Intermec Technologies Corporation

IM11 RFID Module

FCC 15.247:2012

Report #: ITRM0323

Report Prepared By Northwest EMC Inc.

NORTHWEST EMC – (888) 364-2378 – www.nwemc.com

California – Minnesota – Oregon – New York – Washington

CERTIFICATE OF TEST

Last Date of Test: August 29, 2012
Intermec Technologies Corporation
Model: IM11 RFID Module

Emissions

Test Description	Specification	Test Method	Pass/Fail
Carrier Frequency Separation	FCC 15.247:2012	ANSI C63.10:2009	Pass
Dwell Time	FCC 15.247:2012	ANSI C63.10:2009	Pass
Number of Hopping Frequencies	FCC 15.247:2012	ANSI C63.10:2009	Pass
Occupied Bandwidth	FCC 15.247:2012	ANSI C63.10:2009	Pass
Output Power	FCC 15.247:2012	ANSI C63.10:2009	Pass
Band Edge Compliance	FCC 15.247:2012	ANSI C63.10:2009	Pass
Spurious Conducted Emissions	FCC 15.247:2012	ANSI C63.10:2009	Pass
Spurious Radiated Emissions	FCC 15.247:2012	ANSI C63.10:2009	Pass
AC Powerline Conducted Emissions	FCC 15.207:2012	ANSI C63.10:2009	Pass

Deviations From Test Standards

None

Approved By:

Tim O'Shea, Operations Manager

NVLAP Lab Code: 200676-0

Test Facility

The measurement facility used to collect the data is located at:

Northwest EMC, Inc.
41 Tesla Ave.
Irvine, CA 92618

Phone: (503) 844-4066 Fax: 844-3826

This site has been fully described in a report filed with and accepted by the FCC (Federal Communications Commission) and Industry Canada (Site filing #2834B-1).

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America.

Product compliance is the responsibility of the client, therefore the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. This Report may only be duplicated in its entirety. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test.

NORTHWEST EMC
REV 2012.08.02

REVISION HISTORY

Revision Number	Description	Date	Page Number
00	None		

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

NORTHWEST EMC

REV 2012.05.24

ACCREDITATIONS AND AUTHORIZATIONS

United States

FCC - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

A2LA - Accredited by A2LA to ISO / IEC Guide 65 as a product certifier. This allows Northwest EMC to certify transmitters to FCC and IC specifications.

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

Canada

IC - Recognized by Industry Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with IC.

European Union

European Commission – Validated by the European Commission as a Conformity Assessment Body (CAB) under the EMC directive and as a Notified Body under the R&TTE Directive.

Australia/New Zealand

ACMA - Recognized by ACMA as a CAB for the acceptance of test data.

Korea

KCC / RRA - Recognized by KCC's RRA as a CAB for the acceptance of test data.

Japan

VCCI - Associate Member of the VCCI. Conducted and radiated measurement facilities are registered.

Taiwan

BSMI – Recognized by BSMI as a CAB for the acceptance of test data.

NCC - Recognized by NCC as a CAB for the acceptance of test data.

Singapore

IDA – Recognized by IDA as a CAB for the acceptance of test data.

Hong Kong

OFTA – Recognized by OFTA as a CAB for the acceptance of test data.

Vietnam

MIC – Recognized by MIC as a CAB for the acceptance of test data.

Russia

GOST – Accredited by Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC to perform EMC and Hygienic testing for Information Technology products to GOST standards.

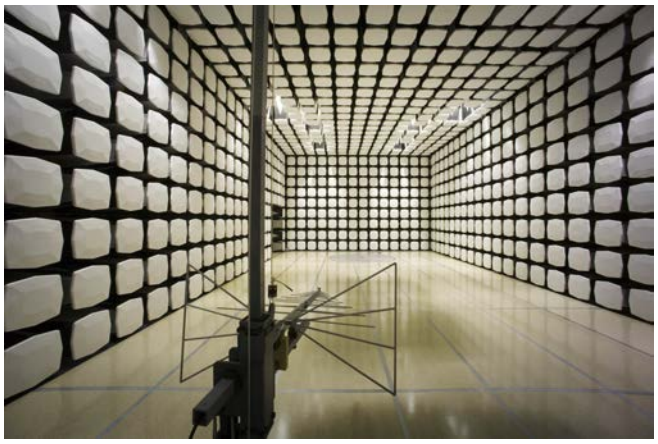
SCOPE

For details on the Scopes of our Accreditations, please visit:
http://www.nwemc.com/accreditations/

LOCATIONS

REV 2012.08.03

Oregon	California	New York	Minnesota	Washington
Labs EV01-EV12 22975 NW Evergreen Pkwy, #400 Hillsboro, OR 97124 (503) 844-4066	Labs OC01-OC13 41 Tesla Irvine, CA 92618 (949) 861-8918	Labs WA01-WA04 4939 Jordan Rd. Elbridge, NY 13060 (315) 685-0796	Labs MN01-MN08 9349 W Broadway Ave. Brooklyn Park, MN 55445 (763) 425-2281	Labs SU01-SU07 14128 339th Ave. SE Sultan, WA 98294 (360) 793-8675
VCCI				
A-0108	A-0029		A-0109	A-0110
Industry Canada				
2834D-1, 2834D-*2*	2834B-1, 2834B-2, 2834B-3		2834E-1	2834C-1



PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	Intermec Technologies Corporation
Address:	550 Second St. SE
City, State, Zip:	Cedar Rapids, IA 52401-2023
Test Requested By:	Dave Fry
Model:	IM11 RFID Module
First Date of Test:	August 15, 2012
Last Date of Test:	August 29, 2012
Receipt Date of Samples:	August 15, 2012
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):

RFID reader operating in the 915 MHz band (902.75 - 927.25 MHz) with one modulation types: EPC Gen 2 (PR-ASK). The RFID reader utilizes a Frequency Hopping Spread Spectrum (FHSS) radio operating with up to +36 dBm EIRP in a mini express PCI format. The EUT has two antenna ports that cannot transmit simultaneously. They are used for spatial diversity.

Clocks and Oscillators of the EUT:

None Provided

Testing Objective:

To demonstrate compliance to FCC 15.247 requirements

CONFIGURATIONS

Configuration ITRM0323- 1

Software/Firmware Running during test	
Description	**Version**
CTI	2.20.04

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
High Gain CP Panel Antenna	Huber & Suhner	1309.56.001	00143

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
RFID Radio Module	Intermec Technologies Corporation	IM11	None
Mini-PCI Test Board	Sierra Wireless	140338 Rev2	None
5VDC Power Supply	Elpac Power Systems	FW1805	067996

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Laptop	Dell Corporation	D620	38652224581

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC Power	Yes	2.5m	No	5VDC Power Supply	Sierra Wireless Board
Serial	Yes	1.8m	No	Laptop	Sierra Wireless Board
RP TNC to RP TNC Cable	Yes	6.7m	No	Sierra Wireless Board	High Gain CP Panel Antenna
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATIONS

Configuration ITRM0323- 2

Software/Firmware Running during test	
Description	**Version**
CTI	2.20.04

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
High Gain Linear Panel Antenna	Huber & Suhner	1309.17.0085	00119

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
RFID Radio Module	Intermec Technologies Corporation	IM11	None
Mini-PCI Test Board	Sierra Wireless	140338 Rev2	None
5VDC Power Supply	Elpac Power Systems	FW1805	067996

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Laptop	Dell Corporation	D620	38652224581

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC Power	Yes	2.5m	No	5VDC Power Supply	Sierra Wireless Board
Serial	Yes	1.8m	No	Laptop	Sierra Wireless Board
RP TNC to RP N Cable	Yes	9.0m	No	Sierra Wireless Board	High Gain Linear Panel Antenna
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATIONS

Configuration ITRM0323- 3

Software/Firmware Running during test	
Description	**Version**
CTI	2.20.04

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Yagi Antenna	Intermec Technologies	IP30	27400800552

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
RFID Radio Module	Intermec Technologies Corporation	IM11	None
Mini-PCI Test Board	Sierra Wireless	140338 Rev2	None
5VDC Power Supply	Elpac Power Systems	FW1805	067996

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Laptop	Dell Corporation	D620	38652224581

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC Power	Yes	2.5m	No	5VDC Power Supply	Sierra Wireless Board
Serial	Yes	1.8m	No	Laptop	Sierra Wireless Board
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATIONS

Configuration ITRM0323- 4

Software/Firmware Running during test	
Description	**Version**
CTI	2.20.04

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
NeWave Multi-Axis Dipole Antenna	None	NSS Wave-N7	None

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
RFID Radio Module	Intermec Technologies Corporation	IM11	None
Mini-PCI Test Board	Sierra Wireless	140338 Rev2	None
5VDC Power Supply	Elpac Power Systems	FW1805	067996

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Laptop	Dell Corporation	D620	38652224581

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC Power	Yes	2.5m	No	5VDC Power Supply	Sierra Wireless Board
Serial	Yes	1.8m	No	Laptop	Sierra Wireless Board
RP TNC to RP TNC Cable	Yes	6.7m	No	Sierra Wireless Board	High Gain CP Panel Antenna
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATIONS

Configuration ITRM0323- 5

Software/Firmware Running during test	
Description	**Version**
CTI	2.20.04

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
4x4 Dual Pole Linear Antenna	Intermec Technologies	None	None

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
RFID Radio Module	Intermec Technologies Corporation	IM11	None
Mini-PCI Test Board	Sierra Wireless	140338 Rev2	None
5VDC Power Supply	Elpac Power Systems	FW1805	067996

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Laptop	Dell Corporation	D620	38652224581

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC Power	Yes	2.5m	No	5VDC Power Supply	Sierra Wireless Board
Serial	Yes	1.8m	No	Laptop	Sierra Wireless Board
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATIONS

Configuration ITRM0323- 6

Software/Firmware Running during test	
Description	**Version**
CTI	2.20.04

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Ceramic Patch FCC Antenna	None	IP4 FCC Ceramic	None

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
RFID Radio Module	Intermec Technologies Corporation	IM11	None
Mini-PCI Test Board	Sierra Wireless	140338 Rev2	None
5VDC Power Supply	Elpac Power Systems	FW1805	067996

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Laptop	Dell Corporation	D620	38652224581

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC Power	Yes	2.5m	No	5VDC Power Supply	Sierra Wireless Board
Serial	Yes	1.8m	No	Laptop	Sierra Wireless Board
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATIONS

Configuration ITRM0323- 7

Software/Firmware Running during test	
Description	**Version**
CTI	2.20.04

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
PIFA, Omni 900 MHz Antenna	Intermec Technologies	None	None

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
RFID Radio Module	Intermec Technologies Corporation	IM11	None
Mini-PCI Test Board	Sierra Wireless	140338 Rev2	None
5VDC Power Supply	Elpac Power Systems	FW1805	067996

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Laptop	Dell Corporation	D620	38652224581

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC Power	Yes	2.5m	No	5VDC Power Supply	Sierra Wireless Board
Serial	Yes	1.8m	No	Laptop	Sierra Wireless Board
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATIONS

Configuration ITRM0323- 8

Software/Firmware Running during test	
Description	**Version**
CTI	2.20.04

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Low Gain FCC/ETSI Coupler Antenna	Kathrein	52010092	G1FD192794

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
RFID Radio Module	Intermec Technologies Corporation	IM11	None
Mini-PCI Test Board	Sierra Wireless	140338 Rev2	None
5VDC Power Supply	Elpac Power Systems	FW1805	067996

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Laptop	Dell Corporation	D620	38652224581

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC Power	Yes	2.5m	No	5VDC Power Supply	Sierra Wireless Board
Serial	Yes	1.8m	No	Laptop	Sierra Wireless Board
RP TNC to TNC Cable	Yes	9.0m	No	Sierra Wireless Board	Low Gain FCC/ETSI Coupler Antenna
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

MODIFICATIONS

WTD 12.5.23

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	8/15/2012	Band Edge Compliance	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
2	8/15/2012	Carrier Frequency Separation	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	8/15/2012	Dwell Time	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
4	8/15/2012	Number of Hopping Frequencies	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
5	8/15/2012	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
6	8/15/2012	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
7	8/15/2012	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
8	8/27/2012	AC Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
9	8/29/2012	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

Carrier Frequency Separation

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
40GHz DC Block	Miteq	DCB4000	AMD	6/25/2012	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	8/2/2012	12
Multimeter	Tektronix	DMM912	MMH	1/28/2011	24
DC Power Supply	Topward	TPS-2000	TPD	NCR	0
Power Meter	Gigatronics	8651A	SPM	1/9/2012	24
MXG Vector Signal Generator	Agilent	N5182A	TIF	NCR	0
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	12/15/2011	12
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	24
Spectrum Analyzer	Agilent	E4440A	AFD	7/5/2012	12

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The channel carrier frequencies in the 902-928MHz band must be separated by 250 kHz or the 20dB bandwidth of the hopping channel, whichever is greater. Or, if the output power is less than 25 mW, the channel separation can be 25 kHz or 2/3 of the 20dB bandwidth. The EUT was operated in pseudorandom hopping mode. The spectrum was scanned across two adjacent peaks. The separation between the peaks of these channels was measured.

Carrier Frequency Separation

EUT:	IM11 RFID Module			**Work Order:**	ITRM0323
Serial Number:	00143			**Date:**	08/15/12
Customer:	Intermec Technologies Corporation			**Temperature:**	24°C
Attendees:	None			**Humidity:**	51%
Project:	None			**Barometric Pres.:**	1016
Tested by:	Brandon Hobbs and Rod Peloquin	**Power:**	4VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2012	ANSI C63.10:2009

COMMENTS

RFID Hyper Terminal software used with BRI commands for Frequency Hopping mode. Commands provided through a serial Telnet session.

DEVIATIONS FROM TEST STANDARD

None

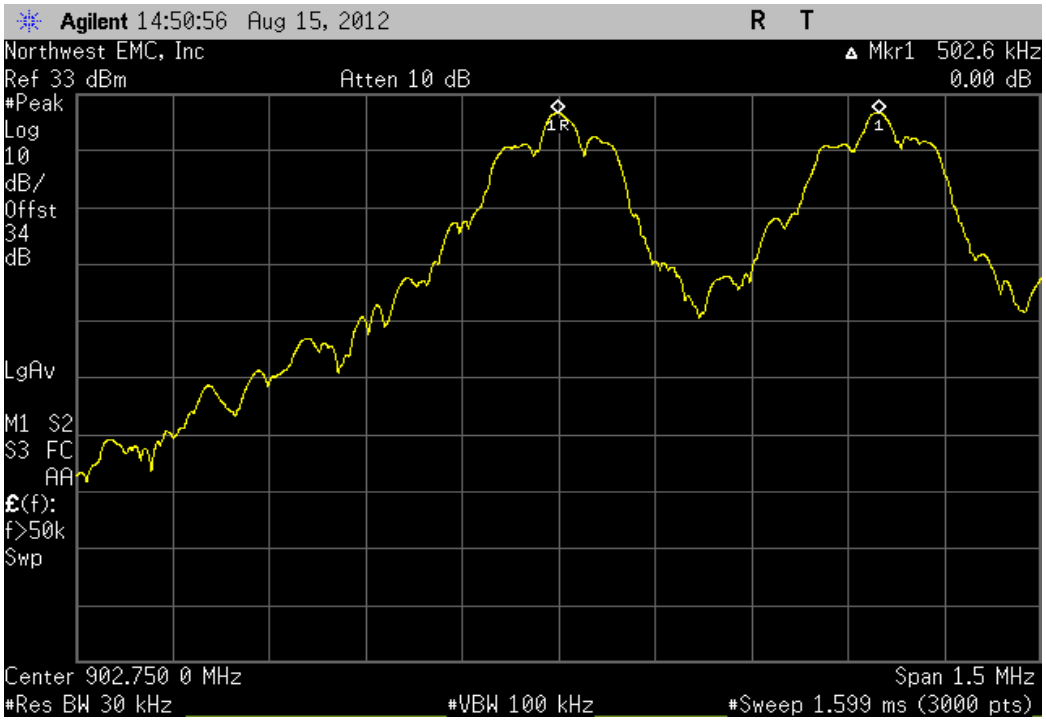
Configuration #	1	Signature

		Value	Limit	Result
Gen2 Reader Mode (PRASK)				
	Tx Port 1			
	Low Channel, Ch. 5, 902.75 MHz	502.6kHz	≥ 175kHz	Pass
	Mid Channel, Ch. 30, 915.25 MHz	508.4kHz	≥ 175kHz	Pass
	High Channel, Ch. 54, 927.25 MHz	503.1kHz	≥ 175kHz	Pass

Carrier Frequency Separation

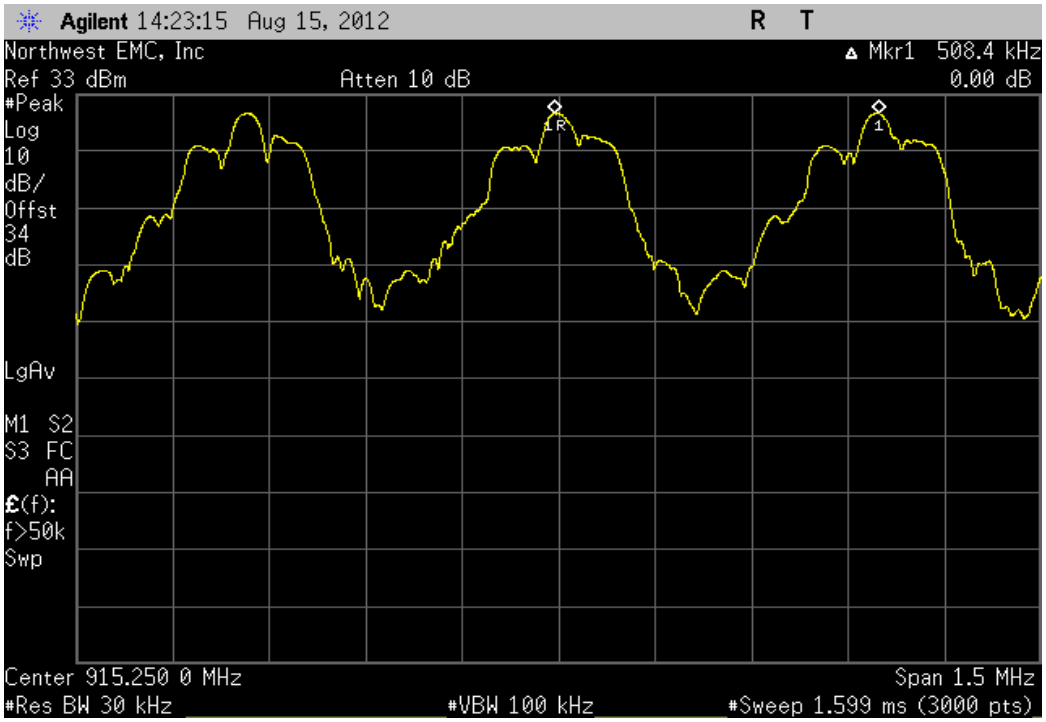
Gen2 Reader Mode (PRASK), Tx Port 1, Low Channel, Ch. 5, 902.75 MHz

				Value	Limit	Result
				502.6kHz	≥ 175kHz	Pass



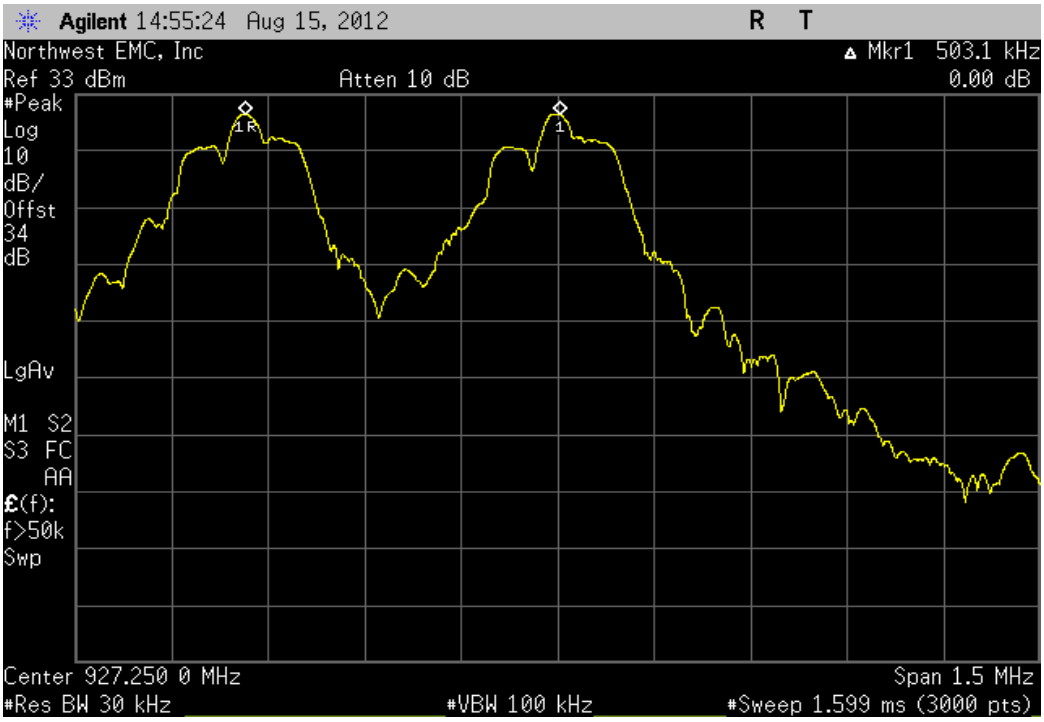
Gen2 Reader Mode (PRASK), Tx Port 1, Mid Channel, Ch. 30, 915.25 MHz

				Value	Limit	Result
				508.4kHz	≥ 175kHz	Pass



Carrier Frequency Separation

Gen2 Reader Mode (PRASK), Tx Port 1, High Channel, Ch. 54, 927.25 MHz						
				Value	Limit	Result
				503.1kHz	≥ 175kHz	Pass



Dwell Time

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
40GHz DC Block	Miteq	DCB4000	AMD	6/25/2012	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	8/2/2012	12
Multimeter	Tektronix	DMM912	MMH	1/28/2011	24
DC Power Supply	Topward	TPS-2000	TPD	NCR	0
Power Meter	Gigatronics	8651A	SPM	1/9/2012	24
MXG Vector Signal Generator	Agilent	N5182A	TIF	NCR	0
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	12/15/2011	12
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	24
Spectrum Analyzer	Agilent	E4440A	AFD	7/5/2012	12

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The average dwell time per hopping channel was measured at one hopping channel in the middle of the authorized band. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The hopping function of the EUT was enabled.

Dwell Time

EUT:	IM11 RFID Module			**Work Order:**	ITRM0323
Serial Number:	00143			**Date:**	08/15/12
Customer:	Intermec Technologies Corporation			**Temperature:**	24°C
Attendees:	None			**Humidity:**	51%
Project:	None			**Barometric Pres.:**	1016
Tested by:	Brandon Hobbs and Rod Peloquin	**Power:**	4VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2012	ANSI C63.10:2009

COMMENTS

RFID Hyer Terminal software used with BRI commands for Frequency Hopping mode. Commands provided through a serial Telnet session.

