

# Intermec Technologies Corporation

## IM5

December 05, 2006

Report No. ITRM0138

Report Prepared By



[www.nwemc.com](http://www.nwemc.com)

1-888-EMI-CERT

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**EMC Test Report**

**Certificate of Test**  
**Issue Date: December 05, 2006**  
**Intermec Technologies Corporation**  
**Model: IM5**

Emissions				
Test Description	Specification	Test Method	Pass	Fail
Occupied Bandwidth	FCC 15.247:2006 FHSS	ANSI C63.4:2003, DA 00-705:2000	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Output Power	FCC 15.247:2006 FHSS	ANSI C63.4:2003, DA 00-705:2000	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Band Edge compliance	FCC 15.247:2006 FHSS	ANSI C63.4:2003, DA 00-705:2000	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Spurious Conducted Emissions	FCC 15.247:2006 FHSS	ANSI C63.4:2003, DA 00-705:2000	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Spurious Radiated Emissions	FCC 15.247:2006 FHSS	ANSI C63.4:2003, DA 00-705:2000	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Modifications made to the product**  
**See the Modifications section of this report**


**Test Facility**

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

Northwest EMC, Inc.  
 22975 NW Evergreen Parkway, Suite 400; Hillsboro, OR 97124  
 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.

**Approved By:**



Greg Kiemel, Director of Engineering

*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.*

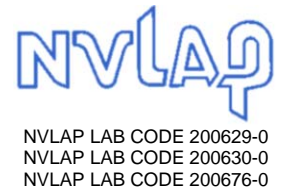
*Product compliance is the responsibility of the client, therefore the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. This Report may only be duplicated in its entirety. The results of this test pertain only to the sample(s) tested,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

Revision Number	Description	Date	Page Number
00	None		

**FCC:** Accredited by NVLAP for performance of FCC radio, digital, and ISM device testing. Our Open Area Test Sites, certification chambers, and conducted measurement facilities have been fully described in reports filed with the FCC and accepted by the FCC in letters maintained in our files. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by the FCC as a Telecommunications Certification Body (TCB). This allows Northwest EMC to certify transmitters to FCC specifications in accordance with 47 CFR 2.960 and 2.962.



**NVLAP:** Northwest EMC, Inc. is accredited under the United States Department of Commerce, National Institute of Standards and Technology, and National Voluntary Laboratory Accreditation Program for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. The NVLAP accreditation encompasses Electromagnetic Compatibility Testing in accordance with the European Union EMC Directive 89/336/EEC, ANSI C63.4, MIL-STD 461E, DO-160D and SAE J1113. Additionally, Northwest EMC is accredited by NVLAP to perform radio testing in accordance with the European Union R&TTE Directive 1999/5/EEC, the requirements of FCC, and the RSS radio standards for Industry Canada.



**Industry Canada:** Accredited by NVLAP for performance of Industry Canada RSS and ICES testing. Our Open Area Test Sites and certification chambers comply with RSS 212, Issue 1 (Provisional) and have been filed with Industry Canada and accepted. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by NIST and recognized by Industry Canada as a Certification Body (CB) per the APEC Mutual Recognition Arrangement (MRA). This allows Northwest EMC to certify transmitters to Industry Canada technical requirements.



**CAB:** Designated by NIST and validated by the European Commission as a Conformity Assessment Body (CAB) to conduct tests and approve products to the EMC directive and transmitters to the R&TTE directive, as described in the U.S. - EU Mutual Recognition Agreement.



**TÜV Product Service:** Included in TÜV Product Service Group's Listing of Recognized Laboratories. It qualifies in connection with the TÜV Certification after Recognition of Agent's Testing Program for the product categories and/or standards shown in TÜV's current Listing of CARAT Laboratories, available from TÜV. A certificate was issued to represent that this laboratory continues to meet TÜV's CARAT Program requirements. Certificate No. USA0401C.



**TÜV Rheinland:** Authorized to carryout EMC tests by order and under supervision of TÜV Rheinland. This authorization is based on "Conditions for EMC-Subcontractors" of November 1992.



**NEMKO:** Assessed and accredited by NEMKO (Norwegian testing and certification body) for European emissions and immunity testing. As a result of NEMKO's laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification (Authorization No. ELA 119).



**Australia/New Zealand:** The National Association of Testing Authorities (NATA), Australia has been appointed by the ACA as an accreditation body to accredit test laboratories and competent bodies for EMC standards. Accredited test reports or assessments by competent bodies must carry the NATA logo. Test reports made by an overseas laboratory that has been accredited for the relevant standards by an overseas accreditation body that has a Mutual Recognition Agreement (MRA) with NATA are also accepted as technical grounds for product conformity. The report should be endorsed with the respective logo of the accreditation body (NVLAP).



**VCCI:** Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. (*Registration Numbers. - Hillsboro: C-1071, R-1025, C-2687, T-289, and R-2318, Irvine: C-2094 and R-1943, Sultan: R-871, C-1784 and R-1761*).



**BSMI:** Northwest EMC has been designated by NIST and validated by C-Taipei (BSMI) as a CAB to conduct tests as described in the APEC Mutual Recognition Agreement. License No.SL2-IN-E-1017.



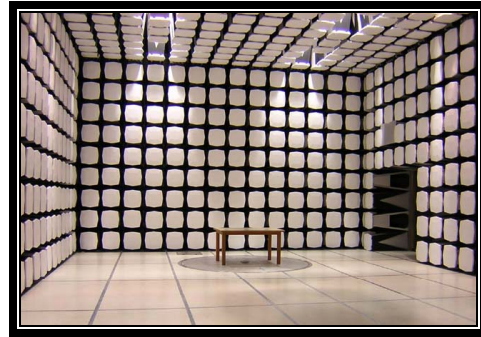
**GOST:** Northwest EMC, Inc. has been assessed and accredited by the Russian Certification bodies Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC, to perform EMC and Hygienic testing for Information Technology Products. As a result of their laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification



## SCOPE

For details on the Scopes of our Accreditations, please visit:

<http://www.nwemc.com/scope.asp>



**California – Orange County Facility  
Labs OC01 – OC13**

41 Tesla Ave. Irvine, CA 92618  
(888) 364-2378 Fax: (503) 844-3826



**Oregon – Evergreen Facility  
Labs EV01 – EV11**

22975 NW Evergreen Pkwy. Suite 400 Hillsboro, OR 97124  
(503) 844-4066 Fax: (503) 844-3826



**Washington – Sultan Facility  
Labs SU01 – SU07**

14128 339<sup>th</sup> Ave. SE Sultan, WA 98294  
(888) 364-2378

## Party Requesting the Test

<b>Company Name:</b>	Intermec Technologies Corporation
<b>Address:</b>	550 Second St. SE
<b>City, State, Zip:</b>	Cedar Rapids, IA 52401-2023
<b>Test Requested By:</b>	Dave Fry
<b>Model:</b>	IM5
<b>First Date of Test:</b>	October 9, 2006
<b>Last Date of Test:</b>	October 10, 2006
<b>Receipt Date of Samples:</b>	October 9, 2006
<b>Equipment Design Stage:</b>	Production
<b>Equipment Condition:</b>	No Damage

## Information Provided by the Party Requesting the Test

**Functional Description of the EUT (Equipment Under Test):**

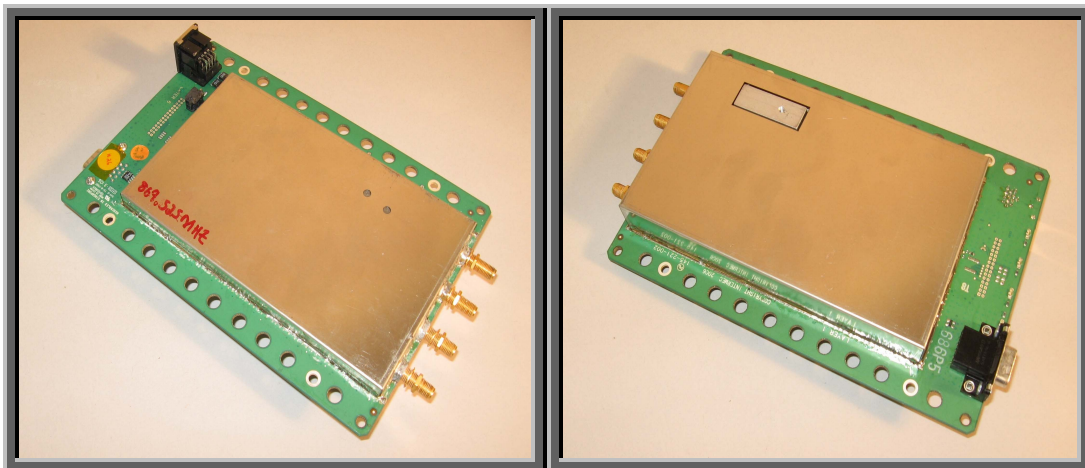
Previously certified RFID radio module. The following changes have been made that require re-testing:

- The radio transmitter printed circuit board has a component change from a circulator to a RF switch in the transmitter circuit.
- The DSP controlling the transmitter is reprogrammed to make the radio compatible to Generation 2 RFID specification by adding PRASK modulation and elimination of one channel in the hopping sequence.

**Testing Objective:**

Only those tests that might be affected by the changes were performed. The tests demonstrate continuing compliance to FCC 15.247 requirements. The highest gain antenna sold with the module was used for spurious radiated emissions.

## EUT Photo



**CONFIGURATION 1 ITRM0138****Software/Firmware Running during test**

Description	Version
Hyperterminal	5.1

**EUT**

Description	Manufacturer	Model/Part Number	Serial Number
EUT - FCC 915 RFID	Intermec Technologies Corporation	IM5	NL 915 4

**Peripherals in test setup boundary**

Description	Manufacturer	Model/Part Number	Serial Number
Switching Power Supply	Intermec Technologies Corporation	SPU24-104	02798281 0537
DC Power Switch	Intermec Technologies Corporation	None	None

**Remote Equipment Outside of Test Setup Boundary**

Description	Manufacturer	Model/Part Number	Serial Number
Remote PC	Dell	PP01L	FR8Z411

**Cables**

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Serial	Yes	3.0 m	No	EUT - FCC 915 RFID	Remote PC
DC Leads	PA	2.0 m	PA	EUT - FCC 915 RFID	Switching Power Supply
AC Power	No	1.8 m	No	Switching Power Supply	AC Mains

PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.



**CONFIGURATION 2 ITRM0138****Software/Firmware Running during test**

Description	Version
Hyperterminal	5.1

**EUT**

Description	Manufacturer	Model/Part Number	Serial Number
EUT - FCC 915 RFID	Intermec Technologies Corporation	IM5	NL 915 8

**Peripherals in test setup boundary**

Description	Manufacturer	Model/Part Number	Serial Number
Switching Power Supply	Intermec Technologies Corporation	SPU24-104	02798281 0537
DC Power Switch	Intermec Technologies Corporation	None	None
Mobile Mark Patch Antenna	Intermec Technologies Corporation	805-629-001	

**Remote Equipment Outside of Test Setup Boundary**

Description	Manufacturer	Model/Part Number	Serial Number
Remote PC	Dell	PP01L	7SCQ411

**Cables**

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Serial	Yes	3.0 m	No	EUT - FCC 915 RFID	Remote PC
DC Leads	PA	2.0 m	PA	EUT - FCC 915 RFID	Switching Power Supply
AC Power	No	1.8 m	No	Switching Power Supply	AC Mains
Antenna cable 236-021-001	Yes	4.0m	No	EUT - FCC 915 RFID	Mobile Mark Patch Antenna

PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.

