



CALS TEST NETWORK

CTN Test Report 93-015

AFCTB-ID
92-075



Technical Publication Transfer

Using:



Xerox Corporation Data



- MIL-D-28000A (IGES)
- MIL-M-28001A (SGML)
- MIL-R-28002A (Raster)
- MIL-D-28003 (CGM)



Quick Short Test Report



28 October 1992

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Quick Short Test Report

28 October 1992

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Contents

1.	Introduction.....	1
1.1.	Background.....	1
1.2.	Purpose.....	2
2.	Test Parameters.....	3
3.	1840A Analysis.....	6
3.1.	External Packaging.....	6
3.2.	Transmission Envelope.....	6
3.2.1.	Tape Formats.....	6
3.2.2.	Declaration and Header Fields.....	7
4.	IGES Analysis.....	7
5.	SGML Analysis.....	8
6.	Raster Analysis.....	8
7.	CGM Analysis.....	9
8.	Conclusions and Recommendations.....	11
9.	Appendix A - Tape Tool Report Logs.....	12
9.1.	Tape Catalog.....	12
9.2.	Tape Evaluation Log.....	13
9.3.	Tape File Set Validation Log.....	18
9.4.	Other Tape Reading Logs.....	23
10.	Appendix B - IGES Detail Analysis.....	24
10.1.	File D001Q003.....	24
10.1.1.	Parser/Verifier Log.....	24
10.1.2.	Output AutoCAD R11.....	29

10.1.3.	Cadkey v4.06 Log.....	30
10.1.4.	Output Cadkey v4.06.....	32
10.1.5.	Output IGESView.....	33
10.1.6.	Output iges2draw/IslandDraw.....	34
10.1.7.	Output IGESWorks.....	35
10.1.8.	Output Preview.....	36
10.2.	File D001Q004.....	37
10.2.1.	Parser/Verifier Log.....	37
10.2.2.	Output AutoCAD R11.....	42
10.2.3.	Output Cadkey v4.06.....	43
10.2.4.	Output IGESView.....	44
10.2.5.	Output iges2draw/IslandDraw.....	45
10.2.6.	Output IGESWorks.....	46
10.2.7.	Output Preview.....	47
11.	Appendix C - SGML Detail Analysis.....	48
11.1.	ArbortText Parser Log.....	48
11.2.	DataLogics Parser Log.....	48
11.3.	Exoterica Parser.....	48
12.	Appendix D - Raster Detail Analysis.....	49
12.1.	File D001R005.....	49
12.1.1.	Output IslandPaint.....	49
12.2.	File D001R006.....	50
12.2.1.	Output IslandPaint.....	50
12.3.	File D001R007.....	51
12.3.1.	Output IslandPaint.....	51

12.4.	File D001R008.....	52
12.4.1.	Output IslandPaint.....	52
12.5.	File D001R009.....	53
12.5.1.	Output IslandPaint.....	53
12.6.	File D001R010.....	54
12.6.1.	Output IslandPaint.....	54
12.6.2.	Output Ventura Publisher - all.....	55
13.	Appendix E - CGM Detail Analysis.....	56
13.1.	File D001C001.....	56
13.1.1.	Parser Log MetaCheck.....	56
13.1.2.	validcgm Log.....	57
13.1.3.	Output IslandDraw.....	58
13.1.4.	Output Metaview 1.13.....	59

1. Introduction

1.1 Background

The Department of Defense (DoD) Computer-aided Acquisition and Logistics Support (CALs) Test Network (CTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The CTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the CTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the CTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by CTN participants. They also allow the CTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the CTN technical staff, gain experience using of the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze Xerox Corporation's interpretation and use of the CALS Standards in transferring technical publications data. Xerox used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the CTN technical staff on a 9-track magnetic tape.

2. Test Parameters

Test Plan: AFCTB 92-075

Date of Evaluation: 28 October 1992

Evaluator: George Elwood
Air Force CALS Test Bed
HQ ESC/ENCS
4027 Colonel Glenn Hwy
Suite 200
Dayton, OH 45431-1601

Data Originator: Gil Legault
Xerox Corporation
1851 E. 1st Street
Santa Ana, CA 92705

Data Description: Technical Manual Test

- 1 Document Declaration file
- 1 Document Type Definitions (DTD)
- 2 Initial Graphics Exchange Specification (IGES) files
- 3 Text files
- 6 Raster files
- 1 Computer Graphics Metafile (CGM) file

Data Source System:

IGES

HARDWARE

Unknown

SOFTWARE

Unknown

Text/Standard Generalized Markup Language (SGML)

HARDWARE

Unknown

SOFTWARE

Unknown

Raster

HARDWARE
Unknown
SOFTWARE
Unknown

CGM

HARDWARE
Unknown
SOFTWARE
Unknown

Evaluation Tools Used:

MIL-STD-1840A (TAPE)

SUN 3/280

CTN Tapetools (v1.2.8) UNIX
AGFA Compugraphics CAPS/CALS v40.4

MIL-D-28000 (IGES)

Sun SparcStation 2

ArborText *iges2draw*
IGES Data Analysis (IDA) Parser/Verifier
IDA *IGESView v3.0*
International TechneGroup Incorporated
(ITI) *IGES/Works 1.0*
ITI *IGESWorks 1.3*
Rosetta Technologies *Preview v3.2*

Cheetah Gold 486

Autodesk AutoCAD 386 R11
Cadkey *Cadkey v4.06*
IDA *IGES Parser/Verifier*

MIL-M-28001 (SGML)

SUN SparcStation 2

AGFA CAPS *v6.0x*
ArborText *ADEPT v4.2.1*
SoftQuad *Author/Editor v2.1*

Cheetah Gold 486

Datalogics *ParserStation v3.36*
Exoterica *XGMLNormalizer V1.2e3.2*
SoftQuad *Author/Editor V2.1*

MIL-R-28002 (Raster)

SUN SparcStation 2

ArborText g42tiff
AGFA CAPS ccitt2caps v6.0x
CTN validg4
CTN calstb.475
Island Graphics IslandPaint 3.0

SUN 3/60

CTN validg4
CTN calstb.350
AGFA CAPS v4.0
Rosetta Technology Preview v3.1

Cheetah

Inset Systems HiJaak v2.02
Softwar Publishing Corporation
(SPC) Harvard Graphics v3.0
Xerox Ventura Publisher

MIL-D-28003 (CGM)

SUN SparcStation 2

AGFA CAPS cgm2ps v6.0x
ArborText cgm2draw
Island Graphics IslandDraw 3.0

Sun 3/60

Advanced Technology Corporation
(ATC) CGM-View R2.0

Cheetah Gold 486

ATC MetaVIEW R 1.12
ATC MetaCHECK R 2.05
SPC Harvard Graphics 3.0
Inset Systems HiJaak v2.02
Xerox Ventura Publisher
MicroGrafx Designer 3.1
MicroGrafx Charisma 2.1

Standards
Tested:

MIL-STD-1840A
MIL-D-28000A
MIL-M-28001A
MIL-R-28002A
MIL-D-28003

3. 1840A Analysis

3.1 External Packaging

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a commercial overnight shipping bag which does not meet the ASTM-D-3951 requirements. The exterior of the bag was not marked with the magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was not enclosed in a barrier bag or barrier sheet material as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed a lack of the label indicating the recording density as required by MIL-STD-1840A, para. 5.3.1. Some 9-track tape units require this BPI to be set manually. Enclosed in the box was a packing list showing all files that were recorded on the tape.

3.2 Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

3.2.1 Tape Formats

The 1840A tape was run through the AFCTB *Tapetool* v1.2.8 utility. No errors and four notes were encountered while evaluating the contents of the tape labels. Three notes were "Last block was incomplete". This note was generated when *Tapetool* found that the last block of a fixed length file was not padded out. This could cause a critical error on some systems because they will not write out incomplete last blocks. This would cause the file to be truncated and the EOF marker would not be displayed.

*** NOTE - Last block was incomplete. Short blocks are prone to be interpreted as noise by some tape drives.
Tape Label => 800, Actual => 240, Block Number => 6

A note was reported on the tape label version. MIL-STD-1840A permits the use of both versions three and four. The use of the most current standard should be used and noted.

All of the errors are shown in Appendix A, Section 9.2, Tape Evaluation Log.

3.2.2 Declaration and Header Fields

No errors were found in the Document Declaration or Data File Headers.

4. IGES Analysis

This tape contained two (2) IGES files. Both files were evaluated using IDA's *Parser/Verifier* with CALS options. No CALS errors were found during this procedure.

The files were inspected for the CALS conformance statement in the Start section, which is required in MIL-D-28000A, para. 3.2.1.3.1. The files meet the current CALS MIL-D-28000A specification.

The files were read into Autodesk's *AutoCAD 386 R11*. Both files generated messages indicating non-supported entities but this is Autodesk's problem. The images, when displayed, were located in the upper corner of the screen. File D001Q003 did not display or print the arrow heads along the frequency line.

The files were converted using Cadkey's *Cadkey ig2c* utility. File D001Q003 had reported errors during this procedure. The reported errors relate to a mismatch of the DE and PD sections. Both files were read, displayed and printed without further error messages.

Entity types do not match at PARAMETER index 149
Found entity type 102 , expected type 106

The files were read into IDA's *IGESView* without a problem. No errors were noted.

The files were read into ITI's *IGESWorks* without a problem. The arrowhead along the frequency line in file D001Q003 did not display correctly when using ITI's *IGESWorks v1.0*. When ITI's *IGESWorks v1.3* was used the arrows were displayed like the other software applications.

The files were converted using ArborText's *iges2draw* utility without a reported error. The resulting files were imported into Island Graphics' *IslandDraw* without a problem.

The files were converted using Rosetta Technologies' *Prepare* and then read into *Preview*. File D001Q003 reported an error during the conversion.

The IGES files meet the current CALS MIL-D-28000A specification.

5. SGML Analysis

The tape contained three (3) Text files. These files were combined for ease of handling during the evaluation process. The DTD was compiled using Exoterica's *XGMLNormalizer* with no reported errors. The Text files were then parsed without a reported error.

The file was parsed using Datalogics *ParserStation* without a reported error.

The SGML files meet the current CALS MIL-M-28001A specification.

6. Raster Analysis

The tape contained six (6) Raster files. All files were evaluated using the CTN *validg4* utility. No errors were reported during this procedure.

The files were converted using Rosetta Technologies' *Prepare* and viewed using *Preview*. No errors were reported during this procedure. Orphan pixels were noted on several of the images.

The files were imported into the CTN *calstb.475* viewer utility. No problems were encountered. Some images showed orphan pixels when displayed. File D001R010 displayed at a slight angle.

The files were converted using Inset Systems' *HiJaak* into a IMG format. No problems were noted. The resulting files

were imported into the Xerox Ventura Publisher without problem.

The files meet the current CALS MIL-R-28002A specification.

7. CGM Analysis

The tape contained one (1) CGM file. This file was evaluated using ATC's *Metacheck* software with CALS options. This software reported that the file meets the current CALS specification.

The file was also evaluated using the CTN *validcgm* utility. This program reported one error which may be a bug in *validcgm*, and has been reported.

The file was converted using ArborText's *cgm2draw* utility. No errors were reported. The resulting file was read into Island Graphics' *IslandDraw*, displayed and printed. The resulting image appeared to have lines that were not connected and text that ran together.

An attempt to directly import the file into Island Graphics' *IslandDraw* was made. This resulted in a message indicating that the file was bad.

