

INTERMEC Technologies Corporation

2011B

December 10, 2004

Report No. INMC0180

Report Prepared By



www.nwemc.com
1-888-EMI-CERT

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EMC Test Report



22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Certificate of Test
Issue Date: December 10, 2004
INTERMEC Technologies Corporation
Model: 2011B

		Emissions	
Specification	Test Method	Pass	Fail
FCC 15.207 AC Powerline Conducted Emissions:2004	ANSI C63.4:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>
FCC 15.247(d) Spurious Radiated Emissions:2004	ANSI C63.4:2003	<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:

Don Facteau, IS Manager

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 recognized under the United States Department of Commerce, National Institute of Standards and Technology, 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. Accreditation has been granted to Northwest EMC, Inc. under Certificate Numbers: 200629-0, 200630-0, and 200676-0.



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).



Technology International: Assessed in accordance with ISO Guide 25 defining the general international requirements for the competence of calibration and testing laboratories and with ITI assessment criteria LACO196. Based upon that assessment Interference Technology International, Ltd., has granted approval for specifications implementing the EU Directive on EMC (89/336/EEC and amendments). The scope of the approval was provided on a Schedule of Assessment supplied with the certificate and is available upon request.



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 Nos. - Hillsboro: C-1071 and R-1025, Irvine: C-2094 and R-1943, Newberg: C-1877 and R-1760, 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>

What is measurement uncertainty?

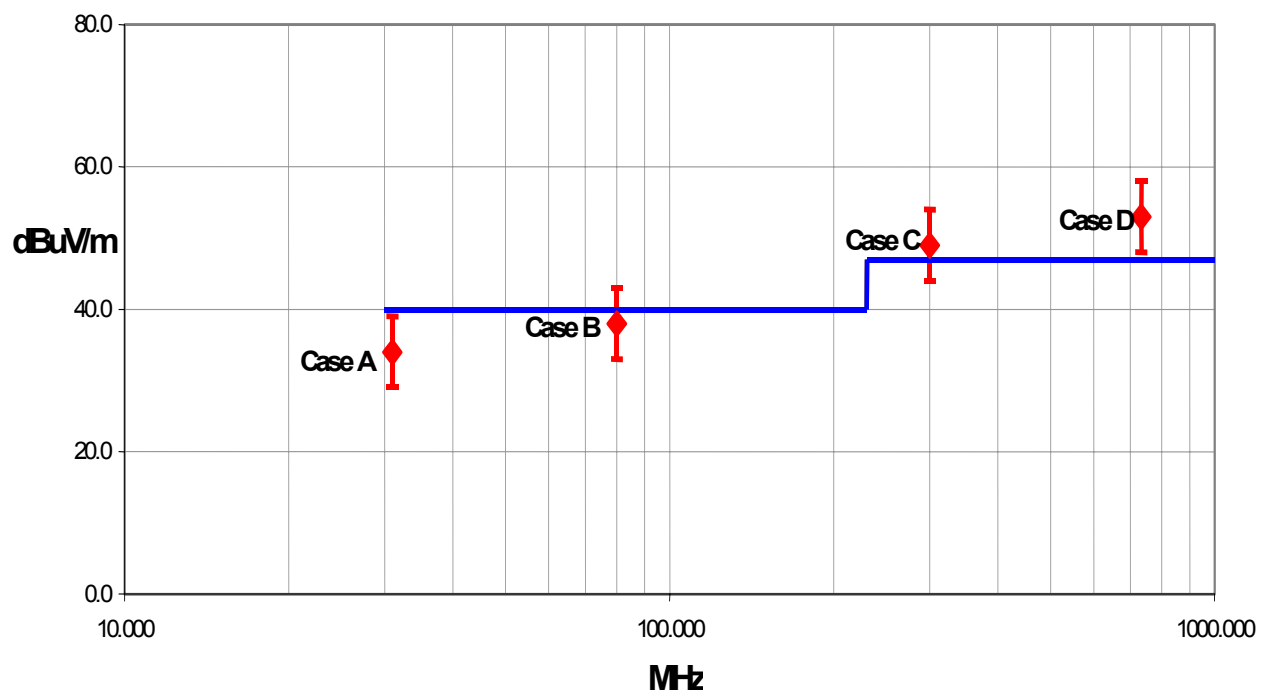
When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. The following statement of measurement uncertainty is used to reflect the accuracy of the measured result as compared with its “true” value. In the case of transient tests (ESD, EFT, Surge, Voltage Dips and Interruptions), the test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements.

The following documents were the basis for determining the uncertainty levels of our measurements:

- “ISO Guide to the Expression of Uncertainty in Measurements”, October 1993
- “NIS81: The Treatment of Uncertainty in EMC Measurements”, May 1994
- “IEC CISPR 16-3 A1 f1 Ed.1: Radio-interference measurements and statistical techniques”, December 2000

How might measurement uncertainty be applied to test results?

If the diamond marks the measured value for the test and the vertical bars bracket the range of + and – measurement uncertainty, then test results can be interpreted from the diagram below.

**Test Result Scenarios:**

Case A: Product complies.

Case B: Product conditionally complies. It is not possible to say with 95% confidence that the product complies.

Case C: Product conditionally does not comply. It is not possible to say with 95% confidence that the product does not comply.

Case D: Product does not comply.

Radiated Emissions ≤ 1 GHz

Value (dB)

Test Distance	Probability Distribution	Biconical Antenna		Log Periodic Antenna		Dipole Antenna	
		3m	10m	3m	10m	3m	10m
Combined standard uncertainty $u_c(y)$	normal	+ 1.86 - 1.88	+ 1.82 - 1.87	+ 2.23 - 1.41	+ 1.29 - 1.26	+ 1.31 - 1.27	+ 1.25 - 1.25
Expanded uncertainty U (level of confidence $\approx 95\%$)	normal (k=2)	+ 3.72 - 3.77	+ 3.64 - 3.73	+ 4.46 - 2.81	+ 2.59 - 2.52	+ 2.61 - 2.55	+ 2.49 - 2.49

Radiated Emissions > 1 GHz

Value (dB)

Test Distance	Probability Distribution	Without High Pass Filter		With High Pass Filter	
		3m	10m	3m	10m
Combined standard uncertainty $u_c(y)$	normal	+ 1.29 - 1.25	+ 1.38 - 1.35	+ 1.29 - 1.25	+ 1.38 - 1.35
Expanded uncertainty U (level of confidence $\approx 95\%$)	normal (k=2)	+ 2.57 - 2.51	+ 2.76 - 2.70	+ 2.57 - 2.51	+ 2.76 - 2.70

Conducted Emissions

Test Distance	Probability Distribution	Value (+/- dB)
Combined standard uncertainty $u_c(y)$	normal	1.48
Expanded uncertainty U (level of confidence $\approx 95\%$)	normal (k = 2)	2.97

Radiated Immunity

Test Distance	Probability Distribution	Value (+/- dB)
Combined standard uncertainty $u_c(y)$	normal	1.05
Expanded uncertainty U (level of confidence $\approx 95\%$)	normal (k = 2)	2.11

Conducted Immunity

Test Distance	Probability Distribution	Value (+/- dB)
Combined standard uncertainty $u_c(y)$	normal	1.05
Expanded uncertainty U (level of confidence $\approx 95\%$)	normal (k = 2)	2.10

Legend

$u_c(y)$ = square root of the sum of squares of the individual standard uncertainties

U = combined standard uncertainty multiplied by the coverage factor: k . This defines an interval about the measured result that will encompass the true value with a confidence level of approximately 95%. If a higher level of confidence is required, then $k=3$ (CL of 99.7%) can be used. Please note that with a coverage factor of one, $u_c(y)$ yields a confidence level of only 68%.

**California****Orange County Facility**

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

**Oregon****Evergreen Facility**

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

**Oregon****Trails End Facility**

30475 NE Trails End Lane
Newberg, OR 97132
(503) 844-4066
FAX (503) 537-0735

**Washington****Sultan Facility**

14128 339th Ave. SE
Sultan, WA 98294
(888) 364-2378
FAX (360) 793-2536

Party Requesting the Test

Company Name:	INTERMEC Technologies Corporation
Address:	6001 36th Avenue West
City, State, Zip:	Everett, WA 98203-1264
Test Requested By:	Katie Molina
Model:	2011B
First Date of Test:	11-30-2004
Last Date of Test:	12-01-2004
Receipt Date of Samples:	11-30-2004
Equipment Design Stage:	Production
Equipment Condition:	No visual damage.

Information Provided by the Party Requesting the Test

Clocks/Oscillators:	32.768kHz, 3.6MHz, 24.576MHz, 10MHz
I/O Ports:	26-pin dock port

Functional Description of the EUT (Equipment Under Test):

Handheld terminal that scans barcodes and communicates via wireless LAN.

Client Justification for EUT Selection:

Representative of a production sample.

Client Justification for Test Selection:

These tests satisfy the EMC requirements for a Class II Permissive change to HN22011B-2

EUT Photo

Equipment modifications					
Item	Test	Date	Modification	Note	Disposition of EUT
1	Spurious Radiated Emissions	11/30/2004	No EMI suppression devices were added or modified during this test.	Same configuration as delivered.	EUT remained at Northwest EMC.
2	Conducted Emissions	12/01/2004	No EMI suppression devices were added or modified during this test.	Same configuration as in previous test.	EUT remained at Northwest EMC.

