

Guidant Inc.

Zoom Latitude Programming System Model 3120

February 18, 2005

Report No. GDMN0037.1 Revision 01

Report Prepared By



www.nwemc.com
1-888-EMI-CERT

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EMC Test Report




22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Certificate of Test
Issue Date: January 20, 2005
Guidant Inc.
Zoom Latitude Programming System
Model 3120

Specification	Emissions		
	Test Method	Pass	Fail
FCC 15.249(a):2004 Field Strength of Fundamental	ANSI C63.4:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>
FCC 15.249(a):2004 Field Strength of Harmonics	ANSI C63.4:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>
FCC 15.207:2004 Conducted AC Powerline Emissions	ANSI C63.4:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Modifications made to the product
See the Modifications section of this report

Approved By:

Dean Ghizzone, President

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America.

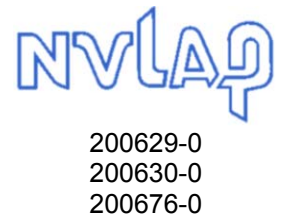
Product compliance is the responsibility of the client, therefore the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. This Report may only be duplicated in its entirety. The results of this test pertain only to the sample(s) tested, the specific description is noted in each of the individual sections of the test report supporting this certificate of test.

Revision Number	Description	Date	Page Number
01	Changed L1 Line Measurement to N (Neutral) in Conducted Emissions Test Data .	2/18/05	26

FCC: Accredited by NVLAP for performance of FCC radio, digital, and ISM device testing. Our Open Area Test Sites, certification chambers, and conducted measurement facilities, have been fully described in reports filed with the FCC and accepted by the FCC in letters maintained in our files. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by the FCC as a Telecommunications Certification Body (TCB). This allows Northwest EMC to certify transmitters to FCC specifications in accordance with 47 CFR 2.960 and 2.962.



NVLAP: Northwest EMC, Inc. is recognized under the United States Department of Commerce, National Institute of Standards and Technology, National Voluntary Laboratory Accreditation Program for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. The NVLAP accreditation encompasses Electromagnetic Compatibility Testing in accordance with the European Union EMC Directive 89/336/EEC, ANSI C63.4, MIL-STD 461E, DO-160D and SAE J1113. Additionally, Northwest EMC is accredited by NVLAP to perform radio testing in accordance with the European Union R&TTE Directive 1999/5/EEC, the requirements of FCC, and the RSS radio standards for Industry Canada.



Industry Canada: Accredited by NVLAP for performance of Industry Canada RSS and ICES testing. Our Open Area Test Sites and certification chambers comply with RSS 212, Issue 1 (Provisional) and have been filed with Industry Canada and accepted. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by NIST and recognized by Industry Canada as a Certification Body (CB) per the APEC Mutual Recognition Arrangement (MRA). This allows Northwest EMC to certify transmitters to Industry Canada technical requirements.



CAB: Designated by NIST and validated by the European Commission as a Conformity Assessment Body (CAB) to conduct tests and approve products to the EMC directive and transmitters to the R&TTE directive, as described in the U.S. - EU Mutual Recognition Agreement



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



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



NEMKO: Assessed and accredited by NEMKO (Norwegian testing and certification body) for European emissions and immunity testing. As a result of NEMKO's laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification (Authorization No. ELA 119).



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



Australia/New Zealand: The National Association of Testing Authorities (NATA), Australia has been appointed by the ACA as an accreditation body to accredit test laboratories and competent bodies for EMC standards. Accredited test reports or assessments by competent bodies must carry the NATA logo. Test reports made by an overseas laboratory that has been accredited for the relevant standards by an overseas accreditation body that has a Mutual Recognition Agreement (MRA) with NATA are also accepted as technical grounds for product conformity. The report should be endorsed with the respective logo of the accreditation body. (NVLAP)



VCCI: Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. (*Registration Nos. - Hillsboro: C-1071 and R-1025, Irvine: C-2094 and R-1943, Newberg: C-1877 and R-1760, Sultan: R-871, C-1784 and R-1761*)



BSMI: Northwest EMC has been designated by NIST and validated by C-Taipei (BSMI) as a CAB to conduct tests as described in the APEC Mutual Recognition Agreement. License No.SL2-IN-E-1017.



GOST: Northwest EMC, Inc. has been assessed and accredited by the Russian Certification bodies Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC, to perform EMC and Hygienic testing for Information Technology Products. As a result of their laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification



SCOPE

For details on the Scopes of our Accreditations, please visit:

<http://www.nwemc.com/scope.asp>

What is measurement uncertainty?

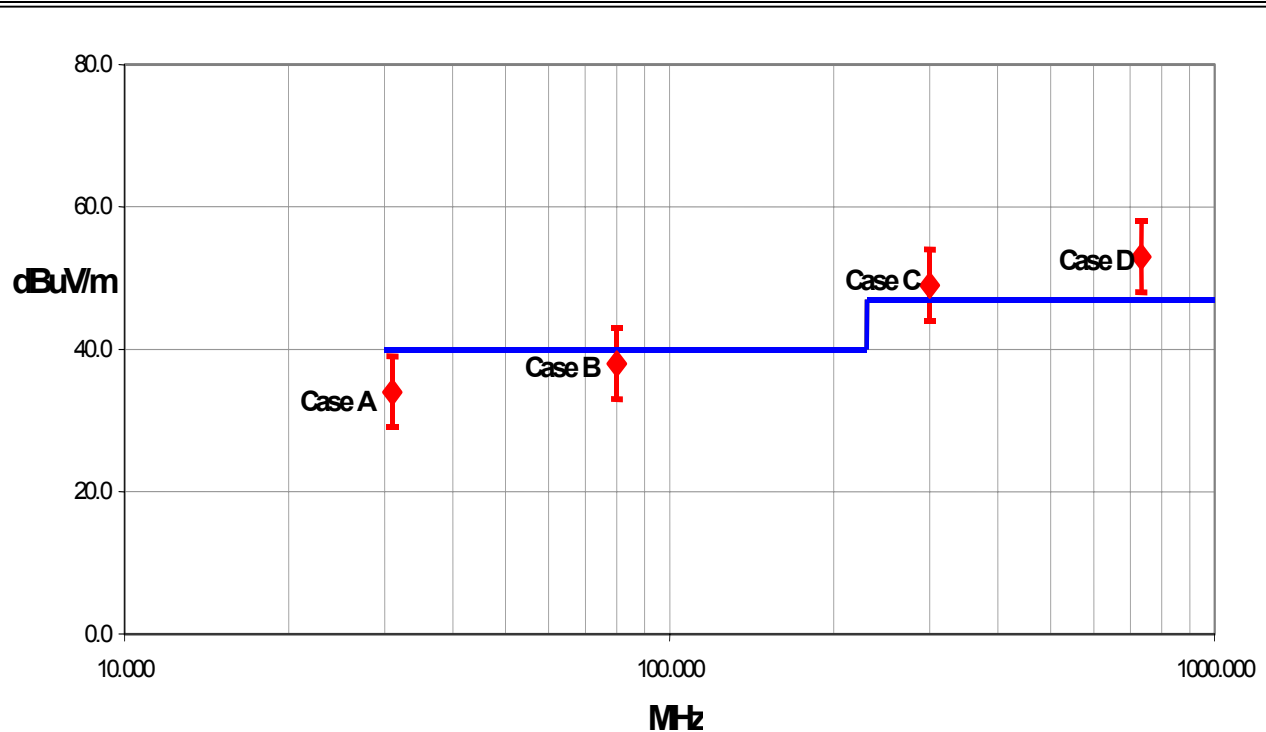
When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. The following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

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

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

How might measurement uncertainty be applied to test results?

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



Test Result Scenarios:

Case A: Product complies.

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

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

Case D: Product does not comply.

Radiated Emissions ≤ 1 GHz

Value (dB)

Test Distance	Probability Distribution	Biconical Antenna		Log Periodic Antenna		Dipole Antenna	
		3m	10m	3m	10m	3m	10m
Combined standard uncertainty $u_c(y)$	normal	+ 1.86	+ 1.82	+ 2.23	+ 1.29	+ 1.31	+ 1.25
		- 1.88	- 1.87	- 1.41	- 1.26	- 1.27	- 1.25
Expanded uncertainty U (level of confidence ≈ 95%)	normal (k=2)	+ 3.72	+ 3.64	+ 4.46	+ 2.59	+ 2.61	+ 2.49
		- 3.77	- 3.73	- 2.81	- 2.52	- 2.55	- 2.49

Radiated Emissions > 1 GHz

Value (dB)

Test Distance	Probability Distribution	Without High Pass Filter		With High Pass Filter	
		3m	10m	3m	10m
Combined standard uncertainty $u_c(y)$	normal	+ 1.29	+ 1.25	+ 1.38	+ 1.35
		- 1.25	- 1.25	- 1.35	- 1.35
Expanded uncertainty U (level of confidence ≈ 95%)	normal (k=2)	+ 2.57	+ 2.51	+ 2.76	+ 2.70
		- 2.51	- 2.51	- 2.70	- 2.70

Conducted Emissions

	Probability Distribution	Value (+/- dB)
Combined standard uncertainty $u_c(y)$	normal	1.48
Expanded uncertainty U (level of confidence ≈ 95 %)	normal (k = 2)	2.97

Radiated Immunity

	Probability Distribution	Value (+/- dB)
Combined standard uncertainty $u_c(y)$	normal	1.05
Expanded uncertainty U (level of confidence ≈ 95 %)	normal (k = 2)	2.11

Conducted Immunity

	Probability Distribution	Value (+/- dB)
Combined standard uncertainty $u_c(y)$	normal	1.05
Expanded uncertainty U (level of confidence ≈ 95 %)	normal (k = 2)	2.10

Legend

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

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

**California****Orange County Facility****Labs OC01 – OC13**

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

**Oregon****Evergreen Facility****Labs EV01 – EV10**

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

**Oregon****Trails End Facility****Labs TE01 – TE03**

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

**Washington****Sultan Facility****Labs SU01 – SU07**

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

ImParty Requesting the Test

Company Name:	Guidant Inc.
Address:	4100 Hamline Avenue North
City, State, Zip:	Saint Paul, MN 55112-5798
Test Requested By:	Holli Pheil
Model:	Zoom Latitude Programming System Model 3120
First Date of Test:	December 20, 2004
Last Date of Test:	February 11, 2005
Receipt Date of Samples:	December 16, 2004
Equipment Design Stage:	Production
Equipment Condition:	No visual damage.

Information Provided by the Party Requesting the Test

Clocks/Oscillators:	40MHz, 33.3MHz, 100MHz, 66.6MHz, 4.1MHz, 41.667MHz, 6MHz, 32.768kHz, 14.318MHz, 16.67MHz, 24MHz, 25MHz, 48MHz, 16MHz, 10MHz, 210.38MHz, 833.52MHz, 13MHz
I/O Ports:	Parallel, USB, VGA, PCMCIA, ECG, Analog Output, Patient Simulator, Telemetry Wand

Functional Description of the EUT (Equipment Under Test):

The ZOOM® LATITUDE™ Programming System, which includes the Model 3120 Programmer/Recorder/Monitor (PRM), is a portable cardiac rhythm management system designed to be used with certain models of Guidant implantable pulse generators. It is a composite system operating under 15.209 using the telemetry wand and 15.249 with the single provided antenna. The Model 3120 PRM is designed to be used only with the Model 6577 Sterilizable Telemetry Wand. The Model 3120 is provided with only one available antenna, it is a RP-SMA to meet the unique antenna requirements of 47 CFR 15.203.

Client Justification for EUT Selection:

The product is a representative production sample.

Client Justification for Test Selection:

Testing required for FCC approval.

Equipment modifications					
Item	Test	Date	Modification	Note	Disposition of EUT
1	Conducted AC Powerline Emissions	12/20/2004	No EMI suppression devices were added or modified during this test.	Same configuration as delivered.	Unit returned to Guidant upon completion of Conducted AC Powerline Emissions Testing for modification by client. Unit was then returned to Northwest EMC for completion of remaining tests.
2	Field Strength of Fundamental	02/09/2005	No EMI suppression devices were added or modified during this test.	Same configuration as delivered.	EUT remained at Northwest EMC.
3	Spurious Radiated Emissions	02/11/2005	No EMI suppression devices were added or modified during this test.	Same configuration as delivered.	EUT remained at Northwest EMC.

Justification

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. 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:

Transmitting External Antenna
Transmitting Internal Antenna

Data Rates Investigated:

Maximum

Output Power Setting(s) Investigated:

Maximum

Power Input Settings Investigated:

120VAC/60Hz

Frequency Range Investigated:

Start Frequency	902 MHz	Stop Frequency	928 MHz
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Software\Firmware Applied During Test

Operating system	QNX/Red Hat LINUX	Version	Unknown
Exercise software	Standard Production Software	Version	Unknown

Description

The system was tested using standard operating production software to exercise the functions of the device during the testing.

EUT and Peripherals in Test Setup Boundary

Description	Manufacturer	Model/Part Number	Serial Number
Telemetry Wand	Guidant	6577	N/A
USB Keyboard	Logitech	N/A	N/A
USB Flash Hard Drive	N/A	Pen Drive 2.0	N/A
Zoom Latitude Programming System	Guidant	Model 3120	050596
PCMCIA Card	D-Link	10/100 Lan	B203146002099

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power	Yes	1.8	No	Zoom Latitude Programming System	AC Mains
Parallel	Yes	1.6	No	Zoom Latitude Programming System	Unterminated
Video	No	8.0	Yes	Zoom Latitude Programming System	Unterminated
USB	No	1.8	No	Zoom Latitude Programming System	keyboard
ECG	Yes	4.0	No	Zoom Latitude Programming System	Unterminated
Slave Stimulator	Yes	3.0	No	Zoom Latitude Programming System	Unterminated
Telemetry	Yes	3.0	No	Zoom Latitude Programming System	Telemetry Wand
Analog Output	No	2.0	No	Zoom Latitude Programming System	Unterminated
Telecom	No	1.8	No	PCMCIA Card	Unterminated

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
Antenna, Biconilog	EMCO	3142	AXJ	09/08/2003	24 mo
Spectrum Analyzer	Hewlett Packard	8593E	AAP	12/07/2004	13 mo
Receiver	Schaffner	SCR 3101	ARC	04/28/2003	24 mo

Test Description


Requirement: the field strength of fundamental emission from intentional radiators operated within these frequency bands shall comply with the limits specified in 15.249(a). The Quasi-peak level must comply with the limits specified in 47 CFR 15.249.