An attempt was made to convert the file using the AGFA CAPS *cgm2ps* utility. An error message resulted with no output.

An attempt was made to read the file into SPC' *Harvard Graphics 3.0*. An error message indicated that the file was bad.

The file was read into ATC's *CGMView*. No error message was generated, but nothing displayed on the screen. Various parameters were tried without success.

The file was read into ATC's *MetaView*. The image was displayed with the following error message generated:

```
System Error: Error -1018 in function 14.  
                cl/id: 4/4, offs: 912, esqn: 55  
Error detected in file \9275\C001.CGM
```

The file was read into the MicroGrafx *Designer* 3.1 but nothing displayed on the screen.

The file was imported into the MicroGrafx *Charisma* 2.1 with one displayed error. Nothing was displayed on the screen.

The file was converted to both an IMG and PCX format using Inset Systems' *HiJaak*. No error message was generated during the process. When both files were displayed, nothing showed.

The file was imported into the Xerox *Ventura Publisher* without a reported error. When the file was displayed and printed, nothing showed.

The file was sent to Mr. Bruce Garner at CTNO LLNL. Mr. Garner is the CALS CGM expert. His evaluation indicated that the file was a valid CALS CGM file. The problem is linked to the inability of the software in the AFCTB to handle 32 bit VDC INTEGER PRECISION. The file displayed satisfactorily with Henderson Software's *MetaView* v1.13 at CTNO LLNL.

8. Conclusions and Recommendations

In summary, the MIL-STD-1840A tape from Xerox Corporation was basically correct. The tape could be read properly using the CTN *Tapetool* and AGFA *read1840A* software.

The IGES files meet the current CALS MIL-D-28000A specification.

The SGML files meet the current CALS MIL-M-28001A specification.

The Raster files meet the current CALS MIL-R-28002A specification.

The CGM file meets the current CALS MIL-D-28003 specification.

The tape meets the current CALS MIL-STD-1840A requirements.

9. Appendix A - Tapetool Report Logs

9.1 Tape Catalog

CALS Test Network Catalog Evaluation - Version 1.2; Release Number 8

Standards referenced:

- MIL-STD-1840A (1987) - Automated Interchange of Technical Information
- MIL-R-28003 (1988) - Digital Representation For Communication Of Illustration Data; CGM Application Profile
- ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes for Information Interchange
- ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Wed Oct 28 10:08:11 1992

MIL-STD-1840A File Catalog

File Set Directory: /cals/tapetool8/Set109

Page: 1

File Name	File Type	Record Format/ Length	Block Length/Total	Selected/ Extracted
D001	Document Declaration	D/00260	02048/000001	Extracted
D001C001	CGM	F/00080	00800/000006	Extracted
D001G002	DTD	D/00260	02048/000002	Extracted
D001Q003	IGES	F/00080	02000/000020	Extracted
D001Q004	IGES	F/00080	02000/000012	Extracted
D001R005	Raster	F/00128	02048/000002	Extracted
D001R006	Raster	F/00128	02048/000009	Extracted
D001R007	Raster	F/00128	02048/000008	Extracted
D001R008	Raster	F/00128	02048/000009	Extracted
D001R009	Raster	F/00128	02048/000008	Extracted
D001R010	Raster	F/00128	02048/000015	Extracted
D001T011	Text	D/00260	02048/000001	Extracted
D001T012	Text	D/00260	02048/000025	Extracted
D001T013	Text	D/00260	02048/000001	Extracted

Catalog Process terminated normally.

9.2 Tape Evaluation Log

CALS Test Network Tape Evaluation - Version 1.2; Release Number 8

Standards referenced:

ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Wed Oct 28 10:07:59 1992

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1AESC01

3

Label Identifier: VOL1
Volume Identifier: AESC01
Volume Accessibility:
Owner Identifier:
Label Standard Version: 3

*** NOTE (ANSI X3.27; 8.3.1.8) - The Label Standard Version
should be 4 to represent the current level of ANSI X3.27.

HDR1D001 AESC0100010001000100 92266 92266 000000DECFE11A

Label Identifier: HDR1
File Identifier: D001
File Set Identifier: AESC01
File Section Number: 0001
File Sequence Number: 0001
Generation Number: 0001
Generation Version Number: 00
Creation Date: 92266
Expiration Date: 92266
File Accessibility:
Block Count: 000000
Implementation Identifier: DECFE11A

HDR2D0204800260

M

00

Label Identifier: HDR2
Recording Format: D
Block Length: 02048
Record Length: 00260

9.3 Tape File Set Validation Log

CALS Test Network File Set Evaluation - Version 1.2; Release Number 8

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information
MIL-R-28002 (1989) - Raster Graphics Representation In Binary
Format, Requirements For

Wed Oct 28 10:08:11 1992

MIL-STD-1840A File Set Evaluation Log

File Set: Set109

Found file: D001

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: AEROJET ELECTRONIC SYSTEMS
srcdocid: NONE
srcrelid: NONE
chglvl: ORIGINAL
dteis: 19920922
dstsys: NONE
dstdocid: NONE
dstrelid: NONE
dtetrm: 19920922
dlvacc: NONE
filcnt: C1, G1, Q2, R6, T3
ttlcls: UNCLASSIFIED
doccls: UNCLASSIFIED
doctyp: TECHNICAL MANUAL
docttl: NONE

Found file: D001C001

Extracting CGM Header Records...

Evaluating CGM Header Records...

srcdocid: NONE
dstdocid: NONE
txtfilid: BODY
figid: 1
srcgph: RE04TS
doccls: UNCLASSIFIED
notes: NONE

Saving CGM Header File: D001C001_HDR

Saving CGM Data File: D001C001_CGM

Found file: D001G002
Extracting DTD Header Records...
Evaluating DTD Header Records...

srcdocid: NONE
dstdocid: NONE
notes: NONE

Saving DTD Header File: D001G002_HDR
Saving DTD Data File: D001G002_DTD

Found file: D001Q003
Extracting IGES Header Records...
Evaluating IGES Header Records...

srcdocid: NONE
dstdocid: NONE
txtfilid: BODY
figid: 1
srcgph: NEMISS
doccls: UNCLASSIFIED
notes: NONE

Saving IGES Header File: D001Q003_HDR
Saving IGES Data File: D001Q003_IGS

Found file: D001Q004
Extracting IGES Header Records...
Evaluating IGES Header Records...

srcdocid: NONE
dstdocid: NONE
txtfilid: BODY
figid: 2
srcgph: CE03TS
doccls: UNCLASSIFIED
notes: NONE

Saving IGES Header File: D001Q004_HDR
Saving IGES Data File: D001Q004_IGS

Found file: D001R005
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: NONE
dstdocid: NONE

txtfilid: FRONT
figid: 1
srcgph: AJSEAL
doccls: NONE
rtype: 1
rorient: 000,270
rpelcnt: 000600,000304
rdensty: 0300
notes: NONE

Saving Raster Header File: D001R005_HDR
Saving Raster Data File: D001R005_GR4

Found file: D001R006
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: NONE
dstdocid: NONE
txtfilid: BODY
figid: 2
srcgph: COMPMAT
doccls: NONE
rtype: 1
rorient: 000,270
rpelcnt: 002163,000760
rdensty: 0300
notes: NONE

Saving Raster Header File: D001R006_HDR
Saving Raster Data File: D001R006_GR4

Found file: D001R007
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: NONE
dstdocid: NONE
txtfilid: BODY
figid: 3
srcgph: POWERLIN
doccls: NONE
rtype: 1
rorient: 000,270
rpelcnt: 001338,001384
rdensty: 0300
notes: NONE

Saving Raster Header File: D001R007_HDR

Saving Raster Data File: D001R007_GR4

Found file: D001R008
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: NONE
dstdocid: NONE
txtfilid: BODY
figid: 4
srcgph: RNEMISS
doccls: NONE
rtype: 1
rorient: 000,270
rpelcnt: 002176,002248
rdensty: 0300
notes: NONE

Saving Raster Header File: D001R008_HDR
Saving Raster Data File: D001R008_GR4

Found file: D001R009
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: NONE
dstdocid: NONE
txtfilid: BODY
figid: 5
srcgph: RBEMISS
doccls: NONE
rtype: 1
rorient: 000,270
rpelcnt: 002136,002296
rdensty: 0300
notes: NONE

Saving Raster Header File: D001R009_HDR
Saving Raster Data File: D001R009_GR4

Found file: D001R010
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: NONE
dstdocid: NONE
txtfilid: BODY
figid: 6
srcgph: RE02TS

doccls: NONE
rtype: 1
rorient: 000,270
rpelcnt: 001920,002248
rdensty: 0300
notes: NONE

Saving Raster Header File: D001R010_HDR
Saving Raster Data File: D001R010_GR4

Found file: D001T011
Extracting Text Header Records...
Evaluating Text Header Records...

srcdocid: NONE
dstdocid: NONE
txtfilid: FRONT
doccls: UNCLASSIFIED
notes: NONE

Saving Text Header File: D001T011_HDR
Saving Text Data File: D001T011_TXT

Found file: D001T012
Extracting Text Header Records...
Evaluating Text Header Records...

srcdocid: NONE
dstdocid: NONE
txtfilid: BODY
doccls: UNCLASSIFIED
notes: NONE

Saving Text Header File: D001T012_HDR
Saving Text Data File: D001T012_TXT

Found file: D001T013
Extracting Text Header Records...
Evaluating Text Header Records...

srcdocid: NONE
dstdocid: NONE
txtfilid: REAR
doccls: UNCLASSIFIED
notes: NONE

Saving Text Header File: D001T013_HDR
Saving Text Data File: D001T013_TXT

Evaluating numbering scheme...

No errors were encountered during numbering scheme evaluation.

Numbering scheme evaluation complete.

Checking file count...

No errors were encountered during file count verification.

File Count verification complete.

No errors were encountered in Document D001.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

9.4 Other Tape Reading Logs

No reported error from AGfA CAPS *read1840A* utility.

10. Appendix B - IGES Detail Analysis

10.1 File D001Q003

10.1.1 Parser/Verifier Log

```
*** IGES DATA FILE ANALYSIS ***  
***      MARCH 1992      ***  
***   IGES Data Analysis   ***  
***   (708) 449-3430     ***
```

Input file is D001Q003_IGS

Checking conformance to CALS Class I (MIL-D-28000A 2/10/92)

Today is October 28, 1992 10:41 AM

*** File and Product Name Information ***

```
File name from sender      = 'NEMISS'  
File creation Date.Time   = '920922.154332'  
Model change Date.Time    = ''  
Author                    = 'Anne Barrington'  
Department                 = ''  
Product name from sender  = 'Xerox Expert'  
Destination product name  = ''
```

*** Parameter Delimiters ***

```
Delimiter = ','  
Terminator = ';' 
```

*** Originating System Data ***

```
System ID          = 'Xerox Expert version 5.0'  
Preprocessor version = '5.0'  
Specification version = 6 (IGES 4.0)
```

*** Precision levels ***

```
Integer bits = 16  
Floating point - Exponent = 38 Mantissa = 7  
Double precision - Exponent = 38 Mantissa = 7
```

*** Global Model Data ***

```
Model scale          = 1.0000E+00
```

Unit flag = 1
 Units = 'INCH'
 Line weights = 3
 Maximum line thickness = 4.166667E-02
 Minimum line thickness = 1.388889E-02
 Granularity = 1.000000E-05
 Maximum coordinate = 7.722300E+00

Drafting standard applicable to original data is not specified.