Justification

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

Channels in Specified Band Investigated:

High
Mid
Low

Operating Modes Investigated:

No Hop

Data Rates Investigated:

11Mbps
5.5Mbps
1Mbps

Output Power Setting(s) Investigated:

Maximum

Power Input Settings Investigated:

120 VAC, 60 Hz.

Other Settings Investigated:

Serial Adapter Dock
Charging Station Dock

Frequency Range Investigated

Start Frequency	30 MHz	Stop Frequency	26 GHz
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Software\Firmware Applied During Test

Exercise software	PrismTestCE	Version	2.0
Description			
The system was tested using special test software to exercise the functions of the device during the test, including dwell time, data rate, mode, and channel.			

EUT and Peripherals			
Description	Manufacturer	Model/Part Number	Serial Number
EUT	Intermec Technologies Corporation	2011B	Unknown
Dock	Intermec Technologies Corporation	074248	177h0420085
CAC Adapter	Intermec Technologies Corporation	074102	R619
Serial Adapter	Intermec Technologies Corporation	074247	SAC001
Power Adapter	Intermec Technologies Corporation	074246	027376
Handheld Terminal	Intermec Technologies Corporation	CN2NI/CN2	CN2-P-16

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Tablet PC	Intermec Technologies Corporation	6642	4267674
Access Point	Intermec Technologies Corporation	WA21	00200000009
Equipment isolated from the EUT so as not to contribute to the measurement result is considered to be outside the test setup boundary			

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Power	No	4m	Yes	Tablet PC	AC Power
AC Power	No	1.5m	No	Access Point	AC Power
AC Power	No	1.5m	No	AC Mains	Power Adapter
Power	No	2m	No	Power Adapter	Dock

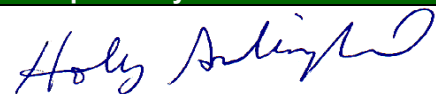
Measurement Equipment					
Description	Manufacturer	Model	Identifier	Last Cal	Interval
Quasi-Peak Adapter	Hewlett-Packard	85650A	AQF	12/23/2003	13 mo
Spectrum Analyzer	Hewlett-Packard	8566B	AAL	12/23/2003	13 mo
Pre-Amplifier	Amplifier Research	LN1000A	APS	02/05/2004	13 mo
Antenna, Biconilog	EMCO	3141	AXE	12/03/2003	24 mo
Antenna, Horn	EMCO	3115	AHC	09/07/2004	12 mo
Pre-Amplifier	Miteq	AMF-4D-005180-24-10P	APJ	01/05/2004	13 mo
Spectrum Analyzer	Tektronix	2784	AAO	02/26/2003	24 mo
Pre-Amplifier	Miteq	AMF-4D-005180-24-10P	APC	10/08/2003	15 mo
Antenna, Horn	EMCO	3160-08	AHK	NCR	NA
Antenna, Horn	EMCO	3160-09	AHG	NCR	NA
Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	10/08/2003	15 mo


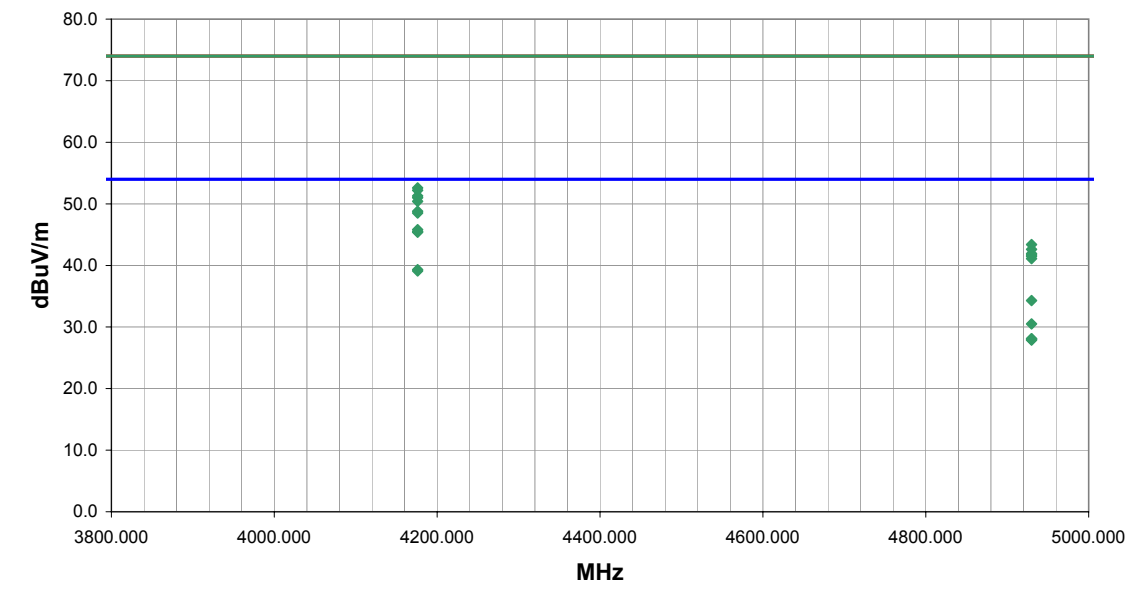
Test Description


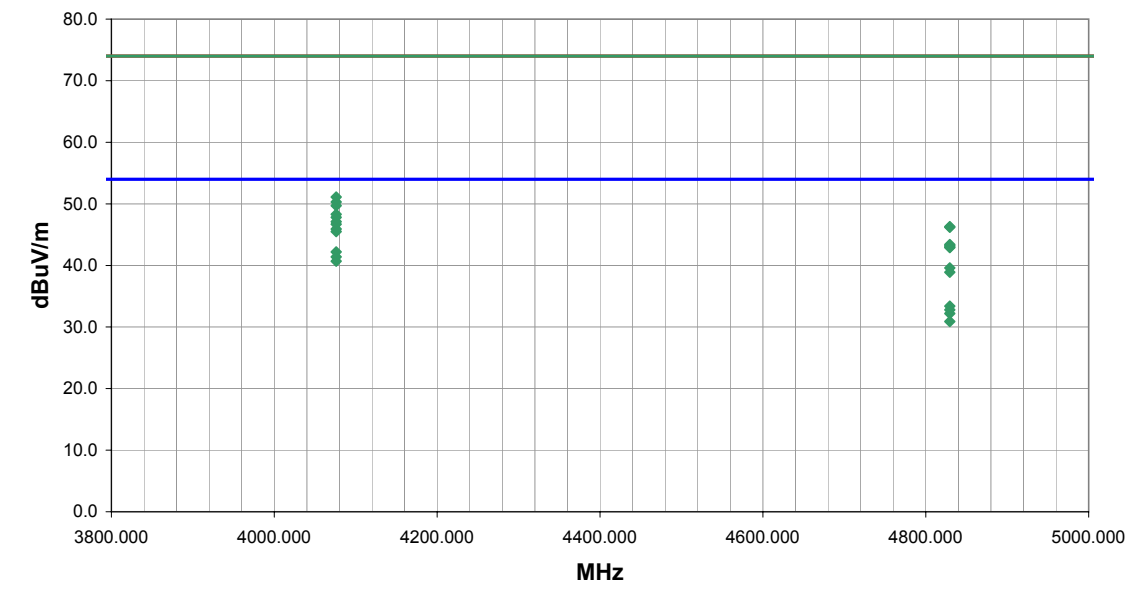
Requirement: The field strength of any spurious emissions or modulation products that fall in a restricted band, as defined in 47 CFR 15.205, is measured. The peak level must comply with the limits specified in 47 CFR 15.35(b). The average level (taken with a 10Hz VBW) must comply with the limits specified in 15.209.


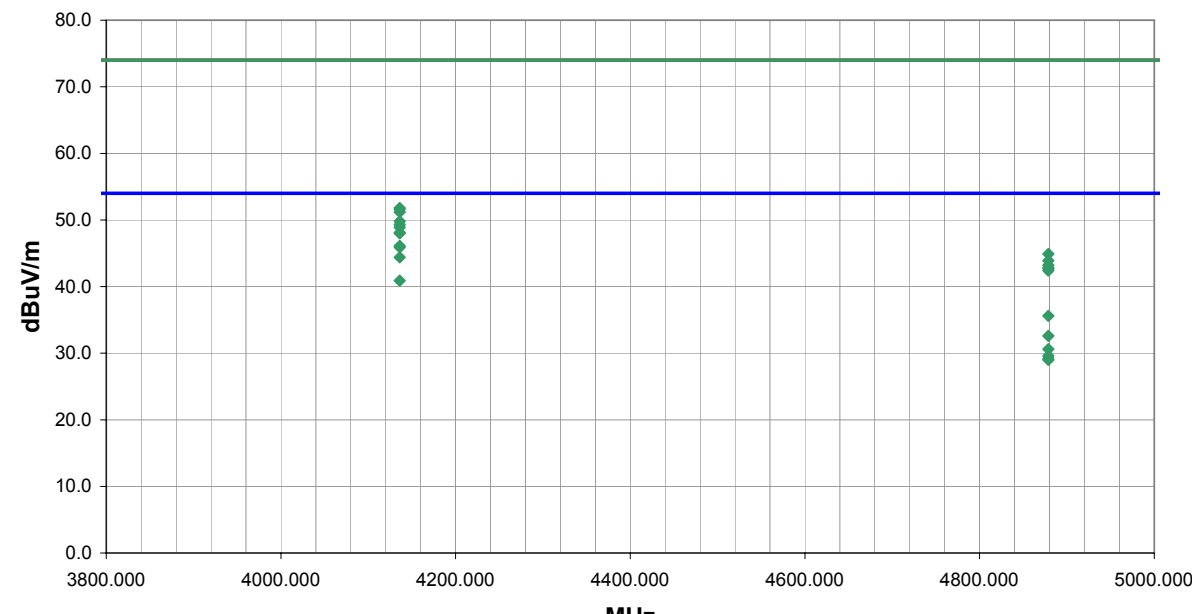
Configuration: The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands 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 EUT antenna in three orthogonal axis, and adjusting the measurement antenna height and polarization (per ANSI C63.4:2003). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