**Equipment modifications**

Item	Date	Test	Modification	Note	Disposition of EUT
1	10/9/2006	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.
2	10/9/2006	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.
3	10/9/2006	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.
4	10/9/2006	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.
5	10/10/2006	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

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**

Transmit Low channel, no hop.
Transmit Mid channel, no hop
Transmit High channel, no hop

**POWER SETTINGS INVESTIGATED**

120VAC/60Hz
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**FREQUENCY RANGE INVESTIGATED**

Start Frequency	30 MHz	Stop Frequency	10 GHz
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**SAMPLE CALCULATIONS**

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

Description	Manufacturer	Model	ID	Last Cal.	Interval
.5-1 GHz Notch Filter	K&L Microwave	3TNF-500/1000-N/N	HFT	8/29/2006	13
EV01 cables c,g, h			EVA	7/6/2006	13
EV01 cables g,h,j			EVB	7/6/2006	13
Antenna, Horn	ETS	3117	AHQ	6/29/2006	24
High Pass Filter 1.2 - 18 GHz	Micro-Tronics	HPM50108	HFV	9/28/2005	13
Pre-Amplifier	Miteq	AMF-4D-010100-24-10P	APW	7/6/2006	13
Pre-Amplifier	Miteq	AM-1616-1000	AOL	7/6/2006	13
Spectrum Analyzer	Agilent	E4446A	AAT	4/4/2006	12

**MEASUREMENT BANDWIDTHS**

	Frequency Range	Peak Data	Quasi-Peak Data	Average Data
	(MHz)	(kHz)	(kHz)	(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**

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is 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. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and 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 C63.4:2003). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

EUT: IM5	Work Order: ITRM0138
Serial Number: NL 915 8	Date: 10/10/06
Customer: Intermec Technologies Corporation	Temperature: 21°C
Attendees: None	Humidity: 33%
Project: None	Barometric Pres.: 30.2
Tested by: Dan Haas	Power: 120VAC/60Hz
	Job Site: EV01

TEST SPECIFICATIONS		Test Method
FCC 15.247:2006 FHSS		ANSI C63.4:2003 DA 00-705:2000

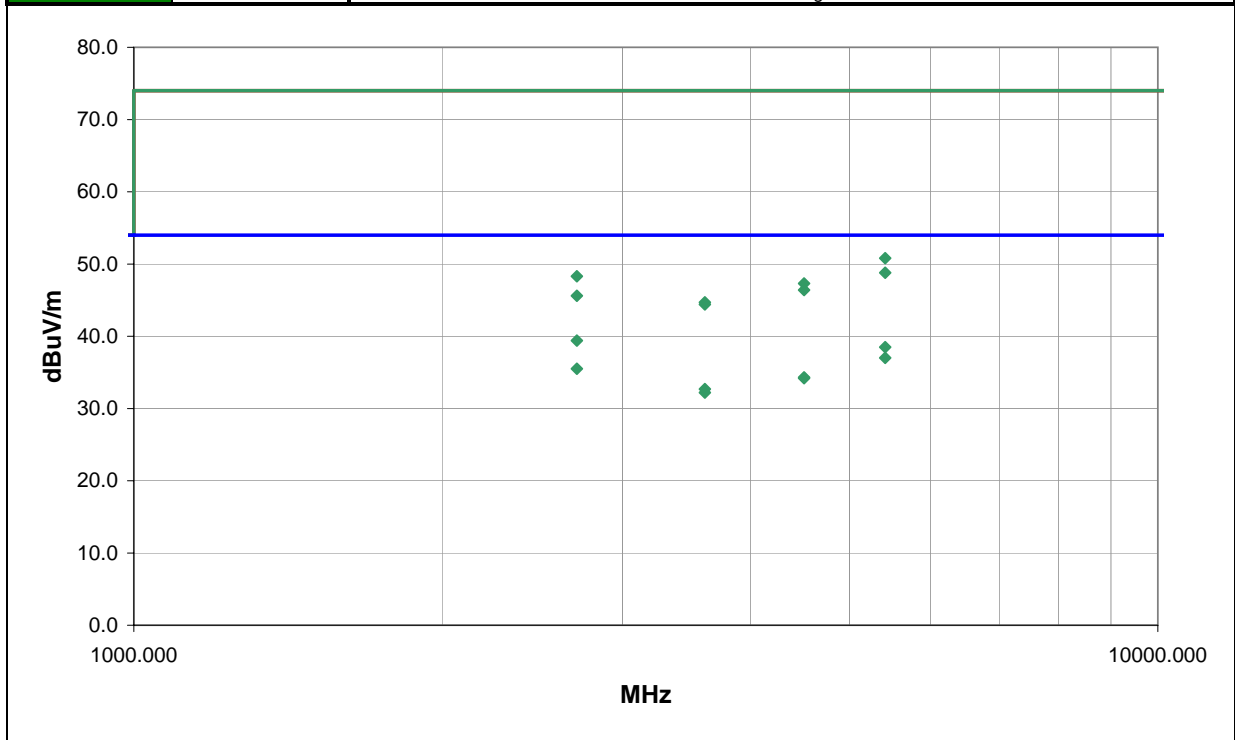
TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

**COMMENTS**  
Mobile Mark Patch Antenna. Intermec Part # 805-629-001 Antenna cable 236-021-001. X axis.

**EUT OPERATING MODES**  
Transmit Low channel, no hop

**DEVIATIONS FROM TEST STANDARD**  
No deviations.

Run #	1	NVLAP Lab Code 200630-0	Signature 
Configuration #	2		
Results	Pass		



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
2708.292	32.9	6.5	81.0	1.0	3.0	0.0	V-Horn	AV	0.0	39.4	54.0	-14.6
5416.491	25.2	13.3	319.0	1.0	3.0	0.0	V-Horn	AV	0.0	38.5	54.0	-15.5
5416.581	23.6	13.4	-1.0	1.9	3.0	0.0	H-Horn	AV	0.0	37.0	54.0	-17.0
2708.270	29.0	6.5	174.0	1.0	3.0	0.0	H-Horn	AV	0.0	35.5	54.0	-18.5
4513.780	23.6	10.7	331.0	1.4	3.0	0.0	V-Horn	AV	0.0	34.3	54.0	-19.7
4513.706	23.5	10.7	313.0	1.0	3.0	0.0	H-Horn	AV	0.0	34.2	54.0	-19.8
3611.011	24.1	8.6	97.0	1.0	3.0	0.0	H-Horn	AV	0.0	32.7	54.0	-21.3
3611.103	23.6	8.6	296.0	1.0	3.0	0.0	V-Horn	AV	0.0	32.2	54.0	-21.8
5416.549	37.5	13.3	319.0	1.0	3.0	0.0	V-Horn	PK	0.0	50.8	74.0	-23.2
5416.778	35.5	13.3	-1.0	1.9	3.0	0.0	H-Horn	PK	0.0	48.8	74.0	-25.2
2708.164	41.8	6.5	81.0	1.0	3.0	0.0	V-Horn	PK	0.0	48.3	74.0	-25.7
4513.434	36.6	10.7	331.0	1.4	3.0	0.0	V-Horn	PK	0.0	47.3	74.0	-26.7
4513.538	35.7	10.7	313.0	1.0	3.0	0.0	H-Horn	PK	0.0	46.4	74.0	-27.6
2708.101	39.1	6.5	174.0	1.0	3.0	0.0	H-Horn	PK	0.0	45.6	74.0	-28.4
3611.050	36.1	8.6	296.0	1.0	3.0	0.0	V-Horn	PK	0.0	44.7	74.0	-29.3
3610.790	35.8	8.6	97.0	1.0	3.0	0.0	H-Horn	PK	0.0	44.4	74.0	-29.6

EUT: IM5	Work Order: ITRM0138
Serial Number: NL 915 8	Date: 10/10/06
Customer: Intermec Technologies Corporation	Temperature: 21°C
Attendees: None	Humidity: 33%
Project: None	Barometric Pres.: 30.2
Tested by: Dan Haas	Power: 120VAC/60Hz
	Job Site: EV01

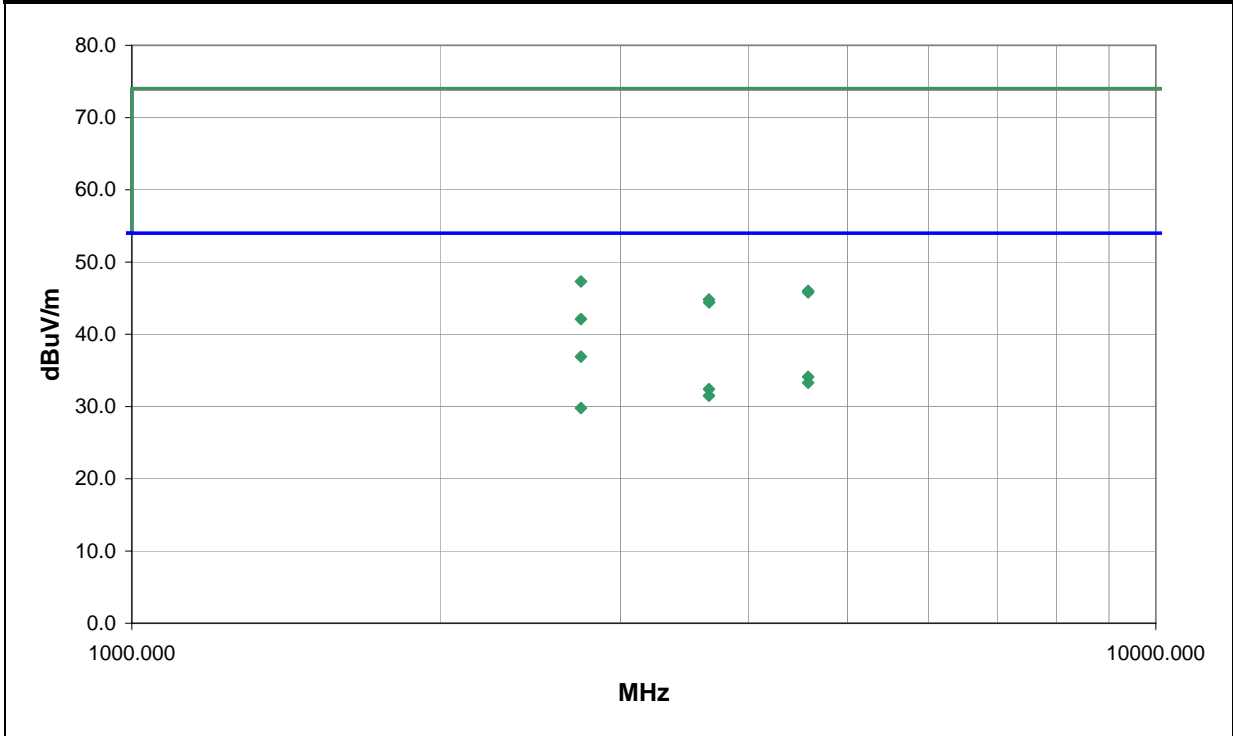
TEST SPECIFICATIONS		Test Method
FCC 15.247:2006 FHSS		ANSI C63.4:2003 DA 00-705:2000

TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

**COMMENTS**  
Mobile Mark Patch Antenna. Intermec Part # 805-629-001 Antenna cable 236-021-001. X axis.

**EUT OPERATING MODES**  
Transmit Mid channel, no hop  
**DEVIATIONS FROM TEST STANDARD**  
No deviations.

Run #	2	NVLAP Lab Code 200630-0	Signature 
Configuration #	2		
Results	Pass		



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
2745.771	30.4	6.5	255.0	1.0	3.0	0.0	V-Horn	AV	0.0	36.9	54.0	-17.1
4576.276	23.2	10.9	271.0	1.0	3.0	0.0	V-Horn	AV	0.0	34.1	54.0	-19.9
4576.248	22.4	10.9	152.0	1.1	3.0	0.0	H-Horn	AV	0.0	33.3	54.0	-20.7
3660.978	23.7	8.7	181.0	1.0	3.0	0.0	H-Horn	AV	0.0	32.4	54.0	-21.6
3660.863	22.8	8.7	276.0	1.0	3.0	0.0	V-Horn	AV	0.0	31.5	54.0	-22.5
2745.801	23.3	6.5	357.0	1.0	3.0	0.0	H-Horn	AV	0.0	29.8	54.0	-24.2
2745.599	40.8	6.5	255.0	1.0	3.0	0.0	V-Horn	PK	0.0	47.3	74.0	-26.7
4576.543	35.1	10.9	271.0	1.0	3.0	0.0	V-Horn	PK	0.0	46.0	74.0	-28.0
4575.690	34.9	10.9	152.0	1.1	3.0	0.0	H-Horn	PK	0.0	45.8	74.0	-28.2
3661.091	36.1	8.7	181.0	1.0	3.0	0.0	H-Horn	PK	0.0	44.8	74.0	-29.2
3661.848	35.7	8.7	276.0	1.0	3.0	0.0	V-Horn	PK	0.0	44.4	74.0	-29.6
2745.595	35.6	6.5	357.0	1.0	3.0	0.0	H-Horn	PK	0.0	42.1	74.0	-31.9

