Intermec Technologies Corporation

1000CP01C 1000CP02C 1001CP01C

Tested to the following Specifications:

FCC 22H:2011 FCC 24E:2011

Report No. INMC0664

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: February 22, 2011 Intermec Technologies Corporation Model: 1000CP01C, 1000CP02C, 1001CP01C

Emissions			
Test Description	Specification	Test Method	Pass/Fail
Out of Band Emissions	FCC 22H:2011	ANSI/TIA/EIA-603-C-2004	Pass
Out of Band Emissions	FCC 24E:2011	ANSI/TIA/EIA-603-C-2004	Pass
Effective Radiated Power (ERP)	FCC 22H:2011	ANSI/TIA/EIA-603-C-2004	Pass
Effective Radiated Power (EIRP)	FCC 24E:2011	ANSI/TIA/EIA-603-C-2004	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-2).

Approved By:

Donald Facteau, IT Manager

QAIVN

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:	1000CP01C, 1000CP02C, 1001CP01C
First Date of Test:	2/18/2011
Last Date of Test:	2/22/2011
Receipt Date of Samples:	2/18/2011
Equipment Design Stage:	Prototype
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):

Handheld computers containing two radio modules. One is the Sierra Wireless Model MC5728V, which is a CDMA (EVDO Rev A) radio module. The other is the Intermec Model RC12, which is an 802.11a/b/g/n – Bluetooth radio module

Testing Objective:

To demonstrate compliance with FCC 22H and FCC 24E requirements for spurious radiated emissions and radiated power. The antenna port conducted measurements are documented in a separate report.



Configurations

CONFIGURATION 1 INMC0664

Software/Firmware Running during test		
Description	Version	
Windows Mobile	6.5	

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Handheld Computer	Intermec Technologies Corp	1001CP01C	24511047145

Peripherals in test setup boundary					
Description	Manufacturer	Model/Part Number	Serial Number		
Power Supply	Intermec Technologies Corp	AE39	02061000875		
USB SNAPON	Intermec Technologies Corp	225-773-001	HDIP D-SUB, A3		
Battery Pack	Intermec Technologies Corp	1001AB01	16661001477		

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



Configurations

CONFIGURATION 2 INMC0664

Software/Firmware Running during test		
Description	Version	
Windows Mobile	6.5	

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Handheld Computer	Intermec Technologies Corp	1000CP02C	24511047014

Peripherals in test setup boundary				
Description	Manufacturer	Model/Part Number	Serial Number	
Power Supply	Intermec Technologies Corp	AE39	02061000875	
USB SNAPON	Intermec Technologies Corp	225-773-001	HDIP D-SUB, A3	
Battery Pack	Intermec Technologies Corp	1000AB01	16961000158	

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



Configurations

CONFIGURATION 3 INMC0664

Software/Firmware Running during test		
Description	Version	
Windows Mobile	6.5	

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Handheld Computer	Intermec Technologies Corp	1000CP01C	24411047085

Peripherals in test setup boundary					
Description	Manufacturer	Model/Part Number	Serial Number		
Power Supply	Intermec Technologies Corp	AE39	02061000875		
USB SNAPON	Intermec Technologies Corp	225-773-001	HDIP D-SUB, A3		
Battery Pack	Intermec Technologies Corp	1000AB01	16961000158		

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

Revision 4/28/03

	Equipment modifications						
Item	Date	Test	Modification	Note	Disposition of EUT		
1	2/18/2011	Out of Band 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	2/22/2011	ERP Part 22H, EIRP Part 24E	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.		

OUT OF BAND EMISSIONS - PART 22H

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

Transmitting, All bits up, 1xEV-DO Rev A

Transmitting, All bits up, CDMA 1xRTT, SC3, SO32 (+SCH)

CHANNELS TESTED

Low = Ch.1013, 824.7MHz

Mid = Ch. 384, 836.52MHz

High = Ch. 777, 848,31MHz

POWER SETTINGS INVESTIGATED

120VAC/60Hz

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
Iniversal Radio Communication Teste	Rhode & Schwarz	CMU200	BSU	NCR	0
Spectrum Analyzer	Agilent	E4440	AFE	11/29/2010	12
Antenna, Biconilog	EMCO	3141	AXG	2/15/2010	13
EV12 Cables	N/A	Bilog Cables	EVS	7/14/2010	13
Pre-Amplifier	Miteq	AM-1616-1000	AVM	7/14/2010	13
Antenna, Horn	ETS	3115	AIB	9/8/2010	24
EV12 Cables	N/A	Double Ridge Horn Cables	EVT	11/22/2010	13
Pre-Amplifier	Miteq	AMF-3D00100800-32-13P	AVF	7/14/2010	13
Antenna, Horn	ETS	3160.07	AHZ	9/8/2010	24
EV12 Cables	N/A	Standard Gain Horn Cables	EVU	7/14/2010	13
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVH	7/14/2010	13
Antenna, Horn	EMCO	3115	AHE	10/22/2009	24
Power Meter	Gigatronics	8651A	SPM	1/7/2010	16
Power Sensor	Gigatronics	80701A	SPL	1/7/2010	16
Signal Generator	Agilent	E8257D	TGX	12/10/2008	27

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

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.

