## Intermec Technologies Corporation

**802UIAG** 

May 10, 2005

Report No. ITRM0065

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**

Issue Date: May 10, 2005
Intermec Technologies Corporation
Model: 802UIAG

Emissions					
Specification	Test Method	Pass	Fail		
FCC 15.207 AC Powerline Conducted Emissions:2004	ANSI C63.4:2003				
FCC 15.247(a) Occupied Bandwidth:2004	ANSI C63.4:2003	$\boxtimes$			
FCC 15.247(b) Output Power:2004	ANSI C63.4:2003				
FCC 15.247(d) Band Edge Compliance:2004	ANSI C63.4:2003	$\boxtimes$			
FCC 15.247(d) Spurious Conducted Emissions:2004	ANSI C63.4:2003	$\boxtimes$			
FCC 15.247(d) Simultaneous Transmit - Spurious Radiated Emissions:2004	ANSI C63.4:2003	$\boxtimes$			
FCC 15.247(d) Stand Alone - Spurious Radiated Emissions:2004	ANSI C63.4:2003				
FCC 15.247(e) Power Spectral Density:2004	ANSI C63.4:2003				

#### 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.

Approved By:

Dean Ghizzone, President

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 05/05/03

Revision Number	Description	Date	Page Number
00	None		

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 recognized 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 89/336/EEC, ANSI C63.4, MIL-STD 461E, DO-160D and SAE J1113. 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.



200629-0 200630-0 200676-0

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 212, Issue 1 (Provisional) 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.



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.



TÜV Product Service: Included in TUV Product Service Group's Listing of Recognized Laboratories. It qualifies in connection with the TUV Certification after Recognition of Agent's Testing Program for the product categories and/or standards shown in TUV's current Listing of CARAT Laboratories, available from TUV. A certificate was issued to represent that this laboratory continues to meet TUV's CARAT Program requirements. Certificate No. USA0401C.



**TÜV Rheinland:** Authorized to carryout EMC tests by order and under supervision of TÜV Rheinland. This authorization is based on "Conditions for EMC-Subcontractors" of November 1992.



**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).



**Technology International:** Assessed in accordance with ISO Guide 25 defining the general international requirements for the competence of calibration and testing laboratories and with ITI assessment criteria LACO196. Based upon that assessment, Interference Technology International, Ltd., has granted approval for specifications implementing the EU Directive on EMC (89/336/EEC and amendments). The scope of the approval was provided on a Schedule of Assessment supplied with the certificate and is available upon request.



**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 and R-1025, Irvine: C-2094 and R-1943, Newberg: C-1877 and R-1760, Sultan: R-871, C-1784 and R-1761).* 



**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. 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



#### **SCOPE**

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

#### What is measurement uncertainty?

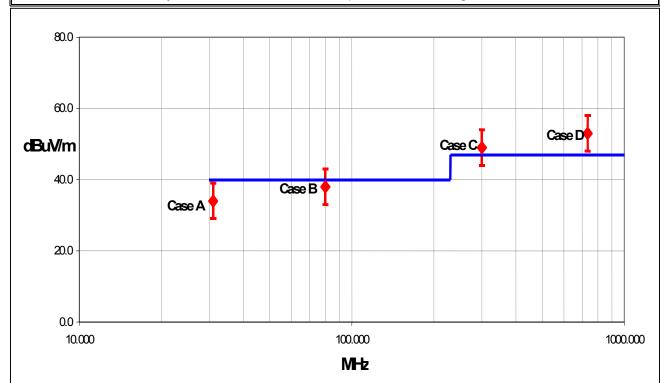
When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. The following statement of measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" value. In the case of transient tests (ESD, EFT, Surge, Voltage Dips and Interruptions), the test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements.

The following documents were the basis for determining the uncertainty levels of our measurements:

- "ISO Guide to the Expression of Uncertainty in Measurements", October 1993
- "NIS81: The Treatment of Uncertainty in EMC Measurements", May 1994
- "IEC CISPR 16-3 A1 f1 Ed.1: Radio-interference measurements and statistical techniques", December 2000

#### How might measurement uncertainty be applied to test results?

If the diamond marks the measured value for the test and the vertical bars bracket the range of + and – measurement uncertainty, then test results can be interpreted from the diagram below.



#### **Test Result Scenarios:**

Case A: Product complies.

Case B: Product conditionally complies. It is not possible to say with 95% confidence that the product complies.

Case C: Product conditionally does not comply. It is not possible to say with 95% confidence that the product does not comply.

Case D: Product does not comply.



Radiated Emissions ≤ 1 GHz	Value (dB)						
	Probability	Bico	nical	Log Pe	eriodic	D	ipole
	Distribution	tion Antenna		Ante	enna	An	tenna
Test Distance		3m	10m	3m	10m	3m	10m
Combined standard	normal	+ 1.86	+ 1.82	+ 2.23	+ 1.29	+ 1.31	+ 1.25
uncertainty <b>u</b> <sub>c</sub> ( <b>y</b> )		- 1.88	- 1.87	- 1.41	- 1.26	- 1.27	- 1.25
Expanded uncertainty <i>U</i>	normal (k=2)	+ 3.72	+ 3.64	+ 4.46	+ 2.59	+ 2.61	+ 2.49
(level of confidence ≈ 95%)		- 3.77	- 3.73	-2.81	- 2.52	- 2.55	- 2.49

Radiated Emissions > 1 GHz	Value (dB)		
	Probability Distribution	Without High Pass Filter	With High Pass Filter
Combined standard uncertainty $u_c(y)$	normal	+ 1.29 - 1.25	+ 1.38 - 1.35
Expanded uncertainty <i>U</i> (level of confidence ≈ 95%)	normal (k=2)	+ 2.57 - 2.51	+ 2.76 2.70

Conducted Emissions		
	Probability	Value
	Distribution	(+/- dB)
Combined standard uncertainty <i>uc(y)</i>	normal	1.48
Expanded uncertainty <b>U</b> (level of confidence ≈ 95 %)	normal (k = 2)	2.97

Radiated Immunity		
	Probability	Value
	Distribution	(+/- dB)
Combined standard uncertainty uc(y)	normal	1.05
Expanded uncertainty <i>U</i> (level of confidence ≈ 95 %)	normal (k = 2)	2.11

Conducted Immunity		
	Probability	Value
	Distribution	(+/- dB)
Combined standard uncertainty <i>uc(y)</i>	normal	1.05
Expanded uncertainty <i>U</i>	normal (k = 2)	2.10
(level of confidence ≈ 95 %)	Hormai (K – 2)	2.10

#### Legend

 $u_c(y)$  = square root of the sum of squares of the individual standard uncertainties

 $\it U$  = combined standard uncertainty multiplied by the coverage factor:  $\it k$ . This defines an interval about the measured result that will encompass the true value with a confidence level of approximately 95%. If a higher level of confidence is required, then  $\it k$ =3 (CL of 99.7%) can be used. Please note that with a coverage factor of one, uc(y) yields a confidence level of only 68%.

#### **Facilities**



#### California

## Orange County Facility Labs OC01 – OC13

41 Tesla Ave. Irvine, CA 92618 (888) 364-2378 FAX (503) 844-3826



#### Oregon

#### **Evergreen Facility**

#### Labs EV01 - EV10

22975 NW Evergreen Pkwy. Suite 400 Hillsboro, OR 97124 (503) 844-4066 FAX (503) 844-3826



#### Oregon

#### Trails End Facility

#### Labs TE01 - TE03

30475 NE Trails End Lane Newberg, OR 97132 (503) 844-4066 FAX (503) 537-0735



#### Washington

#### **Sultan Facility**

#### Labs SU01 - SU07

14128 339<sup>th</sup> Ave. SE Sultan, WA 98294 (888) 364-2378 FAX (360) 793-2536

## **Product Description**

Revision 10/3/03

Party Requesting the Test	
Company Name:	Intermec Technologies Corporation
Address:	550 Second St. SE
City, State, Zip:	Cedar Rapids, IA 52401-2023
Test Requested By:	Scott Holub
Model:	802UIAG
First Date of Test:	3-07-2005
Last Date of Test:	3-29-2005
Receipt Date of Samples:	3-07-2005
<b>Equipment Design Stage:</b>	Production
Equipment Condition:	No visual damage.

#### Information Provided by the Party Requesting the Test

Clocks/Oscillators:	Not provided.
I/O Ports:	Not Provided.

#### Functional Description of the EUT (Equipment Under Test):

802.11(a)/(b)/(g) radio in CK60 hand-held computer.

#### **Client Justification for EUT Selection:**

Not Provided

#### **Client Justification for Test Selection:**

Testing was performed to demonstrate compliance with the FCC Part rules for an intentional radiator. This test also demonstrated compliance with FCC Part 15.247 emissions limits while the co-located radios were transmitting simultaneously. Testing was performed with the EUT collocated with an Intermec Technologies, Bluetooth enabled PB42 Printer. Each radio transmits through its own antenna.

#### **EUT Photo**



	Equipment modifications						
Item	Test	Date	Modification	Note	Disposition of EUT		
1	Occupied Bandwidth	03/07/2005	No EMI suppression devices were added or modified during this test.	Same configuration as delivered.	EUT remained at Northwest EMC.		
2	Stand Alone Spurious Radiated Emissions	03/07/2005	No EMI suppression devices were added or modified during this test.	Same configuration as in previous test.	EUT remained at Northwest EMC.		
3	Power Spectral Density	03/10/2005	No EMI suppression devices were added or modified during this test.	Same configuration as in previous test.	EUT remained at Northwest EMC.		
4	Spurious Conducted Emissions	03/10/2005	No EMI suppression devices were added or modified during this test.	Same configuration as in previous test.	EUT remained at Northwest EMC.		
5	Band-edge Compliance	03/11/2005	No EMI suppression devices were added or modified during this test.	Same configuration as in previous test.	EUT remained at Northwest EMC.		
6	Output Power	03/14/2005	No EMI suppression devices were added or modified during this test.	Same configuration as in previous test.	EUT remained at Northwest EMC.		
7	AC Powerline Conducted Emissions	03/29/2005	No EMI suppression devices were added or modified during this test.	Same configuration as in previous test.	EUT remained at Northwest EMC.		
8	Simultaneous Transmit Spurious Radiated Emissions	03/29/2005	No EMI suppression devices were added or modified during this test.	Same configuration as in previous test.	EUT remained at Northwest EMC.		

Revision 10/1/03

#### **Justification**

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

Channels in Specified Band Investigated:
Low
Mid
High

#### **Operating Modes Investigated:**

Continuous transmit

Data Rates Investigated:	
1 Mbps (802.11b)	
11 Mbps (802.11b)	
6 Mbps (802.11g)	
36 Mbps (802.11g)	
54 Mbps (802.11g)	

#### **Output Power Setting(s) Investigated:**

Maximum default

#### **Power Input Settings Investigated:**

120 VAC, 60 Hz.

Software\Firmware Applied During Test						
Exercise software	cTxRx Win CE	Version		0.1.2.1		
Description	Description					
The system was tested us	ing special software dev	eloped to test all fund	tions of the device	ce during the test.		

EUT and Peripherals			
Description	Manufacturer	Model/Part Number	Serial Number
EUT - 802UIAG	Intermec Technologies Corporation	802UIAG	None
Host Device	Intermec Technologies Corporation	CK61	33390400093
AC Power Adapter	Intermec Technologies Corporation	851-061-002	335174

## **Occupied Bandwidth**

Revision 10/1/03

Cables						
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2	
DC Leads	Yes	1.9	PA	AC Power Adapter	Host Device	
AC Power	No	2.0	No	AC Power Adapter	AC Mains	
PA = Cable is peri	PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

Measurement Equipment						
Description	Manufacturer	Model	Identifier	Last Cal	Interval	
Spectrum Analyzer	Tektronix	2784	AAO	01/02/2005	12 mo	

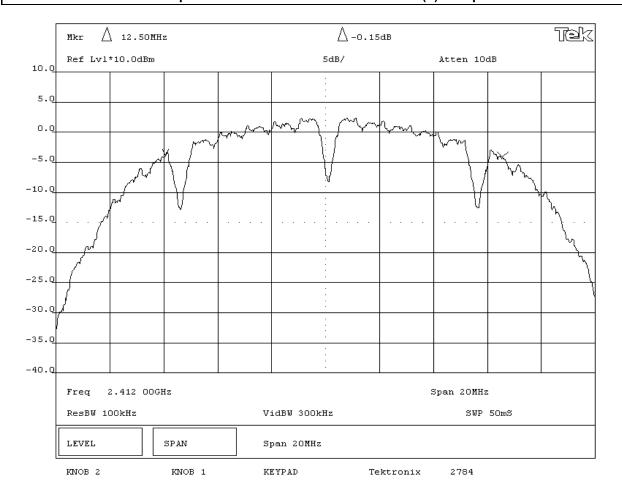
#### **Test Description**

**Requirement:** Per 47 CFR 15.247(a)(2), the 6 dB bandwidth of a direct sequence channel must be at least 500kHz. The measurement is made with the spectrum analyzer's resolution bandwidth set to 100kHz, and the video bandwidth set to greater than or equal to the resolution bandwidth.

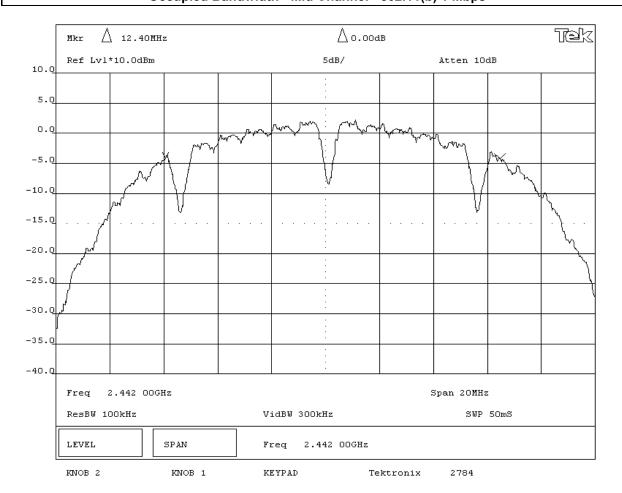
**Configuration**: The occupied bandwidth was measured with the EUT set to low, medium, and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate using direct sequence modulation.

Completed by:

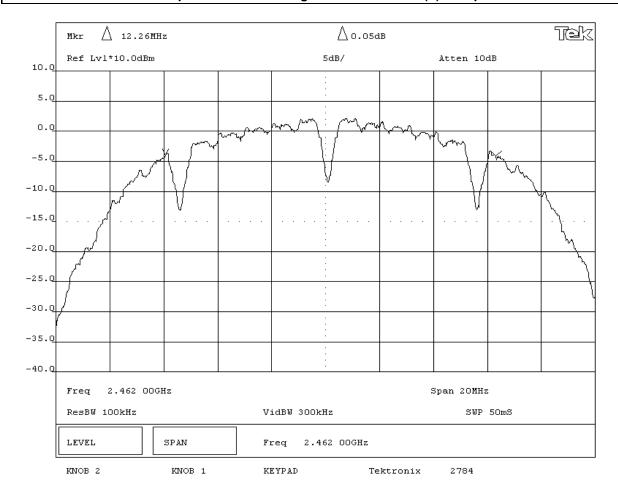
NORTHWEST		<b>EMISSIONS</b> I	DATA SH	EET		Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/08/05
Customer:	Intermec Technologies Corporat	tion			Temperature:	22°C
Attendees:	Scott Holub		Tested by:	Rod Peloquin	Humidity:	39%
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	S					
Specification:	FCC Part 15.247(a)(2)	Year: 2003	Method:	FCC 97-114, ANSI C63.4	4 Year:	1992
SAMPLE CALCULATION	ONS					
DEVIATIONS FROM TE None REQUIREMENTS The minimum 6dB ban	:1 Mbps data rate, 802.11(b) mod EST STANDARD	dulation scheme				
RESULTS			BANDWIDTH			
Pass			12.5 MHz			
Tested By: DESCRIPTION OF TES						
ĺ	Occupied Bandwidth - Low Channel - 802.11(b) 1 Mbps					



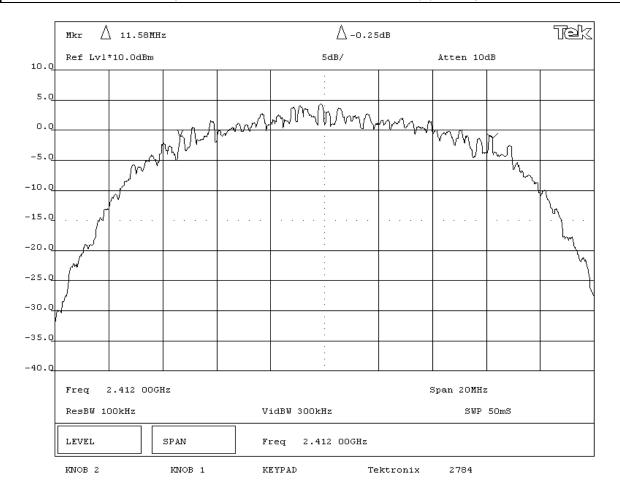
NORTHWEST EMC	E	MISSIONS I	DATA SH	EET		Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:	·				Date:	03/08/05
Customer:	Intermec Technologies Corporation				Temperature:	22°C
Attendees:	Scott Holub		Tested by:	Rod Peloquin	Humidity:	39%
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	S					
Specification:	FCC Part 15.247(a)(2)	Year: 2003	Method:	FCC 97-114, ANSI C63.	4 Year:	1992
SAMPLE CALCULATION	)NS					
DEVIATIONS FROM TO None REQUIREMENTS The minimum 6dB bar	1 Mbps data rate, 802.11(b) modulations ST STANDARD					
RESULTS			BANDWIDTH			
Pass			12.4 MHz			
Tested By: DESCRIPTION OF TES		_				
	Occupied I	Bandwidth - Mid	Channel - 80	2.11(b) 1 Mbp	s	



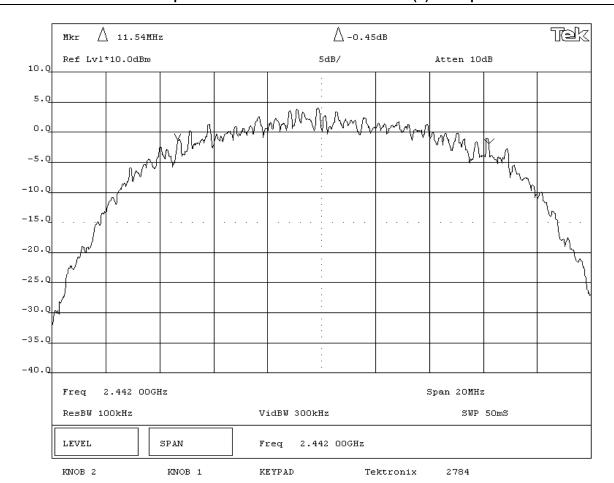
NORTHWEST		<b>EMISSIONS</b>	DATA SHEET			Rev BETA
	802UIAG				Work Order:	01/30/01
Serial Number:	602UIAG					03/08/05
	Intermec Technologies Corpo	ration		-	emperature:	
	Scott Holub	iation	Tested by: Rod Peloquir		Humidity:	
Customer Ref. No.:	ocott Holub		Power: 120VAC/60Hz		Job Site:	
TEST SPECIFICATION	s		1011011 120010101		COD CRO	
Specification:	FCC Part 15.247(a)(2)	Year: 2003	Method: FCC 97-114,	ANSI C63.4	Year:	1992
SAMPLE CALCULATION			,			
EUT OPERATING MOD Modulated by PRBS at DEVIATIONS FROM TE None REQUIREMENTS	1 Mbps data rate, 802.11(b) m	odulation scheme				
The minimum 6dB ban	idwidth is 500KHz					
RESULTS			BANDWIDTH			
Pass			12.26 MHz			
SIGNATURE  Tested By:	Rolly be Reley	>				
DESCRIPTION OF TES	T					
_	Occup	ied Bandwidth - High	Channel - 802.11(b)	1 Mbps		



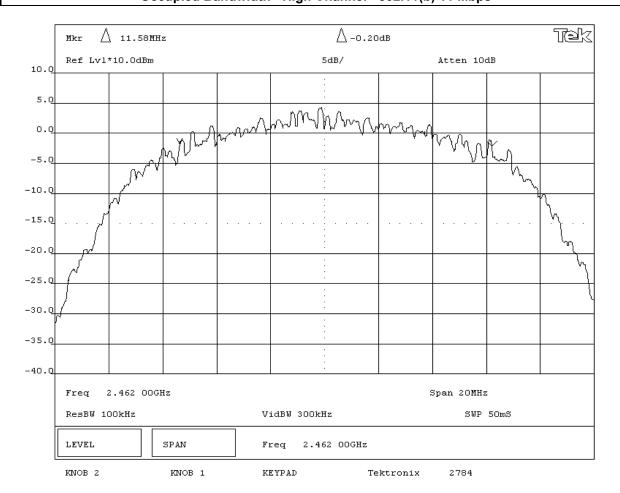
NORTHWEST EMC		<b>EMISSIONS I</b>	DATA SH	EET			v BETA /30/01
EUT:	802UIAG				Work Ord	er: ITRM0065	
Serial Number:					Da	te: 03/08/05	
Customer:	Intermec Technologies Corpor	ation			Temperatu	re: 22°C	
	Scott Holub			Rod Peloquin		ty: 39%	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Si	te: EV06	
TEST SPECIFICATION							
Specification:	FCC Part 15.247(a)(2)	Year: 2003	Method:	FCC 97-114, ANSI C63	.4 Ye	ar: 1992	
SAMPLE CALCULATION	DNS						
COMMENTS							
COMMENTO							
EUT OPERATING MOD	DES						
Modulated by PRBS at	t maximum data rate, 802.11(b)	modulation scheme					
DEVIATIONS FROM TE	EST STANDARD						
None							
REQUIREMENTS							
The minimum 6dB ban	ndwidth is 500KHz						
RESULTS			BANDWIDTH				
Pass			11.58 MHz				
SIGNATURE							
Tested By:	Rody le Feleng	·					
DESCRIPTION OF TES	ST						
	Occupio	ed Bandwidth - Low	Channel - 802	2.11(b) 11 Mb	ps		



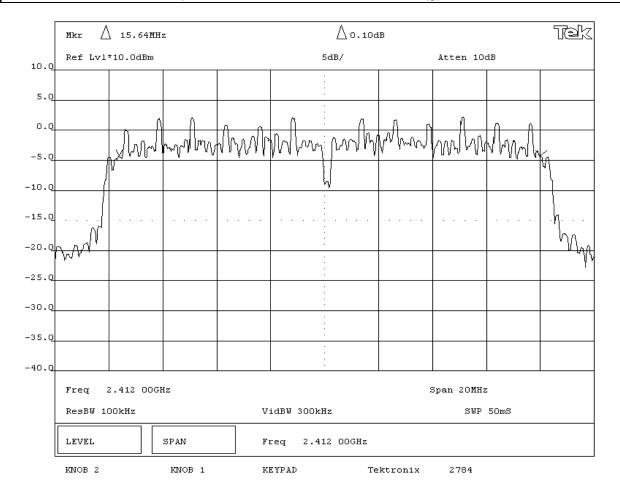
NORTHWEST		<b>EMISSIONS</b>	DATA SH	FFT		Rev BETA
<b>EMC</b>		LIMICOICITO	DAIAOII			01/30/01
EUT:	802UIAG				Work Orde	er: ITRM0065
Serial Number:					Dat	te: 03/08/05
Customer:	Intermec Technologies Corpor	ration			Temperatur	e: 22°C
Attendees:	Scott Holub		Tested by:	Rod Peloquin	Humidit	ty: 39%
Customer Ref. No.:			Power:	120VAC/60Hz	Job Sit	te: EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(a)(2)	Year: 2003	Method:	FCC 97-114, ANSI C63	.4 Yea	ar: 1992
SAMPLE CALCULATION	ONS					
COMMENTS						
<b>EUT OPERATING MOD</b>	DES					
Modulated by PRBS at	t maximum data rate, 802.11(b)	modulation scheme				
<b>DEVIATIONS FROM T</b>	EST STANDARD					
None						
REQUIREMENTS						
The minimum 6dB bar	ndwidth is 500KHz					
RESULTS			BANDWIDTH			
Pass			11.54 MHz			
SIGNATURE						
Tested By:	Rolly be Feley	>				
DESCRIPTION OF TES	ST ST					
	Occupi	ed Bandwidth - Mid	Channel - 802	2.11(b) 11 Mb	ps	



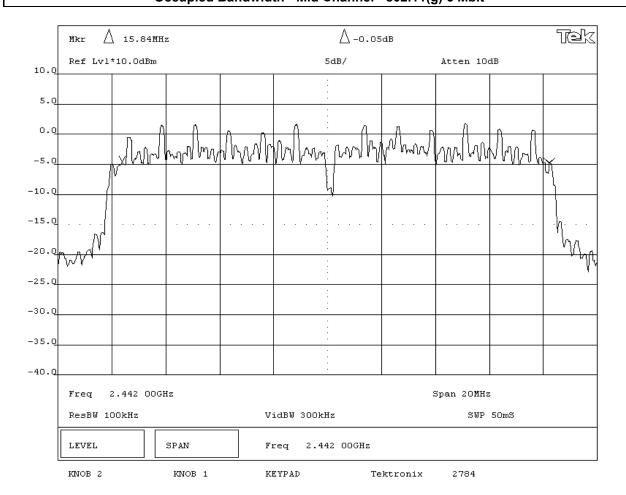
NORTHWEST EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/08/05
Customer:	Intermec Technologies Corpo	ration			Temperature:	22°C
Attendees:	Scott Holub		Tested by:	Rod Peloquin	Humidity:	39%
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	S					
Specification:	FCC Part 15.247(a)(2)	Year: 2003	Method:	FCC 97-114, ANSI C63.	.4 Year:	1992
DEVIATIONS FROM TE None REQUIREMENTS	maximum data rate, 802.11(b)	modulation scheme				
The minimum 6dB ban	dwidth is 500KHz					
RESULTS			BANDWIDTH			
Pass			11.58 MHz			
Tested By:	Rolly be Feling	<u> </u>				
DESCRIPTION OF TES						
	Occupi	ed Bandwidth - High	Channel - 80	2.11(b) 11 Mb	ps	



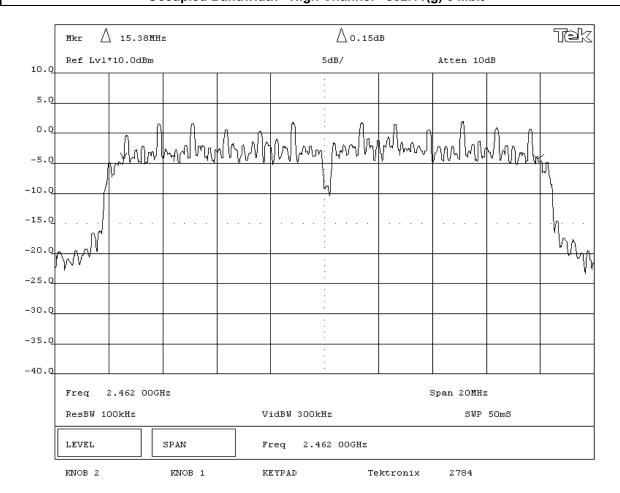
NORTHWEST		EMISSION	S DATA SH	FFT		Rev BETA
<b>EMC</b>		LIVIIOOIOIV	O DAIA SII			01/30/01
EUT:	802UIAG				Work Order	: ITRM0065
Serial Number:					Date	: 03/08/05
Customer:	Intermec Technologies Corporati	ion			Temperature:	22°C
Attendees:	Scott Holub		Tested by:	Rod Peloquin	Humidity	: 39%
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	: EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(a)(2)	Year: 2003	Method:	FCC 97-114, ANSI C63.	.4 Year	: 1992
SAMPLE CALCULATION	ONS					
COMMENTS						
<b>EUT OPERATING MOD</b>						
Modulated by PRBS at	t indicated data rate, 802.11(g) mo	dulation scheme.				
<b>DEVIATIONS FROM T</b>	EST STANDARD					
None						
REQUIREMENTS						
The minimum 6dB bar	ndwidth is 500KHz					
RESULTS			BANDWIDTH			
Pass			15.64 MHz			
SIGNATURE						
Tested By:	Rody le Reley					
DESCRIPTION OF TES	ST					
	Occupie	ed Bandwidth - I	Low Channel - 80	02.11(g) 6 Mb	it	



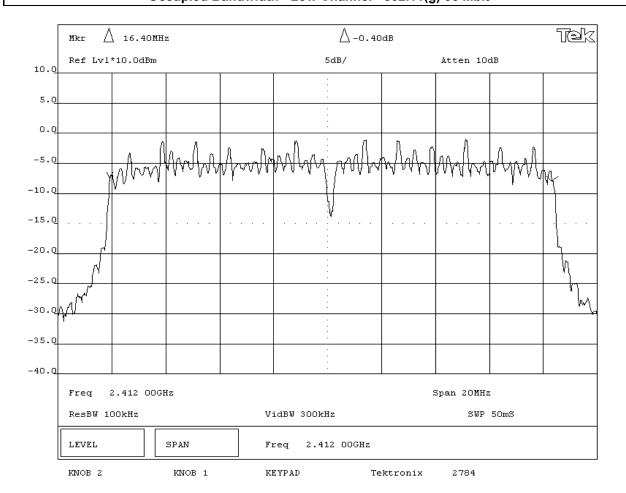
EMC		<b>EMISSIONS</b>	S DATA SH	EET		Rev BETA 01/30/01
	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/08/05
Customer:	Intermec Technologies Corpor	ration			Temperature:	22°C
Attendees:	Scott Holub		Tested by:	Rod Peloquin	Humidity:	39%
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(a)(2)	Year: 2003	Method:	FCC 97-114, ANSI C63	.4 Year:	1992
SAMPLE CALCULATION	ONS					
COMMENTS						
<b>EUT OPERATING MOI</b>						
	t indicated data rate, 802.11(g) r	modulation scheme.				
<b>DEVIATIONS FROM T</b>	EST STANDARD					
None						
REQUIREMENTS						
The minimum 6dB bar	ndwidth is 500KHz					
RESULTS			BANDWIDTH			
Pass			15.84 MHz			
SIGNATURE  Tested By:	Rody la Reling	<u> </u>				
DESCRIPTION OF TES		nied Bandwidth - N	/lid Channel - 8	02 11(a) 6 Mb	it	



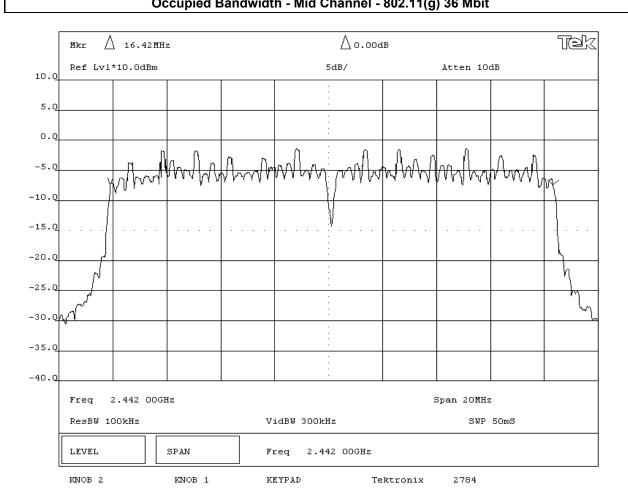
EMC		EMISSION	S DATA SH	EET		Rev BETA 01/30/01		
EUT:	802UIAG				Work Order:	ITRM0065		
Serial Number:					Date:	03/08/05		
Customer:	Intermec Technologies Corpora	tion			Temperature:	22°C		
Attendees:	Scott Holub		Tested by:	Rod Peloquin	Humidity:	39%		
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06		
TEST SPECIFICATION								
Specification:	FCC Part 15.247(a)(2)	Year: 2003	Method:	FCC 97-114, ANSI C63.4	Year:	1992		
SAMPLE CALCULATION	ONS							
COMMENTS								
EUT OPERATING MOD								
	t indicated data rate, 802.11(g) m	odulation scheme.						
DEVIATIONS FROM T	EST STANDARD							
None								
REQUIREMENTS The minimum 6dB bar	adwidth is EOOKH							
RESULTS	iluwidii is 300KHZ		BANDWIDTH					
Pass			15.38 MHz					
SIGNATURE			15.36 WHZ					
Tested By:	Rolly to Religs							
DESCRIPTION OF TES	ST							
	Occupied Bandwidth - High Channel - 802.11(g) 6 Mbit							



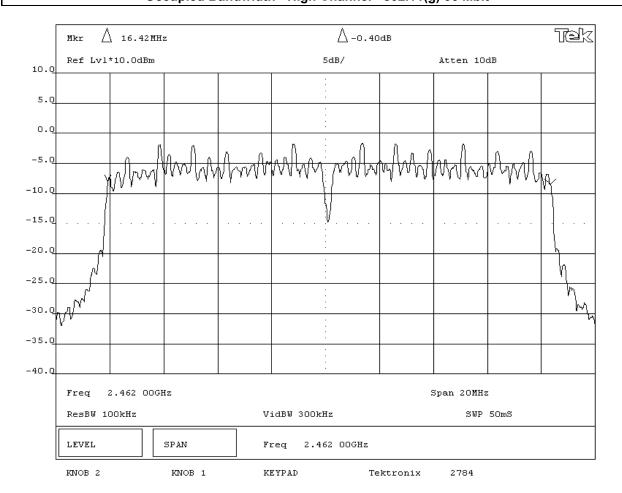
EMC		<b>EMISSIONS</b>	DATA SH	EET			Rev BETA 01/30/01	
EUT:	802UIAG				Work Order	: ITRM0065		
Serial Number:					Date:	: 03/08/05		
Customer	Intermec Technologies Corpor	ration			Temperature:	: 22°C		
Attendees:	Scott Holub		Tested by:	Rod Peloquin	Humidity	: 39%		
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	: EV06		
TEST SPECIFICATION								
Specification:	FCC Part 15.247(a)(2)	Year: 2003	Method:	FCC 97-114, ANSI C63	.4 Year:	: 1992		
COMMENTS								
EUT OPERATING MO	DES							
	at indicated data rate, 802.11(g)	modulation scheme.						
<b>DEVIATIONS FROM T</b>	EST STANDARD							
None								
REQUIREMENTS								
The minimum 6dB ba	ndwidth is 500KHz							
RESULTS			BANDWIDTH					
Pass	Pass 16.4 MHz							
SIGNATURE  Tested By:	Porly le Reley	>						
DESCRIPTION OF TE								
	Occup	ied Bandwidth - Lov	w Channel - 80	)2.11(a) 36 MI	oit			



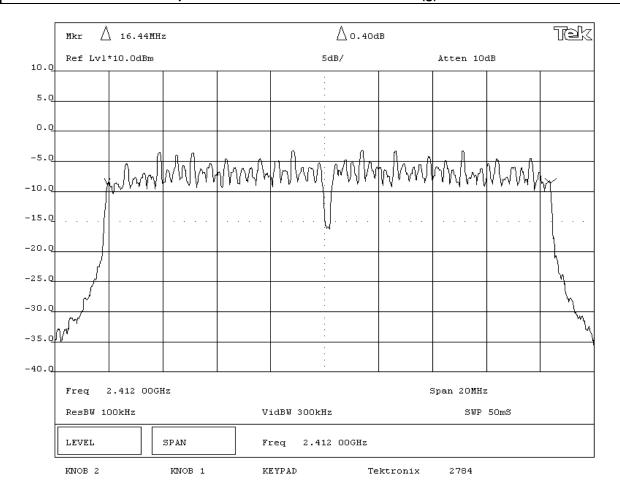
EMC		<b>EMISSIONS</b>	DATA SH	EET			Rev BETA 01/30/01
EUT:	802UIAG				Work Order	: ITRM0065	
Serial Number:					Date	: 03/08/05	
Customer	Intermec Technologies Corporate	tion			Temperature	: 22°C	
	Scott Holub			Rod Peloquin	Humidity		
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site	: EV06	
TEST SPECIFICATION							
Specification: SAMPLE CALCULATI	FCC Part 15.247(a)(2)	Year: 2003	Method:	FCC 97-114, ANSI C63	.4 Year	: 1992	
COMMENTS							
EUT OPERATING MO	DES						
Modulated by PRBS a	at indicated data rate, 802.11(g) m	odulation scheme.					
DEVIATIONS FROM T	EST STANDARD						
None							
REQUIREMENTS							
The minimum 6dB ba	ndwidth is 500KHz						
RESULTS			BANDWIDTH				
Pass 16.42 MHz							
SIGNATURE							
Tested By:	Poeling be Felings						
DESCRIPTION OF TE		ed Bandwidth - Mid	Observat 00	0.44(~) 00 MI			
	()cciini	on Kanawiath - Mia	Channol - XII	2 11101 36 MB	7IT		



