Exhibit P: Peak Excursion of the Modulation Envelope

FCC ID: HN2WN-5MP01

Peak Excursion of the Modulation Envelope

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:
Typical

Data Rates Investigated:
Lowest, Middle, and Highest: Lowest data rate produced the largest peak excursion

Output Power Setting(s) Investigated:
Maximum

Power Input Settings Investigated:
120 V, 60 Hz

Software\Firmware Applied During Test			
Exercise software	AP Monitor	Version	V5.37
Description			
A notebook PC controls the radio through a serial port connection on the WA21 access point. Hyper Terminal running in Windows 98 address the AP monitor commands for setting the transmit channel and data rate.			

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 – 802.11(a) radio module installed in WA21 Access Point	Intermec	WN-5MP01	002-032
Laptop PC	Panasonic	CF-35	7KHSA02247

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Serial cable	Yes	1.5	No	Access Point	Laptop
AC power	No	1.9	No	Access Point	AC mains
AC power	No	1.8	No	Laptop	AC mains

PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.

Northwest EMC

Peak Excursion of the Modulation Envelope

Revision 2/4/02

Measurement Equipment

Description	Manufacturer	Model	Identifier	Last Cal	Interval
Spectrum Analyzer	Hewlett Packard	HP8593E	AAP	05/03/2002	12 mo

Test Description

Requirement: Per 47 CFR 15.407(a)(6), the ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

Configuration: Per the workshop notes provided by Joe Dichoso of the FCC during the TCB training February 2002, this measurement is not required if the peak power measurement was performed with the VBW >= 1 MHz and no other averaging. The peak power measurement was made with a RF detector diode which permits a truly broadband peak power measurement with no averaging. Therefore, this measurement was not required.

Even though it was not required, the peak excursion of the modulation envelope was measured per the workshop notes provided by Greg Czumak of the FCC during the TCB training in December 1999: using a direct connection between the RF output of the EUT and a spectrum analyzer, one trace was put into Peak Max Hold with the RBW = VBW = 1MHz. The 2nd trace with put into Peak Max Hold with the RBW = 1MHz and the VBW = 30 kHz. The marker delta function was used to show that the largest difference between the two traces (in any 1 MHz band) is less than 13 dB.

The EUT set to low, medium, and high transmit frequencies; at the worst-case data rate (investigations showed that the lowest data rate produced the largest peak excursion). The EUT was transmitting at its maximum output power.

Completed by:

NORTHWEST EMC

EMISSIONS DATA SHEET

Rev BETA 01/30/01

EUT:	WN-5MP01			Work Order:	INMC0024
Serial Number:	002-032			Date:	08/26/02
Customer:	Intermec Corporation			Temperature:	24 degrees C
Attendees:	None	Tested by:	Greg Kiemel	Humidity:	40% RH
Customer Ref. No.:	N/A	Power:	120 V, 60 Hz	Job Site:	EV06

TEST SPECIFICATIONS

Specification:	47 CFR 15.407(a)(6)	Year:	Most Current	Method:	ANSI C63.4	Year:	1992

SAMPLE CALCULATIONS

COMMENTS

Tested in WA21 Access Point.

EUT OPERATING MODES

Modulated with worst case data rate (lowest) at maximum output power.

