Intermec Technologies Corporation

1000CP01, 1000CP02, 1001CP01

Tested to the following Specification: FCC 15.407:2010

Report No. INMC0650.2

Report Prepared By



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

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22975 NW Evergreen Parkway Suite 400 Hillsboro, Oregon 97124

Certificate of Test

Last Date of Test: December 21, 2010 Intermec Technologies Corporation Model: 1000CP01, 1000CP02, 1001CP01

| Emissions | | | | |
|-----------------------------|-----------------|------------------|-----------|--|
| Test Description | Specification | Test Method | Pass/Fail | |
| Spurious Radiated Emissions | FCC 15.407:2010 | ANSI C63.10:2009 | Pass | |

| Mandiffication and to the mandret |
|--|
| Modifications made to the product |
| See the Modifications section of this report |

Test Facility

Approved By:

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 (Site filing #2834D-1).

An U.Kip

Greg Kiemel, Director of Engineering

RAJVKI

NVLAP Lab Code: 200630-0

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 History

Revision 06/29/09

| Revision Number | Description | Date | Page Number |
|--------------------|-------------|------|-------------|
| | | | |
| 00 | None | | |



Accreditations and Authorizations

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 National Voluntary Laboratory Accreditation Program (NVLAP) for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. NVLAP is administered by the National Institute of Standards and Technology (NIST), an agency of the U.S. Commerce Department. The NVLAP accreditation encompasses Electromagnetic Compatibility Testing in accordance with the European Union EMC Directive 2004/108/EC, and ANSI C63.4. 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-Gen, Issue 2 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. (Site Filing Numbers - Hillsboro: 2834D-1, 2834D-2, Sultan: 2834C-1, Irvine: 2834B-1, 2834B-2, Brooklyn Park: 2834E-1)

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.

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).



Accreditations and Authorizations

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, G-84, C-2687, T-1658, and R-2318, Irvine: R-1943, G-85, C-2766, and T-1659, Sultan: R-871, G-83, C-1784, and T-1511, Brooklyn Park: R-3125, G-86, G-141, C-3464, and T-1634).

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 (US0017).

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

KCC

Northwest EMC, Inc is a CAB designated by MRA partners and recognized by Korea. (Assigned Lab Numbers: Hillsboro: US0017, Irvine: US0158, Sultan: US0157, Brooklyn Park: US0175)

VIETNAM

Vietnam MIC has approved Northwest EMC as an accredited test lab. Per Decision No. 194/QD-QLCL (dated December 15, 2009), Northwest EMC test reports can be used for Vietnam approval submissions.

SCOPE

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



Northwest EMC Locations

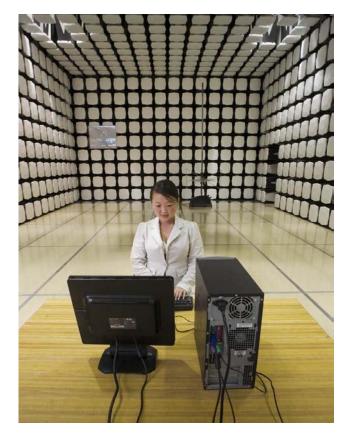




Oregon Labs EV01-EV12 22975 NW Evergreen Pkwy Suite 400 Hillsboro, OR 97124 (503) 844-4066 California Labs OC01-OC13 41 Tesla Irvine, CA 92618 (949) 861-8918 Minnesota Labs MN01-MN08 9349 W Broadway Ave. Brooklyn Park, MN 55445 (763) 425-2281 Washington Labs SU01-SU07 14128 339th Ave. SE Sultan, WA 98294 (360) 793-8675 New York Labs WA01-WA04 4939 Jordan Rd. Elbridge, NY 13060 (315) 685-0796







Party Requesting the Test

| Company Name: | Intermec technologies Corporation |
|--------------------------|-----------------------------------|
| Address: | 6001 36th Avenue West |
| City, State, Zip: | Everett, WA 98203-1264 |
| Test Requested By: | Wayne Rieger |
| Model: | 1000CP01, 1000CP02, 1001CP01 |
| First Date of Test: | December 21, 2010 |
| Last Date of Test: | December 21, 2010 |
| Receipt Date of Samples: | December 6, 2010 |
| Equipment Design Stage: | Production |
| Equipment Condition: | No Damage |

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):

Handheld computers containing the Intermec Model RC12 radio module. The module is an 802.11 a/b/g/n - Bluetooth radio.