EUT: IM5	Work Order: ITRM0138
Serial Number: NL 915 8	Date: 10/10/06
Customer: Intermec Technologies Corporation	Temperature: 21°C
Attendees: None	Humidity: 33%
Project: None	Barometric Pres.: 30.2
Tested by: Dan Haas	Power: 120VAC/60Hz
	Job Site: EV01

TEST SPECIFICATIONS		Test Method
FCC 15.247:2006 FHSS		ANSI C63.4:2003 DA 00-705:2000

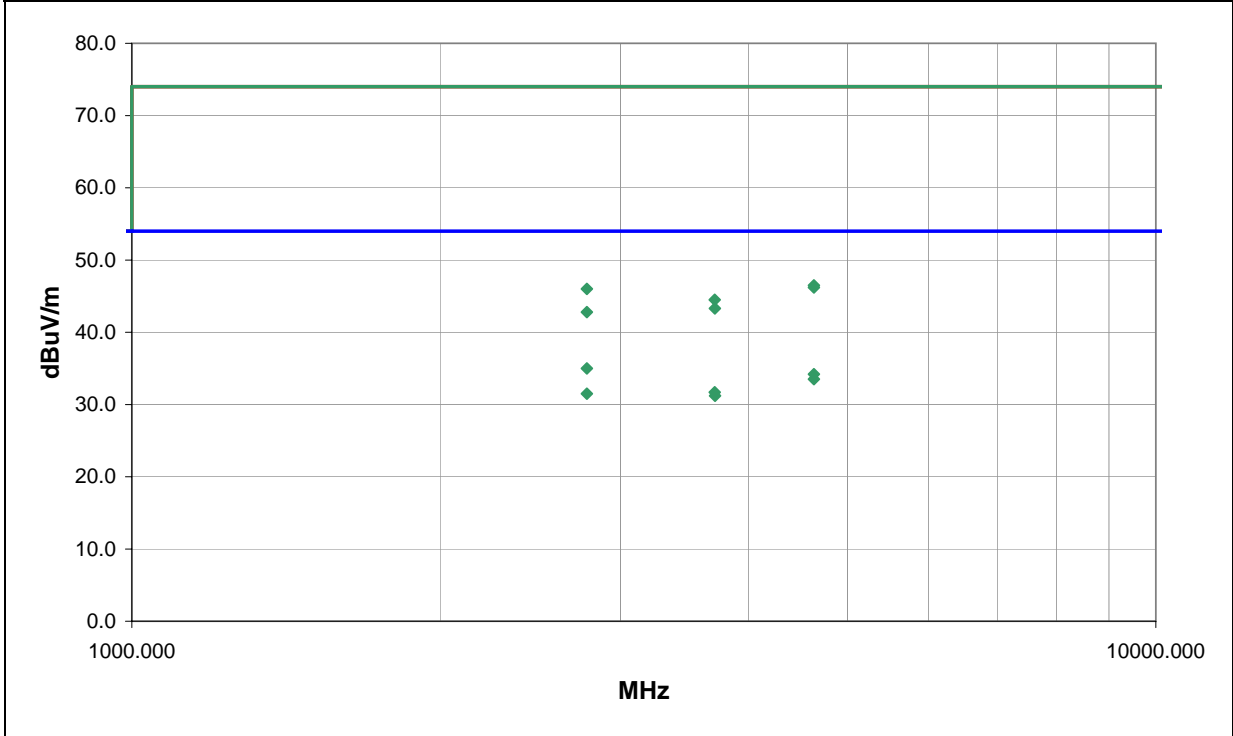
TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

**COMMENTS**  
Mobile Mark Patch Antenna. Intermec Part # 805-629-001 Antenna cable 236-021-001. X axis.

**EUT OPERATING MODES**  
Transmit High channel. no hop

**DEVIATIONS FROM TEST STANDARD**  
No deviations.

Run #	3	NVLAP Lab Code 200630-0	Signature 
Configuration #	2		
Results	Pass		



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
2781.785	28.3	6.7	88.0	1.0	3.0	0.0	V-Horn	AV	0.0	35.0	54.0	-19.0
4636.232	23.2	11.0	227.0	1.0	3.0	0.0	V-Horn	AV	0.0	34.2	54.0	-19.8
4636.105	22.5	11.0	49.0	1.0	3.0	0.0	H-Horn	AV	0.0	33.5	54.0	-20.5
3709.087	23.0	8.7	45.0	1.6	3.0	0.0	H-Horn	AV	0.0	31.7	54.0	-22.3
2781.782	24.8	6.7	-1.0	1.5	3.0	0.0	H-Horn	AV	0.0	31.5	54.0	-22.5
3710.995	22.5	8.7	53.0	1.3	3.0	0.0	V-Horn	AV	0.0	31.2	54.0	-22.8
4635.725	35.5	11.0	227.0	1.0	3.0	0.0	V-Horn	PK	0.0	46.5	74.0	-27.5
4635.785	35.2	11.0	49.0	1.0	3.0	0.0	H-Horn	PK	0.0	46.2	74.0	-27.8
2781.784	39.3	6.7	88.0	1.0	3.0	0.0	V-Horn	PK	0.0	46.0	74.0	-28.0
3709.261	35.8	8.7	45.0	1.6	3.0	0.0	H-Horn	PK	0.0	44.5	74.0	-29.5
3709.918	34.6	8.7	53.0	1.3	3.0	0.0	V-Horn	PK	0.0	43.3	74.0	-30.7
2782.028	36.1	6.7	-1.0	1.5	3.0	0.0	H-Horn	PK	0.0	42.8	74.0	-31.2

NORTHWEST  
**EMC** **SPURIOUS RADIATED EMISSIONS** PSA 2006.09.07  
 EMI 2006.7.11

EUT: IM5	Work Order: ITRM0138
Serial Number: NL 915 8	Date: 10/10/06
Customer: Intermec Technologies Corporation	Temperature: 21°C
Attendees: None	Humidity: 33%
Project: None	Barometric Pres.: 30.2
Tested by: Dan Haas	Power: 120VAC/60Hz
	Job Site: EV01

TEST SPECIFICATIONS		Test Method
FCC 15.247:2006 FHSS		ANSI C63.4:2003 DA 00-705:2000

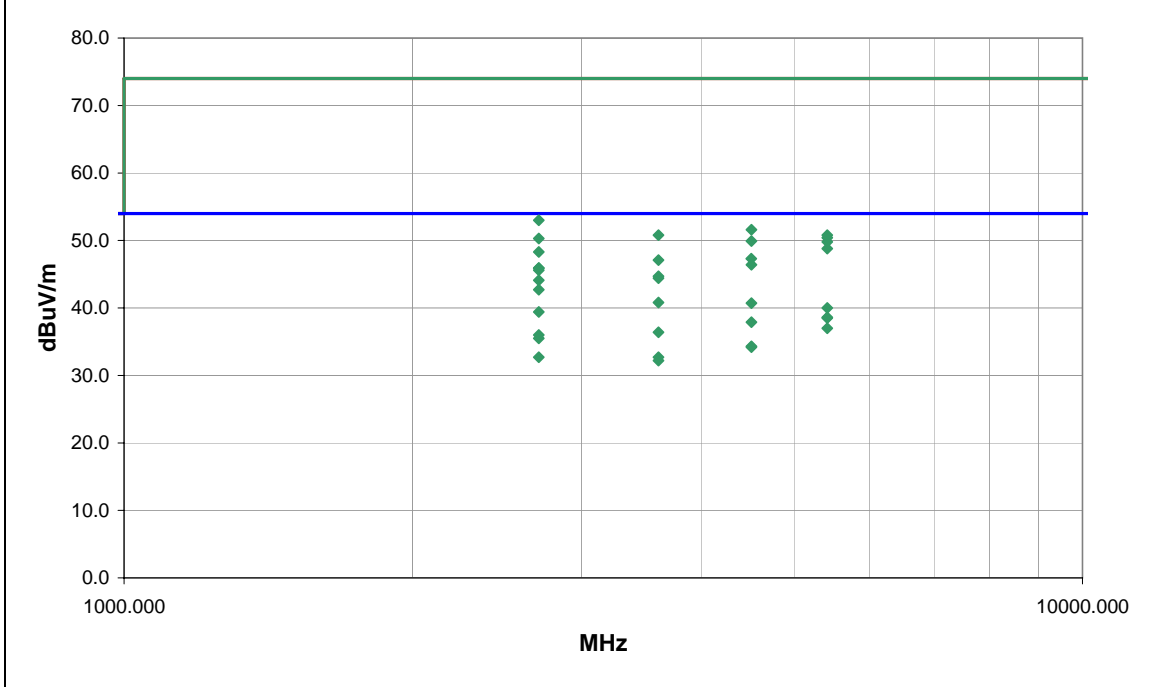
TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

**COMMENTS**  
 Mobile Mark Patch Antenna. Intermec Part # 805-629-001 Antenna cable 236-021-001.

**EUT OPERATING MODES**  
 Transmit Low channel, no hop.

**DEVIATIONS FROM TEST STANDARD**  
 No deviations.

Run #	4	 Signature
Configuration #	2	
Results	Pass	



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
2708.304	39.4	6.5	214.0	1.1	3.0	0.0	H-Horn	AV	0.0	45.9	54.0	-8.1	Z axis
2708.274	36.2	6.5	113.0	1.1	3.0	0.0	V-Horn	AV	0.0	42.7	54.0	-11.3	Y axis
3610.997	32.2	8.6	295.0	1.1	3.0	0.0	V-Horn	AV	0.0	40.8	54.0	-13.2	Z axis
4513.784	30.0	10.7	273.0	1.1	3.0	0.0	H-Horn	AV	0.0	40.7	54.0	-13.3	Z axis
5416.489	26.7	13.3	137.0	1.1	3.0	0.0	V-Horn	AV	0.0	40.0	54.0	-14.0	Z axis
2708.292	32.9	6.5	81.0	1.0	3.0	0.0	V-Horn	AV	0.0	39.4	54.0	-14.6	X axis
5416.484	25.2	13.4	51.0	1.7	3.0	0.0	H-Horn	AV	0.0	38.6	54.0	-15.4	Z axis
5416.491	25.2	13.3	319.0	1.0	3.0	0.0	V-Horn	AV	0.0	38.5	54.0	-15.5	X axis
4513.804	27.2	10.7	262.0	1.1	3.0	0.0	V-Horn	AV	0.0	37.9	54.0	-16.1	Z axis
5416.581	23.6	13.4	-1.0	1.9	3.0	0.0	H-Horn	AV	0.0	37.0	54.0	-17.0	X axis
3611.007	27.8	8.6	230.0	1.0	3.0	0.0	H-Horn	AV	0.0	36.4	54.0	-17.6	Z axis
2708.274	29.5	6.5	8.0	1.1	3.0	0.0	H-Horn	AV	0.0	36.0	54.0	-18.0	Y axis
2708.270	29.0	6.5	174.0	1.0	3.0	0.0	H-Horn	AV	0.0	35.5	54.0	-18.5	X axis
4513.780	23.6	10.7	331.0	1.4	3.0	0.0	V-Horn	AV	0.0	34.3	54.0	-19.7	X axis
4513.706	23.5	10.7	313.0	1.0	3.0	0.0	H-Horn	AV	0.0	34.2	54.0	-19.8	X axis
2708.294	46.5	6.5	214.0	1.1	3.0	0.0	H-Horn	PK	0.0	53.0	74.0	-21.0	Z axis
2708.254	26.2	6.5	97.0	1.1	3.0	0.0	V-Horn	AV	0.0	32.7	54.0	-21.3	Z axis
3611.011	24.1	8.6	97.0	1.0	3.0	0.0	H-Horn	AV	0.0	32.7	54.0	-21.3	X axis
3611.103	23.6	8.6	296.0	1.0	3.0	0.0	V-Horn	AV	0.0	32.2	54.0	-21.8	X axis
4513.488	40.9	10.7	273.0	1.1	3.0	0.0	H-Horn	PK	0.0	51.6	74.0	-22.4	Z axis

EUT: IM5		Work Order: ITRM0138
Serial Number: NL 915 8		Date: 10/10/06
Customer: Intermec Technologies Corporation		Temperature: 21°C
Attendees: None		Humidity: 33%
Project: None		Barometric Pres.: 30.2
Tested by: Dan Haas	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS		Test Method
FCC 15.247:2006 FHSS		ANSI C63.4:2003 DA 00-705:2000