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

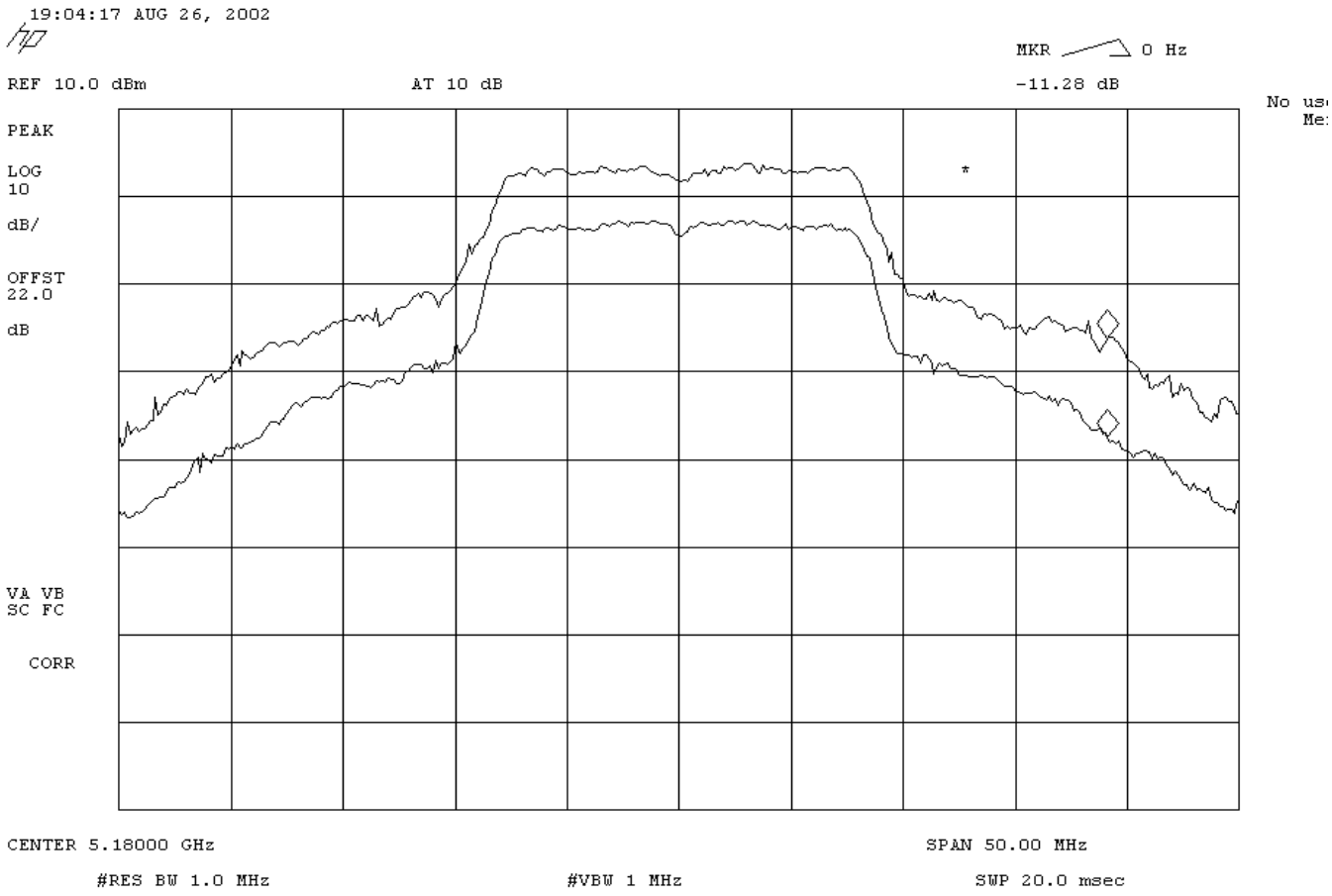
RESULTS	Peak Excursion
Pass	11.28 dB

SIGNATURE

Tested By: _____

DESCRIPTION OF TEST

Peak Excursion of the Modulation Envelope - Low Channel - 5.15 to 5.25 GHz Band



NORTHWEST EMC

EMISSIONS DATA SHEET

Rev BETA 01/30/01

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Serial Number:	002-032			Date:	08/26/02
Customer:	Intermec Corporation			Temperature:	24 degrees C
Attendees:	None	Tested by:	Greg Kiemel	Humidity:	40% RH
Customer Ref. No.:	N/A	Power:	120 V, 60 Hz	Job Site:	EV06

TEST SPECIFICATIONS

Specification:	47 CFR 15.407(a)(6)	Year:	Most Current	Method:	ANSI C63.4	Year:	1992

SAMPLE CALCULATIONS

COMMENTS

Tested in WA21 Access Point.

