



**RADIATED EMISSIONS PORTIONS OF
FCC CFR47 PART 22H, PART 24E, AND PART 27K
INDUSTRY CANADA RSS-132, 133, AND 139**

CERTIFICATION TEST REPORT

FOR

**HEAVY DUTY HANDHELD PDA-TYPE DEVICE WITH DUAL BAND
WCDMA/HSDPA/HSUPA, GSM, GPRS, EDGE, 802.11 B/G & BT**

MODEL NUMBER: CN50

FCC ID: EHA-01CN50

IC: 1223A-01CN50

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Prepared for

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: INTERMEC TECHNOLOGIES CORP
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EUT DESCRIPTION: HEAVY-DUTY HANDHELD PDA-TYPE DEVICE w/ DUAL BAND
WCDMA/HSDPA, HSUPA, GSM, GPRS, EDGE, 802.11 b/g & BT

MODEL: CN50

SERIAL NUMBER: 328V0800138

DATE TESTED: APRIL 18 TO MAY 01, 2009

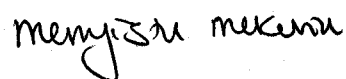
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
Radiated emissions portions of FCC PART 22H, 24E, AND 27K	PASS
Radiated emissions portions of IC RSS-132 ISSUE 2, RSS-133 ISSUE 4, AND RSS-139 ISSUE 1	PASS

Compliance Certification Services, Inc. (CCS) tested the above equipment in accordance with the requirements set forth in the above standards. All expressions of Pass/Fail in this report are opinions expressed by CCS based on interpretations of the test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by CCS will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with RSS-GEN, RSS-132, RSS-133, RSS-139, ANSI/TIA 603C-2004, FCC CFR 47 Part 2, and FCC CFR 47 Part 22, Part 24, and Part 27.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://ts.nist.gov/Standards/scopes/2000650.htm>.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Radiated Emission, 30 to 200 MHz	+/- 3.3 dB
Radiated Emission, 200 to 1000 MHz	+4.5 / -2.9 dB
Radiated Emission, 1000 to 2000 MHz	+4.5 / -2.9 dB
Power Line Conducted Emission	+/- 2.9 dB

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a heavy-duty handheld PDA-type device is an 802.11bg, BT, WWAN Combo Module.

Fenway will deliver WWAN connectivity solutions for the UMTS HSDPA and HSUPA, and GSM/GPRS/EDGE protocols in one hardware configuration.

In the US and Canada, only 850 MHz (Cellular), 1700 MHz (AWS) and 1900 MHz (PCS) bands are used for WCDMA and GSM operation. The EUT was only tested in those three bands for FCC application.

5.2. CROSS REFERENCE REPORT

All RF conducted emissions tests were performed under the Qualcomm reports # 08U12127-3 and 08U12127-4 for FCC ID: J9CFENWAY-1.

5.3. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	Intermec Tech. Corp.	AE37	203	N/A

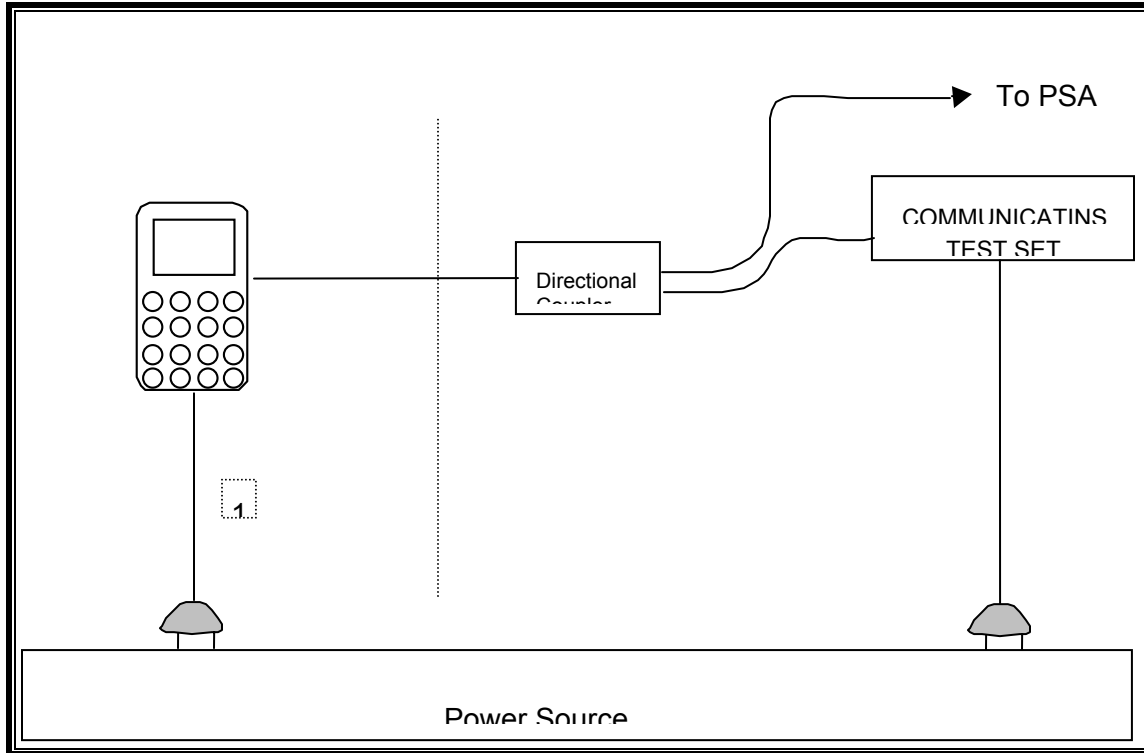
I/O CABLES (CONDUCTED TEST)

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC	1	US 115V	Un-shielded	2m	No
2	DC	1	DC	Un-shielded	2m	No

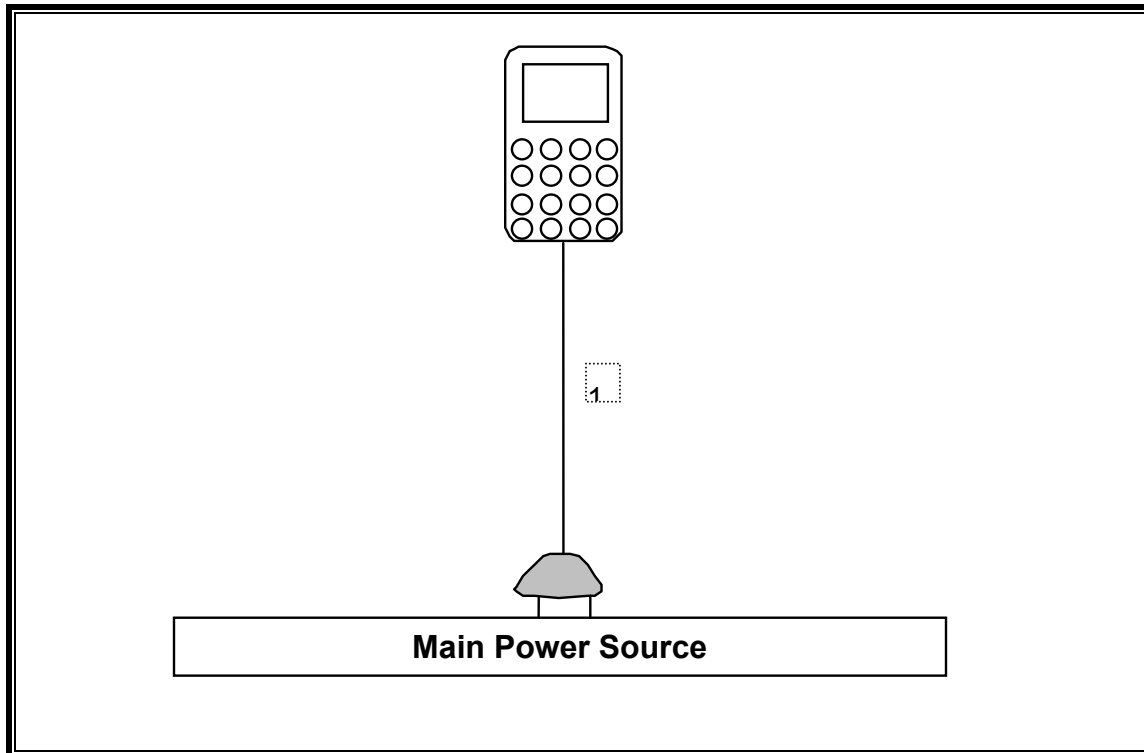
TEST SETUP

The EUT is a standalone unit during the tests. The wireless link is established between the EUT and the Agilent 8960 communications test set.

SETUP DIAGRAM FOR RF CONDUCTED TESTS



SETUP DIAGRAM FOR RF RADIATED TESTS



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST					
Description	Manufacturer	Model	Asset	Cal Date	Cal Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	1/5/2009	1/5/2010
Antenna, Horn, 18 GHz	EMCO	3115	C00783	4/22/2008	1/29/2010
Antenna, Horn, 18 GHz	EMCO	3115	C00943	4/23/2008	1/29/2010
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	2/4/2009	2/4/2010
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02689	CNR	CNR
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR	CNR
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/7/2007	12/7/2009
Peak Power Meter	Agilent / HP	E4416A	C00963	12/4/2007	12/4/2009
Communications Test Set	Agilent / HP	E5515C	C01086	6/16/2008	6/1/2009
Communication Test Set	R & S	CMUJ 200	C00944	12/16/2008	12/16/2010
Spectrum Analyzer 26.5 GHz	Agilent / HP	N9020A	C01179	10/23/2008	10/23/2009
Directional Coupler, 18 GHz	Krytar	1817	N02656	CNR	CNR
LISN, 30 MHz	FCC	LISN-50/250-25-2	N02625	10/29/2008	10/29/2009
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	2/6/2008	8/6/2009
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01012	3/16/2009	3/16/2010
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00885	12/16/2008	12/16/2009
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	2/4/2009	2/4/2010
Antenna, Horn, 18 GHz	EMCO	3115	C00945	1/29/2009	1/29/2010
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01011	1/14/2009	1/14/2010
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01016	1/14/2009	1/14/2010

7. RF POWER OUTPUT VERIFICATION

RULE PART(S)

FCC: §2.1046

IC: RSS-132, 4.4; RSS-133, 6.4; RSS-139, 6.4

LIMITS

For reporting purposes only

TEST PROCEDURE

The transmitter output was connected to an Agilent 8960 Test Set and configured to operate at maximum power in a call. The peak power was measured using the spectrum analyzer at three equally spaced operating frequencies for each band. The RBW was set to 300 KHz for the GSM and EDGE measurements and 5 MHz for the UMTS (WCDMA) measurements.

