Guidant Inc.

6482 Communicator

EMC Test Report

December 13, 2004

Report No. GDMN0028

Report Prepared By

NORTHWEST EMC

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

NORTHWEST EMC

22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Certificate of Test

Issue Date: December 13, 2004
Guidant Inc.
Model: 6482 Communicator

	Emissions		
Specification	**Test Method**	**Pass**	**Fail**
FCC 15.207 AC Powerline Conducted Emissions:2004	ANSI C63.4:2003	☒	☐
FCC 15.249 Field Strength of Fundamental:2004	ANSI C63.4:2003	☒	☐
FCC 15.249 Field Strength of Spurious Emissions:2004	ANSI C63.4:2003	☒	☐
FCC 15.107 AC Powerline Conducted Emissions:2004	ANSI C63.4:2003	☒	☐
FCC 15.109 Radiated Emissions :2004	ANSI C63.4:2003	☒	☐

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

Test Facility

- The measurement facility used to collect the data is located at:
  Northwest EMC, Inc.
  41 Tesla
  Irvine, CA 92618
  Phone: (503) 844-4066 Fax: 844-3826
  This site has been fully described in a report filed with and accepted by the FCC (Federal Communications Commission) and Industry Canada.

Approved By:

Dean Ghizzone, President

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

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

Revision Number	Description	Date	Page Number
00	None		

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

NVLAP: Northwest EMC, Inc. is recognized under the United States Department of Commerce, National Institute of Standards and Technology, 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. Accreditation has been granted to Northwest EMC, Inc. under Certificate Numbers: 200629-0, 200630-0, and 200676-0.

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

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

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

Accreditations and Authorizations

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

Explanation of Northwest EMC Performance Criteria

How important is it to understand performance criteria?

It is the responsibility of the test laboratory to observe the results of the tests that are performed and to accurately report those results. As the responsible party (manufacturer, importer, etc) it is your responsibility to take those results, compare them against the specifications and standards, then, if appropriate make a declaration of conformity. As the responsible party it makes sense that you are fully aware of the requirements, how your device performs when tested to those requirements, and what information is being used to declare conformity.

To better assist you in making those conformity decisions, Northwest EMC has adopted a very simple, yet very clear performance assessment procedure. The following criteria is used when performing immunity or susceptibility tests:

Performance Criteria 1:

- The EUT exhibited no change in performance when operating as specified by the manufacturer. In this case no changes were observed during the test.
- In most cases this would be equivalent to Performance Criteria A. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, no changes were observed. Basically nothing happened.

Performance Criteria 2:

- The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment recovered without any operator intervention, once the test signal was removed. The data sheets will detail the exact phenomena observed.
- In most cases this would be equivalent to Performance Criteria B. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, changes were observed. The EUT was able to recover from those changes without any operator intervention, once the test signal was removed.

Performance Criteria 3:

- The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment required some operator intervention in order to recover. This intervention may be in the form of changing EUT settings, or even resetting the system. The data sheets will detail the exact phenomena observed.
- In most cases this would be equivalent to Performance Criteria C. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, changes were observed. The EUT required some sort of operator intervention to recover. There was no permanent damage and the EUT appeared to function normally after completion test.

Performance Criteria 4:

- The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment was damaged and would not recover. The data sheets will detail the exact phenomena observed.
- In most cases there is no specific criterion to compare this to, it typically ends the test. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, changes were observed. There was no recovery; the equipment would no longer function as intended.

Each of the standards and specifications has unique performance criteria. In order to make an accurate assessment, one must compare the test results provided with the specific performance criteria. **To ensure that a responsible party is compliant with the specifications, one must read and understand those specifications. Provided below is a sample performance criteria, taken from EN 61000-6-1.**

EN 61000-6-1 Performance Criteria

Performance Criteria A: *The apparatus shall continue to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation and what the user may reasonably expect from the apparatus if used as intended.*

Performance Criteria B: *The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation and what the user may reasonably expect from the apparatus if used as intended.*

Performance Criteria C: *Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of controls.*

How should a device perform in order for a declaration of conformity to be made?

As already stated, it is the responsible party that must interpret and understand the results in such a way that a declaration of conformity is made. Having said that, we are often asked to render our opinion as to how a device should perform. Our recommendation simply follows the standards, as can be referenced below. Most of the standards and specifications offer the same performance criterion shown below as their requirements.

Test	Performance Criteria typically specified by the Standard	Equivalent Northwest EMC Performance Criteria
ESD	Performance Criteria B	Performance Criteria 1 or 2
Radiated RF	Performance Criteria A	Performance Criteria 1
EFT/Burst	Performance Criteria B	Performance Criteria 1 or 2
Surge	Performance Criteria B	Performance Criteria 1 or 2
Conducted RF	Performance Criteria A	Performance Criteria 1
Magnetic Field	Performance Criteria A	Performance Criteria 1
Voltage Dips and Variations	Performance Criteria B & C	Performance Criteria 1, 2, or 3

What is measurement uncertainty?

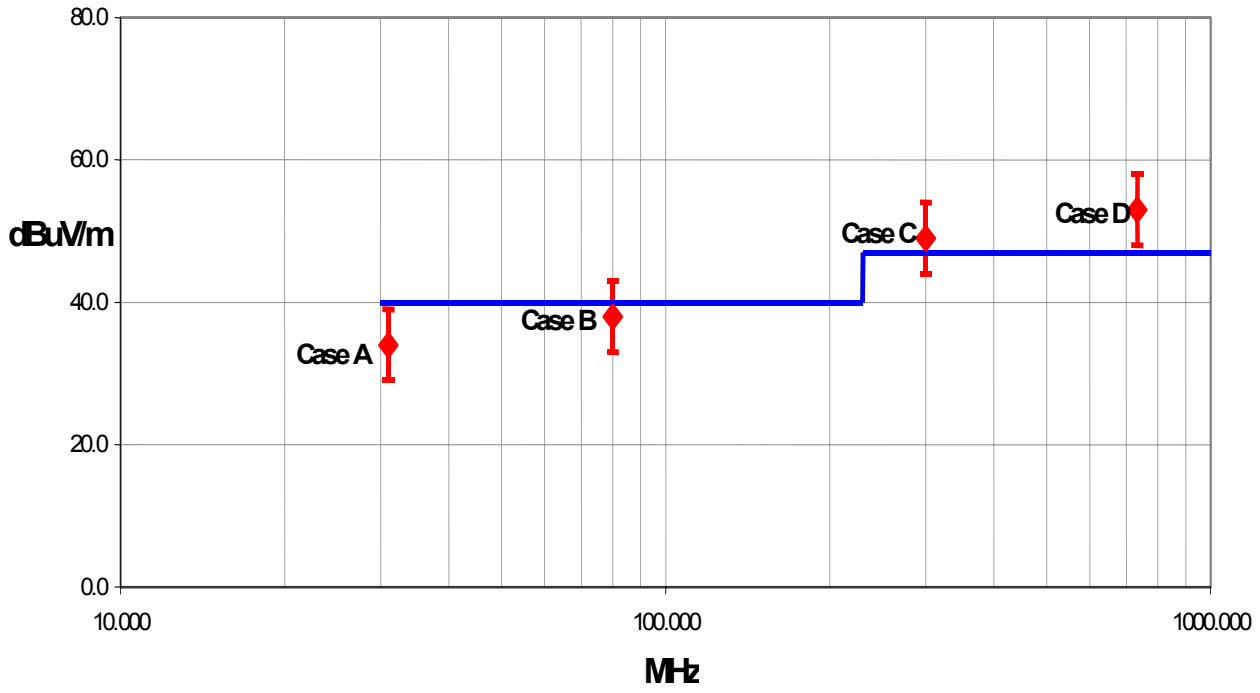
When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. The following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

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

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

How might measurement uncertainty be applied to test results?

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



Test Result Scenarios:
Case A: Product complies.
Case B: Product conditionally complies. It is not possible to say with 95% confidence that the product complies.
Case C: Product conditionally does not comply. It is not possible to say with 95% confidence that the product does not comply.
Case D: Product does not comply.