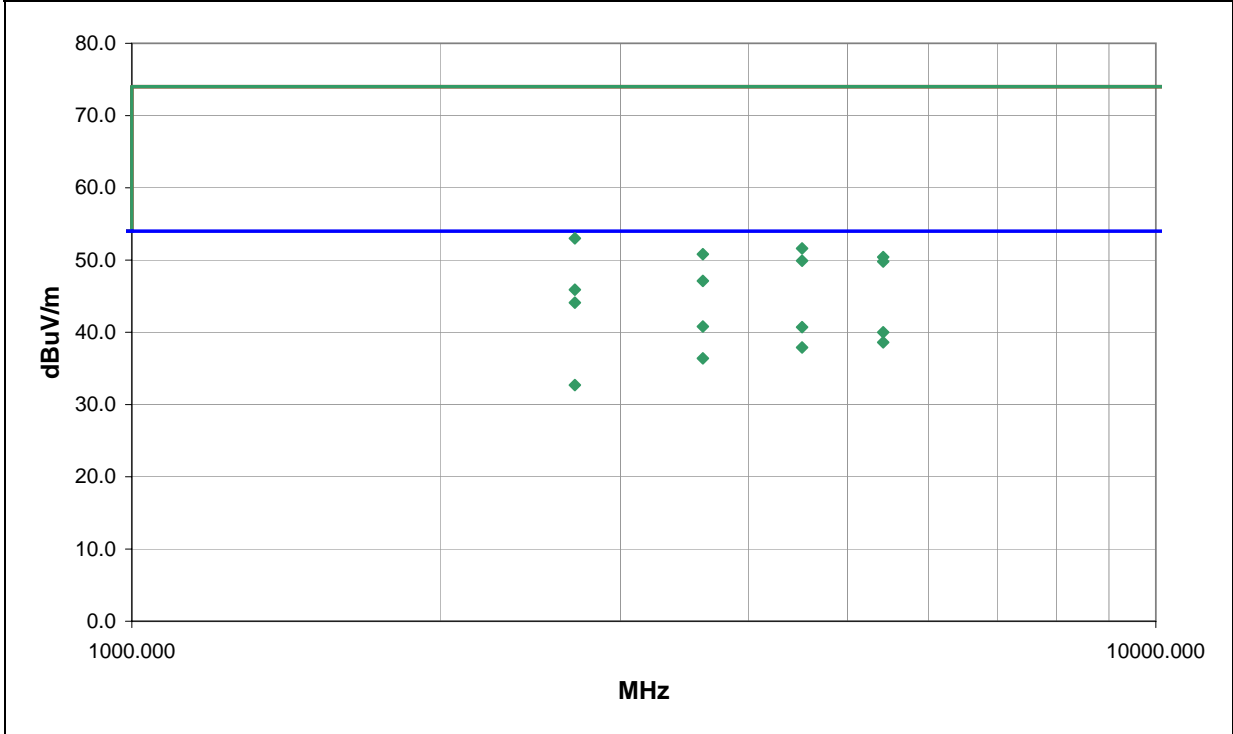
TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

**COMMENTS**  
Mobile Mark Patch Antenna. Intermec Part # 805-629-001 Antenna cable 236-021-001. Z axis.

**EUT OPERATING MODES**  
Transmit Low channel, no hop.

**DEVIATIONS FROM TEST STANDARD**  
No deviations.

Run #	5	NVLAP Lab Code 200630-0	Signature 
Configuration #	2		
Results	Pass		



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
2708.304	39.4	6.5	214.0	1.1	3.0	0.0	H-Horn	AV	0.0	45.9	54.0	-8.1
3610.997	32.2	8.6	295.0	1.1	3.0	0.0	V-Horn	AV	0.0	40.8	54.0	-13.2
4513.784	30.0	10.7	273.0	1.1	3.0	0.0	H-Horn	AV	0.0	40.7	54.0	-13.3
5416.489	26.7	13.3	137.0	1.1	3.0	0.0	V-Horn	AV	0.0	40.0	54.0	-14.0
5416.484	25.2	13.4	51.0	1.7	3.0	0.0	H-Horn	AV	0.0	38.6	54.0	-15.4
4513.804	27.2	10.7	262.0	1.1	3.0	0.0	V-Horn	AV	0.0	37.9	54.0	-16.1
3611.007	27.8	8.6	230.0	1.0	3.0	0.0	H-Horn	AV	0.0	36.4	54.0	-17.6
2708.294	46.5	6.5	214.0	1.1	3.0	0.0	H-Horn	PK	0.0	53.0	74.0	-21.0
2708.254	26.2	6.5	97.0	1.1	3.0	0.0	V-Horn	AV	0.0	32.7	54.0	-21.3
4513.488	40.9	10.7	273.0	1.1	3.0	0.0	H-Horn	PK	0.0	51.6	74.0	-22.4
3611.020	42.2	8.6	295.0	1.1	3.0	0.0	V-Horn	PK	0.0	50.8	74.0	-23.2
5416.572	37.1	13.3	137.0	1.1	3.0	0.0	V-Horn	PK	0.0	50.4	74.0	-23.6
4513.788	39.2	10.7	262.0	1.1	3.0	0.0	V-Horn	PK	0.0	49.9	74.0	-24.1
5416.801	36.5	13.3	51.0	1.7	3.0	0.0	H-Horn	PK	0.0	49.8	74.0	-24.2
3611.103	38.5	8.6	230.0	1.0	3.0	0.0	H-Horn	PK	0.0	47.1	74.0	-26.9
2708.391	37.6	6.5	97.0	1.1	3.0	0.0	V-Horn	PK	0.0	44.1	74.0	-29.9



EUT: IM5		Work Order: ITRM0138
Serial Number: NL 915 8		Date: 10/10/06
Customer: Intermec Technologies Corporation		Temperature: 22°C
Attendees: None		Humidity: 32%
Project: None		Barometric Pres.: 30.2
Tested by: Dan Haas	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS		Test Method
FCC 15.247:2006 FHSS		ANSI C63.4:2003 DA 00-705:2000

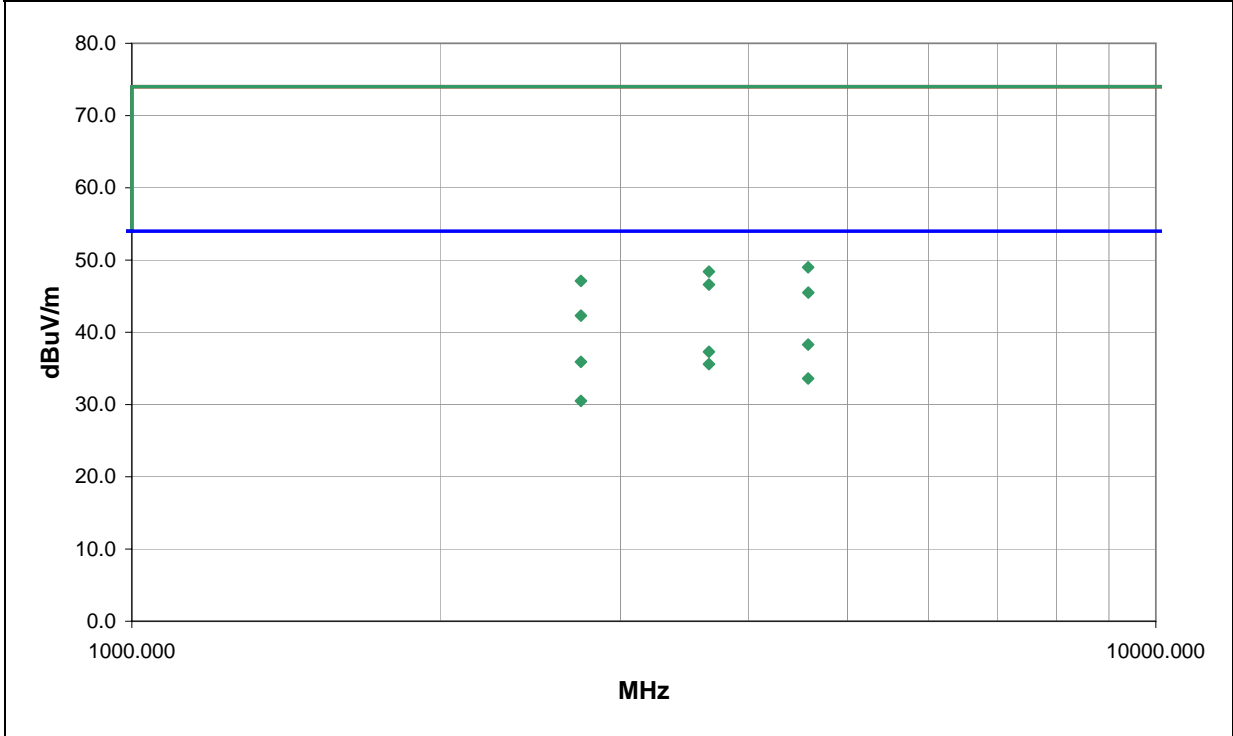
TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

**COMMENTS**  
Mobile Mark Patch Antenna. Intermec Part # 805-629-001 Antenna cable 236-021-001. Z axis

**EUT OPERATING MODES**  
Transmit Mid channel, no hop.

**DEVIATIONS FROM TEST STANDARD**  
No deviations.

Run #	6	NVLAP Lab Code 200630-0	Signature 
Configuration #	2		
Results	Pass		



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
4576.293	27.4	10.9	272.0	1.2	3.0	0.0	H-Horn	AV	0.0	38.3	54.0	-15.7
3661.009	28.6	8.7	309.0	1.0	3.0	0.0	V-Horn	AV	0.0	37.3	54.0	-16.7
2745.803	29.4	6.5	257.0	1.4	3.0	0.0	H-Horn	AV	0.0	35.9	54.0	-18.1
3661.015	26.9	8.7	313.0	1.0	3.0	0.0	H-Horn	AV	0.0	35.6	54.0	-18.4
4576.290	22.7	10.9	218.0	1.0	3.0	0.0	V-Horn	AV	0.0	33.6	54.0	-20.4
2745.807	24.0	6.5	92.0	1.1	3.0	0.0	V-Horn	AV	0.0	30.5	54.0	-23.5
4576.287	38.1	10.9	272.0	1.2	3.0	0.0	H-Horn	PK	0.0	49.0	74.0	-25.0
3661.051	39.7	8.7	309.0	1.0	3.0	0.0	V-Horn	PK	0.0	48.4	74.0	-25.6
2745.519	40.6	6.5	257.0	1.4	3.0	0.0	H-Horn	PK	0.0	47.1	74.0	-26.9
3660.968	37.9	8.7	313.0	1.0	3.0	0.0	H-Horn	PK	0.0	46.6	74.0	-27.4
4576.893	34.6	10.9	218.0	1.0	3.0	0.0	V-Horn	PK	0.0	45.5	74.0	-28.5
2745.615	35.8	6.5	92.0	1.1	3.0	0.0	V-Horn	PK	0.0	42.3	74.0	-31.7

EUT: IM5		Work Order: ITRM0138
Serial Number: NL 915 8		Date: 10/10/06
Customer: Intermec Technologies Corporation		Temperature: 22°C
Attendees: None		Humidity: 32%
Project: None		Barometric Pres.: 30.2
Tested by: Dan Haas	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS		Test Method
FCC 15.247:2006 FHSS		ANSI C63.4:2003 DA 00-705:2000

