107 - Line

Measurement Data: Reading listed by margin. Test Lead: Line

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6							
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	188.542k	35.4	+0.0	+0.2	+0.0	+10.1	+0.0	45.8	54.1	-8.3	Line
			+0.0	+0.1							
2	362.344k	29.9	+0.1	+0.1	+0.0	+10.1	+0.0	40.4	48.7	-8.3	Line
			+0.1	+0.1							
3	2.965M	26.7	+0.1	+0.1	+0.1	+10.1	+0.0	37.3	46.0	-8.7	Line
			+0.1	+0.1							
4	423.429k	27.1	+0.1	+0.1	+0.0	+10.1	+0.0	37.6	47.4	-9.8	Line
			+0.1	+0.1							
5	192.178k	31.4	+0.0	+0.2	+0.0	+10.1	+0.0	41.8	53.9	-12.1	Line
			+0.0	+0.1							
6	245.264k	29.2	+0.0	+0.2	+0.0	+10.1	+0.0	39.6	51.9	-12.3	Line
			+0.0	+0.1							
7	662.680k	21.5	+0.1	+0.2	+0.0	+10.1	+0.0	32.1	46.0	-13.9	Line
			+0.1	+0.1							
8	2.591M	20.5	+0.1	+0.1	+0.1	+10.1	+0.0	31.1	46.0	-14.9	Line
			+0.1	+0.1							
9	2.532M	20.3	+0.1	+0.1	+0.1	+10.1	+0.0	30.9	46.0	-15.1	Line
			+0.1	+0.1							
10	2.778M	20.3	+0.1	+0.1	+0.1	+10.1	+0.0	30.9	46.0	-15.1	Line
			+0.1	+0.1							
11	602.322k	20.2	+0.1	+0.2	+0.0	+10.1	+0.0	30.8	46.0	-15.2	Line
			+0.1	+0.1							
12	2.833M	20.1	+0.1	+0.1	+0.1	+10.1	+0.0	30.7	46.0	-15.3	Line
			+0.1	+0.1							
13	542.691k	19.9	+0.1	+0.2	+0.0	+10.1	+0.0	30.5	46.0	-15.5	Line
			+0.1	+0.1							
14	2.714M	19.8	+0.1	+0.1	+0.1	+10.1	+0.0	30.4	46.0	-15.6	Line
			+0.1	+0.1							
15	307.077k	23.7	+0.0	+0.1	+0.0	+10.1	+0.0	34.0	50.0	-16.0	Line
			+0.0	+0.1							
16	2.472M	19.3	+0.1	+0.1	+0.1	+10.1	+0.0	29.9	46.0	-16.1	Line
			+0.1	+0.1							
17	259.808k	24.4	+0.0	+0.2	+0.0	+10.1	+0.0	34.8	51.4	-16.6	Line
			+0.0	+0.1							
18	723.766k	18.5	+0.0	+0.2	+0.1	+10.1	+0.0	29.1	46.0	-16.9	Line
			+0.1	+0.1							
19	2.293M	18.3	+0.1	+0.1	+0.1	+10.1	+0.0	28.9	46.0	-17.1	Line
			+0.1	+0.1							
20	2.651M	18.3	+0.1	+0.1	+0.1	+10.1	+0.0	28.9	46.0	-17.1	Line
			+0.1	+0.1							
21	471.425k	18.6	+0.1	+0.2	+0.0	+10.1	+0.0	29.2	46.5	-17.3	Line
			+0.1	+0.1							
22	511.421k	18.0	+0.1	+0.2	+0.0	+10.1	+0.0	28.6	46.0	-17.4	Line
			+0.1	+0.1							

23	308.531k	22.1	+0.0 +0.0	+0.1 +0.1	+0.0	+10.1	+0.0	32.4	50.0	-17.6	Line
24	408.158k	19.5	+0.1 +0.1	+0.1 +0.1	+0.0	+10.1	+0.0	30.0	47.7	-17.7	Line
25	410.340k	19.3	+0.1 +0.1	+0.1 +0.1	+0.0	+10.1	+0.0	29.8	47.6	-17.8	Line
26	294.714k	22.2	+0.0 +0.0	+0.1 +0.1	+0.0	+10.1	+0.0	32.5	50.4	-17.9	Line
27	310.713k	21.7	+0.0 +0.0	+0.1 +0.1	+0.0	+10.1	+0.0	32.0	50.0	-18.0	Line
28	844.482k	17.4	+0.0 +0.1	+0.2 +0.1	+0.1	+10.1	+0.0	28.0	46.0	-18.0	Line
29	395.068k	19.4	+0.1 +0.1	+0.1 +0.1	+0.0	+10.1	+0.0	29.9	48.0	-18.1	Line
30	2.230M	17.3	+0.1 +0.1	+0.1 +0.1	+0.1	+10.1	+0.0	27.9	46.0	-18.1	Line



FCC 15.247(a) – 20dB BANDWIDTH

Test Equipment

Asset #	Name	Manufacturer	Model	Serial	Cal date	Cal Due
P05747	Attenuator	Pasternack	PE7004-20	NA	4/3/2008	4/3/2010
P05748	Attenuator	Pasternack	PE7004-20	NA	4/3/2008	4/3/2010
P05371	Cable 6'	Belden	RG-214	RG214 49	11/10/2008	11/10/2010
2872	Spectrum Analyzer	Agilent	E4440A	MY46186330	1/31/2008	1/31/2010

Test Conditions

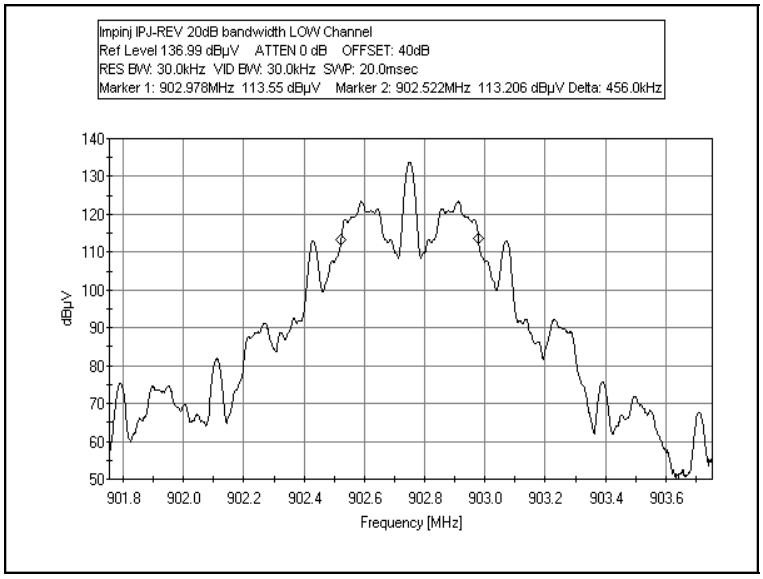
EUT is transmitting at maximum rate. PSA is on max hold, marker-to-peak function is set on the peak of each channel (LOW, MID, HIGH), and then the marker will be positioned 20dB below the peak on one side and then on the other side. The separation between those two is the 20dB bandwidth.

Test Setup Photos

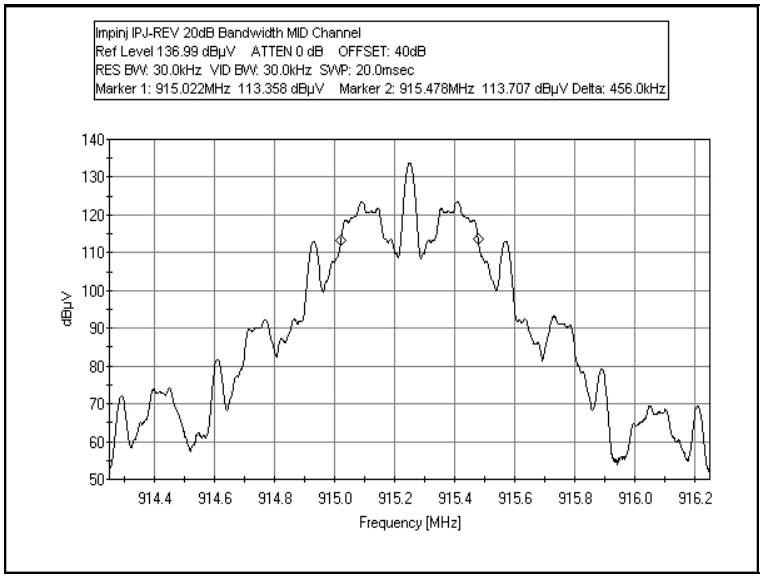
Test Data

Channel	Frequency	20dB Bandwidth	Limit
LOW	902.75MHz	456.0 kHz	500kHz
MID	915.25MHz	456.0hHz	500kHz
HIGH	927.25MHz	454.0kHz	500kHz

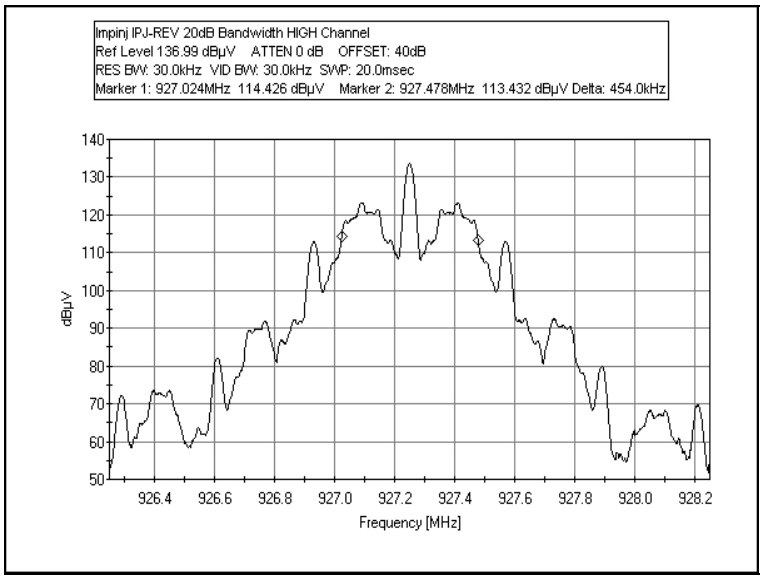
FCC 15.247(a)(1) - 20dB BANDWIDTH - LOW CHANNEL



FCC 15.247(a)(1) - 20dB BANDWIDTH - MID CHANNEL



FCC 15.247(a)(1) - 20dB BANDWIDTH - HIGH CHANNEL



FCC 15.247(a) – FREQUENCY SEPARATION

Test Equipment

Asset #	Name	Manufacturer	Model	Serial	Cal date	Cal Due
P05747	Attenuator	Pasternack	PE7004-20	NA	4/3/2008	4/3/2010
P05748	Attenuator	Pasternack	PE7004-20	NA	4/3/2008	4/3/2010
P05371	Cable 6'	Belden	RG-214	RG214 49	11/10/2008	11/10/2010
2872	Spectrum Analyzer	Agilent	E4440A	MY46186330	1/31/2008	1/31/2010

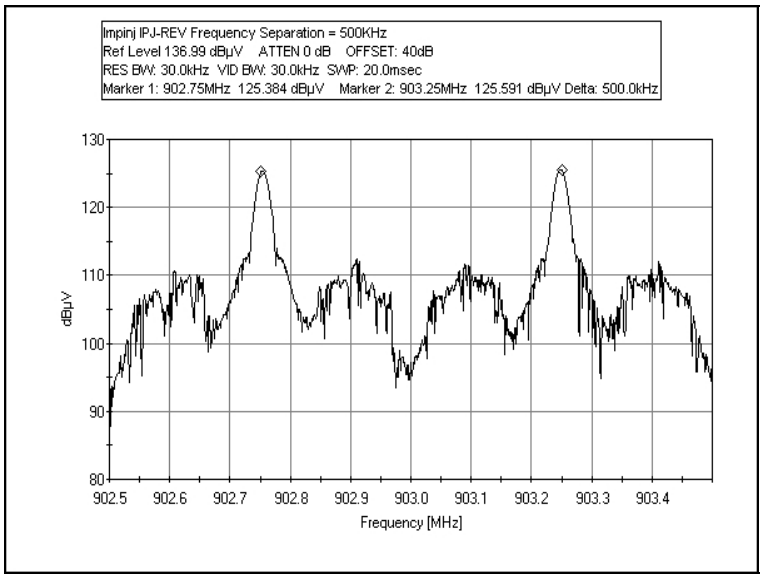
Test Conditions

EUT is transmitting with the Hopping function enabled at maximum rate, PSA is on max hold and the span is wide enough to capture two adjacent signals. Two markers are positioned in the peak of each signal and the delta of those two markers is the frequency separation between signals.

Test Setup Photos

Test Data

Result: 500 kHz



FCC 15.247(a) – NUMBER OF HOPPING CHANNELS

Test Equipment

Asset #	Name	Manufacturer	Model	Serial	Cal date	Cal Due
P05747	Attenuator	Pasternack	PE7004-20	NA	4/3/2008	4/3/2010
P05748	Attenuator	Pasternack	PE7004-20	NA	4/3/2008	4/3/2010
P05371	Cable 6'	Belden	RG-214	RG214 49	11/10/2008	11/10/2010
2872	Spectrum Analyzer	Agilent	E4440A	MY46186330	1/31/2008	1/31/2010

Test Conditions

EUT is transmitting with the Hopping function enabled at maximum rate, PSA is on max hold and the span is wide enough to capture all the channels (902-928MHz at least). All the signals within the screen are the number of hopping channels.

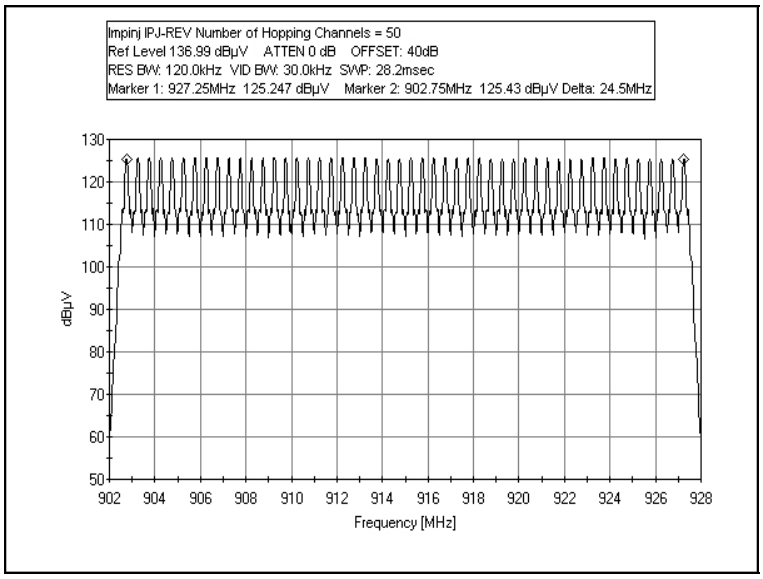
Result: 50 Channels

Notes: The setup included 16 RFID tags coupled to the transmitter to operate with maximum transmitter duty cycle during hopping tests.

Test Setup Photos

Test Data

FCC 15.247(a)(1) - NUMBER OF HOPPING CHANNELS



FCC 15.247(a) – AVERAGE TIME OF OCCUPANCY

Test Equipment

Asset #	Name	Manufacturer	Model	Serial	Cal date	Cal Due
P05747	Attenuator	Pasternack	PE7004-20	NA	4/3/2008	4/3/2010
P05748	Attenuator	Pasternack	PE7004-20	NA	4/3/2008	4/3/2010
P05371	Cable 6'	Belden	RG-214	RG214 49	11/10/2008	11/10/2010
2872	Spectrum Analyzer	Agilent	E4440A	MY46186330	1/31/2008	1/31/2010

Test Conditions

EUT is transmitting with the Hopping function enabled at maximum rate; PSA is on oscilloscope mode (0Hz span) and on max hold. Frequency is centered in a channel and the sweep time long enough to capture the dwell time (500ms). The sweep time is then increased to view the number of hops over a 10 second period. The combination of these measurements yields the total on time per channel over a 10 second period. A total of 10 sets of measurements were taken and the average was calculated to determine the result.

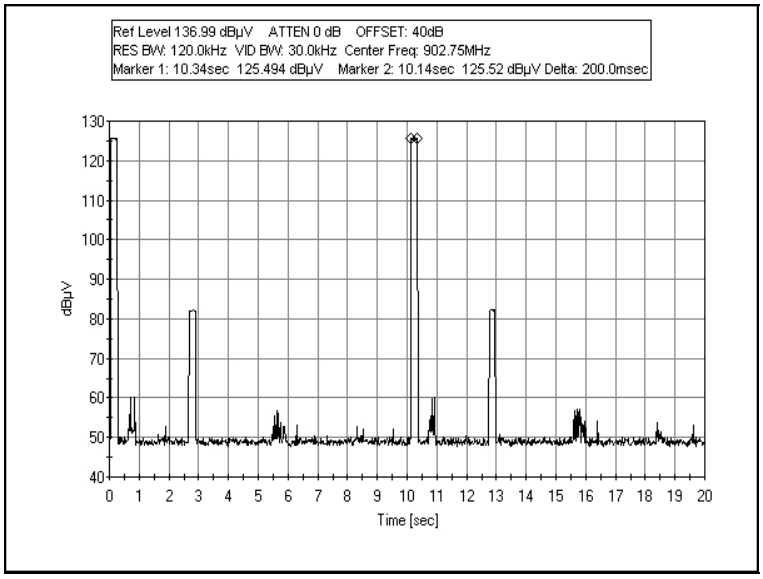
Test Setup Photos

Test Data

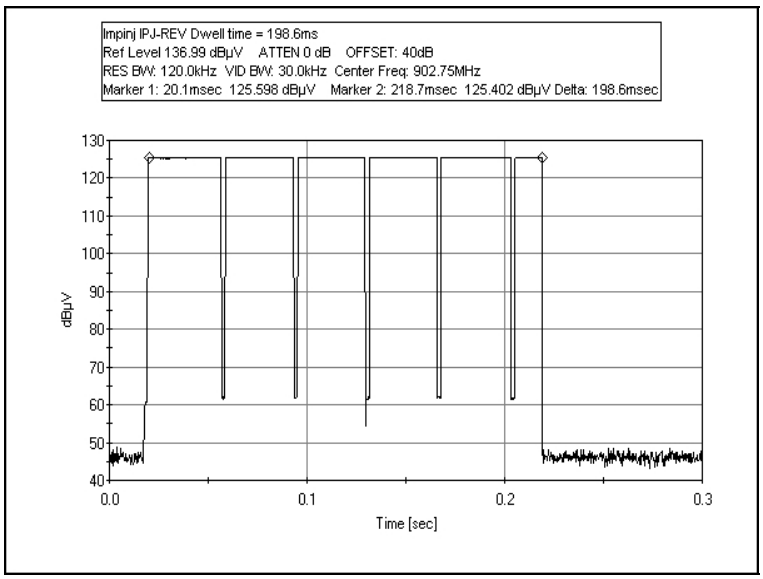
Dwell time per hop	Number of signals in a 20 seconds span	Result	Limit
198.6ms	2	397.2ms	400ms

Notes: 10 measurements were taken to determine the dwell time per hop, and ten measurements were taken to determine how many times the hop would repeat in a 20 seconds interval. Manufacturer declares one operational mode which has occupied bandwidth less than 250 kHz. Therefore, the more stringent requirement was employed.

FCC 15.247(a)(1) - AVERAGE TIME



FCC 15.247(a)(1) - DWELL TIME



FCC 15.247(b) – RF POWER OUTPUT

Test Setup Photos

Test Data

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

Customer: **Impinj Inc**
Specification: **15.247(b)(2) RF power Output**
Work Order #: **89028** Date: 2/9/2009
Test Type: **Radiated Scan** Time: 10:19:06
Equipment: **RFID Reader** Sequence#: 1
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Attenuator		04/03/2008	04/03/2010	5747
Attenuator		04/03/2008	04/03/2010	5748

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

Function	Manufacturer	Model #	S/N
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.
RF Output Power FCC 15.247(b)(2).
The Unit is an RF reader. It is connected directly to the spectrum analyzer.
The EUT will be in transmitting mode throughout the test in the LOW, MEDIUM and HIGH channel.
Remote support computer sends commands to the EUT to exercise the intended functionalities.
Power setting = 30 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 902.75, 915.25 & 927.25

Transducer Legend:

T1=CAB-ANP05371 T2=ATT-ANP05747-040308
T3=ATT-ANP05748-040308

Measurement Data: Reading listed by margin. Test Distance: No Distance

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	927.246M	95.9	+0.5	+20.0	+19.9		+0.0	136.3	137.0 High Channel	-0.7	Condu
2	902.754M	96.0	+0.3	+20.0	+19.9		+0.0	136.2	137.0 Low Channel	-0.8	Condu
3	915.234M	95.9	+0.4	+20.0	+19.9		+0.0	136.2	137.0 Mid Channel	-0.8	Condu

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

Customer: **Impinj Inc**
Specification: **15.247(b)(2) RF power Output**
Work Order #: **89028** Date: 2/9/2009
Test Type: **Radiated Scan** Time: 09:57:17
Equipment: **RFID Reader** Sequence#: 2
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Attenuator		04/03/2008	04/03/2010	5747
Attenuator		04/03/2008	04/03/2010	5748

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

Function	Manufacturer	Model #	S/N
Antenna cable	Manhattan/CDT	M4213	1354 E12091
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696

Test Conditions / Notes:

20C / 26% relative humidity / 102.3 kPa.

RF Output Power FCC 15.247(b)(2)

The Unit is an RF reader. It is connected directly to the spectrum analyzer through
a special cable provided by the customer due to the fact that it will provide the required attenuation
for the unit to comply with the limit in this situation.
The EUT will be in transmitting mode throughout the test in the LOW, MEDIUM and HIGH channel.
Remote support computer sends commands to the EUT to exercise the intended functionalities.
Power setting = 32.5 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 902.75, 915.25 & 927.25

Transducer Legend:

T1=ATT-ANP05747-040308	T2=ATT-ANP05748-040308

Measurement Data: Reading listed by margin. Test Distance: No Distance

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	902.754M	96.3	+20.0	+19.9			+0.0	136.2	137.0 Low Channel	-0.8	Condu
2	915.260M	96.3	+20.0	+19.9			+0.0	136.2	137.0 Mid Channel	-0.8	Condu
3	927.246M	96.1	+20.0	+19.9			+0.0	136.0	137.0 High Channel	-1.0	Condu

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

Customer: **Impinj Inc**
Specification: **15.247(b)(2) RF power Output**
Work Order #: **89028** Date: 2/12/2009
Test Type: **Radiated Scan** Time: 14:11:16
Equipment: **RFID Reader** Sequence#: 3
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Attenuator		04/03/2008	04/03/2010	5747
Attenuator		04/03/2008	04/03/2010	5748

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

Function	Manufacturer	Model #	S/N
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696
Switch POE	NETGEAR	FS108P	1DL1863H0073E

Test Conditions / Notes:

20C / 26% relative humidity / 102.3 kPa.

