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INTERMEC TECHNOLOGIES CORPORATION TEST REPORT

FOR THE

PERSONAL AREA NETWORK (PAN) RADIO, ABTM3

FCC PART 15 SUBPART C SECTIONS 15.247 & 15.207 AND FCC PART 15 SUBPART B SECTION 15.109 CLASS B

COMPLIANCE

DATE OF ISSUE: AUGUST 13, 2001

PREPARED FOR:

Intermec Technologies Corporation
550 Second Street SE
MS#: RD01
Cedar Rapids, IA 52401

PREPARED BY:

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Mariposa, CA 95338

W.O. No.: 77321

Date of test: July 30-August 7, 2001

Report No.: FC01-057

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CKC Laboratories, Inc. has received Certificates of Accreditation from the following agencies:
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CKC Laboratories, Inc has received test site Registration Acceptance from the following agencies:
FCC (USA); VCCI (Japan); and Industry Canada.
CKC Laboratories, Inc. has received Letters of Acceptance through an MRA for the following agencies:
ACA/NATA (Australia); SABS (South Africa); SWEDAC (Sweden); Radio Communications Agency (RA); HOKLAS (Hong Kong); Bakom (Swiss); BIPT (Belgium); Denmark Telestyrelsen; RvA (Netherlands); SEE (Luxembourg) SITTEL (Bolivia); and UKAS (UK).

ADMINISTRATIVE INFORMATION

DATE OF TEST:	July 30-August 7, 2001
DATE OF RECEIPT:	July 30, 2001
PURPOSE OF TEST:	To demonstrate the compliance of the Personal Area Network (PAN) Radio, ABTM3, with the requirements for FCC Part 15 Subpart C Sections 15.247 & 15.207 and FCC Part 15 Subpart B Section 15.109 devices.
TEST METHOD:	ANSI C63.4 (1992)
MANUFACTURER:	Intermec Technologies Corporation 550 Second Street SE MS#: RD01 Cedar Rapids, IA 52401
REPRESENTATIVE:	Dave Fry
TEST LOCATION:	CKC Laboratories, Inc. 5473A Clouds Rest Mariposa, CA 95338

SUMMARY OF RESULTS

As received, the Personal Area Network (PAN) Radio, ABTM3, was found to be fully compliant with the following standards and specifications:

United States

- FCC Part 15 Subpart B Section 15.109 Class B
- FCC Part 15 Subpart C Section 15.247 & 15.207
- ANSI C63.4 (1992) method

Canada

RSS-210 using:

- FCC Part 15 Subpart B Section 15.109 Class B
- FCC Part 15 Subpart C Section 15.247 & 15.207
- ANSI C63.4 (1992) method

The results in this report apply only to the items tested, as identified herein.

MODIFICATIONS REQUIRED FOR COMPLIANCE

No modifications to the EUT were necessary to comply.

APPROVALS

QUALITY ASSURANCE:

Dennis Ward

Dennis Ward, Quality Manager

Chuck Kendall

Chuck Kendall, EMC/Lab Manager

TEST PERSONNEL:

Randy Clark

Randy Clark, EMC Engineer

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The EUT tested by CKC Laboratories was a production unit. The module will be incorporated within Intermec hand-held computer terminals and mobile printers that require short-range wireless communication. The short-range wireless capability will eliminate cables or line of sight infrared communication between the host computer and printers enhancing the user(s) ability perform data entry and inventory control functions with the Intermec products. These radio modules operate as Frequency Hopping Spread Spectrum transmitters in the 2.4-2.4835 GHz radio band within the provisions outlined in FCC Rules Section 15.247 as well as Industry Canada RSS-210. This report shows the radio as a stand-alone module to show the radio is designed to comply with the FCC and Canadian requirements without any additional shielding or filtering. The test data within shows radio characteristics with the integrated antenna as supplied by ALPS. This radio will always be used with the permanently attached antenna.

The following model has been tested by CKC Laboratories:

Personal Area Network Radio Module, Model # UGTA2-2XXA

The following additional models are identical electrically to the one, which was tested, or any differences between them do not affect their EMC characteristics, and therefore they comply with the level of testing equivalent to the tested models.

Personal Area Network Radio Module, (PAN) Radio, Model # ABTM3

The radio manufacturer is ALPS, the distributor is Socket. Intermec is obtaining the radio through Socket and Socket did not understand the radio descriptions defined by ALPS, and therefore misinformed Intermec of the ALPS part number. After persistent inquiries Intermec did obtain the correct ALPS part number. The only radio that ALPS currently builds is UGTZ2-1XXX with integrated antenna. To establish an identity for the radio exclusive to Intermec, the ABTM3 model number and PAN radio description was derived.

ALPS also clarified the radio power and antenna characteristics. Transmitter conducted power is typically +9 dBm, the antenna has an average gain of -10 dBi. This combination generates an EIRP of 0 dBm or 1.0 milliwatts.

Intermec intends to file for approval as a 1.0 milliwatt (0.001 watt) transmitter.

EQUIPMENT UNDER TEST

Personal Area Network Radio (PAN)
Manuf: Intermec Technologies Corporation
Model: ABTM3
Serial: 0104000118
FCC ID: EHAABTM3 (Pending)

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

Host Terminal
Manuf: Intermec Technologies
Model: 700
Serial: 4623379
FCC ID:

SW Host
Manuf: Intermec Technologies Corporation
Model: 6640
Serial: 4502888
FCC ID: DoC

Power Supply
Manuf: Intermec Technologies Corporation
Model: 851-050-001
Serial: 0118-18
FCC ID: DoC

Power Supply
Manuf: Skynet Electronic Co.
Model: SNP-A075
Serial: 993821415
FCC ID: DoC

MODE OF OPERATION

The EUT was configured by the manufacturer to transmit or receive in either continuous or random hopping mode. EUT is a FHSS only transmitter. EUT was tested with voltage variations from 2.9 – 3.5 VDC as the power supplied to the module for frequency stability and power output verification. Since this device can be mounted in any orientation, the EUT was tested in the following 3 orthogonal axis:

A = module laying face up
B = module on its side with the PCB's long edge facing upwards
C = module on its side with the PCB's short edge facing upwards

From the fundamental testing, the worst case orientation was C. Therefore, all testing was performed in this orientation. A and B orientations were re-measured at the highest emissions to verify compliance.

15.33 FREQUENCY RANGE TESTED

Radiated: 150 kHz – 26 GHz
Conducted: 450 kHz – 30 MHz

EUT OPERATING FREQUENCY

The EUT was operating at Channel 1 (2402MHz), Channel 2 (2441MHz) and Channel 3 (2480MHz) MHz within the 2400 – 2483.5 MHz range.

TEMPERATURE AND HUMIDITY DURING TESTING

The temperature during testing was within +15°C and + 35°C.
The relative humidity was between 20% and 75%.

REPORT OF MEASUREMENTS

The following tables report the highest worst case levels recorded during the tests performed on the Personal Area Network (PAN) Radio, ABTM3. All readings taken are peak readings unless otherwise noted. The data sheets from which these tables were compiled are contained in Appendix B.

Table 1: Fundamental Radiated Emission Levels

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	Dist dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
2401.910	94.5	28.5	-34.6	8.2		96.6	97.4	-0.8	H
2479.950	94.0	28.7	-34.4	8.4		96.7	97.4	-0.7	H
2479.950	93.7	28.7	-34.4	8.4		96.4	97.4	-1.0	H
2479.970	93.8	28.7	-34.4	8.4		96.5	97.4	-0.9	H
2480.000	94.0	28.7	-34.4	8.4		96.7	97.4	-0.7	V
2480.010	94.0	28.7	-34.4	8.4		96.7	97.4	-0.7	V

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.247(b)(1)
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization

COMMENTS: EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously transmit at maximum output power. Voltage supplied to EUT is varied from 2.9VDC to 3.5VDC (3.3VDC nominal) supplied through a separate DC power supply. Table represents worst case of all three orthogonals. Frequency Range Tested: Channel 1 (2402MHz), Channel 2 (2441MHz) and Channel 3 (2480MHz). See notes in test data sheets in Appendix C for individual voltages and orthogonal readings.

Table 2: Six Highest Radiated Emission Levels: 150 kHz-1000 MHz

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	Dist dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
64.049	49.3	9.2	-27.1	1.5		32.9	40.0	-7.1	V
64.062	49.6	9.2	-27.1	1.5		33.2	40.0	-6.8	V
420.848	46.5	16.2	-27.3	4.3		39.7	46.0	-6.3	H
420.853	46.6	16.2	-27.3	4.3		39.8	46.0	-6.2	H
420.855	47.9	16.2	-27.3	4.3		41.1	46.0	-4.9	H
440.890	44.6	16.6	-27.4	4.5		38.3	46.0	-7.7	H

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.247(c)
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization

COMMENTS: EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously transmit at maximum output power. EUT tested with three orientations on orthogonal axes and three separate channels (low, middle and high). Power output of modular EUT is limited to 1mW. Frequency Range Tested: 150kHz-1000MHz. No emissions were found in the 150kHz-30MHz range.

Table 3: Six Highest Radiated Emission Levels: 1-18 GHz

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	15.35 dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
7205.880	42.2	34.1	-36.1	13.6	-20.0	33.8	54.0	-20.2	V
7322.560	39.8	35.0	-36.2	13.7	-20.0	32.3	54.0	-21.7	V
7323.100	40.8	35.0	-36.2	13.7	-20.0	33.3	54.0	-20.7	H
7439.850	39.7	35.4	-36.3	13.8	-20.0	32.6	54.0	-21.4	H
7439.870	42.2	35.4	-36.3	13.8	-20.0	35.1	54.0	-18.9	H
7439.930	43.8	35.4	-36.3	13.8	-20.0	36.7	54.0	-17.3	H

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.247(c)
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization

COMMENTS: EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously transmit at maximum output power. Table represents worst case of all three orthogonals. Power output of modular EUT is limited to 1mW. Dwell time correction factor used in accordance with DA00-705 (-20dB maximum used). Frequency Range Tested: 1-18GHz. See notes in test data sheets in Appendix C for individual orthogonal readings.

Table 4: Six Highest Radiated Emission Levels: 18-26 GHz

Frequency MHz	Meter Reading dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	15.35 dB	Dist dB	Corrected Reading dBµV/m	Spec Limit dBµV/m	Margin dB	Notes
19527.710	42.5	40.4	-32.8	3.2	-20.0	-10.0	23.3	54.0	-30.7	H
19839.410	43.3	40.7	-32.8	3.4	-20.0	-10.0	24.6	54.0	-29.4	V
19839.580	41.7	40.7	-32.8	3.4	-20.0	-10.0	23.0	54.0	-31.0	V
19839.630	41.5	40.7	-32.8	3.4	-20.0	-10.0	22.8	54.0	-31.2	H
19840.080	42.5	40.7	-32.8	3.4	-20.0	-10.0	23.8	54.0	-30.2	H
19840.190	41.8	40.7	-32.8	3.4	-20.0	-10.0	23.1	54.0	-30.9	V

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.247(c)
Test Distance: 1 Meter

NOTES: H = Horizontal Polarization
V = Vertical Polarization

COMMENTS: EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously transmit at maximum output power. EUT tested with three orientations on orthogonal axes. Power output of modular EUT is limited to 1mW. Dwell time correction factor used in accordance with DA00-705 (-20dB maximum used). Data corrected for test distance in accordance with FCC 15.31 (20dB/ Dec). Frequency Range Tested: 18-26GHz.

Table 5: Six Highest Radiated Emission Levels: Bandedge

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	Dist dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
2399.455	54.2	28.5	-34.6	8.2		36.3	54.0	-17.7	H
2399.455	52.6	28.5	-34.6	8.2		34.7	54.0	-19.3	V
2399.960	61.8	28.5	-34.6	8.2		43.9	54.0	-10.1	H
2399.960	59.8	28.5	-34.6	8.2		41.9	54.0	-12.1	V
2483.500	54.4	28.8	-34.4	8.4		37.2	54.0	-16.8	H
2483.500	53.5	28.8	-34.4	8.4		36.3	54.0	-17.7	V

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.247
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization

COMMENTS: EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously transmit at maximum output power. Voltage supplied to EUT is set to 3.5VDC (maximum output) supplied through a separate DC power supply. EUT orientation: laying on its side PCB short edge upwards. Power output of modular EUT is limited to 1mW. Dwell time correction factor used in accordance with DA00-705 (-20dB maximum used). Frequency Range Tested: 2398 - 2402MHz and 2480 - 2485MHz (Bandedges only).

Table 6: Six Highest Conducted Emission Levels									
FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Lisn dB	dB	Cable dB	dB	CORRECTED READING dBµV	SPEC LIMIT dBµV	MARGIN dB	NOTES
0.550342	35.6	0.4		0.1		36.1	48.0	-11.9	B
1.688818	35.7	0.3		0.1		36.1	48.0	-11.9	B
1.731082	36.0	0.3		0.1		36.4	48.0	-11.6	B
1.813774	35.5	0.3		0.1		35.9	48.0	-12.1	B
21.357080	35.7	0.5		0.3		36.5	48.0	-11.5	W
21.870820	36.1	0.5		0.3		36.9	48.0	-11.1	W

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.207

NOTES: B = Black Lead
W = White Lead

COMMENTS: EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously transmit on the center channel. Frequency Range Tested: 450 kHz - 30 MHz

Table 7: Six Highest Radiated Emission Levels: 30-1000 MHz (Receiver)									
	METER	CORRECTION FACTORS				CORRECTED	SPEC		
FREQUENCY MHz	READING dBµV	Ant dB	Amp dB	Cable dB	Dist dB	READING dBµV/m	LIMIT dBµV/m	MARGIN dB	NOTES
64.028	49.4	9.2	-27.1	1.5		33.0	40.0	-7.0	V
420.839	47.4	16.2	-27.3	4.3		40.6	46.0	-5.4	H
420.852	45.6	16.2	-27.3	4.3		38.8	46.0	-7.2	H
440.862	44.6	16.6	-27.4	4.5		38.3	46.0	-7.7	H
460.887	44.2	17.0	-27.6	4.6		38.2	46.0	-7.8	V
460.916	43.1	17.0	-27.6	4.6		37.1	46.0	-8.9	H

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart B Section 15.109 Class B
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization

COMMENTS: EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously receive. EUT tested with three orientations on orthogonal axes and three separate channels (low, middle and high). Frequency Range Tested: 30-1000MHz

Table 8: Six Highest Radiated Emission Levels: 1-26 GHz (Receiver)

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	Dist dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
1200.187	45.4	25.0	-35.4	5.3		40.3	54.0	-13.7	V
1200.187	45.1	25.0	-35.4	5.3		40.0	54.0	-14.0	V
1200.204	45.1	25.0	-35.4	5.3		40.0	54.0	-14.0	H
1200.213	45.3	25.0	-35.4	5.3		40.2	54.0	-13.8	V
1219.749	44.7	25.0	-35.4	5.3		39.6	54.0	-14.4	V
1239.250	45.3	25.0	-35.3	5.4		40.4	54.0	-13.6	V

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart B Section 15.109 Class B
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization

COMMENTS: EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously receive. EUT tested with three orientations on orthogonal axes and three separate channels (low, middle and high). Frequency Range Tested: 1 - 26 GHz

MEASUREMENT UNCERTAINTY

Associated with data in this report is a ± 4dB measurement uncertainty.

EUT SETUP

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the photographs in Appendix A. Flex cables were routed consistent with the typical application by varying the configuration of the test sample. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables. The corrected data was then compared to the applicable emission limits to determine compliance.

The radiated and conducted emissions data of the Personal Area Network (PAN) Radio, ABTM3, was taken with the HP Spectrum Analyzer. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in Table A.

Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dBµV/m, the spectrum analyzer reading in dBµV was corrected by using the following formula in Table A. This reading was then compared to the applicable specification limit to determine compliance.

TABLE A: SAMPLE CALCULATIONS

	Meter reading	(dBµV)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dBµV/m)

A typical data sheet will display the following in column format:

#	Freq	Rdng	Amp	Bicon	Log 1	Cable	Corr	Spec	Margin	Polar
			15.35	Horn	LISN	GHz C				

means reading number.
Freq is the frequency in MHz of the obtained reading.
Rdng is the reading obtained on the spectrum analyzer in dBµV.
Amp is the preamplifier factor or gain in dB.
Bicon is the biconical antenna factor in dB.
Log 1 is the log periodic antenna factor in dB.
Horn is the horn antenna factor in dB.
Cable is the cable loss in dB of the coaxial cable on the OATS.
GHz C is the cable loss in dB of the high frequency coaxial cable on the OATS.
Dist is the distance factor in dB used when testing at a different test distance than the one stated in the spec.
Corr is the corrected reading in dBµV/m (field strength).
Spec is the specification limit (dB) stated in the FCC regulations.
Margin is the closeness to the specified limit in dB; + is over and - is under the limit.
Polar is the polarity of the antenna with respect to earth.
LISN is the line impedance stabilization network factor in dB for conducted emissions.
FCC 15.35 is the average correction called in FCC Part 15.35.

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed in Table A were used to collect both the radiated and conducted emissions data for the Personal Area Network (PAN) Radio, ABTM3. Frequencies below 30 MHz were tested using the magnetic loop antenna. For radiated measurements below 300 MHz, the biconical antenna was used. For frequencies from 300 to 1000 MHz, the log periodic antenna was used. The horn antenna was used for frequencies above 1000 MHz. Conducted emissions tests required the use of the FCC type LISNs.

The HP spectrum analyzer was used for all measurements. Table B shows the analyzer bandwidth settings that were used in designated frequency bands. For conducted emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used. A 10 dB external attenuator was also used during conducted tests, with internal offset correction in the analyzer. During radiated testing, the measurements were made with 0 dB of attenuation, a reference level of 97 dBµV, and a vertical scale of 10 dB per division.

FCC SECTION 15.35:
TABLE B: ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE

TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	450 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	26 GHz	1 MHz

SPECTRUM ANALYZER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the Tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the six highest readings, this is indicated as a "Q" or an "A" in the appropriate table. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data for the Personal Area Network (PAN) Radio, ABTM3.

Peak

In this mode, the Spectrum Analyzer or test engineer recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the analyzer called "peak hold," the analyzer had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the analyzer made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the HP Quasi-Peak Adapter for the HP Spectrum Analyzer. The detailed procedure for making quasi peak measurements contained in the HP Quasi-Peak Adapter manual were followed.

Average

For certain frequencies, average measurements may be made using the spectrum analyzer. To make these measurements, the test engineer reduces the video bandwidth on the analyzer until the modulation of the signal is filtered out. At this point the analyzer is set into the linear mode and the scan time is reduced.

EUT TESTING

Radiated Emissions

The EUT was mounted on a nonconductive, rotating table 80 cm above the conductive grid. The nonconductive table dimensions were 1 meter by 1.5 meters.

During the preliminary radiated scan, the host terminal was powered up and operating in its defined FCC test mode. Frequencies below 30 MHz were scanned with a magnetic loop antenna. The frequency range of 30 MHz to 88 MHz was scanned with the biconical antenna located about 1.5 meter above the ground plane in the vertical configuration. During this scan, the turntable was rotated and all peaks at or near the limit were recorded. The frequency range of 100 to 300 MHz was then scanned in the same manner using the biconical antenna and the peaks recorded. Lastly, a scan of the FM band from 88 to 110 MHz was made, using a reduced resolution bandwidth and frequency span. The biconical antenna was changed to the horizontal polarity and the above steps were repeated. After changing to the log periodic antenna in the horizontal configuration, the frequency range of 300 to 1000 MHz was scanned. The log periodic antenna was changed to the vertical polarity and the frequency range of 300 to 1000 MHz was again scanned. For frequencies exceeding 1000 MHz, the horn antenna was used. Care was taken to ensure that no frequencies were missed within the FM and TV bands. An analysis was performed to determine if the signals that were at or near the limit were caused by an ambient transmission. If unable to determine by analysis, the equipment was powered down to make the final determination if the EUT was the source of the emission.

A thorough scan of all frequencies was made manually using a small frequency span, rotating the turntable as needed. The test engineer maximized the readings with respect to the table rotation, antenna height, and configuration of EUT. Maximizing of the EUT was achieved by monitoring the spectrum analyzer on a closed circuit television monitor. Photographs showing the final worst case configuration of the EUT are contained in Appendix A.

Mains Conducted Emissions

During conducted emissions testing, the EUT was located on a wooden table measuring approximately 80 cm high, 1 meter deep, and 1.5 meters in length. One wall of the room where the EUT was located has a minimum 2 meter by 2 meter conductive plane. The EUT was mounted on the wooden table 40 cm away from the conductive plane, and 80 cm from any other conductive surface.

The vertical metal plane used for conducted emissions was grounded to the earth. Power to the EUT was provided through a LISN. The LISN was grounded to the ground plane. All other objects were kept a minimum of 80 cm away from the EUT during the conducted test.

For conducted emissions testing, a 30 to 50 second sweep time was used for automated measurements in the frequency bands of 450 kHz to 1.705 MHz, 1.705 MHz to 3 MHz, and 3 MHz to 30 MHz. All readings within 20 dB of the limit were recorded. At frequencies where the recorded emissions were close to the limit, further investigation was performed manually at a slower sweep rate.