DEVIATIONS FROM TEST STANDARD

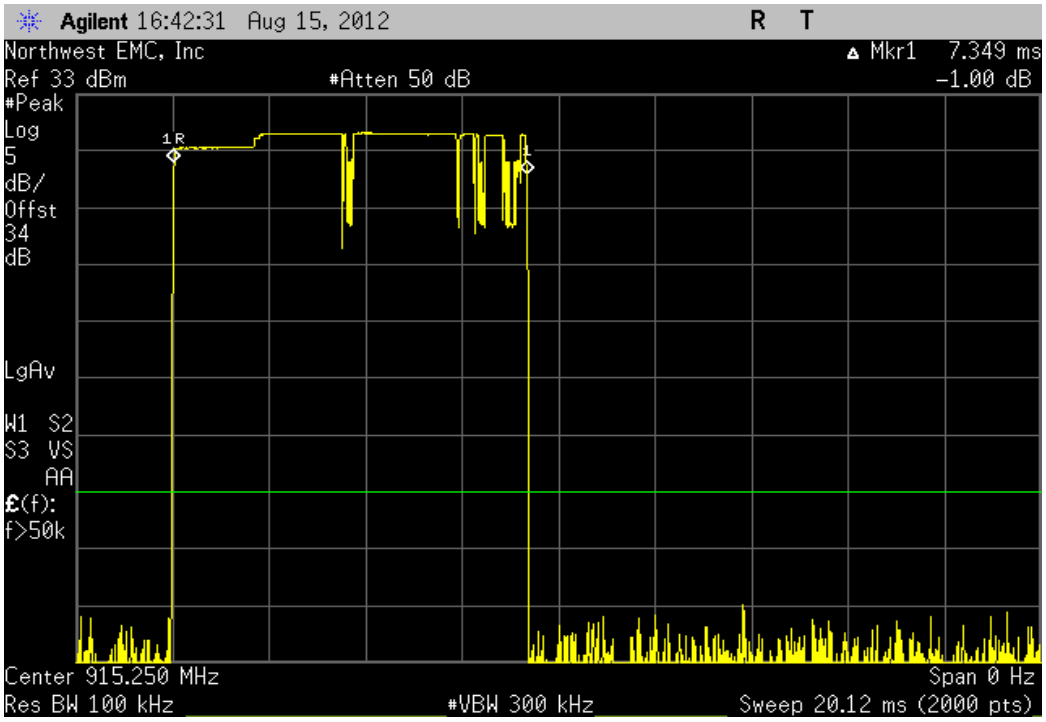
None

Configuration #	1	Signature

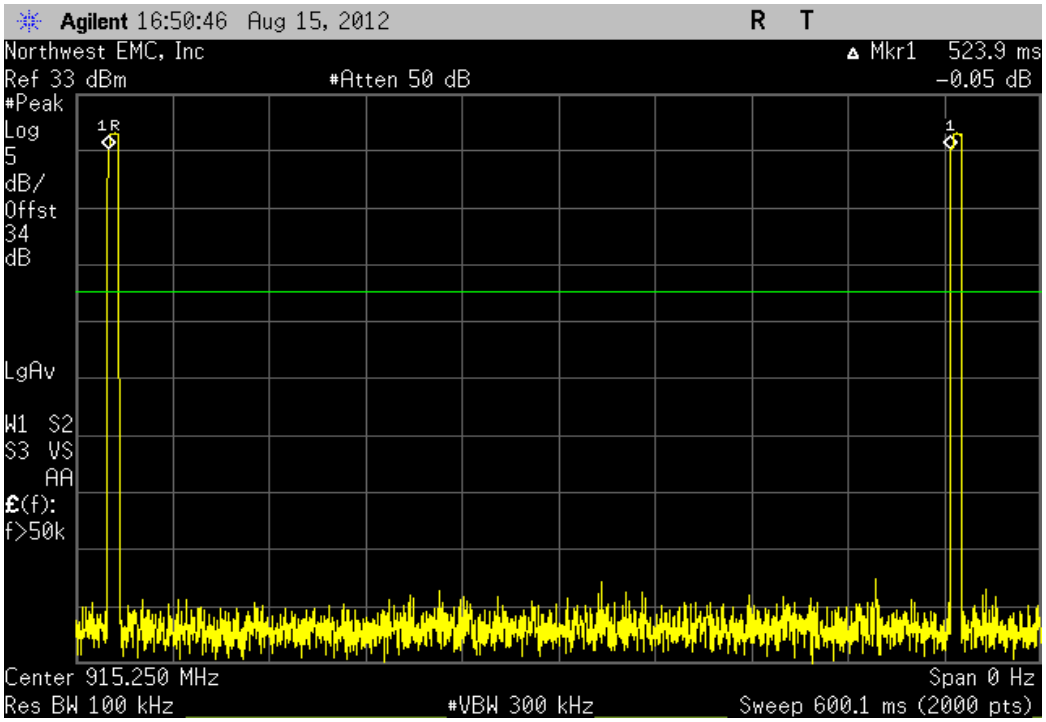
		Value	Limit	Result
Gen2 Reader Mode (PRASK)				
Tx Port 1				
	Pulse Width	7.349 ms	.4 s in 20 s	.287 s
	Period	523.9 ms	.4 s in 20 s	.287 s
	20 Second Period	39 pulses	.4 s in 20 s	.287 s

Dwell Time

Gen2 Reader Mode (PRASK), Tx Port 1, Pulse Width							
					Value	Limit	Result
					7.349 ms	.4 s in 20 s	.287 s

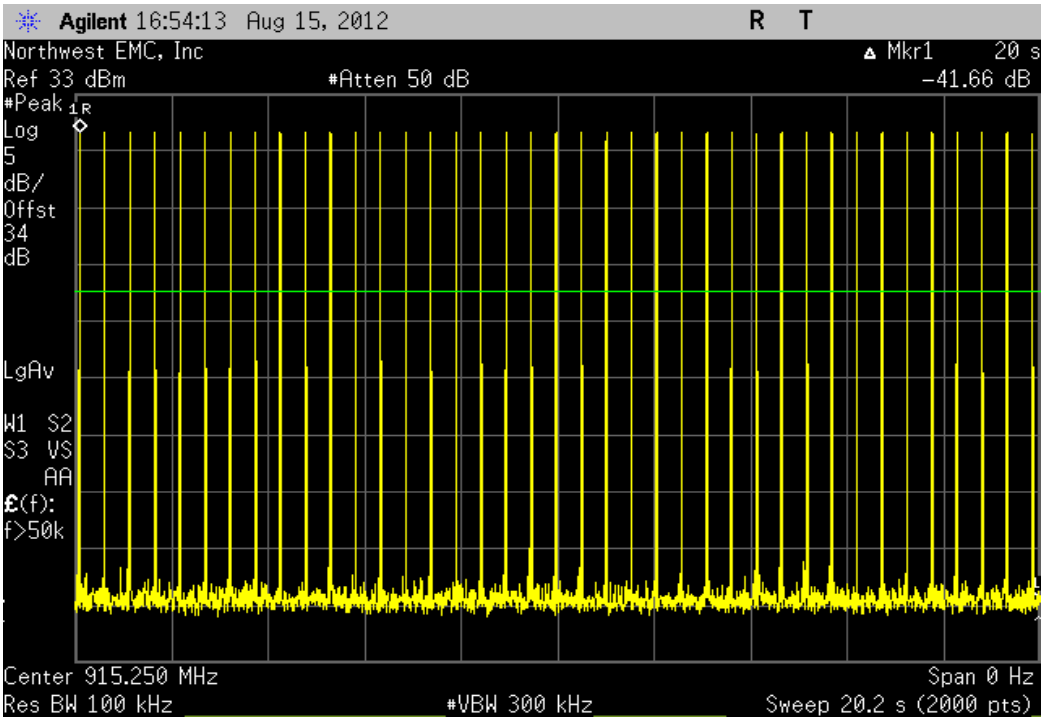


Gen2 Reader Mode (PRASK), Tx Port 1, Period							
					Value	Limit	Result
					523.9 ms	.4 s in 20 s	.287 s



Dwell Time

Gen2 Reader Mode (PRASK), Tx Port 1, 20 Second Period							
					Value	Limit	Result
					39 pulses	.4 s in 20 s	.287 s



Number of Hopping Frequencies

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
40GHz DC Block	Miteq	DCB4000	AMD	6/25/2012	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	8/2/2012	12
Multimeter	Tektronix	DMM912	MMH	1/28/2011	24
DC Power Supply	Topward	TPS-2000	TPD	NCR	0
Power Meter	Gigatronics	8651A	SPM	1/9/2012	24
MXG Vector Signal Generator	Agilent	N5182A	TIF	NCR	0
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	12/15/2011	12
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	24
Spectrum Analyzer	Agilent	E4440A	AFD	7/5/2012	12

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The number of hopping frequencies was measured across the authorized band. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The hopping function of the EUT was enabled.

Number of Hopping Frequencies

EUT:	IM11 RFID Module			**Work Order:**	ITRM0323
Serial Number:	00143			**Date:**	08/15/12
Customer:	Intermec Technologies Corporation			**Temperature:**	24°C
Attendees:	None			**Humidity:**	51%
Project:	None			**Barometric Pres.:**	1016
Tested by:	Brandon Hobbs and Rod Peloquin	**Power:**	4VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2012	ANSI C63.10:2009

COMMENTS

RFID Hyper Terminal software used with BRI commands for Frequency Hopping mode. Commands provided through a serial Telnet session.

DEVIATIONS FROM TEST STANDARD

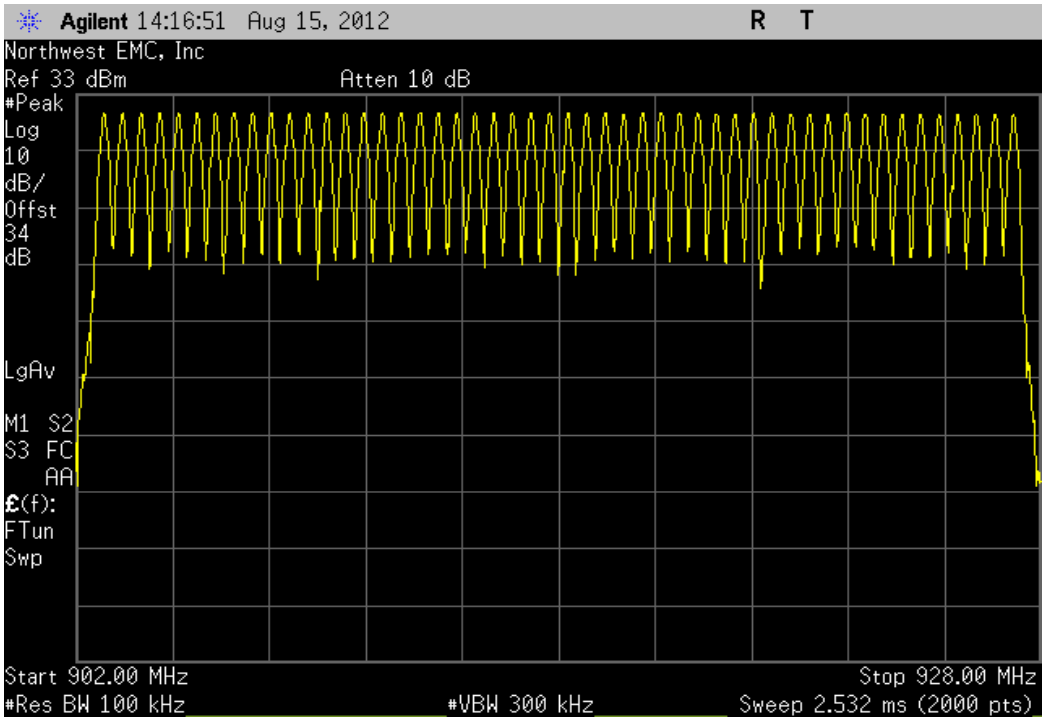
None

Configuration #	1	Signature

	Value	Limit	Result
NUMBER OF HOPPING FREQUENCIES	50	≥50	Pass

Number of Hopping Frequencies

NUMBER OF HOPPING FREQUENCIES							
					Value	Limit	Result
					50	≥50	Pass



Occupied Bandwidth

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
40GHz DC Block	Miteq	DCB4000	AMD	6/25/2012	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	8/2/2012	12
Multimeter	Tektronix	DMM912	MMH	1/28/2011	24
DC Power Supply	Topward	TPS-2000	TPD	NCR	0
Power Meter	Gigatronics	8651A	SPM	1/9/2012	24
MXG Vector Signal Generator	Agilent	N5182A	TIF	NCR	0
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	12/15/2011	12
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	24
Spectrum Analyzer	Agilent	E4440A	AFD	7/5/2012	12

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The occupied bandwidth was measured with the EUT set to low, medium and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet in a no-hop mode.

Occupied Bandwidth

EUT:	IM11 RFID Module			**Work Order:**	ITRM0323
Serial Number:	00143			**Date:**	08/15/12
Customer:	Intermec Technologies Corporation			**Temperature:**	24°C
Attendees:	None			**Humidity:**	51%
Project:	None			**Barometric Pres.:**	1016
Tested by:	Brandon Hobbs and Rod Peloquin	**Power:**	4VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2012	ANSI C63.10:2009

COMMENTS

Hopping Channel Disabled

DEVIATIONS FROM TEST STANDARD

None

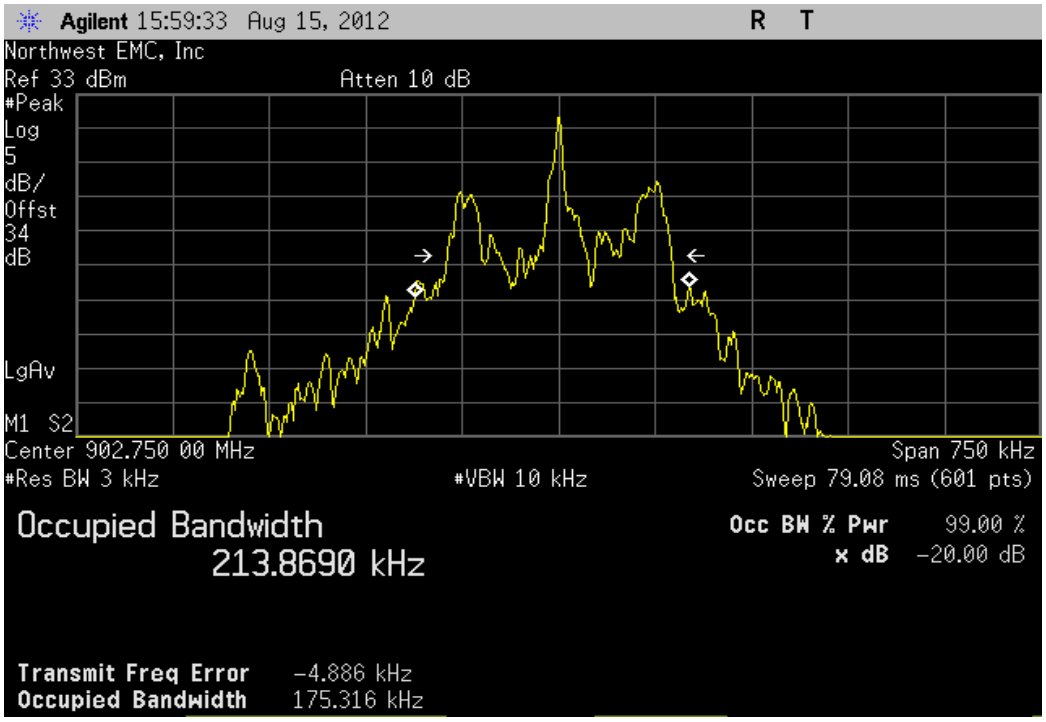
Configuration #	1	Signature

		Value	Limit	Result
Gen2 Reader Mode (PRASK)				
	Tx Port 1			
	Low Channel, Ch. 5, 902.75 MHz	175.316kHz	≤ 250kHz	Pass
	Mid Channel, Ch. 30, 915.25 MHz	173.304kHz	≤ 250kHz	Pass
	High Channel, Ch. 54, 927.25 MHz	174.633kHz	≤ 250kHz	Pass

Occupied Bandwidth

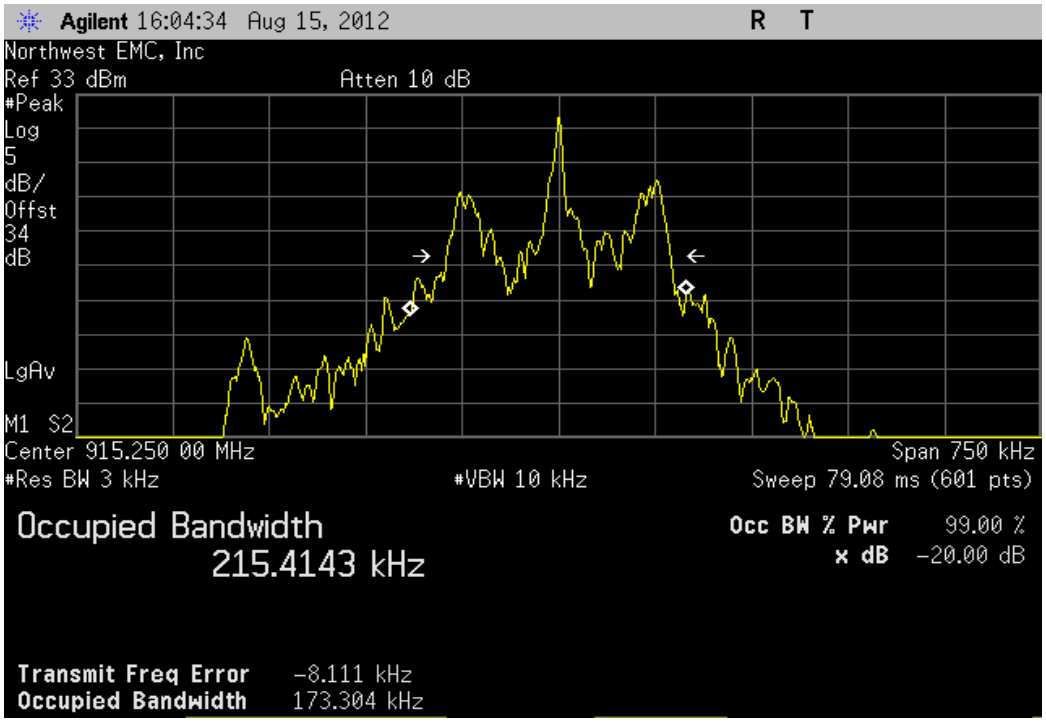
Gen2 Reader Mode (PRASK), Tx Port 1, Low Channel, Ch. 5, 902.75 MHz

				Value	Limit	Result
				175.316kHz	≤ 250kHz	Pass



Gen2 Reader Mode (PRASK), Tx Port 1, Mid Channel, Ch. 30, 915.25 MHz

				Value	Limit	Result
				173.304kHz	≤ 250kHz	Pass



Occupied Bandwidth

Gen2 Reader Mode (PRASK), Tx Port 1, High Channel, Ch. 54, 927.25 MHz						
				Value	Limit	Result
				174.633kHz	≤ 250kHz	Pass

OUTPUT POWER

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
40GHz DC Block	Miteq	DCB4000	AMD	6/25/2012	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	8/2/2012	12
Multimeter	Tektronix	DMM912	MMH	1/28/2011	24
DC Power Supply	Topward	TPS-2000	TPD	NCR	0
Power Meter	Gigatronics	8651A	SPM	1/9/2012	24
MXG Vector Signal Generator	Agilent	N5182A	TIF	NCR	0
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	12/15/2011	12
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	24
Spectrum Analyzer	Agilent	E4440A	AFD	7/5/2012	12

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36dBm.

OUTPUT POWER

EUT:	IM11 RFID Module			**Work Order:**	ITRM0323
Serial Number:	00143			**Date:**	08/15/12
Customer:	Intermec Technologies Corporation			**Temperature:**	24°C
Attendees:	None			**Humidity:**	51%
Project:	None			**Barometric Pres.:**	1016
Tested by:	Brandon Hobbs and Rod Peloquin	**Power:**	4VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2012	ANSI C63.10:2009

COMMENTS

Hopping Mode Disabled

DEVIATIONS FROM TEST STANDARD

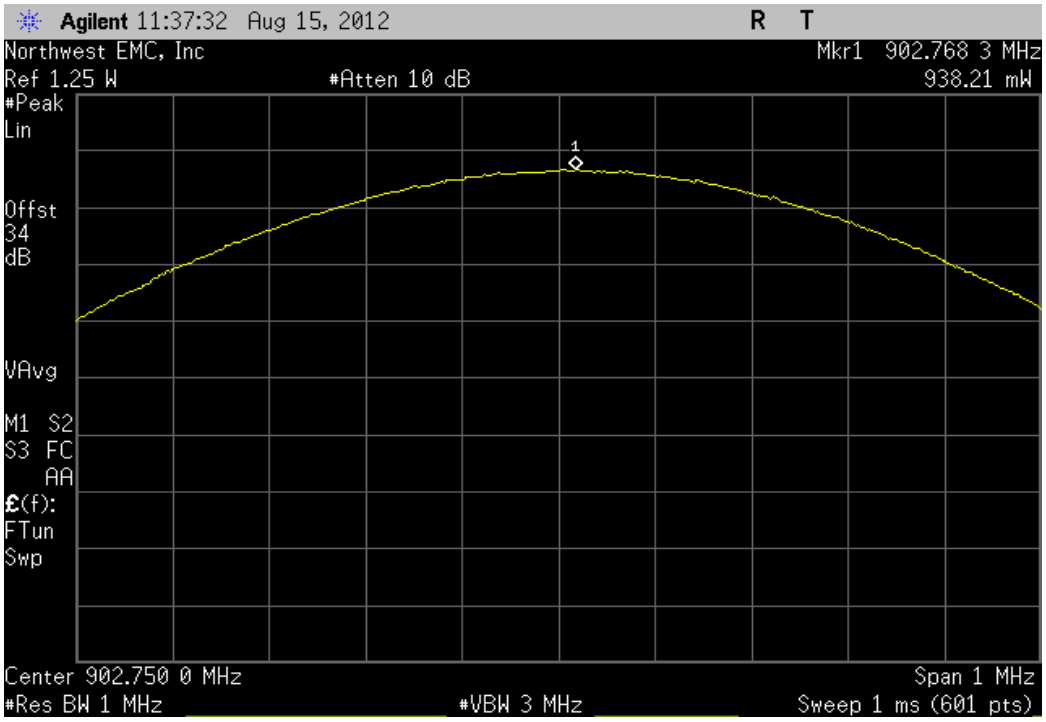
None

Configuration #	1	Signature

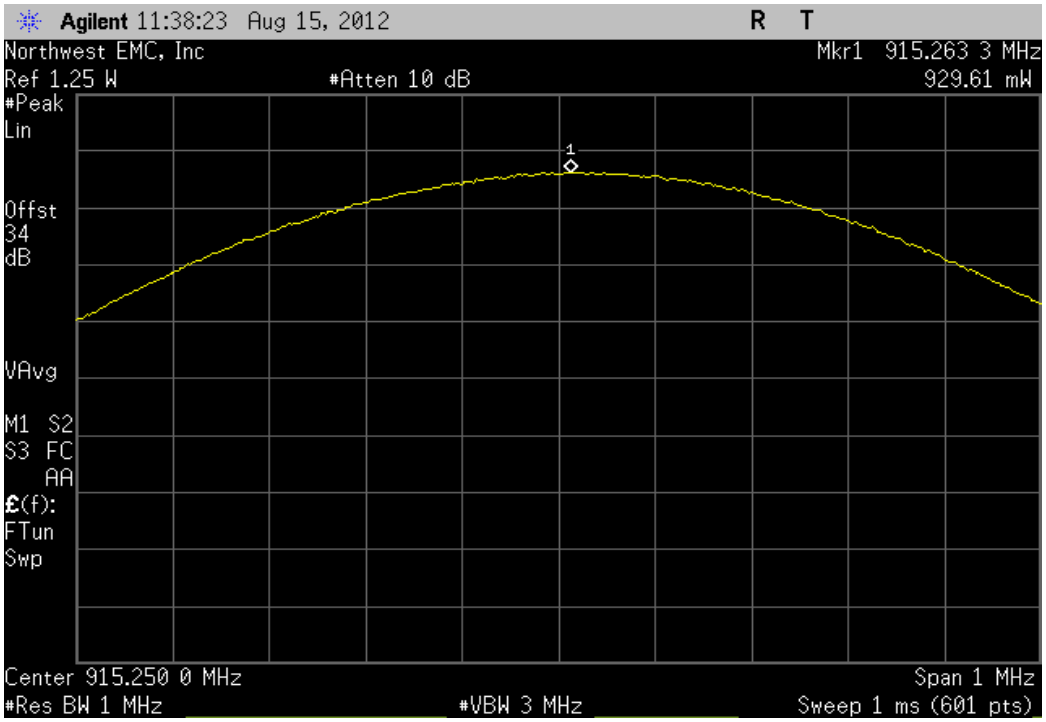
		Value	Limit	Result
Gen2 Reader Mode (PRASK)				
	Tx Port 1			
	Low Channel, Ch. 5, 902.75 MHz	938.21mW	1W	Pass
	Mid Channel, Ch. 30, 915.25 MHz	929.61mW	1W	Pass
	High Channel, Ch. 54, 927.25 MHz	904.27mW	1W	Pass
	Tx Port 2			
	Low Channel, Ch. 5, 902.75 MHz	935.41mW	1W	Pass
	Mid Channel, Ch. 30, 915.25 MHz	928.11mW	1W	Pass
	High Channel, Ch. 54, 927.25 MHz	908.87mW	1W	Pass

OUTPUT POWER

Gen2 Reader Mode (PRASK), Tx Port 1, Low Channel, Ch. 5, 902.75 MHz							
					Value	Limit	Result
					938.21mW	1W	Pass



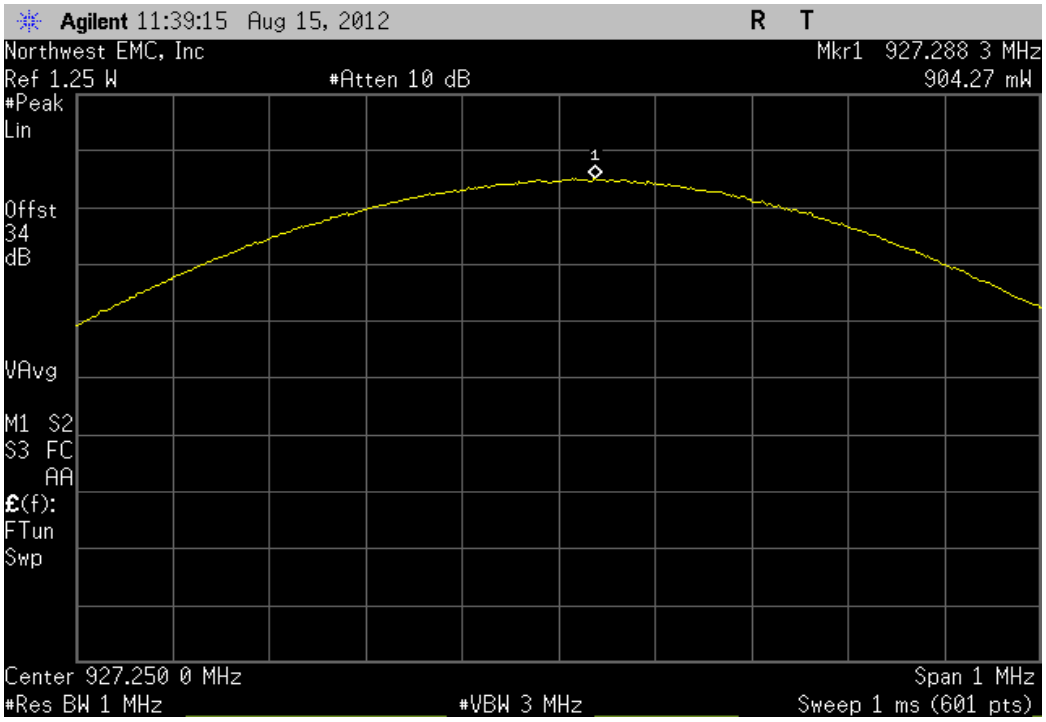
Gen2 Reader Mode (PRASK), Tx Port 1, Mid Channel, Ch. 30, 915.25 MHz							
					Value	Limit	Result
					929.61mW	1W	Pass