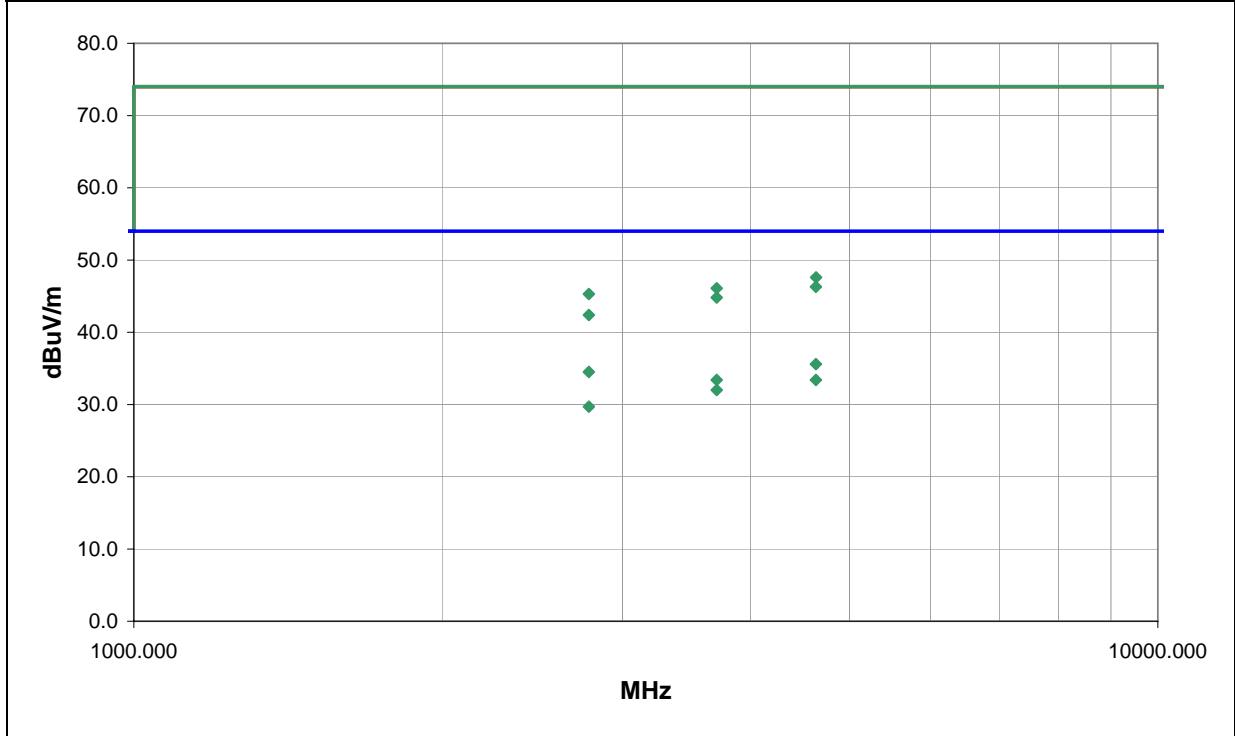
TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

**COMMENTS**  
Mobile Mark Patch Antenna. Intermec Part # 805-629-001 Antenna cable 236-021-001. Z axis.

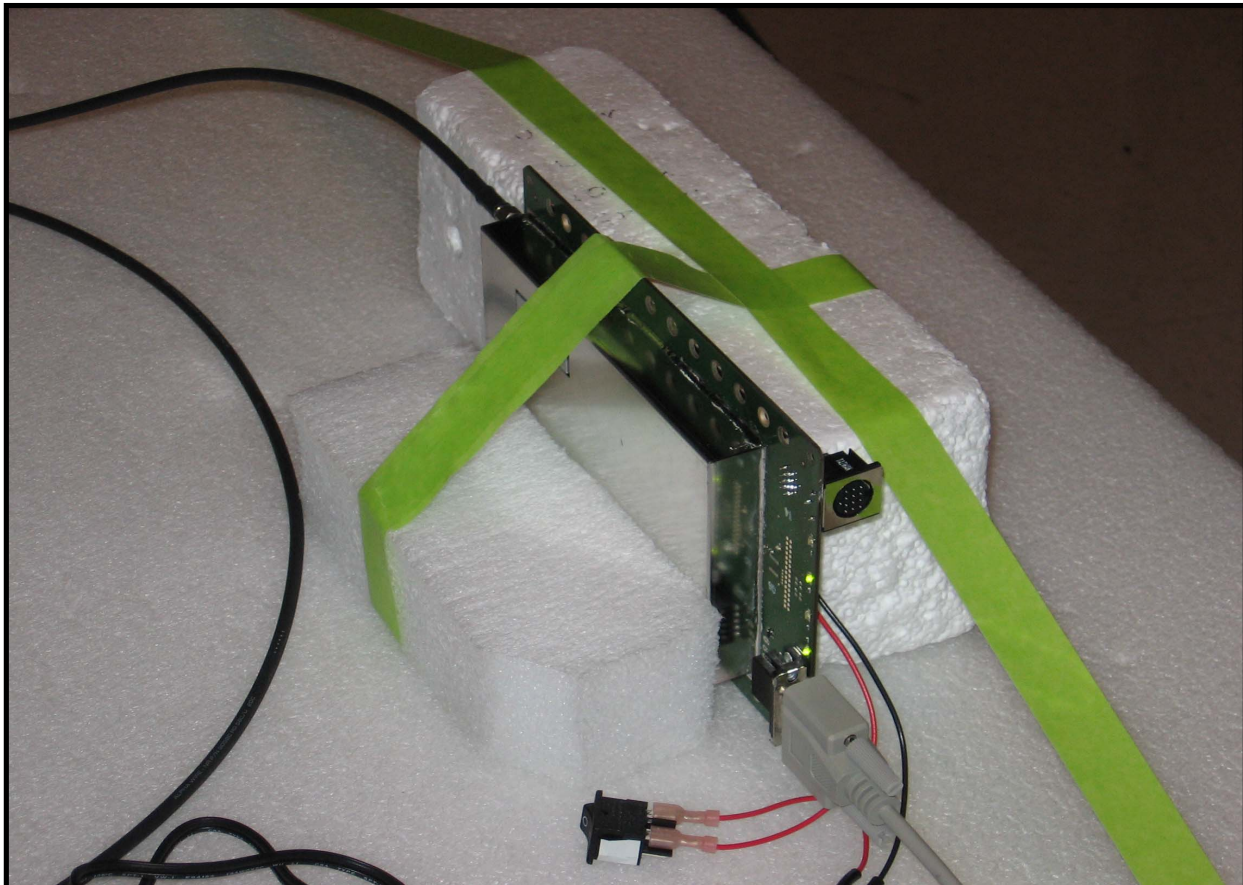
**EUT OPERATING MODES**  
Transmit High channel, no hop

**DEVIATIONS FROM TEST STANDARD**  
No deviations.

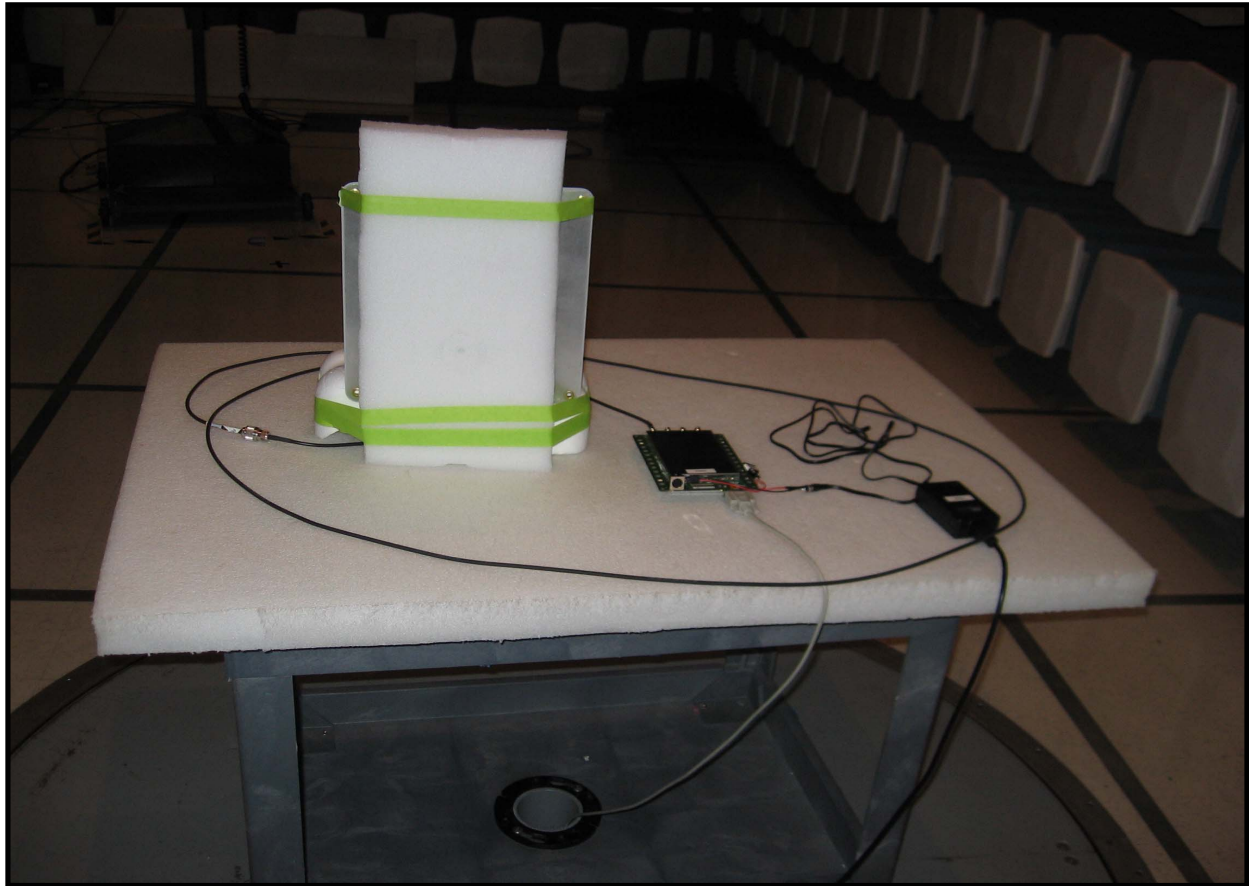
Run #	7	NVLAP Lab Code 200630-0	Signature 
Configuration #	2		
Results	Pass		



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
4636.215	24.6	11.0	277.0	1.0	3.0	0.0	H-Horn	AV	0.0	35.6	54.0	-18.4
2781.775	27.8	6.7	226.0	1.0	3.0	0.0	H-Horn	AV	0.0	34.5	54.0	-19.5
3709.045	24.7	8.7	247.0	1.3	3.0	0.0	H-Horn	AV	0.0	33.4	54.0	-20.6
4635.149	22.4	11.0	342.0	2.5	3.0	0.0	V-Horn	AV	0.0	33.4	54.0	-20.6
3709.038	23.3	8.7	301.0	1.0	3.0	0.0	V-Horn	AV	0.0	32.0	54.0	-22.0
2781.792	23.0	6.7	293.0	1.0	3.0	0.0	V-Horn	AV	0.0	29.7	54.0	-24.3
4636.589	36.6	11.0	277.0	1.0	3.0	0.0	H-Horn	PK	0.0	47.6	74.0	-26.4
4635.785	35.3	11.0	342.0	2.5	3.0	0.0	V-Horn	PK	0.0	46.3	74.0	-27.7
3708.758	37.4	8.7	247.0	1.3	3.0	0.0	H-Horn	PK	0.0	46.1	74.0	-27.9
2781.624	38.6	6.7	226.0	1.0	3.0	0.0	H-Horn	PK	0.0	45.3	74.0	-28.7
3708.668	36.1	8.7	301.0	1.0	3.0	0.0	V-Horn	PK	0.0	44.8	74.0	-29.2
2781.798	35.7	6.7	293.0	1.0	3.0	0.0	V-Horn	PK	0.0	42.4	74.0	-31.6







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
Spectrum Analyzer	Agilent	E4407B	AAU	9/20/2006	12
Signal Generator	Hewlett-Packard	8648D	TGC	1/27/2006	13
Power Sensor	Gigatronics	80701A	SPL	9/19/2006	12
Power Meter	Gigatronics	8651A	SPM	9/19/2006	12

#### MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is 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 its maximum data rate in a no hop mode.

