

Center for Quality Engineering

Test Report No.: T09YSR1K

Order No.: T09Y Pages: 8 Enclosures : 7 Munich, 15 Feb. 2005

Client: Schroff Sas
 Z.I – 4 rue du Marais
 F-67660 Betschdorf
 France

Equipment under test: Cabinet Varistar Slim-Line IP55
 2000Hx600Bx600T", Art. No : 10130-020/30

Manufacturer: Schroff Sas

Task: Vibrationtest

Test Specification(s)
 [covered by accreditation]: IEC 68-2-6 , Test Fc : Vibration (sinusoidal)

Test Specification(s)
 [not covered by accreditation]: IEC 61587-1

Result: No mechanical deviations are detected.

The results relate only to the items tested as described in this test report.

Approved by:	Position	Signature / Date
Mr. Udo Alt	Director CQE 31	15.02.2005

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1 Summary

The report contains the results from the environmental compatibility technical analysis of the Cabinet **Varistar Slim-Line IP55**, 2000Hx600Bx600T", Art. No : 10130-020/30 **completed with Dummiesubbracks** regard to

IEC 61587, performance level DL6 and IEC 60068-2-6 for Vibration

Testing was performed by Siemens AG, ICN TQM QE at their test-facilities.

Requirement	Criteria met (yes/no)	Remark
IEC 68-2-6 , Test Fc : Vibration (sinusoidal)	y	

2 References

2.1 Specifications

IEC 61587-1 : 1999-06

Mechanical structures for electronic equipment -
Tests for IEC 60197 and IEC 60297 –

Part 1:

Climatic, mechanical tests and safety aspects for cabinets, racks, subbracks and chassis

IEC 60068-2-6 : 1995-03

Environmental testing

Part 2 : Tests , Test Fc: Vibration (sinusoidal)

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3 General Information

3.1 Identification of Client

Client: Schroff Sas, R&D
 Address: Z.I – 4 rue du Marais
 F-67660 Betschdorf
 Country: France

3.2 Test Laboratory

Name: Siemens AG, COM CTO CQE 31
 Address: Hofmannstrasse 51
 81359 Munich
 Country: Germany
 Phone: (089) 722 26105 Mr. Alt
 Fax: (089) 722 25326
 E-Mail: Udo.Alt@siemens.com

3.3 Storage of Records

The original of the test plan / report is delivered to the client. It is in the responsibility of the client to administer and store the test report for future use.

The EUT-software has to be kept by the client and must be available for future examinations.

3.4 Time Schedule

Delivery of EUT: 07.02.2005
 Start of test: 09.02.2005
 End of test: 09.02.2005

3.5 Participants

Participants Testreport

Name	Function	Company	Department	Location
Mr. Knier	Accredited testing	Siemens AG	COM CTO CQE 31	Mch H
Mr. Meyer	Client	Schroff Sas		Betschdorf
Mr. Marcinkowski	Client	Schroff Sas		Betschdorf

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4 Equipment under Test

4.1 Description of EUT

Cabinet " Varistar Slim-Line IP55 2000Hx600Bx600T",
Seal:

Art. No : 10130-020/30
Art No : 60130-027

4.2 Failure Criteria

No mechanical deviations.

5 Test Equipment

5.1 Test Facility

The measurements were carried out in the Center for Quality Engineering: Siemens AG, Department ICN TQM QE 31, Hofmannstraße 50, 81359 München, Germany.

5.2 Measuring Equipment

Ident. No.	EQUIPMENT	TYPE	MANUF.	Status of Equipment	Cal.-Date YYYY/MM	Cal. due date YYYY/MM
S0795	Frequency Counter	P6101,FP2	Newport	ind	-	-
S0854	Frequency Display	L4S4RA8W	Newport	ind	-	-
S1402	Charge Amplifier	D22PMG	Unholtz Dickie	cal	2004/02	2005/02
S1403	Charge Amplifier	D22PMG	Unholtz Dickie	cal	2004/02	2005/02
S1404	Charge Amplifier	D22PMG	Unholtz Dickie	cal	2004/02	2005/02
S1405	Charge Amplifier	D22PMG	Unholtz Dickie	cal	2004/02	2005/02
S1418	PARAGON MAINFRAME	35650A	hp	cal	2004/02	2005/02
S1419	Vibration Exciter with Transistor switch Amplifier	SW9100	RMS	cal	2004/02	2005/02
S5004	Oscilloscope	D1011	Siemens	ind	-	-
S5325	Personal Computer with Vibco NT V2.7.2	Scenic L	FSC MP	not	-	-
S5059	Accelerometer	224C	Endevco	cal	2004/12	2006/12
S5055	Accelerometer	4369	Bruel & Kjaer	cal	2004/12	2006/12
S5054	Accelerometer	4369	Bruel & Kjaer	cal	2004/12	2006/12
S5082	Accelerometer	4384	Bruel & Kjaer	cal	2004/12	2006/12

cal=calibrated Equipment - cpu=checked prior to use - chk=checked equipment (dated)

ind=for indication only - not=not calibrated equipment - ref=Reference standard

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6 Specifications, Tests and Results : Environmental

The test results in the report refer exclusively to the test object described in section 4 and the test period in section 3.4.