OUTPUT POWER

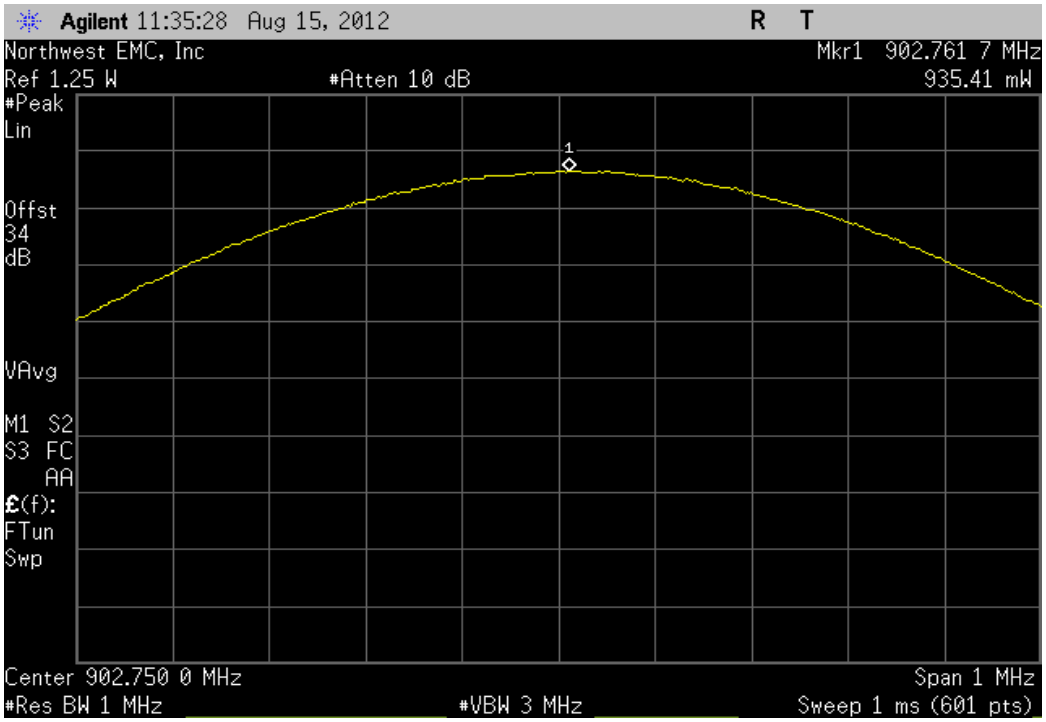
Gen2 Reader Mode (PRASK), Tx Port 1, High Channel, Ch. 54, 927.25 MHz

				Value	Limit	Result
				904.27mW	1W	Pass



Gen2 Reader Mode (PRASK), Tx Port 2, Low Channel, Ch. 5, 902.75 MHz

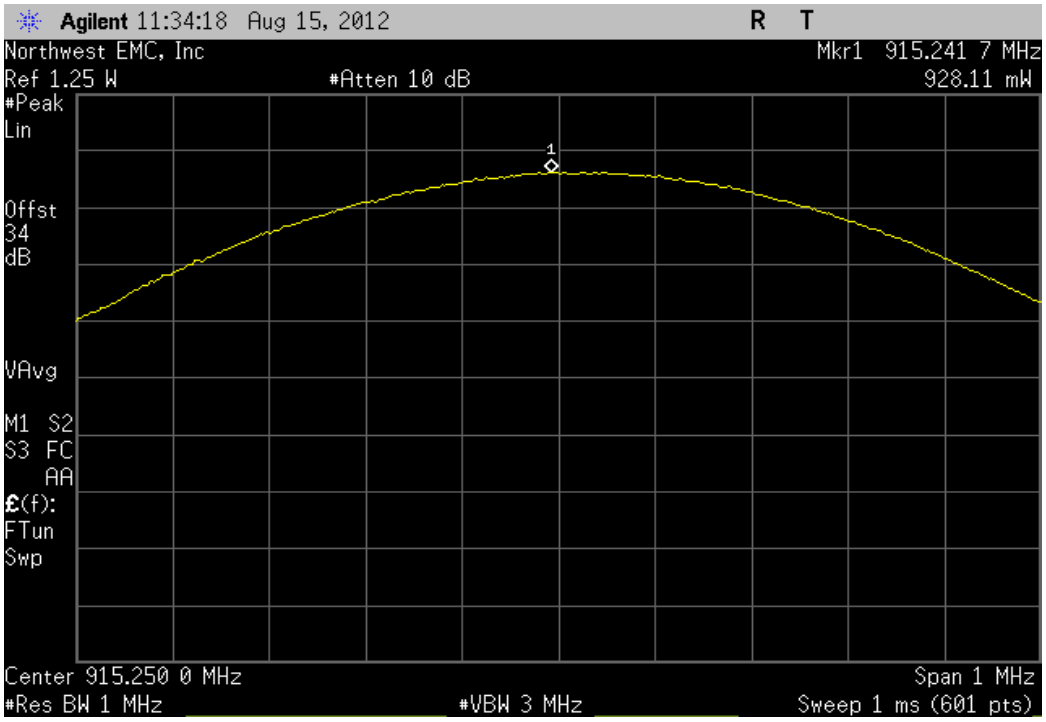
				Value	Limit	Result
				935.41mW	1W	Pass



OUTPUT POWER

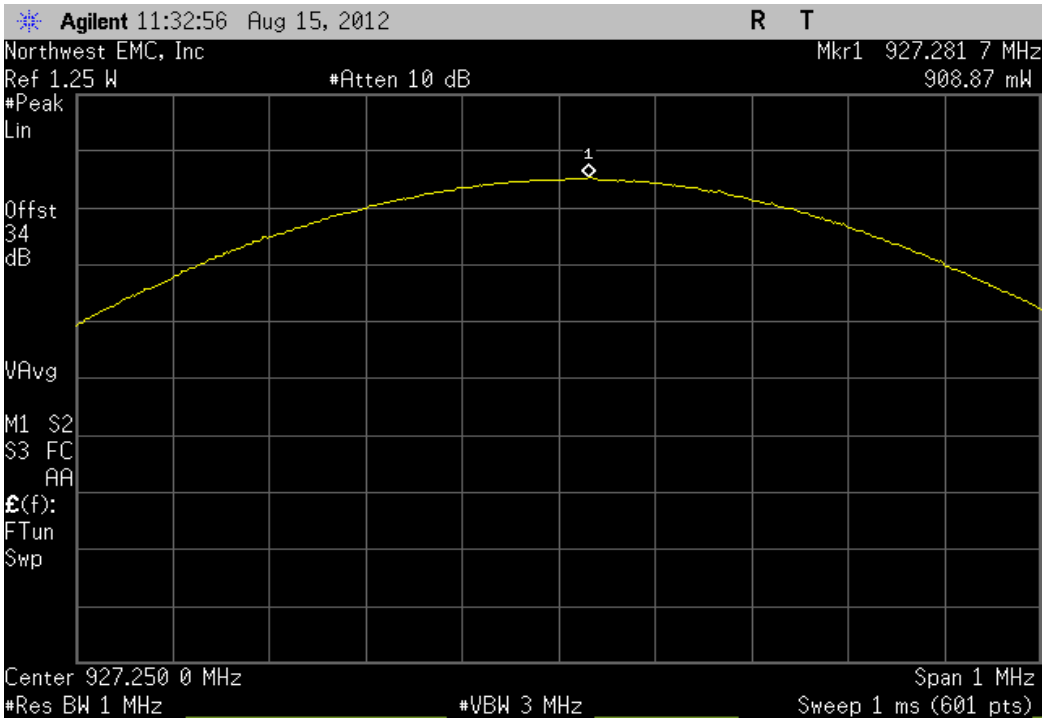
Gen2 Reader Mode (PRASK), Tx Port 2, Mid Channel, Ch. 30, 915.25 MHz

				Value	Limit	Result
				928.11mW	1W	Pass



Gen2 Reader Mode (PRASK), Tx Port 2, High Channel, Ch. 54, 927.25 MHz

				Value	Limit	Result
				908.87mW	1W	Pass



Band Edge Compliance
Hopping

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
40GHz DC Block	Miteq	DCB4000	AMD	6/25/2012	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	8/2/2012	12
Multimeter	Tektronix	DMM912	MMH	1/28/2011	24
DC Power Supply	Topward	TPS-2000	TPD	NCR	0
Power Meter	Gigatronics	8651A	SPM	1/9/2012	24
MXG Vector Signal Generator	Agilent	N5182A	TIF	NCR	0
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	12/15/2011	12
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	24
Spectrum Analyzer	Agilent	E4440A	AFD	7/5/2012	12

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The spurious RF conducted emissions at the edges of the authorized band were measured with the EUT set to its normal pseudo-random hopping sequence. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

Band Edge Compliance Hopping

EUT:	IM11 RFID Module			**Work Order:**	ITRM0323
Serial Number:	00143			**Date:**	08/15/12
Customer:	Intermec Technologies Corporation			**Temperature:**	24°C
Attendees:	None			**Humidity:**	51%
Project:	None			**Barometric Pres.:**	1016
Tested by:	Brandon Hobbs and Rod Peloquin	**Power:**	4VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.245:2012	ANSI C63.10:2009

COMMENTS

RFID Hyer Terminal software used with BRI commands for Frequency Hopping mode. Commands provided through a serial Telnet session.

DEVIATIONS FROM TEST STANDARD

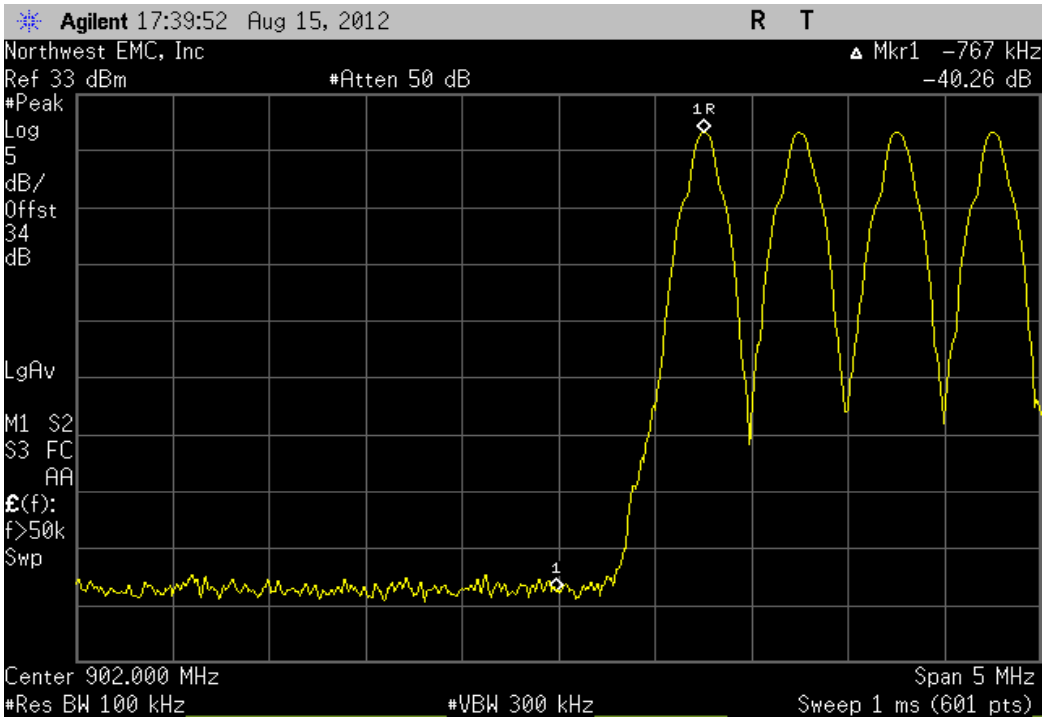
None

Configuration #	1	Signature

		Value	Limit	Result
Gen2 Reader Mode (PRASK)				
Tx Port 1				
	Low Channel, Ch. 5, 902.75 MHz	-40.26 dBc	≤ -20 dBc	Pass
	High Channel, Ch. 54, 927.25 MHz	-40.76 dBc	≤ -20 dBc	Pass

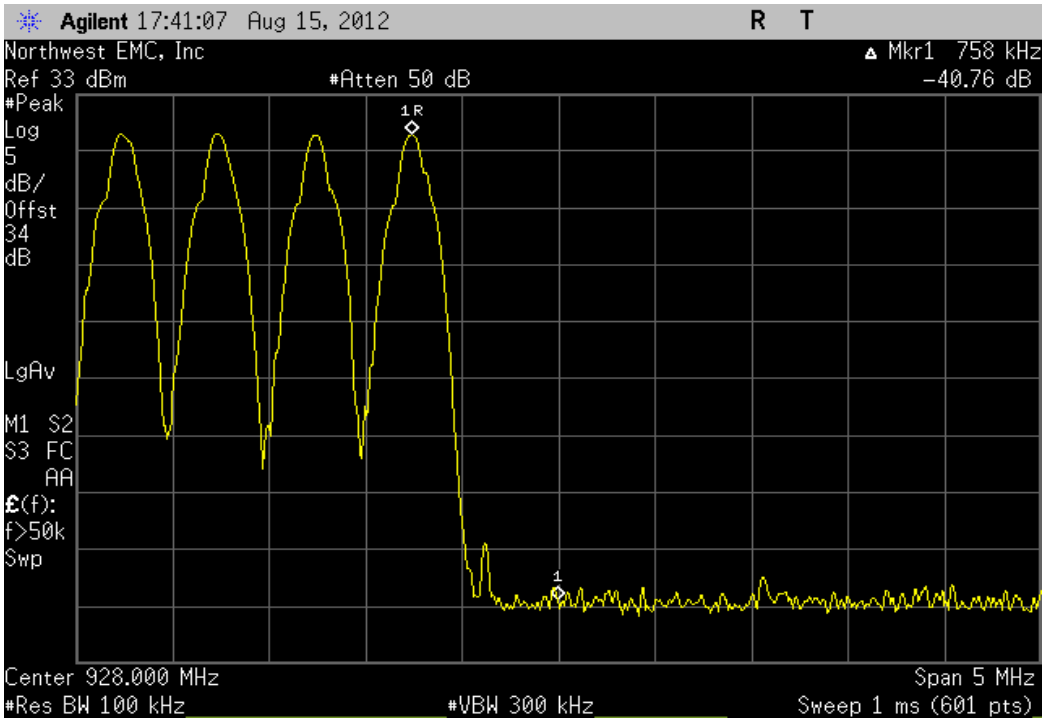
Gen2 Reader Mode (PRASK), Tx Port 1, Low Channel, Ch. 5, 902.75 MHz

				Value	Limit	Result
				-40.26 dBc	≤ -20 dBc	Pass



Gen2 Reader Mode (PRASK), Tx Port 1, High Channel, Ch. 54, 927.25 MHz

				Value	Limit	Result
				-40.76 dBc	≤ -20 dBc	Pass



Band Edge Compliance

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
40GHz DC Block	Miteq	DCB4000	AMD	6/25/2012	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	8/2/2012	12
Multimeter	Tektronix	DMM912	MMH	1/28/2011	24
DC Power Supply	Topward	TPS-2000	TPD	NCR	0
Power Meter	Gigatronics	8651A	SPM	1/9/2012	24
MXG Vector Signal Generator	Agilent	N5182A	TIF	NCR	0
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	12/15/2011	12
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	24
Spectrum Analyzer	Agilent	E4440A	AFD	7/5/2012	12

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The spurious RF conducted emissions at the edges of the authorized band were measured with the EUT set to low and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet in a no hop mode. The channels closest to the band edges were selected.

The spectrum was scanned below the lower band edge and above the higher band edge.

Band Edge Compliance

EUT:	IM11 RFID Module			**Work Order:**	ITRM0323
Serial Number:	00143			**Date:**	08/15/12
Customer:	Intermec Technologies Corporation			**Temperature:**	24°C
Attendees:	None			**Humidity:**	51%
Project:	None			**Barometric Pres.:**	1016
Tested by:	Brandon Hobbs and Rod Peloquin	**Power:**	4VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2012	ANSI C63.10:2009

COMMENTS

Hopping Channel disabled

DEVIATIONS FROM TEST STANDARD

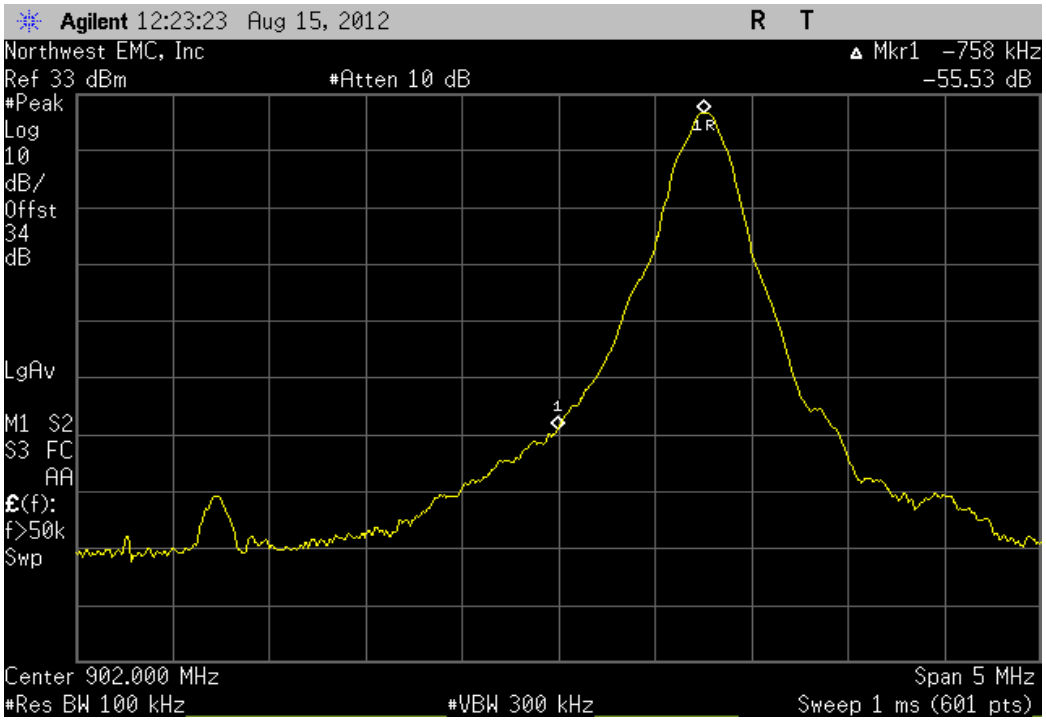
None

Configuration #	1	Signature

		Value	Limit	Result
Gen2 Reader Mode (PRASK)				
	Tx Port 1			
	Low Channel, Ch. 5, 902.75 MHz	-55.53 dBc	≤ -20 dBc	Pass
	High Channel, Ch. 54, 927.25 MHz	-59.64 dBc	≤ -20 dBc	Pass

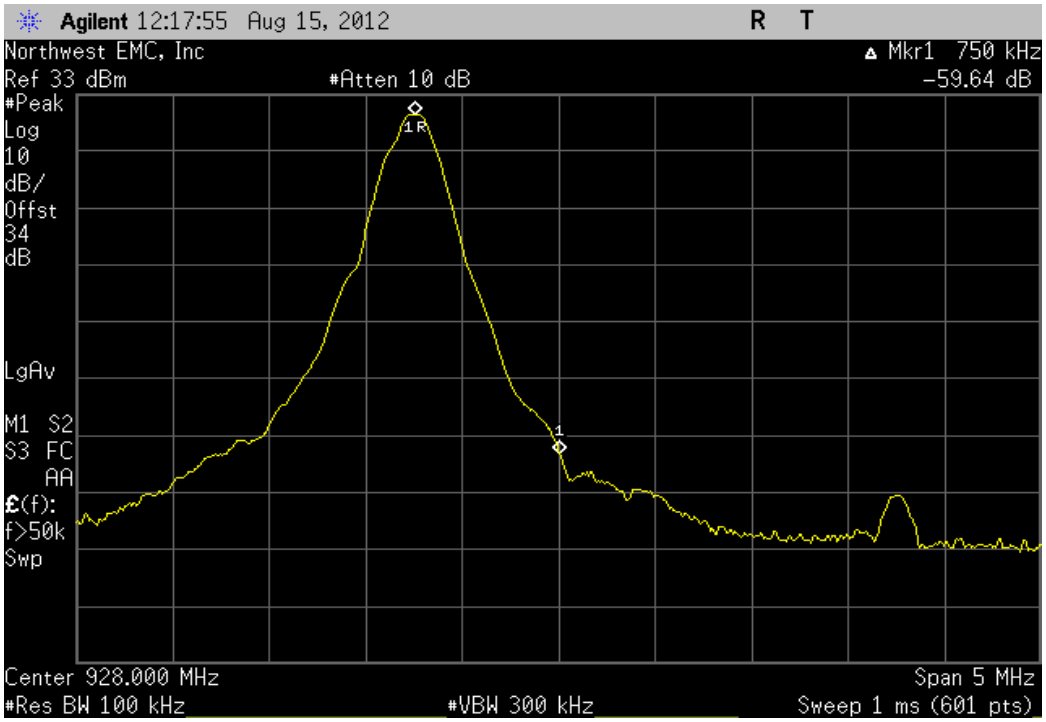
Gen2 Reader Mode (PRASK), Tx Port 1, Low Channel, Ch. 5, 902.75 MHz

				Value	Limit	Result
				-55.53 dBc	≤ -20 dBc	Pass



Gen2 Reader Mode (PRASK), Tx Port 1, High Channel, Ch. 54, 927.25 MHz

				Value	Limit	Result
				-59.64 dBc	≤ -20 dBc	Pass



Spurious Conducted Emissions

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
40GHz DC Block	Miteq	DCB4000	AMD	6/25/2012	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	8/2/2012	12
Multimeter	Tektronix	DMM912	MMH	1/28/2011	24
DC Power Supply	Topward	TPS-2000	TPD	NCR	0
Power Meter	Gigatronics	8651A	SPM	1/9/2012	24
MXG Vector Signal Generator	Agilent	N5182A	TIF	NCR	0
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	12/15/2011	12
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	24
Spectrum Analyzer	Agilent	E4440A	AFD	7/5/2012	12

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

Spurious Conducted Emissions

EUT:	IM11 RFID Module			**Work Order:**	ITRM0323
Serial Number:	00143			**Date:**	08/15/12
Customer:	Intermec Technologies Corporation			**Temperature:**	24°C
Attendees:	None			**Humidity:**	51%
Project:	None			**Barometric Pres.:**	1016
Tested by:	Brandon Hobbs and Rod Peloquin	**Power:**	4VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2012	ANSI C63.10:2009

COMMENTS

Hopping Mode Disabled

DEVIATIONS FROM TEST STANDARD

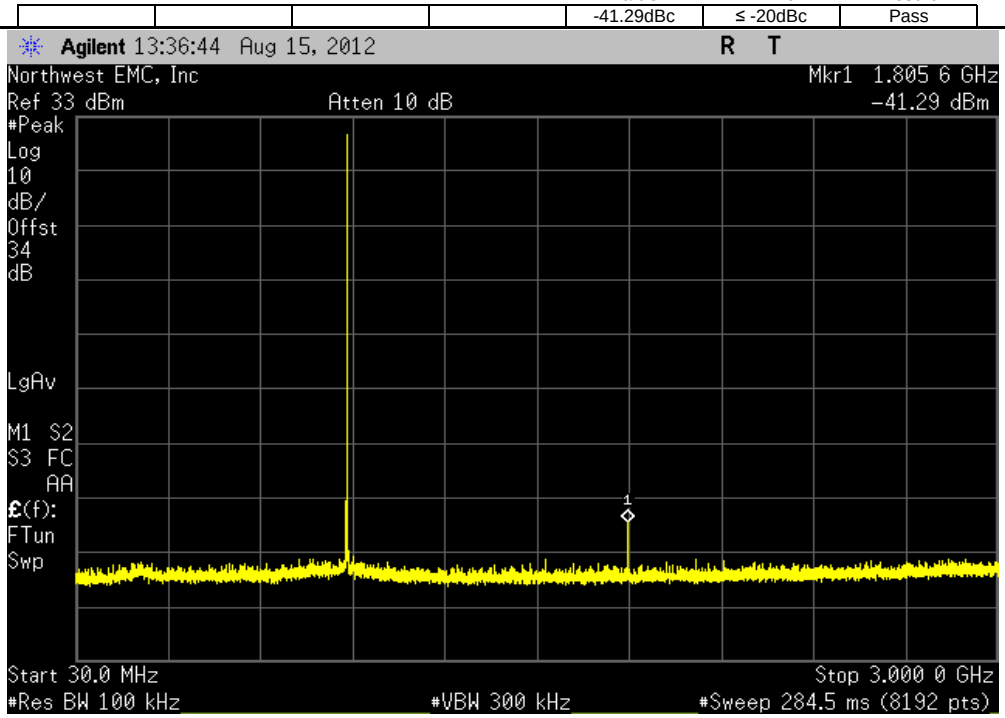
None

Configuration #	1	Signature

		Value	Limit	Result
Gen2 Reader Mode (PRASK)				
Tx Port 1				
	Low Channel, Ch. 5, 902.75 MHz			
	30MHz-3GHz	-41.29dBc	≤ -20dBc	Pass
	3GHz-10GHz	-43.59dBc	≤ -20dBc	Pass
	High Channel, Ch. 54, 927.25 MHz			
	30MHz-3GHz	-41.47dBc	≤ -20dBc	Pass
	3GHz-10GHz	-44.07dBc	≤ -20dBc	Pass

