

Intermec Technologies Corporation

IM5r3

Project
P-INMC015

Report No. INMC0602

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

Last Date of Test: October 05, 2010
Intermec Technologies Corporation
Model: IM5r3

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.
9349 W Broadway Ave.
Brooklyn Park, MN 55445

Phone: (763) 425-2281

Fax: (763) 424-3469

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

Approved By:

Don Facteau, IS Manager



NVLAP Lab Code: 200881-0

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 Number	Description	Date	Page Number
00	None		

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.



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 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 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.



NVLAP LAB CODE 200629-0
NVLAP LAB CODE 200630-0
NVLAP LAB CODE 200676-0
NVLAP LAB CODE 200761-0
NVLAP LAB CODE 200881-0

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-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.



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, 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). 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



KCC

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



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



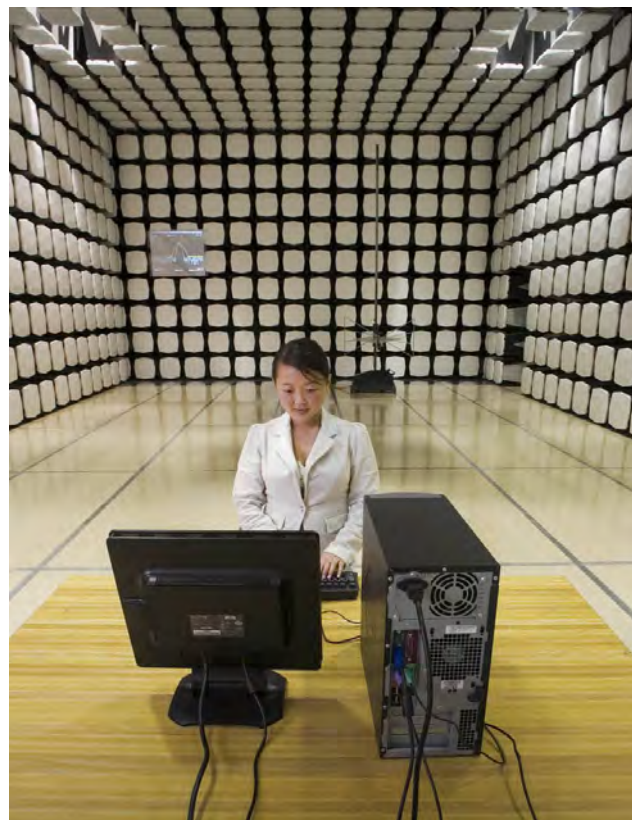
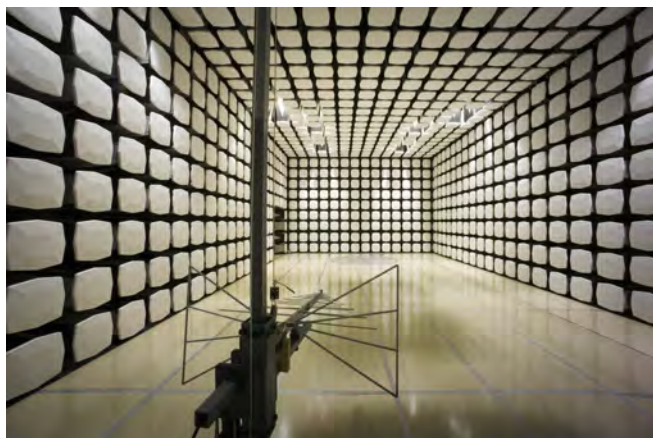
Oregon
Labs EV01-EV12
22975 NW Evergreen Pkwy
Suite 400
Hillsboro, OR 97124
(503) 844-4066

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



Northwest EMC	Product Description	Rev 11/17/06
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Party Requesting the Test

Company Name:	Intermec Technologies Corporation
Address:	6001 36th Avenue West
City, State, Zip:	Everett, WA 98203-1264
Test Requested By:	Sean MacKellar
Model:	IM5r3
First Date of Test:	October 1, 2010
Last Date of Test:	October 5, 2010
Receipt Date of Samples:	October 1, 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):
Frequency Hopping Spread Spectrum (FHSS) radio operating with up to +36 dBm EIRP

Testing Objective:
To demonstrate compliance of a new antenna type and AC power supply under FCC 15.247

CONFIGURATION 2 INMC0602**Software/Firmware Running during test**

Description	Version
Hyperterminal	N/A

EUT

Description	Manufacturer	Model/Part Number	Serial Number
IM5r3	Intermec Technologies Corporation	IM5r3	21711052511
Antenna Linear	Huber Suhner	SPA 915/70/8/0/V	00111

Peripherals in test setup boundary

Description	Manufacturer	Model/Part Number	Serial Number
Laptop	Dell	PP18L	28863562501
DC Power Brick	Dell	PA-1650-05D2	CN-0F7970-71615-79H-0FFD
DC Power Brick EUT	Intermec Technologies Corporation	AE34	885896