6.1 Requirements Specification

IEC 61587-1 : 1999-06

Mechanical structures for electronic equipment -Tests for IEC 60197 and IEC 60297 – Performance Level DL6

6.2 Test Specification

6.2.1 Vibration sinusoidal

Acc. To IEC 60068-2-6, part Fc

Test	Parameter	Dim	Test severity	Dur.	Reference	Method
Vibration sinusoidal	displacement	mm	3,5		IEC 68-2-6	Fc: Vibration (sinusoidal)
	acceleration	m/s ²	10			
	frequency range	Hz	5-9 9-100	3 x 10		
	frequency change		1 Okt/min	sweep		
	axes of vibration		3	cycles		

6.3 Test Performance

For the tests the EUT was completed with dummy-subracks and a dummy weight as described in IEC 61587 page 29, figure 8 and table 7. At the shaker table the EUT was mounted by using of its normal fixing points (see photos 1-3).

The tests are performed in 3 mutually perpendicular axes.

Definition of vibration axes

Z axis = vertical

X axis = longitudinal (side – side)

Y axis = lateral (front – back)

At top of the cabinet the dynamic behaviour of the cabinet was recorded (diagrams see enclosures page

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Photo 1: EUT mounted at vibration table. Axis of vibration **X** – longitudinal (side - side)

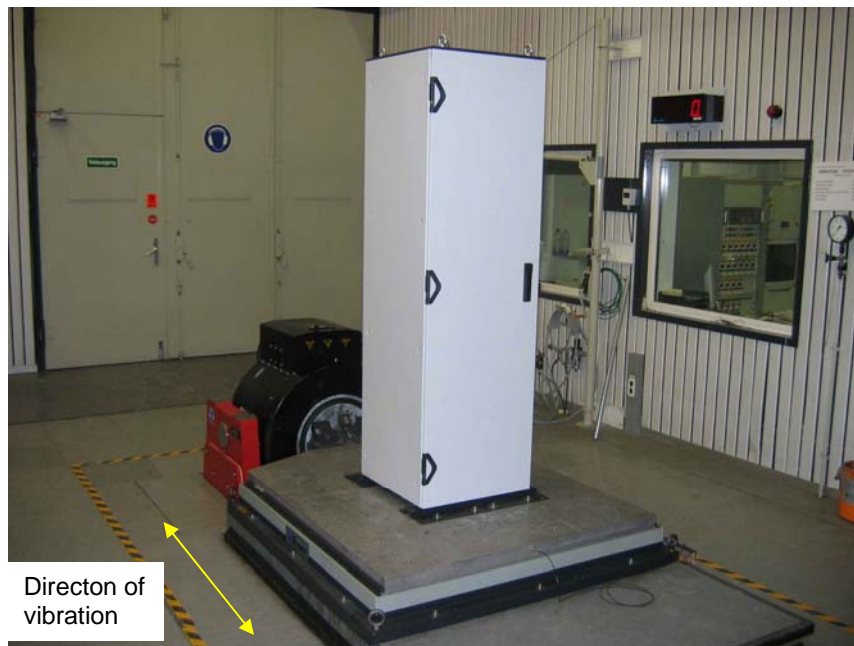


Photo 2: EUT mounted at vibration table. Axis of vibration **Y** -lateral (front – back)

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Photo 3: EUT mounted at vibration table. Axis of vibration Z (vertical)

6.4 Test Results

6.4.1 Vibration sinusoidal

During and after the vibration test no mechanical deviations were occurred.