Configuration: The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.4:2001). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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.

Completed by:



EUT:	Zoom Latitude Programming System	Work Order:	GDMN0055
Serial Number:	050596	Date:	02/09/05
Customer:	Guidant Inc.	Temperature:	21
Attendees:	none	Humidity:	42%
Cust. Ref. No.:	N/A	Barometric Pressure:	30.04
Tested by:	Jaemi Suh	Power:	120VAC/60Hz
		Job Site:	OC10

TEST SPECIFICATIONS	
Specification:	FCC 15.249:2004
Method:	ANSI C63.4:2003

SAMPLE CALCULATIONS
 Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation
 Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

COMMENTS
 None

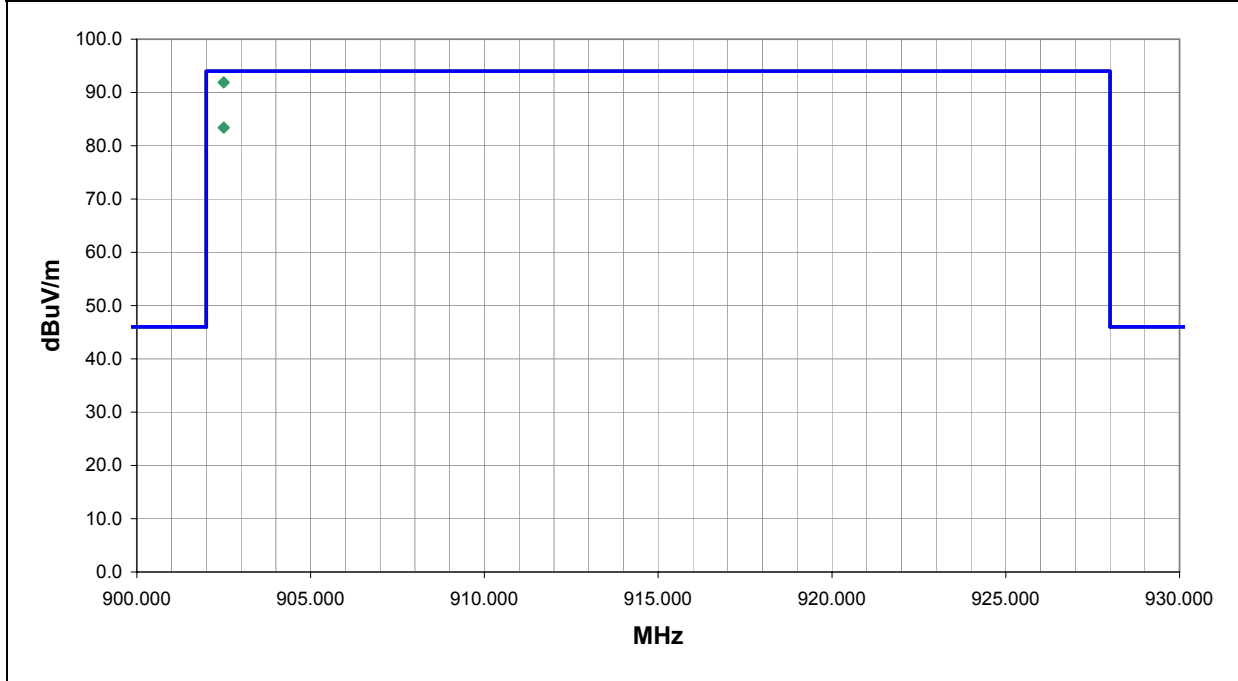
EUT OPERATING MODES
 902.5 MHz Internal

DEVIATIONS FROM TEST STANDARD
 No deviations.

RESULTS	Run #
Pass	10

Other


 Tested By:



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
902.500	60.5	31.4	144.0	1.0	3.0	0.0	H-Bilog	QP	0.0	91.9	94.0	-2.1
902.500	52.0	31.4	195.0	1.6	3.0	0.0	V-Bilog	QP	0.0	83.4	94.0	-10.6

EUT:	Zoom Latitude Programming System	Work Order:	GDMN0055
Serial Number:	050596	Date:	02/09/05
Customer:	Guidant Inc.	Temperature:	21
Attendees:	none	Humidity:	42%
Cust. Ref. No.:	N/A	Barometric Pressure:	30.04
Tested by:	Jaemi Suh	Power:	120VAC/60Hz
		Job Site:	OC10

TEST SPECIFICATIONS	
Specification:	FCC 15.249:2004
Method:	ANSI C63.4:2003

SAMPLE CALCULATIONS
 Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation
 Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator


COMMENTS
 None

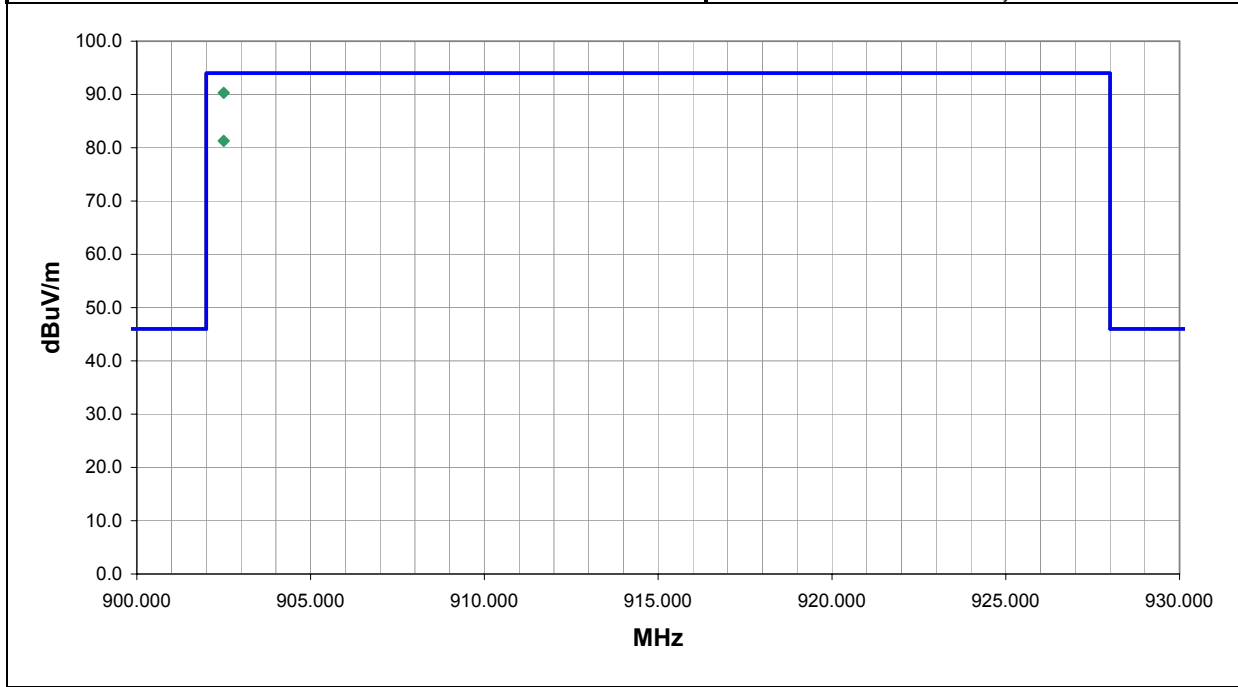
EUT OPERATING MODES
 902.5 MHz External

DEVIATIONS FROM TEST STANDARD
 No deviations.

RESULTS	Run #
Pass	12

Other


 Tested By:



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
902.500	58.9	31.4	166.0	1.0	3.0	0.0	H-Bilog	QP	0.0	90.3	94.0	-3.7
902.500	49.9	31.4	253.0	2.0	3.0	0.0	V-Bilog	QP	0.0	81.3	94.0	-12.7

EUT:	Zoom Latitude Programming System	Work Order:	GDMN0055
Serial Number:	050596	Date:	02/09/05
Customer:	Guidant Inc.	Temperature:	21
Attendees:	none	Humidity:	42%
Cust. Ref. No.:	N/A	Barometric Pressure:	30.04
Tested by:	Jaemi Suh	Power:	120VAC/60Hz
		Job Site:	OC10

TEST SPECIFICATIONS	
Specification:	FCC 15.249:2004
Method:	ANSI C63.4:2003

SAMPLE CALCULATIONS
 Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation
 Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator


COMMENTS
 None

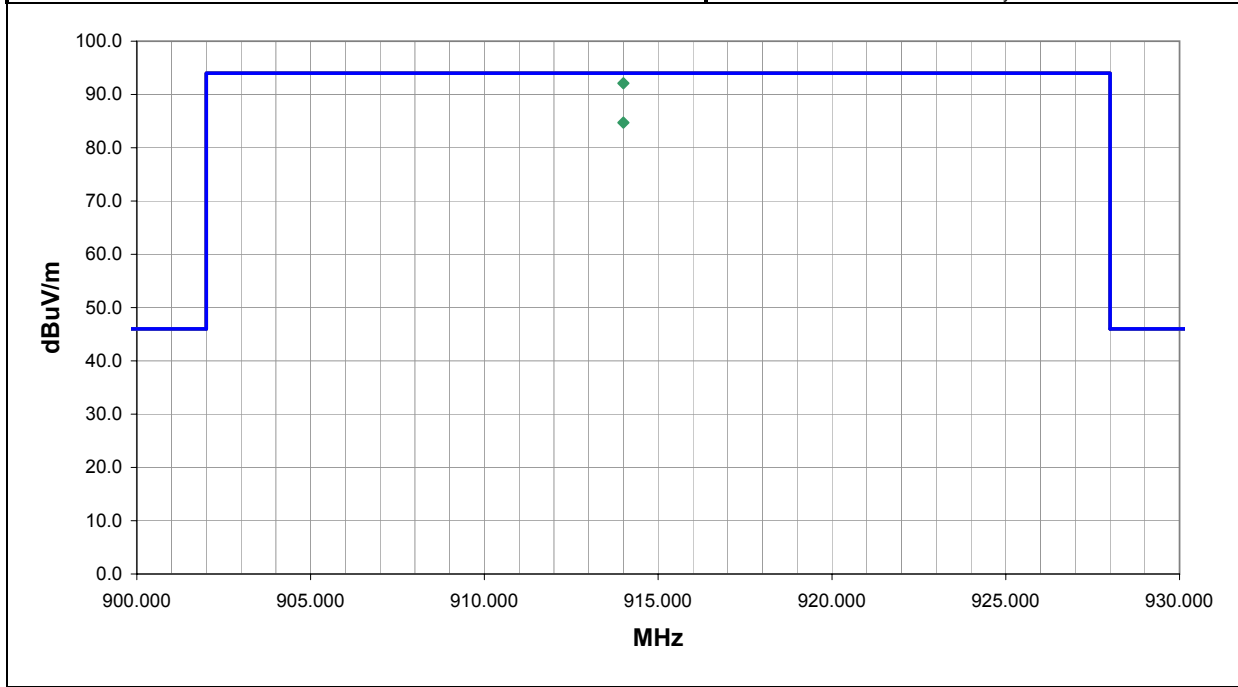
EUT OPERATING MODES
 914 MHz Internal

DEVIATIONS FROM TEST STANDARD
 No deviations.

RESULTS	Run #
Pass	13

Other


 Tested By:



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
914.000	60.6	31.5	152.0	1.0	3.0	0.0	H-Bilog	QP	0.0	92.1	94.0	-1.9
914.000	53.2	31.5	186.0	1.0	3.0	0.0	V-Bilog	QP	0.0	84.7	94.0	-9.3

EUT:	Zoom Latitude Programming System	Work Order:	GDMN0055
Serial Number:	050596	Date:	02/09/05
Customer:	Guidant Inc.	Temperature:	21
Attendees:	none	Humidity:	42%
Cust. Ref. No.:	N/A	Barometric Pressure:	30.04
Tested by:	Jaemi Suh	Power:	120VAC/60Hz
		Job Site:	OC10

TEST SPECIFICATIONS	
Specification:	FCC 15.249:2004
Method:	ANSI C63.4:2003

SAMPLE CALCULATIONS
 Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation
 Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

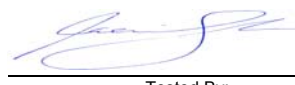
COMMENTS
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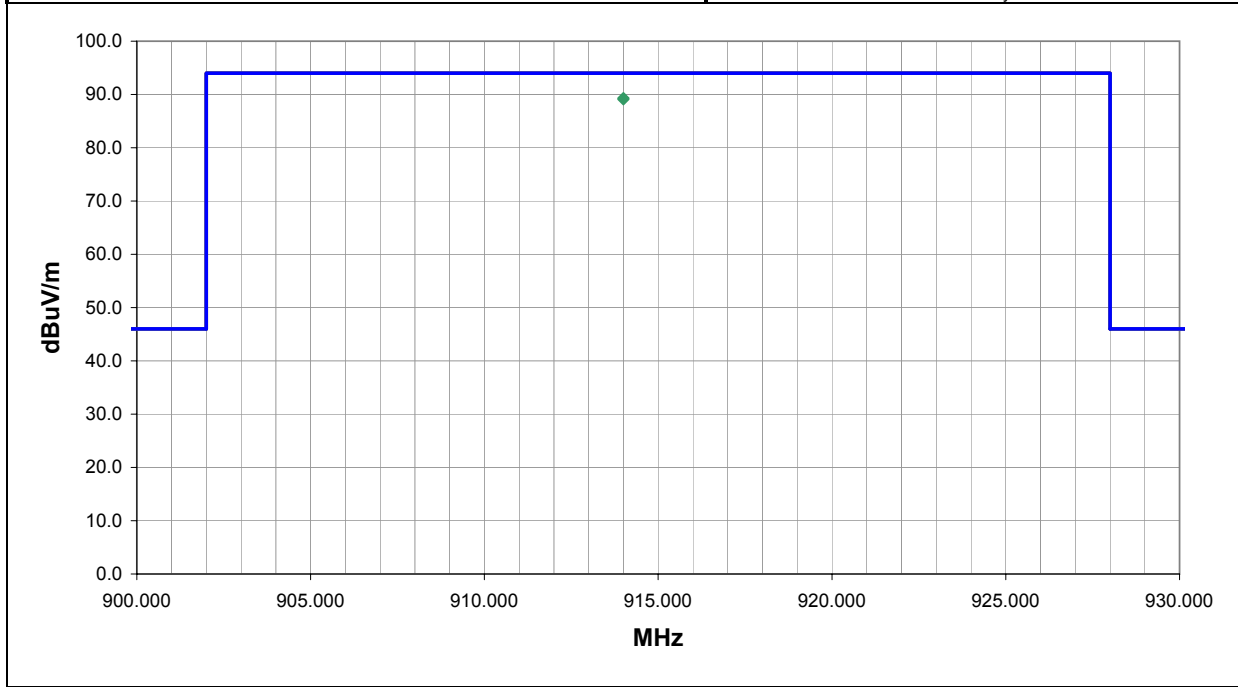
EUT OPERATING MODES
 914 MHz External

DEVIATIONS FROM TEST STANDARD
 No deviations.