MODES TESTED

- GSM – GSM/GPRS (GSMK) & EGPRS (8PSK) modes.
- UMTS (W-CDMA) - Rel 99, Rel 6 HSDPA and HSPA (HSDPA & HSUPA)

RESULTS

7.1. RF POWER OUTPUT FOR GSM MODE (850 AND 1900MHz)

GSM (GMSK)

Band	Ch	Frequency	Conducted output power (dBm)	
			Average	Peak
GSM850	128	824.2	32.31	32.58
	190	836.6	32.33	32.40
	251	848.8	32.22	32.68
GSM1900	512	1850.2	29.00	29.50
	661	1880	29.37	29.80
	810	1909.8	29.40	29.95

GPRS (GMSK) - Coding scheme: MCS4

Band	Ch	Frequency	Conducted output power (dBm)			
			Average		Peak	
			1 slot	2 slot	1 slot	2 slot
GSM850	128	824.2	32.21	32.10	32.50	32.43
	190	836.6	32.33	32.20	32.65	32.45
	251	848.8	32.25	32.30	32.67	32.60
GSM1900	512	1850.2	28.96	28.80	29.72	29.52
	661	1880	28.82	28.80	29.52	29.45
	810	1909.8	28.90	28.85	29.50	29.46

GPRS (GMSK) - Coding scheme: MCS4

Band	Ch	Frequency	Conducted output power (dBm)			
			Average		Peak	
			3 slot	4slot	3 slot	4 slot
GSM850	128	824.2	32.32	32.32	32.39	32.38
	190	836.6	32.33	32.32	32.50	32.50
	251	848.8	32.25	32.30	32.67	32.60
GSM1900	512	1850.2	28.98	28.97	29.44	29.43
	661	1880	29.20	28.80	29.80	29.15
	810	1909.8	29.30	29.30	29.90	29.80

EGPRS (8PSK) - Coding scheme: MCS9

Band	Ch	Frequency	Conducted output power (dBm)			
			Average		Peak	
			1 slot	2 slot	1 slot	2 slot
GSM850	128	824.2	27.00	27.00	30.00	30.00
	190	836.6	26.95	26.90	30.10	30.15
	251	848.8	26.95	26.90	30.17	30.13
GSM1900	512	1850.2	25.60	25.58	29.45	29.42
	661	1880	25.62	25.60	29.60	29.58
	810	1909.8	25.80	25.78	29.50	29.48

EGPRS (8PSK) - Coding scheme: MCS9

Band	Ch	Frequency	Conducted output power (dBm)			
			Average		Peak	
			3 slot	4 slot	3 slot	4 slot
GSM850	128	824.2	26.85	26.80	29.96	29.95
	190	836.6	26.90	26.88	30.03	30.07
	251	848.8	27.20	27.15	30.08	30.05
GSM1900	512	1850.2	25.90	25.85	29.34	29.30
	661	1880	26.00	25.95	29.42	29.40
	810	1909.8	25.80	25.75	29.37	29.35

7.2. RF POWER OUTPUT FOR UMTS REL99 (850 AND 1900MHz)

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 V7.5.0 specification. The EUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7) 12.2kps RMC is used for this testing. Power control set to All bits up. A summary of these settings are illustrated below:

	Mode	Rel99
	Subtest	-
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kpbs RMC
	HSDPA FRC	Not Applicable
	HSUPA Test	Not Applicable
	Power Control Algorithm	Algorithm2
	β_c	Not Applicable
	β_d	Not Applicable
	β_{ec}	Not Applicable
	β_c/β_d	8/15
	β_{hs}	Not Applicable
	β_{ed}	Not Applicable

REL 99

Band	UL Ch	DL Ch	Frequency	Conducted output power (dBm)	
				Average	Peak
UMTS850 (Band V)	4132	4357	826.4	24.60	28.10
	4180	4405	836.0	24.50	28.00
	4230	4455	846.0	24.55	27.85
UMTS1900 (Band II)	9262	9662	1852.4	24.80	28.95
	9400	9800	1880	24.56	28.80
	9538	9938	1907.6	24.50	28.45

7.3. RF POWER OUTPUT FOR UMTS Rel 6 HSDPA (850 AND 1900MHz)

The following Sub-Tests were completed according to the test requirements outlined in section 5.2A of the 3GPP TS34.121-1 V7.5.0 specification. All TX RMS and Peak power requirements for Power Class 3 were met according to table 5.2AA.5 and achieved through the outlined test procedure in section 5.2AA.4.2. A summary of these settings are illustrated below:

	Mode	Rel6 HSDPA	Rel6 HSDPA	Rel6 HSDPA	Rel6 HSDPA
	Subtest	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	HSUPA Test	Not Applicable			
	Power Control Algorithm	Algorithm 2			
	β_c	2/15	12/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	β_{ec}	-	-	-	-
	β_c/β_d	2/15	12/15	15/8	15/4
	β_{hs}	4/15	24/15	30/15	30/15
HSDPA Specific Settings	β_{ed}	Not Applicable			
	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
A _{hs} = β_{hs}/β_c	30/15				
MPR	0	0	0.5	0.5	

Result

REL 6 HSDPA

Band	Subtest	UL Ch	DL Ch	Frequency	Conducted output power (dBm)	
					Average	Peak
UMTS850 (Band V)	1	4132	4357	826.4	24.48	28.35
		4180	4405	836.0	24.30	28.252
		4230	4455	846.0	24.20	28.20
	2*	4132	4357	826.4	24.30	28.15
		4180	4405	836.0	24.50	28.65
		4230	4455	846.0	24.42	28.40
	3	4132	4357	826.4	23.70	27.72
		4180	4405	836.0	23.60	27.80
		4230	4455	846.0	23.80	27.64
	4	4132	4357	826.4	23.75	27.80
		4180	4405	836.0	23.68	27.60
		4230	4455	846.0	23.65	27.75
UMTS1900 (Band II)	1	9262	9662	1852.4	24.20	28.80
		9400	9800	1880.0	24.33	28.19
		9538	9938	1907.6	24.35	28.58
	2*	9262	9662	1852.4	24.40	28.90
		9400	9800	1880.0	24.30	28.96
		9538	9938	1907.6	24.56	29.45
	3	9262	9662	1852.4	24.02	28.85
		9400	9800	1880.0	23.90	28.85
		9538	9938	1907.6	24.00	28.78
	4	9262	9662	1852.4	24.20	28.85
		9400	9800	1880.0	24.30	28.21
		9538	9938	1907.6	24.30	28.87

7.4. RF POWER OUTPUT UMTS Rel 6 HSPA (HSDPA & HSUPA) (850 AND 1900MHz)

The following 5 Sub-Tests were completed according to the test requirements outlined in section 5.2B of the 3GPP TS34.121-1 V7.5.0 specification. All TX RMS and Peak power requirements were met according to table 5.2B.5 and achieved through the outlined test procedure in section 5.2B.4.2. A summary of these settings are illustrated below:

	Mode	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	β_c	11/15	6/15	15/15	2/15	15/15
	β_d	15/15	15/15	9/15	15/15	15/15
	β_{ec}	209/225	12/15	30/15	2/15	24/15
	β_c/β_d	11/15	6/15	15/9	2/15	15/15
	β_{hs}	22/15	12/15	30/15	4/15	30/15
β_{ed}	1309/225	94/75	47/15 47/15	56/75	134/15	
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	$A_{hs} = \beta_{hs}/\beta_c$	30/15				
HSUPA Specific Settings	D E-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	MPR	0	2	1	2	0
	Reference E_TFCIs	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27		E-TFCI 11 E-TFCI PO 4 E-TFCI 92 E-TFCI PO 18		E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27

REL 6 HSPA (HSDPA & HSUPA)

Band	Subtest	UL Ch	DL Ch	Frequency	Conducted output power (dBm)	
					Average	Peak
UMTS850 (Band V)	1	4132	4357	826.4	23.90	28.10
		4180	4405	836.0	24.10	28.35
		4230	4455	846.0	24.20	28.15
	2	4132	4357	826.4	22.60	28.00
		4180	4405	836.0	22.60	28.10
		4230	4455	846.0	22.60	27.98
	3	4132	4357	826.4	23.40	28.25
		4180	4405	836.0	23.25	28.25
		4230	4455	846.0	23.30	28.25
	4	4132	4357	826.4	23.20	28.15
		4180	4405	836.0	23.30	28.10
		4230	4455	846.0	23.70	28.18
	5	4132	4357	826.4	24.00	28.30
		4180	4405	836.0	24.20	28.25
		4230	4455	846.0	24.10	28.25
UMTS1900 (Band II)	1	9262	9662	1852.4	24.15	28.00
		9400	9800	1880.0	24.20	28.15
		9538	9938	1907.6	23.90	28.85
	2	9262	9662	1852.4	22.65	28.16
		9400	9800	1880.0	22.40	28.75
		9538	9938	1907.6	22.30	28.60
	3	9262	9662	1852.4	23.60	28.80
		9400	9800	1880.0	23.60	28.75
		9538	9938	1907.6	23.20	28.82
	4	9262	9662	1852.4	23.30	28.58
		9400	9800	1880.0	23.00	28.35

		9538	9938	1907.6	22.80	28.74
	5	9262	9662	1852.4	24.10	28.72
		9400	9800	1880.0	23.90	28.63
		9538	9938	1907.6	24.00	28.80

7.5. RF POWER OUTPUT FOR UMTS REL99 (1700MHz)

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 V7.5.0 specification. The EUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7) 12.2kps RMC is used for this testing. Power control set to all bits up. A summary of these settings are illustrated below:

	Mode	Rel99
	Subtest	-
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	HSDPA FRC	Not Applicable
	HSUPA Test	Not Applicable
	Power Control Algorithm	Algorithm2
	β_c	Not Applicable
	β_d	Not Applicable
	β_{ec}	Not Applicable
	β_c/β_d	8/15
	β_{hs}	Not Applicable
β_{ed}	Not Applicable	

REL 99

Band	UL Ch	DL Ch	Frequency	Conducted output power (dBm)	
				Average	Peak
UNTS1710 (Band IV)	1312	1537	1712.4	23.85	28.50
	1412	1637	1732.4	24.10	28.58
	1513	1738	1754.6	24.20	28.65

7.6. RF POWER OUTPUT FOR UMTS Rel 6 HSDPA (1700 MHz)

The following Sub-Tests were completed according to the test requirements outlined in section 5.2A of the 3GPP TS34.121-1 V7.5.0 specification. All TX RMS and Peak power requirements for Power Class 3 were met according to table 5.2AA.5 and achieved through the outlined test procedure in section 5.2AA.4.2. A summary of these settings are illustrated below:

	Mode	Rel6 HSDPA	Rel6 HSDPA	Rel6 HSDPA	Rel6 HSDPA
	Subtest	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	HSUPA Test	Not Applicable			
	Power Control Algorithm	Algorithm 2			
	β_c	2/15	12/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	β_{ec}	-	-	-	-
	β_c/β_d	2/15	12/15	15/8	15/4
	β_{hs}	4/15	24/15	30/15	30/15
	β_{ed}	Not Applicable			
HSDPA Specific Settings	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	$A_{hs} = \beta_{hs}/\beta_c$	30/15			

RESULTS

REL 6 HSDPA

Band	Subtest	UL Ch	DL Ch	Frequency	Conducted output power (dBm)	
					Average	Peak
UMTS1710 (Band IV)	1	1312	1537	1712.4	24.40	28.50
		1412	1637	1732.4	24.20	28.75
		1513	1738	1752.6	24.25	28.76
	2*	1312	1537	1712.4	24.50	29.05
		1412	1637	1732.4	24.20	28.62
		1513	1738	1752.6	24.15	28.75
	3	1312	1537	1712.4	24.18	28.89
		1412	1637	1732.4	24.25	28.83
		1513	1738	1752.6	24.30	28.85
	4	1312	1537	1712.4	23.75	28.75
		1412	1637	1732.4	23.70	28.70
		1513	1738	1752.6	23.65	28.65