7 Enclosures

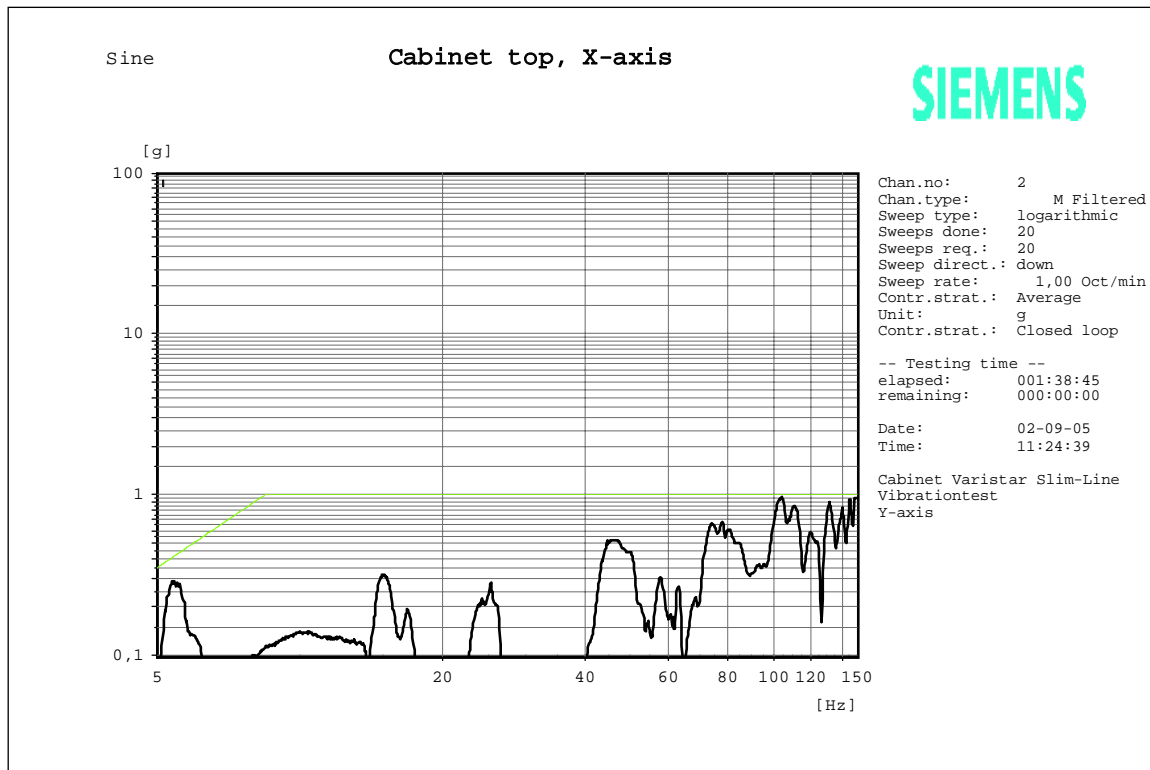
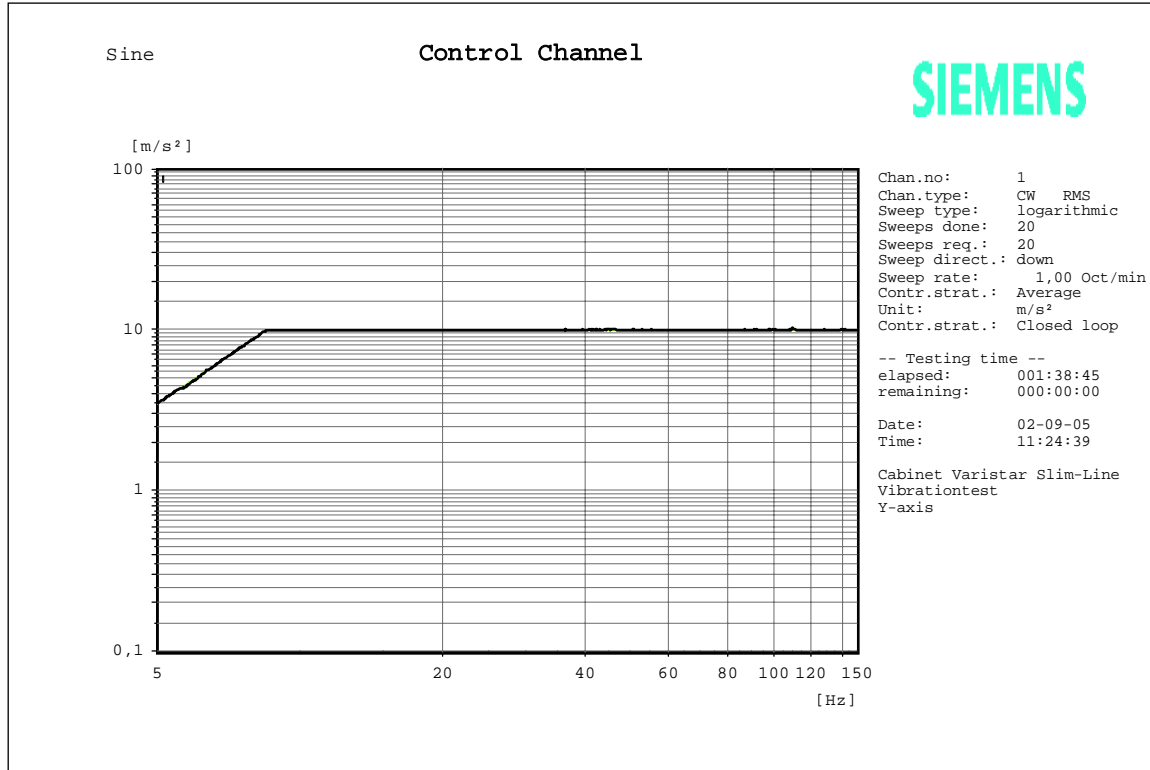
7.1 Accreditation Certificate