Testing Objective:

To demonstrate compliance with FCC 15.407 spurious radiated emissions requirement for the 802.11a/n portion of the radio. The RC12 radio module has been previously tested in a standalone configuration using a higher gain antenna of the same type. This testing in the Models 1000CP01, 1000CP02, and 1001CP01 handheld computers is done for an additional assurance of compliance.

Configurations

Revision 9/21/05

CONFIGURATION 1 INMC0650

| Software/Firmware Running during test | |
|---------------------------------------|------------------|
| Description | Version |
| Regulatory Test Tool | RTT_1.01.00.0007 |

| EUT | | | |
|---------------|-----------------------------------|-------------------|---------------|
| Description | Manufacturer | Model/Part Number | Serial Number |
| Data Terminal | Intermec Technologies Corporation | 1000CP01 | 2831147092 |

| Peripherals in test setup boundary | | | | |
|--|-----------------------------------|-------------|-----------------|--|
| Description Manufacturer Model/Part Number Serial Number | | | | |
| USB SNAPON | Intermec Technologies Corporation | 225-773-001 | HDI5P D-SUB, A3 | |
| Power Supply | Intermec Technologies Corporation | AE39 | 02061000875 | |

| Cables | | | | | |
|--|--------|------------|---------|---------------|--------------|
| Cable Type | Shield | Length (m) | Ferrite | Connection 1 | Connection 2 |
| AC power | No | 1.8 | No | Power Supply | AC Mains |
| Power | PA | 1.8 | PA | Power Supply | USB SNAPON |
| Serial to USB | Yes | 0.2 | Yes | USB SNAPON | USB Cable |
| USB | Yes | 0.2 | No | Serial to USB | Unterminated |
| PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown. | | | | | |

CONFIGURATION 2 INMC0650

| Software/Firmware Running during test | |
|---------------------------------------|------------------|
| Description | Version |
| Regulatory Test Tool | RTT_1.01.00.0007 |

| EUT | | | |
|---------------|-----------------------------------|-------------------|---------------|
| Description | Manufacturer | Model/Part Number | Serial Number |
| Data Terminal | Intermec Technologies Corporation | 1000CP02 | 2831147193 |

| Peripherals in test setup boundary | | | | |
|------------------------------------|-----------------------------------|---------------|-----------------|--|
| Description | Model/Part Number | Serial Number | | |
| USB SNAPON | Intermec Technologies Corporation | 225-773-001 | HDI5P D-SUB, A3 | |
| Power Supply | Intermec Technologies Corporation | AE39 | 02061000875 | |

| Cables | | | | | |
|--|--------|------------|---------|---------------|--------------|
| Cable Type | Shield | Length (m) | Ferrite | Connection 1 | Connection 2 |
| AC power | No | 1.8 | No | Power Supply | AC Mains |
| Power | PA | 1.8 | PA | Power Supply | USB SNAPON |
| Serial to USB | Yes | 0.2 | Yes | USB SNAPON | USB Cable |
| USB | Yes | 0.2 | No | Serial to USB | Unterminated |
| PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown. | | | | | |

Configurations

CONFIGURATION 3 INMC0650

| Software/Firmware Running during test | | | | |
|---------------------------------------|------------------|--|--|--|
| Description | Version | | | |
| Regulatory Test Tool | RTT_1.01.00.0007 | | | |

| EUT | | | |
|---------------|-----------------------------------|-------------------|---------------|
| Description | Manufacturer | Model/Part Number | Serial Number |
| Data Terminal | Intermec Technologies Corporation | 1001CP01 | 2831147306 |

| Peripherals in test setup boundary | | | | | |
|------------------------------------|--|-------------|-----------------|--|--|
| Description | ption Manufacturer Model/Part Number Serial Number | | | | |
| USB SNAPON | Intermec Technologies Corporation | 225-773-001 | HDI5P D-SUB, A3 | | |
| Power Supply | Intermec Technologies Corporation | AE39 | 02061000875 | | |

| Cables | | | | | |
|--|--------|------------|---------|---------------|--------------|
| Cable Type | Shield | Length (m) | Ferrite | Connection 1 | Connection 2 |
| AC power | No | 1.8 | No | Power Supply | AC Mains |
| Power | PA | 1.8 | PA | Power Supply | USB SNAPON |
| Serial to USB | Yes | 0.2 | Yes | USB SNAPON | USB Cable |
| USB | Yes | 0.2 | No | Serial to USB | Unterminated |
| PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown. | | | | | |