7.7. RF POWER OUTPUT for UMTS– Rel 6 HSPA (HSDPA & HSUPA) (1700 MHz)

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 V7.5.0 specification. The EUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7) 12.2kps RMC is used for this testing. Power control set to all bits up. A summary of these settings are illustrated below:

	Mode	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	β_c	11/15	6/15	15/15	2/15	15/15
	β_d	15/15	15/15	9/15	15/15	15/15
	β_{ec}	209/225	12/15	30/15	2/15	24/15
	β_c/β_d	11/15	6/15	15/9	2/15	15/15
	β_{hs}	22/15	12/15	30/15	4/15	30/15
β_{ed}	1309/225	94/75	47/15 47/15	56/75	134/15	
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	$A_{hs} = \beta_{hs}/\beta_c$	30/15				
HSUPA Specific Settings	D E-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E_TFCIs	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27		E-TFCI 11 E-TFCI PO 4 E-TFCI 92 E-TFCI PO 18		E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27

RESULTS

REL 6 HSPA (HSDPA & HSUPA)

Band	Subtest	UL Ch	DL Ch	Frequency	Conducted output power (dBm)	
					Average	Peak
UMTS1700	1	1312	1537	1712.4	24.15	28.40
		1412	1637	1732.4	23.95	28.35
		1513	1738	1752.6	24.00	28.50
	2	1312	1537	1712.4	22.75	28.00
		1412	1637	1732.4	22.70	28.00
		1513	1738	1752.6	22.65	28.05
	3	1312	1537	1712.4	23.06	28.35
		1412	1637	1732.4	23.25	28.65
		1513	1738	1752.6	23.20	28.50
	4	1312	1537	1712.4	22.80	28.28
		1412	1637	1732.4	22.45	28.65
		1513	1738	1752.6	22.55	28.70
	5	1312	1537	1712.4	23.80	28.75
		1412	1637	1732.4	23.85	28.80
		1513	1738	1752.6	23.82	28.80

8. WORST-CASE CONFIGURATION AND MODE

Based on the following investigation results, see Section 6. RF POWER OUTPUT VERIFICATION. The highest peak power and enhanced data rate is the worst-case scenario for all measurements.

Worst case modes:

- Cellular & PCS bands for GSM
 - GSM (GMSK)
 - EGPRS (8PSK)
- Band V & Band II for UMTS (WCDMA)
 - Rel 99
 - Rel 6 HSDPA Subtest 2
- Band IV for UMTS (WCDMA)
 - Rel 99
 - Rel 6 HSDPA Subtest 2

During radiation test the worst-position at which the EUT generate highest emissions was also investigated. That means the fundamental power is measured in X, Y, and Z-Positions, and the worst position among X, Y, and Z with battery charger. After the investigations, the worst-position was turned out to be Z-position without Battery Charger for all modulations in cell band, X-position without Battery Charger for GPRS and EGPRS modulations in PCS band, and Y-position without Battery Charger for WCDMA modulation in PCS and AWS bands.

9. LIMITS AND RESULTS

9.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232, §27.50(d) (2)

LIMITS

22.913(a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

24.232(c) & RSS-133 § 6.4 - Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

27.50(d) (2) - The Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to a peak EIRP of 1 watt.

TEST PROCEDURE

ANSI / TIA / EIA 603C.

RESULTS for Cellular Band (ERP)

Mode	Channel	f (MHz)	ERP	
			dBm	mW
GPRS	128	824.20	31.00	1258.93
	192	837.00	32.50	1778.28
	251	848.80	31.70	1479.11
EGPRS	128	824.20	28.70	741.31
	192	837.00	30.30	1071.52
	251	848.80	29.70	933.25

Mode	Channel	f (MHz)	ERP	
			dBm	mW
Rel 99	4132	826.40	23.60	229.09
	4180	836.00	23.00	199.53
	4230	846.00	23.70	234.42
HSDPA (Subtest 2)	4132	826.40	26.50	446.68
	4180	836.00	23.70	234.42
	4230	846.00	24.80	302.00

RESULTS for PCS Band (EIRP)

Mode	Channel	f (MHz)	EIRP	
			dBm	mW
GPRS	512	1850.20	31.80	1513.56
	661	1880.00	31.70	1479.11
	810	1909.80	32.80	1905.46
EGPRS	512	1850.20	30.60	1148.15
	661	1880.00	31.00	1258.93
	810	1909.80	31.10	1288.25

Mode	Channel	f (MHz)	EIRP	
			dBm	mW
Rel 99	9262	1852.40	26.10	407.38
	9400	1880.00	27.10	512.86
	9538	1907.60	26.60	457.09
HSDPA (Subtest 2)	9262	1852.40	26.00	398.11
	9400	1880.00	26.80	478.63
	9538	1907.60	26.20	416.87

RESULTS for AWS Band (EIRP)

Mode	Channel	f (MHz)	EIRP	
			dBm	mW
Rel. 6 HSDPA (Subtest 2)	1312	1712.40	23.00	199.53
	1412	1732.40	23.40	218.78
	1513	1752.60	23.90	245.47

CELL BAND GSM MODE (ERP)

High Frequency Substitution Measurement Compliance Certification Services Chamber B							
Company:	INTERMEC TECHNOLOGIES CORP						
Project #:	09U12487						
Date:	4/17/2009						
Test Engineer:	MENGISTU MEKURIA						
Configuration:	EUT ALONE						
Mode:	TX CELL BAND,GSM 850.0 MHz						
Test Equipment:							
Receiving: Sunol T130, and 3m Chamber N-type Cable (Setup this one for testing EUT)							
Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.							
f MHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
824.20	-1.6	V	32.6	31.0	38.5	-7.5	
824.20	-7.9	H	30.4	22.4	38.5	-16.0	
837.00	-0.1	V	32.7	32.5	38.5	-5.9	
837.00	-5.0	H	30.7	25.8	38.5	-12.7	
848.80	-0.3	V	32.0	31.7	38.5	-6.8	
848.80	-6.8	H	30.8	24.0	38.5	-14.5	
Rev. 1.24.7							

CELL BAND EGPRS MODE (ERP)

High Frequency Substitution Measurement Compliance Certification Services Chamber B							
Company:		INTERMEC TECHNOLOGIES CORP					
Project #:		09U12487					
Date:		4/18/2009					
Test Engineer:		MENGISTU MEKURIA					
Configuration:		EUT ALONE					
Mode:		TX CELL BAND,EGPRS 850.0 MHz					
<u>Test Equipment:</u>							
Receiving: Sunol T130, and 3m Chamber N-type Cable (Setup this one for testing EUT)							
Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.							
f MHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
824.20	-3.9	V	32.6	28.7	38.5	-9.7	
824.20	-9.3	H	30.4	21.1	38.5	-17.4	
837.00	-2.4	V	32.7	30.3	38.5	-8.2	
837.00	-8.7	H	30.7	22.1	38.5	-16.4	
848.80	-2.3	V	32.0	29.7	38.5	-8.7	
848.80	-8.8	H	30.8	21.9	38.5	-16.5	
Rev. 1.24.7							

CELL BAND REL 99 WCDMA MODE (ERP)

High Frequency Substitution Measurement Compliance Certification Services Chamber B							
Company:	INTERMEC TECHNOLOGIES CORP						
Project #:	09U12487						
Date:	4/18/2009						
Test Engineer:	MENGISTU MEKURIA						
Configuration:	EUT ALONE						
Mode:	TX CELL BAND,WCDMA 850.0 MHz						
Test Equipment:							
Receiving: Sunol T130, and 3m Chamber N-type Cable (Setup this one for testing EUT)							
Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.							
f MHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
826.40	-9.0	V	32.6	23.6	38.5	-14.8	
826.40	-13.2	H	30.4	17.1	38.5	-21.3	
836.00	-9.7	V	32.7	23.0	38.5	-15.5	
836.00	-14.1	H	30.7	16.7	38.5	-21.8	
846.00	-8.2	V	32.0	23.7	38.5	-14.7	
846.00	-13.9	H	30.8	16.9	38.5	-21.6	
Rev. 1.24.7							

CELL BAND REL. 6 HSDPA MODE (ERP)

High Frequency Substitution Measurement Compliance Certification Services Chamber B							
Company:		INTERMEC TECHNOLOGIES CORP					
Project #:		09U12487					
Date:		4/18/2009					
Test Engineer:		MENGISTU MEKURIA					
Configuration:		EUT ALONE					
Mode:		TX CELL BAND,HSDPA 850.0 MHz					
Test Equipment:							
Receiving: Sunol T130, and 3m Chamber N-type Cable (Setup this one for testing EUT)							
Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.							
f MHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
826.40	-6.1	V	32.6	26.5	38.5	-12.0	
826.40	-12.5	H	30.4	17.9	38.5	-20.6	
836.00	-8.9	V	32.7	23.7	38.5	-14.7	
836.00	-14.1	H	30.7	16.7	38.5	-21.8	
846.00	-7.2	V	32.0	24.8	38.5	-13.7	
846.00	-13.5	H	30.8	17.2	38.5	-21.2	
Rev. 1.24.7							

PCS BAND GSM MODE (EIRP)

High Frequency Fundamental Measurement Compliance Certification Services Chamber B							
Company:		INTERMEC TECHNOLOGIES CORP					
Project #:		09U12487					
Date:		4/18/2009					
Test Engineer:		MENGISTU MEKURIA					
Configuration:		EUT ALONE					
Mode:		TX PCS BAND, GSM 1900.0 MHz					
Test Equipment:							
Receiving: Horn T59, and Camber B SMA Cables							
Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse							
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.850	-8.3	V	40.2	31.8	33.0	-1.2	
1.850	-11.1	H	39.5	28.4	33.0	-4.6	
1.880	-8.5	V	40.3	31.7	33.0	-1.3	
1.880	-11.3	H	40.1	28.8	33.0	-4.2	
1.910	-7.4	V	40.2	32.8	33.0	-0.2	
1.910	-10.3	H	40.1	29.8	33.0	-3.2	
Rev. 1.24.7							

PCS BAND EGPRS MODE (EIRP)

High Frequency Fundamental Measurement Compliance Certification Services Chamber B							
Company:	INTERMEC TECHNOLOGIES CORP						
Project #:	09U12487						
Date:	4/18/2009						
Test Engineer:	MENGISTU MEKURIA						
Configuration:	EUT ALONE						
Mode:	TX PCS BAND, EGPRS 1900.0 MHz						
Test Equipment:							
Receiving: Horn T59, and Camber B SMA Cables							
Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse							
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.850	-9.6	V	40.2	30.6	33.0	-2.4	
1.850	-12.0	H	39.5	27.5	33.0	-5.5	
1.880	-9.2	V	40.3	31.0	33.0	-2.0	
1.880	-11.7	H	40.1	28.5	33.0	-4.6	
1.910	-9.1	V	40.2	31.1	33.0	-1.9	
1.910	-10.8	H	40.1	29.3	33.0	-3.7	
Rev. 1.24.7							

PCS BAND REL 99 WCDMA MODE (EIRP)