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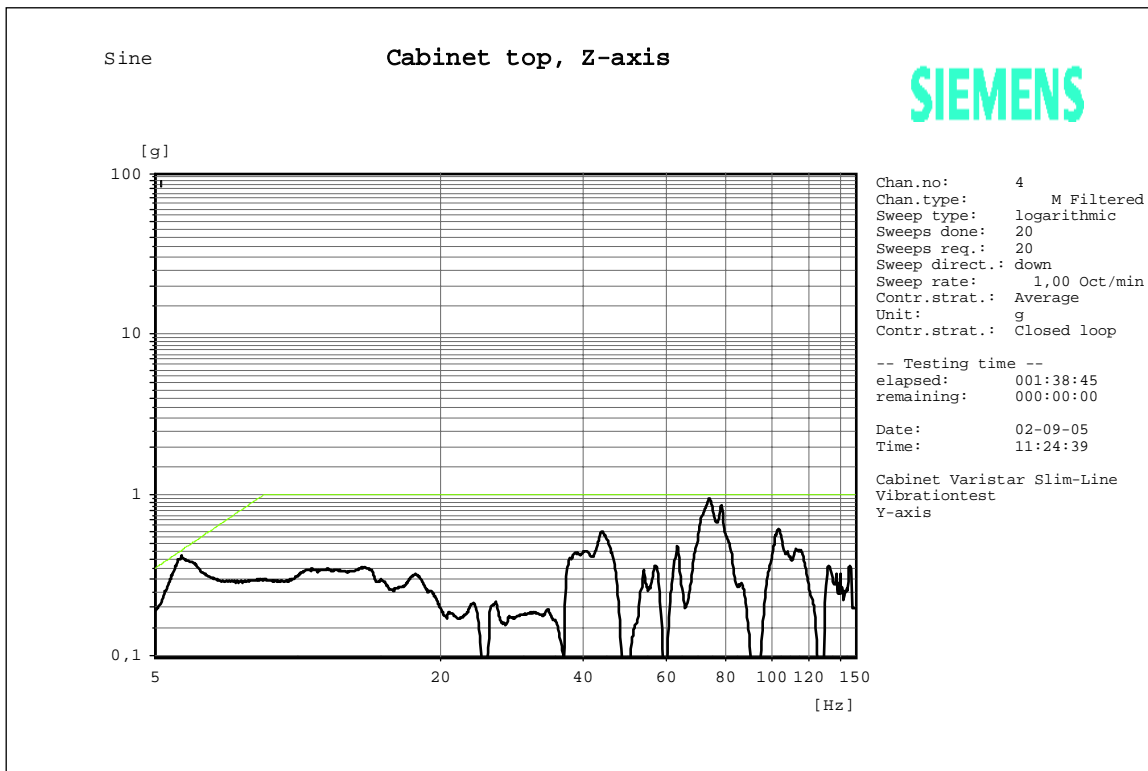
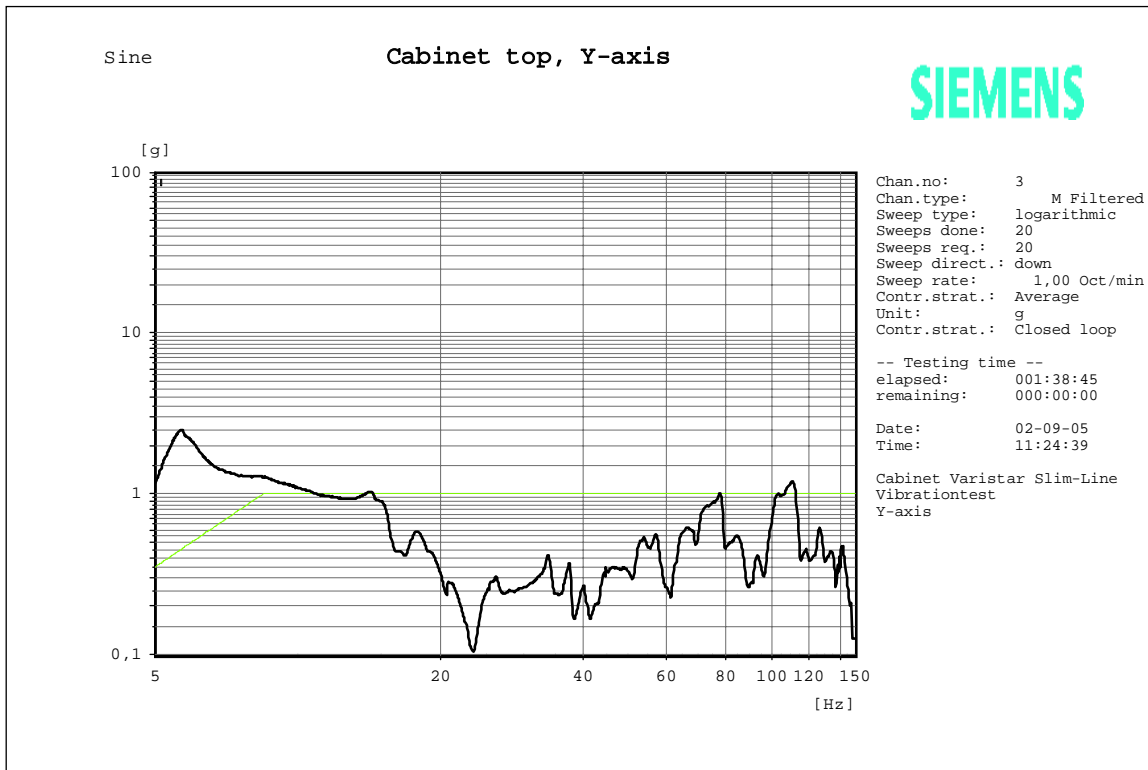