TRANSMITTER CHARACTERISTICS

15.203 Antenna Requirements)

The EUT uses an on-board antenna. The provisions to address a connector that meets the unique coupler requirements do not apply.

15.205 Restricted Bands)

The Fundamental operating frequency lies outside the restricted bands and therefore complies with the requirements of Section 15.205 of the FCC rules.

Any spurious emission coming from the EUT was investigated to determine if any portion lies inside the restricted band. If any portion of a spurious emissions signal was found to be within a restricted band, investigation was performed to ensure compliance with Section 15.209.

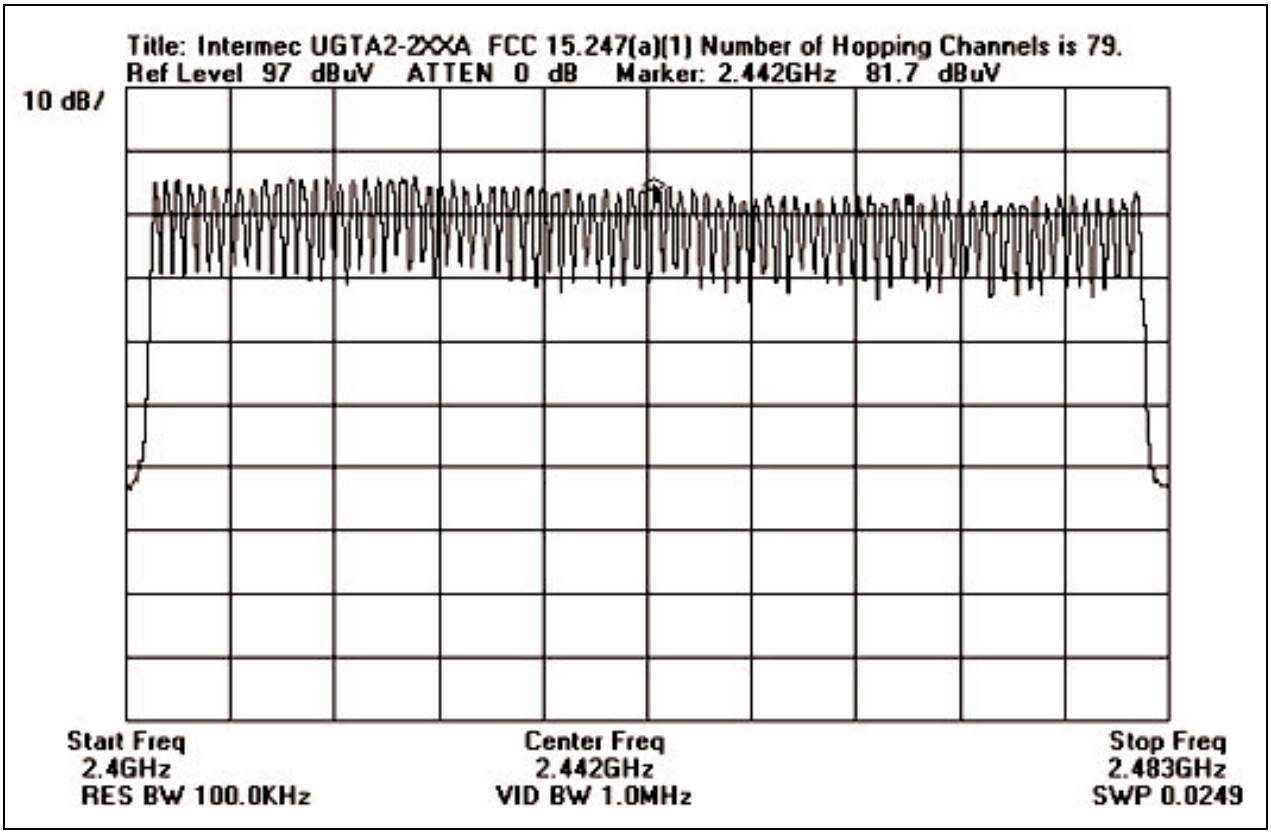
15.247(a)(1)(ii) Bandwidth Measurements (Frequency Hopping 2400-2483.5 MHz)

The fundamental frequency was kept within the permitted band 2400-2483.5 MHz. This band shall use a minimum of 75 hopping frequencies. The hopping channel carrier frequencies shall be separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. The maximum 20 dB bandwidth of the hopping channel is 1 MHz. In a 30-second period, the average time of occupancy on any frequency shall be no more than 0.4 seconds.

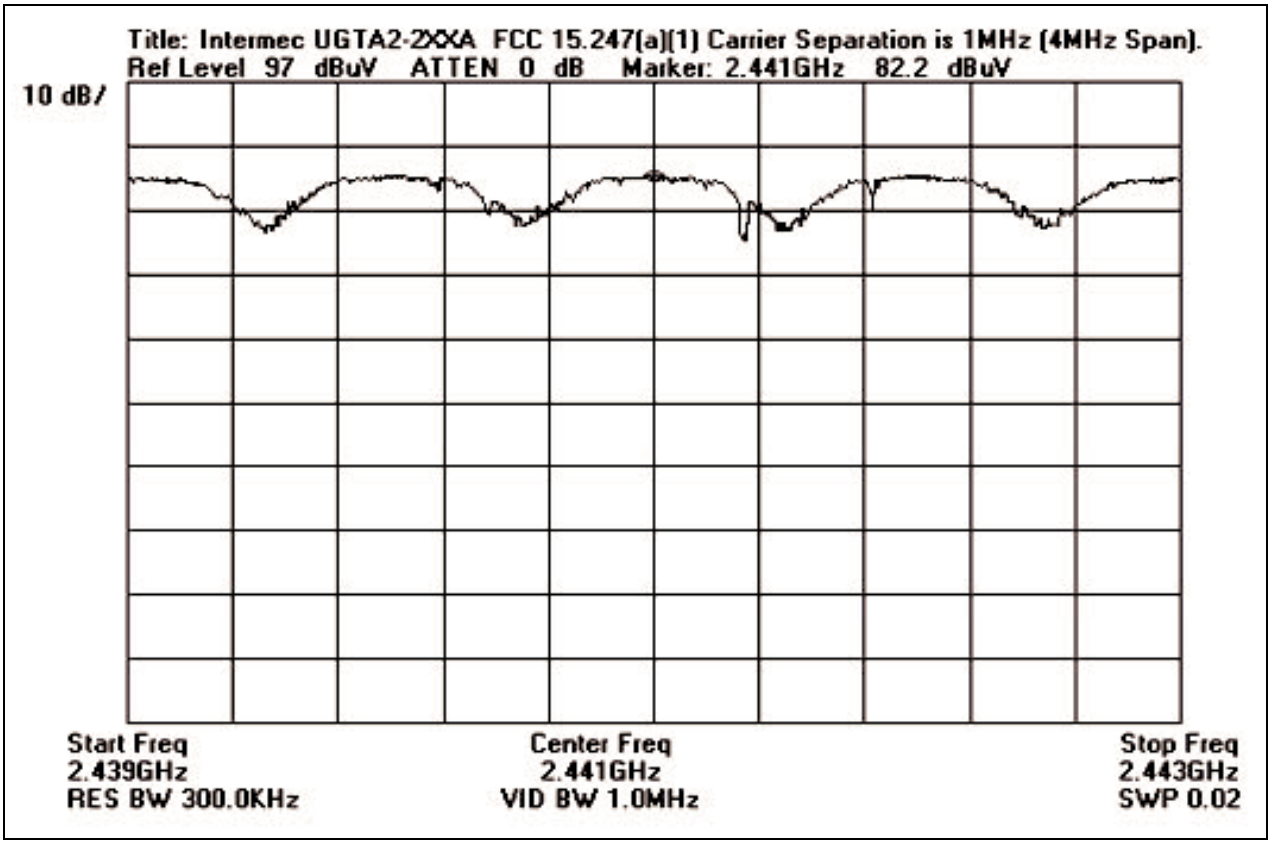
15.215 Additional Provisions To The General Radiated Emission Limitations

The fundamental frequency was kept within at least the central 80% of the permitted band. See Table 7 in the Report of Measurements section.

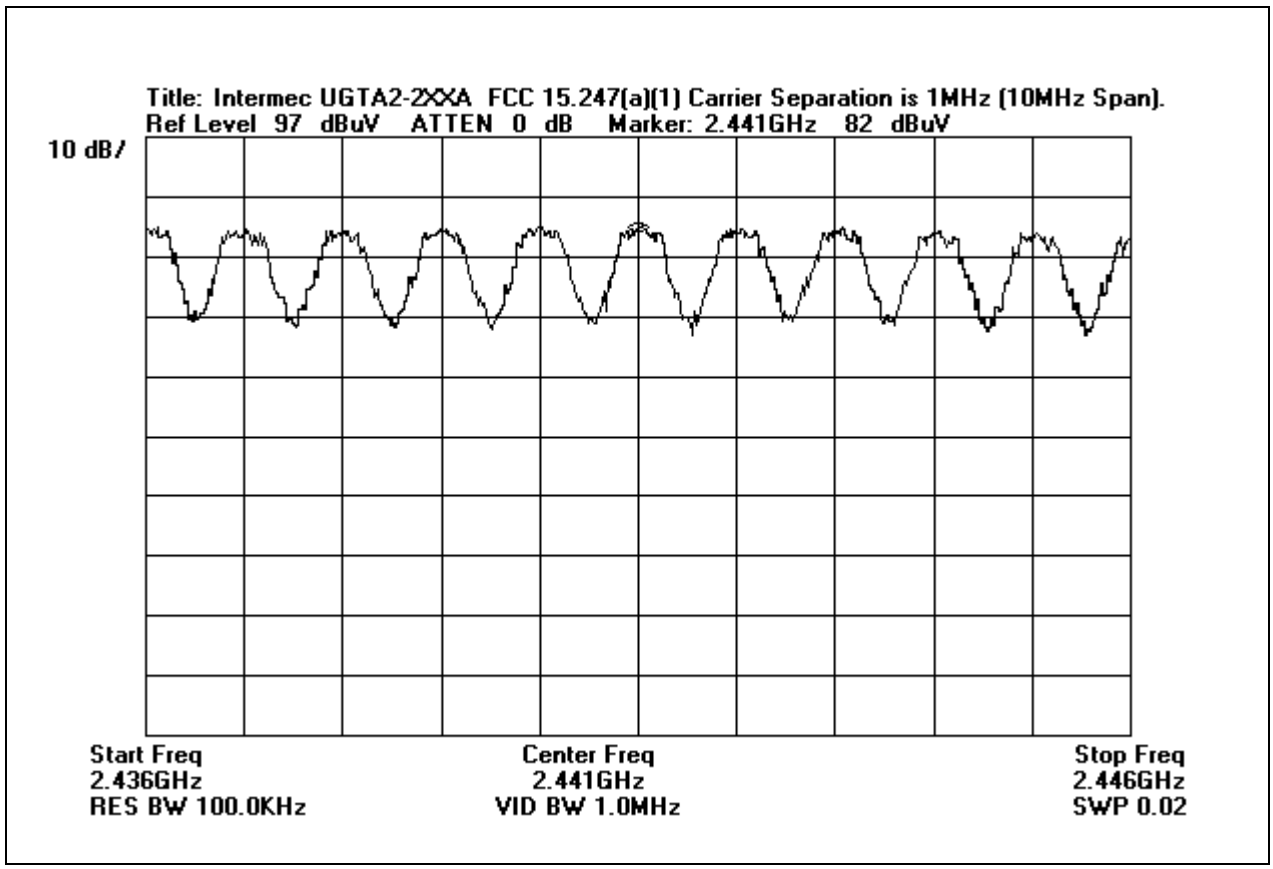
15.247(a)(1) - Number of Hopping Channels



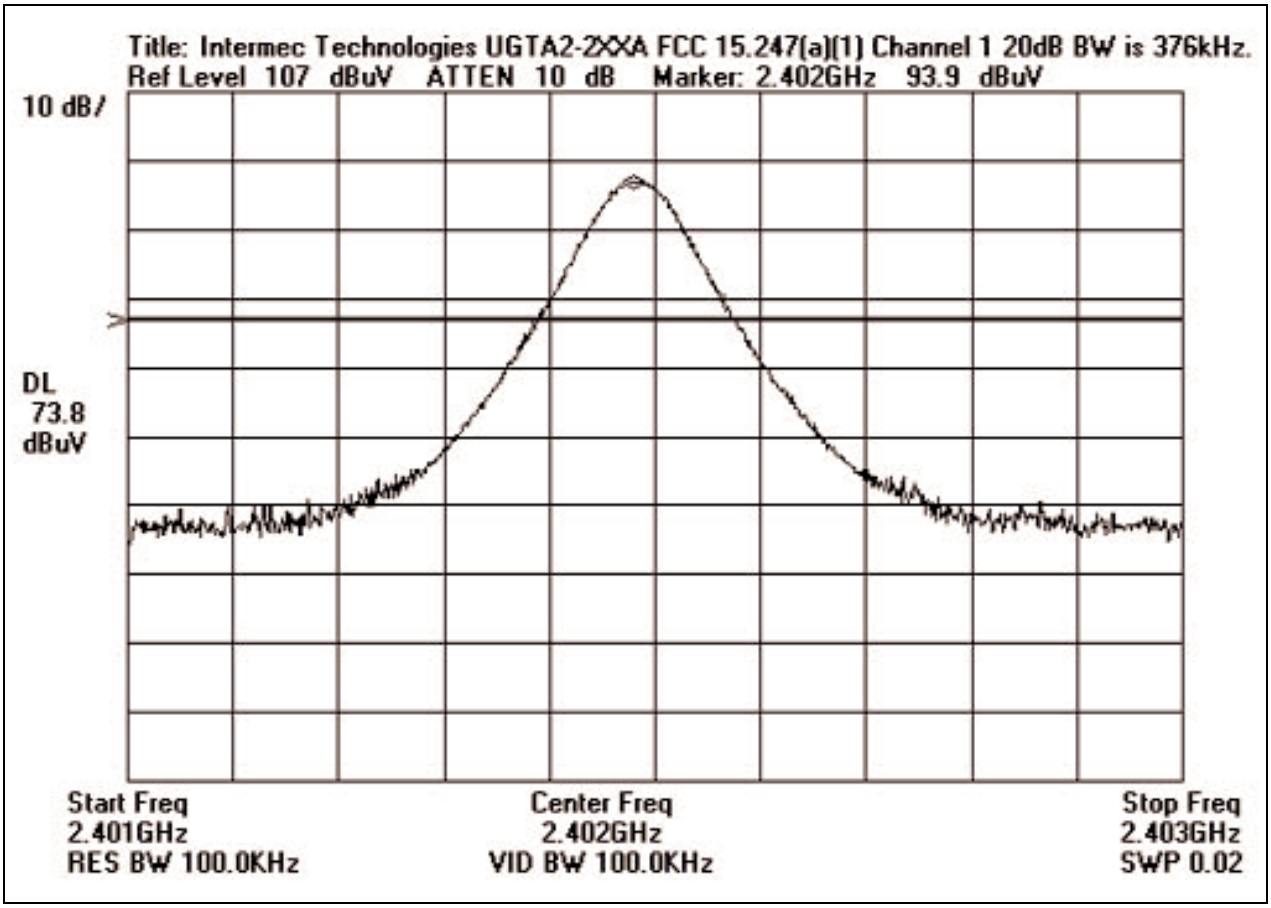
15.247(a)(1) - Carrier Separation (4MHz)



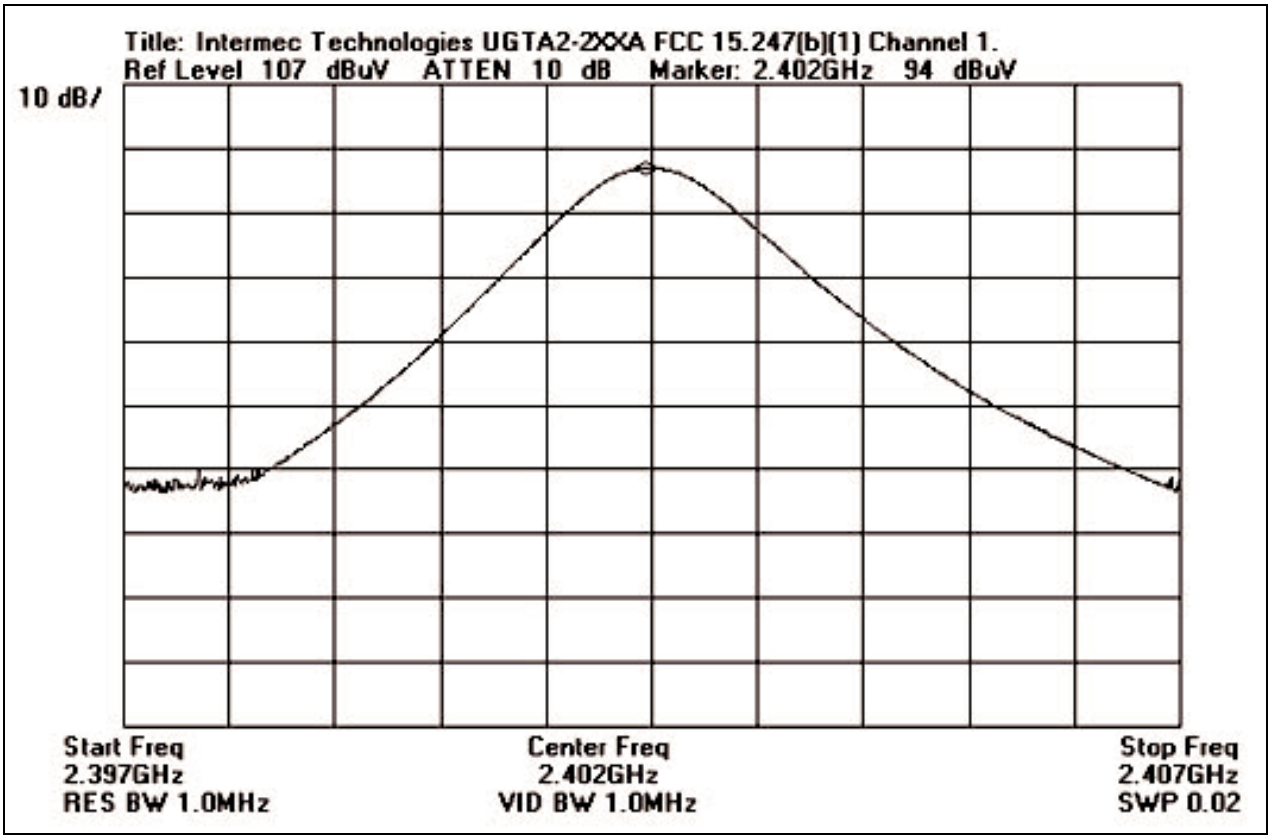
15.247(a)(1) - Carrier Separation (10MHz)