RESULTS	Run #
Pass	14

Other


 Tested By:



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
914.000	57.8	31.5	111.0	1.5	3.0	0.0	V-Bilog	QP	0.0	89.3	94.0	-4.7
914.000	57.6	31.5	163.0	2.1	3.0	0.0	H-Bilog	QP	0.0	89.1	94.0	-4.9

EUT:	Zoom Latitude Programming System	Work Order:	GDMN0055
Serial Number:	050596	Date:	02/09/05
Customer:	Guidant Inc.	Temperature:	21
Attendees:	none	Humidity:	42%
Cust. Ref. No.:	N/A	Barometric Pressure:	30.04
Tested by:	Jaemi Suh	Power:	120VAC/60Hz
		Job Site:	OC10

TEST SPECIFICATIONS	
Specification:	FCC 15.249:2004
Method:	ANSI C63.4:2003

SAMPLE CALCULATIONS
 Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation
 Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

COMMENTS
 None

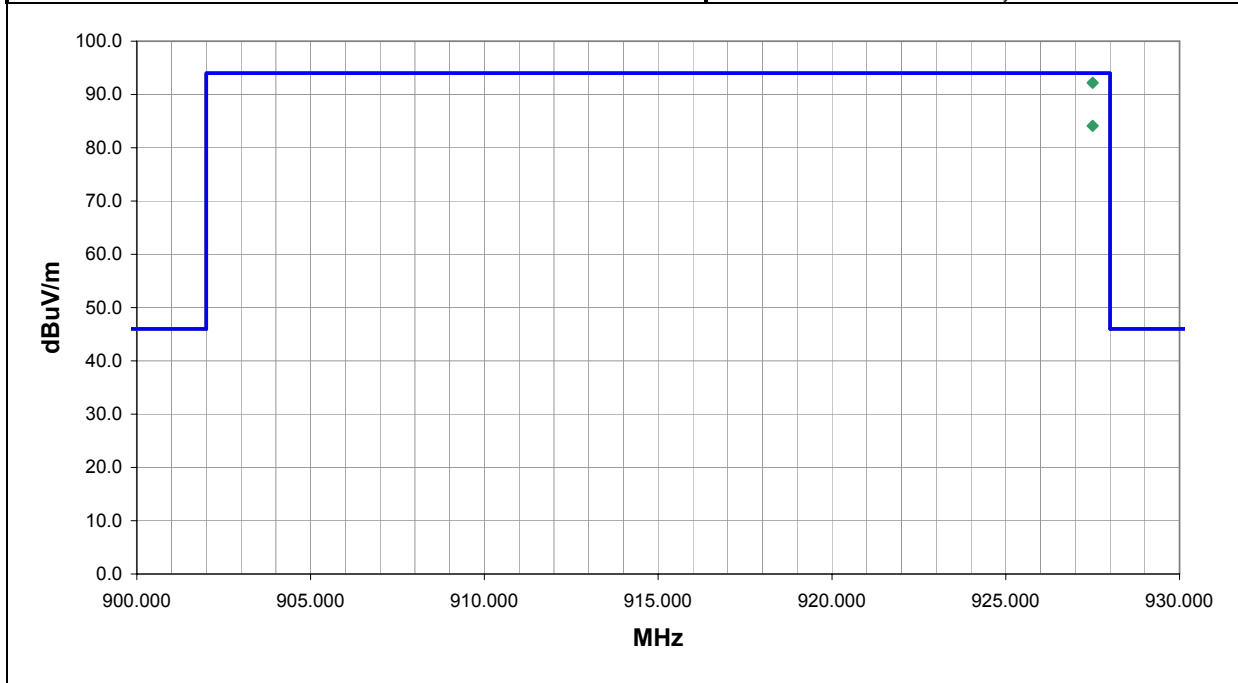
EUT OPERATING MODES
 927.5 MHz Internal

DEVIATIONS FROM TEST STANDARD
 No deviations.

RESULTS	Run #
Pass	15

Other


 Tested By:



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
927.500	60.7	31.5	145.0	1.0	3.0	0.0	H-Bilog	QP	0.0	92.2	94.0	-1.8
927.500	52.6	31.5	186.0	1.0	3.0	0.0	V-Bilog	QP	0.0	84.1	94.0	-9.9

EUT:	Zoom Latitude Programming System	Work Order:	GDMN0055
Serial Number:	050596	Date:	02/09/05
Customer:	Guidant Inc.	Temperature:	21
Attendees:	none	Humidity:	42%
Cust. Ref. No.:	N/A	Barometric Pressure:	30.04
Tested by:	Jaemi Suh	Power:	120VAC/60Hz
		Job Site:	OC10

TEST SPECIFICATIONS	
Specification:	FCC 15.249:2004
Method:	ANSI C63.4:2003

SAMPLE CALCULATIONS
 Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation
 Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

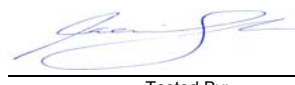
COMMENTS
 None

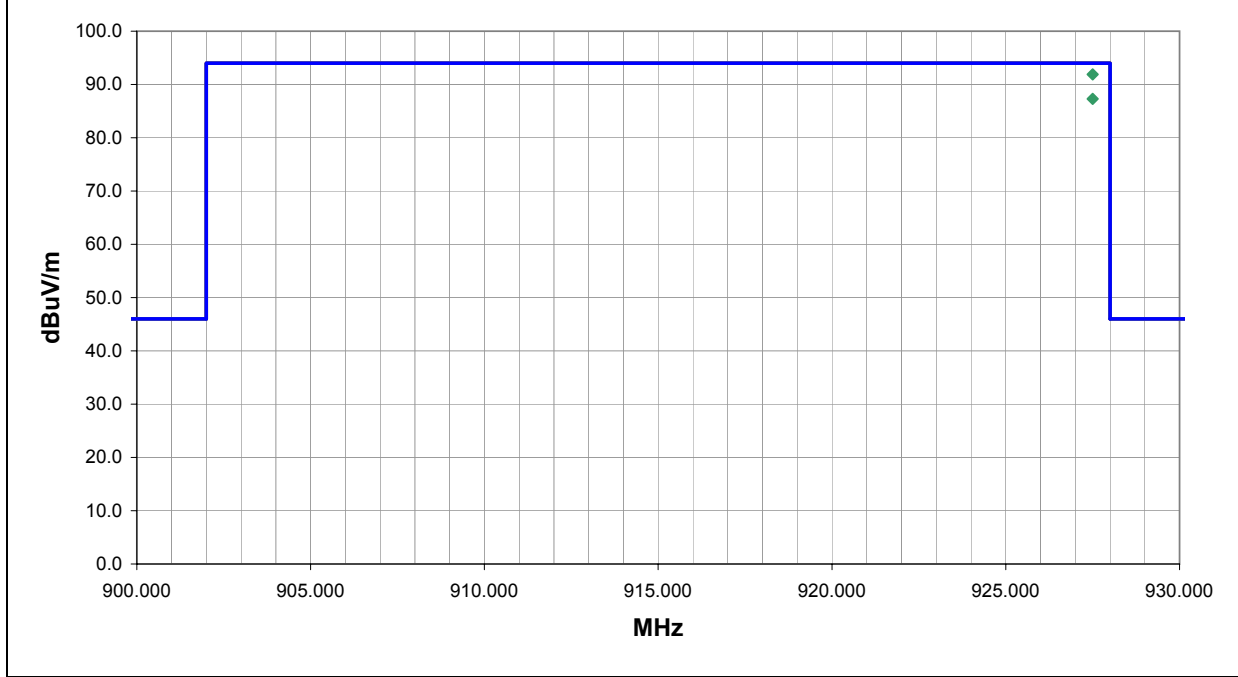
EUT OPERATING MODES
 927.5 MHz External

DEVIATIONS FROM TEST STANDARD
 No deviations.

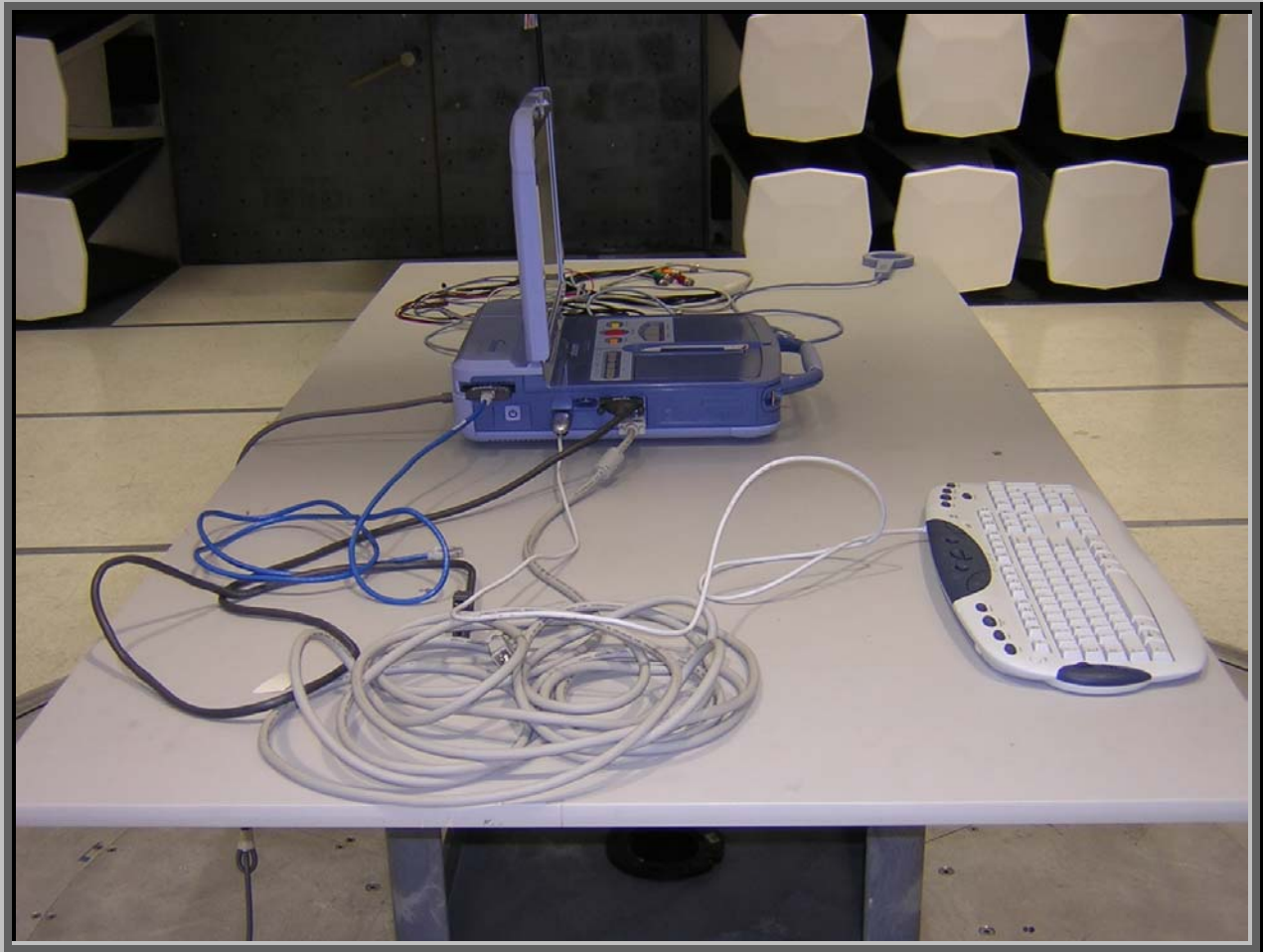
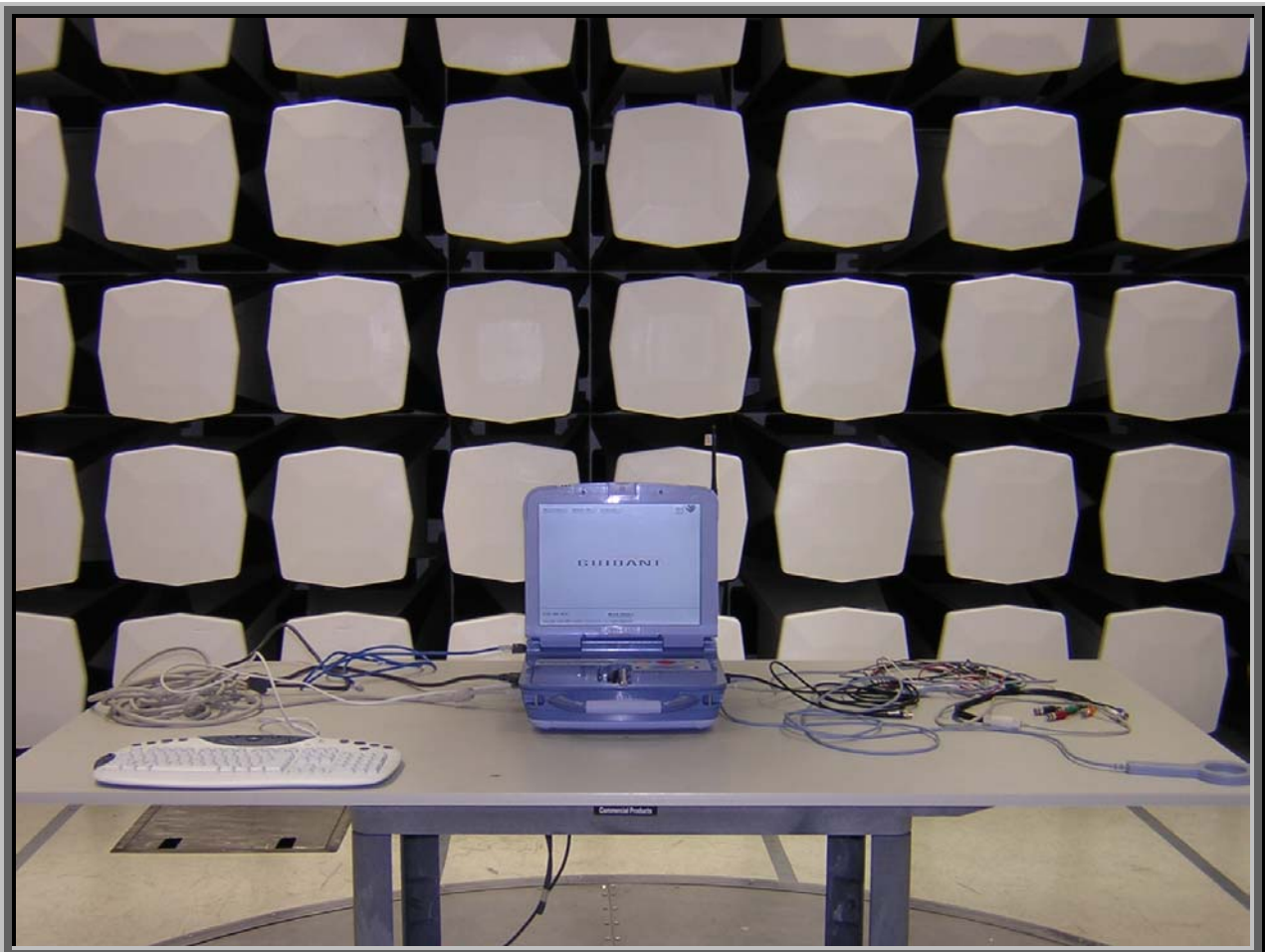
RESULTS	Run #
Pass	16