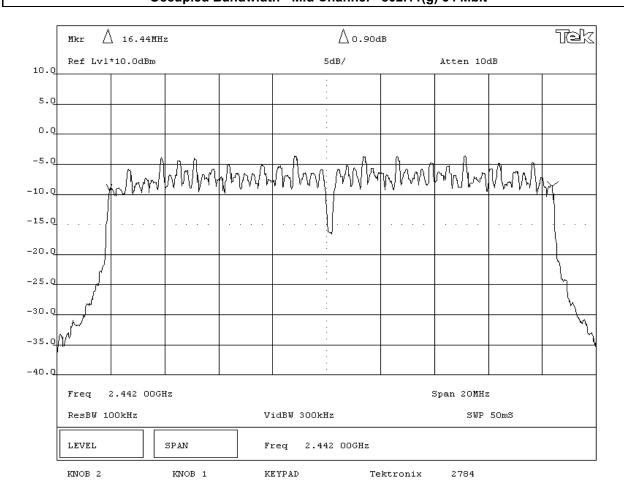
EMC		<b>EMISSIONS</b>	DATA SH	EET			Rev BETA 01/30/01
EUT:	802UIAG				Work Order	: ITRM0065	
Serial Number:					Date	: 03/08/05	
Customer:	Intermec Technologies Corpor	ration			Temperature	: 22°C	
Attendees:	Scott Holub		Tested by:	Rod Peloquin	Humidity	: 39%	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site	: EV06	
TEST SPECIFICATION			_				
Specification:	FCC Part 15.247(a)(2)	Year: 2003	Method:	FCC 97-114, ANSI C63	.4 Year	: 1992	
COMMENTS							
EUT OPERATING MO	DES						
Modulated by PRBS a	at indicated data rate, 802.11(g) i	modulation scheme.					
<b>DEVIATIONS FROM T</b>	EST STANDARD						
None							
REQUIREMENTS							
The minimum 6dB ba	ndwidth is 500KHz						
RESULTS			BANDWIDTH				
Pass			16.42 MHz				
SIGNATURE  Tested By:	Rolly be Reling	>					
DESCRIPTION OF TE							
	Occupi	ied Bandwidth - High	n Channel - 80	)2.11(a) 36 M	bit		



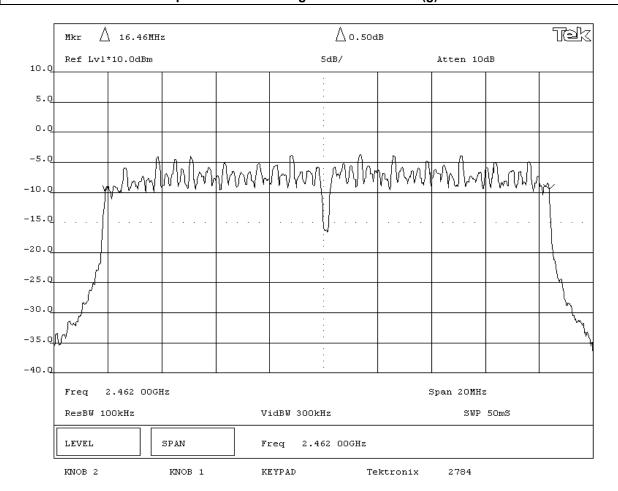
EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BET/ 01/30/01		
EUT:	802UIAG				Work Order:	ITRM0065		
Serial Number:					Date:	03/08/05		
Customer:	Intermec Technologies Corporati	ion			Temperature:	22°C		
Attendees:	Scott Holub		Tested by:	Rod Peloquin	Humidity:	39%		
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06		
TEST SPECIFICATION	IS							
Specification:	FCC Part 15.247(a)(2)	Year: 2003	Method:	FCC 97-114, ANSI C63	3.4 Year:	1992		
SAMPLE CALCULATION	ONS							
COMMENTS								
EUT OBERATING MOI	250							
EUT OPERATING MOI	DES t indicated data rate, 802.11(g) mo	adulation schomo						
DEVIATIONS FROM T	, (8)	dulation scheme.						
None	EST STANDARD							
REQUIREMENTS								
The minimum 6dB bar	ndwidth is 500KHz							
RESULTS			BANDWIDTH					
Pass	16.44 MHz							
SIGNATURE								
Tested By:	Rolly be Felings							
DESCRIPTION OF TES	ST							
	Occupie	ed Bandwidth - Low	Channel - 80	2.11(g) 54 M	bit			



EMC		<b>EMISSION</b>	S DATA SH	EET		Rev BETA		
	802UIAG				Work Order:	01/30/01 UTDM0065		
Serial Number:	8020IAG					03/08/05		
	Intermec Technologies Corpor	ration			Temperature:			
	Scott Holub	ration	To at ad hour	Rod Peloguin	Humidity:			
Customer Ref. No.:	Scott Holub			120VAC/60Hz	Job Site:			
TEST SPECIFICATION	ls		rower.	120VAC/60H2	Job Site.	EVUO		
	FCC Part 15.247(a)(2)	Year: 2003	Method:	FCC 97-114, ANSI C63.4	4 Year	1992		
SAMPLE CALCULATION		1641. 2003	metriod.	1 00 37-114, ANOI 003.	i ear.	1332		
COMMENTS								
EUT OPERATING MOD								
	t indicated data rate, 802.11(g)	modulation scheme.						
DEVIATIONS FROM T	EST STANDARD							
None								
REQUIREMENTS The minimum 6dB bar	adwidth in EOOKU-							
RESULTS	idwidth is 500KHZ		BANDWIDTH					
Pass			16.44 MHz					
SIGNATURE								
Rolly be Feligs Tested By:								
DESCRIPTION OF TES	Occupied Bandwidth - Mid Channel - 802 11(g) 54 Mbit							



NORTHWEST EMC		<b>EMISSION</b>	S DATA SH	EET		Rev BETA 01/30/01		
EUT:	802UIAG				Work Order:	ITRM0065		
Serial Number:					Date:	03/08/05		
Customer:	Intermec Technologies Corpora	ation			Temperature:	22°C		
Attendees:	Scott Holub		Tested by: I	Rod Peloquin	Humidity:			
Customer Ref. No.:			Power: 1	120VAC/60Hz	Job Site:	EV06		
TEST SPECIFICATION								
Specification:	FCC Part 15.247(a)(2)	Year: 2003	Method: I	CC 97-114, ANSI C63.4	Year:	1992		
COMMENTS								
EUT OPERATING MOI								
	t indicated data rate, 802.11(g) n	nodulation scheme.						
<b>DEVIATIONS FROM T</b>	EST STANDARD							
None								
REQUIREMENTS								
The minimum 6dB bar	ndwidth is 500KHz							
RESULTS			BANDWIDTH					
	Pass 16.46 MHz							
Rocky be Felego Tosted By:								
DESCRIPTION OF TES	ST							
	Occupied Bandwidth - High Channel - 802.11(g) 54 Mbit							





Revision 10/1/03

#### **Justification**

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

Channels in Specified Band Investigated:
Low
Mid
High

#### **Operating Modes Investigated:**

Continuous transmit

Data Rates Investigated:
1 Mbps (802.11b)
11 Mbps (802.11b)
6 Mbps (802.11g)
36 Mbps (802.11g)
54 Mbps (802.11g)

#### **Output Power Setting(s) Investigated:**

Maximum default

#### **Power Input Settings Investigated:**

120 VAC, 60 Hz.

Software\Firmware Applied During Test						
Exercise software	cTxRx Win CE	Version	0.1.2.1			
Description						
The system was tested using special software developed to test all functions of the device during the test.						

EUT and Peripherals								
Description	Manufacturer	Model/Part Number	Serial Number					
EUT - 802UIAG	Intermec Technologies Corporation	802UIAG	Unknown					
Host Device	Intermec Technologies Corporation	CK61	33390400093					
AC Power Adapter	Intermec Technologies Corporation	851-061-002	335174					

#### **Output Power**

Revision 10/1/03

Cables							
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2		
DC Leads	Yes	1.9	PA	AC Power Adapter	Host Device		
AC Power	No	2.0	No	AC Power Adapter	AC Mains		
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.							

Measurement Equipment						
Description	Manufacturer	Model	Identifier	Last Cal	Interval	
Oscilloscope	Tektronix	TDS 3052	TOF	12/02/2004	13 mo	
Power Meter	Hewlett Packard	E4418A	SPA	07/23/2004	24 mo	
Power Sensor	Hewlett-Packard	8481H	SPB	07/23/2004	24 mo	
Signal Generator	Hewlett Packard	8341B	TGN	02/07/2005	13 mo	
RF Detector	RLC Electronics	CR-133-R	ZZA	NCR	NA	
Attenuator		2082-6148-20	ATE	03/07/2005	13 mo	
Attenuator	Pasternack	PE7005-6	ATF	02/25/2005	13 mo	

#### **Test Description**

Requirement: Per 47 CFR 15.247(b)(3), the maximum peak output power must not exceed 1 Watt.

<u>Configuration</u>: The peak output power was measured with the EUT set to low, medium, and high transmit frequencies. The EUT was transmitting at its maximum output power. The data rate of the radio was varied to determine the level that produced the highest output power.

The measurement was made using a direct connection between the RF output of the EUT and a RF detector diode. The DC output of the diode was measured with the oscilloscope. The signal generator, tuned to the transmit frequency, was then substituted for the EUT. The CW output of the signal generator was adjusted until the DC output of the RF detector diode match the peak level produced when connected to the EUT. To further reduce measurement error, the power meter and sensor were then used to measure the output power level of the signal generator.

De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36dBm.

Rocky be Relenge

					Rev BETA 01/30/01	
EUT:	802UIAG				Work Ord	er: ITRM0065
Serial Number:					Da	te: 03/14/05
Customer:	Intermec Technologies Corporation	1			Temperatu	re: 20°C
Attendees:	None		•	Rod Peloquin		ty: 38% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Si	te: EV06
TEST SPECIFICATION						
Specification:	47 CFR 15.247(b)(3)	Year: 2004	Method:	FCC 97-114, ANSI C63	3.4 Yes	ar: 2003
COMMENTS  EUT OPERATING MODES  Modulated by PRBS at indicated data rate, at maximum output power. 802.11(b) modulation scheme.  DEVIATIONS FROM TEST STANDARD  None  REQUIREMENTS						
RESULTS	cted output power does not exceed	· · · · · · · · · · · · · · · · · · ·	AMPLITUDE			
Pass 45.2 mW						
DESCRIPTION OF TEST						
	Output Power - Low, Mid. & High Channels					

#### Data Rate = 1 Mbit

Frequency (MHz)	Power (mW)
2412	44.7
2442	43.9
2462	41.5

#### Data Rate = 11 Mbit

Frequency (MHz)	Power (mW)
2412	45.2
2442	43.9
2462	42.0

EMC EMISSIONS DATA SHEET					
EUT: 802UIAG			Work Order:	ITRM0065	
Serial Number:			Date:	03/14/05	
Customer: Intermec Technologies C	orporation		Temperature:	20°C	
Attendees: None		Tested by: Rod Peloquin	Humidity:		
Customer Ref. No.:		Power: 120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATIONS					
Specification: 47 CFR 15.247(b)(3) SAMPLE CALCULATIONS	Year: 2004	Method: FCC 97-114, ANSI C6	3.4 Year:	2003	
COMMENTO					
COMMENTS					
EUT OPERATING MODES					
Modulated by PRBS at indicated data rate, at m	aximum output power. 802.11(g) modula	ation scheme.			
DEVIATIONS FROM TEST STANDARD					
None					
REQUIREMENTS					
Maximum peak conducted output power does n	ot exceed 1 Watt				
RESULTS		AMPLITUDE			
Pass 44.8 mW					
SIGNATURE					
Tested By:					
DESCRIPTION OF TEST	DESCRIPTION OF TEST				
Output Power - Low, Mid. & High Channels					

#### Data Rate = 6 Mbit

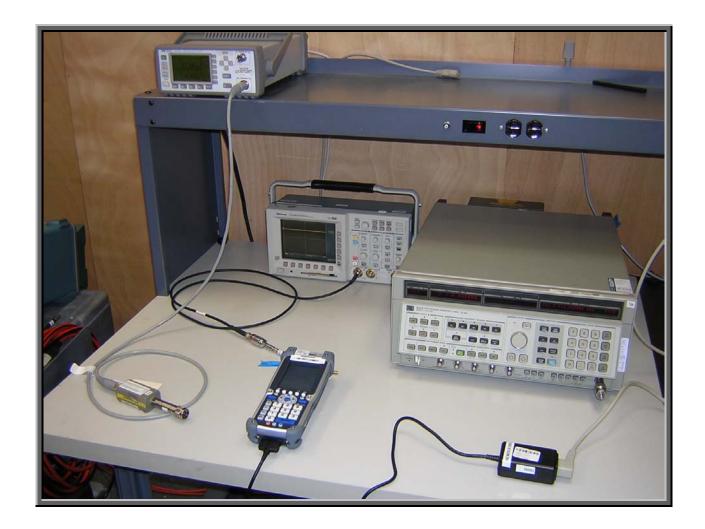
Frequency (MHz)	Power (mW)	
2412	44.8	
2442	42.5	
2462	42.0	

#### Data Rate = 36 Mbit

Frequency (MHz)	Power (mW)
2412	26.9
2442	26.2
2462	24.5

#### Data Rate = 54 Mbit

Frequency (MHz)	Power (mW)
2412	19.0
2442	18.0
2462	16.8



## **Band Edge Compliance**

Revision 10/1/03

#### **Justification**

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

Channels in Specified Band Investigated:
Low
High

#### **Operating Modes Investigated:**

Continuous transmit

Data Rates Investigated:
1 Mbps (802.11b)
11 Mbps (802.11b)
6 Mbps (802.11g)
36 Mbps (802.11g)
54 Mbps (802.11g)

#### **Output Power Setting(s) Investigated:**

Maximum default

#### **Power Input Settings Investigated:**

120 VAC, 60 Hz.

Software\Firmware Applied During Test				
Exercise software	cTxRx Win CE	Version		0.1.2.1
Description				
The system was tested using special software developed to test all functions of the device during the test.				

EUT and Peripherals					
Description	Manufacturer	Model/Part Number	Serial Number		
EUT - 802UIAG	Intermec Technologies Corporation	802UIAG	Unknown		
Host Device	Intermec Technologies Corporation	CK61	33390400093		
AC Power Adapter	Intermec Technologies Corporation	851-061-002	335174		

## **Band Edge Compliance**

Revision 10/1/03

Cables						
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2	
DC Leads	Yes	1.9	PA	AC Power Adapter	Host Device	
AC Power	No	2.0	No	AC Power Adapter	AC Mains	
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.						

Measurement Equipment								
Description	Manufacturer	Model Identifier		Last Cal Interva				
Spectrum Analyzer	Tektronix	2784	AAO	01/02/2005	12 mo			

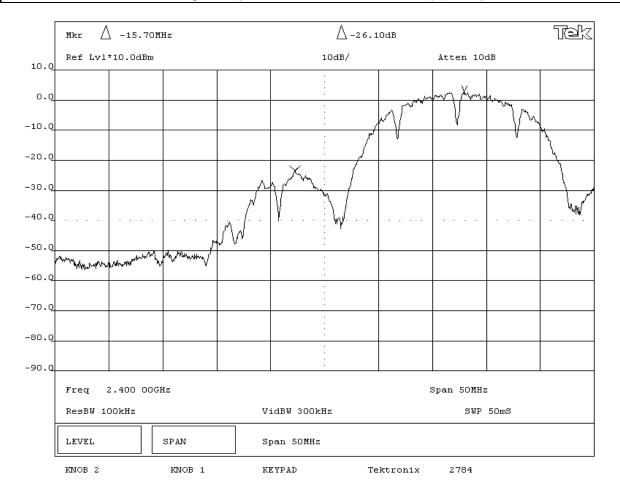
#### **Test Description**

**Requirement**: Per 47 CFR 15.247(d), in any 100 kHz bandwidth outside the authorized band, the maximum level of radio frequency power must be at least 20dB down from the highest emission level within the authorized band. The measurement is made with the spectrum analyzer's resolution bandwidth set to 100 kHz, and the video bandwidth set to greater than or equal to the resolution bandwidth.

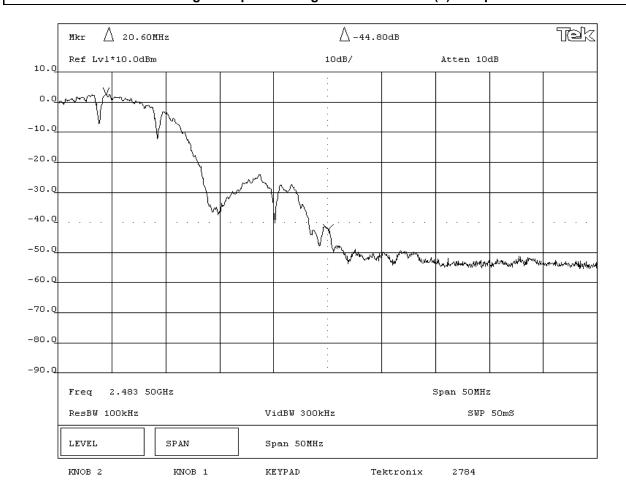
**Configuration**: The spurious RF conducted emissions at the edges of the authorized band were measured with the EUT set to low and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at various data rates. The channels closest to the band edges were selected. The spectrum was scanned across each band edge from 25 MHz below the band edge to 25 MHz above the band edge.

# Completed by:

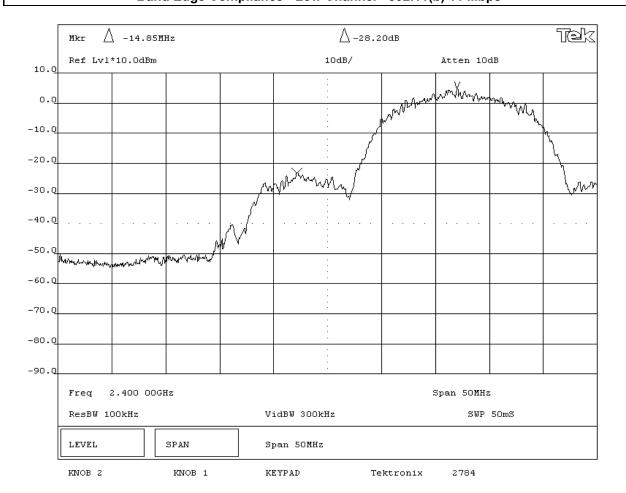
EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA
	802UIAG				Work Order:	01/30/01
	8020IAG					
Serial Number:						03/11/05
	Intermec Technologies Corporat	ion		I	Temperature:	
Attendees:	None			Greg Kiemel	Humidity:	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION						1
	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS	<u> </u>				
COMMENTS						
EUT OPERATING MOD	DES					
Modulated by PRBS a	t 1 Mbps data rate, 802.11(b) mod	ulation scheme				
<b>DEVIATIONS FROM T</b>	EST STANDARD					
None						
REQUIREMENTS						
Maximum level of any	spurious emission at the edge of	f the authorized band is 20 dB d	own from the fundamenta	al.		
RESULTS			AMPLITUDE			
Pass			-26.10 dB			
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES						
	Band Edg	ge Compliance - L	ow Channel - 8	302.11(b) 1 M	bps	



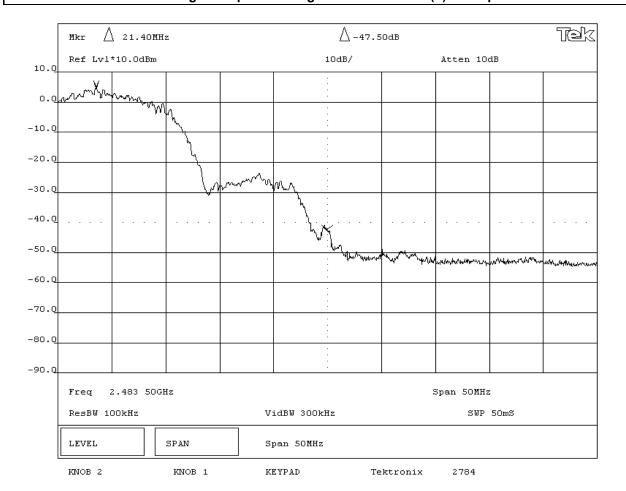
NORTHWEST		<b>EMISSIONS</b>	DATA CH	CCT		_	DETA
<b>EMC</b>		EIVIIOOIONO	DAIASH	CC 1			Rev BETA 01/30/01
EUT:	802UIAG				Work Order	: ITRM0065	
Serial Number:	er:					: 03/11/05	
Customer:	Intermec Technologies Corpora	ntermec Technologies Corporation				: 21°C	
Attendees:	None		Tested by:	Greg Kiemel	Humidity	: 42%	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site	: EV06	
TEST SPECIFICATION	IS						
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	3.4 Year	: 2003	
SAMPLE CALCULATION	ONS						
COMMENTS							
EUT OPERATING MOD	250						
	t 1 Mbps data rate, 802.11(b) mod	dulation scheme					
DEVIATIONS FROM T		dudicin Scheme					
None	EST STANDARD						
REQUIREMENTS							
	spurious emission at the edge o	of the authorized band is 20 dB	down from the fundamenta	ıl.			
RESULTS			AMPLITUDE				
Pass	Pass -44.80 dB						
SIGNATURE							
Tested By:	ADU.K.P						
DESCRIPTION OF TES	ST						
	Band Edd	ge Compliance - H	ligh Channel - 8	802.11(b) 1 M	bps		



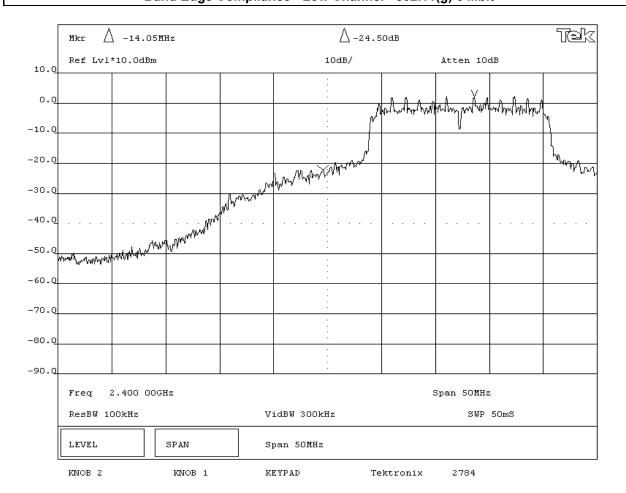
EMC		<b>EMISSIONS</b> I	DATA SH	EET			Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065	
Serial Number:					Date:	03/11/05	
Customer:	Intermec Technologies Corporation				Temperature:	21°C	
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42%	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATION	IS						
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003	
SAMPLE CALCULATION	ONS						
COMMENTS							
EUT OPERATING MOI		adulation ashama					
	t maximum data rate, 802.11(b) m	odulation scheme					
DEVIATIONS FROM T	EST STANDARD						
REQUIREMENTS							
	snurious emission at the edge of	the authorized band is 20 dB dow	n from the fundamenta	1			
RESULTS	opanious simosion at alle suge si		AMPLITUDE				
Pass			-28.2 dB				
SIGNATURE			20.2 0.5				
Tested By:	ADUK-P						
DESCRIPTION OF TES	ST						
	Band Edg	e Compliance - Low	Channel - 8	02.11(b) 11 M	bps		



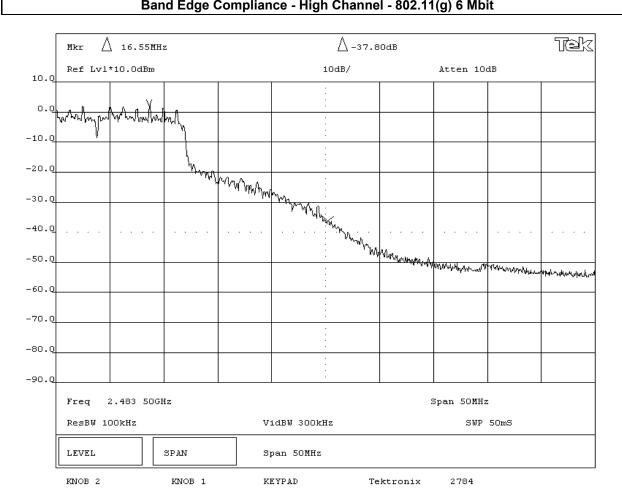
NORTHWEST		<b>EMISSIONS</b>	DATA CH	CCT			D DETA
<b>EMC</b>		EMISSICINS	DATA SIT	CC 1			Rev BETA 01/30/01
EUT:	802UIAG				Work Order	: ITRM0065	
Serial Number:	mber:					: 03/11/05	
Customer:	Intermec Technologies Corporat	Intermec Technologies Corporation					
Attendees:	None		Tested by:	Greg Kiemel	Humidity	: 42%	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site	: EV06	
TEST SPECIFICATION	IS						
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year	2003	
SAMPLE CALCULATION	ONS						
0011151170							
COMMENTS							
EUT OPERATING MOI	DES						
	t maximum data rate, 802.11(b) m	odulation scheme					
DEVIATIONS FROM T							
None							
REQUIREMENTS							
Maximum level of any	spurious emission at the edge of	f the authorized band is 20 dB do	wn from the fundamenta	ıl.			
RESULTS			AMPLITUDE				
Pass	Pass -47.5 dB						
SIGNATURE							
Tested By:	ADU.K.P						
DESCRIPTION OF TES	ST .						
	Band Edg	e Compliance - Hid	ah Channel - 8	02.11(b) 11 N	lbps		



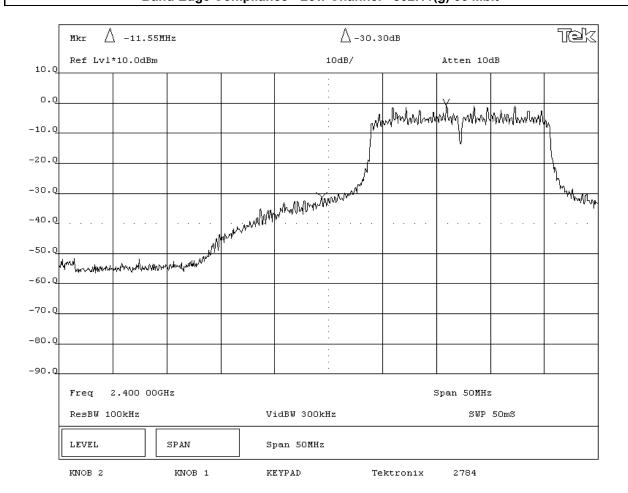
EMC		<b>EMISSIONS</b>	DATA SH	EET			Rev BETA 01/30/01
EUT:	802UIAG				Work Order	: ITRM0065	
Serial Number:	er:				Date	: 03/11/05	
Customer:	Intermec Technologies Corporat	Temperature	21°C				
Attendees:	None		Tested by:	Greg Kiemel	Humidity	: 42%	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site	: EV06	
TEST SPECIFICATION	IS						
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	3.4 Year	2003	
SAMPLE CALCULATION	ONS						
COMMENTS							
EUT OPERATING MO							
	t 6 Mbps data rate, 802.11(g) mod	lulation scheme.					
DEVIATIONS FROM T	EST STANDARD						
REQUIREMENTS							
	enurious amission at the adda of	f the authorized band is 20 dB dow	n from the fundaments	al .			
RESULTS	sparious chilosion at the eage of	The dutionized band is 20 db dow	AMPLITUDE				
Pass			-24.5 dB				
SIGNATURE			-24.5 dB				
Tested By:	ADU.K.P						
DESCRIPTION OF TES	ST						
	Band Ed	ge Compliance - Lo	w Channel -	802.11(a) 6 M	lbit		



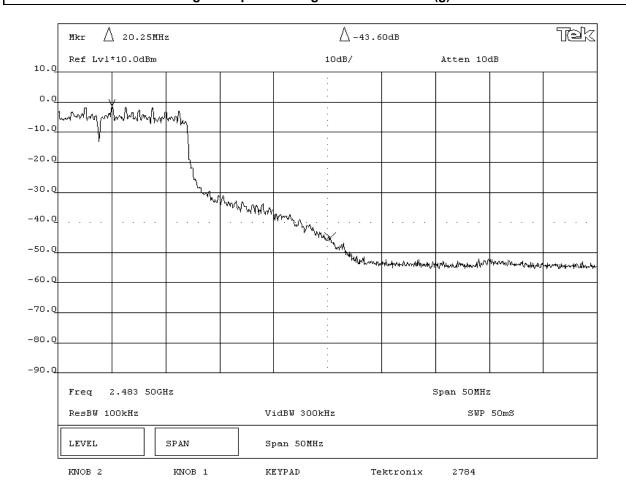
NORTHWEST EMC		<b>EMISSIONS I</b>	DATA SH	EET		Rev BET.
						01/30/01
EUT:	802UIAG				Work Order:	
Serial Number:			03/11/05			
Customer:	Intermec Technologies Corporation	on			Temperature:	21°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42%
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	S					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	3.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
<b>EUT OPERATING MOD</b>	DES					
Modulated by PRBS at	t 6 Mbps data rate, 802.11(g) modu	lation scheme.				
<b>DEVIATIONS FROM TE</b>	EST STANDARD					
None						
REQUIREMENTS						
Maximum level of any	spurious emission at the edge of	the authorized band is 20 dB dow	n from the fundamenta	l.		
RESULTS			AMPLITUDE			
Pass			-37.8 dB			
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES		o Complianco - Hic	ah Channal	902 44(a) 6 N	/hit	



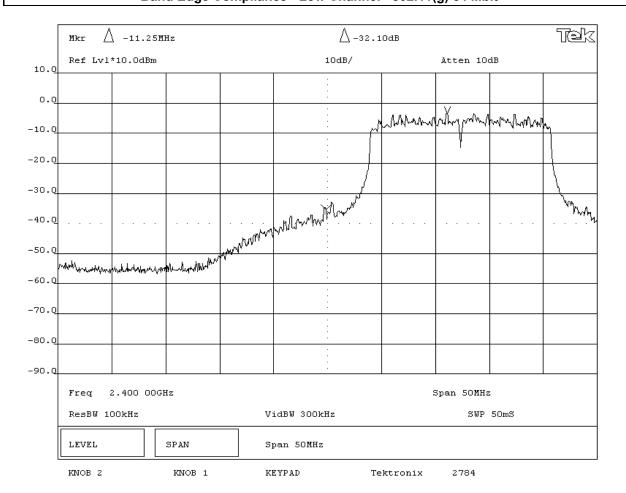
EMC		<b>EMISSIONS</b> I	DATA SH	EET			Rev BETA 01/30/01
EUT:	802UIAG				Work Order	: ITRM0065	
Serial Number:					Date:	03/11/05	
Customer:	Intermec Technologies Corporat	tion			Temperature:	21°C	
Attendees:	None		Tested by:	Greg Kiemel	Humidity	: 42%	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATION	is						
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003	
SAMPLE CALCULATION	ONS						
COMMENTS							
EUT OPERATING MOI		dulation askama					
	t 36 Mbps data rate, 802.11(g) mo	dulation scheme.					
DEVIATIONS FROM T	EST STANDARD						
REQUIREMENTS							
	snurious emission at the edge of	f the authorized band is 20 dB dow	n from the fundamenta	1			
RESULTS	opanious simosion at the suge of		AMPLITUDE				
Pass			-30.3 dB				
SIGNATURE			00.0 42				
Tested By:	ADU.K.P						
DESCRIPTION OF TES	ST						
	Band Edd	ge Compliance - Lov	w Channel - 8	302.11(a) 36 N	//bit		



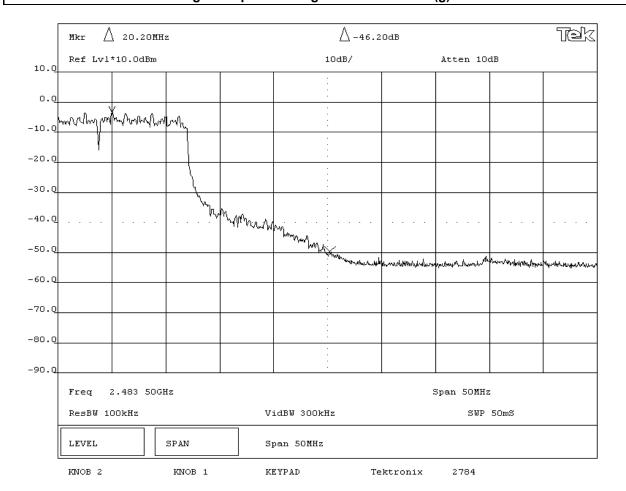
NORTHWEST		<b>EMISSIONS</b>	DATA CH	EET			Rev BETA
<b>EMC</b>		LIVIIOSICIAS	DATA SIT				1/30/01
EUT:	802UIAG				Work Order	: ITRM0065	
Serial Number:		Date	: 03/11/05				
Customer:	Intermec Technologies Corporat	ntermec Technologies Corporation					
Attendees:	None		Tested by:	Greg Kiemel	Humidity	: 42%	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site	: EV06	
TEST SPECIFICATION	IS						
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	3.4 Year	: 2003	
SAMPLE CALCULATION	ONS						
1							
COMMENTS							
COMMENTS							
EUT OPERATING MOD	DES						
	t 36 Mbps data rate, 802.11(g) mo	dulation scheme.					
DEVIATIONS FROM T	EST STANDARD						
None							
REQUIREMENTS							
Maximum level of any	spurious emission at the edge of	f the authorized band is 20 dB do	wn from the fundamenta	ıl.			
RESULTS			AMPLITUDE				
Pass	Pass -43.6 dB						
SIGNATURE							
Tested By:	ADU.K.P						
DESCRIPTION OF TES	ST .						
	Band Edd	ge Compliance - Hi	gh Channel - 8	802.11(a) 36 I	Mbit		

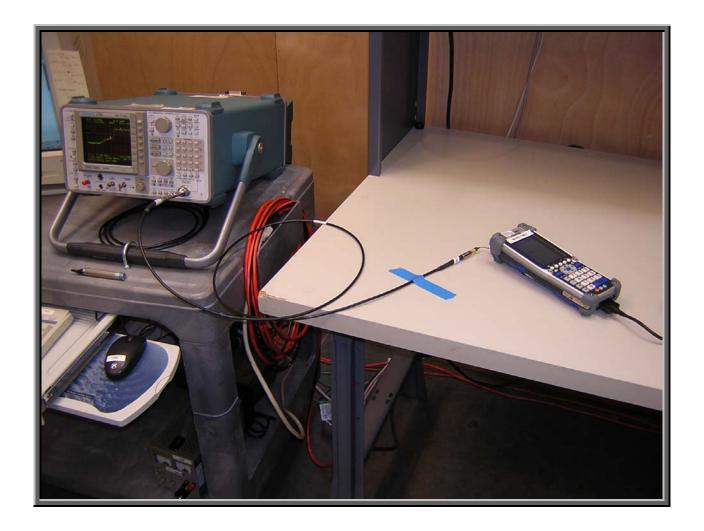


EMC		<b>EMISSIONS</b> I	DATA SH	EET			Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065	
Serial Number:	er:				Date:	03/11/05	
Customer:	Intermec Technologies Corporati	Temperature:	21°C				
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42%	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATION	IS						
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003	
SAMPLE CALCULATION	ONS						
COMMENTS							
EUT OPERATING MOI		adulation ashama					
	t maximum data rate, 802.11(g) m	odulation scheme.					
DEVIATIONS FROM T	EST STANDARD						
REQUIREMENTS							
	snurious emission at the edge of	f the authorized band is 20 dB dow	n from the fundamenta	1			
RESULTS	opanious simosion at alle suge si		AMPLITUDE				
Pass			-32.1 dB				
SIGNATURE			0211 02				
Tested By:	ADUK-P						
DESCRIPTION OF TES	ST						
	Band Edd	ge Compliance - Lov	w Channel - 8	302.11(a) 54 N	//bit		



NORTHWEST		<b>EMISSIONS</b>	DATA CH	CCT			
<b>EMC</b>		EMISSICINS	DATA SH	EEI			ev BETA 1/30/01
EUT:	802UIAG				Work Order:	ITRM0065	
Serial Number:	mber:					03/11/05	
Customer:	Intermec Technologies Corpora	Intermec Technologies Corporation					
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42%	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATION	IS						
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003	
SAMPLE CALCULATION	ONS						
COMMENTS							
EUT OPERATING MOD							
	t maximum data rate, 802.11(g) n	nodulation scheme.					
DEVIATIONS FROM T	EST STANDARD						
None							
REQUIREMENTS							
Maximum level of any	spurious emission at the edge of	of the authorized band is 20 dB d	own from the fundamenta	al.			
RESULTS			AMPLITUDE				
Pass	Pass -46.2 dB						
SIGNATURE							
Tested By:	ADU.K.P						
DESCRIPTION OF TES	ST						
	Band Edd	ge Compliance - H	igh Channel -	802.11(a) 54 I	Mbit		





# **Spurious Conducted Emissions**

Revision 10/1/03

### **Justification**

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

Channels in Specified Band Investigated:
Low
Mid
High

### **Operating Modes Investigated:**

Continuous transmit

Data Rates Investigated:
1 Mbps (802.11b)
11 Mbps (802.11b)
6 Mbps (802.11g)
36 Mbps (802.11g)
54 Mbps (802.11g)

### **Output Power Setting(s) Investigated:**

Maximum default

### **Power Input Settings Investigated:**

120 VAC, 60 Hz.

Software\Firmware Applied During Test							
Exercise software	cTxRx Win CE	Version	0.1.2.1				
Description							
The system was tested using special software developed to test all functions of the device during the test.							