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Serial	Yes	3m	No	IM5r3	Laptop
AC Power	No	1.8m	No	AC Mains	DC Power Brick
DC Power	No	1.8m	Yes	DC Power Brick	Laptop
AC Power	No	1.8m	No	AC Mains	DC Power Brick EUT
DC Power	No	1.9m	No	DC Power Brick EUT	IM5r3
N to SMA	Yes	9m	No	IM5r3	Antenna

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

CONFIGURATION 3 INMC0602**Software/Firmware Running during test**

Description	Version
Hyperterminal	N/A

EUT

Description	Manufacturer	Model/Part Number	Serial Number
IM5r3	Intermec Technologies Corporation	IM5r3	21711052511
Antenna 7FT	NeWave	XRAB-N1	D/C 20091116

Peripherals in test setup boundary

Description	Manufacturer	Model/Part Number	Serial Number
Laptop	Dell	PP18L	28863562501
DC Power Brick	Dell	PA-1650-05D2	CN-0F7970-71615-79H-0FFD
DC Power Brick EUT	Intermec Technologies Corporation	AE34	885896

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Serial	Yes	3m	No	IM5r3	Laptop
AC Power	No	1.8m	No	AC Mains	DC Power Brick
DC Power	No	1.8m	Yes	DC Power Brick	Laptop
AC Power	No	1.8m	No	AC Mains	DC Power Brick EUT
DC Power	No	1.9m	No	DC Power Brick EUT	IM5r3
N to SMA	Yes	9m	No	IM5r3	Antenna

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

CONFIGURATION 4 INMC0602**Software/Firmware Running during test**

Description	Version
Hyperterminal	N/A

EUT

Description	Manufacturer	Model/Part Number	Serial Number
IM5r3	Intermec Technologies Corporation	IM5r3	21711052511
Antenna Ultra Low	Kathrein	52010092	G0D1400048

Peripherals in test setup boundary

Description	Manufacturer	Model/Part Number	Serial Number
Laptop	Dell	PP18L	28863562501
DC Power Brick	Dell	PA-1650-05D2	CN-0F7970-71615-79H-0FFD
DC Power Brick EUT	Intermec Technologies Corporation	AE34	885896

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Serial	Yes	3m	No	IM5r3	Laptop
AC Power	No	1.8m	No	AC Mains	DC Power Brick
DC Power	No	1.8m	Yes	DC Power Brick	Laptop
AC Power	No	1.8m	No	AC Mains	DC Power Brick EUT
DC Power	No	1.9m	No	DC Power Brick EUT	IM5r3
N to SMA	Yes	9m	No	IM5r3	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	10/2/2010	Spurious Radiated 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.
2	10/5/2010	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

EMC**Spurious Radiated Emissions**

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

MODES OF OPERATION

Transmitting PRASK modulation, EPC Tags.

POWER SETTINGS INVESTIGATED

120VAC/60Hz

CONFIGURATIONS INVESTIGATED

INMC0602 - 4

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator, 6 dB, 'SMA'	SM Electronics	SA18H-06	REM	7/9/2010	13 mo
Attenuator, 20 dB, 'SMA'	SM Electronics	SA6-20	REO	7/9/2010	13 mo
Attenuator, 10db, 'SMA'	S.M. Electronics	SA18H-10	REN	7/9/2010	13 mo
.5-1 GHz Notch Filter	K&L Microwave	3TNF-500/1000-N/N	HFT	1/8/2010	13 mo
High Pass Filter 0-425 MHz	Micro-Tronics	LPM50003	HGO	7/9/2010	13 mo
High Pass Filter	Micro-Tronics	HPM50108	HGP	7/9/2010	13 mo
Antenna, Horn	ETS	3160-07	AXP	NCR	0 mo
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	7/19/2010	13 mo
MN05 Cables	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	7/19/2010	13 mo
MN05 Cables	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	7/19/2010	13 mo
Antenna, Horn (DRG)	ETS Lindgren	3115	AIP	12/22/2009	24 mo
Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVX	7/19/2010	13 mo
Pre-Amplifier	Miteq	AM-1616-1000	AVY	7/19/2010	13 mo
MN05 Cables	ESM Cable Corp.	Bilog Cables	MNH	1/15/2010	13 mo
Antenna, Biconilog	ETS Lindgren	3142D	AXO	12/30/2009	13 mo
Spectrum Analyzer	Agilent	E4446A	AAT	2/24/2010	12 mo

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 IF bandwidths and detectors specified. No video filter was used, except in the case of the FCC Average Measurements above 1GHz. In that case, a peak detector with a 10Hz video bandwidth was used.

MEASUREMENT UNCERTAINTY

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

TEST DESCRIPTION

The 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.

NORTHWEST

EMC

Spurious Radiated Emissions

PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	INMC0602	Date:	10/02/10	Trevor Buls
Project:	P-INMC015	Temperature:	22.59°C	
Job Site:	MN05	Humidity:	41.49	
Serial Number:	21711052511	Barometric Pres.:	1029.9	Tested by: Trevor Buls
EUT:	IM5r3			
Configuration:	4 - INMC0602			
Customer:	Intermec Technologies Corporation			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Transmitting PRASK modulation, EPC Tags.			
Deviations:	None			
Comments:	Antenna Port 4 is worst case. Using Kathrein Ultra-Low Gain antenna.			