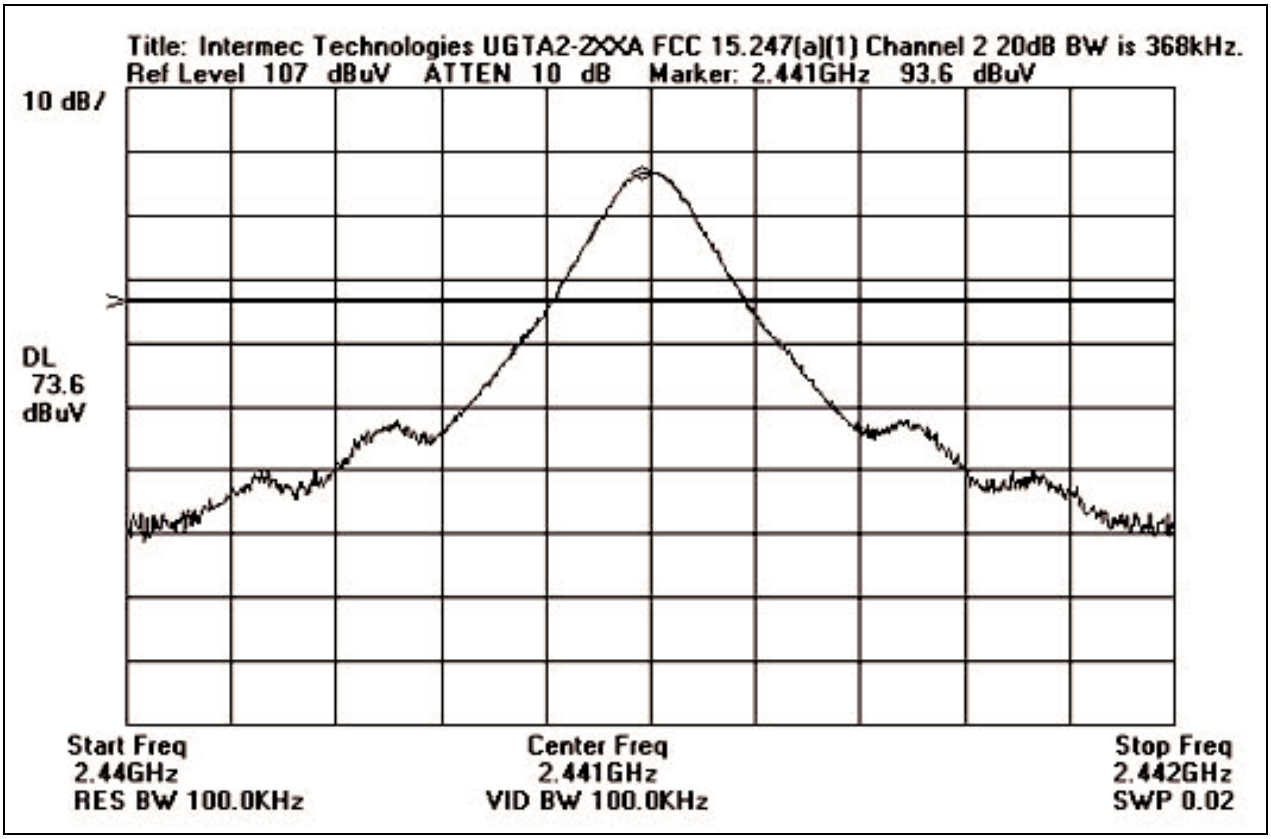
15.247(a)(1) - Channel 1



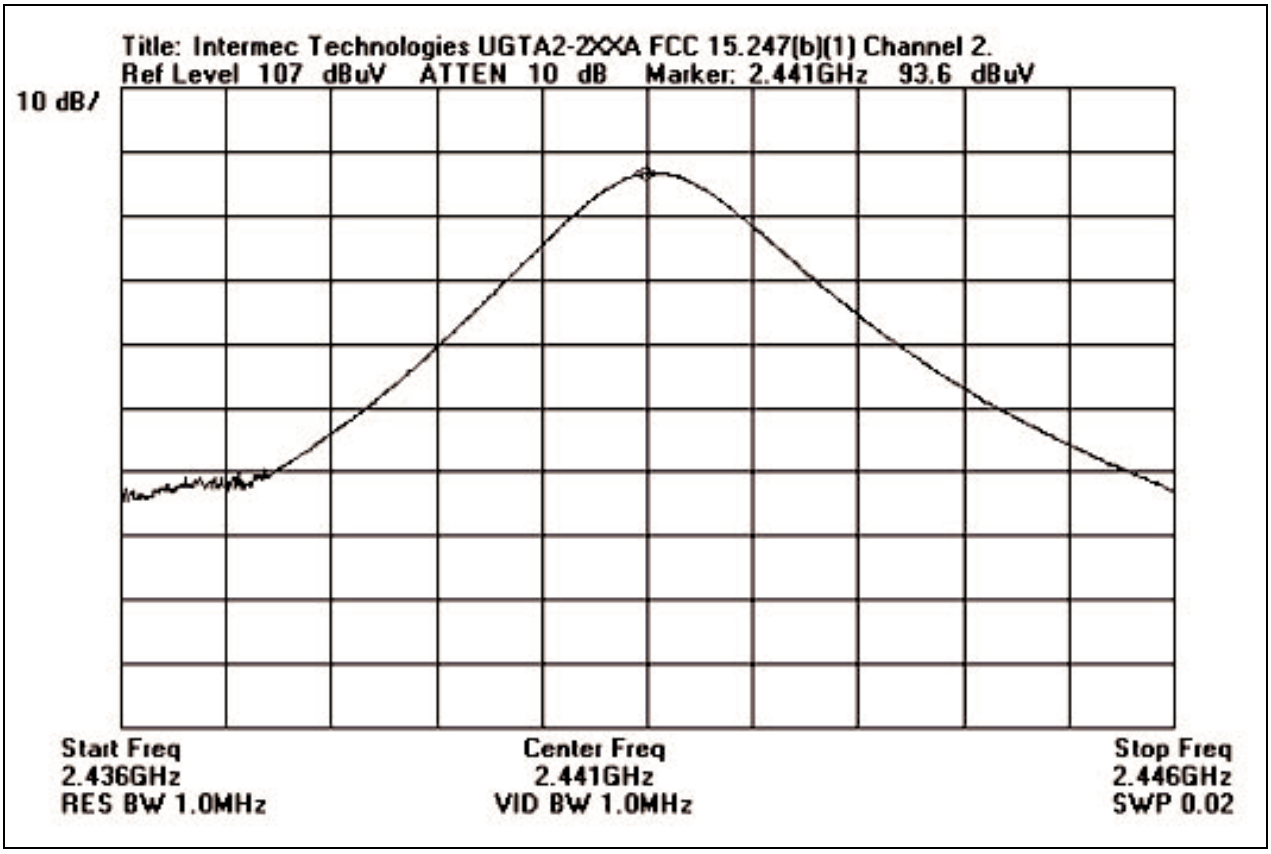
15.247(b)(1) - Channel 1



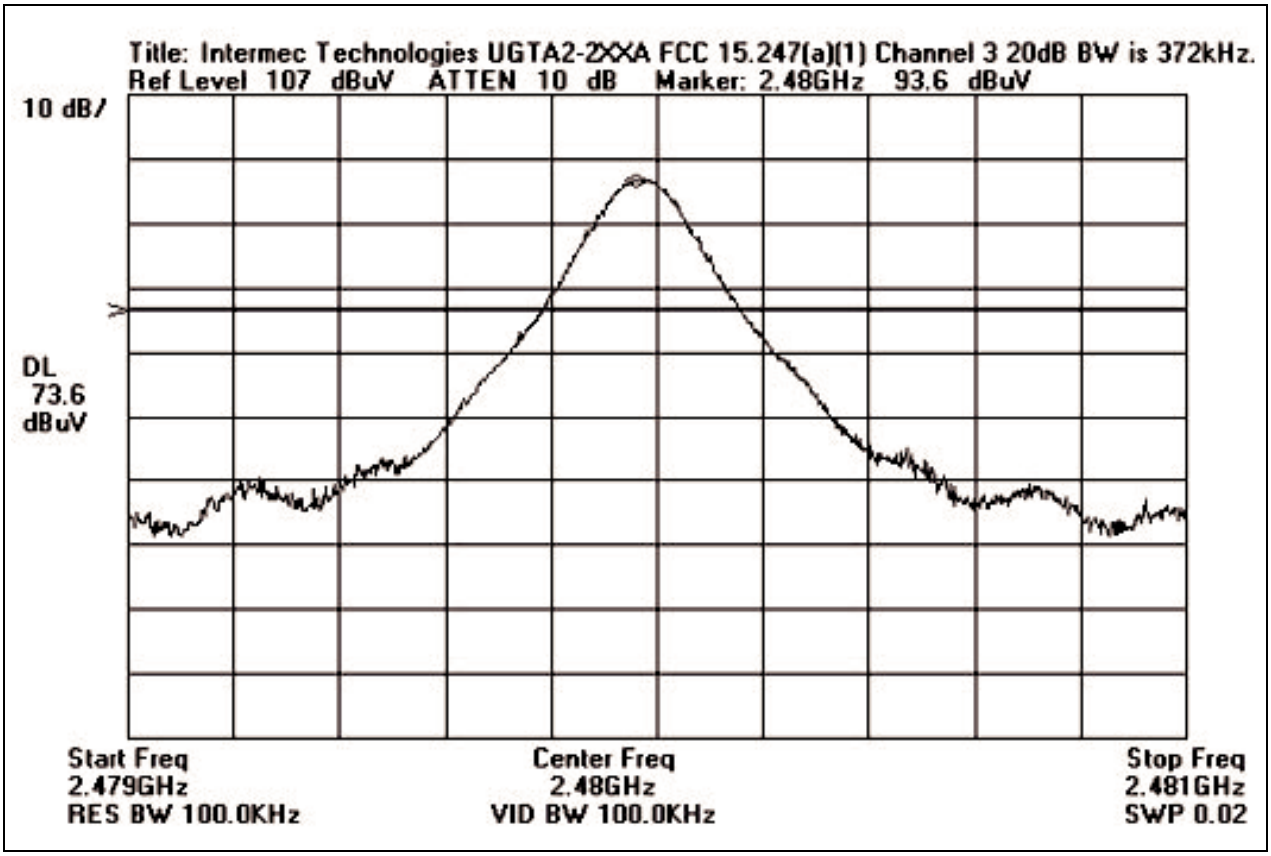
15.247(a)(1) - Channel 2



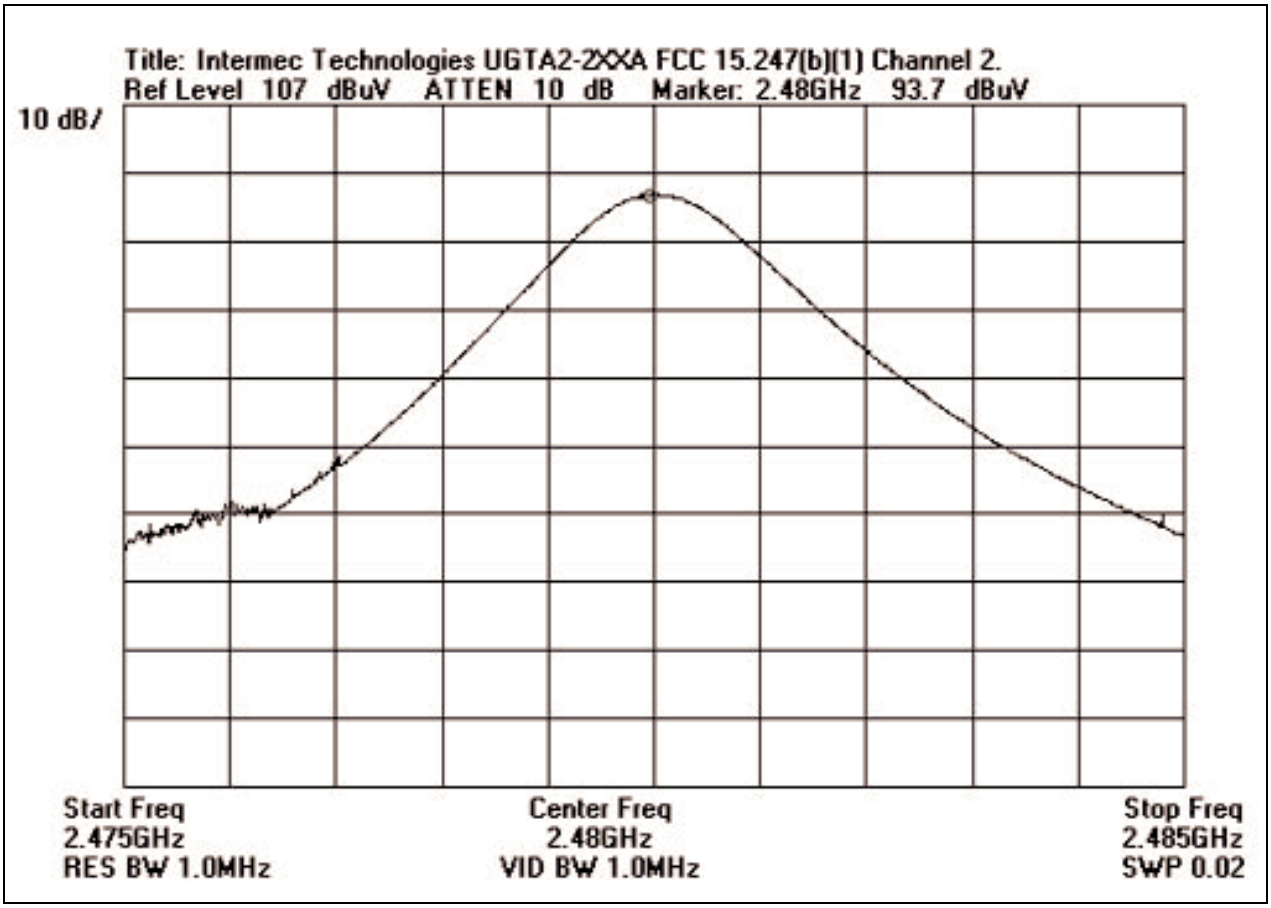
15.247(b)(1) – Channel 2



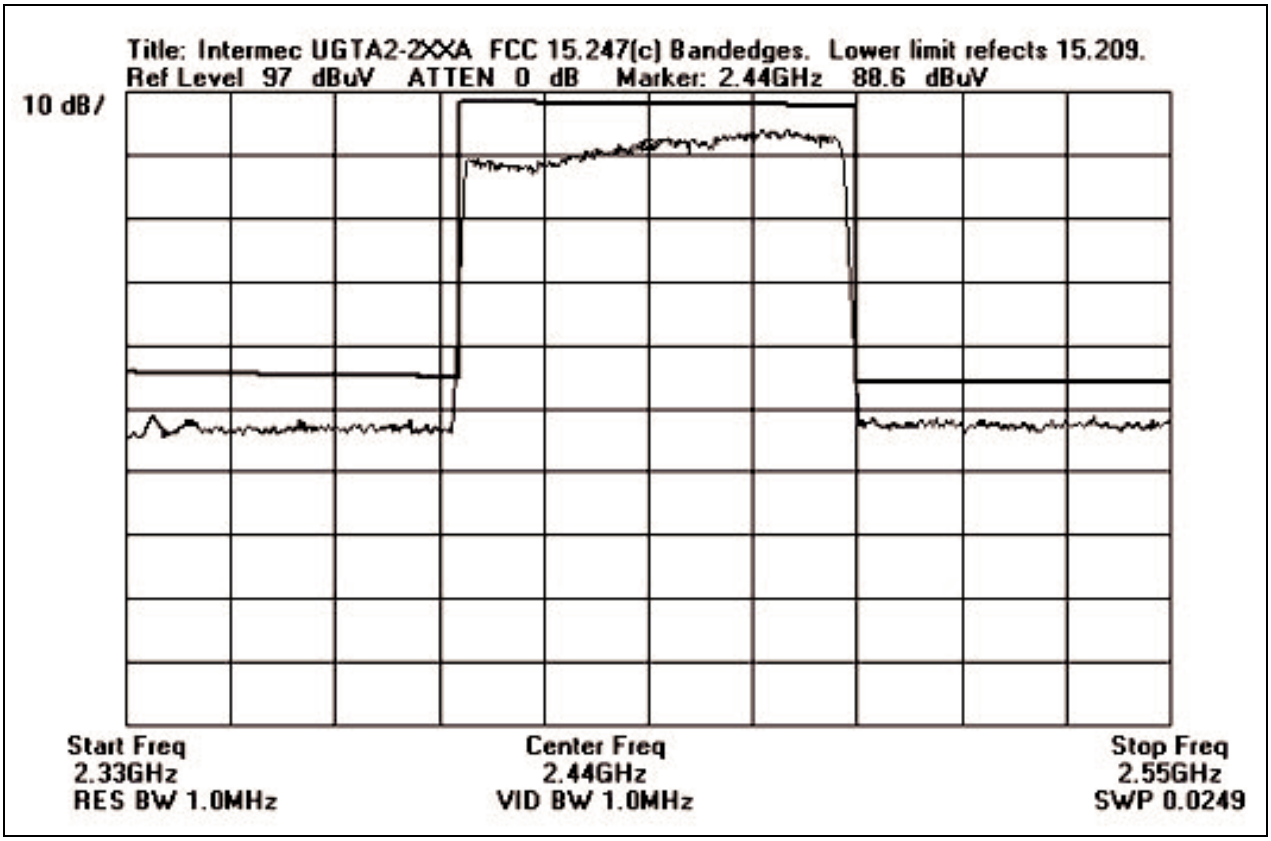
15.247(a)(1) - Channel 3



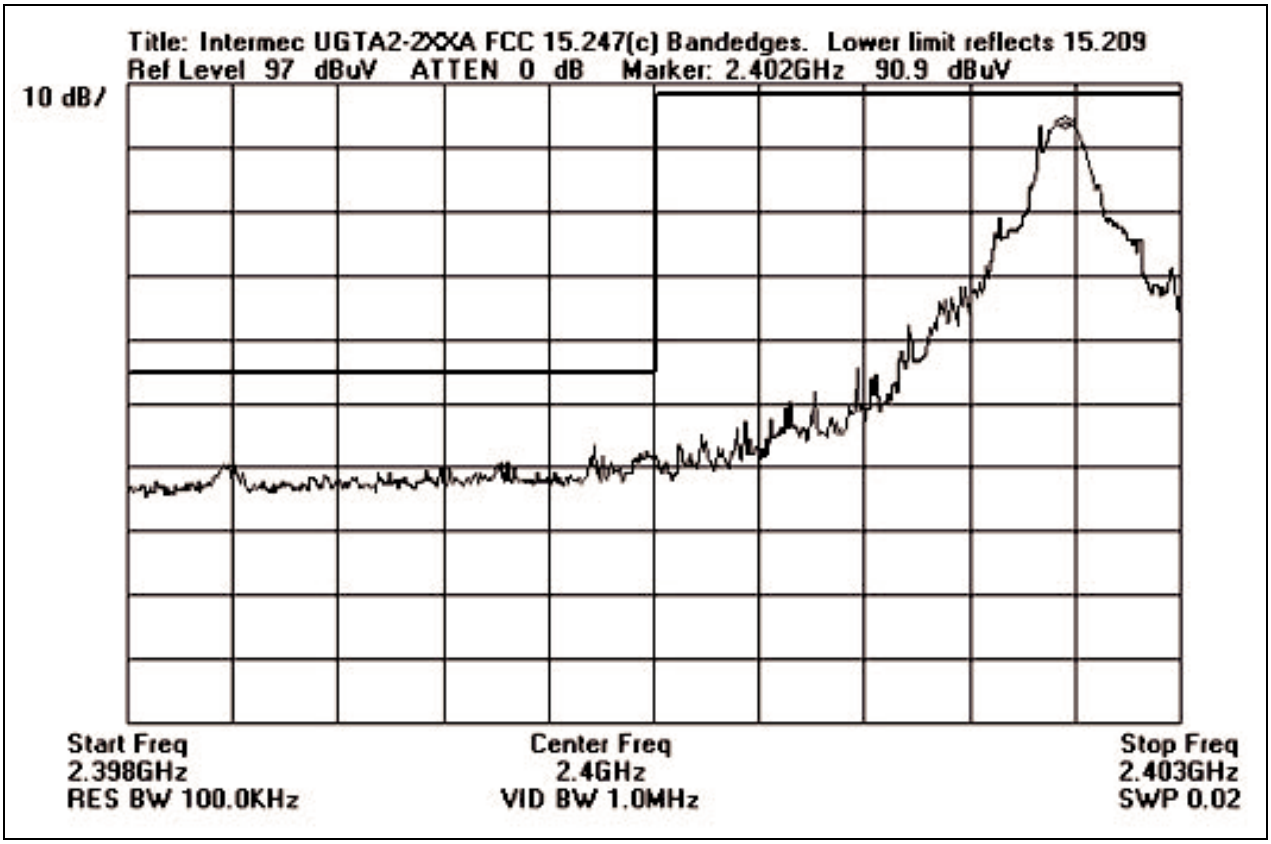
15.247(b)(1) - Channel 3



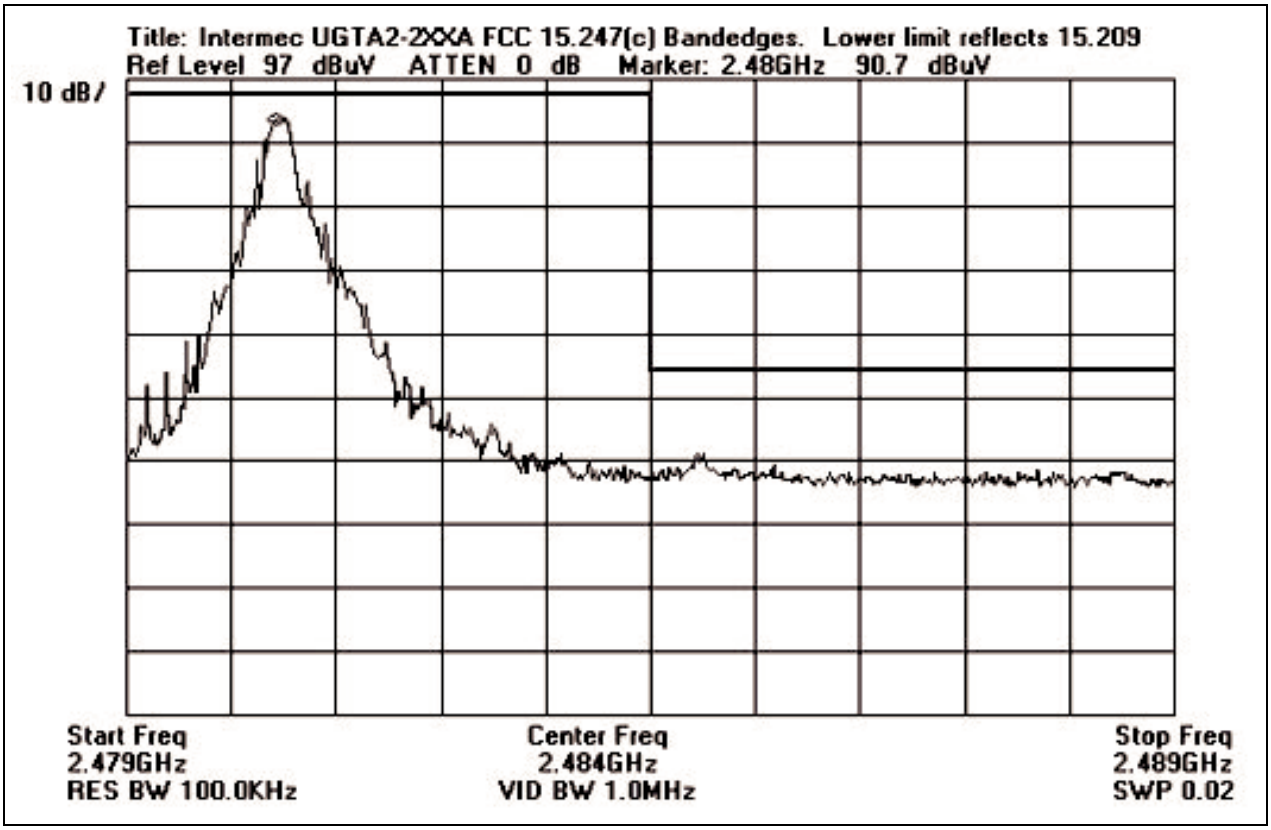
15.247(c) - Bandedges



15.247(c) - Channel 1 Bandedge (30MHz)