7.2 Diagram of vibration response
Y-axis

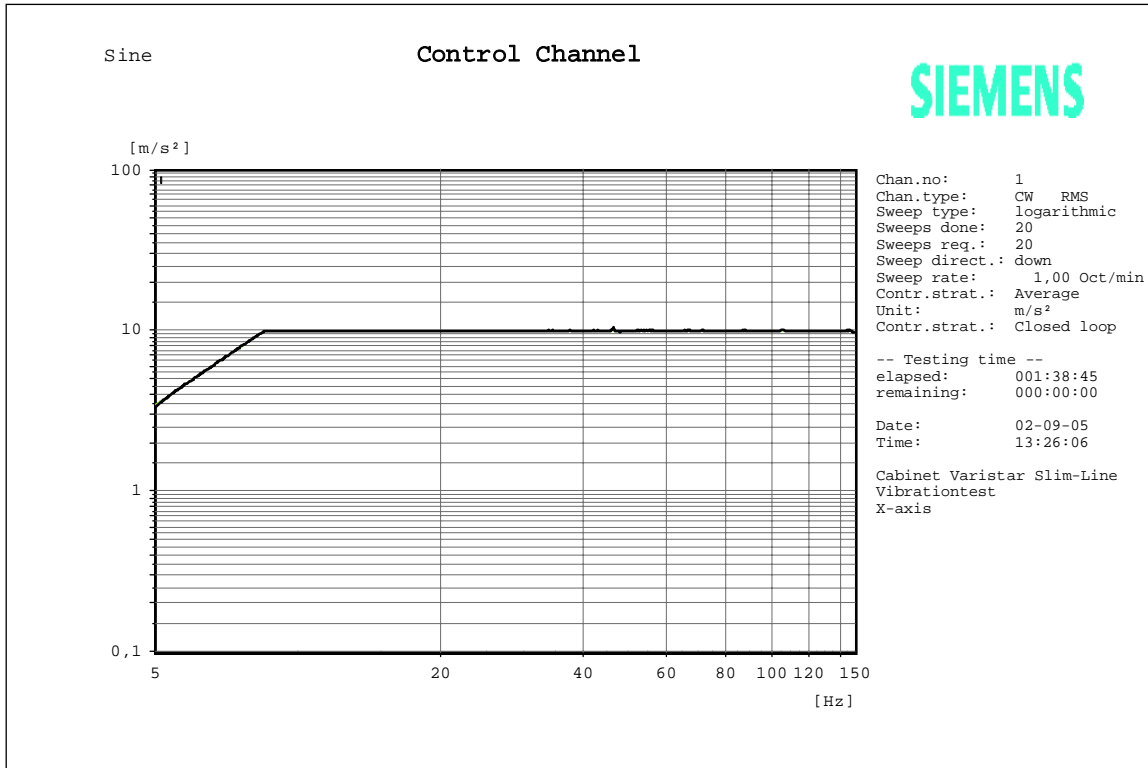
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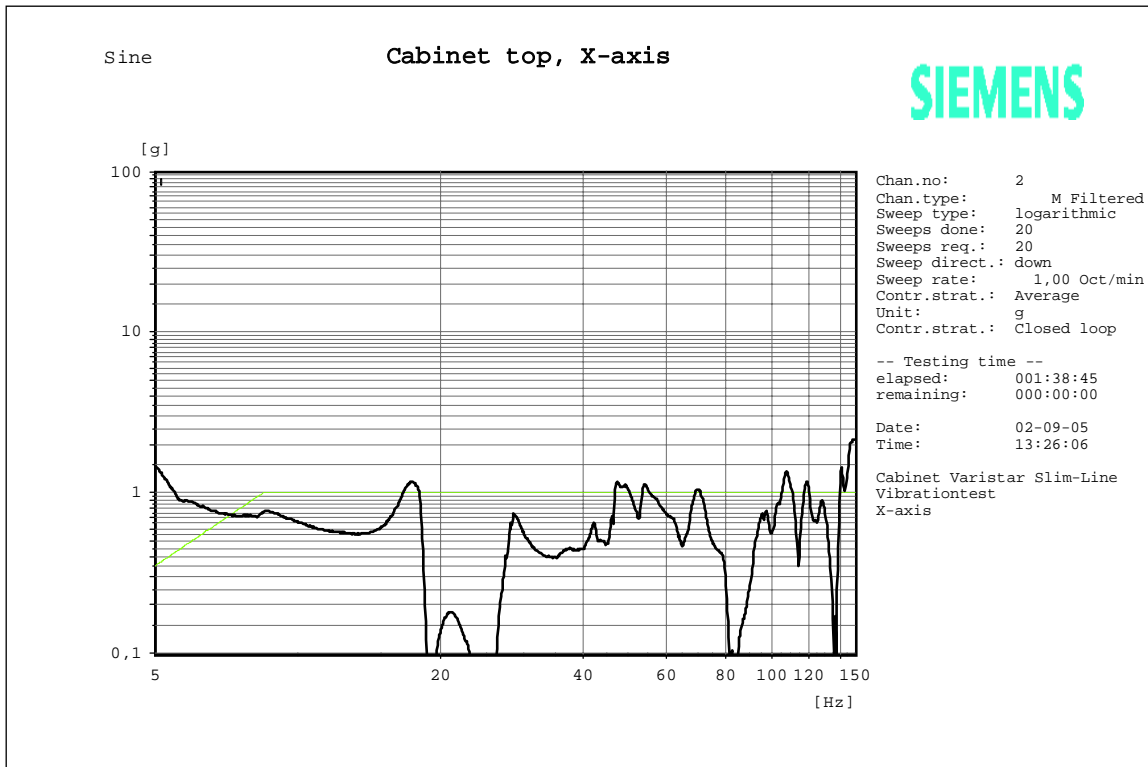