Test Specifications			Test Method	
FCC 15.247:2010			ANSI C63.10:2009	

Run #	16	Test Distance (m)	3	Antenna Height(s)	1-4m	Results	Pass
80 70 60 50 40 30 20 10 0 1000 10000 MHz							

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
1854.542	47.6	-5.8	1.3	238.0	3.0	0.0	Horz	AV	0.0	41.8	54.0	-12.2
3611.067	42.5	-1.3	1.4	34.0	3.0	0.0	Horz	AV	0.0	41.2	54.0	-12.8
3661.038	39.6	-0.9	1.2	5.0	3.0	0.0	Vert	AV	0.0	38.7	54.0	-15.3
3611.033	39.4	-1.3	1.3	29.0	3.0	0.0	Vert	AV	0.0	38.1	54.0	-15.9
3661.063	38.2	-0.9	1.0	315.0	3.0	0.0	Horz	AV	0.0	37.3	54.0	-16.7
3661.005	37.7	-0.9	1.3	5.0	3.0	0.0	Horz	AV	0.0	36.8	54.0	-17.2
3661.038	37.2	-0.9	1.0	22.0	3.0	0.0	Vert	AV	0.0	36.3	54.0	-17.7
3709.025	36.5	-0.6	1.3	347.0	3.0	0.0	Horz	AV	0.0	35.9	54.0	-18.1
1854.558	40.6	-5.8	1.3	331.0	3.0	0.0	Vert	AV	0.0	34.8	54.0	-19.2
3709.025	35.3	-0.6	1.4	332.0	3.0	0.0	Vert	AV	0.0	34.7	54.0	-19.3
3661.030	35.2	-0.9	1.2	161.0	3.0	0.0	Vert	AV	0.0	34.3	54.0	-19.7
3661.005	32.7	-0.9	1.0	301.0	3.0	0.0	Horz	AV	0.0	31.8	54.0	-22.2
4513.758	28.0	2.2	1.3	323.0	3.0	0.0	Vert	AV	0.0	30.2	54.0	-23.8
4638.350	26.9	2.9	2.9	113.0	3.0	0.0	Horz	AV	0.0	29.8	54.0	-24.2
4633.500	26.9	2.9	1.3	177.0	3.0	0.0	Vert	AV	0.0	29.8	54.0	-24.2
4513.858	27.4	2.2	1.3	29.0	3.0	0.0	Horz	AV	0.0	29.6	54.0	-24.4
4576.492	26.9	2.6	3.0	181.0	3.0	0.0	Horz	AV	0.0	29.5	54.0	-24.5
4576.150	26.9	2.6	1.3	292.0	3.0	0.0	Vert	AV	0.0	29.5	54.0	-24.5
1830.542	34.6	-6.0	1.0	205.0	3.0	0.0	Horz	AV	0.0	28.6	54.0	-25.4
1805.550	33.5	-6.2	1.3	149.0	3.0	0.0	Horz	AV	0.0	27.3	54.0	-26.7
1805.450	33.4	-6.2	1.3	197.0	3.0	0.0	Vert	AV	0.0	27.2	54.0	-26.8
1830.542	32.5	-6.0	1.3	156.0	3.0	0.0	Vert	AV	0.0	26.5	54.0	-27.5
3611.092	47.3	-1.3	1.4	34.0	3.0	0.0	Horz	PK	0.0	46.0	74.0	-28.0
2784.300	29.4	-3.8	1.3	235.0	3.0	0.0	Vert	AV	0.0	25.6	54.0	-28.4
2745.683	29.2	-3.7	2.5	196.0	3.0	0.0	Vert	AV	0.0	25.5	54.0	-28.5
2745.717	29.2	-3.7	1.3	12.0	3.0	0.0	Horz	AV	0.0	25.5	54.0	-28.5
2784.050	29.3	-3.8	1.1	308.0	3.0	0.0	Horz	AV	0.0	25.5	54.0	-28.5
2706.158	29.0	-3.6	1.3	10.0	3.0	0.0	Horz	AV	0.0	25.4	54.0	-28.6
2708.233	29.0	-3.6	1.3	205.0	3.0	0.0	Vert	AV	0.0	25.4	54.0	-28.6
3660.738	45.6	-0.9	1.2	5.0	3.0	0.0	Vert	PK	0.0	44.7	74.0	-29.3
3610.833	45.9	-1.3	1.3	29.0	3.0	0.0	Vert	PK	0.0	44.6	74.0	-29.4
3660.896	45.5	-0.9	1.0	22.0	3.0	0.0	Vert	PK	0.0	44.6	74.0	-29.4
3708.658	44.7	-0.6	1.3	347.0	3.0	0.0	Horz	PK	0.0	44.1	74.0	-29.9
3661.096	44.9	-0.9	1.0	315.0	3.0	0.0	Horz	PK	0.0	44.0	74.0	-30.0
4574.933	41.3	2.6	1.3	292.0	3.0	0.0	Vert	PK	0.0	43.9	74.0	-30.1
1854.442	49.2	-5.8	1.3	238.0	3.0	0.0	Horz	PK	0.0	43.4	74.0	-30.6
3661.071	44.3	-0.9	1.3	5.0	3.0	0.0	Horz	PK	0.0	43.4	74.0	-30.6
3660.771	44.0	-0.9	1.2	161.0	3.0	0.0	Vert	PK	0.0	43.1	74.0	-30.9
4633.758	40.1	2.9	1.3	177.0	3.0	0.0	Vert	PK	0.0	43.0	74.0	-31.0
3708.725	43.5	-0.6	1.4	332.0	3.0	0.0	Vert	PK	0.0	42.9	74.0	-31.1
1854.642	47.8	-5.8	1.3	331.0	3.0	0.0	Vert	PK	0.0	42.0	74.0	-32.0
4512.183	39.7	2.2	1.3	323.0	3.0	0.0	Vert	PK	0.0	41.9	74.0	-32.1
4637.167	38.9	2.9	2.9	113.0	3.0	0.0	Horz	PK	0.0	41.8	74.0	-32.2
4512.742	39.5	2.2	1.3	29.0	3.0	0.0	Horz	PK	0.0	41.7	74.0	-32.3
4576.025	38.9	2.6	3.0	181.0	3.0	0.0	Horz	PK	0.0	41.5	74.0	-32.5
3661.330	42.1	-0.9	1.0	301.0	3.0	0.0	Horz	PK	0.0	41.2	74.0	-32.8
2780.458	42.6	-3.8	1.3	235.0	3.0	0.0	Vert	PK	0.0	38.8	74.0	-35.2
2744.592	42.4	-3.7	2.5	196.0	3.0	0.0	Vert	PK	0.0	38.7	74.0	-35.3
2746.517	42.2	-3.7	1.3	12.0	3.0	0.0	Horz	PK	0.0	38.5	74.0	-35.5
1805.142	44.6	-6.2	1.3	197.0	3.0	0.0	Vert	PK	0.0	38.4	74.0	-35.6
2782.683	42.2	-3.8	1.1	308.0	3.0	0.0	Horz	PK	0.0	38.4	74.0	-35.6
2708.092	41.9	-3.6	1.3	205.0	3.0	0.0	Vert	PK	0.0	38.3	74.0	-35.7
2708.825	41.9	-3.6	1.3	10.0	3.0	0.0	Horz	PK	0.0	38.3	74.0	-35.7
1830.975	44.2	-6.0	1.0	205.0	3.0	0.0	Horz	PK	0.0	38.2	74.0	-35.8
1831.175	43.0	-6.0	1.3	156.0	3.0	0.0	Vert	PK	0.0	37.0	74.0	-37.0
1805.592	43.1	-6.2	1.3	149.0	3.0	0.0	Horz	PK	0.0	36.9	74.0	-37.1