Radiated Emissions ≤ 1 GHz		Value (dB)					
	Probability Distribution	Biconical Antenna		Log Periodic Antenna		Dipole Antenna	
Test Distance		3m	10m	3m	10m	3m	10m
Combined standard uncertainty $u_c(y)$	normal	+ 1.86 - 1.88	+ 1.82 - 1.87	+ 2.23 - 1.41	+ 1.29 - 1.26	+ 1.31 - 1.27	+ 1.25 - 1.25
Expanded uncertainty ***U*** (level of confidence ≈ 95%)	normal (k=2)	+ 3.72 - 3.77	+ 3.64 - 3.73	+ 4.46 -2.81	+ 2.59 - 2.52	+ 2.61 - 2.55	+ 2.49 - 2.49

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

Conducted Emissions		
	Probability Distribution	Value (+/- dB)
Combined standard uncertainty ***uc(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 ***uc(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 ***uc(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, uc(y) yields a confidence level of only 68%.

California

Orange County Facility

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

Oregon

Evergreen Facility

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

Oregon

Trails End Facility

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

Washington

Sultan Facility

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

Party Requesting the Test	
Company Name:	Guidant Inc.
Address:	4100 Hamline Avenue North
City, State, Zip:	Saint Paul, MN 55112-5798
Test Requested By:	Robert Parkinson
Model:	6482 Communicator
First Date of Test:	12-06-2004
Last Date of Test:	12-07-2004
Receipt Date of Samples:	12-06-2004
Equipment Design Stage:	Production
Equipment Condition:	No visual damage.

Information Provided by the Party Requesting the Test

Clocks/Oscillators:	Not provided.
I/O Ports:	RJ11 Out/In

Functional Description of the EUT (Equipment Under Test):

The Communicator, Model 6482 is an externally powered device that remotely communicates with radio frequency (RF) devices and transmits information back to a central database. There is a semi-rigid, fixed-mount antenna that enables communication with Renewal 3 RF implanted Guidant devices. In addition, there is a Bluetooth radio that enables data collection from Bluetooth-enabled external sensors. The two radios cannot operate at the same time. Internally, the Model 6482 is comprised of 3 rigid PCB assemblies, a liquid crystal display (LCD), speaker, plastic internal frame and miscellaneous cables.

Client Justification for EUT Selection:

Not Provided

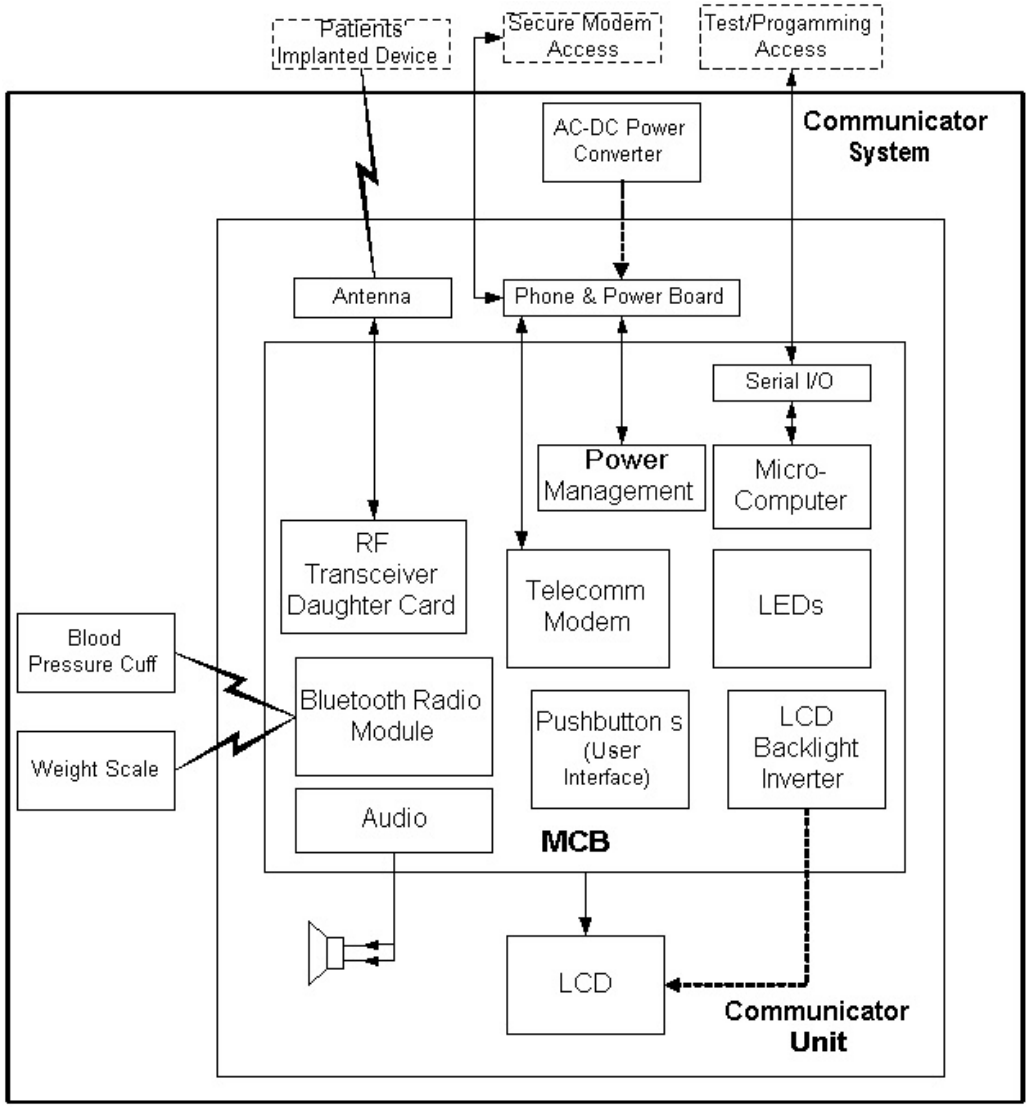
Client Justification for Test Selection:

Meet the requirements for FCC Approval

Other Information:

Client has other information to provide. See 100009-224, EDVT Protocol.

EUT Functional Block Diagram



Equipment modifications					
Item	Test	Date	Modification	Note	Disposition of EUT
1	Field Strength of Fundamental	12/06/2004	No EMI suppression devices were added or modified during this test.	Same configuration as delivered.	EUT remained at Northwest EMC.
2	Radiated Spurious Emissions	12/06/2004	No EMI suppression devices were added or modified during this test.	Same configuration as delivered.	EUT remained at Northwest EMC.
3	Radiated Emissions	12/06/2004	No EMI suppression devices were added or modified during this test.	Same configuration as delivered.	EUT remained at Northwest EMC.
4	Conducted Emissions	12/07/2004	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, CPU speeds, video resolution settings, operational modes, and input voltages.

Operating Modes Investigated:
Receive Mode

Power Input Settings Investigated:
120 VAC, 60 Hz
Worst Case Input Power Setting used for Final Test:
120 VAC, 60 Hz (designated by client or system limitations)

Frequency Range Investigated			
Start Frequency	30 MHz	**Stop Frequency**	10 GHz

Software\Firmware Applied During Test			
Operating system	SW	**Version**	0.9.4
Exercise software	Sigtest	**Version**	1.5
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**
DC Power Supply	GlobTek	GTM21089-1305-W2	n/a
EUT- Model 6482 Communicator	Guidant, Inc.	6482	64

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
Phone	No	2	No	EUT- Model 6482 Communicator	Unterminated
Phone	No	2	No	EUT- Model 6482 Communicator	Unterminated
DC Leads	PA	1.8	PA	DC Power Supply	EUT- Model 6482 Communicator
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	03/22/2004	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
Quasi-Peak Adapter	Hewlett-Packard	85650A	AQD	02/10/2004	13 mo
Spectrum Analyzer	Hewlett-Packard	8568B	AAI	02/10/2004	13 mo
Pre-Amplifier	Miteq	AM-1551	AOX	05/07/2004	13 mo
Antenna, Biconilog	EMCO	3142	AXK	05/21/2003	24 mo
High Pass Filter 1.5 GHz	Micro-Tronics	HPM50111	HFM	04/29/2004	13 mo
Spectrum Analyzer Display	Hewlett Packard	85662A	AAID	02/10/2004	13 mo

Test Description

The final radiated emissions test was performed using the parameters described above as worst case. That final test was conducted at a facility that meets the ANSI C63.4 NSA requirements. The frequency range noted in the data sheets was scanned/tested at that facility. Emissions were maximized as specified, by maximizing table azimuth, antenna height, and cable manipulation.