15.247(c) - Channel 3 Bandedge (30MHz)



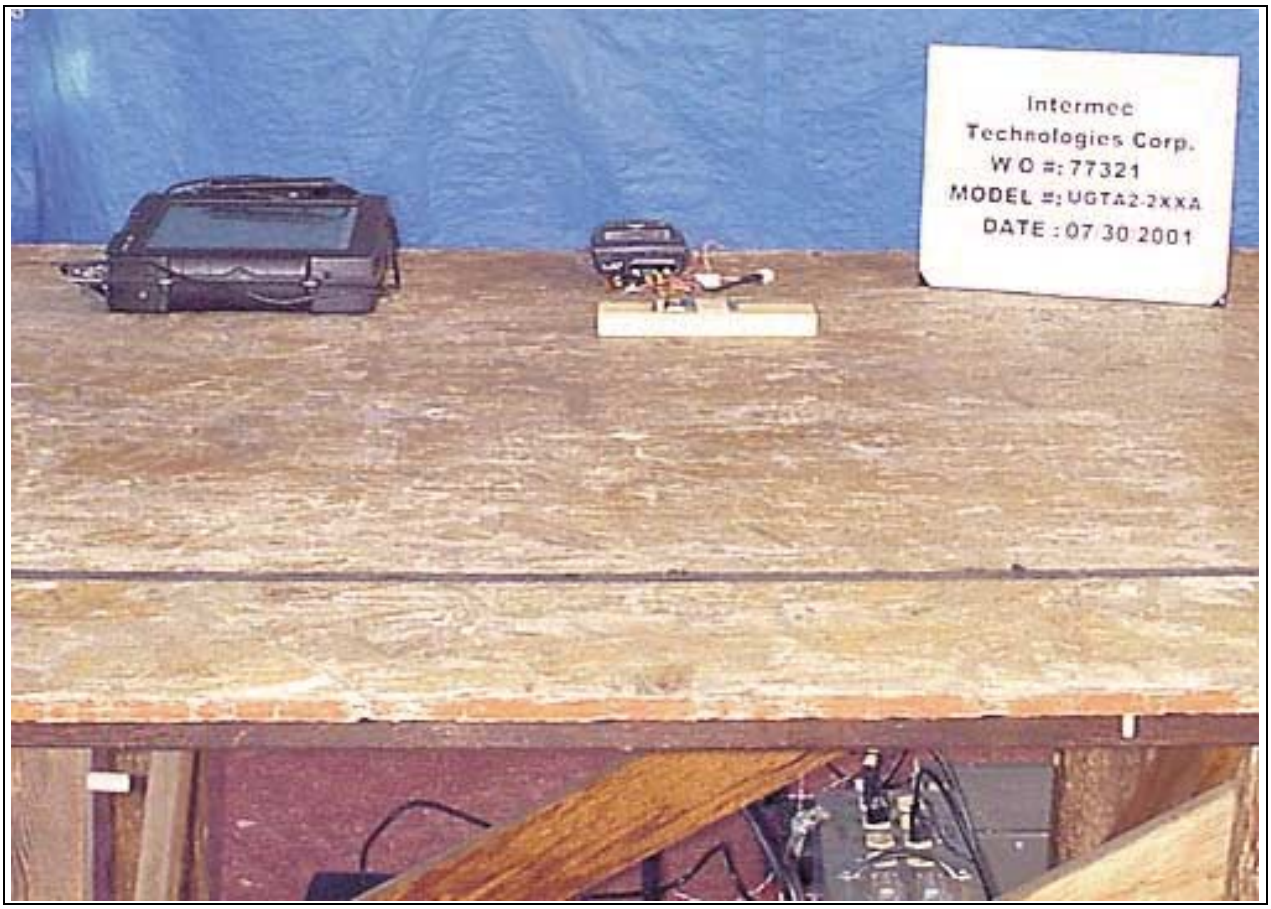
APPENDIX A

TESTING SETUP PHOTOGRAPHS

PHOTOGRAPH SHOWING RADIATED EMISSIONS

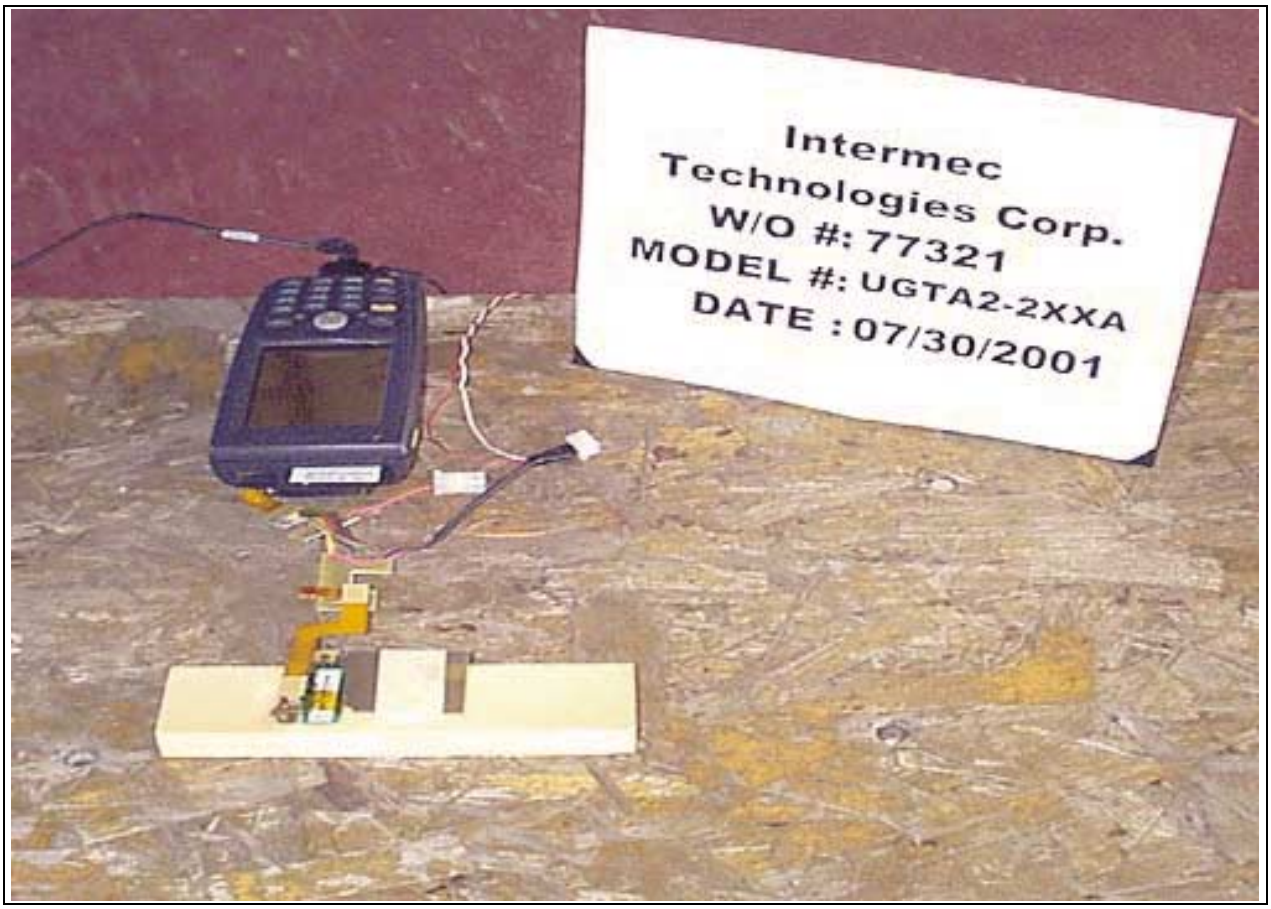
Radiated Emissions - 26GHz

PHOTOGRAPH SHOWING RADIATED EMISSIONS



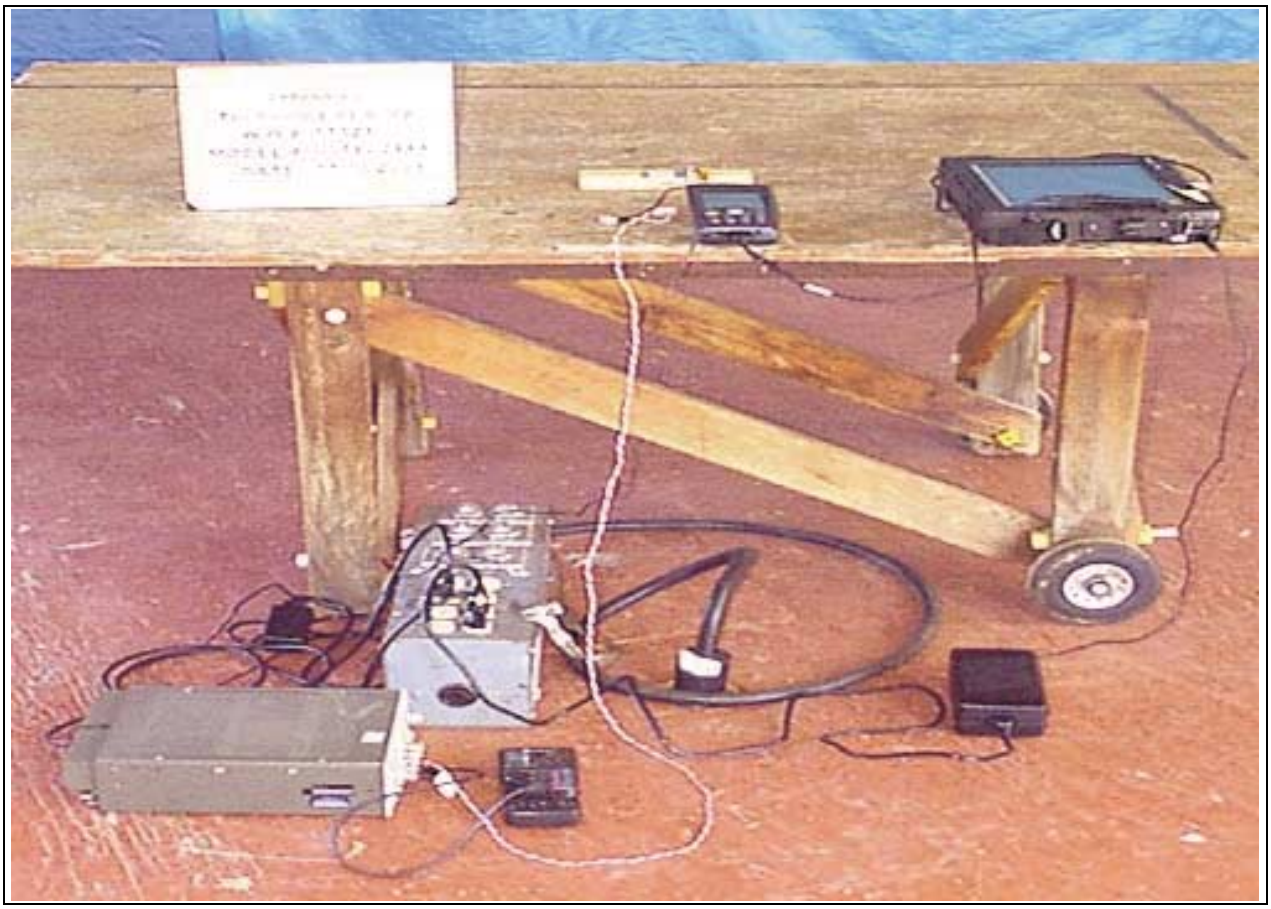
Radiated Emissions - Orthogonal A Front View

PHOTOGRAPH SHOWING RADIATED EMISSIONS



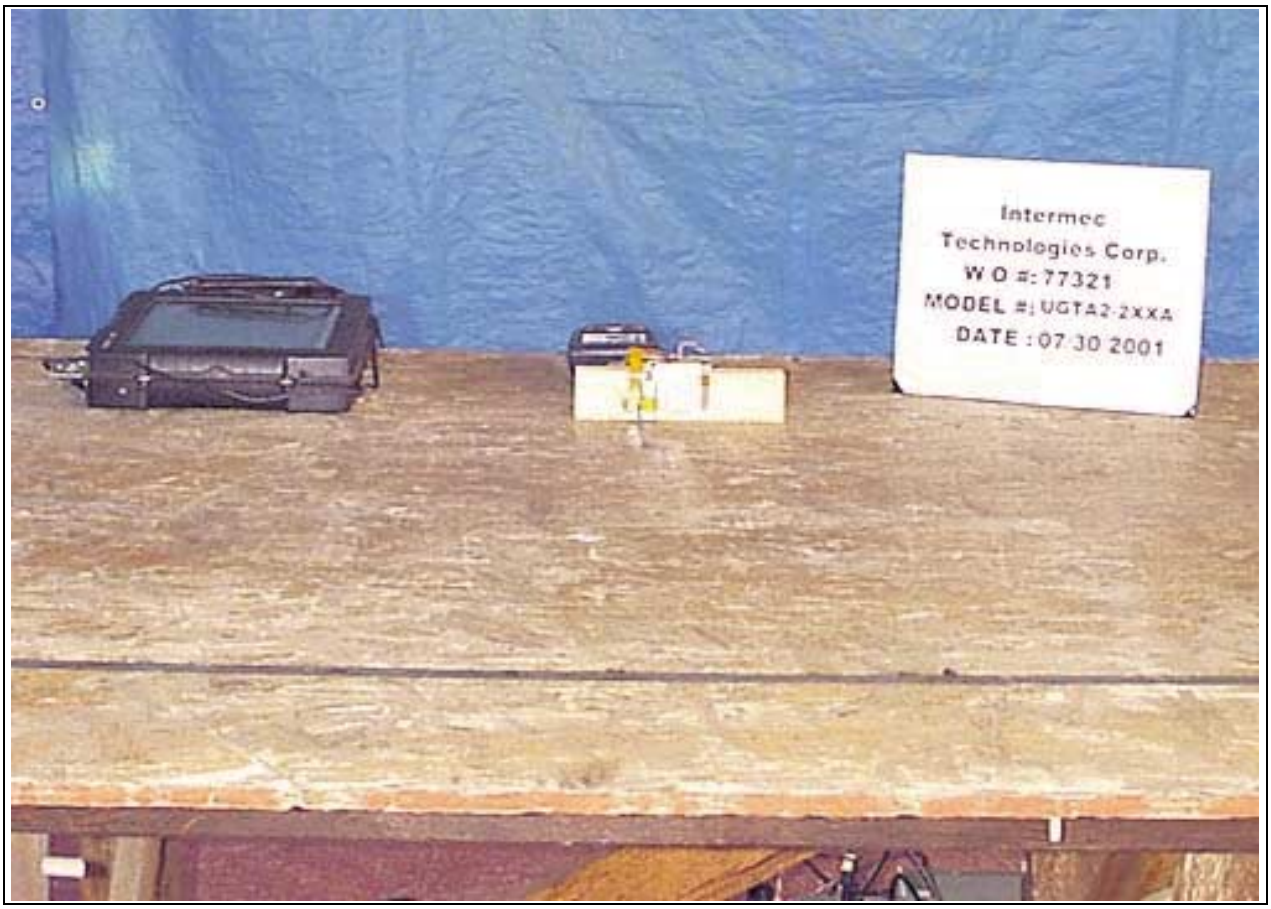
Radiated Emissions - Orthogonal A Close-up