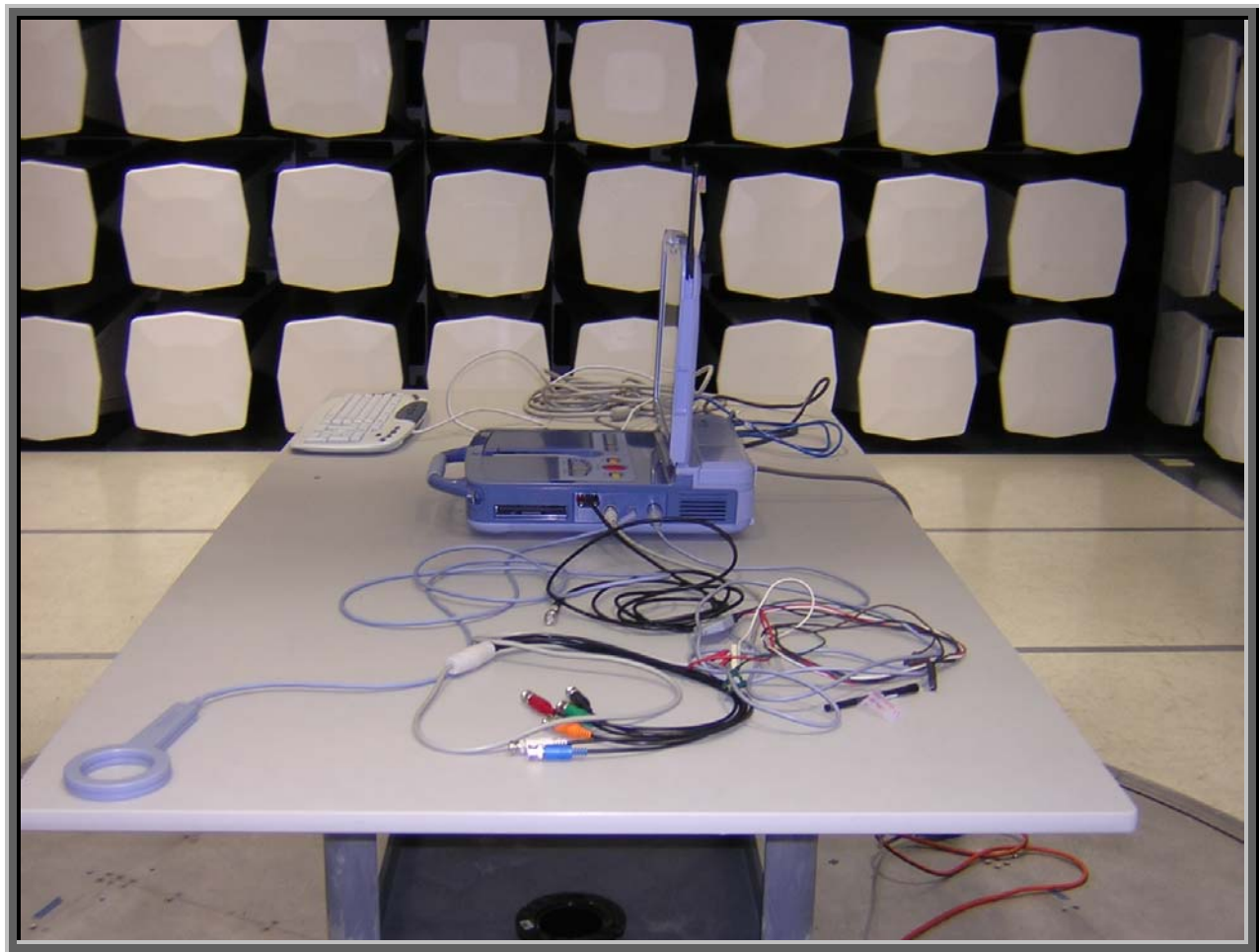
Other


 Tested By:



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
927.500	60.4	31.5	130.0	1.0	3.0	0.0	V-Bilog	QP	0.0	91.9	94.0	-2.1
927.500	55.8	31.5	169.0	1.0	3.0	0.0	H-Bilog	QP	0.0	87.3	94.0	-6.7





Justification

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. All of the EUT parameters listed below were investigated. This includes, but may not be limited to, CPU speeds, video resolution settings, operational modes, and input voltages.

Operating Modes Investigated:

High Band
Mid Band
Low Band

Power Input Settings Investigated:

120 VAC, 60 Hz

Software\Firmware Applied During Test

Operating system	QNX/Red Hat LINUX	Version	Unknown
Exercise software	Standard Production Software	Version	Unknown
Description			
The system was tested using standard operating production software to exercise the functions of the device during the testing.			

EUT and Peripherals in Test Setup Boundary

Description	Manufacturer	Model/Part Number	Serial Number
Telemetry Wand	Guidant	6577	N/A
USB Keyboard	Logitech	N/A	N/A
USB Flash Hard Drive	N/A	Pen Drive 2.0	N/A
PCMCIA Card	D-Link	10/100 Lan	B203146002099
Zoom Latitude Programming System	Guidant	Model 3120	050574

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power	Yes	1.8	No	Zoom Latitude Programming System	AC Mains
Parallel	Yes	1.6	No	Zoom Latitude Programming System	Unterminated
Video	No	8.0	Yes	Zoom Latitude Programming System	Unterminated
USB	No	1.8	No	Zoom Latitude Programming System	keyboard
ECG	Yes	4.0	No	Zoom Latitude Programming System	Unterminated
Slave Stimulator	Yes	3.0	No	Zoom Latitude Programming System	Unterminated
Telemetry	Yes	3.0	No	Zoom Latitude Programming System	Telemetry Wand
Analog Output	No	2.0	No	Zoom Latitude Programming System	Unterminated
Telecom	No	1.8	No	PCMCIA Card	Unterminated
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
LISN	Solar	9252-50-24-BNC	LIA	12/16/2003	16 mo
Spectrum Analyzer	Hewlett Packard	8593E	AAP	12/07/2004	13 mo
Receiver	Schaffner	SCR 3101	ARC	04/28/2003	24 mo

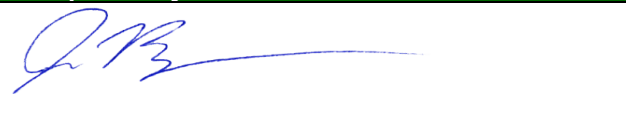
Test Description

Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50 Ω measuring port is terminated by a 50 Ω EMI meter or a 50 Ω resistive load. All 50 Ω measuring ports of the LISN are terminated by 50 Ω .

Measurement Bandwidths

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.

Completed by:


EUT:	Zoom Latitude Programming System	Work Order:	GDMN0037
Serial Number:	050574	Date:	12/20/04
Customer:	Guidant Inc.	Temperature:	23
Attendees:	None	Humidity:	32%
Cust. Ref. No.:	N/A	Barometric Pressure:	30.22
Tested by:	Jonathan Peng	Power:	120VAC/60Hz
		Job Site:	OC10

TEST SPECIFICATIONS	
Specification:	FCC 15.207 AC Powerline Conducted Emissions:2004
Method:	ANSI C63.4:2003

SAMPLE CALCULATIONS
 Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation
 Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

COMMENTS
 FRRP Harddisk drive; Transmitting Low Frequency Band 902.5 MHz; External US Antenna.

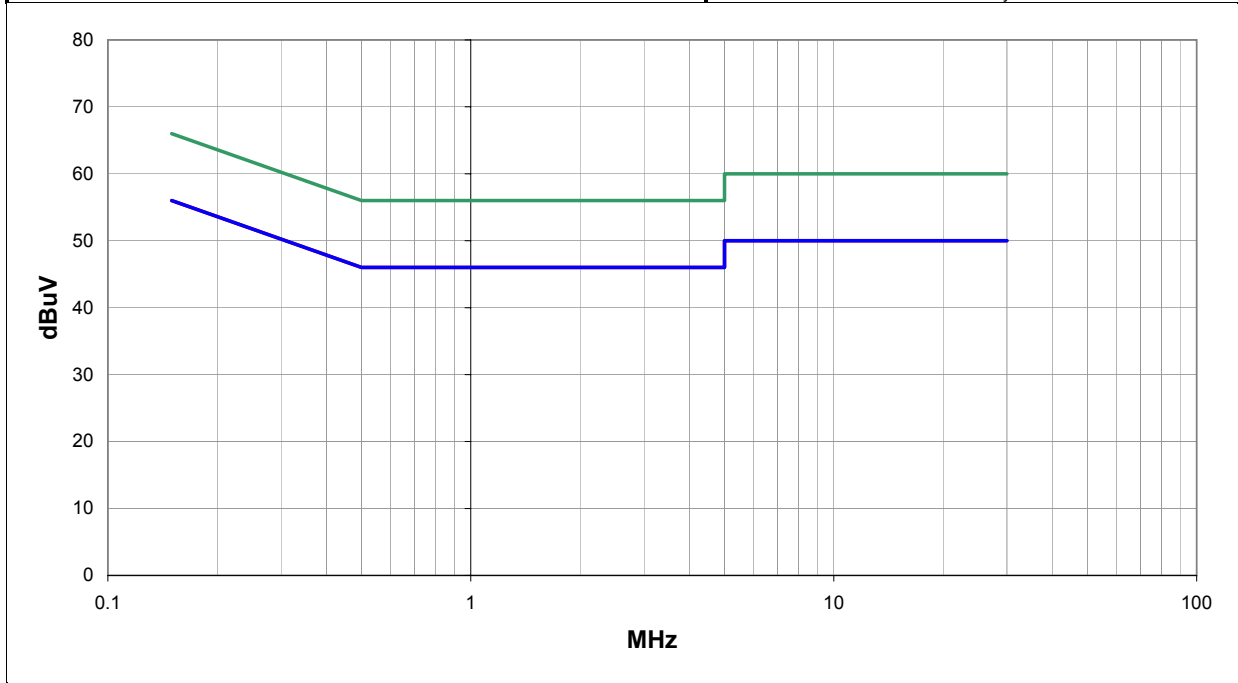
EUT OPERATING MODES
 Typical Operating Mode

DEVIATIONS FROM TEST STANDARD
 No deviations.

RESULTS	Line	Run #
Pass	L1	1

Other


 Tested By: _____



Freq (MHz)	Amplitude (dBuV)	Transducer (dB)	Cable (dB)	External Attenuation (dB)	Detector (blank equal peaks [PK] from scan)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)

All Radio AC Conducted Power Line Emissions are more than 10 dB below the Average Limit

EUT:	Zoom Latitude Programming System	Work Order:	GDMN0037
Serial Number:	050574	Date:	12/20/04
Customer:	Guidant Inc.	Temperature:	23
Attendees:	None	Humidity:	32%
Cust. Ref. No.:	N/A	Barometric Pressure:	30.22
Tested by:	Jonathan Peng	Power:	120VAC/60Hz
		Job Site:	OC10

TEST SPECIFICATIONS	
Specification:	FCC 15.207 AC Powerline Conducted Emissions:2004
Method:	ANSI C63.4:2003

SAMPLE CALCULATIONS
 Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation
 Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

COMMENTS
 FRRP Harddisk drive; Transmitting Low Frequency Band 902.5 MHz; External US Antenna.