RF Output Power FCC 15.247(b)(2)

The Unit is an RF reader. It is connected directly to the spectrum analyzer through
a special cable provided by the customer due to the fact that it will provide the required attenuation
for the unit to comply with the limit in this situation.
The EUT will be in transmitting mode throughout the test in the LOW, MEDIUM and HIGH channel.
Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 30.0dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 902.75, 915.25 & 927.25

Transducer Legend:

T1=CAB-ANP05371 T2=ATT-ANP05747-040308
T3=ATT-ANP05748-040308

Measurement Data: Reading listed by margin. Test Distance: No Distance

#	Freq	Rdng	T1	T2	T3		Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	927.250M	96.3	+0.5	+20.0	+19.9		+0.0	136.7	137.0	-0.3	Condu
							179		100% Power HIGH		101
2	915.250M	96.3	+0.4	+20.0	+19.9		+0.0	136.6	137.0	-0.4	Condu
							179		100% Power MID		101
3	902.750M	96.3	+0.3	+20.0	+19.9		+0.0	136.5	137.0	-0.5	Condu
							179		100% Power LOW		101

FCC 15.247(d) – ANTENNA CONDUCTED SPURIOUS EMISSIONS

Test Setup Photos

Test Data Sheets

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

Customer: **Impinj Inc**
Specification: **FCC 15.247(d) Conducted**
Work Order #: **89028** Date: 2/9/2009
Test Type: **Radiated Scan** Time: 17:18:53
Equipment: **RFID Reader** Sequence#: 6
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872
Attenuator		04/03/2008	04/03/2010	05747
Attenuator	9912	03/21/2008	03/21/2010	ANP05503
Cable 6'	RG214 49	11/10/2008	11/10/2010	P05371

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

Function	Manufacturer	Model #	S/N
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Conducted Spurious Emissions per FCC 15.247(d).

The Unit is an RF reader. The measurements will be taken from the RF port.
The EUT will be in transmitting mode throughout the test in the LOW channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 30.0 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 902.75MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=CAB-ANP05371	T2=ATT-ANP05747-040308
T3=ATT-ANP5503-032108	

Measurement Data: Reading listed by margin. Test Distance: No Distance

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	902.750M	104.1	+0.3	+20.0	+10.1		+0.0 360	134.5	137.0	-2.5	Condu 157
2	3992.000M	45.6	+0.0	+20.0	+10.2		+0.0 360	75.8	117.0	-41.2	Condu 157
3	3128.000M	44.5	+0.0	+20.0	+10.2		+0.0 360	74.7	117.0	-42.3	Condu 157
4	12400.000 M	54.2	+0.0	+20.1	+0.0		+0.0 360	74.3	117.0	-42.7	Condu 157
5	16216.000 M	48.5	+0.0	+20.3	+0.0		+0.0 360	68.8	117.0	-48.2	Condu 157
6	14845.000 M	48.3	+0.0	+20.3	+0.0		+0.0 360	68.6	117.0	-48.4	Condu 157
7	7300.000M	46.2	+0.0	+20.0	+0.0		+0.0 360	66.2	117.0	-50.8	Condu 157
8	778.500M	32.6	+0.5	+20.0	+10.1		+0.0 360	63.2	117.0	-53.8	Condu 157
9	581.000M	31.2	+0.4	+20.0	+10.1		+0.0 360	61.7	117.0	-55.3	Condu 157
10	187.200M	23.8	+0.2	+20.0	+10.1		+0.0 360	54.1	117.0	-62.9	Condu 157
11	270.800M	23.5	+0.3	+20.0	+10.1		+0.0 360	53.9	117.0	-63.1	Condu 157
12	57.020M	19.6	+0.1	+20.0	+10.0		+0.0 360	49.7	117.0	-67.3	Condu 157
13	999.995k	14.1	+0.0	+20.0	+10.1		+0.0 360	44.2	117.0	-72.8	Condu 157
14	1.319M	12.3	+0.0	+20.0	+10.1		+0.0 360	42.4	117.0	-74.6	Condu 157
15	12.194M	11.7	+0.1	+20.0	+10.0		+0.0 360	41.8	117.0	-75.2	Condu 157
16	10.902k	6.8	+0.0	+20.0	+10.1		+0.0 360	36.9	117.0	-80.1	Condu 157
17	44.567k	3.0	+0.0	+20.0	+10.1		+0.0 360	33.1	117.0	-83.9	Condu 157

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

Customer: **Impinj Inc**
Specification: **FCC 15.247(d) Conducted**
Work Order #: **89028** Date: 2/9/2009
Test Type: **Radiated Scan** Time: 17:12:46
Equipment: **RFID Reader** Sequence#: 5
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872
Attenuator	NA	04/03/2008	04/03/2010	05747
Attenuator	9912	03/21/2008	03/21/2010	ANP05503
Cable 6'	RG214 49	11/10/2008	11/10/2010	P05371
Cable	NA	12/2/2008	12/2/2010	03121

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

Function	Manufacturer	Model #	S/N
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Conducted Spurious Emissions per FCC 15.247(d).

The Unit is an RF reader. The measurements will be taken from the RF port.
The EUT will be in transmitting mode throughout the test in the MID channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 30.0 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 927.25MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=CAB-ANP05371	T2=CAB-ANP03121-120208
T3=ATT-ANP05747-040308	T4=ATT-ANP5503-032108

Measurement Data: Reading listed by margin. Test Distance: No Distance

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	915.250M	104.1	+0.4	+0.0	+20.0	+10.1	+0.0 360	134.6	137.0	-2.4	Condu 157
2	2746.000M	46.2	+0.0	+1.4	+20.1	+10.2	+0.0 360	77.9	117.0	-39.1	Condu 157
3	4564.000M	52.5	+0.0	+2.0	+20.0	+0.0	+0.0 360	74.5	117.0	-42.5	Condu 157
4	16174.000 M	50.1	+0.0	+2.9	+20.3	+0.0	+0.0 360	73.3	117.0	-43.7	Condu 157
5	7930.000M	46.8	+0.0	+2.5	+20.0	+0.0	+0.0 360	69.3	117.0	-47.7	Condu 157
6	12484.000 M	45.2	+0.0	+3.1	+20.2	+0.0	+0.0 360	68.5	117.0	-48.5	Condu 157
7	431.200M	24.0	+0.5	+0.0	+20.0	+10.1	+0.0 360	54.6	117.0	-62.4	Condu 157
8	333.000M	23.9	+0.3	+0.0	+20.0	+10.1	+0.0 360	54.3	117.0	-62.7	Condu 157
9	216.000M	23.5	+0.3	+0.0	+20.0	+10.1	+0.0 360	53.9	117.0	-63.1	Condu 157
10	113.500M	23.4	+0.3	+0.0	+20.0	+10.1	+0.0 360	53.8	117.0	-63.2	Condu 157
11	52.890M	23.2	+0.1	+0.0	+20.0	+10.0	+0.0 360	53.3	117.0	-63.7	Condu 157
12	186.100k	18.4	+0.0	+0.0	+20.0	+10.1	+0.0 360	48.5	117.0	-68.5	Condu 157
13	135.000k	18.2	+0.0	+0.0	+20.0	+10.1	+0.0 360	48.3	117.0	-68.7	Condu 157
14	2.305M	13.5	+0.1	+0.0	+20.0	+10.1	+0.0 360	43.7	117.0	-73.3	Condu 157
15	10.811k	6.6	+0.0	+0.0	+20.0	+10.1	+0.0 360	36.7	117.0	-80.3	Condu 157
16	32.166k	-0.8	+0.0	+0.0	+20.0	+10.1	+0.0 360	29.3	117.0	-87.7	Condu 157

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

Customer: **Impinj Inc**
Specification: **FCC 15.247(d) Conducted**
Work Order #: **89028** Date: 2/9/2009
Test Type: **Radiated Scan** Time: 17:08:28
Equipment: **RFID Reader** Sequence#: 4
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872
Attenuator		04/03/2008	04/03/2010	05747
Attenuator	9912	03/21/2008	03/21/2010	ANP05503
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03121

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

Function	Manufacturer	Model #	S/N
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Conducted Spurious Emissions per FCC 15.247(d).

The Unit is an RF reader. The measurements will be taken from the RF port.
The EUT will be in transmitting mode throughout the test in the HIGH channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 30.0 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 927.25MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=CAB-ANP05371	T2=CAB-ANP03121-120208
T3=ATT-ANP05747-040308	T4=ATT-ANP5503-032108

Measurement Data: Reading listed by margin. Test Distance: No Distance

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	927.250M	104.1	+0.5	+0.0	+20.0	+10.1	+0.0 360	134.7	137.0	-2.3	Condu 157
2	2724.000M	53.6	+0.0	+1.4	+20.1	+10.1	+0.0 360	85.2	117.0	-31.8	Condu 157
3	3156.000M	45.2	+0.0	+1.6	+20.1	+10.2	+0.0 360	77.1	117.0	-39.9	Condu 157
4	14235.000 M	49.0	+0.0	+3.3	+20.1	+0.0	+0.0 360	72.4	117.0	-44.6	Condu 157
5	16160.000 M	48.9	+0.0	+2.9	+20.3	+0.0	+0.0 360	72.1	117.0	-44.9	Condu 157
6	7020.000M	46.7	+0.0	+2.2	+20.0	+0.0	+0.0 360	68.9	117.0	-48.1	Condu 157
7	972.400M	34.0	+0.5	+0.0	+20.0	+10.0	+0.0 360	64.5	117.0	-52.5	Condu 157
8	212.500M	33.9	+0.3	+0.0	+20.0	+10.1	+0.0 360	64.3	117.0	-52.7	Condu 157
9	113.800M	33.4	+0.3	+0.0	+20.0	+10.1	+0.0 360	63.8	117.0	-53.2	Condu 157
10	68.010M	32.5	+0.2	+0.0	+20.0	+10.0	+0.0 360	62.7	117.0	-54.3	Condu 157
11	1.870M	23.0	+0.1	+0.0	+20.0	+10.1	+0.0 360	53.2	117.0	-63.8	Condu 157
12	114.600k	17.9	+0.0	+0.0	+20.0	+10.1	+0.0 360	48.0	117.0	-69.0	Condu 157
13	12.546k	8.3	+0.0	+0.0	+20.0	+10.1	+0.0 360	38.4	117.0	-78.6	Condu 157
14	58.599k	1.5	+0.0	+0.0	+20.0	+10.1	+0.0 360	31.6	117.0	-85.4	Condu 157

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

Customer: **Impinj Inc**
Specification: **FCC 15.247(d) Conducted**
Work Order #: **89028** Date: 2/9/2009
Test Type: **Radiated Scan** Time: 16:36:30
Equipment: **RFID Reader** Sequence#: 1
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872
Attenuator		04/03/2008	04/03/2010	05747
Attenuator	9912	03/21/2008	03/21/2010	ANP05503

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

Function	Manufacturer	Model #	S/N
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB
Antenna cable	Manhattan/CDT	M4213	1354 E12091

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Conducted Spurious Emissions per FCC 15.247(d).

The Unit is an RF reader. It will be connected to the PSA through a special cable provided by the customer.
The EUT will be in transmitting mode throughout the test in the LOW channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 32.5 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 902.75MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=ATT-ANP05747-040308	T2=ATT-ANP5503-032108

Measurement Data: Reading listed by margin. Test Distance: No Distance

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	903.000M	104.5	+20.0	+10.1			+0.0 360	134.6	137.0	-2.4	Condu 157
2	1798.000M	39.3	+20.0	+10.2			+0.0 360	69.5	117.0	-47.5	Condu 157
3	2710.000M	37.4	+20.1	+10.1			+0.0 360	67.6	117.0	-49.4	Condu 157
4	10842.000 M	42.1	+20.1	+0.0			+0.0 360	62.2	117.0	-54.8	Condu 157
5	15003.000 M	39.0	+20.3	+0.0			+0.0 360	59.3	117.0	-57.7	Condu 157
6	13198.000 M	37.9	+20.1	+0.0			+0.0 360	58.0	117.0	-59.0	Condu 157
7	7289.000M	36.9	+20.0	+0.0			+0.0 360	56.9	117.0	-60.1	Condu 157
8	450.000M	25.6	+20.0	+10.1			+0.0 360	55.7	117.0	-61.3	Condu 157
9	10348.000 M	35.4	+20.0	+0.0			+0.0 360	55.4	117.0	-61.6	Condu 157
10	602.300M	24.2	+20.0	+10.1			+0.0 360	54.3	117.0	-62.7	Condu 157
11	5313.000M	34.2	+20.0	+0.0			+0.0 360	54.2	117.0	-62.8	Condu 157
12	82.400M	23.8	+20.0	+10.1			+0.0 360	53.9	117.0	-63.1	Condu 157
13	129.900k	16.9	+20.0	+10.1			+0.0 360	47.0	117.0	-70.0	Condu 157
14	1.002M	13.4	+20.0	+10.1			+0.0 360	43.5	117.0	-73.5	Condu 157
15	17.562M	12.7	+20.0	+10.1			+0.0 360	42.8	117.0	-74.2	Condu 157
16	7.246M	12.1	+20.0	+10.1			+0.0 360	42.2	117.0	-74.8	Condu 157
17	16.784M	10.9	+20.0	+10.1			+0.0 360	41.0	117.0	-76.0	Condu 157
18	22.313k	3.8	+20.0	+10.1			+0.0 360	33.9	117.0	-83.1	Condu 157
19	77.627k	2.7	+20.0	+10.1			+0.0 360	32.8	117.0	-84.2	Condu 157
20	9.076k	8.5	+0.0	+0.0			+0.0 360	8.5	117.0	-108.5	Condu 157

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

Customer: **Impinj Inc**
Specification: **FCC 15.247(d) Conducted**
Work Order #: **89028** Date: 2/9/2009
Test Type: **Radiated Scan** Time: 16:47:27
Equipment: **RFID Reader** Sequence#: 2
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872
Attenuator		04/03/2008	04/03/2010	05747
Attenuator	9912	03/21/2008	03/21/2010	ANP05503

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

Function	Manufacturer	Model #	S/N
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB
Antenna cable	Manhattan/CDT	M4213	1354 E12091

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Conducted Spurious Emissions per FCC 15.247(d).

The Unit is an RF reader. It will be connected to the PSA through a special cable provided by the customer.
The EUT will be in transmitting mode throughout the test in the MID channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 32.5 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 915.25MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=ATT-ANP05747-040308	T2=ATT-ANP5503-032108

Measurement Data: Reading listed by margin. Test Distance: No Distance

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	915.251M	104.9	+20.0	+10.1			+0.0 360	135.0	137.0	-2.0	Condu 157
2	2744.000M	41.5	+20.1	+10.1			+0.0 360	71.7	117.0	-45.3	Condu 157
3	1832.000M	39.5	+20.0	+10.2			+0.0 360	69.7	117.0	-47.3	Condu 157
4	13665.000 M	38.9	+20.1	+0.0			+0.0 360	59.0	117.0	-58.0	Condu 157
5	17415.000 M	38.4	+20.3	+0.0			+0.0 360	58.7	117.0	-58.3	Condu 157
6	16220.000 M	38.3	+20.3	+0.0			+0.0 360	58.6	117.0	-58.4	Condu 157
7	7700.000M	36.9	+20.0	+0.0			+0.0 360	56.9	117.0	-60.1	Condu 157
8	11895.000 M	35.9	+20.1	+0.0			+0.0 360	56.0	117.0	-61.0	Condu 157
9	837.800M	25.2	+20.0	+10.1			+0.0 360	55.3	117.0	-61.7	Condu 157
10	7005.000M	35.2	+20.0	+0.0			+0.0 360	55.2	117.0	-61.8	Condu 157
11	442.300M	24.6	+20.0	+10.1			+0.0 360	54.7	117.0	-62.3	Condu 157
12	241.200M	24.6	+20.0	+10.1			+0.0 360	54.7	117.0	-62.3	Condu 157
13	571.300M	24.2	+20.0	+10.1			+0.0 360	54.3	117.0	-62.7	Condu 157
14	312.200M	23.9	+20.0	+10.1			+0.0 360	54.0	117.0	-63.0	Condu 157
15	633.200M	23.4	+20.0	+10.1			+0.0 360	53.5	117.0	-63.5	Condu 157
16	125.400M	23.0	+20.0	+10.1			+0.0 360	53.1	117.0	-63.9	Condu 157
17	138.800k	17.1	+20.0	+10.1			+0.0 360	47.2	117.0	-69.8	Condu 157
18	545.400k	14.9	+20.0	+10.1			+0.0 360	45.0	117.0	-72.0	Condu 157
19	2.653M	13.1	+20.0	+10.1			+0.0 360	43.2	117.0	-73.8	Condu 157
20	20.778M	11.3	+20.0	+10.1			+0.0 360	41.4	117.0	-75.6	Condu 157
21	11.267k	6.1	+20.0	+10.1			+0.0 360	36.2	117.0	-80.8	Condu 157

22	15.102k	5.8	+20.0	+10.1		+0.0 360	35.9	117.0	-81.1	Condu 157
23	73.714k	3.2	+20.0	+10.1		+0.0 360	33.3	117.0	-83.7	Condu 157

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

Customer: **Impinj Inc**
Specification: **FCC 15.247(d) Conducted**
Work Order #: **89028** Date: 2/9/2009
Test Type: **Radiated Scan** Time: 16:54:28
Equipment: **RFID Reader** Sequence#: 3
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872
Attenuator		04/03/2008	04/03/2010	05747
Attenuator	9912	03/21/2008	03/21/2010	ANP05503

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

Function	Manufacturer	Model #	S/N
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB
Antenna cable	Manhattan/CDT	M4213	1354 E12091

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Conducted Spurious Emissions per FCC 15.247(d).

The Unit is an RF reader. It will be connected to the PSA through a special cable provided by the customer.
The EUT will be in transmitting mode throughout the test in the HIGH channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 32.5 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 927.25MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=ATT-ANP05747-040308	T2=ATT-ANP5503-032108

Measurement Data: Reading listed by margin. Test Distance: No Distance

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	927.249M	104.3	+20.0	+10.1			+0.0 360	134.4	137.0	-2.6	Condu 157
2	3980.000M	55.5	+20.0	+10.2			+0.0 360	85.7	117.0	-31.3	Condu 157
3	15728.000 M	58.6	+20.4	+0.0			+0.0 360	79.0	117.0	-38.0	Condu 157
4	14155.000 M	58.8	+20.1	+0.0			+0.0 360	78.9	117.0	-38.1	Condu 157
5	7155.000M	57.1	+20.0	+0.0			+0.0 360	77.1	117.0	-39.9	Condu 157
6	432.700M	24.6	+20.0	+10.1			+0.0 360	54.7	117.0	-62.3	Condu 157
7	130.700M	24.1	+20.0	+10.1			+0.0 360	54.2	117.0	-62.8	Condu 157
8	226.000M	23.9	+20.0	+10.1			+0.0 360	54.0	117.0	-63.0	Condu 157
9	78.090M	23.6	+20.0	+10.1			+0.0 360	53.7	117.0	-63.3	Condu 157
10	124.800k	19.4	+20.0	+10.1			+0.0 360	49.5	117.0	-67.5	Condu 157
11	2.566M	12.4	+20.0	+10.1			+0.0 360	42.5	117.0	-74.5	Condu 157
12	21.010M	12.1	+20.0	+10.1			+0.0 360	42.2	117.0	-74.8	Condu 157
13	12.272k	6.7	+20.0	+10.1			+0.0 360	36.8	117.0	-80.2	Condu 157
14	43.929k	0.9	+20.0	+10.1			+0.0 360	31.0	117.0	-86.0	Condu 157

FCC 15.247(d) – OATS RADIATED SPURIOUS EMISSIONS

Test Setup Photos

Test Data Sheets

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

Customer: **Impinj Inc**
Specification: **FCC 15.247/15.209**
Work Order #: **89028** Date: 2/11/2009
Test Type: **Radiated Scan** Time: 10:37:19
Equipment: **RFID Reader** Sequence#: 1
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Mag Loop	2156	06/04/2008	06/04/2010	AN00052
Antenna	2453	12/22/2008	12/22/2010	AN01994
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
Horn Antenna, Active 18-26GHz	1114018	11/13/2008	11/13/2010	2742
Heliax cable	N/A	07/22/2008	07/22/2010	AN05545
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03123
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03122
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03121
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Pasternack Coax		07/20/2007	07/20/2009	AN05425
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271
Filter	2	05/01/2008	05/01/2010	2750
Filter	311SH10-3000/T10000-0/0	12/02/2008	12/02/2010	3116
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872

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

Function	Manufacturer	Model #	S/N
Circular patch antenna	Cushcraft	S90289CLJ	092436
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB
Antenna cable	Manhattan/CDT	M4213	1354 E12091

Support Devices:

Function	Manufacturer	Model #	S/N
Wireless G Router	Belkin	F5D7230-4	2028723009696
Laptop Computer	Dell	Latitude	6497402833

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Radiated Spurious Emissions per FCC 15.247(d).