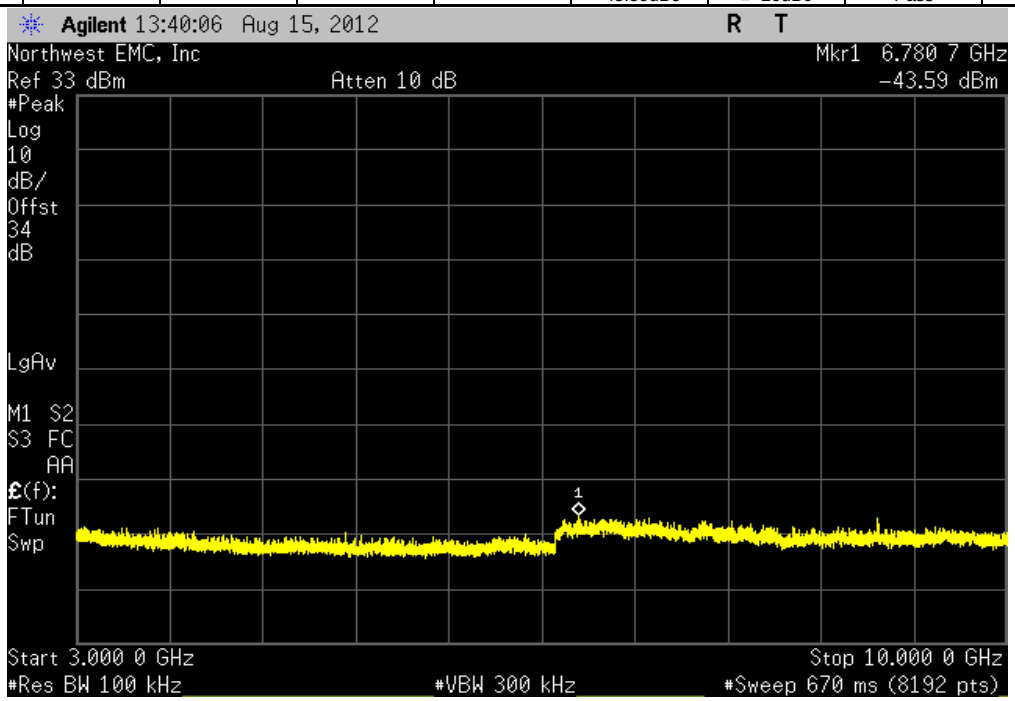
Gen2 Reader Mode (PRASK), Tx Port 1, Low Channel, Ch. 5, 902.75 MHz, 30MHz-3GHz

Value	Limit	Result
-41.29dBc	≤ -20dBc	Pass



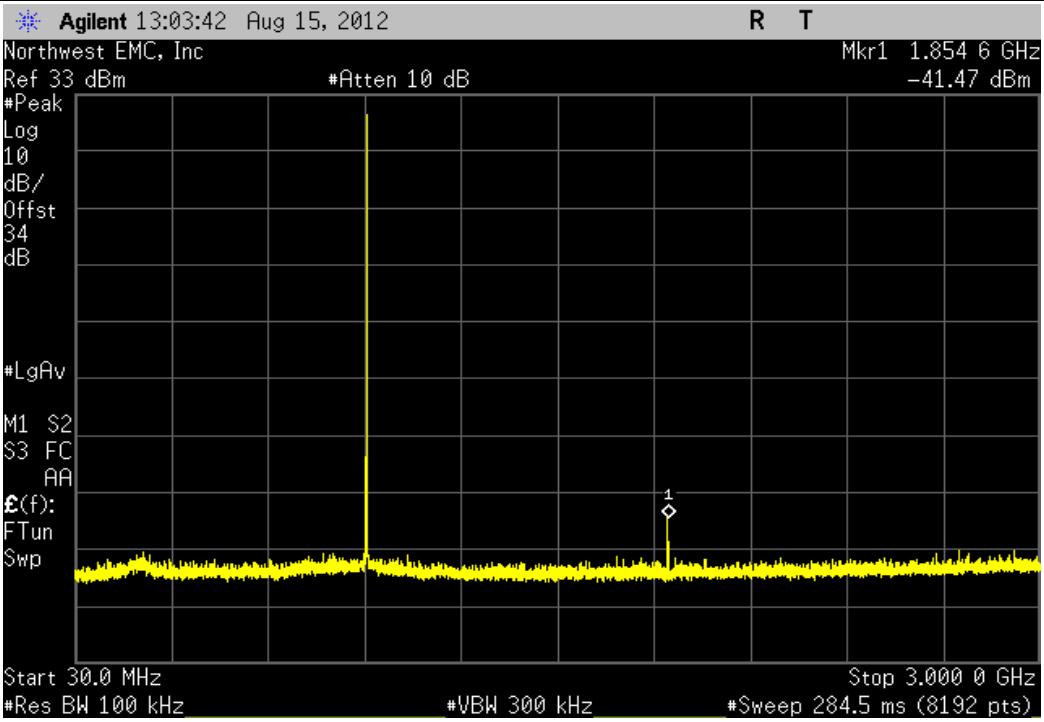
Gen2 Reader Mode (PRASK), Tx Port 1, Low Channel, Ch. 5, 902.75 MHz, 3GHz-10GHz

Value	Limit	Result
-43.59dBc	≤ -20dBc	Pass



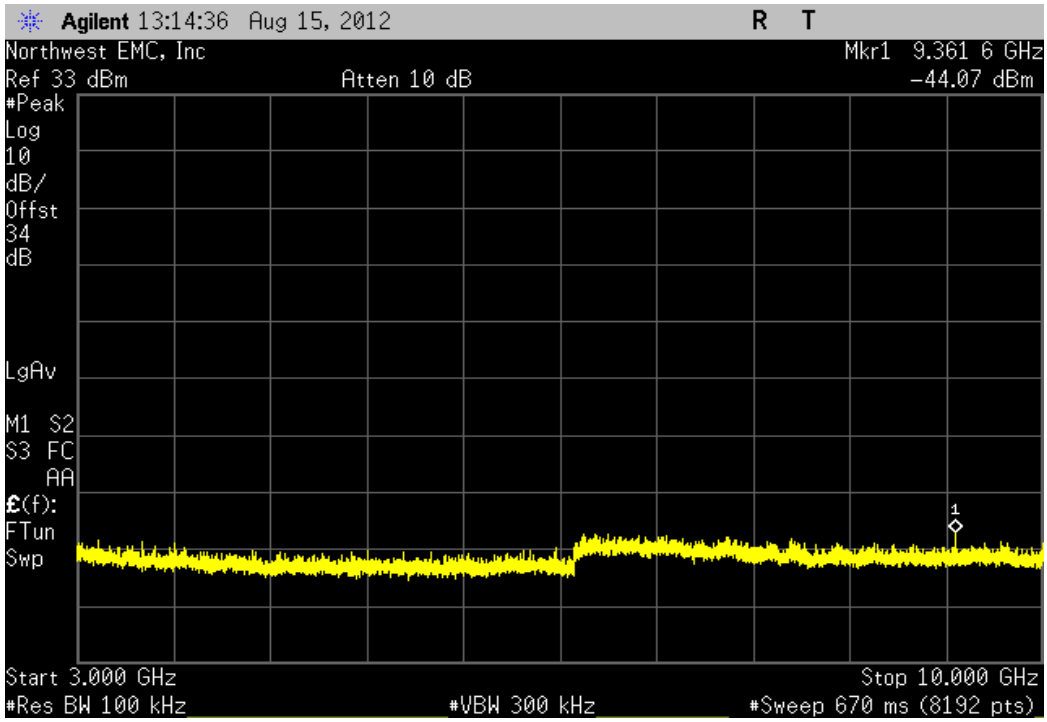
Gen2 Reader Mode (PRASK), Tx Port 1, High Channel, Ch. 54, 927.25 MHz, 30MHz-3GHz

Value	Limit	Result
-41.47dBc	≤ -20dBc	Pass



Gen2 Reader Mode (PRASK), Tx Port 1, High Channel, Ch. 54, 927.25 MHz, 3GHz-10GHz

Value	Limit	Result
-44.07dBc	≤ -20dBc	Pass



SPURIOUS RADIATED EMISSIONS

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

MODES OF OPERATION

Transmitting Low, Mid, High Channels (Ch 5 - 902.75 MHz, Ch 30 - 915.25 MHz, Ch 54 - 927.25 MHz)

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

ITRM0323 - 8
ITRM0323 - 7
ITRM0323 - 6
ITRM0323 - 5
ITRM0323 - 4
ITRM0323 - 3
ITRM0323 - 2
ITRM0323 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	12400 MHz

SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
.5-1GHz Notch Filter	K&L Microwave	3TNF-500/1000-N/N	HFR	11/30/2010	24 mo
High Pass Filter	Micro-Tronics	HPM50111	HFM	4/2/2012	24 mo
High Pass Filter 1.2-18 GHz	Micro-Tronics	HPM50108	HFW	4/2/2012	24 mo
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AOE	11/21/2011	12 mo
Antenna, Horn	ETS	3160-07	AHR	NCR	0 mo
OC 10 Cables	N/A	12-18GHz RE Cables	OCO	10/13/2011	12 mo
Pre-Amplifier	Miteq	AMF-4D-010120-30-10P-1	AOP	6/7/2012	12 mo
Antenna, Horn	EMCO	3115	AHB	3/8/2011	24 mo
OC10 Cables	N/A	1-8GHz RE Cables	OCJ	10/13/2011	12 mo
Antenna, Biconilog	EMCO	3142	AXB	6/14/2012	12 mo
OC10 Cables	N/A	10kHz-1GHz RE Cables	OCH	6/7/2012	12 mo
Pre-Amplifier	Miteq	AM-1064-9079	AOO	6/7/2012	12 mo
Spectrum Analyzer	Agilent	E4440A	AFA	6/15/2012	12 mo

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

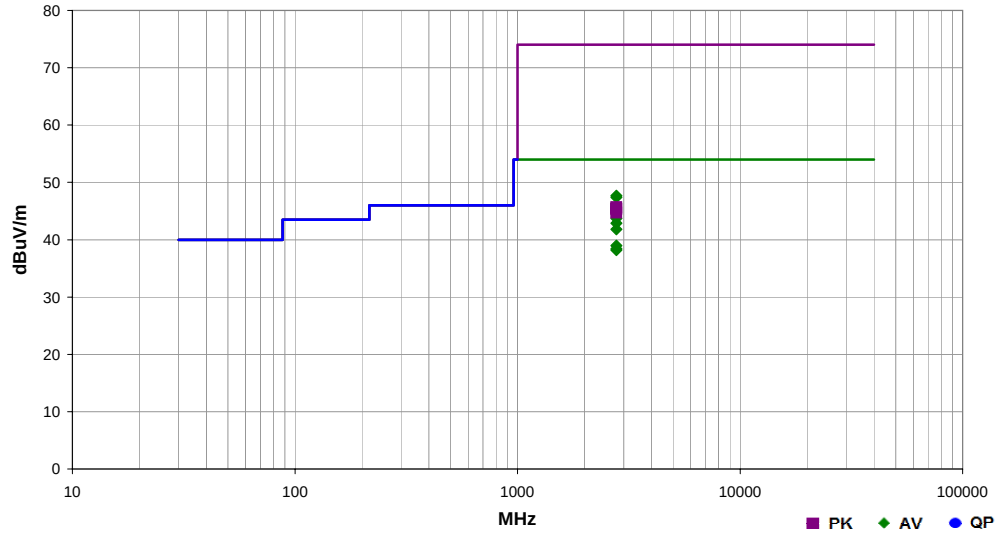
The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.10:2009). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

SPURIOUS RADIATED EMISSIONS

Work Order:	ITRM0323	**Date:**	08/21/12		
Project:	None	**Temperature:**	24.48 °C		
Job Site:	OC10	**Humidity:**	46.15% RH		
Serial Number:	None	**Barometric Pres.:**	1019 mbar	**Tested by:**	Jaemi Suh
EUT:	Bali RFID Module.				
Configuration:	1				
Customer:	Intermec Technologies Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting High Channel, 54, 927.25MHz				
Deviations:	None				
Comments:	Antenna TX Port 1. Huber & Suhner 1309.56.001. RP TNC to RP TNC Cable. Power=30.				

Test Specifications	**Test Method**
FCC 15.247:2012	ANSI C63.10:2009

Run #	14	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



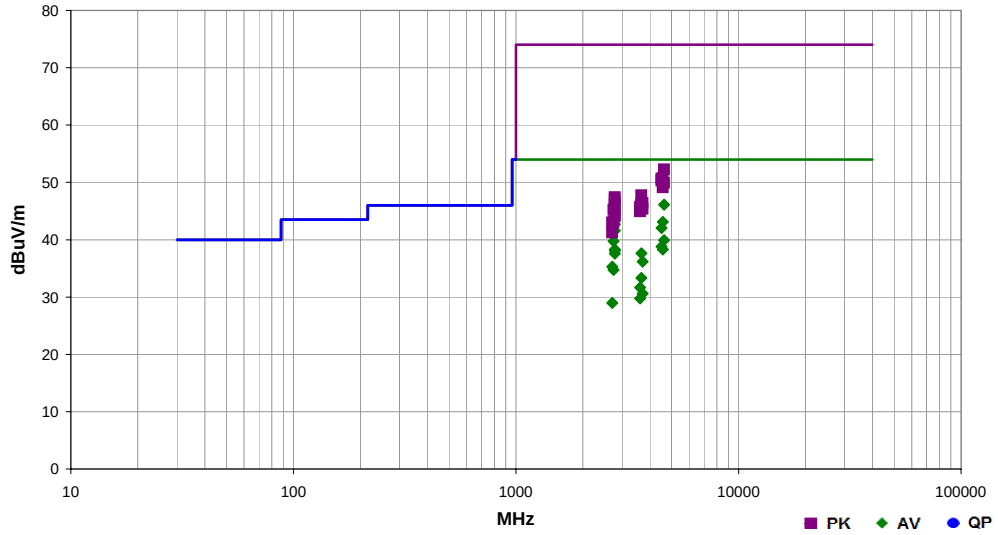
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2781.753	40.9	2.8	1.0	196.0	3.0	0.0	Vert	AV	0.0	43.7	54.0	-10.3	EUT X-Axis, Antenna Horizontal, High Channel, 54, 927.25 MHz
2781.765	40.1	2.8	1.6	353.0	3.0	0.0	Vert	AV	0.0	42.9	54.0	-11.1	EUT Y-Axis, Antenna Horizontal, High Channel, 54, 927.25 MHz
2781.753	39.0	2.8	1.0	355.0	3.0	0.0	Vert	AV	0.0	41.8	54.0	-12.2	EUT Z-Axis, Antenna Horizontal, High Channel, 54, 927.25 MHz
2781.763	36.2	2.8	1.2	46.0	3.0	0.0	Horz	AV	0.0	39.0	54.0	-15.0	EUT X-Axis, Antenna Horizontal, High Channel, 54, 927.25 MHz
2781.753	35.6	2.8	1.0	285.0	3.0	0.0	Horz	AV	0.0	38.4	54.0	-15.6	EUT Y-Axis, Antenna Horizontal, High Channel, 54, 927.25 MHz
2781.765	35.4	2.8	1.2	290.0	3.0	0.0	Horz	AV	0.0	38.2	54.0	-15.8	EUT Z-Axis, Antenna Horizontal, High Channel, 54, 927.25 MHz
2781.933	44.9	2.8	1.0	196.0	3.0	0.0	Vert	PK	0.0	47.7	74.0	-26.3	EUT X-Axis, Antenna Horizontal, High Channel, 54, 927.25 MHz
2781.620	44.6	2.8	1.0	355.0	3.0	0.0	Vert	PK	0.0	47.4	74.0	-26.6	EUT Z-Axis, Antenna Horizontal, High Channel, 54, 927.25 MHz
2781.605	42.9	2.8	1.6	353.0	3.0	0.0	Vert	PK	0.0	45.7	74.0	-28.3	EUT Y-Axis, Antenna Horizontal, High Channel, 54, 927.25 MHz
2781.903	42.6	2.8	1.2	46.0	3.0	0.0	Horz	PK	0.0	45.4	74.0	-28.6	EUT X-Axis, Antenna Horizontal, High Channel, 54, 927.25 MHz
2781.707	42.6	2.8	1.0	285.0	3.0	0.0	Horz	PK	0.0	45.4	74.0	-28.6	EUT Y-Axis, Antenna Horizontal, High Channel, 54, 927.25 MHz
2781.552	41.9	2.8	1.2	290.0	3.0	0.0	Horz	PK	0.0	44.7	74.0	-29.3	EUT Z-Axis, Antenna Horizontal, High Channel, 54, 927.25 MHz

SPURIOUS RADIATED EMISSIONS

Work Order:	ITRM0323	**Date:**	08/21/12		
Project:	None	**Temperature:**	24.48 °C		
Job Site:	OC10	**Humidity:**	46.15% RH		
Serial Number:	00143	**Barometric Pres.:**	1019 mbar	**Tested by:**	Jaemi Suh
EUT:	IM11 RFID Module				
Configuration:	1				
Customer:	Intermec Technologies Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting Low, Mid, High Channels (Ch 5 - 902.75 MHz, Ch 30 - 915.25 MHz, Ch 54 - 927.25 MHz)				
Deviations:	None				
Comments:	Antenna TX Port 1. Antenna Huber Suhner 1309.56.001. RP TNC to RP TNC Cable (Part#236-246-001). Power=30.				

Test Specifications	**Test Method**
FCC 15.247:2012	ANSI C63.10:2009

Run #	15	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance ()	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted ()	Spec. Limit ()	Compared to Spec. (dB)	Comments
4636.243	35.5	10.6	1.0	73.0	3.0	0.0	Vert	AV	0.0	46.1	54.0	-7.9	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
2781.753	40.8	2.8	1.0	196.0	3.0	0.0	Vert	AV	0.0	43.6	54.0	-10.4	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
4576.257	32.7	10.4	1.0	79.0	3.0	0.0	Vert	AV	0.0	43.1	54.0	-10.9	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2781.753	39.9	2.8	1.0	355.0	3.0	0.0	Vert	AV	0.0	42.7	54.0	-11.3	EUT X-Axis, ANT On Side, High Channel, 54, 927.25 MHz
4513.750	31.9	10.1	1.0	81.0	3.0	0.0	Vert	AV	0.0	42.0	54.0	-12.0	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
2781.752	38.8	2.8	1.2	177.0	3.0	0.0	Vert	AV	0.0	41.6	54.0	-12.4	EUT X-Axis, ANT Vertical, High Channel, 54, 927.25 MHz
4636.230	29.3	10.6	1.8	107.0	3.0	0.0	Horz	AV	0.0	39.9	54.0	-14.1	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
2745.757	37.0	2.7	1.0	6.0	3.0	0.0	Vert	AV	0.0	39.7	54.0	-14.3	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
4513.763	28.7	10.1	2.6	125.0	3.0	0.0	Horz	AV	0.0	38.8	54.0	-15.2	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4576.270	27.9	10.4	1.9	2.0	3.0	0.0	Horz	AV	0.0	38.3	54.0	-15.7	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2781.753	35.5	2.8	1.0	285.0	3.0	0.0	Horz	AV	0.0	38.3	54.0	-15.7	EUT X-Axis, ANT On Side, High Channel, 54, 927.25 MHz
2781.765	35.3	2.8	1.2	290.0	3.0	0.0	Horz	AV	0.0	38.1	54.0	-15.9	EUT X-Axis, ANT Vertical, High Channel, 54, 927.25 MHz
3661.013	30.7	6.9	1.0	189.0	3.0	0.0	Vert	AV	0.0	37.6	54.0	-16.4	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2781.773	34.8	2.8	1.0	64.0	3.0	0.0	Horz	AV	0.0	37.6	54.0	-16.4	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
3709.007	29.0	7.2	1.0	177.0	3.0	0.0	Vert	AV	0.0	36.2	54.0	-17.8	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
2708.257	32.6	2.7	1.8	22.0	3.0	0.0	Vert	AV	0.0	35.3	54.0	-18.7	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
2745.763	32.0	2.7	1.0	128.0	3.0	0.0	Horz	AV	0.0	34.7	54.0	-19.3	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
3661.047	26.4	6.9	1.0	165.0	3.0	0.0	Horz	AV	0.0	33.3	54.0	-20.7	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
4636.183	41.6	10.6	1.0	73.0	3.0	0.0	Vert	PK	0.0	52.2	74.0	-21.8	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
3611.020	25.0	6.7	1.0	118.0	3.0	0.0	Vert	AV	0.0	31.7	54.0	-22.3	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4576.223	40.3	10.4	1.0	79.0	3.0	0.0	Vert	PK	0.0	50.7	74.0	-23.3	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
4513.610	40.5	10.1	2.6	125.0	3.0	0.0	Horz	PK	0.0	50.6	74.0	-23.4	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
3709.007	23.4	7.2	1.0	268.0	3.0	0.0	Horz	AV	0.0	30.6	54.0	-23.4	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
4513.870	40.2	10.1	1.0	81.0	3.0	0.0	Vert	PK	0.0	50.3	74.0	-23.7	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4636.263	39.3	10.6	1.8	107.0	3.0	0.0	Horz	PK	0.0	49.9	74.0	-24.1	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
3611.133	23.1	6.7	1.0	333.0	3.0	0.0	Horz	AV	0.0	29.8	54.0	-24.2	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4575.923	38.7	10.4	1.9	2.0	3.0	0.0	Horz	PK	0.0	49.1	74.0	-24.9	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2708.270	26.3	2.7	1.0	65.0	3.0	0.0	Horz	AV	0.0	29.0	54.0	-25.0	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
3661.047	40.8	6.9	1.0	189.0	3.0	0.0	Vert	PK	0.0	47.7	74.0	-26.3	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2781.933	44.6	2.8	1.0	196.0	3.0	0.0	Vert	PK	0.0	47.4	74.0	-26.6	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
2781.620	44.2	2.8	1.0	355.0	3.0	0.0	Vert	PK	0.0	47.0	74.0	-27.0	EUT X-Axis, ANT On Side, High Channel, 54, 927.25 MHz
3708.793	39.2	7.2	1.0	177.0	3.0	0.0	Vert	PK	0.0	46.4	74.0	-27.6	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
2781.745	43.5	2.8	1.2	177.0	3.0	0.0	Vert	PK	0.0	46.3	74.0	-27.7	EUT X-Axis, ANT Vertical, High Channel, 54, 927.25 MHz
3660.913	39.3	6.9	1.0	165.0	3.0	0.0	Horz	PK	0.0	46.2	74.0	-27.8	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
3611.340	39.0	6.7	1.0	333.0	3.0	0.0	Horz	PK	0.0	45.7	74.0	-28.3	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
2781.707	42.6	2.8	1.0	285.0	3.0	0.0	Horz	PK	0.0	45.4	74.0	-28.6	EUT X-Axis, ANT On Side, High Channel, 54, 927.25 MHz
3708.120	38.2	7.2	1.0	268.0	3.0	0.0	Horz	PK	0.0	45.4	74.0	-28.6	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
2745.990	42.5	2.7	1.0	6.0	3.0	0.0	Vert	PK	0.0	45.2	74.0	-28.8	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
3610.867	38.3	6.7	1.0	118.0	3.0	0.0	Vert	PK	0.0	45.0	74.0	-29.0	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
2781.552	41.6	2.8	1.2	290.0	3.0	0.0	Horz	PK	0.0	44.4	74.0	-29.6	EUT X-Axis, ANT Vertical, High Channel, 54, 927.25 MHz

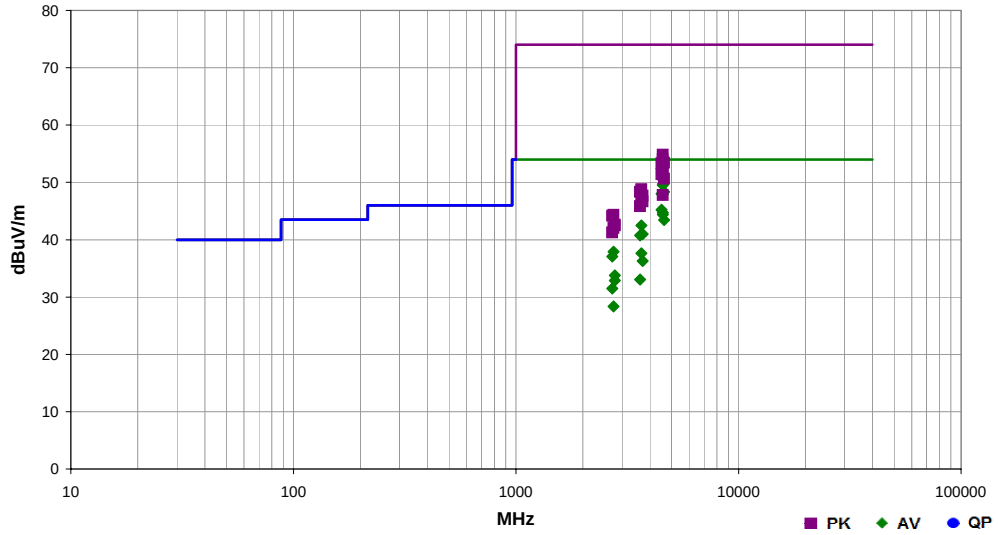
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance ()	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted ()	Spec. Limit ()	Compared to Spec. (dB)	Comments
2781.873	41.3	2.8	1.0	64.0	3.0	0.0	Horz	PK	0.0	44.1	74.0	-29.9	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
2745.603	40.3	2.7	1.0	128.0	3.0	0.0	Horz	PK	0.0	43.0	74.0	-31.0	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2708.317	40.3	2.7	1.8	22.0	3.0	0.0	Vert	PK	0.0	43.0	74.0	-31.0	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
2708.363	38.6	2.7	1.0	65.0	3.0	0.0	Horz	PK	0.0	41.3	74.0	-32.7	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz

SPURIOUS RADIATED EMISSIONS

Work Order:	ITRM0323	**Date:**	08/29/12		
Project:	None	**Temperature:**	28.45 °C		
Job Site:	OC10	**Humidity:**	45.15% RH		
Serial Number:	00119	**Barometric Pres.:**	1018 mbar	**Tested by:**	Jaemi Suh
EUT:	IM11 RFID Module				
Configuration:	2				
Customer:	Intermec Technologies Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting Low, Mid, High Channels (Ch 5 - 902.75 MHz, Ch 30 - 915.25 MHz, Ch 54 - 927.25 MHz)				
Deviations:	None				
Comments:	Antenna TX Port 1. Antenna Huber Suhner 1309.17.0085. RP TNC to N Cable (Part#236-235-001 REV.C). Power=30.				