High Frequency Fundamental Measurement Compliance Certification Services Chamber B							
Company:		INTERMEC TECHNOLOGIES CORP					
Project #:		09U12487					
Date:		4/18/2009					
Test Engineer:		MENGISTU MEKURIA					
Configuration:		EUT ALONE					
Mode:		TX PCS BAND,WCDMA 1900.0 MHz					
<u>Test Equipment:</u>							
Receiving: Horn T59, and Camber B SMA Cables							
Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse							
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.852	-18.8	V	40.2	21.3	33.0	-11.7	
1.852	-13.4	H	39.5	26.1	33.0	-6.9	
1.880	-17.2	V	40.3	23.1	33.0	-9.9	
1.880	-13.0	H	40.1	27.1	33.0	-5.9	
1.908	-17.7	V	40.2	22.5	33.0	-10.5	
1.908	-13.5	H	40.1	26.6	33.0	-6.4	
Rev. 1.24.7							

PCS BAND REL. 6 HSDPA MODE (EIRP)

High Frequency Fundamental Measurement Compliance Certification Services Chamber B							
Company:		INTERMEC TECHNOLOGIES CORP					
Project #:		09U12487					
Date:		4/18/2009					
Test Engineer:		MENGISTU MEKURIA					
Configuration:		EUT ALONE					
Mode:		TX PCS BAND,HSDPA 1900.0 MHz					
Test Equipment:							
Receiving: Horn T59, and Camber B SMA Cables							
Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse							
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.852	-15.1	V	40.2	25.0	33.0	-8.0	
1.852	-13.5	H	39.5	26.0	33.0	-7.1	
1.880	-14.8	V	40.3	25.4	33.0	-7.6	
1.880	-13.4	H	40.1	26.8	33.0	-6.3	
1.908	-14.8	V	40.2	25.4	33.0	-7.6	
1.908	-13.9	H	40.1	26.2	33.0	-6.8	
Rev. 1.24.7							

AWS BAND REL 6 HSDPA SUBTEST 2 OUTPUT POWER (EIRP)

High Frequency Fundamental Measurement Compliance Certification Services Chamber A							
Company:	INTERMEC TECHNOLOGIES CORP						
Project #:	09U12487						
Date:	4/18/2009						
Test Engineer:	MENGISTU MEKURIA						
Configuration:	EUT ALONE						
Mode:	TX AWS 1700 MHz, REL. 6 HSDPA SUBTEST 2						
<u>Test Equipment:</u>							
Receiving: Horn T59, and Camber B SMA Cables							
Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse							
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.712	-21.0	V	39.9	18.9	30.0	-11.1	
1.712	-15.6	H	38.6	23.0	30.0	-7.0	
1.732	-19.7	V	40.4	20.7	30.0	-9.3	
1.732	-15.8	H	39.2	23.4	30.0	-6.7	
1.753	-20.3	V	40.2	19.9	30.0	-10.1	
1.753	-15.7	H	39.6	23.9	30.0	-6.2	
Rev. 1.24.7							

9.2. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, §27.53

LIMIT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

TEST PROCEDURE

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power

RESULTS

See the following pages.

CELL BAND GPRS MODE (ERP)

Compliance Certification Services											
Above 1GHz High Frequency Substitution Measurement											
Company:		INTERMEC TECHNOLOGIES CORP									
Project #:		09U12487									
Date:		4/25/2009									
Test Engineer:		MENGISTU MEKURIA									
Configuration:		EUT ALONE									
Mode:		TX GPRS 850 MHz									
Chamber		Pre-amplifier			Filter			Limit			
3m Chamber		T34 8449B			Filter 1			FCC PART 22			
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch. (824.2 MHz)											
1.648	-41.2	V	3.0	36.9	37.4	1.0	-40.7	-13.0	-27.7		
2.473	-47.3	V	3.0	41.6	36.4	1.0	-41.1	-13.0	-28.1		
3.297	-58.9	V	3.0	43.6	35.8	1.0	-50.1	-13.0	-37.1		
4.121	-50.9	V	3.0	46.2	35.1	1.0	-38.8	-13.0	-25.8		
4.945	-49.1	V	3.0	48.0	34.8	1.0	-34.9	-13.0	-21.9		
5.769	-64.4	V	3.0	49.5	34.7	1.0	-48.6	-13.0	-35.6		
6.594	-57.0	V	3.0	50.9	34.8	1.0	-39.9	-13.0	-26.9		
7.418	-68.5	V	3.0	52.2	34.9	1.0	-50.3	-13.0	-37.3		
8.242	-64.3	V	3.0	53.2	35.1	1.0	-45.2	-13.0	-32.2		
9.066	-64.4	V	3.0	54.2	35.2	1.0	-44.3	-13.0	-31.3		
1.648	-38.9	H	3.0	36.6	37.4	1.0	-38.7	-13.0	-25.7		
2.473	-49.0	H	3.0	40.0	36.4	1.0	-44.4	-13.0	-31.4		
3.297	-59.9	H	3.0	43.4	35.8	1.0	-51.3	-13.0	-38.3		
4.121	-59.9	H	3.0	45.9	35.1	1.0	-48.1	-13.0	-35.1		
4.945	-50.9	H	3.0	48.3	34.8	1.0	-36.4	-13.0	-23.4		
5.769	-65.0	H	3.0	50.2	34.7	1.0	-48.5	-13.0	-35.5		
6.594	-57.2	H	3.0	51.8	34.8	1.0	-39.2	-13.0	-26.2		
7.418	-68.6	H	3.0	53.1	34.9	1.0	-49.4	-13.0	-36.4		
8.242	-65.2	H	3.0	54.1	35.1	1.0	-45.1	-13.0	-32.1		
9.066	-67.0	H	3.0	55.1	35.2	1.0	-46.1	-13.0	-33.1		
Mid Ch. (837.0 MHz)											
1.674	-40.1	V	3.0	37.2	37.3	1.0	-39.3	-13.0	-26.3		
2.511	-48.4	V	3.0	41.8	36.4	1.0	-42.0	-13.0	-29.0		
3.348	-58.5	V	3.0	43.8	35.7	1.0	-49.4	-13.0	-36.4		
4.185	-51.4	V	3.0	46.3	35.0	1.0	-39.1	-13.0	-26.1		
5.022	-48.0	V	3.0	48.2	34.8	1.0	-33.6	-13.0	-20.6		
5.859	-63.4	V	3.0	49.7	34.7	1.0	-47.5	-13.0	-34.5		
6.696	-57.8	V	3.0	51.1	34.8	1.0	-40.5	-13.0	-27.5		
7.533	-67.9	V	3.0	52.3	34.9	1.0	-49.5	-13.0	-36.5		
8.370	-64.9	V	3.0	53.4	35.1	1.0	-45.6	-13.0	-32.6		
9.207	-65.5	V	3.0	54.4	35.2	1.0	-45.3	-13.0	-32.3		
1.674	-39.6	H	3.0	36.9	37.3	1.0	-39.1	-13.0	-26.1		
2.511	-48.5	H	3.0	40.2	36.4	1.0	-43.7	-13.0	-30.7		
3.348	-60.1	H	3.0	43.6	35.7	1.0	-51.3	-13.0	-38.3		
4.185	-52.1	H	3.0	46.1	35.0	1.0	-40.1	-13.0	-27.1		
5.022	-50.6	H	3.0	48.5	34.8	1.0	-35.8	-13.0	-22.8		
5.859	-65.6	H	3.0	50.3	34.7	1.0	-49.0	-13.0	-36.0		
6.696	-58.2	H	3.0	52.0	34.8	1.0	-40.0	-13.0	-27.0		
7.533	-69.0	H	3.0	53.3	34.9	1.0	-49.6	-13.0	-36.6		
8.370	-67.2	H	3.0	54.3	35.1	1.0	-47.0	-13.0	-34.0		
9.207	-68.0	H	3.0	55.3	35.2	1.0	-47.0	-13.0	-34.0		
Hi Ch. (848.8 MHz)											
1.698	-38.8	V	3.0	37.4	37.3	1.0	-37.7	-13.0	-24.7		
2.546	-47.4	V	3.0	41.9	36.3	1.0	-40.9	-13.0	-27.9		
3.395	-57.9	V	3.0	43.9	35.7	1.0	-48.6	-13.0	-35.6		
4.244	-50.5	V	3.0	46.4	35.0	1.0	-38.0	-13.0	-25.0		
5.093	-48.0	V	3.0	48.3	34.7	1.0	-33.4	-13.0	-20.4		
5.942	-62.5	V	3.0	49.8	34.8	1.0	-46.4	-13.0	-33.4		
6.790	-56.8	V	3.0	51.3	34.8	1.0	-39.4	-13.0	-26.4		
7.639	-67.0	V	3.0	52.4	35.0	1.0	-48.5	-13.0	-35.5		
8.488	-64.2	V	3.0	53.5	35.1	1.0	-44.8	-13.0	-31.8		
9.337	-64.8	V	3.0	54.6	35.2	1.0	-44.4	-13.0	-31.4		
1.698	-38.5	H	3.0	37.1	37.3	1.0	-37.7	-13.0	-24.7		
2.546	-47.0	H	3.0	40.4	36.3	1.0	-42.0	-13.0	-29.0		
3.395	-58.1	H	3.0	43.7	35.7	1.0	-49.1	-13.0	-36.1		
4.244	-54.1	H	3.0	46.3	35.0	1.0	-41.9	-13.0	-28.9		
5.093	-54.1	H	3.0	48.7	34.7	1.0	-39.1	-13.0	-26.1		
5.942	-62.3	H	3.0	50.5	34.8	1.0	-45.6	-13.0	-32.6		
6.790	-54.2	H	3.0	52.2	34.8	1.0	-35.9	-13.0	-22.9		
7.639	-66.0	H	3.0	53.4	35.0	1.0	-46.5	-13.0	-33.5		
8.488	-64.5	H	3.0	54.4	35.1	1.0	-44.2	-13.0	-31.2		
9.337	-66.0	H	3.0	55.4	35.2	1.0	-44.9	-13.0	-31.9		

Rev. 03.03.09

CELL BAND EGPRS MODE (ERP)

