

TEST REPORT



DANAK

Reg. no. 19

DELTA
Electronics Testing

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**Measurements of radio frequency interference from
RapidFire 3540 HSTR PCI UTP Adapter (STP- and S-UTP-cables)
Manufactured by Olicom A/S
Project no.: K220672-2
Date: 1999-01-06**

Title Measurements of radio frequency interference from Token RapidFire 3540 HSTR PCI UTP Adapter (STP- and S-UTP-cables)

Test object RapidFire 3540 HSTR PCI UTP Adapter

Report no. DANAK-194236

Project no. K220672-2

Test period 1998-10-29 to 1998-11-05

Client Olicom A/S
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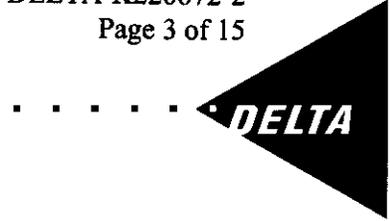
Contact person Mrs. Susanne C. Petersen

Manufacturer Olicom A/S

Specification EN 55022 class B
FCC Rules and Regulations part 15, subpart B, class B,
demonstrated by compliance with EN 55022:1994 class B
VCCI class B
CISPR 22 class B

Test personnel Henrik Egeberg Nielsen
Jesper Nielsen

Results The emission from the RapidFire 3540 HSTR PCI UTP Adapter was within the limits of EN 55022 class B, FCC rules and regulations part 15, subpart B class B, VCCI class B, and CISPR 22 class B when using STP- and S-UTP-cables.



Date 1999-01-06

Project manager



Per Hansen, Facility Manager, EMC
DELTA Electronics Testing

Responsible

Jørgen Duvald Christensen
Jørgen Duvald Christensen, B.Sc.E.E.
Department Manager, EMC
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1. SUMMARY OF TEST RESULTS

The results of the emission tests can be summarised as follows:

Emission tests	EN 55022 class B	FCC class B *)	VCCI class B	CISPR 22 class B
Conducted emission, AC mains	Passed	Passed	Passed	Passed
Radiated electromagnetic field	Passed	Passed	Passed	Passed

Abbreviations : Passed : The emission was below the limit.
Not done : No test was performed.
N/A : Not applicable.
Not relevant : The test was not relevant for the test object.

*) Demonstrated by compliance with EN 55022:1994 class B

The test results relate only to the specimen tested.

2. TEST SPECIMEN

Category : Network equipment

Manufacturer : Olicom A/S

Model/Type : RapidFire 3540 HSTR PCI UTP Adapter

Part no. : 770002050

Serial no. : Prototype

Supply voltage : 115 / 230 VAC

Operational mode : During the test, PC1 was transmitting data through EUT via STP- or S-UTP-cables to PC2. All tests were carried out at 16 Mbps and 100 Mbps. See *section 3.1*