The Unit is an RF reader. It is located in the back edge of the test table.
All its ports are being exercised. It is being powered by the AC/DC converter.
It is connected to a laptop outside the chamber through a shielded ethernet cable.
The antenna is suspended 10cm above the wooden table with styrofoam.
The EUT will be in transmitting mode throughout the test in the LOW channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 32.5 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 902.75MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=ANT- AN00052-06042008	T2=ANT-AN01412-111207
T3=ANT AN01994 25-1000MHz	T4=CAB-ANP05360
T5=CAB-ANP05361	T6=CAB-ANP05366
T7=CAB-ANP05371	T8=CAB-ANP03121-120208
T9=CAB-ANP03123-120208	T10=CAB-ANP05545-072208
T11=Filter 1GHz HP AN02750	T12=FIL-AN03116-120208
T13=AMP-AN01517-070808	T14=AMP-AN01271-100207 - .5-26.5 GHz

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

#	Freq	Rdng	T1 T5 T9 T13	T2 T6 T10 T14	T3 T7 T11	T4 T8 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	7222.023M	39.7	+0.0	+36.3	+0.0	+0.0	+0.0	49.8	54.0	-4.2	Vert
	Ave		+0.0	+0.0	+0.0	+2.3	337				109
			+1.1	+4.7	+0.0	+0.4					
			+0.0	-34.7							
^	7222.023M	47.4	+0.0	+36.3	+0.0	+0.0	+0.0	57.5	54.0	+3.5	Vert
			+0.0	+0.0	+0.0	+2.3	337				109
			+1.1	+4.7	+0.0	+0.4					
			+0.0	-34.7							
3	5.902M	15.3	+9.9	+0.0	+0.0	+0.2	+0.0	25.7	30.0	-4.3	90deg
	Ambient		+0.0	+0.2	+0.1	+0.0	175		Noisefloor		100
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
4	15544.000 M	30.6	+0.0	+38.6	+0.0	+0.0	+0.0	49.6	54.0	-4.4	Vert
			+0.0	+0.0	+0.0	+3.4					
	Ambient		+1.4	+7.3	+0.0	+0.5	180		Noisefloor		112
			+0.0	-32.2							

5	100.040M	55.6	+0.0	+0.0	+10.2	+0.6	+0.0	38.2	44.0	-5.8	Vert
			+0.1	+0.6	+0.2	+0.0	360				99
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							
6	9027.462M	32.5	+0.0	+38.9	+0.0	+0.0	+0.0	48.1	54.0	-5.9	Vert
	Ave		+0.0	+0.0	+0.0	+3.1	360				130
			+1.6	+5.3	+0.0	+0.5					
			+0.0	-33.8							
^	9027.462M	38.8	+0.0	+38.9	+0.0	+0.0	+0.0	54.4	54.0	+0.4	Vert
			+0.0	+0.0	+0.0	+3.1	360				130
			+1.6	+5.3	+0.0	+0.5					
			+0.0	-33.8							
8	1805.493M	17.0	+0.0	+26.5	+0.0	+0.0	+0.0	47.7	54.0	-6.3	Vert
	Ave		+0.0	+0.0	+0.0	+1.1	180				126
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							
^	1805.493M	22.7	+0.0	+26.5	+0.0	+0.0	+0.0	53.4	54.0	-0.6	Vert
			+0.0	+0.0	+0.0	+1.1	180				126
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							
10	16.899M	12.6	+8.5	+0.0	+0.0	+0.3	+0.0	21.9	30.0	-8.1	180de
	Ambient		+0.0	+0.3	+0.2	+0.0	287		Noisefloor		100
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
11	102.551M	53.0	+0.0	+0.0	+10.4	+0.6	+0.0	35.8	44.0	-8.2	Horiz
			+0.1	+0.6	+0.2	+0.0	308				150
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							
12	802.640M	39.9	+0.0	+0.0	+22.5	+1.9	+0.0	37.7	46.0	-8.3	Vert
			+0.4	+2.0	+0.5	+0.0	248				150
			+0.0	+0.0	+0.0	+0.0					
			-29.5	+0.0							
13	918.890M	37.8	+0.0	+0.0	+23.4	+1.9	+0.0	36.7	46.0	-9.3	Vert
			+0.5	+2.0	+0.4	+0.0	180				150
			+0.0	+0.0	+0.0	+0.0					
			-29.3	+0.0							
14	481.100M	44.6	+0.0	+0.0	+17.8	+1.4	+0.0	36.5	46.0	-9.5	Horiz
			+0.3	+1.6	+0.3	+0.0	284				151
			+0.0	+0.0	+0.0	+0.0					
			-29.5	+0.0							
15	17500.000 M	20.8	+0.0	+42.4	+0.0	+0.0	+0.0	44.0	54.0	-10.0	Vert
			+0.0	+0.0	+0.0	+3.4					
	Ambient		+1.6	+8.2	+0.0	+0.6	352		Noisefloor		112
			+0.0	-33.0							
16	800.200M	38.1	+0.0	+0.0	+22.5	+1.9	+0.0	35.9	46.0	-10.1	Horiz
			+0.4	+2.0	+0.5	+0.0	164				151
			+0.0	+0.0	+0.0	+0.0					
			-29.5	+0.0							
17	16.903M	9.7	+8.5	+0.0	+0.0	+0.3	+0.0	19.0	30.0	-11.0	90deg
	Ambient		+0.0	+0.3	+0.2	+0.0	199		Noisefloor		100
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							

18	5416.584M Ave	32.7	+0.0 +0.0 +1.0 +0.0	+34.5 +0.0 +3.9 -33.1	+0.0 +0.0 +0.0	+0.0 +2.3 +0.5	+0.0 352	41.8	54.0	-12.2	Vert 112
^	5416.584M	39.9	+0.0 +0.0 +1.0 +0.0	+34.5 +0.0 +3.9 -33.1	+0.0 +0.0 +0.0	+0.0 +2.3 +0.5	+0.0 352	49.0	54.0	-5.0	Vert 112
20	24.300M Ambient	9.4	+6.8 +0.0 +0.0 +0.0	+0.0 +0.3 +0.0 +0.0	+0.0 +0.2 +0.0	+0.3 +0.0 +0.0	+0.0 200	17.0	30.0 Noisefloor	-13.0	180de 100
21	11483.010 M Ambient	34.6	+0.0 +0.0 +1.5 +0.0	+39.1 +0.0 +5.8 -43.3	+0.0 +0.0 +0.0	+0.0 +2.9 +0.4	+0.0 231	41.0	54.0 Noisefloor	-13.0	Horiz 99
22	5416.471M Ave	31.0	+0.0 +0.0 +1.0 +0.0	+34.5 +0.0 +3.9 -33.1	+0.0 +0.0 +0.0	+0.0 +2.3 +0.5	+0.0 336	40.1	54.0	-13.9	Horiz 111
^	5416.471M	37.2	+0.0 +0.0 +1.0 +0.0	+34.5 +0.0 +3.9 -33.1	+0.0 +0.0 +0.0	+0.0 +2.3 +0.5	+0.0 336	46.3	54.0	-7.7	Horiz 111
24	7222.100M Ave	30.0	+0.0 +0.0 +1.1 +0.0	+36.3 +0.0 +4.7 -34.7	+0.0 +0.0 +0.0	+0.0 +2.3 +0.4	+0.0 352	40.1	54.0	-13.9	Horiz 99
^	7222.100M	40.3	+0.0 +0.0 +1.1 +0.0	+36.3 +0.0 +4.7 -34.7	+0.0 +0.0 +0.0	+0.0 +2.3 +0.4	+0.0 352	50.4	54.0	-3.6	Horiz 99
26	9027.463M Ave	24.4	+0.0 +0.0 +1.6 +0.0	+38.9 +0.0 +5.3 -33.8	+0.0 +0.0 +0.0	+0.0 +3.1 +0.5	+0.0	40.0	54.0	-14.0	Horiz 99
^	9027.463M	36.0	+0.0 +0.0 +1.6 +0.0	+38.9 +0.0 +5.3 -33.8	+0.0 +0.0 +0.0	+0.0 +3.1 +0.5	+0.0	51.6	54.0	-2.4	Horiz 99
28	160.280k	73.3	+10.0 +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	-80.0 199	3.3	23.8	-20.5	180de 100
29	972.925M Ambient	31.6	+0.0 +0.5 +0.0 -29.1	+0.0 +2.2 +0.0 +0.0	+24.1 +0.5 +0.0	+1.8 +0.0 +0.0	+0.0 360	31.6	54.0 Noisefloor	-22.4	Horiz 151
30	640.500k	38.1	+9.9 +0.0 +0.0 +0.0	+0.0 +0.0 +0.0 +0.0	+0.0 +0.1 +0.0	+0.1 +0.0 +0.0	-40.0 200	8.2	31.6	-23.4	180de 100

31	319.370k	62.6	+9.9 +0.0 +0.0 +0.0	+0.0 +0.0 +0.0 +0.0	+0.0 +0.1 +0.0	+0.1 +0.0 +0.0	-80.0 175	-7.3	17.7	-25.0	90deg 100
32	101.900k	67.4	+10.0 +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	-80.0 175	-2.6	27.8	-30.4	90deg 100
33	15.755k	67.8	+14.2 +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	-80.0 174	2.0	44.1	-42.1	90deg 100
34	12.006k	65.7	+15.6 +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	-80.0 174	1.3	46.5	-45.2	90deg 100
35	23.030k	60.2	+12.4 +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	-80.0 199	-7.4	40.8	-48.2	180de 100
36	11.982k	59.5	+15.6 +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	-80.0 187	-4.9	46.5	-51.4	180de 100

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

Customer: **Impinj Inc**
Specification: **FCC 15.247/15.209**
Work Order #: **89028** Date: 2/11/2009
Test Type: **Radiated Scan** Time: 13:36:09
Equipment: **RFID Reader** Sequence#: 6
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Mag Loop	2156	06/04/2008	06/04/2010	AN00052
Antenna	2453	12/22/2008	12/22/2010	AN01994
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
Horn Antenna, Active 18-26GHz	1114018	11/13/2008	11/13/2010	2742
Heliax cable	N/A	07/22/2008	07/22/2010	AN05545
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03123
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03122
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03121
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Pasternack Coax		07/20/2007	07/20/2009	AN05425
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271
Filter	2	05/01/2008	05/01/2010	2750
Filter	311SH10-3000/T10000-0/0	12/02/2008	12/02/2010	3116
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872

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

Function	Manufacturer	Model #	S/N
Circular patch antenna	Cushcraft	S90289CLJ	092436
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Radiated Spurious Emissions per FCC 15.247(d)

The Unit is an RF reader. It is located in the back edge of the test table.
All its ports are being exercised. It is being powered by the AC/DC converter
It is connected to a laptop outside the chamber through a shielded ethernet cable.
The antenna is suspended 10cm above the wooden table with styrofoam.
The EUT will be in transmitting mode throughout the test in the LOW channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 30.0 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 902.75MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=ANT- AN00052-06042008	T2=ANT-AN01412-111207
T3=ANT AN01994 25-1000MHz	T4=CAB-ANP05360
T5=CAB-ANP05361	T6=CAB-ANP05366
T7=CAB-ANP05371	T8=CAB-ANP03121-120208
T9=CAB-ANP03123-120208	T10=CAB-ANP05545-072208
T11=Filter 1GHz HP AN02750	T12=FIL-AN03116-120208
T13=AMP-AN01517-070808	T14=AMP-AN01271-100207 - .5-26.5 GHz

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

#	Freq	Rdng	T1 T5 T9 T13	T2 T6 T10 T14	T3 T7 T11	T4 T8 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	17152.010	32.0	+0.0	+40.8	+0.0	+0.0	+0.0	53.0	54.0	-1.0	Vert
	M		+0.0	+0.0	+0.0	+3.4					
	Ambient		+1.2	+8.0	+0.0	+0.4	42		NOISEFLOOR		119
			+0.0	-32.8							
2	1947.000M	20.7	+0.0	+27.2	+0.0	+0.0	+0.0	52.0	54.0	-2.0	Vert
	Ambient		+0.0	+0.0	+0.0	+1.1	205		NOISEFLOOR		115
			+0.4	+2.3	+0.3	+0.0					
			+0.0	+0.0							
3	1947.000M	20.1	+0.0	+27.2	+0.0	+0.0	+0.0	51.4	54.0	-2.6	Horiz
	Ambient		+0.0	+0.0	+0.0	+1.1	205		NOISEFLOOR		115
			+0.4	+2.3	+0.3	+0.0					
			+0.0	+0.0							
4	15346.530	31.6	+0.0	+39.1	+0.0	+0.0	+0.0	50.2	54.0	-3.8	Horiz
	M		+0.0	+0.0	+0.0	+3.2					
	Ambient		+1.2	+7.2	+0.0	+0.4	251		NOISEFLOOR		125
			+0.0	-32.5							

5	18.313M	15.8	+8.4	+0.0	+0.0	+0.3	+0.0	25.0	30.0	-5.0	180de
			+0.0	+0.3	+0.2	+0.0	205				160
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
6	100.065M	56.0	+0.0	+0.0	+10.2	+0.6	+0.0	38.6	44.0	-5.4	Vert
			+0.1	+0.6	+0.2	+0.0	360				111
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							
7	802.445M	42.2	+0.0	+0.0	+22.5	+1.9	+0.0	40.0	46.0	-6.0	Vert
			+0.4	+2.0	+0.5	+0.0	360				111
			+0.0	+0.0	+0.0	+0.0					
			-29.5	+0.0							
8	13.093M	14.2	+8.9	+0.0	+0.0	+0.2	+0.0	23.6	30.0	-6.4	180de
			+0.0	+0.2	+0.1	+0.0	205				160
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
9	102.660M	54.6	+0.0	+0.0	+10.4	+0.6	+0.0	37.4	44.0	-6.6	Horiz
			+0.1	+0.6	+0.2	+0.0	360				160
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							
10	9027.590M	30.5	+0.0	+38.9	+0.0	+0.0	+0.0	46.1	54.0	-7.9	Vert
	Ave		+0.0	+0.0	+0.0	+3.1	42				119
			+1.6	+5.3	+0.0	+0.5					
			+0.0	-33.8							
^	9027.590M	38.2	+0.0	+38.9	+0.0	+0.0	+0.0	53.8	54.0	-0.2	Vert
			+0.0	+0.0	+0.0	+3.1	42				119
			+1.6	+5.3	+0.0	+0.5					
			+0.0	-33.8							
12	24.900M	14.5	+6.6	+0.0	+0.0	+0.3	+0.0	21.9	30.0	-8.1	90deg
	Ambient		+0.0	+0.3	+0.2	+0.0	168		NOISEFLOOR		160
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
13	799.850M	39.2	+0.0	+0.0	+22.5	+1.9	+0.0	37.0	46.0	-9.0	Horiz
			+0.4	+2.0	+0.5	+0.0	360				160
			+0.0	+0.0	+0.0	+0.0					
			-29.5	+0.0							
14	10832.880	31.6	+0.0	+38.6	+0.0	+0.0	+0.0	44.8	54.0	-9.2	Horiz
	M		+0.0	+0.0	+0.0	+2.8					
	Ambient		+1.2	+5.6	+0.0	+0.1	251		NOISEFLOOR		125
			+0.0	-35.1							
15	7222.001M	33.8	+0.0	+36.3	+0.0	+0.0	+0.0	43.9	54.0	-10.1	Vert
			+0.0	+0.0	+0.0	+2.3	156				119
			+1.1	+4.7	+0.0	+0.4					
			+0.0	-34.7							
16	455.580M	43.6	+0.0	+0.0	+17.3	+1.6	+0.0	35.6	46.0	-10.4	Horiz
			+0.3	+1.6	+0.5	+0.0	360				160
			+0.0	+0.0	+0.0	+0.0					
			-29.3	+0.0							
17	913.150M	35.6	+0.0	+0.0	+23.3	+1.9	+0.0	34.4	46.0	-11.6	Vert
	Ambient		+0.5	+2.0	+0.4	+0.0	253		NOISEFLOOR		111
			+0.0	+0.0	+0.0	+0.0					
			-29.3	+0.0							

18	5416.514M	32.9	+0.0	+34.5	+0.0	+0.0	+0.0	42.0	54.0	-12.0	Vert
	Ave		+0.0	+0.0	+0.0	+2.3	156				172
			+1.0	+3.9	+0.0	+0.5					
			+0.0	-33.1							
^	5416.514M	39.8	+0.0	+34.5	+0.0	+0.0	+0.0	48.9	54.0	-5.1	Vert
			+0.0	+0.0	+0.0	+2.3	156				172
			+1.0	+3.9	+0.0	+0.5					
			+0.0	-33.1							
20	17152.010 M	20.9	+0.0	+40.8	+0.0	+0.0	+0.0	41.9	54.0	-12.1	Vert
			+0.0	+0.0	+0.0	+3.4					
	Ambient		+1.2	+8.0	+0.0	+0.4	42		NOISEFLOOR		119
			+0.0	-32.8							
21	169.265M	48.0	+0.0	+0.0	+9.8	+0.8	+0.0	31.1	44.0	-12.9	Horiz
			+0.2	+0.9	+0.2	+0.0	360				160
			+0.0	+0.0	+0.0	+0.0					
			-28.8	+0.0							
22	15346.530 M	21.6	+0.0	+39.1	+0.0	+0.0	+0.0	40.2	54.0	-13.8	Horiz
			+0.0	+0.0	+0.0	+3.2					
	Ambient		+1.2	+7.2	+0.0	+0.4	251		NOISEFLOOR		125
			+0.0	-32.5							
23	3611.033M	33.3	+0.0	+31.8	+0.0	+0.0	+0.0	38.3	54.0	-15.7	Horiz
	Ave		+0.0	+0.0	+0.0	+1.6	254				125
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
^	3611.033M	40.3	+0.0	+31.8	+0.0	+0.0	+0.0	45.3	54.0	-8.7	Horiz
			+0.0	+0.0	+0.0	+1.6	254				125
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
25	3611.052M	28.6	+0.0	+31.8	+0.0	+0.0	+0.0	33.6	54.0	-20.4	Vert
	Ave		+0.0	+0.0	+0.0	+1.6	42				119
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
^	3611.052M	37.6	+0.0	+31.8	+0.0	+0.0	+0.0	42.6	54.0	-11.4	Vert
			+0.0	+0.0	+0.0	+1.6	42				119
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
27	990.100M	33.0	+0.0	+0.0	+24.3	+2.0	+0.0	33.2	54.0	-20.8	Horiz
	Ambient		+0.5	+2.1	+0.3	+0.0			NOISEFLOOR		160
			+0.0	+0.0	+0.0	+0.0					
			-29.0	+0.0							
28	5416.514M	24.0	+0.0	+34.5	+0.0	+0.0	+0.0	33.1	54.0	-20.9	Horiz
	Ave		+0.0	+0.0	+0.0	+2.3	156				172
			+1.0	+3.9	+0.0	+0.5					
			+0.0	-33.1							
^	5416.514M	36.9	+0.0	+34.5	+0.0	+0.0	+0.0	46.0	54.0	-8.0	Horiz
			+0.0	+0.0	+0.0	+2.3	156				172
			+1.0	+3.9	+0.0	+0.5					
			+0.0	-33.1							
^	5416.494M	34.6	+0.0	+34.5	+0.0	+0.0	+0.0	43.7	54.0	-10.3	Horiz
			+0.0	+0.0	+0.0	+2.3	191				125
			+1.0	+3.9	+0.0	+0.5					
			+0.0	-33.1							

31	149.360k	72.9	+10.0 +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	-80.0 160	2.9	24.4	-21.5	90deg 160
32	159.890k	69.5	+10.0 +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	-80.0 30	-0.5	23.8	-24.3	180de 160
33	1.076M	28.7	+10.0 +0.0 +0.0 +0.0	+0.0 +0.1 +0.0 +0.0	+0.0 +0.0 +0.0	+0.1 +0.0 +0.0	-40.0 160	-1.1	27.1	-28.2	90deg 160
34	1.000M	27.2	+10.0 +0.0 +0.0 +0.0	+0.0 +0.1 +0.0 +0.0	+0.0 +0.0 +0.0	+0.1 +0.0 +0.0	-40.0 205	-2.6	27.7	-30.3	180de 160
35	320.700k	55.8	+9.9 +0.0 +0.0 +0.0	+0.0 +0.0 +0.0 +0.0	+0.0 +0.1 +0.0	+0.1 +0.0 +0.0	-80.0 160	-14.1	17.7	-31.8	90deg 160
36	480.240k	51.3	+9.9 +0.0 +0.0 +0.0	+0.0 +0.0 +0.0 +0.0	+0.0 +0.1 +0.0	+0.1 +0.0 +0.0	-80.0 205	-18.6	14.2	-32.8	180de 160
37	318.960k	53.4	+9.9 +0.0 +0.0 +0.0	+0.0 +0.0 +0.0 +0.0	+0.0 +0.1 +0.0	+0.1 +0.0 +0.0	-80.0 168	-16.5	17.8	-34.3	180de 160
38	101.900k	60.9	+10.0 +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	-80.0 152	-9.1	27.8	-36.9	90deg 160
39	15.790k	62.0	+14.2 +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	-80.0 159	-3.8	44.1	-47.9	90deg 160
40	12.006k	60.8	+15.6 +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	-80.0 159	-3.6	46.5	-50.1	90deg 160
41	15.715k	58.7	+14.2 +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	-80.0 205	-7.1	44.1	-51.2	180de 160
42	12.024k	57.2	+15.6 +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	-80.0 205	-7.2	46.5	-53.7	180de 160

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

Customer: **Impinj Inc**
Specification: **FCC 15.247/15.209**
Work Order #: **89028** Date: 2/11/2009
Test Type: **Radiated Scan** Time: 10:42:00
Equipment: **RFID Reader** Sequence#: 2
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Mag Loop	2156	06/04/2008	06/04/2010	AN00052
Antenna	2453	12/22/2008	12/22/2010	AN01994
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
Horn Antenna, Active 18-26GHz	1114018	11/13/2008	11/13/2010	2742
Heliax cable	N/A	07/22/2008	07/22/2010	AN05545
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03123
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03122
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03121
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Pasternack Coax		07/20/2007	07/20/2009	AN05425
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271
Filter	2	05/01/2008	05/01/2010	2750
Filter	311SH10-3000/T10000-0/0	12/02/2008	12/02/2010	3116
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872

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

Function	Manufacturer	Model #	S/N
Circular patch antenna	Cushcraft	S90289CLJ	092436
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB
Antenna cable	Manhattan/CDT	M4213	1354 E12091

Support Devices:

Function	Manufacturer	Model #	S/N
Wireless G Router	Belkin	F5D7230-4	2028723009696
Laptop Computer	Dell	Latitude	6497402833

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Radiated Spurious Emissions per FCC 15.247(d)

The Unit is an RF reader. It is located in the back edge of the test table.
All its ports are being exercised. It is being powered by the AC/DC converter
It is connected to a laptop outside the chamber through a shielded ethernet cable.
The antenna is suspended 10cm above the wooden table with styrofoam.
The EUT will be in transmitting mode throughout the test in the MID channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 32.5 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 915.25MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=ANT- AN00052-06042008	T2=ANT-AN01412-111207
T3=ANT AN01994 25-1000MHz	T4=CAB-ANP05360
T5=CAB-ANP05361	T6=CAB-ANP05366
T7=CAB-ANP05371	T8=CAB-ANP03121-120208
T9=CAB-ANP03123-120208	T10=CAB-ANP05545-072208
T11=Filter 1GHz HP AN02750	T12=FIL-AN03116-120208
T13=AMP-AN01517-070808	T14=AMP-AN01271-100207 - .5-26.5 GHz

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

#	Freq	Rdng	T1 T5 T9 T13	T2 T6 T10 T14	T3 T7 T11	T4 T8 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	13885.000	32.5	+0.0	+40.9	+0.0	+0.0	+0.0	52.6	54.0	-1.4	Horiz
	M		+0.0	+0.0	+0.0	+3.3					
	Ambient		+1.3	+6.9	+0.0	+0.5			Noisefloor		130
			+0.0	-32.8							
2	1830.468M	20.9	+0.0	+26.6	+0.0	+0.0	+0.0	51.7	54.0	-2.3	Vert
	Ave		+0.0	+0.0	+0.0	+1.1	195				125
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							
^	1830.468M	28.4	+0.0	+26.6	+0.0	+0.0	+0.0	59.2	54.0	+5.2	Vert
			+0.0	+0.0	+0.0	+1.1	195				125
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							
4	16932.000	30.7	+0.0	+40.0	+0.0	+0.0	+0.0	50.5	54.0	-3.5	Horiz
	M		+0.0	+0.0	+0.0	+3.4					
	Ambient		+0.9	+7.9	+0.0	+0.4	299		Noisefloor		130
			+0.0	-32.8							