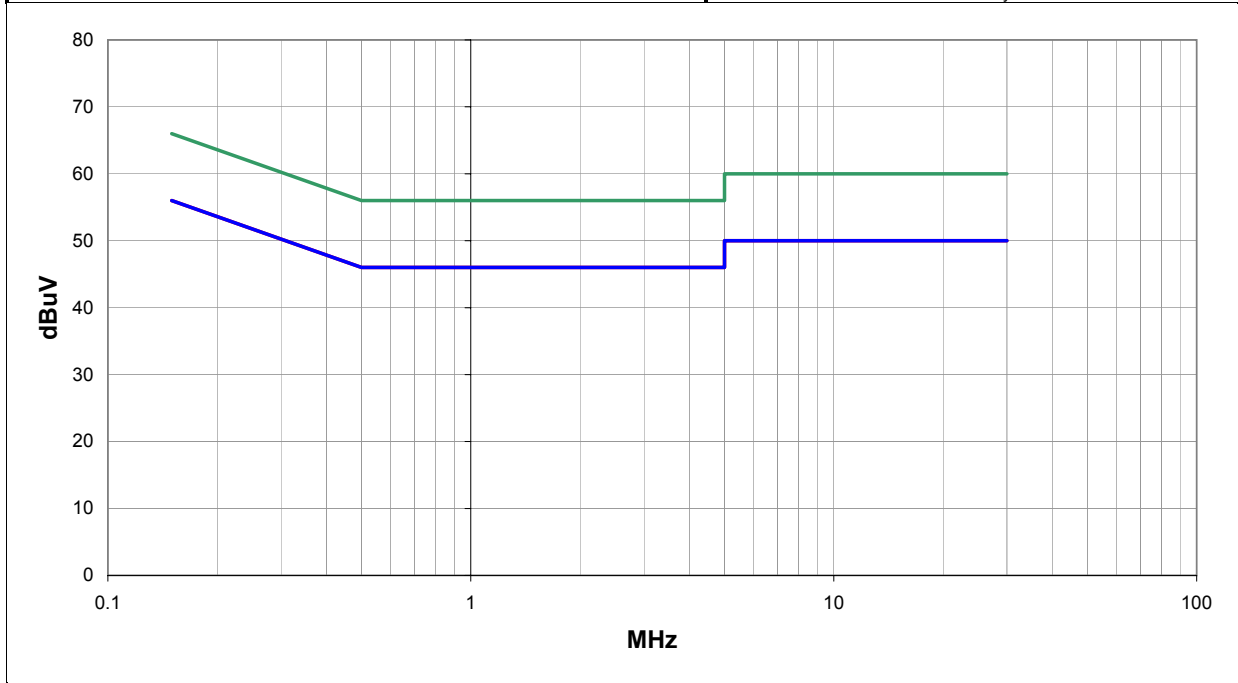
EUT OPERATING MODES
 Typical Operating Mode

DEVIATIONS FROM TEST STANDARD
 No deviations.

RESULTS	Line	Run #
Pass	N	2

Other


 Tested By: _____



Freq (MHz)	Amplitude (dBuV)	Transducer (dB)	Cable (dB)	External Attenuation (dB)	Detector (blank equal peaks [PK] from scan)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)

All Radio AC Conducted Power Line Emissions are more than 10 dB below the Average Limit

EUT:	Zoom Latitude Programming System	Work Order:	GDMN0037
Serial Number:	050574	Date:	12/20/04
Customer:	Guidant Inc.	Temperature:	23
Attendees:	None	Humidity:	32%
Cust. Ref. No.:	N/A	Barometric Pressure:	30.22
Tested by:	Jonathan Peng	Power:	120VAC/60Hz
		Job Site:	OC10

TEST SPECIFICATIONS	
Specification:	FCC 15.207 AC Powerline Conducted Emissions:2004
Method:	ANSI C63.4:2003

SAMPLE CALCULATIONS
 Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation
 Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator


COMMENTS
 FRRP Harddisk drive; Transmitting Middle Frequency Band 914 MHz; External US Antenna.

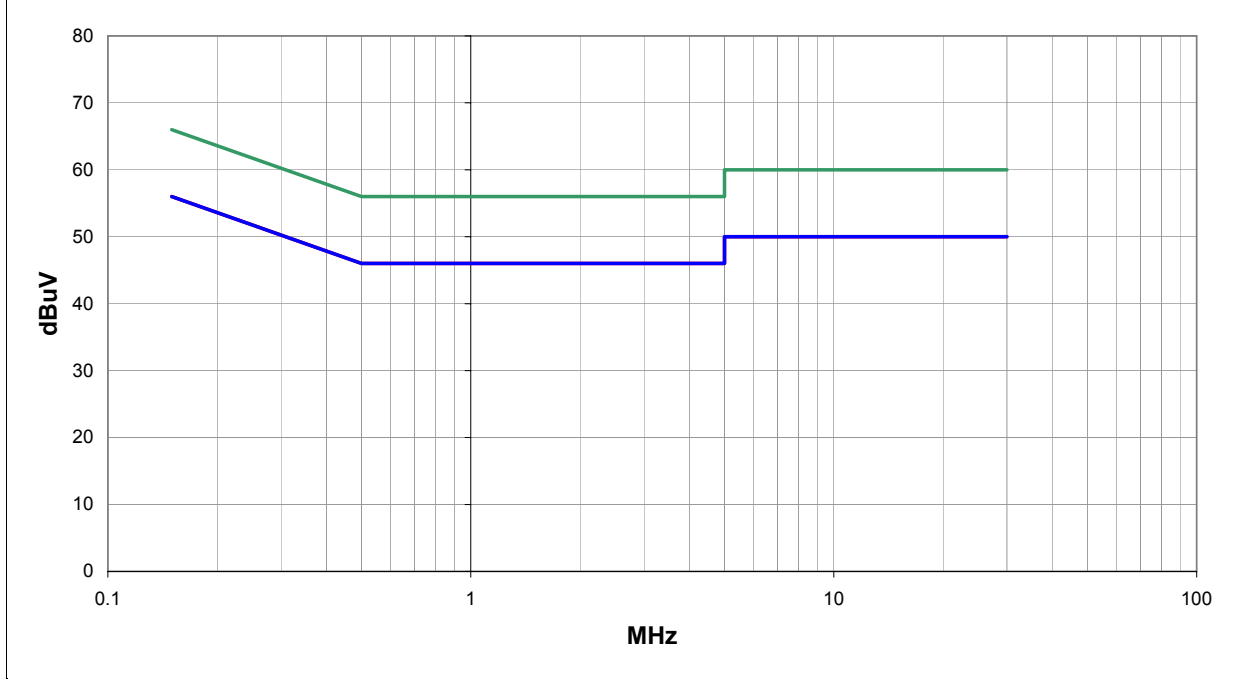
EUT OPERATING MODES
 Typical Operating Mode

DEVIATIONS FROM TEST STANDARD
 No deviations.

RESULTS	Line	Run #
Pass	L1	3

Other


 Tested By: _____



Freq (MHz)	Amplitude (dBuV)	Transducer (dB)	Cable (dB)	External Attenuation (dB)	Detector (blank equal peaks [PK] from scan)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)

All Radio AC Conducted Power Line Emissions are more than 10 dB below the Average Limit

EUT:	Zoom Latitude Programming System	Work Order:	GDMN0037
Serial Number:	050574	Date:	12/20/04
Customer:	Guidant Inc.	Temperature:	23
Attendees:	None	Humidity:	32%
Cust. Ref. No.:	N/A	Barometric Pressure:	30.22
Tested by:	Jonathan Peng	Power:	120VAC/60Hz
		Job Site:	OC10

TEST SPECIFICATIONS	
Specification:	FCC 15.207 AC Powerline Conducted Emissions:2004
Method:	ANSI C63.4:2003

SAMPLE CALCULATIONS
 Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation
 Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

COMMENTS
 FRRP Harddisk drive; Transmitting Middle Frequency Band 914 MHz; External US Antenna.

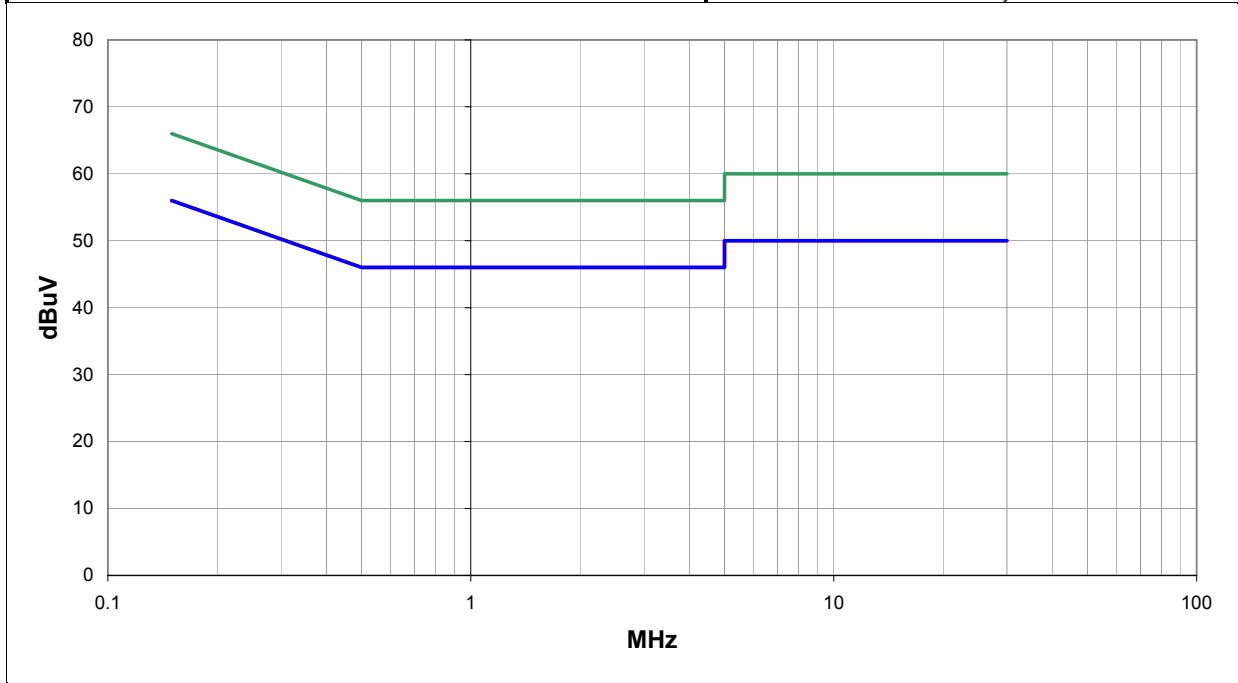
EUT OPERATING MODES
 Typical Operating Mode

DEVIATIONS FROM TEST STANDARD
 No deviations.

RESULTS	Line	Run #
Pass	N	6

Other


 Tested By: _____



Freq (MHz)	Amplitude (dBuV)	Transducer (dB)	Cable (dB)	External Attenuation (dB)	Detector (blank equal peaks [PK] from scan)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)

All Radio AC Conducted Power Line Emissions are more than 10 dB below the Average Limit

EUT:	Zoom Latitude Programming System	Work Order:	GDMN0037
Serial Number:	050574	Date:	12/20/04
Customer:	Guidant Inc.	Temperature:	23
Attendees:	None	Humidity:	32%
Cust. Ref. No.:	N/A	Barometric Pressure:	30.22
Tested by:	Jonathan Peng	Power:	120VAC/60Hz
		Job Site:	OC10

TEST SPECIFICATIONS	
Specification:	FCC 15.207 AC Powerline Conducted Emissions:2004
Method:	ANSI C63.4:2003

SAMPLE CALCULATIONS
 Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation
 Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

COMMENTS
 FRRP Harddisk drive; Transmitting High Frequency Band 927.5 MHz; External US Antenna.

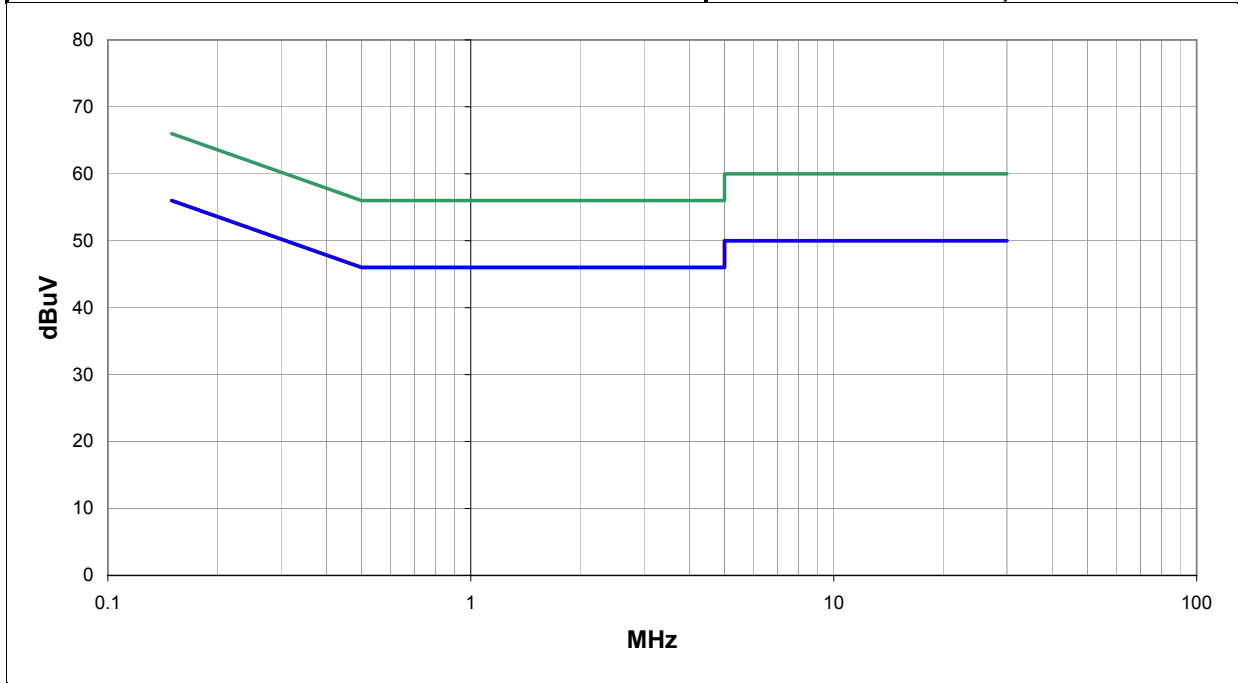
EUT OPERATING MODES
 Typical Operating Mode

DEVIATIONS FROM TEST STANDARD
 No deviations.