Compliance Certification Services										
Above 1GHz High Frequency Substitution Measurement										
Company:		INTERMEC TECHNOLOGIES CORP								
Project #:		09U12487								
Date:		4/25/2009								
Test Engineer:		MENGISTU MEKURIA								
Configuration:		EUT ALONE								
Mode:		TX EGPRS 850 MHz								
Chamber		Pre-amplifier			Filter			Limit		
3m Chamber		T34 8449B			Filter 1			FCC PART 22		
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. (824.2 MHz)										
1.648	-41.7	V	3.0	36.9	37.4	1.0	-41.2	-13.0	-28.2	
2.473	-51.0	V	3.0	41.6	36.4	1.0	-44.7	-13.0	-31.7	
3.297	-64.5	V	3.0	43.6	35.8	1.0	-55.6	-13.0	-42.6	
4.121	-50.9	V	3.0	46.2	35.1	1.0	-38.8	-13.0	-25.8	
4.945	-53.2	V	3.0	48.0	34.8	1.0	-39.0	-13.0	-26.0	
5.769	-66.2	V	3.0	49.5	34.7	1.0	-50.4	-13.0	-37.4	
6.594	-64.2	V	3.0	50.9	34.8	1.0	-47.0	-13.0	-34.0	
1.648	-41.0	H	3.0	36.6	37.4	1.0	-40.7	-13.0	-27.7	
2.473	-51.3	H	3.0	40.0	36.4	1.0	-46.6	-13.0	-33.6	
3.297	-59.5	H	3.0	43.4	35.8	1.0	-50.8	-13.0	-37.8	
4.121	-53.7	H	3.0	45.9	35.1	1.0	-41.8	-13.0	-28.8	
4.945	-53.3	H	3.0	48.3	34.8	1.0	-38.8	-13.0	-25.8	
5.769	-63.1	H	3.0	50.2	34.7	1.0	-46.7	-13.0	-33.7	
6.594	-62.1	V	3.0	50.9	34.8	1.0	-45.0	-13.0	-32.0	
Mid Ch. (837.0 MHz)										
1.674	-42.4	V	3.0	37.2	37.3	1.0	-41.6	-13.0	-28.6	
2.511	-51.9	V	3.0	41.8	36.4	1.0	-45.5	-13.0	-32.5	
3.348	-63.0	V	3.0	43.8	35.7	1.0	-54.0	-13.0	-41.0	
4.185	-50.3	V	3.0	46.3	35.0	1.0	-38.1	-13.0	-25.1	
5.022	-56.2	V	3.0	48.2	34.8	1.0	-41.8	-13.0	-28.8	
5.859	-69.2	V	3.0	49.7	34.7	1.0	-53.3	-13.0	-40.3	
6.696	-62.2	V	3.0	51.1	34.8	1.0	-44.9	-13.0	-31.9	
1.674	-41.1	H	3.0	36.9	37.3	1.0	-40.6	-13.0	-27.6	
2.511	-50.1	H	3.0	40.2	36.4	1.0	-45.2	-13.0	-32.2	
3.348	-61.1	H	3.0	43.6	35.7	1.0	-52.3	-13.0	-39.3	
4.185	-52.4	H	3.0	46.1	35.0	1.0	-40.4	-13.0	-27.4	
5.022	-54.6	H	3.0	48.5	34.8	1.0	-39.8	-13.0	-26.8	
5.859	-65.1	H	3.0	50.3	34.7	1.0	-48.5	-13.0	-35.5	
6.696	-64.1	H	3.0	52.0	34.8	1.0	-45.9	-13.0	-32.9	
Hi Ch. (848.8 MHz)										
1.698	-40.3	V	3.0	37.4	37.3	1.0	-39.1	-13.0	-26.1	
2.546	-49.5	V	3.0	41.9	36.3	1.0	-42.9	-13.0	-29.9	
3.395	-60.6	V	3.0	43.9	35.7	1.0	-51.3	-13.0	-38.3	
4.244	-49.3	V	3.0	46.4	35.0	1.0	-36.9	-13.0	-23.9	
5.093	-58.2	V	3.0	48.3	34.7	1.0	-43.6	-13.0	-30.6	
5.942	-69.2	V	3.0	49.8	34.8	1.0	-53.1	-13.0	-40.1	
6.790	-61.4	V	3.0	51.3	34.8	1.0	-44.0	-13.0	-31.0	
1.698	-39.1	H	3.0	37.1	37.3	1.0	-38.3	-13.0	-25.3	
2.546	-48.1	H	3.0	40.4	36.3	1.0	-43.0	-13.0	-30.0	
3.395	-62.5	H	3.0	43.7	35.7	1.0	-53.4	-13.0	-40.4	
4.244	-50.8	H	3.0	46.3	35.0	1.0	-38.6	-13.0	-25.6	
5.093	-53.0	H	3.0	48.7	34.7	1.0	-38.0	-13.0	-25.0	
5.942	-63.3	H	3.0	50.5	34.8	1.0	-46.6	-13.0	-33.6	
6.790	-65.0	H	3.0	52.2	34.8	1.0	-46.6	-13.0	-33.6	
Rev. 03.03.09										

CELL BAND REL 99 WCDMA MODE (ERP)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: INTERMEC TECHNOLOGIES CORP
Project #: 09U12487
Date: 4/25/2009
Test Engineer: MENGISTU MEKURIA
Configuration: EUT ALONE
Mode: TX WCDMA 850 MHz

Chamber
 3m Chamber

Pre-amplifier
 T34 8449B

Filter
 Filter 1

Limit
 FCC PART 22

f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. (826.4 MHz)										
1.653	-54.1	V	3.0	36.9	37.4	1.0	-53.6	-13.0	-40.6	
2.479	-63.6	V	3.0	41.6	36.4	1.0	-57.3	-13.0	-44.3	
1.653	-55.5	H	3.0	36.7	37.4	1.0	-55.2	-13.0	-42.2	
2.479	-64.3	H	3.0	40.1	36.4	1.0	-59.6	-13.0	-46.6	
Mid Ch. (836.4 MHz)										
1.673	-52.5	V	3.0	37.1	37.3	1.0	-51.7	-13.0	-38.7	
2.509	-61.1	V	3.0	41.8	36.4	1.0	-54.6	-13.0	-41.6	
1.673	-51.4	H	3.0	36.9	37.3	1.0	-50.9	-13.0	-37.9	
2.509	-60.2	H	3.0	40.2	36.4	1.0	-55.3	-13.0	-42.3	
Hi Ch. (846.6 MHz)										
1.693	-53.2	V	3.0	37.4	37.3	1.0	-52.2	-13.0	-39.2	
2.540	-64.4	V	3.0	41.9	36.3	1.0	-57.9	-13.0	-44.9	
1.693	-54.6	H	3.0	37.1	37.3	1.0	-53.8	-13.0	-40.8	
2.540	-62.2	H	3.0	40.3	36.3	1.0	-57.2	-13.0	-44.2	

Rev. 03.03.09

CELL BAND REL. 6 HSDPA MODE (ERP)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: INTERMEC TECHNOLOGIES CORP
Project #: 09U12487
Date: 4/25/2009
Test Engineer: MENGISTU MEKURIA
Configuration: EUT ALONE
Mode: TX HSDPA 850.0 MHz

Chamber

3m Chamber

Pre-amplifier

T34 8449B

Filter

Filter 1

Limit

FCC PART 22

f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. (826.4 MHz)										
1.653	-54.5	V	3.0	36.9	37.4	1.0	-53.9	-13.0	-40.9	
2.480	-61.3	V	3.0	41.7	36.4	1.0	-55.0	-13.0	-42.0	
3.306	-65.7	V	3.0	43.7	35.8	1.0	-56.8	-13.0	-43.8	
1.653	-54.6	H	3.0	36.7	37.4	1.0	-54.2	-13.0	-41.2	
2.480	-60.3	H	3.0	40.1	36.4	1.0	-55.7	-13.0	-42.7	
3.306	-63.1	H	3.0	43.5	35.8	1.0	-54.5	-13.0	-41.5	
Mid Ch. (836.4 MHz)										
1.673	-52.5	V	3.0	37.1	37.3	1.0	-51.7	-13.0	-38.7	
2.509	-59.5	V	3.0	41.8	36.4	1.0	-53.0	-13.0	-40.0	
3.346	-62.9	V	3.0	43.8	35.8	1.0	-53.8	-13.0	-40.8	
1.673	-54.2	H	3.0	36.9	37.3	1.0	-53.7	-13.0	-40.7	
2.509	-59.5	H	3.0	40.2	36.4	1.0	-54.6	-13.0	-41.6	
3.346	-62.7	H	3.0	43.6	35.8	1.0	-53.8	-13.0	-40.8	
Hi Ch. (846.6 MHz)										
1.693	-51.5	V	3.0	37.4	37.3	1.0	-50.4	-13.0	-37.4	
2.540	-59.3	V	3.0	41.9	36.3	1.0	-52.8	-13.0	-39.8	
3.386	-63.9	V	3.0	43.9	35.7	1.0	-54.7	-13.0	-41.7	
1.693	-52.5	H	3.0	37.1	37.3	1.0	-51.7	-13.0	-38.7	
2.540	-58.4	H	3.0	40.3	36.3	1.0	-53.4	-13.0	-40.4	
3.386	-60.2	H	3.0	43.7	35.7	1.0	-51.2	-13.0	-38.2	

Rev. 03.03.09

PCS BAND GPRS MODE (EIRP)

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		INTERMEC TECHNOLOGIES CORP								
Project #:		09U12487								
Date:		4/25/2009								
Test Engineer:		MENGISTU MEKURIA								
Configuration:		EUT ALONE								
Mode:		TX GPRS 1900.0 MHz								
Chamber		Pre-amplifier			Filter			Limit		
3m Chamber		T34 8449B			Filter 1			FCC PART 24		
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. (1850.2 MHz)										
3.700	-57.6	V	3.0	44.9	35.4	1.0	-47.1	-13.0	-34.1	
5.551	-62.5	V	3.0	49.2	34.7	1.0	-47.0	-13.0	-34.0	
7.401	-62.5	V	3.0	52.1	34.9	1.0	-44.3	-13.0	-31.3	
9.251	-63.5	V	3.0	54.5	35.2	1.0	-43.3	-13.0	-30.3	
11.101	-60.4	V	3.0	56.2	34.8	1.0	-38.0	-13.0	-25.0	
12.951	-61.2	V	3.0	57.6	34.1	1.0	-36.6	-13.0	-23.6	
3.700	-59.2	H	3.0	44.7	35.4	1.0	-49.0	-13.0	-36.0	
5.551	-63.6	H	3.0	49.7	34.7	1.0	-47.6	-13.0	-34.6	
7.401	-62.3	H	3.0	53.1	34.9	1.0	-43.1	-13.0	-30.1	
9.251	-64.5	H	3.0	55.3	35.2	1.0	-43.4	-13.0	-30.4	
11.101	-62.1	H	3.0	56.2	34.8	1.0	-39.7	-13.0	-26.7	
12.951	-66.2	H	3.0	57.3	34.1	1.0	-42.1	-13.0	-29.1	
Mid Ch. (1880.0 MHz)										
3.760	-58.5	V	3.0	45.1	35.3	1.0	-47.7	-13.0	-34.7	
5.640	-62.1	V	3.0	49.3	34.7	1.0	-46.5	-13.0	-33.5	
7.520	-63.2	V	3.0	52.3	34.9	1.0	-44.8	-13.0	-31.8	
9.400	-63.6	V	3.0	54.7	35.3	1.0	-43.2	-13.0	-30.2	
11.280	-61.4	V	3.0	56.4	34.7	1.0	-38.8	-13.0	-25.8	
13.160	-60.2	V	3.0	57.8	34.0	1.0	-35.4	-13.0	-22.4	
3.760	-61.3	H	3.0	44.8	35.3	1.0	-50.8	-13.0	-37.8	
5.640	-65.4	H	3.0	49.9	34.7	1.0	-49.2	-13.0	-36.2	
7.520	-63.1	H	3.0	53.3	34.9	1.0	-43.8	-13.0	-30.8	
9.400	-66.2	H	3.0	55.5	35.3	1.0	-44.9	-13.0	-31.9	
11.280	-65.1	H	3.0	56.2	34.7	1.0	-42.6	-13.0	-29.6	
13.160	-69.4	H	3.0	57.5	34.0	1.0	-45.0	-13.0	-32.0	
Hi Ch. (1909.8 MHz)										
3.820	-56.1	V	3.0	45.3	35.3	1.0	-45.1	-13.0	-32.1	
5.729	-63.7	V	3.0	49.5	34.7	1.0	-48.0	-13.0	-35.0	
7.639	-60.2	V	3.0	52.4	35.0	1.0	-41.7	-13.0	-28.7	
9.549	-61.3	V	3.0	54.8	35.3	1.0	-40.7	-13.0	-27.7	
11.459	-59.3	V	3.0	56.5	34.6	1.0	-36.5	-13.0	-23.5	
13.369	-60.6	V	3.0	58.0	34.0	1.0	-35.6	-13.0	-22.6	
3.820	-59.4	H	3.0	45.0	35.3	1.0	-48.7	-13.0	-35.7	
5.729	-64.2	H	3.0	50.1	34.7	1.0	-47.9	-13.0	-34.9	
7.639	-63.2	H	3.0	53.4	35.0	1.0	-43.7	-13.0	-30.7	
9.549	-62.0	H	3.0	55.7	35.3	1.0	-40.6	-13.0	-27.6	
11.459	-63.2	H	3.0	56.2	34.6	1.0	-40.6	-13.0	-27.6	
13.369	-65.3	H	3.0	57.7	34.0	1.0	-40.5	-13.0	-27.5	
Rev. 03.03.09										