EUT and Peripherals							
Description	Manufacturer	Model/Part Number	Serial Number				
EUT - 802UIAG	Intermec Technologies Corporation	802UIAG	Unknown				
Host Device	Intermec Technologies Corporation	CK61	33390400093				
AC Power Adapter	Intermec Technologies Corporation	851-061-002	335174				

## **Spurious Conducted Emissions**

Revision 10/1/03

Cables								
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2			
DC Leads	Yes	1.9	PA	AC Power Adapter	Host Device			
AC Power	No	2.0	No	AC Power Adapter	AC Mains			
PA = Cable is peri	PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.							

Measurement Equipment								
Description	Manufacturer	Model	Identifier	Last Cal	Interval			
Spectrum Analyzer	Tektronix	2784	AAO	01/02/2005	12 mo			

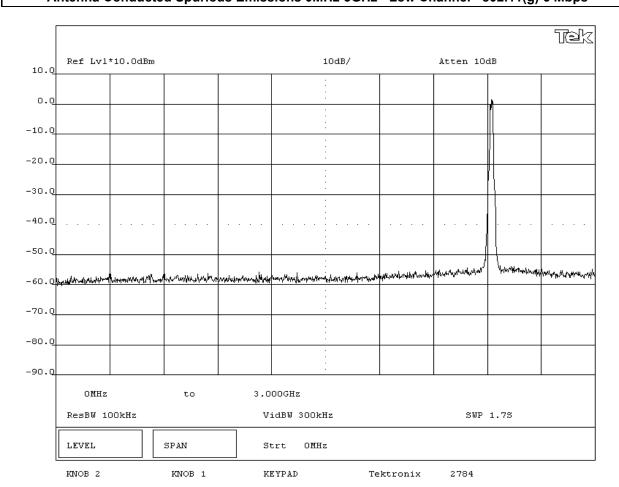
### **Test Description**

**Requirement**: Per 47 CFR 15.247(d), in any 100 kHz bandwidth outside the authorized band, the maximum level of radio frequency power must be at least 20dB down from the highest emission level within the authorized band. The measurement is made with the spectrum analyzer's resolution bandwidth set to 100 kHz, and the video bandwidth set to greater than or equal to the resolution bandwidth.

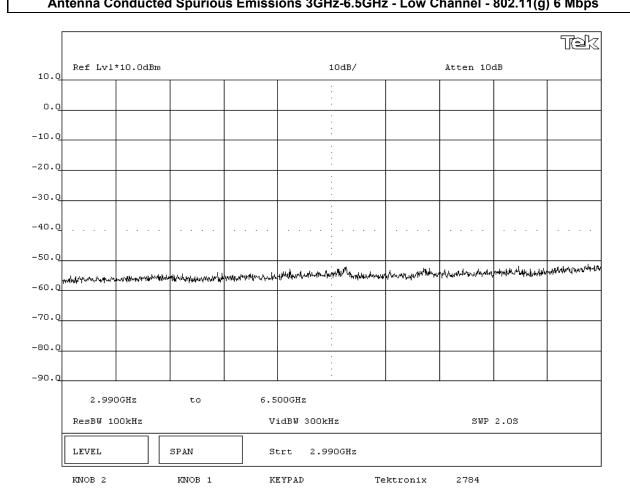
**Configuration**: The spurious RF conducted emissions were measured with the EUT set to low, medium, and high transmit frequencies. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at various data rates. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

#### Completed by:

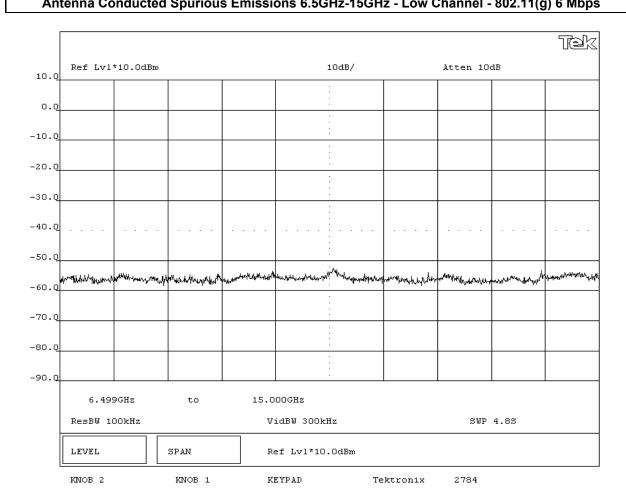
EMC		<b>EMISSIONS</b> I	DATA SH	EET		Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corpora	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OBERATING MO	252					
EUT OPERATING MO	DES it 6 Mbps data rate, 802.11(g) mod	Julation schome				
DEVIATIONS FROM T		idiation scheme				
None	EST STANDARD					
REQUIREMENTS						
	spurious emission outside of the	e authorized band is 20 dB down fr	om the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Δntei	nna Conducted Sp	urious Emissions Ol	MHz-3GHz - I	ow Channel	- 802 11(a) 6	Mhns



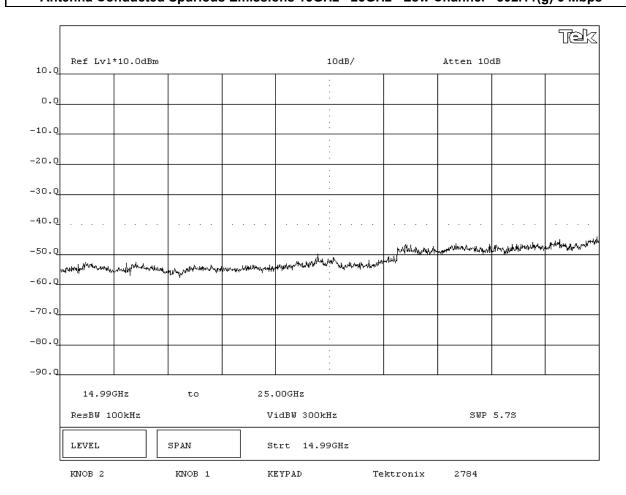
EMC		<b>EMISSIONS</b>	DATA SH	EET			Rev BETA 01/30/01
EUT:	802UIAG				Work Order	: ITRM0065	
Serial Number:					Date	: 03/10/05	
Customer:	Intermec Technologies Corporation	on			Temperature	: 20°C	
Attendees:	None		Tested by:	Greg Kiemel	Humidity	: 42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site	: EV06	
TEST SPECIFICATION							
_	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year	: 2003	
SAMPLE CALCULATI	UNS						
COMMENTS							
<b>EUT OPERATING MO</b>	DES						
Modulated by PRBS a	t 6 Mbps data rate, 802.11(g) modι	ulation scheme					
<b>DEVIATIONS FROM T</b>	EST STANDARD						
None							
REQUIREMENTS							
Maximum level of any	spurious emission outside of the	authorized band is 20 dB down fr	om the fundamental.				
RESULTS							
Pass							
SIGNATURE							
Tested By:	ADU.K.P						
DESCRIPTION OF TE	ST						
Anton	na Conducted Spur	ious Emissions 3G	Hz-6 5GHz -	Low Channel	- 802 11(a)	6 Mhns	



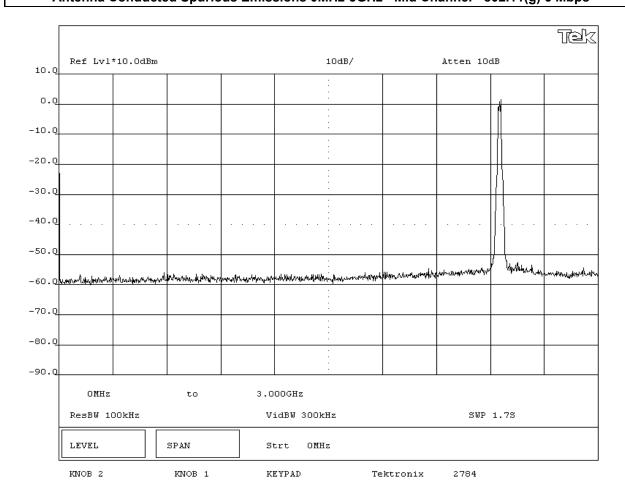
EMC		<b>EMISSIONS</b>	DATA SH	EET			Rev BETA 01/30/01
EUT:	802UIAG				Work Order	: ITRM0065	
Serial Number:					Date	: 03/10/05	
Customer:	Intermec Technologies Corporati	ion			Temperature	: 20°C	
Attendees:	None		Tested by:	Greg Kiemel	Humidity	: 42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site	: EV06	
TEST SPECIFICATION							
_	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year	: 2003	
SAMPLE CALCULATI	UNS	·					
COMMENTS							
<b>EUT OPERATING MO</b>							
Modulated by PRBS a	t 6 Mbps data rate, 802.11(g) modu	ulation scheme					
<b>DEVIATIONS FROM T</b>	EST STANDARD						
None							
REQUIREMENTS							
	spurious emission outside of the	authorized band is 20 dB down fr	om the fundamental.				
RESULTS							
Pass							
SIGNATURE							
Tested By:	ADU.K.P						
DESCRIPTION OF TE	ST						
Antoni	a Conducted Spur	ious Emissions 6.5	GHz-15GHz -	Low Channe	I - 802 11(a)	6 Mhn	<u> </u>



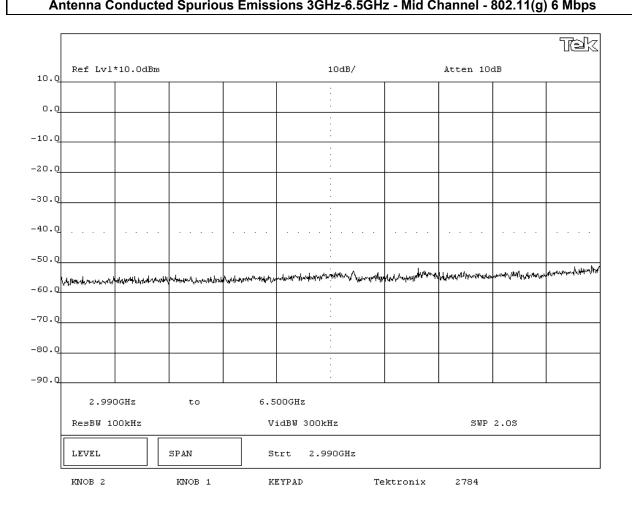
EMC		<b>EMISSIONS</b> I	DATA SH	EET		Rev BETA 01/30/01
	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporat	ion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	is					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MOI						
-	t 6 Mbps data rate, 802.11(g) mod	lulation scheme				
DEVIATIONS FROM T	EST STANDARD					
REQUIREMENTS						
	courious omission outside of the	e authorized band is 20 dB down fr	om the fundamental			
RESULTS	spurious emission outside of the	e authorized band is 20 dB down in	om the fundamental.			
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Antenn	a Conducted Spur	ious Emissions 150	Hz - 25GHz -	I ow Channe	I - 802 11(a)	6 Mbns



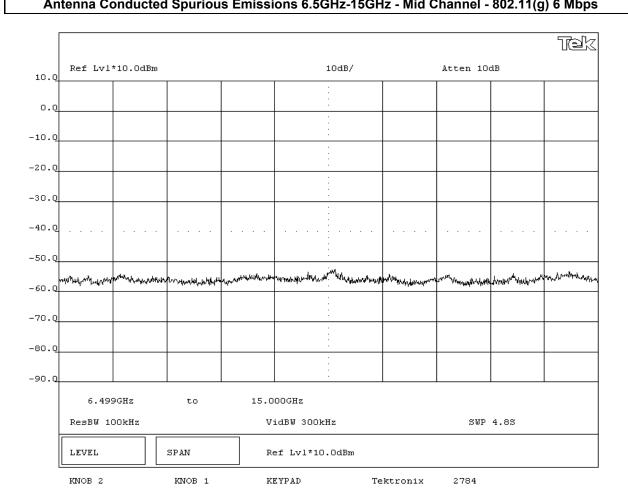
EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporat	ion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63.	4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MOD						
	t 6 Mbps data rate, 802.11(g) mod	ulation scheme				
DEVIATIONS FROM TI None	EST STANDARD					
REQUIREMENTS						
	spurious emission outside of the	authorized band is 20 dB down fr	om the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Δnte	nna Conducted Sn	urious Emissions 0	MHz-3GHz - I	Mid Channel .	. 802 11(a) 6	Mhns



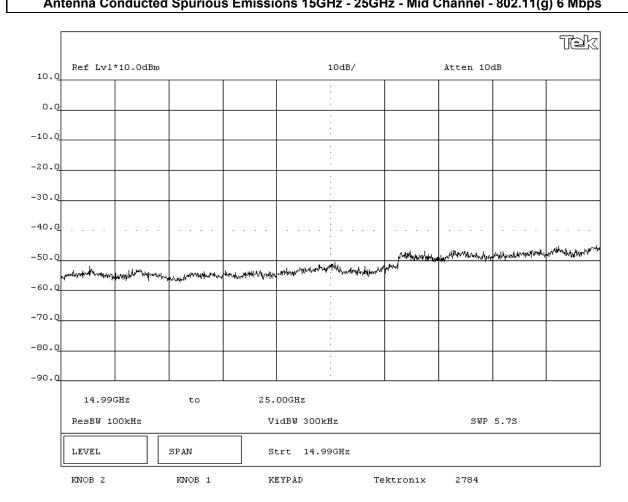
EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA 01/30/01
	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corpora	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MO						
	t 6 Mbps data rate, 802.11(g) mod	dulation scheme				
DEVIATIONS FROM T	EST STANDARD					
None						
REQUIREMENTS			0 6 1 1			
	spurious emission outside of th	e authorized band is 20 dB down fr	om the fundamental.			
RESULTS						
Pass SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TE	ST					
Anton	na Conducted Spi	rique Emissions 30	LITE FOLL	Mid Channol	202 11/a) 6	Mhne



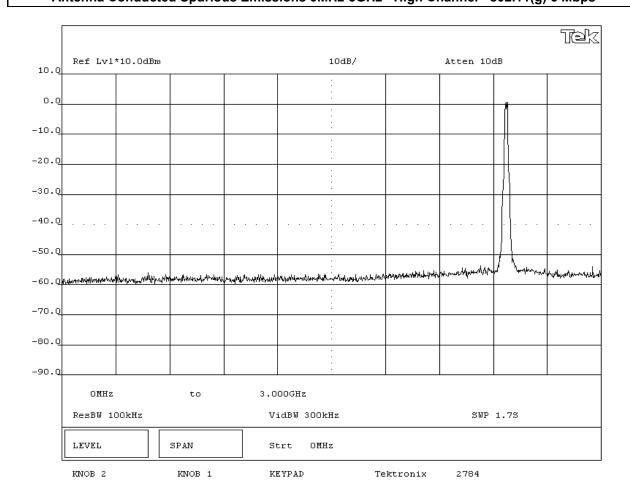
EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporate	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MOI						
-	t 6 Mbps data rate, 802.11(g) mod	lulation scheme				
DEVIATIONS FROM T	EST STANDARD					
None						
REQUIREMENTS	anusiana amianian antaida af th	e authorized band is 20 dB down fr	om the fundamental			
RESULTS	spurious emission outside of the	e authorized band is 20 dB down ii	om the fundamental.			
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Antoni	na Conducted Spu	rique Emissions 6 F	CH2 15CH2	Mid Channo	L 802 11(a)	6 Mhne



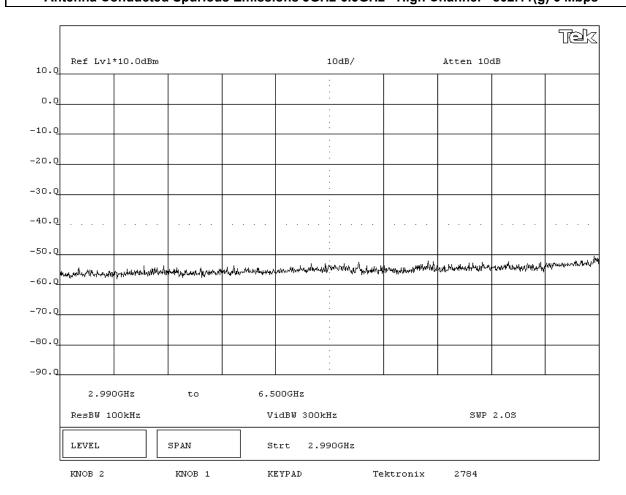
EMC	EN	MISSIONS I	DATA SH	EET			Rev BETA 01/30/01
EUT:	802UIAG				Work Order	ITRM0065	
Serial Number:					Date:	03/10/05	
Customer:	Intermec Technologies Corporation				Temperature:	20°C	
Attendees:	None			Greg Kiemel	Humidity		
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATION							
		ear: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003	
SAMPLE CALCULATION	ONS						
COMMENTS							
EUT OPERATING MO							
•	t 6 Mbps data rate, 802.11(g) modulation s	scheme					
DEVIATIONS FROM T	EST STANDARD						
None							
REQUIREMENTS							
	spurious emission outside of the authoriz	ized band is 20 dB down fro	om the fundamental.				
RESULTS							
Pass							
SIGNATURE							
Tested By:	ADU.K.P						
DESCRIPTION OF TES	ST						
Antoni	na Conducted Spurious	Emissions 150	2Hz - 25GHz .	Mid Channe	I - 802 11(a)	6 Mhn	<u> </u>



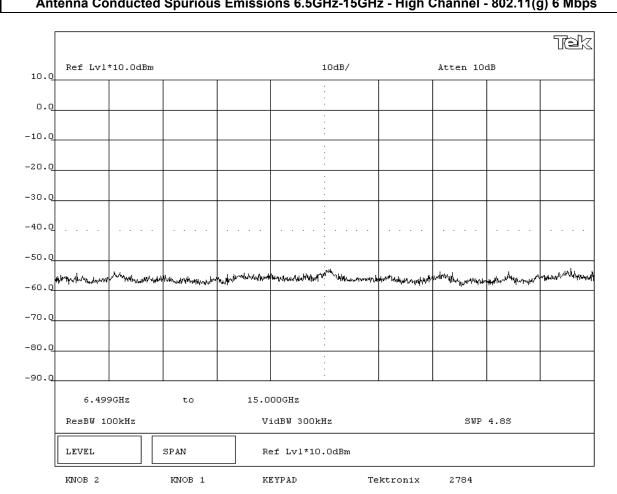
EMC		<b>EMISSIONS</b> I	DATA SH	EET		Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporat	ion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63.	4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MOD						
	t 6 Mbps data rate, 802.11(g) mod	lulation scheme				
DEVIATIONS FROM TI None	EST STANDARD					
REQUIREMENTS						
	spurious emission outside of the	authorized band is 20 dB down fr	om the fundamental			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST T					
Δnten	na Conducted Snu	rious Emissions 0	/Hz-3GHz - H	ligh Channel	- 802 11(a) 6	Mhns



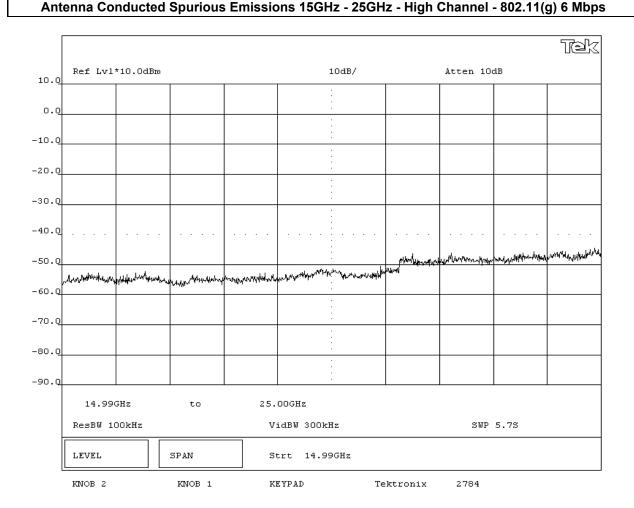
EMC		<b>EMISSIONS</b> I	DATA SH	EET		Rev BETA 01/30/01
	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corpora	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	ıs					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OBERATING MO	252					
EUT OPERATING MO	DES it 6 Mbps data rate, 802.11(g) mod	Julation schome				
DEVIATIONS FROM T		idiation scheme				
None	EST STANDARD					
REQUIREMENTS						
	spurious emission outside of the	e authorized band is 20 dB down fr	om the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
∆nten	na Conducted Spu	rious Emissions 3G	Hz-6 5GHz - 1	High Channel	- 802 11(a) (	6 Mbps



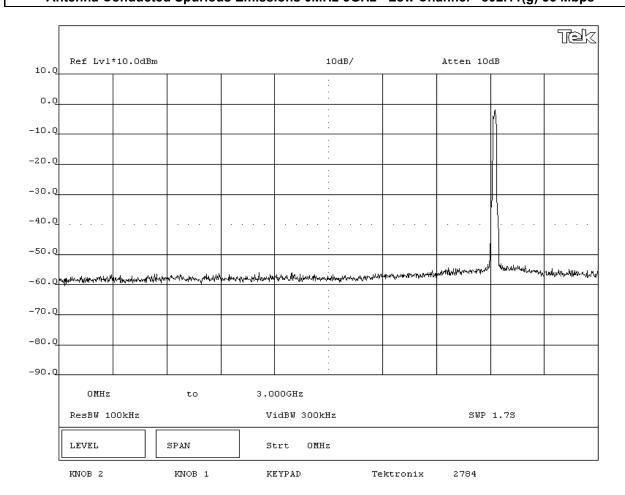
EMC		<b>EMISSIONS</b> I	DATA SH	EET			Rev BETA 01/30/01
EUT:	802UIAG				Work Order	: ITRM0065	
Serial Number:					Date	: 03/10/05	
Customer:	Intermec Technologies Corporatio	n			Temperature	: 20°C	
Attendees:	None			Greg Kiemel		: 42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site	: EV06	
TEST SPECIFICATION							
Specification: SAMPLE CALCULATI	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year	: 2003	
COMMENTS							
EUT OPERATING MO	DES						
Modulated by PRBS a	t 6 Mbps data rate, 802.11(g) modul	lation scheme					
DEVIATIONS FROM T	EST STANDARD						
None							
REQUIREMENTS							
	spurious emission outside of the a	authorized band is 20 dB down fr	om the fundamental.				
RESULTS							
Pass							
SIGNATURE							
Tested By:	ADU.K.P						
DESCRIPTION OF TE	ST						
Δntonr	a Conducted Spurio	oue Emissions 6 50	GH7-15GH7 -	High Channe	1 - 802 11(a)	6 Mhn	16



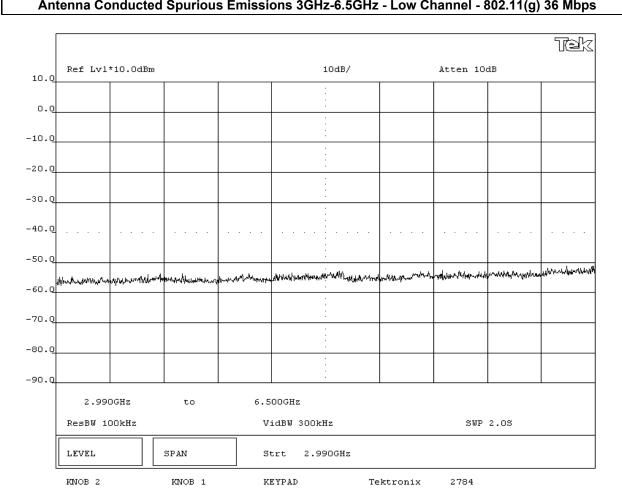
EMC	AC EMISSIONS DATA SHEET  EUT: 802UIAG Work Order:  ITRM0065			Rev BETA 01/30/01		
	802UIAG				Work Order:	
Serial Number:						
Customer:	Intermec Technologies Corpora	ition			Temperature:	20°C
Attendees:			Tested by:	Greg Kiemel	Humidity:	
Customer Ref. No.:				120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63.4	Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MO						
Modulated by PRBS a	t 6 Mbps data rate, 802.11(g) mo	dulation scheme				
DEVIATIONS FROM T	EST STANDARD					
None						
REQUIREMENTS						
	spurious emission outside of th	e authorized band is 20 dB down	from the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested Bv:	ADU.K.P					
rested by:						
DESCRIPTION OF TE	ST					
A 1	a Canduated Cour	ious Emissions 4E	CU- OFCU-	High Charana	000 44/~\	C Mbass



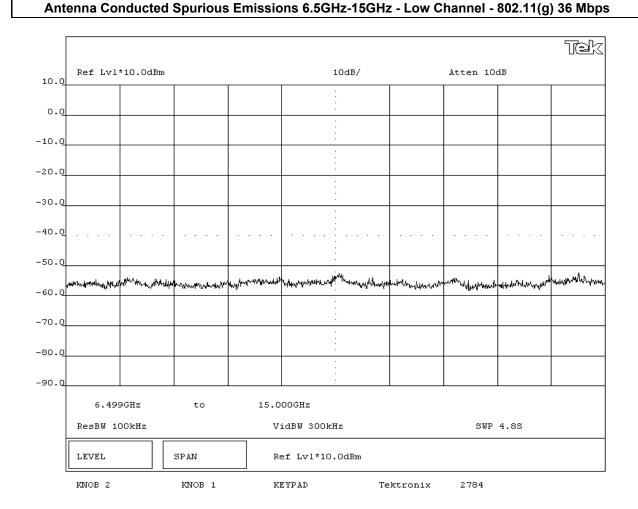
EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporat	ion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63.	4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MOD	DES t 36 Mbps data rate, 802.11(g) mo	dulation cohomo				
DEVIATIONS FROM TE		dulation scheme				
None	EST STANDARD					
REQUIREMENTS						
	spurious emission outside of the	authorized band is 20 dB down fr	om the fundamental.			
RESULTS	•					
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Anten	na Conducted Snu	rious Emissions ON	MHz-3GHz - L	ow Channel -	802 11(a) 36	Mhns



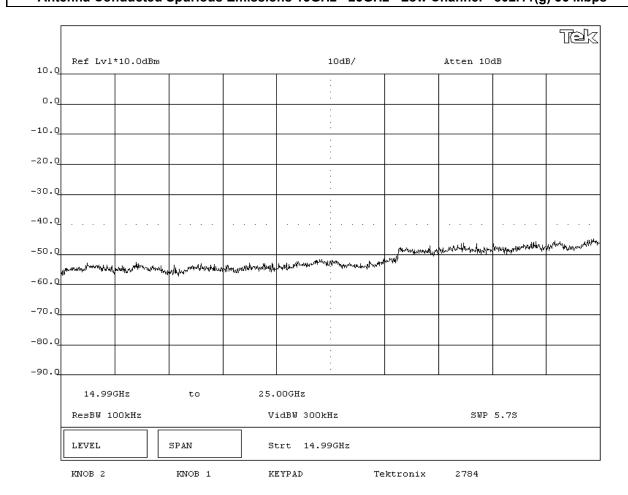
EMC	MC EMISSIONS DATA SHEET  EUT: 802UIAG Work Order: ITRM00			Rev BETA 01/30/01		
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporate	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MO						
	t 36 Mbps data rate, 802.11(g) mo	dulation scheme				
DEVIATIONS FROM T None	EST STANDARD					
REQUIREMENTS						
	snurious emission outside of the	e authorized band is 20 dB down fr	om the fundamental			
RESULTS	oparious simosism sutisfue of the		om are ramaamentan			
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Antonr	a Conducted Spur	ious Emissions 3G	Hz-6 5GHz - I	ow Channol	_ 802 11/a\ 3	6 Mhne



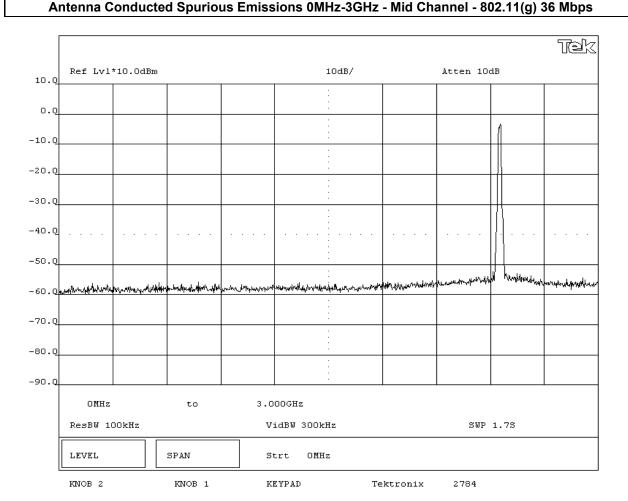
NORTHWEST		<b>EMISSIONS</b>	DATA SH	FFT		Rev BETA
EMC		Limitediente	DAIA GII			01/30/01
EUT:	802UIAG				Work Order:	: ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporat	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	3.4 Year:	2003
SAMPLE CALCULATI	ONS					
COMMENTS						
EUT OPERATING MO	DES					
Modulated by PRBS a	t 36 Mbps data rate, 802.11(g) mo	dulation scheme				
<b>DEVIATIONS FROM T</b>	EST STANDARD					
None						
REQUIREMENTS						
Maximum level of any	spurious emission outside of the	e authorized band is 20 dB down fi	rom the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TE						



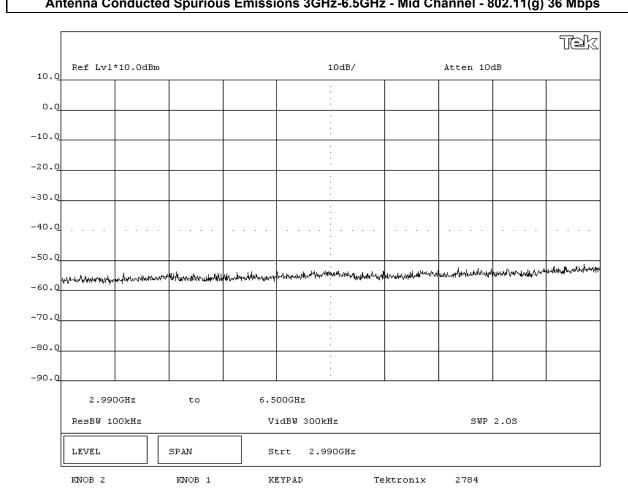
EMC	AC EMISSIONS DATA SHEET  EUT: 802UIAG Work Order:   ITRM006		Rev BETA 01/30/01			
	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporat	ion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	is					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MOI	DES					
Modulated by PRBS a	t 36 Mbps data rate, 802.11(g) mo	dulation scheme				
<b>DEVIATIONS FROM T</b>	EST STANDARD					
None						
REQUIREMENTS						
Maximum level of any	spurious emission outside of the	e authorized band is 20 dB down fr	om the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Antenna	a Conducted Spuri	ous Emissions 15G	Hz - 25GHz -	Low Channe	I - 802 11(a)	36 Mbps



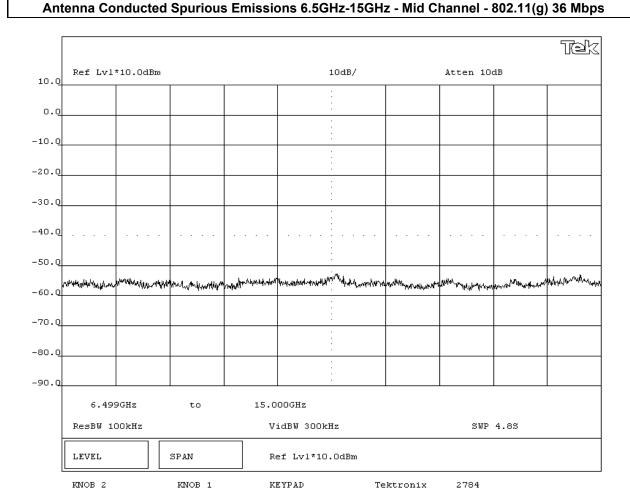
EMC					Rev BET 01/30/01	
	802UIAG				Work Order	
Serial Number:					Date	: 03/10/05
Customer:	Intermec Technologies Corpora	tion			Temperature	: 20°C
Attendees:			Tested by:	Greg Kiemel		: 42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site	: EV06
TEST SPECIFICATION	is					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MOI						
•	t 36 Mbps data rate, 802.11(g) m	odulation scheme				
DEVIATIONS FROM T	EST STANDARD					
REQUIREMENTS						
	enurious amission outside of th	e authorized band is 20 dB down	from the fundamental			
RESULTS	spurious emission outside of th	e authorized band is 20 dB down	nom the fundamental.			
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES						
A 4			MILL SOLL N		000 44/~\ 20	• N/le



