Exhibit J: Spurious Radiated Emissions

FCC ID: HN2MG18

Spurious Radiated Emissions

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:
High
Mid
Low

Operating Modes Investigated:
Typical

Antennas Investigated:
Integral to EUT

Data Rates Investigated:
Maximum

Output Power Setting(s) Investigated:
Maximum

Power Input Settings Investigated:
120 VAC, 60 Hz.

Frequency Range Investigated			
Start Frequency	30 MHz	Stop Frequency	21.25 GHz

Software\Firmware Applied During Test			
Exercise software	Intermec Core	Version	1.8.4
Description			
(C)ommon (O)bject (R)esource (E)nvironment, running the D15 GSM Module. The "Phone App" was used to place calls to the base station simulator (HP8922 test set). The software ran on the EUT under Microsoft Windows CE Version 3.0.9348			

Equipment Modifications

No EMI suppression devices were added or modified. The EUT was tested as delivered.

EUT and Peripherals

Description	Manufacturer	Model/Part Number	Serial Number
EUT	Intermec Corporation	700 GPRS	6007998
AC Adapter	Ault Inc.	PW160	None

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power	No	2.0	No	AC Adapter	AC Mains
DC Power	PA	1.5	Yes	EUT	AC Adapter

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	Hewlett-Packard	8566B	AAL	03/19/2002	12 mo
Quasi-Peak Adapter	Hewlett-Packard	85650A	AQF	03/19/2002	12 mo
Pre-Amplifier	Miteq	AMF-4D-005180-24-10P	APC	11/26/2001	12 mo
Antenna, Biconilog	EMCO	3141	AXE	12/31/2001	12 mo
Antenna, Horn	EMCO	3115	AHC	08/24/2001	12 mo
High Pass Filter	RLC Electronics	F-100-4000-5-R (HPF>	HFF	02/04/2002	12 mo
Spectrum Analyzer	Tektronix	2784	AAO	03/08/2001	24 mo
Pre-Amplifier 0.5-18 GHz	Miteq	AMF-4D-005180-24-10P	APQ	04/23/2002	12 mo
Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	01/17/2000	36 mo
Antenna, Horn	EMCO	3160-09	AHG	01/15/2000	36 mo
Signal Generator	Hewlett-Packard	8341B	TGM	01/09/02	12 mo
Antenna, Horn	EMCO	3115	AHF	03/03/02	12 mo

Spurious Radiated Emissions

Test Description

Requirement: Per 2.1053 and 24.238, the Field Strength of Spurious Radiation was measured in the far-field at an FCC Listed semi-anechoic chamber up to 21.25 GHz. Spectrum analyzer, signal generator, and linearly polarized antennas were used to measure radiated harmonics and spurious emissions. The orientation of the EUT and measurement antenna were manipulated to maximize the level of emissions. The EUT was configured to transmit at the highest output into its integral antenna at low, mid, and high channels.

The substitution method as described in TIA/EIA-603 Section 2.2.12 was used for the highest spurious emissions. Preliminary measurements were made using the alternate limit of 84.3 dBuV/m at a 3 meter test distance and 93.8 dBuV/m at a 1 meter distance.