Test Specifications	**Test Method**
FCC 15.247:2012	ANSI C63.10:2009

Run #	130	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance ()	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted ()	Spec. Limit ()	Compared to Spec. (dB)	Comments
4576.255	40.1	10.4	1.2	61.0	3.0	0.0	Vert	AV	0.0	50.5	54.0	-3.5	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4576.255	39.3	10.4	1.2	72.0	3.0	0.0	Vert	AV	0.0	49.7	54.0	-4.3	EUT X-Axis, ANT Vertical, Mid Channel, 30, 915.25 MHz
4576.262	39.1	10.4	1.2	73.0	3.0	0.0	Vert	AV	0.0	49.5	54.0	-4.5	EUT X-Axis, ANT on Side, Mid Channel, 30, 915.25 MHz
4636.250	37.7	10.6	1.0	66.0	3.0	0.0	Vert	AV	0.0	48.3	54.0	-5.7	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
4513.770	37.9	10.1	1.0	60.0	3.0	0.0	Vert	AV	0.0	48.0	54.0	-6.0	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4576.248	37.5	10.4	1.2	53.0	3.0	0.0	Horz	AV	0.0	47.9	54.0	-6.1	EUT X-Axis, ANT on Side, Mid Channel, 30, 915.25 MHz
4513.743	35.1	10.1	1.0	56.0	3.0	0.0	Horz	AV	0.0	45.2	54.0	-8.8	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4576.248	34.3	10.4	1.2	21.0	3.0	0.0	Horz	AV	0.0	44.7	54.0	-9.3	EUT X-Axis, ANT Vertical, Mid Channel, 30, 915.25 MHz
4576.262	34.0	10.4	1.2	53.0	3.0	0.0	Horz	AV	0.0	44.4	54.0	-9.6	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
4636.277	32.8	10.6	1.0	59.0	3.0	0.0	Horz	AV	0.0	43.4	54.0	-10.6	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
3661.007	35.6	6.9	1.0	352.0	3.0	0.0	Vert	AV	0.0	42.5	54.0	-11.5	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
3709.007	33.8	7.2	1.0	359.0	3.0	0.0	Vert	AV	0.0	41.0	54.0	-13.0	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
3611.007	34.1	6.7	1.0	48.0	3.0	0.0	Vert	AV	0.0	40.8	54.0	-13.2	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
2745.740	35.2	2.7	1.6	8.0	3.0	0.0	Vert	AV	0.0	37.9	54.0	-16.1	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
3661.013	30.7	6.9	1.0	108.0	3.0	0.0	Horz	AV	0.0	37.6	54.0	-16.4	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2708.260	34.4	2.7	1.2	12.0	3.0	0.0	Vert	AV	0.0	37.1	54.0	-16.9	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
3709.000	29.1	7.2	1.0	113.0	3.0	0.0	Horz	AV	0.0	36.3	54.0	-17.7	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
4576.415	44.4	10.4	1.2	61.0	3.0	0.0	Vert	PK	0.0	54.8	74.0	-19.2	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
4576.208	43.6	10.4	1.2	73.0	3.0	0.0	Vert	PK	0.0	54.0	74.0	-20.0	EUT X-Axis, ANT on Side, Mid Channel, 30, 915.25 MHz
2780.227	31.0	2.8	1.0	20.0	3.0	0.0	Vert	AV	0.0	33.8	54.0	-20.2	EUT X-Axis, ANT Horizontal,High Channel, 54, 927.25 MHz
4636.117	42.8	10.6	1.0	66.0	3.0	0.0	Vert	PK	0.0	53.4	74.0	-20.6	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
4513.870	43.2	10.1	1.0	60.0	3.0	0.0	Vert	PK	0.0	53.3	74.0	-20.7	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4576.082	42.9	10.4	1.2	53.0	3.0	0.0	Horz	PK	0.0	53.3	74.0	-20.7	EUT X-Axis, ANT on Side, Mid Channel, 30, 915.25 MHz
3610.947	26.4	6.7	1.0	30.0	3.0	0.0	Horz	AV	0.0	33.1	54.0	-20.9	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
2780.253	30.1	2.8	1.0	44.0	3.0	0.0	Horz	AV	0.0	32.9	54.0	-21.1	EUT X-Axis, ANT Horizontal,High Channel, 54, 927.25 MHz
4576.335	41.5	10.4	1.2	72.0	3.0	0.0	Vert	PK	0.0	51.9	74.0	-22.1	EUT X-Axis, ANT Vertical, Mid Channel, 30, 915.25 MHz
4576.382	41.3	10.4	1.2	53.0	3.0	0.0	Horz	PK	0.0	51.7	74.0	-22.3	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2708.280	28.8	2.7	1.2	150.0	3.0	0.0	Horz	AV	0.0	31.5	54.0	-22.5	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4513.763	41.3	10.1	1.0	56.0	3.0	0.0	Horz	PK	0.0	51.4	74.0	-22.6	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4636.177	40.0	10.6	1.0	59.0	3.0	0.0	Horz	PK	0.0	50.6	74.0	-23.4	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
3660.920	41.9	6.9	1.0	352.0	3.0	0.0	Vert	PK	0.0	48.8	74.0	-25.2	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
3611.140	41.7	6.7	1.0	48.0	3.0	0.0	Vert	PK	0.0	48.4	74.0	-25.6	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
2745.727	25.6	2.7	1.0	123.0	3.0	0.0	Horz	AV	0.0	28.3	54.0	-25.7	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
4576.335	37.4	10.4	1.2	21.0	3.0	0.0	Horz	PK	0.0	47.8	74.0	-26.2	EUT X-Axis, ANT Vertical, Mid Channel, 30, 915.25 MHz
3708.740	40.5	7.2	1.0	359.0	3.0	0.0	Vert	PK	0.0	47.7	74.0	-26.3	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
3660.893	40.1	6.9	1.0	108.0	3.0	0.0	Horz	PK	0.0	47.0	74.0	-27.0	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
3708.900	39.5	7.2	1.0	113.0	3.0	0.0	Horz	PK	0.0	46.7	74.0	-27.3	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
3610.627	39.2	6.7	1.0	30.0	3.0	0.0	Horz	PK	0.0	45.9	74.0	-28.1	EUT X-Axis, ANT Horizontal,High Channel, 54, 927.25 MHz
2745.860	41.6	2.7	1.6	8.0	3.0	0.0	Vert	PK	0.0	44.3	74.0	-29.7	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2708.053	41.5	2.7	1.2	12.0	3.0	0.0	Vert	PK	0.0	44.2	74.0	-29.8	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz

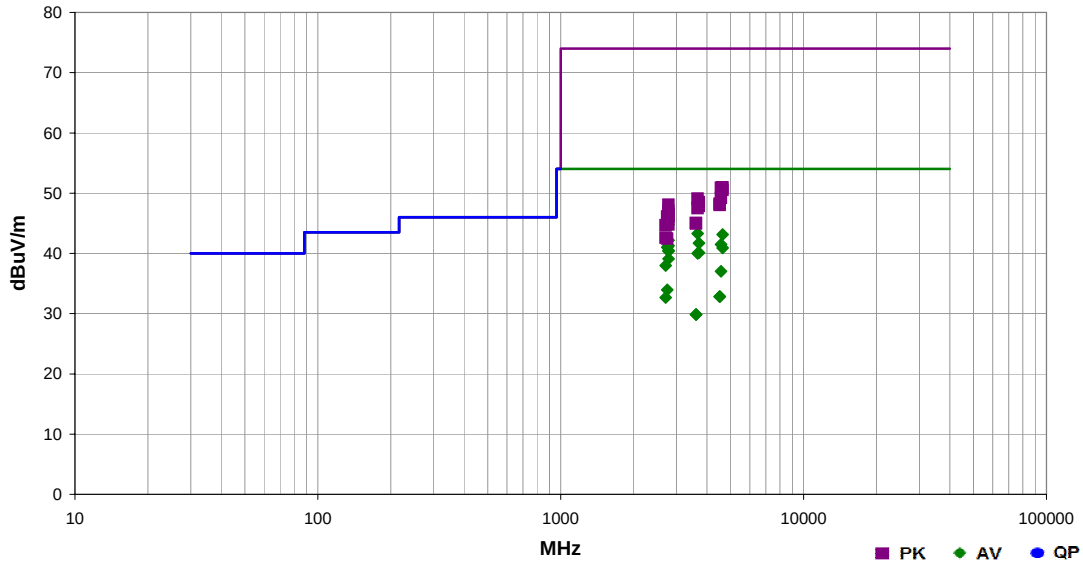
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance ()	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted ()	Spec. Limit ()	Compared to Spec. (dB)	Comments
2780.053	39.8	2.8	1.0	20.0	3.0	0.0	Vert	PK	0.0	42.6	74.0	-31.4	EUT X-Axis, ANT Horizontal,High Channel, 54, 927.25 MHz
2780.327	39.7	2.8	1.0	44.0	3.0	0.0	Horz	PK	0.0	42.5	74.0	-31.5	EUT X-Axis, ANT Horizontal,High Channel, 54, 927.25 MHz
2746.053	39.3	2.7	1.0	123.0	3.0	0.0	Horz	PK	0.0	42.0	74.0	-32.0	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2708.607	38.6	2.7	1.2	150.0	3.0	0.0	Horz	PK	0.0	41.3	74.0	-32.7	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz

SPURIOUS RADIATED EMISSIONS

Work Order:	ITRM0323	**Date:**	08/21/12		
Project:	None	**Temperature:**	26.3 °C		
Job Site:	OC10	**Humidity:**	43.84% RH		
Serial Number:	27400800552	**Barometric Pres.:**	1011 mbar	**Tested by:**	Mark Baytan
ANT:	IM11 RFID Module				
Configuration:	3				
Customer:	Intermec Technologies Corporation				
Attendees:	None				
ANT Power:	110VAC/60Hz				
Operating Mode:	Transmitting Low, Mid, High Channels (Ch 5 - 902.75 MHz, Ch 30 - 915.25 MHz, Ch 54 - 927.25 MHz)				
Deviations:	None				
Comments:	Antenna TX Port 1. Antenna Yagi (IP30). Power=30.				

Test Specifications	**Test Method**
FCC 15.247:2012	ANSI C63.10:2009

Run #	43	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance ()	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted ()	Spec. Limit ()	Compared to Spec. (dB)	Comments
2781.756	42.0	2.8	1.2	28.0	3.0	0.0	Vert	AV	0.0	44.8	54.0	-9.2	EUT X-Axis, ANT Vert, High Ch 927.25MHz
3661.013	36.4	6.9	1.7	185.0	3.0	0.0	Horz	AV	0.0	43.3	54.0	-10.7	EUT X-Axis, ANT Vert, Mid Ch 915.25 MHz
4636.270	32.5	10.6	1.0	85.0	3.0	0.0	Vert	AV	0.0	43.1	54.0	-10.9	EUT X-Axis, ANT Vert, High Ch 927.25MHz
2781.763	39.4	2.8	1.2	15.0	3.0	0.0	Vert	AV	0.0	42.2	54.0	-11.8	EUT X-Axis, ANT Horz, High Ch 927.25MHz
3709.000	34.5	7.2	1.0	357.0	3.0	0.0	Horz	AV	0.0	41.7	54.0	-12.3	EUT X-Axis, ANT Vert, High Ch 927.25MHz
4576.277	31.1	10.4	1.0	86.0	3.0	0.0	Vert	AV	0.0	41.5	54.0	-12.5	EUT X-Axis, ANT Vert, Mid Ch 915.25 MHz
2781.549	38.5	2.8	1.2	3.0	3.0	0.0	Horz	AV	0.0	41.3	54.0	-12.7	EUT X-Axis, ANT Vert, High Ch 927.25MHz
2745.750	38.3	2.7	1.0	28.0	3.0	0.0	Vert	AV	0.0	41.0	54.0	-13.0	EUT X-Axis, ANT Vert, Mid Ch 915.25MHz
4636.237	30.3	10.6	1.0	30.0	3.0	0.0	Horz	AV	0.0	40.9	54.0	-13.1	EUT X-Axis, ANT Vert, High Ch 927.25MHz
2781.769	37.7	2.8	1.2	239.0	3.0	0.0	Horz	AV	0.0	40.5	54.0	-13.5	EUT X-Axis, ANT Horz, High Ch 927.25MHz
2781.763	37.6	2.8	1.2	332.0	3.0	0.0	Vert	AV	0.0	40.4	54.0	-13.6	EUT X-Axis, ANT on side, High Ch 927.25MHz
3709.033	32.9	7.2	1.0	208.0	3.0	0.0	Vert	AV	0.0	40.1	54.0	-13.9	EUT X-Axis, ANT Vert, High Ch 927.25MHz
3661.020	33.1	6.9	1.0	74.0	3.0	0.0	Vert	AV	0.0	40.0	54.0	-14.0	EUT X-Axis, ANT Vert, Mid Ch 915.25 MHz
2781.749	36.3	2.8	1.2	12.0	3.0	0.0	Horz	AV	0.0	39.1	54.0	-14.9	EUT X-Axis, ANT on side, High Ch 927.25MHz
2708.257	35.3	2.7	1.0	19.0	3.0	0.0	Vert	AV	0.0	38.0	54.0	-16.0	EUT X-Axis, ANT Vert, Low Ch 902.75MHz
4576.283	26.6	10.4	2.2	144.0	3.0	0.0	Horz	AV	0.0	37.0	54.0	-17.0	EUT X-Axis, ANT Vert, Mid Ch 915.25 MHz
2745.750	31.2	2.7	1.0	213.0	3.0	0.0	Horz	AV	0.0	33.9	54.0	-20.1	EUT X-Axis, ANT Vert, Mid Ch 915.25MHz
4515.530	22.7	10.1	1.0	81.0	3.0	0.0	Horz	AV	0.0	32.8	54.0	-21.2	EUT X-Axis, ANT Vert, Low Ch 902.75 MHz
4514.617	22.7	10.1	3.3	129.0	3.0	0.0	Vert	AV	0.0	32.8	54.0	-21.2	EUT X-Axis, ANT Vert, Low Ch 902.75 MHz
2708.257	30.0	2.7	1.9	2.0	3.0	0.0	Horz	AV	0.0	32.7	54.0	-21.3	EUT X-Axis, ANT Vert, Low Ch 902.75MHz
4636.577	40.3	10.6	1.0	85.0	3.0	0.0	Vert	PK	0.0	50.9	74.0	-23.1	EUT X-Axis, ANT Vert, High Ch 927.25MHz
4576.103	40.5	10.4	1.0	86.0	3.0	0.0	Vert	PK	0.0	50.9	74.0	-23.1	EUT X-Axis, ANT Vert, Mid Ch 915.25 MHz
4636.097	39.9	10.6	1.0	30.0	3.0	0.0	Horz	PK	0.0	50.5	74.0	-23.5	EUT X-Axis, ANT Vert, High Ch 927.25MHz
3609.353	23.2	6.6	1.0	29.0	3.0	0.0	Vert	AV	0.0	29.8	54.0	-24.2	EUT X-Axis, ANT Vert, High Ch 927.25MHz
3609.013	23.2	6.6	3.6	264.0	3.0	0.0	Horz	AV	0.0	29.8	54.0	-24.2	EUT X-Axis, ANT Vert, High Ch 927.25MHz
4576.317	38.8	10.4	2.2	144.0	3.0	0.0	Horz	PK	0.0	49.2	74.0	-24.8	EUT X-Axis, ANT Vert, Mid Ch 915.25 MHz
3660.967	42.2	6.9	1.7	185.0	3.0	0.0	Horz	PK	0.0	49.1	74.0	-24.9	EUT X-Axis, ANT Vert, Mid Ch 915.25 MHz
3709.147	41.3	7.2	1.0	357.0	3.0	0.0	Horz	PK	0.0	48.5	74.0	-25.5	EUT X-Axis, ANT Vert, High Ch 927.25MHz
4515.730	38.1	10.1	3.3	129.0	3.0	0.0	Vert	PK	0.0	48.2	74.0	-25.8	EUT X-Axis, ANT Vert, Low Ch 902.75 MHz
2781.756	45.3	2.8	1.2	28.0	3.0	0.0	Vert	PK	0.0	48.1	74.0	-25.9	EUT X-Axis, ANT Vert, High Ch 927.25MHz
4515.690	37.9	10.1	1.0	81.0	3.0	0.0	Horz	PK	0.0	48.0	74.0	-26.0	EUT X-Axis, ANT Vert, Low Ch 902.75 MHz
3708.927	40.7	7.2	1.0	208.0	3.0	0.0	Vert	PK	0.0	47.9	74.0	-26.1	EUT X-Axis, ANT Vert, High Ch 927.25MHz
3661.153	40.6	6.9	1.0	74.0	3.0	0.0	Vert	PK	0.0	47.5	74.0	-26.5	EUT X-Axis, ANT Vert, Mid Ch 915.25 MHz
2781.669	44.3	2.8	1.2	15.0	3.0	0.0	Vert	PK	0.0	47.1	74.0	-26.9	EUT X-Axis, ANT Horz, High Ch 927.25MHz

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance ()	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted ()	Spec. Limit ()	Compared to Spec. (dB)	Comments
2781.836	43.7	2.8	1.2	3.0	3.0	0.0	Horz	PK	0.0	46.5	74.0	-27.5	EUT X-Axis, ANT Vert, High Ch 927.25MHz
2781.736	43.4	2.8	1.2	239.0	3.0	0.0	Horz	PK	0.0	46.2	74.0	-27.8	EUT X-Axis, ANT Horz, High Ch 927.25MHz
2745.710	43.4	2.7	1.0	28.0	3.0	0.0	Vert	PK	0.0	46.1	74.0	-27.9	EUT X-Axis, ANT Vert, Mid Ch 915.25MHz
2781.556	43.2	2.8	1.2	332.0	3.0	0.0	Vert	PK	0.0	46.0	74.0	-28.0	EUT X-Axis, ANT on side, High Ch 927.25MHz
3611.667	38.4	6.7	1.0	29.0	3.0	0.0	Vert	PK	0.0	45.1	74.0	-28.9	EUT X-Axis, ANT Vert, Mid Ch 915.25 MHz
3610.100	38.3	6.7	3.6	264.0	3.0	0.0	Horz	PK	0.0	45.0	74.0	-29.0	EUT X-Axis, ANT Vert, Mid Ch 915.25 MHz
2781.783	42.0	2.8	1.2	12.0	3.0	0.0	Horz	PK	0.0	44.8	74.0	-29.2	EUT X-Axis, ANT on side, High Ch 927.25MHz
2708.203	42.0	2.7	1.0	19.0	3.0	0.0	Vert	PK	0.0	44.7	74.0	-29.3	EUT X-Axis, ANT Vert, Low Ch 902.75MHz
2708.603	39.9	2.7	1.9	2.0	3.0	0.0	Horz	PK	0.0	42.6	74.0	-31.4	EUT X-Axis, ANT Vert, Low Ch 902.75MHz
2745.737	39.7	2.7	1.0	213.0	3.0	0.0	Horz	PK	0.0	42.4	74.0	-31.6	EUT X-Axis, ANT Vert, Mid Ch 915.25MHz

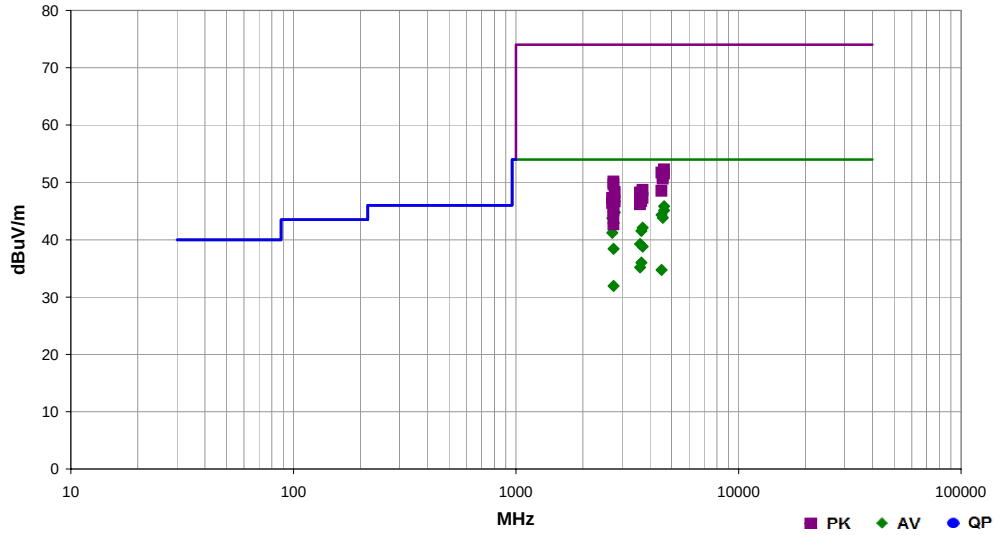
SPURIOUS RADIATED EMISSIONS

Work Order:	ITRM0323	**Date:**	08/21/12		
Project:	None	**Temperature:**	28.45 °C		
Job Site:	OC10	**Humidity:**	46.15% RH		
Serial Number:	None	**Barometric Pres.:**	1012 mbar	**Tested by:**	Jaemi Suh

EUT:	IM11 RFID Module
Configuration:	4
Customer:	Intermec Technologies Corporation
Attendees:	None
EUT Power:	110VAC/60Hz
Operating Mode:	Transmitting Low, Mid, High Channels (Ch 5 - 902.75 MHz, Ch 30 - 915.25 MHz, Ch 54 - 927.25 MHz)
Deviations:	None
Comments:	Antenna TX Port 1. NeWave NSS Wave-N7 Antenna. RP TNC to RP TNC Cable (Part#263-246-001). Power=30.