Modifications

Revision 4/28/03

| Equipment modifications | | | | | | |
|-------------------------|------------|----------------------------------|--------------------------------------|---|----------------------------------|--|
| Item | Date | Test | Modification | Note | Disposition of EUT | |
| 1 | 12/21/2010 | Spurious Radiated Emission | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | Scheduled testing was completed. | |

SPURIOUS RADIATED EMISSIONS

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

| MODES OF OPERATION | |
|------------------------|--|
| Continuous Tx. 1 Mbps | |
| Continuous Tx. 6 Mbps | |
| Continuous Tx. 11 Mbps | |
| Continuous Tx. 36 Mbps | |
| Continuous Tx. 54Mbps | |
| Continuous Tx. MCS0 | |
| Continuous Ty MCS7 | |

| FREC | วบ | ENC | CIES | S IN | VES | TIG | ΑT | ED | |
|------|----|-----|------|------|-----|-----|----|----|--|
| | | | | | | | | | |

Low Channel Mid Channel

High Channel

POWER SETTINGS INVESTIGATED

120VAC/60Hz

FREQUENCY RANGE INVESTIGATED Start Frequency 30 MHz Stop Frequency 40 GHz

SAMPLE CALCULATIONS

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

| TEST EQUIPMENT | | | | | |
|--------------------------|-----------------|---------------------------|-----|------------|----------|
| Description | Manufacturer | Model | ID | Last Cal. | Interval |
| Spectrum Analyzer | Agilent | E4446A | AAQ | 1/6/2010 | 12 |
| High Pass Filter | Micro-Tronics | HPM50112 | HGA | 10/1/2009 | 13 |
| 5.725-5.875 Notch Filter | Micro-Tronics | BRC50705 | HGJ | 9/29/2010 | 13 |
| 5.47-5.725 Notch Filter | Micro-Tronics | BRC50704 | HGI | 9/29/2010 | 13 |
| 5.25 GHz Notch Filter | K&L Microwave | 8N50-5250/X200-0/0 | HFK | 4/2/2010 | 13 |
| OC Cable | ESM Cable Corp. | KMKM-72 | OCV | 11/3/2009 | 16 |
| Cable | ESM Cable Corp. | KMKM-72 | EVY | 11/3/2009 | 16 |
| EV12 Cables | N/A | Standard Gain Horn Cables | EVU | 7/14/2010 | 13 |
| EV12 Cables | N/A | Double Ridge Horn Cables | EVT | 11/22/2010 | 13 |
| EV12 Cables | N/A | Bilog Cables | EVS | 7/14/2010 | 13 |
| Pre-Amplifier | Miteq | JSW45-26004000-40-5P | AVR | 6/22/2010 | 13 |
| Pre-Amplifier | Miteq | AMF-6F-18002650-25-10P | AVU | 12/15/2010 | 13 |
| Pre-Amplifier | Miteq | AMF-6F-12001800-30-10P | AVI | 7/14/2010 | 13 |
| Pre-Amplifier | Miteq | AMF-6F-08001200-30-10P | AVH | 7/14/2010 | 13 |
| Pre-Amplifier | Miteq | AMF-3D00100800-32-13P | AVF | 7/14/2010 | 13 |
| Pre-Amplifier | Miteq | AM-1616-1000 | AVM | 7/14/2010 | 13 |
| Antenna, Horn | ETS Lindgren | 3160-10 | AIW | NCR | 0 |
| Antenna, Horn | ETS Lindgren | 3160-09 | AIV | NCR | 0 |
| Antenna, Horn | ETS | 3160-08 | AIA | NCR | 0 |
| Antenna, Horn | ETS | 3160.07 | AHZ | 9/8/2010 | 24 |
| Antenna, Horn | ETS | 3115 | AIB | 9/8/2010 | 24 |
| Antenna, Biconilog | EMCO | 3141 | AXG | 2/15/2010 | 13 |
| Spectrum Analyzer | Agilent | E4440A | AAX | 5/14/2010 | 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

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. The measurement uncertainty estimation is available upon request.

TEST DESCRIPTION

The antennas to be used with the EUT were tested. The EUT was transmitting and/or receiving while set at the lowest channel, a middle channel, and the highest channel available. While scanning, emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63 10-2009)

The amplitude and frequency of the highest emissions were noted. The EUT was then replaced with a horn antenna. A signal generator was connected to the horn antenna and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded, and by factoring in the cable loss to the dipole antenna and its gain (dBi); the effective radiated power for each radiated spurious emission was determined.