EUT OPERATING MODES

Tested in WA21 Access Point. Maximum antenna gain in this band is 5 dBi

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

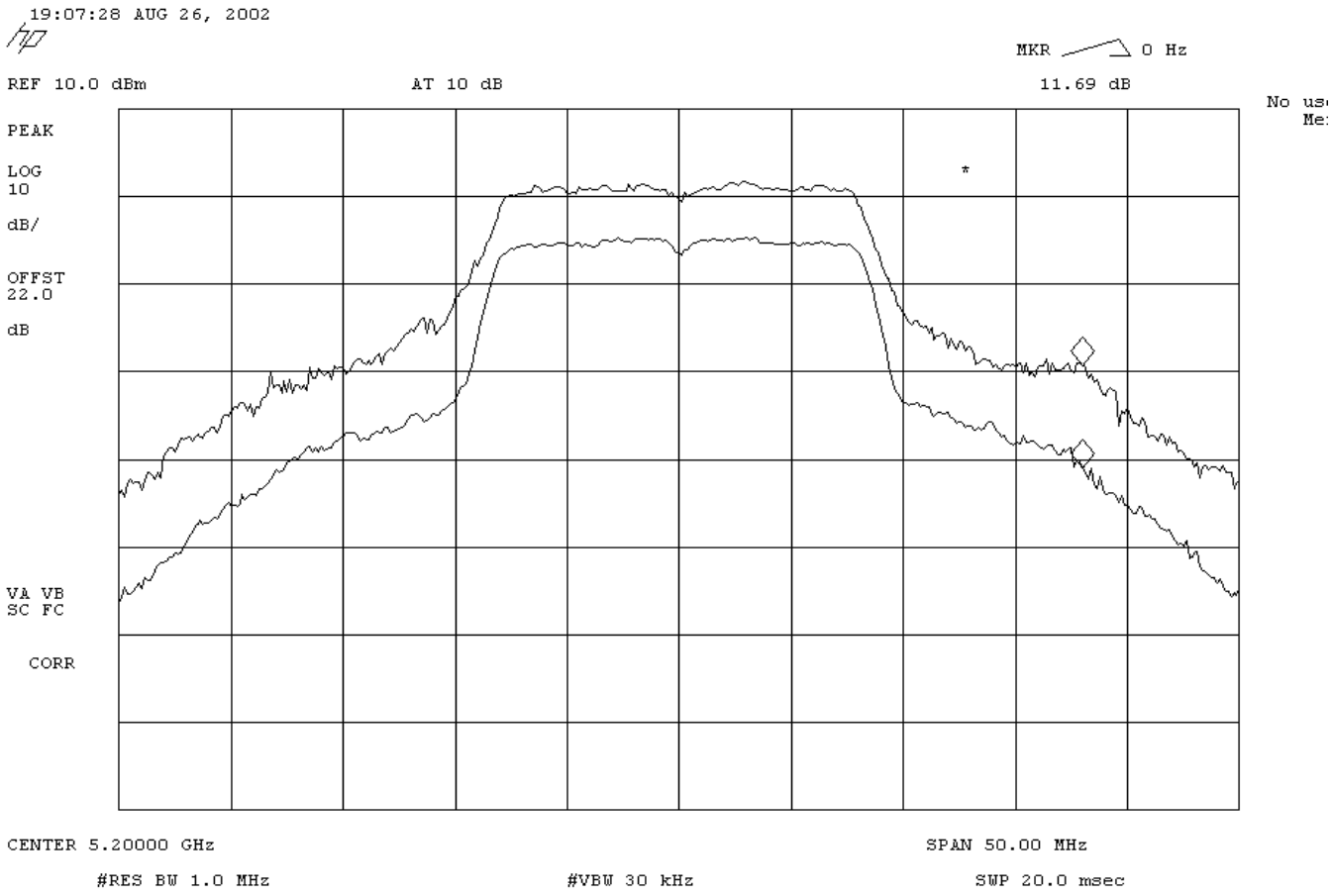
RESULTS	Peak Excursion
Pass	11.69 dB

SIGNATURE

Tested By: _____

DESCRIPTION OF TEST

Peak Excursion of the Modulation Envelope - Mid Channel - 5.15 to 5.25 GHz Band



NORTHWEST EMC

EMISSIONS DATA SHEET

Rev BETA 01/30/01

EUT:	WN-5MP01			Work Order:	INMC0024
Serial Number:	002-032			Date:	08/26/02
Customer:	Intermec Corporation			Temperature:	24 degrees C
Attendees:	None	Tested by:	Greg Kiemel	Humidity:	40% RH
Customer Ref. No.:	N/A	Power:	120 V, 60 Hz	Job Site:	EV06

TEST SPECIFICATIONS

Specification:	47 CFR 15.407(a)(6)	Year:	Most Current	Method:	ANSI C63.4	Year:	1992

SAMPLE CALCULATIONS

COMMENTS

Tested in WA21 Access Point.