5	12500.000 M Ambient	31.2	+0.0 +0.0 +1.7 +0.0	+38.8 +0.0 +6.5 -33.6	+0.0 +0.0 +0.0	+0.0 +3.1 +0.3	+0.0 312	48.0	54.0 Noisefloor	-6.0	Vert 130
6	99.500M	54.6	+0.0 +0.1 +0.0 -29.1	+0.0 +0.6 +0.0 +0.0	+10.1 +0.2 +0.0	+0.6 +0.0 +0.0	+0.0	37.1	44.0	-6.9	Vert 99
7	9030.984M Ambient	31.4	+0.0 +0.0 +1.6 +0.0	+38.9 +0.0 +5.3 -33.8	+0.0 +0.0 +0.0	+0.0 +3.1 +0.5	+0.0	47.0	54.0 Noisefloor	-7.0	Vert 130
8	18.244M Ambient	12.7	+8.4 +0.0 +0.0 +0.0	+0.0 +0.3 +0.0 +0.0	+0.0 +0.2 +0.0	+0.3 +0.0 +0.0	+0.0 75	21.9	30.0 Noisefloor	-8.1	90deg 100
9	102.200M	52.8	+0.0 +0.1 +0.0 -29.1	+0.0 +0.6 +0.0 +0.0	+10.4 +0.2 +0.0	+0.6 +0.0 +0.0	+0.0 282	35.6	44.0	-8.4	Horiz 151
10	478.800M	45.2	+0.0 +0.3 +0.0 -29.4	+0.0 +1.6 +0.0 +0.0	+17.7 +0.4 +0.0	+1.5 +0.0 +0.0	+0.0 282	37.3	46.0	-8.7	Horiz 151
11	7322.005M Ave	33.1	+0.0 +0.0 +1.1 +0.0	+36.4 +0.0 +4.7 -34.7	+0.0 +0.0 +0.0	+0.0 +2.3 +0.3	+0.0 15	43.2	54.0	-10.8	Vert 200
^	7322.005M	41.7	+0.0 +0.0 +1.1 +0.0	+36.4 +0.0 +4.7 -34.7	+0.0 +0.0 +0.0	+0.0 +2.3 +0.3	+0.0 15	51.8	54.0	-2.2	Vert 200
13	67.000M	50.7	+0.0 +0.1 +0.0 -29.2	+0.0 +0.4 +0.0 +0.0	+5.9 +0.1 +0.0	+0.4 +0.0 +0.0	+0.0	28.4	40.0	-11.6	Vert 99
14	17395.000 M Ambient	19.6	+0.0 +0.0 +1.3 +0.0	+41.9 +0.0 +8.1 -32.9	+0.0 +0.0 +0.0	+0.0 +3.3 +0.6	+0.0 360	41.9	54.0 Noisefloor	-12.1	Vert 130
15	167.300M	46.8	+0.0 +0.2 +0.0 -28.8	+0.0 +0.9 +0.0 +0.0	+10.0 +0.2 +0.0	+0.8 +0.0 +0.0	+0.0 282	30.1	44.0	-13.9	Horiz 151
16	23.550M Ambient	7.9	+7.1 +0.0 +0.0 +0.0	+0.0 +0.3 +0.0 +0.0	+0.0 +0.2 +0.0	+0.3 +0.0 +0.0	+0.0 179	15.8	30.0 Noisefloor	-14.2	180de 100
17	16.900M Ave	4.9	+8.5 +0.0 +0.0 +0.0	+0.0 +0.3 +0.0 +0.0	+0.0 +0.2 +0.0	+0.3 +0.0 +0.0	+0.0 1	14.2	30.0	-15.8	180de 100

^	16.900M	15.8	+8.5 +0.0 +0.0 +0.0	+0.0 +0.3 +0.0 +0.0	+0.0 +0.2 +0.0	+0.3 +0.0 +0.0	+0.0 1	25.1	30.0	-4.9	180de 100
19	5491.440M Ave	29.6	+0.0 +0.0 +0.8 +0.0	+34.7 +0.0 +3.9 -33.3	+0.0 +0.0 +0.0	+0.0 +2.0 +0.5	+0.0 6	38.2	54.0	-15.8	Vert 111
^	5491.440M	37.7	+0.0 +0.0 +0.8 +0.0	+34.7 +0.0 +3.9 -33.3	+0.0 +0.0 +0.0	+0.0 +2.0 +0.5	+0.0 6	46.3	54.0	-7.7	Vert 111
21	5491.612M Ave	28.3	+0.0 +0.0 +0.8 +0.0	+34.7 +0.0 +3.9 -33.3	+0.0 +0.0 +0.0	+0.0 +2.0 +0.5	+0.0 339	36.9	54.0	-17.1	Horiz 122
^	5491.612M	38.3	+0.0 +0.0 +0.8 +0.0	+34.7 +0.0 +3.9 -33.3	+0.0 +0.0 +0.0	+0.0 +2.0 +0.5	+0.0 339	46.9	54.0	-7.1	Horiz 122
23	25.000M Ambient	5.1	+6.6 +0.0 +0.0 +0.0	+0.0 +0.3 +0.0 +0.0	+0.0 +0.2 +0.0	+0.3 +0.0 +0.0	+0.0 310	12.5	30.0 Noisefloor	-17.5	90deg 100
24	7321.941M Ave	25.7	+0.0 +0.0 +1.1 +0.0	+36.4 +0.0 +4.7 -34.7	+0.0 +0.0 +0.0	+0.0 +2.3 +0.3	+0.0 89	35.8	54.0	-18.2	Horiz 200
^	7321.941M	37.5	+0.0 +0.0 +1.1 +0.0	+36.4 +0.0 +4.7 -34.7	+0.0 +0.0 +0.0	+0.0 +2.3 +0.3	+0.0 89	47.6	54.0	-6.4	Horiz 200
26	960.880M	30.4	+0.0 +0.5 +0.0 -29.2	+0.0 +2.2 +0.0 +0.0	+23.9 +0.5 +0.0	+1.8 +0.0 +0.0	+0.0	30.1	54.0	-23.9	Vert 99
27	960.800M	29.6	+0.0 +0.5 +0.0 -29.2	+0.0 +2.2 +0.0 +0.0	+23.9 +0.5 +0.0	+1.8 +0.0 +0.0	+0.0 282	29.3	54.0	-24.7	Horiz 151
28	159.477k	54.8	+10.0 +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	-80.0 171	-15.2	23.8	-39.0	90deg 100
29	141.450k Ambient	48.3	+9.9 +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	-80.0 209	-21.8	24.9 Noisefloor	-46.7	90deg 100
30	159.010k	47.1	+10.0 +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	-80.0 169	-22.9	23.9	-46.8	180de 100

31	12.288k	44.1	+15.5	+0.0	+0.0	+0.0	-80.0	-20.4	46.3	-66.7	180de
			+0.0	+0.0	+0.0	+0.0	360				100
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
32	11.862k	44.0	+15.7	+0.0	+0.0	+0.0	-80.0	-20.3	46.6	-66.9	90deg
	Ambient		+0.0	+0.0	+0.0	+0.0	360		Noisefloor		100
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
33	119.153k	28.7	+10.1	+0.0	+0.0	+0.0	-80.0	-41.2	26.4	-67.6	90deg
	Ambient		+0.0	+0.0	+0.0	+0.0	360		Noisefloor		100
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							

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

Customer: **Impinj Inc**
Specification: **FCC 15.247/15.209**
Work Order #: **89028** Date: 2/11/2009
Test Type: **Radiated Scan** Time: 13:48:54
Equipment: **RFID Reader** Sequence#: 5
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Mag Loop	2156	06/04/2008	06/04/2010	AN00052
Antenna	2453	12/22/2008	12/22/2010	AN01994
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
Horn Antenna, Active 18-26GHz	1114018	11/13/2008	11/13/2010	2742
Heliax cable	N/A	07/22/2008	07/22/2010	AN05545
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03123
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03122
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03121
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Pasternack Coax		07/20/2007	07/20/2009	AN05425
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271
Filter	2	05/01/2008	05/01/2010	2750
Filter	311SH10-3000/T10000-0/0	12/02/2008	12/02/2010	3116
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872

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

Function	Manufacturer	Model #	S/N
Circular patch antenna	Cushcraft	S90289CLJ	092436
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Radiated Spurious Emissions per FCC 15.247(d).

The Unit is an RF reader. It is located in the back edge of the test table.
All its ports are being exercised. It is being powered by the AC/DC converter.
It is connected to a laptop outside the chamber through a shielded ethernet cable.
The antenna is suspended 10cm above the wooden table with styrofoam.
The EUT will be in transmitting mode throughout the test in the MID channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 30.0 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 915.25MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=ANT- AN00052-06042008	T2=ANT-AN01412-111207
T3=ANT AN01994 25-1000MHz	T4=CAB-ANP05360
T5=CAB-ANP05361	T6=CAB-ANP05366
T7=CAB-ANP05371	T8=CAB-ANP03121-120208
T9=CAB-ANP03123-120208	T10=CAB-ANP05545-072208
T11=Filter 1GHz HP AN02750	T12=FIL-AN03116-120208
T13=AMP-AN01517-070808	T14=AMP-AN01271-100207 - .5-26.5 GHz

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

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
			T9	T10	T11	T12					
			T13	T14							
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	14.623M	14.9	+8.7	+0.0	+0.0	+0.2	+0.0	24.1	30.0	-5.9	90deg
	Ambient		+0.0	+0.2	+0.1	+0.0			NOISEFLOOR		160
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
2	9152.437M	32.0	+0.0	+38.8	+0.0	+0.0	+0.0	47.8	54.0	-6.2	Vert
	Ave		+0.0	+0.0	+0.0	+3.1	27				115
			+1.7	+5.3	+0.0	+0.5					
			+0.0	-33.6							
^	9152.437M	38.5	+0.0	+38.8	+0.0	+0.0	+0.0	54.3	54.0	+0.3	Vert
			+0.0	+0.0	+0.0	+3.1	27				115
			+1.7	+5.3	+0.0	+0.5					
			+0.0	-33.6							
4	100.400M	55.2	+0.0	+0.0	+10.2	+0.6	+0.0	37.8	44.0	-6.2	Vert
			+0.1	+0.6	+0.2	+0.0	360				111
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							

5	815.000M	41.7	+0.0	+0.0	+22.6	+1.9	+0.0	39.7	46.0	-6.3	Vert
			+0.4	+2.0	+0.5	+0.0	360				111
			+0.0	+0.0	+0.0	+0.0					
			-29.4	+0.0							
6	18.252M	14.2	+8.4	+0.0	+0.0	+0.3	+0.0	23.4	30.0	-6.6	180de
			+0.0	+0.3	+0.2	+0.0	360				160
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
7	478.900M	47.3	+0.0	+0.0	+17.7	+1.5	+0.0	39.4	46.0	-6.6	Horiz
			+0.3	+1.6	+0.4	+0.0					160
			+0.0	+0.0	+0.0	+0.0					
			-29.4	+0.0							
8	25.880M	14.5	+6.7	+0.0	+0.0	+0.3	+0.0	22.0	30.0	-8.0	90deg
	Ambient		+0.0	+0.3	+0.2	+0.0	360		NOISEFLOOR		160
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
9	1830.497M	15.1	+0.0	+26.6	+0.0	+0.0	+0.0	45.9	54.0	-8.1	Vert
	Ave		+0.0	+0.0	+0.0	+1.1	205				115
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							
^	1830.497M	25.7	+0.0	+26.6	+0.0	+0.0	+0.0	56.5	54.0	+2.5	Vert
			+0.0	+0.0	+0.0	+1.1	205				115
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							
11	102.200M	53.1	+0.0	+0.0	+10.4	+0.6	+0.0	35.9	44.0	-8.1	Horiz
			+0.1	+0.6	+0.2	+0.0	39				160
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							
12	12.019M	11.5	+9.0	+0.0	+0.0	+0.2	+0.0	21.0	30.0	-9.0	180de
	Ambient		+0.0	+0.2	+0.1	+0.0			NOISEFLOOR		160
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
13	941.040M	37.5	+0.0	+0.0	+23.7	+1.9	+0.0	37.0	46.0	-9.0	Horiz
	Ambient		+0.5	+2.1	+0.5	+0.0	360		NOISEFLOOR		160
			+0.0	+0.0	+0.0	+0.0					
			-29.2	+0.0							
14	17390.140 M	21.5	+0.0	+41.9	+0.0	+0.0	+0.0	43.8	54.0	-10.2	Horiz
			+0.0	+0.0	+0.0	+3.3					
	Ambient		+1.3	+8.1	+0.0	+0.6	360		NOISEFLOOR		115
			+0.0	-32.9							
15	169.200M	47.9	+0.0	+0.0	+9.8	+0.8	+0.0	31.0	44.0	-13.0	Horiz
			+0.2	+0.9	+0.2	+0.0					160
			+0.0	+0.0	+0.0	+0.0					
			-28.8	+0.0							
16	1830.497M	10.0	+0.0	+26.6	+0.0	+0.0	+0.0	40.8	54.0	-13.2	Horiz
	Ave		+0.0	+0.0	+0.0	+1.1	205				115
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							
^	1830.497M	22.5	+0.0	+26.6	+0.0	+0.0	+0.0	53.3	54.0	-0.7	Horiz
			+0.0	+0.0	+0.0	+1.1	205				115
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							

18	134.700M	46.1	+0.0	+0.0	+11.7	+0.7	+0.0	30.7	44.0	-13.3	Vert
			+0.2	+0.7	+0.3	+0.0	360				111
			+0.0	+0.0	+0.0	+0.0					
			-29.0	+0.0							
19	7321.991M	28.8	+0.0	+36.4	+0.0	+0.0	+0.0	38.9	54.0	-15.1	Vert
	Ave		+0.0	+0.0	+0.0	+2.3	342				114
			+1.1	+4.7	+0.0	+0.3					
			+0.0	-34.7							
^	7321.991M	37.3	+0.0	+36.4	+0.0	+0.0	+0.0	47.4	54.0	-6.6	Vert
			+0.0	+0.0	+0.0	+2.3	342				114
			+1.1	+4.7	+0.0	+0.3					
			+0.0	-34.7							
21	3661.005M	32.7	+0.0	+31.9	+0.0	+0.0	+0.0	37.9	54.0	-16.1	Horiz
	Ave		+0.0	+0.0	+0.0	+1.7	253				125
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
^	3661.005M	41.2	+0.0	+31.9	+0.0	+0.0	+0.0	46.4	54.0	-7.6	Horiz
			+0.0	+0.0	+0.0	+1.7	253				125
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
23	3661.005M	32.3	+0.0	+31.9	+0.0	+0.0	+0.0	37.5	54.0	-16.5	Vert
	Ave		+0.0	+0.0	+0.0	+1.7	249				125
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
^	3661.005M	39.8	+0.0	+31.9	+0.0	+0.0	+0.0	45.0	54.0	-9.0	Vert
			+0.0	+0.0	+0.0	+1.7	249				125
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
25	982.480M	35.8	+0.0	+0.0	+24.2	+1.9	+0.0	35.9	54.0	-18.1	Vert
	Ambient		+0.5	+2.2	+0.4	+0.0	247		NOISEFLOOR		111
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							
26	7321.991M	25.2	+0.0	+36.4	+0.0	+0.0	+0.0	35.3	54.0	-18.7	Horiz
	Ave		+0.0	+0.0	+0.0	+2.3	24				114
			+1.1	+4.7	+0.0	+0.3					
			+0.0	-34.7							
^	7321.991M	36.0	+0.0	+36.4	+0.0	+0.0	+0.0	46.1	54.0	-7.9	Horiz
			+0.0	+0.0	+0.0	+2.3	24				114
			+1.1	+4.7	+0.0	+0.3					
			+0.0	-34.7							
28	5491.545M	26.3	+0.0	+34.7	+0.0	+0.0	+0.0	34.9	54.0	-19.1	Horiz
	Ave		+0.0	+0.0	+0.0	+2.0	325				152
			+0.8	+3.9	+0.0	+0.5					
			+0.0	-33.3							
^	5491.545M	37.5	+0.0	+34.7	+0.0	+0.0	+0.0	46.1	54.0	-7.9	Horiz
			+0.0	+0.0	+0.0	+2.0	325				152
			+0.8	+3.9	+0.0	+0.5					
			+0.0	-33.3							
30	5491.545M	25.8	+0.0	+34.7	+0.0	+0.0	+0.0	34.4	54.0	-19.6	Vert
	Ave		+0.0	+0.0	+0.0	+2.0	234				125
			+0.8	+3.9	+0.0	+0.5					
			+0.0	-33.3							

^	5491.545M	36.6	+0.0 +0.0 +0.8 +0.0	+34.7 +0.0 +3.9 -33.3	+0.0 +0.0 +0.0	+0.0 +2.0 +0.5	+0.0 234	45.2	54.0	-8.8	Vert 125
32	935.160k	32.7	+9.9 +0.0 +0.0 +0.0	+0.0 +0.1 +0.0 +0.0	+0.0 +0.0 +0.0	+0.1 +0.0 +0.0	-40.0 150	2.8	28.3	-25.5	90deg 160
33	172.170k	51.5	+10.0 +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	-80.0 150	-18.5	23.2	-41.7	90deg 160
34	150.000k Ambient	46.5	+10.0 +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	-80.0 360	-23.5	24.4 NOISEFLOOR	-47.9	180de 160
35	61.600k	38.8	+10.1 +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	-80.0 244	-31.1	32.2	-63.3	90deg 160
36	14.508k	45.6	+14.6 +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	-80.0 144	-19.8	44.8	-64.6	90deg 160
37	17.753k	44.6	+13.5 +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	-80.0 160	-21.9	43.1	-65.0	90deg 160
38	18.313k Ambient	43.5	+13.4 +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	-80.0 159	-23.1	42.8 NOISEFLOOR	-65.9	180de 160

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

Customer: **Impinj Inc**
Specification: **FCC 15.247/15.209**
Work Order #: **89028** Date: 2/11/2009
Test Type: **Radiated Scan** Time: 10:47:00
Equipment: **RFID Reader** Sequence#: 3
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Mag Loop	2156	06/04/2008	06/04/2010	AN00052
Antenna	2453	12/22/2008	12/22/2010	AN01994
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
Horn Antenna, Active 18-26GHz	1114018	11/13/2008	11/13/2010	2742
Heliax cable	N/A	07/22/2008	07/22/2010	AN05545
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03123
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03122
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03121
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Pasternack Coax		07/20/2007	07/20/2009	AN05425
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271
Filter	2	05/01/2008	05/01/2010	2750
Filter	311SH10-3000/T10000-0/0	12/02/2008	12/02/2010	3116
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872

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

Function	Manufacturer	Model #	S/N
Circular patch antenna	Cushcraft	S90289CLJ	092436
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB
Antenna cable	Manhattan/CDT	M4213	1354 E12091

Support Devices:

Function	Manufacturer	Model #	S/N
Wireless G Router	Belkin	F5D7230-4	2028723009696
Laptop Computer	Dell	Latitude	6497402833

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Radiated Spurious Emissions per FCC 15.247(d)

The Unit is an RF reader. It is located in the back edge of the test table.
All its ports are being exercised. It is being powered by the AC/DC converter.
It is connected to a laptop outside the chamber through a shielded ethernet cable.
The antenna is suspended 10cm above the wooden table with styrofoam.
The EUT will be in transmitting mode throughout the test in the High channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 32.5 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 927.25MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=ANT- AN00052-06042008	T2=ANT-AN01412-111207
T3=ANT AN01994 25-1000MHz	T4=CAB-ANP05360
T5=CAB-ANP05361	T6=CAB-ANP05366
T7=CAB-ANP05371	T8=CAB-ANP03121-120208
T9=CAB-ANP03123-120208	T10=CAB-ANP05545-072208
T11=Filter 1GHz HP AN02750	T12=FIL-AN03116-120208
T13=AMP-AN01517-070808	T14=AMP-AN01271-100207 - .5-26.5 GHz

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

#	Freq	Rdng	T1 T5 T9 T13	T2 T6 T10 T14	T3 T7 T11	T4 T8 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	17707.000	28.5	+0.0	+43.4	+0.0	+0.0	+0.0	52.8	54.0	-1.2	Horiz
	M		+0.0	+0.0	+0.0	+3.6					
	Ambient		+1.4	+8.1	+0.0	+0.9	360		Noisefloor		118
			+0.0	-33.1							
2	11959.810	35.6	+0.0	+39.4	+0.0	+0.0	+0.0	51.3	54.0	-2.7	Horiz
	M		+0.0	+0.0	+0.0	+3.2					
	Ambient		+1.9	+6.2	+0.0	+0.5	83		Noisefloor		99
			+0.0	-35.5							
3	1855.000M	18.7	+0.0	+26.8	+0.0	+0.0	+0.0	49.7	54.0	-4.3	Vert
			+0.0	+0.0	+0.0	+1.1	195				126
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							
4	102.090M	54.8	+0.0	+0.0	+10.4	+0.6	+0.0	37.6	44.0	-6.4	Vert
			+0.1	+0.6	+0.2	+0.0	360				99
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							

5	15584.450	28.7	+0.0	+38.6	+0.0	+0.0	+0.0	46.9	54.0	-7.1	Vert
	M		+0.0	+0.0	+0.0	+3.2					
	Ambient		+0.9	+7.3	+0.0	+0.5	236		Noisefloor		118
			+0.0	-32.3							
6	7418.061M	36.4	+0.0	+36.5	+0.0	+0.0	+0.0	46.8	54.0	-7.2	Horiz
			+0.0	+0.0	+0.0	+2.3	180				113
			+1.1	+4.7	+0.0	+0.3					
			+0.0	-34.5							
7	826.550M	40.7	+0.0	+0.0	+22.7	+1.8	+0.0	38.6	46.0	-7.4	Vert
			+0.4	+2.0	+0.4	+0.0	360				99
			+0.0	+0.0	+0.0	+0.0					
			-29.4	+0.0							
8	5563.488M	37.6	+0.0	+34.7	+0.0	+0.0	+0.0	46.0	54.0	-8.0	Horiz
			+0.0	+0.0	+0.0	+1.9	23				112
			+0.8	+4.0	+0.0	+0.4					
			+0.0	-33.4							
9	102.090M	52.9	+0.0	+0.0	+10.4	+0.6	+0.0	35.7	44.0	-8.3	Horiz
			+0.1	+0.6	+0.2	+0.0					160
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							
10	27.070M	13.5	+6.9	+0.0	+0.0	+0.3	+0.0	21.2	30.0	-8.8	180de
	Ave		+0.0	+0.3	+0.2	+0.0	111				100
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
^	27.070M	22.9	+6.9	+0.0	+0.0	+0.3	+0.0	30.6	30.0	+0.6	180de
			+0.0	+0.3	+0.2	+0.0	111				100
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
12	8386.000M	31.7	+0.0	+37.7	+0.0	+0.0	+0.0	45.2	54.0	-8.8	Vert
	Ambient		+0.0	+0.0	+0.0	+2.8			Noisefloor		123
			+1.4	+5.2	+0.0	+0.5					
			+0.0	-34.1							
13	1855.000M	14.0	+0.0	+26.8	+0.0	+0.0	+0.0	45.0	54.0	-9.0	Horiz
			+0.0	+0.0	+0.0	+1.1	195				126
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							
14	2781.750M	8.7	+0.0	+30.0	+0.0	+0.0	+0.0	43.9	54.0	-10.1	Vert
			+0.0	+0.0	+0.0	+1.4	195				126
			+0.5	+2.7	+0.6	+0.0					
			+0.0	+0.0							
15	22.840M	10.9	+7.3	+0.0	+0.0	+0.3	+0.0	19.0	30.0	-11.0	180de
	Ave		+0.0	+0.3	+0.2	+0.0					100
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
^	22.840M	18.0	+7.3	+0.0	+0.0	+0.3	+0.0	26.1	30.0	-3.9	180de
			+0.0	+0.3	+0.2	+0.0					100
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
17	466.100M	43.0	+0.0	+0.0	+17.5	+1.5	+0.0	34.9	46.0	-11.1	Horiz
			+0.3	+1.6	+0.4	+0.0					160
			+0.0	+0.0	+0.0	+0.0					
			-29.4	+0.0							