Using the mode of operation and configuration noted within this report, a final radiated emissions test was performed. The frequency range investigated (scanned), is also noted in this report. Radiated emissions measurements were made at the EUT azimuth and antenna height such that the maximum radiated emissions level will be detected. This requires the use of a turntable and an antenna positioner. The preferred method of a continuous azimuth search is utilized for frequency scans of the EUT field strength with both polarities of the measuring antenna. A calibrated, linearly polarized antenna was positioned at the specified distance from the periphery of the EUT.

> *Note: The specified distance is the horizontal separation between the closest periphery of the EUT and the center of the axis of the elements of the receiving antenna. However, if the receiving antenna is a log-periodic array, the specified distance shall be the distance between the closest periphery of the EUT and the front-to-back center of the array of elements.*

Tests were made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement was varied in height above the conducting ground plane to obtain the maximum signal strength. Though specified in the report, the measurement distance shall be 1 meter, 3 meters, 5 meters, 10 meters, or 30 meters. At any measurement distance, the antenna height was varied from 1 meter to 4 meters. These height scans apply for both horizontal and vertical polarization, except that for vertical polarization the minimum height of the center of the antenna shall be increased so that the lowest point of the bottom of the antenna clears the ground surface by at least 25 cm.

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:

NORTHWEST EMC

RADIATED EMISSIONS DATA SHEET

REV df4.5 11/29/2004

EUT:	Model 6482 Communicator	Work Order:	GDMN0028
Serial Number:	64	Date:	12/06/04
Customer:	Guidant Inc.	Temperature:	22
Attendees:	None	Humidity:	41%
Cust. Ref. No.:	N/A	Barometric Pressure	30.03
Tested by:	Jonathan Peng	Power: 120VAC/60Hz	Job Site: OC08

TEST SPECIFICATIONS

Specification:	FCC 15.109 (CISPR 22) Class B: 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

Receive Mode

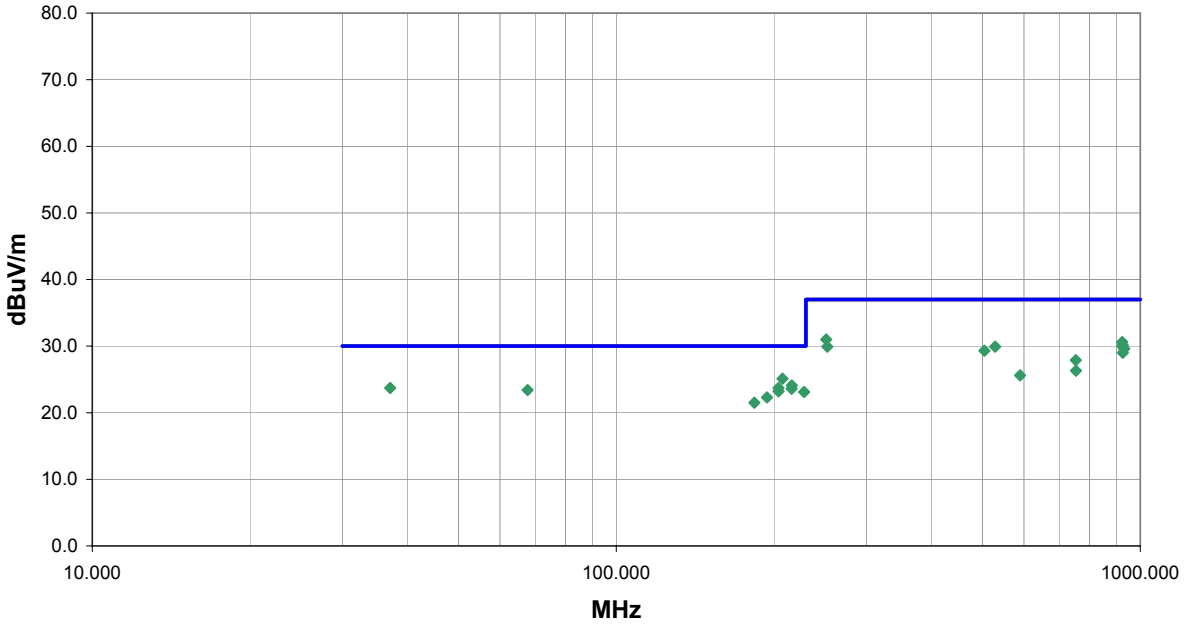
DEVIATIONS FROM TEST STANDARD

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)
207.599	48.9	-23.8	106.0	4.0	10.0	0.0	H-Bilog	PK	0.0	25.1	30.0	-4.9
216.221	47.4	-23.3	99.0	3.5	10.0	0.0	H-Bilog	QP	0.0	24.1	30.0	-5.9
251.494	52.6	-21.6	82.0	3.4	10.0	0.0	H-Bilog	QP	0.0	31.0	37.0	-6.0
37.030	45.2	-21.5	185.0	1.0	10.0	0.0	V-Bilog	PK	0.0	23.7	30.0	-6.3
204.052	47.8	-24.1	98.0	3.3	10.0	0.0	H-Bilog	QP	0.0	23.7	30.0	-6.3
216.127	46.9	-23.3	101.0	3.3	10.0	0.0	H-Bilog	QP	0.0	23.6	30.0	-6.4
923.782	40.1	-9.5	170.0	1.3	10.0	0.0	H-Bilog	PK	0.0	30.6	37.0	-6.4
67.740	52.0	-28.6	149.0	2.0	10.0	0.0	V-Bilog	PK	0.0	23.4	30.0	-6.6
204.040	47.3	-24.1	106.0	4.0	10.0	0.0	H-Bilog	QP	0.0	23.2	30.0	-6.8
926.183	39.6	-9.5	168.0	3.1	10.0	0.0	H-Bilog	PK	0.0	30.1	37.0	-6.9
228.248	45.6	-22.5	86.0	3.2	10.0	0.0	H-Bilog	QP	0.0	23.1	30.0	-6.9
923.782	39.5	-9.5	238.0	1.9	10.0	0.0	V-Bilog	PK	0.0	30.0	37.0	-7.0
528.347	44.4	-14.5	225.0	1.8	10.0	0.0	H-Bilog	PK	0.0	29.9	37.0	-7.1
252.739	51.5	-21.6	338.0	1.0	10.0	0.0	V-Bilog	PK	0.0	29.9	37.0	-7.1
932.185	39.1	-9.5	65.0	1.7	10.0	0.0	V-Bilog	PK	0.0	29.6	37.0	-7.4
193.935	46.6	-24.3	274.0	4.0	10.0	0.0	H-Bilog	QP	0.0	22.3	30.0	-7.7
504.338	44.5	-15.2	212.0	2.0	10.0	0.0	H-Bilog	PK	0.0	29.3	37.0	-7.7
926.183	38.5	-9.5	176.0	1.6	10.0	0.0	V-Bilog	PK	0.0	29.0	37.0	-8.0
183.469	45.9	-24.4	341.0	3.8	10.0	0.0	H-Bilog	QP	0.0	21.5	30.0	-8.5
753.390	39.3	-11.4	169.0	1.2	10.0	0.0	H-Bilog	QP	0.0	27.9	37.0	-9.1
753.781	37.7	-11.4	149.0	1.2	10.0	0.0	H-Bilog	QP	0.0	26.3	37.0	-10.7
589.865	39.3	-13.7	341.0	1.2	10.0	0.0	H-Bilog	QP	0.0	25.6	37.0	-11.4

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:
Transmit
Receive

Power Input Settings Investigated:
120 VAC, 60 Hz

Software\Firmware Applied During Test			
Operating system	SW	**Version**	0.9.4
Exercise software	Sigtest	**Version**	1.5
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**
DC Power Supply	GlobTek	GTM21089-1305-W2	n/a
EUT- Model 6482 Communicator	Guidant, Inc.	6482	64

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
Phone	No	2	No	EUT- Model 6482 Communicator	Unterminated
Phone	No	2	No	EUT- Model 6482 Communicator	Unterminated
DC Leads	PA	1.8	PA	DC Power Supply	EUT- Model 6482 Communicator
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	13 mo
Spectrum Analyzer	Hewlett Packard	8593E	AAP	03/22/2004	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 50Ω.