EUT OPERATING MODES

Tested in WA21 Access Point. Maximum antenna gain in this band is 5 dBi

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

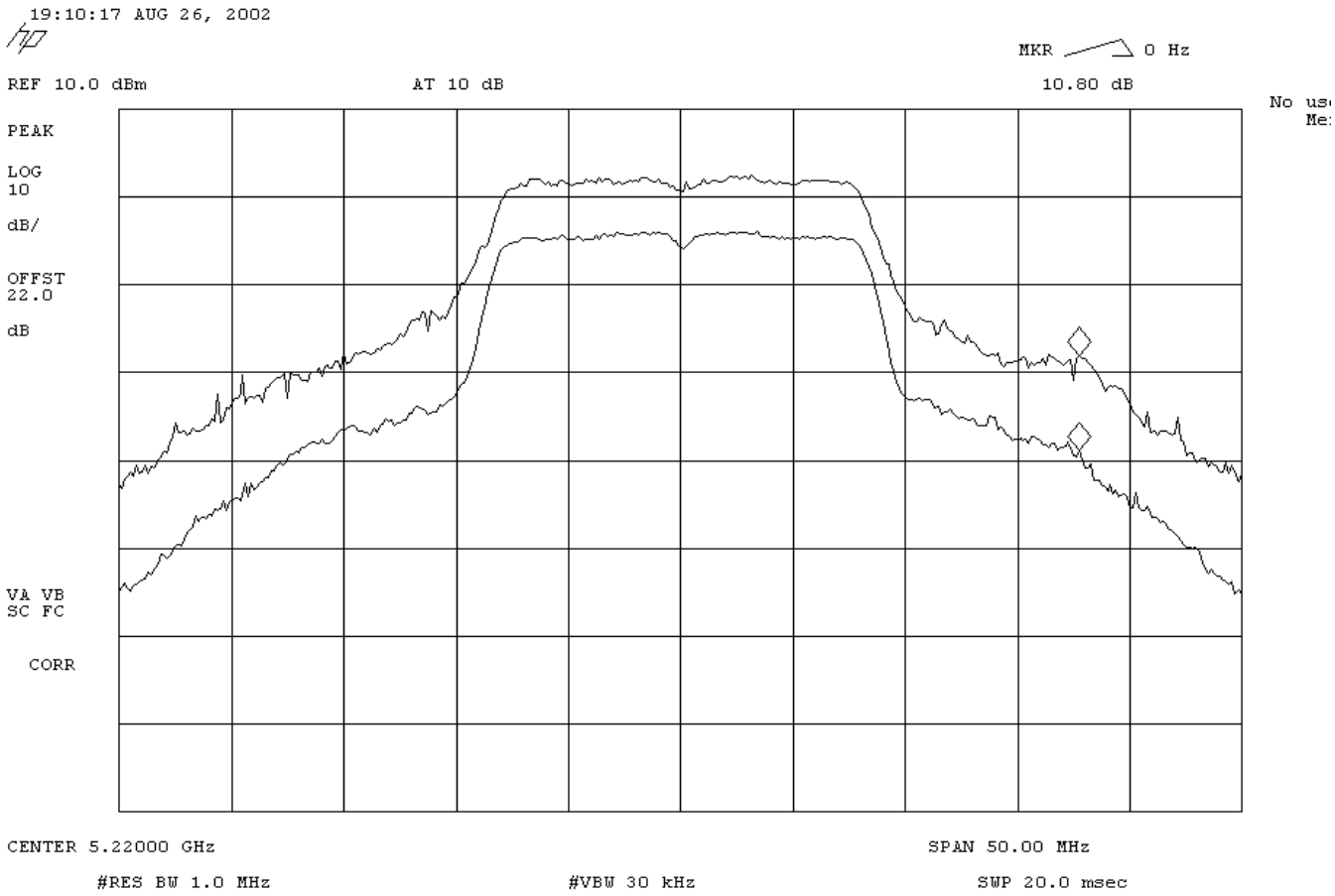
RESULTS	Peak Excursion
Pass	10.80 dB

SIGNATURE

Tested By: _____

DESCRIPTION OF TEST

Peak Excursion of the Modulation Envelope - High Channel - 5.15 to 5.25 GHz Band



NORTHWEST EMC

EMISSIONS DATA SHEET

Rev BETA 01/30/01

EUT:	WN-5MP01			Work Order:	INMC0024
Serial Number:	002-032			Date:	08/26/02
Customer:	Intermec Corporation			Temperature:	24 degrees C
Attendees:	None	Tested by:	Greg Kiemel	Humidity:	40% RH
Customer Ref. No.:	N/A	Power:	120 V, 60 Hz	Job Site:	EV06

TEST SPECIFICATIONS

Specification:	47 CFR 15.407(a)(6)	Year:	Most Current	Method:	ANSI C63.4	Year:	1992

SAMPLE CALCULATIONS

COMMENTS

Tested in WA21 Access Point.

EUT OPERATING MODES

Modulated with worst case data rate (lowest) at maximum output power.