PCS BAND EGPRS MODE (EIRP)

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		INTERMEC TECHNOLOGIES CORP								
Project #:		09U12487								
Date:		4/25/2009								
Test Engineer:		MENGISTU MEKURIA								
Configuration:		EUT ALONE								
Mode:		TX EGPRS 1900.0 MHz								
Chamber		Pre-amplifier			Filter			Limit		
3m Chamber		T34 8449B			Filter 1			FCC PART 24		
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. (1850.2 MHz)										
3.700	-60.2	V	3.0	44.9	35.4	1.0	-49.7	-13.0	-36.7	
5.551	-59.8	V	3.0	49.2	34.7	1.0	-44.3	-13.0	-31.3	
7.401	-57.4	V	3.0	52.1	34.9	1.0	-39.2	-13.0	-26.2	
9.251	-61.5	V	3.0	54.5	35.2	1.0	-41.2	-13.0	-28.2	
11.101	-62.2	V	3.0	56.2	34.8	1.0	-39.7	-13.0	-26.7	
12.951	-67.2	V	3.0	57.6	34.1	1.0	-42.7	-13.0	-29.7	
3.700	-60.5	H	3.0	44.7	35.4	1.0	-50.2	-13.0	-37.2	
5.551	-61.3	H	3.0	49.7	34.7	1.0	-45.3	-13.0	-32.3	
7.401	-62.6	H	3.0	53.1	34.9	1.0	-43.4	-13.0	-30.4	
9.251	-63.3	H	3.0	55.3	35.2	1.0	-42.2	-13.0	-29.2	
11.101	-65.0	H	3.0	56.2	34.8	1.0	-42.6	-13.0	-29.6	
12.951	-66.5	H	3.0	57.3	34.1	1.0	-42.4	-13.0	-29.4	
Mid Ch. (1880.0 MHz)										
3.760	-61.5	V	3.0	45.1	35.3	1.0	-50.7	-13.0	-37.7	
5.640	-61.3	V	3.0	49.3	34.7	1.0	-45.8	-13.0	-32.8	
7.520	-59.6	V	3.0	52.3	34.9	1.0	-41.3	-13.0	-28.3	
9.400	-63.0	V	3.0	54.7	35.3	1.0	-42.6	-13.0	-29.6	
11.280	-65.4	V	3.0	56.4	34.7	1.0	-42.8	-13.0	-29.8	
13.160	-66.1	V	3.0	57.8	34.0	1.0	-41.3	-13.0	-28.3	
3.760	-61.8	H	3.0	44.8	35.3	1.0	-51.3	-13.0	-38.3	
5.640	-63.9	H	3.0	49.9	34.7	1.0	-47.7	-13.0	-34.7	
7.520	-64.3	H	3.0	53.3	34.9	1.0	-45.0	-13.0	-32.0	
9.400	-66.3	H	3.0	55.5	35.3	1.0	-45.1	-13.0	-32.1	
11.280	-66.1	H	3.0	56.2	34.7	1.0	-43.6	-13.0	-30.6	
13.160	-69.8	H	3.0	57.5	34.0	1.0	-45.4	-13.0	-32.4	
Hi Ch. (1909.8 MHz)										
3.820	-59.4	V	3.0	45.3	35.3	1.0	-48.4	-13.0	-35.4	
5.729	-60.1	V	3.0	49.5	34.7	1.0	-44.3	-13.0	-31.3	
7.639	-56.4	V	3.0	52.4	35.0	1.0	-38.0	-13.0	-25.0	
9.549	-60.5	V	3.0	54.8	35.3	1.0	-40.0	-13.0	-27.0	
11.459	-62.3	V	3.0	56.5	34.6	1.0	-39.4	-13.0	-26.4	
13.369	-63.1	V	3.0	58.0	34.0	1.0	-38.1	-13.0	-25.1	
3.820	-59.8	H	3.0	45.0	35.3	1.0	-49.1	-13.0	-36.1	
5.729	-61.3	H	3.0	50.1	34.7	1.0	-45.0	-13.0	-32.0	
7.639	-62.2	H	3.0	53.4	35.0	1.0	-42.7	-13.0	-29.7	
9.549	-62.4	H	3.0	55.7	35.3	1.0	-41.1	-13.0	-28.1	
11.459	-65.2	H	3.0	56.2	34.6	1.0	-42.6	-13.0	-29.6	
13.369	-66.1	H	3.0	57.7	34.0	1.0	-41.4	-13.0	-28.4	

Rev. 03.03.09

PCS BAND REL 99 WCDMA MODE (EIRP)

Company: INTERMEC TECHNOLOGIES CORP	
Project #: 09U12487	
Date: 4/25/2009	
Test Engineer: MENGISTU MEKURIA	
Configuration: EUT ALONE	
Mode: TX WCDMA 1900.0 MHz	

Chamber	Pre-amplifier	Filter	Limit
3m Chamber	T34 8449B	Filter 1	FCC PART 24

f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. (1852.4 MHz)										
3.705	-51.0	V	3.0	44.9	35.4	1.0	-40.5	-13.0	-27.5	
5.557	-54.8	V	3.0	49.2	34.7	1.0	-39.3	-13.0	-26.3	
7.410	-62.7	V	3.0	52.1	34.9	1.0	-44.4	-13.0	-31.4	
9.262	-61.3	V	3.0	54.5	35.2	1.0	-41.0	-13.0	-28.0	
11.114	-62.5	V	3.0	56.2	34.8	1.0	-40.0	-13.0	-27.0	
12.967	-64.0	V	3.0	57.6	34.1	1.0	-39.5	-13.0	-26.5	
3.705	-48.2	H	3.0	44.7	35.4	1.0	-37.9	-13.0	-24.9	
5.557	-55.2	H	3.0	49.7	34.7	1.0	-39.2	-13.0	-26.2	
7.410	-62.2	H	3.0	53.1	34.9	1.0	-43.0	-13.0	-30.0	
9.262	-59.1	H	3.0	55.3	35.2	1.0	-38.0	-13.0	-25.0	
11.114	-63.1	H	3.0	56.2	34.8	1.0	-40.7	-13.0	-27.7	
12.967	-66.5	H	3.0	57.3	34.1	1.0	-42.3	-13.0	-29.3	
Mid Ch. (1880.0 MHz)										
3.760	-50.8	V	3.0	45.1	35.3	1.0	-40.0	-13.0	-27.0	
5.640	-54.2	V	3.0	49.3	34.7	1.0	-38.6	-13.0	-25.6	
7.520	-64.9	V	3.0	52.3	34.9	1.0	-46.6	-13.0	-33.6	
9.400	-61.1	V	3.0	54.7	35.3	1.0	-40.6	-13.0	-27.6	
11.280	-64.1	V	3.0	56.4	34.7	1.0	-41.4	-13.0	-28.4	
13.160	-66.1	V	3.0	57.8	34.0	1.0	-41.3	-13.0	-28.3	
3.760	-47.8	H	3.0	44.8	35.3	1.0	-37.3	-13.0	-24.3	
5.640	-56.3	H	3.0	49.9	34.7	1.0	-40.1	-13.0	-27.1	
7.520	-64.9	H	3.0	53.3	34.9	1.0	-45.5	-13.0	-32.5	
9.400	-62.0	H	3.0	55.5	35.3	1.0	-40.8	-13.0	-27.8	
11.280	-65.4	H	3.0	56.2	34.7	1.0	-43.0	-13.0	-30.0	
13.160	-65.7	H	3.0	57.5	34.0	1.0	-41.2	-13.0	-28.2	
Hi Ch. (1907.6 MHz)										
3.815	-48.1	V	3.0	45.3	35.3	1.0	-37.1	-13.0	-24.1	
5.723	-51.4	V	3.0	49.5	34.7	1.0	-35.6	-13.0	-22.6	
7.630	-61.5	V	3.0	52.4	34.9	1.0	-43.0	-13.0	-30.0	
9.538	-63.7	V	3.0	54.8	35.3	1.0	-43.1	-13.0	-30.1	
11.446	-61.4	V	3.0	56.5	34.6	1.0	-38.5	-13.0	-25.5	
13.353	-64.3	V	3.0	57.9	34.0	1.0	-39.4	-13.0	-26.4	
3.815	-45.3	H	3.0	45.0	35.3	1.0	-34.5	-13.0	-21.5	
5.723	-55.2	H	3.0	50.1	34.7	1.0	-38.9	-13.0	-25.9	
7.630	-64.7	H	3.0	53.4	34.9	1.0	-45.3	-13.0	-32.3	
9.538	-61.0	H	3.0	55.7	35.3	1.0	-39.6	-13.0	-26.6	
11.446	-62.4	H	3.0	56.2	34.6	1.0	-39.9	-13.0	-26.9	
13.353	-67.1	H	3.0	57.7	34.0	1.0	-42.4	-13.0	-29.4	

Rev. 03.03.09

PCS BAND REL. 6 HSDPA MODE (EIRP)