18	68.270M	50.0	+0.0	+0.0	+6.1	+0.5	+0.0	28.2	40.0	-11.8	Vert
			+0.1	+0.5	+0.2	+0.0	360				99
			+0.0	+0.0	+0.0	+0.0					
			-29.2	+0.0							
19	2781.750M	7.0	+0.0	+30.0	+0.0	+0.0	+0.0	42.2	54.0	-11.8	Horiz
			+0.0	+0.0	+0.0	+1.4	195				126
			+0.5	+2.7	+0.6	+0.0					
			+0.0	+0.0							
20	956.180M	33.6	+0.0	+0.0	+23.8	+1.9	+0.0	33.2	46.0	-12.8	Horiz
			+0.5	+2.1	+0.5	+0.0	321				160
			+0.0	+0.0	+0.0	+0.0					
			-29.2	+0.0							
21	5563.473M	31.4	+0.0	+34.7	+0.0	+0.0	+0.0	39.8	54.0	-14.2	Vert
	Ave		+0.0	+0.0	+0.0	+1.9	344				133
			+0.8	+4.0	+0.0	+0.4					
			+0.0	-33.4							
^	5563.473M	39.5	+0.0	+34.7	+0.0	+0.0	+0.0	47.9	54.0	-6.1	Vert
			+0.0	+0.0	+0.0	+1.9	344				133
			+0.8	+4.0	+0.0	+0.4					
			+0.0	-33.4							
23	167.060M	46.0	+0.0	+0.0	+10.0	+0.8	+0.0	29.3	44.0	-14.7	Horiz
			+0.2	+0.9	+0.2	+0.0					160
			+0.0	+0.0	+0.0	+0.0					
			-28.8	+0.0							
24	7417.934M	28.3	+0.0	+36.5	+0.0	+0.0	+0.0	38.7	54.0	-15.3	Vert
	Ave		+0.0	+0.0	+0.0	+2.3	180				123
			+1.1	+4.7	+0.0	+0.3					
			+0.0	-34.5							
^	7417.934M	38.8	+0.0	+36.5	+0.0	+0.0	+0.0	49.2	54.0	-4.8	Vert
			+0.0	+0.0	+0.0	+2.3	180				123
			+1.1	+4.7	+0.0	+0.3					
			+0.0	-34.5							
26	18.244M	3.2	+8.4	+0.0	+0.0	+0.3	+0.0	12.4	30.0	-17.6	90deg
	Ave		+0.0	+0.3	+0.2	+0.0	360				100
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
^	18.244M	14.5	+8.4	+0.0	+0.0	+0.3	+0.0	23.7	30.0	-6.3	90deg
			+0.0	+0.3	+0.2	+0.0	360				100
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
28	23.131M	0.7	+7.2	+0.0	+0.0	+0.3	+0.0	8.7	30.0	-21.3	90deg
	Ave		+0.0	+0.3	+0.2	+0.0	360				100
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
^	23.131M	10.8	+7.2	+0.0	+0.0	+0.3	+0.0	18.8	30.0	-11.2	90deg
			+0.0	+0.3	+0.2	+0.0	355				100
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
30	992.650M	30.7	+0.0	+0.0	+24.3	+2.0	+0.0	30.9	54.0	-23.1	Vert
			+0.5	+2.1	+0.3	+0.0	360				99
			+0.0	+0.0	+0.0	+0.0					
			-29.0	+0.0							

31	146.720k	46.9	+10.0 +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	-80.0 337	-23.1	24.6	-47.7	90deg 100
32	150.000k	46.1	+10.0 +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	-80.0 81	-23.9	24.4	-48.3	180de 100
33	35.120k	42.4	+11.0 +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	-80.0	-26.6	37.1	-63.7	180de 100
34	13.988k	43.5	+14.8 +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	-80.0 111	-21.7	45.1	-66.8	90deg 100
35	9.550k	43.2	+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	-80.0 39	-36.8	48.5	-85.3	180de 100

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

Customer: **Impinj Inc**
Specification: **FCC 15.247/15.209**
Work Order #: **89028** Date: 2/11/2009
Test Type: **Radiated Scan** Time: 14:00:00
Equipment: **RFID Reader** Sequence#: 4
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Mag Loop	2156	06/04/2008	06/04/2010	AN00052
Antenna	2453	12/22/2008	12/22/2010	AN01994
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
Horn Antenna, Active 18-26GHz	1114018	11/13/2008	11/13/2010	2742
Heliax cable	N/A	07/22/2008	07/22/2010	AN05545
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03123
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03122
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03121
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Pasternack Coax		07/20/2007	07/20/2009	AN05425
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271
Filter	2	05/01/2008	05/01/2010	2750
Filter	311SH10-3000/T10000-0/0	12/02/2008	12/02/2010	3116
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872

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

Function	Manufacturer	Model #	S/N
Circular patch antenna	Cushcraft	S90289CLJ	092436
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Radiated Spurious Emissions per FCC 15.247(d)

The Unit is an RF reader. It is located in the back edge of the test table.
All its ports are being exercised. It is being powered by the AC/DC converter.
It is connected to a laptop outside the chamber through a shielded ethernet cable.
The antenna is suspended 10cm above the wooden table with styrofoam.
The EUT will be in transmitting mode throughout the test in the HIGH channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 30.0 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 927.25MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=ANT- AN00052-06042008	T2=ANT-AN01412-111207
T3=ANT AN01994 25-1000MHz	T4=CAB-ANP05360
T5=CAB-ANP05361	T6=CAB-ANP05366
T7=CAB-ANP05371	T8=CAB-ANP03121-120208
T9=CAB-ANP03123-120208	T10=CAB-ANP05545-072208
T11=Filter 1GHz HP AN02750	T12=FIL-AN03116-120208
T13=AMP-AN01517-070808	T14=AMP-AN01271-100207 - .5-26.5 GHz

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

#	Freq	Rdng	T1 T5 T9 T13	T2 T6 T10 T14	T3 T7 T11	T4 T8 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	1854.500M	18.1	+0.0	+26.8	+0.0	+0.0	+0.0	49.1	54.0	-4.9	Vert
	Ave		+0.0	+0.0	+0.0	+1.1	204				119
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							
^	1854.500M	27.2	+0.0	+26.8	+0.0	+0.0	+0.0	58.2	54.0	+4.2	Vert
			+0.0	+0.0	+0.0	+1.1	204				119
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							
3	827.440M	42.0	+0.0	+0.0	+22.7	+1.8	+0.0	39.9	46.0	-6.1	Vert
			+0.4	+2.0	+0.4	+0.0					125
			+0.0	+0.0	+0.0	+0.0					
			-29.4	+0.0							
4	100.310M	55.0	+0.0	+0.0	+10.2	+0.6	+0.0	37.6	44.0	-6.4	Vert
			+0.1	+0.6	+0.2	+0.0	47				125
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							

5	23.130M	14.5	+7.2 +0.0 +0.0 +0.0	+0.0 +0.3 +0.0 +0.0	+0.0 +0.2 +0.0	+0.3 +0.0 +0.0	+0.0 241	22.5	30.0	-7.5	180de 160
6	100.310M	53.8	+0.0 +0.1 +0.0 -29.1	+0.0 +0.6 +0.0 +0.0	+10.2 +0.2 +0.0	+0.6 +0.0 +0.0	+0.0	36.4	44.0	-7.6	Horiz 160
7	15.345M	13.0	+8.7 +0.0 +0.0 +0.0	+0.0 +0.2 +0.0 +0.0	+0.0 +0.1 +0.0	+0.2 +0.0 +0.0	+0.0 185	22.2	30.0	-7.8	180de 160
8	453.640M	45.6	+0.0 +0.3 +0.0 -29.3	+0.0 +1.6 +0.0 +0.0	+17.3 +0.5 +0.0	+1.6 +0.0 +0.0	+0.0	37.6	46.0	-8.4	Horiz 160
9	15.877M	12.1	+8.6 +0.0 +0.0 +0.0	+0.0 +0.3 +0.0 +0.0	+0.0 +0.2 +0.0	+0.3 +0.0 +0.0	+0.0 185	21.5	30.0	-8.5	90deg 160
10	25.880M	13.2	+6.7 +0.0 +0.0 +0.0	+0.0 +0.3 +0.0 +0.0	+0.0 +0.2 +0.0	+0.3 +0.0 +0.0	+0.0 185	20.7	30.0	-9.3	90deg 160
11	17617.760 M	19.9	+0.0 +0.0 +1.5 +0.0	+42.9 +0.0 +8.2 -33.0	+0.0 +0.0 +0.0	+0.0 +3.6 +0.7	+0.0 215	43.8	54.0	-10.2	Vert 113
12	5563.505M	34.5	+0.0 +0.0 +0.8 +0.0	+34.7 +0.0 +4.0 -33.4	+0.0 +0.0 +0.0	+0.0 +1.9 +0.4	+0.0 211	42.9	54.0	-11.1	Vert 113
13	3709.000M	35.6	+0.0 +0.0 +0.7 +0.0	+32.1 +0.0 +2.9 -32.7	+0.0 +0.0 +0.0	+0.0 +1.8 +0.7	+0.0 169	41.1	54.0	-12.9	Horiz 118
14	1854.191M Ave	10.1	+0.0 +0.0 +0.5 +0.0	+26.8 +0.0 +2.2 +0.0	+0.0 +0.0 +0.4	+0.0 +1.1 +0.0	+0.0 204	41.1	54.0	-12.9	Horiz 119
^	1854.191M	22.6	+0.0 +0.0 +0.5 +0.0	+26.8 +0.0 +2.2 +0.0	+0.0 +0.0 +0.4	+0.0 +1.1 +0.0	+0.0 204	53.6	54.0	-0.4	Horiz 119
16	67.380M	48.8	+0.0 +0.1 +0.0 -29.2	+0.0 +0.5 +0.0 +0.0	+6.0 +0.2 +0.0	+0.5 +0.0 +0.0	+0.0	26.9	40.0	-13.1	Vert 125
17	169.730M	47.6	+0.0 +0.2 +0.0 -28.8	+0.0 +0.9 +0.0 +0.0	+9.8 +0.2 +0.0	+0.8 +0.0 +0.0	+0.0	30.7	44.0	-13.3	Horiz 160

18	9272.503M	23.9	+0.0	+38.8	+0.0	+0.0	+0.0	39.8	54.0	-14.2	Vert
	Ave		+0.0	+0.0	+0.0	+3.2	215				113
			+1.7	+5.3	+0.0	+0.4					
			+0.0	-33.5							
^	9272.503M	32.5	+0.0	+38.8	+0.0	+0.0	+0.0	48.4	54.0	-5.6	Vert
			+0.0	+0.0	+0.0	+3.2	215				113
			+1.7	+5.3	+0.0	+0.4					
			+0.0	-33.5							
20	3709.000M	31.3	+0.0	+32.1	+0.0	+0.0	+0.0	36.8	54.0	-17.2	Vert
	Ave		+0.0	+0.0	+0.0	+1.8	169				118
			+0.7	+2.9	+0.0	+0.7					
			+0.0	-32.7							
^	3709.000M	39.1	+0.0	+32.1	+0.0	+0.0	+0.0	44.6	54.0	-9.4	Vert
			+0.0	+0.0	+0.0	+1.8	169				118
			+0.7	+2.9	+0.0	+0.7					
			+0.0	-32.7							
22	992.720M	34.7	+0.0	+0.0	+24.3	+2.0	+0.0	34.9	54.0	-19.1	Vert
			+0.5	+2.1	+0.3	+0.0	360				125
			+0.0	+0.0	+0.0	+0.0					
			-29.0	+0.0							
23	962.200M	33.2	+0.0	+0.0	+23.9	+1.8	+0.0	32.9	54.0	-21.1	Horiz
			+0.5	+2.2	+0.5	+0.0	360				160
			+0.0	+0.0	+0.0	+0.0					
			-29.2	+0.0							
24	650.480k	36.7	+10.0	+0.0	+0.0	+0.1	-40.0	6.9	31.5	-24.6	180de
			+0.0	+0.0	+0.1	+0.0	185				160
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
25	835.090k	33.2	+10.0	+0.0	+0.0	+0.1	-40.0	3.4	29.3	-25.9	90deg
			+0.0	+0.1	+0.0	+0.0	185				160
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
26	1.171M	28.2	+10.1	+0.0	+0.0	+0.1	-40.0	-1.5	26.3	-27.8	180de
			+0.0	+0.1	+0.0	+0.0	185				160
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
27	1.000M	27.4	+10.0	+0.0	+0.0	+0.1	-40.0	-2.4	27.7	-30.1	90deg
			+0.0	+0.1	+0.0	+0.0	185				160
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
28	39.220k	54.5	+10.7	+0.0	+0.0	+0.0	-80.0	-14.8	36.1	-50.9	90deg
			+0.0	+0.0	+0.0	+0.0	185				160
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
29	141.200k	34.0	+9.9	+0.0	+0.0	+0.0	-80.0	-36.1	24.9	-61.0	180de
			+0.0	+0.0	+0.0	+0.0	185				160
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
30	15.545k	45.0	+14.2	+0.0	+0.0	+0.0	-80.0	-20.8	44.2	-65.0	180de
			+0.0	+0.0	+0.0	+0.0	185				160
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							

31	11.172k	46.0	+16.0 +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	-80.0 111	-18.0	47.1	-65.1	180de 160
32	58.600k	37.3	+10.1 +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	-80.0 185	-32.6	32.6	-65.2	180de 160
33	16.526k	43.3	+13.9 +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	-80.0 185	-22.8	43.7	-66.5	90deg 160
34	11.916k	44.2	+15.7 +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	-80.0	-20.1	46.5	-66.6	90deg 160

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

Customer: **Impinj Inc**
Specification: **FCC 15.247/15.209**
Work Order #: **89028** Date: 2/12/2009
Test Type: **Radiated Scan** Time: 09:09:29
Equipment: **RFID Reader** Sequence#: 11
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Mag Loop	2156	06/04/2008	06/04/2010	AN00052
Antenna	2453	12/22/2008	12/22/2010	AN01994
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
Horn Antenna, Active 18-26GHz	1114018	11/13/2008	11/13/2010	2742
Heliax cable	N/A	07/22/2008	07/22/2010	AN05545
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03123
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03122
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03121
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Pasternack Coax		07/20/2007	07/20/2009	AN05425
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271
Filter	2	05/01/2008	05/01/2010	2750
Filter	311SH10-3000/T10000-0/0	12/02/2008	12/02/2010	3116
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872

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

Function	Manufacturer	Model #	S/N
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB
Brickyard Antenna	CSL	CS777-2	V25078 EP00090

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Radiated Spurious Emissions per FCC 15.247(d)

The Unit is an RF reader. It is located in the back edge of the test table.
All its ports are being exercised. It is being powered by the AC/DC converter
It is connected to a laptop outside the chamber through a shielded ethernet cable.
The antenna is suspended 10cm above the wooden table with styrofoam.
The EUT will be in transmitting mode throughout the test in the MID channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 30.0 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 915.25MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=ANT- AN00052-06042008	T2=ANT-AN01412-111207
T3=ANT AN01994 25-1000MHz	T4=CAB-ANP05360
T5=CAB-ANP05361	T6=CAB-ANP05366
T7=CAB-ANP05371	T8=CAB-ANP03121-120208
T9=CAB-ANP03123-120208	T10=CAB-ANP05545-072208
T11=Filter 1GHz HP AN02750	T12=FIL-AN03116-120208
T13=AMP-AN01517-070808	T14=AMP-AN01271-100207 - .5-26.5 GHz

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

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
			T9	T10	T11	T12					
			T13	T14							
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	14190.000	33.4	+0.0	+41.2	+0.0	+0.0	+0.0	54.1	54.0	+0.1	Vert
	M		+0.0	+0.0	+0.0	+3.4					
	Ambient		+1.2	+6.8	+0.0	+1.0	360		NOISEFLOOR		141
			+0.0	-32.9							
2	2570.000M	16.3	+0.0	+29.3	+0.0	+0.0	+0.0	50.5	54.0	-3.5	Horiz
	Ambient		+0.0	+0.0	+0.0	+1.3			NOISEFLOOR		116
			+0.5	+2.6	+0.5	+0.0					
			+0.0	+0.0							
3	904.700M	43.2	+0.0	+0.0	+23.2	+1.9	+0.0	41.8	46.0	-4.2	Vert
			+0.5	+2.0	+0.3	+0.0	360				100
			+0.0	+0.0	+0.0	+0.0					
			-29.3	+0.0							
4	100.400M	56.4	+0.0	+0.0	+10.2	+0.6	+0.0	39.0	44.0	-5.0	Vert
			+0.1	+0.6	+0.2	+0.0	360				100
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							

5	12.077M	14.6	+9.0	+0.0	+0.0	+0.2	+0.0	24.1	30.0	-5.9	180de
			+0.0	+0.2	+0.1	+0.0	360				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
6	904.700M	41.5	+0.0	+0.0	+23.2	+1.9	+0.0	40.1	46.0	-5.9	Horiz
			+0.5	+2.0	+0.3	+0.0					175
			+0.0	+0.0	+0.0	+0.0					
			-29.3	+0.0							
7	99.500M	54.8	+0.0	+0.0	+10.1	+0.6	+0.0	37.3	44.0	-6.7	Horiz
			+0.1	+0.6	+0.2	+0.0					175
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							
8	11.507M	13.6	+9.1	+0.0	+0.0	+0.2	+0.0	23.2	30.0	-6.8	90deg
	Ambient		+0.0	+0.2	+0.1	+0.0	360		NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
9	7322.003M	36.6	+0.0	+36.4	+0.0	+0.0	+0.0	46.7	54.0	-7.3	Horiz
			+0.0	+0.0	+0.0	+2.3	360				141
			+1.1	+4.7	+0.0	+0.3					
			+0.0	-34.7							
10	7322.004M	36.2	+0.0	+36.4	+0.0	+0.0	+0.0	46.3	54.0	-7.7	Vert
			+0.0	+0.0	+0.0	+2.3					140
			+1.1	+4.7	+0.0	+0.3					
			+0.0	-34.7							
11	10760.000 M	32.1	+0.0	+38.5	+0.0	+0.0	+0.0	45.5	54.0	-8.5	Vert
			+0.0	+0.0	+0.0	+2.8					
	Ambient		+1.2	+5.6	+0.0	+0.0	360		NOISEFLOOR		141
			+0.0	-34.7							
12	5491.494M	36.3	+0.0	+34.7	+0.0	+0.0	+0.0	44.9	54.0	-9.1	Horiz
			+0.0	+0.0	+0.0	+2.0	339				137
			+0.8	+3.9	+0.0	+0.5					
			+0.0	-33.3							
13	167.300M	50.9	+0.0	+0.0	+10.0	+0.8	+0.0	34.2	44.0	-9.8	Horiz
			+0.2	+0.9	+0.2	+0.0					175
			+0.0	+0.0	+0.0	+0.0					
			-28.8	+0.0							
14	1506.000M	15.3	+0.0	+24.7	+0.0	+0.0	+0.0	44.2	54.0	-9.8	Horiz
	Ambient		+0.0	+0.0	+0.0	+1.1			NOISEFLOOR		116
			+0.6	+2.0	+0.5	+0.0					
			+0.0	+0.0							
15	5491.496M	35.3	+0.0	+34.7	+0.0	+0.0	+0.0	43.9	54.0	-10.1	Vert
			+0.0	+0.0	+0.0	+2.0	160				125
			+0.8	+3.9	+0.0	+0.5					
			+0.0	-33.3							
16	14190.000 M	21.3	+0.0	+41.2	+0.0	+0.0	+0.0	42.0	54.0	-12.0	Vert
			+0.0	+0.0	+0.0	+3.4					
	Ambient		+1.2	+6.8	+0.0	+1.0	360		NOISEFLOOR		141
			+0.0	-32.9							
17	3661.005M	33.1	+0.0	+31.9	+0.0	+0.0	+0.0	38.3	54.0	-15.7	Vert
	Ave		+0.0	+0.0	+0.0	+1.7	191				140
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							

^	3661.005M	40.1	+0.0	+31.9	+0.0	+0.0	+0.0	45.3	54.0	-8.7	Vert
			+0.0	+0.0	+0.0	+1.7	191				140
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
19	3660.996M	32.9	+0.0	+31.9	+0.0	+0.0	+0.0	38.1	54.0	-15.9	Horiz
	Ave		+0.0	+0.0	+0.0	+1.7	358				140
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
^	3660.996M	39.9	+0.0	+31.9	+0.0	+0.0	+0.0	45.1	54.0	-8.9	Horiz
			+0.0	+0.0	+0.0	+1.7	358				140
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
21	162.000M	44.3	+0.0	+0.0	+10.5	+0.8	+0.0	28.0	44.0	-16.0	Vert
			+0.2	+0.9	+0.2	+0.0	360				100
			+0.0	+0.0	+0.0	+0.0					
			-28.9	+0.0							
22	437.541k	41.6	+9.8	+0.0	+0.0	+0.1	-80.0	-28.4	15.0	-43.4	180de
			+0.0	+0.0	+0.1	+0.0					101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
23	16.281k	47.6	+14.0	+0.0	+0.0	+0.0	-80.0	-18.4	43.8	-62.2	90deg
	Ambient		+0.0	+0.0	+0.0	+0.0	14		NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
24	10.884k	45.9	+16.1	+0.0	+0.0	+0.0	-80.0	-18.0	47.3	-65.3	180de
	Ambient		+0.0	+0.0	+0.0	+0.0			NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
25	11.940k	45.0	+15.7	+0.0	+0.0	+0.0	-80.0	-19.3	46.5	-65.8	90deg
	Ambient		+0.0	+0.0	+0.0	+0.0	360		NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							

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

Customer: **Impinj Inc**
Specification: **FCC 15.247/15.209**
Work Order #: **89028** Date: 2/12/2009
Test Type: **Radiated Scan** Time: 08:59:35
Equipment: **RFID Reader** Sequence#: 12
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Mag Loop	2156	06/04/2008	06/04/2010	AN00052
Antenna	2453	12/22/2008	12/22/2010	AN01994
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
Horn Antenna, Active 18-26GHz	1114018	11/13/2008	11/13/2010	2742
Heliax cable	N/A	07/22/2008	07/22/2010	AN05545
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03123
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03122
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03121
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Pasternack Coax		07/20/2007	07/20/2009	AN05425
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271
Filter	2	05/01/2008	05/01/2010	2750
Filter	311SH10-3000/T10000-0/0	12/02/2008	12/02/2010	3116
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872

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

Function	Manufacturer	Model #	S/N
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB
Brickyard Antenna	CSL	CS777-2	V25078 EP00090

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Radiated Spurious Emissions per FCC 15.247(d)

The Unit is an RF reader. It is located in the back edge of the test table.
All its ports are being exercised. It is being powered by the AC/DC converter.
It is connected to a laptop outside the chamber through a shielded ethernet cable.
The antenna is suspended 10cm above the wooden table with styrofoam.
The EUT will be in transmitting mode throughout the test in the HIGH channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 30.0 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 927.25MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=ANT- AN00052-06042008	T2=ANT-AN01412-111207
T3=ANT AN01994 25-1000MHz	T4=CAB-ANP05360
T5=CAB-ANP05361	T6=CAB-ANP05366
T7=CAB-ANP05371	T8=CAB-ANP03121-120208
T9=CAB-ANP03123-120208	T10=CAB-ANP05545-072208
T11=Filter 1GHz HP AN02750	T12=FIL-AN03116-120208
T13=AMP-AN01517-070808	T14=AMP-AN01271-100207 - .5-26.5 GHz