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:

NORTHWEST EMC

CONDUCTED EMISSIONS DATA SHEET

REV df4.5 11/29/2004

EUT:	Model 6482 Communicator			Work Order:	GDMN0028
Serial Number:	64			Date:	12/07/04
Customer:	Guidant Inc.			Temperature:	23
Attendees:	None			Humidity:	38%
Cust. Ref. No.:	N/A			Barometric Pressure	30.17
Tested by:	Luis Flores	Power:	120VAC/60Hz	Job Site:	OC10

TEST SPECIFICATIONS

Specification:	FCC 15.107: 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

Receive

DEVIATIONS FROM TEST STANDARD

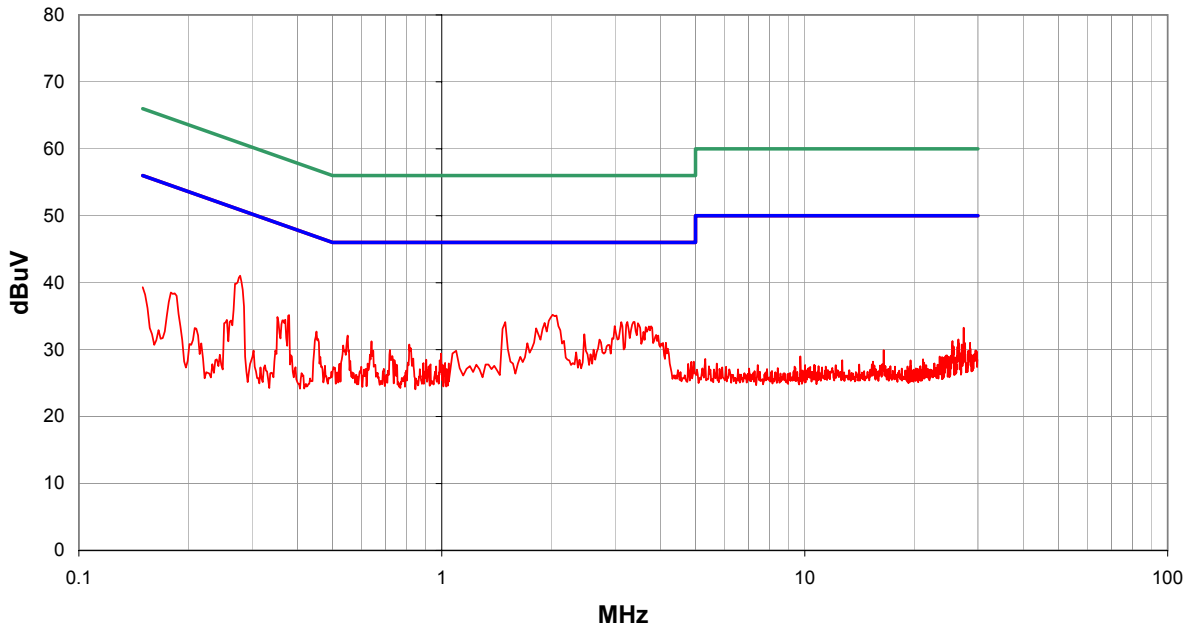
No deviations.

RESULTS	Line	Run #
Pass	L1	1

Other

Jose Luis Flores

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)
0.278	20.9			0.0	0.1	20.0				41.0	50.9	-9.8
2.021	14.7			0.0	0.5	20.0				35.2	46.0	-10.8
3.396	13.6			0.0	0.5	20.0				34.1	46.0	-11.9
3.246	13.6			0.0	0.5	20.0				34.1	46.0	-11.9
3.121	13.6			0.0	0.5	20.0				34.1	46.0	-11.9
1.495	13.7			0.0	0.4	20.0				34.1	46.0	-11.9
3.771	12.9			0.0	0.6	20.0				33.5	46.0	-12.5
0.379	15.0			0.0	0.2	20.0				35.2	48.3	-13.1
2.471	11.8			0.0	0.5	20.0				32.3	46.0	-13.7
0.550	11.9			0.0	0.2	20.0				32.1	46.0	-13.9
0.370	14.3			0.0	0.2	20.0				34.5	48.5	-14.0
0.352	14.7			0.0	0.2	20.0				34.9	48.9	-14.0
0.451	12.5			0.0	0.2	20.0				32.7	46.8	-14.2
2.721	11.0			0.0	0.5	20.0				31.5	46.0	-14.5
0.640	11.0			0.0	0.2	20.0				31.2	46.0	-14.8
4.147	10.4			0.0	0.6	20.0				31.0	46.0	-15.0
0.814	10.5			0.0	0.3	20.0				30.8	46.0	-15.2
0.179	18.4			0.0	0.1	20.0				38.5	54.5	-16.0
0.719	9.7			0.0	0.2	20.0				29.9	46.0	-16.1

NORTHWEST EMC

CONDUCTED EMISSIONS DATA SHEET

REV df4.5 11/29/2004

EUT:	Model 6482 Communicator			Work Order:	GDMN0028
Serial Number:	64			Date:	12/07/04
Customer:	Guidant Inc.			Temperature:	23
Attendees:	None			Humidity:	38%
Cust. Ref. No.:	N/A			Barometric Pressure	30.17
Tested by:	Luis Flores	Power:	120VAC/60Hz	Job Site:	OC10