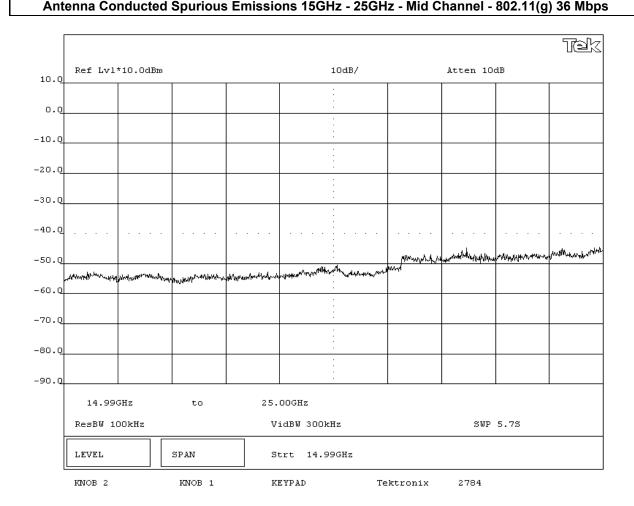
EMC		<b>EMISSIONS</b>	DATA SH	EET			Rev BETA 01/30/01
EUT:	802UIAG				Work Order	r: ITRM0065	
Serial Number:					Date	: 03/10/05	
Customer:	Intermec Technologies Corporation	on			Temperature	: 20°C	
Attendees:				Greg Kiemel		/: 42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site	: EV06	
TEST SPECIFICATION							
	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year	r: 2003	
SAMPLE CALCULATI	ONS						
COMMENTS							
EUT OPERATING MO	DES at 36 Mbps data rate, 802.11(g) mod	halatian a shama					
	, ,	idiation scheme					
DEVIATIONS FROM T None	EST STANDARD						
REQUIREMENTS							
	spurious emission outside of the	authorized band is 20 dB down fr	om the fundamental.				
RESULTS							
Pass							
SIGNATURE							
Tested By:	ADU.K.P						
DESCRIPTION OF TE	ST						
Anton	na Conducted Spur	ious Emissions 3G	Hz-6 5GHz -	Mid Channel	- 802 11(a) 3	6 Mhn	•



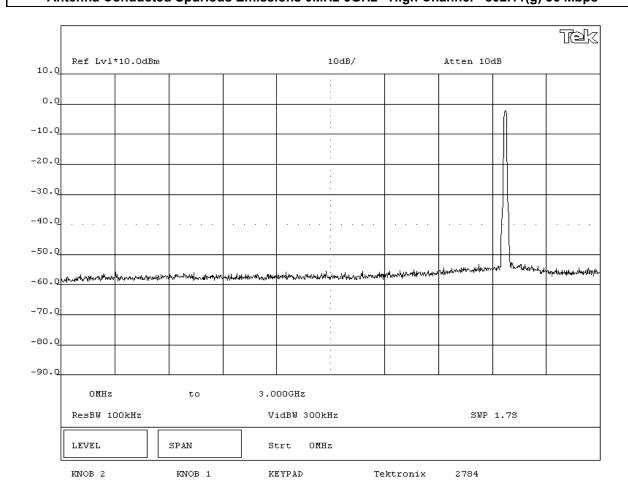
NORTHWEST EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA
						01/30/01
	802UIAG				Work Order:	
Serial Number:						03/10/05
	Intermec Technologies Corporati	ion			Temperature:	
Attendees:	None			Greg Kiemel	Humidity:	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION						
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	3.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS  EUT OPERATING MO Modulated by PRBS a	DES t 36 Mbps data rate, 802.11(g) mo	dulation scheme				
DEVIATIONS FROM T	, ,,					
None						
REQUIREMENTS						
Maximum level of any	spurious emission outside of the	authorized band is 20 dB down fr	om the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
			aa			



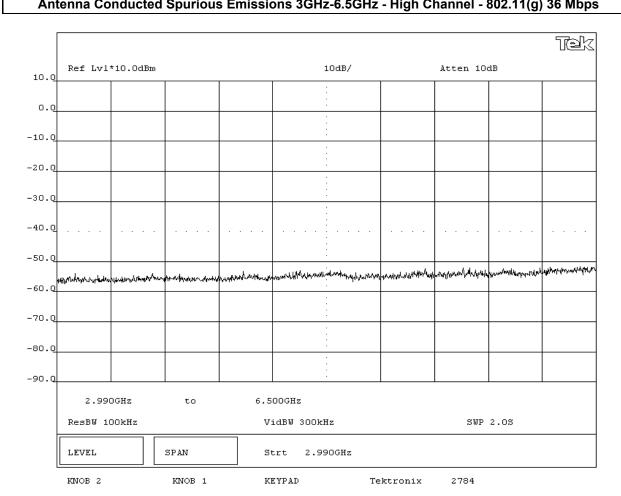
EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA 01/30/01
	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporat	ion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63.4	Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
<b>EUT OPERATING MOI</b>	DES					
Modulated by PRBS a	t 36 Mbps data rate, 802.11(g) mo	dulation scheme				
<b>DEVIATIONS FROM T</b>	EST STANDARD					
None						
REQUIREMENTS						
Maximum level of any	spurious emission outside of the	authorized band is 20 dB down fi	rom the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Antonn	a Canduated Spuri	oue Emissione 150	N- 25CU-	Mid Channal	902 44/~) 3	26 Mbpc



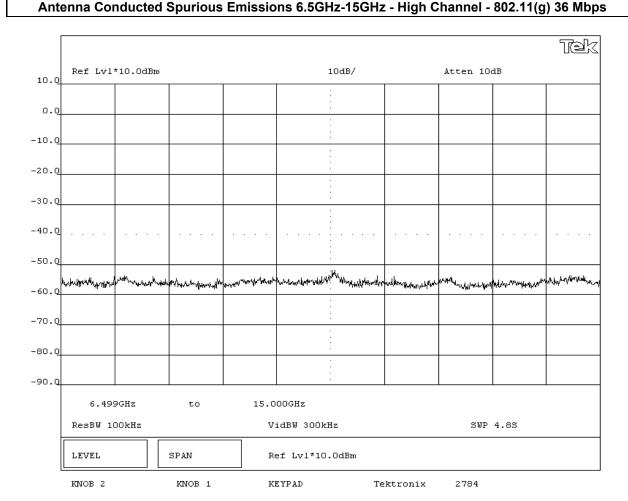
EMC			Rev BETA 01/30/01			
	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporat	ion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MO	DES					
	t 36 Mbps data rate, 802.11(g) mo	dulation scheme				
DEVIATIONS FROM T	EST STANDARD					
None						
REQUIREMENTS						
Maximum level of any	spurious emission outside of the	authorized band is 20 dB down fr	om the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Δnten	na Conducted Spu	rious Emissions ON	IHz-3GHz - Hi	igh Channel -	802 11(a) 36	3 Mbps



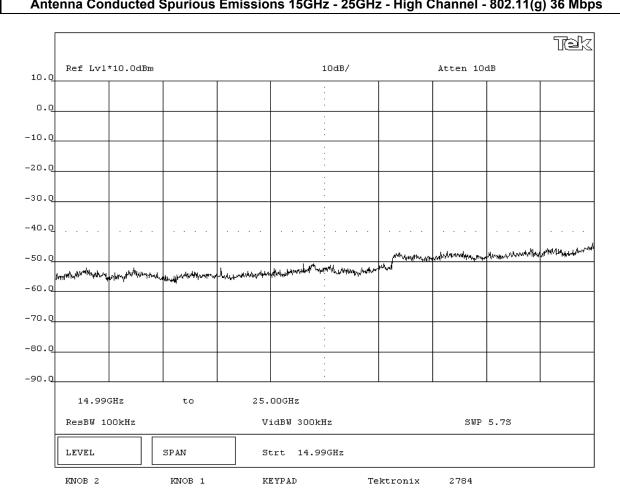
EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporat	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63.	4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MOD	nes					
	t 36 Mbps data rate, 802.11(g) mo	dulation scheme				
DEVIATIONS FROM T	1 , 167					
None						
REQUIREMENTS						
Maximum level of any	spurious emission outside of the	e authorized band is 20 dB down f	rom the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Antonn	a Conducted Spur	ious Emissions 3G	Hz 6 5CHz L	ligh Channol	_ 802 11/a\ 3	6 Mhne



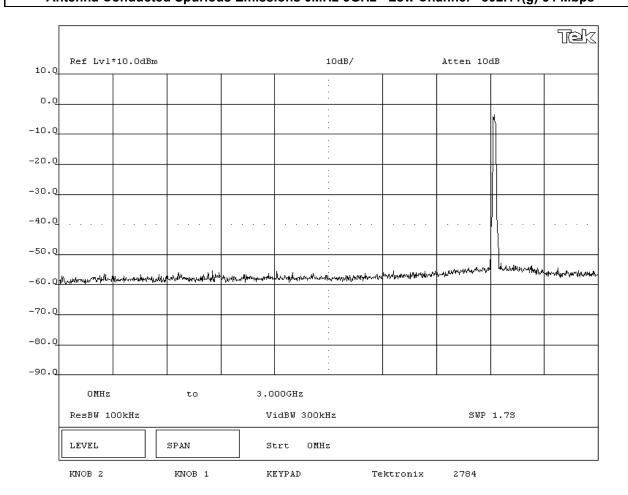
EMC		<b>EMISSIONS</b>	<b>DATA SH</b>	EET		Rev BETA 01/30/01
	802UIAG				Work Order:	
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corpora	ition			Temperature:	20°C
Attendees:			Tested by:	Greg Kiemel	Humidity:	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	ıs					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63.4	Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MOI		116				
•	t 36 Mbps data rate, 802.11(g) m	odulation scheme				
DEVIATIONS FROM T	EST STANDARD					
REQUIREMENTS						
	spurious emission outside of th	e authorized band is 20 dB down	from the fundamental			
RESULTS	Sparious chilosion outside of th	c dutionized band is 20 dB down	irom the fundamental.			
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES						
A 4 a	- Canalizated Cour	iaura Euriaaiaura C E	CU- 45CU- 1	Hank Channal	000 44/~\	2C Mb



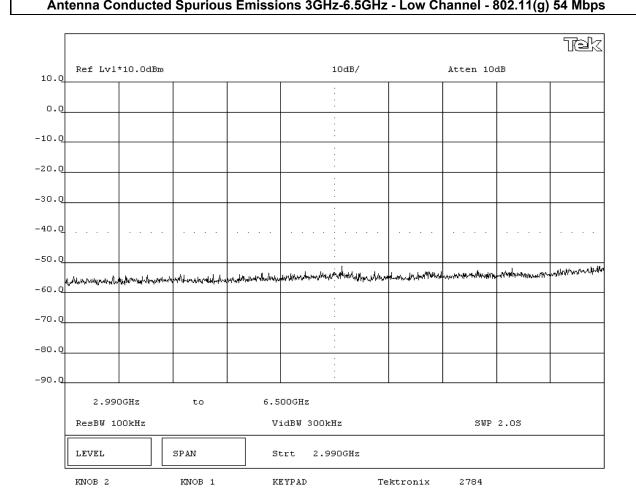
EMC		<b>EMISSIONS</b> I	DATA SH	EET		Rev BETA 01/30/01
	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporate	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MOI						
-	t 36 Mbps data rate, 802.11(g) mo	dulation scheme				
DEVIATIONS FROM T	EST STANDARD					
None						
REQUIREMENTS						
	spurious emission outside of the	e authorized band is 20 dB down fr	om the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Antonna	Conducted Spuri	oue Emissions 15G	Hz - 25GHz -	High Channe	L 802 11(a)	36 Mhne



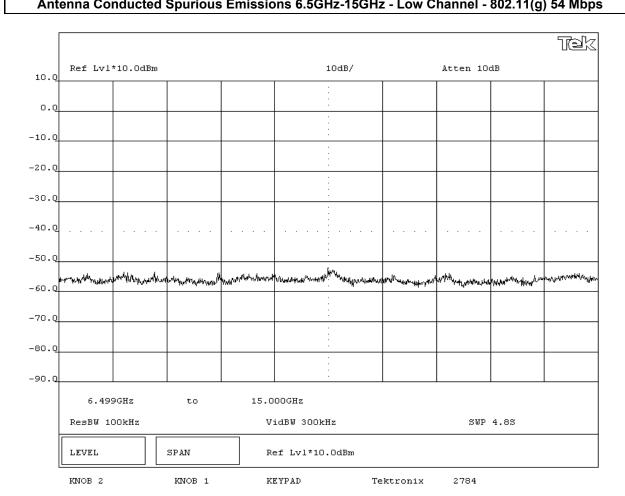
EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporate	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:	:		Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	is					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MO	DES					
	at maximum data rate, 802.11(g) m	nodulation scheme				
DEVIATIONS FROM T						
None						
REQUIREMENTS						
Maximum level of any	spurious emission outside of the	e authorized band is 20 dB down fr	om the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
∆nten	ina Conducted Spir	rious Emissions ON	MHz-3GHz - I	ow Channel -	802 11(a) 54	Mbns



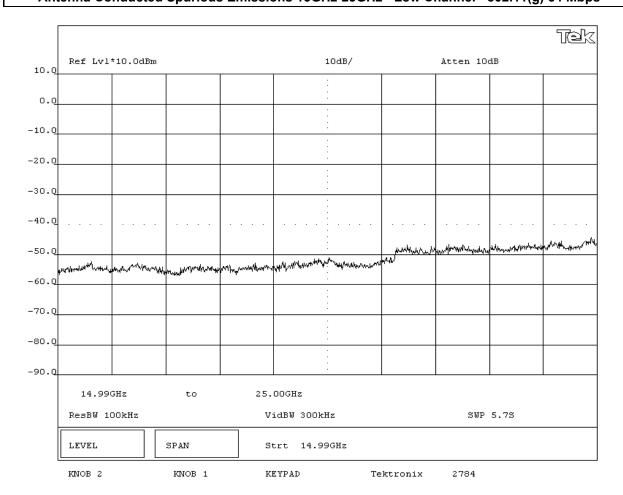
EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporati	ion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
<b>EUT OPERATING MOI</b>	DES					
Modulated by PRBS a	t maximum data rate, 802.11(g) m	odulation scheme				
<b>DEVIATIONS FROM T</b>	EST STANDARD					
None						
REQUIREMENTS						
Maximum level of any	spurious emission outside of the	authorized band is 20 dB down fr	om the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Antonr	a Canduated Spur	ious Emissions 2C	U- 6 FCU- I	ow Channal	902 44(a) E	4 Mhna



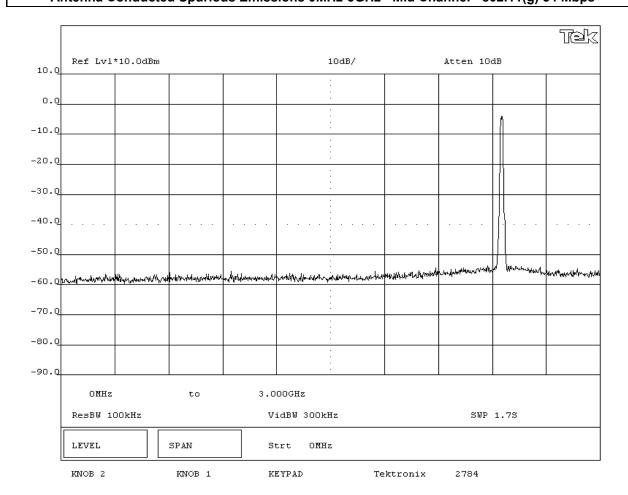
EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corpora	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MOI	DEC					
	t maximum data rate, 802.11(g) n	nodulation scheme				
DEVIATIONS FROM T		iodulation scheme				
None	LOT OTANDARD					
REQUIREMENTS						
Maximum level of any	spurious emission outside of the	e authorized band is 20 dB down fi	rom the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Antonn	a Conducted Spur	ious Emissions 6 50	CH7_15CH7_	Low Channol	- 802 11(a) A	Mbne



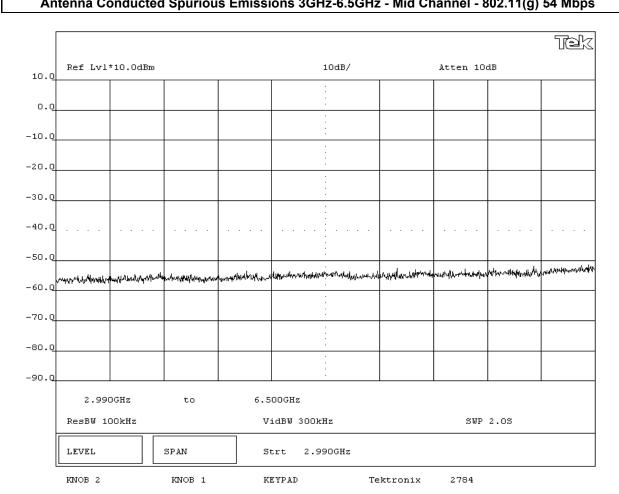
EMC		<b>EMISSIONS</b> I	DATA SH	EET		Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporate	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	is					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MOI	DES					
	nt maximum data rate, 802.11(g) m	nodulation scheme				
DEVIATIONS FROM T						
None						
REQUIREMENTS						
Maximum level of any	spurious emission outside of the	e authorized band is 20 dB down fr	om the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
∆ntenn	a Conducted Spur	ious Emissions 150	Hz-25GHz - I	ow Channel	-80211(a)5	4 Mhns



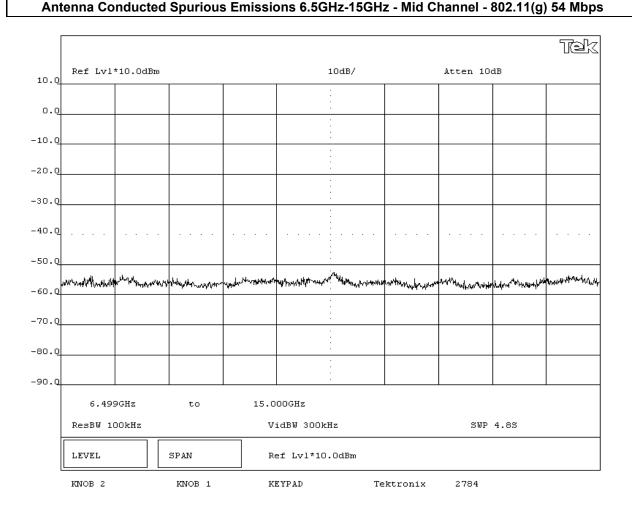
EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA 01/30/01
	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporate	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	is					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OBERATING MO	252					
EUT OPERATING MO	DES It maximum data rate, 802.11(g) m	andulation schome				
DEVIATIONS FROM T		ioudiation scheme				
None	EST STANDARD					
REQUIREMENTS						
	spurious emission outside of the	e authorized band is 20 dB down fr	om the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Δnter	na Conducted Spi	rious Emissions 0	MHz-3GHz - M	Iid Channel -	802 11(a) 54	Mhns



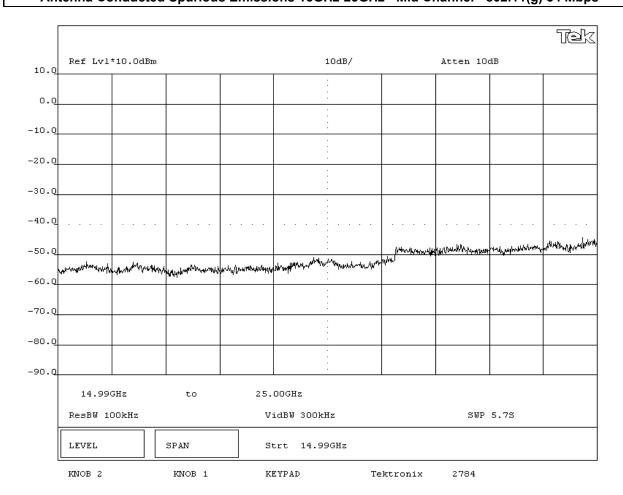
EMC		<b>EMISSIONS</b> I	DATA SH	EET			Rev BETA 01/30/01
EUT:	802UIAG				Work Order	r: ITRM0065	
Serial Number:					Date	: 03/10/05	
Customer:	Intermec Technologies Corporatio	n		-	Temperature	: 20°C	
Attendees:				Greg Kiemel		/: 42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site	: EV06	
TEST SPECIFICATION							
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year	r: 2003	
SAMPLE CALCULATI	ONS						
COMMENTS							
EUT OPERATING MO	DES						
	at maximum data rate, 802.11(g) mod	dulation scheme					
DEVIATIONS FROM T	EST STANDARD						
None							
REQUIREMENTS							
Maximum level of any	spurious emission outside of the a	uthorized band is 20 dB down from	om the fundamental.				
RESULTS							
Pass							
SIGNATURE							
Tested By:	ADU.K.P						
DESCRIPTION OF TE	ST						
Δnton	na Conducted Spuri	oue Emissions 3G	Hz-6 5GHz - I	Mid Channel	- 802 11(a) 5	4 Mhn	<b>c</b>



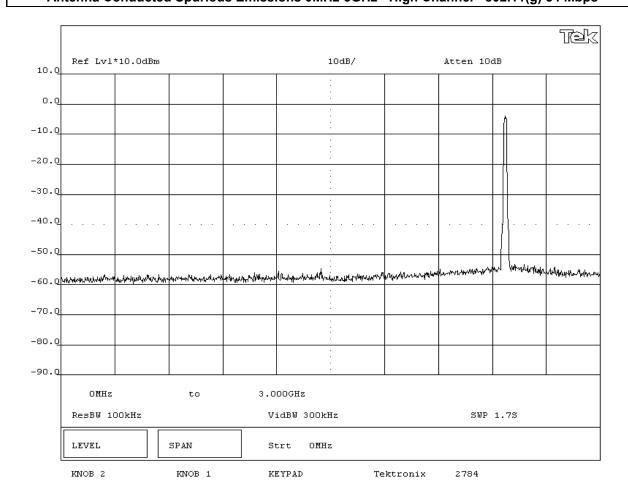
EMC		<b>EMISSIONS</b>	<b>DATA SH</b>	EET		Rev BETA 01/30/01
	802UIAG				Work Order	
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corpora	tion			Temperature:	20°C
Attendees:			Tested by:	Greg Kiemel	Humidity	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	ıs					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63.	4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MO						
•	t maximum data rate, 802.11(g) n	nodulation scheme				
DEVIATIONS FROM T None	EST STANDARD					
REQUIREMENTS						
	enurious amission outside of th	e authorized band is 20 dB down	from the fundamental			
RESULTS	spurious emission outside of th	e authorized band is 20 dB down	nom the fundamental.			
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES						
A 4 a	a Canalitatad Carr	dana Emiasiana C <i>t</i>	CII- 45CII-	Mid Channal	000 44/~\ 6	4 14 14 14 14



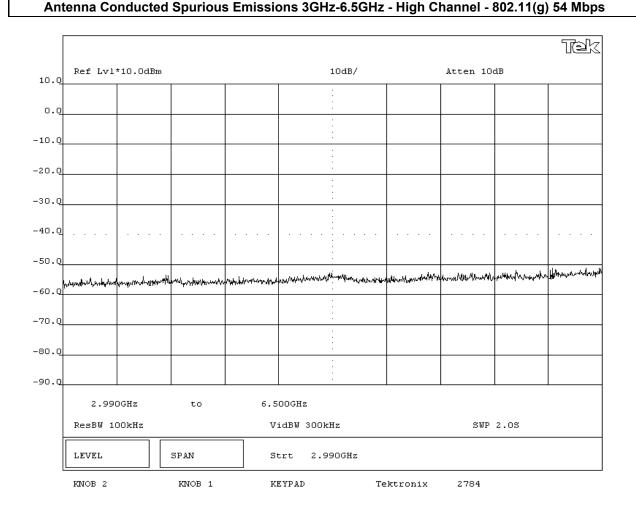
EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corpora	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MO	DEC.					
	t maximum data rate, 802.11(g) n	nodulation scheme				
DEVIATIONS FROM T		iodalation selicine				
None	ESTSTANDARD					
REQUIREMENTS						
Maximum level of any	spurious emission outside of the	e authorized band is 20 dB down fr	om the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Antenr	na Conducted Spui	rious Emissions 150	3Hz-25GHz -	Mid Channel	- 802 11(a) 5	4 Mbns



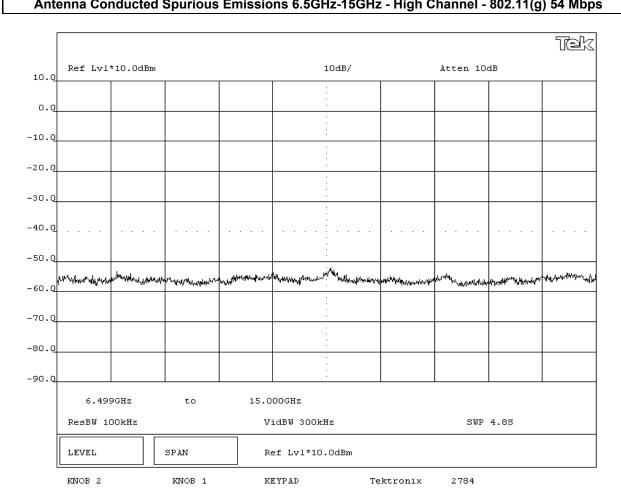
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	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporat	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	is					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MO	DES					
	t maximum data rate, 802.11(g) m	nodulation scheme				
DEVIATIONS FROM T						
None						
REQUIREMENTS						
Maximum level of any	spurious emission outside of the	e authorized band is 20 dB down fro	om the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Δnten	na Conducted Spu	rious Emissions 0M	IHz-3GHz - H	igh Channel .	802 11(a) 54	1 Mhns



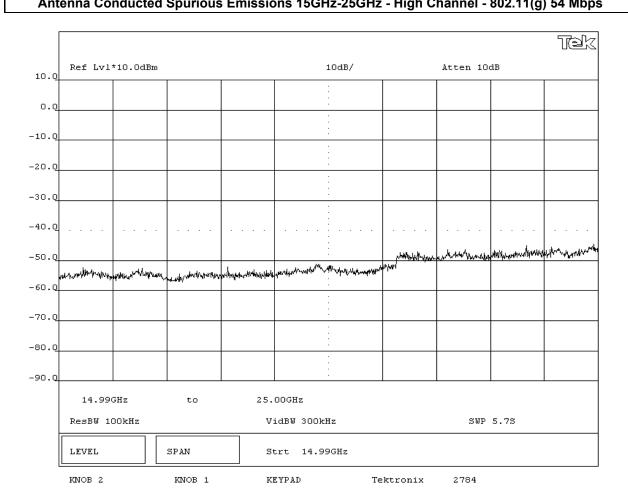
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	802UIAG				Work Order	: ITRM0065
Serial Number:					Date	03/10/05
Customer:	Intermec Technologies Corpora	tion			Temperature	20°C
Attendees:			Tested by:	Greg Kiemel		: 42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site	: EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MO	DEC					
	t maximum data rate, 802.11(g) n	andulation scheme				
DEVIATIONS FROM T	, (6)	iodulution scheme				
None	LOT STANDARD					
REQUIREMENTS						
	spurious emission outside of th	e authorized band is 20 dB down	from the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES						
A 4	a Canalizatad Carr	dawa Emdaalama 20	11- C FOII- 1	Itala Chamal	000 44/~\ [	* 4 N/Ib



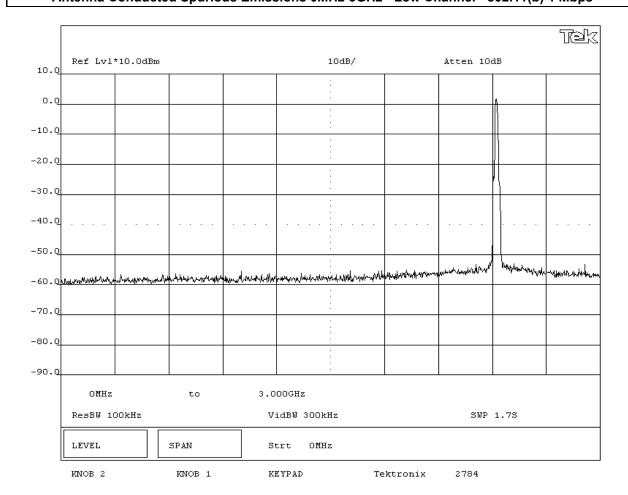
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EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corpora	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MOI						
-	t maximum data rate, 802.11(g) n	nodulation scheme				
DEVIATIONS FROM T	EST STANDARD					
None						
REQUIREMENTS						
	spurious emission outside of the	e authorized band is 20 dB down fr	om the fundamental.			
RESULTS						
Pass SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Antonn	a Conducted Spuri	oue Emissions 6 50	2H7_15CH7	High Channo	202 11/a)	54 Mhne



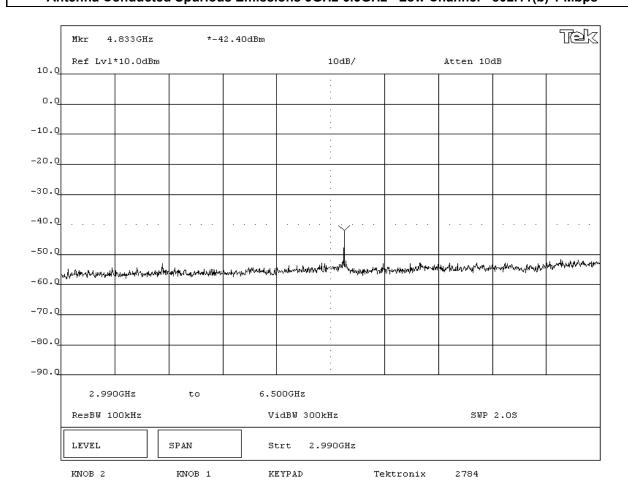
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EUT:	802UIAG				Work Order:	ITRM0065	
Serial Number:					Date:	03/10/05	
Customer:	Intermec Technologies Corpora	ation			Temperature:	20°C	
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATION	ıs						
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003	
SAMPLE CALCULATION	ONS						
COMMENTS							
EUT OPERATING MOI							
	t maximum data rate, 802.11(g)	modulation scheme					
DEVIATIONS FROM T	EST STANDARD						
None							
REQUIREMENTS	onurious emission outside of t	he authorized band is 20 dB down	from the fundamental				
RESULTS	spurious emission outside of the	ne authorized band is 20 dB down	ironi the fundamental.				
Pass							
SIGNATURE							
Tested By:	ADU.K.P						
DESCRIPTION OF TES	ST						
Antenn	a Conducted Spur	rique Emissions 150	CHz-25CHz - I	High Channel	- 802 11(a) F	Mhn	



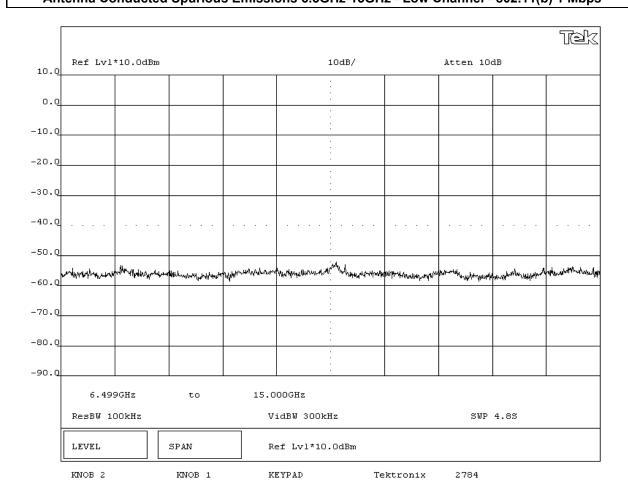
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EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporat	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	s					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ons					
COMMENTS						
EUT OPERATING MO						
	t 1 Mbps data rate, 802.11(b) mod	Iulation scheme				
DEVIATIONS FROM T	EST STANDARD					
None						
REQUIREMENTS			name that from dame antal			
	spurious emission outside of the	e authorized band is 20 dB down f	rom the fundamental.			
RESULTS						
Pass SIGNATURE						
SIGNATURE	AMU.K.P					
Tested By:	- 00					
DESCRIPTION OF TES	<b>в</b> т					
Δntei	nna Conducted Sp	urious Emissions 0	MHz-3GHz - I	ow Channel	- 802 11(b) 1	Mhns



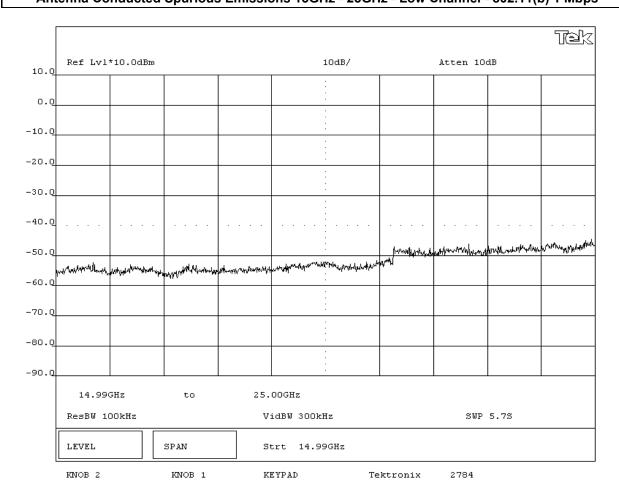
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EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporat	ion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	is					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ons					
COMMENTS						
EUT OPERATING MOI	DES it 1 Mbps data rate, 802.11(b) mod	ulation cohomo				
DEVIATIONS FROM T		ulation scheme				
None	EST STANDARD					
REQUIREMENTS						
	spurious emission outside of the	authorized band is 20 dB down f	rom the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADUK-P					
DESCRIPTION OF TE	ST					
Δnten	na Conducted Spu	rious Emissions 30	Hz-6 5GHz -	l ow Channel	- 802 11(b) 1	1 Mbns



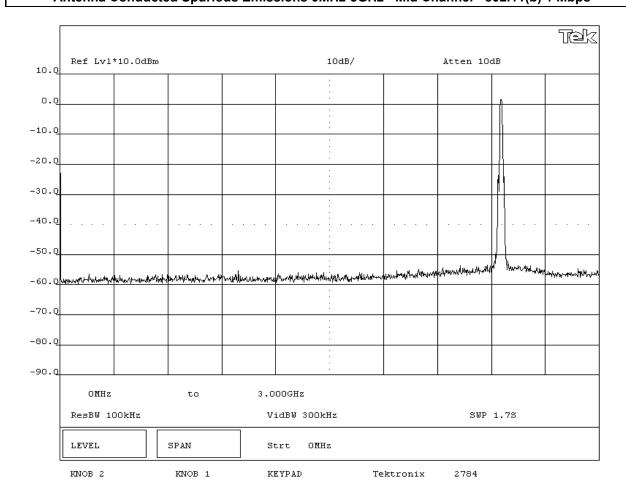
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EUT:	802UIAG				Work Order	: ITRM0065	
Serial Number:					Date	: 03/10/05	
Customer:	Intermec Technologies Corporation	on			Temperature	: 20°C	
Attendees:				Greg Kiemel		: 42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site	: EV06	
TEST SPECIFICATION							
	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year	: 2003	
SAMPLE CALCULATI	ONS						
COMMENTS							
EUT OPERATING MO	DES at 1 Mbps data rate, 802.11(b) modu	lation achomo					
DEVIATIONS FROM T	. , , ,	nation scheme					
None	EST STANDARD						
REQUIREMENTS							
	spurious emission outside of the	authorized band is 20 dB down f	rom the fundamental.				
RESULTS							
Pass							
SIGNATURE							
Tested By:	ADU.K.P						
DESCRIPTION OF TE	ST						
Antoni	na Conducted Spuri	ous Emissions 6.5	GHz-15GHz -	Low Channe	I - 802 11(h)	1 Mhn	<u> </u>