EMC**Spurious Radiated Emissions**

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

MODES OF OPERATION

Transmitting PRASK modulation, EPC Tags.

POWER SETTINGS INVESTIGATED

120VAC/60Hz

CONFIGURATIONS INVESTIGATED

INMC0602 - 3

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator, 6 dB, 'SMA'	SM Electronics	SA18H-06	REM	7/9/2010	13 mo
Attenuator, 20 dB, 'SMA'	SM Electronics	SA6-20	REO	7/9/2010	13 mo
Attenuator, 10db, 'SMA'	S.M. Electronics	SA18H-10	REN	7/9/2010	13 mo
.5-1 GHz Notch Filter	K&L Microwave	3TNF-500/1000-N/N	HFT	1/8/2010	13 mo
High Pass Filter 0-425 MHz	Micro-Tronics	LPM50003	HGO	7/9/2010	13 mo
High Pass Filter	Micro-Tronics	HPM50108	HGP	7/9/2010	13 mo
Antenna, Horn	ETS	3160-07	AXP	NCR	0 mo
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	7/19/2010	13 mo
MN05 Cables	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	7/19/2010	13 mo
MN05 Cables	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	7/19/2010	13 mo
Antenna, Horn (DRG)	ETS Lindgren	3115	AIP	12/22/2009	24 mo
Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVX	7/19/2010	13 mo
Pre-Amplifier	Miteq	AM-1616-1000	AVY	7/19/2010	13 mo
MN05 Cables	ESM Cable Corp.	Bilog Cables	MNH	1/15/2010	13 mo
Antenna, Biconilog	ETS Lindgren	3142D	AXO	12/30/2009	13 mo
Spectrum Analyzer	Agilent	E4446A	AAT	2/24/2010	12 mo

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 IF bandwidths and detectors specified. No video filter was used, except in the case of the FCC Average Measurements above 1GHz. In that case, a peak detector with a 10Hz video bandwidth was used.

MEASUREMENT UNCERTAINTY

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

TEST DESCRIPTION

The 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.

Work Order:INMC0602

Project:P-INMC015

Job Site:MN05

Serial Number:21711052511

Date:10/04/10

Temperature:22.59°C

Humidity:41.49

Barometric Pres.:1029.9

Tested by:Trevor Buls

EUT:IM5r3

Configuration:3 - INMC0602

Customer:Intermec Technologies Corporation

Attendees:None

EUT Power:120VAC/60Hz

Operating Mode:Transmitting PRASK modulation, EPC Tags.