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

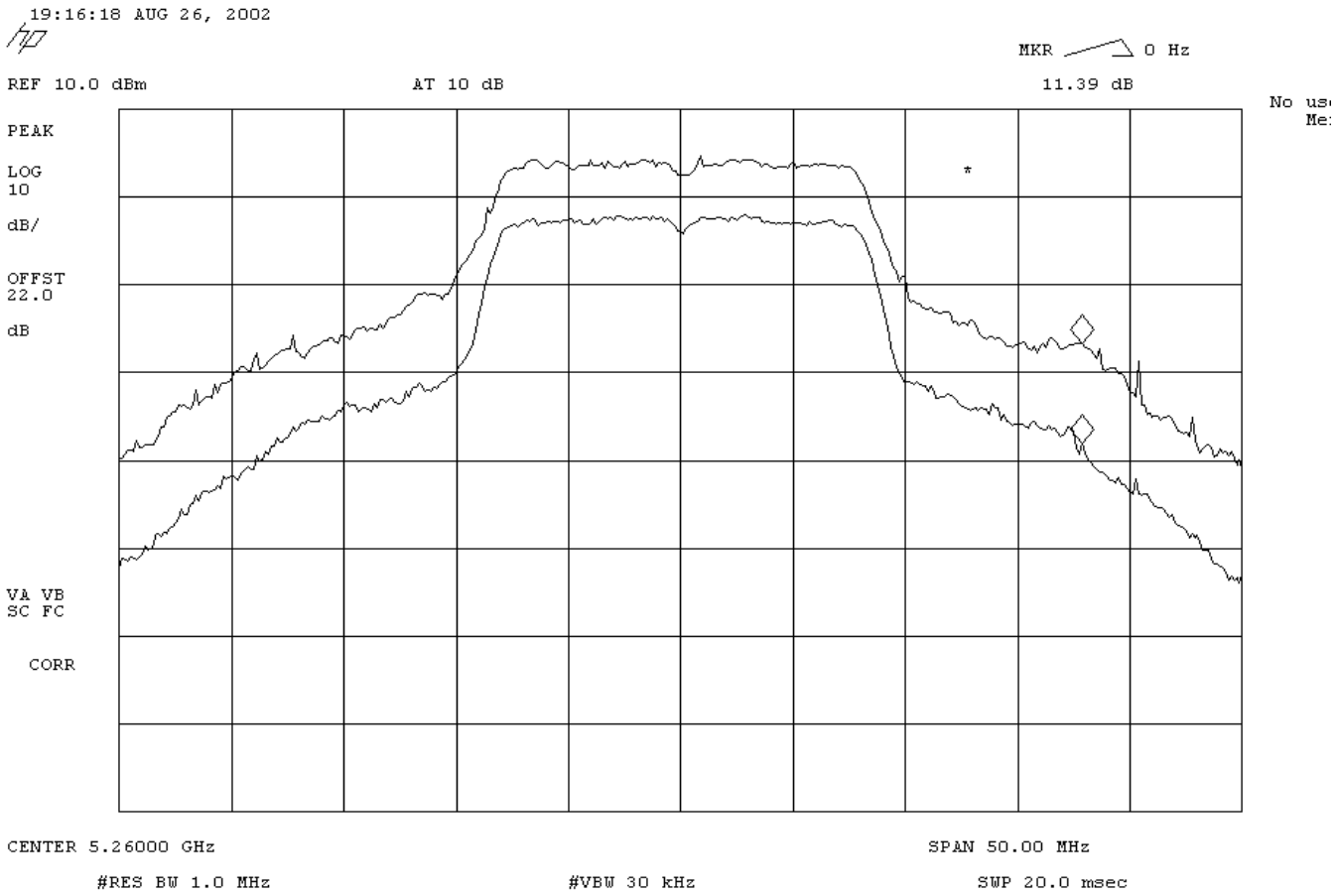
RESULTS	Peak Excursion
Pass	11.39 dB

SIGNATURE

Tested By: _____

DESCRIPTION OF TEST

Peak Excursion of the Modulation Envelope - Low Channel - 5.25 to 5.35 GHz Band



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EMISSIONS DATA SHEET

Rev BETA 01/30/01

EUT:	WN-5MP01			Work Order:	INMC0024
Serial Number:	002-032			Date:	08/26/02
Customer:	Intermec Corporation			Temperature:	24 degrees C
Attendees:	None	Tested by:	Greg Kiemel	Humidity:	40% RH
Customer Ref. No.:	N/A	Power:	120 V, 60 Hz	Job Site:	EV06

TEST SPECIFICATIONS

Specification:	47 CFR 15.407(a)(6)	Year:	Most Current	Method:	ANSI C63.4	Year:	1992

SAMPLE CALCULATIONS

COMMENTS

Tested in WA21 Access Point.

EUT OPERATING MODES

Modulated with worst case data rate (lowest) at maximum output power.