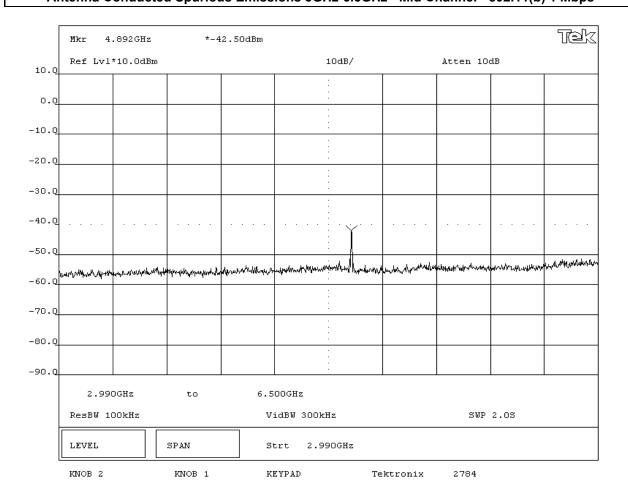
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Serial Number:					Date	: 03/10/05	
Customer:	Intermec Technologies Corporation	on			Temperature	: 20°C	
Attendees:				Greg Kiemel		: 42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site	: EV06	
TEST SPECIFICATION							
	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year	: 2003	
SAMPLE CALCULATI	<u> </u>						
COMMENTS							
EUT OPERATING MO	DES						
	at 1 Mbps data rate, 802.11(b) modu	lation scheme					
DEVIATIONS FROM T	EST STANDARD						
None							
REQUIREMENTS							
Maximum level of any	spurious emission outside of the	authorized band is 20 dB down f	rom the fundamental.				
RESULTS							
Pass							
SIGNATURE							
Tested By:	ADU.K.P						
DESCRIPTION OF TE	ST						
Antenn	a Conducted Spuri	ous Emissions 150	3Hz - 25GHz -	Low Channe	1 - 802 11/h)	1 Mhn	16



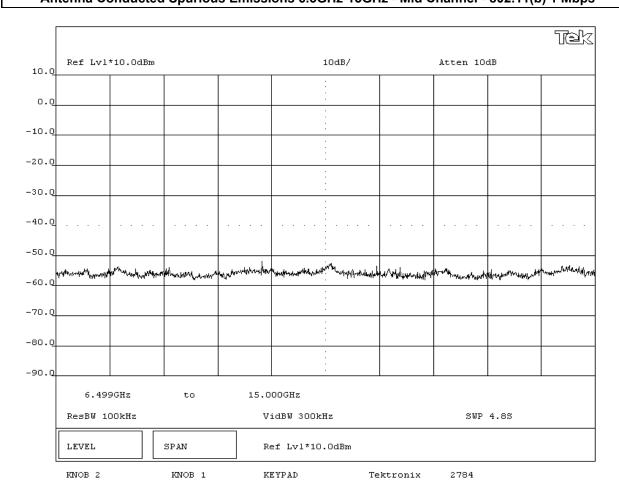
EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corpora	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ons					
COMMENTS						
EUT OPERATING MO	DEC					
	t 1 Mbps data rate, 802.11(b) mod	dulation scheme				
DEVIATIONS FROM T		dudicion scheme				
None	LOT OTANDARD					
REQUIREMENTS						
Maximum level of any	spurious emission outside of th	e authorized band is 20 dB down t	from the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ABUKIP					
DESCRIPTION OF TES	ST					
Δnte	nna Conducted Sn	urious Emissions (	MHz-3GHz - I	Mid Channel	- 802 11(b) 1	Mhns



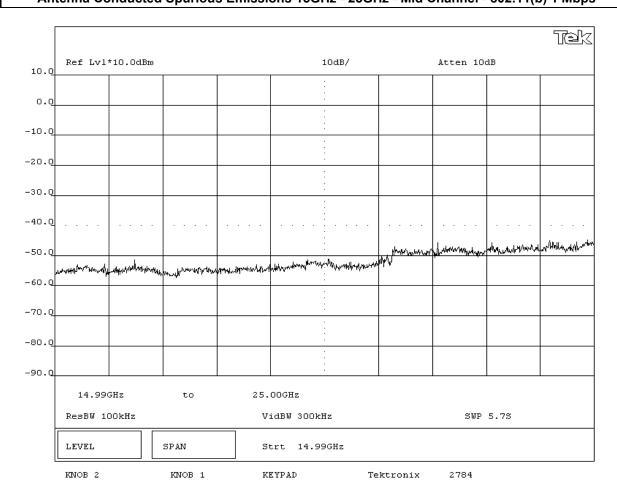
EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporate	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	is					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MOI						
-	t 1 Mbps data rate, 802.11(b) mod	iulation scheme				
DEVIATIONS FROM T	EST STANDARD					
REQUIREMENTS						
	spurious emission outside of the	e authorized band is 20 dB down fr	om the fundamental			
RESULTS	spurious emission outside of the	e authorized band is 20 db down in	om the fundamental.			
Pass						
SIGNATURE						
Tested By:	ADUK-P					
DESCRIPTION OF TES	ST					
Δnten	na Conducted Spi	rious Emissions 30	3Hz-6 5GHz -	Mid Channel	- 802 11(b) 1	Mhns



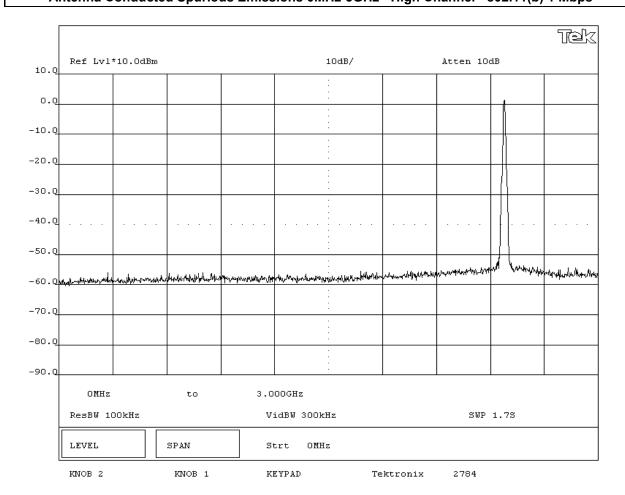
EMC		<b>EMISSIONS</b>	<b>DATA SH</b>	EET			Rev BETA 01/30/01
EUT:	802UIAG				Work Order	: ITRM0065	
Serial Number:					Date	: 03/10/05	
Customer:	Intermec Technologies Corporati	ion			Temperature	: 20°C	
Attendees:				Greg Kiemel		: 42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site	: EV06	
TEST SPECIFICATION							
	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year	: 2003	
SAMPLE CALCULATI	ONS						
COMMENTS							
EUT OPERATING MO	DES at 1 Mbps data rate, 802.11(b) modu	ulation cohomo					
DEVIATIONS FROM T	, , ,	ulation scheme					
None	EST STANDARD						
REQUIREMENTS							
	spurious emission outside of the	authorized band is 20 dB down	from the fundamental.				
RESULTS							
Pass							
SIGNATURE							
Tested By:	ABU.K.P						
DESCRIPTION OF TE	ST						
Anton	na Conducted Spur	ious Emissions 6	5GHz-15GHz	Mid Channe	I - 802 11/h)	1 Mhn	<u> </u>



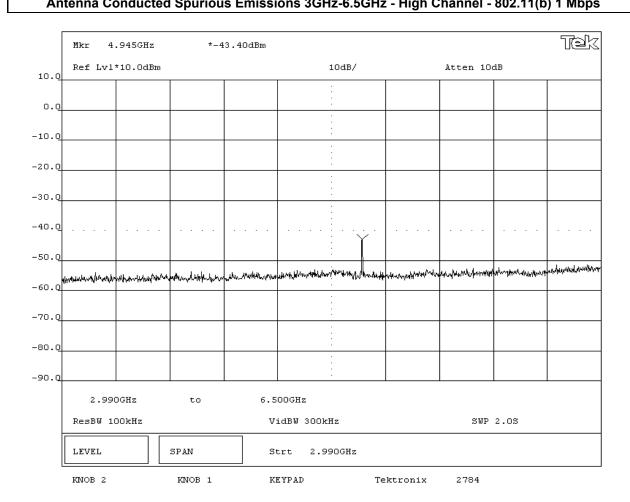
EMC		EMISSIONS I	DATA SH	EET			Rev BETA 01/30/01
EUT:	802UIAG				Work Order	: ITRM0065	
Serial Number:					Date	: 03/10/05	
Customer:	Intermec Technologies Corporation			-	Temperature	: 20°C	
Attendees:	None			Greg Kiemel		: 42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site	: EV06	
TEST SPECIFICATION							
_	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year	: 2003	
SAMPLE CALCULATION	UNS	·					
COMMENTS							
COMMENTO							
EUT OPERATING MO	DES						
Modulated by PRBS a	t 1 Mbps data rate, 802.11(b) modula	tion scheme					
<b>DEVIATIONS FROM T</b>	EST STANDARD						
None							
REQUIREMENTS							
Maximum level of any	spurious emission outside of the au	thorized band is 20 dB down from	om the fundamental.				
RESULTS							
Pass							
SIGNATURE							
Tested By:	ADUK-P						
DESCRIPTION OF TES	ST						
Antoni	na Conducted Spurio	ue Emissions 150	2Hz - 25GHz .	Mid Channe	I - 802 11(b)	1 Mhn	-



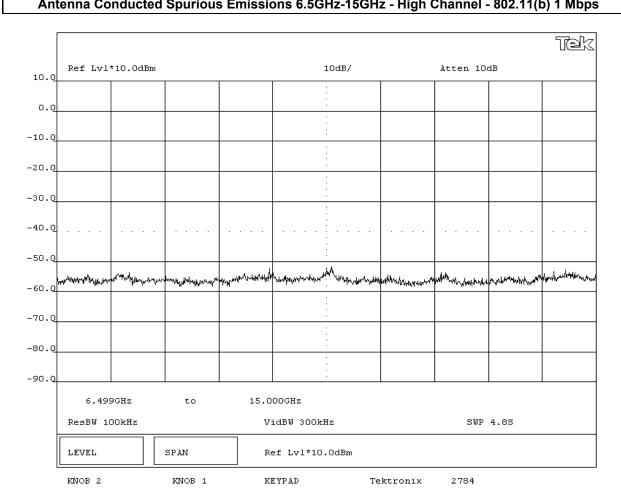
EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporat	ion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63.	4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MOD						
	t 1 Mbps data rate, 802.11(b) mod	ulation scheme				
DEVIATIONS FROM TE	EST STANDARD					
None REQUIREMENTS						
	spurious emission outside of the	authorized band is 20 dB down fr	om the fundamental			
RESULTS	spurious emission outside of the	addionized band is 20 db down in	om me fundamental.			
Pass						
SIGNATURE						
Tested By:	A BUK.P					
DESCRIPTION OF TES	ST					
Anton	na Conducted Spi	rious Emissions 0	MHz-3GHz - F	ligh Channel	- 802 11/h) 1	Mbps



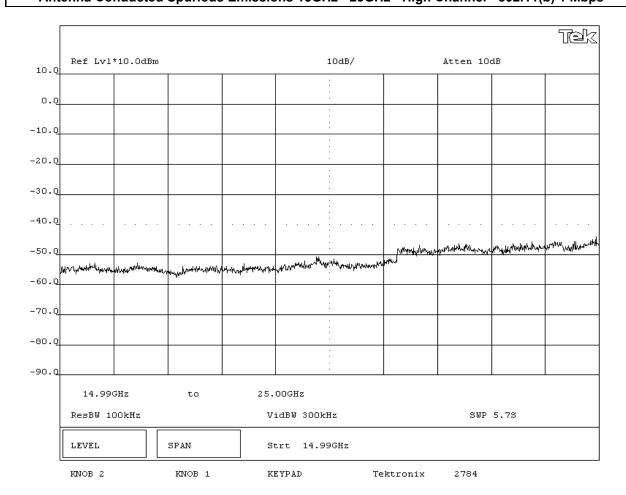
EMC		<b>EMISSIONS</b>	DATA SH	EET			Rev BETA 01/30/01
EUT:	802UIAG				Work Order	: ITRM0065	
Serial Number:					Date	: 03/10/05	
Customer:	Intermec Technologies Corporati	ion			Temperature	: 20°C	
Attendees:	None			Greg Kiemel		: 42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site	: EV06	
TEST SPECIFICATION							
_	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year	: 2003	
SAMPLE CALCULATION	UNS						
COMMENTS							
EUT OPERATING MO	DES						
Modulated by PRBS a	t 1 Mbps data rate, 802.11(b) mod	ulation scheme					
<b>DEVIATIONS FROM T</b>	EST STANDARD						
None							
REQUIREMENTS							
	spurious emission outside of the	authorized band is 20 dB down t	from the fundamental.				
RESULTS							
Pass							
SIGNATURE							
Tested By:	ADUK-P						
DESCRIPTION OF TES	ST						
	na Conducted Spur	rique Emissions 30	Hz-6 5GHz -	High Channe	I - 802 11/h)	1 Mhn	



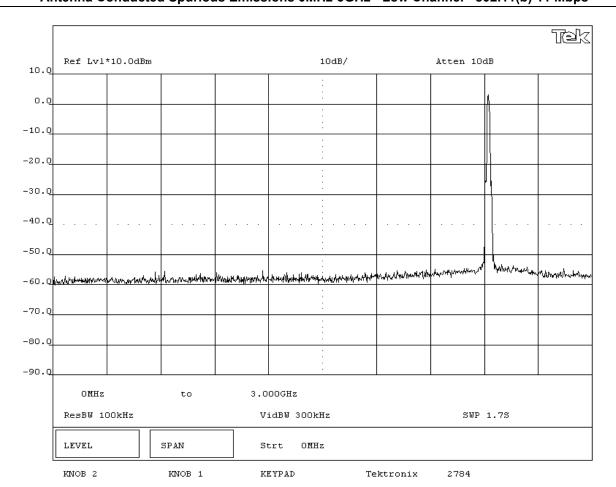
EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporate	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MOI						
•	t 1 Mbps data rate, 802.11(b) mod	lulation scheme				
DEVIATIONS FROM T	EST STANDARD					
None						
REQUIREMENTS						
	spurious emission outside of the	e authorized band is 20 dB down	rom the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Antonn	a Conducted Spur	ious Emissions 6 F	CH7_15CH7	High Channe	1 - 802 11/h)	1 Mhne



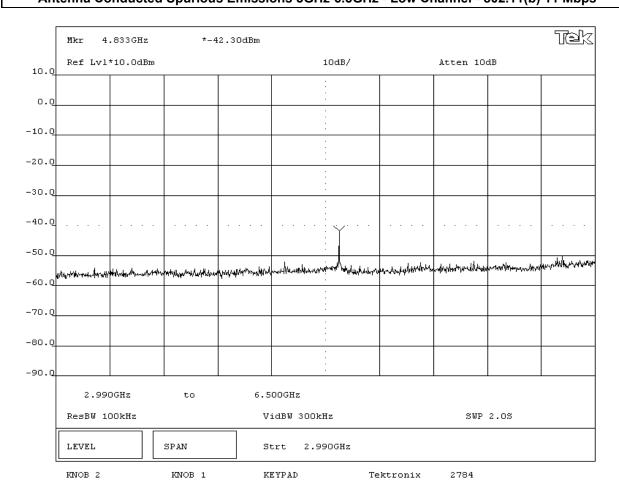
EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA 01/30/01
	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporat	ion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	is					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ons					
COMMENTS						
EUT OPERATING MO						
	t 1 Mbps data rate, 802.11(b) mod	ulation scheme				
DEVIATIONS FROM T	EST STANDARD					
None						
REQUIREMENTS						
	spurious emission outside of the	e authorized band is 20 dB down f	om the fundamental.			
RESULTS						
Pass SIGNATURE						
Tested By:	ADUK-P					
DESCRIPTION OF TE	ST					
∆ntenn	a Conducted Spuri	ious Emissions 150	Hz - 25GHz -	High Channe	el - 802 11(b)	1 Mbns



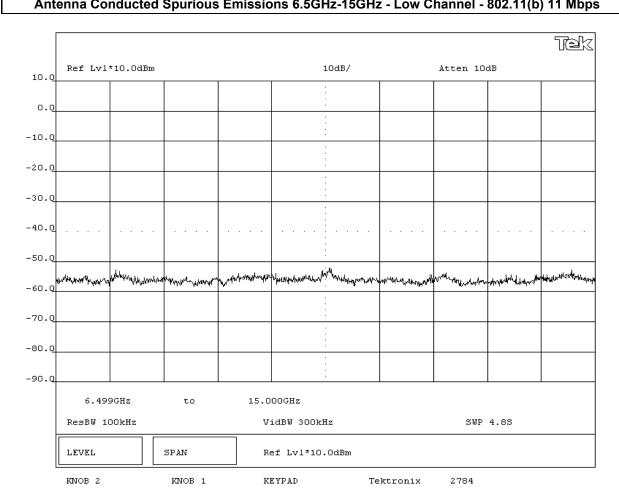
EMC		EET		Rev BETA 01/30/01		
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporate	ion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	is					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ons					
COMMENTS						
EUT OPERATING MO						
	t maximum data rate, 802.11(b) m	lodulation scheme				
DEVIATIONS FROM T	EST STANDARD					
None REQUIREMENTS						
	courious omission outside of the	e authorized band is 20 dB down f	rom the fundamental			
RESULTS	spurious emission outside of the	e authorized band is 20 dB down i	on the fundamental.			
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Δnten	na Conducted Spu	rious Emissions Of	/Hz-3GHz - L	ow Channel -	802 11(b) 11	Mhns



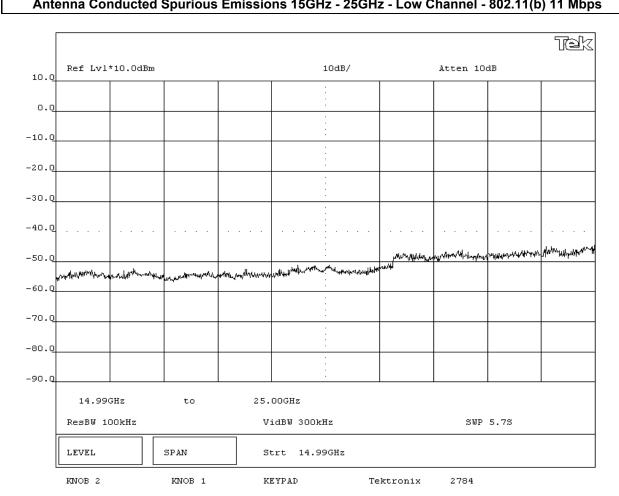
EMC		<b>EMISSIONS</b>	DATA SH	EET			Rev BETA 01/30/01
EUT:	802UIAG				Work Order	: ITRM0065	
Serial Number:					Date	: 03/10/05	
Customer:	Intermec Technologies Corporation	on			Temperature	: 20°C	
Attendees:	None			Greg Kiemel		: 42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site	: EV06	
TEST SPECIFICATION							
	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year	: 2003	
SAMPLE CALCULATION	JNJ						
COMMENTS							
EUT OPERATING MOI	DES						
Modulated by PRBS a	t maximum data rate, 802.11(b) mo	dulation scheme					
<b>DEVIATIONS FROM T</b>	EST STANDARD						
None							
REQUIREMENTS							
Maximum level of any	spurious emission outside of the a	authorized band is 20 dB down fr	om the fundamental.				
RESULTS							
Pass							
SIGNATURE							
Tested By:	ADU.K.P						
DESCRIPTION OF TES	ST						
	na Conducted Snuri	oue Emissions 3G	Hz-6 5GHz - I	ow Channel	- 802 11/b) 1	1 Mhn	6



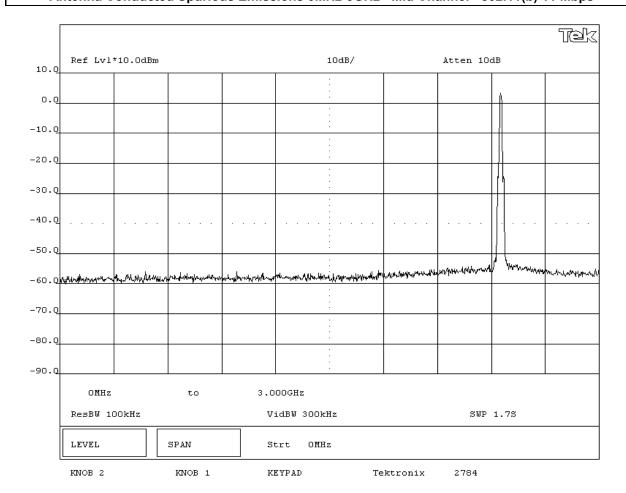
EMC		EET		Rev BETA 01/30/01		
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corpora	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS .					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MOI						
-	t maximum data rate, 802.11(b) n	lodulation scheme				
DEVIATIONS FROM T	EST STANDARD					
REQUIREMENTS						
	spurious emission outside of the	e authorized band is 20 dB down	from the fundamental			
RESULTS	opanioae omiocien dateiae et al	0 444.101.1204 24.14 10 20 42 40.111	Tom the familianion tan			
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Antonn	a Conducted Spur	ious Emissions 6 5	CH7_15CH7	Low Channol	- 802 11/b) 1	11 Mhne



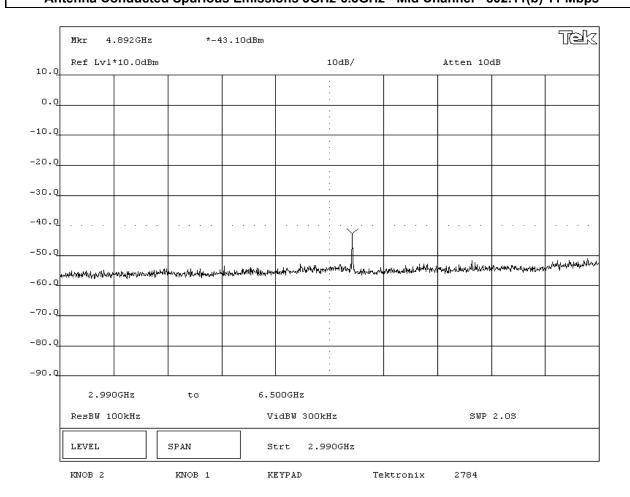
EMC		EET		Rev BETA 01/30/01		
EUT:	802UIAG				Work Order:	: ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporat	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MOI						
-	t maximum data rate, 802.11(b) m	odulation scheme				
DEVIATIONS FROM T	EST STANDARD					
None						
REQUIREMENTS						
	spurious emission outside of the	e authorized band is 20 dB down fr	om the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
Antonn	a Conducted Spuri	oue Emissions 15G	Hz 25CHz	Low Channo	I _ 802 11/b)	11 Mhne



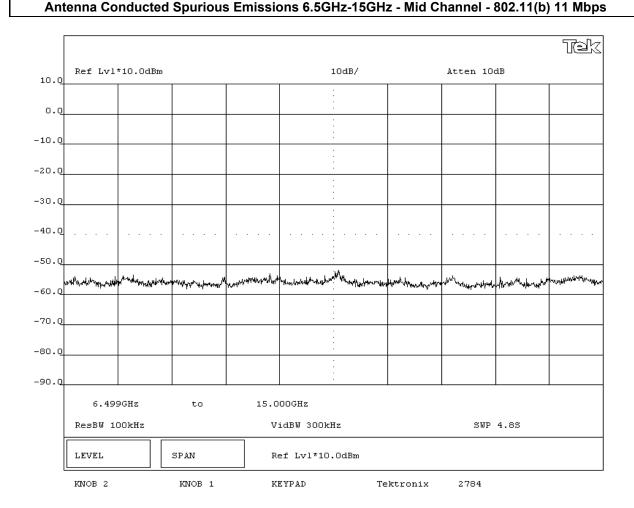
EMC		<b>EMISSIONS</b>	DATA SH	EET			Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	: ITRM0065	
Serial Number:					Date:	03/10/05	
Customer:	Intermec Technologies Corporat	ion			Temperature:	20°C	
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	: 42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATION	NS						
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003	
COMMENTS							
EUT OPERATING MO							
	t maximum data rate, 802.11(b) m	odulation scheme					
DEVIATIONS FROM T	EST STANDARD						
None							
REQUIREMENTS							
	spurious emission outside of the	authorized band is 20 dB down f	rom the fundamental.				
RESULTS							
Pass							
SIGNATURE  Tested By:	ADUK-P						
DESCRIPTION OF TES	ST						
Anter	nna Conducted Spu	rious Emissions 0	MHz-3GHz - N	lid Channel -	802.11(b) 11	Mbps	



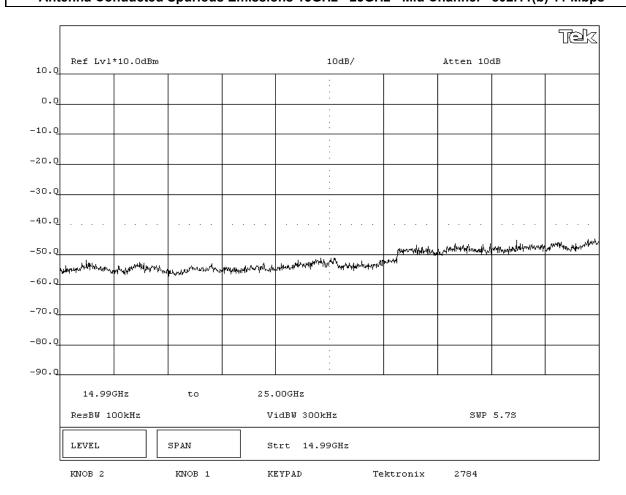
EMC		<b>EMISSIONS</b>	DATA SH	EET			Rev BETA 01/30/01
EUT:	802UIAG				Work Order	: ITRM0065	
Serial Number:					Date	: 03/10/05	
Customer:	Intermec Technologies Corporation	on			Temperature	: 20°C	
Attendees:				Greg Kiemel		: 42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site	: EV06	
TEST SPECIFICATION	<del>,                                      </del>						
Specification: SAMPLE CALCULATI	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year	: 2003	
COMMENTS							
EUT OPERATING MO							
	t maximum data rate, 802.11(b) mo	dulation scheme					
DEVIATIONS FROM T	EST STANDARD						
None							
REQUIREMENTS	spurious emission outside of the a	outhorized hand is 20 dB down f	rom the fundamental				
RESULTS	spurious emission outside of the a	authorized band is 20 dB down ii	om the fundamental.				
Pass							
SIGNATURE							
Tested By:	ADU.K.P						
DESCRIPTION OF TE	ST						
Δnton	na Conducted Spuri	ious Emissions 36	Hz-6 5GHz -	Mid Channal	- 802 11/h) 1	1 Mhn	<b>c</b>



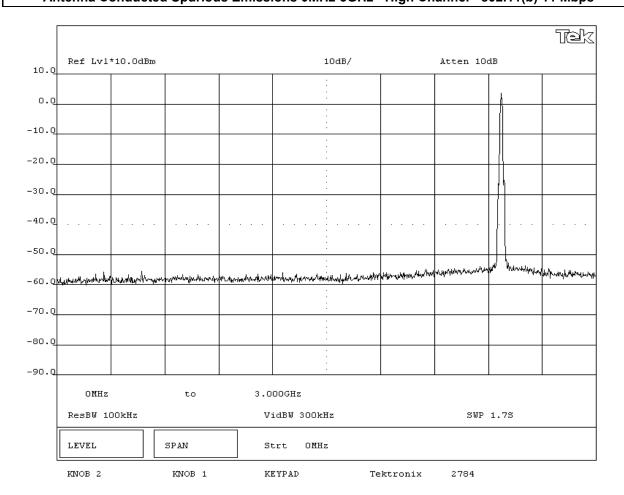
EMC		EET		Rev BET. 01/30/01		
	802UIAG				Work Order	
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corpora	tion			Temperature:	20°C
Attendees:			Tested by:	Greg Kiemel	Humidity	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	ıs					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63.	4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MO	DEC					
	t maximum data rate, 802.11(b) n	nodulation scheme				
DEVIATIONS FROM T	, , ,	iodulation scrienie				
None	EST STANDARD					
REQUIREMENTS						
	spurious emission outside of the	e authorized band is 20 dB dowr	from the fundamental.			
RESULTS	•					
Pass						
SIGNATURE						
Tested By:	ADUK-P					
DESCRIPTION OF TES	ST					
A		iaua Emicaiana C	ECUL 4ECUL	Mid Champal	000 44/6\	I A BAlbasa



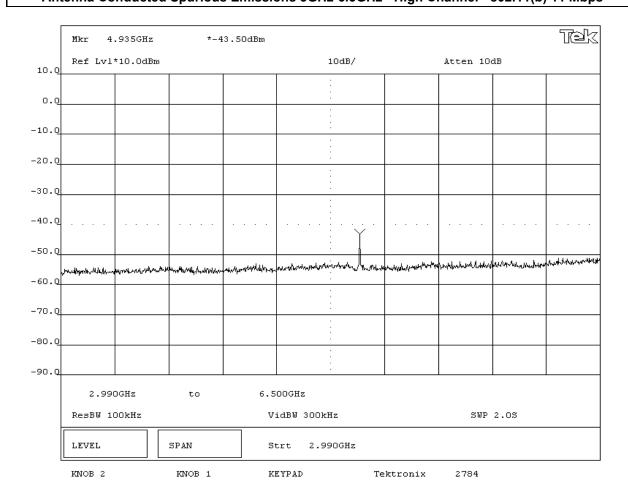
EMC		EET		Rev BETA 01/30/01		
	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporat	ion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	is					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MOI						
-	t maximum data rate, 802.11(b) m	odulation scheme				
DEVIATIONS FROM T	EST STANDARD					
REQUIREMENTS						
	enurious amission outside of the	authorized band is 20 dB down fi	om the fundamental			
RESULTS	Sparious chinosion outside of the	dunonized bund to 20 db down in	om the fundamental.			
Pass						
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
∆ntenn	a Conducted Spuri	ious Emissions 150	Hz - 25GHz -	Mid Channel	- 802 11(b) 1	11 Mbns



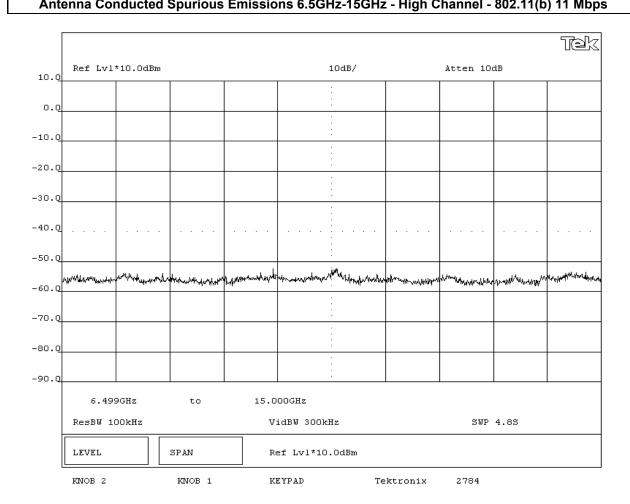
EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporate	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	is					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MO		- dulation - shows				
	t maximum data rate, 802.11(b) m	lodulation scheme				
DEVIATIONS FROM T None	EST STANDARD					
REQUIREMENTS						
	spurious emission outside of the	e authorized band is 20 dB down f	rom the fundamental			
RESULTS	oparious simosion sutoras or an		om the fundamental			
Pass						
SIGNATURE						
Tested By:	ADUK-P					
DESCRIPTION OF TE	ST					
Δnten	na Conducted Spu	rious Emissions 01	/Hz-3GHz - Н	igh Channel .	802 11(b) 11	Mbns



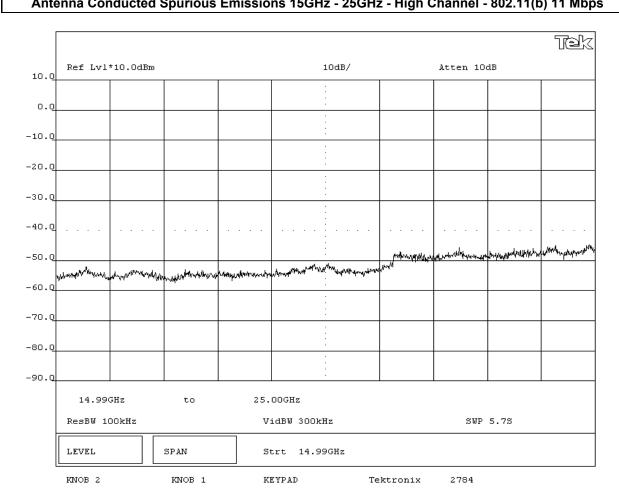
EMC		EET		Rev BETA 01/30/01		
	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corpora	tion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MO		and detine and area				
	t maximum data rate, 802.11(b) n	lodulation scheme				
DEVIATIONS FROM T None	EST STANDARD					
REQUIREMENTS						
	spurious emission outside of the	e authorized band is 20 dB down f	from the fundamental			
RESULTS	opanioae omiocien dateiae et al		Tom the familianion tall			
Pass						
SIGNATURE						
Tested By:	ADUK-P					
DESCRIPTION OF TES	ST					
∆ntenr	na Conducted Spur	ious Emissions 3G	Hz-6 5GHz - F	ligh Channel	- 802 11(b) 1	1 Mhns



EMC		EET		Rev BETA 01/30/01		
EUT:	802UIAG				Work Order:	ITRM0065
Serial Number:					Date:	03/10/05
Customer:	Intermec Technologies Corporat	ion			Temperature:	20°C
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
COMMENTS						
EUT OPERATING MOI						
-	t maximum data rate, 802.11(b) m	odulation scheme				
DEVIATIONS FROM T	EST STANDARD					
None						
REQUIREMENTS						
	spurious emission outside of the	e authorized band is 20 dB down fr	om the fundamental.			
RESULTS						
Pass						
SIGNATURE						
Tested By:	ADU.K.D					
DESCRIPTION OF TES	ST					
Antonn	a Conducted Spuri	oue Emissions 6 50	2H7-15GH7 - I	High Channo	1 - 802 11/h)	11 Mhne



EMC	E	EMISSIONS I	DATA SH	EET			Rev BETA 01/30/01
EUT:	802UIAG				Work Order	ITRM0065	
Serial Number:					Date:	03/10/05	
Customer:	Intermec Technologies Corporation			-	Temperature:	20°C	
Attendees:	None			Greg Kiemel	Humidity		
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATION							
Specification: SAMPLE CALCULATI	FCC Part 15.247(d)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003	
COMMENTS							
EUT OPERATING MO	DES						
Modulated by PRBS a	t maximum data rate, 802.11(b) modu	lation scheme					
DEVIATIONS FROM T	EST STANDARD						
None							
REQUIREMENTS							
	spurious emission outside of the aut	thorized band is 20 dB down fro	om the fundamental.				
RESULTS							
Pass							
SIGNATURE							
Tested By:	A Bu. K. P						
DESCRIPTION OF TE	ST						
Antonn	a Conducted Spurious	e Emissions 15G	Hz - 25GHz -	High Channe	I - 802 11(h)	11 Mb	ne





# **Power Spectral Density**

Revision 10/1/03

## **Justification**

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

Channels in Specified Band Investigated:	
Low	
Mid	
High	

## **Operating Modes Investigated:**

Continuous transmit

Data Rates Investigated:	
1 Mbps (802.11b)	
11 Mbps (802.11b)	
6 Mbps (802.11g)	
36 Mbps (802.11g)	
54 Mbps (802.11g)	

## **Output Power Setting(s) Investigated:**

Maximum default

## **Power Input Settings Investigated:**

120 VAC, 60 Hz.

Software\Firmware Applied During Test							
Exercise software	cTxRx Win CE	Version	0.1.2.1				
Description							
The system was tested us	ing special software devel	oped to test all functions of t	he device during the test.				

<b>EUT and Peripherals</b>			
Description	Manufacturer	Model/Part Number	Serial Number
EUT - 802UIAG	Intermec Technologies Corporation	802UIAG	None
Host Device	Intermec Technologies Corporation	CK61	33390400093
AC Power Adapter	Intermec Technologies Corporation	851-061-002	335174

## **Power Spectral Density**

Revision 10/1/03

Cables						
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2	
DC Leads	Yes	1.9	PA	AC Power Adapter	Host Device	
AC Power	No	2.0	No	AC Power Adapter	AC Mains	
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.						