Deviations:None

Comments:Antenna Port 4 is worst case. Using NeWave Multi-Axis antenna.

Test Specifications

FCC 15.247:2010

Test Method

ANSI C63.10:2009

Run #

31

Test Distance (m)

3

Antenna Height(s)

1-4m

Results

Pass

80

70

60

50

40

30

20

10

0

1000

10000

dBuV/m

MHz

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
1854.550	53.8	-5.8	1.1	29.0	3.0	0.0	Horz	AV	0.0	48.0	54.0	-6.0
1854.508	52.0	-5.8	1.1	336.0	3.0	0.0	Vert	AV	0.0	46.2	54.0	-7.8
2708.317	47.0	-3.6	1.2	156.0	3.0	0.0	Horz	AV	0.0	43.4	54.0	-10.6
2708.258	45.7	-3.6	1.2	229.0	3.0	0.0	Vert	AV	0.0	42.1	54.0	-11.9
2781.758	44.6	-3.8	1.3	276.0	3.0	0.0	Vert	AV	0.0	40.8	54.0	-13.2
2781.758	44.3	-3.8	1.4	161.0	3.0	0.0	Horz	AV	0.0	40.5	54.0	-13.5
1830.550	45.7	-6.0	1.0	345.0	3.0	0.0	Horz	AV	0.0	39.7	54.0	-14.3
2745.775	43.1	-3.7	1.3	321.0	3.0	0.0	Vert	AV	0.0	39.4	54.0	-14.6
1830.525	44.5	-6.0	1.0	185.0	3.0	0.0	Vert	AV	0.0	38.5	54.0	-15.5
3611.042	39.7	-1.3	1.3	33.0	3.0	0.0	Horz	AV	0.0	38.4	54.0	-15.6
1830.550	44.2	-6.0	1.3	191.0	3.0	0.0	Vert	AV	0.0	38.2	54.0	-15.8
3661.050	38.7	-0.9	1.2	346.0	3.0	0.0	Vert	AV	0.0	37.8	54.0	-16.2
1805.492	43.5	-6.2	1.3	0.0	3.0	0.0	Vert	AV	0.0	37.3	54.0	-16.7
1830.533	43.2	-6.0	1.3	17.0	3.0	0.0	Horz	AV	0.0	37.2	54.0	-16.8
2745.750	40.8	-3.7	1.3	184.0	3.0	0.0	Horz	AV	0.0	37.1	54.0	-16.9
3709.033	37.5	-0.6	1.3	24.0	3.0	0.0	Vert	AV	0.0	36.9	54.0	-17.1
1805.558	42.5	-6.2	1.3	219.0	3.0	0.0	Horz	AV	0.0	36.3	54.0	-17.7
4573.500	32.1	2.6	1.3	318.0	3.0	0.0	Vert	AV	0.0	34.7	54.0	-19.3
3611.050	35.1	-1.3	1.2	62.0	3.0	0.0	Vert	AV	0.0	33.8	54.0	-20.2
1830.542	38.8	-6.0	1.3	228.0	3.0	0.0	Horz	AV	0.0	32.8	54.0	-21.2
4513.783	30.2	2.2	1.3	168.0	3.0	0.0	Horz	AV	0.0	32.4	54.0	-21.6
1854.558	58.1	-5.8	1.1	29.0	3.0	0.0	Horz	PK	0.0	52.3	74.0	-21.7
4513.742	30.0	2.2	1.3	166.0	3.0	0.0	Vert	AV	0.0	32.2	54.0	-21.8
1830.533	37.9	-6.0	1.2	263.0	3.0	0.0	Vert	AV	0.0	31.9	54.0	-22.1
3661.058	32.7	-0.9	1.3	75.0	3.0	0.0	Horz	AV	0.0	31.8	54.0	-22.2
1854.425	56.8	-5.8	1.1	336.0	3.0	0.0	Vert	PK	0.0	51.0	74.0	-23.0
3709.033	31.6	-0.6	1.3	18.0	3.0	0.0	Horz	AV	0.0	31.0	54.0	-23.0
4636.308	28.1	2.9	1.3	253.0	3.0	0.0	Vert	AV	0.0	31.0	54.0	-23.0
4636.075	27.3	2.9	1.8	163.0	3.0	0.0	Horz	AV	0.0	30.2	54.0	-23.8
4577.892	27.0	2.7	2.9	263.0	3.0	0.0	Horz	AV	0.0	29.7	54.0	-24.3
2708.083	52.0	-3.6	1.2	156.0	3.0	0.0	Horz	PK	0.0	48.4	74.0	-25.6
2708.342	51.1	-3.6	1.2	229.0	3.0	0.0	Vert	PK	0.0	47.5	74.0	-26.5
2781.742	50.6	-3.8	1.3	276.0	3.0	0.0	Vert	PK	0.0	46.8	74.0	-27.2
2781.683	50.5	-3.8	1.4	161.0	3.0	0.0	Horz	PK	0.0	46.7	74.0	-27.3
2745.875	50.2	-3.7	1.3	321.0	3.0	0.0	Vert	PK	0.0	46.5	74.0	-27.5
3611.058	46.8	-1.3	1.3	33.0	3.0	0.0	Horz	PK	0.0	45.5	74.0	-28.5
1830.592	51.2	-6.0	1.0	345.0	3.0	0.0	Horz	PK	0.0	45.2	74.0	-28.8
1830.458	50.5	-6.0	1.0	185.0	3.0	0.0	Vert	PK	0.0	44.5	74.0	-29.5
3709.100	45.0	-0.6	1.3	24.0	3.0	0.0	Vert	PK	0.0	44.4	74.0	-29.6
3661.075	45.1	-0.9	1.2	346.0	3.0	0.0	Vert	PK	0.0	44.2	74.0	-29.8
1805.483	50.4	-6.2	1.3	0.0	3.0	0.0	Vert	PK	0.0	44.2	74.0	-29.8
1830.233	50.1	-6.0	1.3	191.0	3.0	0.0	Vert	PK	0.0	44.1	74.0	-29.9
2745.525	47.8	-3.7	1.3	184.0	3.0	0.0	Horz	PK	0.0	44.1	74.0	-29.9
1830.558	49.4	-6.0	1.3	17.0	3.0	0.0	Horz	PK	0.0	43.4	74.0	-30.6
4636.150	40.2	2.9	1.3	253.0	3.0	0.0	Vert	PK	0.0	43.1	74.0	-30.9
1805.425	49.0	-6.2	1.3	219.0	3.0	0.0	Horz	PK	0.0	42.8	74.0	-31.2
4636.417	39.8	2.9	1.8	163.0	3.0	0.0	Horz	PK	0.0	42.7	74.0	-31.3
3611.183	43.9	-1.3	1.2	62.0	3.0	0.0	Vert	PK	0.0	42.6	74.0	-31.4
3661.233	43.5	-0.9	1.3	75.0	3.0	0.0	Horz	PK	0.0	42.6	74.0	-31.4
4513.583	40.3	2.2	1.3	168.0	3.0	0.0	Horz	PK	0.0	42.5	74.0	-31.5
4575.808	39.8	2.6	1.3	318.0	3.0	0.0	Vert	PK	0.0	42.4	74.0	-31.6
4513.333	40.1	2.2	1.3	166.0	3.0	0.0	Vert	PK	0.0	42.3	74.0	-31.7
4577.667	39.6	2.7	2.9	263.0	3.0	0.0	Horz	PK	0.0	42.3	74.0	-31.7
3708.917	42.0	-0.6	1.3	18.0	3.0	0.0	Horz	PK	0.0	41.4	74.0	-32.6
1830.575	46.5	-6.0	1.2	263.0	3.0	0.0	Vert	PK	0.0	40.5	74.0	-33.5
1830.600	46.0	-6.0	1.3	228.0	3.0	0.0	Horz	PK	0.0	40.0	74.0	-34.0