*** Status Flag Summary ***

Blank status:	Visible	148
	Blanked	0
Independence:	Independent	114
	Physically Subordinate	32
	Logically Subordinate	2
	Totally Subordinate	0
Entity use:	Geometry	118
	Annotation	27
	Definition	2
	Other	1
	Logical/Positional	0
	2D parametric	0
	Not Specified	0
Hierarchy:	Structure DE applies	148
	Subordinate DE applies	0
	Hierarchy property applies	0
	Not Specified	0

*** Entity Occurrence Counts ***

Entity	Form	Level	Count	Type
-----	-----	-----	-----	-----
102	0	0	8	Composite curve
110	0	0	102	Line
212	0	0	27	General note
230	0	0	8	Sectioned area (Standard Crosshatching)
404	0	0	1	Drawing
406	16	0	1	Property - Drawing size
410	0	0	1	View - Orthographic parallel

*** Entity Count by Level ***

Level Count
0 148

*** Labeling Information ***

100% of the entities are labeled.

Unlabeled 0

Label	Count	Label	Count	Label	Count
View	1*	Line	102*	GNote	27*
Composit	8	Section	8*	Property	1
Drawing	1*				

NITPICK 2327: One or more of the flagged entity labels are not right-justified.

*** Line Fonts Used in Data ***

100	102	104	106	108	110	112	114	
-	-	-	-	-	-	-	-	Undefined
-	8	-	-	-	96	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	6	-	-	Dotted
-	-	-	-	-	-	-	-	User defined
116	118	120	122	124	125	126	128	
-	-	-	-	-	-	-	-	Undefined
-	-	-	-	-	-	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined
130	132	134	136	138	140	142	144	
-	-	-	-	-	-	-	-	Undefined
-	-	-	-	-	-	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

*** Line Widths Used in Data ***

Weight	Count	Width
Defaulted	100	(0.0139)
1	46	(0.0139)
2	2	(0.0278)

*** Colors Used in Data ***

Defaulted	19
Green	129

***** ENTITY ANALYSIS *****

*** Entity type: 102

*** Entity type: 110

-- 102 lines averaging 5.398573E-01 units --

*** Entity type: 212

27 text strings in data file.
Average text aspect ratio in file is 0.8413931.
Minimum text aspect ratio in file is 0.8400480.
Maximum text aspect ratio in file is 0.8417273.

FONTS USED IN FILE

FONT	COUNT	NAME
1	26	Default ASCII Style
1002	1	Symbol Font 2

*** Entity type: 230

NITPICK 2076: Entity does not have Annotation flag set at D 121.
NITPICK 2076: Entity does not have Annotation flag set at D 131.
NITPICK 2076: Entity does not have Annotation flag set at D 141.
NITPICK 2076: Entity does not have Annotation flag set at D 151.
NITPICK 2076: Entity does not have Annotation flag set at D 161.
NITPICK 2076: Entity does not have Annotation flag set at D 171.
NITPICK 2076: Entity does not have Annotation flag set at D 181.

NITPICK 2076: Entity does not have Annotation flag set at D 191.

*** Entity type: 404

NITPICK 2074: Entity use flag must be 1 for Drawing entity at D 295.
Drawing at D 295 contains 1 views.
Drawing at D 295 contains 0 annotation entities.

*** Entity type: 406

*** Entity type: 410

NITPICK 2073: Entity use flag must be 1 for View entity at D 1.
Scale of view at D 1 is 1.000000E+00.
Orthographic View entity at D 1 has 0 clipping planes specified.
XMIN = Not Set XMAX = Not Set
YMIN = Not Set YMAX = Not Set
ZMIN = Not Set ZMAX = Not Set

*** Message Summary ***

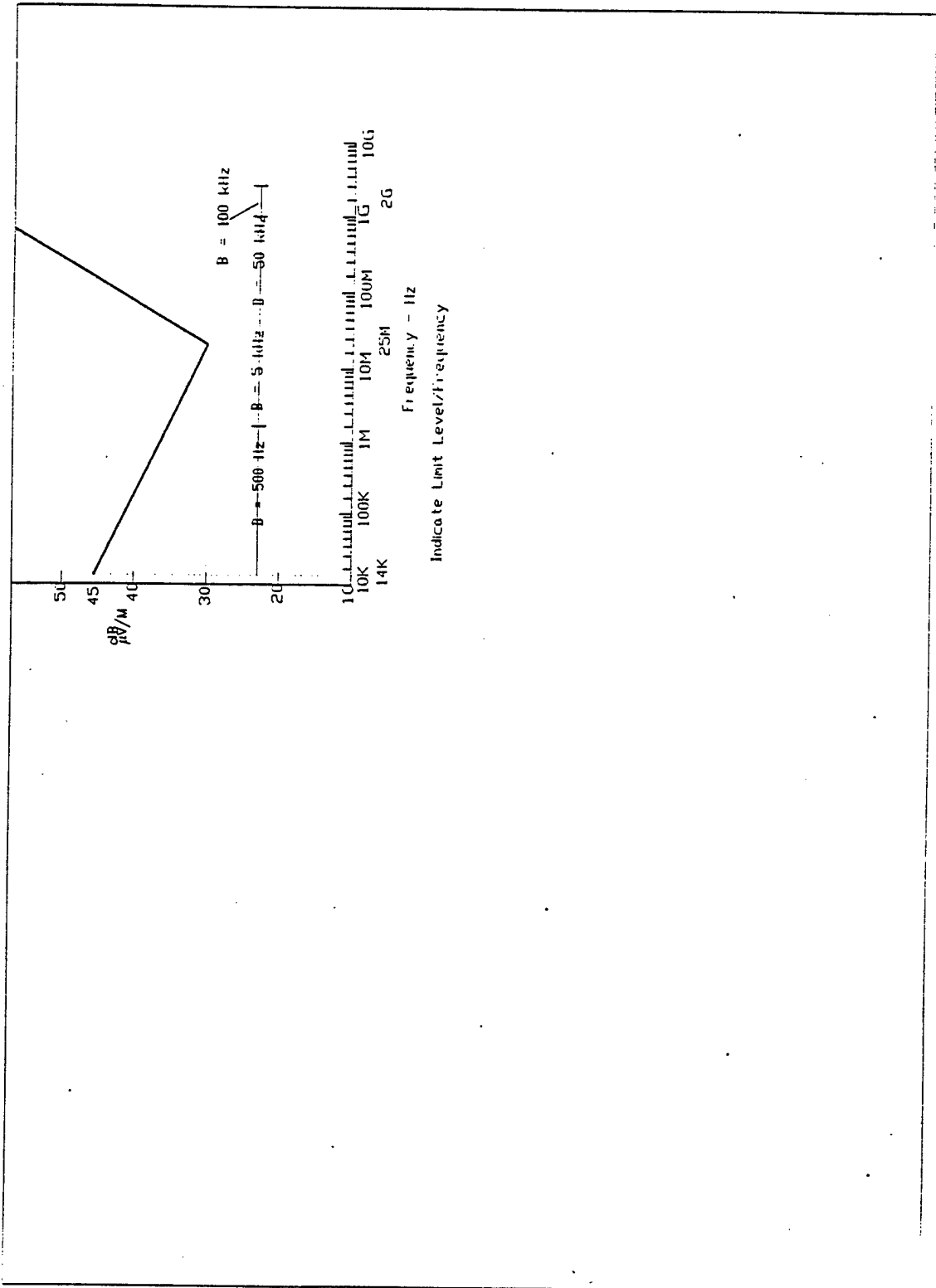
2016: 10 Invalid entity use flag.

*** Error Summary ***

0 fatal errors
0 severe errors
0 errors
0 warnings
0 cautions
11 nitpicks
0 notes

*** End of Analysis of D001Q003_IGS ***

10.1.2 Output AutoCAD R11



10.1.3 Cadkey v4.06 Log

----- \9275\q003.igs -> \9275\q003.pr
IGES version - 4.0
Date of creation: 09/22/92

Start section:

Drawing name: NEMISS. This file was converted by Expert.
Compliant with CALS class 1, per MIL-D-28000 Amendment 1.

DATE: 22-Sep-92 15:43:32

Entity types do not match at PARAMETER index 119
Found entity type 102 , expected type 106

Entity types do not match at PARAMETER index 129
Found entity type 102 , expected type 106

Entity types do not match at PARAMETER index 139
Found entity type 102 , expected type 106

Entity types do not match at PARAMETER index 149
Found entity type 102 , expected type 106

Entity types do not match at PARAMETER index 159
Found entity type 102 , expected type 106

Entity types do not match at PARAMETER index 169
Found entity type 102 , expected type 106

Entity types do not match at PARAMETER index 179
Found entity type 102 , expected type 106

Entity types do not match at PARAMETER index 189
Found entity type 102 , expected type 106

Entities Translated:

78 (110) Line type
27 (212) General Note type

8 (230) Sectioned Area type
1 (404) Drawing type
1 (410) View type

Entities Not Translated:

1 (406) Property type

Special Notes

8 Sectioned area(s) form 0 or 19 encountered.
(Only boundaries and islands processed)

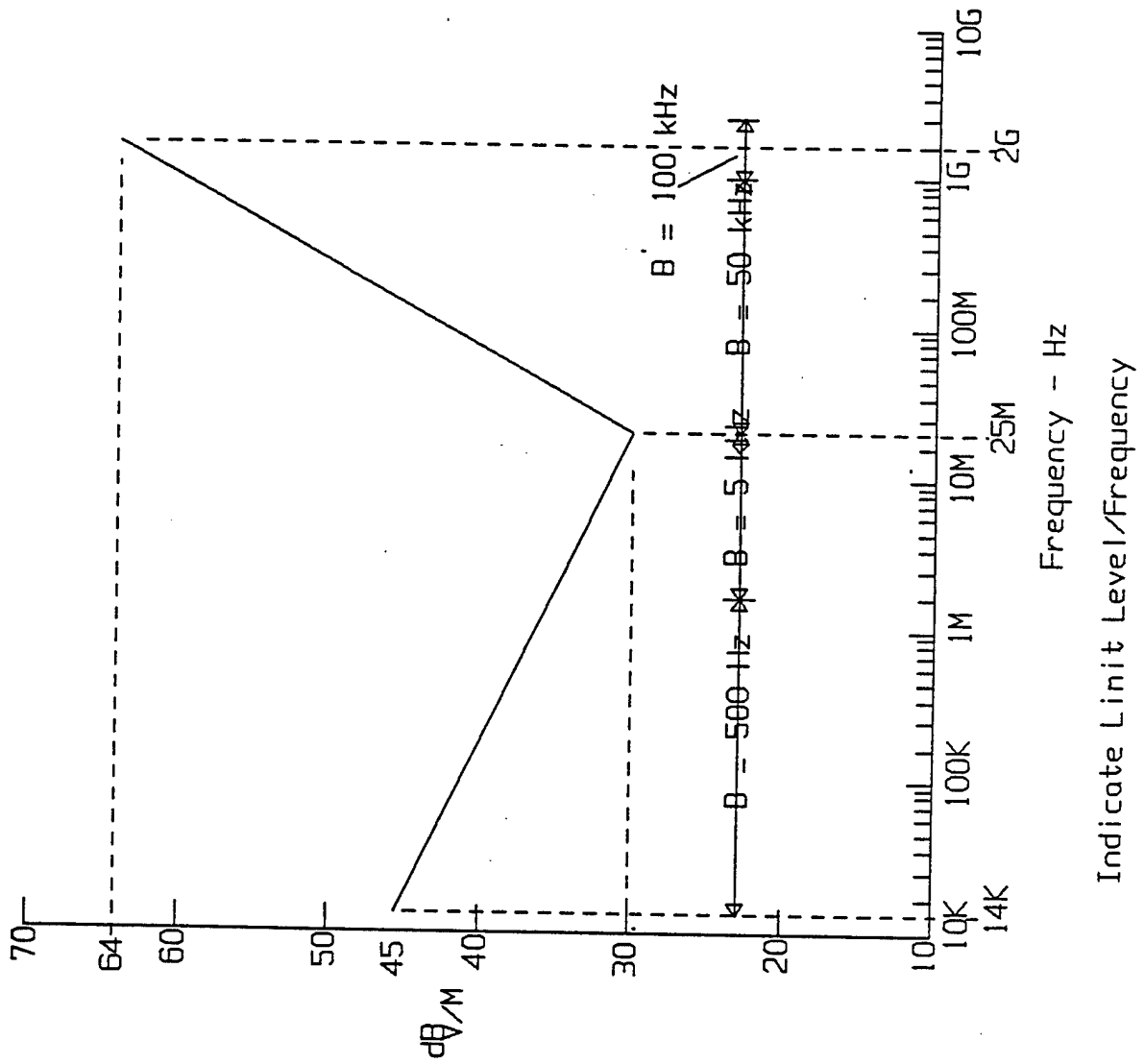
View Entities

View at D:1 placed in Level #241

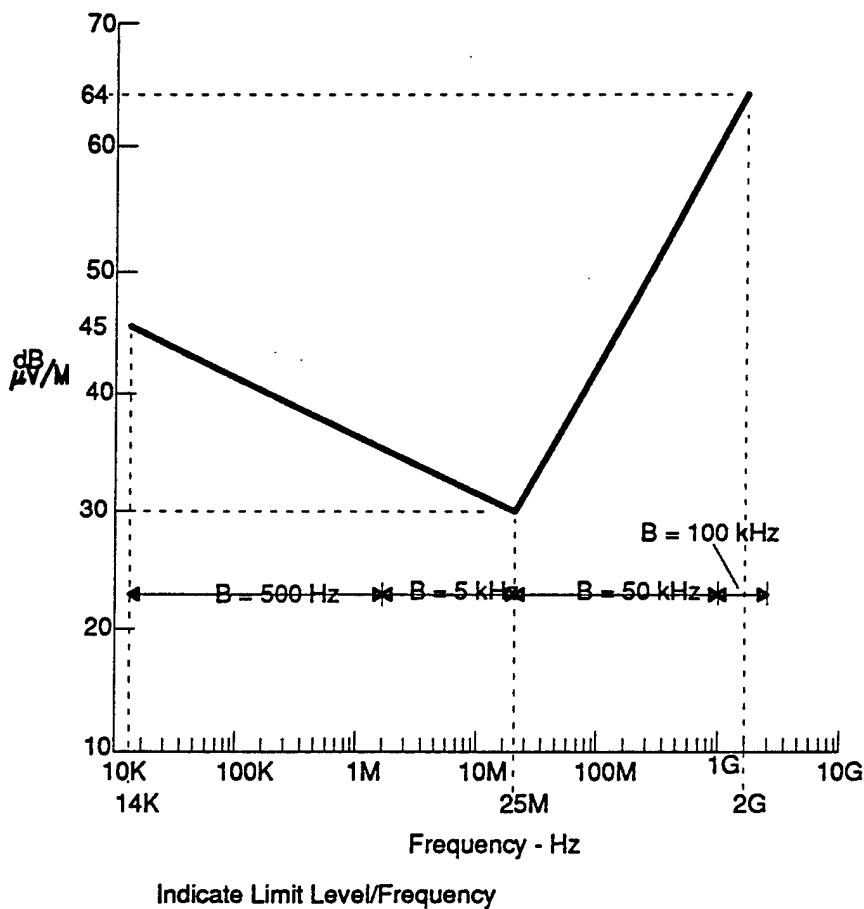
Drawing Entities

Drawing at D:295 placed in Level #241 and contains 1 views

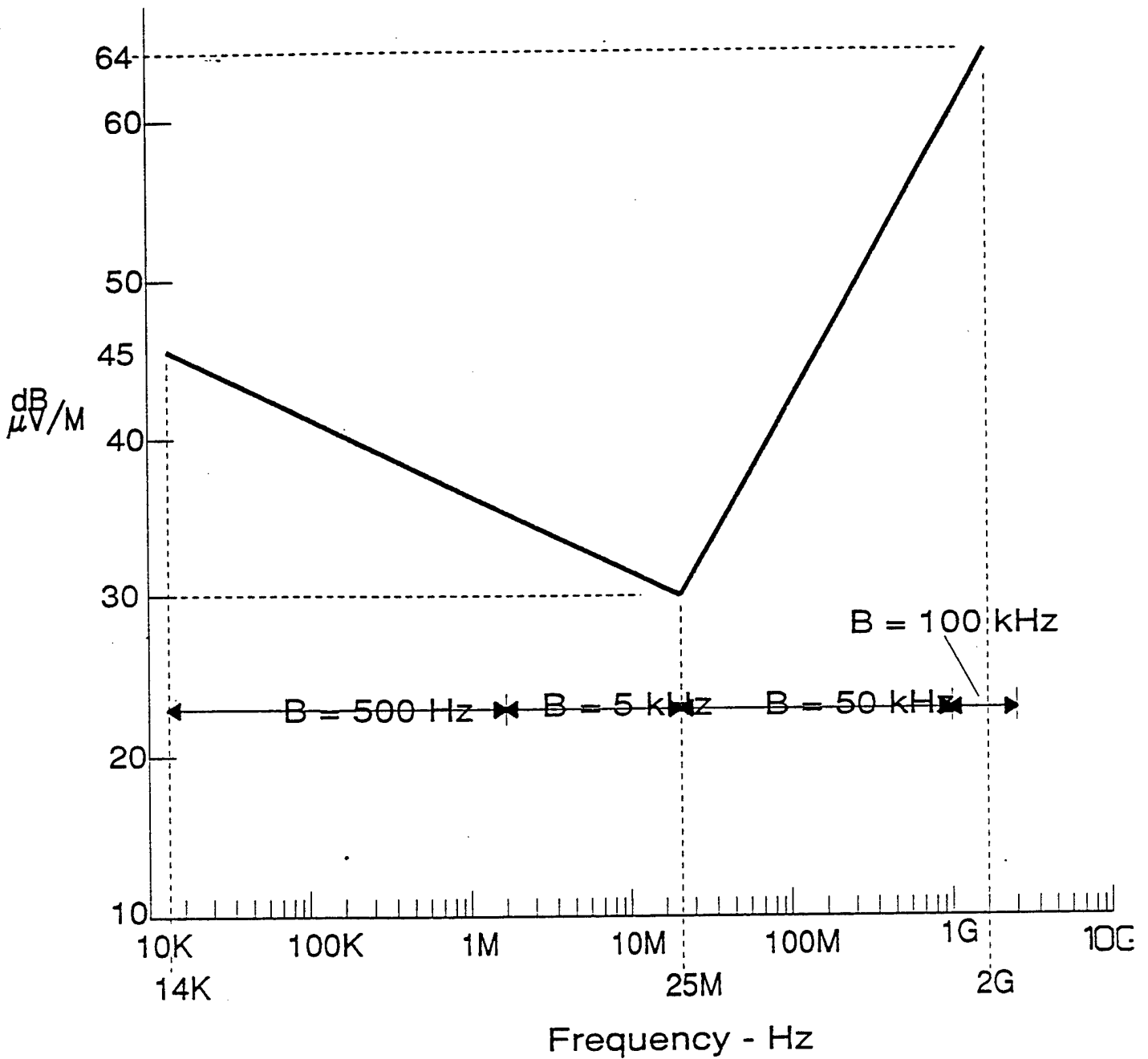
10.1.4 Output Cadkey v4.06



10.1.5 Output IGESView

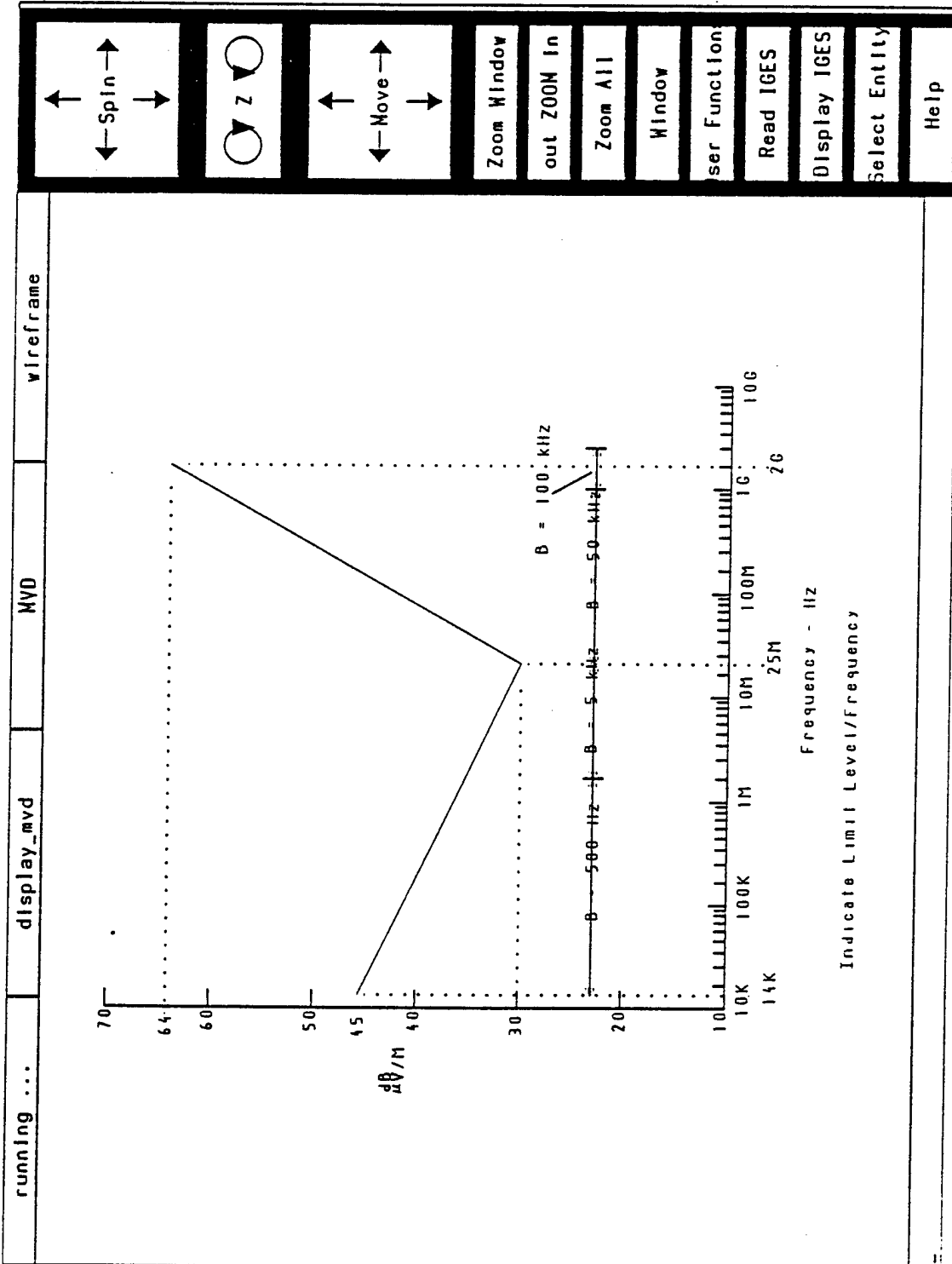


10.1.6 Output iges2draw/IslandDraw

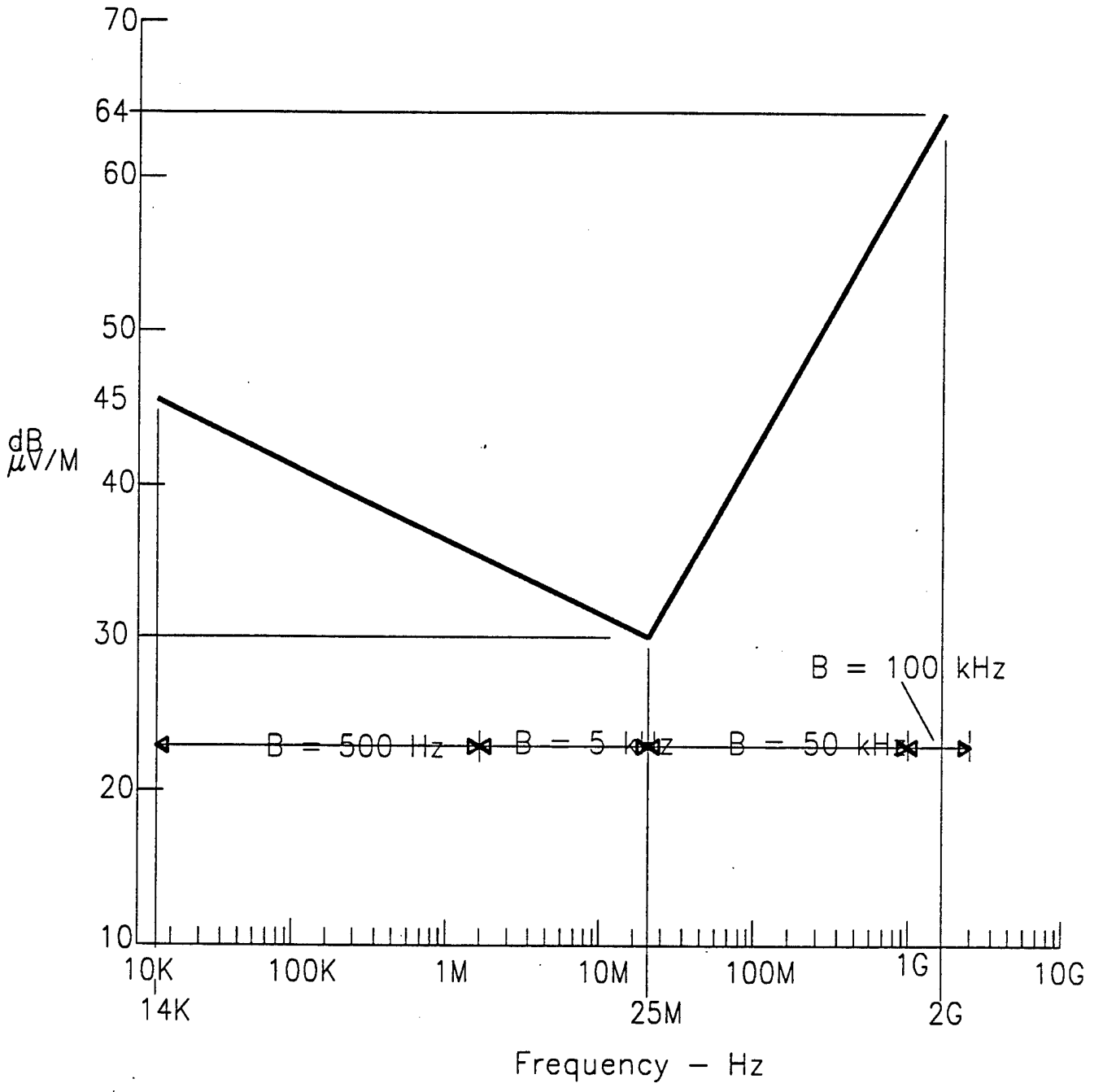


Indicate Limit Level/Frequency

10.1.7 Output IGESWorks



10.1.8 Output Preview



Indicate Limit Level/Frequency

10.2 File D001Q004

10.2.1 Parser/Verifier Log

```
*** IGES DATA FILE ANALYSIS ***
***      MARCH 1992      ***
***   IGES Data Analysis   ***
***   (708) 449-3430     ***
```

Input file is D001Q004_IGS

Checking conformance to CALS Class I (MIL-D-28000A 2/10/92)

Today is October 28, 1992 10:41 AM

*** File and Product Name Information ***

```
File name from sender      = 'CE03TS'
File creation Date.Time    = '920922.154233'
Model change Date.Time     = ''
Author                     = 'Anne Barrington'
Department                 = ''
Product name from sender   = 'Xerox Expert'
Destination product name   = ''
```

*** Parameter Delimiters ***

```
Delimiter = ','
Terminator = ';'

```

*** Originating System Data ***

```
System ID          = 'Xerox Expert version 5.0'
Preprocessor version = '5.0'
Specification version = 6 (IGES 4.0)
```

*** Precision levels ***

```
Integer bits = 16
Floating point - Exponent = 38  Mantissa = 7
Double precision - Exponent = 38  Mantissa = 7
```

*** Global Model Data ***

```
Model scale          = 1.0000E+00
Unit flag            = 1
Units                = 'INCH'
Line weights         = 3
```

Maximum line thickness = 4.166667E-02
Minimum line thickness = 1.388889E-02
Granularity = 1.000000E-05
Maximum coordinate = 1.055850E+01

Drafting standard applicable to original data is not specified.

*** Status Flag Summary ***

Blank status:	Visible	77
	Blanked	0
Independence:	Independent	70
	Physically Subordinate	5
	Logically Subordinate	2
	Totally Subordinate	0
Entity use:	Geometry	45
	Annotation	29
	Definition	2
	Other	1
	Logical/Positional	0
	2D parametric	0
	Not Specified	0
Hierarchy:	Structure DE applies	77