RESULTS	Line	Run #
Pass	L1	7

Other


 Tested By: _____



Freq (MHz)	Amplitude (dBuV)	Transducer (dB)	Cable (dB)	External Attenuation (dB)	Detector (blank equal peaks [PK] from scan)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)

All Radio AC Conducted Power Line Emissions are more than 10 dB below the Average Limit

EUT:	Zoom Latitude Programming System	Work Order:	GDMN0037
Serial Number:	050574	Date:	12/20/04
Customer:	Guidant Inc.	Temperature:	23
Attendees:	None	Humidity:	32%
Cust. Ref. No.:	N/A	Barometric Pressure:	30.22
Tested by:	Jonathan Peng	Power:	120VAC/60Hz
		Job Site:	OC10

TEST SPECIFICATIONS	
Specification:	FCC 15.207 AC Powerline Conducted Emissions:2004
Method:	ANSI C63.4:2003

SAMPLE CALCULATIONS
 Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation
 Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

COMMENTS
 FRRP Harddisk drive; Transmitting High Frequency Band 927.5 MHz; External US Antenna.

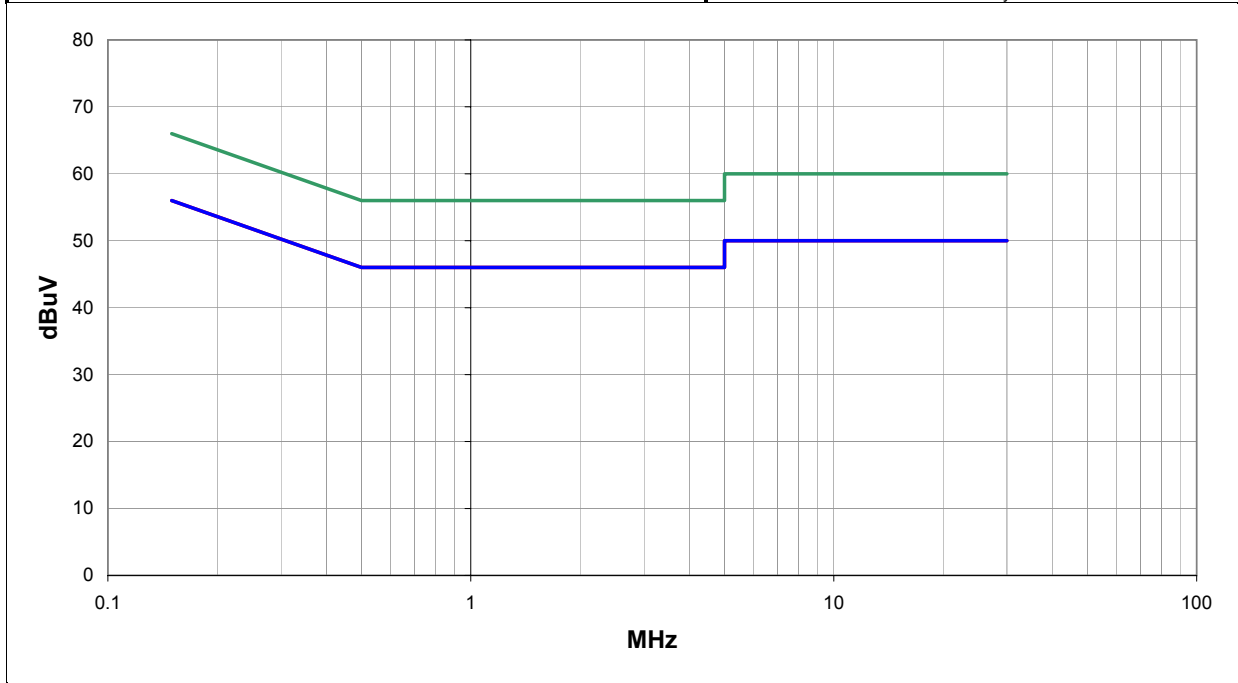
EUT OPERATING MODES
 Typical Operating Mode

DEVIATIONS FROM TEST STANDARD
 No deviations.

RESULTS	Line	Run #
Pass	N	8

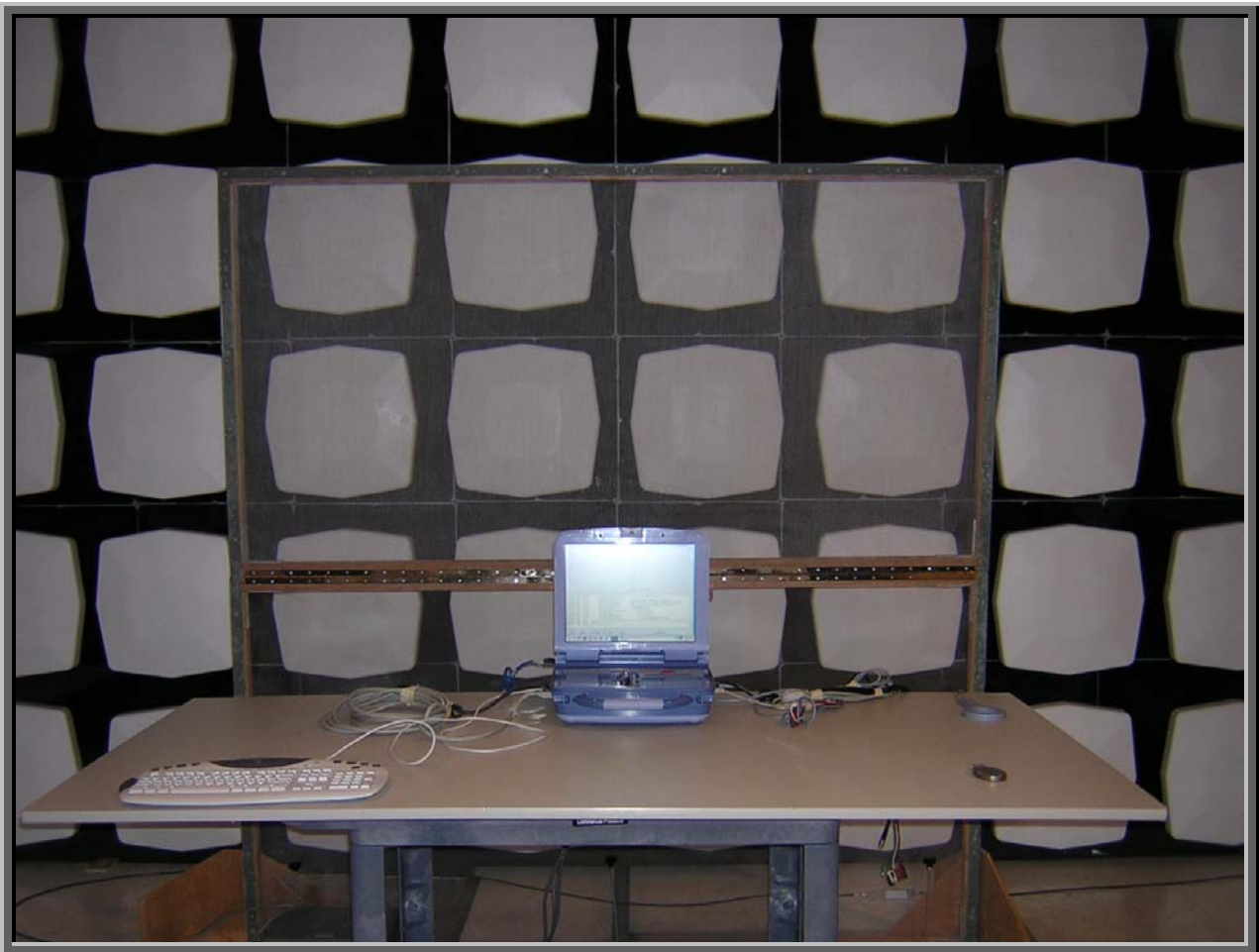
Other


 Tested By: _____



Freq (MHz)	Amplitude (dBuV)	Transducer (dB)	Cable (dB)	External Attenuation (dB)	Detector (blank equal peaks [PK] from scan)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
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All Radio AC Conducted Power Line Emissions are more than 10 dB below the Average Limit



Justification

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. 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:

Transmitting External Antenna
Transmitting Internal Antenna

Data Rates Investigated:

Maximum

Output Power Setting(s) Investigated:

Maximum

Power Input Settings Investigated:

120VAC/60Hz

Frequency Range Investigated:

Start Frequency	30 MHz	Stop Frequency	10 GHz
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Software\Firmware Applied During Test

Operating system	QNX/Red Hat LINUX	Version	Unknown
Exercise software	Standard Production Software	Version	Unknown

Description

The system was tested using standard operating production software to exercise the functions of the device during the testing.

EUT and Peripherals in Test Setup Boundary

Description	Manufacturer	Model/Part Number	Serial Number
Telemetry Wand	Guidant	6577	N/A
USB Keyboard	Logitech	N/A	N/A
USB Flash Hard Drive	N/A	Pen Drive 2.0	N/A
Zoom Latitude Programming System	Guidant	Model 3120	050596
PCMCIA Card	D-Link	10/100 Lan	B203146002099

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power	Yes	1.8	No	Zoom Latitude Programming System	AC Mains
Parallel	Yes	1.6	No	Zoom Latitude Programming System	Unterminated
Video	No	8.0	Yes	Zoom Latitude Programming System	Unterminated
USB	No	1.8	No	Zoom Latitude Programming System	keyboard
ECG	Yes	4.0	No	Zoom Latitude Programming System	Unterminated
Slave Stimulator	Yes	3.0	No	Zoom Latitude Programming System	Unterminated
Telemetry	Yes	3.0	No	Zoom Latitude Programming System	Telemetry Wand
Analog Output	No	2.0	No	Zoom Latitude Programming System	Unterminated
Telecom	No	1.8	No	PCMCIA Card	Unterminated
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
Antenna, Biconilog	EMCO	3142	AXJ	09/08/2003	24 mo
Antenna, Horn	EMCO	3115	AHB	08/27/2003	24 mo
Spectrum Analyzer	Hewlett Packard	8593E	AAP	12/07/2004	13 mo
Receiver	Schaffner	SCR 3101	ARC	04/28/2003	24 mo
Pre-Amplifier 0.5-18 GHz	Miteq	AMF-4D-005180-24-10P	APP	05/07/2004	13 mo
Pre-Amplifier	Miteq	AM-1616-1000	AOM	10/20/2004	13 mo
Antenna, Horn	EMCO	3160-07	AHP	NCR	NA
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AOK	12/26/2004	13 mo

Test Description

Requirement: the field strength of harmonic emissions from intentional radiators operated within these frequency bands shall comply with the limits specified in 15.249(a). The peak level must comply with the limits specified in 47 CFR 15.35(b). The average level (taken with a 10 Hz VBW) must comply with the limits specified in 15.209.

Configuration: The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.4:2001). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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.

Completed by:

RADIATED EMISSIONS DATA SHEET

EUT: Zoom Latitude Programming System		Work Order: GDMN0055
Serial Number: 050596	Date: 02/11/05	
Customer: Guidant Inc.	Temperature: 70	
Attendees: N/A	Humidity: 52%	
Cust. Ref. No.: N/A	Barometric Pressure: 30.13	
Tested by: Jaemi Suh	Power: 120VAC/60Hz	Job Site: OC10

TEST SPECIFICATIONS		
Specification: FCC 15.249:2004	Method: ANSI C63.4:2003	

SAMPLE CALCULATIONS
 Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation
 Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator


COMMENTS
 None

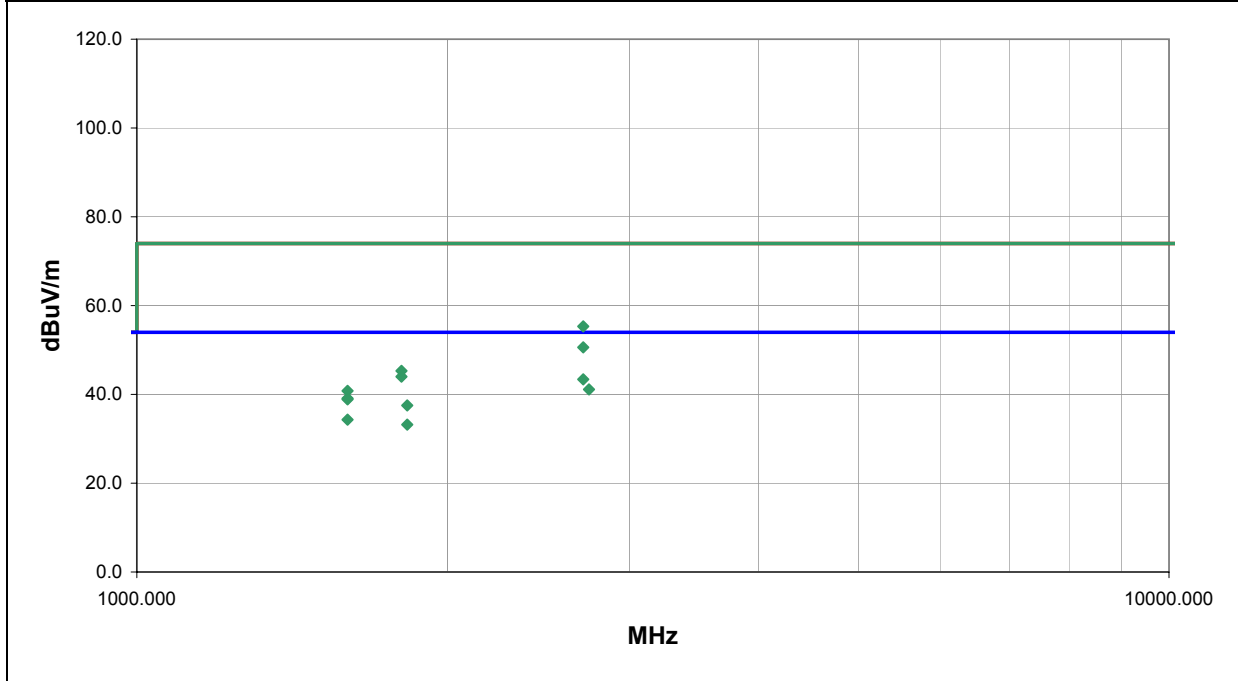
EUT OPERATING MODES
 902.5 MHz Internal Transmitting

DEVIATIONS FROM TEST STANDARD
 No deviations.