TEST SPECIFICATIONS

Specification:	FCC 15.107: 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

Receive

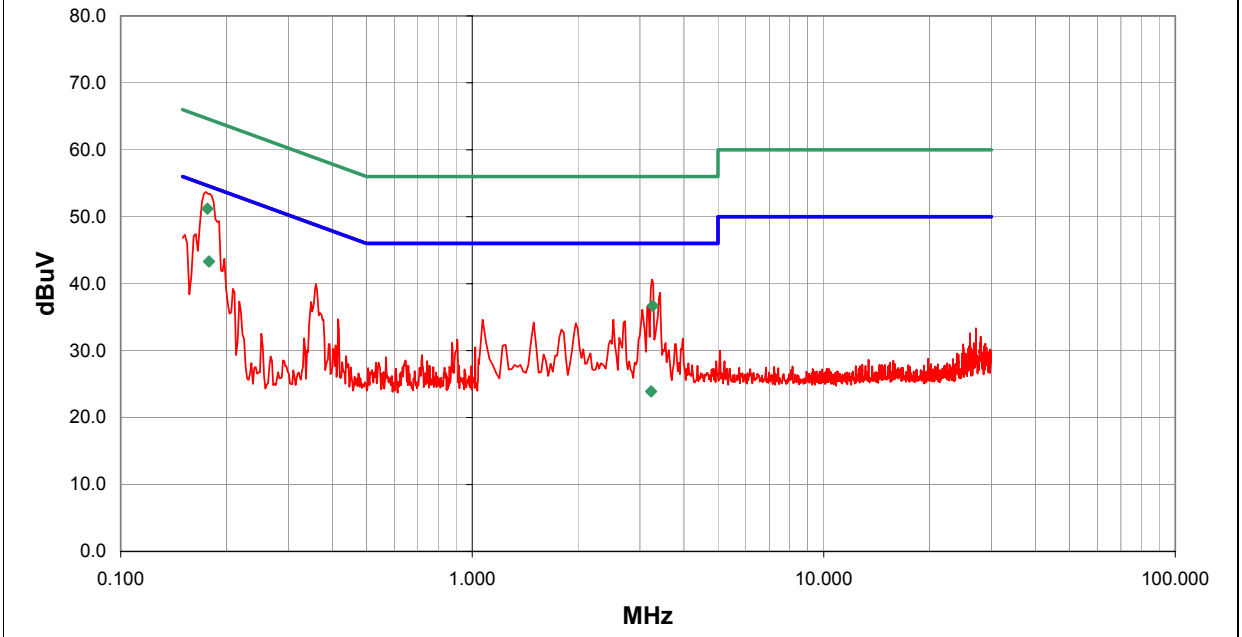
DEVIATIONS FROM TEST STANDARD

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)
0.178	23.3			0.0	0.0	20.0		AV		43.3	54.6	-11.3
0.177	31.2			0.0	0.0	20.0		QP		51.2	64.6	-13.4
3.261	16.2			0.0	0.5	20.0		QP		36.7	56.0	-19.3
3.227	3.4			0.0	0.5	20.0		AV		23.9	46.0	-22.1
0.175	33.6			0.0	0.1	20.0				53.7	54.7	-1.0
3.246	20.1			0.0	0.5	20.0				40.6	46.0	-5.4
3.421	18.1			0.0	0.5	20.0				38.6	46.0	-7.4
0.164	27.3			0.0	0.1	20.0				47.4	55.3	-7.9
0.152	27.2			0.0	0.1	20.0				47.3	55.9	-8.6
0.359	19.8			0.0	0.2	20.0				40.0	48.7	-8.8
3.171	16.3			0.0	0.5	20.0				36.8	46.0	-9.2
3.046	15.6			0.0	0.5	20.0				36.1	46.0	-9.9
1.070	14.3			0.0	0.3	20.0				34.6	46.0	-11.4
2.521	14.1			0.0	0.5	20.0				34.6	46.0	-11.4
2.721	13.9			0.0	0.5	20.0				34.4	46.0	-11.6
1.495	13.8			0.0	0.4	20.0				34.2	46.0	-11.8
1.970	13.6			0.0	0.5	20.0				34.1	46.0	-11.9
1.795	12.7			0.0	0.5	20.0				33.2	46.0	-12.8
0.415	14.5			0.0	0.2	20.0				34.7	47.5	-12.9

NORTHWEST EMC

CONDUCTED EMISSIONS DATA SHEET

REV df4.5 11/29/2004

EUT:	Model 6482 Communicator	Work Order:	GDMN0028
Serial Number:	64	Date:	12/07/04
Customer:	Guidant Inc.	Temperature:	23
Attendees:	None	Humidity:	38%
Cust. Ref. No.:	N/A	Barometric Pressure	30.17
Tested by:	Jonathan Peng	Power: 120VAC/60Hz	Job Site: OC10

TEST SPECIFICATIONS

Specification:	FCC 15.207: 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

Transmit

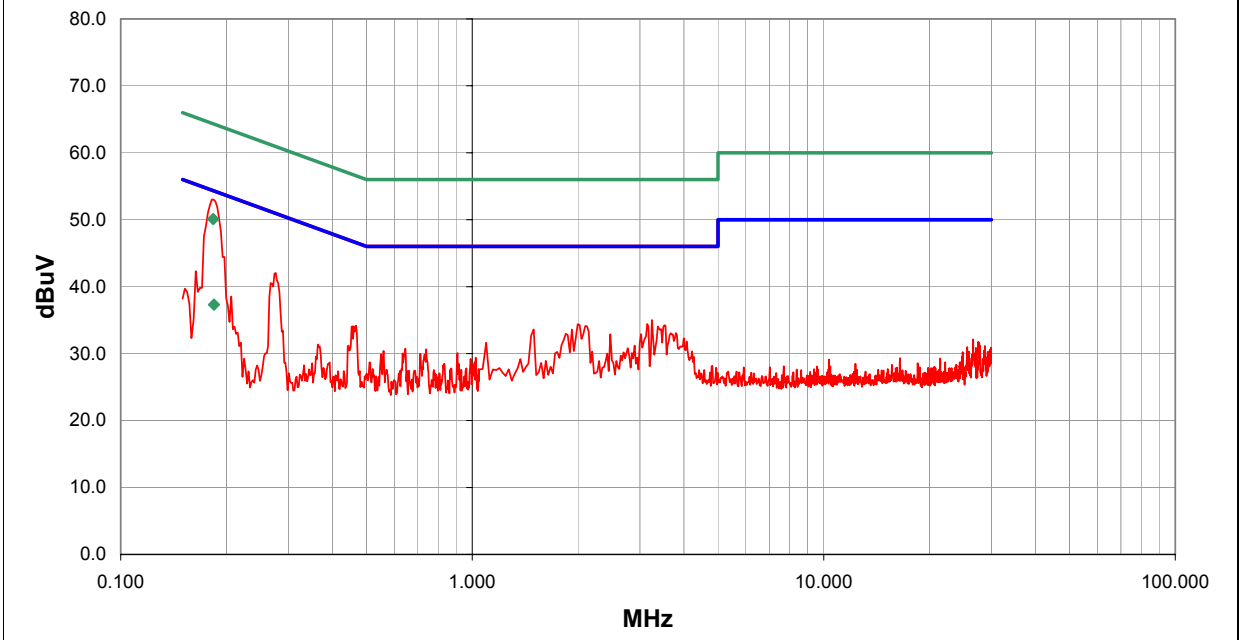
DEVIATIONS FROM TEST STANDARD

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)
0.183	30.1			0.0	0.0	20.0		QP		50.1	64.3	-14.2
0.184	17.3			0.0	0.0	20.0		AV		37.3	54.3	-17.0
0.184	32.9			0.0	0.1	20.0				53.0	54.3	-1.3
0.276	21.9			0.0	0.1	20.0				42.0	50.9	-8.9
3.246	14.5			0.0	0.5	20.0				35.0	46.0	-11.0
3.146	13.9			0.0	0.5	20.0				34.4	46.0	-11.6
1.996	13.9			0.0	0.5	20.0				34.4	46.0	-11.6
3.521	13.7			0.0	0.6	20.0				34.3	46.0	-11.7
3.371	13.5			0.0	0.5	20.0				34.0	46.0	-12.0
0.467	14.0			0.0	0.2	20.0				34.2	46.6	-12.4
1.495	13.2			0.0	0.4	20.0				33.6	46.0	-12.4
1.920	13.1			0.0	0.5	20.0				33.6	46.0	-12.4
3.796	12.5			0.0	0.6	20.0				33.1	46.0	-12.9
0.164	22.2			0.0	0.1	20.0				42.3	55.3	-13.0
1.845	12.5			0.0	0.5	20.0				33.0	46.0	-13.0
2.471	12.4			0.0	0.5	20.0				32.9	46.0	-13.1
1.095	11.3			0.0	0.3	20.0				31.6	46.0	-14.4
2.896	10.7			0.0	0.5	20.0				31.2	46.0	-14.8
0.206	18.4			0.0	0.1	20.0				38.5	53.4	-14.8

NORTHWEST EMC

CONDUCTED EMISSIONS DATA SHEET

REV df4.5 11/29/2004

EUT:	Model 6482 Communicator	Work Order:	GDMN0028
Serial Number:	64	Date:	12/07/04
Customer:	Guidant Inc.	Temperature:	23
Attendees:	None	Humidity:	38%
Cust. Ref. No.:	N/A	Barometric Pressure	30.17
Tested by:	Jonathan Peng	Power: 120VAC/60Hz	Job Site: OC10