**EMC**

**OCCUPIED BANDWIDTH**

EUT:	IM5	Work Order:	ITRM0138
Serial Number:	NL 915 4	Date:	10/09/06
Customer:	Intermec Technologies Corporation	Temperature:	21°C
Attendees:	None	Humidity:	34%
Project:	None	Barometric Pres.:	30.31
Tested by:	Rod Peloquin	Power:	120VAC/60Hz
		Job Site:	EV06

<b>TEST SPECIFICATIONS</b>	Test Method
FCC 15.247:2006 FHSS	ANSI C63.4:2003, DA 00-705:2000

**COMMENTS**

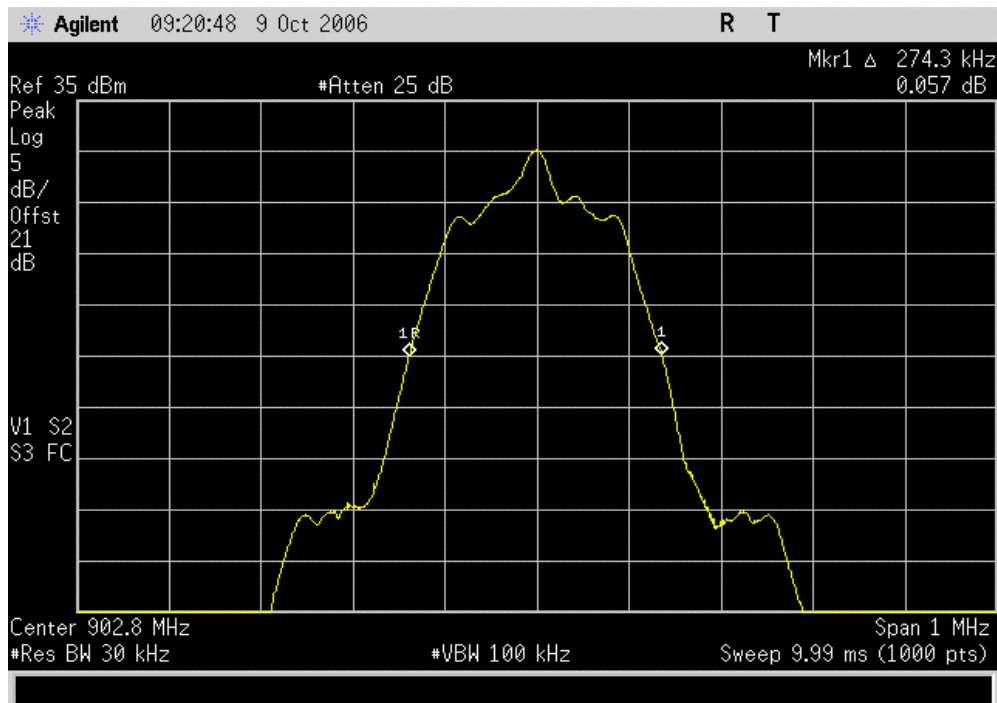
Modulated PR9 at default rate

**DEVIATIONS FROM TEST STANDARD**

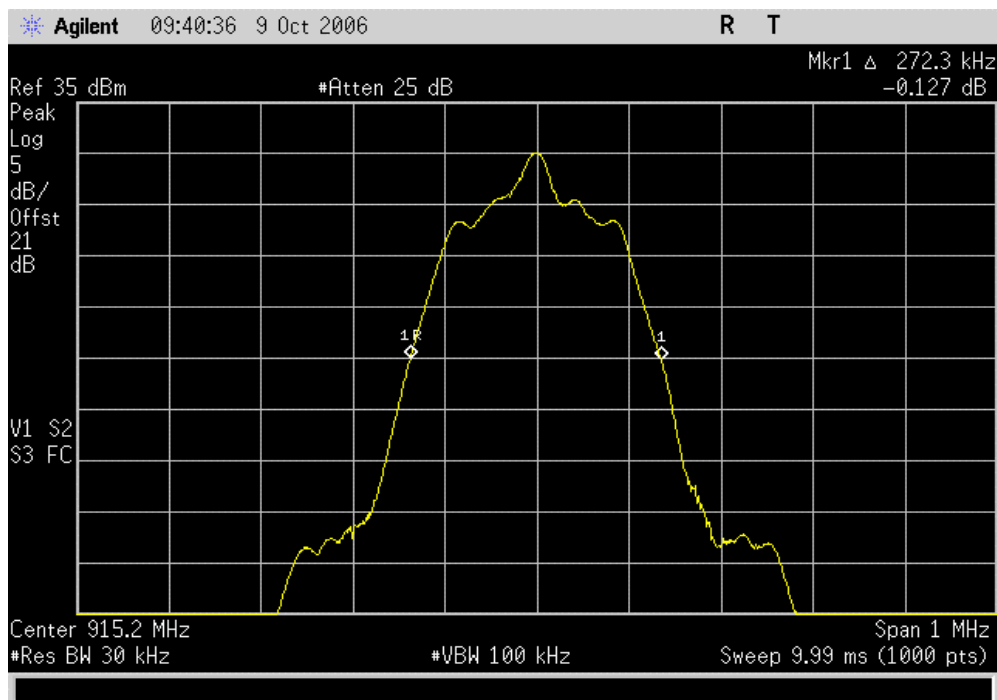
Configuration #	1	Signature <i>Rodney L. Peloquin</i>
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	Value	Limit	Results
Low Channel	274.3 kHz	≤ 500 kHz	Pass
Mid Channel	272.3 kHz	≤ 500 kHz	Pass
High Channel	272.3 kHz	≤ 500 kHz	Pass

Low Channel		
<b>Result:</b> Pass	<b>Value:</b> 274.3 kHz	<b>Limit:</b> ≤ 500 kHz

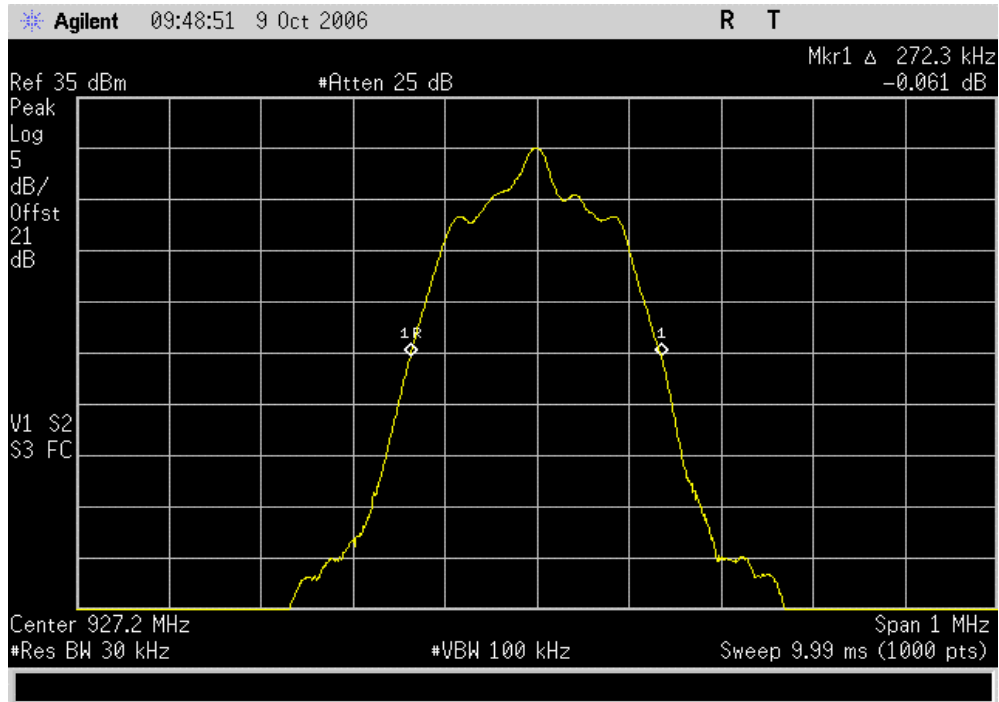


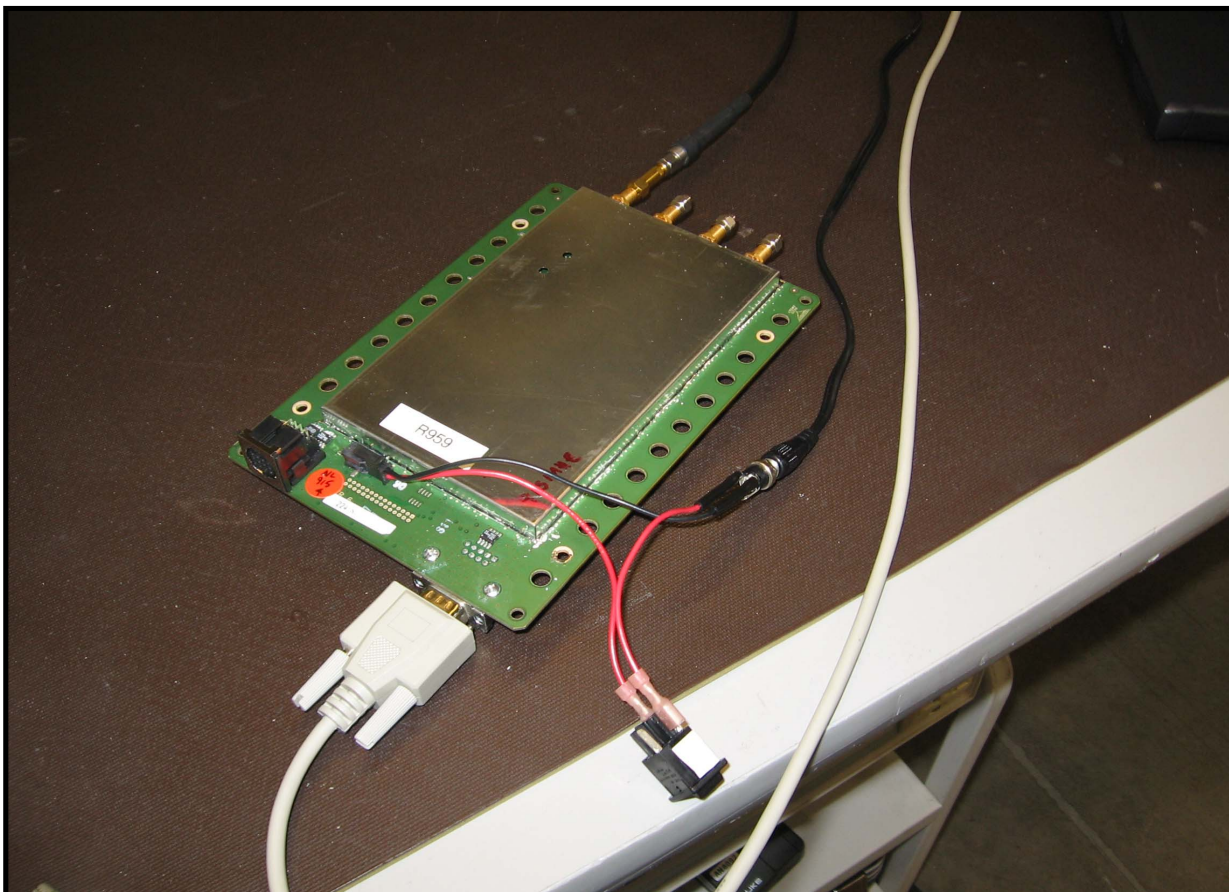
Mid Channel		
<b>Result:</b> Pass	<b>Value:</b> 272.3 kHz	<b>Limit:</b> ≤ 500 kHz





High Channel		
<b>Result:</b> Pass	<b>Value:</b> 272.3 kHz	<b>Limit:</b> ≤ 500 kHz





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
RF Detector	RLC Electronics	CR-133-R	ZZA	NCR	0
Oscilloscope	Tektronix	TDS 3052	TOF	12/8/2005	13
Power Sensor	Gigatronics	80701A	SPL	9/19/2006	12
Power Meter	Gigatronics	8651A	SPM	9/19/2006	12
Signal Generator	Hewlett-Packard	8648D	TGC	1/27/2006	13

#### MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

#### TEST DESCRIPTION

The peak output power was measured with the EUT set to low, medium, and high transmit frequencies. The EUT was transmitting at its maximum output power. The measurement was made using a direct connection between the RF output of the EUT and a RF detector diode. The DC output of the diode was measured with the oscilloscope. The signal generator, tuned to the transmit frequency, was then substituted for the EUT. The CW output of the signal generator was adjusted until the DC output of the RF detector diode match the peak level produced when connected to the EUT. To further reduce measurement error, the power meter and sensor were then used to measure the output power level of the signal generator.