3. GENERAL TEST CONDITIONS

3.1 Test set-up

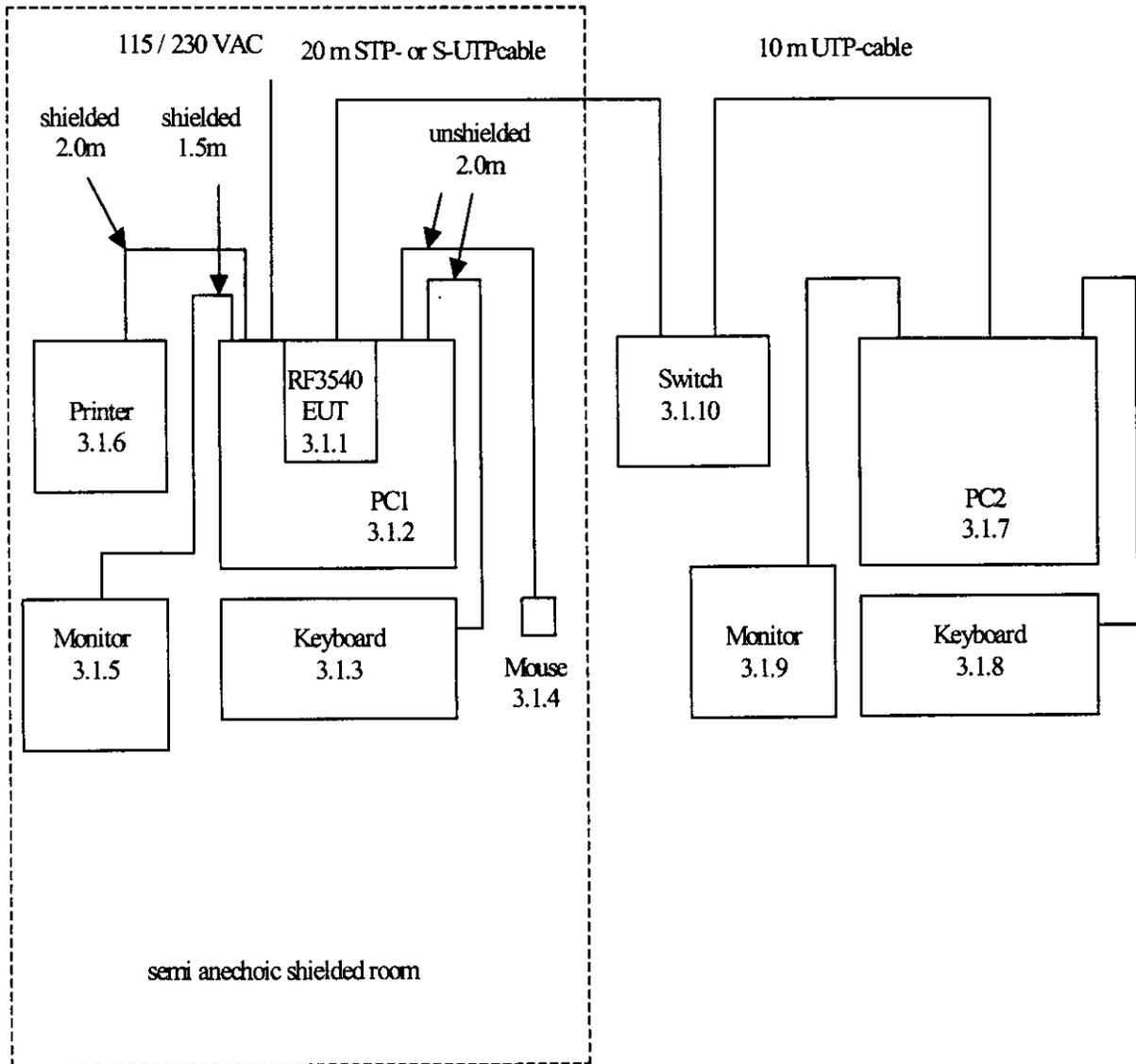


FIG. 1 Test set-up including test object and peripheral equipment.

The complete system used during the tests consisted of the following units:

3.1.1 RapidFire 3540 HSTR PCI UTP Adapter (EUT installed in 3.1.2)

Manufacturer : Olicom
Model/type : RF3540
Part no. : 770002050
Serial no. : -

3.1.2 PC1

Manufacturer : Gateway 2000
Model/type : ATX Tower
Part no. : -
Serial no. : 5614165
FCC ID : HWYTHP5133T

3.1.3 Keyboard (PC1)

Manufacturer : Digital
Model/type : RT102
Part no. : 120117 Rev. A
Serial no. : 70540913
FCC ID : AQ6-MTN4XZ15

3.1.4 Mouse (PC1)

Manufacturer : Genius
Model/type : GM-F303
Part no. : -
Serial no. : -
FCC ID : FSU4VVGGMZAS

3.1.5 Monitor (PC1)

Manufacturer : Compaq
Model/type : 460
Part no. : -
Serial no. : 32342601T003
FCC ID : BR85M-5514N

3.1.6 Printer (PC1)

Manufacturer : Hewlett Packard
Model/type : Desk Jet 890 C
Part no. : -
Serial no. : SG7 A8190QY
FCC ID : B94C4602X

3.1.7 PC2

Manufacturer : Compaq
Model/type : Prolinea 4/33
Part no. : -
Serial no. : 3061
FCC ID : CNT75MBF5

3.1.8 Keyboard (PC2)

Manufacturer : Compaq
Model/type : KPQ-E99 AC-10
Part no. : -
Serial no. : -
FCC ID : EW4KPQ4813

3.1.9 Monitor (PC2)

Manufacturer : KFC
Model/type : -
Part no. : MA-0933
Serial no. : 1161475
FCC ID : -

3.1.10 TRN Switch

Manufacturer : Olicom
Model/type : CF-8600
Part no. : 770001422
Serial no. : ECD7CO
FCC ID : -

4. TESTS AND RESULTS

4.1 Conducted emission, AC mains (EN 55022, class B)

	Requirements	
Specification	EN 50081-1:1992	
Test method	EN 55022:1994 (CISPR 22:1993), class B	
Frequency range	0.15 - 30 MHz	
Limit: (quasi-peak)	0.15-0.50 MHz: (decreasing lin. with the logarithm of freq.)	66-56 dB μ V
	0.50-5 MHz:	56 dB μ V
	5-30 MHz:	60 dB μ V
Limit: (average)	0.15-0.50 MHz: (decreasing lin. with the logarithm of freq.)	56-46 dB μ V
	0.50-5 MHz:	46 dB μ V
	5-30 MHz:	50 dB μ V
Test record sheets and photos	<i>Annex 2</i>	

Results:

The emission was within the specified limits.

Comments:

Supply voltage was 230 VAC.
 Transmitting speed was 16 Mbps and 100 Mbps.
 Cables used were STP- and S-UTP-cables.