Bandwidths Used for Measurements			
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
<i>Measurements were made using the bandwidths and detectors specified. No video filter was used.</i>			


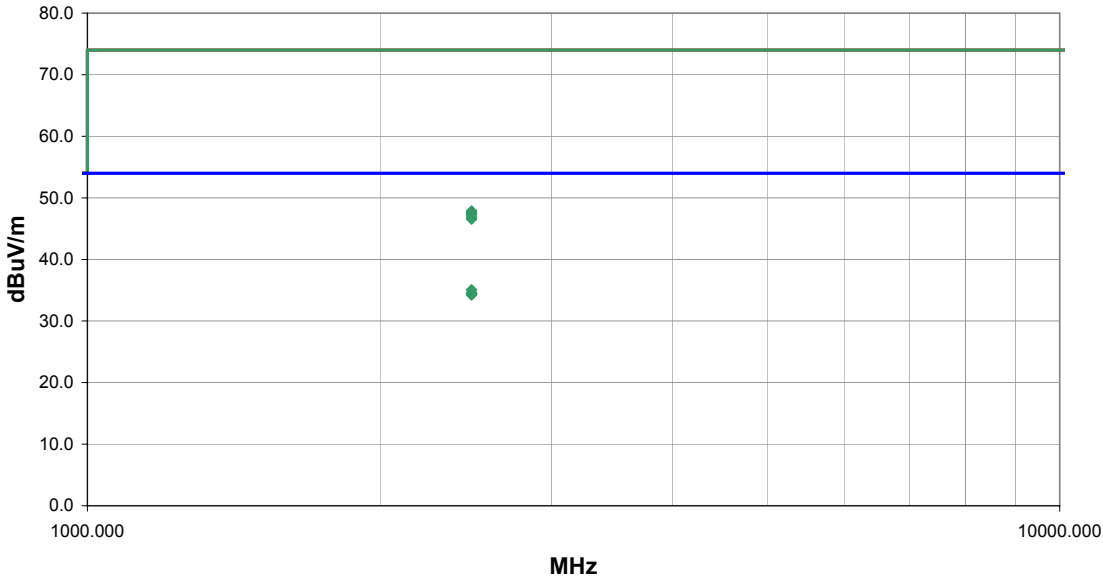
Completed by:

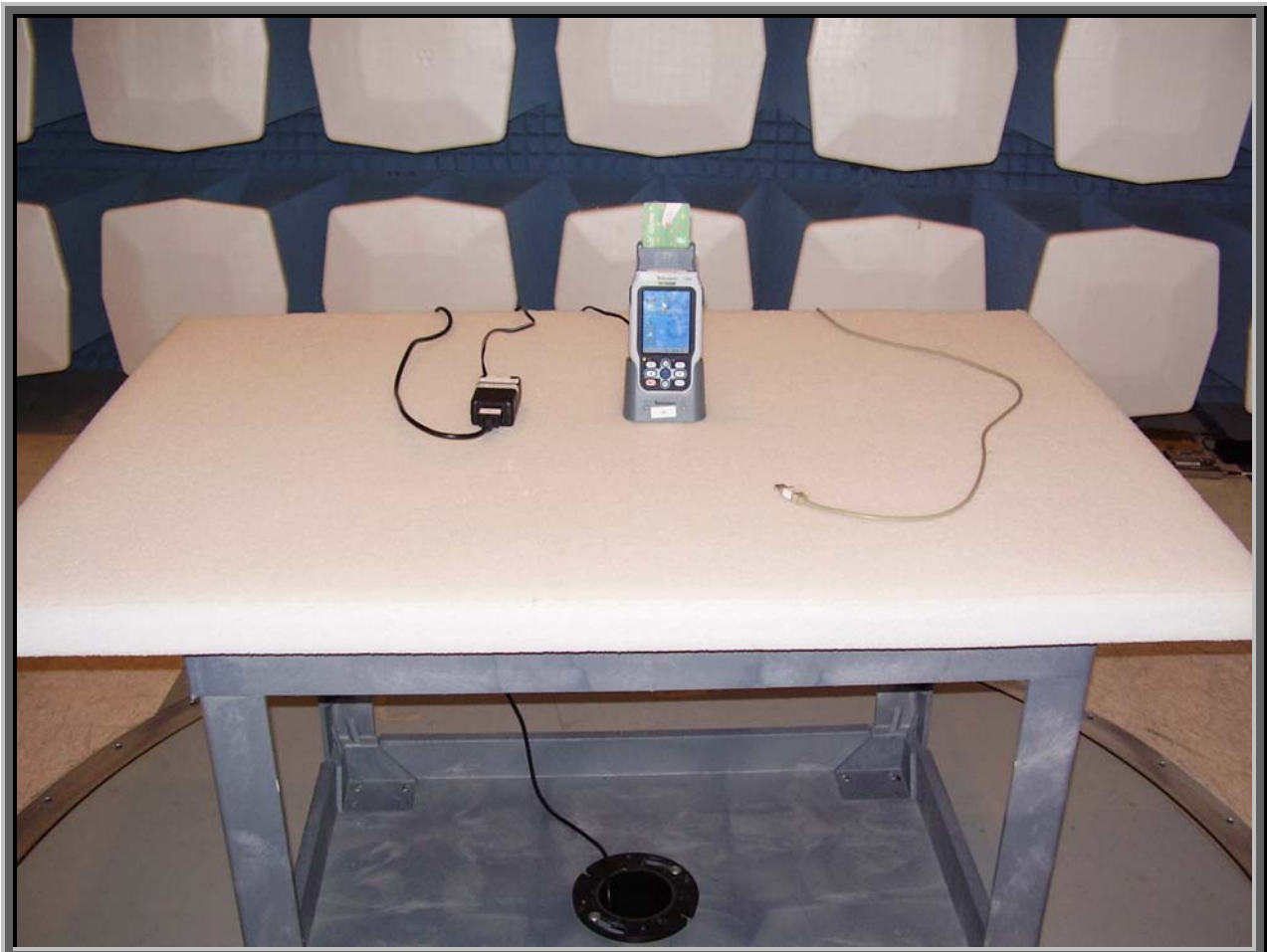
NORTHWEST EMC										RADIATED EMISSIONS DATA SHEET										REV d4.4 10/22/2004	
EUT: 2011B										Work Order: INMC0180											
Serial Number: Unknown										Date: 11/30/04											
Customer: INTERMEC Technologies Corporation										Temperature: 22											
Attendees: None										Humidity: 33%											
Cust. Ref. No.:										Barometric Pressure: 30.18											
Tested by: Holly Ashkannejhad										Power: 120VAC, 60Hz										Job Site: EV01	
TEST SPECIFICATIONS																					
Specification: FCC 15.247(d) Spurious Radiated Emissions										Year: 2004											
Method: ANSI C63.4										Year: 2003											
SAMPLE CALCULATIONS																					
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation																					
Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator																					
COMMENTS																					
2011B Radio installed in CN2N1/CN2 Terminal, placed in docking station. CAC reader attached.																					
EUT OPERATING MODES																					
Transmitting 802.11(b), High Channel. See comments for data rate.																					
DEVIATIONS FROM TEST STANDARD																					
No deviations.																					
RESULTS																					
Pass																Run #					
																2					
Other																					
										 Tested By:											
																					
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								
4175.964	48.6	2.4	241.0	1.7	3.0	0.0	H-Horn	AV	0.0	51.0	54.0	-3.0	11Mbps								
4175.964	48.0	2.4	222.0	1.4	3.0	0.0	H-Horn	AV	0.0	50.4	54.0	-3.6	1Mbps								
4175.964	46.4	2.4	223.0	1.3	3.0	0.0	H-Horn	AV	0.0	48.8	54.0	-5.2	5.5Mbps								
4175.964	43.0	2.4	316.0	1.5	3.0	0.0	V-Horn	AV	0.0	45.4	54.0	-8.6	11Mbps								
4175.964	36.9	2.4	25.0	1.2	3.0	0.0	V-Horn	AV	0.0	39.3	54.0	-14.7	5.5Mbps								
4175.964	36.7	2.4	207.0	1.2	3.0	0.0	V-Horn	AV	0.0	39.1	54.0	-14.9	1Mbps								
4929.940	30.7	3.6	282.0	1.2	3.0	0.0	V-Horn	AV	0.0	34.3	54.0	-19.7	11Mbps								
4175.964	50.2	2.4	241.0	1.7	3.0	0.0	H-Horn	PK	0.0	52.6	74.0	-21.4	11Mbps								
4175.964	49.8	2.4	222.0	1.4	3.0	0.0	H-Horn	PK	0.0	52.2	74.0	-21.8	1Mbps								
4175.964	48.9	2.4	223.0	1.3	3.0	0.0	H-Horn	PK	0.0	51.3	74.0	-22.7	5.5Mbps								
4929.940	26.9	3.6	284.0	1.4	3.0	0.0	H-Horn	AV	0.0	30.5	54.0	-23.5	11Mbps								
4175.964	46.1	2.4	316.0	1.5	3.0	0.0	V-Horn	PK	0.0	48.5	74.0	-25.5	11Mbps								
4929.940	24.5	3.6	324.0	2.0	3.0	0.0	V-Horn	AV	0.0	28.1	54.0	-25.9	5.5Mbps								
4929.940	24.5	3.6	206.0	1.2	3.0	0.0	V-Horn	AV	0.0	28.1	54.0	-25.9	1Mbps								
4929.940	24.3	3.6	30.0	1.3	3.0	0.0	H-Horn	AV	0.0	27.9	54.0	-26.1	5.5Mbps								
4929.940	24.3	3.6	11.0	1.3	3.0	0.0	H-Horn	AV	0.0	27.9	54.0	-26.1	1Mbps								
4175.964	43.4	2.4	207.0	1.2	3.0	0.0	V-Horn	PK	0.0	45.8	74.0	-28.2	1Mbps								
4175.964	43.1	2.4	25.0	1.2	3.0	0.0	V-Horn	PK	0.0	45.5	74.0	-28.5	5.5Mbps								
4929.940	39.8	3.6	282.0	1.2	3.0	0.0	V-Horn	PK	0.0	43.4	74.0	-30.6	11Mbps								
4929.940	39.0	3.6	284.0	1.4	3.0	0.0	H-Horn	PK	0.0	42.6	74.0	-31.4	11Mbps								