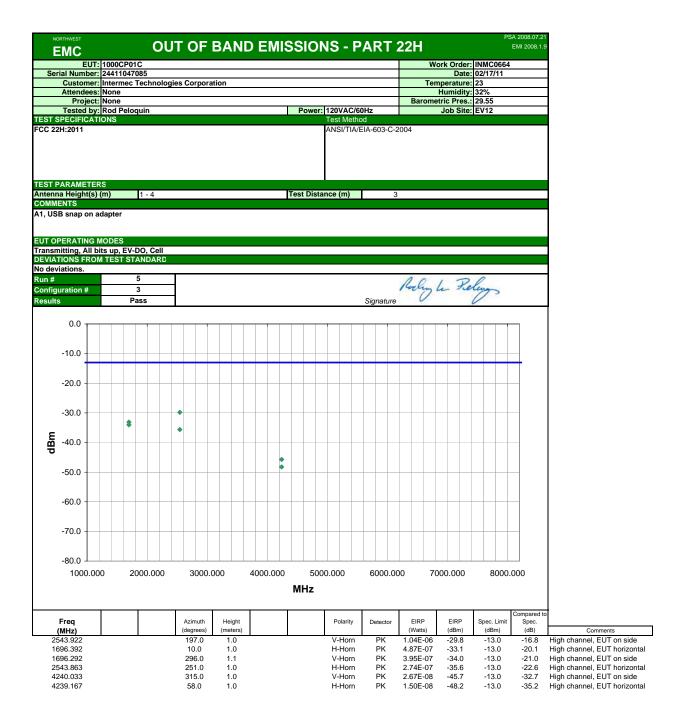
TEST DESCRIPTION

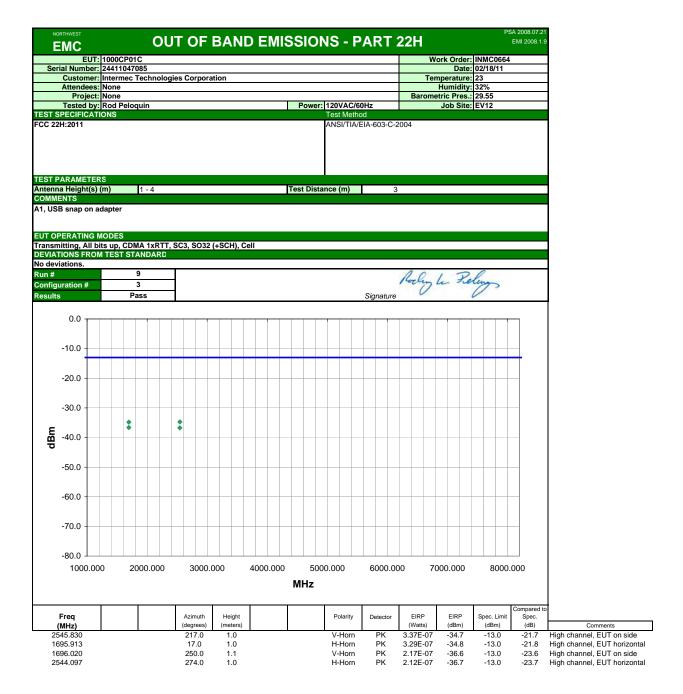
The highest gain antenna to be used with the EUT was tested for final measurements. The EUT was configured for the lowest, a middle, and the highest transmit frequency in each operational band. For each configuration, the spectrum was scanned throughout the specified range. While scanning, emissions 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 C63.10:2009). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

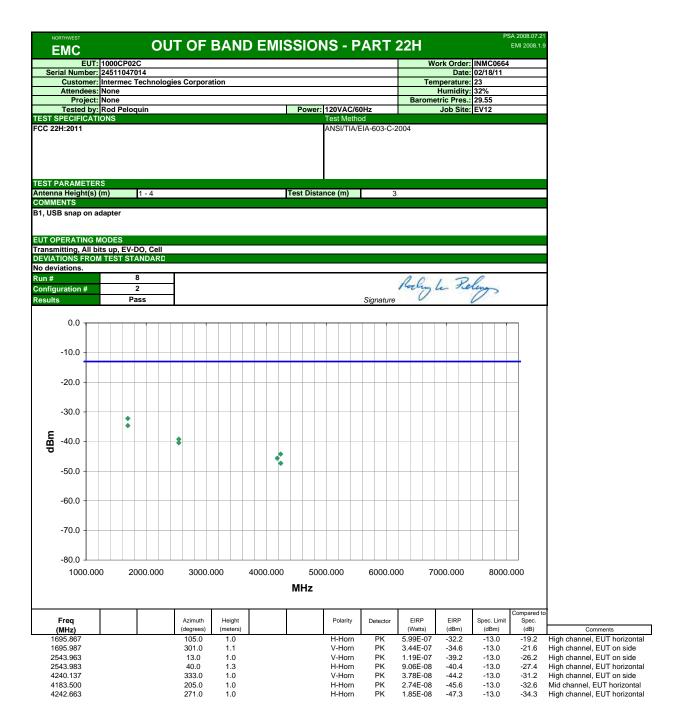
For licensed transmitters, the FCC references TIA/EIA-603 as the measurement procedure standard. TIA/EIA-603 Section 2.2.12 describes a method for measuring radiated spurious emissions that utilizes an antenna substitution method:

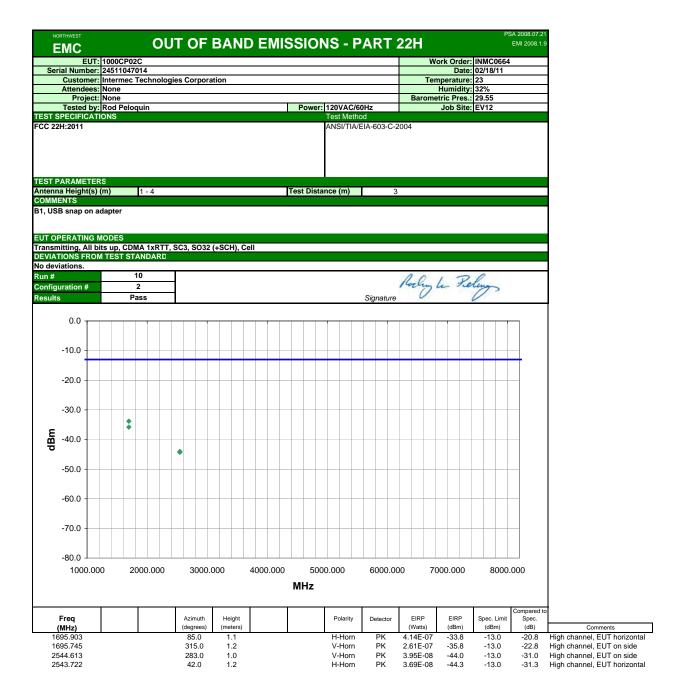
At an approved test site, the transmitter is place on a remotely controlled turntable, and the measurement antenna is placed 3 meters from the transmitter. The turntable azimuth is varied to maximize the level of spurious emissions. The height of the measurement antenna is also varied from 1 to 4 meters. The amplitude and frequency of the highest emissions are noted. The transmitter is then replaced with a ½ wave dipole that is successively tuned to each of the highest spurious emissions for emissions below 1 GHz, and a horn antenna for emissions above 1 GHz. A signal generator is connected to the dipole (horn antenna for frequencies above 1 GHz), and its output is adjusted to match the level previously noted for each frequency. The output of the signal generator is recorded, and by factoring in the cable loss to the antenna and its gain; the power (dBm) into an ideal ½ wave dipole antenna is determined for each radiated spurious emission.

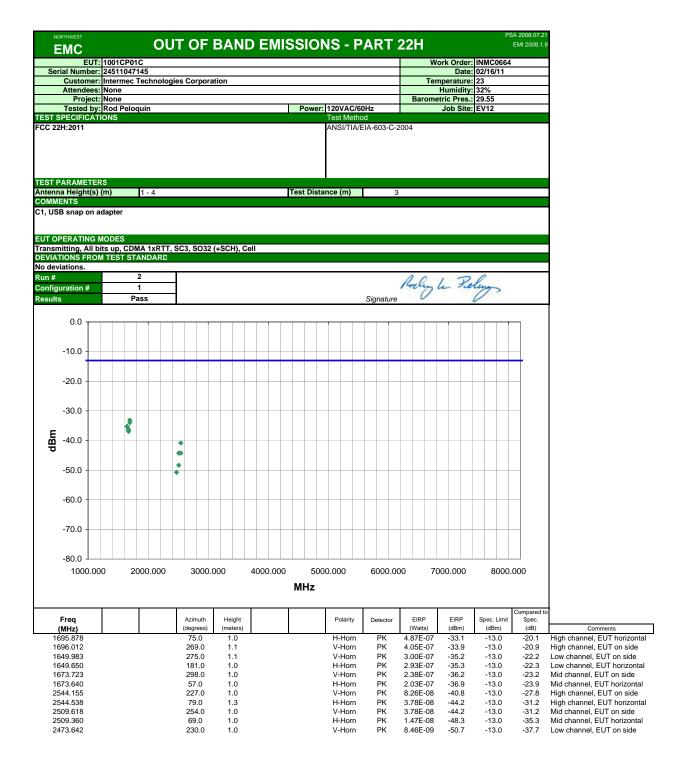
For the purposes of preliminary measurements, the field strength of the spurious emissions can be measured and compared with a 3 meter limit. The 3 meter limit was calculated to be 82.5 dBuV/m at 3 meters. The final measurements must be made utilizing the substitution method described above