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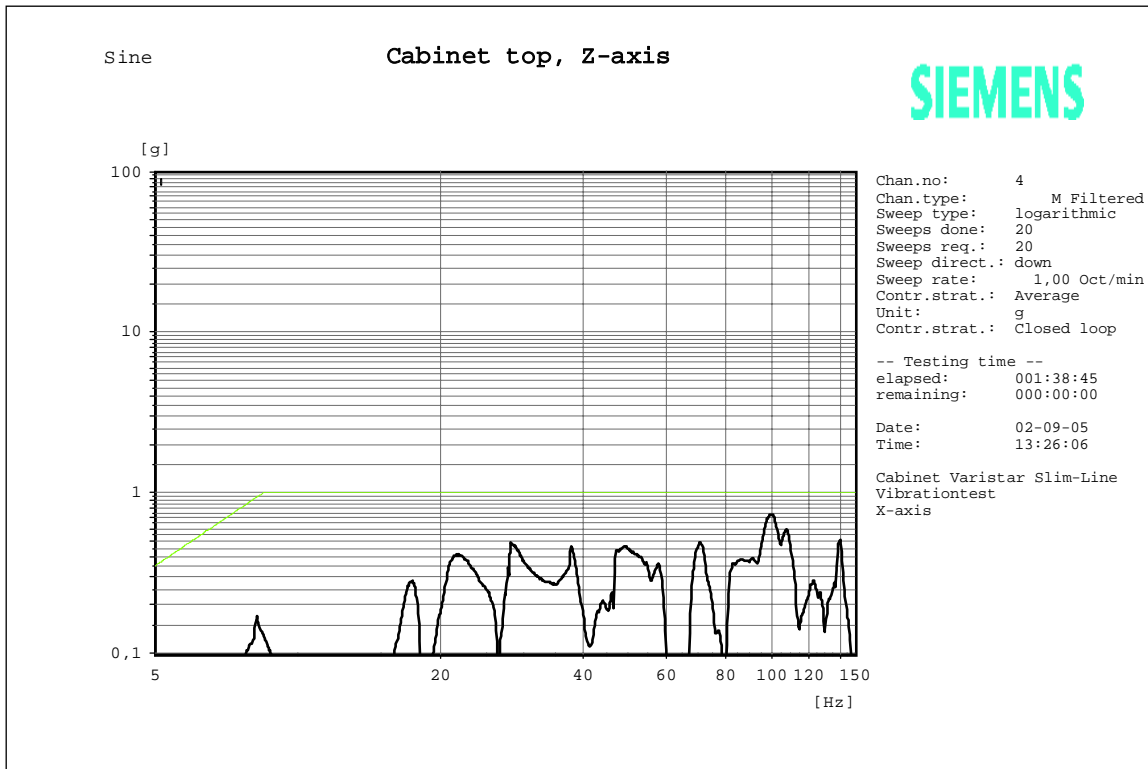
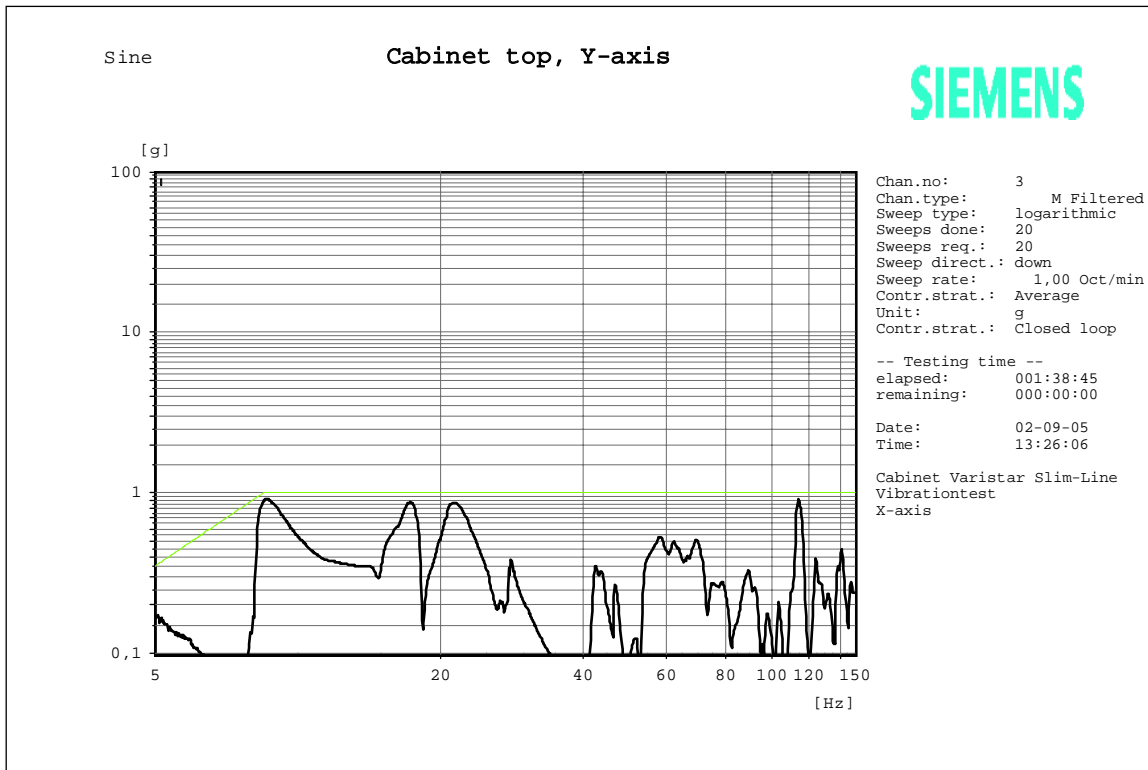
X-axis