	Subordinate DE applies	0
	Hierarchy property applies	0
	Not Specified	0

*** Entity Occurrence Counts ***

Entity	Form	Level	Count	Type
-----	----	-----	-----	-----
100	0	0	1	Circular arc
102	0	0	1	Composite curve
110	0	0	42	Line
212	0	0	29	General note
230	0	0	1	Sectioned area (Standard Crosshatching)
404	0	0	1	Drawing
406	16	0	1	Property - Drawing size
410	0	0	1	View - Orthographic parallel

*** Entity Count by Level ***

Level	Count
0	77

*** Labeling Information ***

100% of the entities are labeled.

Unlabeled 0

Label	Count	Label	Count	Label	Count
View	1*	GNote	29*	Line	42*
Circle	1*	Composit	1	Section	1*
Property	1	Drawing	1*		

NITPICK 2327: One or more of the flagged entity labels are not right-justified.

*** Line Fonts Used in Data ***

100	102	104	106	108	110	112	114	
-	-	-	-	-	-	-	-	Undefined
1	1	-	-	-	42	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined
116	118	120	122	124	125	126	128	
-	-	-	-	-	-	-	-	Undefined
-	-	-	-	-	-	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined
130	132	134	136	138	140	142	144	
-	-	-	-	-	-	-	-	Undefined
-	-	-	-	-	-	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

*** Line Widths Used in Data ***

Weight	Count	Width
Defaulted	43	(0.0139)
1	34	(0.0139)

*** Colors Used in Data ***

Defaulted	5
Green	72

***** ENTITY ANALYSIS *****

*** Entity type: 100

*** Entity type: 102

*** Entity type: 110

-- 42 lines averaging 1.290360E+00 units --

*** Entity type: 212

29 text strings in data file.
Average text aspect ratio in file is 0.8407874.
Minimum text aspect ratio in file is 0.8400291.
Maximum text aspect ratio in file is 0.8417273.

FONTS USED IN FILE

FONT	COUNT	NAME
1	29	Default ASCII Style

*** Entity type: 230

NITPICK 2076: Entity does not have Annotation flag set at D 73.

*** Entity type: 404

NITPICK 2074: Entity use flag must be 1 for Drawing entity at D 153.
Drawing at D 153 contains 1 views.
Drawing at D 153 contains 0 annotation entities.

*** Entity type: 406

*** Entity type: 410

NITPICK 2073: Entity use flag must be 1 for View entity at D 1.
Scale of view at D 1 is 1.000000E+00.
Orthographic View entity at D 1 has 0 clipping planes specified.
XMIN = Not Set XMAX = Not Set
YMIN = Not Set YMAX = Not Set
ZMIN = Not Set ZMAX = Not Set

*** Message Summary ***

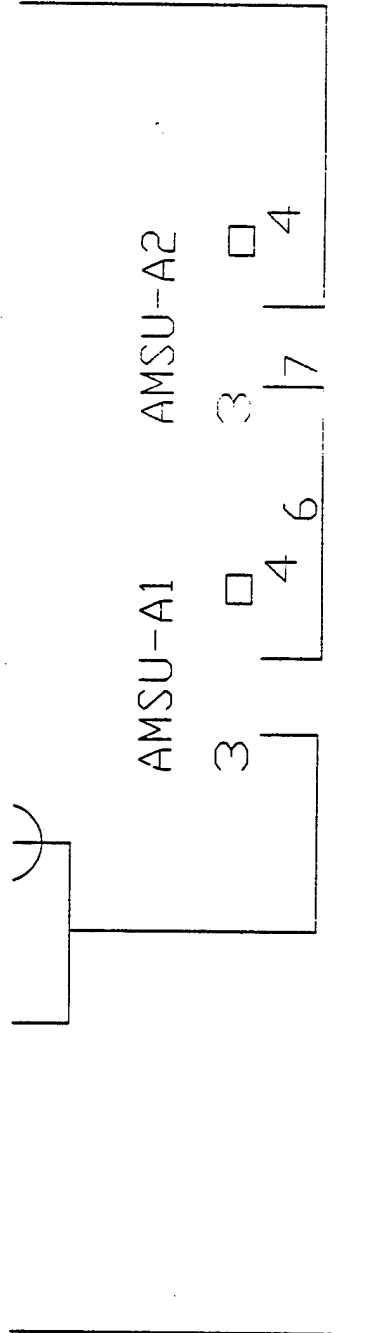
2016: 3 Invalid entity use flag.