TEST SPECIFICATIONS

Specification:	FCC 15.207: 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

Transmit

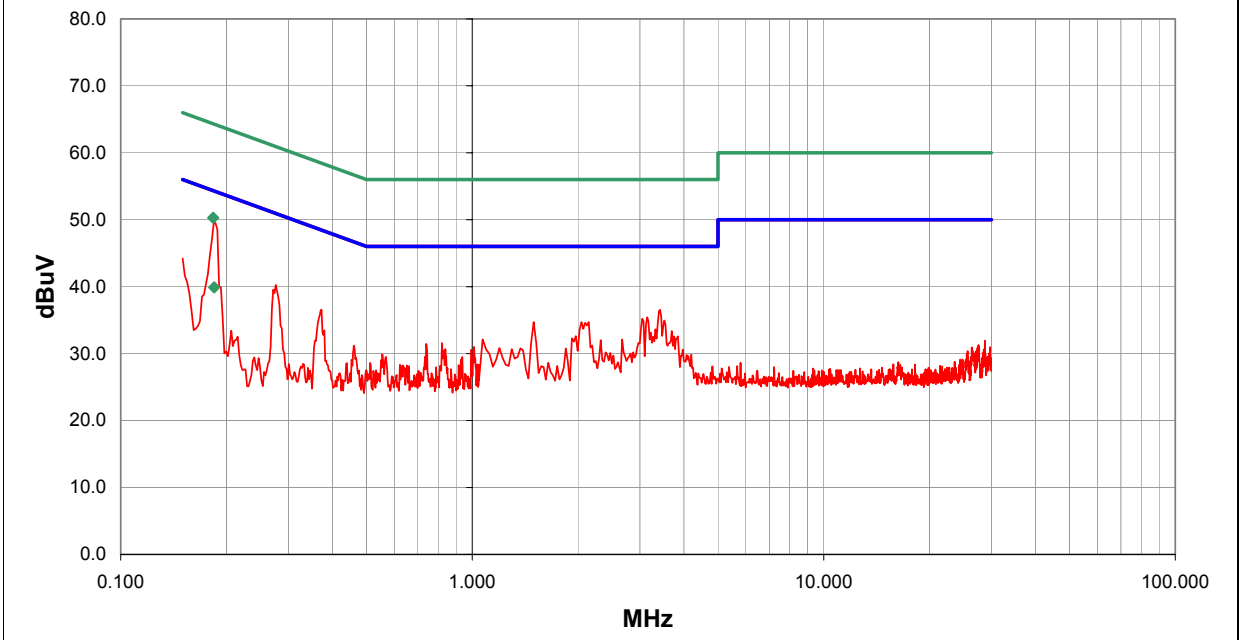
DEVIATIONS FROM TEST STANDARD

No deviations.

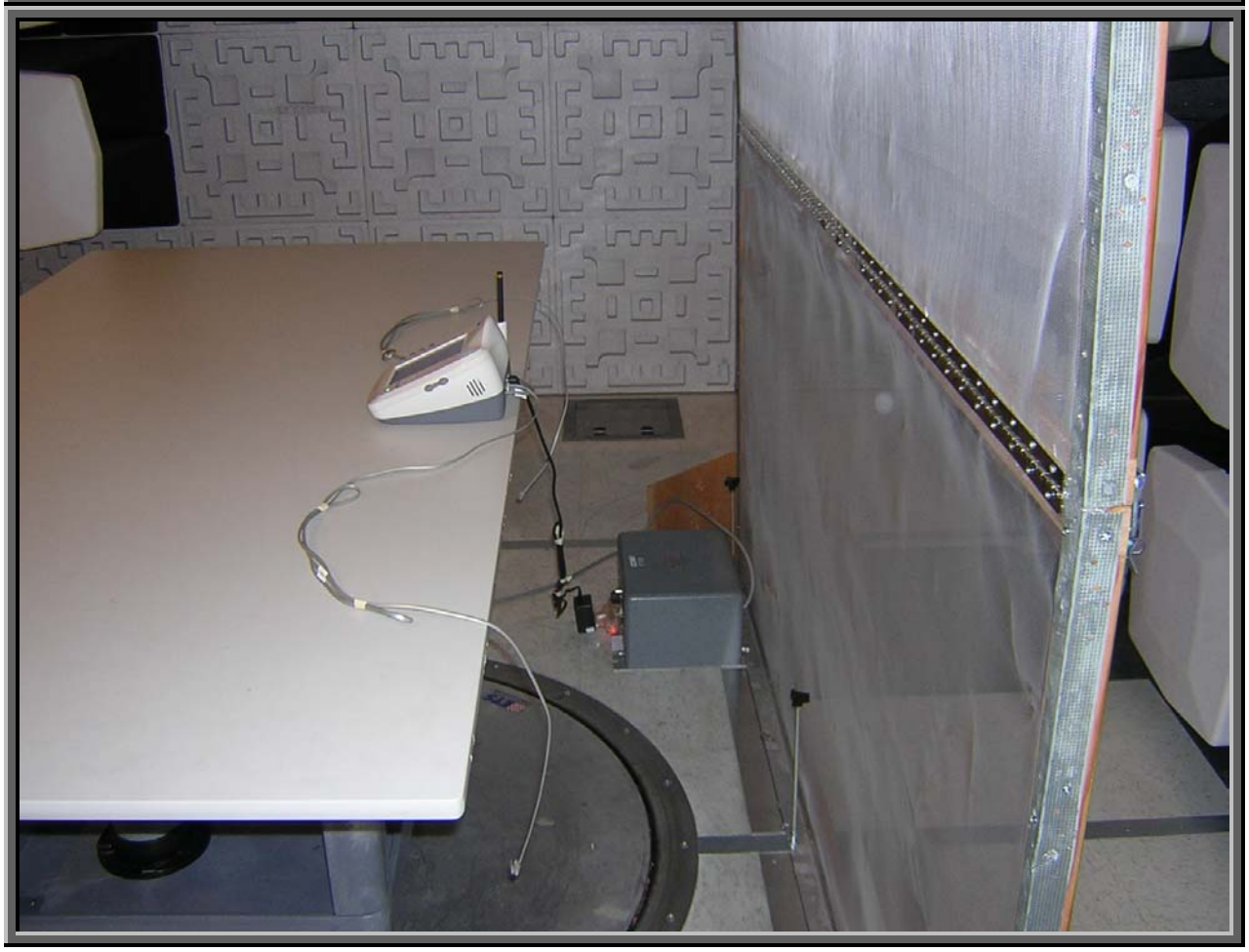
RESULTS	Line	Run #
Pass	N	4

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)
0.183	30.3			0.0	0.0	20.0		QP		50.3	64.3	-14.0
0.184	19.9			0.0	0.0	20.0		AV		39.9	54.3	-14.4
0.186	29.4			0.0	0.1	20.0				49.5	54.2	-4.7
3.421	16.0			0.0	0.5	20.0				36.5	46.0	-9.5
3.146	14.9			0.0	0.5	20.0				35.4	46.0	-10.6
0.276	20.1			0.0	0.1	20.0				40.2	50.9	-10.7
3.046	14.7			0.0	0.5	20.0				35.2	46.0	-10.8
3.521	14.4			0.0	0.6	20.0				35.0	46.0	-11.0
2.046	14.2			0.0	0.5	20.0				34.7	46.0	-11.3
1.495	14.3			0.0	0.4	20.0				34.7	46.0	-11.3
0.150	24.1			0.0	0.1	20.0				44.2	56.0	-11.8
0.373	16.4			0.0	0.2	20.0				36.6	48.4	-11.9
3.696	12.8			0.0	0.6	20.0				33.4	46.0	-12.6
1.970	12.1			0.0	0.5	20.0				32.6	46.0	-13.4
1.070	11.8			0.0	0.3	20.0				32.1	46.0	-13.9
2.671	11.6			0.0	0.5	20.0				32.1	46.0	-13.9
2.321	11.5			0.0	0.5	20.0				32.0	46.0	-14.0
0.821	11.3			0.0	0.3	20.0				31.6	46.0	-14.4
0.740	11.2			0.0	0.2	20.0				31.4	46.0	-14.6