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

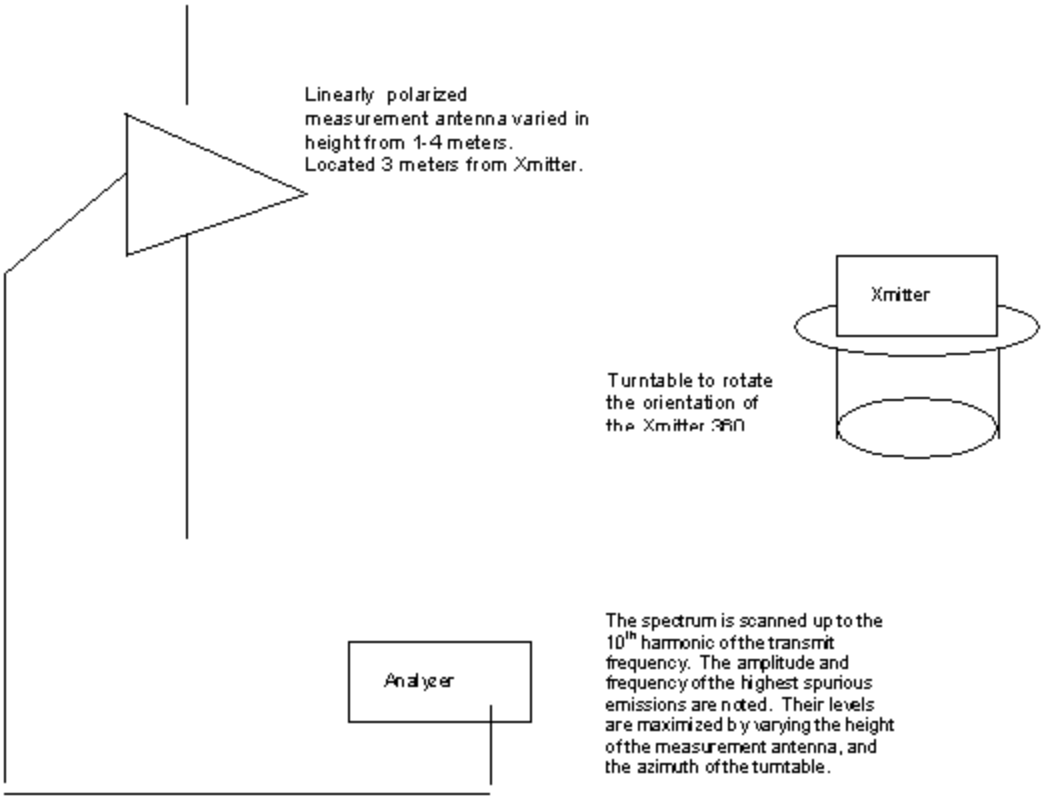
At an approved test site, the transmitter is place on a remotely controlled turntable, and the measurement antenna is placed 3 meters from the transmitter. The turntable azimuth is varied to maximize the level of spurious emissions. The height of the measurement antenna is also varied from 1 to 4 meters.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

For the purposes of preliminary measurements, the field strength of the spurious emissions can be measured and compared with a 3 meter limit. The final measurements must be made utilizing the substitution method described above. The 3 meter limit was calculated to be 84.3 dBuV/m at 3 meters. This was based upon an output power of 1 W.

Bandwidths Used for Measurements

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.			

Test Setup Diagram



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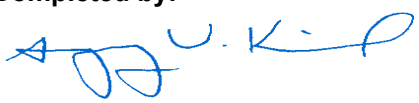


NORTHWEST EMC

Apparent Power Data Sheet

REV df1.90 04/23/2002

EUT:	Model 700 GPRS			Work Order:	INMC0017
Serial Number:	6007998			Date:	4/28/02 11:20
Customer:	INTERMEC Corporation			Temperature:	66
Attendees:	none	Tested by:	Greg Kiemel	Humidity:	35%
Cust. Ref. No.:		Power:	120 V, 60 Hz	Job Site:	EV01

TEST SPECIFICATIONS

Specification:	FCC 24.238	Year:	2001
Method:	TIA/EIA-603	Year:	1998

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

COMMENTS

EUT transmitting at max output power.

EUT OPERATING MODES

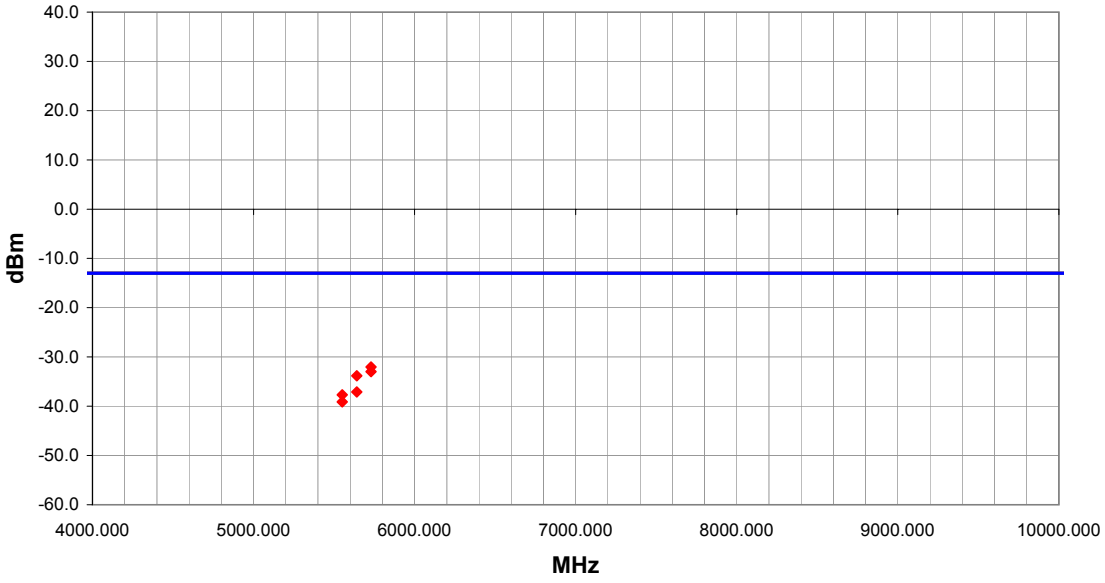
DEVIATIONS FROM TEST STANDARD

No deviations.