*** Error Summary ***

0 fatal errors
0 severe errors
0 errors
0 warnings
0 cautions
4 nitpicks
0 notes

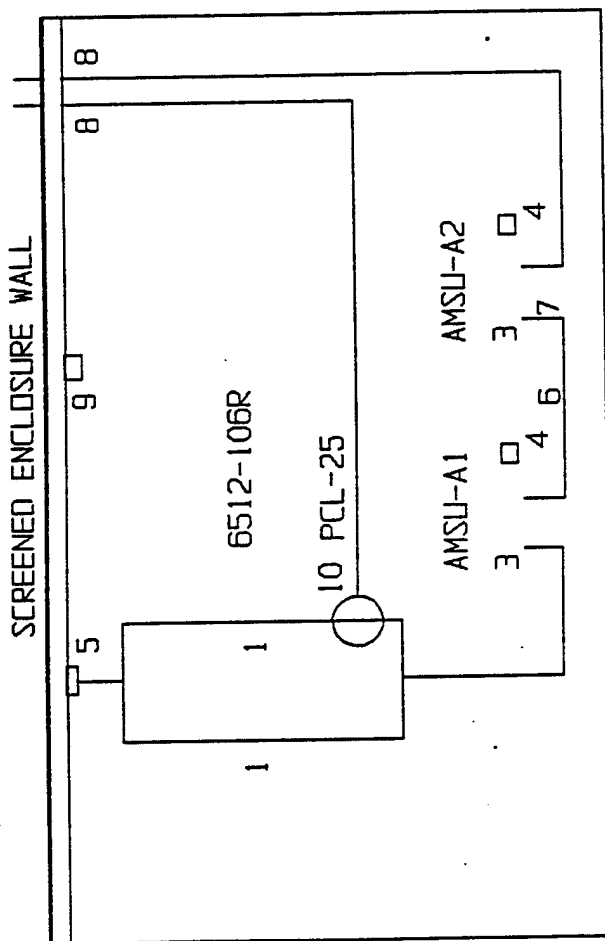
*** End of Analysis of D001Q004_IGS ***

10.2.2 Output AutoCAD R11



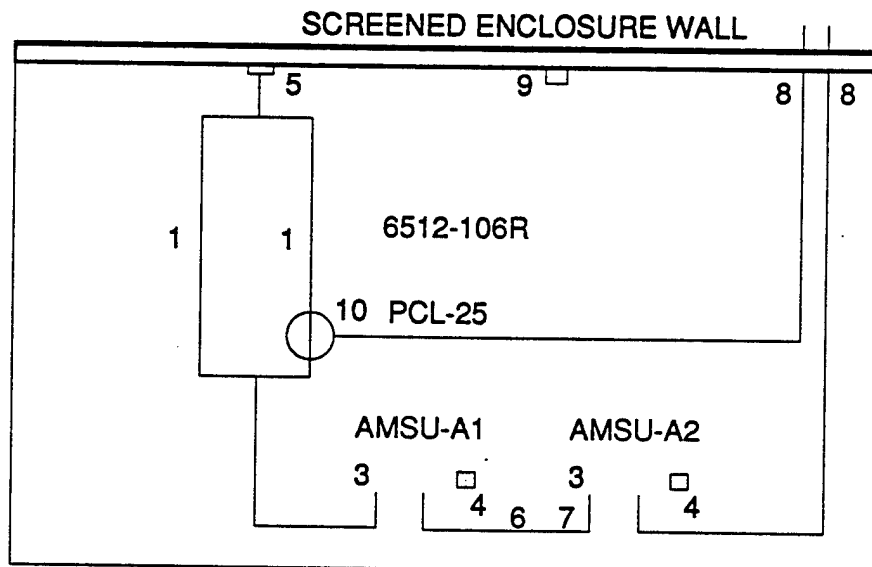
1. Feedthrough capacitor.
2. Bond to ground plane.
3. Test sample situated in test fixture, 10 cm from f
4. Bond to test fixture as defined.
5. Filtered power supply terminals at screened encl
6. Test sample interconnecting lead. Length as de
7. Power leads emulating the spacecraft configurati
8. Interconnecting lead to monitoring equipment/test
9. Connectors or feedthrough filters.
10. Test fixture DC bond to screened enclosure wall o
- 2.5 milliohms.
10. Current probe connected to receiver via coaxial

10.2.3 Output Cadkey v4.06



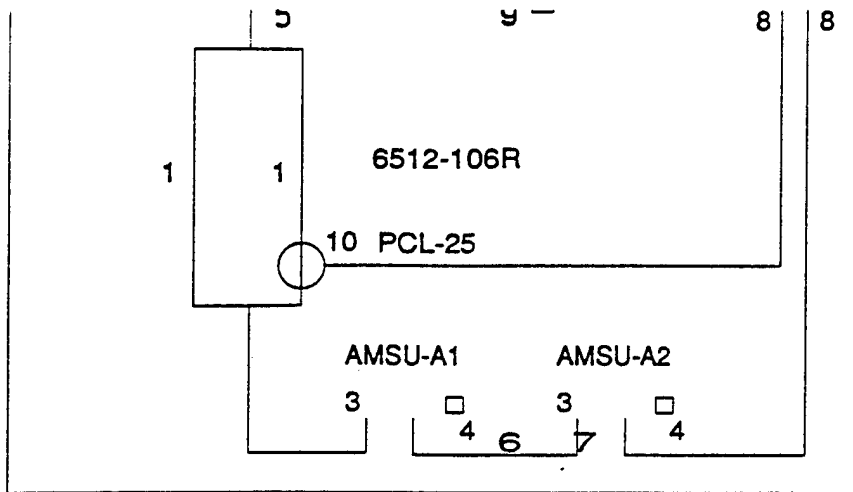
1. Feedthrough capacitor.
2. Bond to ground plane.
3. Test sample situated in test fixture, 10 cm from front edge of ground plane.
4. Bond to test fixture as defined.
5. Filtered power supply terminals at screened enclosure wall.
6. Test sample interconnecting lead, length as defined in the installation specification.
7. Power leads emulating the spacecraft configuration.
8. Interconnecting lead to monitoring equipment/test set via conduit. Feedthrough connectors or feedthrough filters.
9. Test fixture DC bond to screened enclosure wall or ground plane shall be less than 5 milliohms.
10. Current probe connected to receiver via coaxial cable.

10.2.4 Output IGESView



1. Feedthrough capacitor.
2. Bond to ground plane.
3. Test sample situated in test fixture, 10 cm from front edge of ground plane.
4. Bond to test fixture as defined.
5. Filtered power supply terminals at screened enclosure wall.
6. Test sample interconnecting lead. Length as defined in the installation specification.
7. Power leads emulating the spacecraft configuration.
8. Interconnecting lead to monitoring equipment/test set via conduit. Feedthrough connectors or feedthrough filters.
9. Test fixture DC bond to screened enclosure wall or ground plane shall be less than 2.5 milliohms.
10. Current probe connected to receiver via coaxial cable.

10.2.5 Output iges2draw/IslandDraw

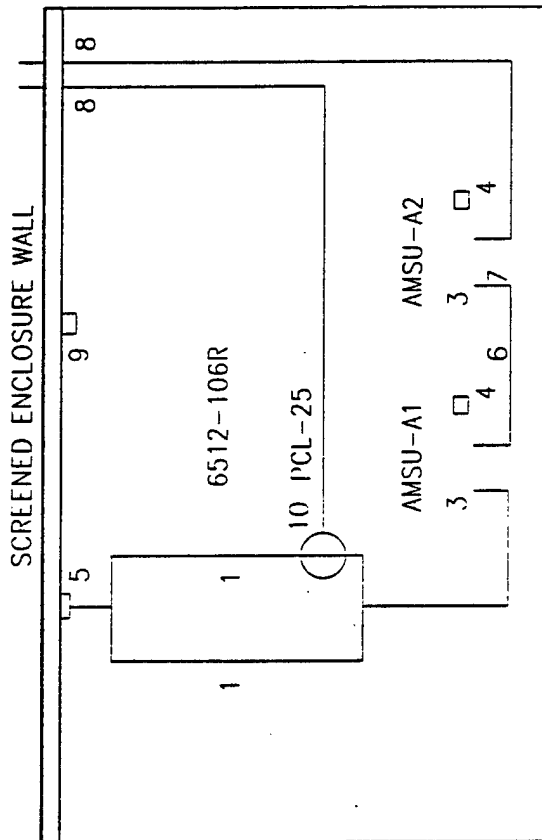


1. Feedthrough capacitor.
2. Bond to ground plane.
3. Test sample situated in test fixture, 10 cm from front edge of ground plane.
4. Bond to test fixture as defined.
5. Filtered power supply terminals at screened enclosure wall.
6. Test sample interconnecting lead. Length as defined in the installation specification.
7. Power leads emulating the spacecraft configuration.
8. Interconnecting lead to monitoring equipment/test set via conduit. Feedthrough connectors or feedthrough filters.
9. Test fixture DC bond to screened enclosure wall or ground plane shall be less than 2.5 milliohms.
10. Current probe connected to receiver via coaxial cable.

10.2.6 Output IGESWorks

running ...	display_mvd	MVD	wireframe
<p>1. Feedthrough capacitor. 2. Bond to ground plane. 3. Test sample situated in test fixture. 10 cm from front edge of ground plane. 4. Bond to test fixture as defined. 5. Filtered power supply terminals at screened enclosure wall. 6. Test sample interconnecting lead. Length as defined in the installation specification. 7. Power leads emanating the spacecraft configuration. 8. Interconnecting lead to monitoring equipment/test set via conduit. Feedthrough connectors or feedthrough filters. 9. Test fixture DC bond to screened enclosure wall or ground plane shall be less than 2.5 milliohms. 10. Current probe connected to receiver via coaxial cable.</p>			

10.2.7 Output Preview



1. Feedthrough capacitor.
2. Bond to ground plane.
3. Test sample situated in test fixture, 10 cm from front edge of ground plane.
4. Bond to test fixture as defined.
5. Filtered power supply terminals at screened enclosure wall.
6. Test sample interconnecting lead. Length as defined in the installation specification.
7. Power leads, emulating the spacecraft configuration.
8. Interconnecting lead to monitoring equipment/test set via conduit. Feedthrough connectors or leadthrough filters.
9. Test fixture DC bond to screened enclosure wall or ground plane shall be less than 2.5 milliohms.
10. Current probe connected to receiver via coaxial cable.

11. Appendix C - SGML Detail Analysis

11.1 ArbortText Parser Log

No reported errors.

11.2 DataLogics Parser Log

No reported errors.

11.3 Exoterica Parser

No reported errors.

12. Appendix D - Raster Detail Analysis

12.1 File D001R005

12.1.1 Output IslandPaint

GENCORP
AEROJET

12.2 File D001R006

12.2.1 Output IslandPaint

Test Method	Para.	S-480-13	S-480-40	IS-2617547	IS-2624483	IS-2280259	IS-3267415
CE01*	--	4.4.7.2	3.2	3.4.2	3.4.2	3.6.1.1	3.6.1.1
CE03	3.4.5	4.4.7.2	3.2	3.4.2	3.4.2	3.6.1.1	3.6.1.1
RE02	3.4.6	4.4.7.2	3.3.c	3.4.2	3.4.2	3.6.1.4.2	3.6.1.4.2
RE04**	3.4.7	4.5.7	3.3.a	3.4.1	3.4.1	3.5.2	3.5.2
CS01	3.4.8	4.4.7.2	3.4.a	3.4.2	3.4.2	3.6.1.2	3.6.1.2
CS02	3.4.9	4.4.7.2	3.4.a	3.4.2	3.4.2	3.6.1.2	3.6.1.2
CS06	3.4.10	4.4.7.2	3.4.b	3.4.2	3.4.2	3.6.1.3	3.6.1.3
RS03	3.4.11	4.4.7.2	3.5	3.4.2	3.4.2	3.6.1.5	3.6.1.5

* No emanation in the frequency range specified by this test method are present in the test sample.
 ** No AC emanation in the frequency range specified by this test method are present in the test sample.