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Orthogonal A Back View

PHOTOGRAPH SHOWING RADIATED EMISSIONS

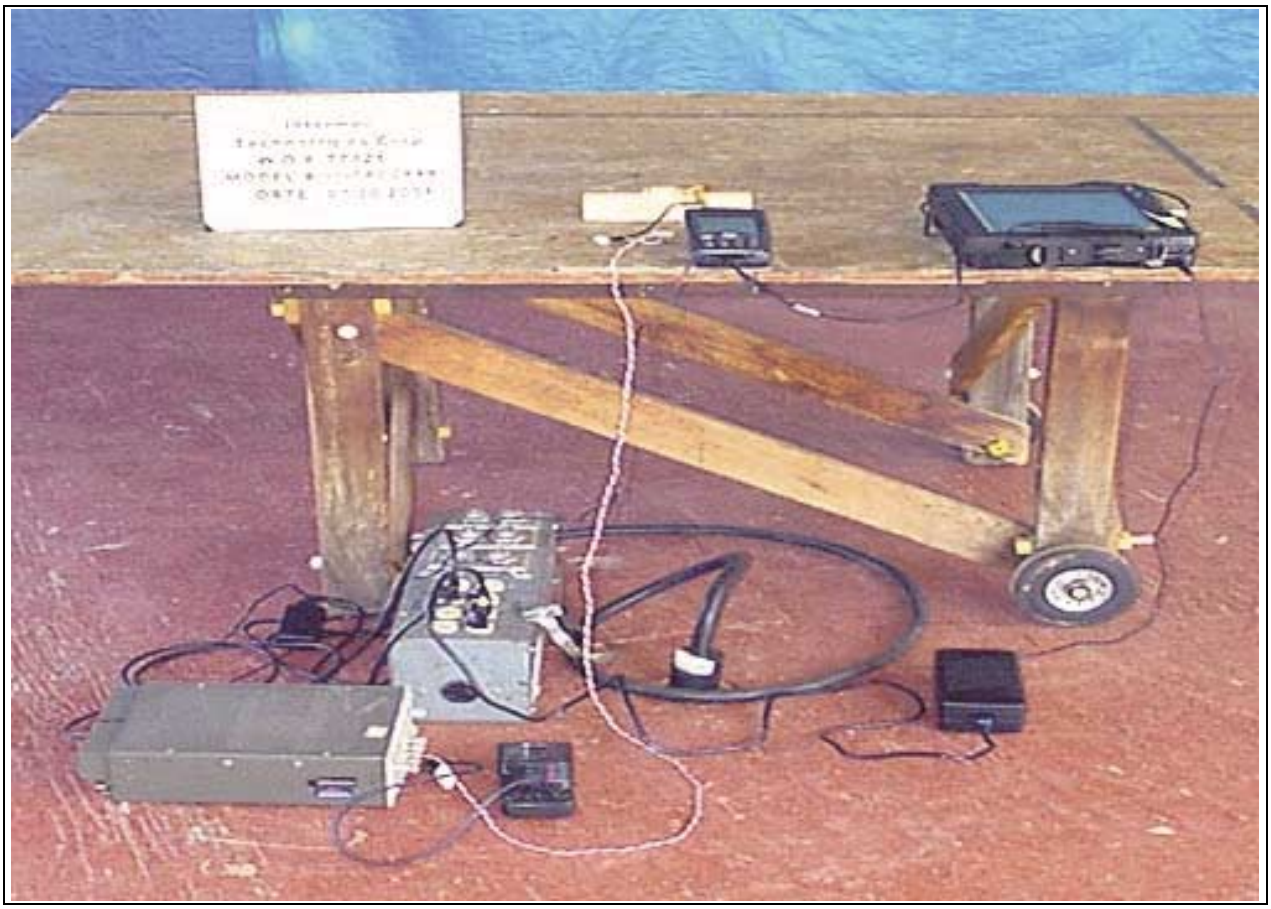


Radiated Emissions - Orthogonal B Front View

PHOTOGRAPH SHOWING RADIATED EMISSIONS

Radiated Emissions - Orthogonal B Front View Close-up

PHOTOGRAPH SHOWING RADIATED EMISSIONS

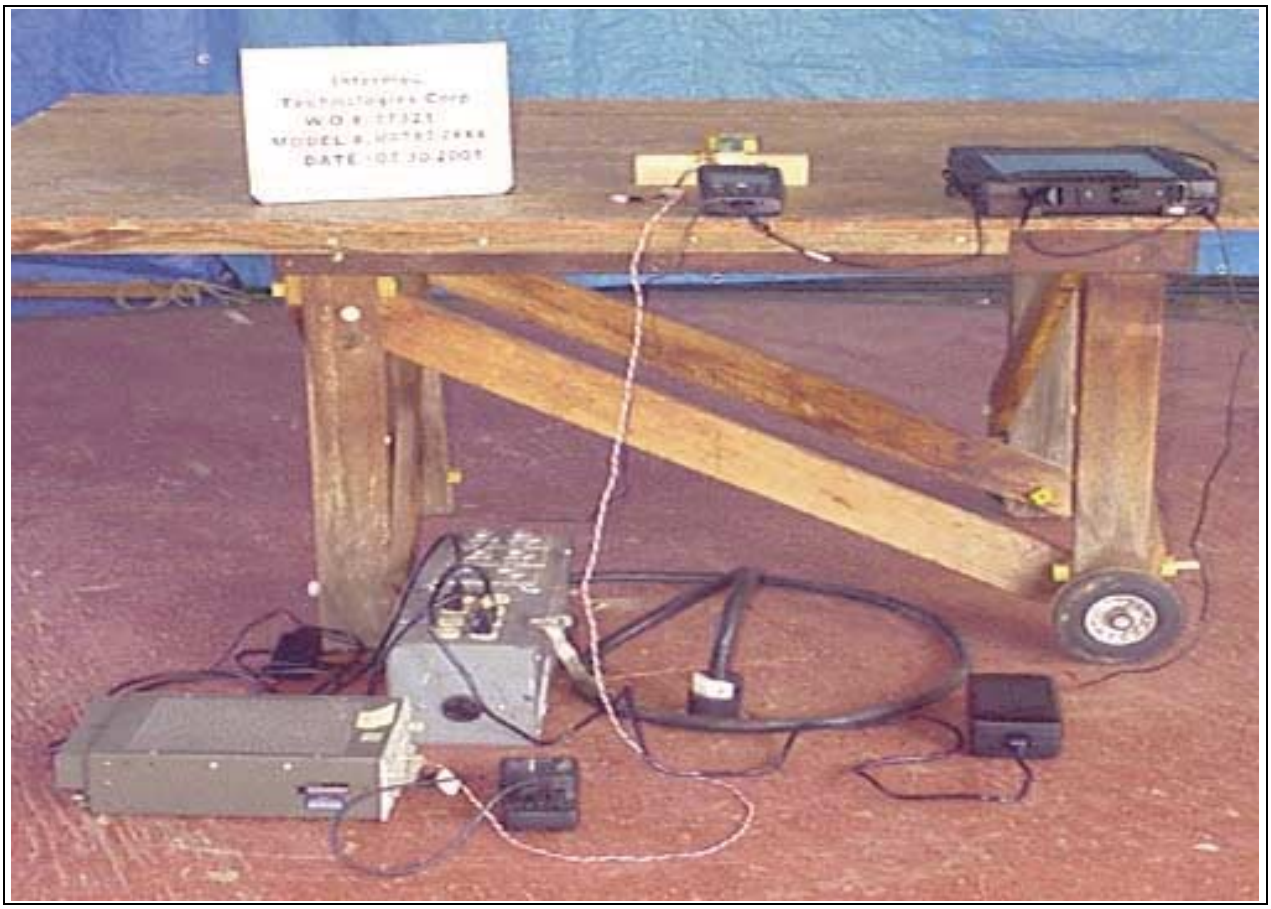


Radiated Emissions - Orthogonal B Back View

PHOTOGRAPH SHOWING RADIATED EMISSIONS

Radiated Emissions - Orthogonal C Front View Close up

PHOTOGRAPH SHOWING RADIATED EMISSIONS

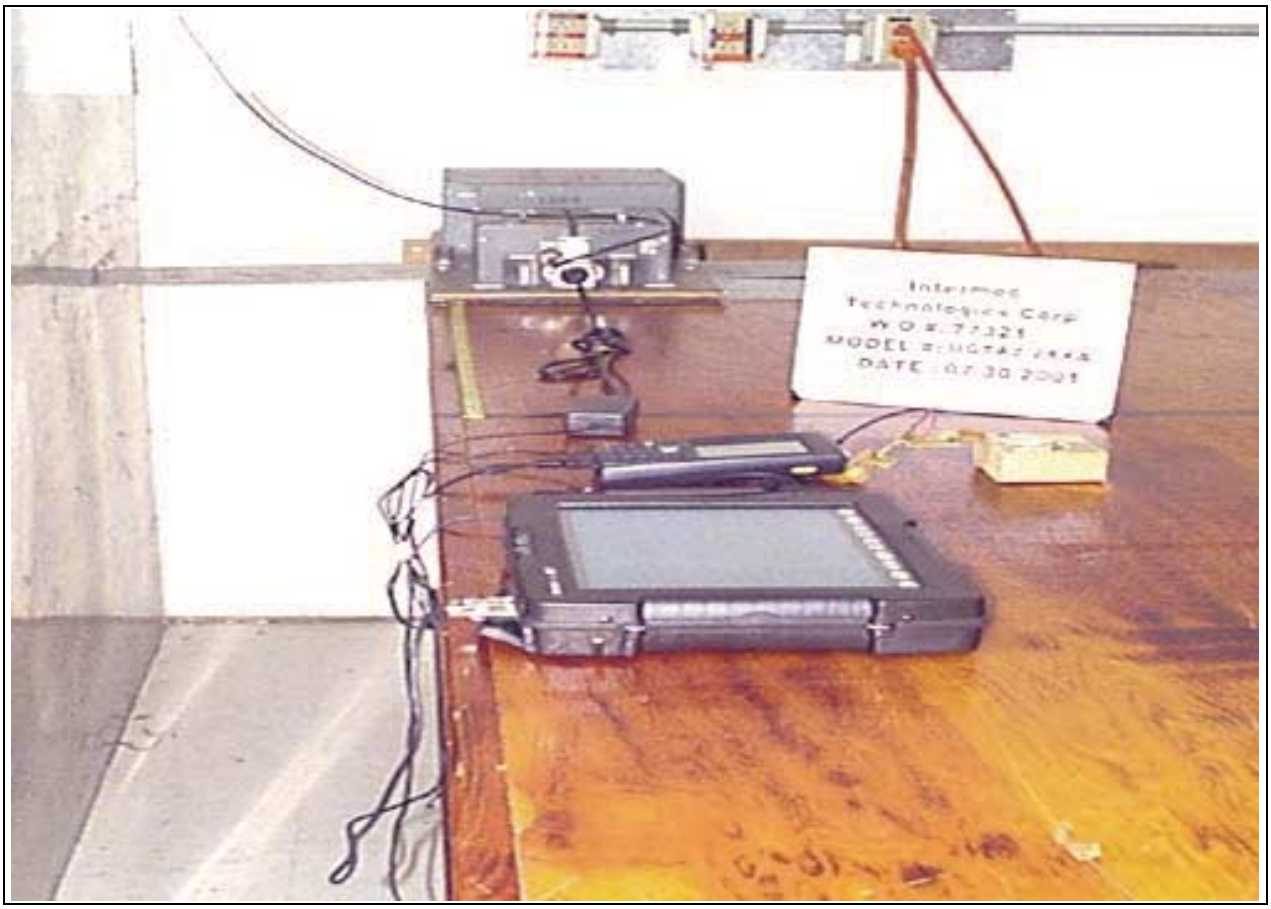


Radiated Emissions - Orthogonal B Back View

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS

Mains Conducted Emissions - Front View

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



Mains Conducted Emissions - Side View

APPENDIX B

TEST EQUIPMENT LIST

VCCI Acceptance Nos. R-565 & C-580
Industry of Canada File No. IC 3082-D

Equipment	*Manufacturer*	*Model #*	*Serial #*	*Asset #*	*Cal Date*	*Cal Due*
3/10 meter Cable	Andrews	Hardline	N/A	N/A	2/27/01	2/27/02
Bicon Antenna	A&H	SAS-200/542	156	00225	12/8/00	12/8/01
LISN Set	Solar	8028-50-TS-24-BNC	814493, 474	02056	5/22/01	5/22/02
Log Antenna	A&H	SAS-200/510	154	01330	5/07/01	5/7/02
Magnetic Loop	EMCO	6502	1074	00226	5/31/01	5/31/02
Preamp	HP	8447D	1937A02604	00099	3/29/01	3/29/02
QP Adapter	HP	85650A	2811A01267	00478	11/03/00	11/3/01
S/A Display	HP	8566B	2403A08241	00489	11/3/00	11/3/01
Spectrum Analyzer	HP	8566B	2209A01404	00490	11/3/00	11/3/01
Cable #4 (50')	Andrew	FSJ1-50A	N/A	N/A	4/16/01	4/16/02
Cable #2 (2')	Andrew	FSJ1-50A	N/A	N/A	4/16/01	4/16/02
Antenna, Horn	EMCO	3115	4085	00656	2/28/01	2/28/02
Preamp	HP	8449B	3008A00301	02010	10/13/00	10/13/01
2.4GHz High Pass Filter	K&L Microwave, Inc	91H31-3000	00001	01440	10/03/00	10/3/01
Cable #7 (25')	Andrew	FSJ1-50A	N/A	N/A	4/16/01	4/16/02
Antenna, Horn	HP	84125-80008	N/A	01413	7/9/01	7/9/02
Spectrum Analyzer	HP	8564E	3623A00539	1406	12/12/00	12/12/01

APPENDIX C

MEASUREMENT DATA SHEETS

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Intermec**
Specification: **15.247(b)(1)**
Work Order #: **77321** Date: 07/30/2001
Test Type: **Maximized Emissions** Time: 16:10:48
Equipment: **Personal Area Network Radio Module** Sequence#: 1
Manufacturer: Intermec Technologies Tested By: Randal Clark
Model: UGTA2-2XXA
S/N: 0104000118

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Personal Area Network Radio Module*	Intermec Technologies	UGTA2-2XXA	0104000118

Support Devices:

Function	Manufacturer	Model #	S/N
Host Terminal	Intermec Technologies	700	4623379
SW Host	Intermec Technologies	6640	4502888
Power Supply	Intermec Technologies	851-050-001	0118-18
Power Supply	Skynet Electronic Co.	SNP-A075	993821415

Test Conditions / Notes:

EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously transmit at maximum output power. Voltage supplied to EUT is varied from 2.9VDC to 3.5VDC (3.3VDC nominal) supplied through a separate DC power supply. See notes in test data for voltage. EUT orientation: laying flat on its back - module facing upwards. Frequency Range Tested: Channel 1 (2402MHz), Channel 2 (2441MHz) and Channel 3 (2480MHz)

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Amp Cable dB	Horn dB	Cable dB	Cable dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2479.950M	93.7	-34.4 +2.8	+28.7	+0.3	+5.3	+0.0	96.4	97.4 Module Voltage: 3.5	-1.0	Horiz
2	2440.990M	93.8	-34.5 +2.7	+28.6	+0.3	+5.2	+0.0	96.1	97.4 Module Voltage: 3.5	-1.3	Horiz
3	2479.950M	93.4	-34.4 +2.8	+28.7	+0.3	+5.3	+0.0	96.1	97.4 Module Voltage: 3.3	-1.3	Horiz
4	2402.000M	94.0	-34.6 +2.7	+28.5	+0.3	+5.2	+0.0	96.1	97.4 Module Voltage: 2.9	-1.3	Horiz
5	2401.940M	93.9	-34.6 +2.7	+28.5	+0.3	+5.2	+0.0	96.0	97.4 Module Voltage: 3.3	-1.4	Horiz
6	2401.930M	93.1	-34.6 +2.7	+28.5	+0.3	+5.2	+0.0	95.2	97.4 Module Voltage: 3.5	-2.2	Horiz

7	2440.990M	92.5	-34.5 +2.7	+28.6	+0.3	+5.2	+0.0	94.8	97.4 Module Voltage: 3.3	-2.6	Horiz
8	2479.930M	90.2	-34.4 +2.8	+28.7	+0.3	+5.3	+0.0	92.9	97.4 Module Voltage: 2.9	-4.5	Horiz
9	2441.010M	89.3	-34.5 +2.7	+28.6	+0.3	+5.2	+0.0	91.6	97.4 Module Voltage: 2.9	-5.8	Horiz
10	2440.970M	89.2	-34.5 +2.7	+28.6	+0.3	+5.2	+0.0	91.5	97.4 Module Voltage: 3.5	-5.9	Vert
11	2440.970M	88.5	-34.5 +2.7	+28.6	+0.3	+5.2	+0.0	90.8	97.4 Module Voltage: 3.3	-6.6	Vert
12	2401.920M	85.0	-34.6 +2.7	+28.5	+0.3	+5.2	+0.0	87.1	97.4 Module Voltage: 2.9	-10.3	Vert
13	2401.930M	85.0	-34.6 +2.7	+28.5	+0.3	+5.2	+0.0	87.1	97.4 Module Voltage: 3.5	-10.3	Vert
14	2401.870M	84.7	-34.6 +2.7	+28.5	+0.3	+5.2	+0.0	86.8	97.4 Module Voltage: 3.3	-10.6	Vert
15	2440.950M	84.2	-34.5 +2.7	+28.6	+0.3	+5.2	+0.0	86.5	97.4 Module Voltage: 2.9	-10.9	Vert

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Intermec**
Specification: **15.247(b)(1)**
Work Order #: **77321** Date: 07/30/2001
Test Type: **Maximized Emissions** Time: 17:14:48
Equipment: **Personal Area Network Radio Module** Sequence#: 2
Manufacturer: Intermec Technologies Tested By: Randal Clark
Model: UGTA2-2XXA
S/N: 0104000118

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Personal Area Network Radio Module*	Intermec Technologies	UGTA2-2XXA	0104000118

Support Devices:

Function	Manufacturer	Model #	S/N
Host Terminal	Intermec Technologies	700	4623379
SW Host	Intermec Technologies	6640	4502888
Power Supply	Intermec Technologies	851-050-001	0118-18
Power Supply	Skynet Electronic Co.	SNP-A075	993821415

Test Conditions / Notes:

EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously transmit at maximum output power. Voltage supplied to EUT is set to 3.5VDC (maximum output) supplied through a separate DC power supply. EUT orientation: laying on its side PCB long edge upwards. Power output of modular EUT is limited to 1mW. Frequency Range Tested: Channel 1 (2402MHz), Channel 2 (2441MHz) and Channel 3 (2480MHz)

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Amp Cable dB	Horn dB	Cable dB	Cable dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2401.910M	94.5	-34.6 +2.7	+28.5	+0.3	+5.2	+0.0	96.6	97.4	-0.8	Horiz
2	2479.970M	93.8	-34.4 +2.8	+28.7	+0.3	+5.3	+0.0	96.5	97.4	-0.9	Horiz
3	2441.030M	93.1	-34.5 +2.7	+28.6	+0.3	+5.2	+0.0	95.4	97.4	-2.0	Horiz
4	2401.890M	92.6	-34.6 +2.7	+28.5	+0.3	+5.2	+0.0	94.7	97.4	-2.7	Vert
5	2440.970M	91.5	-34.5 +2.7	+28.6	+0.3	+5.2	+0.0	93.8	97.4	-3.6	Vert
6	2479.910M	90.5	-34.4 +2.8	+28.7	+0.3	+5.3	+0.0	93.2	97.4	-4.2	Vert

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Intermec**
Specification: **15.247(b)(1)**
Work Order #: **77321** Date: 07/30/2001
Test Type: **Maximized Emissions** Time: 17:36:49
Equipment: **Personal Area Network Radio Module** Sequence#: 3
Manufacturer: Intermec Technologies Tested By: Randal Clark
Model: UGTA2-2XXA
S/N: 0104000118

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Personal Area Network Radio Module*	Intermec Technologies	UGTA2-2XXA	0104000118

Support Devices:

Function	Manufacturer	Model #	S/N
Host Terminal	Intermec Technologies	700	4623379
SW Host	Intermec Technologies	6640	4502888
Power Supply	Intermec Technologies	851-050-001	0118-18
Power Supply	Skynet Electronic Co.	SNP-A075	993821415

Test Conditions / Notes:

EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously transmit at maximum output power. Voltage supplied to EUT is set to 3.5VDC (maximum output) supplied through a separate DC power supply. EUT orientation: laying on its side PCB short edge upwards. Power output of modular EUT is limited to 1mW. Frequency Range Tested: Channel 1 (2402MHz), Channel 2 (2441MHz) and Channel 3 (2480MHz)

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Amp Cable dB	Horn dB	Cable dB	Cable dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2479.950M	94.0	-34.4 +2.8	+28.7	+0.3	+5.3	+0.0	96.7	97.4	-0.7	Horiz
2	2480.000M	94.0	-34.4 +2.8	+28.7	+0.3	+5.3	+0.0	96.7	97.4	-0.7	Vert
3	2480.010M	94.0	-34.4 +2.8	+28.7	+0.3	+5.3	+0.0	96.7	97.4	-0.7	Vert
4	2440.940M	93.9	-34.5 +2.7	+28.6	+0.3	+5.2	+0.0	96.2	97.4	-1.2	Vert
5	2441.030M	93.2	-34.5 +2.7	+28.6	+0.3	+5.2	+0.0	95.5	97.4	-1.9	Horiz
6	2401.980M	92.9	-34.6 +2.7	+28.5	+0.3	+5.2	+0.0	95.0	97.4	-2.4	Horiz

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Intermec**
Specification: **FCC 15.247 / 15.209**
Work Order #: **77321** Date: 08/06/2001
Test Type: **Maximized Emissions** Time: 16:51:12
Equipment: **Personal Area Network Radio Module** Sequence#: 10
Manufacturer: Intermec Technologies Tested By: Randal Clark
Model: UGTA2-2XXA
S/N: 0104000118

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Personal Area Network Radio Module*	Intermec Technologies	UGTA2-2XXA	0104000118

Support Devices:

Function	Manufacturer	Model #	S/N
Host Terminal	Intermec Technologies	700	4623379
SW Host	Intermec Technologies	6640	4502888
Power Supply	Intermec Technologies	851-050-001	0118-18
Power Supply	Skynet Electronic Co.	SNP-A075	993821415

Test Conditions / Notes:

EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously transmit at maximum output power. EUT tested with three orientations on orthogonal axes and three separate channels (low, middle and high). Power output of modular EUT is limited to 1mW. Frequency Range Tested: 150kHz-1000MHz No emissions found in the 150kHz-30MHz range.

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Amp dB	Bicon dB	Log 1 dB	Cable dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	420.855M	47.9	-27.3	+0.0	+16.2	+4.3	+0.0	41.1	46.0	-4.9	Horiz
2	420.853M	46.6	-27.3	+0.0	+16.2	+4.3	+0.0	39.8	46.0	-6.2	Horiz
3	420.848M	46.5	-27.3	+0.0	+16.2	+4.3	+0.0	39.7	46.0	-6.3	Horiz
4	64.062M	49.6	-27.1	+9.2	+0.0	+1.5	+0.0	33.2	40.0	-6.8	Vert
5	64.050M	49.3	-27.1	+9.2	+0.0	+1.5	+0.0	32.9	40.0	-7.1	Vert
6	528.157M	42.9	-27.8	+0.0	+18.3	+4.9	+0.0	38.3	46.0	-7.7	Horiz
7	440.890M	44.6	-27.4	+0.0	+16.6	+4.5	+0.0	38.3	46.0	-7.7	Horiz
8	430.861M	43.8	-27.4	+0.0	+16.4	+4.4	+0.0	37.2	46.0	-8.8	Horiz
9	460.921M	43.2	-27.6	+0.0	+17.0	+4.6	+0.0	37.2	46.0	-8.8	Horiz
10	460.919M	43.0	-27.6	+0.0	+17.0	+4.6	+0.0	37.0	46.0	-9.0	Vert

11	440.881M	43.1	-27.4	+0.0	+16.6	+4.5	+0.0	36.8	46.0	-9.2	Horiz
12	460.913M	42.7	-27.6	+0.0	+17.0	+4.6	+0.0	36.7	46.0	-9.3	Horiz
13	528.170M	41.0	-27.8	+0.0	+18.3	+4.9	+0.0	36.4	46.0	-9.6	Horiz
14	64.057M	46.7	-27.1	+9.2	+0.0	+1.5	+0.0	30.3	40.0	-9.7	Vert
15	420.841M	42.3	-27.3	+0.0	+16.2	+4.3	+0.0	35.5	46.0	-10.5	Vert
16	430.829M	41.8	-27.4	+0.0	+16.4	+4.4	+0.0	35.2	46.0	-10.8	Horiz
17	258.079M	41.5	-26.5	+16.7	+0.0	+3.2	+0.0	34.9	46.0	-11.1	Horiz
18	500.998M	40.0	-27.8	+0.0	+17.8	+4.7	+0.0	34.7	46.0	-11.3	Horiz
19	500.991M	40.0	-27.8	+0.0	+17.8	+4.7	+0.0	34.7	46.0	-11.3	Horiz
20	400.813M	41.9	-27.1	+0.0	+15.7	+4.1	+0.0	34.6	46.0	-11.4	Horiz
21	336.078M	38.2	-26.6	+0.0	+19.1	+3.8	+0.0	34.5	46.0	-11.5	Horiz
22	350.727M	38.9	-26.7	+0.0	+18.3	+3.9	+0.0	34.4	46.0	-11.6	Vert
23	410.802M	41.4	-27.2	+0.0	+16.0	+4.2	+0.0	34.4	46.0	-11.6	Horiz
24	84.975M	45.6	-27.1	+8.1	+0.0	+1.8	+0.0	28.4	40.0	-11.6	Horiz
25	501.001M	39.6	-27.8	+0.0	+17.8	+4.7	+0.0	34.3	46.0	-11.7	Horiz
26	440.861M	40.5	-27.4	+0.0	+16.6	+4.5	+0.0	34.2	46.0	-11.8	Vert
27	370.757M	39.9	-26.9	+0.0	+17.2	+4.0	+0.0	34.2	46.0	-11.8	Vert
28	450.900M	40.2	-27.5	+0.0	+16.8	+4.6	+0.0	34.1	46.0	-11.9	Horiz
29	310.605M	36.0	-26.5	+0.0	+20.6	+3.7	+0.0	33.8	46.0	-12.2	Vert
30	410.836M	40.8	-27.2	+0.0	+16.0	+4.2	+0.0	33.8	46.0	-12.2	Horiz
31	501.001M	38.9	-27.8	+0.0	+17.8	+4.7	+0.0	33.6	46.0	-12.4	Vert
32	330.677M	36.9	-26.6	+0.0	+19.4	+3.8	+0.0	33.5	46.0	-12.5	Vert
33	528.151M	38.0	-27.8	+0.0	+18.3	+4.9	+0.0	33.4	46.0	-12.6	Horiz
34	681.304M	34.6	-27.8	+0.0	+20.8	+5.7	+0.0	33.3	46.0	-12.7	Horiz
35	80.050M	45.8	-27.0	+6.8	+0.0	+1.7	+0.0	27.3	40.0	-12.7	Vert
36	410.823M	40.2	-27.2	+0.0	+16.0	+4.2	+0.0	33.2	46.0	-12.8	Horiz