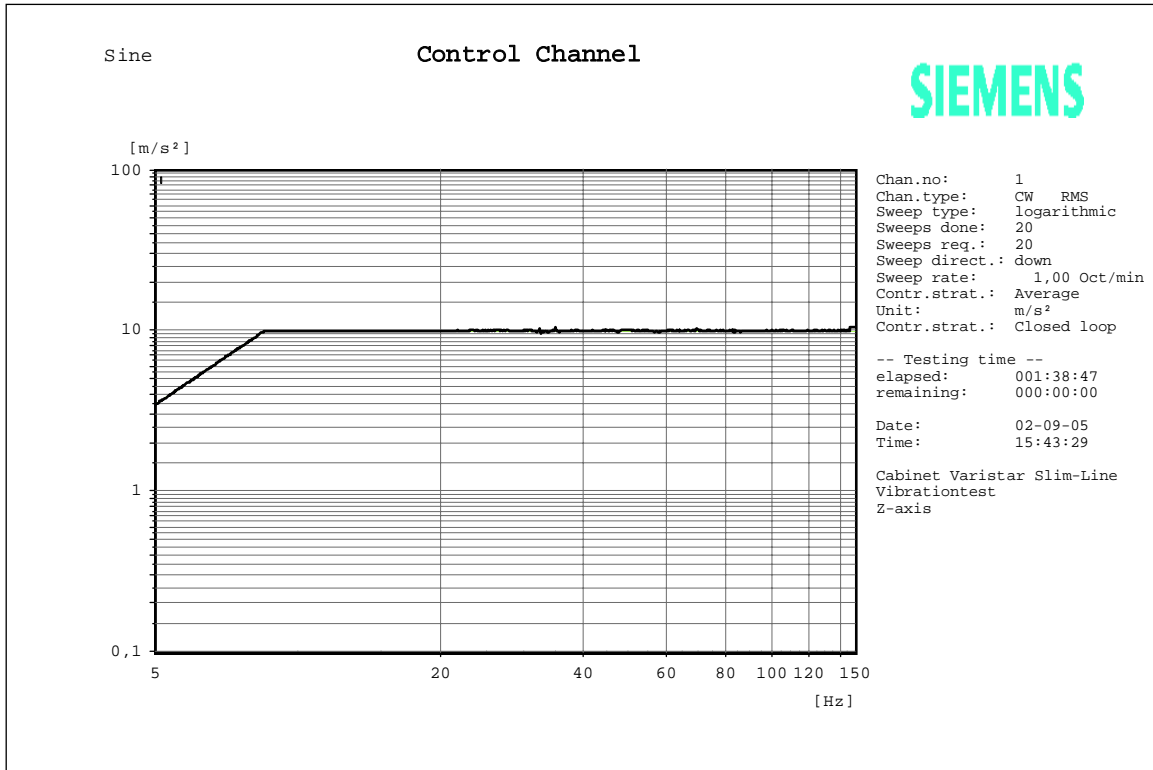
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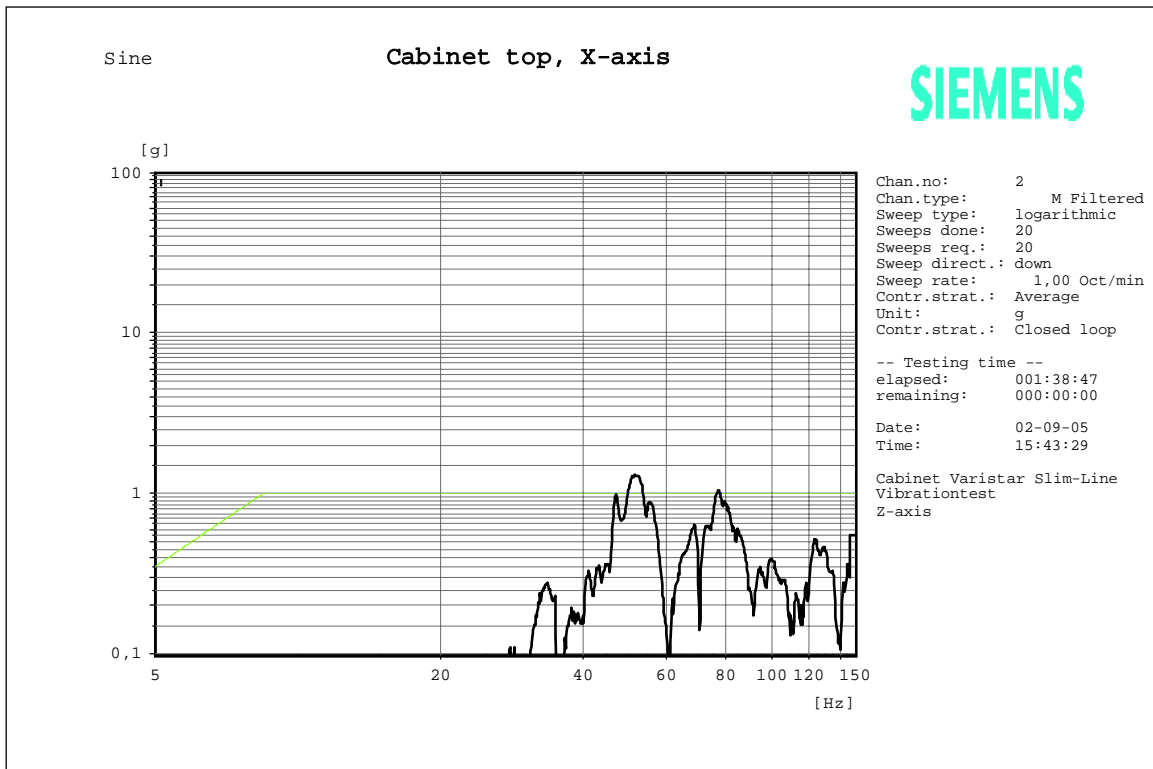
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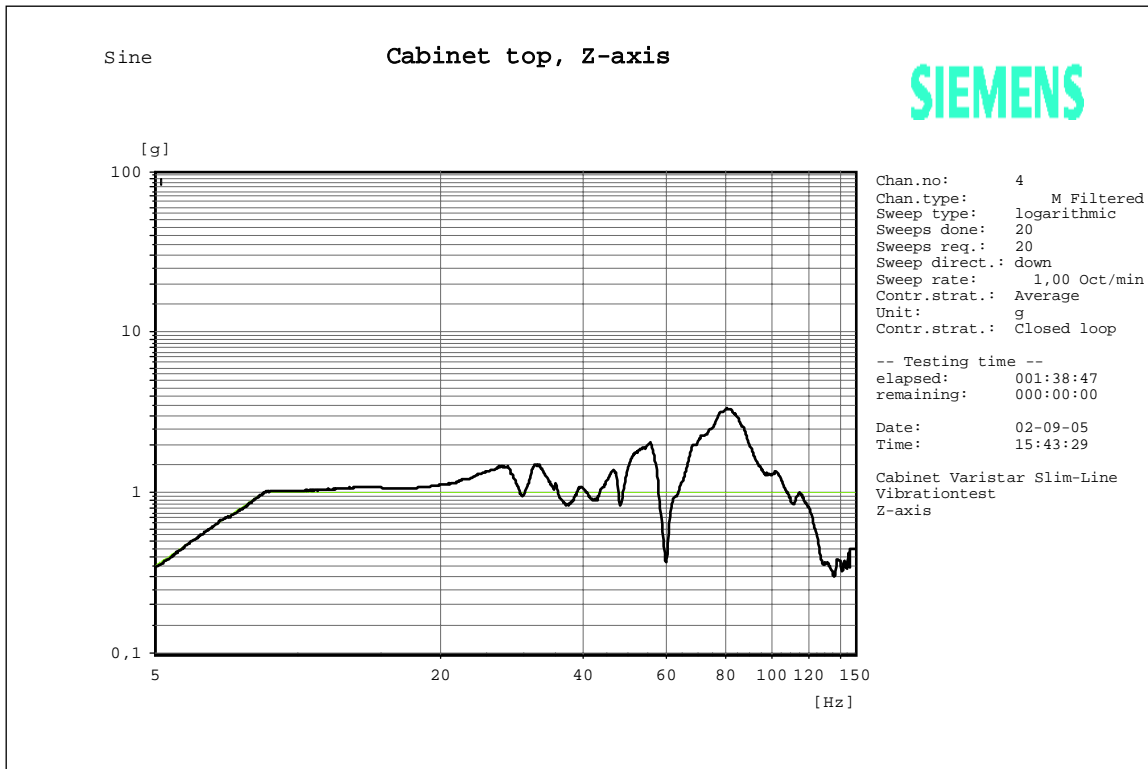