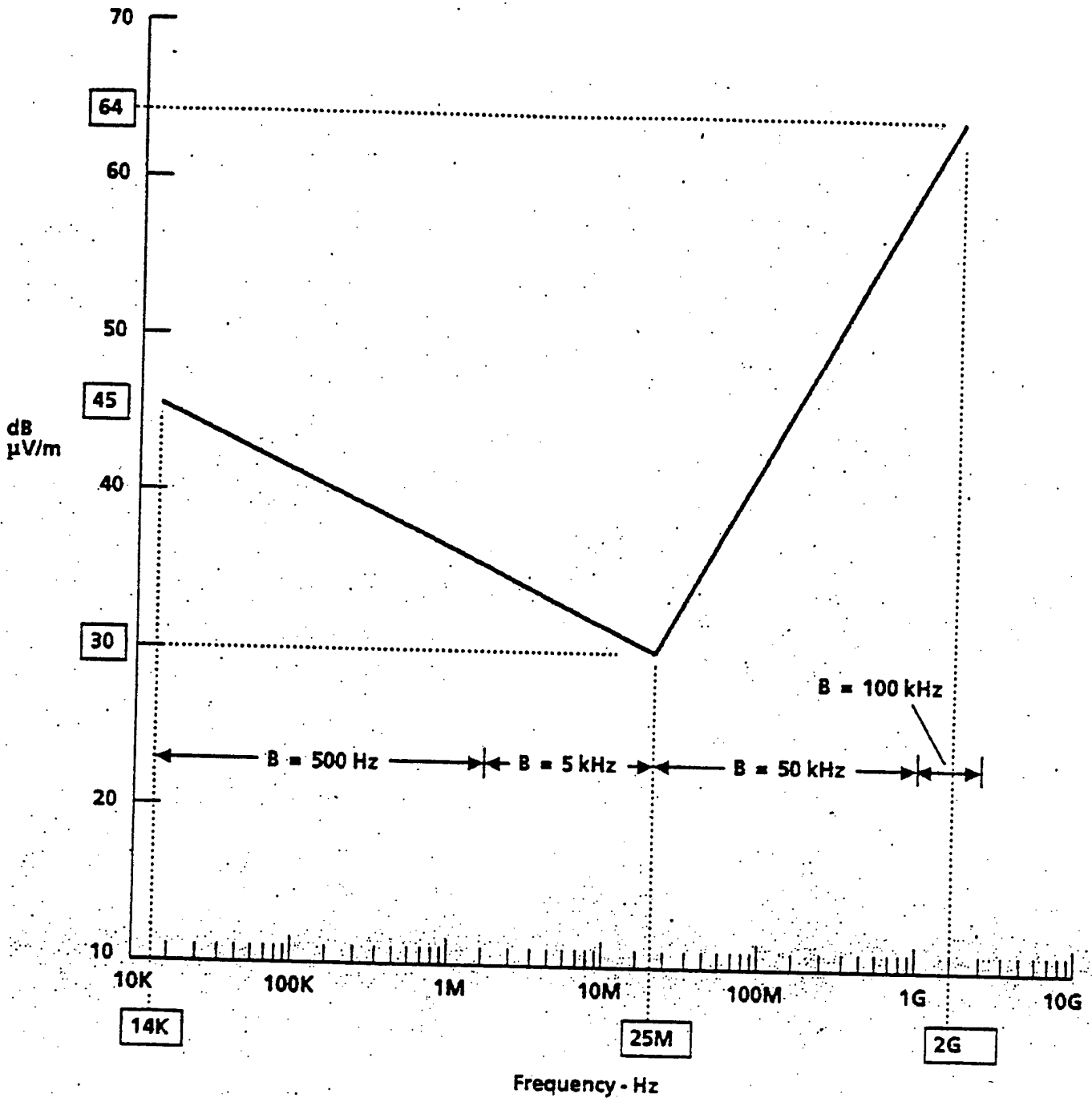
12.3 File D001R007

12.3.1 Output IslandPaint

From	To
+ 28V Feedthrough Capacitor Main Bus	AMSU A1 J1-1 AMSU A2 J1-1
28V Feedthrough Capacitor Main Bus Return	AMSU A1 J1-3 AMSU A2 J1-3
+ 28V Feedthrough Capacitor Pulse Load	AMSU A1 J1-5 AMSU A2 J1-5
28V Feedthrough Capacitor Pulse Load Return	AMSU A1 J1-7 AMSU A2 J1-7
+ 28V Feedthrough Capacitor Analog Telemetry Bus	AMSU A1 J1-9 AMSU A2 J1-9
28V Feedthrough Capacitor Analog Telemetry Bus Return	AMSU A1 J1-10 AMSU A2 J1-10
+ 10V Feedthrough Capacitor Interface Bus	AMSU A1 J4-12 AMSU A2 J4-12
10V Feedthrough Capacitor Interface Bus Return	AMSU A1 J4-13 AMSU A2 J4-13

12.4 File D001R008

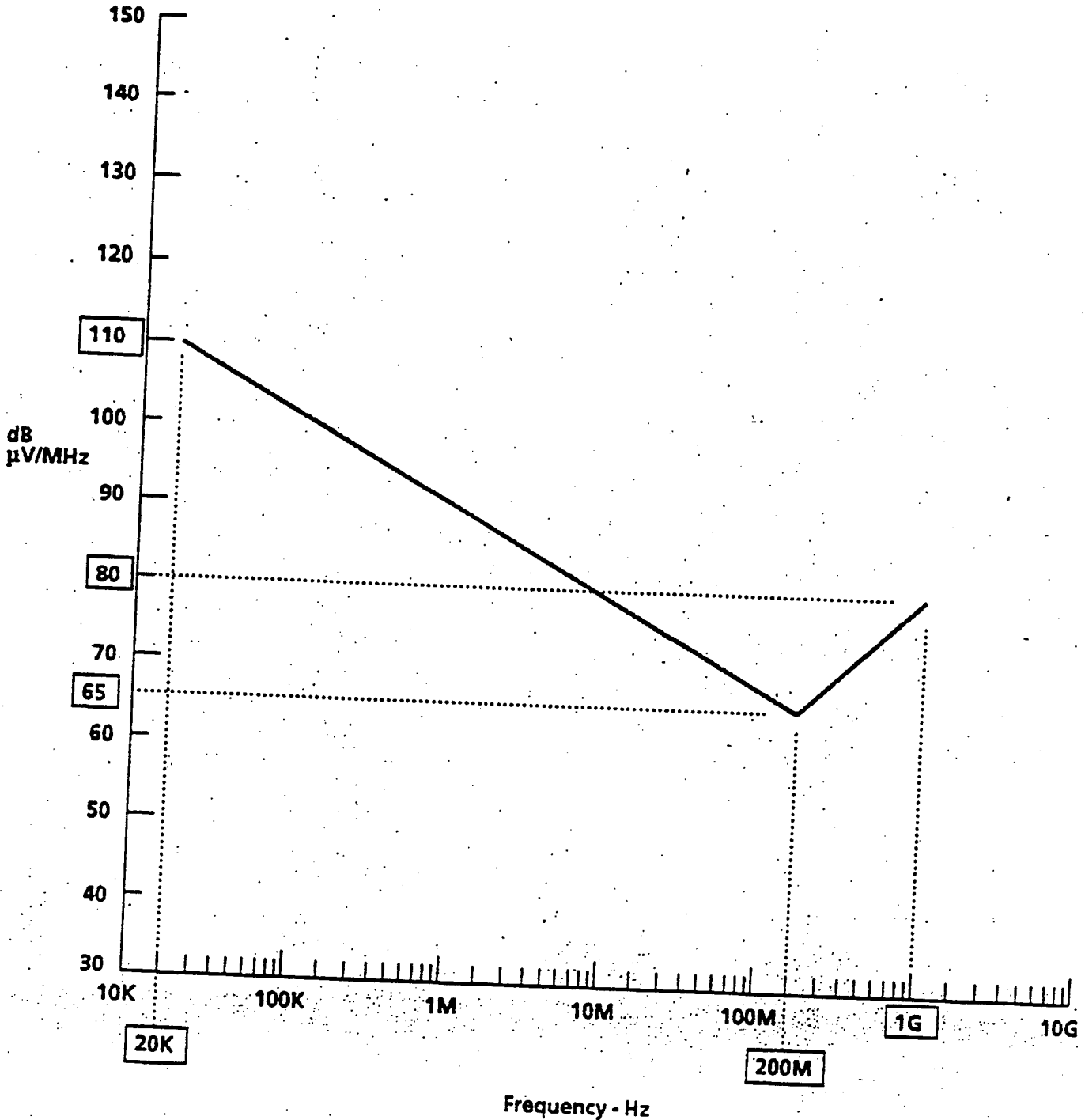
12.4.1 Output IslandPaint



 Indicate Limit Level/Frequency

12.5 File D001R009

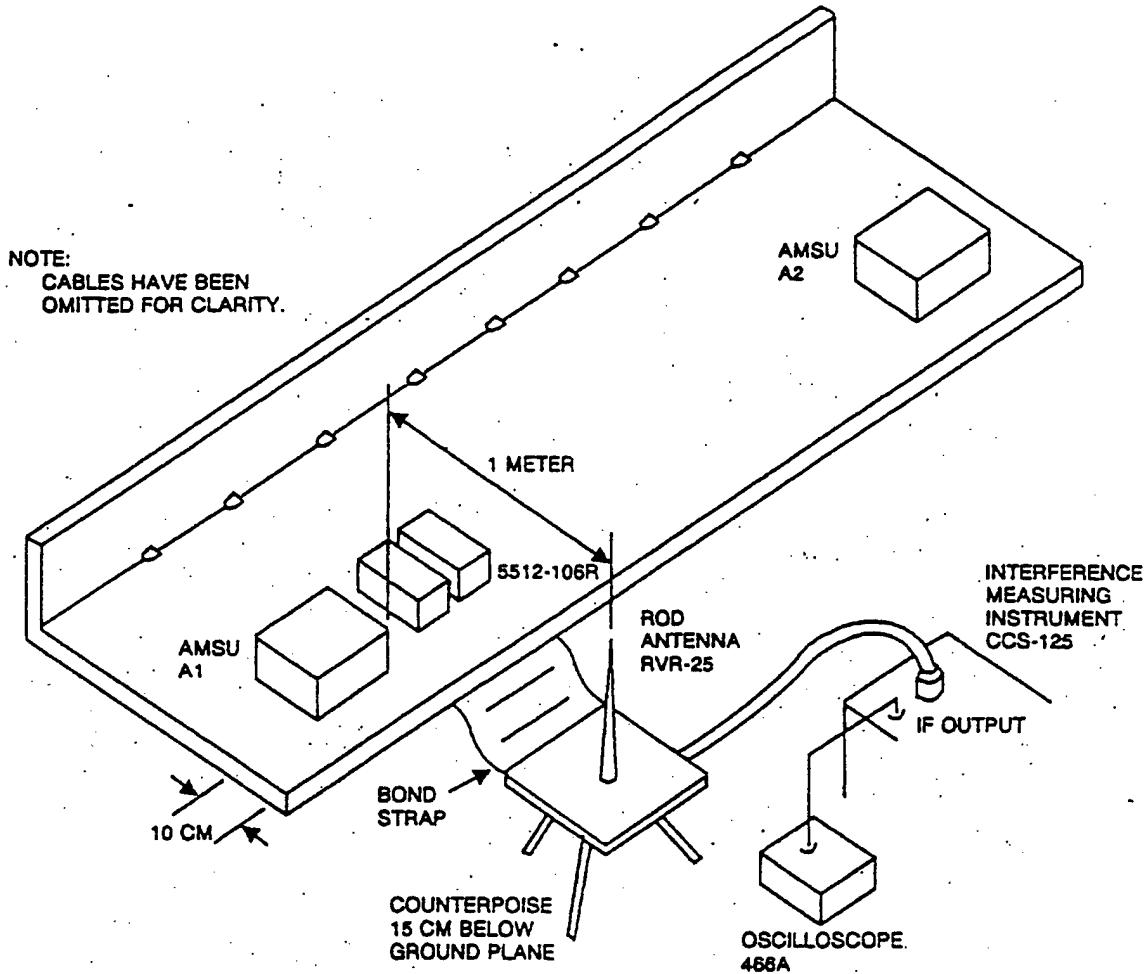
12.5.1 Output IslandPaint



Indicate Limit Level/Frequency

12.6 File D001R010

12.6.1 Output IslandPaint



14 kHz to 10 GHz Antennas

Manufacturer	Model	Frequency Range
Electrometrics	RVR-25 Rod	14 KHz - 30 MHz
AIL Tech	94455-1 Biconical	20 MHz - 200 MHz
AIL Tech	93490-1 Log Conical	200 MHz - 1 GHz
Electrometrics	RGA-180	1 GHz - 18 GHz

13. Appendix E - CGM Detail Analysis

13.1 File D001C001

13.1.1 Parser Log MetaCheck

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-91 CGM Technology Software
Execution Date: 10/28/92 Time: 11:52:23

Metafile Examined : \9275\c001.cgm

Pictures Examined : All

Elements Examined : All

Bytes Examined : All

=====
Trace Report
=====

Tracing not selected.