EMC**Spurious Radiated Emissions**

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

MODES OF OPERATION

Transmitting ASK modulation ISO Tags.

Transmitting PRASK modulation, EPC Tags.

POWER SETTINGS INVESTIGATED

120VAC/60Hz

CONFIGURATIONS INVESTIGATED

INMC0602 - 2

FREQUENCY RANGE INVESTIGATED

Start Frequency

30 MHz

Stop Frequency

10 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
.5-1 GHz Notch Filter	K&L Microwave	3TNF-500/1000-N/N	HFT	1/8/2010	13 mo
High Pass Filter 0-425 MHz	Micro-Tronics	LPM50003	HGO	7/9/2010	13 mo
High Pass Filter	Micro-Tronics	HPM50108	HGP	7/9/2010	13 mo
Attenuator, 10db, 'SMA'	S.M. Electronics	SA18H-10	REN	7/9/2010	13 mo
Attenuator, 6 dB, 'SMA'	SM Electronics	SA18H-06	REM	7/9/2010	13 mo
Attenuator, 20 dB, 'SMA'	SM Electronics	SA6-20	REO	7/9/2010	13 mo
MN05 Cables	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	7/19/2010	13 mo
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	7/19/2010	13 mo
Antenna, Horn	ETS	3160-07	AXP	NCR	0 mo
Antenna, Horn (DRG)	ETS Lindgren	3115	AIP	12/22/2009	24 mo
MN05 Cables	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	7/19/2010	13 mo
Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVX	7/19/2010	13 mo
Pre-Amplifier	Miteq	AM-1616-1000	AVY	7/19/2010	13 mo
MN05 Cables	ESM Cable Corp.	Bilog Cables	MNH	1/15/2010	13 mo
Antenna, Biconilog	ETS Lindgren	3142D	AXO	12/30/2009	13 mo
Spectrum Analyzer	Agilent	E4446A	AAT	2/24/2010	12 mo

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 IF bandwidths and detectors specified. No video filter was used, except in the case of the FCC Average Measurements above 1GHz. In that case, a peak detector with a 10Hz video bandwidth was used.

MEASUREMENT UNCERTAINTY

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

TEST DESCRIPTION

The 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.