Compliance Certification Services										
Above 1GHz High Frequency Substitution Measurement										
Company:		INTERMEC TECHNOLOGIES CORP								
Project #:		09U12487								
Date:		4/25/2009								
Test Engineer:		MENGISTU MEKURIA								
Configuration:		EUT ALONE								
Mode:		TX HSDPA 1900.0 MHz								
Chamber		Pre-amplifier			Filter			Limit		
3m Chamber		T34 8449B			Filter 1			FCC PART 24		
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. (1852.4 MHz)										
3.705	-54.3	V	3.0	44.9	35.4	1.0	-43.7	-13.0	-30.7	
5.557	-53.5	V	3.0	49.2	34.7	1.0	-38.0	-13.0	-25.0	
7.410	-64.5	V	3.0	52.1	34.9	1.0	-46.2	-13.0	-33.2	
9.262	-64.2	V	3.0	54.5	35.2	1.0	-44.0	-13.0	-31.0	
11.114	-65.1	V	3.0	56.2	34.8	1.0	-42.7	-13.0	-29.7	
12.967	-63.2	V	3.0	57.6	34.1	1.0	-38.6	-13.0	-25.6	
3.705	-50.1	H	3.0	44.7	35.4	1.0	-39.8	-13.0	-26.8	
5.557	-53.1	H	3.0	49.7	34.7	1.0	-37.1	-13.0	-24.1	
7.410	-62.2	H	3.0	53.1	34.9	1.0	-43.0	-13.0	-30.0	
9.262	-61.3	H	3.0	55.3	35.2	1.0	-40.2	-13.0	-27.2	
11.114	-61.1	H	3.0	56.2	34.8	1.0	-38.8	-13.0	-25.8	
12.967	-62.1	H	3.0	57.3	34.1	1.0	-37.9	-13.0	-24.9	
Mid Ch. (1880.0 MHz)										
3.760	-56.6	V	3.0	45.1	35.3	1.0	-45.8	-13.0	-32.8	
5.640	-56.5	V	3.0	49.3	34.7	1.0	-40.9	-13.0	-27.9	
7.520	-66.2	V	3.0	52.3	34.9	1.0	-47.9	-13.0	-34.9	
9.400	-66.2	V	3.0	54.7	35.3	1.0	-45.8	-13.0	-32.8	
11.280	-68.2	V	3.0	56.4	34.7	1.0	-45.6	-13.0	-32.6	
13.160	-65.6	V	3.0	57.8	34.0	1.0	-40.9	-13.0	-27.9	
3.760	-49.1	H	3.0	44.8	35.3	1.0	-38.6	-13.0	-25.6	
5.640	-55.7	H	3.0	49.9	34.7	1.0	-39.5	-13.0	-26.5	
7.520	-63.9	H	3.0	53.3	34.9	1.0	-44.5	-13.0	-31.5	
9.400	-63.0	H	3.0	55.5	35.3	1.0	-41.8	-13.0	-28.8	
11.280	-64.3	H	3.0	56.2	34.7	1.0	-41.9	-13.0	-28.9	
13.160	-65.7	H	3.0	57.5	34.0	1.0	-41.2	-13.0	-28.2	
Hi Ch. (1907.6 MHz)										
3.815	-53.1	V	3.0	45.3	35.3	1.0	-42.1	-13.0	-29.1	
5.723	-54.1	V	3.0	49.5	34.7	1.0	-38.4	-13.0	-25.4	
7.630	-61.2	V	3.0	52.4	34.9	1.0	-42.7	-13.0	-29.7	
9.538	-67.1	V	3.0	54.8	35.3	1.0	-46.6	-13.0	-33.6	
11.446	-67.3	V	3.0	56.5	34.6	1.0	-44.4	-13.0	-31.4	
13.353	-63.1	V	3.0	57.9	34.0	1.0	-38.2	-13.0	-25.2	
3.815	-46.3	H	3.0	45.0	35.3	1.0	-35.6	-13.0	-22.6	
5.723	-51.3	H	3.0	50.1	34.7	1.0	-35.0	-13.0	-22.0	
7.630	-65.3	H	3.0	53.4	34.9	1.0	-45.8	-13.0	-32.8	
9.538	-61.1	H	3.0	55.7	35.3	1.0	-39.8	-13.0	-26.8	
11.446	-66.2	H	3.0	56.2	34.6	1.0	-43.6	-13.0	-30.6	
13.353	-63.2	H	3.0	57.7	34.0	1.0	-38.5	-13.0	-25.5	
Rev. 03.03.09										

AWS BAND REL 6 HSDPA SUBTEST 2 MODE (EIRP)

Compliance Certification Services
 Above 1GHz High Frequency Substitution Measurement

Company: INTERMEC TECHNOLOGIES CORP
Project #: 09U12487
Date: 4/18/2009
Test Engineer: MENGISTU MEKURIA
Configuration: EUT ALONE
Mode: TX AWS 1700 MHz, REL 6 HSDPA SUBTEST 2

Chamber

5m Chamber B

Pre-amplifier

T145 8449B

Filter

Filter 1

Limit

FCC PART 27

f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. (1712.4 MHz)										
3.425	-58.1	V	3.0	44.5	35.5	1.0	-48.1	-13.0	-35.1	
5.137	-64.4	V	3.0	48.6	35.3	1.0	-50.1	-13.0	-37.1	
3.425	-57.5	H	3.0	44.4	35.5	1.0	-47.6	-13.0	-34.6	
5.137	-66.2	H	3.0	49.2	35.3	1.0	-51.3	-13.0	-38.3	
Mid Ch. (1732.4 MHz)										
3.465	-58.1	V	3.0	44.5	35.5	1.0	-48.0	-13.0	-35.0	
5.197	-67.0	V	3.0	48.8	35.3	1.0	-52.6	-13.0	-39.6	
3.465	-55.1	H	3.0	44.5	35.5	1.0	-45.0	-13.0	-32.0	
5.197	-67.0	H	3.0	49.4	35.3	1.0	-51.9	-13.0	-38.9	
Hi Ch. (1752.6 MHz)										
3.512	-59.3	V	3.0	44.7	35.4	1.0	-49.1	-13.0	-36.1	
5.268	-66.5	V	3.0	48.9	35.3	1.0	-51.9	-13.0	-38.9	
3.512	-56.0	H	3.0	44.7	35.4	1.0	-45.8	-13.0	-32.8	
5.268	-66.6	H	3.0	49.5	35.3	1.0	-51.4	-13.0	-38.4	

Rev. 03.03.09

9.3. RECEIVER SPURIOUS EMISSIONS

LIMIT

Spurious Emission Limits for Receivers:

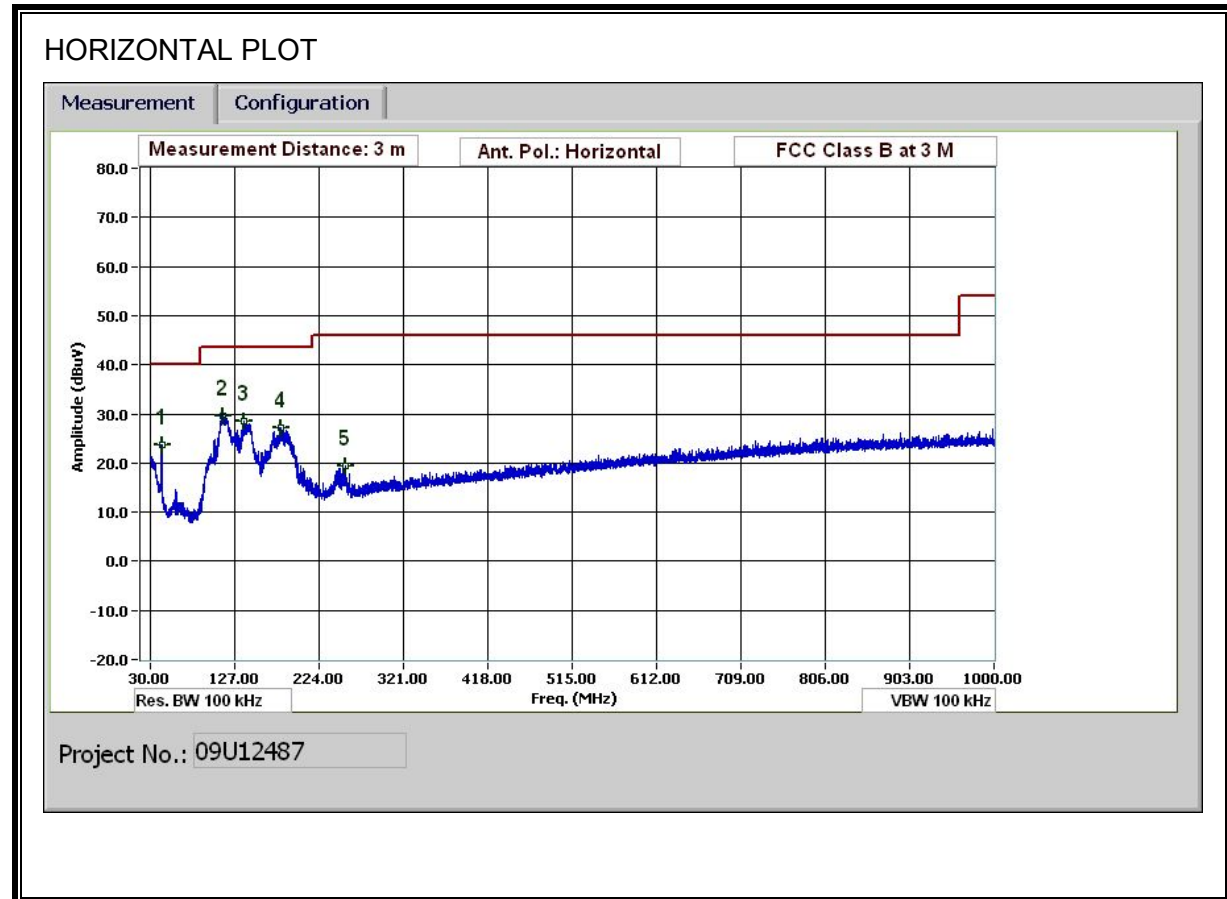
Spurious Frequency (MHz)	Field Strength (microvolts/m at 3 metres)
30-88	100
88-216	150
216-960	200
Above 960	500

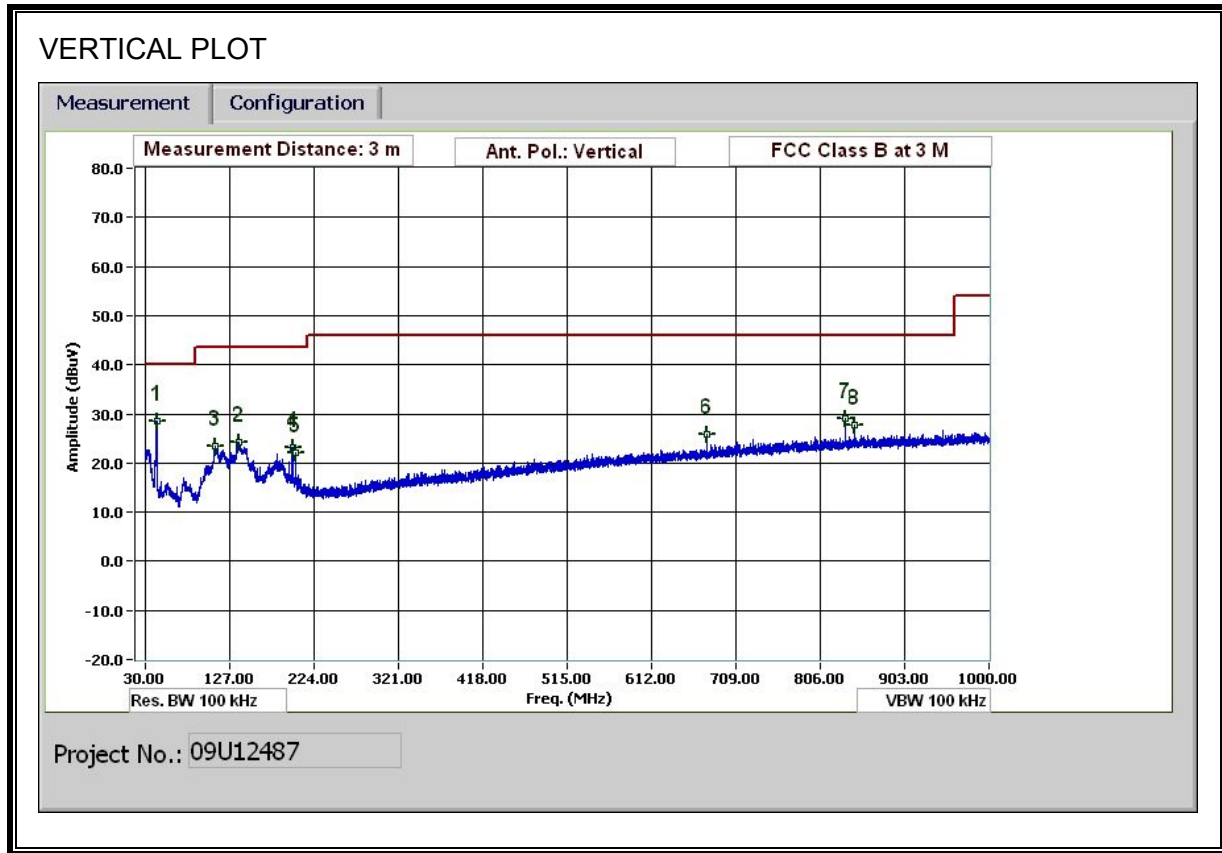
TEST PROCEDURE

The search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (local oscillator frequency, intermediate frequency or carrier frequency), or 30 MHz, whichever is the higher, to at least 3 times the highest tunable and local oscillator frequencies.