37	450.901M	39.2	-27.5	+0.0	+16.8	+4.6	+0.0	33.1	46.0	-12.9	Horiz
38	80.024M	45.6	-27.0	+6.8	+0.0	+1.7	+0.0	27.1	40.0	-12.9	Horiz
39	480.965M	38.4	-27.7	+0.0	+17.4	+4.7	+0.0	32.8	46.0	-13.2	Vert
40	400.781M	39.9	-27.1	+0.0	+15.7	+4.1	+0.0	32.6	46.0	-13.4	Vert
41	480.959M	38.2	-27.7	+0.0	+17.4	+4.7	+0.0	32.6	46.0	-13.4	Horiz
42	400.812M	39.8	-27.1	+0.0	+15.7	+4.1	+0.0	32.5	46.0	-13.5	Horiz
43	480.929M	38.0	-27.7	+0.0	+17.4	+4.7	+0.0	32.4	46.0	-13.6	Horiz
44	80.081M	44.9	-27.0	+6.8	+0.0	+1.7	+0.0	26.4	40.0	-13.6	Vert
45	380.757M	38.6	-27.0	+0.0	+16.7	+4.0	+0.0	32.3	46.0	-13.7	Vert
46	430.867M	38.8	-27.4	+0.0	+16.4	+4.4	+0.0	32.2	46.0	-13.8	Vert
47	471.326M	38.0	-27.6	+0.0	+17.2	+4.6	+0.0	32.2	46.0	-13.8	Horiz
48	300.625M	33.6	-26.5	+0.0	+21.3	+3.7	+0.0	32.1	46.0	-13.9	Vert
49	380.752M	38.2	-27.0	+0.0	+16.7	+4.0	+0.0	31.9	46.0	-14.1	Horiz
50	410.791M	38.8	-27.2	+0.0	+16.0	+4.2	+0.0	31.8	46.0	-14.2	Vert
51	390.794M	38.5	-27.0	+0.0	+16.2	+4.1	+0.0	31.8	46.0	-14.2	Horiz
52	336.075M	35.3	-26.6	+0.0	+19.1	+3.8	+0.0	31.6	46.0	-14.4	Horiz
53	200.495M	34.9	-26.7	+17.9	+0.0	+2.9	+0.0	29.0	43.5	-14.5	Horiz
54	84.010M	42.9	-27.0	+7.8	+0.0	+1.7	+0.0	25.4	40.0	-14.6	Vert
55	450.909M	37.3	-27.5	+0.0	+16.8	+4.6	+0.0	31.2	46.0	-14.8	Vert
56	320.613M	34.0	-26.6	+0.0	+20.0	+3.8	+0.0	31.2	46.0	-14.8	Vert
57	390.765M	37.8	-27.0	+0.0	+16.2	+4.1	+0.0	31.1	46.0	-14.9	Vert
58	320.627M	33.9	-26.6	+0.0	+20.0	+3.8	+0.0	31.1	46.0	-14.9	Horiz
59	370.730M	36.8	-26.9	+0.0	+17.2	+4.0	+0.0	31.1	46.0	-14.9	Horiz
60	270.544M	35.9	-26.4	+18.3	+0.0	+3.3	+0.0	31.1	46.0	-14.9	Horiz
61	360.715M	35.8	-26.8	+0.0	+17.7	+3.9	+0.0	30.6	46.0	-15.4	Vert
62	340.695M	34.6	-26.7	+0.0	+18.8	+3.9	+0.0	30.6	46.0	-15.4	Vert

63	621.216M	33.1	-27.9	+0.0	+19.7	+5.4	+0.0	30.3	46.0	-15.7	Horiz
64	641.262M	32.4	-27.9	+0.0	+20.1	+5.6	+0.0	30.2	46.0	-15.8	Horiz
65	240.063M	37.5	-26.6	+16.1	+0.0	+3.1	+0.0	30.1	46.0	-15.9	Horiz
66	432.151M	36.6	-27.4	+0.0	+16.4	+4.4	+0.0	30.0	46.0	-16.0	Horiz
67	661.259M	31.2	-27.9	+0.0	+20.4	+5.7	+0.0	29.4	46.0	-16.6	Horiz
68	350.726M	33.9	-26.7	+0.0	+18.3	+3.9	+0.0	29.4	46.0	-16.6	Horiz
69	258.105M	36.0	-26.5	+16.7	+0.0	+3.2	+0.0	29.4	46.0	-16.6	Vert
70	258.109M	35.8	-26.5	+16.8	+0.0	+3.2	+0.0	29.3	46.0	-16.7	Vert
71	390.779M	35.9	-27.0	+0.0	+16.2	+4.1	+0.0	29.2	46.0	-16.8	Horiz
72	521.025M	33.9	-27.8	+0.0	+18.1	+4.9	+0.0	29.1	46.0	-16.9	Vert
73	144.099M	38.2	-26.8	+12.9	+0.0	+2.3	+0.0	26.6	43.5	-16.9	Vert
74	470.940M	34.7	-27.6	+0.0	+17.2	+4.6	+0.0	28.9	46.0	-17.1	Horiz
75	521.023M	33.7	-27.8	+0.0	+18.1	+4.9	+0.0	28.9	46.0	-17.1	Horiz
76	521.043M	33.6	-27.8	+0.0	+18.1	+4.9	+0.0	28.8	46.0	-17.2	Horiz
77	360.705M	33.9	-26.8	+0.0	+17.7	+3.9	+0.0	28.7	46.0	-17.3	Horiz
78	384.056M	35.2	-27.0	+0.0	+16.5	+4.0	+0.0	28.7	46.0	-17.3	Horiz
79	470.919M	34.3	-27.6	+0.0	+17.2	+4.6	+0.0	28.5	46.0	-17.5	Vert
80	258.094M	35.1	-26.5	+16.7	+0.0	+3.2	+0.0	28.5	46.0	-17.5	Vert
81	336.072M	32.1	-26.6	+0.0	+19.1	+3.8	+0.0	28.4	46.0	-17.6	Horiz
82	576.110M	32.1	-27.9	+0.0	+19.0	+5.2	+0.0	28.4	46.0	-17.6	Horiz
83	120.080M	36.5	-27.0	+14.2	+0.0	+2.2	+0.0	25.9	43.5	-17.6	Vert
84	380.788M	34.4	-27.0	+0.0	+16.7	+4.0	+0.0	28.1	46.0	-17.9	Horiz
85	490.985M	33.3	-27.7	+0.0	+17.6	+4.7	+0.0	27.9	46.0	-18.1	Vert
86	240.592M	35.2	-26.6	+16.1	+0.0	+3.1	+0.0	27.8	46.0	-18.2	Vert
87	490.981M	33.1	-27.7	+0.0	+17.6	+4.7	+0.0	27.7	46.0	-18.3	Horiz
88	491.000M	32.9	-27.7	+0.0	+17.6	+4.7	+0.0	27.5	46.0	-18.5	Horiz

89	432.089M	34.1	-27.4	+0.0	+16.4	+4.4	+0.0	27.5	46.0	-18.5	Horiz
90	370.773M	33.1	-26.9	+0.0	+17.2	+4.0	+0.0	27.4	46.0	-18.6	Horiz
91	120.034M	35.4	-27.0	+14.2	+0.0	+2.2	+0.0	24.8	43.5	-18.7	Vert
92	340.675M	31.1	-26.7	+0.0	+18.8	+3.9	+0.0	27.1	46.0	-18.9	Horiz
93	250.508M	34.7	-26.6	+15.8	+0.0	+3.1	+0.0	27.0	46.0	-19.0	Horiz
94	130.270M	35.1	-27.0	+14.0	+0.0	+2.3	+0.0	24.4	43.5	-19.1	Horiz
95	360.736M	31.9	-26.8	+0.0	+17.7	+3.9	+0.0	26.7	46.0	-19.3	Horiz
96	444.058M	32.9	-27.5	+0.0	+16.7	+4.5	+0.0	26.6	46.0	-19.4	Horiz
97	160.063M	35.3	-26.8	+13.2	+0.0	+2.4	+0.0	24.1	43.5	-19.4	Horiz
98	150.359M	35.7	-26.8	+12.6	+0.0	+2.3	+0.0	23.8	43.5	-19.7	Horiz
99	128.083M	34.1	-27.0	+14.1	+0.0	+2.3	+0.0	23.5	43.5	-20.0	Horiz
100	144.065M	34.8	-26.8	+13.0	+0.0	+2.3	+0.0	23.3	43.5	-20.2	Vert
101	270.092M	30.5	-26.4	+18.2	+0.0	+3.3	+0.0	25.6	46.0	-20.4	Vert
102	144.064M	34.5	-26.8	+13.0	+0.0	+2.3	+0.0	23.0	43.5	-20.5	Horiz
103	144.070M	34.4	-26.8	+13.0	+0.0	+2.3	+0.0	22.9	43.5	-20.6	Vert
104	150.370M	34.6	-26.8	+12.6	+0.0	+2.3	+0.0	22.7	43.5	-20.8	Horiz
105	240.077M	32.5	-26.6	+16.1	+0.0	+3.1	+0.0	25.1	46.0	-20.9	Vert
106	240.115M	32.5	-26.6	+16.1	+0.0	+3.1	+0.0	25.1	46.0	-20.9	Horiz
107	64.046M	35.4	-27.1	+9.2	+0.0	+1.5	+0.0	19.0	40.0	-21.0	Horiz
108	270.557M	29.6	-26.4	+18.3	+0.0	+3.3	+0.0	24.8	46.0	-21.2	Vert
109	64.048M	35.2	-27.1	+9.2	+0.0	+1.5	+0.0	18.8	40.0	-21.2	Horiz
110	160.069M	33.3	-26.8	+13.2	+0.0	+2.4	+0.0	22.1	43.5	-21.4	Vert
111	240.119M	31.8	-26.6	+16.1	+0.0	+3.1	+0.0	24.4	46.0	-21.6	Horiz
112	112.076M	33.3	-27.0	+13.5	+0.0	+2.1	+0.0	21.9	43.5	-21.6	Horiz
113	144.071M	33.3	-26.8	+13.0	+0.0	+2.3	+0.0	21.8	43.5	-21.7	Horiz
114	160.036M	32.7	-26.8	+13.2	+0.0	+2.4	+0.0	21.5	43.5	-22.0	Vert

115	170.366M	30.5	-26.8	+15.2	+0.0	+2.5	+0.0	21.4	43.5	-22.1	Vert
116	160.094M	32.6	-26.8	+13.2	+0.0	+2.4	+0.0	21.4	43.5	-22.1	Vert
117	144.106M	33.0	-26.8	+12.9	+0.0	+2.3	+0.0	21.4	43.5	-22.1	Horiz
118	160.052M	32.5	-26.8	+13.2	+0.0	+2.4	+0.0	21.3	43.5	-22.2	Horiz
119	80.045M	36.0	-27.0	+6.8	+0.0	+1.7	+0.0	17.5	40.0	-22.5	Horiz
120	64.050M	33.4	-27.1	+9.2	+0.0	+1.5	+0.0	17.0	40.0	-23.0	Horiz

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Intermec**
Specification: **FCC 15.247 / 15.209**
Work Order #: **77321** Date: 07/31/2001
Test Type: **Maximized Emissions** Time: 17:57:52
Equipment: **Personal Area Network Radio Module** Sequence#: 5
Manufacturer: Intermec Technologies Tested By: Randal Clark
Model: UGTA2-2XXA
S/N: 0104000118

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Personal Area Network Radio Module*	Intermec Technologies	UGTA2-2XXA	0104000118

Support Devices:

Function	Manufacturer	Model #	S/N
Host Terminal	Intermec Technologies	700	4623379
SW Host	Intermec Technologies	6640	4502888
Power Supply	Intermec Technologies	851-050-001	0118-18
Power Supply	Skynet Electronic Co.	SNP-A075	993821415

Test Conditions / Notes:

EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously transmit at maximum output power. EUT orientation: laying on its side PCB short edge upwards. Power output of modular EUT is limited to 1mW. Dwell time correction factor used IAW DA00-705 (-20dB maximum used). Frequency Range Tested: 1-18GHz

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Amp Cable dB	Horn 15.35 dB	Cable dB	Cable dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	7439.870M	42.2	-36.3 +4.0	+35.4 -20.0	+1.0	+8.8	+0.0	35.1	54.0	-18.9	Horiz
2	7205.880M	42.2	-36.1 +3.6	+34.1 -20.0	+1.4	+8.6	+0.0	33.8	54.0	-20.2	Vert
3	7322.560M	39.8	-36.2 +3.8	+35.0 -20.0	+1.2	+8.7	+0.0	32.3	54.0	-21.7	Vert
4	7439.541M	38.7	-36.3 +4.0	+35.4 -20.0	+1.0	+8.8	+0.0	31.6	54.0	-22.4	Horiz
5	4804.191M	42.1	-35.5 +3.4	+33.1 -20.0	+1.0	+7.2	+0.0	31.3	54.0	-22.7	Horiz
6	4882.050M	41.6	-35.6 +3.5	+33.1 -20.0	+1.0	+7.2	+0.0	30.8	54.0	-23.2	Vert
7	4804.120M	41.4	-35.5 +3.4	+33.1 -20.0	+1.0	+7.2	+0.0	30.6	54.0	-23.4	Vert
8	7205.743M	37.0	-36.1 +3.6	+34.1 -20.0	+1.4	+8.6	+0.0	28.6	54.0	-25.4	Horiz
9	7322.715M	35.5	-36.2 +3.8	+35.0 -20.0	+1.2	+8.7	+0.0	28.0	54.0	-26.0	Horiz
10	4881.870M	38.0	-35.6 +3.5	+33.1 -20.0	+1.0	+7.2	+0.0	27.2	54.0	-26.8	Horiz

11	1859.935M	44.9	-35.4 +2.1	+27.9 -20.0	+0.2	+4.3	+0.0	24.0	54.0	-30.0	Horiz
12	4959.945M	33.9	-35.7 +3.6	+33.2 -20.0	+1.0	+7.3	+0.0	23.3	54.0	-30.7	Horiz
13	4959.990M	33.5	-35.7 +3.6	+33.2 -20.0	+1.0	+7.3	+0.0	22.9	54.0	-31.1	Horiz
14	9608.090M	26.2	-35.4 +4.2	+36.9 -20.0	+0.3	+8.4	+0.0	20.6	54.0	-33.4	Horiz
15	1239.935M	45.8	-35.8 +1.7	+25.0 -20.0	+0.2	+3.5	+0.0	20.4	54.0	-33.6	Horiz
16	2473.070M	45.8	-34.4 +2.8	+28.7 -20.0	+0.3	+5.3	+0.0	28.5	97.4	-68.9	Vert

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Intermec**
Specification: **FCC 15.247 / 15.209**
Work Order #: **77321** Date: 08/01/2001
Test Type: **Maximized Emissions** Time: 10:59:41
Equipment: **Personal Area Network Radio Module** Sequence#: 6
Manufacturer: Intermec Technologies Tested By: Randal Clark
Model: UGTA2-2XXA
S/N: 0104000118

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Personal Area Network Radio Module*	Intermec Technologies	UGTA2-2XXA	0104000118

Support Devices:

Function	Manufacturer	Model #	S/N
Host Terminal	Intermec Technologies	700	4623379
SW Host	Intermec Technologies	6640	4502888
Power Supply	Intermec Technologies	851-050-001	0118-18
Power Supply	Skynet Electronic Co.	SNP-A075	993821415

Test Conditions / Notes:

EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously transmit at maximum output power. EUT orientation: laying on its side PCB long edge upwards. Power output of modular EUT is limited to 1mW. Dwell time correction factor used IAW DA00-705 (-20dB maximum used). Frequency Range Tested: 1-18GHz

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Amp Cable dB	Horn 15.35 dB	Cable dB	Cable dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	7439.930M	43.8	-36.3 +4.0	+35.4 -20.0	+1.0	+8.8	+0.0	36.7	54.0	-17.3	Horiz
2	7323.100M	40.8	-36.2 +3.8	+35.0 -20.0	+1.2	+8.7	+0.0	33.3	54.0	-20.7	Horiz
3	7439.845M	38.5	-36.3 +4.0	+35.4 -20.0	+1.0	+8.8	+0.0	31.4	54.0	-22.6	Vert
4	4881.985M	42.1	-35.6 +3.5	+33.1 -20.0	+1.0	+7.2	+0.0	31.3	54.0	-22.7	Horiz
5	4881.915M	40.1	-35.6 +3.5	+33.1 -20.0	+1.0	+7.2	+0.0	29.3	54.0	-24.7	Vert
6	7322.980M	36.6	-36.2 +3.8	+35.0 -20.0	+1.2	+8.7	+0.0	29.1	54.0	-24.9	Vert
7	4803.935M	39.5	-35.5 +3.4	+33.1 -20.0	+1.0	+7.2	+0.0	28.7	54.0	-25.3	Horiz
8	4959.925M	39.0	-35.7 +3.6	+33.2 -20.0	+1.0	+7.3	+0.0	28.4	54.0	-25.6	Horiz
9	7205.919M	27.6	-36.1 +3.6	+34.1 -20.0	+1.4	+8.6	+0.0	19.2	54.0	-34.8	Vert

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362
Customer: **Intermec**
Specification: **FCC 15.247 / 15.209**
Work Order #: **77321** Date: 08/01/2001
Test Type: **Maximized Emissions** Time: 12:42:18
Equipment: **Personal Area Network Radio Module** Sequence#: 7
Manufacturer: Intermec Technologies Tested By: Randal Clark
Model: UGTA2-2XXA
S/N: 0104000118

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Personal Area Network Radio Module*	Intermec Technologies	UGTA2-2XXA	0104000118

Support Devices:

Function	Manufacturer	Model #	S/N
Host Terminal	Intermec Technologies	700	4623379
SW Host	Intermec Technologies	6640	4502888
Power Supply	Intermec Technologies	851-050-001	0118-18
Power Supply	Skynet Electronic Co.	SNP-A075	993821415

Test Conditions / Notes:

EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously transmit at maximum output power. EUT orientation: laying flat on its back - module facing upwards. Power output of modular EUT is limited to 1mW. Dwell time correction factor used IAW DA00-705 (-20dB maximum used). Frequency Range Tested: 1-18GHz

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Amp Cable dB	Horn 15.35 dB	Cable dB	Cable dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	7439.850M	39.7	-36.3 +4.0	+35.4 -20.0	+1.0	+8.8	+0.0	32.6	54.0	-21.4	Horiz
2	4803.780M	42.8	-35.5 +3.4	+33.1 -20.0	+1.0	+7.2	+0.0	32.0	54.0	-22.0	Vert
3	7322.650M	38.4	-36.2 +3.8	+35.0 -20.0	+1.2	+8.7	+0.0	30.9	54.0	-23.1	Horiz
4	7205.820M	39.2	-36.1 +3.6	+34.1 -20.0	+1.4	+8.6	+0.0	30.8	54.0	-23.2	Vert
5	4881.720M	41.6	-35.6 +3.5	+33.1 -20.0	+1.0	+7.2	+0.0	30.8	54.0	-23.2	Horiz
6	4803.935M	41.4	-35.5 +3.4	+33.1 -20.0	+1.0	+7.2	+0.0	30.6	54.0	-23.4	Horiz
7	7322.875M	36.8	-36.2 +3.8	+35.0 -20.0	+1.2	+8.7	+0.0	29.3	54.0	-24.7	Vert
8	7205.785M	37.6	-36.1 +3.6	+34.1 -20.0	+1.4	+8.6	+0.0	29.2	54.0	-24.8	Horiz
9	7439.850M	36.2	-36.3 +4.0	+35.4 -20.0	+1.0	+8.8	+0.0	29.1	54.0	-24.9	Vert
10	4959.880M	39.4	-35.7 +3.6	+33.2 -20.0	+1.0	+7.3	+0.0	28.8	54.0	-25.2	Horiz
11	4881.925M	38.2	-35.6 +3.5	+33.1 -20.0	+1.0	+7.2	+0.0	27.4	54.0	-26.6	Vert