NORTHWEST		PSA-ESCI 2010.04.06 Version 2010.3.17											
EMC		Spurious Radiated Emissions											
Work Order:		INMC0602		Date:		10/02/10		Trevor Buls					
Project:		P-INMC015		Temperature:		22.59°C							
Job Site:		MN05		Humidity:		41.49							
Serial Number:		21711052511		Barometric Pres.:		1029.9		Tested by: Trevor Buls					
EUT:		IM5r3											
Configuration:		2 - INMC0602											
Customer:		Intermec Technologies Corporation											
Attendees:		None											
EUT Power:		120VAC/60Hz											
Operating Mode:		Transmitting PRASK modulation, EPC Tags.											
Deviations:		None											
Comments:		Antenna Port 4 is worst case. Using Huber Suhner antenna.											
Test Specifications								Test Method					
FCC 15.247:2010								ANSI C63.10:2009					
Run #	1	Test Distance (m)	3	Antenna Height(s)	1-4m			Results	Pass				
dBuV/m 1000MHz10000													
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	
3611.050	45.4	-1.3	1.1	18.0	3.0	0.0	Vert	AV	0.0	44.1	54.0	-9.9	
1854.558	48.0	-5.8	1.2	21.0	3.0	0.0	Vert	AV	0.0	42.2	54.0	-11.8	
1854.567	47.8	-5.8	1.8	46.0	3.0	0.0	Horz	AV	0.0	42.0	54.0	-12.0	
3611.042	41.0	-1.3	1.1	321.0	3.0	0.0	Horz	AV	0.0	39.7	54.0	-14.3	
3661.008	39.8	-0.9	1.3	342.0	3.0	0.0	Horz	AV	0.0	38.9	54.0	-15.1	
3709.058	38.8	-0.6	1.4	331.0	3.0	0.0	Horz	AV	0.0	38.2	54.0	-15.8	
3661.033	37.2	-0.9	1.3	26.0	3.0	0.0	Vert	AV	0.0	36.3	54.0	-17.7	
3709.025	36.1	-0.6	1.3	335.0	3.0	0.0	Vert	AV	0.0	35.5	54.0	-18.5	
1805.558	41.4	-6.2	1.0	46.0	3.0	0.0	Horz	AV	0.0	35.2	54.0	-18.8	
1805.542	39.0	-6.2	1.8	8.0	3.0	0.0	Vert	AV	0.0	32.8	54.0	-21.2	
1830.558	37.6	-6.0	1.3	9.0	3.0	0.0	Vert	AV	0.0	31.6	54.0	-22.4	
4513.758	28.7	2.2	1.1	14.0	3.0	0.0	Horz	AV	0.0	30.9	54.0	-23.1	
1830.508	35.8	-6.0	1.2	60.0	3.0	0.0	Horz	AV	0.0	29.8	54.0	-24.2	
4636.508	26.9	2.9	1.3	69.0	3.0	0.0	Vert	AV	0.0	29.8	54.0	-24.2	
4633.542	26.9	2.9	1.3	132.0	3.0	0.0	Horz	AV	0.0	29.8	54.0	-24.2	
4576.225	27.1	2.6	1.3	247.0	3.0	0.0	Horz	AV	0.0	29.7	54.0	-24.3	
4578.592	27.0	2.7	1.3	317.0	3.0	0.0	Vert	AV	0.0	29.7	54.0	-24.3	
4513.675	27.2	2.2	2.0	319.0	3.0	0.0	Vert	AV	0.0	29.4	54.0	-24.6	
1830.542	34.5	-6.0	2.3	268.0	3.0	0.0	Vert	AV	0.0	28.5	54.0	-25.5	
3610.917	49.4	-1.3	1.1	18.0	3.0	0.0	Vert	PK	0.0	48.1	74.0	-25.9	
1854.417	53.0	-5.8	1.2	21.0	3.0	0.0	Vert	PK	0.0	47.2	74.0	-26.8	
1854.567	52.7	-5.8	1.8	46.0	3.0	0.0	Horz	PK	0.0	46.9	74.0	-27.1	
1830.492	32.5	-6.0	1.9	79.0	3.0	0.0	Horz	AV	0.0	26.5	54.0	-27.5	
2745.808	29.7	-3.7	1.3	225.0	3.0	0.0	Horz	AV	0.0	26.0	54.0	-28.0	
2745.850	29.4	-3.7	1.3	67.0	3.0	0.0	Vert	AV	0.0	25.7	54.0	-28.3	
2783.483	29.3	-3.8	1.3	174.0	3.0	0.0	Vert	AV	0.0	25.5	54.0	-28.5	
2705.867	29.0	-3.6	1.3	350.0	3.0	0.0	Vert	AV	0.0	25.4	54.0	-28.6	
2708.017	29.0	-3.6	1.3	292.0	3.0	0.0	Horz	AV	0.0	25.4	54.0	-28.6	
2783.442	29.2	-3.8	1.3	320.0	3.0	0.0	Horz	AV	0.0	25.4	54.0	-28.6	
1830.550	31.1	-6.0	1.6	254.0	3.0	0.0	Vert	AV	0.0	25.1	54.0	-28.9	
3611.200	46.2	-1.3	1.1	321.0	3.0	0.0	Horz	PK	0.0	44.9	74.0	-29.1	
1830.500	30.9	-6.0	1.3	238.0	3.0	0.0	Horz	AV	0.0	24.9	54.0	-29.1	
3661.017	45.7	-0.9	1.3	342.0	3.0	0.0	Horz	PK	0.0	44.8	74.0	-29.2	
3709.325	45.3	-0.6	1.4	331.0	3.0	0.0	Horz	PK	0.0	44.7	74.0	-29.3	
3660.783	45.1	-0.9	1.3	26.0	3.0	0.0	Vert	PK	0.0	44.2	74.0	-29.8	
3709.042	44.0	-0.6	1.3	335.0	3.0	0.0	Vert	PK	0.0	43.4	74.0	-30.6	
4576.133	40.1	2.6	1.3	247.0	3.0	0.0	Horz	PK	0.0	42.7	74.0	-31.3	
4515.950	40.3	2.3	2.0	319.0	3.0	0.0	Vert	PK	0.0	42.6	74.0	-31.4	
4513.783	40.3	2.2	1.1	14.0	3.0	0.0	Horz	PK	0.0	42.5	74.0	-31.5	
4633.750	39.6	2.9	1.3	132.0	3.0	0.0	Horz	PK	0.0	42.5	74.0	-31.5	
4634.017	39.4	2.9	1.3	69.0	3.0	0.0	Vert	PK	0.0	42.3	74.0	-31.7	
1805.492	48.4	-6.2	1.0	46.0	3.0	0.0	Horz	PK	0.0	42.2	74.0	-31.8	
4576.208	39.1	2.6	1.3	317.0	3.0	0.0	Vert	PK	0.0	41.7	74.0	-32.3	
1805.175	46.1	-6.2	1.8	8.0	3.0	0.0	Vert	PK	0.0	39.9	74.0	-34.1	
1830.517	45.5	-6.0	1.3	9.0	3.0	0.0	Vert	PK	0.0	39.5	74.0	-34.5	
2745.458	42.4	-3.7	1.3	67.0	3.0	0.0	Vert	PK	0.0	38.7	74.0	-35.3	
2706.825	42.2	-3.6	1.3	292.0	3.0	0.0	Horz	PK	0.0	38.6	74.0	-35.4	
2781.942	42.4	-3.8	1.3	174.0	3.0	0.0	Vert	PK	0.0	38.6	74.0	-35.4	
2705.983	42.1	-3.6	1.3	350.0	3.0	0.0	Vert	PK	0.0	38.5	74.0	-35.5	
1830.325	44.5	-6.0	1.2	60.0	3.0	0.0	Horz	PK	0.0	38.5	74.0	-35.5	
2782.375	42.3	-3.8	1.3	320.0	3.0	0.0	Horz	PK	0.0	38.5	74.0	-35.5	
2745.900	42.0	-3.7	1.3	225.0	3.0	0.0	Horz	PK	0.0	38.3	74.0	-35.7	
1830.425	44.2	-6.0	2.3	268.0	3.0	0.0	Vert	PK	0.0	38.2	74.0	-35.8	
1830.533	43.7	-6.0	1.9	79.0	3.0	0.0	Horz	PK	0.0	37.7	74.0	-36.3	
1830.675	42.5	-6.0	1.6	254.0	3.0	0.0	Vert	PK	0.0	36.5	74.0	-37.5	
1830.117	42.0	-6.0	1.3	238.0	3.0	0.0	Horz	PK	0.0	36.0	74.0	-38.0	