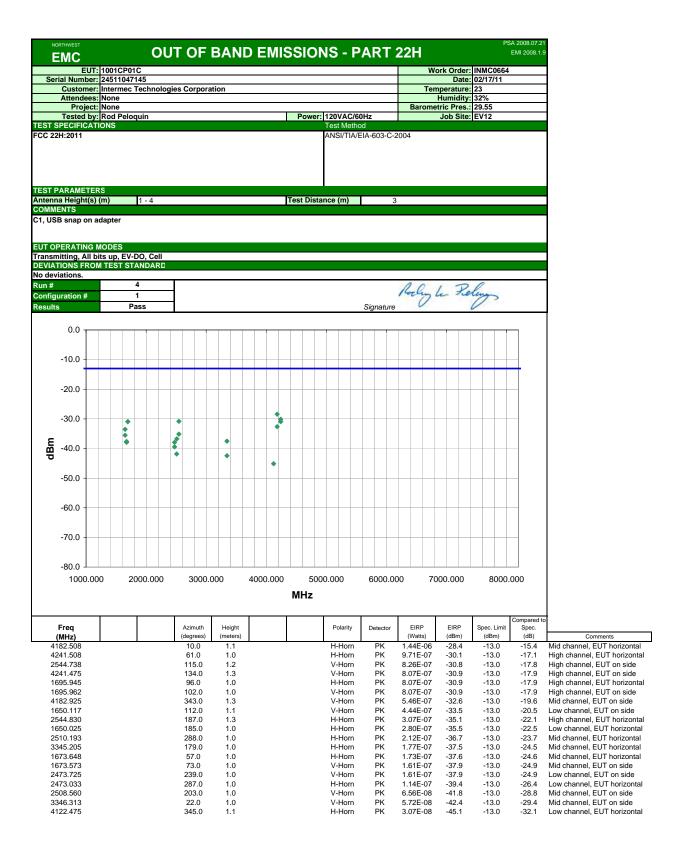


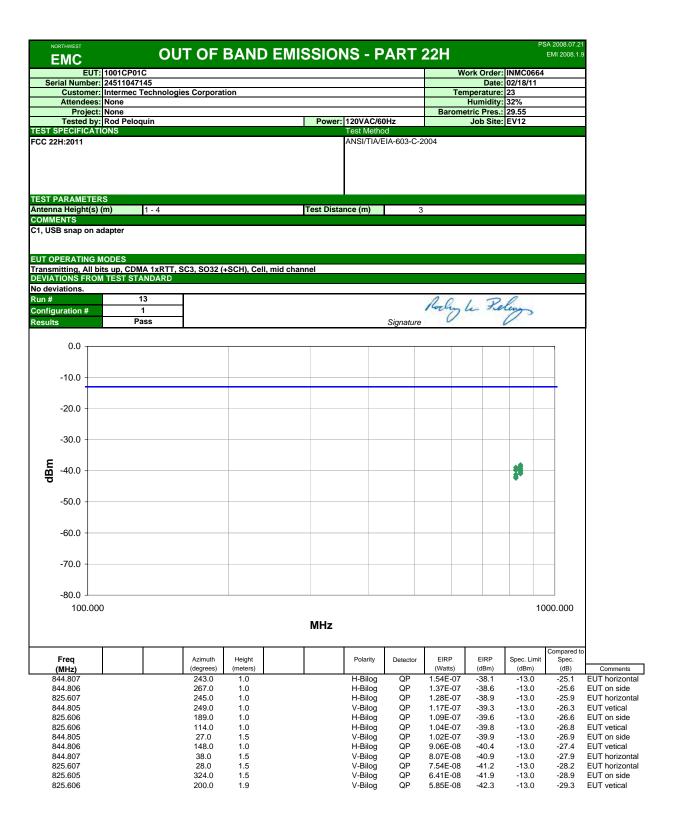












OUT OF BAND EMISSIONS - PART 24E

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

Transmitting, All bits up, 1xEV-DO Rev A

Transmitting, All bits up, CDMA 1xRTT, SC3, SO32 (+SCH)

CHANNELS TESTED

Low = Ch. 25, 1851.25MHz Mid = Ch. 600, 1880MHz High = Ch. 1175, 1908.75MHz

POWER SETTINGS INVESTIGATED

120VAC/60Hz

FREQUENCY RANGE INVESTIGATED

Start Frequency 30 MHz Stop Frequency 20 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
niversal Radio Communication Test	Rhode & Schwarz	CMU200	BSU	NCR	0
Spectrum Analyzer	Agilent	E4440	AFE	11/29/2010	12
Antenna, Biconilog	EMCO	3141	AXG	2/15/2010	13
EV12 Cables	N/A	Bilog Cables	EVS	7/14/2010	13
Pre-Amplifier	Miteq	AM-1616-1000	AVM	7/14/2010	13
Antenna, Horn	ETS	3115	AIB	9/8/2010	24
EV12 Cables	N/A	Double Ridge Horn Cables	EVT	11/22/2010	13
Pre-Amplifier	Miteq	AMF-3D00100800-32-13P	AVF	7/14/2010	13
Antenna, Horn	ETS	3160.07	AHZ	9/8/2010	24
EV12 Cables	N/A	Standard Gain Horn Cables	EVU	7/14/2010	13
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVH	7/14/2010	13
Antenna, Horn	EMCO	3115	AHE	10/22/2009	24
Power Meter	Gigatronics	8651A	SPM	1/7/2010	16
Power Sensor	Gigatronics	80701A	SPL	1/7/2010	16
Signal Generator	Agilent	E8257D	TGX	12/10/2008	27
Antenna, Horn	ETS Lindgren	3160-09	AIV	NCR	0
Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AVU	9/15/2010	13
Cable	ESM Cable Corp.	KMKM-72	EVY	9/15/2010	13
Antenna, Horn	ETS	3160-08	AIA	NCR	0
EV12 Cables	N/A	Standard Gain Horn Cables	EVU	7/14/2010	13
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVI	7/14/2010	13

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 u	sing the bandwidths and det	ectors specified. No video filt	er 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.