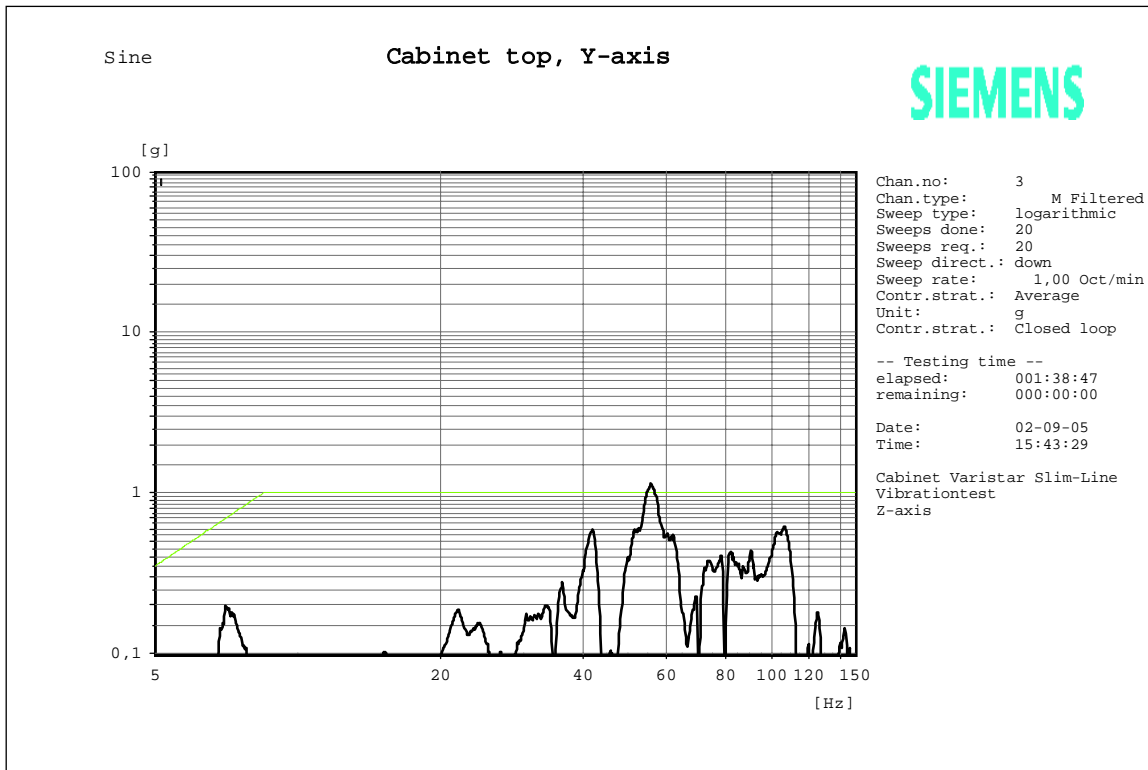
Z-axis



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Mch H, 15 Feb. 2005

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