RESULTS	Run #
Pass	5

Other


 Tested By:



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
1804.603	35.9	-1.9	99.0	1.0	3.0	10.0	V-Horn	AV	0.0	44.0	54.0	-10.0
2706.670	32.8	0.6	100.0	1.9	3.0	10.0	V-Horn	AV	0.0	43.4	54.0	-10.6
2742.000	30.3	0.8	302.0	2.1	3.0	10.0	H-Horn	AV	0.0	41.1	54.0	-12.9
1599.974	32.1	-3.2	153.0	1.0	3.0	10.0	V-Horn	AV	0.0	38.9	54.0	-15.1
2706.670	44.5	0.8	100.0	1.9	3.0	10.0	V-Horn	PK	0.0	55.3	74.0	-18.7
1599.935	27.5	-3.2	187.0	1.4	3.0	10.0	H-Horn	AV	0.0	34.3	54.0	-19.7
1828.000	25.0	-1.8	353.0	2.3	3.0	10.0	H-Horn	AV	0.0	33.2	54.0	-20.8
2706.850	39.8	0.8	302.0	2.1	3.0	10.0	H-Horn	PK	0.0	50.6	74.0	-23.4
1804.603	37.1	-1.8	99.0	1.0	3.0	10.0	V-Horn	PK	0.0	45.3	74.0	-28.7
1600.000	34.0	-3.2	153.0	1.0	3.0	10.0	V-Horn	PK	0.0	40.8	74.0	-33.2
1600.000	32.3	-3.2	187.0	1.4	3.0	10.0	H-Horn	PK	0.0	39.1	74.0	-34.9
1828.000	29.3	-1.8	353.0	2.3	3.0	10.0	H-Horn	PK	0.0	37.5	74.0	-36.5

RADIATED EMISSIONS DATA SHEET

EUT:	Zoom Latitude Programming System	Work Order:	GDMN0055
Serial Number:	050596	Date:	02/11/05
Customer:	Guidant Inc.	Temperature:	70
Attendees:	N/A	Humidity:	52%
Cust. Ref. No.:	N/A	Barometric Pressure:	30.13
Tested by:	Jaemi Suh	Power:	120VAC/60Hz
		Job Site:	OC10

TEST SPECIFICATIONS	
Specification:	FCC 15.249:2004
Method:	ANSI C63.4:2003

SAMPLE CALCULATIONS
 Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation
 Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

COMMENTS
 None

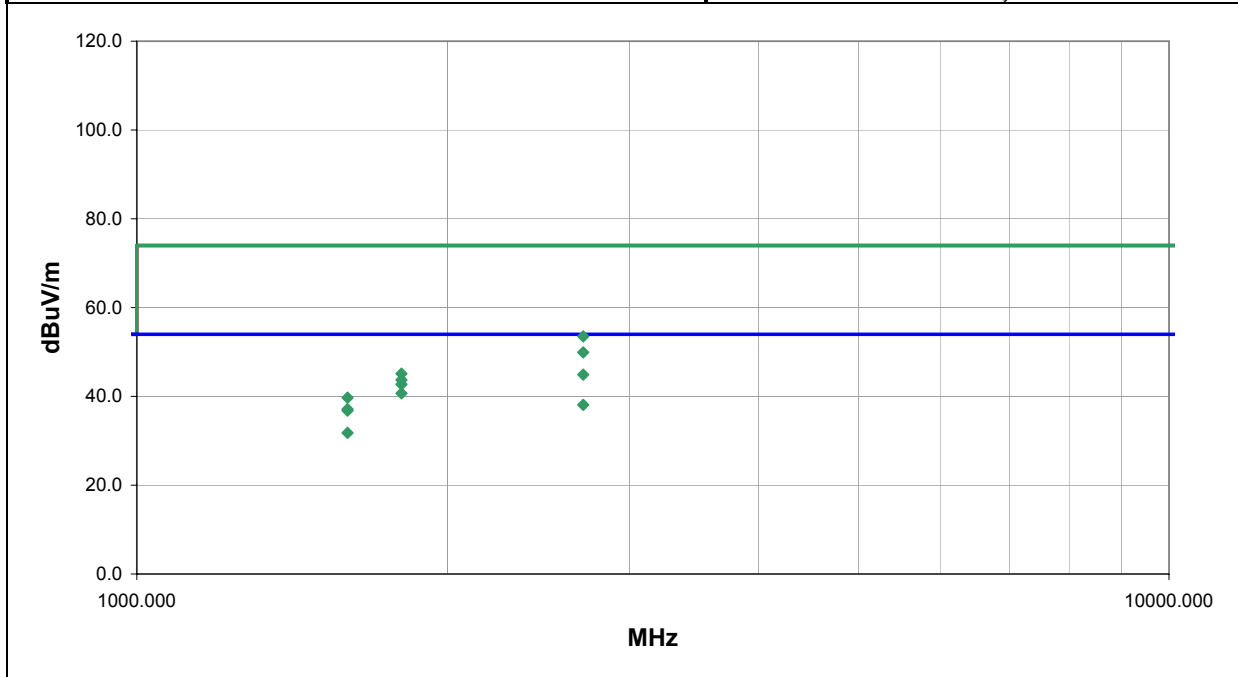
EUT OPERATING MODES
 902.5 MHz External Transmitting

DEVIATIONS FROM TEST STANDARD
 No deviations.

RESULTS	Run #
Pass	4

Other


 Tested By:



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
2706.700	34.1	0.8	102.0	1.0	3.0	10.0	V-Horn	AV	0.0	44.9	54.0	-9.1
1804.600	34.5	-1.8	91.0	1.0	3.0	10.0	V-Horn	AV	0.0	42.7	54.0	-11.3
1804.600	32.5	-1.8	40.0	1.0	3.0	10.0	H-Horn	AV	0.0	40.7	54.0	-13.3
2706.700	27.3	0.8	112.0	2.4	3.0	10.0	H-Horn	AV	0.0	38.1	54.0	-15.9
1600.000	30.0	-3.2	149.0	1.0	3.0	10.0	V-Horn	AV	0.0	36.8	54.0	-17.2
2706.700	42.7	0.8	102.0	1.0	3.0	10.0	V-Horn	PK	0.0	53.5	74.0	-20.5
1600.000	25.0	-3.2	192.0	1.0	3.0	10.0	H-Horn	AV	0.0	31.8	54.0	-22.2
2706.700	39.1	0.8	112.0	2.4	3.0	10.0	H-Horn	PK	0.0	49.9	74.0	-24.1
1804.600	36.9	-1.8	91.0	1.0	3.0	10.0	V-Horn	PK	0.0	45.1	74.0	-28.9
1804.600	35.5	-1.8	40.0	1.0	3.0	10.0	H-Horn	PK	0.0	43.7	74.0	-30.3
1600.000	32.9	-3.2	149.0	1.0	3.0	10.0	V-Horn	PK	0.0	39.7	74.0	-34.3
1600.000	30.3	-3.2	192.0	1.0	3.0	10.0	H-Horn	PK	0.0	37.1	74.0	-36.9

RADIATED EMISSIONS DATA SHEET

EUT:	Zoom Latitude Programming System	Work Order:	GDMN0055
Serial Number:	050596	Date:	02/11/05
Customer:	Guidant Inc.	Temperature:	70
Attendees:	N/A	Humidity:	52%
Cust. Ref. No.:	N/A	Barometric Pressure:	30.13
Tested by:	Jaemi Suh	Power:	120VAC/60Hz
		Job Site:	OC10

TEST SPECIFICATIONS			
Specification:	FCC 15.249:2004	Method:	ANSI C63.4:2003

SAMPLE CALCULATIONS
 Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation
 Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

COMMENTS
 None

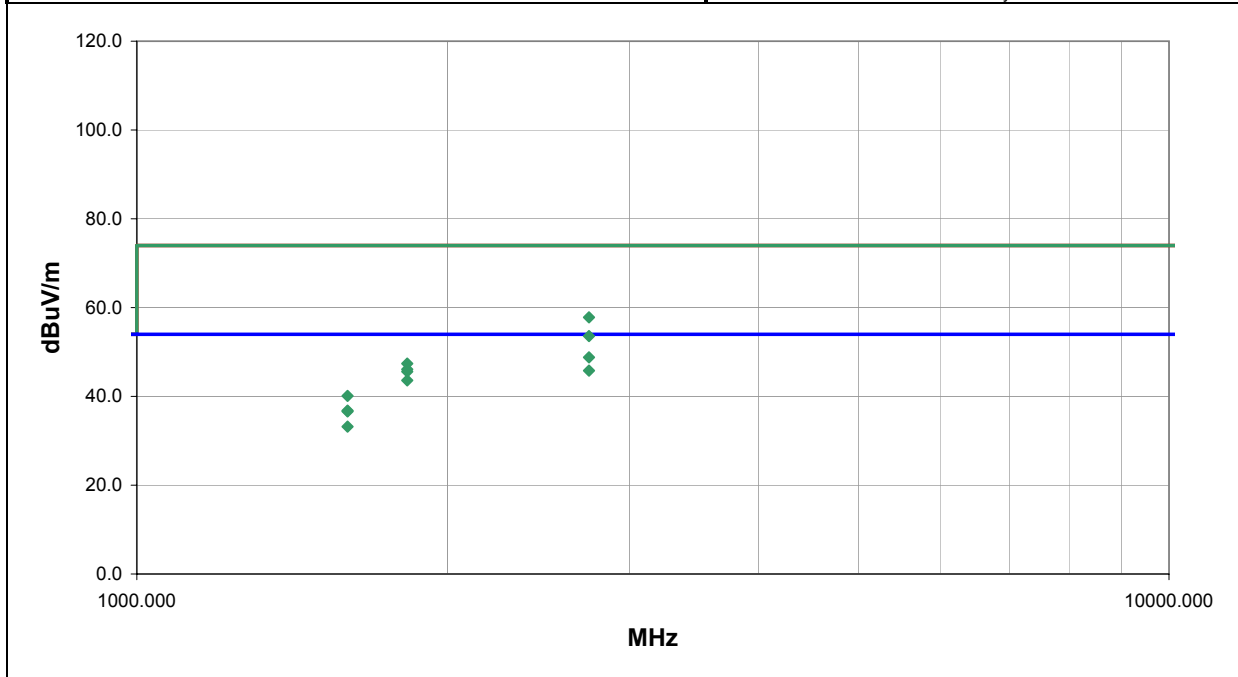
EUT OPERATING MODES
 914 MHz Internal Transmitting

DEVIATIONS FROM TEST STANDARD
 No deviations.

RESULTS	Run #
Pass	4

Other


 Tested By:



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
2742.272	38.0	0.8	104.0	1.0	3.0	10.0	V-Horn	AV	0.0	48.8	54.0	-5.2
1828.000	37.9	-1.8	90.0	1.0	3.0	10.0	V-Horn	AV	0.0	46.1	54.0	-7.9
2742.265	35.0	0.8	109.0	2.0	3.0	10.0	H-Horn	AV	0.0	45.8	54.0	-8.2
1828.113	35.4	-1.8	39.0	1.0	3.0	10.0	H-Horn	AV	0.0	43.6	54.0	-10.4
2742.000	47.0	0.8	104.0	1.0	3.0	10.0	V-Horn	PK	0.0	57.8	74.0	-16.2
1600.000	30.0	-3.2	144.0	1.0	3.0	10.0	V-Horn	AV	0.0	36.8	54.0	-17.2
2742.265	42.8	0.8	109.0	2.0	3.0	10.0	H-Horn	PK	0.0	53.6	74.0	-20.4
1599.983	26.4	-3.2	134.0	1.0	3.0	10.0	H-Horn	AV	0.0	33.2	54.0	-20.8
1828.000	39.2	-1.8	90.0	1.0	3.0	10.0	V-Horn	PK	0.0	47.4	74.0	-26.6
1828.000	37.4	-1.8	39.0	1.0	3.0	10.0	H-Horn	PK	0.0	45.6	74.0	-28.4
1600.000	33.3	-3.2	144.0	1.0	3.0	10.0	V-Horn	PK	0.0	40.1	74.0	-33.9
1599.983	29.8	-3.2	134.0	1.0	3.0	10.0	H-Horn	PK	0.0	36.6	74.0	-37.4

RADIATED EMISSIONS DATA SHEET

EUT:	Zoom Latitude Programming System	Work Order:	GDMN0055
Serial Number:	050596	Date:	02/11/05
Customer:	Guidant Inc.	Temperature:	70
Attendees:	N/A	Humidity:	52%
Cust. Ref. No.:	N/A	Barometric Pressure:	30.13
Tested by:	Jaemi Suh	Power:	120VAC/60Hz
		Job Site:	OC10

TEST SPECIFICATIONS	
Specification:	FCC 15.249:2004
Method:	ANSI C63.4:2003

SAMPLE CALCULATIONS
 Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation
 Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator


COMMENTS
 None

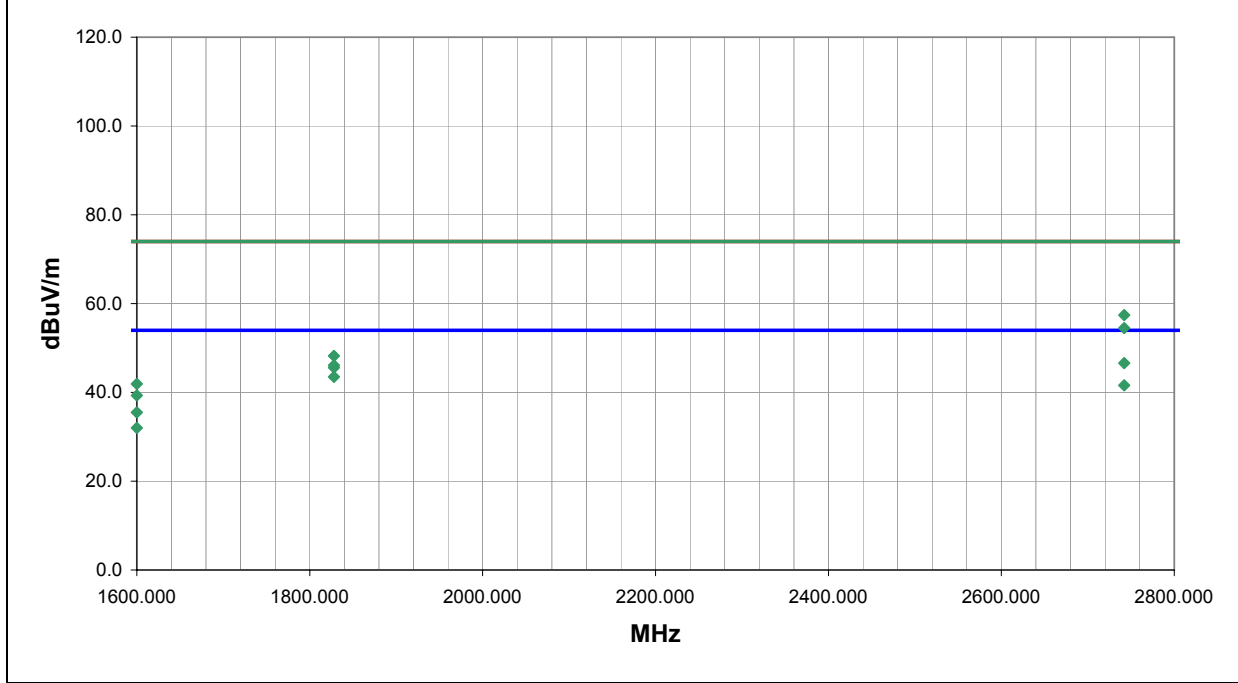
EUT OPERATING MODES
 914 MHz External Transmitting

DEVIATIONS FROM TEST STANDARD
 No deviations.

RESULTS	Run #
Pass	1

Other


 Tested By:



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
2742.000	35.8	0.8	104.0	1.0	3.0	10.0	V-Horn	AV	0.0	46.6	54.0	-7.4
1828.000	37.9	-1.8	90.0	1.0	3.0	10.0	V-Horn	AV	0.0	46.1	54.0	-7.9
1828.000	35.3	-1.8	41.0	1.0	3.0	10.0	H-Horn	AV	0.0	43.5	54.0	-10.5
2742.000	30.8	0.8	110.0	2.1	3.0	10.0	H-Horn	AV	0.0	41.6	54.0	-12.4
2742.000	46.6	0.8	104.0	1.0	3.0	10.0	V-Horn	PK	0.0	57.4	74.0	-16.6
1600.000	28.7	-3.2	134.0	1.7	3.0	10.0	H-Horn	AV	0.0	35.5	54.0	-18.5
2742.000	43.7	0.8	110.0	2.1	3.0	10.0	H-Horn	PK	0.0	54.5	74.0	-19.5
1600.000	25.2	-3.2	146.0	1.4	3.0	10.0	V-Horn	AV	0.0	32.0	54.0	-22.0
1828.000	40.0	-1.8	90.0	1.0	3.0	10.0	V-Horn	PK	0.0	48.2	74.0	-25.8
1828.000	37.4	-1.8	41.0	1.0	3.0	10.0	H-Horn	PK	0.0	45.6	74.0	-28.4
1600.000	35.1	-3.2	146.0	1.4	3.0	10.0	V-Horn	PK	0.0	41.9	74.0	-32.1
1600.000	32.5	-3.2	134.0	1.7	3.0	10.0	H-Horn	PK	0.0	39.3	74.0	-34.7

EUT:	Zoom Latitude Programming System	Work Order:	GDMN0055
Serial Number:	050596	Date:	02/11/05
Customer:	Guidant Inc.	Temperature:	70
Attendees:	N/A	Humidity:	52%
Cust. Ref. No.:	N/A	Barometric Pressure:	30.13
Tested by:	Jaemi Suh	Power:	120VAC/60Hz
		Job Site:	OC10

TEST SPECIFICATIONS	
Specification:	FCC 15.249:2004
Method:	ANSI C63.4:2003

SAMPLE CALCULATIONS
 Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation
 Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

COMMENTS
 None

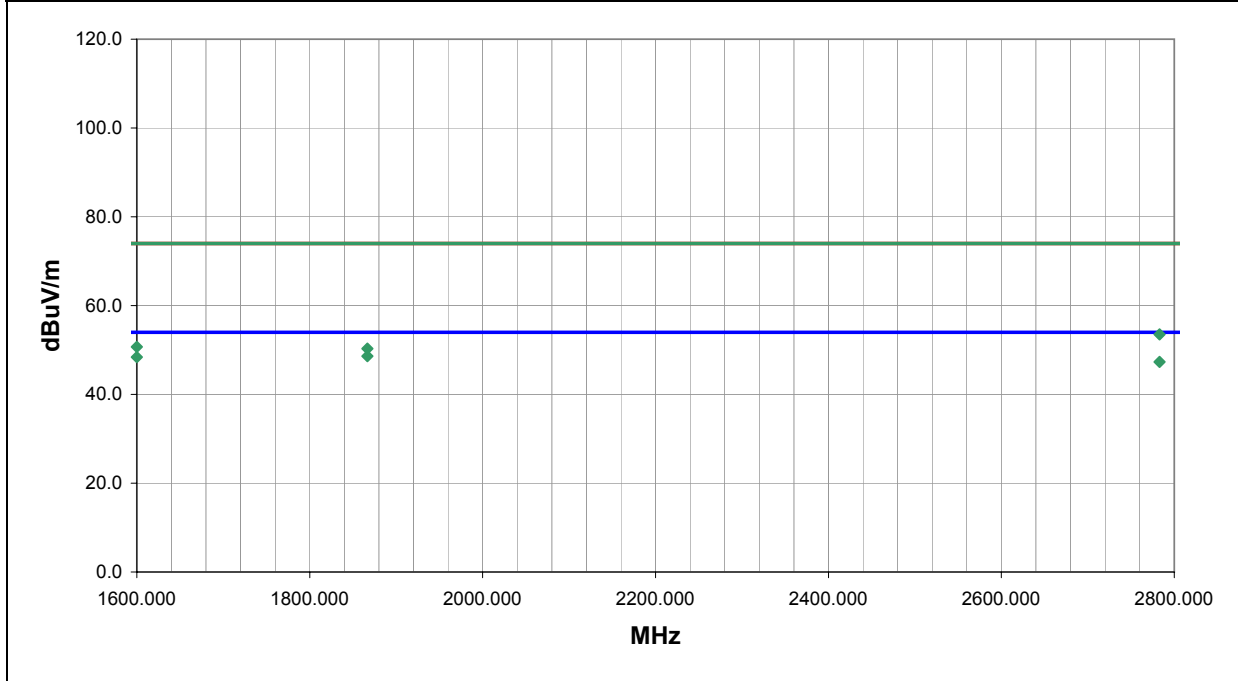
EUT OPERATING MODES
 927.5 MHz Internal Transmitting

DEVIATIONS FROM TEST STANDARD
 No deviations.

RESULTS	Run #
Pass	2

Other


 Tested By:



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
1866.637	40.2	-1.6	107.0	1.0	3.0	10.0	H-Horn	AV	0.0	48.6	54.0	-5.4
1600.000	41.6	-3.2	146.0	1.0	3.0	10.0	V-Horn	AV	0.0	48.4	54.0	-5.6
2782.913	36.3	1.0	92.0	1.7	3.0	10.0	V-Horn	AV	0.0	47.3	54.0	-6.7
2782.913	42.5	1.0	92.0	1.7	3.0	10.0	V-Horn	PK	0.0	53.5	74.0	-20.5
1600.000	43.9	-3.2	146.0	1.0	3.0	10.0	V-Horn	PK	0.0	50.7	74.0	-23.3
1866.637	41.9	-1.6	107.0	1.0	3.0	10.0	H-Horn	PK	0.0	50.3	74.0	-23.7

EUT: Zoom Latitude Programming System		Work Order: GDMN0055
Serial Number: 050596	Customer: Guidant Inc.	Date: 02/11/05
Attendees: N/A	Cust. Ref. No.: N/A	Temperature: 70
Tested by: Jaemi Suh	Power: 120VAC/60Hz	Humidity: 52%
		Barometric Pressure: 30.13
		Job Site: OC10

TEST SPECIFICATIONS		
Specification: FCC 15.249:2004	Method: ANSI C63.4:2003	

SAMPLE CALCULATIONS
 Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation
 Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator


COMMENTS
 None

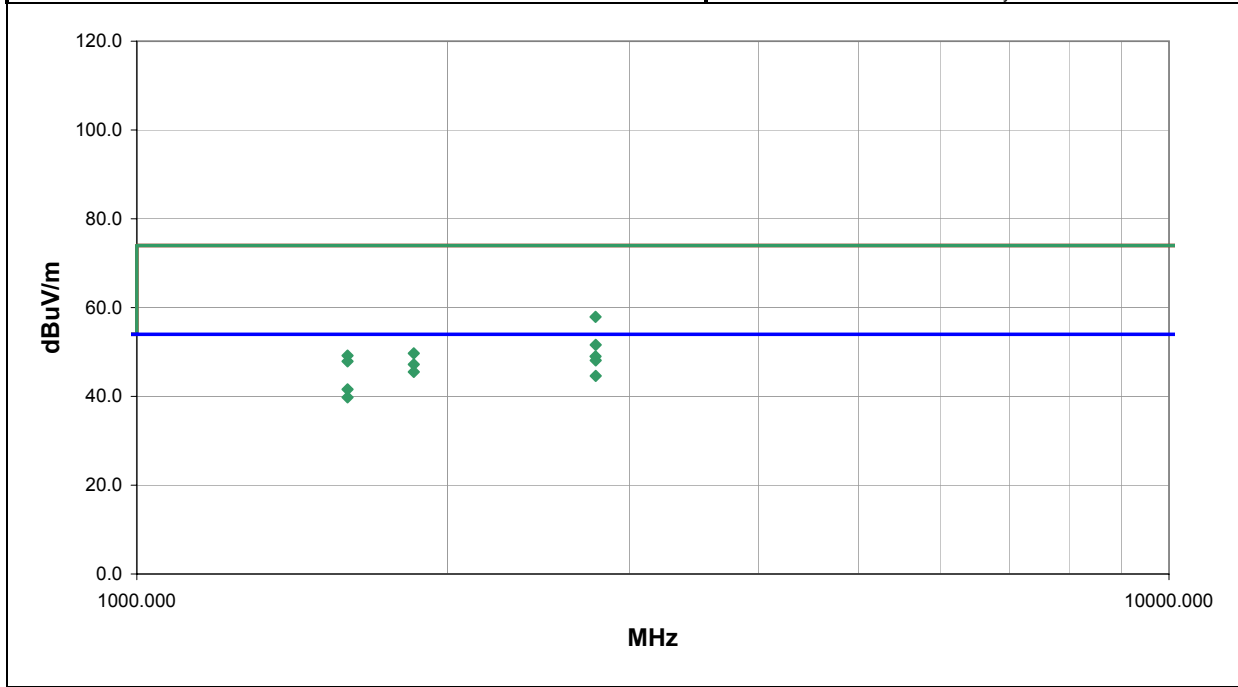
EUT OPERATING MODES
 927.5 MHz External Transmitting

DEVIATIONS FROM TEST STANDARD
 No deviations.

RESULTS	Run #
Pass	3

Other


 Tested By:



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
2782.930	38.0	1.0	227.0	1.5	3.0	10.0	V-Horn	AV	0.0	49.0	54.0	-5.0
2782.952	37.1	1.0	232.0	2.1	3.0	10.0	V-Horn	AV	0.0	48.1	54.0	-5.9
1855.200	37.1	-1.6	47.0	1.0	3.0	10.0	H-Horn	AV	0.0	45.5	54.0	-8.5
2782.952	33.6	1.0	205.0	3.1	3.0	10.0	H-Horn	AV	0.0	44.6	54.0	-9.4
1600.000	34.8	-3.2	158.0	1.0	3.0	10.0	V-Horn	AV	0.0	41.6	54.0	-12.4
1600.000	33.0	-3.2	197.0	1.0	3.0	10.0	H-Horn	AV	0.0	39.8	54.0	-14.2
2782.930	46.9	1.0	227.0	1.5	3.0	10.0	V-Horn	PK	0.0	57.9	74.0	-16.1
2782.952	40.6	1.0	205.0	3.1	3.0	10.0	H-Horn	PK	0.0	51.6	74.0	-22.4
1855.000	41.3	-1.6	67.0	1.0	3.0	10.0	V-Horn	PK	0.0	49.7	74.0	-24.3
1600.000	42.4	-3.2	197.0	1.0	3.0	10.0	H-Horn	PK	0.0	49.2	74.0	-24.8
1600.000	41.1	-3.2	158.0	1.0	3.0	10.0	V-Horn	PK	0.0	47.9	74.0	-26.1
1855.200	39.0	-1.8	47.0	1.0	3.0	10.0	H-Horn	PK	0.0	47.2	74.0	-26.8