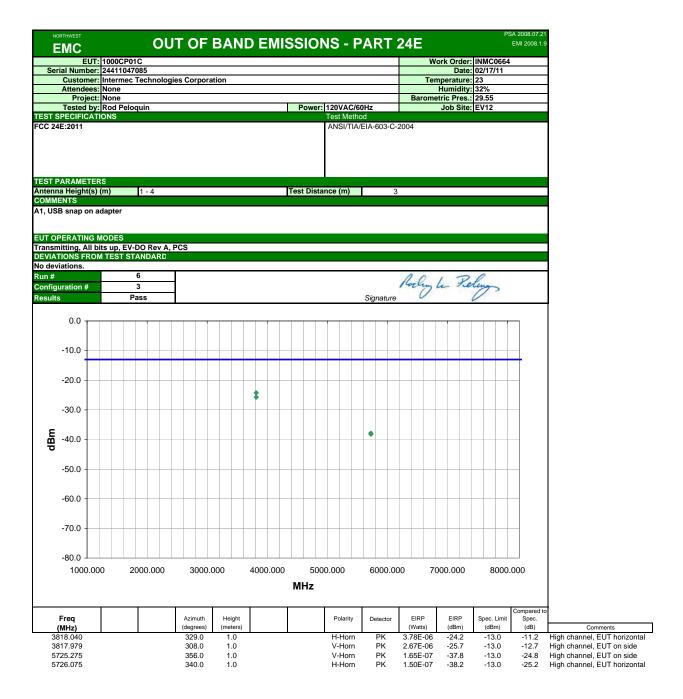
TEST DESCRIPTION

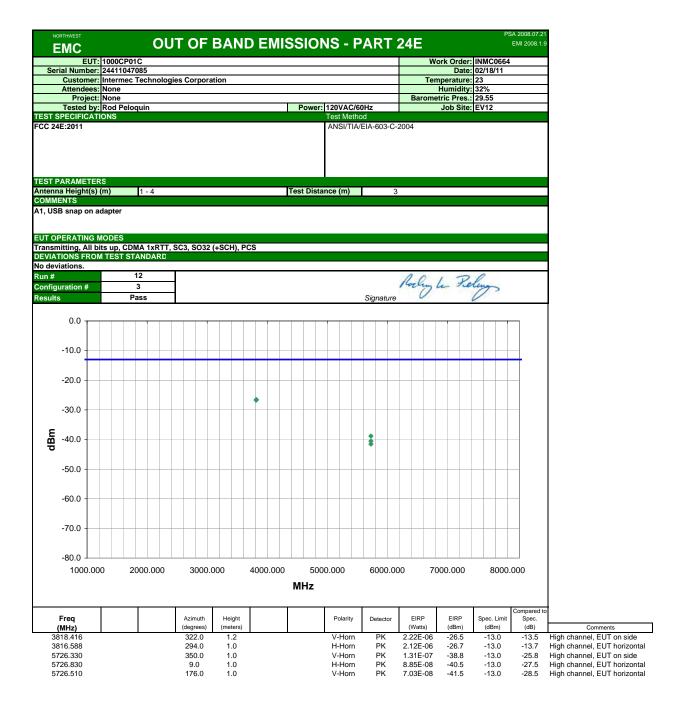
The highest gain antenna to be used with the EUT was tested for final measurements. The EUT was configured for the lowest, a middle, and the highest transmit frequency in each operational band. For each configuration, the spectrum was scanned throughout the specified range. While scanning, emissions 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 C63.10:2009). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

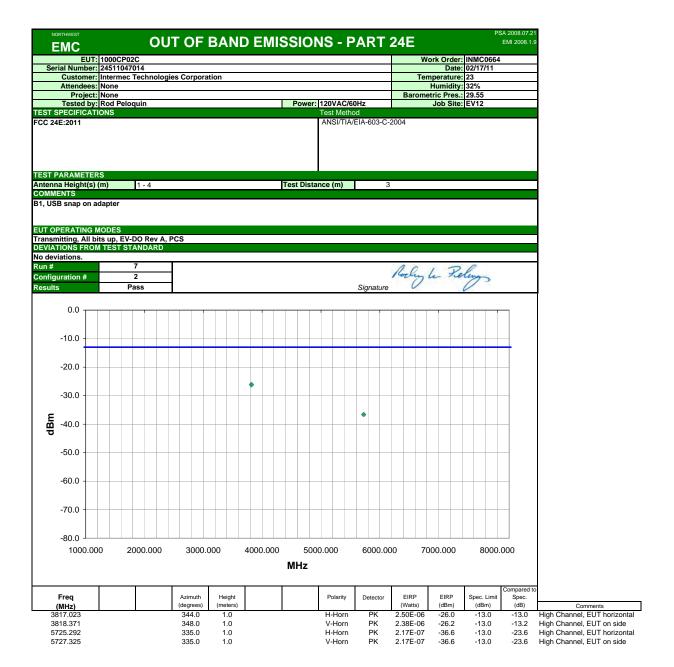
For licensed transmitters, the FCC references TIA/EIA-603 as the measurement procedure standard. TIA/EIA-603 Section 2.2.12 describes a method for measuring radiated spurious emissions that utilizes an antenna substitution method:

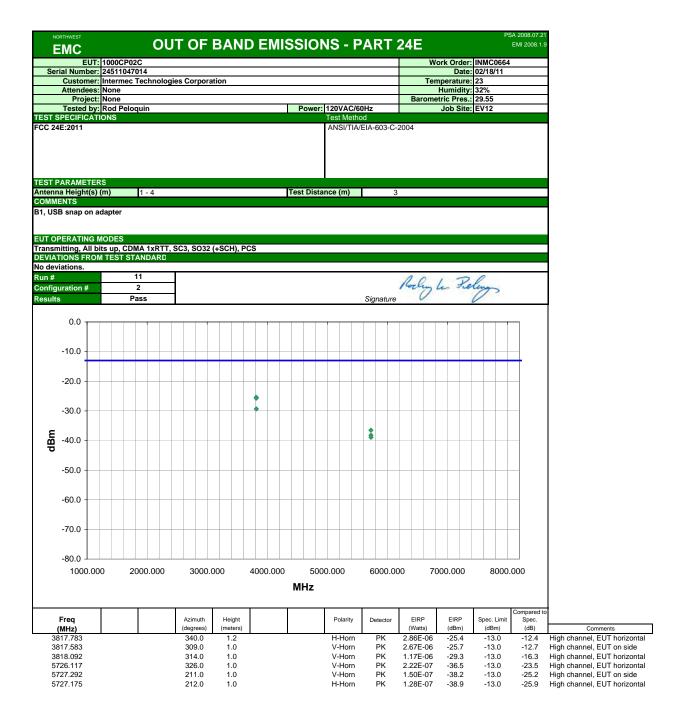
At an approved test site, the transmitter is place on a remotely controlled turntable, and the measurement antenna is placed 3 meters from the transmitter. The turntable azimuth is varied to maximize the level of spurious emissions. The height of the measurement antenna is also varied from 1 to 4 meters. The amplitude and frequency of the highest emissions are noted. The transmitter is then replaced with a ½ wave dipole that is successively tuned to each of the highest spurious emissions for emissions below 1 GHz, and a horn antenna for emissions above 1 GHz. A signal generator is connected to the dipole (horn antenna for frequencies above 1 GHz), and its output is adjusted to match the level previously noted for each frequency. The output of the signal generator is recorded, and by factoring in the cable loss to the antenna and its gain; the power (dBm) into an ideal ½ wave dipole antenna is determined for each radiated spurious emission.