Test Specifications	**Test Method**
FCC 15.247:2012	ANSI C63.10:2009

Run #	57	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance ()	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted ()	Spec. Limit ()	Compared to Spec. (dB)	Comments
2745.770	46.4	2.7	1.0	256.0	3.0	0.0	Horz	AV	0.0	49.1	54.0	-4.9	EUT X-Axis, ANT Vertical, Mid Channel, 30, 915.25 MHz
2745.757	44.0	2.7	1.4	230.0	3.0	0.0	Vert	AV	0.0	46.7	54.0	-7.3	EUT X-Axis, ANT Vertical, Mid Channel, 30, 915.25 MHz
2781.756	43.9	2.8	1.2	40.0	3.0	0.0	Horz	AV	0.0	46.7	54.0	-7.3	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
4636.277	35.2	10.6	1.0	59.0	3.0	0.0	Vert	AV	0.0	45.8	54.0	-8.2	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
4636.277	34.5	10.6	1.0	34.0	3.0	0.0	Horz	AV	0.0	45.1	54.0	-8.9	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
2781.756	42.0	2.8	1.2	4.0	3.0	0.0	Vert	AV	0.0	44.8	54.0	-9.2	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
4513.750	34.2	10.1	2.2	96.0	3.0	0.0	Vert	AV	0.0	44.3	54.0	-9.7	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4576.267	33.4	10.4	1.0	68.0	3.0	0.0	Vert	AV	0.0	43.8	54.0	-10.2	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2708.270	41.1	2.7	1.0	43.0	3.0	0.0	Horz	AV	0.0	43.8	54.0	-10.2	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
2745.763	40.2	2.7	1.0	172.0	3.0	0.0	Vert	AV	0.0	42.9	54.0	-11.1	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2745.757	40.2	2.7	1.0	220.0	3.0	0.0	Horz	AV	0.0	42.9	54.0	-11.1	EUT X-Axis, ANT Vertical, Mid Channel, 30, 915.25 MHz
3709.013	34.9	7.2	1.0	258.0	3.0	0.0	Horz	AV	0.0	42.1	54.0	-11.9	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
3660.987	34.6	6.9	1.0	75.0	3.0	0.0	Vert	AV	0.0	41.5	54.0	-12.5	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2708.270	38.5	2.7	1.0	21.0	3.0	0.0	Vert	AV	0.0	41.2	54.0	-12.8	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
3611.000	32.6	6.7	1.0	266.0	3.0	0.0	Horz	AV	0.0	39.3	54.0	-14.7	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
3709.013	31.6	7.2	1.0	76.0	3.0	0.0	Vert	AV	0.0	38.8	54.0	-15.2	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
2745.770	35.7	2.7	1.0	318.0	3.0	0.0	Horz	AV	0.0	38.4	54.0	-15.6	EUT X-Axis, ANT On Side, Mid Channel, 30, 915.25 MHz
3661.013	29.1	6.9	1.0	172.0	3.0	0.0	Horz	AV	0.0	36.0	54.0	-18.0	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
3611.013	28.5	6.7	1.0	97.0	3.0	0.0	Vert	AV	0.0	35.2	54.0	-18.8	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4513.737	24.6	10.1	1.0	155.0	3.0	0.0	Horz	AV	0.0	34.7	54.0	-19.3	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4636.217	41.6	10.6	1.0	59.0	3.0	0.0	Vert	PK	0.0	52.2	74.0	-21.8	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
2745.757	29.2	2.7	1.0	157.0	3.0	0.0	Vert	AV	0.0	31.9	54.0	-22.1	EUT X-Axis, ANT On Side, Mid Channel, 30, 915.25 MHz
4513.657	41.6	10.1	2.2	96.0	3.0	0.0	Vert	PK	0.0	51.7	74.0	-22.3	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4636.343	40.9	10.6	1.0	34.0	3.0	0.0	Horz	PK	0.0	51.5	74.0	-22.5	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
4576.380	40.7	10.4	1.0	68.0	3.0	0.0	Vert	PK	0.0	51.1	74.0	-22.9	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
4576.467	40.2	10.4	1.0	59.0	3.0	0.0	Horz	PK	0.0	50.6	74.0	-23.4	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2745.717	47.4	2.7	1.0	256.0	3.0	0.0	Horz	PK	0.0	50.1	74.0	-23.9	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2745.843	46.9	2.7	1.4	230.0	3.0	0.0	Vert	PK	0.0	49.6	74.0	-24.4	EUT X-Axis, ANT Vertical, Mid Channel, 30, 915.25 MHz
3708.607	41.5	7.2	1.0	258.0	3.0	0.0	Horz	PK	0.0	48.7	74.0	-25.3	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
4513.417	38.4	10.1	1.0	155.0	3.0	0.0	Horz	PK	0.0	48.5	74.0	-25.5	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
2781.796	45.5	2.8	1.2	40.0	3.0	0.0	Horz	PK	0.0	48.3	74.0	-25.7	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
3660.873	41.3	6.9	1.0	75.0	3.0	0.0	Vert	PK	0.0	48.2	74.0	-25.8	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
3611.260	41.5	6.7	1.0	266.0	3.0	0.0	Horz	PK	0.0	48.2	74.0	-25.8	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
3708.907	40.1	7.2	1.0	76.0	3.0	0.0	Vert	PK	0.0	47.3	74.0	-26.7	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
2708.063	44.6	2.7	1.0	43.0	3.0	0.0	Horz	PK	0.0	47.3	74.0	-26.7	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
2745.723	44.1	2.7	1.0	220.0	3.0	0.0	Horz	PK	0.0	46.8	74.0	-27.2	EUT X-Axis, ANT Vertical, Mid Channel, 30, 915.25 MHz
3660.807	39.8	6.9	1.0	172.0	3.0	0.0	Horz	PK	0.0	46.7	74.0	-27.3	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2781.763	43.9	2.8	1.2	4.0	3.0	0.0	Vert	PK	0.0	46.7	74.0	-27.3	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
2708.143	43.7	2.7	1.0	21.0	3.0	0.0	Vert	PK	0.0	46.4	74.0	-27.6	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
3610.280	39.5	6.7	1.0	97.0	3.0	0.0	Vert	PK	0.0	46.2	74.0	-27.8	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance ()	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted ()	Spec. Limit ()	Compared to Spec. (dB)	Comments
2745.703	42.4	2.7	1.0	172.0	3.0	0.0	Vert	PK	0.0	45.1	74.0	-28.9	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2745.570	41.9	2.7	1.0	318.0	3.0	0.0	Horz	PK	0.0	44.6	74.0	-29.4	EUT X-Axis, ANT On Side, Mid Channel, 30, 915.25 MHz
2745.650	39.9	2.7	1.0	157.0	3.0	0.0	Vert	PK	0.0	42.6	74.0	-31.4	EUT X-Axis, ANT On Side, Mid Channel, 30, 915.25 MHz

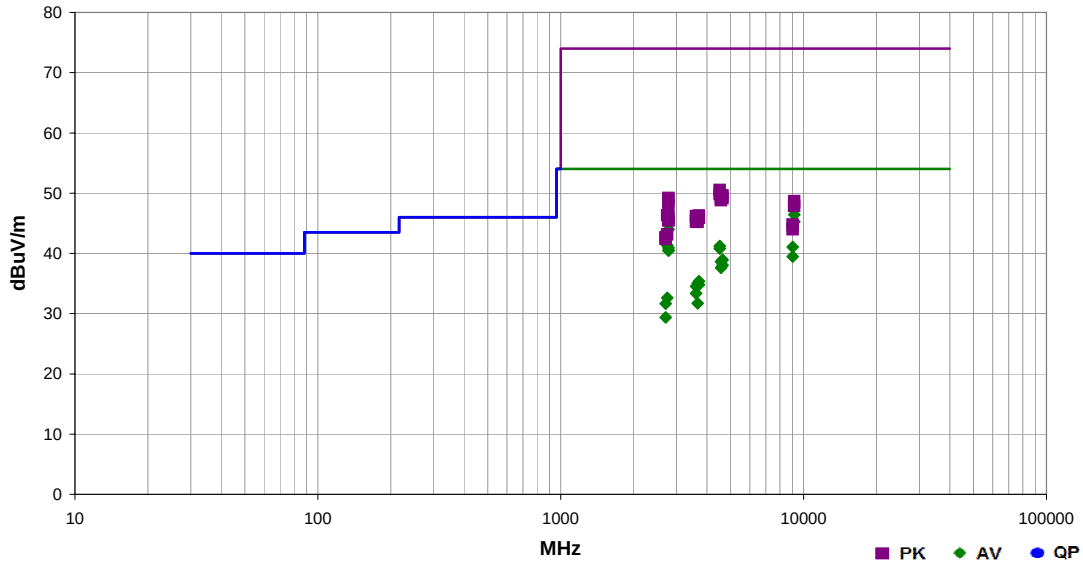
SPURIOUS RADIATED EMISSIONS

Work Order:	ITRM0323	**Date:**	08/22/12		
Project:	None	**Temperature:**	26.23 °C		
Job Site:	OC10	**Humidity:**	42.67% RH		
Serial Number:	None	**Barometric Pres.:**	1012 mbar	**Tested by:**	Jaemi Suh

EUT:	IM11 RFID Module
Configuration:	5
Customer:	Intermec Technologies Corporation
Attendees:	None
EUT Power:	110VAC/60Hz
Operating Mode:	Transmitting Low, Mid, High Channels (Ch 5 - 902.75 MHz, Ch 30 - 915.25 MHz, Ch 54 - 927.25 MHz)
Deviations:	None
Comments:	Antenna TX Port 1. Intermec 4x4 Dual Pole Linear. Power=30. Antenna Cable #1

Test Specifications	**Test Method**
FCC 15.247:2012	ANSI C63.10:2009

Run #	71	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance ()	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted ()	Spec. Limit ()	Compared to Spec. (dB)	Comments
9152.507	55.8	-9.4	1.0	177.0	3.0	0.0	Horz	AV	0.0	46.4	54.0	-7.6	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
2781.736	43.2	2.8	1.2	4.0	3.0	0.0	Vert	AV	0.0	46.0	54.0	-8.0	EUT X-Axis, ANT Horz, High Ch 927.25MHz
9152.507	54.6	-9.4	1.2	234.0	3.0	0.0	Vert	AV	0.0	45.2	54.0	-8.8	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
2781.769	42.4	2.8	1.2	9.0	3.0	0.0	Vert	AV	0.0	45.2	54.0	-8.8	EUT X-Axis, ANT on side, High Ch 927.25MHz
2781.769	41.2	2.8	1.2	17.0	3.0	0.0	Vert	AV	0.0	44.0	54.0	-10.0	EUT X-Axis, ANT Vert, High Ch 927.25MHz
2745.757	38.6	2.7	1.0	346.0	3.0	0.0	Vert	AV	0.0	41.3	54.0	-12.7	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
4513.750	31.1	10.1	1.0	159.0	3.0	0.0	Horz	AV	0.0	41.2	54.0	-12.8	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
9027.520	50.8	-9.7	1.0	180.0	3.0	0.0	Horz	AV	0.0	41.1	54.0	-12.9	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
2781.743	38.1	2.8	1.2	269.0	3.0	0.0	Horz	AV	0.0	40.9	54.0	-13.1	EUT X-Axis, ANT Horz, High Ch 927.25MHz
4513.757	30.7	10.1	1.0	117.0	3.0	0.0	Vert	AV	0.0	40.8	54.0	-13.2	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
2781.763	37.7	2.8	1.2	252.0	3.0	0.0	Horz	AV	0.0	40.5	54.0	-13.5	EUT X-Axis, ANT Vert, High Ch 927.25MHz
2781.763	37.7	2.8	1.2	265.0	3.0	0.0	Horz	AV	0.0	40.5	54.0	-13.5	EUT X-Axis, ANT on side, High Ch 927.25MHz
9027.513	49.2	-9.7	1.0	81.0	3.0	0.0	Vert	AV	0.0	39.5	54.0	-14.5	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
4636.250	28.3	10.6	1.0	40.0	3.0	0.0	Vert	AV	0.0	38.9	54.0	-15.1	EUT X-Axis, ANT Horz, High Ch 927.25MHz
4576.270	28.2	10.4	1.0	28.0	3.0	0.0	Vert	AV	0.0	38.6	54.0	-15.4	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
4636.257	27.4	10.6	1.0	344.0	3.0	0.0	Horz	AV	0.0	38.0	54.0	-16.0	EUT X-Axis, ANT Horz, High Ch 927.25MHz
4576.250	27.2	10.4	1.0	160.0	3.0	0.0	Horz	AV	0.0	37.6	54.0	-16.4	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
3709.007	28.2	7.2	1.0	158.0	3.0	0.0	Horz	AV	0.0	35.4	54.0	-18.6	EUT X-Axis, ANT Horz, High Ch 927.25MHz
3660.993	28.1	6.9	1.0	260.0	3.0	0.0	Vert	AV	0.0	35.0	54.0	-19.0	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
3709.033	27.6	7.2	1.0	30.0	3.0	0.0	Vert	AV	0.0	34.8	54.0	-19.2	EUT X-Axis, ANT Horz, High Ch 927.25MHz
3611.007	27.9	6.7	1.0	255.0	3.0	0.0	Vert	AV	0.0	34.6	54.0	-19.4	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
3610.960	26.7	6.7	1.2	35.0	3.0	0.0	Horz	AV	0.0	33.4	54.0	-20.6	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
2745.750	29.9	2.7	1.0	267.0	3.0	0.0	Horz	AV	0.0	32.6	54.0	-21.4	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
3660.993	24.8	6.9	1.0	126.0	3.0	0.0	Horz	AV	0.0	31.7	54.0	-22.3	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
2708.257	29.0	2.7	1.0	243.0	3.0	0.0	Horz	AV	0.0	31.7	54.0	-22.3	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
4513.610	40.4	10.1	1.0	159.0	3.0	0.0	Horz	PK	0.0	50.5	74.0	-23.5	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
4513.623	39.7	10.1	1.0	117.0	3.0	0.0	Vert	PK	0.0	49.8	74.0	-24.2	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
4636.203	39.0	10.6	1.0	344.0	3.0	0.0	Horz	PK	0.0	49.6	74.0	-24.4	EUT X-Axis, ANT Horz, High Ch 927.25MHz
2708.303	26.7	2.7	1.0	40.0	3.0	0.0	Vert	AV	0.0	29.4	54.0	-24.6	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
4576.050	38.8	10.4	1.0	28.0	3.0	0.0	Vert	PK	0.0	49.2	74.0	-24.8	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
2781.636	46.4	2.8	1.2	4.0	3.0	0.0	Vert	PK	0.0	49.2	74.0	-24.8	EUT X-Axis, ANT Horz, High Ch 927.25MHz
4635.403	38.5	10.6	1.0	40.0	3.0	0.0	Vert	PK	0.0	49.1	74.0	-24.9	EUT X-Axis, ANT Horz, High Ch 927.25MHz
4576.903	38.4	10.4	1.0	160.0	3.0	0.0	Horz	PK	0.0	48.8	74.0	-25.2	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
2781.756	46.0	2.8	1.2	9.0	3.0	0.0	Vert	PK	0.0	48.8	74.0	-25.2	EUT X-Axis, ANT on side, High Ch 927.25MHz

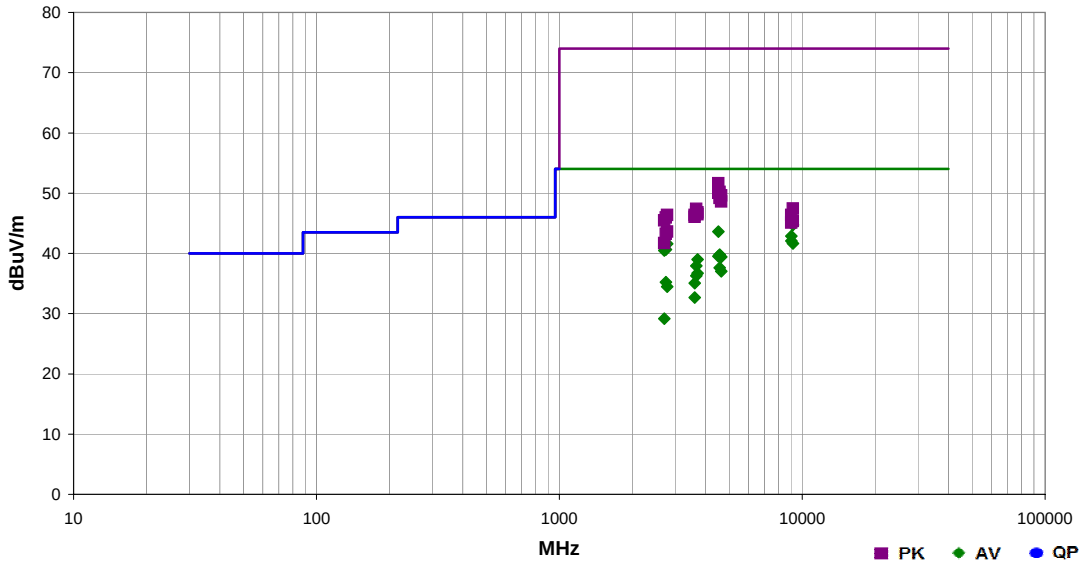
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance ()	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted ()	Spec. Limit ()	Compared to Spec. (dB)	Comments
9152.533	58.0	-9.4	1.0	177.0	3.0	0.0	Horz	PK	0.0	48.6	74.0	-25.4	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
9152.500	57.2	-9.4	1.2	234.0	3.0	0.0	Vert	PK	0.0	47.8	74.0	-26.2	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
2781.643	45.0	2.8	1.2	17.0	3.0	0.0	Vert	PK	0.0	47.8	74.0	-26.2	EUT X-Axis, ANT Vert, High Ch 927.25MHz
2745.710	43.6	2.7	1.0	346.0	3.0	0.0	Vert	PK	0.0	46.3	74.0	-27.7	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
3709.087	39.1	7.2	1.0	30.0	3.0	0.0	Vert	PK	0.0	46.3	74.0	-27.7	EUT X-Axis, ANT Horz, High Ch 927.25MHz
3610.693	39.5	6.7	1.0	255.0	3.0	0.0	Vert	PK	0.0	46.2	74.0	-27.8	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
2781.763	43.1	2.8	1.2	265.0	3.0	0.0	Horz	PK	0.0	45.9	74.0	-28.1	EUT X-Axis, ANT on side, High Ch 927.25MHz
3709.093	38.7	7.2	1.0	158.0	3.0	0.0	Horz	PK	0.0	45.9	74.0	-28.1	EUT X-Axis, ANT Horz, High Ch 927.25MHz
3661.180	38.8	6.9	1.0	260.0	3.0	0.0	Vert	PK	0.0	45.7	74.0	-28.3	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
2781.956	42.7	2.8	1.2	269.0	3.0	0.0	Horz	PK	0.0	45.5	74.0	-28.5	EUT X-Axis, ANT Vert, High Ch 927.25MHz
2781.823	42.7	2.8	1.2	252.0	3.0	0.0	Horz	PK	0.0	45.5	74.0	-28.5	EUT X-Axis, ANT Horz, High Ch 927.25MHz
3610.740	38.6	6.7	1.2	35.0	3.0	0.0	Horz	PK	0.0	45.3	74.0	-28.7	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
3662.547	38.3	6.9	1.0	126.0	3.0	0.0	Horz	PK	0.0	45.2	74.0	-28.8	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
9027.587	54.5	-9.7	1.0	180.0	3.0	0.0	Horz	PK	0.0	44.8	74.0	-29.2	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
9027.513	53.7	-9.7	1.0	81.0	3.0	0.0	Vert	PK	0.0	44.0	74.0	-30.0	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
2745.843	40.4	2.7	1.0	267.0	3.0	0.0	Horz	PK	0.0	43.1	74.0	-30.9	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
2708.257	40.0	2.7	1.0	40.0	3.0	0.0	Vert	PK	0.0	42.7	74.0	-31.3	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
2708.103	39.7	2.7	1.0	243.0	3.0	0.0	Horz	PK	0.0	42.4	74.0	-31.6	EUT X-Axis, ANT Horz, Low Ch 902.75MHz

SPURIOUS RADIATED EMISSIONS

Work Order:	ITRM0323	**Date:**	08/22/12		
Project:	None	**Temperature:**	26.23 °C		
Job Site:	OC10	**Humidity:**	42.67% RH		
Serial Number:	None	**Barometric Pres.:**	1012 mbar	**Tested by:**	Jaemi Suh
EUT:	IM11 RFID Module				
Configuration:	5				
Customer:	Intermec Technologies Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting Low, Mid, High Channels (Ch 5 - 902.75 MHz, Ch 30 - 915.25 MHz, Ch 54 - 927.25 MHz)				
Deviations:	None				
Comments:	Antenna TX Port 1. Intermec 4x4 Dual Pole Linear. Power=30. Antenna Cable #2				

Test Specifications	**Test Method**
FCC 15.247:2012	ANSI C63.10:2009

Run #	74	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance ()	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted ()	Spec. Limit ()	Compared to Spec. (dB)	Comments
9152.507	54.1	-9.4	1.0	190.0	3.0	0.0	Horz	AV	0.0	44.7	54.0	-9.3	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
4513.757	33.5	10.1	1.0	170.0	3.0	0.0	Horz	AV	0.0	43.6	54.0	-10.4	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
9027.511	52.6	-9.7	1.2	190.0	3.0	0.0	Horz	AV	0.0	42.9	54.0	-11.1	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
9027.518	51.8	-9.7	1.2	258.0	3.0	0.0	Vert	AV	0.0	42.1	54.0	-11.9	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
9152.520	51.0	-9.4	1.0	257.0	3.0	0.0	Vert	AV	0.0	41.6	54.0	-12.4	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
2781.757	38.8	2.8	1.0	348.0	3.0	0.0	Vert	AV	0.0	41.6	54.0	-12.4	EUT X-Axis, ANT Horz, High Ch 927.25MHz
2745.750	37.9	2.7	1.0	138.0	3.0	0.0	Vert	AV	0.0	40.6	54.0	-13.4	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
2708.263	37.8	2.7	1.0	359.0	3.0	0.0	Vert	AV	0.0	40.5	54.0	-13.5	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
4576.277	29.4	10.4	1.0	101.0	3.0	0.0	Vert	AV	0.0	39.8	54.0	-14.2	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
4513.723	29.4	10.1	1.0	172.0	3.0	0.0	Vert	AV	0.0	39.5	54.0	-14.5	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
4636.263	28.8	10.6	1.0	248.0	3.0	0.0	Horz	AV	0.0	39.4	54.0	-14.6	EUT X-Axis, ANT Horz, High Ch 927.25MHz
3709.000	31.8	7.2	1.0	174.0	3.0	0.0	Horz	AV	0.0	39.0	54.0	-15.0	EUT X-Axis, ANT Horz, High Ch 927.25MHz
3660.993	31.0	6.9	2.0	85.0	3.0	0.0	Horz	AV	0.0	37.9	54.0	-16.1	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
4576.263	27.2	10.4	1.0	348.0	3.0	0.0	Horz	AV	0.0	37.6	54.0	-16.4	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
4636.237	26.4	10.6	1.0	127.0	3.0	0.0	Vert	AV	0.0	37.0	54.0	-17.0	EUT X-Axis, ANT Horz, High Ch 927.25MHz
3709.000	29.5	7.2	1.0	75.0	3.0	0.0	Vert	AV	0.0	36.7	54.0	-17.3	EUT X-Axis, ANT Horz, High Ch 927.25MHz
3661.027	29.4	6.9	1.8	253.0	3.0	0.0	Vert	AV	0.0	36.3	54.0	-17.7	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
2745.790	32.5	2.7	1.0	5.0	3.0	0.0	Horz	AV	0.0	35.2	54.0	-18.8	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
3611.000	28.4	6.7	1.0	262.0	3.0	0.0	Vert	AV	0.0	35.1	54.0	-18.9	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
2781.743	31.7	2.8	1.0	195.0	3.0	0.0	Horz	AV	0.0	34.5	54.0	-19.5	EUT X-Axis, ANT Horz, High Ch 927.25MHz
3611.047	26.0	6.7	1.0	158.0	3.0	0.0	Horz	AV	0.0	32.7	54.0	-21.3	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
4513.823	41.5	10.1	1.0	170.0	3.0	0.0	Horz	PK	0.0	51.6	74.0	-22.4	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
4575.683	39.8	10.4	1.0	101.0	3.0	0.0	Vert	PK	0.0	50.2	74.0	-23.8	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
4513.910	39.9	10.1	1.0	172.0	3.0	0.0	Vert	PK	0.0	50.0	74.0	-24.0	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
4636.330	39.0	10.6	1.0	248.0	3.0	0.0	Horz	PK	0.0	49.6	74.0	-24.4	EUT X-Axis, ANT Horz, High Ch 927.25MHz
4576.317	38.8	10.4	1.0	348.0	3.0	0.0	Horz	PK	0.0	49.2	74.0	-24.8	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
2708.263	26.5	2.7	1.0	353.0	3.0	0.0	Horz	AV	0.0	29.2	54.0	-24.8	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
4635.890	38.0	10.6	1.0	127.0	3.0	0.0	Vert	PK	0.0	48.6	74.0	-25.4	EUT X-Axis, ANT Horz, High Ch 927.25MHz
9152.513	56.8	-9.4	1.0	190.0	3.0	0.0	Horz	PK	0.0	47.4	74.0	-26.6	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
3660.933	40.5	6.9	2.0	85.0	3.0	0.0	Horz	PK	0.0	47.4	74.0	-26.6	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
3660.867	39.9	6.9	1.8	253.0	3.0	0.0	Vert	PK	0.0	46.8	74.0	-27.2	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
3708.960	39.6	7.2	1.0	174.0	3.0	0.0	Horz	PK	0.0	46.8	74.0	-27.2	EUT X-Axis, ANT Horz, High Ch 927.25MHz
3709.007	39.3	7.2	1.0	75.0	3.0	0.0	Vert	PK	0.0	46.5	74.0	-27.5	EUT X-Axis, ANT Horz, High Ch 927.25MHz
2781.790	43.6	2.8	1.0	348.0	3.0	0.0	Vert	PK	0.0	46.4	74.0	-27.6	EUT X-Axis, ANT Horz, High Ch 927.25MHz

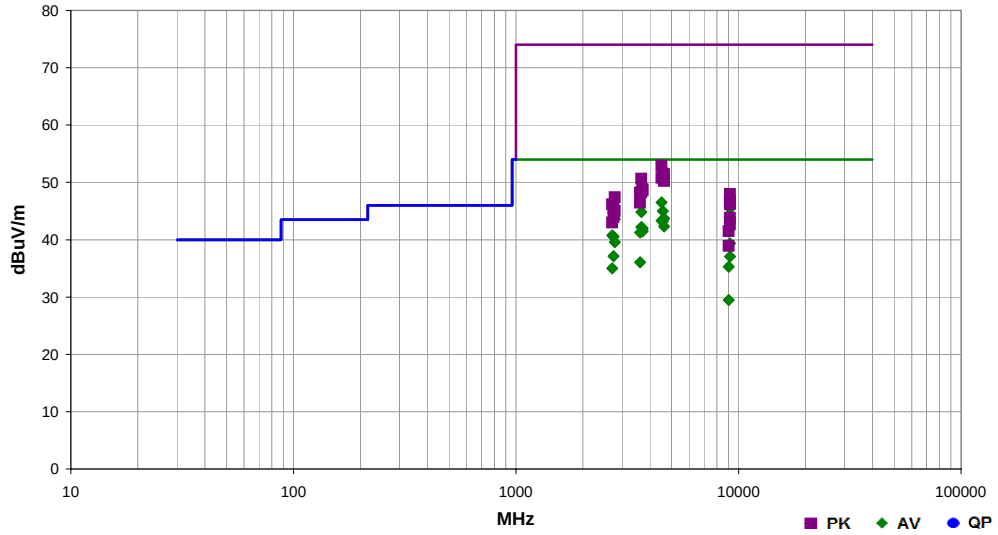
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance ()	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted ()	Spec. Limit ()	Compared to Spec. (dB)	Comments
9027.478	56.1	-9.7	1.2	190.0	3.0	0.0	Horz	PK	0.0	46.4	74.0	-27.6	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
3610.287	39.7	6.7	1.0	262.0	3.0	0.0	Vert	PK	0.0	46.4	74.0	-27.6	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
3611.260	39.4	6.7	1.0	158.0	3.0	0.0	Horz	PK	0.0	46.1	74.0	-27.9	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
2745.717	43.2	2.7	1.0	138.0	3.0	0.0	Vert	PK	0.0	45.9	74.0	-28.1	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
2708.223	42.8	2.7	1.0	359.0	3.0	0.0	Vert	PK	0.0	45.5	74.0	-28.5	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
9152.487	54.7	-9.4	1.0	257.0	3.0	0.0	Vert	PK	0.0	45.3	74.0	-28.7	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
9027.531	54.8	-9.7	1.2	258.0	3.0	0.0	Vert	PK	0.0	45.1	74.0	-28.9	EUT X-Axis, ANT Horz, Low Ch 902.75MHz
2782.070	40.8	2.8	1.0	195.0	3.0	0.0	Horz	PK	0.0	43.6	74.0	-30.4	EUT X-Axis, ANT Horz, High Ch 927.25MHz
2745.623	40.5	2.7	1.0	5.0	3.0	0.0	Horz	PK	0.0	43.2	74.0	-30.8	EUT X-Axis, ANT Horz, Mid Ch 915.25MHz
2708.330	39.0	2.7	1.0	353.0	3.0	0.0	Horz	PK	0.0	41.7	74.0	-32.3	EUT X-Axis, ANT Horz, Low Ch 902.75MHz

SPURIOUS RADIATED EMISSIONS

Work Order:	ITRM0323	**Date:**	08/23/12		
Project:	None	**Temperature:**	25.48 °C		
Job Site:	OC10	**Humidity:**	46.45% RH		
Serial Number:	None	**Barometric Pres.:**	1016 mbar	**Tested by:**	Mark Baytan
EUT:	IM11 RFID Module				
Configuration:	6				
Customer:	Intermec Technologies Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting Low, Mid, High Channels (Ch 5 - 902.75 MHz, Ch 30 - 915.25 MHz, Ch 54 - 927.25 MHz)				
Deviations:	None				
Comments:	Antenna TX Port 1. IP4 FCC Ceramic Patch. Power=30.				