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

#	Freq	Rdng	T1 T5 T9 T13	T2 T6 T10 T14	T3 T7 T11	T4 T8 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	1854.495M	20.3	+0.0	+26.8	+0.0	+0.0	+0.0	51.3	54.0	-2.7	Vert
	Ambient		+0.0	+0.0	+0.0	+1.1	112		NOISEFLOOR		116
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							
2	916.440M	42.8	+0.0	+0.0	+23.3	+1.9	+0.0	41.6	46.0	-4.4	Vert
			+0.5	+2.0	+0.4	+0.0					100
			+0.0	+0.0	+0.0	+0.0					
			-29.3	+0.0							
3	100.310M	56.9	+0.0	+0.0	+10.2	+0.6	+0.0	39.5	44.0	-4.5	Vert
			+0.1	+0.6	+0.2	+0.0					100
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							
4	100.310M	55.1	+0.0	+0.0	+10.2	+0.6	+0.0	37.7	44.0	-6.3	Horiz
			+0.1	+0.6	+0.2	+0.0	360				175
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							

5	26.490M	15.3	+6.8	+0.0	+0.0	+0.3	+0.0	22.9	30.0	-7.1	180de
			+0.0	+0.3	+0.2	+0.0					101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
6	11.811M	13.2	+9.1	+0.0	+0.0	+0.2	+0.0	22.8	30.0	-7.2	180de
			+0.0	+0.2	+0.1	+0.0	357				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
7	853.250M	40.5	+0.0	+0.0	+22.8	+1.7	+0.0	38.5	46.0	-7.5	Horiz
			+0.5	+2.0	+0.3	+0.0	360				175
			+0.0	+0.0	+0.0	+0.0					
			-29.3	+0.0							
8	25.690M	14.3	+6.7	+0.0	+0.0	+0.3	+0.0	21.8	30.0	-8.2	90deg
	Ambient		+0.0	+0.3	+0.2	+0.0	360		NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
9	17752.000 M	20.1	+0.0	+43.6	+0.0	+0.0	+0.0	44.9	54.0	-9.1	Horiz
			+0.0	+0.0	+0.0	+3.6					
	Ambient		+1.7	+8.1	+0.0	+0.9	209		NOISEFLOOR		109
			+0.0	-33.1							
10	5563.505M	35.7	+0.0	+34.7	+0.0	+0.0	+0.0	44.1	54.0	-9.9	Horiz
			+0.0	+0.0	+0.0	+1.9	360				151
			+0.8	+4.0	+0.0	+0.4					
			+0.0	-33.4							
11	5563.505M	35.5	+0.0	+34.7	+0.0	+0.0	+0.0	43.9	54.0	-10.1	Vert
			+0.0	+0.0	+0.0	+1.9	159				113
			+0.8	+4.0	+0.0	+0.4					
			+0.0	-33.4							
12	3709.000M	38.1	+0.0	+32.1	+0.0	+0.0	+0.0	43.6	54.0	-10.4	Vert
			+0.0	+0.0	+0.0	+1.8	197				113
			+0.7	+2.9	+0.0	+0.7					
			+0.0	-32.7							
13	167.060M	49.8	+0.0	+0.0	+10.0	+0.8	+0.0	33.1	44.0	-10.9	Horiz
			+0.2	+0.9	+0.2	+0.0	360				175
			+0.0	+0.0	+0.0	+0.0					
			-28.8	+0.0							
14	3709.000M	36.4	+0.0	+32.1	+0.0	+0.0	+0.0	41.9	54.0	-12.1	Horiz
			+0.0	+0.0	+0.0	+1.8	290				109
			+0.7	+2.9	+0.0	+0.7					
			+0.0	-32.7							
15	9272.500M	24.1	+0.0	+38.8	+0.0	+0.0	+0.0	40.0	54.0	-14.0	Horiz
	Ave		+0.0	+0.0	+0.0	+3.2	209				109
			+1.7	+5.3	+0.0	+0.4					
			+0.0	-33.5							
^	9272.500M	33.3	+0.0	+38.8	+0.0	+0.0	+0.0	49.2	54.0	-4.8	Horiz
			+0.0	+0.0	+0.0	+3.2	209				109
			+1.7	+5.3	+0.0	+0.4					
			+0.0	-33.5							
17	136.800M	44.9	+0.0	+0.0	+11.7	+0.7	+0.0	29.5	44.0	-14.5	Vert
			+0.2	+0.7	+0.3	+0.0					100
			+0.0	+0.0	+0.0	+0.0					
			-29.0	+0.0							

18	438.510M	37.4	+0.0	+0.0	+17.0	+1.5	+0.0	29.0	46.0	-17.0	Horiz
			+0.3	+1.6	+0.5	+0.0	360				175
			+0.0	+0.0	+0.0	+0.0					
			-29.3	+0.0							
19	173.920k	46.5	+10.0	+0.0	+0.0	+0.0	-80.0	-23.5	23.1	-46.6	90deg
	Ambient		+0.0	+0.0	+0.0	+0.0			NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
20	14.460k	45.2	+14.6	+0.0	+0.0	+0.0	-80.0	-20.2	44.8	-65.0	90deg
	Ambient		+0.0	+0.0	+0.0	+0.0			NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
21	11.526k	45.4	+15.8	+0.0	+0.0	+0.0	-80.0	-18.8	46.8	-65.6	180de
	Ambient		+0.0	+0.0	+0.0	+0.0	360		NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							

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

Customer: **Impinj Inc**
Specification: **FCC 15.247/15.209**
Work Order #: **89028** Date: 2/12/2009
Test Type: **Radiated Scan** Time: 09:29:27
Equipment: **RFID Reader** Sequence#: 10
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Mag Loop	2156	06/04/2008	06/04/2010	AN00052
Antenna	2453	12/22/2008	12/22/2010	AN01994
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
Horn Antenna, Active 18-26GHz	1114018	11/13/2008	11/13/2010	2742
Heliax cable	N/A	07/22/2008	07/22/2010	AN05545
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03123
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03122
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03121
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Pasternack Coax		07/20/2007	07/20/2009	AN05425
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271
Filter	2	05/01/2008	05/01/2010	2750
Filter	311SH10-3000/T10000-0/0	12/02/2008	12/02/2010	3116
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872

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

Function	Manufacturer	Model #	S/N
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB
Brickyard Antenna	CSL	CS777-2	V25078 EP00090

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Radiated Spurious Emissions per FCC 15.247(d)

The Unit is an RF reader. It is located in the back edge of the test table.
All its ports are being exercised. It is being powered by the AC/DC converter.
It is connected to a laptop outside the chamber through a shielded ethernet cable.
The antenna is suspended 10cm above the wooden table with styrofoam.
The EUT will be in transmitting mode throughout the test in the LOW channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 30.0 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 902.75MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=ANT- AN00052-06042008	T2=ANT-AN01412-111207
T3=ANT AN01994 25-1000MHz	T4=CAB-ANP05360
T5=CAB-ANP05361	T6=CAB-ANP05366
T7=CAB-ANP05371	T8=CAB-ANP03121-120208
T9=CAB-ANP03123-120208	T10=CAB-ANP05545-072208
T11=Filter 1GHz HP AN02750	T12=FIL-AN03116-120208
T13=AMP-AN01517-070808	T14=AMP-AN01271-100207 - .5-26.5 GHz

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

#	Freq	Rdng	T1 T5 T9 T13	T2 T6 T10 T14	T3 T7 T11	T4 T8 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	14070.000	32.2	+0.0	+41.1	+0.0	+0.0	+0.0	52.4	54.0	-1.6	Horiz
	M		+0.0	+0.0	+0.0	+3.4					
	Ambient		+1.3	+6.8	+0.0	+0.6	312		NOISEFLOOR		116
			+0.0	-33.0							
2	2518.000M	16.9	+0.0	+29.2	+0.0	+0.0	+0.0	51.0	54.0	-3.0	Horiz
	Ambient		+0.0	+0.0	+0.0	+1.3	360		NOISEFLOOR		116
			+0.5	+2.6	+0.5	+0.0					
			+0.0	+0.0							
3	892.405M	44.4	+0.0	+0.0	+23.1	+1.8	+0.0	42.7	46.0	-3.3	Vert
			+0.5	+2.0	+0.2	+0.0					99
			+0.0	+0.0	+0.0	+0.0					
			-29.3	+0.0							
4	100.065M	56.5	+0.0	+0.0	+10.2	+0.6	+0.0	39.1	44.0	-4.9	Vert
			+0.1	+0.6	+0.2	+0.0	4				99
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							

5	100.065M	55.6	+0.0	+0.0	+10.2	+0.6	+0.0	38.2	44.0	-5.8	Horiz
			+0.1	+0.6	+0.2	+0.0	360				175
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							
6	10635.000 M	34.7	+0.0	+38.4	+0.0	+0.0	+0.0	48.2	54.0	-5.8	Horiz
			+0.0	+0.0	+0.0	+2.9					
	Ambient		+1.1	+5.6	+0.0	+0.0	312		NOISEFLOOR		116
			+0.0	-34.5							
7	802.445M	42.3	+0.0	+0.0	+22.5	+1.9	+0.0	40.1	46.0	-5.9	Horiz
			+0.4	+2.0	+0.5	+0.0	360				175
			+0.0	+0.0	+0.0	+0.0					
			-29.5	+0.0							
8	26.610M	15.7	+6.8	+0.0	+0.0	+0.3	+0.0	23.3	30.0	-6.7	90deg
	Ambient		+0.0	+0.3	+0.2	+0.0	103		NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
9	24.350M	15.5	+6.8	+0.0	+0.0	+0.3	+0.0	23.1	30.0	-6.9	180de
			+0.0	+0.3	+0.2	+0.0	352				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
10	9087.282M	31.0	+0.0	+38.9	+0.0	+0.0	+0.0	46.7	54.0	-7.3	Vert
	Ambient		+0.0	+0.0	+0.0	+3.1	312		NOISEFLOOR		116
			+1.6	+5.3	+0.0	+0.5					
			+0.0	-33.7							
11	1832.000M	14.7	+0.0	+26.6	+0.0	+0.0	+0.0	45.5	54.0	-8.5	Vert
	Ambient		+0.0	+0.0	+0.0	+1.1	360		NOISEFLOOR		116
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							
12	166.670M	51.0	+0.0	+0.0	+10.1	+0.8	+0.0	34.4	44.0	-9.6	Horiz
			+0.2	+0.9	+0.2	+0.0	360				175
			+0.0	+0.0	+0.0	+0.0					
			-28.8	+0.0							
13	3610.990M	39.0	+0.0	+31.8	+0.0	+0.0	+0.0	44.0	54.0	-10.0	Vert
			+0.0	+0.0	+0.0	+1.6	224				147
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
14	3610.990M	37.1	+0.0	+31.8	+0.0	+0.0	+0.0	42.1	54.0	-11.9	Horiz
			+0.0	+0.0	+0.0	+1.6	184				147
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
15	5416.494M	32.8	+0.0	+34.5	+0.0	+0.0	+0.0	41.9	54.0	-12.1	Horiz
			+0.0	+0.0	+0.0	+2.3	128				116
			+1.0	+3.9	+0.0	+0.5					
			+0.0	-33.1							
16	5416.494M	32.1	+0.0	+34.5	+0.0	+0.0	+0.0	41.2	54.0	-12.8	Vert
	Ave		+0.0	+0.0	+0.0	+2.3	155				116
			+1.0	+3.9	+0.0	+0.5					
			+0.0	-33.1							
^	5416.494M	37.3	+0.0	+34.5	+0.0	+0.0	+0.0	46.4	54.0	-7.6	Vert
			+0.0	+0.0	+0.0	+2.3	155				116
			+1.0	+3.9	+0.0	+0.5					
			+0.0	-33.1							

18	136.395M	44.8	+0.0	+0.0	+11.7	+0.7	+0.0	29.4	44.0	-14.6	Vert
			+0.2	+0.7	+0.3	+0.0					99
			+0.0	+0.0	+0.0	+0.0					
			-29.0	+0.0							
19	1.114M	32.0	+10.1	+0.0	+0.0	+0.1	-40.0	2.3	26.8	-24.5	90deg
	Ambient		+0.0	+0.1	+0.0	+0.0	360		NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
20	149.360k	64.5	+10.0	+0.0	+0.0	+0.0	-80.0	-5.5	24.4	-29.9	180de
			+0.0	+0.0	+0.0	+0.0	156				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
21	119.850k	62.9	+10.1	+0.0	+0.0	+0.0	-80.0	-7.0	26.3	-33.3	90deg
			+0.0	+0.0	+0.0	+0.0	110				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
22	319.830k	48.1	+9.9	+0.0	+0.0	+0.1	-80.0	-21.8	17.7	-39.5	180de
			+0.0	+0.0	+0.1	+0.0	156				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
23	111.700k	52.5	+9.9	+0.0	+0.0	+0.0	-80.0	-17.6	26.9	-44.5	180de
			+0.0	+0.0	+0.0	+0.0	185				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
24	15.790k	54.3	+14.2	+0.0	+0.0	+0.0	-80.0	-11.5	44.1	-55.6	180de
			+0.0	+0.0	+0.0	+0.0	60				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
25	12.024k	52.8	+15.6	+0.0	+0.0	+0.0	-80.0	-11.6	46.5	-58.1	180de
			+0.0	+0.0	+0.0	+0.0	185				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
26	17.823k	50.6	+13.5	+0.0	+0.0	+0.0	-80.0	-15.9	43.0	-58.9	90deg
			+0.0	+0.0	+0.0	+0.0	360				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
27	31.309k	47.0	+11.3	+0.0	+0.0	+0.0	-80.0	-21.7	38.1	-59.8	90deg
			+0.0	+0.0	+0.0	+0.0	360				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
28	9.792k	50.3	+0.0	+0.0	+0.0	+0.0	-80.0	-29.7	48.3	-78.0	90deg
			+0.0	+0.0	+0.0	+0.0					101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							

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

Customer: **Impinj Inc**
Specification: **FCC 15.247/15.209**
Work Order #: **89028** Date: 2/12/2009
Test Type: **Radiated Scan** Time: 08:35:48
Equipment: **RFID Reader** Sequence#: 14
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Mag Loop	2156	06/04/2008	06/04/2010	AN00052
Antenna	2453	12/22/2008	12/22/2010	AN01994
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
Horn Antenna, Active 18-26GHz	1114018	11/13/2008	11/13/2010	2742
Heliax cable	N/A	07/22/2008	07/22/2010	AN05545
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03123
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03122
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03121
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Pasternack Coax		07/20/2007	07/20/2009	AN05425
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271
Filter	2	05/01/2008	05/01/2010	2750
Filter	311SH10-3000/T10000-0/0	12/02/2008	12/02/2010	3116
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872

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

Function	Manufacturer	Model #	S/N
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB
Mini-Guardrail	Impinj	IPJ-A0303-0000E	0069

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Radiated Spurious Emissions per FCC 15.247(d)

The Unit is an RF reader. It is located in the back edge of the test table.
All its ports are being exercised. It is being powered by the AC/DC converter
It is connected to a laptop outside the chamber through a shielded ethernet cable.
The antenna is suspended 10cm above the wooden table with styrofoam.
The EUT will be in transmitting mode throughout the test in the LOW channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 30.0 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 902.75MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=ANT- AN00052-06042008	T2=ANT-AN01412-111207
T3=ANT AN01994 25-1000MHz	T4=CAB-ANP05360
T5=CAB-ANP05361	T6=CAB-ANP05366
T7=CAB-ANP05371	T8=CAB-ANP03121-120208
T9=CAB-ANP03123-120208	T10=CAB-ANP05545-072208
T11=Filter 1GHz HP AN02750	T12=FIL-AN03116-120208
T13=AMP-AN01517-070808	T14=AMP-AN01271-100207 - .5-26.5 GHz

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

#	Freq	Rdng	T1 T5 T9 T13	T2 T6 T10 T14	T3 T7 T11	T4 T8 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	13016.000	33.1	+0.0	+39.4	+0.0	+0.0	+0.0	52.1	54.0	-1.9	Vert
	M		+0.0	+0.0	+0.0	+3.2					
	Ambient		+1.5	+6.9	+0.0	+0.4	155		NOISEFLOOR		116
			+0.0	-32.4							
2	2817.000M	15.7	+0.0	+30.1	+0.0	+0.0	+0.0	51.1	54.0	-2.9	Horiz
	Ambient		+0.0	+0.0	+0.0	+1.4	360		NOISEFLOOR		116
			+0.5	+2.7	+0.7	+0.0					
			+0.0	+0.0							
3	1786.000M	19.5	+0.0	+26.4	+0.0	+0.0	+0.0	50.2	54.0	-3.8	Vert
	Ambient		+0.0	+0.0	+0.0	+1.1			NOISEFLOOR		116
			+0.5	+2.2	+0.5	+0.0					
			+0.0	+0.0							
4	16288.000	31.1	+0.0	+38.9	+0.0	+0.0	+0.0	49.3	54.0	-4.7	Horiz
	M		+0.0	+0.0	+0.0	+3.0					
	Ambient		+0.9	+7.6	+0.0	+0.5	155		NOISEFLOOR		116
			+0.0	-32.7							

5	100.065M	56.2	+0.0	+0.0	+10.2	+0.6	+0.0	38.8	44.0	-5.2	Vert
			+0.1	+0.6	+0.2	+0.0	360				101
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							
6	3610.986M	41.0	+0.0	+31.8	+0.0	+0.0	+0.0	46.0	54.0	-8.0	Vert
			+0.0	+0.0	+0.0	+1.6	224				147
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
7	100.065M	52.2	+0.0	+0.0	+10.2	+0.6	+0.0	34.8	44.0	-9.2	Horiz
			+0.1	+0.6	+0.2	+0.0					175
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							
8	5416.606M	35.4	+0.0	+34.5	+0.0	+0.0	+0.0	44.5	54.0	-9.5	Horiz
			+0.0	+0.0	+0.0	+2.3	127				116
			+1.0	+3.9	+0.0	+0.5					
			+0.0	-33.1							
9	3611.134M	38.5	+0.0	+31.8	+0.0	+0.0	+0.0	43.5	54.0	-10.5	Horiz
			+0.0	+0.0	+0.0	+1.6	184				147
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
10	67.195M	50.2	+0.0	+0.0	+5.9	+0.5	+0.0	28.2	40.0	-11.8	Vert
			+0.1	+0.5	+0.2	+0.0	360				101
			+0.0	+0.0	+0.0	+0.0					
			-29.2	+0.0							
11	169.265M	48.7	+0.0	+0.0	+9.8	+0.8	+0.0	31.8	44.0	-12.2	Horiz
			+0.2	+0.9	+0.2	+0.0					175
			+0.0	+0.0	+0.0	+0.0					
			-28.8	+0.0							
12	18.305M	6.8	+8.4	+0.0	+0.0	+0.3	+0.0	16.0	30.0	-14.0	180de
	Ave		+0.0	+0.3	+0.2	+0.0	111				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
^	18.305M	17.8	+8.4	+0.0	+0.0	+0.3	+0.0	27.0	30.0	-3.0	180de
			+0.0	+0.3	+0.2	+0.0	111				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
14	169.265M	46.5	+0.0	+0.0	+9.8	+0.8	+0.0	29.6	44.0	-14.4	Vert
			+0.2	+0.9	+0.2	+0.0	360				101
			+0.0	+0.0	+0.0	+0.0					
			-28.8	+0.0							
15	5416.435M	30.4	+0.0	+34.5	+0.0	+0.0	+0.0	39.5	54.0	-14.5	Vert
	Ave		+0.0	+0.0	+0.0	+2.3	155				116
			+1.0	+3.9	+0.0	+0.5					
			+0.0	-33.1							
^	5416.435M	38.1	+0.0	+34.5	+0.0	+0.0	+0.0	47.2	54.0	-6.8	Vert
			+0.0	+0.0	+0.0	+2.3	155				116
			+1.0	+3.9	+0.0	+0.5					
			+0.0	-33.1							
17	24.352M	6.2	+6.8	+0.0	+0.0	+0.3	+0.0	13.8	30.0	-16.2	90deg
	Ave		+0.0	+0.3	+0.2	+0.0	360				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							

^	24.352M	17.4	+6.8	+0.0	+0.0	+0.3	+0.0	25.0	30.0	-5.0	90deg
			+0.0	+0.3	+0.2	+0.0	360				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
19	790.335M	27.6	+0.0	+0.0	+22.3	+1.8	+0.0	25.1	46.0	-20.9	Vert
			+0.4	+2.0	+0.5	+0.0	360				101
			+0.0	+0.0	+0.0	+0.0					
			-29.5	+0.0							
20	794.660M	25.5	+0.0	+0.0	+22.4	+1.8	+0.0	23.1	46.0	-22.9	Horiz
			+0.4	+2.0	+0.5	+0.0					175
			+0.0	+0.0	+0.0	+0.0					
			-29.5	+0.0							
21	1.114M	29.1	+10.1	+0.0	+0.0	+0.1	-40.0	-0.6	26.8	-27.4	180de
			+0.0	+0.1	+0.0	+0.0					101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
22	154.620k	48.5	+10.0	+0.0	+0.0	+0.0	-80.0	-21.5	24.1	-45.6	180de
	Ambient		+0.0	+0.0	+0.0	+0.0	360		NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
23	50.900k	38.4	+10.4	+0.0	+0.0	+0.0	-80.0	-31.2	33.8	-65.0	180de
	Ambient		+0.0	+0.0	+0.0	+0.0			NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
24	11.544k	45.6	+15.8	+0.0	+0.0	+0.0	-80.0	-18.6	46.8	-65.4	90deg
	Ambient		+0.0	+0.0	+0.0	+0.0	360		NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
25	21.607k	43.2	+12.6	+0.0	+0.0	+0.0	-80.0	-24.2	41.3	-65.5	180de
	Ambient		+0.0	+0.0	+0.0	+0.0			NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
26	9.624k	45.3	+0.0	+0.0	+0.0	+0.0	-80.0	-34.7	48.4	-83.1	180de
	Ambient		+0.0	+0.0	+0.0	+0.0	-16		NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							

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

Customer: **Impinj Inc**
Specification: **FCC 15.247/15.209**
Work Order #: **89028** Date: 2/12/2009
Test Type: **Radiated Scan** Time: 08:46:50
Equipment: **RFID Reader** Sequence#: 14
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Mag Loop	2156	06/04/2008	06/04/2010	AN00052
Antenna	2453	12/22/2008	12/22/2010	AN01994
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
Horn Antenna, Active 18-26GHz	1114018	11/13/2008	11/13/2010	2742
Heliax cable	N/A	07/22/2008	07/22/2010	AN05545
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03123
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03122
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03121
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Pasternack Coax		07/20/2007	07/20/2009	AN05425
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271
Filter	2	05/01/2008	05/01/2010	2750
Filter	311SH10-3000/T10000-0/0	12/02/2008	12/02/2010	3116
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872

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

Function	Manufacturer	Model #	S/N
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB
Mini-Guardrail	Impinj	IPJ-A0303-0000E	0069

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Radiated Spurious Emissions per FCC 15.247(d)