Measurement Equipment						
Description	Manufacturer	Model	Identifier	Last Cal	Interval	
Spectrum Analyzer	Tektronix	2784	AAO	01/02/2005	12 mo	

#### **Test Description**

**Requirement**: Per 47 CFR 15.247(e), the peak power spectral density conducted from the antenna port of a direct sequence transmitter must not be greater than +8 dBm in any 3 kHz band during any time interval of continuous transmission.

**Configuration**: The peak power spectral density measurements were measured with the EUT set to low, mid, and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. Per the procedure outlined in FCC 97-114, the spectrum analyzer was used as follows:

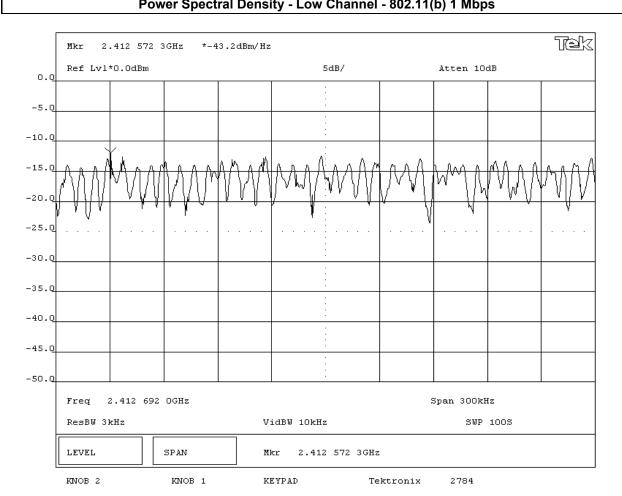
The emission peak(s) were located and zoom in on within the passband. The resolution bandwidth was set to 3 kHz, the video bandwidth was set to greater than or equal to the resolution bandwidth. The sweep speed was set equal to the span divided by 3 kHz (sweep = (SPAN/3 kHz)). For example, given a span of 1.5 MHz, the sweep should be  $1.5 \times 10^6 \div 3 \times 10^3 = 500$  seconds. External attenuation was used and added to the reading. The following FCC procedure was used for modifying the power spectral density measurements:

"If the spectrum line spacing cannot be resolved on the available spectrum analyzer, the noise density function on most modern conventional spectrum analyzers will directly measure the noise power density normalized to a 1 Hz noise power bandwidth. Add 34.8 dB for correction to 3 kHz."

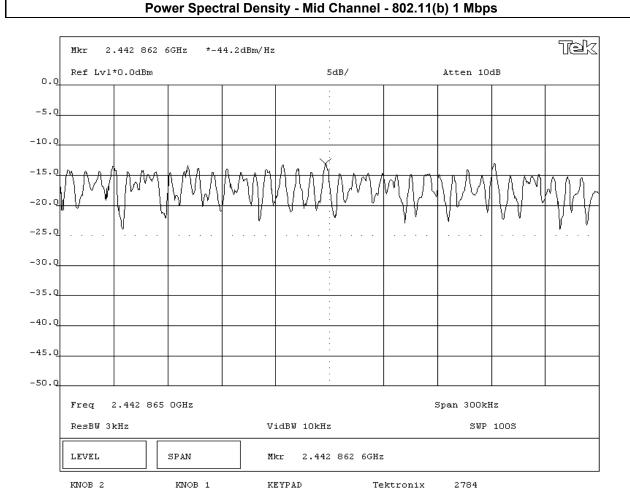
## Completed by:

1. K'\_

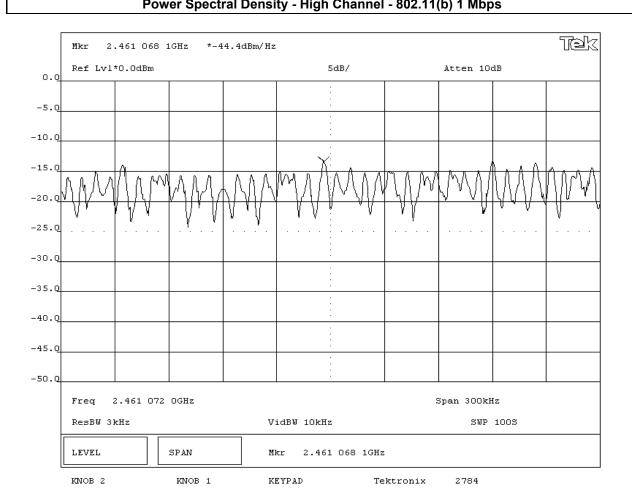
EMC		<b>EMISSIONS</b> I	DATA SH	EET		Rev BETA 01/30/01
	802UIAG				Work Order:	
Serial Number:						03/10/05
Customer:	Intermec Technologies Corporation	on			Temperature:	20°C
Attendees:			Tested by:	Greg Kiemel	Humidity:	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION	is					
Specification:	FCC Part 15.247(e)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
Meter reading on spec	trum analyzer is internally compe	nsated for cable loss and external	attenuation.			
Power Spectral Densit	ty per 3kHz bandwidth = Power Sp	ectral Density per 1 Hz bandwidth	+ Bandwidth Correction	on Factor.		
Bandwidth Correction	Factor = 10*log(3 kHz / 1 Hz) = 34.	.8 dB				
COMMENTS						
<b>EUT OPERATING MOD</b>	DES					
Modulated by PRBS a	t 1 Mbps data rate, 802.11(b) modu	ılation scheme				
<b>DEVIATIONS FROM T</b>	EST STANDARD					
None						
REQUIREMENTS						
	spectral density conducted from	a DSSS transmitter does not excee	ed 8 dBm in any 3 kHz	band		
RESULTS			Amplitude			
Pass			Power Spectral Densi	ty = -8.4 dBm / 3kHz		
SIGNATURE						
Tested By:	ABU.K.P					
DESCRIPTION OF TES	ST					
	Dowar Sn	octral Doneity - Loy	v Channol - 9	(02 44/b) 4 MI	ne	



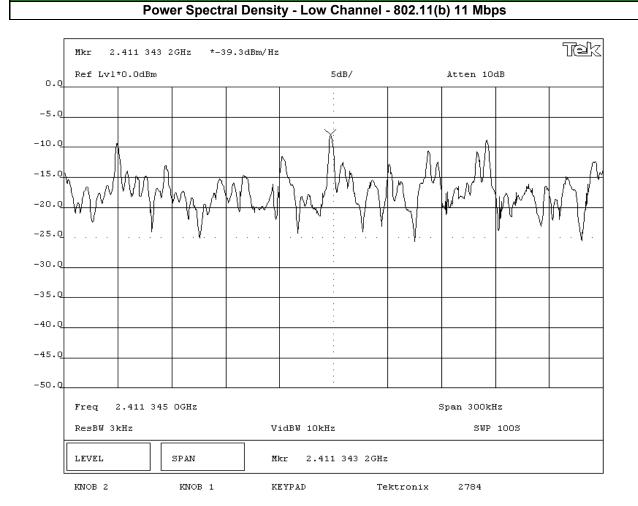
NORTHWEST		ENHAGIANA	- A - T A - O I I				
<b>EMC</b>		EMISSIONS I	JATA SH	EEI			Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065	
Serial Number:					Date:	03/10/05	
Customer:	Intermec Technologies Corporati	on			Temperature:	20°C	
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATION	IS						
Specification:	FCC Part 15.247(e)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003	
SAMPLE CALCULATION	ONS						
Meter reading on spec	trum analyzer is internally compe	ensated for cable loss and external	attenuation.				
Power Spectral Densi	ty per 3kHz bandwidth = Power Sp	ectral Density per 1 Hz bandwidth	+ Bandwidth Correction	on Factor.			
Bandwidth Correction	Factor = 10*log(3 kHz / 1 Hz) = 34	.8 dB					
COMMENTS							
<b>EUT OPERATING MOI</b>	DES						
Modulated by PRBS a	t 1 Mbps data rate, 802.11(b) modu	ulation scheme					
<b>DEVIATIONS FROM T</b>	EST STANDARD						
None							
REQUIREMENTS							
Maximum peak power	spectral density conducted from	a DSSS transmitter does not exce	ed 8 dBm in any 3 kHz	band			
RESULTS			Amplitude				
Pass			Power Spectral Densi	ty = -9.4 dBm / 3kHz			
SIGNATURE							
Tested By:	ABU.K.P						
DESCRIPTION OF TES	ST	<u>'</u>					
I		4 1 5 14 541					



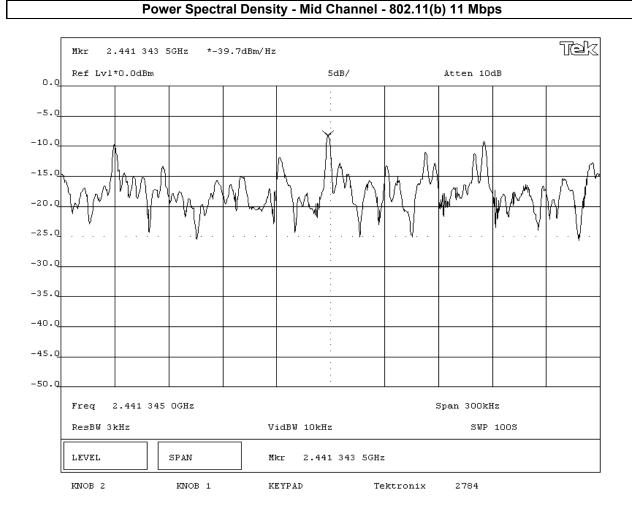
EMC		<b>EMISSIONS</b> I	DATA SH	EET		Rev BETA
	802UIAG				Work Order:	01/30/01 ITRM0065
Serial Number:	00201AG					03/10/05
	Intermec Technologies Corporation	on .			Temperature:	
Attendees:		···	Tested by:	Greg Kiemel	Humidity:	
Customer Ref. No.:				120VAC/60Hz	Job Site:	
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(e)	Year: 2004	Method:	FCC 97-114, ANSI C63	4 Year:	2003
SAMPLE CALCULATION	· · · · · · · · · · · · · · · · · · ·			, ,		
Meter reading on spec	trum analyzer is internally comper	nsated for cable loss and external	attenuation.			
Power Spectral Densit	ty per 3kHz bandwidth = Power Spo	ectral Density per 1 Hz bandwidth	+ Bandwidth Correction	on Factor.		
Bandwidth Correction	Factor = 10*log(3 kHz / 1 Hz) = 34.	8 dB				
COMMENTS						
<b>EUT OPERATING MOD</b>	DES					
Modulated by PRBS a	t 1 Mbps data rate, 802.11(b) modu	lation scheme				
<b>DEVIATIONS FROM T</b>	EST STANDARD					
None						
REQUIREMENTS						
Maximum peak power	spectral density conducted from a	DSSS transmitter does not excee	ed 8 dBm in any 3 kHz	band		
RESULTS			Amplitude			
Pass			Power Spectral Densi	ty = -9.6 dBm / 3kHz		
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
	Dower Sne	octral Doneity - High	h Channal - 9	202 44/b) 4 MI	hne	



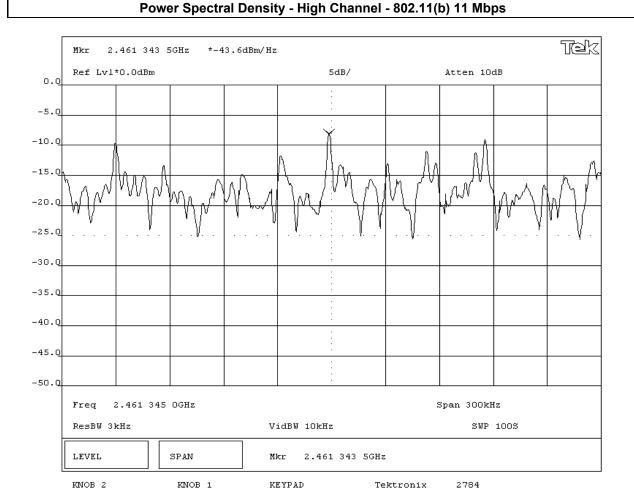
NORTHWEST		EMICOLONIC	SATA OIL				
<b>EMC</b>		<b>EMISSIONS</b> I	JATA SH	EEI			Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065	
Serial Number:					Date:	03/10/05	
Customer:	Intermec Technologies Corporati	ion			Temperature:	20°C	
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATION	s						
Specification:	FCC Part 15.247(e)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003	
SAMPLE CALCULATION	ONS						
Meter reading on spec	trum analyzer is internally compe	ensated for cable loss and external	attenuation.				
Power Spectral Densit	ty per 3kHz bandwidth = Power Sp	pectral Density per 1 Hz bandwidth	+ Bandwidth Correction	on Factor.			
<b>Bandwidth Correction</b>	Factor = 10*log(3 kHz / 1 Hz) = 34	.8 dB					
COMMENTS							
<b>EUT OPERATING MOD</b>	DES						
Modulated by PRBS a	t maximum data rate, 802.11(b) mo	odulation scheme					
<b>DEVIATIONS FROM T</b>	EST STANDARD						
None							
REQUIREMENTS							
Maximum peak power	spectral density conducted from	a DSSS transmitter does not exce	ed 8 dBm in any 3 kHz	band			
RESULTS			Amplitude				
Pass			Power Spectral Densi	ty = -4.5 dBm / 3kHz			
SIGNATURE							
Tested By:	ADU.K.P						
DESCRIPTION OF TES	ST .						



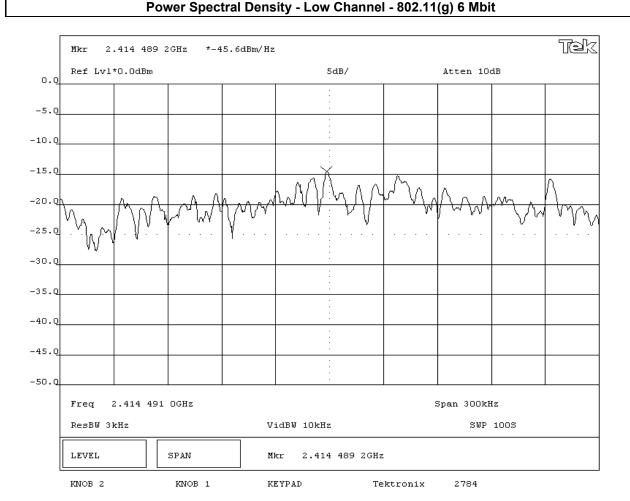
NORTHWEST		EMICOLONIC	SATA OLI				
<b>EMC</b>		<b>EMISSIONS</b> I	JATA SH	EEI		Rev BE 01/30/0	
EUT:	802UIAG				Work Order:	ITRM0065	
Serial Number:					Date:	03/10/05	
Customer:	Intermec Technologies Corporati	ion			Temperature:	20°C	
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATION	IS						
Specification:	FCC Part 15.247(e)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003	
SAMPLE CALCULATION	ONS						
Meter reading on spec	trum analyzer is internally compe	ensated for cable loss and external	attenuation.				
Power Spectral Densit	ty per 3kHz bandwidth = Power Sp	pectral Density per 1 Hz bandwidth	+ Bandwidth Correction	on Factor.			
Bandwidth Correction	Factor = 10*log(3 kHz / 1 Hz) = 34	.8 dB					
COMMENTS							
<b>EUT OPERATING MOD</b>	DES						
Modulated by PRBS a	t maximum data rate, 802.11(b) mo	odulation scheme					
<b>DEVIATIONS FROM T</b>	EST STANDARD						
None							
REQUIREMENTS							
Maximum peak power	spectral density conducted from	a DSSS transmitter does not exce	ed 8 dBm in any 3 kHz	band			
RESULTS			Amplitude				
Pass			Power Spectral Densi	ty = -4.9 dBm / 3kHz			
SIGNATURE							
Tested By:	ABU.K.P						
DESCRIPTION OF TES	ST				_		



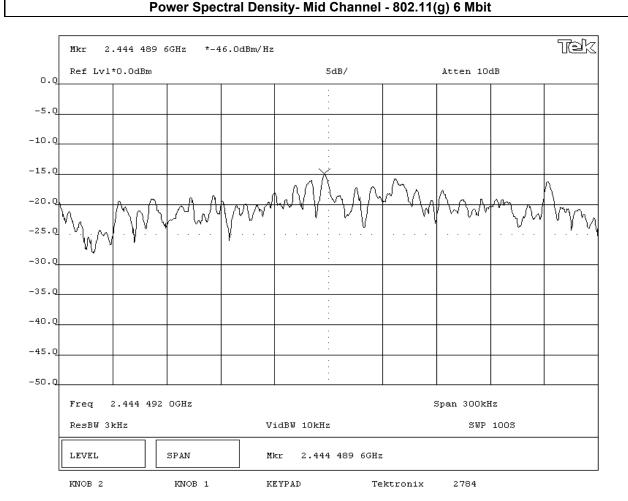
NORTHWEST		ENHAGIANA	- A - T A - O I I				
<b>EMC</b>		EMISSIONS I	JATA SH	EEI			Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065	
Serial Number:					Date:	03/10/05	
Customer:	Intermec Technologies Corporati	on			Temperature:	20°C	
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATION	IS						
Specification:	FCC Part 15.247(e)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003	
SAMPLE CALCULATION	ONS						
Meter reading on spec	trum analyzer is internally compe	ensated for cable loss and external	attenuation.				
Power Spectral Densi	ty per 3kHz bandwidth = Power Sp	ectral Density per 1 Hz bandwidth	+ Bandwidth Correction	on Factor.			
<b>Bandwidth Correction</b>	Factor = 10*log(3 kHz / 1 Hz) = 34	.8 dB					
COMMENTS							
<b>EUT OPERATING MOI</b>	DES						
Modulated by PRBS a	t maximum data rate, 802.11(b) mo	odulation scheme					
<b>DEVIATIONS FROM T</b>	EST STANDARD						
None							
REQUIREMENTS							
Maximum peak power	spectral density conducted from	a DSSS transmitter does not exce	ed 8 dBm in any 3 kHz	band			
RESULTS			Amplitude				
Pass			Power Spectral Densi	ty = -8.8 dBm / 3kHz			
SIGNATURE							
Tested By:	ABU.K.P						
DESCRIPTION OF TES	ST						
1		4 1 15 14 111 1	<b>~</b> ! ! ~	00 44/1 \ 44 8/			



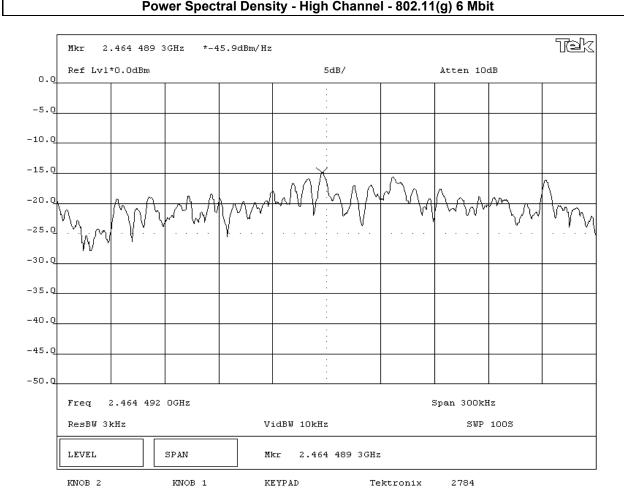
EMC		EMISSIONS [	DATA SH	EET		Rev BETA
	802UIAG				Work Order:	01/30/01 ITPM0065
Serial Number:	00201AG					03/10/05
	Intermec Technologies Corporation				Temperature:	
Attendees:			Tested by:	Greg Kiemel	Humidity:	
Customer Ref. No.:				120VAC/60Hz	Job Site:	
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(e)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS			· · · · · · · · · · · · · · · · · · ·		
Meter reading on spec	trum analyzer is internally compens	sated for cable loss and external	attenuation.			
Power Spectral Densi	ty per 3kHz bandwidth = Power Spec	tral Density per 1 Hz bandwidth	+ Bandwidth Correction	on Factor.		
Bandwidth Correction	Factor = 10*log(3 kHz / 1 Hz) = 34.8	dB				
COMMENTS						
<b>EUT OPERATING MOI</b>	DES					
Modulated by PRBS a	t 6 Mbps data rate, 802.11(g) modula	ition scheme.				
<b>DEVIATIONS FROM T</b>	EST STANDARD					
None						
REQUIREMENTS						
Maximum peak power	spectral density conducted from a I	DSSS transmitter does not excee	ed 8 dBm in any 3 kHz	band		
RESULTS			Amplitude			
Pass			Power Spectral Densi	ty = -10.8 dBm / 3kHz		
SIGNATURE						
Tested By:	ARU.K.P					
DESCRIPTION OF TES	ST					
i e	Dawas Coa	satual Danaits, I as	Chamal	000 44/~\ C N/	L :4	



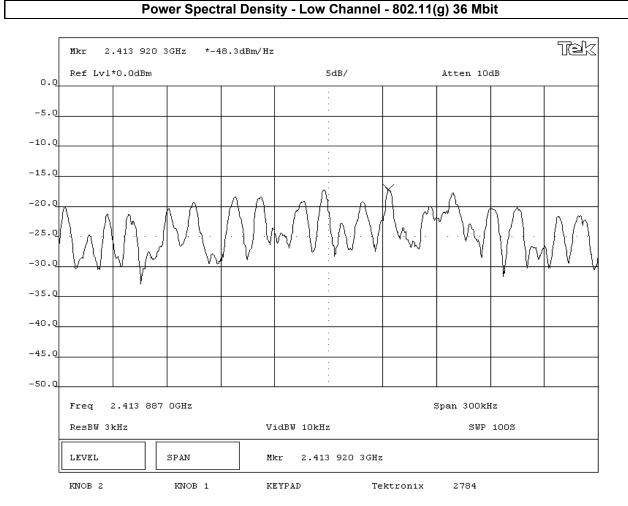
EMC	E	MISSIONS [	DATA SH	EET		Rev BETA 01/30/01
	802UIAG				Work Order:	
Serial Number:	00201740					03/10/05
	Intermec Technologies Corporation				Temperature:	
Attendees:			Tested by:	Greg Kiemel	Humidity:	
Customer Ref. No.:				120VAC/60Hz	Job Site:	
TEST SPECIFICATION	IS					
Specification:	FCC Part 15.247(e)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	ONS					
Meter reading on spec	trum analyzer is internally compensate	ed for cable loss and external	attenuation.			
Power Spectral Densi	ty per 3kHz bandwidth = Power Spectra	al Density per 1 Hz bandwidth	+ Bandwidth Correction	on Factor.		
Bandwidth Correction	Factor = 10*log(3 kHz / 1 Hz) = 34.8 dB					
COMMENTS						
<b>EUT OPERATING MOI</b>	DES					
Modulated by PRBS a	t 6 Mbps data rate, 802.11(g) modulatio	n scheme.				
<b>DEVIATIONS FROM T</b>	EST STANDARD					
None						
REQUIREMENTS						
Maximum peak power	spectral density conducted from a DS	SS transmitter does not excee	ed 8 dBm in any 3 kHz	band		
RESULTS			Amplitude			
Pass			Power Spectral Densi	ty = -11.2 dBm / 3kHz		
SIGNATURE						
Tested By:	ADU.K.P					
DESCRIPTION OF TES	ST					
i e	Dawer Coa	atual Danaitur Mir	d Chambal (	000 44/m\ C MI	_!4	



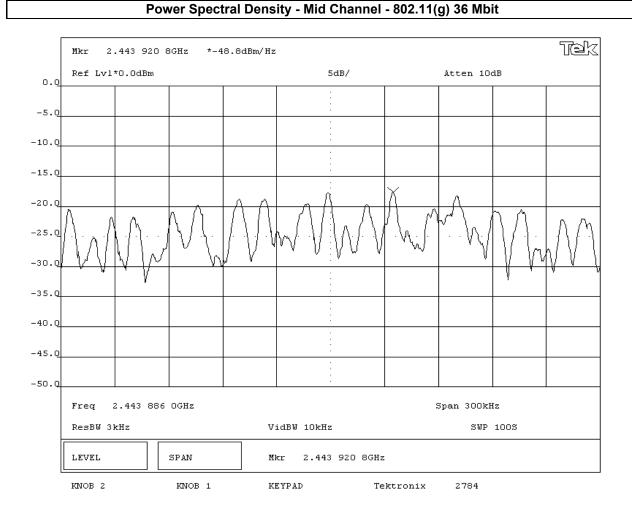
NORTHWEST		MICCICNIC	SATA OIL				
<b>EMC</b>	E	MISSIONS [	JATA SH	EEI			Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065	
Serial Number:					Date:	03/10/05	
Customer:	Intermec Technologies Corporation				Temperature:	20°C	
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATION	IS						
Specification:	FCC Part 15.247(e)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003	
SAMPLE CALCULATION	ONS						
Meter reading on spec	trum analyzer is internally compensate	d for cable loss and external	attenuation.				
Power Spectral Densi	ty per 3kHz bandwidth = Power Spectral	Density per 1 Hz bandwidth	+ Bandwidth Correction	on Factor.			
<b>Bandwidth Correction</b>	Factor = 10*log(3 kHz / 1 Hz) = 34.8 dB						
COMMENTS							
<b>EUT OPERATING MOI</b>	DES						
Modulated by PRBS a	t 6 Mbps data rate, 802.11(g) modulation	n scheme.					
<b>DEVIATIONS FROM T</b>	EST STANDARD						
None							
REQUIREMENTS							
Maximum peak power	spectral density conducted from a DSS	SS transmitter does not excee	ed 8 dBm in any 3 kHz	band			
RESULTS			Amplitude				
Pass			Power Spectral Densi	ty = -11.1 dBm / 3kHz			
SIGNATURE							
Tested By:	ADU.K.P						
DESCRIPTION OF TES							
	Dower Charl	tral Danaity Lie	h Channal	002 44/a\ 6 N	lhi#		



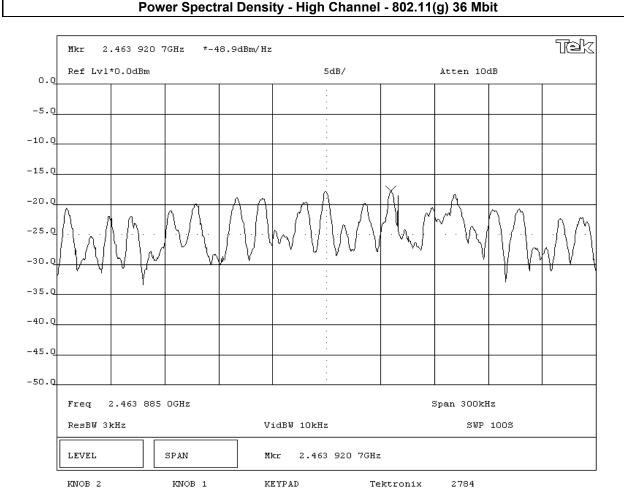
NORTHWEST		EMICOLONIC	DATA OIL				
<b>EMC</b>		<b>EMISSIONS I</b>	DATA SH	EEI		Rev BET 01/30/01	
EUT:	802UIAG				Work Order:	ITRM0065	
Serial Number:					Date:	03/10/05	
Customer:	Intermec Technologies Corporati	on			Temperature:	20°C	
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATION	IS						
Specification:	FCC Part 15.247(e)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003	
SAMPLE CALCULATION	ONS						
Meter reading on spec	trum analyzer is internally compe	ensated for cable loss and external	l attenuation.				
Power Spectral Densit	ty per 3kHz bandwidth = Power Sp	ectral Density per 1 Hz bandwidth	+ Bandwidth Correction	on Factor.			
Bandwidth Correction	Factor = 10*log(3 kHz / 1 Hz) = 34	.8 dB					
COMMENTS							
<b>EUT OPERATING MOD</b>	DES						
Modulated by PRBS a	t 36 Mbps data rate, 802.11(g) mod	dulation scheme.					
<b>DEVIATIONS FROM T</b>	EST STANDARD						
None							
REQUIREMENTS							
Maximum peak power	spectral density conducted from	a DSSS transmitter does not exce	ed 8 dBm in any 3 kHz	band			
RESULTS			Amplitude				
Pass			Power Spectral Densi	ty = -13.5 dBm / 3kHz			
SIGNATURE							
Tested By:	ABU.K.P						
DESCRIPTION OF TES	ST						



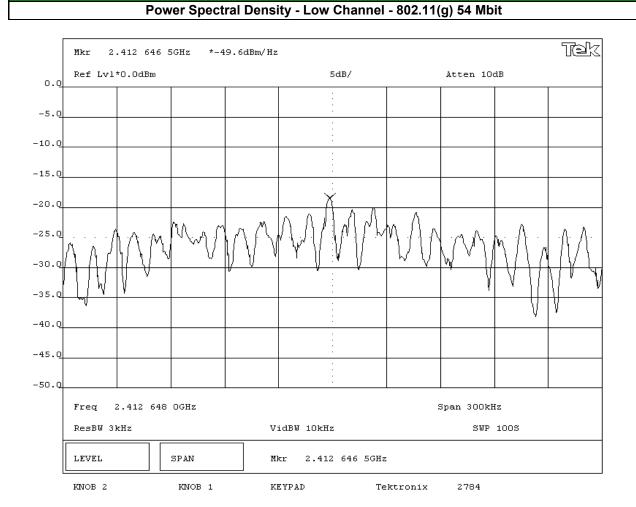
NORTHWEST		EMICOLONIC	SATA OLI				
<b>EMC</b>		<b>EMISSIONS</b> I	JATA SH	EEI		Rev BET/ 01/30/01	A
EUT:	802UIAG				Work Order:	ITRM0065	
Serial Number:					Date:	03/10/05	
Customer:	Intermec Technologies Corporati	ion			Temperature:	20°C	
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATION	IS						
Specification:	FCC Part 15.247(e)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003	
SAMPLE CALCULATION	ONS						
Meter reading on spec	trum analyzer is internally compe	ensated for cable loss and external	attenuation.				
Power Spectral Densit	ty per 3kHz bandwidth = Power Sp	pectral Density per 1 Hz bandwidth	+ Bandwidth Correction	on Factor.			
Bandwidth Correction	Factor = 10*log(3 kHz / 1 Hz) = 34	.8 dB					
COMMENTS							
<b>EUT OPERATING MOD</b>	DES						
Modulated by PRBS a	t 36 Mbps data rate, 802.11(g) mod	dulation scheme.					
<b>DEVIATIONS FROM T</b>	EST STANDARD						
None							
REQUIREMENTS							
Maximum peak power	spectral density conducted from	a DSSS transmitter does not exce	ed 8 dBm in any 3 kHz	band			
RESULTS			Amplitude				
Pass			Power Spectral Densi	ty = -14.0 dBm / 3kHz			
SIGNATURE							
Tested By:	ABU.K.P						
DESCRIPTION OF TES	ST						



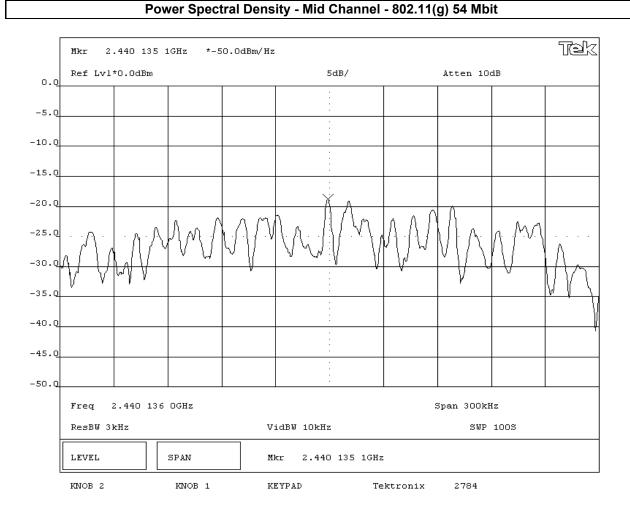
EMC		<b>EMISSIONS</b>	DATA SH	EET		Rev BETA
						01/30/01
	802UIAG				Work Order:	
Serial Number:						03/10/05
	Intermec Technologies Corporation	1		I	Temperature:	
Attendees:	None			Greg Kiemel	Humidity:	
Customer Ref. No.:	10		Power:	120VAC/60Hz	Job Site:	EV06
TEST SPECIFICATION		V 0004		E00.07.444.4N01.000		2000
	FCC Part 15.247(e)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003
SAMPLE CALCULATION	<u> </u>		-44			
	ctrum analyzer is internally compens			F4		
-	ty per 3kHz bandwidth = Power Spec	• •	+ Bandwidth Correction	on Factor.		
	Factor = 10*log(3 kHz / 1 Hz) = 34.8	ав				
COMMENTS						
EUT OPERATING MOI	DEC					
	t 36 Mbps data rate, 802.11(g) modu	lation scheme				
DEVIATIONS FROM T		lation scheme.				
None	EST STANDARD					
REQUIREMENTS						
	spectral density conducted from a	DSSS transmitter does not excee	ed 8 dBm in any 3 kHz	hand		
RESULTS	opecara denotify conducted from a		Amplitude	Dalla		
Pass			Power Spectral Densi	tv = -14.1 dRm / 3kHz		
SIGNATURE			Tower opecarai Bensi	ty = -14.1 dBill / Oki 12		
Tested By:	ADU.K.P					
DESCRIPTION OF TES						
1	Dannay Coa	atual Danathe I Ital	h	200 44/~\ 20 B	A La : 4	



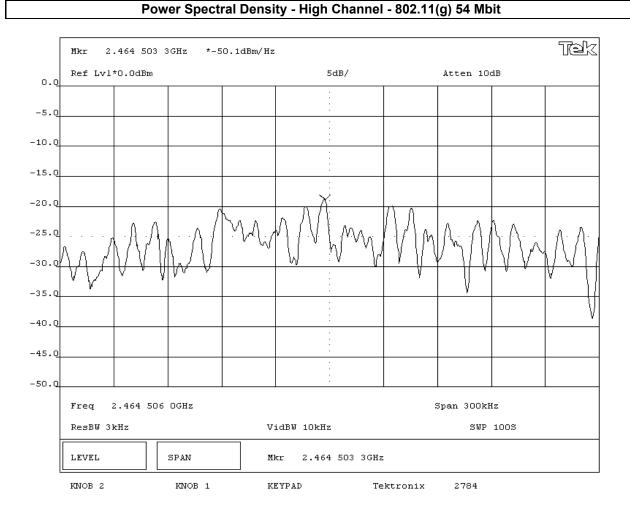
NORTHWEST		EMICOLONIC	SATA OIL				
<b>EMC</b>		<b>EMISSIONS</b> I	JATA SH	EEI			Rev BETA 01/30/01
EUT:	802UIAG				Work Order:	ITRM0065	
Serial Number:					Date:	03/10/05	
Customer:	Intermec Technologies Corporati	ion			Temperature:	20°C	
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATION	s						
Specification:	FCC Part 15.247(e)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003	
SAMPLE CALCULATION	ONS						
Meter reading on spec	trum analyzer is internally compe	ensated for cable loss and external	attenuation.				
Power Spectral Densit	ty per 3kHz bandwidth = Power Sp	pectral Density per 1 Hz bandwidth	+ Bandwidth Correction	on Factor.			
<b>Bandwidth Correction</b>	Factor = 10*log(3 kHz / 1 Hz) = 34	.8 dB					
COMMENTS							
<b>EUT OPERATING MOD</b>	DES						
Modulated by PRBS a	t indicated data rate, 802.11(g) mo	dulation scheme.					
<b>DEVIATIONS FROM T</b>	EST STANDARD						
None							
REQUIREMENTS							
Maximum peak power	spectral density conducted from	a DSSS transmitter does not exce	ed 8 dBm in any 3 kHz	band			
RESULTS			Amplitude				
Pass			Power Spectral Densi	ty = -14.8 dBm / 3kHz			
SIGNATURE							
Tested By:	ADU.K.P						
DESCRIPTION OF TES	ST .						



