Intermec Technologies Corporation

1000CP01, 1000CP02, 1001CP01

Tested to the following Specification: FCC 15.247:2010

Report No. INMC0650.1

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 15.247:2010	ANSI C63.10:2009	Pass	

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 (Site filing #2834D-1).

Approved By:

Greg Kiemel, Director of Engineering

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

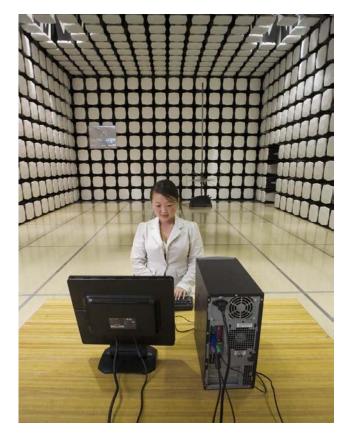




Oregon Labs EV01-EV12 22975 NW Evergreen Pkwy Suite 400 Hillsboro, OR 97124 (503) 844-4066 California Labs OC01-OC13 41 Tesla Irvine, CA 92618 (949) 861-8918 Minnesota Labs MN01-MN08 9349 W Broadway Ave. Brooklyn Park, MN 55445 (763) 425-2281 Washington Labs SU01-SU07 14128 339th Ave. SE Sultan, WA 98294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







Rev 11/17/06

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 15.247 spurious radiated emissions requirement for the Bluetooth 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 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. DH5 (GFSK)

Continuous Tx. 2DH5

Continuous Tx. 3DH5

FREQUENCIES INVESTIGATED

Low Channel

Mid Channel

High Channel

POWER SETTINGS INVESTIGATED

120VAC/60Hz

FREQUENCY RANGE INVESTIGATED			
Start Frequency	30 MHz	Stop Frequency	26 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 i	ising the handwidths and dete	ectors specified No video filte	r 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 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 C63.10:2009). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