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

**EMC**

**OUTPUT POWER**

EUT:	IM5	Work Order:	ITRM0138
Serial Number:	NL 915 4	Date:	10/09/06
Customer:	Intermec Technologies Corporation	Temperature:	21°C
Attendees:	None	Humidity:	34%
Project:	None	Barometric Pres.:	30.31
Tested by:	Rod Peloquin	Power:	120VAC/60Hz
		Job Site:	EV06

<b>TEST SPECIFICATIONS</b>		Test Method	
FCC 15.247:2006 FHSS		ANSI C63.4:2003, DA 00-705:2000	

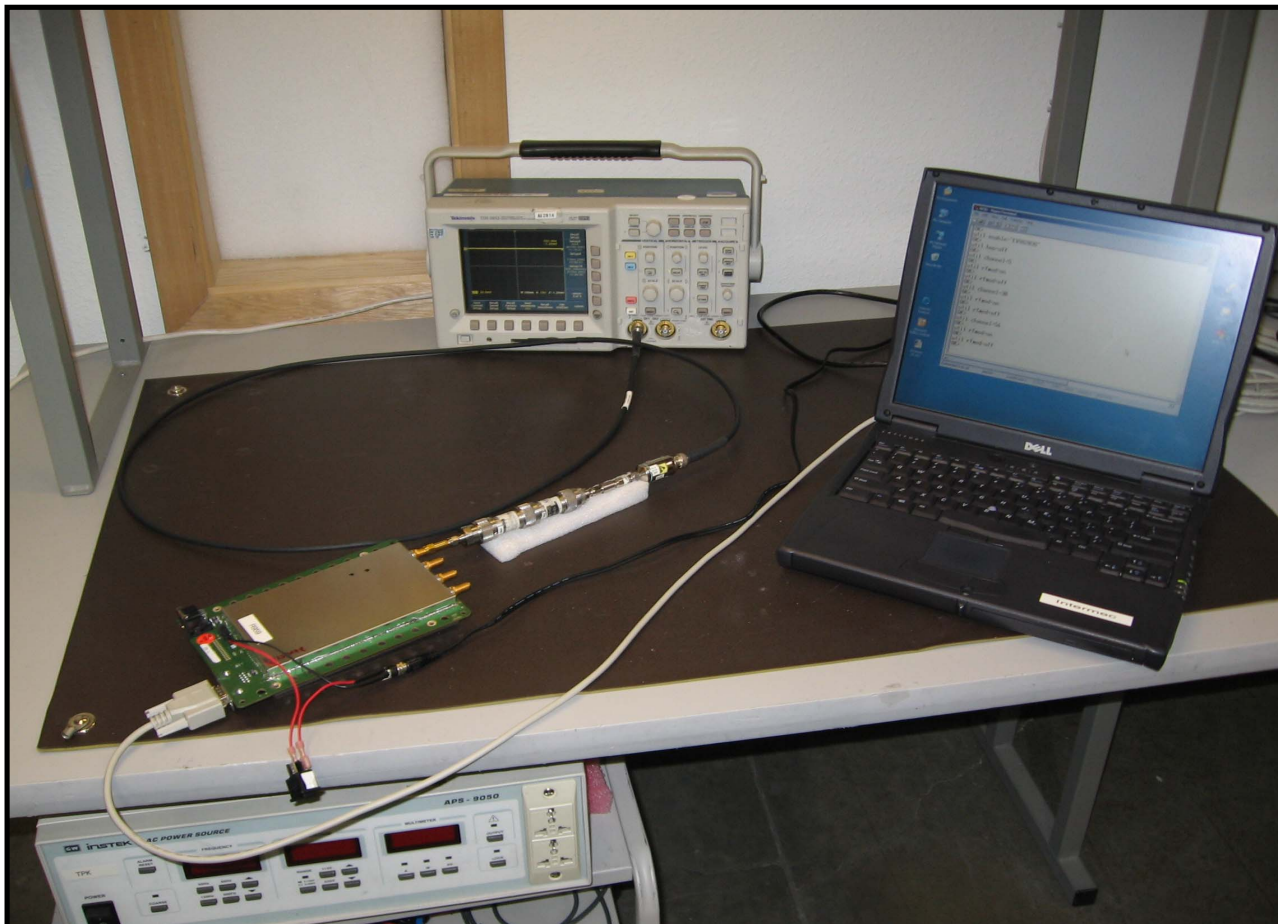
**COMMENTS**

Modulated PR9 at normal rate

**DEVIATIONS FROM TEST STANDARD**

Configuration #	1	Signature <i>Rodney L. Peloquin</i>
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	Value		Limit	Results
	dBm	W		
Low Channel	29.73	0.939	1 W	Pass
Mid Channel	29.73	0.939	1 W	Pass
High Channel	29.78	0.950	1 W	Pass



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
Spectrum Analyzer	Agilent	E4407B	AAU	9/20/2006	12
Power Meter	Gigatronics	8651A	SPM	9/19/2006	12
Power Sensor	Gigatronics	80701A	SPL	9/19/2006	12
Signal Generator	Hewlett-Packard	8648D	TGC	1/27/2006	13

#### MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is 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 its maximum data rate in a no hop mode. The channels closest to the band edges were selected.

**EMC**

**BAND EDGE COMPLIANCE**

EUT:	IM5	Work Order:	ITRM0138
Serial Number:	NL 915 4	Date:	10/09/06
Customer:	Intermec Technologies Corporation	Temperature:	21°C
Attendees:	None	Humidity:	34%
Project:	None	Barometric Pres.:	30.31
Tested by:	Rod Peloquin	Power:	120VAC/60Hz
		Job Site:	EV06

<b>TEST SPECIFICATIONS</b>		Test Method	
FCC 15.247:2006 FHSS		ANSI C63.4:2003, DA 00-705:2000	

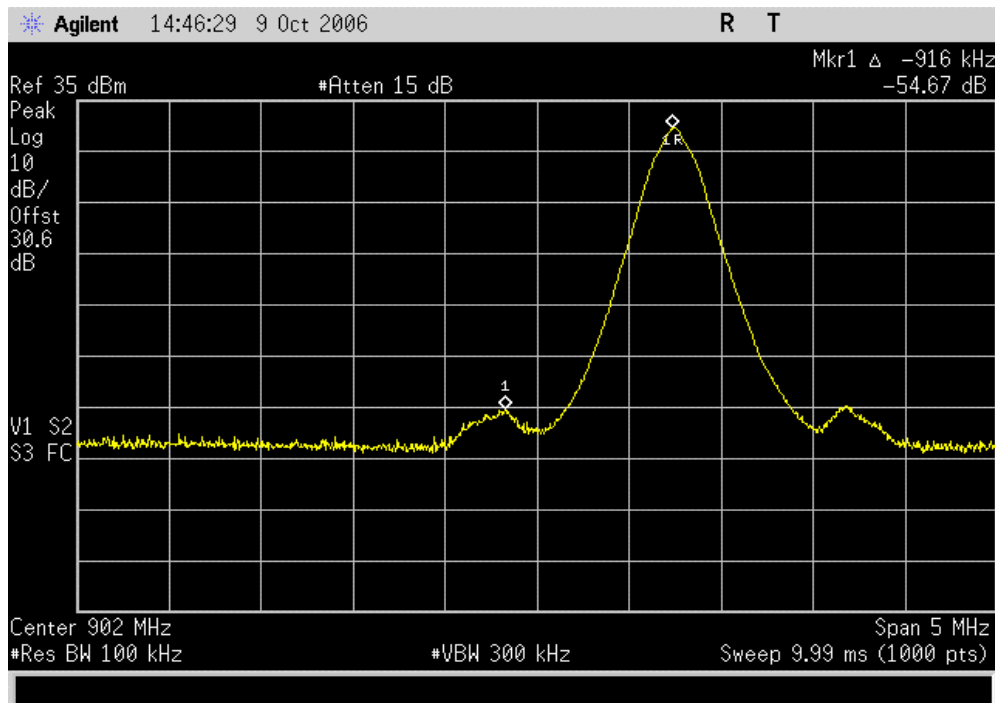
**COMMENTS**

**DEVIATIONS FROM TEST STANDARD**

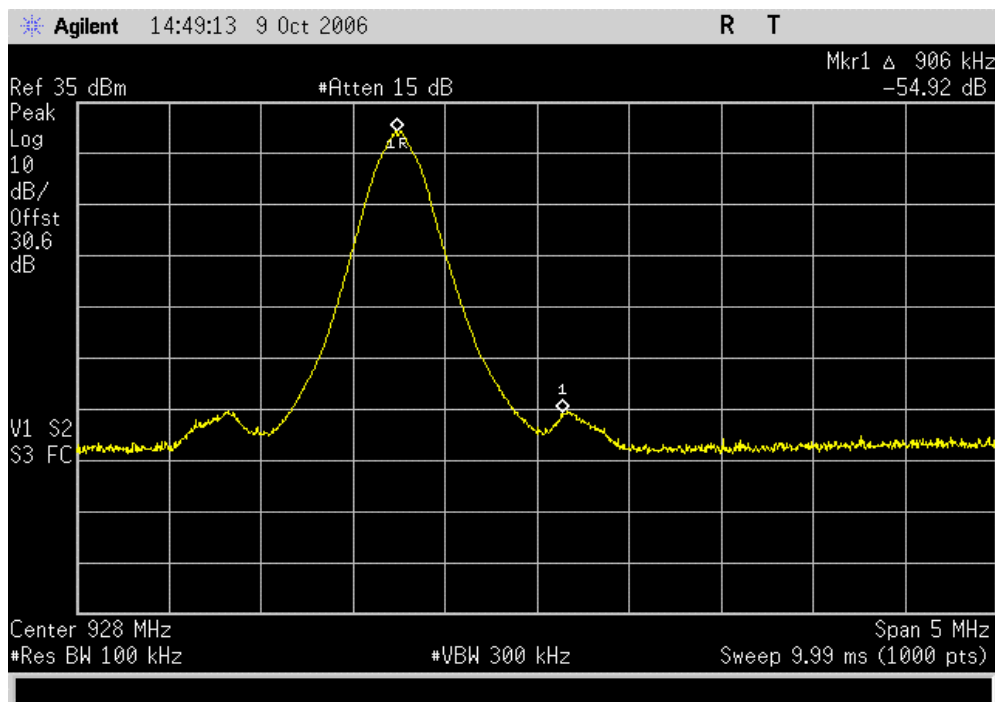
Configuration #	1	Signature <i>Rodney Le Pellego</i>
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	Value	Limit	Results
Low Channel	-54.7 dBc	≤ - 20 dBc	Pass
High Channel	-54.9 dBc	≤ - 20 dBc	Pass

Low Channel  
**Result:** Pass      **Value:** -54.7 dBc      **Limit:** ≤ -20 dBc



High Channel  
**Result:** Pass      **Value:** -54.9 dBc      **Limit:** ≤ -20 dBc







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
Spectrum Analyzer	Agilent	E4407B	AAU	9/20/2006	12
Power Sensor	Gigatronics	80701A	SPL	9/19/2006	12
Power Meter	Gigatronics	8651A	SPM	9/19/2006	12
Signal Generator	Hewlett-Packard	8648D	TGC	1/27/2006	13

#### MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is 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 its maximum data rate in a no hop mode. For each transmit frequency, the spectrum was scanned throughout the specified frequency.