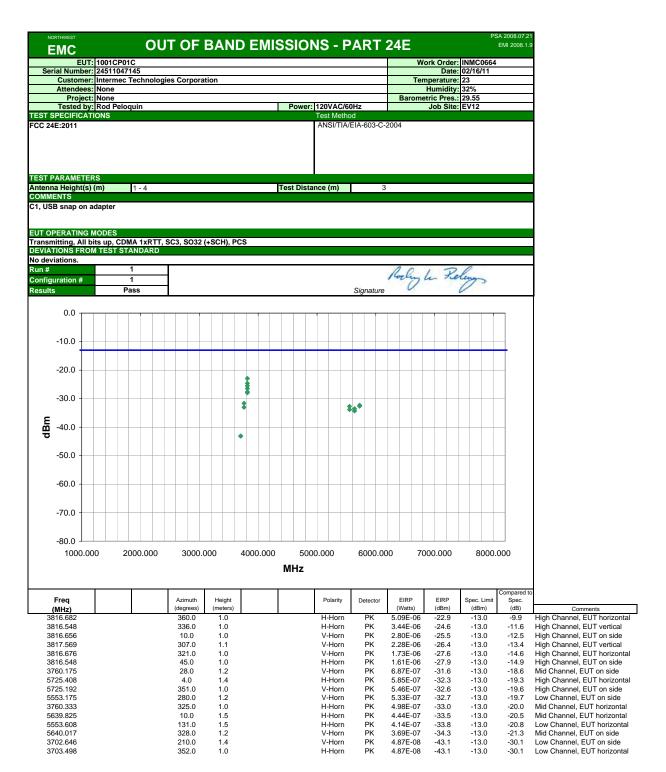
For the purposes of preliminary measurements, the field strength of the spurious emissions can be measured and compared with a 3 meter limit. The 3 meter limit was calculated to be 82.5 dBuV/m at 3 meters. The final measurements must be made utilizing the substitution method described above

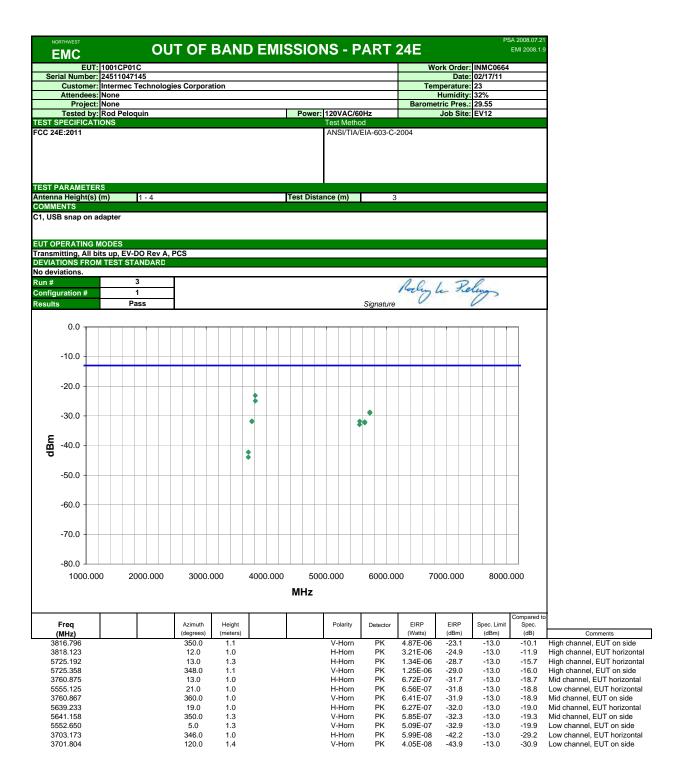












Effective Radiated Power (ERP)

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

Transmitting, All bits up, CDMA 1xRTT RC3 SO55, Cell band

Transmitting, All bits up, EV-DO Rev A, Cell band

CHANNELS TESTED

Low = Ch.1013, 824.7MHz Mid = Ch. 384, 836.52MHz

High = Ch. 777, 848.31MHz

POWER SETTINGS INVESTIGATED

120VAC/60Hz

FREQUENCY RANGE INVESTIGATED

Start Frequency 824 MHz Stop Frequency 848 MHz

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	1/10/2011	12
EV01 Cables	N/A	Bilog Cables	EVA	7/9/2010	13
Antenna, Bilog	Teseq	CBL 6141B	AXR	11/29/2010	13
MXG Vector Singal Generator	Agilent	N5182A	TIF	NCR	0
Power Meter	Gigatronics	8651A	SPM	1/7/2010	16
Power Sensor	Gigatronics	80701A	SPL	1/7/2010	16
Antenna, Dipole	ETS	3121C-DB4	ADH	3/6/2009	24