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

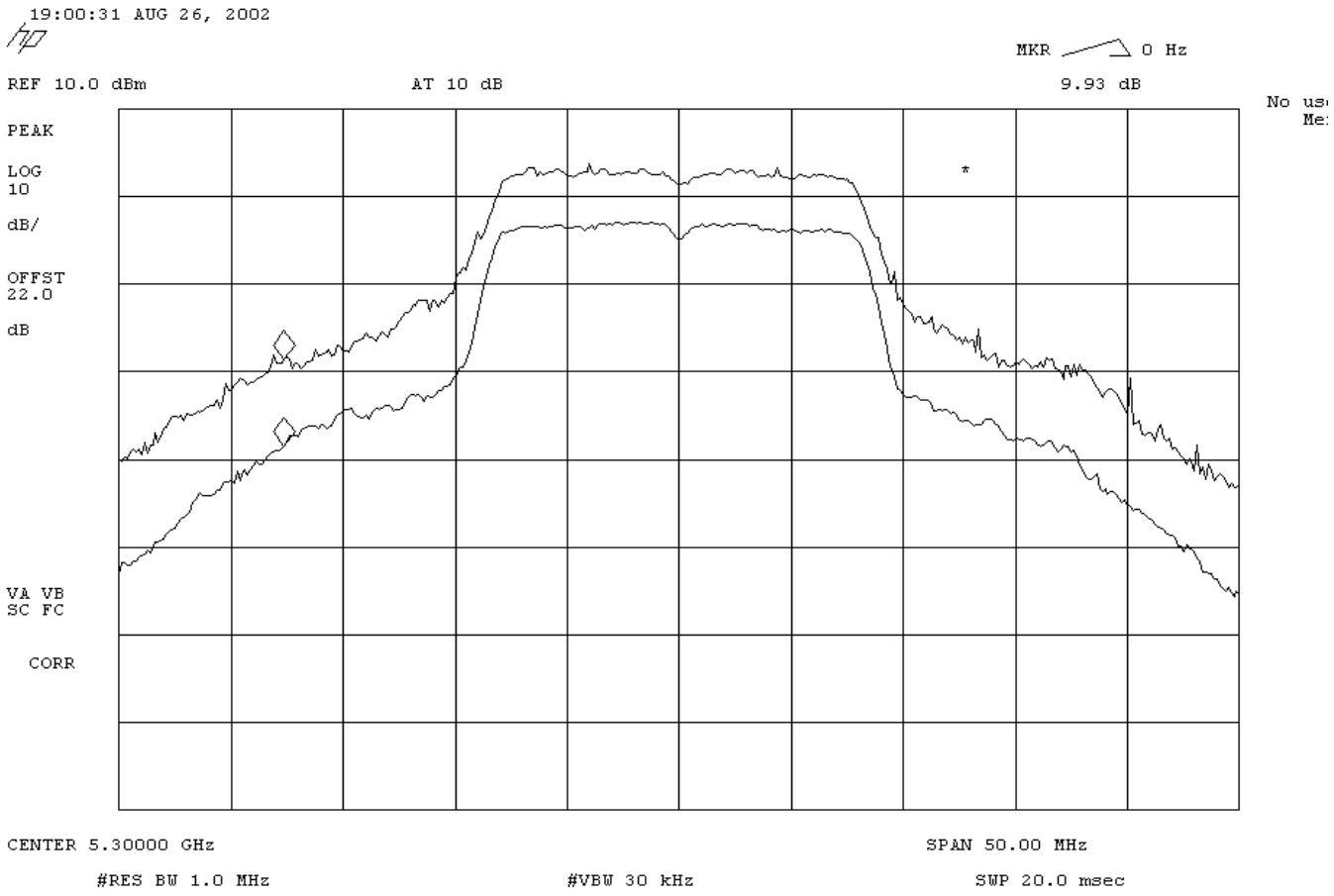
RESULTS	Peak Excursion
Pass	9.93 dB

SIGNATURE

Tested By: _____

DESCRIPTION OF TEST

Peak Excursion of the Modulation Envelope - Mid Channel - 5.25 to 5.35 GHz Band



NORTHWEST EMC

EMISSIONS DATA SHEET

Rev BETA 01/30/01

EUT:	WN-5MP01			Work Order:	INMC0024
Serial Number:	002-032			Date:	08/26/02
Customer:	Intermec Corporation			Temperature:	24 degrees C
Attendees:	None	Tested by:	Greg Kiemel	Humidity:	40% RH
Customer Ref. No.:	N/A	Power:	120 V, 60 Hz	Job Site:	EV06

TEST SPECIFICATIONS

Specification:	47 CFR 15.407(a)(6)	Year:	Most Current	Method:	ANSI C63.4	Year:	1992

SAMPLE CALCULATIONS

COMMENTS

Tested in WA21 Access Point.

EUT OPERATING MODES

Modulated with worst case data rate (lowest) at maximum output power.

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

RESULTS	Peak Excursion
Pass	10.58 dB

SIGNATURE

Tested By: _____

DESCRIPTION OF TEST

Peak Excursion of the Modulation Envelope - High Channel - 5.25 to 5.35 GHz Band