RESULTS	Test Distance (m)	Run #
Pass	3	1

Other

Tested By:



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector		Power Into an Ideal Half-Wave Dipole (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
5729.308			157.0	1.6			V-Horn	PK		-32.0	-13.0	-19.0	"Channel 810 (1909.8 MHz)"
5729.308			128.0	1.7			H-Horn	PK		-33.0	-13.0	-20.0	"Channel 810 (1909.8 MHz)"
5640.600			157.0	1.3			V-Horn	PK		-33.8	-13.0	-20.8	"Channel 662 (1880.2 MHz)"
5640.600			123.0	2.3			H-Horn	PK		-37.1	-13.0	-24.1	"Channel 662 (1880.2 MHz)"
5550.600			151.0	1.7			H-Horn	PK		-37.7	-13.0	-24.7	"Channel 512 (1850.2 MHz)"
5550.600			23.0	1.4			V-Horn	PK		-39.1	-13.0	-26.1	"Channel 512 (1850.2 MHz)"

NORTHWEST EMC

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Serial Number:	6007998			Date:	4/28/02 15:17
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Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

COMMENTS

EUT transmitting at max output power..

EUT OPERATING MODES

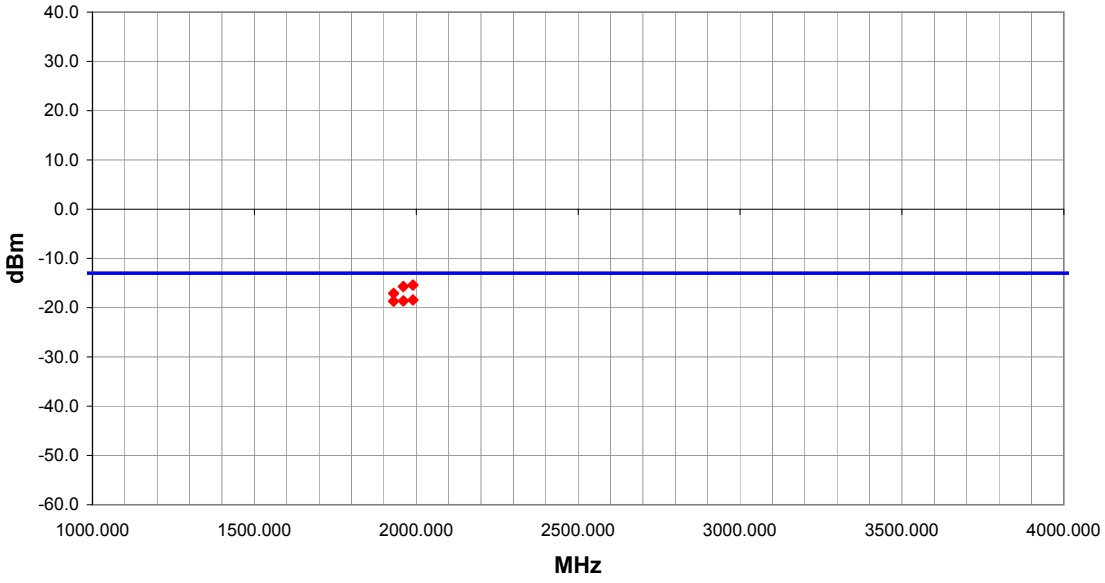
DEVIATIONS FROM TEST STANDARD

No deviations.

RESULTS	Test Distance (m)	Run #
Pass	3	2

Other

Tested By:



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector		Power Into an Ideal Half-Wave Dipole (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1989.800			328.0	1.0			H-Horn	PK		-15.4	-13.0	-2.4	"Channel 810 (1909.8 MHz)"
1960.200			321.0	1.1			H-Horn	PK		-15.7	-13.0	-2.7	"Channel 662 (1880.2 MHz)"
1930.200			149.0	1.1			H-Horn	PK		-17.1	-13.0	-4.1	"Channel 512 (1850.2 MHz)"
1989.800			99.0	1.3			V-Horn	PK		-18.4	-13.0	-5.4	"Channel 810 (1909.8 MHz)"
1960.200			77.0	1.3			V-Horn	PK		-18.6	-13.0	-5.6	"Channel 662 (1880.2 MHz)"
1930.200			37.0	1.3			V-Horn	PK		-18.7	-13.0	-5.7	"Channel 512 (1850.2 MHz)"