The Unit is an RF reader. It is located in the back edge of the test table.
All its ports are being exercised. It is being powered by the AC/DC converter.
It is connected to a laptop outside the chamber through a shielded ethernet cable.
The antenna is suspended 10cm above the wooden table with styrofoam.
The EUT will be in transmitting mode throughout the test in the MID channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 30.0 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 915.25MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=ANT- AN00052-06042008	T2=ANT-AN01412-111207
T3=ANT AN01994 25-1000MHz	T4=CAB-ANP05360
T5=CAB-ANP05361	T6=CAB-ANP05366
T7=CAB-ANP05371	T8=CAB-ANP03121-120208
T9=CAB-ANP03123-120208	T10=CAB-ANP05545-072208
T11=Filter 1GHz HP AN02750	T12=FIL-AN03116-120208
T13=AMP-AN01517-070808	T14=AMP-AN01271-100207 - .5-26.5 GHz

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

#	Freq	Rdng	T1 T5 T9 T13	T2 T6 T10 T14	T3 T7 T11	T4 T8 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	11976.000	33.9	+0.0	+39.4	+0.0	+0.0	+0.0	49.7	54.0	-4.3	Vert
	M		+0.0	+0.0	+0.0	+3.2					
	Ambient		+1.9	+6.2	+0.0	+0.5	360		NOISEFLOOR		100
			+0.0	-35.4							
2	16112.000	31.1	+0.0	+38.6	+0.0	+0.0	+0.0	49.0	54.0	-5.0	Vert
	M		+0.0	+0.0	+0.0	+3.1					
	Ambient		+0.9	+7.5	+0.0	+0.4	360		NOISEFLOOR		100
			+0.0	-32.6							
3	99.500M	55.8	+0.0	+0.0	+10.1	+0.6	+0.0	38.3	44.0	-5.7	Vert
			+0.1	+0.6	+0.2	+0.0					100
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							

4	1864.000M	16.7	+0.0	+26.8	+0.0	+0.0	+0.0	47.7	54.0	-6.3	Vert
			+0.0	+0.0	+0.0	+1.1	311				116
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							
5	7322.002M	35.8	+0.0	+36.4	+0.0	+0.0	+0.0	45.9	54.0	-8.1	Horiz
			+0.0	+0.0	+0.0	+2.3	359				140
			+1.1	+4.7	+0.0	+0.3					
			+0.0	-34.7							
6	99.500M	53.3	+0.0	+0.0	+10.1	+0.6	+0.0	35.8	44.0	-8.2	Horiz
			+0.1	+0.6	+0.2	+0.0	360				175
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							
7	24.540M	14.0	+6.7	+0.0	+0.0	+0.3	+0.0	21.5	30.0	-8.5	90deg
	Ambient		+0.0	+0.3	+0.2	+0.0	24		NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
8	5491.467M	36.4	+0.0	+34.7	+0.0	+0.0	+0.0	45.0	54.0	-9.0	Horiz
			+0.0	+0.0	+0.0	+2.0	339				136
			+0.8	+3.9	+0.0	+0.5					
			+0.0	-33.3							
9	17624.000 M	20.2	+0.0	+43.0	+0.0	+0.0	+0.0	44.2	54.0	-9.8	Horiz
			+0.0	+0.0	+0.0	+3.6					
	Ave		+1.5	+8.2	+0.0	+0.7	360				100
			+0.0	-33.0							
10	5491.675M	35.6	+0.0	+34.7	+0.0	+0.0	+0.0	44.2	54.0	-9.8	Vert
			+0.0	+0.0	+0.0	+2.0	160				125
			+0.8	+3.9	+0.0	+0.5					
			+0.0	-33.3							
11	3.337M	8.3	+10.5	+0.0	+0.0	+0.2	+0.0	19.3	30.0	-10.7	180de
	Ambient		+0.0	+0.2	+0.1	+0.0	360		NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
12	67.000M	51.0	+0.0	+0.0	+5.9	+0.4	+0.0	28.7	40.0	-11.3	Vert
			+0.1	+0.4	+0.1	+0.0					100
			+0.0	+0.0	+0.0	+0.0					
			-29.2	+0.0							
13	167.300M	48.6	+0.0	+0.0	+10.0	+0.8	+0.0	31.9	44.0	-12.1	Horiz
			+0.2	+0.9	+0.2	+0.0	360				175
			+0.0	+0.0	+0.0	+0.0					
			-28.8	+0.0							
14	169.000M	46.2	+0.0	+0.0	+9.8	+0.8	+0.0	29.3	44.0	-14.7	Vert
			+0.2	+0.9	+0.2	+0.0					100
			+0.0	+0.0	+0.0	+0.0					
			-28.8	+0.0							
15	3660.930M	32.8	+0.0	+31.9	+0.0	+0.0	+0.0	38.0	54.0	-16.0	Vert
	Ave		+0.0	+0.0	+0.0	+1.7	190				140
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
^	3660.930M	42.3	+0.0	+31.9	+0.0	+0.0	+0.0	47.5	54.0	-6.5	Vert
			+0.0	+0.0	+0.0	+1.7	201				140
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							

17	7321.995M	26.5	+0.0	+36.4	+0.0	+0.0	+0.0	36.6	54.0	-17.4	Vert
	Ave		+0.0	+0.0	+0.0	+2.3	359				140
			+1.1	+4.7	+0.0	+0.3					
			+0.0	-34.7							
^	7321.995M	36.8	+0.0	+36.4	+0.0	+0.0	+0.0	46.9	54.0	-7.1	Vert
			+0.0	+0.0	+0.0	+2.3	359				140
			+1.1	+4.7	+0.0	+0.3					
			+0.0	-34.7							
19	3661.011M	31.1	+0.0	+31.9	+0.0	+0.0	+0.0	36.3	54.0	-17.7	Horiz
	Ave		+0.0	+0.0	+0.0	+1.7	360				140
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
^	3661.011M	40.8	+0.0	+31.9	+0.0	+0.0	+0.0	46.0	54.0	-8.0	Horiz
			+0.0	+0.0	+0.0	+1.7	360				140
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
21	828.200M	27.0	+0.0	+0.0	+22.7	+1.8	+0.0	24.9	46.0	-21.1	Horiz
			+0.4	+2.0	+0.4	+0.0	360				175
			+0.0	+0.0	+0.0	+0.0					
			-29.4	+0.0							
22	807.900M	26.4	+0.0	+0.0	+22.6	+1.9	+0.0	24.3	46.0	-21.7	Vert
			+0.4	+2.0	+0.5	+0.0					100
			+0.0	+0.0	+0.0	+0.0					
			-29.5	+0.0							
23	68.700k	38.2	+10.1	+0.0	+0.0	+0.0	-80.0	-31.7	31.2	-62.9	180de
	Ambient		+0.0	+0.0	+0.0	+0.0	360		NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
24	29.769k	41.9	+11.4	+0.0	+0.0	+0.0	-80.0	-26.7	38.5	-65.2	180de
	Ambient		+0.0	+0.0	+0.0	+0.0			NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
25	10.740k	46.0	+16.2	+0.0	+0.0	+0.0	-80.0	-17.8	47.5	-65.3	90deg
	Ambient		+0.0	+0.0	+0.0	+0.0			NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
26	15.440k	43.9	+14.3	+0.0	+0.0	+0.0	-80.0	-21.8	44.3	-66.1	90deg
	Ambient		+0.0	+0.0	+0.0	+0.0	174		NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
27	9.186k	44.6	+0.0	+0.0	+0.0	+0.0	-80.0	-35.4	48.8	-84.2	180de
	Ambient		+0.0	+0.0	+0.0	+0.0	336		NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							

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

Customer: **Impinj Inc**
Specification: **FCC 15.247/15.209**
Work Order #: **89028** Date: 2/12/2009
Test Type: **Radiated Scan** Time: 08:51:33
Equipment: **RFID Reader** Sequence#: 13
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Mag Loop	2156	06/04/2008	06/04/2010	AN00052
Antenna	2453	12/22/2008	12/22/2010	AN01994
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
Horn Antenna, Active 18-26GHz	1114018	11/13/2008	11/13/2010	2742
Heliax cable	N/A	07/22/2008	07/22/2010	AN05545
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03123
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03122
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03121
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Pasternack Coax		07/20/2007	07/20/2009	AN05425
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271
Filter	2	05/01/2008	05/01/2010	2750
Filter	311SH10-3000/T10000-0/0	12/02/2008	12/02/2010	3116
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872

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

Function	Manufacturer	Model #	S/N
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB
Mini-Guardrail	Impinj	IPJ-A0303-0000E	0069

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Radiated Spurious Emissions per FCC 15.247(d)

The Unit is an RF reader. It is located in the back edge of the test table.
All its ports are being exercised. It is being powered by the AC/DC converter.
It is connected to a laptop outside the chamber through a shielded ethernet cable.
The antenna is suspended 10cm above the wooden table with styrofoam.
The EUT will be in transmitting mode throughout the test in the HIGH channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 30.0 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 927.25MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=ANT- AN00052-06042008	T2=ANT-AN01412-111207
T3=ANT AN01994 25-1000MHz	T4=CAB-ANP05360
T5=CAB-ANP05361	T6=CAB-ANP05366
T7=CAB-ANP05371	T8=CAB-ANP03121-120208
T9=CAB-ANP03123-120208	T10=CAB-ANP05545-072208
T11=Filter 1GHz HP AN02750	T12=FIL-AN03116-120208
T13=AMP-AN01517-070808	T14=AMP-AN01271-100207 - .5-26.5 GHz

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

#	Freq	Rdng	T1 T5 T9 T13	T2 T6 T10 T14	T3 T7 T11	T4 T8 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	2704.000M	17.2	+0.0	+29.7	+0.0	+0.0	+0.0	52.1	54.0	-1.9	Horiz
	Ambient		+0.0	+0.0	+0.0	+1.4	360		NOISEFLOOR		116
			+0.5	+2.7	+0.6	+0.0					
			+0.0	+0.0							
2	16232.000 M	33.1	+0.0	+38.8	+0.0	+0.0	+0.0	51.1	54.0	-2.9	Vert
	Ambient		+0.0	+0.0	+0.0	+2.9					
			+0.8	+7.6	+0.0	+0.5	209		NOISEFLOOR		109
			+0.0	-32.6							
3	100.310M	55.8	+0.0	+0.0	+10.2	+0.6	+0.0	38.4	44.0	-5.6	Vert
			+0.1	+0.6	+0.2	+0.0	360				100
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							
4	25.700M	16.1	+6.7	+0.0	+0.0	+0.3	+0.0	23.6	30.0	-6.4	90deg
			+0.0	+0.3	+0.2	+0.0	360				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							

5	24.350M	16.0	+6.8	+0.0	+0.0	+0.3	+0.0	23.6	30.0	-6.4	180de
	Ambient		+0.0	+0.3	+0.2	+0.0	242		NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
6	1868.000M	16.5	+0.0	+26.8	+0.0	+0.0	+0.0	47.5	54.0	-6.5	Vert
	Ambient		+0.0	+0.0	+0.0	+1.1			NOISEFLOOR		116
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							
7	17922.000 M	20.0	+0.0	+44.3	+0.0	+0.0	+0.0	45.7	54.0	-8.3	Horiz
			+0.0	+0.0	+0.0	+3.7					
	Ambient		+1.6	+8.1	+0.0	+1.1	209		NOISEFLOOR		109
			+0.0	-33.1							
8	100.310M	52.4	+0.0	+0.0	+10.2	+0.6	+0.0	35.0	44.0	-9.0	Horiz
			+0.1	+0.6	+0.2	+0.0					175
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							
9	5563.769M	36.6	+0.0	+34.7	+0.0	+0.0	+0.0	45.0	54.0	-9.0	Horiz
			+0.0	+0.0	+0.0	+1.9	360				151
			+0.8	+4.0	+0.0	+0.4					
			+0.0	-33.4							
10	5563.619M	36.6	+0.0	+34.7	+0.0	+0.0	+0.0	45.0	54.0	-9.0	Vert
			+0.0	+0.0	+0.0	+1.9	158				114
			+0.8	+4.0	+0.0	+0.4					
			+0.0	-33.4							
11	3708.994M	37.0	+0.0	+32.1	+0.0	+0.0	+0.0	42.5	54.0	-11.5	Vert
			+0.0	+0.0	+0.0	+1.8	197				113
			+0.7	+2.9	+0.0	+0.7					
			+0.0	-32.7							
12	67.380M	50.0	+0.0	+0.0	+6.0	+0.5	+0.0	28.1	40.0	-11.9	Vert
			+0.1	+0.5	+0.2	+0.0	360				100
			+0.0	+0.0	+0.0	+0.0					
			-29.2	+0.0							
13	167.060M	48.7	+0.0	+0.0	+10.0	+0.8	+0.0	32.0	44.0	-12.0	Horiz
			+0.2	+0.9	+0.2	+0.0					175
			+0.0	+0.0	+0.0	+0.0					
			-28.8	+0.0							
14	3709.000M	35.5	+0.0	+32.1	+0.0	+0.0	+0.0	41.0	54.0	-13.0	Horiz
			+0.0	+0.0	+0.0	+1.8	290				107
			+0.7	+2.9	+0.0	+0.7					
			+0.0	-32.7							
15	16232.000 M	21.3	+0.0	+38.8	+0.0	+0.0	+0.0	39.3	54.0	-14.7	Vert
			+0.0	+0.0	+0.0	+2.9					
	Ambient		+0.8	+7.6	+0.0	+0.5	209		NOISEFLOOR		109
			+0.0	-32.6							
16	9272.394M	23.4	+0.0	+38.8	+0.0	+0.0	+0.0	39.3	54.0	-14.7	Vert
	Ave		+0.0	+0.0	+0.0	+3.2	209				109
			+1.7	+5.3	+0.0	+0.4					
			+0.0	-33.5							
^	9272.394M	35.5	+0.0	+38.8	+0.0	+0.0	+0.0	51.4	54.0	-2.6	Vert
			+0.0	+0.0	+0.0	+3.2	209				109
			+1.7	+5.3	+0.0	+0.4					
			+0.0	-33.5							

18	168.840M	45.3	+0.0	+0.0	+9.9	+0.8	+0.0	28.5	44.0	-15.5	Vert
			+0.2	+0.9	+0.2	+0.0	360				100
			+0.0	+0.0	+0.0	+0.0					
			-28.8	+0.0							
19	799.850M	27.4	+0.0	+0.0	+22.5	+1.9	+0.0	25.2	46.0	-20.8	Vert
			+0.4	+2.0	+0.5	+0.0	360				100
			+0.0	+0.0	+0.0	+0.0					
			-29.5	+0.0							
20	37.227k	40.1	+10.8	+0.0	+0.0	+0.0	-80.0	-29.1	36.6	-65.7	180de
	Ambient		+0.0	+0.0	+0.0	+0.0	360		NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
21	11.922k	44.5	+15.7	+0.0	+0.0	+0.0	-80.0	-19.8	46.5	-66.3	180de
	Ambient		+0.0	+0.0	+0.0	+0.0			NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							

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

Customer: **Impinj Inc**
Specification: **FCC 15.247/15.209**
Work Order #: **89028** Date: 2/12/2009
Test Type: **Radiated Scan** Time: 09:43:21
Equipment: **RFID Reader** Sequence#: 9
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Mag Loop	2156	06/04/2008	06/04/2010	AN00052
Antenna	2453	12/22/2008	12/22/2010	AN01994
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
Horn Antenna, Active 18-26GHz	1114018	11/13/2008	11/13/2010	2742
Heliax cable	N/A	07/22/2008	07/22/2010	AN05545
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03123
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03122
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03121
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Pasternack Coax		07/20/2007	07/20/2009	AN05425
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271
Filter	2	05/01/2008	05/01/2010	2750
Filter	311SH10-3000/T10000-0/0	12/02/2008	12/02/2010	3116
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872

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

Function	Manufacturer	Model #	S/N
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB
Guardwall antenna	Impinj	IPJ-A0402-USA	0116

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Radiated Spurious Emissions per FCC 15.247(d)

The Unit is an RF reader. It is located in the back edge of the test table.
All its ports are being exercised. It is being powered by the AC/DC converter.
It is connected to a laptop outside the chamber through a shielded ethernet cable.
The antenna is suspended 10cm above the wooden table with styrofoam.
The EUT will be in transmitting mode throughout the test in the LOW channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 30.0 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 902.75MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=ANT- AN00052-06042008	T2=ANT-AN01412-111207
T3=ANT AN01994 25-1000MHz	T4=CAB-ANP05360
T5=CAB-ANP05361	T6=CAB-ANP05366
T7=CAB-ANP05371	T8=CAB-ANP03121-120208
T9=CAB-ANP03123-120208	T10=CAB-ANP05545-072208
T11=Filter 1GHz HP AN02750	T12=FIL-AN03116-120208
T13=AMP-AN01517-070808	T14=AMP-AN01271-100207 - .5-26.5 GHz

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

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
			T9	T10	T11	T12					
			T13	T14							
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	14145.000	32.3	+0.0	+41.1	+0.0	+0.0	+0.0	52.7	54.0	-1.3	Horiz
	M		+0.0	+0.0	+0.0	+3.4					
	Ambient		+1.2	+6.8	+0.0	+0.8			NOISEFLOOR		147
			+0.0	-32.9							
2	2743.600M	16.2	+0.0	+29.9	+0.0	+0.0	+0.0	51.3	54.0	-2.7	Horiz
	Ambient		+0.0	+0.0	+0.0	+1.4	360		NOISEFLOOR		116
			+0.5	+2.7	+0.6	+0.0					
			+0.0	+0.0							
3	16500.000	32.3	+0.0	+39.3	+0.0	+0.0	+0.0	50.9	54.0	-3.1	Vert
	M		+0.0	+0.0	+0.0	+3.3					
	Ambient		+1.0	+7.7	+0.0	+0.4	34		NOISEFLOOR		147
			+0.0	-33.1							
4	892.405M	43.8	+0.0	+0.0	+23.1	+1.8	+0.0	42.1	46.0	-3.9	Vert
			+0.5	+2.0	+0.2	+0.0	360				99
			+0.0	+0.0	+0.0	+0.0					
			-29.3	+0.0							

5	892.405M	42.9	+0.0	+0.0	+23.1	+1.8	+0.0	41.2	46.0	-4.8	Horiz
			+0.5	+2.0	+0.2	+0.0					175
			+0.0	+0.0	+0.0	+0.0					
			-29.3	+0.0							
6	100.065M	54.4	+0.0	+0.0	+10.2	+0.6	+0.0	37.0	44.0	-7.0	Vert
			+0.1	+0.6	+0.2	+0.0	360				99
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							
7	1817.200M	14.8	+0.0	+26.6	+0.0	+0.0	+0.0	45.6	54.0	-8.4	Vert
	Ambient		+0.0	+0.0	+0.0	+1.1	360		NOISEFLOOR		116
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							
8	10480.000 M	31.6	+0.0	+38.2	+0.0	+0.0	+0.0	44.9	54.0	-9.1	Vert
			+0.0	+0.0	+0.0	+2.8					
	Ambient		+1.1	+5.5	+0.0	+0.0	360		NOISEFLOOR		147
			+0.0	-34.3							
9	5416.504M	35.4	+0.0	+34.5	+0.0	+0.0	+0.0	44.5	54.0	-9.5	Vert
			+0.0	+0.0	+0.0	+2.3	199				123
			+1.0	+3.9	+0.0	+0.5					
			+0.0	-33.1							
10	166.670M	50.4	+0.0	+0.0	+10.1	+0.8	+0.0	33.8	44.0	-10.2	Horiz
			+0.2	+0.9	+0.2	+0.0					175
			+0.0	+0.0	+0.0	+0.0					
			-28.8	+0.0							
11	11310.000 M	31.9	+0.0	+39.0	+0.0	+0.0	+0.0	42.2	54.0	-11.8	Horiz
			+0.0	+0.0	+0.0	+2.9					
	Ambient		+1.6	+5.8	+0.0	+0.2			NOISEFLOOR		147
			+0.0	-39.2							
12	100.930M	49.2	+0.0	+0.0	+10.3	+0.6	+0.0	31.9	44.0	-12.1	Horiz
			+0.1	+0.6	+0.2	+0.0					175
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							
13	14790.000 M	21.2	+0.0	+40.8	+0.0	+0.0	+0.0	41.5	54.0	-12.5	Vert
			+0.0	+0.0	+0.0	+3.2					
	Ave		+1.4	+7.2	+0.0	+0.5	360				147
			+0.0	-32.8							
^	14790.000 M	32.3	+0.0	+40.8	+0.0	+0.0	+0.0	52.6	54.0	-1.4	Vert
			+0.0	+0.0	+0.0	+3.2					
			+1.4	+7.2	+0.0	+0.5	360				147
			+0.0	-32.8							
15	14145.000 M	21.1	+0.0	+41.1	+0.0	+0.0	+0.0	41.5	54.0	-12.5	Horiz
			+0.0	+0.0	+0.0	+3.4					
	Ambient		+1.2	+6.8	+0.0	+0.8			NOISEFLOOR		147
			+0.0	-32.9							
16	3610.989M	36.4	+0.0	+31.8	+0.0	+0.0	+0.0	41.4	54.0	-12.6	Horiz
			+0.0	+0.0	+0.0	+1.6	247				99
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
17	9027.502M	23.5	+0.0	+38.9	+0.0	+0.0	+0.0	39.1	54.0	-14.9	Vert
	Ave		+0.0	+0.0	+0.0	+3.1	180				123
			+1.6	+5.3	+0.0	+0.5					
			+0.0	-33.8							

^	9027.500M	32.8	+0.0	+38.9	+0.0	+0.0	+0.0	48.4	54.0	-5.6	Vert
			+0.0	+0.0	+0.0	+3.1	180				123
			+1.6	+5.3	+0.0	+0.5					
			+0.0	-33.8							
19	9027.502M	22.9	+0.0	+38.9	+0.0	+0.0	+0.0	38.5	54.0	-15.5	Horiz
	Ave		+0.0	+0.0	+0.0	+3.1	209				124
			+1.6	+5.3	+0.0	+0.5					
			+0.0	-33.8							
^	9027.502M	32.4	+0.0	+38.9	+0.0	+0.0	+0.0	48.0	54.0	-6.0	Horiz
			+0.0	+0.0	+0.0	+3.1	209				124
			+1.6	+5.3	+0.0	+0.5					
			+0.0	-33.8							
21	3610.989M	33.5	+0.0	+31.8	+0.0	+0.0	+0.0	38.5	54.0	-15.5	Vert
	Ave		+0.0	+0.0	+0.0	+1.6	170				99
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
^	3610.989M	39.5	+0.0	+31.8	+0.0	+0.0	+0.0	44.5	54.0	-9.5	Vert
			+0.0	+0.0	+0.0	+1.6	170				99
			+0.6	+3.0	+0.0	+0.7					
			+0.0	-32.7							
23	169.265M	44.8	+0.0	+0.0	+9.8	+0.8	+0.0	27.9	44.0	-16.1	Vert
			+0.2	+0.9	+0.2	+0.0	360				99
			+0.0	+0.0	+0.0	+0.0					
			-28.8	+0.0							
24	5416.492M	28.5	+0.0	+34.5	+0.0	+0.0	+0.0	37.6	54.0	-16.4	Horiz
			+0.0	+0.0	+0.0	+2.3	196				123
			+1.0	+3.9	+0.0	+0.5					
			+0.0	-33.1							
25	452.985M	37.3	+0.0	+0.0	+17.3	+1.6	+0.0	29.3	46.0	-16.7	Horiz
			+0.3	+1.6	+0.5	+0.0					175
			+0.0	+0.0	+0.0	+0.0					
			-29.3	+0.0							
26	16.162M	2.8	+8.6	+0.0	+0.0	+0.3	+0.0	12.2	30.0	-17.8	90deg
	Ave		+0.0	+0.3	+0.2	+0.0	190				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
^	16.162M	15.5	+8.6	+0.0	+0.0	+0.3	+0.0	24.9	30.0	-5.1	90deg
			+0.0	+0.3	+0.2	+0.0	190				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
28	119.850k	77.7	+10.1	+0.0	+0.0	+0.0	-80.0	7.8	26.3	-18.5	90deg
			+0.0	+0.0	+0.0	+0.0	190				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
29	319.080k	58.3	+9.9	+0.0	+0.0	+0.1	-80.0	-11.6	17.8	-29.4	90deg
			+0.0	+0.0	+0.1	+0.0	190				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
30	123.780k	63.4	+10.1	+0.0	+0.0	+0.0	-80.0	-6.5	26.0	-32.5	180de
			+0.0	+0.0	+0.0	+0.0	179				101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							