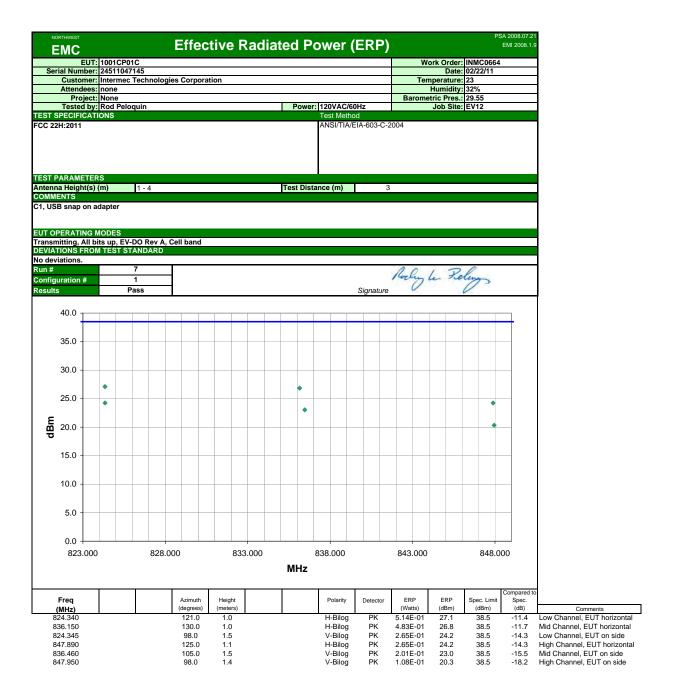
MEASUREMENT BANDWIDTHS							
	Frequency Range	Peak Data	Quasi-Peak Data	Average Data			
	(MHz)	(kHz)	(kHz)	(kHz)			
	0.01 - 0.15	1.0	0.2	0.2			
	0.15 - 30.0	10.0	9.0	9.0			
	30.0 - 1000	100.0	120.0	120.0			
	Above 1000	1000.0	N/A	1000.0			
	Measurements were made using the bandwidths and detectors, specified. No video filter was used.						

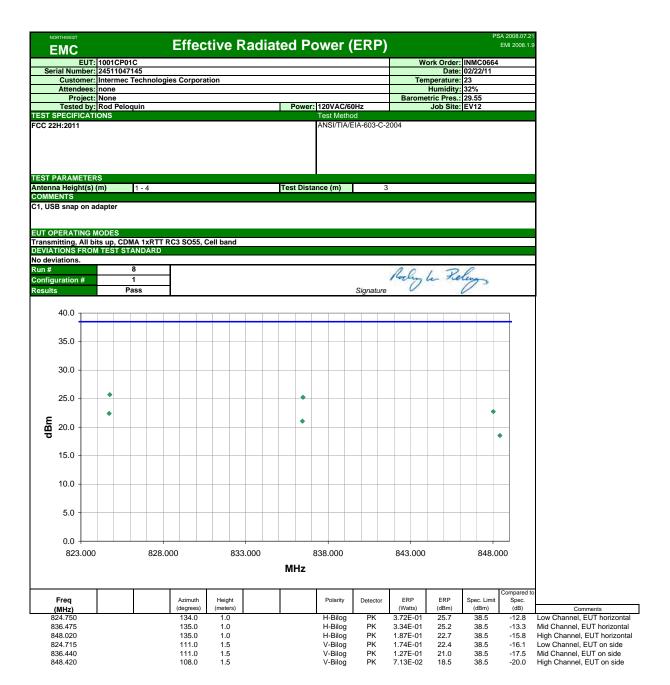
MEASUREMENT UNCERTAINTY

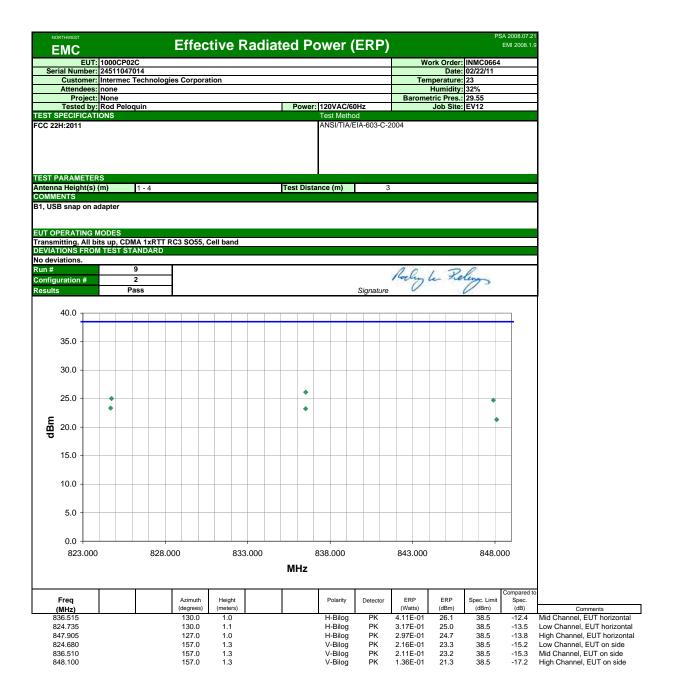
A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR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