Test Specifications	**Test Method**
FCC 15.247:2012	ANSI C63.10:2009

Run #	90	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance ()	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted ()	Spec. Limit ()	Compared to Spec. (dB)	Comments
4513.763	36.4	10.1	1.5	138.0	3.0	0.0	Horz	AV	0.0	46.5	54.0	-7.5	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
9152.513	54.8	-9.4	1.0	277.0	3.0	0.0	Vert	AV	0.0	45.4	54.0	-8.6	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
4576.250	34.6	10.4	1.0	273.0	3.0	0.0	Vert	AV	0.0	45.0	54.0	-9.0	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 902.75 MHz
3661.007	37.9	6.9	1.7	300.0	3.0	0.0	Horz	AV	0.0	44.8	54.0	-9.2	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
9152.513	53.3	-9.4	1.0	6.0	3.0	0.0	Vert	AV	0.0	43.9	54.0	-10.1	EUT X-Axis, ANT On Side, Mid Channel, 30, 915.25 MHz
9152.507	53.2	-9.4	1.0	153.0	3.0	0.0	Vert	AV	0.0	43.8	54.0	-10.2	EUT X-Axis, ANT Vertical, Mid Channel, 30, 915.25 MHz
4636.270	33.1	10.6	1.7	43.0	3.0	0.0	Horz	AV	0.0	43.7	54.0	-10.3	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
2781.763	40.8	2.8	1.2	5.0	3.0	0.0	Vert	AV	0.0	43.6	54.0	-10.4	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
9152.513	52.7	-9.4	1.0	179.0	3.0	0.0	Horz	AV	0.0	43.3	54.0	-10.7	EUT X-Axis, ANT Vertical, Mid Channel, 30, 915.25 MHz
4513.777	33.2	10.1	1.0	44.0	3.0	0.0	Vert	AV	0.0	43.3	54.0	-10.7	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4576.257	32.8	10.4	1.0	36.0	3.0	0.0	Horz	AV	0.0	43.2	54.0	-10.8	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 902.75 MHz
4636.283	31.7	10.6	1.0	270.0	3.0	0.0	Vert	AV	0.0	42.3	54.0	-11.7	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
3661.020	35.3	6.9	1.0	324.0	3.0	0.0	Vert	AV	0.0	42.2	54.0	-11.8	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
3709.007	34.8	7.2	1.0	208.0	3.0	0.0	Vert	AV	0.0	42.0	54.0	-12.0	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
3709.013	34.3	7.2	1.0	300.0	3.0	0.0	Horz	AV	0.0	41.5	54.0	-12.5	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
3611.007	34.6	6.7	1.0	320.0	3.0	0.0	Vert	AV	0.0	41.3	54.0	-12.7	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
2708.257	38.1	2.7	1.0	350.0	3.0	0.0	Vert	AV	0.0	40.8	54.0	-13.2	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
2745.757	37.8	2.7	1.0	10.0	3.0	0.0	Vert	AV	0.0	40.5	54.0	-13.5	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2781.749	36.8	2.8	1.2	249.0	3.0	0.0	Horz	AV	0.0	39.6	54.0	-14.4	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
9152.513	48.7	-9.4	1.0	6.0	3.0	0.0	Horz	AV	0.0	39.3	54.0	-14.7	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2745.730	34.4	2.7	1.0	210.0	3.0	0.0	Horz	AV	0.0	37.1	54.0	-16.9	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
9152.500	46.4	-9.4	1.4	165.0	3.0	0.0	Horz	AV	0.0	37.0	54.0	-17.0	EUT X-Axis, ANT On Side, Mid Channel, 30, 915.25 MHz
3611.000	29.4	6.7	2.0	120.0	3.0	0.0	Horz	AV	0.0	36.1	54.0	-17.9	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
9027.527	45.0	-9.7	1.0	204.0	3.0	0.0	Vert	AV	0.0	35.3	54.0	-18.7	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
2708.263	32.3	2.7	1.0	325.0	3.0	0.0	Horz	AV	0.0	35.0	54.0	-19.0	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4513.697	42.8	10.1	1.5	138.0	3.0	0.0	Horz	PK	0.0	52.9	74.0	-21.1	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4576.270	41.1	10.4	1.0	273.0	3.0	0.0	Vert	PK	0.0	51.5	74.0	-22.5	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 902.75 MHz
4636.243	40.8	10.6	1.7	43.0	3.0	0.0	Horz	PK	0.0	51.4	74.0	-22.6	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
4513.670	40.7	10.1	1.0	44.0	3.0	0.0	Vert	PK	0.0	50.8	74.0	-23.2	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4576.350	40.4	10.4	1.0	36.0	3.0	0.0	Horz	PK	0.0	50.8	74.0	-23.2	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 902.75 MHz
3660.947	43.7	6.9	1.7	300.0	3.0	0.0	Horz	PK	0.0	50.6	74.0	-23.4	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 902.75 MHz
4636.137	39.6	10.6	1.0	270.0	3.0	0.0	Vert	PK	0.0	50.2	74.0	-23.8	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
9027.520	39.2	-9.7	1.6	240.0	3.0	0.0	Horz	AV	0.0	29.5	54.0	-24.5	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
3709.040	41.6	7.2	1.0	208.0	3.0	0.0	Vert	PK	0.0	48.8	74.0	-25.2	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
3709.153	41.4	7.2	1.0	300.0	3.0	0.0	Horz	PK	0.0	48.6	74.0	-25.4	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
3660.913	41.4	6.9	1.0	324.0	3.0	0.0	Vert	PK	0.0	48.3	74.0	-25.7	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 902.75 MHz
3611.087	41.5	6.7	1.0	320.0	3.0	0.0	Vert	PK	0.0	48.2	74.0	-25.8	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
9152.453	57.3	-9.4	1.0	277.0	3.0	0.0	Vert	PK	0.0	47.9	74.0	-26.1	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2781.769	44.6	2.8	1.2	5.0	3.0	0.0	Vert	PK	0.0	47.4	74.0	-26.6	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
9152.633	56.1	-9.4	1.0	153.0	3.0	0.0	Vert	PK	0.0	46.7	74.0	-27.3	EUT X-Axis, ANT Vertical, Mid Channel, 30, 915.25 MHz

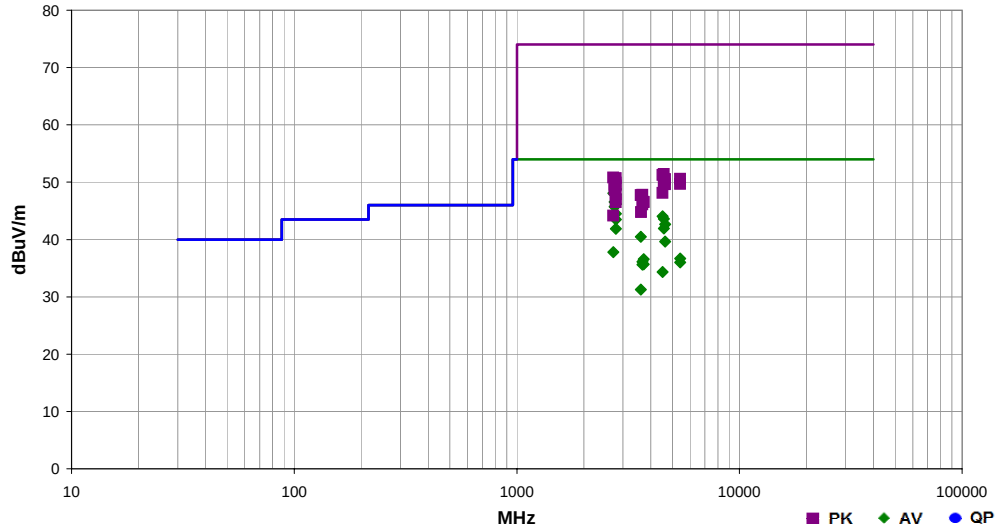
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance ()	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted ()	Spec. Limit ()	Compared to Spec. (dB)	Comments
9152.427	56.1	-9.4	1.0	6.0	3.0	0.0	Vert	PK	0.0	46.7	74.0	-27.3	EUT X-Axis, ANT On Side, Mid Channel, 30, 915.25 MHz
3610.613	39.8	6.7	2.0	120.0	3.0	0.0	Horz	PK	0.0	46.5	74.0	-27.5	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
9152.467	55.6	-9.4	1.0	179.0	3.0	0.0	Horz	PK	0.0	46.2	74.0	-27.8	EUT X-Axis, ANT Vertical, Mid Channel, 30, 915.25 MHz
2708.283	43.5	2.7	1.0	350.0	3.0	0.0	Vert	PK	0.0	46.2	74.0	-27.8	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
2745.730	42.9	2.7	1.0	10.0	3.0	0.0	Vert	PK	0.0	45.6	74.0	-28.4	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2781.569	42.2	2.8	1.2	249.0	3.0	0.0	Horz	PK	0.0	45.0	74.0	-29.0	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
2745.950	41.2	2.7	1.0	210.0	3.0	0.0	Horz	PK	0.0	43.9	74.0	-30.1	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
9152.567	53.2	-9.4	1.0	6.0	3.0	0.0	Horz	PK	0.0	43.8	74.0	-30.2	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2708.070	40.3	2.7	1.0	325.0	3.0	0.0	Horz	PK	0.0	43.0	74.0	-31.0	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
9152.613	52.0	-9.4	1.4	165.0	3.0	0.0	Horz	PK	0.0	42.6	74.0	-31.4	EUT X-Axis, ANT On Side, Mid Channel, 30, 915.25 MHz
9027.733	51.2	-9.7	1.0	204.0	3.0	0.0	Vert	PK	0.0	41.5	74.0	-32.5	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
9026.987	48.6	-9.7	1.6	240.0	3.0	0.0	Horz	PK	0.0	38.9	74.0	-35.1	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz

SPURIOUS RADIATED EMISSIONS

Work Order:	ITRM0323	**Date:**	08/23/12		
Project:	None	**Temperature:**	24.74 °C		
Job Site:	OC10	**Humidity:**	50.85% RH		
Serial Number:	None	**Barometric Pres.:**	1016 mbar	**Tested by:**	Jaemi Suh
EUT:	IM11 RFID Module				
Configuration:	7				
Customer:	Intermec Technologies Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting Low, Mid, High Channels (Ch 5 - 902.75 MHz, Ch 30 - 915.25 MHz, Ch 54 - 927.25 MHz)				
Deviations:	None				
Comments:	Antenna TX Port 1. 70 Series Omni. Power=30.				

Test Specifications	**Test Method**
FCC 15.247:2012	ANSI C63.10:2009

Run #	107	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance ()	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted ()	Spec. Limit ()	Compared to Spec. (dB)	Comments
2781.752	46.0	2.8	1.2	172.0	3.0	0.0	Vert	AV	0.0	48.8	54.0	-5.2	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
2708.256	45.4	2.7	1.6	4.0	3.0	0.0	Horz	AV	0.0	48.1	54.0	-5.9	EUT X-Axis, ANT Vertical, Low Channel, 5, 902.75 MHz
2781.769	45.0	2.8	2.0	308.0	3.0	0.0	Horz	AV	0.0	47.8	54.0	-6.2	EUT X-Axis, ANT Vertical, High Channel, 54, 927.25 MHz
2745.750	43.8	2.7	1.0	170.0	3.0	0.0	Vert	AV	0.0	46.5	54.0	-7.5	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2781.759	43.4	2.8	1.2	181.0	3.0	0.0	Vert	AV	0.0	46.2	54.0	-7.8	EUT X-Axis, ANT on side, High Channel, 54, 927.25 MHz
2745.750	43.0	2.7	1.0	280.0	3.0	0.0	Horz	AV	0.0	45.7	54.0	-8.3	EUT X-Axis, ANT Vertical, Mid Channel, 30, 915.25 MHz
2781.759	41.7	2.8	1.2	196.0	3.0	0.0	Vert	AV	0.0	44.5	54.0	-9.5	EUT X-Axis, ANT Vertical, High Channel, 54, 927.25 MHz
4513.770	33.9	10.1	1.0	260.0	3.0	0.0	Vert	AV	0.0	44.0	54.0	-10.0	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4576.263	33.2	10.4	1.1	66.0	3.0	0.0	Vert	AV	0.0	43.6	54.0	-10.4	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2781.769	40.7	2.8	1.2	253.0	3.0	0.0	Horz	AV	0.0	43.5	54.0	-10.5	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
4636.263	32.0	10.6	1.0	75.0	3.0	0.0	Vert	AV	0.0	42.6	54.0	-11.4	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
4576.270	31.5	10.4	1.0	96.0	3.0	0.0	Horz	AV	0.0	41.9	54.0	-12.1	EUT X-Axis, ANT Vertical, Mid Channel, 30, 915.25 MHz
2781.756	39.1	2.8	1.2	198.0	3.0	0.0	Horz	AV	0.0	41.9	54.0	-12.1	EUT X-Axis, ANT on side, High Channel, 54, 927.25 MHz
3611.013	33.8	6.7	1.0	151.0	3.0	0.0	Vert	AV	0.0	40.5	54.0	-13.5	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4636.270	29.0	10.6	1.0	92.0	3.0	0.0	Horz	AV	0.0	39.6	54.0	-14.4	EUT X-Axis, ANT Vertical, High Channel, 54, 927.25 MHz
2708.273	35.1	2.7	1.2	158.0	3.0	0.0	Vert	AV	0.0	37.8	54.0	-16.2	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
5416.493	23.8	12.9	1.0	179.0	3.0	0.0	Vert	AV	0.0	36.7	54.0	-17.3	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
3709.027	29.4	7.2	1.0	182.0	3.0	0.0	Horz	AV	0.0	36.6	54.0	-17.4	EUT X-Axis, ANT Vertical, High Channel, 54, 927.25 MHz
3661.020	29.2	6.9	1.0	230.0	3.0	0.0	Horz	AV	0.0	36.1	54.0	-17.9	EUT X-Axis, ANT Vertical, Mid Channel, 30, 915.25 MHz
5417.680	23.1	12.9	2.1	3.0	3.0	0.0	Horz	AV	0.0	36.0	54.0	-18.0	EUT X-Axis, ANT Vertical, Low Channel, 5, 902.75 MHz
3709.000	28.5	7.2	1.0	98.0	3.0	0.0	Vert	AV	0.0	35.7	54.0	-18.3	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
3661.007	28.7	6.9	1.0	173.0	3.0	0.0	Vert	AV	0.0	35.6	54.0	-18.4	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
4514.383	24.2	10.1	2.6	142.0	3.0	0.0	Horz	AV	0.0	34.3	54.0	-19.7	EUT X-Axis, ANT Vertical, Low Channel, 5, 902.75 MHz
4576.150	41.0	10.4	1.1	66.0	3.0	0.0	Vert	PK	0.0	51.4	74.0	-22.6	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
3610.580	24.6	6.7	1.0	111.0	3.0	0.0	Horz	AV	0.0	31.3	54.0	-22.7	EUT X-Axis, ANT Vertical, Low Channel, 5, 902.75 MHz
4513.843	41.1	10.1	1.0	260.0	3.0	0.0	Vert	PK	0.0	51.2	74.0	-22.8	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
2708.203	48.1	2.7	1.6	4.0	3.0	0.0	Horz	PK	0.0	50.8	74.0	-23.2	EUT X-Axis, ANT Vertical, Low Channel, 5, 902.75 MHz
2781.736	47.9	2.8	2.0	308.0	3.0	0.0	Horz	PK	0.0	50.7	74.0	-23.3	EUT X-Axis, ANT Vertical, High Channel, 54, 927.25 MHz
5416.933	37.7	12.9	2.1	3.0	3.0	0.0	Horz	PK	0.0	50.6	74.0	-23.4	EUT X-Axis, ANT Vertical, Low Channel, 5, 902.75 MHz
4636.450	39.9	10.6	1.0	75.0	3.0	0.0	Vert	PK	0.0	50.5	74.0	-23.5	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
4576.310	39.6	10.4	1.0	96.0	3.0	0.0	Horz	PK	0.0	50.0	74.0	-24.0	EUT X-Axis, ANT Vertical, Mid Channel, 30, 915.25 MHz
2781.779	47.1	2.8	1.2	172.0	3.0	0.0	Vert	PK	0.0	49.9	74.0	-24.1	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
5417.800	36.8	12.9	1.0	179.0	3.0	0.0	Vert	PK	0.0	49.7	74.0	-24.3	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
4636.257	39.0	10.6	1.0	92.0	3.0	0.0	Horz	PK	0.0	49.6	74.0	-24.4	EUT X-Axis, ANT Vertical, High Channel, 54, 927.25 MHz
2745.670	46.8	2.7	1.0	170.0	3.0	0.0	Vert	PK	0.0	49.5	74.0	-24.5	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz
2781.845	46.6	2.8	1.2	181.0	3.0	0.0	Vert	PK	0.0	49.4	74.0	-24.6	EUT X-Axis, ANT on side, High Channel, 54, 927.25 MHz
2745.963	46.0	2.7	1.0	280.0	3.0	0.0	Horz	PK	0.0	48.7	74.0	-25.3	EUT X-Axis, ANT Vertical, Mid Channel, 30, 915.25 MHz
4515.670	38.0	10.1	2.6	142.0	3.0	0.0	Horz	PK	0.0	48.1	74.0	-25.9	EUT X-Axis, ANT Vertical, Low Channel, 5, 902.75 MHz
2781.919	45.1	2.8	1.2	196.0	3.0	0.0	Vert	PK	0.0	47.9	74.0	-26.1	EUT X-Axis, ANT Vertical, High Channel, 54, 927.25 MHz
3661.173	40.9	6.9	1.0	173.0	3.0	0.0	Vert	PK	0.0	47.8	74.0	-26.2	EUT X-Axis, ANT Horizontal, Mid Channel, 30, 915.25 MHz

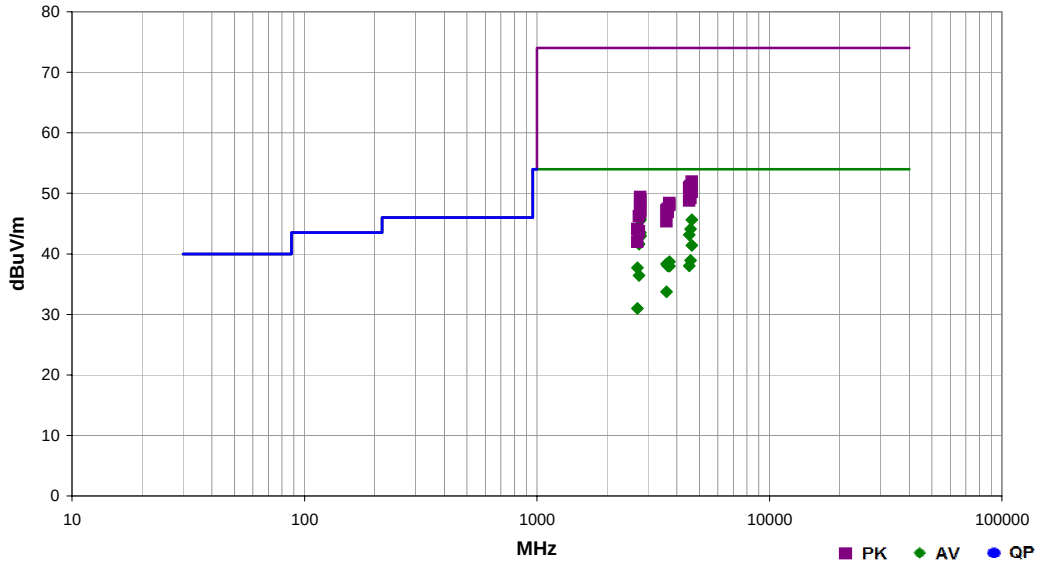
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance ()	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted ()	Spec. Limit ()	Compared to Spec. (dB)	Comments
3610.913	41.1	6.7	1.0	151.0	3.0	0.0	Vert	PK	0.0	47.8	74.0	-26.2	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz
2781.629	44.3	2.8	1.2	253.0	3.0	0.0	Horz	PK	0.0	47.1	74.0	-26.9	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
3709.160	39.4	7.2	1.0	182.0	3.0	0.0	Horz	PK	0.0	46.6	74.0	-27.4	EUT X-Axis, ANT Vertical, High Channel, 54, 927.25 MHz
2781.549	43.7	2.8	1.2	198.0	3.0	0.0	Horz	PK	0.0	46.5	74.0	-27.5	EUT X-Axis, ANT on side, High Channel, 54, 927.25 MHz
3708.787	39.3	7.2	1.0	98.0	3.0	0.0	Vert	PK	0.0	46.5	74.0	-27.5	EUT X-Axis, ANT Horizontal, High Channel, 54, 927.25 MHz
3660.880	39.2	6.9	1.0	230.0	3.0	0.0	Horz	PK	0.0	46.1	74.0	-27.9	EUT X-Axis, ANT Vertical, Mid Channel, 30, 915.25 MHz
3612.727	38.1	6.7	1.0	111.0	3.0	0.0	Horz	PK	0.0	44.8	74.0	-29.2	EUT X-Axis, ANT Vertical, Low Channel, 5, 902.75 MHz
2708.247	41.5	2.7	1.2	158.0	3.0	0.0	Vert	PK	0.0	44.2	74.0	-29.8	EUT X-Axis, ANT Horizontal, Low Channel, 5, 902.75 MHz

SPURIOUS RADIATED EMISSIONS

Work Order:	ITRM0323	**Date:**	08/23/12		
Project:	None	**Temperature:**	26.29 °C		
Job Site:	OC10	**Humidity:**	44.9% RH		
Serial Number:	G1FD192794	**Barometric Pres.:**	1011 mbar	**Tested by:**	Mark Baytan
ANT:	IM11 RFID Module				
Configuration:	8				
Customer:	Intermec Technologies Corporation				
Attendees:	None				
ANT Power:	110VAC/60Hz				
Operating Mode:	Transmitting Low, Mid, High Channels (Ch 5 - 902.75 MHz, Ch 30 - 915.25 MHz, Ch 54 - 927.25 MHz)				
Deviations:	None				
Comments:	Antenna TX Port 1. Kathrein 520. RP TNC to TNC Cable (Part#236-250-001). Power=30.				