NORTHWEST		EMICOLONIC	SATA OLI				
<b>EMC</b>		<b>EMISSIONS</b> I	JATA SH	EEI		Rev BETA 01/30/01	٨
EUT:	802UIAG				Work Order:	ITRM0065	
Serial Number:					Date:	03/10/05	
Customer:	Intermec Technologies Corporati	ion			Temperature:	20°C	
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATION	IS						
Specification:	FCC Part 15.247(e)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003	
SAMPLE CALCULATION	ONS						
Meter reading on spec	trum analyzer is internally compe	ensated for cable loss and external	attenuation.				
Power Spectral Densit	ty per 3kHz bandwidth = Power Sp	pectral Density per 1 Hz bandwidth	+ Bandwidth Correction	on Factor.			
Bandwidth Correction	Factor = 10*log(3 kHz / 1 Hz) = 34	.8 dB					
COMMENTS							
<b>EUT OPERATING MOD</b>	DES						
Modulated by PRBS a	t indicated data rate, 802.11(g) mo	dulation scheme.					
<b>DEVIATIONS FROM T</b>	EST STANDARD						
None							
REQUIREMENTS							
Maximum peak power	spectral density conducted from	a DSSS transmitter does not exce	ed 8 dBm in any 3 kHz	band			
RESULTS			Amplitude				
Pass			Power Spectral Densi	ty = -15.2 dBm / 3kHz			
SIGNATURE							
Tested By:	ABU.K.P						
DESCRIPTION OF TES	ST						



NORTHWEST		EMICOLONIC	SATA OLI				
<b>EMC</b>		<b>EMISSIONS</b> I	JATA SH	EEI		Rev BET. 01/30/01	
EUT:	802UIAG				Work Order:	ITRM0065	
Serial Number:					Date:	03/10/05	
Customer:	Intermec Technologies Corporati	ion			Temperature:	20°C	
Attendees:	None		Tested by:	Greg Kiemel	Humidity:	42% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATION	IS						
Specification:	FCC Part 15.247(e)	Year: 2004	Method:	FCC 97-114, ANSI C63	.4 Year:	2003	
SAMPLE CALCULATION	ONS						
Meter reading on spec	trum analyzer is internally compe	ensated for cable loss and external	attenuation.				
Power Spectral Densit	ty per 3kHz bandwidth = Power Sp	pectral Density per 1 Hz bandwidth	+ Bandwidth Correction	on Factor.			
Bandwidth Correction	Factor = 10*log(3 kHz / 1 Hz) = 34	.8 dB					
COMMENTS							
<b>EUT OPERATING MOD</b>	DES						
Modulated by PRBS a	t indicated data rate, 802.11(g) mo	dulation scheme.					
<b>DEVIATIONS FROM T</b>	EST STANDARD						
None							
REQUIREMENTS							
Maximum peak power	spectral density conducted from	a DSSS transmitter does not exce	ed 8 dBm in any 3 kHz	band			
RESULTS			Amplitude				
Pass			Power Spectral Densi	ty = -15.3 dBm / 3kHz			
SIGNATURE							
Tested By:	ABU.K.P						
DESCRIPTION OF TES	ST						





# **Spurious Radiated Emissions**

Revision 10/1/03

## **Justification**

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

Channels in Specified Band Investigated:
Low
Mid
High

## **Operating Modes Investigated:**

Continuous transmit in a collocated configuration

Data Rates Investigated:	
1 Mbps (802.11b)	
6 Mbps (802.11g)	
Bluetooth default	

## **Output Power Setting(s) Investigated:**

Maximum default

## **Power Input Settings Investigated:**

120 VAC, 60 Hz.

Frequency Range Invest	gated		
Start Frequency	30 MHz	Stop Frequency	25 GHz

Software\Firmware Applied During Test								
Exercise software	cTxRx Win CE	Version	0.1.2.1					
	CSR Bluetest		Unknown					
Description								
The system was tested us	sing special software develo	oned to test all functions of t	he device during the test					

Revision 10/1/03

EUT and Peripherals											
Description	Manufacturer	Model/Part Number	Serial Number								
EUT - 802UIAG	Intermec Technologies Corporation	802UIAG	Unknown								
Host Device	Intermec Technologies Corporation	CK61	33390400093								
Bluetooth enabled printer	Intermec Technologies Corporation	PB42	SAC001								
AC Power Adapter	Intermec Technologies Corporation	073573-003	6079450								
AC Power Adapter	Intermec Technologies Corporation	851-061-002	038962								

Cables									
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2				
DC Leads	Yes	1.9	PA	AC Power Adapter	Host Device				
AC Power	No	2.0	No	AC Power Adapter	AC Mains				
DC Leads	No	1.8	Yes	Bluetooth enabled printer	AC Power Adapter				
AC Power	No	2.0	No	Bluetooth enabled printer	AC Mains				
PA = Cable is p	PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.								

Measurement Equip	Measurement Equipment										
Description	Manufacturer	Model	Identifier	Last Cal	Interval						
Spectrum Analyzer	Hewlett-Packard	8566B	AAL	12/02/2004	13 mo						
Pre-Amplifier	Miteq	AMF-4D-005180-24-10P	APJ	01/05/2004	16 mo						
Antenna, Horn	EMCO	3115	AHC	09/07/2004	12 mo						
Pre-Amplifier	Miteq	AMF-4D-005180-24-10P	APC	02/17/2005	13 mo						
Antenna, Horn	EMCO	3160-09	AHG	NCR	NA						
Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	02/15/2005	13 mo						
Spectrum Analyzer	Tektronix	2784	AAO	01/02/2005	12 mo						
Attenuator	Coaxicom	66702 5910-20	RBJ	02/25/2005	13 mo						
High Pass Filter	Micro-Tronics	HPM50111	HFO	03/09/2005	13 mo						

#### **Test Description**

**Requirement:** The field strength of any spurious emissions or modulation products that fall in a restricted band, as defined in 47 CFR 15.205, is measured. The peak level must comply with the limits specified in 47 CFR 15.35(b). The average level (taken with a 10Hz VBW) must comply with the limits specified in 15.209.

**Configuration**: 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 EUT antenna in three orthogonal axis, and adjusting the measurement antenna height and polarization (per ANSI C63.4:1992). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

# **Spurious Radiated Emissions**

Revision 10/1/03

Bandwidths Used for Mea	asurements							
Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (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.								

Rocky be Relenge

## ACQ 2005.1.0 EMI A2.10 **RADIATED EMISSIONS DATA SHEET EMC** EUT: 802UIAG Work Order: ITRM0065 Serial Number: Date: 03/07/05 Customer: Intermec Technologies Corporation Attendees: None Temperature: 23 Humidity: 39% Cust. Ref. No.: Tested by: Holly Ashkannejhad TEST SPECIFICATIONS Barometric Pressure 30.22 Job Site: EV01 Power: 120VAC, 60Hz Specification: FCC 15.247(d) Spurious Radiated Emissions:2004 Method: ANSI C63.4:2003 SAMPLE CALCULATIONS Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation EUT OPERATING MODES DEVIATIONS FROM TEST STANDARD RESULTS Pass Holy Aligh 80.0 70.0 60.0 50.0 dBuV/m 40.0 30.0 20.0 10.0 0.0

 $19290.000 \quad 19291.000 \quad 19292.000 \quad 19293.000 \quad 19294.000 \quad 19295.000 \quad 19296.000 \quad 19297.000 \quad 19298.000 \quad 19299.000 \quad 19300.000 \quad 19299.000 \quad 1929$ MHz

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						External			Distance			Compared to	ĺ
Freq	Amplitude	Factor	Azimuth	Height	Distance	Attenuation	Polarity	Detector	Adjustment	Adjusted	Spec. Limit	Spec.	
(MHz)	(dBuV)	(dB)	(degrees)	(meters)	(meters)	(dB)			(dB)	dBuV/m	dBuV/m	(dB)	Comments
19296.060	33.2	8.0	22.0	1.1	3.0	0.0	H-High Horr	AV	0.0	41.2	54.0	-12.8	802.11(g) 6Mbps
19296.060	32.9	8.0	100.0	1.0	3.0	0.0	V-High Horr	AV	0.0	40.9	54.0	-13.1	802.11(g) 36Mbps
19296.060	32.9	8.0	356.0	1.1	3.0	0.0	H-High Horr	AV	0.0	40.9	54.0	-13.1	802.11(g) 36Mbps
19296.060	32.2	8.0	291.0	1.0	3.0	0.0	V-High Horr	AV	0.0	40.2	54.0	-13.8	802.11(g) 6Mbps
19296.060	30.2	8.0	17.0	1.1	3.0	0.0	H-High Horr	AV	0.0	38.2	54.0	-15.8	802.11(g) 54Mbps
19296.060	30.1	8.0	97.0	1.1	3.0	0.0	V-High Horr	AV	0.0	38.1	54.0	-15.9	802.11(g) 54Mbps
19296.060	28.9	8.0	226.0	1.1	3.0	0.0	H-High Horr	AV	0.0	36.9	54.0	-17.1	802.11(b) 11Mbps
19296.060	28.8	8.0	67.0	1.1	3.0	0.0	1-High Horr	AV	0.0	36.8	54.0	-17.2	802.11(b) 1Mbps
19296.060	28.8	8.0	116.0	1.1	3.0	0.0	√-High Horr	AV	0.0	36.8	54.0	-17.2	802.11(b) 1Mbps
19296.060	28.2	8.0	95.0	1.1	3.0	0.0	√-High Horr	AV	0.0	36.2	54.0	-17.8	802.11(b) 11Mbps
19296.060	41.0	8.0	22.0	1.1	3.0	0.0	H-High Horr	PK	0.0	49.0	74.0	-25.0	802.11(g) 6Mbps
19296.060	40.1	8.0	356.0	1.1	3.0	0.0	H-High Horr	PK	0.0	48.1	74.0	-25.9	802.11(g) 36Mbps
19296.060	40.0	8.0	17.0	1.1	3.0	0.0	H-High Horr	PK	0.0	48.0	74.0	-26.0	802.11(g) 54Mbps
19296.060	39.8	8.0	100.0	1.0	3.0	0.0	V-High Horr	PK	0.0	47.8	74.0	-26.2	802.11(g) 36Mbps
19296.060	39.7	8.0	97.0	1.1	3.0	0.0	V-High Horr	PK	0.0	47.7	74.0	-26.3	802.11(g) 54Mbps
19296.060	39.6	8.0	291.0	1.0	3.0	0.0	V-High Horr	PK	0.0	47.6	74.0	-26.4	802.11(g) 6Mbps
19296.060	39.2	8.0	226.0	1.1	3.0	0.0	H-High Horr	PK	0.0	47.2	74.0	-26.8	802.11(b) 11Mbps
19296.060	39.0	8.0	67.0	1.1	3.0	0.0	H-High Horr	PK	0.0	47.0	74.0	-27.0	802.11(b) 1Mbps
19296.060	39.0	8.0	95.0	1.1	3.0	0.0	√-High Horr	PK	0.0	47.0	74.0	-27.0	802.11(b) 11Mbps
19296.060	38.5	8.0	116.0	1.1	3.0	0.0	√-High Horr	PK	0.0	46.5	74.0	-27.5	802.11(b) 1Mbps

## ACQ 2005.1.0 EMI A2.10 **RADIATED EMISSIONS DATA SHEET EMC** EUT: 802UIAG Work Order: ITRM0065 Serial Number: Date: 03/07/05 Customer: Intermec Technologies Corporation Attendees: None Temperature: 23 Humidity: 39% Cust. Ref. No.: Tested by: Holly Ashkannejhad TEST SPECIFICATIONS Barometric Pressure 30.22 Job Site: EV01 Power: 120VAC, 60Hz Specification: FCC 15.247(d) Spurious Radiated Emissions:2004 Method: ANSI C63.4:2003 SAMPLE CALCULATIONS Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation EUT OPERATING MODES DEVIATIONS FROM TEST STANDARD RESULTS Pass Holy Solingho 80.0 70.0 60.0 50.0 dBuV/m 40.0 30.0 20.0 10.0 0.0 $19500.000 \quad 19510.000 \quad 19520.000 \quad 19530.000 \quad 19540.000 \quad 19550.000 \quad 19560.000 \quad 19570.000 \quad 19580.000 \quad 19590.000 \quad 19600.000 \quad 19590.000 \quad 1959$ MHz

						External			Distance			Compared to	
Freq	Amplitude	Factor	Azimuth	Height	Distance	Attenuation	Polarity	Detector	Adjustment	Adjusted	Spec. Limit	Spec.	
(MHz)	(dBuV)	(dB)	(degrees)	(meters)	(meters)	(dB)			(dB)	dBuV/m	dBuV/m	(dB)	Comments
19536.090	30.8	8.4	177.0	1.0	3.0	0.0	√-High Horr	AV	0.0	39.2	54.0	-14.8	802.11(g) 6Mbps
19536.090	30.5	8.4	264.0	1.1	3.0	0.0	√-High Horr	AV	0.0	38.9	54.0	-15.1	802.11(b) 11Mbps
19536.090	29.8	8.4	77.0	1.1	3.0	0.0	H-High Horr	AV	0.0	38.2	54.0	-15.8	802.11(b) 11Mbps
19536.090	29.7	8.4	266.0	1.1	3.0	0.0	H-High Horr	AV	0.0	38.1	54.0	-15.9	802.11(g) 6Mbps
19536.090	39.8	8.4	177.0	1.0	3.0	0.0	V-High Horr	PK	0.0	48.2	74.0	-25.8	802.11(g) 6Mbps
19536.090	39.1	8.4	266.0	1.1	3.0	0.0	H-High Horr	PK	0.0	47.5	74.0	-26.5	802.11(g) 6Mbps
19536.090	39.0	8.4	264.0	1.1	3.0	0.0	√-High Horr	PK	0.0	47.4	74.0	-26.6	802.11(b) 11Mbps
19536.090	38.5	8.4	77.0	1.1	3.0	0.0	H-High Horr	PK	0.0	46.9	74.0	-27.1	802.11(b) 11Mbps

#### **RADIATED EMISSIONS DATA SHEET** EMI A2.1 **EMC** EUT: 802UIAG Work Order: ITRM0065 Serial Number: Date: 03/07/05 Customer: Intermec Technologies Corporation Attendees: None Temperature: 23 Humidity: 39% Barometric Pressure 30.22 Tested by: Holly Ashkannejhad TEST SPECIFICATIONS Power: 120VAC, 60Hz Job Site: EV01 Specification: FCC 15.247(d) Spurious Radiated Emissions:2004 Method: ANSI C63.4:2003 SAMPLE CALCULATIONS Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation EUT OPERATING MODES DEVIATIONS FROM TEST STANDARD RESULTS Pass Holy Stight 80.0 70.0 60.0 50.0 dBuV/m 40.0 30.0 20.0 10.0 0.0 $19600.000 \quad 19610.000 \quad 19620.000 \quad 19630.000 \quad 19640.000 \quad 19650.000 \quad 19660.000 \quad 19670.000 \quad 19680.000 \quad 19690.000 \quad 19700.000 \quad 19690.000 \quad 1969$ MHz Amplitude Factor Azimuth Height Polarity Freq Adjustment Detector Attenuation (dBuV) (dB) (degrees) (meters) (meters) (dB) (dB) dBuV/m dBuV/m (MHz) -14.6 802.11(b) 11Mbps 271.0 0.0 H-High Horr 39.4 19696,100 30.8 8.6 1.1 3.0 AV 0.0 54.0 19696.100 30.1 8.6 113.0 3.0 0.0 /-High Horr AV0.0 38.7 54.0 -15.3 802.11(b) 11Mbps 1.1 19696.100 0.0 H-High Horr 54.0 -15.7 802.11(g) 6Mbps

29.7

29.7

38.5

38.4

38.2

37.9

19696.100

19696,100

19696.100

19696.100

19696,100

8.6

8.6

8.6

8.6

8.6

8.6

257.0

97.0 271.0

257.0

113.0

97.0

3.0

3.0

3.0

3.0

3.0

3.0

1.1

1.1

1.1

1.1

ΑV

AV PK

PK

PK

PK

0.0 /-High Horr

0.0 H-High Horr 0.0 H-High Horr

0.0 /-High Horr

0.0 V-High Horr

0.0

0.0

0.0

0.0

0.0

0.0

38.3

38.3

47.1

47.0

46.8

46.5

54.0 74.0

74.0

74.0

74.0

-15.7 802.11(g) 6Mbps

-26.9 802.11(b) 11Mbps

-27.0 802.11(g) 6Mbps

-27.2 802.11(b) 11Mbps

-27.5 802.11(g) 6Mbps

## ACQ 2005.1.0 EMI A2.10 **RADIATED EMISSIONS DATA SHEET EMC** EUT: 802UIAG Work Order: ITRM0065 Serial Number: Date: 03/07/05 Customer: Intermec Technologies Corporation Attendees: None Temperature: 23 Humidity: 39% Cust. Ref. No.: Tested by: Holly Ashkannejhad TEST SPECIFICATIONS Barometric Pressure 30.22 Job Site: EV01 Power: 120VAC, 60Hz Specification: FCC 15.247(d) Spurious Radiated Emissions:2004 Method: ANSI C63.4:2003 SAMPLE CALCULATIONS Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation EUT OPERATING MODES DEVIATIONS FROM TEST STANDARD RESULTS Pass Holy Aligh 80.0 70.0 60.0 50.0 dBuV/m 40.0 30.0 20.0 10.0 0.0 2400.000 2410.000 2420.000 2430.000 2440.000 2450.000 2460.000 2470.000 2480.000 2490.000 MHz External Distance Compared to

Freq	Amplitude	Factor	Azimuth	Height	Distance	Attenuation	Polarity	Detector	Adjustment	Adjusted	Spec. Limit	Spec.	
(MHz)	(dBuV)	(dB)	(degrees)	(meters)	(meters)	(dB)	,		(dB)	dBuV/m	dBuV/m	(dB)	Comments
2483.500	28.9	30.4	215.0	1.2	1.0	0.0	V-Horn	AV	-9.5	49.8	54.0	-4.2	802.11(g) 6Mbps
2483.500	26.3	30.4	144.0	1.1	1.0	0.0	H-Horn	AV	-9.5	47.2	54.0	-6.8	802.11(g) 6Mbps
2483.500	23.8	30.4	289.0	1.1	1.0	0.0	H-Horn	AV	-9.5	44.7	54.0	-9.3	802.11(b) 1Mbps
2483.500	23.2	30.4	155.0	1.1	1.0	0.0	V-Horn	AV	-9.5	44.1	54.0	-9.9	802.11(b) 1Mbps
2483.500	41.4	30.4	215.0	1.2	1.0	0.0	V-Horn	PK	-9.5	62.3	74.0		802.11(g) 6Mbps
2483.500	40.0	30.4	144.0	1.1	1.0	0.0	H-Horn	PK	-9.5	60.9	74.0	-13.1	802.11(g) 6Mbps
2483.500	19.2	30.4	305.0	1.1	1.0	0.0	H-Horn	AV	-9.5	40.1	54.0	-13.9	802.11(g) 36Mbps
2483.500	18.9	30.4	123.0	1.1	1.0	0.0	V-Horn	AV	-9.5	39.8	54.0	-14.2	802.11(g) 36Mbps
2483.500	18.4	30.4	288.0	1.1	1.0	0.0	H-Horn	AV	-9.5	39.3	54.0	-14.7	802.11(b) 11Mbps
2483.500	18.3	30.4	143.0	1.0	1.0	0.0	V-Horn	AV	-9.5	39.2	54.0		802.11(b) 11Mbps
2483.500	17.1	30.4	127.0	1.1	1.0	0.0	H-Horn	AV	-9.5	38.0	54.0	-16.0	802.11(g) 54Mbps
2483.500	17.0	30.4	212.0	1.1	1.0	0.0	V-Horn	AV	-9.5	37.9	54.0	-16.1	802.11(g) 54Mbps
2483.500	33.6	30.4	305.0	1.0	1.0	0.0	H-Horn	PK	-9.5	54.5	74.0	-19.5	802.11(g) 36Mbps
2483.500	33.0	30.4	289.0	1.1	1.0	0.0	H-Horn	PK	-9.5	53.9	74.0		802.11(b) 1Mbps
2483.500	32.5	30.4	123.0	1.0	1.0	0.0	V-Horn	PK	-9.5	53.4	74.0	-20.6	802.11(g) 36Mbps
2483.500	32.5	30.4	155.0	1.1	1.0	0.0	V-Horn	PK	-9.5	53.4	74.0	-20.6	802.11(b) 1Mbps
2483.500	32.1	30.4	212.0	1.1	1.0	0.0	V-Horn	PK	-9.5	53.0	74.0	-21.0	802.11(g) 54Mbps
2483.500	31.8	30.4	127.0	1.1	1.0	0.0	H-Horn	PK	-9.5	52.7	74.0	-21.3	802.11(g) 54Mbps
2483.500	30.8	30.4	288.0	1.1	1.0	0.0	H-Horn	PK	-9.5	51.7	74.0	-22.3	802.11(b) 11Mbps
2483.500	29.3	30.4	143.0	1.0	1.0	0.0	V-Horn	PK	-9.5	50.2	74.0	-23.8	802.11(b) 11Mbps

## **RADIATED EMISSIONS DATA SHEET** EMI 2005.1. **EMC** EUT: 802UIAG Work Order: ITRM0065 Serial Number: Date: 03/07/05 Customer: Intermec Technologies Corporation Attendees: None Temperature: 22 Humidity: 42% Cust. Ref. No.: Tested by: Holly Ashkannejhad TEST SPECIFICATIONS Barometric Pressure 30.27 Job Site: EV01 Power: 120VAC, 60Hz Specification: FCC 15.247(d) Spurious Radiated Emissions:2004 Method: ANSI C63.4:2003 SAMPLE CALCULATIONS Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation EUT OPERATING MODES DEVIATIONS FROM TEST STANDARD RESULTS Pass Holy Slight 80.0 70.0 60.0 50.0 dBuV/m \* 40.0 \* 30.0 20.0 10.0 0.0 4920.000 4921.000 4922.000 4923.000 4924.000 4925.000 4926.000 4927.000 4928.000 4929.000 4930.000 MHz

						External			Distance			Compared to	
Freq	Amplitude	Factor	Azimuth	Height	Distance	Attenuation	Polarity	Detector	Adjustment	Adjusted	Spec. Limit	Spec.	
(MHz)	(dBuV)	(dB)	(degrees)	(meters)	(meters)	(dB)			(dB)	dBuV/m	dBuV/m	(dB)	Comments
4924.330	46.7	3.5	10.0	1.1	3.0	0.0	V-Horn	AV	0.0	50.2	54.0	-3.8	802.11(b) 1Mbps
4924.330	45.2	3.5	340.0	1.1	3.0	0.0	V-Horn	AV	0.0	48.7	54.0	-5.3	802.11(b) 1Mbps
4924.330	33.8	3.5	77.0	1.1	3.0	0.0	V-Horn	AV	0.0	37.3	54.0	-16.7	802.11(b) 11Mbps
4924.330	33.8	3.5	53.0	1.3	3.0	0.0	H-Horn	AV	0.0	37.3	54.0	-16.7	802.11(b) 11Mbps
4924.330	29.9	3.5	74.0	1.2	3.0	0.0	V-Horn	AV	0.0	33.4	54.0	-20.6	802.11(g) 6Mbps
4924.330	29.8	3.5	352.0	1.1	3.0	0.0	H-Horn	AV	0.0	33.3	54.0	-20.7	802.11(g) 6Mbps
4924.330	28.2	3.5	18.0	1.4	3.0	0.0	V-Horn	AV	0.0	31.7	54.0	-22.3	802.11(g) 36Mbps
4924.330	47.8	3.5	10.0	1.1	3.0	0.0	V-Horn	PK	0.0	51.3	74.0	-22.7	802.11(b) 1Mbps
4924.330	46.9	3.5	340.0	1.1	3.0	0.0	V-Horn	PK	0.0	50.4	74.0	-23.6	802.11(b) 1Mbps
4924.330	26.3	3.5	350.0	1.3	3.0	0.0	V-Horn	AV	0.0	29.8	54.0	-24.2	802.11(g) 54Mbps
4924.330	46.3	3.5	53.0	1.3	3.0	0.0	H-Horn	PK	0.0	49.8	74.0	-24.2	802.11(b) 11Mbps
4924.330	46.1	3.5	77.0	1.1	3.0	0.0	V-Horn	PK	0.0	49.6	74.0	-24.4	802.11(b) 11Mbps
4924.330	25.4	3.5	54.0	1.3	3.0	0.0	H-Horn	AV	0.0	28.9	54.0	-25.1	802.11(g) 36Mbps
4924.330	25.1	3.5	343.0	1.3	3.0	0.0	H-Horn	AV	0.0	28.6	54.0	-25.4	802.11(g) 54Mbps
4924.330	42.5	3.5	74.0	1.2	3.0	0.0	V-Horn	PK	0.0	46.0	74.0	-28.0	802.11(g) 6Mbps
4924.330	42.0	3.5	352.0	1.1	3.0	0.0	H-Horn	PK	0.0	45.5	74.0	-28.5	802.11(g) 6Mbps
4924.330	40.2	3.5	18.0	1.4	3.0	0.0	V-Horn	PK	0.0	43.7	74.0	-30.3	802.11(g) 36Mbps
4924.330	39.0	3.5	54.0	1.3	3.0	0.0	H-Horn	PK	0.0	42.5	74.0	-31.5	802.11(g) 36Mbps
4924.330	38.2	3.5	350.0	1.3	3.0	0.0	V-Horn	PK	0.0	41.7	74.0	-32.3	802.11(g) 54Mbps
4924.330	38.0	3.5	343.0	1.3	3.0	0.0	H-Horn	PK	0.0	41.5	74.0	-32.5	802.11(g) 54Mbps

#### **RADIATED EMISSIONS DATA SHEET** EMI 2005.1. **EMC** Work Order: ITRM0065 EUT: 802UIAG Serial Number: Date: 03/08/05 Customer: Intermec Technologies Corporation Attendees: None Temperature: 23 Humidity: 39% Barometric Pressure 30.22 Tested by: Holly Ashkannejhad Power: 120VAC, 60Hz Job Site: EV01 Specification: FCC 15.247(d) Spurious Radiated Emissions:2004 Method: ANSI C63.4:2003 SAMPLE CALCULATIONS Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation EUT OPERATING MODES DEVIATIONS FROM TEST STANDARD RESULTS Pass Rolly be Fely 0.08 70.0 60.0 50.0 dBuV/m 40.0 \*\*\* 30.0 20.0 10.0 0.0 3000.000 4000.000 5000.000 6000.000 7000.000 8000.000 9000.000 10000.000 11000.000 12000.000 MHz Factor Height Freq Detector Adjustment Attenuation (dBuV) (dB) (degrees) (meters) (dB) (dB) dBuV/m dBuV/m (MHz) -0.7 802.11(b), 1Mbps 4824.030 50.0 3.3 199.0 1.1 3.0 0.0 V-Horn AV 0.0 53.3 54.0 4824.000 45.9 3.3 77.0 H-Horn ΑV 49.2 54.0 -4.8 802.11(b), 1Mbps 1.3 3.0 0.0 0.0 4824.000 37.7 3.3 199.0 3.0 0.0 V-Horn ΑV 0.0 41.0 -13.0 802.11(b), 11Mbps 1.1 4824.310 34.6 34.4 3.3 205.0 1.2 3.0 0.0 V-Horn ΑV 0.0 37.9 54.0 -16.1 802.11(g), 6Mbps 4824.000 3.3 72.0 1.3 3.0 0.0 H-Horn ΑV 0.0 37.7 54.0 -16.3 802.11(b), 11Mbps -18.5 802.11(g), 6Mbps 4825.970 32.2 3.3 0.0 H-Horn ΑV 35.5 54.0 1.3 3.0 0.0 0.0 4824.030 52.0 3.3 199.0 1.1 3.0 0.0 V-Horn PK 0.0 55.3 74.0 -18.7 802.11(b), 1Mbps -19.3 802.11(b), 11Mbps -19.7 802.11(g), 36Mbps 4824.000 51.4 3.3 199.0 1.1 3.0 0.0 V-Horn PΚ 0.0 54.7 74.0 4824.000 3.3 V-Horn ΑV 54.0 31.0 207.0 1.2 3.0 0.0 0.0 34.3 4824.000 29.2 3.3 1.4 3.0 0.0 H-Horn ΑV 0.0 32.5 54.0 -21.5 802.11(g), 36Mbps 68.0 4824.000 28.6 3.3 199.0 1.2 3.0 0.0 V-Horn ΑV 0.0 31.9 54.0 -22.1 802.11(g), 54Mbps 1.2 PΚ -22.1 802.11(g), 6Mbps 4824 310 48 6 3.3 205.0 3.0 0.0 V-Horn 0.0 51.9 74 0

H-Horn

H-Horn

V-Horn

V-Horn

0.0

0.0

0.0 H-Horn

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0.0 H-Horn

0.0 H-Horn

PK

AV PK

PΚ

PK PK 74.0

74.0

54.0 74.0

74.0

74.0

74.0

74.0

51.8

51.3

30.3

48.6

46.7

45.2

44.2

42.8

0.0

0.0

0.0

0.0

0.0

0.0

0.0

0.0

-22.2 802.11(b), 1Mbps

-22.7 802.11(b), 11Mbps

-23.7 802.11(g), 54Mbps

-25.4 802.11(g), 6Mbps

-27.3 802.11(g), 36Mbps

-28.8 802.11(g), 54Mbps

-29.8 802.11(g), 36Mbps

-31.2 802.11(g), 54Mbps

4824.000

4824.000

4824.000

4824.310

4824.000

4824.000

4824.000

4824.000

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#### **RADIATED EMISSIONS DATA SHEET** EMI 2005.1. **EMC** Work Order: ITRM0065 EUT: 802UIAG Serial Number: Date: 03/08/05 Customer: Intermec Technologies Corporation Attendees: None Temperature: 23 Humidity: 39% Barometric Pressure 30.22 Cust. Ref. No.: Tested by: Rod Peloquin Power: 120VAC, 60Hz Job Site: EV01 Specification: FCC 15.247(d) Spurious Radiated Emissions:2004 Method: ANSI C63.4:2003 SAMPLE CALCULATIONS Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation EUT OPERATING MODES DEVIATIONS FROM TEST STANDARD RESULTS Pass Rolly be Fely 0.08 70.0 60.0 50.0 dBuV/m 40.0 \$ \* 30.0 20.0 10.0 0.0 3000.000 4000.000 5000.000 6000.000 7000.000 8000.000 9000.000 10000.000 11000.000 12000.000 MHz Factor Height Freq Detector Adjustment Attenuation (dBuV) (dB) (degrees) (meters) (dB) (dB) dBuV/m dBuV/m (MHz) -1.3 802.11(b), 1Mbps 4884.000 49.1 3.6 197.0 1.1 3.0 0.0 V-Horn AV 0.0 52.7 54.0 4884.000 47.1 3.6 18.0 H-Horn ΑV 50.7 54.0 -3.3 802.11(b), 1Mbps 1.1 3.0 0.0 0.0 4884.000 36.7 3.6 197.0 3.0 0.0 V-Horn ΑV 0.0 40.3 -13.7 802.11(b), 11Mbps 7326.000 27.3 10.5 183.0 2.1 3.0 0.0 V-Horn ΑV 0.0 37.8 54.0 -16.2 802.11(b), 1Mbps 7734.194 24.9 12.5 216.0 1.3 3.0 0.0 H-Horn ΑV 0.0 37.4 54.0 -16.6 802.11(b), 1Mbps 36.7 -17.3 802.11(g), 6Mbps 4884.000 33.1 3.6 200.0 1.2 V-Horn ΑV 54.0 3.0 0.0 0.0 7326.000 26.1 10.5 186.0 1.9 3.0 0.0 V-Horn ΑV 0.0 36.6 54.0 -17.4 802.11(g), 6Mbps -17.4 802.11(b), 11Mbps -18.6 802.11(b), 11Mbps 7326.000 26.1 10.5 198.0 1.9 3.0 0.0 V-Horn ΑV 0.0 36.6 54.0 ΑV 7326.000 24.9 54.0 10.5 -1.0 2.3 3.0 0.0 H-Horn 0.0 35.4 4884.000 50.9 3.6 197.0 1.1 3.0 0.0 V-Horn PK 0.0 54.5 74.0 -19.5 802.11(b), 1Mbps 4881.720 30.8 3.6 11.0 3.0 0.0 H-Horn ΑV 0.0 34.4 54.0 -19.6 802.11(g), 6Mbps PΚ -20.4 802.11(b), 11Mbps 4884 000 50.0 3.6 197 0 1.1 3.0 0.0 V-Horn 0.0 53.6 74 0 4884.000 H-Horn PK 74.0 -21.7 802.11(b), 1Mbps 48.7 18.0 52.3 3.6 1.1 3.0 0.0 0.0 4884.000 -23.0 802.11(g), 36Mbps 27.4 3.6 217.0 1.6 3.0 0.0 V-Horn 0.0 31.0 54.0

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-23.5 802.11(b), 1Mbps

-23.6 802.11(g), 36Mbps

-24.0 802.11(g), 6Mbps

-24.0 802.11(b), 11Mbps

-24.3 802.11(g), 6Mbps

-24.4 802.11(g), 54Mbps









## **AC Powerline Conducted Emissions**

Revision 10/1/03

#### **Justification**

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

Channels in Specified Band Investigated:	
Low	
Mid	
High	

## **Operating Modes Investigated:**

Continuous transmit

## Data Rates Investigated:

6 Mbps (802.11g), worst case mode

## Output Power Setting(s) Investigated:

Maximum default

## **Power Input Settings Investigated:**

120 VAC, 60 Hz.

Software\Firmware Applied During Test								
Exercise software	cTxRx Win CE	Version	0.1.2.1					
Description								
The system was tested us	The system was tested using special software developed to test all functions of the device during the test.							

EUT and Peripherals									
Description	Manufacturer	Model/Part Number	Serial Number						
EUT- 802UIAG	Intermec Technologies Corporation	Unknown	Unknown						
AC Adapter	Intermec Technologies Corporation	851-061-002	3335174						
Host Device	Intermec Technologies Corporation	CK61	33390400093						

Cables										
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2					
DC Leads	Yes	1.9	PA	AC Power Adapter	Host Device					
AC Power	No	2.0	No	AC Power Adapter	AC Mains					
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.										

## **AC Powerline Conducted Emissions**

Revision 10/1/03

Measurement Equipment											
Description	Manufacturer	Model	Identifier	Last Cal	Interval						
Spectrum Analyzer	Hewlett-Packard	8566B	AAL	12/02/2004	13 mo						
Quasi-Peak Adapter	Hewlett-Packard	85650A	AQF	12/02/2004	13 mo						
High Pass Filter	TTE	H97-100k-50-720B	HFC	12/29/2004	13 mo						
LISN	Solar	9252-50-R-24-BNC	LIN	12/29/2004	13 mo						

## **Test Description**

**Requirement:** Per 47 15.207(d), if the EUT is connected to the AC power line indirectly, obtaining its power from another device that is connected to the AC power line, then it should be tested to demonstrate compliance with the conducted limits of 15.207.

<u>Configuration:</u> The EUT will be powered from a device that could be connected to the AC power line. Therefore, the measurements were made on the device used to power the EUT. The AC power line conducted emissions were measured with the EUT operating at the lowest, the highest, and a middle channel in the operational band. The EUT was transmitting at its maximum data rate. For each mode, the spectrum was scanned from 150 kHz to 30 MHz. The test setup and procedures were in accordance with ANSI C63.4-1992.