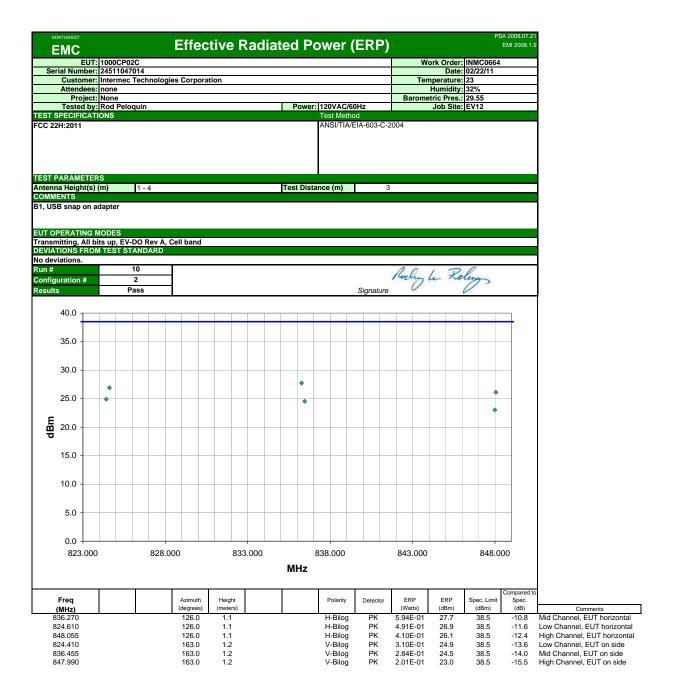
TEST DESCRIPTION

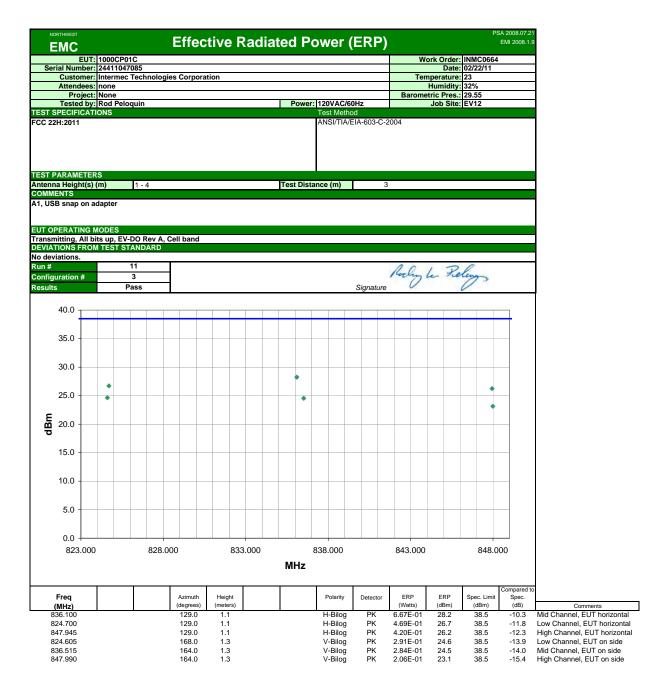
The fundamental emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height (1-4 meters) and polarizationThe amplitude and frequency of the highest emission were noted. The EUT was then replaced with a ½ wave dipole that was successively tuned to the highest emission. A signal generator was connected to the dipole, and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded. The signal generator, amplifier, and cable were then connected to an analyzer and the power output was recorded. By factoring in the dipole antenna gain (dBi), the effective radiated power for the maximum fundamental emission was determined. The ERP value was obtained from taking the value in EIRP – 2.15.

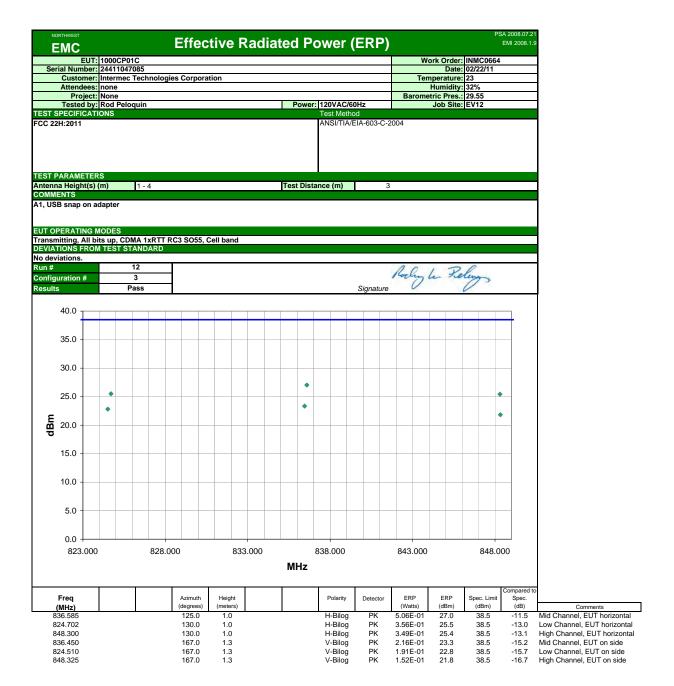












Effective Radiated Power (EIRP)

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

Transmitting, All bits up, CDMA2000 1xRTT RC3 SO55, PCS band

Transmitting, All bits up, EV-DO Rev A, PCS band

CHANNELS TESTED

Low = Ch. 25, 1851.25MHz

Mid = Ch. 600, 1880MHz High = Ch. 1175, 1908.75MHz

POWER SETTINGS INVESTIGATED

120VAC/60Hz

FREQUENCY RANGE INVESTIGATED Start Frequency 1850 MHz Stop Frequency 1910 MHz

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	1/10/2011	12
Antenna, Horn	EMCO	3115	AHC	7/8/2010	24
EV01 Cables	N/A	Double Ridge Horn Cables	EVB	7/9/2010	13
Power Meter	Gigatronics	8651A	SPM	1/7/2010	16
Power Sensor	Gigatronics	80701A	SPL	1/7/2010	16
MXG Vector Singal Generator	Agilent	N5182A	TIF	NCR	0
Antenna, Horn	EMCO	3115	AHE	10/22/2009	24

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 fundamental emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height (1-4 meters) and polarization and manipulating the EUT antenna in 3 orthogonal planes. The antennas to be used with the EUT were tested. The EUT was transmitting while set at the lowest channel, a middle channel, and the highest channel available. The amplitude and frequency 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 gain (dBi) of the horn antenna the effective radiated power for each emission was determined.