EMC

Spurious Radiated Emissions

Work Order:

Project:

Job Site:

Serial Number:

INMC0602

P-INMC015

MN05

21711052511

Date:

Temperature:

Humidity:

Barometric Pres.:

10/05/10

22.59°C

41.49

1029.9

Tested by:

Trevor Buls

EUT:

Configuration:

Customer:

Attendees:

EUT Power:

Operating Mode:

Deviations:

Comments:

IM5r3

2 - INMC0602

Intermec Technologies Corporation

None

120VAC/60Hz

Transmitting ASK modulation ISO Tags.

None

Antenna Port 4 is worst case. Using Huber Suhner antenna.

Test Specifications

FCC 15.247:2010

Test Method

ANSI C63.10:2009

Run #

46

Test Distance (m)

3

Antenna Height(s)

1-4m

Results

Pass

80

70

60

50

40

30

20

10

0

1000

10000

dBuV/m

MHz

3611.217

1854.583

3611.017

1854.533

3611.000

3661.050

3708.992

3611.059

3661.000

3611.042

1805.517

3709.058

1830.592

3611.025

2745.800

4513.750

1805.467

4636.175

4513.783

4633.725

4577.867

4577.875

1830.600

2708.317

3610.942

2781.742

3611.009

2745.808

2708.333

1854.525

2784.217

3661.075

3611.242

3708.975

3611.067

1854.417

3661.058

4513.558

3610.875

3708.958

4578.350

4635.583

4513.467

4574.400

3611.034

4638.192

1805.858

1830.617

2745.992

2782.117

2708.083

2707.983

2780.275

1805.317

2744.317

1830.575

43.8

48.2

43.0

44.6

38.7

38.3

37.4

37.8

37.0

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