Completed by

	IORTHWEST		C	DNC	UCT	ED E	MIS:	SION	SD	ATA	SHE	ΕŢ		ACQ 2005.1.3 EMI 2005.1.3
	_WO		802UIAG									Work Order:	ITRM0065	
S	Serial Nur											Date:	03/29/05	
				echnologi	es Corpora	tion					Te	emperature:		
	Atten Cust. Ref	dees:	None								Barometi	Humidity: ric Pressure		
			Rod Peloc	uin				Power:	120VAC	C/60Hz	24.0	Job Site:		
	SPECIF									. I awara				
	Specifica	ation:	FCC 15.20	7 AC Powe	erline Cond	ucted Emis	ssions:200	4	Metho	od: ANSI C	33.4:2003			
SAMP	LE CAL	CULA	TIONS											
											or + External Atte	nuation		
COMM		ssions: A	Adjusted Leve	el = Measured	Level + Transo	ducer Factor +	Cable Attenu	ation Factor + E	External At	tenuator				
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		0.150	25.8	1		0.0	0.0	20.0	1	AV	1	45.8	56.0	-10.2
		0.150	34.6			0.0	0.0			QP		54.6		
		0.151 0.225	35.0 27.4			0.0	0.1 0.1					55.1 47.5	56.0 52.6	
		2.896	27.4 19.2			0.0 0.0	0.1					47.5 39.7	52.6 46.0	
		2.536	18.7			0.0	0.5					39.2		
	2	2.826	17.7			0.0	0.5	20.0				38.2	46.0	-7.8
		0.168	26.8			0.0	0.1					46.9		
		2.456 2.606	17.3 17.0			0.0 0.0	0.4 0.5					37.7 37.5		
		2.606	21.5			0.0	0.5					37.5 41.6		
		2.976	16.4			0.0	0.5					36.9	46.0	
		2.746	16.3			0.0	0.5	20.0				36.8	46.0	-9.2
		2.156	16.3			0.0	0.4					36.7	46.0	
		2.676 0.447	16.2 17.0			0.0 0.0	0.5 0.2					36.7 37.2		
		2.076	15.7			0.0	0.4					36.1	46.0	
	(	0.164	25.2			0.0	0.1	20.0				45.3	55.2	-9.9
	(	0.964	15.6			0.0	0.3	20.0				35.9	46.0	-10.1

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		802UIAG								1	Work Order:	ITRM0065	
Serial I	Number:										Date	03/29/05	
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	tendees:	None									Humidity:		
	Ref. No.:	Dad Dalam	.!				D	1400\/AC/		Baromet	ric Pressure		
TEST SPEC		Rod Peloqu	ıın				Power	: 120VAC/	60HZ		Job Site:	EV01	
		FCC 15.207	AC Powe	rline Cond	lucted Fr	niesions:20	104	Method	: ANSI C6	3 4.2003			
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SAMPLE CA	ALCULA	TIONS											
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		Adjusted Level	= Measured I	Level + Trans	ducer Facto	or + Cable Atter	nuation Factor +	External Atter	nuator				
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	0.150	26.5				0.0 0	.0 20.0	1	AV		46.5	5 56.0	-9.5
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	2.896	20.4					.5 20.0				40.9		
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	2.976	19.4					.5 20.0				39.9		
	2.446	19.0			C	0.0	.4 20.0				39.4	46.0	
	2.816	18.8					.5 20.0				39.3		
	2.596	18.8					.5 20.0				39.3		
	0.373	20.8					.2 20.0				41.0		
	2.146	18.1					.4 20.0				38.5		
	2.226	17.9					.4 20.0				38.3		
	0.299	22.5					.1 20.0				42.6		
	1.715	17.8					.4 20.0				38.2		
	2.086	17.5					.4 20.0				37.9		
	24.412	20.4					.5 20.0				41.9		
	1.785	17.4 17.3					.4 20.0 .3 20.0				37.8 37.6		
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	al Number:										Date:	03/29/05	
		Intermec Techn	ologies Corpora	ition						Ten	nperature:		
	Attendees:	None									Humidity:		
	t. Ref. No.:	Rod Peloquin				Power:	120VA	C/60Hz		Barometric	Pressure Job Site:		
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		FCC 15.207 AC	Powerline Cond	lucted Emis	sions:200	4	Meth	od: AN	SI C63.4:2	003			
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	0.450	26.4		1	0.0	20.0			۸۱/		40.4	FC 0	0.0
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	0.130	29.4		0.0	0.1	20.0					49.5		
	2.896	19.0		0.0	0.5	20.0					39.5		
	2.526	18.0		0.0	0.5	20.0					38.5		
	2.816	17.5		0.0	0.5	20.0					38.0	46.0	-8.0
	2.606	17.5		0.0	0.5	20.0					38.0	46.0	
	2.456	17.0		0.0	0.4						37.4		
	2.966	16.6		0.0	0.5	20.0					37.1	46.0	
	0.446	17.5		0.0	0.2						37.7	46.9	
	2.146	16.3		0.0	0.4						36.7	46.0	
	1.705	16.1		0.0	0.4	20.0					36.5		
	2.226 0.594	15.8 15.5		0.0 0.0	0.4 0.2						36.2 35.7	46.0 46.0	
	1.775	15.3		0.0	0.2						35.7 35.7	46.0 46.0	
	2.746	15.1		0.0	0.4	20.0					35.6		
	2.086	15.1		0.0	0.4						35.5	46.0	
	3.186	14.8		0.0	0.5	20.0					35.3	46.0	

	RTHWEST MC	C	DND	JCT	ED E	MIS	SION	S D	ATA :	SHEE	T		ACQ 2005.1.3 EMI 2005.1.3
		T: 802UIAG								W	/ork Order:	ITRM0065	
Sei	rial Numbe		aahnalaaia	o Cornoro	tion					т.		03/29/05	
	Attendee	r: Intermec T s: None	echnologie	es Corpora	ition					1e	mperature: Humidity:		
Cu	ıst. Ref. No									Barometri	c Pressure	29.67	
TEST S	Tested by PECIFICA	y: Rod Peloq	uin				Power:	120VAC/6	0Hz		Job Site:	EV01	
		n: FCC 15.20	7 AC Powe	rline Cond	ucted Emis	sions:200	4	Method	ANSI C63.	4:2003			
	E CALCUL	LATIONS s: Field Strength	= Measured I	evel + Antenn	a Factor + Cal	ole Factor - Ar	nnlifier Gain +	Distance Adiu	stment Factor -	- Evternal Δtter	uation		
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iransmitti	ing 802.11(g	) mid channel, 6	Midps data rai	ie									
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	req	Amplitude		<del></del>	Transducer	Cable	External Attenuation		Detector		Adjusted	Spec. Limit	Compared to Spec.
	MHz)	(dBuV)			(dB)	(dB)	(dB)		(blank equal peaks [PK] from scan)		dBuV	dBuV	(dB)
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	0.15 0.15				0.0 0.0	0.0			AV QP		47.0 54.8		-9.0 -11.2
	0.15				0.0	0.0			Q.		55.3		-0.7
	2.89				0.0	0.5					40.8		-5.2
	2.96 2.52				0.0 0.0	0.5 0.5					40.3 39.9		-5.7 -6.1
	2.81				0.0	0.5					39.9 39.6		
	2.59	6 19.1			0.0	0.5	20.0				39.6	46.0	-6.4
	0.16 2.45				0.0 0.0	0.1 0.4					48.8 39.0		-6.5 -7.0
	2.45 2.15				0.0	0.4					39.0 38.8		-7.0 -7.2
	0.29	9 22.4			0.0	0.1	20.0				42.5	50.3	-7.8
	24.17				0.0	1.5					42.2		-7.8 7.0
	24.41 2.07				0.0 0.0	1.5 0.4					42.1 37.9	50.0 46.0	-7.9 -8.1
	1.77	75 17.5			0.0	0.4	20.0				37.9	46.0	-8.1
	0.21				0.0	0.1					44.7		-8.3
	24.32 1.70				0.0 0.0	1.5 0.4					41.7 37.7		-8.3 -8.3

	NORTHWEST		C	DNC	UC	TED	Е	MISS	SION	S D	ATA	SHEE	ΞŢ		ACQ 2005.1.3 EMI 2005.1.3
		EUT:	802UIAG											ITRM0065	
	Serial Nur		Intormoo T	'aahaalaa	iloo Cor	norotion						To		03/29/05	
		dees:	Intermec T None	echnolog	jies cor	poration						Te	mperature: Humidity:		
	Cust. Ref									T		Barometri	ic Pressure	29.67	
TEST	Teste SPECIF		Rod Peloq	uin					Power:	120VAC/6	60Hz		Job Site:	EV01	
ILOI			FCC 15.20	7 AC Pow	erline C	onducted	Emiss	ions:200	4	Method	: ANSI C63	.4:2003			
0.445															
	PLE CAL			= Measured	llevel+A	ntenna Facto	r + Cable	e Factor - An	nolifier Gain +	Distance Adii	istment Factor	+ External Atter	nuation		
Cond	lucted Emis								tion Factor +			- Extornal 7 tto	radiio:		
COM	MENTS														
	DPERAT		ODES igh channel,	6Mhns data	rate										
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		FROM	TEST STA	NDARD											
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	20.0					<u> </u>									
	10.0														
	10.0														
	0.0					4.00	•				10.000				<u> </u>
	0.1	00				1.00	0				10.000			1	00.000
									MHz						
											_				
	Freq		Amplitude			Trans	ducer	Cable	External Attenuation	<u> </u>	Detector	1	Adjusted	Spec. Limit	Compared to Spec.
	(MHz)		(dBuV)			(di		(dB)	(dB)		(blank equal peaks [PK] from scan)		dBuV	dBuV	(dB)
1	(							^ -	22.2	<u> </u>			40.0	50.0	
		\ ·					0.0	0.0	20.0		AV		46.3	56.0	-9.7
	. ,	0.150 0.150	26.3 34.7				0.0	Λ Λ	20.0				54.7	66.0	_11 '4
	(	0.150 0.150 0.151	26.3 34.7 35.2				0.0	0.0 0.1	20.0 20.0		QP		54.7 55.3	66.0 56.0	-11.3 -0.7
	(	0.150 0.151 0.227	34.7 35.2 29.0				0.0	0.1 0.2	20.0 20.0				55.3 49.2	56.0 52.6	-0.7 -3.4
	(	0.150 0.151 0.227 2.896	34.7 35.2 29.0 19.9				0.0 0.0 0.0	0.1 0.2 0.5	20.0 20.0 20.0				55.3 49.2 40.4	56.0 52.6 46.0	-0.7 -3.4 -5.6
	(	0.150 0.151 0.227	34.7 35.2 29.0				0.0	0.1 0.2	20.0 20.0				55.3 49.2	56.0 52.6	-0.7 -3.4 -5.6 -7.3
	(	0.150 0.151 0.227 2.896 2.526 2.816 2.446	34.7 35.2 29.0 19.9 18.2 18.0 18.0				0.0 0.0 0.0 0.0 0.0 0.0	0.1 0.2 0.5 0.5 0.5	20.0 20.0 20.0 20.0 20.0 20.0				55.3 49.2 40.4 38.7 38.5 38.4	56.0 52.6 46.0 46.0 46.0	-0.7 -3.4 -5.6 -7.3 -7.5
	()	0.150 0.151 0.227 2.896 2.526 2.816 2.446 2.966	34.7 35.2 29.0 19.9 18.2 18.0 18.0				0.0 0.0 0.0 0.0 0.0 0.0	0.1 0.2 0.5 0.5 0.5 0.4 0.5	20.0 20.0 20.0 20.0 20.0 20.0 20.0				55.3 49.2 40.4 38.7 38.5 38.4 38.2	56.0 52.6 46.0 46.0 46.0 46.0	-0.7 -3.4 -5.6 -7.3 -7.5 -7.6
		0.150 0.151 0.227 2.896 2.526 2.816 2.446	34.7 35.2 29.0 19.9 18.2 18.0 18.0				0.0 0.0 0.0 0.0 0.0 0.0	0.1 0.2 0.5 0.5 0.5	20.0 20.0 20.0 20.0 20.0 20.0				55.3 49.2 40.4 38.7 38.5 38.4	56.0 52.6 46.0 46.0 46.0	-0.7 -3.4 -5.6 -7.3 -7.5 -7.6 -7.8 -8.3
		0.150 0.151 0.227 2.896 2.526 2.816 2.446 2.966 0.296 2.596 1.775	34.7 35.2 29.0 19.9 18.2 18.0 17.7 22.0 17.1 16.3				0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.1 0.2 0.5 0.5 0.5 0.4 0.5 0.1 0.5	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0				55.3 49.2 40.4 38.7 38.5 38.4 38.2 42.1 37.6 36.7	56.0 52.6 46.0 46.0 46.0 46.0 46.0 50.4 46.0	-0.7 -3.4 -5.6 -7.3 -7.5 -7.6 -7.8 -8.3 -8.4
		0.150 0.151 0.227 2.896 2.526 2.816 2.446 2.966 0.296 0.296 1.775 2.146	34.7 35.2 29.0 19.9 18.2 18.0 17.7 22.0 17.1 16.3 16.1				0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.1 0.2 0.5 0.5 0.5 0.4 0.5 0.1 0.5 0.4	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0				55.3 49.2 40.4 38.7 38.5 38.4 38.2 42.1 37.6 36.7 36.5	56.0 52.6 46.0 46.0 46.0 46.0 46.0 50.4 46.0 46.0	-0.7 -3.4 -5.6 -7.3 -7.5 -7.6 -7.8 -8.3 -8.4 -9.3
		0.150 0.151 0.227 2.896 2.526 2.816 2.446 2.966 0.296 2.596 1.775 2.146 0.444	34.7 35.2 29.0 19.9 18.2 18.0 17.7 22.0 17.1 16.3 16.1 17.2				0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.1 0.2 0.5 0.5 0.5 0.4 0.5 0.1 0.5 0.4 0.4	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0				55.3 49.2 40.4 38.7 38.5 38.4 42.1 37.6 36.7 36.5 37.4	56.0 52.6 46.0 46.0 46.0 46.0 50.4 46.0 46.0 46.0 47.0	-0.7 -3.4 -5.6 -7.3 -7.5 -7.6 -7.8 -8.3 -8.4 -9.3 -9.5
		0.150 0.151 0.227 2.896 2.526 2.446 2.966 0.296 0.296 1.775 2.146 0.444 2.226 1.705	34.7 35.2 29.0 19.9 18.2 18.0 17.7 22.0 17.1 16.3 16.1 17.2 15.9				0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.1 0.2 0.5 0.5 0.5 0.4 0.5 0.1 0.5 0.4 0.4 0.2	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0				55.3 49.2 40.4 38.7 38.5 38.4 38.2 42.1 37.6 36.7 36.5 37.4 36.3 35.9	56.0 52.6 46.0 46.0 46.0 46.0 46.0 50.4 46.0 46.0 47.0 46.0 46.0	-0.7 -3.4 -5.6 -7.3 -7.5 -7.6 -7.8 -8.3 -9.3 -9.5 -9.6 -9.7
		0.150 0.151 0.227 2.896 2.526 2.816 2.446 2.966 0.296 2.596 1.775 2.146 0.444 2.226	34.7 35.2 29.0 19.9 18.2 18.0 17.7 22.0 17.1 16.3 16.1 17.2 15.9				0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.1 0.2 0.5 0.5 0.4 0.5 0.1 0.5 0.4 0.4 0.2	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0				55.3 49.2 40.4 38.7 38.5 38.4 37.6 36.7 36.5 37.4 36.3	56.0 52.6 46.0 46.0 46.0 46.0 46.0 50.4 46.0 46.0 46.0 47.0	-0.7 -3.4 -5.6 -7.3 -7.5 -7.6 -7.8 -8.3 -8.4 -9.3 -9.5 -9.6 -9.7 -10.1

	NORTHWEST EMC		С	ONI	OUC	CTI	Εſ	E	MIS	SS	ION	S	D	ΑT	ΓΑ	SHE	ĒΤ		ACQ 2005.1.3 EMI 2005.1.3
		EUT:	802UIAG													\	Vork Order:		5
S	Serial Nur																	03/29/05	
			Intermec	Technolo	gies C	orpora	tion									Te	mperature:		
<b>.</b>		dees:	None													Davament	Humidity:		
_ '	Cust. Ref		Rod Pelo	auin							Power:	120	VAC	/60H-	,	Barometr	ic Pressure Job Site:		
TEST	SPECIFI			quiii							Power.	120	VAC	00112	-		Job Site.	EVUI	
			FCC 15.2	07 AC Po	werline	Cond	ucte	d Emis	sions:2	2004		M	letho	d: AN	ISI C63.	4:2003			
	•																		
SAMP	LE CAL	CULA	TIONS																
Rad	diated Emis	ssions:	Field Strengt	th = Measur	ed Level -	+ Antenn	a Fac	tor + Cal	le Factor	- Ampli	fier Gain +	Distan	ice Ac	justme	nt Factor	+ External Atte	nuation		
		ssions:	Adjusted Lev	/el = Measu	red Level	+ Transo	ducer	Factor +	Cable Att	enuatio	n Factor + I	Extern	al Atte	enuato	r				
COMM	IENTS																		
FUT O	PERATI	NG M	ODES																
			igh channel	. 6Mbps da	ta rate														
		(3)	g	,															
DEVIA	TIONS I	FROM	TEST ST	ANDARD															
No devi		TOW	TEOTO	ANDAIL															
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dBuV	40.0		<u> </u>																
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	Freq (MHz)		Amplitude (dBuV)					nsducer (dB)	Cable (dB)		ttenuation (dB)			(bla	Detector nk equal peaks		Adjusted dBuV	Spec. Limit dBuV	Spec. (dB)
	(IVITIZ)		(4547)				l '	(30)	(40)		(30)			[P	K] from scan)		JDG V	abuv	(45)
	(	0.150	27.1	1				0.0		0.0	20.0				AV	1	47.1	56.0	0 -8.9
		0.150	34.8					0.0		0.0	20.0				QP		54.8		
		0.150	35.7					0.0		0.1	20.0				~.		55.8		
		0.227	29.2					0.0		0.2	20.0						49.4		
		2.896	20.0					0.0		0.5	20.0						40.5		
		2.966	19.4					0.0		0.5	20.0						39.9		
		0.162	29.1					0.0		0.1	20.0						49.2		
		2.526	19.3					0.0		0.5	20.0						39.8		
		2.596	18.8					0.0		0.5	20.0						39.3		
	(	0.168	28.0	)				0.0		0.1	20.0						48.1		
		2.146	18.6					0.0		0.4	20.0						39.0		
		2.816	18.5					0.0		0.5	20.0						39.0		
		2.456	18.2					0.0		0.4	20.0						38.6		
		0.297	22.3					0.0		0.1	20.0						42.4		
		1.705	17.6					0.0		0.4	20.0						38.0		
		1.325	17.3					0.0		0.3	20.0						37.6		
		2.076	17.2					0.0		0.4	20.0						37.6		
		1.775	17.2					0.0		0.4	20.0						37.6		
	24	1.698	20.0	J				0.0		1.5	20.0						41.5	50.0	-8.5







# **Spurious Radiated Emissions**

Revision 10/1/03

#### **Justification**

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

Channels in Specified Band Investigated:
Low
Mid
High

#### **Operating Modes Investigated:**

Continuous transmit in a collocated configuration

Data Rates Investigated:	
1 Mbps (802.11b)	
6 Mbps (802.11g)	
Bluetooth default	

Channels in Specified Band Investigated:							
802.11(b):	11						
Bluetooth:	9						

## **Operating Modes Investigated:**

Simultaneous Transmitting 802.11(g) High channel, Bluetooth High Channel on CK60 and Bluetooth High Channel on PB42 printer.

#### **Output Power Setting(s) Investigated:**

Maximum default

#### **Power Input Settings Investigated:**

120 VAC, 60 Hz.

Frequency Range Invest	Frequency Range Investigated							
Start Frequency	30 MHz	Stop Frequency	25 GHz					

Software\Firmware Applied During Test								
Exercise software cTxRx Win CE Version 0.1.2.1								
	CSR Bluetest		Unknown					
Description								
The system was tested us	sing special software development	oped to test all functions of t	the device during the test.					

Revision 10/1/03

EUT and Peripherals								
Description	Manufacturer	Model/Part Number	Serial Number					
EUT - 802.11 a/b/g radio card	Intermec Technologies Corporation	802UIAG	Unknown					
Host Device - Handheld Computer	Intermec Technologies Corporation	CK61	33390400093					
Bluetooth enabled printer	Intermec Technologies Corporation	PB42	SAC001					
AC Power Adapter	Intermec Technologies Corporation	073573-003	6079450					
AC Power Adapter	Intermec Technologies Corporation	851-061-002	038962					

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Leads	Yes	1.9	PA	AC Power Adapter	Host Device
AC Power	No	2.0	No	AC Power Adapter	AC Mains
DC Leads	No	1.8	Yes	Bluetooth enabled printer	AC Power Adapter
AC Power	No	2.0	No	Bluetooth enabled printer	AC Mains
PA = Cable is p	ermanently	attached to the	device. Sh	ielding and/or presence of ferrite	may be unknown.

Measurement Equipment										
Description	Manufacturer	Model	Identifier	Last Cal	Interval					
Spectrum Analyzer	Hewlett-Packard	8566B	AAL	12/02/2004	13 mo					
Pre-Amplifier	Miteq	AMF-4D-005180-24-10P	APJ	01/05/2004	16 mo					
Antenna, Horn	EMCO	3115	AHC	09/07/2004	12 mo					
Pre-Amplifier	Miteq	AMF-4D-005180-24-10P	APC	02/17/2005	13 mo					
Antenna, Horn	EMCO	3160-09	AHG	NCR	NA					
Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	02/15/2005	13 mo					
Spectrum Analyzer	Tektronix	2784	AAO	01/02/2005	12 mo					
Attenuator	Coaxicom	66702 5910-20	RBJ	02/25/2005	13 mo					
High Pass Filter	Micro-Tronics	HPM50111	HFO	03/09/2005	13 mo					

## **Spurious Radiated Emissions**

Revision 10/1/03

#### **Test Description**

**Simultaneous Transmission**: For co-located radios, it is necessary to measure the field strength of spurious emissions, while co-located radios are transmitting simultaneously. The following is an excerpt from the FCC/TCB training Q & A, October 2002, Day 2, Question 7:

Assuming that the radios do not share an antenna, only radiated tests for simultaneous transmission is required. If the radios share an antenna, antenna conducted measurements would also be required. Only one set of worst case simultaneous transmission data is going to be requested to be submitted at this time. The test engineer should indicate the worst case condition and provide justification as to why the worst case condition was chosen. The grantee should be reminded that even if the FCC requests one set of data, they are responsible for compliance for all modes of simultaneous transmission.

All possible combinations of harmonic emissions from the CDMA, 802.11(b), and Bluetooth radios were compared numerically. It was determined that there were no possible coincidental harmonics below 1 GHz. The frequency range from 1 GHZ to 25 GHz was investigated for channel combinations that would produce coincidental harmonics. Compliance with the restricted band at 2483.5 – 2500 MHz was also measured.

All the radios were configured for simultaneous transmission at the channels specified in the previous pages. The highest gain antennas to be used with the radios were tested. The spectrum was scanned throughout the specified range. While scanning, emissions from the radios were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antennas in three orthogonal axes, and adjusting the measurement antenna height and polarization (per ANSI C63.4:2003). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

**Configuration**: 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 EUT antenna in three orthogonal axis, and adjusting the measurement antenna height and polarization (per ANSI C63.4:1992). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

Bandwidths Used for Me	easurements		
Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (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 r	nade using the bandwidths	and detectors specified. No	video filter was used.

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## **RADIATED EMISSIONS DATA SHEET EMC** Work Order: ITRM0065 EUT: 802UIAG Serial Number Date: 03/21/05 Customer: Intermec Technologies Corporation Temperature: 23 Attendees: None Humidity: 38% Barometric Pressure 29.67 Tested by: Holly Ashkannejhad Power: 120VAC, 60Hz Job Site: EV01 **TEST SPECIFICATIONS** Specification: FCC 15.247(d) Spurious Radiated Emissions:2004 Method: ANSI C63.4:2003 SAMPLE CALCULATIONS Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation Transmitting 802.11(g) High channel, Bluetooth High Channel on CK60 and Bluetooth High Channel on PB42 printer. **EUT OPERATING MODES** Simultaneous transmission of Bluetooth and 802.11(g) radios DEVIATIONS FROM TEST STANDARD No deviations. RESULTS Pass Other Holy Salingha Tested By: 80.0 70.0 \$ 60.0 50.0 dBuV/m 40.0 30.0 20.0 10.0 0.0 2400.000 2410.000 2420.000 2430.000 2440.000 2450.000 2460.000 2470.000 2480.000 2490.000 2500.000 MHz

External

Attenuation

(dB)

0.0

0.0

0.0

0.0

Polarity

H-Horn

V-Horn

H-Horn

V-Horn

Detector

 $\mathsf{AV}$ 

PΚ

Height

(meters)

1.1

1.0

1.1

1.0

Azimuth

(degrees)

189.0

306.0

189.0

306.0

Distance

(meters)

1.0

1.0

1.0

1.0

Amplitude

(dBuV)

31.7

31.3

45.3

44.2

Factor

(dB)

30.4

30.4

30.4

30.4

Freq

(MHz) 2483.500

2483.500

2483.500

2483.500

Distance

Adjustment

(dB)

-9.5

-9.5

-9.5

-9.5

Adjusted

dBuV/m

52.6

52.2

66.2

65.1

Compared to

Spec.

(dB)

-1.4

-1.8

-7.8

-8.9

Spec. Limit

dBuV/m

54.0

54.0

74.0

74.0

## **RADIATED EMISSIONS DATA SHEET EMC** EUT: 802UIAG Work Order: ITRM0065 Date: 03/21/05 Serial Number: Customer: Intermec Technologies Corporation Temperature: 23 Attendees: None Humidity: 38% Barometric Pressure 29.67 Tested by: Holly Ashkannejhad Power: 120VAC, 60Hz Job Site: EV01 TEST SPECIFICATIONS Specification: FCC 15.247(d) Spurious Radiated Emissions:2004 Method: ANSI C63.4:2003 SAMPLE CALCULATIONS Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator Transmitting 802.11(b) High channel, Bluetooth High Channel on CK60 and Bluetooth High Channel on PB42 printer. **EUT OPERATING MODES** Simultaneous transmission of Bluetooth and 802.11(b) radios DEVIATIONS FROM TEST STANDARD No deviations. RESULTS Pass Other Holy Saling Tested By: 80.0 70.0 60.0 50.0 \$ dBuV/m 40.0 30.0 20.0 10.0 0.0 2400.000 2410.000 2420.000 2430.000 2440.000 2450.000 2460.000 2470.000 2480.000 2490.000 2500.000 MHz

						External			Distance			Compared to
Freq	Amplitude	Factor	Azimuth	Height	Distance	Attenuation	Polarity	Detector	Adjustment	Adjusted	Spec. Limit	Spec.
(MHz)	(dBuV)	(dB)	(degrees)	(meters)	(meters)	(dB)			(dB)	dBuV/m	dBuV/m	(dB)
2483.500	29.6	30.4	245.0	1.0	1.0	0.0	H-Horn	AV	-9.5	50.5	54.0	-3.5
2483.500	28.0	30.4	290.0	1.0	1.0	0.0	V-Horn	AV	-9.5	48.9	54.0	-5.1
2483.500	40.2	30.4	245.0	1.0	1.0	0.0	H-Horn	PK	-9.5	61.1	74.0	-12.9
2483 500	39 1	30.4	290.0	1.0	1.0	0.0	V-Horn	PK	-9.5	60.0	74 0	-14.0

## **RADIATED EMISSIONS DATA SHEET EMC** EUT: 802UIAG Work Order: ITRM0065 Serial Number: Date: 03/29/05 Customer: Intermec Technologies Corporation Temperature: 23 Attendees: None Humidity: 38% Cust. Ref. No.: Barometric Pressure 29.67 Tested by: Rod Peloquin Power: 120VAC, 60Hz Job Site: EV01 TEST SPECIFICATIONS Specification: FCC 15.247(d) Spurious Radiated Emissions:2004 Method: ANSI C63.4:2003 SAMPLE CALCULATIONS Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator Transmitting 802.11(b) High channel, Bluetooth High Channel on CK60 and Bluetooth High Channel on PB42 printer. **EUT OPERATING MODES** Simultaneous transmission of Bluetooth and 802.11(b) radios DEVIATIONS FROM TEST STANDARD No deviations. RESULTS 10 Pass Other Rocky la Felegy Tested By: 80.0 70.0 60.0 • 50.0 dBuV/m 40.0 30.0 20.0 10.0 0.0 $16000.000 \quad 16010.000 \quad 16020.000 \quad 16030.000 \quad 16040.000 \quad 16050.000 \quad 16060.000 \quad 16070.000 \quad 16080.000 \quad 16090.000 \quad 16100.000 \quad 16080.000 \quad 1608$ MHz

					·		External			Distance	·		Compared to
	Freq	Amplitude	Factor	Azimuth	Height	Distance	Attenuation	Polarity	Detector	Adjustment	Adjusted	Spec. Limit	Spec.
	(MHz)	(dBuV)	(dB)	(degrees)	(meters)	(meters)	(dB)			(dB)	dBuV/m	dBuV/m	(dB)
	16035.000	26.2	16.6	53.0	3.4	3.0	0.0	H-Horn	AV	0.0	42.8	54.0	-11.2
	16035.000	26.1	16.6	333.0	2.2	3.0	0.0	V-Horn	AV	0.0	42.7	54.0	-11.3
	16035.000	40.3	16.6	53.0	3.4	3.0	0.0	H-Horn	PK	0.0	56.9	74.0	-17.1
	16035.000	40.1	16.6	333.0	2.2	3.0	0.0	V-Horn	PK	0.0	56.7	74.0	-17.3

### **RADIATED EMISSIONS DATA SHEET EMC** EUT: 802UIAG Work Order: ITRM0065 Serial Number: Date: 03/29/05 Customer: Intermec Technologies Corporation Temperature: 23 Attendees: None Humidity: 38% Cust. Ref. No.: Barometric Pressure 29.67 Tested by: Rod Peloquin Power: 120VAC, 60Hz Job Site: EV01 TEST SPECIFICATIONS Specification: FCC 15.247(d) Spurious Radiated Emissions:2004 Method: ANSI C63.4:2003 SAMPLE CALCULATIONS Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator Transmitting 802.11(g) High channel, Bluetooth High Channel on CK60 and Bluetooth High Channel on PB42 printer. **EUT OPERATING MODES** Simultaneous transmission of Bluetooth and 802.11(g) radios DEVIATIONS FROM TEST STANDARD No deviations. RESULTS 11 Pass Other Rocky le Feling Tested By: 80.0 70.0 60.0 \$ 50.0 dBuV/m 40.0 30.0 20.0 10.0 0.0 16000.000 16010.000 16020.000 16030.000 16040.000 16050.000 16060.000 16070.000 16080.000 16090.000 16100.000 MHz

						External			Distance			Compared to
Freq	Amplitude	Factor	Azimuth	Height	Distance	Attenuation	Polarity	Detector	Adjustment	Adjusted	Spec. Limit	Spec.
(MHz)	(dBuV)	(dB)	(degrees)	(meters)	(meters)	(dB)			(dB)	dBuV/m	dBuV/m	(dB)
16035.000	26.1	16.6	314.0	1.3	3.0	0.0	H-Horn	AV	0.0	42.7	54.0	-11.3
16035.000	26.1	16.6	249.0	2.0	3.0	0.0	V-Horn	AV	0.0	42.7	54.0	-11.3
16035.000	41.1	16.6	249.0	2.0	3.0	0.0	V-Horn	PK	0.0	57.7	74.0	-16.3
16035.000	39.6	16.6	314.0	1.3	3.0	0.0	H-Horn	PK	0.0	56.2	74.0	-17.8

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		802UIAG							Work	Order: ITRM0	065
Se	erial Number									Date: 03/29/0	
			echnologies C	orporation						ature: 23	
	Attendees									nidity: 38%	
C	ust. Ref. No.	Rod Peloqu	iin			Power:	120VAC, 60		Barometric Pre	o Site: EV01	
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			(d) Spurious	Radiated Emi	ssions:2004		Method: A	NSI C63.4:2	003		
AMPL	E CALCUL	ATIONS									
		-	= Measured Level			-	-		ternal Attenuation	ו	
Condu		: Adjusted Level	= Measured Leve	I + Transducer Fa	ctor + Cable Atte	nuation Factor +	External Attenua	tor			
		High channel. E	Bluetooth High Ch	nannel on CK60 a	and Bluetooth Hi	igh Channel on	PB42 printer.				
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		7210 000	7320.000	7330.000	7340.000	7350.000	7360.000	7370.000	7380.000	7390.000	7400.000
	7300.000	7310.000	7 320.000	7 330.000	7.540.000	7330.000	7000.000	7070.000	7000.000	7000.000	7 100.000

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<b>_</b>						External			Distance			Compared to
Freq	Amplitude	Factor	Azimuth	Height	Distance	Attenuation	Polarity	Detector	Adjustment	Adjusted	Spec. Limit	Spec.
(MHz)	(dBuV)	(dB)	(degrees)	(meters)	(meters)	(dB)			(dB)	dBuV/m	dBuV/m	(dB)
7386.002	37.9	10.8	132.0	2.3	3.0	0.0	V-Horn	AV	0.0	48.7	54.0	-5.3
7386.002	33.3	10.8	128.0	1.3	3.0	0.0	H-Horn	AV	0.0	44.1	54.0	-9.9
7386.002	51.8	10.8	132.0	2.3	3.0	0.0	V-Horn	PK	0.0	62.6	74.0	-11.4
7386.002	51.8	10.8	128.0	1.3	3.0	0.0	H-Horn	PK	0.0	62.6	74.0	-11.4

## **RADIATED EMISSIONS DATA SHEET EMC** EUT: 802UIAG Work Order: ITRM0065 Serial Number: Date: 03/29/05 Customer: Intermec Technologies Corporation Temperature: 23 Attendees: None Humidity: 38% Cust. Ref. No.: Barometric Pressure 29.67 Tested by: Rod Peloquin Power: 120VAC, 60Hz Job Site: EV01 TEST SPECIFICATIONS Specification: FCC 15.247(d) Spurious Radiated Emissions:2004 Method: ANSI C63.4:2003 SAMPLE CALCULATIONS Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator Transmitting 802.11(g) High channel, Bluetooth High Channel on CK60 and Bluetooth High Channel on PB42 printer. **EUT OPERATING MODES** Simultaneous transmission of Bluetooth and 802.11(g) radios DEVIATIONS FROM TEST STANDARD No deviations. RESULTS 13 Pass Other Rocky le Feling Tested By: 80.0 70.0 60.0 50.0 dBuV/m 40.0 30.0 20.0 10.0 0.0 7300.000 7310.000 7320.000 7330.000 7340.000 7350.000 7360.000 7370.000 7380.000 7390.000 7400.000

						External			Distance			Compared to	
Freq	Amplitude	Factor	Azimuth	Height	Distance	Attenuation	Polarity	Detector	Adjustment	Adjusted	Spec. Limit	Spec.	
(MHz)	(dBuV)	(dB)	(degrees)	(meters)	(meters)	(dB)			(dB)	dBuV/m	dBuV/m	(dB)	
7386.002	26.1	10.8	180.0	2.4	3.0	0.0	V-Horn	AV	0.0	36.9	54.0	-17.1	
7386.002	25.6	10.8	13.0	3.9	3.0	0.0	H-Horn	AV	0.0	36.4	54.0	-17.6	
7386.002	39.7	10.8	180.0	2.4	3.0	0.0	V-Horn	PK	0.0	50.5	74.0	-23.5	
7386.002	39.7	10.8	13.0	3.9	3.0	0.0	H-Horn	PK	0.0	50.5	74.0	-23.5	

MHz