31	319.080k	47.7	+9.9 +0.0 +0.0 +0.0	+0.0 +0.0 +0.0 +0.0	+0.0 +0.1 +0.0	+0.1 +0.0 +0.0	-80.0 179	-22.2	17.8	-40.0	180de 101
32	15.755k	64.1	+14.2 +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	-80.0 190	-1.7	44.1	-45.8	90deg 101
33	26.021k	61.5	+11.9 +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	-80.0 190	-6.6	39.7	-46.3	90deg 101
34	12.018k	62.6	+15.6 +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	-80.0 190	-1.8	46.5	-48.3	90deg 101
35	15.790k	52.6	+14.2 +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	-80.0 180	-13.2	44.1	-57.3	180de 101
36	12.030k	51.7	+15.6 +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	-80.0 180	-12.7	46.5	-59.2	180de 101

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

Customer: **Impinj Inc**
Specification: **FCC 15.247/15.209**
Work Order #: **89028** Date: 2/12/2009
Test Type: **Radiated Scan** Time: 09:50:20
Equipment: **RFID Reader** Sequence#: 8
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Mag Loop	2156	06/04/2008	06/04/2010	AN00052
Antenna	2453	12/22/2008	12/22/2010	AN01994
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
Horn Antenna, Active 18-26GHz	1114018	11/13/2008	11/13/2010	2742
Heliax cable	N/A	07/22/2008	07/22/2010	AN05545
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03123
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03122
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03121
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Pasternack Coax		07/20/2007	07/20/2009	AN05425
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271
Filter	2	05/01/2008	05/01/2010	2750
Filter	311SH10-3000/T10000-0/0	12/02/2008	12/02/2010	3116
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872

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

Function	Manufacturer	Model #	S/N
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB
Guardwall antenna	Impinj	IPJ-A0402-USA	0116

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Radiated Spurious Emissions per FCC 15.247(d)

The Unit is an RF reader. It is located in the back edge of the test table.
All its ports are being exercised. It is being powered by the AC/DC converter.
It is connected to a laptop outside the chamber through a shielded ethernet cable.
The antenna is suspended 10cm above the wooden table with styrofoam.
The EUT will be in transmitting mode throughout the test in the MID channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 30.0 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 915.25MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=ANT- AN00052-06042008	T2=ANT-AN01412-111207
T3=ANT AN01994 25-1000MHz	T4=CAB-ANP05360
T5=CAB-ANP05361	T6=CAB-ANP05366
T7=CAB-ANP05371	T8=CAB-ANP03121-120208
T9=CAB-ANP03123-120208	T10=CAB-ANP05545-072208
T11=Filter 1GHz HP AN02750	T12=FIL-AN03116-120208
T13=AMP-AN01517-070808	T14=AMP-AN01271-100207 - .5-26.5 GHz

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

#	Freq	Rdng	T1 T5 T9 T13	T2 T6 T10 T14	T3 T7 T11	T4 T8 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	15414.000	31.6	+0.0	+38.9	+0.0	+0.0	+0.0	50.0	54.0	-4.0	Horiz
	M		+0.0	+0.0	+0.0	+3.1					
	Ambient		+1.1	+7.2	+0.0	+0.4	375		Noisefloor		115
			+0.0	-32.3							
2	904.700M	43.1	+0.0	+0.0	+23.2	+1.9	+0.0	41.7	46.0	-4.3	Horiz
			+0.5	+2.0	+0.3	+0.0	360				175
			+0.0	+0.0	+0.0	+0.0					
			-29.3	+0.0							
3	904.700M	42.8	+0.0	+0.0	+23.2	+1.9	+0.0	41.4	46.0	-4.6	Vert
			+0.5	+2.0	+0.3	+0.0					139
			+0.0	+0.0	+0.0	+0.0					
			-29.3	+0.0							
4	9248.500M	30.9	+0.0	+38.8	+0.0	+0.0	+0.0	46.8	54.0	-7.2	Vert
	Ambient		+0.0	+0.0	+0.0	+3.2	134		Noisefloor		115
			+1.7	+5.3	+0.0	+0.4					
			+0.0	-33.5							

5	1817.200M	15.1	+0.0 +0.0 +0.5 +0.0	+26.6 +0.0 +2.2 +0.0	+0.0 +0.0 +0.4	+0.0 +1.1 +0.0	+0.0	45.9	54.0	-8.1	Vert 128
6	100.400M	53.0	+0.0 +0.1 +0.0 -29.1	+0.0 +0.6 +0.0 +0.0	+10.2 +0.2 +0.0	+0.6 +0.0 +0.0	+0.0 3	35.6	44.0	-8.4	Vert 139
7	24.880M Ambient	13.5	+6.6 +0.0 +0.0 +0.0	+0.0 +0.3 +0.0 +0.0	+0.0 +0.2 +0.0	+0.3 +0.0 +0.0	+0.0 162	20.9	30.0 Noisefloor	-9.1	180de 101
8	21.220M Ambient	12.3	+7.8 +0.0 +0.0 +0.0	+0.0 +0.3 +0.0 +0.0	+0.0 +0.2 +0.0	+0.3 +0.0 +0.0	+0.0 189	20.9	30.0 Noisefloor	-9.1	90deg 101
9	16.466M Ambient	11.0	+8.6 +0.0 +0.0 +0.0	+0.0 +0.3 +0.0 +0.0	+0.0 +0.2 +0.0	+0.3 +0.0 +0.0	+0.0 226	20.4	30.0 Noisefloor	-9.6	180de 101
10	17655.000 M Ave	20.0	+0.0 +0.0 +1.3 +0.0	+43.1 +0.0 +8.2 -33.1	+0.0 +0.0 +0.0	+0.0 +3.5 +0.8	+0.0 -11	43.8	54.0	-10.2	Vert 115
11	169.000M	50.5	+0.0 +0.2 +0.0 -28.8	+0.0 +0.9 +0.0 +0.0	+9.8 +0.2 +0.0	+0.8 +0.0 +0.0	+0.0 360	33.6	44.0	-10.4	Horiz 175
12	11103.000 M Ambient	30.8	+0.0 +0.0 +1.5 +0.0	+38.9 +0.0 +5.7 -36.6	+0.0 +0.0 +0.0	+0.0 +2.9 +0.2	+0.0 134	43.4	54.0 Noisefloor	-10.6	Horiz 115
13	99.500M	48.5	+0.0 +0.1 +0.0 -29.1	+0.0 +0.6 +0.0 +0.0	+10.1 +0.2 +0.0	+0.6 +0.0 +0.0	+0.0 360	31.0	44.0	-13.0	Horiz 175
14	3660.996M Ave	33.1	+0.0 +0.0 +0.6 +0.0	+31.9 +0.0 +3.0 -32.7	+0.0 +0.0 +0.0	+0.0 +1.7 +0.7	+0.0 217	38.3	54.0	-15.7	Vert 109
^	3660.996M	40.5	+0.0 +0.0 +0.6 +0.0	+31.9 +0.0 +3.0 -32.7	+0.0 +0.0 +0.0	+0.0 +1.7 +0.7	+0.0 217	45.7	54.0	-8.3	Vert 109
16	452.400M	37.9	+0.0 +0.3 +0.0 -29.3	+0.0 +1.6 +0.0 +0.0	+17.2 +0.5 +0.0	+1.6 +0.0 +0.0	+0.0 360	29.8	46.0	-16.2	Horiz 175
17	3661.001M Ave	28.2	+0.0 +0.0 +0.6 +0.0	+31.9 +0.0 +3.0 -32.7	+0.0 +0.0 +0.0	+0.0 +1.7 +0.7	+0.0 202	33.4	54.0	-20.6	Horiz 115

^	3661.001M	39.4	+0.0 +0.0 +0.6 +0.0	+31.9 +0.0 +3.0 -32.7	+0.0 +0.0 +0.0	+0.0 +1.7 +0.7	+0.0 202	44.6	54.0	-9.4	Horiz 115
19	1.038M Ambient	28.2	+10.0 +0.0 +0.0 +0.0	+0.0 +0.1 +0.0 +0.0	+0.0 +0.0 +0.0	+0.1 +0.0 +0.0	-40.0 226	-1.6	27.4 Noisefloor	-29.0	180de 101
20	17.507k Ambient	44.5	+13.6 +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	-80.0 189	-21.9	43.2 Noisefloor	-65.1	90deg 101
21	9.834k Ambient	46.3	+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	-80.0 226	-33.7	48.2 Noisefloor	-81.9	180de 101
22	9.540k Ambient	45.8	+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	-80.0 298	-34.2	48.5 Noisefloor	-82.7	90deg 101

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

Customer: **Impinj Inc**
Specification: **FCC 15.247/15.209**
Work Order #: **89028** Date: 2/12/2009
Test Type: **Radiated Scan** Time: 09:57:54
Equipment: **RFID Reader** Sequence#: 7
Manufacturer: Impinj Tested By: Armando Del Angel
Model: IPJ-REV
S/N: 940-08-21-0006

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Mag Loop	2156	06/04/2008	06/04/2010	AN00052
Antenna	2453	12/22/2008	12/22/2010	AN01994
EMCO 3115 Horn	9606-4854	11/12/2007	11/12/2009	AN01412
Horn Antenna, Active 18-26GHz	1114018	11/13/2008	11/13/2010	2742
Heliax cable	N/A	07/22/2008	07/22/2010	AN05545
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03123
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03122
High freq. Cable	N/A	12/02/2008	12/02/2010	AN03121
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 6'	49	11/10/2008	11/10/2010	ANP05371
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Pasternack Coax		07/20/2007	07/20/2009	AN05425
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
HP 83017A Pre-amp	3123A00464	10/02/2007	10/02/2009	AN01271
Filter	2	05/01/2008	05/01/2010	2750
Filter	311SH10-3000/T10000-0/0	12/02/2008	12/02/2010	3116
Spectrum Analyzer	MY46186330	03/10/2007	03/10/2009	2872

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

Function	Manufacturer	Model #	S/N
RFID Reader*	Impinj	IPJ-REV	940-08-21-0006
AC/DC adaptor	CUI	DSA-60W-20	ETS240250UC-P11P-DB
Guardwall antenna	Impinj	IPJ-A0402-USA	0116

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	Latitude	6497402833
Wireless G Router	Belkin	F5D7230-4	2028723009696

Test Conditions / Notes:

20°C / 26% relative humidity / 102.3 kPa.

Testing Radiated Spurious Emissions per FCC 15.247(d).

The Unit is an RF reader. It is located in the back edge of the test table.
All its ports are being exercised. It is being powered by the AC/DC converter.
It is connected to a laptop outside the chamber through a shielded ethernet cable.
The antenna is suspended 10cm above the wooden table with styrofoam.
The EUT will be in transmitting mode throughout the test in the HIGH channel.

Remote support computer sends commands to the EUT to exercise the intended functionalities.

Power setting = 30.0 dBm
Operating Frequency range = 902 - 928MHz
Frequency under test = 927.25MHz

Frequency range of measurement = 9kHz - 19GHz.

Frequency: 9kHz - 150kHz RBW= 200Hz, VBW= 200Hz
150kHz-30MHz RBW= 9kHz, VBW = 9kHz
30MHz - 1GHz RBW= 120kHz, VBW=120kHz
1GHz-19GHz RBW= 1 MHz, VBW=1 MHz.

Transducer Legend:

T1=ANT- AN00052-06042008	T2=ANT-AN01412-111207
T3=ANT AN01994 25-1000MHz	T4=CAB-ANP05360
T5=CAB-ANP05361	T6=CAB-ANP05366
T7=CAB-ANP05371	T8=CAB-ANP03121-120208
T9=CAB-ANP03123-120208	T10=CAB-ANP05545-072208
T11=Filter 1GHz HP AN02750	T12=FIL-AN03116-120208
T13=AMP-AN01517-070808	T14=AMP-AN01271-100207 - .5-26.5 GHz

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

#	Freq	Rdng	T1 T5 T9 T13	T2 T6 T10 T14	T3 T7 T11	T4 T8 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	9272.507M	34.2	+0.0	+38.8	+0.0	+0.0	+0.0	50.1	54.0	-3.9	Horiz
	Ambient		+0.0	+0.0	+0.0	+3.2	212		NOISEFLOOR		109
			+1.7	+5.3	+0.0	+0.4					
			+0.0	-33.5							
2	916.440M	43.2	+0.0	+0.0	+23.3	+1.9	+0.0	42.0	46.0	-4.0	Vert
			+0.5	+2.0	+0.4	+0.0					100
			+0.0	+0.0	+0.0	+0.0					
			-29.3	+0.0							
3	15936.000 M	30.8	+0.0	+38.4	+0.0	+0.0	+0.0	48.7	54.0	-5.3	Vert
	Ambient		+0.0	+0.0	+0.0	+3.2					
			+1.0	+7.4	+0.0	+0.5	212		NOISEFLOOR		109
			+0.0	-32.6							
4	916.440M	41.3	+0.0	+0.0	+23.3	+1.9	+0.0	40.1	46.0	-5.9	Horiz
			+0.5	+2.0	+0.4	+0.0	360				159
			+0.0	+0.0	+0.0	+0.0					
			-29.3	+0.0							

5	1854.499M	17.0	+0.0	+26.8	+0.0	+0.0	+0.0	48.0	54.0	-6.0	Horiz
	Ave		+0.0	+0.0	+0.0	+1.1	209				144
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							
^	1854.499M	22.4	+0.0	+26.8	+0.0	+0.0	+0.0	53.4	54.0	-0.6	Horiz
			+0.0	+0.0	+0.0	+1.1	209				144
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							
7	100.310M	54.9	+0.0	+0.0	+10.2	+0.6	+0.0	37.5	44.0	-6.5	Vert
			+0.1	+0.6	+0.2	+0.0	37				100
			+0.0	+0.0	+0.0	+0.0					
			-29.1	+0.0							
8	1854.516M	13.7	+0.0	+26.8	+0.0	+0.0	+0.0	44.7	54.0	-9.3	Vert
	Ave		+0.0	+0.0	+0.0	+1.1	170				128
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							
^	1854.516M	20.3	+0.0	+26.8	+0.0	+0.0	+0.0	51.3	54.0	-2.7	Vert
			+0.0	+0.0	+0.0	+1.1	170				128
			+0.5	+2.2	+0.4	+0.0					
			+0.0	+0.0							
10	168.840M	50.8	+0.0	+0.0	+9.9	+0.8	+0.0	34.0	44.0	-10.0	Horiz
			+0.2	+0.9	+0.2	+0.0	360				159
			+0.0	+0.0	+0.0	+0.0					
			-28.8	+0.0							
11	17688.000 M	19.9	+0.0	+43.3	+0.0	+0.0	+0.0	43.9	54.0	-10.1	Horiz
			+0.0	+0.0	+0.0	+3.5					
	Ambient		+1.3	+8.2	+0.0	+0.8	212		NOISEFLOOR		109
			+0.0	-33.1							
12	451.860M	40.0	+0.0	+0.0	+17.2	+1.6	+0.0	31.9	46.0	-14.1	Horiz
			+0.3	+1.6	+0.5	+0.0	360				159
			+0.0	+0.0	+0.0	+0.0					
			-29.3	+0.0							
13	9272.507M	23.9	+0.0	+38.8	+0.0	+0.0	+0.0	39.8	54.0	-14.2	Vert
	Ave		+0.0	+0.0	+0.0	+3.2	212				109
			+1.7	+5.3	+0.0	+0.4					
			+0.0	-33.5							
^	9272.507M	34.4	+0.0	+38.8	+0.0	+0.0	+0.0	50.3	54.0	-3.7	Vert
			+0.0	+0.0	+0.0	+3.2	212				109
			+1.7	+5.3	+0.0	+0.4					
			+0.0	-33.5							
15	162.610M	45.3	+0.0	+0.0	+10.4	+0.8	+0.0	29.0	44.0	-15.0	Vert
			+0.2	+0.9	+0.2	+0.0					100
			+0.0	+0.0	+0.0	+0.0					
			-28.8	+0.0							
16	3708.999M	30.4	+0.0	+32.1	+0.0	+0.0	+0.0	35.9	54.0	-18.1	Vert
	Ave		+0.0	+0.0	+0.0	+1.8	197				113
			+0.7	+2.9	+0.0	+0.7					
			+0.0	-32.7							
^	3708.999M	38.2	+0.0	+32.1	+0.0	+0.0	+0.0	43.7	54.0	-10.3	Vert
			+0.0	+0.0	+0.0	+1.8	197				113
			+0.7	+2.9	+0.0	+0.7					
			+0.0	-32.7							

18	5563.495M	27.0	+0.0	+34.7	+0.0	+0.0	+0.0	35.4	54.0	-18.6	Vert
			+0.0	+0.0	+0.0	+1.9	197				114
			+0.8	+4.0	+0.0	+0.4					
			+0.0	-33.4							
19	1.087M	29.4	+10.0	+0.0	+0.0	+0.1	-40.0	-0.4	27.0	-27.4	180de
	Ambient		+0.0	+0.1	+0.0	+0.0			NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
20	135.550k	46.7	+9.9	+0.0	+0.0	+0.0	-80.0	-23.4	25.3	-48.7	180de
	Ambient		+0.0	+0.0	+0.0	+0.0	190		NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
21	11.862k	45.2	+15.7	+0.0	+0.0	+0.0	-80.0	-19.1	46.6	-65.7	90deg
	Ambient		+0.0	+0.0	+0.0	+0.0	352		NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
22	18.454k	42.6	+13.3	+0.0	+0.0	+0.0	-80.0	-24.1	42.7	-66.8	180de
	Ambient		+0.0	+0.0	+0.0	+0.0			NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
23	11.928k	40.8	+15.7	+0.0	+0.0	+0.0	-80.0	-23.5	46.5	-70.0	180de
	Ambient		+0.0	+0.0	+0.0	+0.0	328		NOISEFLOOR		101
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							

RSS-210 – 99% BANDWIDTH

Test Equipment

Asset #	Name	Manufacturer	Model	Serial	Cal date	Cal Due
P05747	Attenuator	Pasternack	PE7004-20	NA	4/3/2008	4/3/2010
P05748	Attenuator	Pasternack	PE7004-20	NA	4/3/2008	4/3/2010
P05371	Cable 6'	Belden	RG-214	RG214 49	11/10/2008	11/10/2010
2872	Spectrum Analyzer	Agilent	E4440A	MY46186330	1/31/2008	1/31/2010

Test Conditions

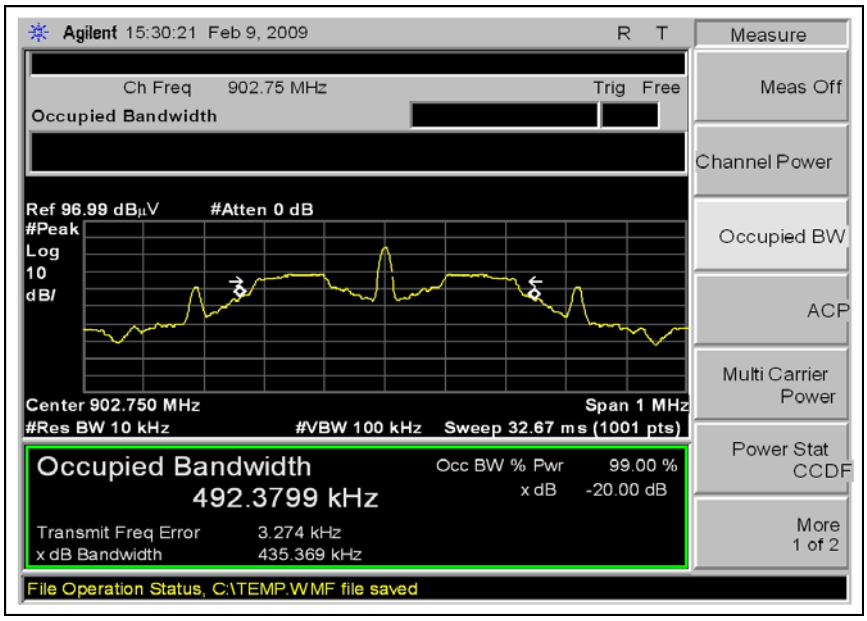
EUT is transmitting at maximum rate. PSA is on max hold, Agilent procedure is used where the Occupied Bandwidth option is used in three channels (LOW, MID, HIGH), and the span is set to 1MHz and the RBW to 1 kHz.

Result: Less than 500 kHz

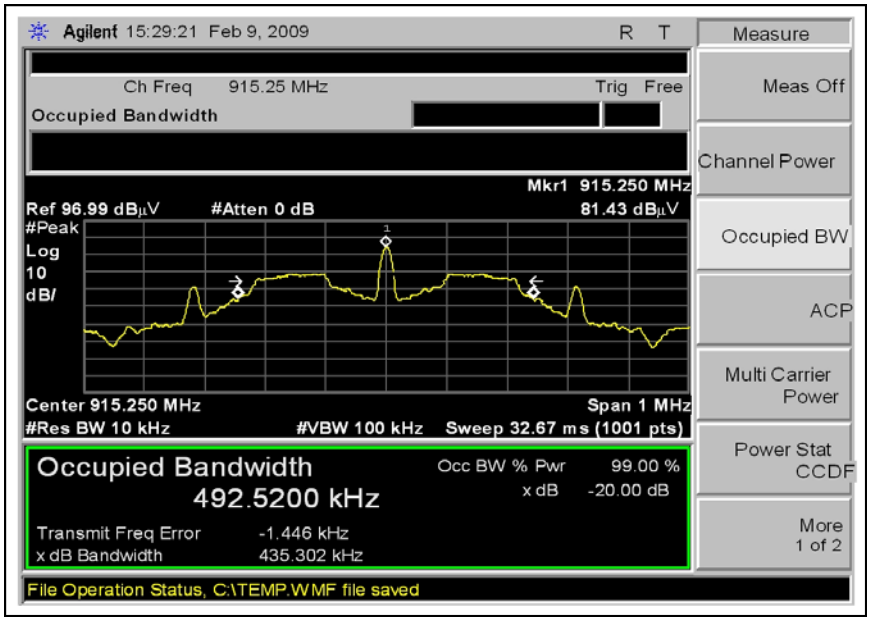
Test Setup Photos

Test Plots

RSS-210 – LOW CHANNEL



RSS-210 – MID CHANNEL



RSS-210 – HIGH CHANNEL