NORTHWEST EMC										RADIATED EMISSIONS DATA SHEET										REV d4.4 10/22/2004	
EUT: CN2N1/CN2 with 802.11(b) Radio										Work Order: INMC0180											
Serial Number: Unknown										Date: 11/30/04											
Customer: INTERMEC Technologies Corporation										Temperature: 22											
Attendees: None										Humidity: 33%											
Cust. Ref. No.:										Barometric Pressure: 30.18											
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EUT OPERATING MODES																					
Transmitting 802.11(b), Low Channel, see comments for data rate.																					
DEVIATIONS FROM TEST STANDARD																					
No deviations.																					
RESULTS															Run #						
Pass															5						
Other																					
<div style="text-align: right; margin-right: 50px;">  Tested By: </div>																					
																					
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								
4075.968	45.9	2.4	254.0	1.6	3.0	0.0	H-Horn	AV	0.0	48.3	54.0	-5.7	11Mbps								
4075.968	45.4	2.4	244.0	1.6	3.0	0.0	H-Horn	AV	0.0	47.8	54.0	-6.2	5.5Mbps								
4075.968	44.7	2.4	241.0	1.6	3.0	0.0	H-Horn	AV	0.0	47.1	54.0	-6.9	1Mbps								
4075.968	39.8	2.4	312.0	1.2	3.0	0.0	V-Horn	AV	0.0	42.2	54.0	-11.8	1Mbps								
4075.968	39.0	2.4	313.0	1.2	3.0	0.0	V-Horn	AV	0.0	41.4	54.0	-12.6	5.5Mbps								
4075.968	38.3	2.4	311.0	1.2	3.0	0.0	V-Horn	AV	0.0	40.7	54.0	-13.3	11Mbps								
4829.500	36.2	3.4	340.0	1.2	3.0	0.0	V-Horn	AV	0.0	39.6	54.0	-14.4	11Mbps								
4829.500	35.5	3.4	282.0	1.3	3.0	0.0	H-Horn	AV	0.0	38.9	54.0	-15.1	11Mbps								
4829.500	30.0	3.4	319.0	1.2	3.0	0.0	V-Horn	AV	0.0	33.4	54.0	-20.6	1Mbps								
4829.500	29.4	3.4	289.0	1.3	3.0	0.0	H-Horn	AV	0.0	32.8	54.0	-21.2	1Mbps								
4829.500	28.8	3.4	346.0	1.2	3.0	0.0	V-Horn	AV	0.0	32.2	54.0	-21.8	5.5Mbps								
4075.968	48.7	2.4	254.0	1.6	3.0	0.0	H-Horn	PK	0.0	51.1	74.0	-22.9	11Mbps								
4829.500	27.5	3.4	273.0	1.3	3.0	0.0	H-Horn	AV	0.0	30.9	54.0	-23.1	5.5Mbps								
4075.968	47.9	2.4	244.0	1.6	3.0	0.0	H-Horn	PK	0.0	50.3	74.0	-23.7	5.5Mbps								
4075.968	47.3	2.4	241.0	1.6	3.0	0.0	H-Horn	PK	0.0	49.7	74.0	-24.3	1Mbps								
4075.968	44.3	2.4	312.0	1.2	3.0	0.0	V-Horn	PK	0.0	46.7	74.0	-27.3	1Mbps								
4829.500	42.9	3.4	340.0	1.2	3.0	0.0	V-Horn	PK	0.0	46.3	74.0	-27.7	11Mbps								
4829.500	42.8	3.4	282.0	1.3	3.0	0.0	H-Horn	PK	0.0	46.2	74.0	-27.8	11Mbps								
4075.968	43.5	2.4	311.0	1.2	3.0	0.0	V-Horn	PK	0.0	45.9	74.0	-28.1	11Mbps								
4075.968	43.1	2.4	313.0	1.2	3.0	0.0	V-Horn	PK	0.0	45.5	74.0	-28.5	5.5Mbps								

NORTHWEST EMC										RADIATED EMISSIONS DATA SHEET				REV df4.4 10/22/2004	
EUT: CN2N1/CN2 with 802.11(b) Radio										Work Order: INMC0180					
Serial Number: Unknown										Date: 11/30/04					
Customer: INTERMEC Technologies Corporation										Temperature: 22					
Attendees: None										Humidity: 33%					
Cust. Ref. No.:										Barometric Pressure: 30.18					
Tested by: Holly Ashkannejhad						Power: 120VAC, 60Hz		Job Site: EV01							
TEST SPECIFICATIONS															
Specification: FCC 15.247(d) Spurious Radiated Emissions										Year: 2004					
Method: ANSI C63.4										Year: 2003					
SAMPLE CALCULATIONS															
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation															
Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator															
COMMENTS															
2011B Radio installed in CN2N1/CN2 Terminal, placed in docking station. CAC reader attached.															
EUT OPERATING MODES															
Transmitting 802.11(b), Mid Channel. See comments for data rate.															
DEVIATIONS FROM TEST STANDARD															
No deviations.															
RESULTS												Run #			
Pass												3			
Other															
										 Tested By:					
															
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)			
4135.973	47.4	2.4	218.0	1.6	3.0	0.0	H-Horn	AV	0.0	49.8	54.0	-4.2			
4135.973	46.9	2.4	238.0	1.4	3.0	0.0	H-Horn	AV	0.0	49.3	54.0	-4.7			
4135.973	45.7	2.4	239.0	1.4	3.0	0.0	H-Horn	AV	0.0	48.1	54.0	-5.9			
4135.973	43.5	2.4	271.0	1.4	3.0	0.0	V-Horn	AV	0.0	45.9	54.0	-8.1			
4135.973	42.0	2.4	238.0	1.2	3.0	0.0	V-Horn	AV	0.0	44.4	54.0	-9.6			
4135.973	38.5	2.4	300.0	1.2	3.0	0.0	V-Horn	AV	0.0	40.9	54.0	-13.1			
4878.680	32.0	3.6	335.0	1.2	3.0	0.0	V-Horn	AV	0.0	35.6	54.0	-18.4			
4878.680	29.0	3.6	282.0	1.3	3.0	0.0	H-Horn	AV	0.0	32.6	54.0	-21.4			
4135.973	49.4	2.4	218.0	1.6	3.0	0.0	H-Horn	PK	0.0	51.8	74.0	-22.2			
4135.973	49.2	2.4	238.0	1.4	3.0	0.0	H-Horn	PK	0.0	51.6	74.0	-22.4			
4135.973	48.8	2.4	239.0	1.4	3.0	0.0	H-Horn	PK	0.0	51.2	74.0	-22.8			
4878.680	27.0	3.6	266.0	1.2	3.0	0.0	V-Horn	AV	0.0	30.6	54.0	-23.4			
4878.680	26.0	3.6	0.0	1.3	3.0	0.0	H-Horn	AV	0.0	29.6	54.0	-24.4			
4878.680	25.6	3.6	122.0	1.3	3.0	0.0	H-Horn	AV	0.0	29.2	54.0	-24.8			
4878.680	25.4	3.6	134.0	1.2	3.0	0.0	V-Horn	AV	0.0	29.0	54.0	-25.0			
4135.973	46.5	2.4	271.0	1.4	3.0	0.0	V-Horn	PK	0.0	48.9	74.0	-25.1			
4135.973	45.6	2.4	238.0	1.2	3.0	0.0	V-Horn	PK	0.0	48.0	74.0	-26.0			
4135.973	43.7	2.4	300.0	1.2	3.0	0.0	V-Horn	PK	0.0	46.1	74.0	-27.9			
4878.680	41.3	3.6	335.0	1.2	3.0	0.0	V-Horn	PK	0.0	44.9	74.0	-29.1			
4878.680	40.3	3.6	282.0	1.3	3.0	0.0	H-Horn	PK	0.0	43.9	74.0	-30.1			
4878.680	39.6	3.6	266.0	1.2	3.0	0.0	V-Horn	PK	0.0	43.2	74.0	-30.8			