=====
CGM Conformance Violation Report
=====

No Errors Detected

=====
CALC CGM Profile (MIL-D-28003) Report
=====

No profile discrepancies detected.

=====
Conformance Summary Report
=====

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-91 CGM Technology Software
Execution Date: 10/28/92 Time: 11:52:25

Name of CGM under test: \9275\c001.cgm

Encoding : Binary

Pictures Examined : All

Elements Examined : All

Bytes Examined : All

BEGIN METAFILE string : "RE04TS.cgm"

METAFILE DESCRIPTION : " Xerox-Expert/CGM Converter MIL-D-28003/BASIC-1"

Picture 1 starts at octet offset 166; string contains: "RE04TS.cgm"

Conformance Summary : This file conforms to the CGM specification.

This file meets the CALS CGM Profile (MIL-D-28003).

Summary of Testing Performed and Errors Found:

1 Pictures Tested
183 Elements Tested
3420 Octets Tested

```
=====
|   No Errors Were Detected   |
=====
```

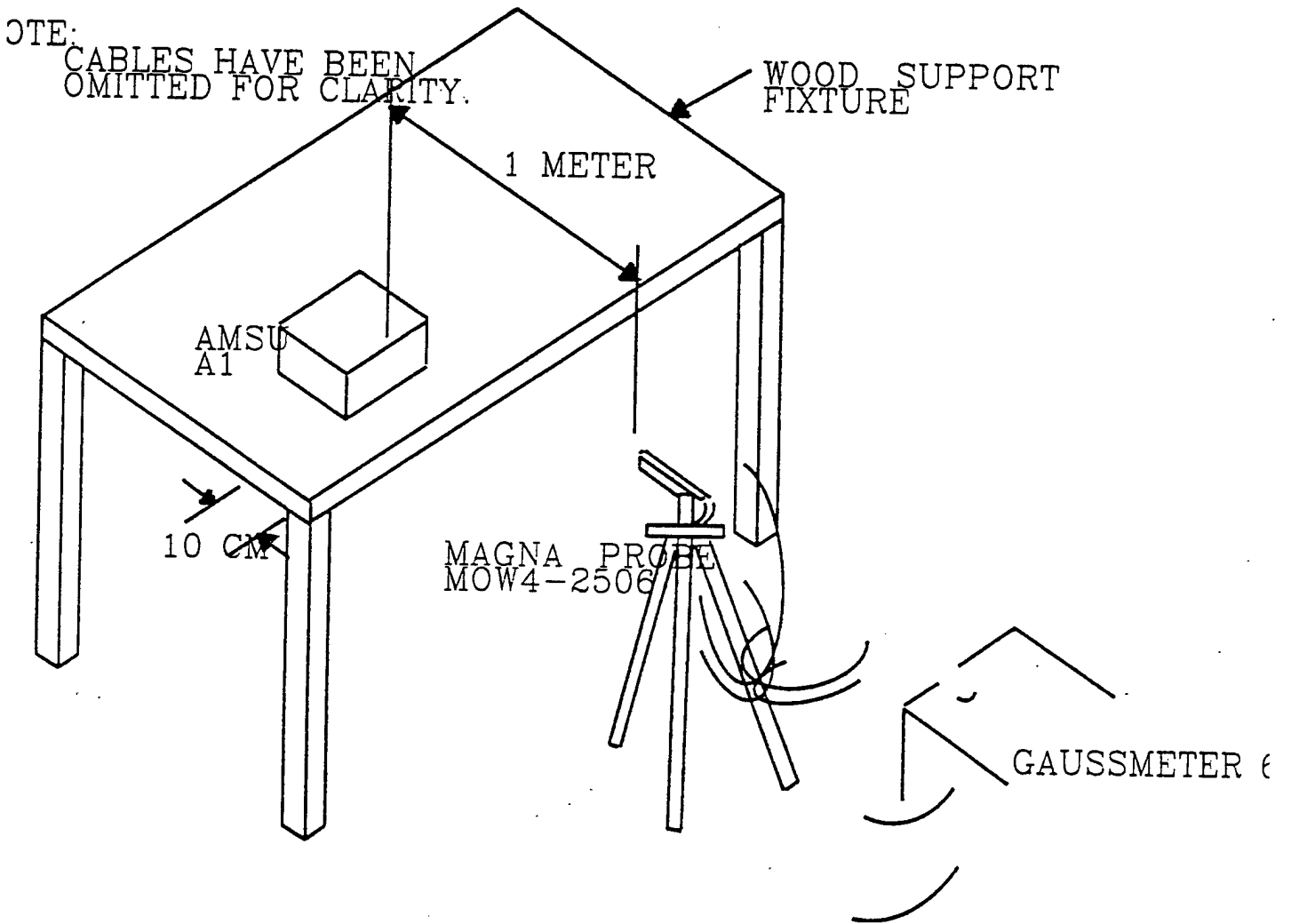
===== End of Conformance Report =====

13.1.2 validcgm Log

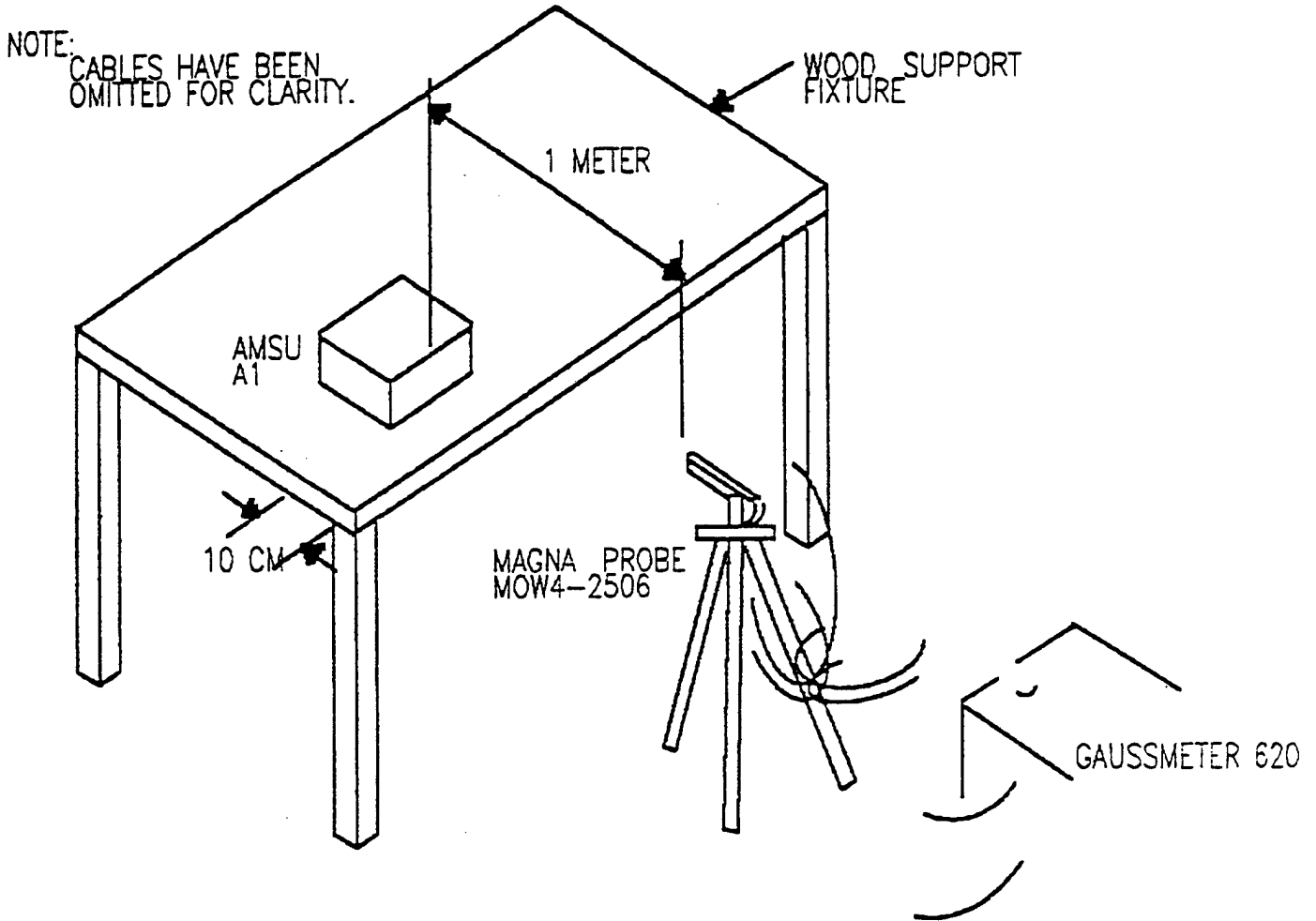
Analysis for file c001.cgm using table table

- (0, 1) occurred 1 time
- (0, 2) occurred 1 time
- (0, 3) occurred 1 time
- (0, 4) occurred 1 time
- (0, 5) occurred 1 time
- (1, 1) occurred 1 time
- (1, 2) occurred 1 time
- (1, 11) occurred 1 time
- (1, 13) occurred 1 time
- (2, 3) occurred 1 time
- (2, 4) occurred 1 time
- (2, 5) occurred 1 time
- (2, 6) occurred 1 time
- (2, 7) never occurred, required by standard B
- (3, 1) occurred 1 time
- (4, 1) occurred 146 times
- (4, 4) occurred 12 times
- (4, 18) occurred 6 times
- (5, 3) occurred 2 times
- (5, 10) occurred 1 time
- (5, 15) occurred 1 time
- (5, 30) occurred 1 time

13.1.3 Output Island Draw



13.1.4 Output Metaview 1.13



CALS Test Network/LLNL CGM Test
CGM & Source: XEROX.cgm/xerox via CTN-201
Interpreter: MetaView 1.13
Printer: Laserjet II P
Date: 92-10-29 A. Gerson