Test Specifications	**Test Method**
FCC 15.247:2012	ANSI C63.10:2009

Run #	122	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance ()	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted ()	Spec. Limit ()	Compared to Spec. (dB)	Comments
2781.756	43.6	2.8	1.2	184.0	3.0	0.0	Vert	AV	0.0	46.4	54.0	-7.6	EUT X-Axis, ANT Horz, High Ch 54, 927.25MHz
2781.763	43.0	2.8	1.2	350.0	3.0	0.0	Vert	AV	0.0	45.8	54.0	-8.2	EUT X-Axis, ANT Vert, High Ch 54, 927.25MHz
4636.263	35.0	10.6	1.0	42.0	3.0	0.0	Vert	AV	0.0	45.6	54.0	-8.4	EUT X-Axis, ANT Horz, High Ch 54, 927.25MHz
2781.756	42.8	2.8	1.2	13.0	3.0	0.0	Vert	AV	0.0	45.6	54.0	-8.4	EUT X-Axis, ANT on side, High Ch 54, 927.25MHz
4576.270	33.7	10.4	1.0	48.0	3.0	0.0	Vert	AV	0.0	44.1	54.0	-9.9	EUT X-Axis, ANT Horz, Mid Ch 30, 915.25MHz
2781.765	40.7	2.8	1.2	257.0	3.0	0.0	Horz	AV	0.0	43.5	54.0	-10.5	EUT X-Axis, ANT Horz, High Ch 54, 927.25MHz
4513.770	33.0	10.1	1.9	3.0	3.0	0.0	Horz	AV	0.0	43.1	54.0	-10.9	EUT X-Axis, ANT Horz, Low Ch 5, 902.75MHz
2781.752	40.3	2.8	1.2	255.0	3.0	0.0	Horz	AV	0.0	43.1	54.0	-10.9	EUT X-Axis, ANT on side, High Ch 54, 927.25MHz
2781.759	40.1	2.8	1.2	270.0	3.0	0.0	Horz	AV	0.0	42.9	54.0	-11.1	EUT X-Axis, ANT Vert, High Ch 54, 927.25MHz
2745.777	38.9	2.7	1.0	154.0	3.0	0.0	Vert	AV	0.0	41.6	54.0	-12.4	EUT X-Axis, ANT Horz, Mid Ch 30, 915.25MHz
4636.270	30.8	10.6	1.3	12.0	3.0	0.0	Horz	AV	0.0	41.4	54.0	-12.6	EUT X-Axis, ANT Horz, High Ch 54, 927.25MHz
4576.263	28.5	10.4	1.0	342.0	3.0	0.0	Horz	AV	0.0	38.9	54.0	-15.1	EUT X-Axis, ANT Horz, Mid Ch 30, 915.25MHz
3709.013	31.5	7.2	2.1	273.0	3.0	0.0	Horz	AV	0.0	38.7	54.0	-15.3	EUT X-Axis, ANT Horz, High Ch 54, 927.25MHz
3610.987	31.7	6.7	1.0	271.0	3.0	0.0	Vert	AV	0.0	38.4	54.0	-15.6	EUT X-Axis, ANT Horz, Low Ch 5, 902.75MHz
3661.020	31.2	6.9	2.3	259.0	3.0	0.0	Horz	AV	0.0	38.1	54.0	-15.9	EUT X-Axis, ANT Horz, Mid Ch 30, 915.25MHz
4513.770	27.9	10.1	1.0	160.0	3.0	0.0	Vert	AV	0.0	38.0	54.0	-16.0	EUT X-Axis, ANT Horz, Low Ch 5, 902.75MHz
3661.020	31.1	6.9	1.0	272.0	3.0	0.0	Vert	AV	0.0	38.0	54.0	-16.0	EUT X-Axis, ANT Horz, Mid Ch 30, 915.25MHz
3709.000	30.8	7.2	1.0	241.0	3.0	0.0	Vert	AV	0.0	38.0	54.0	-16.0	EUT X-Axis, ANT Horz, High Ch 54, 927.25MHz
2708.263	35.0	2.7	1.0	154.0	3.0	0.0	Vert	AV	0.0	37.7	54.0	-16.3	EUT X-Axis, ANT Horz, Low Ch 5, 902.75MHz
2745.783	33.7	2.7	1.0	244.0	3.0	0.0	Horz	AV	0.0	36.4	54.0	-17.6	EUT X-Axis, ANT Horz, Mid Ch 30, 915.25MHz
3611.033	27.1	6.7	1.0	260.0	3.0	0.0	Horz	AV	0.0	33.8	54.0	-20.2	EUT X-Axis, ANT Horz, Low Ch 5, 902.75MHz
4636.370	41.3	10.6	1.0	42.0	3.0	0.0	Vert	PK	0.0	51.9	74.0	-22.1	EUT X-Axis, ANT Horz, High Ch 54, 927.25MHz
4576.243	40.8	10.4	1.0	48.0	3.0	0.0	Vert	PK	0.0	51.2	74.0	-22.8	EUT X-Axis, ANT Horz, Mid Ch 30, 915.25MHz
2708.263	28.3	2.7	1.0	197.0	3.0	0.0	Horz	AV	0.0	31.0	54.0	-23.0	EUT X-Axis, ANT Horz, Low Ch 5, 902.75MHz
4513.750	40.8	10.1	1.9	3.0	3.0	0.0	Horz	PK	0.0	50.9	74.0	-23.1	EUT X-Axis, ANT Horz, Low Ch 5, 902.75MHz
4636.163	39.6	10.6	1.3	12.0	3.0	0.0	Horz	PK	0.0	50.2	74.0	-23.8	EUT X-Axis, ANT Horz, High Ch 54, 927.25MHz
2781.703	46.6	2.8	1.2	184.0	3.0	0.0	Vert	PK	0.0	49.4	74.0	-24.6	EUT X-Axis, ANT Horz, High Ch 54, 927.25MHz
4576.517	38.8	10.4	1.0	342.0	3.0	0.0	Horz	PK	0.0	49.2	74.0	-24.8	EUT X-Axis, ANT Horz, Mid Ch 30, 915.25MHz
2781.689	46.1	2.8	1.2	13.0	3.0	0.0	Vert	PK	0.0	48.9	74.0	-25.1	EUT X-Axis, ANT on side, High Ch 54, 927.25MHz
4513.577	38.7	10.1	1.0	160.0	3.0	0.0	Vert	PK	0.0	48.8	74.0	-25.2	EUT X-Axis, ANT Horz, Low Ch 5, 902.75MHz
2781.789	46.0	2.8	1.2	350.0	3.0	0.0	Vert	PK	0.0	48.8	74.0	-25.2	EUT X-Axis, ANT Vert, High Ch 54, 927.25MHz
3708.947	41.2	7.2	2.1	273.0	3.0	0.0	Horz	PK	0.0	48.4	74.0	-25.6	EUT X-Axis, ANT Horz, High Ch 54, 927.25MHz
3708.933	40.9	7.2	1.0	241.0	3.0	0.0	Vert	PK	0.0	48.1	74.0	-25.9	EUT X-Axis, ANT Horz, High Ch 54, 927.25MHz
2781.759	44.8	2.8	1.2	257.0	3.0	0.0	Horz	PK	0.0	47.6	74.0	-26.4	EUT X-Axis, ANT Horz, High Ch 54, 927.25MHz

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance ()	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted ()	Spec. Limit ()	Compared to Spec. (dB)	Comments
3660.973	40.5	6.9	2.3	259.0	3.0	0.0	Horz	PK	0.0	47.4	74.0	-26.6	EUT X-Axis, ANT Horz, Mid Ch 30, 915.25MHz
3611.020	40.5	6.7	1.0	271.0	3.0	0.0	Vert	PK	0.0	47.2	74.0	-26.8	EUT X-Axis, ANT Horz, Low Ch 5, 902.75MHz
2781.725	44.3	2.8	1.2	255.0	3.0	0.0	Horz	PK	0.0	47.1	74.0	-26.9	EUT X-Axis, ANT on side, High Ch 54, 927.25MHz
3660.947	40.0	6.9	1.0	272.0	3.0	0.0	Vert	PK	0.0	46.9	74.0	-27.1	EUT X-Axis, ANT Horz, Mid Ch 30, 915.25MHz
2781.712	44.1	2.8	1.2	270.0	3.0	0.0	Horz	PK	0.0	46.9	74.0	-27.1	EUT X-Axis, ANT Vert, High Ch 54, 927.25MHz
2745.563	43.5	2.7	1.0	154.0	3.0	0.0	Vert	PK	0.0	46.2	74.0	-27.8	EUT X-Axis, ANT Horz, Mid Ch 30, 915.25MHz
3611.120	38.7	6.7	1.0	260.0	3.0	0.0	Horz	PK	0.0	45.4	74.0	-28.6	EUT X-Axis, ANT Horz, Low Ch 5, 902.75MHz
2708.310	41.4	2.7	1.0	154.0	3.0	0.0	Vert	PK	0.0	44.1	74.0	-29.9	EUT X-Axis, ANT Horz, Low Ch 5, 902.75MHz
2745.670	41.0	2.7	1.0	244.0	3.0	0.0	Horz	PK	0.0	43.7	74.0	-30.3	EUT X-Axis, ANT Horz, Mid Ch 30, 915.25MHz
2708.183	39.3	2.7	1.0	197.0	3.0	0.0	Horz	PK	0.0	42.0	74.0	-32.0	EUT X-Axis, ANT Horz, Low Ch 5, 902.75MHz

AC POWERLINE CONDUCTED EMISSIONS

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION

Transmitting High Channel, 54, 927.25MHz
Transmitting Mid Channel, 30, 915.25MHz
Transmitting Low Channel, 5, 905.75MHz

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

ITRM0323 - 1

SAMPLE CALCULATIONS

Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
LISN	Solar	9252-50-R-24-BNC	LIC	4/24/2012	12 mo
LISN	Solar	9252-50-24-BNC	LIA	6/4/2012	12 mo
Attenuator	Pasternack	6N10W-20	AWC	3/1/2012	12 mo
High Pass Filter	TTE	H97-100K-50-720B	HFP	3/1/2012	24 mo
OC06 Cables	N/A	CE Cables	OCM	4/6/2012	12 mo
Receiver	Rohde & Schwarz	ESCI	ARF	4/26/2012	12 mo

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The EUT will be powered either directly or indirectly from the DC power line. Therefore, conducted emissions measurements were made on the DC input of the EUT, or on the DC input of the device used to power the EUT. The DC power line conducted emissions were measured with the EUT operating at the lowest, the highest, and a middle channel in the operational band. The EUT was transmitting at its maximum data rate. For each mode, the spectrum was scanned from 150 kHz to 30 MHz. The test setup and procedures were in accordance with ANSI C63.10-2009.

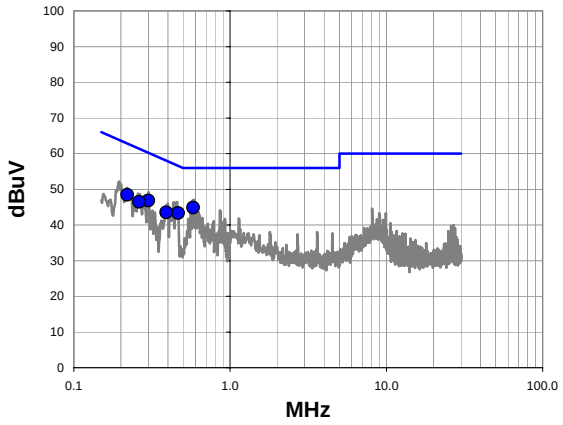
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	ITRM0323	**Date:**	08/27/12		
Project:	None	**Temperature:**	26.37 °C		
Job Site:	OC06	**Humidity:**	38.74% RH		
Serial Number:	00143	**Barometric Pres.:**	1011 mbar	**Tested by:**	Mark Baytan
EUT:	IM11 RFID Module				
Configuration:	1				
Customer:	Intermec Technologies Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting Low Channel, 5, 905.75MHz				
Deviations:	None				
Comments:	Antenna TX Port 1. Huber & Suhner 1309.56.001. RP TNC to RP TNC Cable. Power=30.				

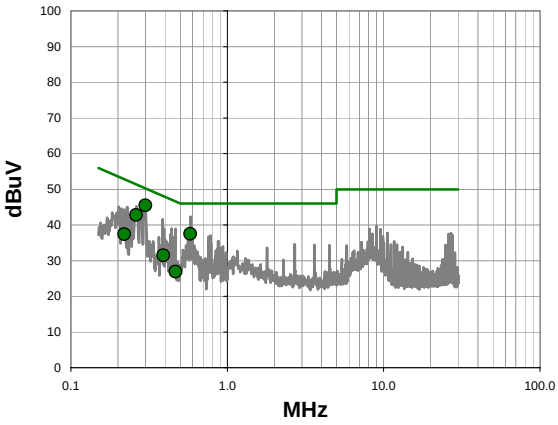
Test Specifications	**Test Method**
FCC 15.247:2012	

Run #	1	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.580	24.7	20.1	44.8	56.0	-11.2
0.466	23.2	20.1	43.3	56.6	-13.3
0.300	26.7	20.1	46.8	60.2	-13.4
0.220	28.3	20.1	48.4	62.8	-14.4
0.390	23.4	20.1	43.5	58.1	-14.6
0.262	26.4	20.1	46.5	61.4	-14.9

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.300	25.4	20.1	45.5	50.2	-4.7
0.580	17.4	20.1	37.5	46.0	-8.5
0.262	22.7	20.1	42.8	51.4	-8.6
0.220	17.3	20.1	37.4	52.8	-15.4
0.390	11.4	20.1	31.5	48.1	-16.6
0.466	6.8	20.1	26.9	46.6	-19.7

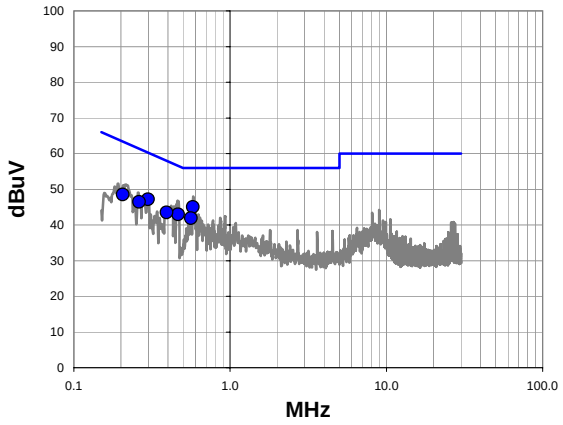
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	ITRM0323	**Date:**	08/27/12		
Project:	None	**Temperature:**	26.37 °C		
Job Site:	OC06	**Humidity:**	38.74% RH		
Serial Number:	00143	**Barometric Pres.:**	1011 mbar	**Tested by:**	Mark Baytan
EUT:	IM11 RFID Module				
Configuration:	1				
Customer:	Intermec Technologies Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting Low Channel, 5, 905.75MHz				
Deviations:	None				
Comments:	Antenna TX Port 1. Huber & Suhner 1309.56.001. RP TNC to RP TNC Cable. Power=30.				

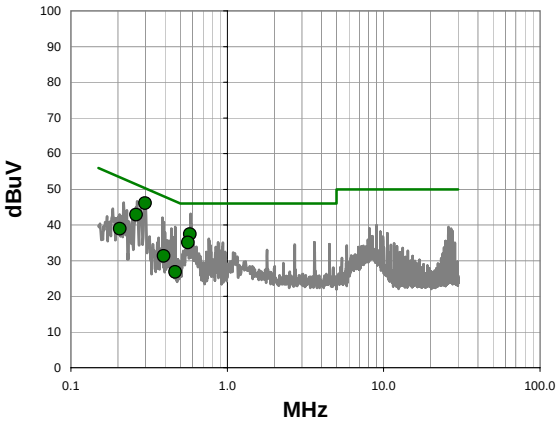
Test Specifications	**Test Method**
FCC 15.247:2012	

Run #	2	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.578	24.9	20.1	45.0	56.0	-11.0
0.298	27.1	20.1	47.2	60.3	-13.1
0.465	22.9	20.1	43.0	56.6	-13.6
0.561	21.8	20.1	41.9	56.0	-14.1
0.393	23.4	20.1	43.5	58.0	-14.5
0.206	28.4	20.1	48.5	63.4	-14.9
0.262	26.4	20.1	46.5	61.4	-14.9

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.298	26.0	20.1	46.1	50.3	-4.2
0.262	22.8	20.1	42.9	51.4	-8.5
0.578	17.3	20.1	37.4	46.0	-8.6
0.561	15.0	20.1	35.1	46.0	-10.9
0.206	18.8	20.1	38.9	53.4	-14.5
0.393	11.2	20.1	31.3	48.0	-16.7
0.465	6.7	20.1	26.8	46.6	-19.8

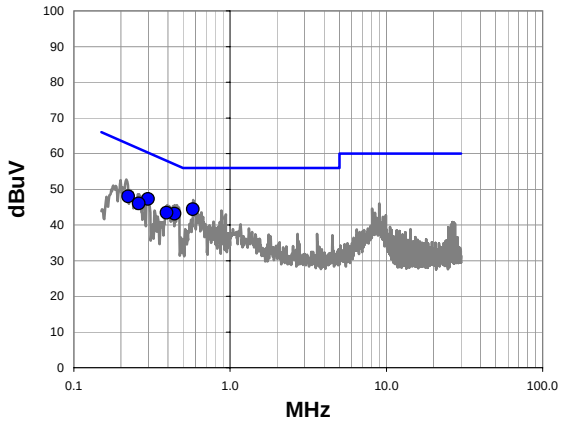
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	ITRM0323	**Date:**	08/27/12		
Project:	None	**Temperature:**	26.37 °C		
Job Site:	OC06	**Humidity:**	38.74% RH		
Serial Number:	00143	**Barometric Pres.:**	1011 mbar	**Tested by:**	Mark Baytan
EUT:	IM11 RFID Module				
Configuration:	1				
Customer:	Intermec Technologies Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting Mid Channel, 30, 915.25MHz				
Deviations:	None				
Comments:	Antenna TX Port 1. Huber & Suhner 1309.56.001. RP TNC to RP TNC Cable. Power=30.				

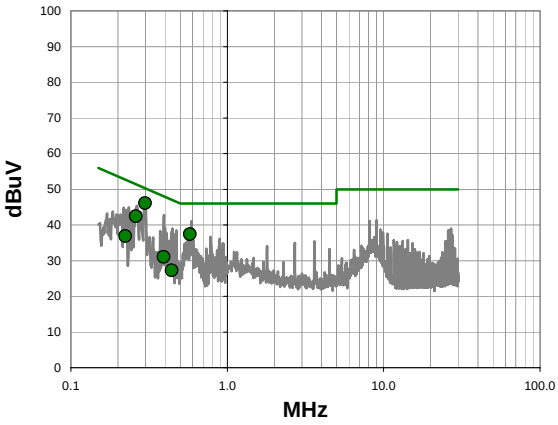
Test Specifications	**Test Method**
FCC 15.247:2012	

Run #	3	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.578	24.3	20.1	44.4	56.0	-11.6
0.298	27.2	20.1	47.3	60.3	-13.0
0.442	23.0	20.1	43.1	57.0	-13.9
0.393	23.3	20.1	43.4	58.0	-14.6
0.223	27.9	20.1	48.0	62.7	-14.7
0.260	25.9	20.1	46.0	61.4	-15.4

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.298	26.0	20.1	46.1	50.3	-4.2
0.578	17.3	20.1	37.4	46.0	-8.6
0.260	22.3	20.1	42.4	51.4	-9.0
0.223	16.8	20.1	36.9	52.7	-15.8
0.393	10.9	20.1	31.0	48.0	-17.0
0.442	7.2	20.1	27.3	47.0	-19.7

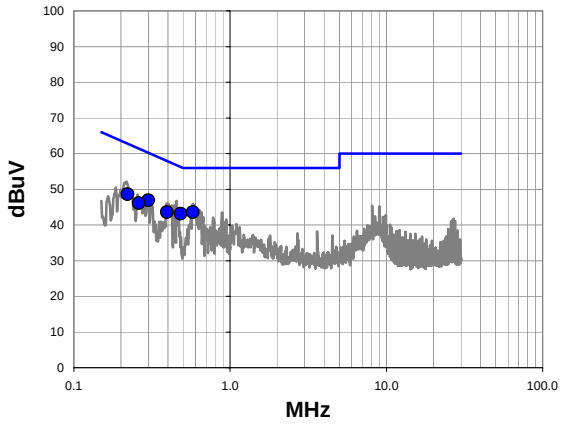
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	ITRM0323	**Date:**	08/27/12		
Project:	None	**Temperature:**	26.37 °C		
Job Site:	OC06	**Humidity:**	38.74% RH		
Serial Number:	00143	**Barometric Pres.:**	1011 mbar	**Tested by:**	Mark Baytan
EUT:	IM11 RFID Module				
Configuration:	1				
Customer:	Intermec Technologies Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting Mid Channel, 30, 915.25MHz				
Deviations:	None				
Comments:	Antenna TX Port 1. Huber & Suhner 1309.56.001. RP TNC to RP TNC Cable. Power=30.				

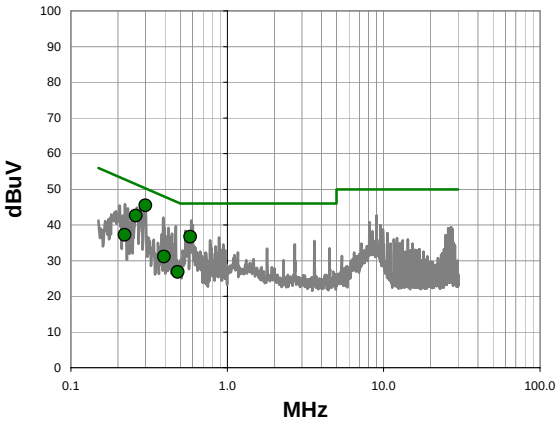
Test Specifications	**Test Method**
FCC 15.247:2012	

Run #	4	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.579	23.5	20.1	43.6	56.0	-12.4
0.482	23.0	20.1	43.1	56.3	-13.2
0.300	26.8	20.1	46.9	60.2	-13.3
0.221	28.5	20.1	48.6	62.8	-14.2
0.394	23.5	20.1	43.6	58.0	-14.4
0.260	26.0	20.1	46.1	61.4	-15.3

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.300	25.4	20.1	45.5	50.2	-4.7
0.260	22.5	20.1	42.6	51.4	-8.8
0.579	16.6	20.1	36.7	46.0	-9.3
0.221	17.1	20.1	37.2	52.8	-15.6
0.394	11.0	20.1	31.1	48.0	-16.9
0.482	6.7	20.1	26.8	46.3	-19.5

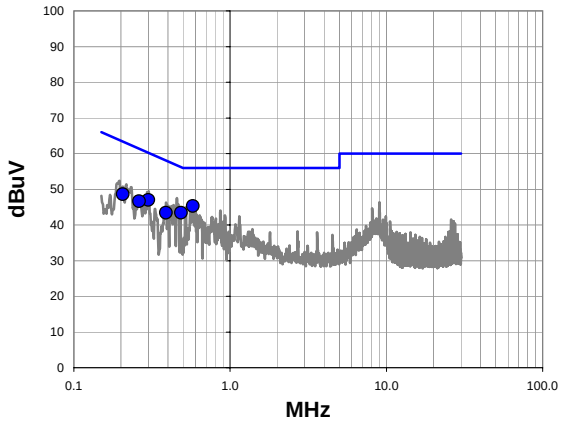
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	ITRM0323	**Date:**	08/27/12		
Project:	None	**Temperature:**	26.37 °C		
Job Site:	OC06	**Humidity:**	38.74% RH		
Serial Number:	00143	**Barometric Pres.:**	1011 mbar	**Tested by:**	Mark Baytan
EUT:	IM11 RFID Module				
Configuration:	1				
Customer:	Intermec Technologies Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting High Channel, 54, 927.25MHz				
Deviations:	None				
Comments:	Antenna TX Port 1. Huber & Suhner 1309.56.001. RP TNC to RP TNC Cable. Power=30.				

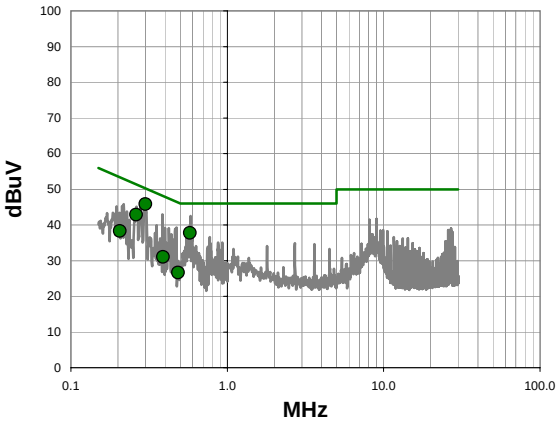
Test Specifications	**Test Method**
FCC 15.247:2012	

Run #	5	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.578	25.2	20.1	45.3	56.0	-10.7
0.485	23.3	20.1	43.4	56.3	-12.9
0.300	26.9	20.1	47.0	60.2	-13.2
0.389	23.3	20.1	43.4	58.1	-14.7
0.206	28.5	20.1	48.6	63.4	-14.8
0.262	26.5	20.1	46.6	61.4	-14.8

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.300	25.7	20.1	45.8	50.2	-4.4
0.578	17.7	20.1	37.8	46.0	-8.2
0.262	22.8	20.1	42.9	51.4	-8.5
0.206	18.2	20.1	38.3	53.4	-15.1
0.389	10.9	20.1	31.0	48.1	-17.1
0.485	6.5	20.1	26.6	46.3	-19.7

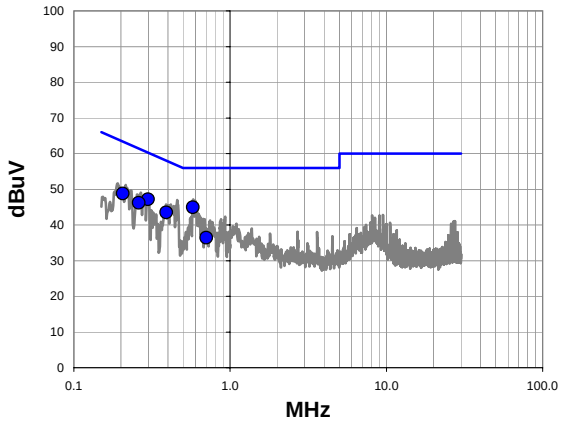
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	ITRM0323	**Date:**	08/27/12		
Project:	None	**Temperature:**	26.37 °C		
Job Site:	OC06	**Humidity:**	38.74% RH		
Serial Number:	00143	**Barometric Pres.:**	1011 mbar	**Tested by:**	Mark Baytan
EUT:	IM11 RFID Module				
Configuration:	1				
Customer:	Intermec Technologies Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting High Channel, 54, 927.25MHz				
Deviations:	None				
Comments:	Antenna TX Port 1. Huber & Suhner 1309.56.001. RP TNC to RP TNC Cable. Power=30.				

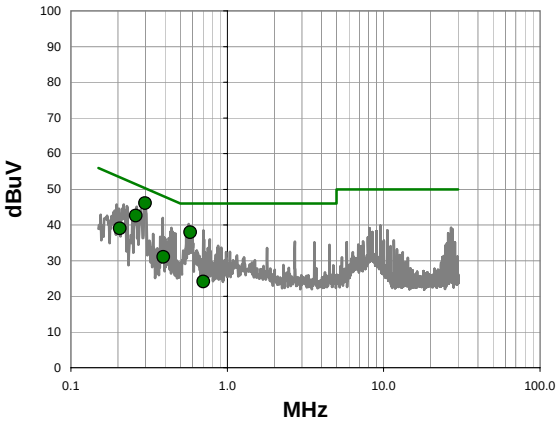
Test Specifications	**Test Method**
FCC 15.247:2012	

Run #	6	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.579	24.8	20.1	44.9	56.0	-11.1
0.299	27.1	20.1	47.2	60.3	-13.1
0.390	23.4	20.1	43.5	58.1	-14.6
0.206	28.7	20.1	48.8	63.4	-14.6
0.260	26.1	20.1	46.2	61.4	-15.2
0.703	16.3	20.1	36.4	56.0	-19.6

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.299	26.0	20.1	46.1	50.3	-4.2
0.579	17.8	20.1	37.9	46.0	-8.1
0.260	22.5	20.1	42.6	51.4	-8.8
0.206	18.9	20.1	39.0	53.4	-14.4
0.390	10.9	20.1	31.0	48.1	-17.1
0.703	4.0	20.1	24.1	46.0	-21.9