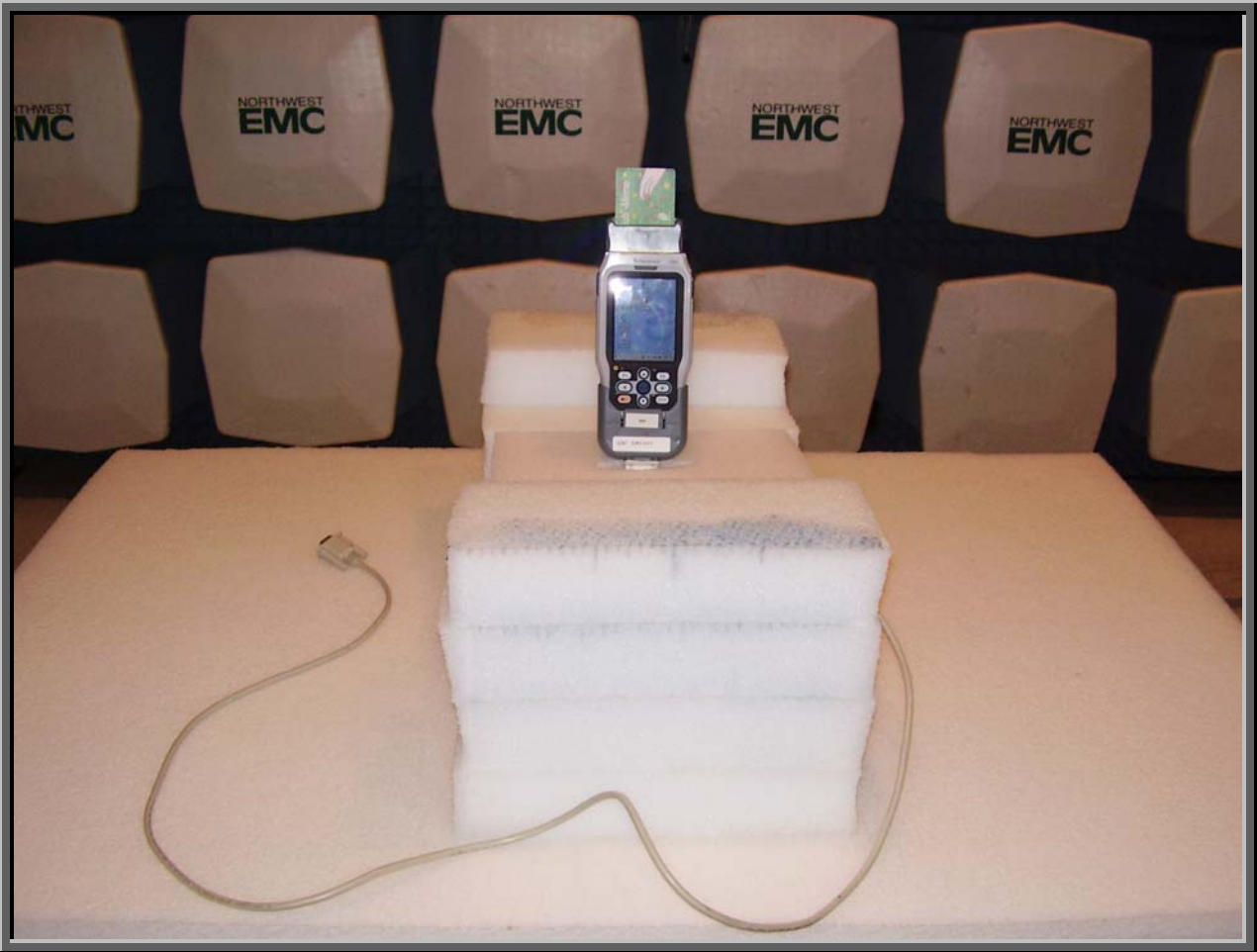
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
4878.680	39.2	3.6	122.0	1.3	3.0	0.0	H-Horn	PK	0.0	42.8	74.0	-31.2
4878.680	39.1	3.6	0.0	1.3	3.0	0.0	H-Horn	PK	0.0	42.7	74.0	-31.3
4878.680	38.8	3.6	134.0	1.2	3.0	0.0	V-Horn	PK	0.0	42.4	74.0	-31.6

NORTHWEST EMC		RADIATED EMISSIONS DATA SHEET										REV d4.4 10/22/2004	
EUT: CN2N1/CN2 with 802.11(b) Radio										Work Order: INMC0180			
Serial Number: Unknown										Date: 11/30/04			
Customer: INTERMEC Technologies Corporation										Temperature: 22			
Attendees: None										Humidity: 33%			
Cust. Ref. No.:										Barometric Pressure: 30.18			
Tested by: Holly Ashkannejhad						Power: 120VAC, 60Hz		Job Site: EV01					
TEST SPECIFICATIONS													
Specification: FCC 15.247(d) Spurious Radiated Emissions										Year: 2004			
Method: ANSI C63.4										Year: 2003			
SAMPLE CALCULATIONS													
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation													
Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator													
COMMENTS													
2011B Radio installed in CN2N1/CN2 Terminal, placed in docking station. CAC reader attached.													
EUT OPERATING MODES													
Transmitting 802.11(b), High Channel. See comments for data rate.													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
RESULTS													
Pass												Run #	
												6	
Other													
 Tested By:													
													
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
2483.500	12.6	32.0	117.0	1.1	1.0	0.0	H-Horn	AV	-9.5	35.1	54.0	-18.9	11Mbps
2483.500	12.1	32.0	123.0	1.1	1.0	0.0	H-Horn	AV	-9.5	34.6	54.0	-19.4	5.5Mbps
2483.500	12.0	32.0	56.0	1.0	1.0	0.0	V-Horn	AV	-9.5	34.5	54.0	-19.5	11Mbps
2483.500	12.0	32.0	94.0	1.0	1.0	0.0	H-Horn	AV	-9.5	34.5	54.0	-19.5	1Mbps
2483.500	11.9	32.0	292.0	1.0	1.0	0.0	V-Horn	AV	-9.5	34.4	54.0	-19.6	5.5Mbps
2483.500	11.8	32.0	309.0	1.0	1.0	0.0	V-Horn	AV	-9.5	34.3	54.0	-19.7	1Mbps
2483.500	25.4	32.0	123.0	1.1	1.0	0.0	H-Horn	PK	-9.5	47.9	74.0	-26.1	5.5Mbps
2483.500	25.2	32.0	117.0	1.1	1.0	0.0	H-Horn	PK	-9.5	47.7	74.0	-26.3	11Mbps
2483.500	25.0	32.0	94.0	1.0	1.0	0.0	H-Horn	PK	-9.5	47.5	74.0	-26.5	1Mbps
2483.500	24.8	32.0	292.0	1.0	1.0	0.0	V-Horn	PK	-9.5	47.3	74.0	-26.7	5.5Mbps
2483.500	24.4	32.0	56.0	1.0	1.0	0.0	V-Horn	PK	-9.5	46.9	74.0	-27.1	11Mbps
2483.500	24.1	32.0	309.0	1.0	1.0	0.0	V-Horn	PK	-9.5	46.6	74.0	-27.4	1Mbps









Justification

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

Channels in Specified Band Investigated:

High
Mid
Low

Operating Modes Investigated:

No Hop

Data Rates Investigated:

11Mbps

Output Power Setting(s) Investigated:

Maximum

Power Input Settings Investigated:

120 VAC, 60 Hz.

Software\Firmware Applied During Test

Exercise software	PrismTestCE	Version	2.0
Description			
The system was tested using special test software to exercise the functions of the device during the test, including dwell time, data rate, mode, and channel.			

EUT and Peripherals

Description	Manufacturer	Model/Part Number	Serial Number
EUT	Intermec Technologies Corporation	2011B	Unknown
Dock	Intermec Technologies Corporation	074248	177h0420085
CAC Adapter	Intermec Technologies Corporation	074102	R619
Serial Adapter	Intermec Technologies Corporation	074247	SAC001
Power Adapter	Intermec Technologies Corporation	074246	027376
Handheld Terminal	Intermec Technologies Corporation	CN2NI/CN2	CN2-P-17

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power	No	1.5m	No	AC Mains	Power Adapter
Power	No	2m	No	Power Adapter	Dock