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:
Receive Mode

Power Input Settings Investigated:
120 VAC, 60 Hz
Worst Case Input Power Setting used for Final Test:
120 VAC, 60 Hz (designated by client or system limitations)

Frequency Range Investigated			
Start Frequency	902 MHz	**Stop Frequency**	928 MHz

Software\Firmware Applied During Test			
Operating system	SW	**Version**	0.9.4
Exercise software	Sigtest	**Version**	1.5
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**
DC Power Supply	GlobTek	GTM21089-1305-W2	n/a
EUT- Model 6482 Communicator	Guidant, Inc.	6482	64

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
Phone	No	2	No	EUT- Model 6482 Communicator	Unterminated
Phone	No	2	No	EUT- Model 6482 Communicator	Unterminated
DC Leads	PA	1.8	PA	DC Power Supply	EUT- Model 6482 Communicator
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	03/22/2004	13 mo
Receiver	Schaffner	SCR 3101	ARC	04/28/2003	24 mo

Test Description

Configuration: The antenna to be used with the EUT was tested. The EUT was configured for its' only available transmit frequency. 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 adjusting measurement antenna height and polarization, (per ANSIC63.4:2001). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

Requirement: The field strength of the fundamental emission shall comply with the limits specified in 15.249(a). Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation. As shown in Section 15.35(b), for frequencies above 1000 MHz, the above field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

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:

NORTHWEST EMC

RADIATED EMISSIONS DATA SHEET

REV df4.5 11/29/2004

EUT:	Model 6482 Communicator	Work Order:	GDMN0028
Serial Number:	64	Date:	12/06/04
Customer:	Guidant Inc.	Temperature:	22
Attendees:	None	Humidity:	41%
Cust. Ref. No.:	N/A	Barometric Pressure	30.03
Tested by:	Jeremiah Darden	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

Transmit

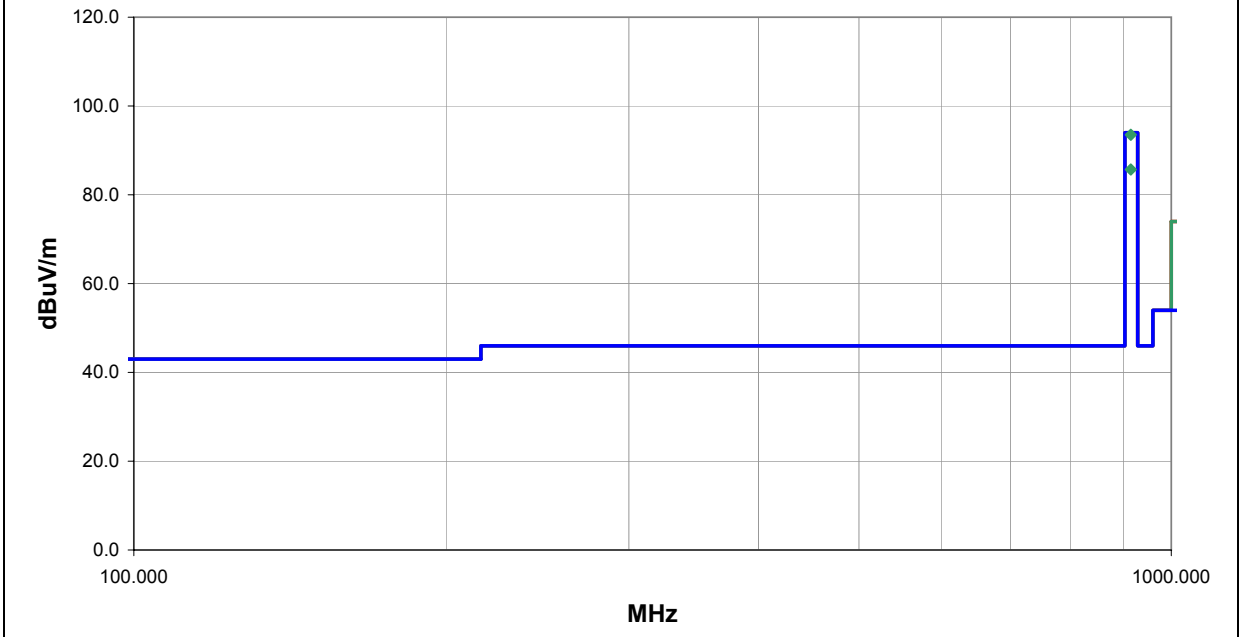
DEVIATIONS FROM TEST STANDARD

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)
914.212	62.0	31.5	36.0	1.0	3.0	0.0	V-Bilog	QP	0.0	93.5	94.0	-0.5
914.212	54.2	31.5	46.0	1.0	3.0	0.0	H-Bilog	QP	0.0	85.7	94.0	-8.3

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:
Receive Mode

Power Input Settings Investigated:
120 VAC, 60 Hz
Worst Case Input Power Setting used for Final Test:
120 VAC, 60 Hz (designated by client or system limitations)

Frequency Range Investigated			
Start Frequency	30 MHz	**Stop Frequency**	10 GHz

Software\Firmware Applied During Test			
Operating system	SW	**Version**	0.9.4
Exercise software	Sigtest	**Version**	1.5
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**
DC Power Supply	GlobTek	GTM21089-1305-W2	n/a
EUT- Model 6482 Communicator	Guidant, Inc.	6482	64

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
Phone	No	2	No	EUT- Model 6482 Communicator	Unterminated
Phone	No	2	No	EUT- Model 6482 Communicator	Unterminated
DC Leads	PA	1.8	PA	DC Power Supply	EUT- Model 6482 Communicator
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	03/22/2004	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
Quasi-Peak Adapter	Hewlett-Packard	85650A	AQD	02/10/2004	13 mo
Spectrum Analyzer	Hewlett-Packard	8568B	AAI	02/10/2004	13 mo
Pre-Amplifier	Miteq	AM-1551	AOX	05/07/2004	13 mo
Antenna, Biconilog	EMCO	3142	AXK	05/21/2003	24 mo
High Pass Filter 1.5 GHz	Micro-Tronics	HPM50111	HFM	04/29/2004	13 mo

Test Description

Configuration: The antenna to be used with the EUT was tested. The EUT was configured for its' only available transmit frequency. 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 adjusting measurement antenna height and polarization, (per ANSIC63.4:2001). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

Requirement: The field strength of harmonics shall comply with the limits specified in 15.249(a). Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation. As shown in Section 15.35(b), for frequencies above 1000 MHz, the above field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

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:

NORTHWEST EMC

RADIATED EMISSIONS DATA SHEET

REV df4.5 11/29/2004

EUT:	Model 6482 Communicator	Work Order:	GDMN0028
Serial Number:	64	Date:	12/06/04
Customer:	Guidant Inc.	Temperature:	22
Attendees:	None	Humidity:	41%
Cust. Ref. No.:	N/A	Barometric Pressure	30.03
Tested by:	Jeremiah Darden	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