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Intermec**
Specification: **FCC 15.247 / 15.209**
Work Order #: **77321** Date: 08/01/2001
Test Type: **Maximized Emissions** Time: 17:54:10
Equipment: **Personal Area Network Radio Module** Sequence#: 8
Manufacturer: Intermec Technologies Tested By: Randal Clark
Model: UGTA2-2XXA
S/N: 0104000118

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Personal Area Network Radio Module*	Intermec Technologies	UGTA2-2XXA	0104000118

Support Devices:

Function	Manufacturer	Model #	S/N
Host Terminal	Intermec Technologies	700	4623379
SW Host	Intermec Technologies	6640	4502888
Power Supply	Intermec Technologies	851-050-001	0118-18
Power Supply	Skynet Electronic Co.	SNP-A075	993821415

Test Conditions / Notes:

EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously transmit at maximum output power. EUT tested with three orientations on orthogonal axes. Power output of modular EUT is limited to 1mW. Dwell time correction factor used IAW DA00-705 (-20dB maximum used). Data corrected for test distance IAW 15.31 (20dB/ Dec). Frequency Range Tested: 18-26GHz

Measurement Data: Reading listed by margin. Test Distance: 1 Meter

#	Freq MHz	Rdng dBµV	Amp Filte dB	Horn dB	Cable dB	15.35 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	19839.410M	43.3	-32.8 +0.0	+40.7	+3.4	-20.0	-10.0	24.6	54.0	-29.4	Vert
2	19840.080M	42.5	-32.8 +0.0	+40.7	+3.4	-20.0	-10.0	23.8	54.0	-30.2	Horiz
3	19527.710M	42.5	-32.8 +0.0	+40.4	+3.2	-20.0	-10.0	23.3	54.0	-30.7	Horiz
4	19840.190M	41.8	-32.8 +0.0	+40.7	+3.4	-20.0	-10.0	23.1	54.0	-30.9	Vert
5	19839.580M	41.7	-32.8 +0.0	+40.7	+3.4	-20.0	-10.0	23.0	54.0	-31.0	Vert
6	19839.630M	41.5	-32.8 +0.0	+40.7	+3.4	-20.0	-10.0	22.8	54.0	-31.2	Horiz
7	24800.080M	43.5	-33.9 +0.0	+40.4	+2.7	-20.0	-10.0	22.7	54.0	-31.3	Horiz
8	21968.460M	43.0	-33.7 +0.0	+40.3	+2.7	-20.0	-10.0	22.3	54.0	-31.7	Horiz
9	19216.070M	40.8	-31.9 +0.0	+40.3	+3.0	-20.0	-10.0	22.2	54.0	-31.8	Horiz
10	21968.840M	42.5	-33.7 +0.0	+40.3	+2.7	-20.0	-10.0	21.8	54.0	-32.2	Horiz

11	19216.220M	40.3	-31.9 +0.0	+40.3	+3.0	-20.0	-10.0	21.7	54.0	-32.3	Horiz
12	22319.480M	42.0	-32.8 +0.0	+40.2	+2.3	-20.0	-10.0	21.7	54.0	-32.3	Horiz
13	24800.000M	42.3	-33.9 +0.0	+40.4	+2.7	-20.0	-10.0	21.5	54.0	-32.5	Vert
14	19528.010M	40.7	-32.8 +0.0	+40.4	+3.2	-20.0	-10.0	21.5	54.0	-32.5	Vert
15	21968.220M	42.2	-33.7 +0.0	+40.3	+2.7	-20.0	-10.0	21.5	54.0	-32.5	Vert
16	19216.080M	40.0	-31.9 +0.0	+40.3	+3.0	-20.0	-10.0	21.4	54.0	-32.6	Vert
17	19216.120M	39.8	-31.9 +0.0	+40.3	+3.0	-20.0	-10.0	21.2	54.0	-32.8	Vert
18	24800.000M	42.0	-33.9 +0.0	+40.4	+2.7	-20.0	-10.0	21.2	54.0	-32.8	Horiz
19	22319.540M	41.5	-32.8 +0.0	+40.2	+2.3	-20.0	-10.0	21.2	54.0	-32.8	Vert
20	19527.680M	40.2	-32.8 +0.0	+40.4	+3.2	-20.0	-10.0	21.0	54.0	-33.0	Vert
21	21968.710M	41.7	-33.7 +0.0	+40.3	+2.7	-20.0	-10.0	21.0	54.0	-33.0	Vert
22	24410.070M	42.3	-33.8 +0.0	+39.9	+2.5	-20.0	-10.0	20.9	54.0	-33.1	Vert
23	24409.790M	42.2	-33.8 +0.0	+39.9	+2.5	-20.0	-10.0	20.8	54.0	-33.2	Vert
24	21618.020M	42.2	-34.1 +0.0	+40.1	+2.5	-20.0	-10.0	20.7	54.0	-33.3	Horiz
25	21969.100M	41.0	-33.7 +0.0	+40.3	+2.7	-20.0	-10.0	20.3	54.0	-33.7	Horiz
26	21618.130M	41.0	-34.1 +0.0	+40.1	+2.5	-20.0	-10.0	19.5	54.0	-34.5	Horiz
27	21617.460M	40.8	-34.1 +0.0	+40.1	+2.5	-20.0	-10.0	19.3	54.0	-34.7	Vert
28	22319.760M	39.3	-32.8 +0.0	+40.2	+2.3	-20.0	-10.0	19.0	54.0	-35.0	Horiz
29	22319.630M	38.7	-32.8 +0.0	+40.2	+2.3	-20.0	-10.0	18.4	54.0	-35.6	Vert
30	22319.580M	38.5	-32.8 +0.0	+40.2	+2.3	-20.0	-10.0	18.2	54.0	-35.8	Vert
31	21618.310M	39.7	-34.1 +0.0	+40.1	+2.5	-20.0	-10.0	18.2	54.0	-35.8	Vert
32	22319.980M	38.3	-32.8 +0.0	+40.2	+2.3	-20.0	-10.0	18.0	54.0	-36.0	Horiz

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Intermec**
Specification: **FCC 15.247 / 15.209 Bandedges**
Work Order #: **77321** Date: 07/31/2001
Test Type: **Maximized Emissions** Time: 11:39:35
Equipment: **Personal Area Network Radio Module** Sequence#: 4
Manufacturer: Intermec Technologies Tested By: Randal Clark
Model: UGTA2-2XXA
S/N: 0104000118

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Personal Area Network Radio Module*	Intermec Technologies	UGTA2-2XXA	0104000118

Support Devices:

Function	Manufacturer	Model #	S/N
Host Terminal	Intermec Technologies	700	4623379
SW Host	Intermec Technologies	6640	4502888
Power Supply	Intermec Technologies	851-050-001	0118-18
Power Supply	Skynet Electronic Co.	SNP-A075	993821415

Test Conditions / Notes:

EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously transmit at maximum output power. Voltage supplied to EUT is set to 3.5VDC (maximum output) supplied through a separate DC power supply. EUT orientation: laying on its side PCB short edge upwards. Power output of modular EUT is limited to 1mW. Dwell time correction factor used IAW DA00-705 (-20dB maximum used). Frequency Range Tested: 2398 - 2402MHz and 2480 - 2485MHz (Bandedges only)

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Amp Cable dB	Horn 15.35 dB	Cable dB	Cable dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2399.960M	61.8	-34.6 +2.7	+28.5 -20.0	+0.3	+5.2	+0.0	43.9	54.0	-10.1	Horiz
2	2399.960M	59.8	-34.6 +2.7	+28.5 -20.0	+0.3	+5.2	+0.0	41.9	54.0	-12.1	Vert
3	2483.500M	54.4	-34.4 +2.8	+28.8 -20.0	+0.3	+5.3	+0.0	37.2	54.0	-16.8	Horiz
4	2483.500M	53.5	-34.4 +2.8	+28.8 -20.0	+0.3	+5.3	+0.0	36.3	54.0	-17.7	Vert
5	2399.455M	54.2	-34.6 +2.7	+28.5 -20.0	+0.3	+5.2	+0.0	36.3	54.0	-17.7	Horiz
6	2399.455M	52.6	-34.6 +2.7	+28.5 -20.0	+0.3	+5.2	+0.0	34.7	54.0	-19.3	Vert

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Intermec**
Specification: **FCC 15.207**
Work Order #: **77321** Date: 08/07/2001
Test Type: **Conducted Emissions** Time: 3:42:48 PM
Equipment: **Personal Area Network Radio Module** Sequence#: 13
Manufacturer: Intermec Technologies Tested By: Randal Clark
Model: UGTA2-2XXA
S/N: 0104000118

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Personal Area Network Radio Module*	Intermec Technologies	UGTA2-2XXA	0104000118

Support Devices:

Function	Manufacturer	Model #	S/N
Host Terminal	Intermec Technologies	700	4623379
SW Host	Intermec Technologies	6640	4502888
Power Supply	Intermec Technologies	851-050-001	0118-18
Power Supply	Skynet Electronic Co.	SNP-A075	993821415

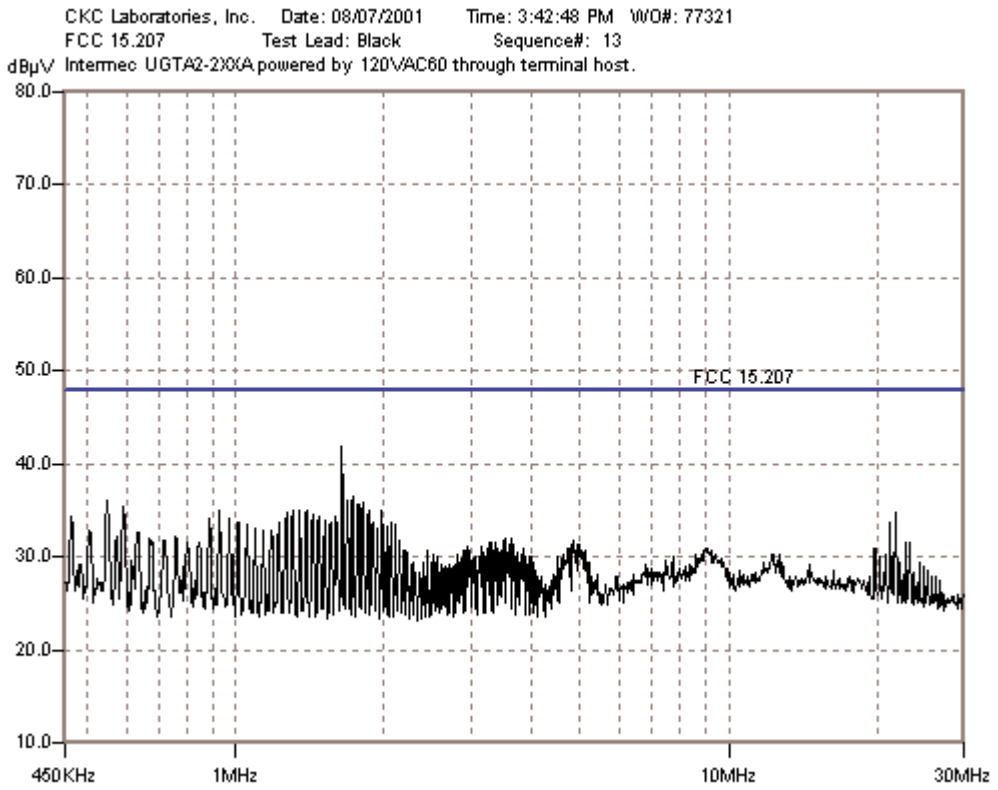
Test Conditions / Notes:

EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously transmit on the center channel. Frequency Range Tested: 450 kHz - 30 MHz

Measurement Data: Reading listed by margin. Test Lead: Black

#	Freq MHz	Rdng dBµV	Cable dB	LISN dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	1.639M Ambient	41.5	+0.1	+0.3			+0.0	41.9	48.0 Transient Ambient	-6.1	Black
2	1.731M	36.0	+0.1	+0.3			+0.0	36.4	48.0	-11.6	Black
3	1.689M	35.7	+0.1	+0.3			+0.0	36.1	48.0	-11.9	Black
4	550.342k	35.6	+0.1	+0.4			+0.0	36.1	48.0	-11.9	Black
5	1.814M	35.5	+0.1	+0.3			+0.0	35.9	48.0	-12.1	Black
6	1.772M	35.3	+0.1	+0.3			+0.0	35.7	48.0	-12.3	Black
7	593.215k	35.0	+0.1	+0.4			+0.0	35.5	48.0	-12.5	Black
8	1.858M	34.6	+0.1	+0.3			+0.0	35.0	48.0	-13.0	Black
9	1.984M	34.5	+0.1	+0.3			+0.0	34.9	48.0	-13.1	Black
10	1.395M	34.5	+0.1	+0.3			+0.0	34.9	48.0	-13.1	Black
11	1.353M	34.5	+0.1	+0.3			+0.0	34.9	48.0	-13.1	Black

12	1.310M	34.5	+0.1	+0.3	+0.0	34.9	48.0	-13.1	Black
13	929.889k	34.4	+0.1	+0.4	+0.0	34.9	48.0	-13.1	Black
14	21.841M	33.9	+0.3	+0.6	+0.0	34.8	48.0	-13.2	Black
15	1.268M	34.4	+0.1	+0.3	+0.0	34.8	48.0	-13.2	Black
16	1.433M	34.1	+0.1	+0.3	+0.0	34.5	48.0	-13.5	Black
17	1.602M	33.9	+0.1	+0.3	+0.0	34.3	48.0	-13.7	Black
18	1.476M	33.9	+0.1	+0.3	+0.0	34.3	48.0	-13.7	Black
19	463.683k	33.8	+0.1	+0.4	+0.0	34.3	48.0	-13.7	Black
20	972.154k	33.8	+0.1	+0.3	+0.0	34.2	48.0	-13.8	Black


CKC Laboratories, Inc. Date: 08/07/2001 Time: 3:42:48 PM WO#: 77321
FCC 15.207 Test Lead: Black Sequence#: 13
dBµV Intermec UGTA2-2XXA powered by 120VAC60 through terminal host.
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
FCC 15.207
450KHz
1MHz
10MHz
30MHz

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Intermec**
Specification: **FCC 15.207**
Work Order #: **77321** Date: 08/07/2001
Test Type: **Conducted Emissions** Time: 3:54:48 PM
Equipment: **Personal Area Network Radio Module** Sequence#: 14
Manufacturer: Intermec Technologies Tested By: Randal Clark
Model: UGTA2-2XXA
S/N: 0104000118

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Personal Area Network Radio Module*	Intermec Technologies	UGTA2-2XXA	0104000118

Support Devices:

Function	Manufacturer	Model #	S/N
Host Terminal	Intermec Technologies	700	4623379
SW Host	Intermec Technologies	6640	4502888
Power Supply	Intermec Technologies	851-050-001	0118-18
Power Supply	Skynet Electronic Co.	SNP-A075	993821415

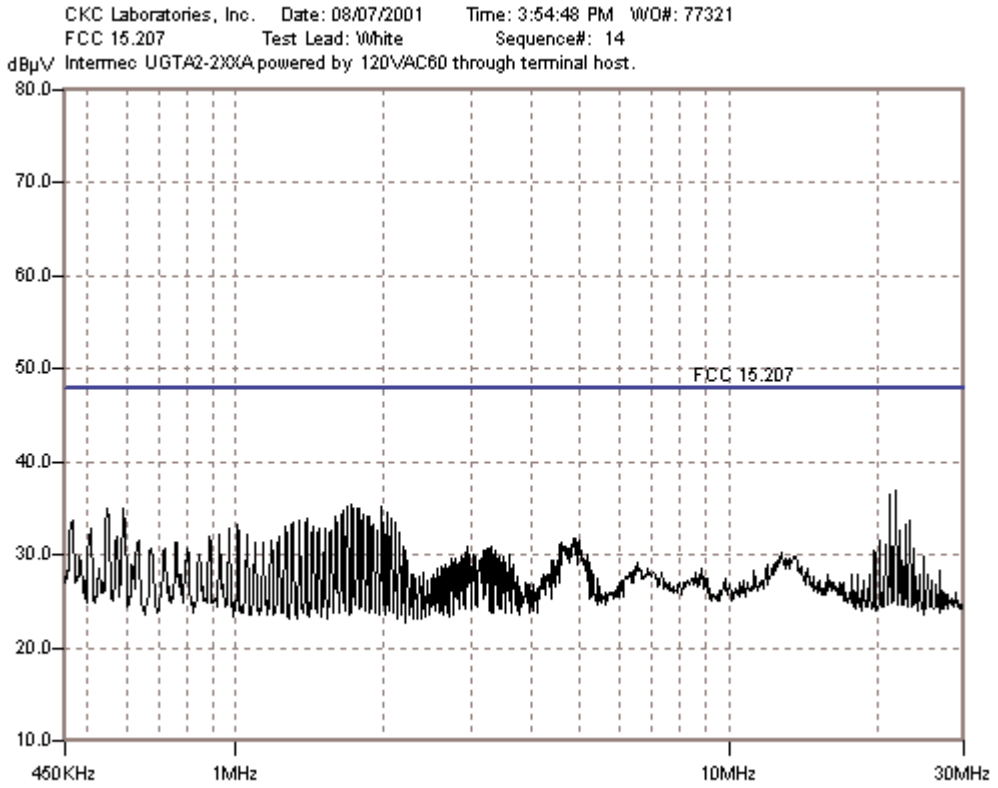
Test Conditions / Notes:

EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously transmit on the center channel. Frequency Range Tested: 450 kHz - 30 MHz

Measurement Data: Reading listed by margin. Test Lead: White

#	Freq MHz	Rdng dBµV	Cable dB	dB	LISN dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	21.871M	36.1	+0.3		+0.5		+0.0	36.9	48.0	-11.1	White
2	21.357M	35.7	+0.3		+0.5		+0.0	36.5	48.0	-11.5	White
3	1.727M	35.0	+0.1		+0.3		+0.0	35.4	48.0	-12.6	White
4	1.984M	34.9	+0.1		+0.3		+0.0	35.3	48.0	-12.7	White
5	1.689M	34.8	+0.1		+0.3		+0.0	35.2	48.0	-12.8	White
6	1.772M	34.7	+0.1		+0.3		+0.0	35.1	48.0	-12.9	White
7	593.215k	34.5	+0.1		+0.5		+0.0	35.1	48.0	-12.9	White
8	551.254k	34.5	+0.1		+0.5		+0.0	35.1	48.0	-12.9	White
9	1.647M	34.3	+0.1		+0.3		+0.0	34.7	48.0	-13.3	White
10	2.025M	34.1	+0.1		+0.3		+0.0	34.5	48.0	-13.5	White
11	1.816M	34.0	+0.1		+0.3		+0.0	34.4	48.0	-13.6	White

12	1.855M	33.8	+0.1	+0.3	+0.0	34.2	48.0	-13.8	White
13	1.602M	33.7	+0.1	+0.3	+0.0	34.1	48.0	-13.9	White
14	2.069M	33.6	+0.1	+0.3	+0.0	34.0	48.0	-14.0	White
15	1.395M	33.6	+0.1	+0.3	+0.0	34.0	48.0	-14.0	White
16	23.367M	32.8	+0.4	+0.6	+0.0	33.8	48.0	-14.2	White
17	1.351M	33.4	+0.1	+0.3	+0.0	33.8	48.0	-14.2	White
18	467.332k	33.0	+0.1	+0.6	+0.0	33.7	48.0	-14.3	White
19	2.113M	33.1	+0.1	+0.3	+0.0	33.5	48.0	-14.5	White
20	1.308M	33.1	+0.1	+0.3	+0.0	33.5	48.0	-14.5	White


CKC Laboratories, Inc. Date: 08/07/2001 Time: 3:54:48 PM WO#: 77321
FCC 15.207 Test Lead: White Sequence#: 14
dBµV Intermec UGTA2-2XXA powered by 120VAC60 through terminal host.
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
FCC 15.207
450KHz
1MHz
10MHz
30MHz

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Intermec**
Specification: **15.109 CLASS B**
Work Order #: **77321** Date: 08/06/2001
Test Type: **Maximized Emissions** Time: 17:40:07
Equipment: **Personal Area Network Radio Module** Sequence#: 11
Manufacturer: Intermec Technologies Tested By: Randal Clark
Model: UGTA2-2XXA
S/N: 0104000118

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Personal Area Network Radio Module*	Intermec Technologies	UGTA2-2XXA	0104000118

Support Devices:

Function	Manufacturer	Model #	S/N
Host Terminal	Intermec Technologies	700	4623379
SW Host	Intermec Technologies	6640	4502888
Power Supply	Intermec Technologies	851-050-001	0118-18
Power Supply	Skynet Electronic Co.	SNP-A075	993821415

Test Conditions / Notes:

EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously receive. EUT tested with three orientations on orthogonal axes and three separate channels (low, middle and high). Frequency Range Tested: 30-1000MHz