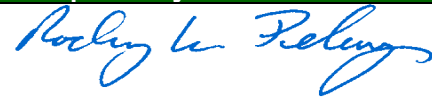
Measurement Equipment


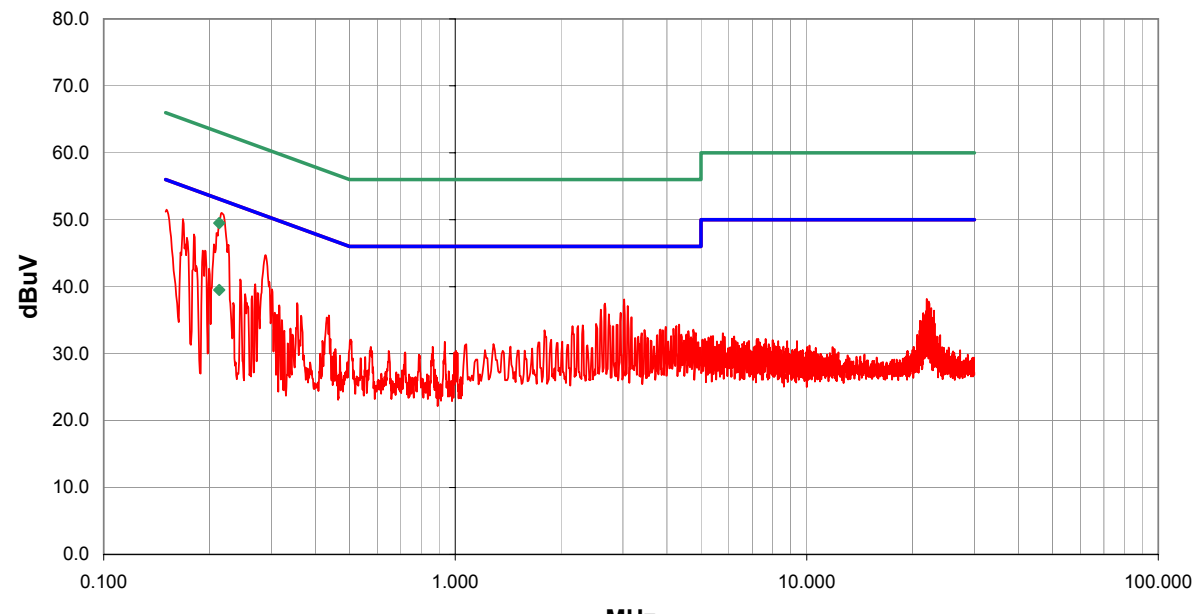
Description	Manufacturer	Model	Identifier	Last Cal	Interval
Spectrum Analyzer	Hewlett-Packard	8566B	AAL	12/23/2003	13 mo
Quasi-Peak Adapter	Hewlett-Packard	85650A	AQF	12/23/2003	13 mo
LISN	Solar	9252-50-R-24-BNC	LIO	04/30/2004	12 mo
High Pass Filter	TTE	H97-100k-50-720B	HFC	02/01/2004	13 mo


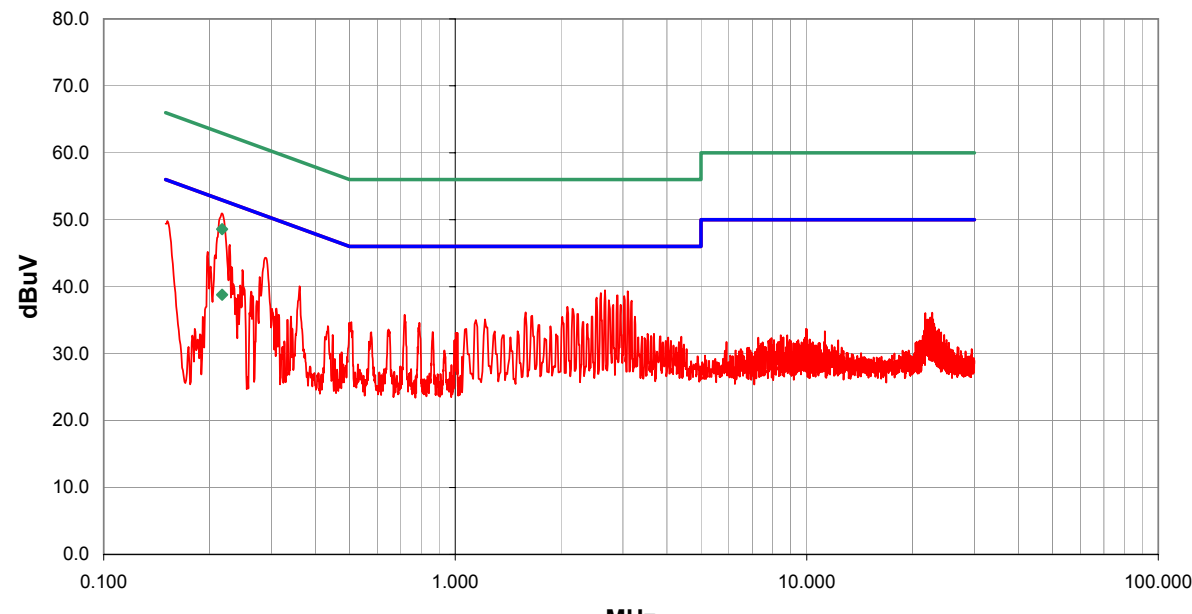
Test Description

Requirement: Per 47 15.207(d), if the EUT is connected to the AC power line indirectly, obtaining its power from another device that is connected to the AC power line, then it should be tested to demonstrate compliance with the conducted limits of 15.207.


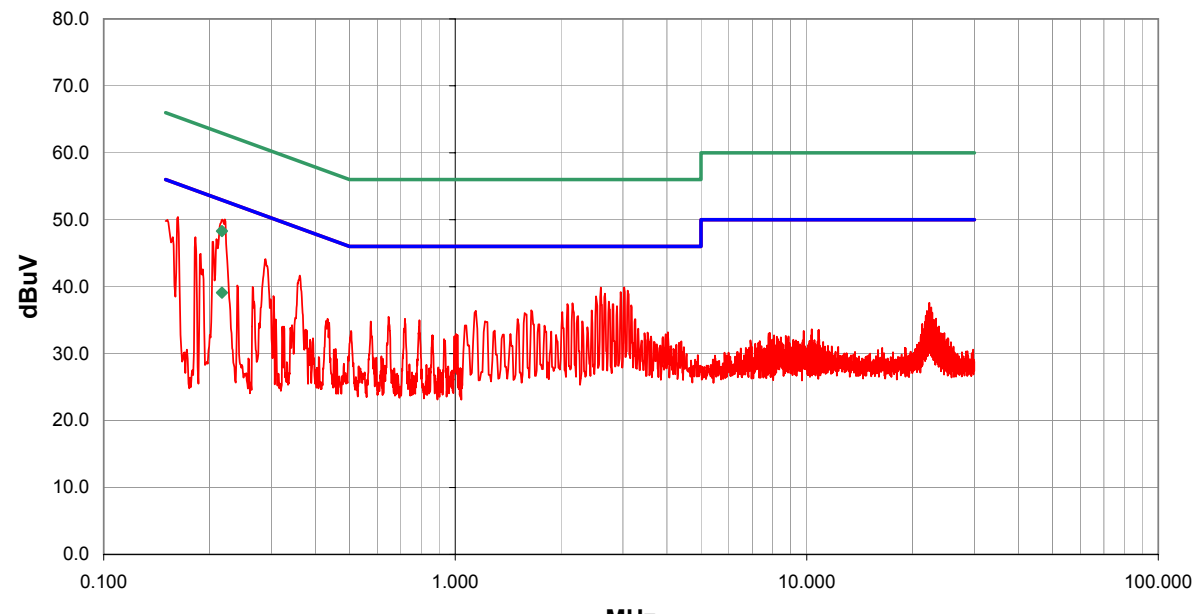
Configuration: The EUT will be powered from a device that could be connected to the AC power line. Therefore, the measurements were made on the device used to power the EUT. The AC power line conducted emissions were measured with the EUT operating at the lowest, the highest, and a middle channel in 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 C63.4-2003.


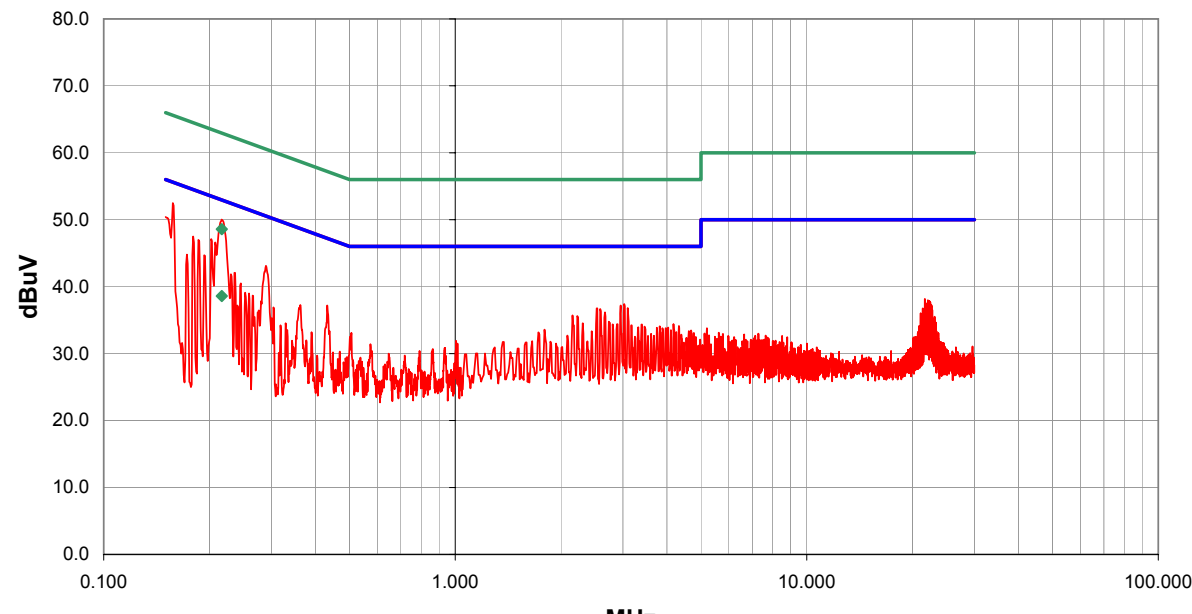
Completed by:



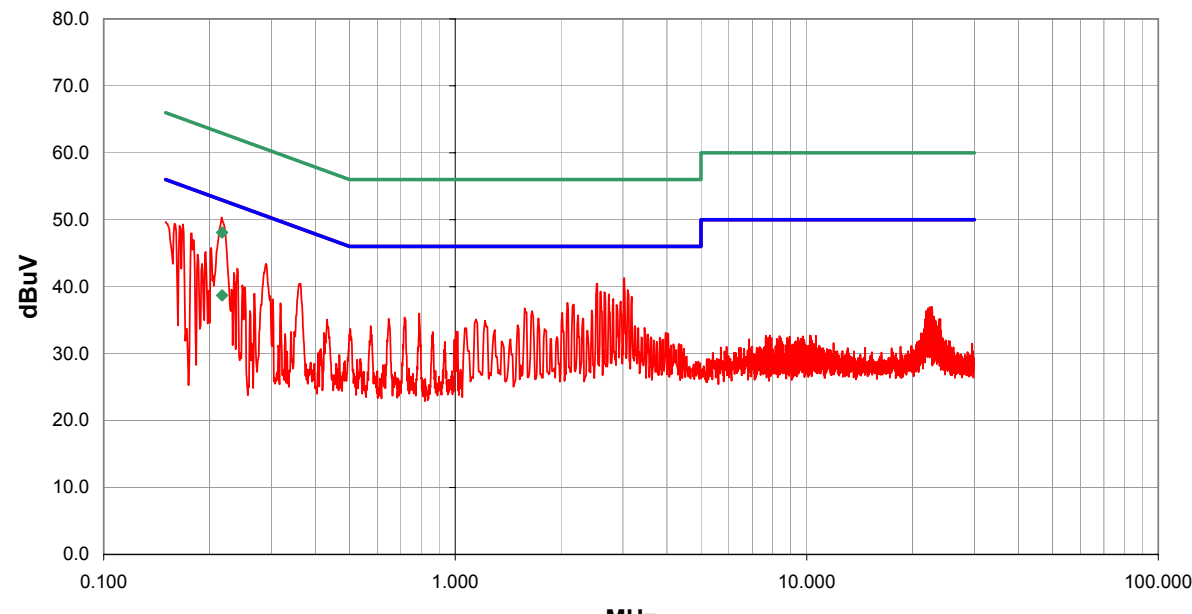
NORTHWEST EMC		CONDUCTED EMISSIONS DATA SHEET				REV df4.4 10/22/2004				
EUT: 2011B				Work Order: INMC0180						
Serial Number: Unknown				Date: 12/01/04						
Customer: INTERMEC Technologies Corporation				Temperature: 21						
Attendees: None				Humidity: 35%						
Cust. Ref. No.:				Barometric Pressure: 30.18						
Tested by: Rod Peloquin		Power: 120VAC/60Hz		Job Site: EV01						
TEST SPECIFICATIONS										
Specification: FCC 15.207 AC Powerline Conducted Emissions				Year: 2004						
Method: ANSI C63.4				Year: 2003						
SAMPLE CALCULATIONS										
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation										
Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator										
COMMENTS										
Installed in CN2NI/CN2 charging in docking station. CAC reader attached.										
EUT OPERATING MODES										
Transmitting 802.11(b), Low Channel, 11Mbps										
DEVIATIONS FROM TEST STANDARD										
No deviations.										
RESULTS				Line		Run #				
Pass				L1		1				
Other										
				 Tested By:						
										
Freq (MHz)	Amplitude (dBuV)			Transducer (dB)	Cable (dB)	External Attenuation (dB)	Detector (blank equal peaks [PK] from scan)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.213	19.5			0.0	0.0	20.0	AV	39.5	53.1	-13.6
0.213	29.5			0.0	0.0	20.0	QP	49.5	63.1	-13.6
0.217	30.9			0.0	0.1	20.0		51.0	52.9	-1.9
0.151	31.4			0.0	0.1	20.0		51.5	56.0	-4.5
0.168	30.0			0.0	0.1	20.0		50.1	55.1	-5.0
0.289	24.6			0.0	0.1	20.0		44.7	50.6	-5.8
0.181	27.7			0.0	0.1	20.0		47.8	54.5	-6.7
0.173	27.2			0.0	0.1	20.0		47.3	54.8	-7.5
3.026	17.6			0.0	0.5	20.0		38.1	46.0	-7.9
0.194	25.3			0.0	0.1	20.0		45.4	53.9	-8.5
2.666	17.0			0.0	0.5	20.0		37.5	46.0	-8.5
0.191	25.3			0.0	0.1	20.0		45.4	54.0	-8.6
3.096	16.6			0.0	0.5	20.0		37.1	46.0	-8.9
2.596	16.1			0.0	0.5	20.0		36.6	46.0	-9.4
2.956	15.6			0.0	0.5	20.0		36.1	46.0	-9.9
2.736	15.4			0.0	0.5	20.0		35.9	46.0	-10.1
3.176	14.9			0.0	0.5	20.0		35.4	46.0	-10.6
0.301	19.5			0.0	0.1	20.0		39.6	50.2	-10.6
0.270	20.2			0.0	0.2	20.0		40.4	51.1	-10.8

NORTHWEST EMC		CONDUCTED EMISSIONS DATA SHEET				REV d4.4 10/22/2004				
EUT: 2011B		Work Order: INMC0180								
Serial Number: Unknown		Date: 12/01/04								
Customer: INTERMEC Technologies Corporation		Temperature: 21								
Attendees: None		Humidity: 35%								
Cust. Ref. No.:		Barometric Pressure: 30.18								
Tested by: Rod Peloquin		Power: 120VAC/60Hz		Job Site: EV01						
TEST SPECIFICATIONS										
Specification: FCC 15.207 AC Powerline Conducted Emissions				Year: 2004						
Method: ANSI C63.4				Year: 2003						
SAMPLE CALCULATIONS										
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation										
Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator										
COMMENTS										
Installed in CN2NI/CN2 charging in docking station. CAC reader attached.										
EUT OPERATING MODES										
Transmitting 802.11(b), Low Channel, 11Mbps										
DEVIATIONS FROM TEST STANDARD										
No deviations.										
RESULTS										
Pass		Line N		Run # 2						
Other		 Tested By:								
										
Freq (MHz)	Amplitude (dBuV)			Transducer (dB)	Cable (dB)	External Attenuation (dB)	Detector (blank equal peaks [PK] from scan)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.217	18.8			0.0	0.0	20.0	AV	38.8	52.9	-14.1
0.217	28.6			0.0	0.0	20.0	QP	48.6	62.9	-14.3
0.218	30.8			0.0	0.1	20.0		50.9	52.9	-2.0
0.152	29.7			0.0	0.1	20.0		49.8	55.9	-6.1
0.228	26.1			0.0	0.2	20.0		46.3	52.5	-6.3
0.288	24.2			0.0	0.1	20.0		44.3	50.6	-6.3
2.666	19.0			0.0	0.5	20.0		39.5	46.0	-6.5
3.096	18.8			0.0	0.5	20.0		39.3	46.0	-6.7
2.596	18.6			0.0	0.5	20.0		39.1	46.0	-6.9
2.896	18.2			0.0	0.5	20.0		38.7	46.0	-7.3
3.026	18.1			0.0	0.5	20.0		38.6	46.0	-7.4
2.526	17.9			0.0	0.5	20.0		38.4	46.0	-7.6
2.736	17.5			0.0	0.5	20.0		38.0	46.0	-8.0
3.176	17.4			0.0	0.5	20.0		37.9	46.0	-8.1
0.198	25.1			0.0	0.1	20.0		45.2	53.7	-8.5
0.361	19.9			0.0	0.2	20.0		40.1	48.7	-8.7
2.956	16.8			0.0	0.5	20.0		37.3	46.0	-8.7
2.816	16.8			0.0	0.5	20.0		37.3	46.0	-8.7
2.086	16.6			0.0	0.4	20.0		37.0	46.0	-9.0

NORTHWEST		CONDUCTED EMISSIONS DATA SHEET				REV d4.4 10/22/2004			
EMC									
EUT: 2011B		Work Order: INMC0180							
Serial Number: Unknown		Date: 12/01/04							
Customer: INTERMEC Technologies Corporation		Temperature: 21							
Attendees: None		Humidity: 35%							
Cust. Ref. No.:		Barometric Pressure: 30.18							
Tested by: Rod Peloquin		Power: 120VAC/60Hz		Job Site: EV01					
TEST SPECIFICATIONS									
Specification: FCC 15.207 AC Powerline Conducted Emissions				Year: 2004					
Method: ANSI C63.4				Year: 2003					
SAMPLE CALCULATIONS									
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation									
Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator									
COMMENTS									
Installed in CN2NI/CN2 charging in docking station. CAC reader attached.									
EUT OPERATING MODES									
Transmitting 802.11(b), Mid Channel, 11Mbps									
DEVIATIONS FROM TEST STANDARD									
No deviations.									
RESULTS				Line		Run #			
Pass				L1		3			
Other									
				<div>Tested By:</div>					
<div><div><div>80.0</div><div>70.0</div><div>60.0</div><div>50.0</div><div>40.0</div><div>30.0</div><div>20.0</div><div>10.0</div><div>0.0</div></div><div><div>0.100</div><div>1.000</div><div>10.000</div><div>100.000</div></div><div><div>dBuV</div><div>MHz</div></div></div>									
Freq (MHz)	Amplitude (dBuV)		Transducer (dB)	Cable (dB)	External Attenuation (dB)	Detector (blank equal peaks [PK] from scan)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.217	19.3		0.0	0.0	20.0	AV	39.3	52.9	-13.6
0.217	29.1		0.0	0.0	20.0	QP	49.1	62.9	-13.8
0.214	31.6		0.0	0.1	20.0		51.7	53.1	-1.3
0.151	31.0		0.0	0.1	20.0		51.1	56.0	-4.9
0.160	29.8		0.0	0.1	20.0		49.9	55.5	-5.6
0.289	23.7		0.0	0.1	20.0		43.8	50.6	-6.7
0.281	23.2		0.0	0.1	20.0		43.3	50.8	-7.5
0.173	26.3		0.0	0.1	20.0		46.4	54.8	-8.4
3.026	16.8		0.0	0.5	20.0		37.3	46.0	-8.7
0.234	23.4		0.0	0.2	20.0		43.6	52.3	-8.7
0.182	25.5		0.0	0.1	20.0		45.6	54.4	-8.8
0.164	26.3		0.0	0.1	20.0		46.4	55.2	-8.8
2.586	16.7		0.0	0.5	20.0		37.2	46.0	-8.8
3.096	16.6		0.0	0.5	20.0		37.1	46.0	-8.9
2.666	16.4		0.0	0.5	20.0		36.9	46.0	-9.1
2.956	16.2		0.0	0.5	20.0		36.7	46.0	-9.3
2.526	16.2		0.0	0.5	20.0		36.7	46.0	-9.3
0.191	24.5		0.0	0.1	20.0		44.6	54.0	-9.4
0.198	24.1		0.0	0.1	20.0		44.2	53.7	-9.5