RESULTS

RECEIVER SPURIOUS EMISSIONS FOR 30 TO 1000 MHz





HORIZONTAL AND VERTICAL DATA

30-1000MHz Frequency Measurement
 Compliance Certification Services, Fremont 5m Chamber

Test Engr: MENGISTU MEKURIA
Date: 05/04/09
Project #: 09U12487
Company: INTERMEC TECHNOLOGISES CORP.
EUT Description: HEAVY DUTY HANDHELD PAD-TYPE DEVICE
EUT M/N: NC50
Test Target: FCC CLASS B
Mode Oper: NORMAL MODE

f	Measurement Frequency	Amp	Preamp Gain	Margin	Margin vs. Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		
Read	Analyzer Reading	Filter	Filter Insert Loss		
AF	Antenna Factor	Corr.	Calculated Field Strength		
CL	Cable Loss	Limit	Field Strength Limit		

f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filter dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Notes
42.961	3.0	44.4	12.1	0.6	28.4	0.0	0.0	28.6	40.0	-11.4	V	
110.403	3.0	38.9	11.9	1.0	28.3	0.0	0.0	23.4	43.5	-20.1	V	
137.764	3.0	38.1	13.3	1.1	28.3	0.0	0.0	24.2	43.5	-19.3	V	
199.087	3.0	38.2	11.9	1.2	28.2	0.0	0.0	23.2	43.5	-20.3	V	
202.687	3.0	37.1	12.0	1.3	28.2	0.0	0.0	22.1	43.5	-21.4	V	
675.267	3.0	31.3	19.3	2.4	27.3	0.0	0.0	25.7	46.0	-20.3	V	
834.753	3.0	32.7	21.3	2.7	27.6	0.0	0.0	29.1	46.0	-16.9	V	
845.794	3.0	31.1	21.4	2.7	27.6	0.0	0.0	27.6	46.0	-18.4	V	
42.961	3.0	39.5	12.1	0.6	28.4	0.0	0.0	23.8	40.0	-16.2	H	
113.283	3.0	44.5	12.4	1.0	28.3	0.0	0.0	29.6	43.5	-13.9	H	
137.764	3.0	42.5	13.3	1.1	28.3	0.0	0.0	28.6	43.5	-14.9	H	
179.406	3.0	43.1	11.0	1.2	28.2	0.0	0.0	27.1	43.5	-16.4	H	
254.169	3.0	34.4	11.9	1.4	28.2	0.0	0.0	19.5	46.0	-26.5	H	

Rev. 1.27.09

Note: No other emissions were detected above the system noise floor.

RECEIVER SPURIOUS EMISSIONS ABOVE 1000 MHz

Note: No emissions were detected, from 1 to 10 GHz, above the system noise floor.

9.4. POWER LINE CONDUCTED EMISSION

LIMIT

RSS-Gen 7.2.2

Except when the requirements applicable to a given device state otherwise, for any licence-exempt radio communication device equipped to operate from the public utility AC power supply, either directly or indirectly, the radio frequency voltage that is conducted back onto the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in Table 2. The tighter limit applies at the frequency range boundaries.

Table 2 – AC Power Lines Conducted Emission Limits

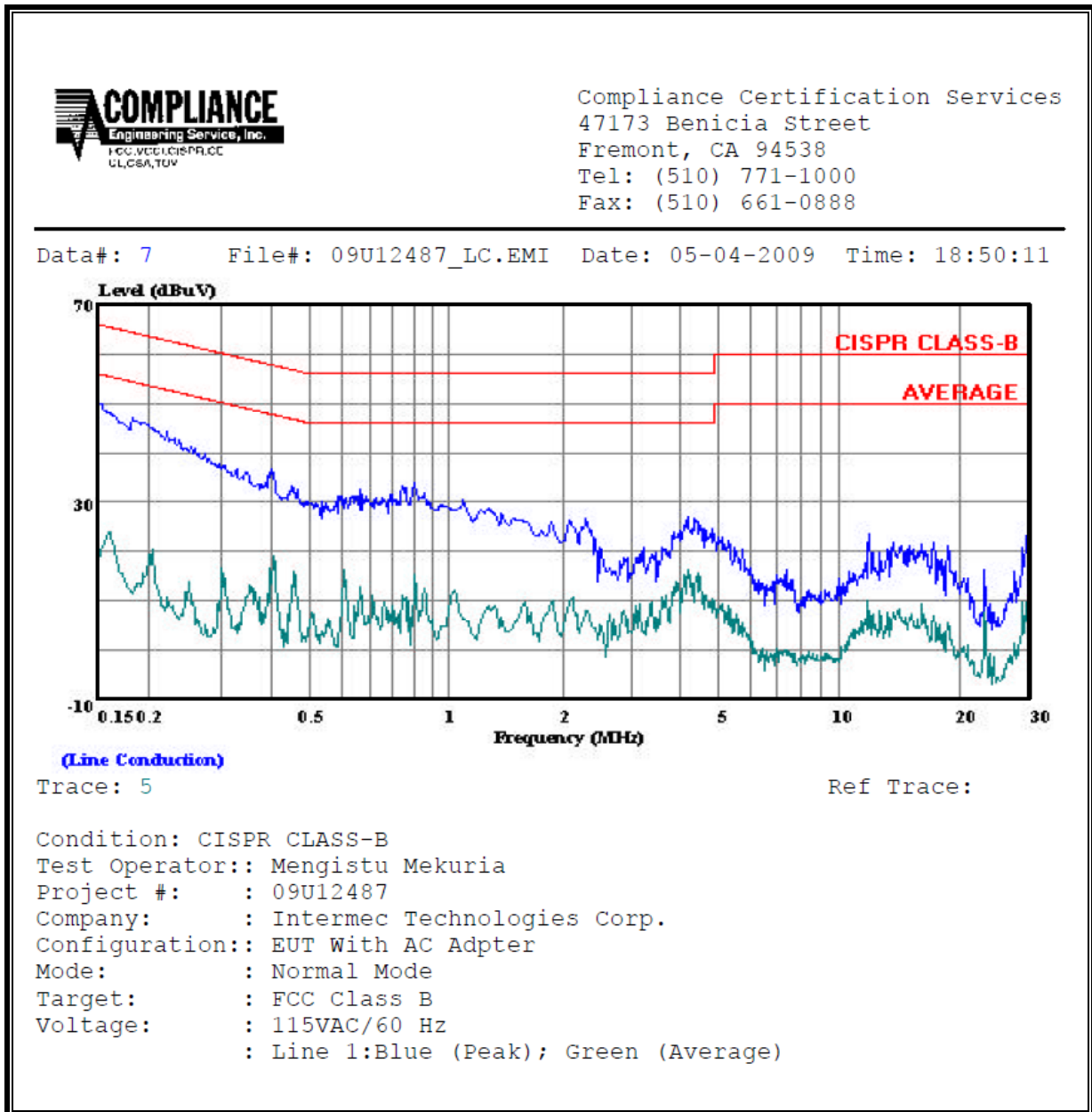
Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

RESULTS

CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq. (MHz)	Reading			Class (dB)	Limit QP	EN B AV	Margin		Remark L1 / L2
	PK (dBuV)	QP (dBuV)	AV (dBuV)				QP (dB)	AV (dB)	
0.18	47.10	--	20.48	0.00	64.39	54.39	-17.29	-33.91	L1
0.40	36.62	--	19.18	0.00	57.85	47.85	-21.23	-28.67	L1
0.84	33.29	--	15.38	0.00	56.00	46.00	-22.71	-30.62	L1
0.16	50.42	--	20.14	0.00	65.62	55.62	-15.20	-35.48	L2
0.40	35.94	--	18.82	0.00	57.94	47.94	-22.00	-29.12	L2
4.27	27.76	--	16.67	0.00	56.00	46.00	-28.24	-29.33	L2
6 Worst Data									

LINE 1 RESULTS

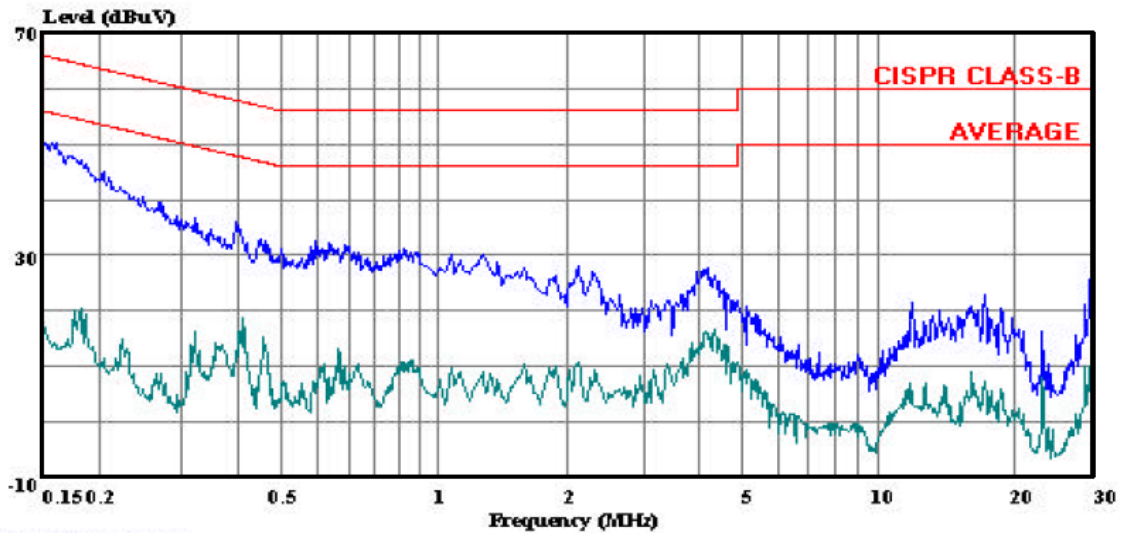


LINE 2 RESULTS



Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
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Data#: 14 File#: 09U12487_LC.EMI Date: 05-04-2009 Time: 19:00:27



(Line Conduction)

Trace: 12

Ref Trace:

Condition: CISPR CLASS-B
Test Operator:: Mengistu Mekuria
Project #: : 09U12487
Company: : Intermec Technologies Corp.
Configuration: EUT With AC Adpter
Mode: : Normal Mode
Target: : FCC Class B
Voltage: : 115VAC/60 Hz
: Line 2:Blue (Peak); Green (Average)