Transmit

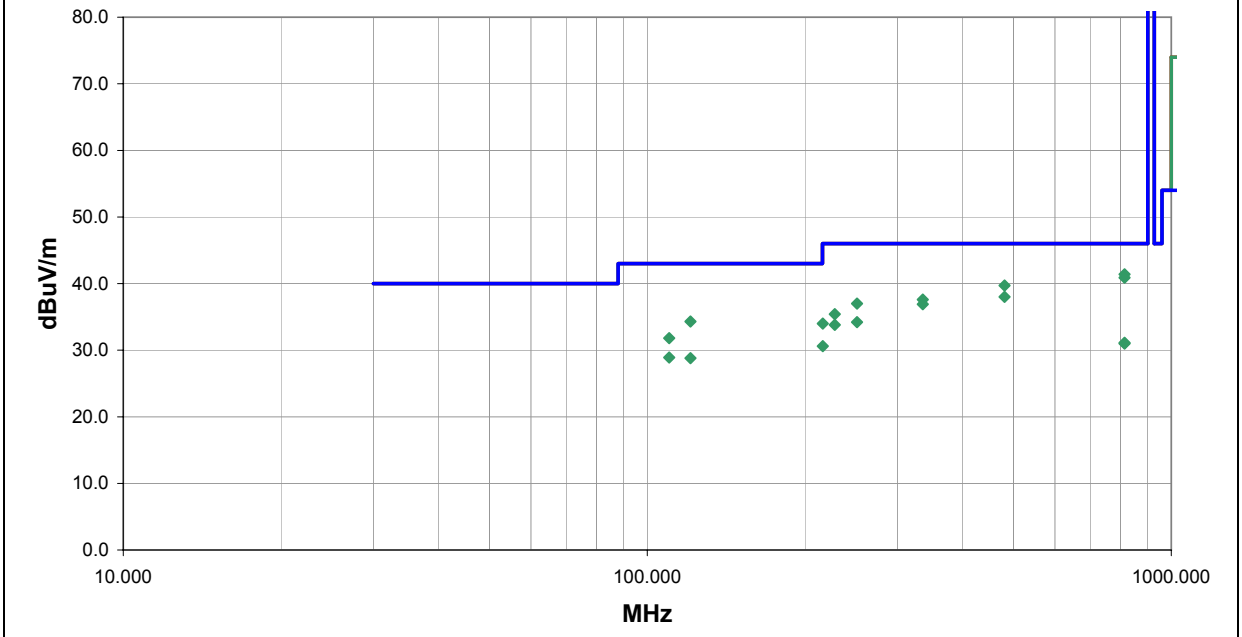
DEVIATIONS FROM TEST STANDARD

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)
814.132	22.4	9.0	61.0	1.4	3.0	10.0	H-Bilog	PK	0.0	41.4	46.0	-4.6
814.132	21.9	9.0	116.0	1.2	3.0	10.0	V-Bilog	PK	0.0	40.9	46.0	-5.1
480.618	25.7	4.0	192.0	1.8	3.0	10.0	H-Bilog	PK	0.0	39.7	46.0	-6.3
480.618	24.0	4.0	122.0	1.1	3.0	10.0	V-Bilog	PK	0.0	38.0	46.0	-8.0
335.501	26.3	1.3	218.0	1.6	3.0	10.0	V-Bilog	PK	0.0	37.6	46.0	-8.4
120.871	31.3	-7.0	291.0	2.2	3.0	10.0	H-Bilog	PK	0.0	34.3	43.0	-8.7
251.294	28.8	-1.8	122.0	1.0	3.0	10.0	H-Bilog	PK	0.0	37.0	46.0	-9.0
335.501	25.6	1.3	188.0	1.0	3.0	10.0	H-Bilog	PK	0.0	36.9	46.0	-9.1
227.998	28.1	-2.7	226.0	2.2	3.0	10.0	H-Bilog	PK	0.0	35.4	46.0	-10.6
110.080	28.1	-6.3	288.0	2.2	3.0	10.0	H-Bilog	PK	0.0	31.8	43.0	-11.2
251.294	26.0	-1.8	146.0	2.0	3.0	10.0	V-Bilog	PK	0.0	34.2	46.0	-11.8
216.273	27.4	-3.4	234.0	2.2	3.0	10.0	H-Bilog	PK	0.0	34.0	46.0	-12.0
227.998	26.5	-2.7	271.0	1.8	3.0	10.0	V-Bilog	PK	0.0	33.8	46.0	-12.2
110.080	25.2	-6.3	1.0	1.0	3.0	10.0	V-Bilog	PK	0.0	28.9	43.0	-14.1
120.871	25.8	-7.0	226.0	1.5	3.0	10.0	V-Bilog	PK	0.0	28.8	43.0	-14.2
814.132	12.1	9.0	116.0	1.2	3.0	10.0	V-Bilog	QP	0.0	31.1	46.0	-14.9
814.132	12.0	9.0	61.0	1.4	3.0	10.0	H-Bilog	QP	0.0	31.0	46.0	-15.0
216.273	24.0	-3.4	164.0	1.0	3.0	10.0	V-Bilog	PK	0.0	30.6	46.0	-15.4

NORTHWEST EMC

RADIATED EMISSIONS DATA SHEET

REV df4.5 11/29/2004

EUT:	Model 6482 Communicator			Work Order:	GDMN0028
Serial Number:	64			Date:	12/06/04
Customer:	Guidant Inc.			Temperature:	22
Attendees:	None			Humidity:	41%
Cust. Ref. No.:	N/A			Barometric Pressure	30.03
Tested by:	Jeremiah Darden	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

Transmit

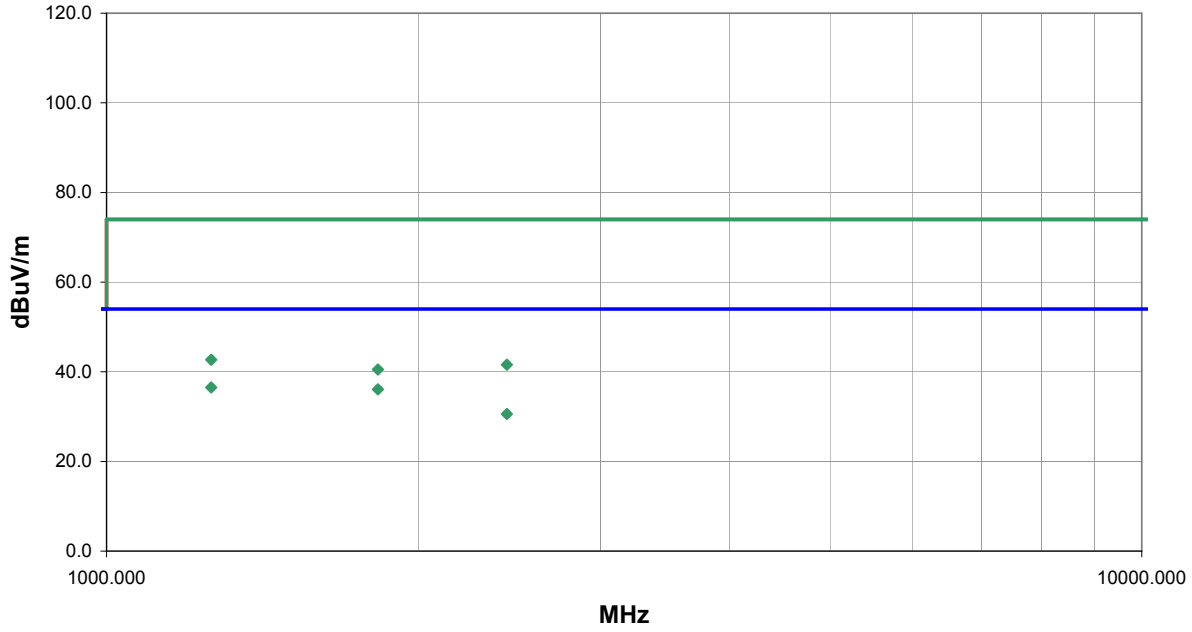
DEVIATIONS FROM TEST STANDARD

No deviations.

RESULTS	Test Distance (m)	Run #
Pass	3	9

Other

Tested By:



Freq (MHz)	Amplitude (dBuV)	Preamp (dB)	Chamber (dB)	Transducer (dB)	Cable (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector (blank equal peaks [PK] from scan)	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
1261.891	31.3	33.9	0.0	26.1	3.0	10.0	V-Horn	AV	0.0	36.5	54.0	-17.5
1261.891	37.5	33.9	0.0	26.1	3.0	10.0	V-Horn	PK	0.0	42.7	74.0	-31.3
1828.349	38.3	33.7	0.0	27.8	3.7	0.0	V-Horn	AV	0.0	36.1	54.0	-17.9
2436.481	31.4	33.6	0.0	28.5	4.3	0.0	V-Horn	AV	0.0	30.6	54.0	-23.4
2436.481	42.4	33.6	0.0	28.5	4.3	0.0	V-Horn	PK	0.0	41.6	74.0	-32.4
1828.349	42.7	33.7	0.0	27.8	3.7	0.0	V-Horn	PK	0.0	40.5	74.0	-33.5