**EMC**

**SPURIOUS CONDUCTED EMISSIONS**

EUT:	IM5	Work Order:	ITRM0138
Serial Number:	NL 915 4	Date:	10/09/06
Customer:	Intermec Technologies Corporation	Temperature:	23°C
Attendees:	None	Humidity:	32%
Project:	None	Barometric Pres.:	30.21
Tested by:	Rod Peloquin	Power:	120VAC/60Hz
		Job Site:	EV06

<b>TEST SPECIFICATIONS</b>	Test Method
FCC 15.247:2006 FHSS	ANSI C63.4:2003, DA 00-705:2000

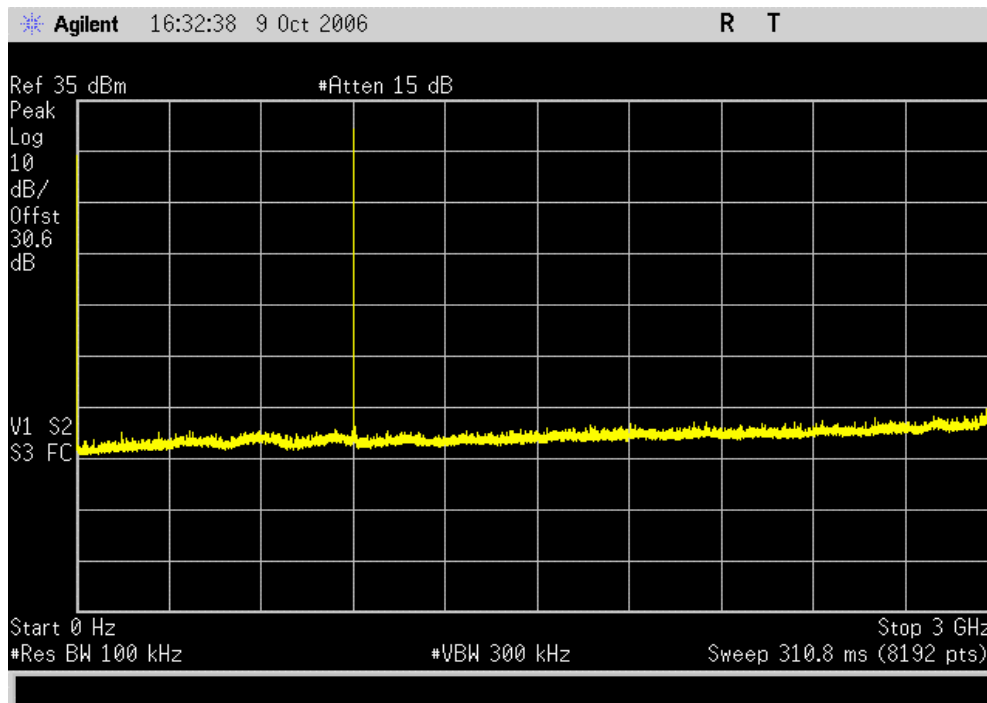
**COMMENTS**  
 Modulated PR9 at maximum data rate

**DEVIATIONS FROM TEST STANDARD**

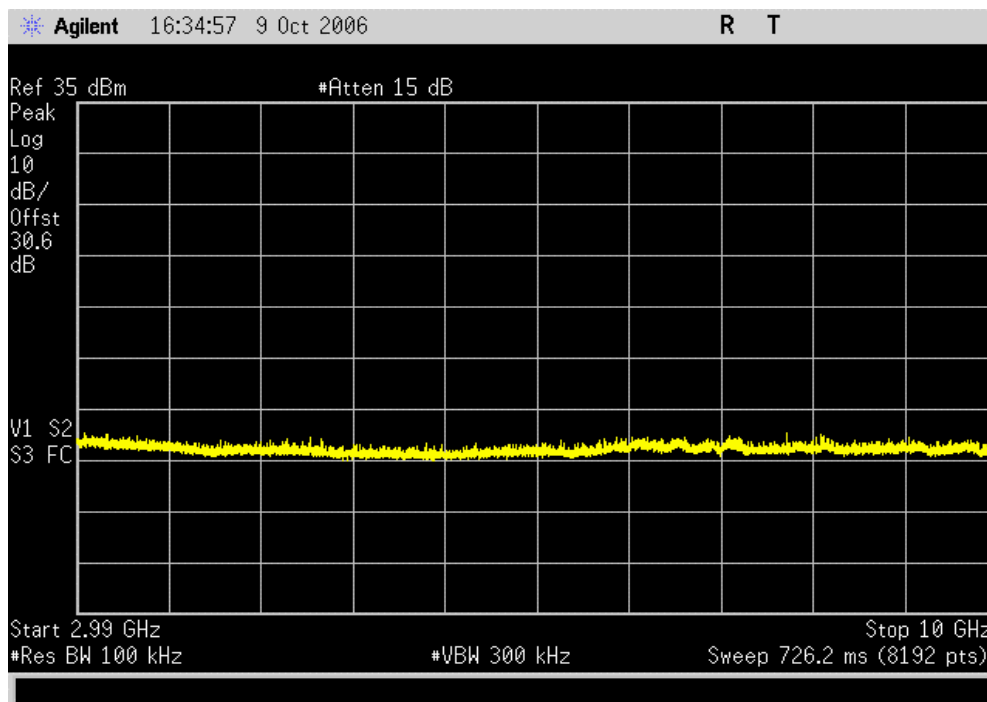
Configuration #	1	Signature <i>Rodney L. Peloquin</i>
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		Value	Limit	Results
Low Channel	0 - 3 GHz	< -50 dBc	≤ -20 dBc	Pass
	2.99 GHz - 10 GHz	< -50 dBc	≤ -20 dBc	Pass
Mid Channel	0 - 3 GHz	< -50 dBc	≤ -20 dBc	Pass
	2.99 GHz - 10 GHz	< -50 dBc	≤ -20 dBc	Pass
High Channel	0 - 3 GHz	< -50 dBc	≤ -20 dBc	Pass
	2.99 GHz - 10 GHz	< -50 dBc	≤ -20 dBc	Pass

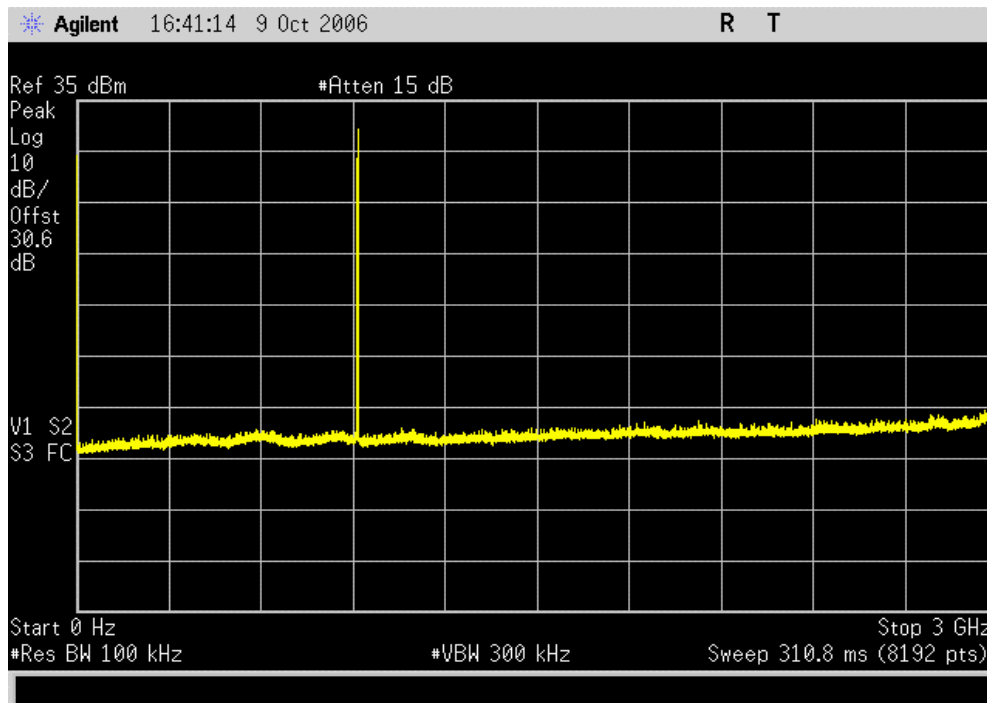
Low Channel, 0 - 3 GHz  
**Result:** Pass      **Value:** < -50 dBc      **Limit:** ≤ -20 dBc



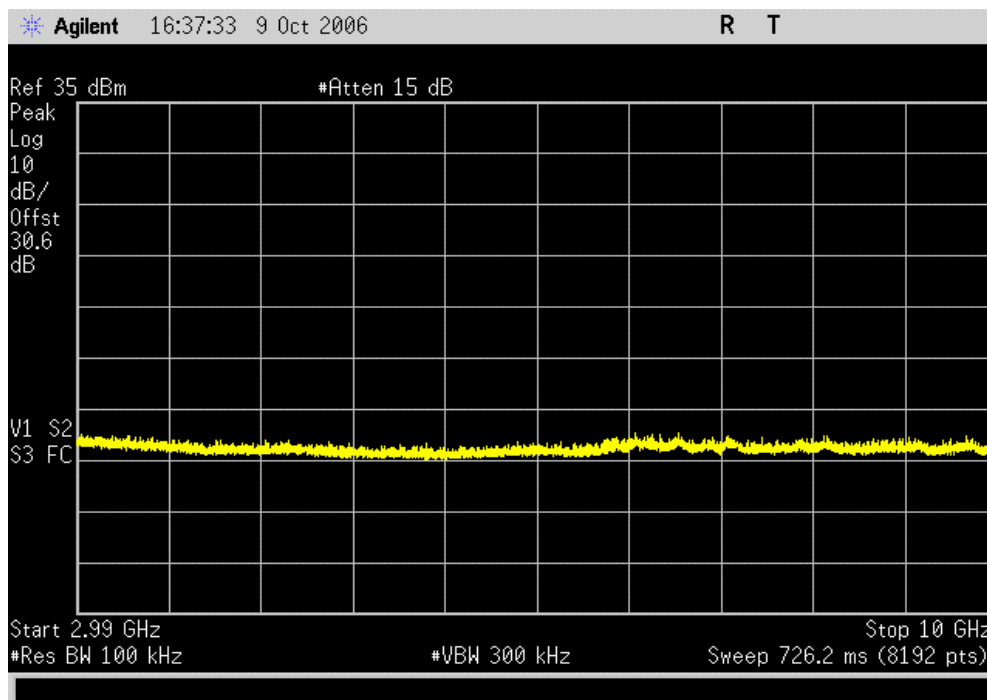
Low Channel, 2.99 GHz - 10 GHz  
**Result:** Pass      **Value:** < -50 dBc      **Limit:** ≤ -20 dBc



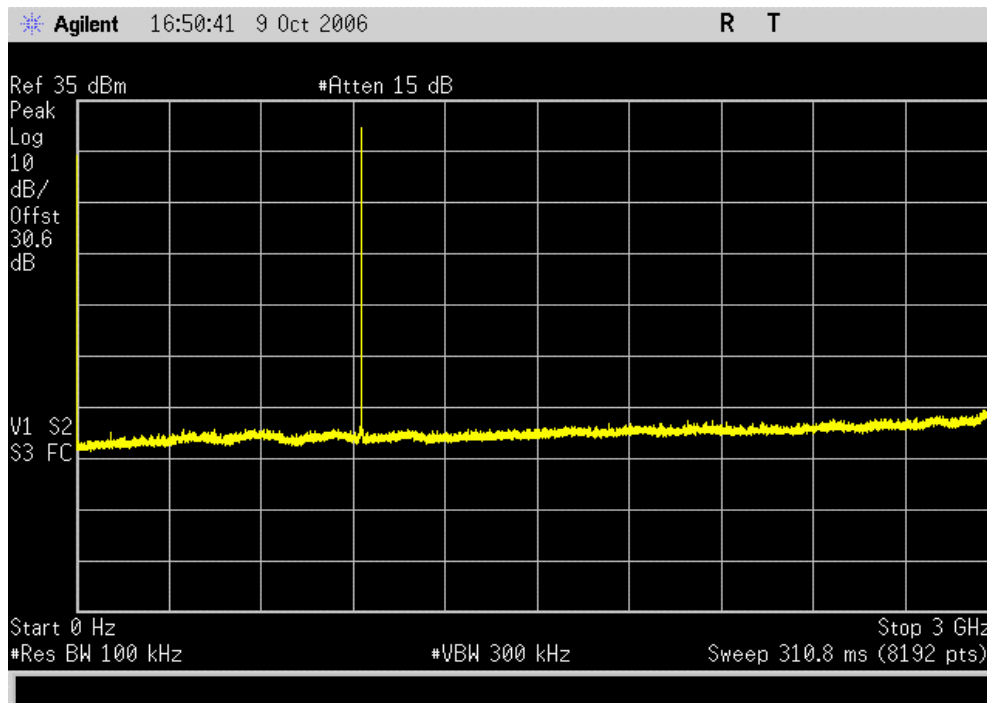
Mid Channel, 0 - 3 GHz  
**Result:** Pass      **Value:** < -50 dBc      **Limit:** ≤ -20 dBc



Mid Channel, 2.99 GHz - 10 GHz  
**Result:** Pass      **Value:** < -50 dBc      **Limit:** ≤ -20 dBc



High Channel, 0 - 3 GHz  
**Result:** Pass      **Value:** < -50 dBc      **Limit:** ≤ -20 dBc



High Channel, 2.99 GHz - 10 GHz  
**Result:** Pass      **Value:** < -50 dBc      **Limit:** ≤ -20 dBc