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Amp dB	Bicon dB	Log 1 dB	Cable dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	420.839M	47.4	-27.3	+0.0	+16.2	+4.3	+0.0	40.6	46.0	-5.4	Horiz
2	64.028M	49.4	-27.1	+9.2	+0.0	+1.5	+0.0	33.0	40.0	-7.0	Vert
3	420.852M	45.6	-27.3	+0.0	+16.2	+4.3	+0.0	38.8	46.0	-7.2	Horiz
4	440.862M	44.6	-27.4	+0.0	+16.6	+4.5	+0.0	38.3	46.0	-7.7	Horiz
5	460.887M	44.2	-27.6	+0.0	+17.0	+4.6	+0.0	38.2	46.0	-7.8	Vert
6	460.916M	43.1	-27.6	+0.0	+17.0	+4.6	+0.0	37.1	46.0	-8.9	Horiz
7	460.916M	42.7	-27.6	+0.0	+17.0	+4.6	+0.0	36.7	46.0	-9.3	Vert
8	430.877M	43.3	-27.4	+0.0	+16.4	+4.4	+0.0	36.7	46.0	-9.3	Horiz
9	528.149M	41.1	-27.8	+0.0	+18.3	+4.9	+0.0	36.5	46.0	-9.5	Horiz
10	84.990M	47.3	-27.1	+8.1	+0.0	+1.8	+0.0	30.1	40.0	-9.9	Vert
11	310.656M	38.0	-26.5	+0.0	+20.6	+3.7	+0.0	35.8	46.0	-10.2	Vert

12	440.882M	41.5	-27.4	+0.0	+16.6	+4.5	+0.0	35.2	46.0	-10.8	Vert
13	48.071M	43.9	-27.1	+11.0	+0.0	+1.3	+0.0	29.1	40.0	-10.9	Vert
14	420.829M	41.7	-27.3	+0.0	+16.2	+4.3	+0.0	34.9	46.0	-11.1	Vert
15	410.839M	41.7	-27.2	+0.0	+16.0	+4.2	+0.0	34.7	46.0	-11.3	Horiz
16	500.997M	39.9	-27.8	+0.0	+17.8	+4.7	+0.0	34.6	46.0	-11.4	Vert
17	440.844M	40.9	-27.4	+0.0	+16.6	+4.5	+0.0	34.6	46.0	-11.4	Horiz
18	500.996M	39.8	-27.8	+0.0	+17.8	+4.7	+0.0	34.5	46.0	-11.5	Horiz
19	400.801M	41.8	-27.1	+0.0	+15.7	+4.1	+0.0	34.5	46.0	-11.5	Horiz
20	258.122M	41.0	-26.5	+16.8	+0.0	+3.2	+0.0	34.5	46.0	-11.5	Horiz
21	500.966M	39.7	-27.8	+0.0	+17.8	+4.7	+0.0	34.4	46.0	-11.6	Horiz
22	350.726M	38.7	-26.7	+0.0	+18.3	+3.9	+0.0	34.2	46.0	-11.8	Vert
23	500.990M	39.5	-27.8	+0.0	+17.8	+4.7	+0.0	34.2	46.0	-11.8	Vert
24	480.945M	39.8	-27.7	+0.0	+17.4	+4.7	+0.0	34.2	46.0	-11.8	Vert
25	430.873M	40.6	-27.4	+0.0	+16.4	+4.4	+0.0	34.0	46.0	-12.0	Horiz
26	420.836M	40.6	-27.3	+0.0	+16.2	+4.3	+0.0	33.8	46.0	-12.2	Vert
27	681.325M	34.9	-27.8	+0.0	+20.8	+5.7	+0.0	33.6	46.0	-12.4	Vert
28	450.860M	39.7	-27.5	+0.0	+16.8	+4.6	+0.0	33.6	46.0	-12.4	Horiz
29	440.852M	39.7	-27.4	+0.0	+16.6	+4.5	+0.0	33.4	46.0	-12.6	Vert
30	480.952M	38.9	-27.7	+0.0	+17.4	+4.7	+0.0	33.3	46.0	-12.7	Vert
31	528.151M	37.7	-27.8	+0.0	+18.3	+4.9	+0.0	33.1	46.0	-12.9	Horiz
32	80.027M	45.6	-27.0	+6.8	+0.0	+1.7	+0.0	27.1	40.0	-12.9	Horiz
33	370.744M	38.7	-26.9	+0.0	+17.2	+4.0	+0.0	33.0	46.0	-13.0	Vert
34	681.343M	34.3	-27.8	+0.0	+20.8	+5.7	+0.0	33.0	46.0	-13.0	Horiz
35	410.823M	40.0	-27.2	+0.0	+16.0	+4.2	+0.0	33.0	46.0	-13.0	Horiz
36	420.812M	39.7	-27.3	+0.0	+16.2	+4.3	+0.0	32.9	46.0	-13.1	Vert
37	370.759M	38.4	-26.9	+0.0	+17.2	+4.0	+0.0	32.7	46.0	-13.3	Vert

38	400.790M	40.0	-27.1	+0.0	+15.7	+4.1	+0.0	32.7	46.0	-13.3	Horiz
39	480.971M	38.2	-27.7	+0.0	+17.4	+4.7	+0.0	32.6	46.0	-13.4	Horiz
40	480.948M	38.1	-27.7	+0.0	+17.4	+4.7	+0.0	32.5	46.0	-13.5	Horiz
41	410.798M	39.4	-27.2	+0.0	+16.0	+4.2	+0.0	32.4	46.0	-13.6	Vert
42	380.795M	38.6	-27.0	+0.0	+16.7	+4.0	+0.0	32.3	46.0	-13.7	Vert
43	350.684M	36.8	-26.7	+0.0	+18.3	+3.9	+0.0	32.3	46.0	-13.7	Vert
44	330.676M	35.7	-26.6	+0.0	+19.4	+3.8	+0.0	32.3	46.0	-13.7	Vert
45	320.673M	35.0	-26.6	+0.0	+20.0	+3.8	+0.0	32.2	46.0	-13.8	Vert
46	450.874M	38.3	-27.5	+0.0	+16.8	+4.6	+0.0	32.2	46.0	-13.8	Vert
47	380.782M	38.4	-27.0	+0.0	+16.7	+4.0	+0.0	32.1	46.0	-13.9	Horiz
48	380.768M	38.3	-27.0	+0.0	+16.7	+4.0	+0.0	32.0	46.0	-14.0	Vert
49	500.996M	37.1	-27.8	+0.0	+17.8	+4.7	+0.0	31.8	46.0	-14.2	Vert
50	670.981M	33.4	-27.9	+0.0	+20.6	+5.7	+0.0	31.8	46.0	-14.2	Vert
51	80.050M	44.3	-27.0	+6.8	+0.0	+1.7	+0.0	25.8	40.0	-14.2	Horiz
52	400.794M	39.0	-27.1	+0.0	+15.7	+4.1	+0.0	31.7	46.0	-14.3	Vert
53	430.871M	38.2	-27.4	+0.0	+16.4	+4.4	+0.0	31.6	46.0	-14.4	Vert
54	601.190M	35.0	-27.9	+0.0	+19.3	+5.2	+0.0	31.6	46.0	-14.4	Horiz
55	336.075M	35.3	-26.6	+0.0	+19.1	+3.8	+0.0	31.6	46.0	-14.4	Horiz
56	390.792M	38.3	-27.0	+0.0	+16.2	+4.1	+0.0	31.6	46.0	-14.4	Horiz
57	460.882M	37.5	-27.6	+0.0	+17.0	+4.6	+0.0	31.5	46.0	-14.5	Vert
58	390.794M	38.2	-27.0	+0.0	+16.2	+4.1	+0.0	31.5	46.0	-14.5	Vert
59	79.927M	43.9	-27.0	+6.8	+0.0	+1.7	+0.0	25.4	40.0	-14.6	Vert
60	581.112M	35.0	-27.9	+0.0	+19.0	+5.2	+0.0	31.3	46.0	-14.7	Horiz
61	410.834M	37.9	-27.2	+0.0	+16.0	+4.2	+0.0	30.9	46.0	-15.1	Vert
62	470.912M	36.7	-27.6	+0.0	+17.2	+4.6	+0.0	30.9	46.0	-15.1	Vert
63	541.084M	35.3	-27.8	+0.0	+18.4	+5.0	+0.0	30.9	46.0	-15.1	Horiz

64	336.133M	34.5	-26.6	+0.0	+19.1	+3.8	+0.0	30.8	46.0	-15.2	Horiz
65	400.802M	38.0	-27.1	+0.0	+15.7	+4.1	+0.0	30.7	46.0	-15.3	Vert
66	340.720M	34.7	-26.7	+0.0	+18.8	+3.9	+0.0	30.7	46.0	-15.3	Vert
67	450.908M	36.8	-27.5	+0.0	+16.8	+4.6	+0.0	30.7	46.0	-15.3	Vert
68	410.844M	37.6	-27.2	+0.0	+16.0	+4.2	+0.0	30.6	46.0	-15.4	Vert
69	360.712M	35.8	-26.8	+0.0	+17.7	+3.9	+0.0	30.6	46.0	-15.4	Vert
70	430.872M	37.1	-27.4	+0.0	+16.4	+4.4	+0.0	30.5	46.0	-15.5	Vert
71	521.056M	35.3	-27.8	+0.0	+18.1	+4.9	+0.0	30.5	46.0	-15.5	Horiz
72	270.543M	35.2	-26.4	+18.3	+0.0	+3.3	+0.0	30.4	46.0	-15.6	Horiz
73	432.135M	36.9	-27.4	+0.0	+16.4	+4.4	+0.0	30.3	46.0	-15.7	Horiz
74	370.780M	36.0	-26.9	+0.0	+17.2	+4.0	+0.0	30.3	46.0	-15.7	Horiz
75	290.571M	32.6	-26.5	+20.6	+0.0	+3.6	+0.0	30.3	46.0	-15.7	Horiz
76	450.905M	36.3	-27.5	+0.0	+16.8	+4.6	+0.0	30.2	46.0	-15.8	Horiz
77	390.761M	36.8	-27.0	+0.0	+16.2	+4.1	+0.0	30.1	46.0	-15.9	Vert
78	521.016M	34.7	-27.8	+0.0	+18.1	+4.9	+0.0	29.9	46.0	-16.1	Horiz
79	432.140M	36.4	-27.4	+0.0	+16.4	+4.4	+0.0	29.8	46.0	-16.2	Vert
80	340.684M	33.7	-26.7	+0.0	+18.8	+3.9	+0.0	29.7	46.0	-16.3	Vert
81	440.841M	35.9	-27.4	+0.0	+16.6	+4.5	+0.0	29.6	46.0	-16.4	Vert
82	430.866M	36.2	-27.4	+0.0	+16.4	+4.4	+0.0	29.6	46.0	-16.4	Vert
83	390.762M	36.2	-27.0	+0.0	+16.2	+4.1	+0.0	29.5	46.0	-16.5	Horiz
84	220.412M	36.1	-26.5	+16.9	+0.0	+3.0	+0.0	29.5	46.0	-16.5	Vert
85	581.064M	33.0	-27.9	+0.0	+19.0	+5.2	+0.0	29.3	46.0	-16.7	Vert
86	336.088M	32.8	-26.6	+0.0	+19.1	+3.8	+0.0	29.1	46.0	-16.9	Horiz
87	350.697M	33.6	-26.7	+0.0	+18.3	+3.9	+0.0	29.1	46.0	-16.9	Horiz
88	480.973M	34.6	-27.7	+0.0	+17.4	+4.7	+0.0	29.0	46.0	-17.0	Vert
89	470.956M	34.8	-27.6	+0.0	+17.2	+4.6	+0.0	29.0	46.0	-17.0	Horiz

90	400.819M	36.2	-27.1	+0.0	+15.7	+4.1	+0.0	28.9	46.0	-17.1	Vert
91	79.939M	41.4	-27.0	+6.8	+0.0	+1.7	+0.0	22.9	40.0	-17.1	Vert
92	520.980M	33.6	-27.8	+0.0	+18.1	+4.9	+0.0	28.8	46.0	-17.2	Vert
93	360.734M	33.9	-26.8	+0.0	+17.7	+3.9	+0.0	28.7	46.0	-17.3	Vert
94	336.089M	32.3	-26.6	+0.0	+19.1	+3.8	+0.0	28.6	46.0	-17.4	Vert
95	336.075M	32.3	-26.6	+0.0	+19.1	+3.8	+0.0	28.6	46.0	-17.4	Horiz
96	360.748M	33.8	-26.8	+0.0	+17.7	+3.9	+0.0	28.6	46.0	-17.4	Horiz
97	380.728M	34.8	-27.0	+0.0	+16.7	+4.0	+0.0	28.5	46.0	-17.5	Horiz
98	490.966M	33.8	-27.7	+0.0	+17.6	+4.7	+0.0	28.4	46.0	-17.6	Horiz
99	470.916M	34.1	-27.6	+0.0	+17.2	+4.6	+0.0	28.3	46.0	-17.7	Vert
100	336.068M	32.0	-26.6	+0.0	+19.1	+3.8	+0.0	28.3	46.0	-17.7	Vert
101	380.792M	34.6	-27.0	+0.0	+16.7	+4.0	+0.0	28.3	46.0	-17.7	Vert
102	340.710M	32.2	-26.7	+0.0	+18.8	+3.9	+0.0	28.2	46.0	-17.8	Vert
103	470.928M	34.0	-27.6	+0.0	+17.2	+4.6	+0.0	28.2	46.0	-17.8	Horiz
104	258.078M	34.8	-26.5	+16.7	+0.0	+3.2	+0.0	28.2	46.0	-17.8	Horiz
105	432.112M	34.7	-27.4	+0.0	+16.4	+4.4	+0.0	28.1	46.0	-17.9	Vert
106	350.692M	32.6	-26.7	+0.0	+18.3	+3.9	+0.0	28.1	46.0	-17.9	Vert
107	220.410M	34.7	-26.5	+16.9	+0.0	+3.0	+0.0	28.1	46.0	-17.9	Vert
108	390.812M	34.6	-27.0	+0.0	+16.2	+4.1	+0.0	27.9	46.0	-18.1	Vert
109	144.075M	36.8	-26.8	+13.0	+0.0	+2.3	+0.0	25.3	43.5	-18.2	Vert
110	280.585M	31.3	-26.4	+19.5	+0.0	+3.4	+0.0	27.8	46.0	-18.2	Horiz
111	490.989M	33.1	-27.7	+0.0	+17.6	+4.7	+0.0	27.7	46.0	-18.3	Vert
112	220.433M	33.9	-26.5	+16.9	+0.0	+3.0	+0.0	27.3	46.0	-18.7	Vert
113	432.127M	33.8	-27.4	+0.0	+16.4	+4.4	+0.0	27.2	46.0	-18.8	Horiz
114	270.522M	32.0	-26.4	+18.3	+0.0	+3.3	+0.0	27.2	46.0	-18.8	Vert
115	240.579M	34.5	-26.6	+16.1	+0.0	+3.1	+0.0	27.1	46.0	-18.9	Vert

116	144.083M	36.2	-26.8	+12.9	+0.0	+2.3	+0.0	24.6	43.5	-18.9	Vert
117	490.930M	32.4	-27.7	+0.0	+17.6	+4.7	+0.0	27.0	46.0	-19.0	Vert
118	360.718M	32.1	-26.8	+0.0	+17.7	+3.9	+0.0	26.9	46.0	-19.1	Vert
119	240.612M	34.3	-26.6	+16.1	+0.0	+3.1	+0.0	26.9	46.0	-19.1	Vert
120	160.051M	35.5	-26.8	+13.2	+0.0	+2.4	+0.0	24.3	43.5	-19.2	Horiz
121	144.062M	35.7	-26.8	+13.0	+0.0	+2.3	+0.0	24.2	43.5	-19.3	Vert
122	240.097M	34.1	-26.6	+16.1	+0.0	+3.1	+0.0	26.7	46.0	-19.3	Horiz
123	450.915M	32.7	-27.5	+0.0	+16.8	+4.6	+0.0	26.6	46.0	-19.4	Vert
124	370.772M	32.1	-26.9	+0.0	+17.2	+4.0	+0.0	26.4	46.0	-19.6	Vert
125	384.066M	32.8	-27.0	+0.0	+16.5	+4.0	+0.0	26.3	46.0	-19.7	Vert
126	511.015M	31.2	-27.8	+0.0	+18.0	+4.8	+0.0	26.2	46.0	-19.8	Horiz
127	144.075M	35.2	-26.8	+13.0	+0.0	+2.3	+0.0	23.7	43.5	-19.8	Horiz
128	384.086M	32.5	-27.0	+0.0	+16.5	+4.0	+0.0	26.0	46.0	-20.0	Vert
129	240.057M	33.1	-26.6	+16.1	+0.0	+3.1	+0.0	25.7	46.0	-20.3	Vert
130	144.083M	34.6	-26.8	+13.0	+0.0	+2.3	+0.0	23.1	43.5	-20.4	Horiz
131	400.296M	32.8	-27.1	+0.0	+15.7	+4.1	+0.0	25.5	46.0	-20.5	Vert
132	250.546M	33.2	-26.6	+15.8	+0.0	+3.1	+0.0	25.5	46.0	-20.5	Horiz
133	160.042M	33.8	-26.8	+13.2	+0.0	+2.4	+0.0	22.6	43.5	-20.9	Horiz
134	132.090M	33.2	-26.9	+13.8	+0.0	+2.3	+0.0	22.4	43.5	-21.1	Vert
135	64.048M	35.2	-27.1	+9.2	+0.0	+1.5	+0.0	18.8	40.0	-21.2	Horiz
136	400.002M	31.9	-27.1	+0.0	+15.7	+4.1	+0.0	24.6	46.0	-21.4	Vert
137	160.025M	33.2	-26.8	+13.2	+0.0	+2.4	+0.0	22.0	43.5	-21.5	Vert
138	112.076M	33.3	-27.0	+13.5	+0.0	+2.1	+0.0	21.9	43.5	-21.6	Horiz
139	160.030M	33.0	-26.8	+13.2	+0.0	+2.4	+0.0	21.8	43.5	-21.7	Vert
140	240.076M	31.6	-26.6	+16.1	+0.0	+3.1	+0.0	24.2	46.0	-21.8	Vert
141	150.328M	33.6	-26.8	+12.6	+0.0	+2.3	+0.0	21.7	43.5	-21.8	Horiz

142	224.051M	30.6	-26.5	+16.8	+0.0	+3.0	+0.0	23.9	46.0	-22.1	Horiz
143	150.361M	33.1	-26.8	+12.6	+0.0	+2.3	+0.0	21.2	43.5	-22.3	Vert
144	240.130M	30.8	-26.6	+16.1	+0.0	+3.1	+0.0	23.4	46.0	-22.6	Vert
145	34.828M	31.2	-27.2	+11.0	+0.0	+1.1	+0.0	16.1	40.0	-23.9	Horiz

Test Location:	CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362		
Customer:	**Intermec**		
Specification:	**15.109 CLASS B**		
Work Order #:	**77321**	Date:	08/07/2001
Test Type:	**Maximized Emissions**	Time:	15:39:49
Equipment:	**Personal Area Network Radio Module**	Sequence#:	12
Manufacturer:	Intermec Technologies	Tested By:	Randal Clark
Model:	UGTA2-2XXA	S/N:	0104000118

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Personal Area Network Radio Module*	Intermec Technologies	UGTA2-2XXA	0104000118

Support Devices:

Function	Manufacturer	Model #	S/N
Host Terminal	Intermec Technologies	700	4623379
SW Host	Intermec Technologies	6640	4502888
Power Supply	Intermec Technologies	851-050-001	0118-18
Power Supply	Skynet Electronic Co.	SNP-A075	993821415

Test Conditions / Notes:

EUT is a transceiver module mounted externally to the host terminal via flex cables and wires. The EUT is set to continuously receive. EUT tested with three orientations on orthogonal axes and three separate channels (low, middle and high). Frequency Range Tested: 1 - 26 GHz

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Amp Cable dB	Horn dB	Cable dB	Cable dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	1239.250M	45.3	-35.3 +1.7	+25.0	+0.2	+3.5	+0.0	40.4	54.0	-13.6	Vert
2	1200.187M	45.4	-35.4 +1.7	+25.0	+0.1	+3.5	+0.0	40.3	54.0	-13.7	Vert
3	1200.213M	45.3	-35.4 +1.7	+25.0	+0.1	+3.5	+0.0	40.2	54.0	-13.8	Vert
4	1200.187M	45.1	-35.4 +1.7	+25.0	+0.1	+3.5	+0.0	40.0	54.0	-14.0	Vert
5	1200.204M	45.1	-35.4 +1.7	+25.0	+0.1	+3.5	+0.0	40.0	54.0	-14.0	Horiz
6	1219.749M	44.7	-35.4 +1.7	+25.0	+0.1	+3.5	+0.0	39.6	54.0	-14.4	Vert
7	1219.742M	44.5	-35.4 +1.7	+25.0	+0.1	+3.5	+0.0	39.4	54.0	-14.6	Vert
8	1200.212M	44.5	-35.4 +1.7	+25.0	+0.1	+3.5	+0.0	39.4	54.0	-14.6	Horiz
9	1200.380M	43.2	-35.4 +1.7	+25.0	+0.1	+3.5	+0.0	38.1	54.0	-15.9	Horiz
10	1239.252M	37.0	-35.3 +1.7	+25.0	+0.2	+3.5	+0.0	32.1	54.0	-21.9	Horiz
11	1219.749M	36.0	-35.4 +1.7	+25.0	+0.1	+3.5	+0.0	30.9	54.0	-23.1	Horiz
12	1239.252M	34.1	-35.3 +1.7	+25.0	+0.2	+3.5	+0.0	29.2	54.0	-24.8	Vert