NORTHWEST EMC		CONDUCTED EMISSIONS DATA SHEET				REV d4.4 10/22/2004				
EUT: 2011B				Work Order: INMC0180						
Serial Number: Unknown				Date: 12/01/04						
Customer: INTERMEC Technologies Corporation				Temperature: 21						
Attendees: None				Humidity: 35%						
Cust. Ref. No.:				Barometric Pressure: 30.18						
Tested by: Rod Peloquin		Power: 120VAC/60Hz		Job Site: EV01						
TEST SPECIFICATIONS										
Specification: FCC 15.207 AC Powerline Conducted Emissions				Year: 2004						
Method: ANSI C63.4				Year: 2003						
SAMPLE CALCULATIONS										
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation										
Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator										
COMMENTS										
Installed in CN2NI/CN2 charging in docking station. CAC reader attached.										
EUT OPERATING MODES										
Transmitting 802.11(b), Mid Channel, 11Mbps										
DEVIATIONS FROM TEST STANDARD										
No deviations.										
RESULTS				Line		Run #				
Pass				N		4				
Other										
				 Tested By:						
										
Freq (MHz)	Amplitude (dBuV)			Transducer (dB)	Cable (dB)	External Attenuation (dB)	Detector (blank equal peaks [PK] from scan)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.217	19.1			0.0	0.0	20.0	AV	39.1	52.9	-13.8
0.217	28.3			0.0	0.0	20.0	QP	48.3	62.9	-14.6
0.221	29.9			0.0	0.1	20.0		50.0	52.8	-2.7
0.163	30.3			0.0	0.1	20.0		50.4	55.3	-4.9
0.152	29.9			0.0	0.1	20.0		50.0	55.9	-5.9
3.026	19.4			0.0	0.5	20.0		39.9	46.0	-6.1
2.596	19.4			0.0	0.5	20.0		39.9	46.0	-6.1
0.289	24.0			0.0	0.1	20.0		44.1	50.6	-6.4
3.096	18.9			0.0	0.5	20.0		39.4	46.0	-6.6
0.205	26.6			0.0	0.1	20.0		46.7	53.4	-6.7
2.956	18.7			0.0	0.5	20.0		39.2	46.0	-6.8
0.182	27.3			0.0	0.1	20.0		47.4	54.4	-7.0
0.362	21.5			0.0	0.2	20.0		41.7	48.7	-7.0
2.666	18.5			0.0	0.5	20.0		39.0	46.0	-7.0
2.516	18.1			0.0	0.5	20.0		38.6	46.0	-7.4
2.736	17.3			0.0	0.5	20.0		37.8	46.0	-8.2
2.156	17.1			0.0	0.4	20.0		37.5	46.0	-8.5
2.086	17.0			0.0	0.4	20.0		37.4	46.0	-8.6
2.816	16.9			0.0	0.5	20.0		37.4	46.0	-8.6

NORTHWEST EMC		CONDUCTED EMISSIONS DATA SHEET				REV df4.4 10/22/2004				
EUT: 2011B		Work Order: INMC0180								
Serial Number: Unknown		Date: 12/01/04								
Customer: INTERMEC Technologies Corporation		Temperature: 21								
Attendees: None		Humidity: 35%								
Cust. Ref. No.:		Barometric Pressure: 30.18								
Tested by: Rod Peloquin		Power: 120VAC/60Hz		Job Site: EV01						
TEST SPECIFICATIONS										
Specification: FCC 15.207 AC Powerline Conducted Emissions				Year: 2004						
Method: ANSI C63.4				Year: 2003						
SAMPLE CALCULATIONS										
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation										
Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator										
COMMENTS										
Installed in CN2NI/CN2 charging in docking station. CAC reader attached.										
EUT OPERATING MODES										
Transmitting 802.11(b), High Channel, 11Mbps										
DEVIATIONS FROM TEST STANDARD										
No deviations.										
RESULTS				Line		Run #				
Pass				L1		5				
Other										
				 Tested By:						
										
Freq (MHz)	Amplitude (dBuV)			Transducer (dB)	Cable (dB)	External Attenuation (dB)	Detector (blank equal peaks [PK] from scan)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.217	18.6			0.0	0.0	20.0	AV	38.6	52.9	-14.3
0.217	28.6			0.0	0.0	20.0	QP	48.6	62.9	-14.3
0.217	29.9			0.0	0.1	20.0		50.0	52.9	-2.9
0.157	32.4			0.0	0.1	20.0		52.5	55.6	-3.1
0.150	30.3			0.0	0.1	20.0		50.4	56.0	-5.6
0.202	27.0			0.0	0.1	20.0		47.1	53.5	-6.4
0.180	27.4			0.0	0.1	20.0		47.5	54.5	-7.0
0.186	26.9			0.0	0.1	20.0		47.0	54.2	-7.2
0.290	23.0			0.0	0.1	20.0		43.1	50.5	-7.4
3.026	16.9			0.0	0.5	20.0		37.4	46.0	-8.6
2.956	16.7			0.0	0.5	20.0		37.2	46.0	-8.8
3.096	16.3			0.0	0.5	20.0		36.8	46.0	-9.2
0.193	24.6			0.0	0.1	20.0		44.7	53.9	-9.2
2.536	16.3			0.0	0.5	20.0		36.8	46.0	-9.2
2.586	16.2			0.0	0.5	20.0		36.7	46.0	-9.3
2.666	15.7			0.0	0.5	20.0		36.2	46.0	-9.8
0.433	17.0			0.0	0.2	20.0		37.2	47.2	-10.0
0.173	24.7			0.0	0.1	20.0		44.8	54.8	-10.0
0.236	21.9			0.0	0.2	20.0		42.1	52.2	-10.1

NORTHWEST EMC		CONDUCTED EMISSIONS DATA SHEET				REV d4.4 10/22/2004				
EUT: 2011B		Work Order: INMC0180								
Serial Number: Unknown		Date: 12/01/04								
Customer: INTERMEC Technologies Corporation		Temperature: 21								
Attendees: None		Humidity: 35%								
Cust. Ref. No.:		Barometric Pressure: 30.18								
Tested by: Rod Peloquin		Power: 120VAC/60Hz		Job Site: EV01						
TEST SPECIFICATIONS										
Specification: FCC 15.207 AC Powerline Conducted Emissions				Year: 2004						
Method: ANSI C63.4				Year: 2003						
SAMPLE CALCULATIONS										
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation										
Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator										
COMMENTS										
Installed in CN2NI/CN2 charging in docking station. CAC reader attached.										
EUT OPERATING MODES										
Transmitting 802.11(b), High Channel, 11Mbps										
DEVIATIONS FROM TEST STANDARD										
No deviations.										
RESULTS										
Pass		Line L1		Run # 5						
Other		 Tested By:								
										
Freq (MHz)	Amplitude (dBuV)			Transducer (dB)	Cable (dB)	External Attenuation (dB)	Detector (blank equal peaks [PK] from scan)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.217	18.7			0.0	0.0	20.0	AV	38.7	52.9	-14.2
0.217	28.1			0.0	0.0	20.0	QP	48.1	62.9	-14.8
0.217	30.2			0.0	0.1	20.0		50.3	52.9	-2.6
3.026	20.8			0.0	0.5	20.0		41.3	46.0	-4.7
2.536	20.0			0.0	0.5	20.0		40.5	46.0	-5.5
0.168	29.2			0.0	0.1	20.0		49.3	55.1	-5.8
0.159	29.3			0.0	0.1	20.0		49.4	55.5	-6.1
0.164	29.0			0.0	0.1	20.0		49.1	55.2	-6.1
0.150	29.6			0.0	0.1	20.0		49.7	56.0	-6.3
3.096	19.0			0.0	0.5	20.0		39.5	46.0	-6.5
0.178	27.9			0.0	0.1	20.0		48.0	54.6	-6.6
2.596	18.8			0.0	0.5	20.0		39.3	46.0	-6.7
2.656	18.7			0.0	0.5	20.0		39.2	46.0	-6.8
0.290	23.3			0.0	0.1	20.0		43.4	50.5	-7.1
2.736	18.4			0.0	0.5	20.0		38.9	46.0	-7.1
3.176	18.0			0.0	0.5	20.0		38.5	46.0	-7.5
0.202	25.7			0.0	0.1	20.0		45.8	53.5	-7.7
2.816	17.7			0.0	0.5	20.0		38.2	46.0	-7.8
2.956	17.3			0.0	0.5	20.0		37.8	46.0	-8.2