4.2 Conducted emission, AC mains (FCC, class B / EN 55022, class B)

	Requirements	
Specification	FCC Rules and Regulations part 15, subpart B class B, demonstrated by compliance with EN 55022:1994, class B	
Test method	CISPR 22:1993	
Frequency range	0.15 - 30 MHz	
Test set-up	ANSI C63.4:1992	
Limit: (quasi-peak)	0.15-0.50 MHz: (decreasing lin. with the logarithm of freq.)	66-56 dB μ V
	0.50-5 MHz:	56 dB μ V
	5-30 MHz:	60 dB μ V
Limit: (average)	0.15-0.50 MHz: (decreasing lin. with the logarithm of freq.)	56-46 dB μ V
	0.50-5 MHz:	46 dB μ V
	5-30 MHz:	50 dB μ V
Test record sheets and photos		
		<i>Annex 3</i>

Results:

The emission was within the specified limits.

Comments:

Supply voltage was 115 VAC.
 Transmitting speed was 16 Mbps and 100 Mbps.
 Cables used were STP- and S-UTP-cables.

4.3 Conducted emission, AC mains (VCCI, class B)

	Requirements	
Specification	VCCI:1989	
Test method	EN 55022:1994 (CISPR 22:1993), class B	
Frequency range	0.15 - 30 MHz	
Limit: (quasi-peak)	0.15-0.50 MHz: (decreasing lin. with the logarithm of freq.)	66-56 dB μ V
	0.50-5 MHz:	56 dB μ V
	5-30 MHz:	60 dB μ V
Limit: (average)	0.15-0.50 MHz: (decreasing lin. with the logarithm of freq.)	56-46 dB μ V
	0.50-5 MHz:	46 dB μ V
	5-30 MHz:	50 dB μ V
Test record sheets and photos		
		<i>Annex 4</i>

Results:

The emission was within the specified limits.

Comments:

Supply voltage was 230 VAC.
 Transmitting speed was 16 Mbps and 100 Mbps.
 Cables used were STP- and S-UTP-cables.

4.4 Radiated electromagnetic field (EN 55022, class B)

	Requirements	
Specification	EN 50081-1:1992	
Test method	EN 55022:1994 (CISPR 22:1993), class B	
Measuring distance	10 m	
Frequency range	30 - 1000 MHz	
Limit: (quasi-peak)	30-230 MHz: 230-1000 MHz:	30 dB μ V/m 37 dB μ V/m
Test record sheets and photos	<i>Annex 5</i>	

Results:

The emission was within the specified limits.

Comments:

Supply voltage was 115 VAC.
Transmitting speed was 16 Mbps and 100 Mbps.
Cables used were STP- and S-UTP-cables.

4.5 Radiated electromagnetic field (FCC, class B / EN 55022, class B)

	Requirements	
Specification	FCC Rules and Regulations part 15, subpart B, class B, demonstrated by compliance with EN 55022:1995, class B	
Test method	EN 55022:1995 (CISPR 22:1993), class B	
Test set-up	ANSI C63.4:1992	
Measuring distance	10 m	
Frequency range	30 - 1000 MHz	
Limit: (quasi-peak)	30-230 MHz:	30 dB μ V/m
	230-1000 MHz:	37 dB μ V/m
Test record sheets and photos		
		<i>Annex 6</i>

Results:

The emission was within the specified limits.

Comments:

Supply voltage was 115 VAC.
 Transmitting speed was 16 Mbps and 100 Mbps.
 Cables used were STP- and S-UTP-cables.

4.6 Radiated electromagnetic field (VCCI, class B)

	Requirements	
Specification	VCCI:1989	
Test method	EN 55022:1994 (CISPR 22:1993), class B	
Measuring distance	10 m	
Frequency range	30 - 1000 MHz	
Limit: (quasi-peak)	30-230 MHz:	30 dB μ V/m
	230-1000 MHz:	37 dB μ V/m
Test record sheets and photos		
		<i>Annex 7</i>

Results:

The emission was within the specified limits.

Comments:

Supply voltage was 115 VAC.
 Transmitting speed was 16 Mbps and 100 Mbps.
 Cables used were STP- and S-UTP-cables.

ANNEX 1

List of instruments

(1 page)

LIST OF INSTRUMENTS

EC NO	INSTRUMENT	MANUFACTURER	TYPE
29861	SOFTWARE Ver. 1.50c	ROHDE & SCHWARZ	ES-K1, PART:1026.6790.02
29916	AUTOMATIC EMI RECEIVER	ROHDE & SCHWARZ	ESCS-30
29797	BILOG ANTENNA, 30-1000 MHz	CHASE ELECTRICS LTD	CBL 6111A
29461	ARTIFICIAL MAINS NETWORK	ROHDE & SCHWARZ	ESH2-Z5

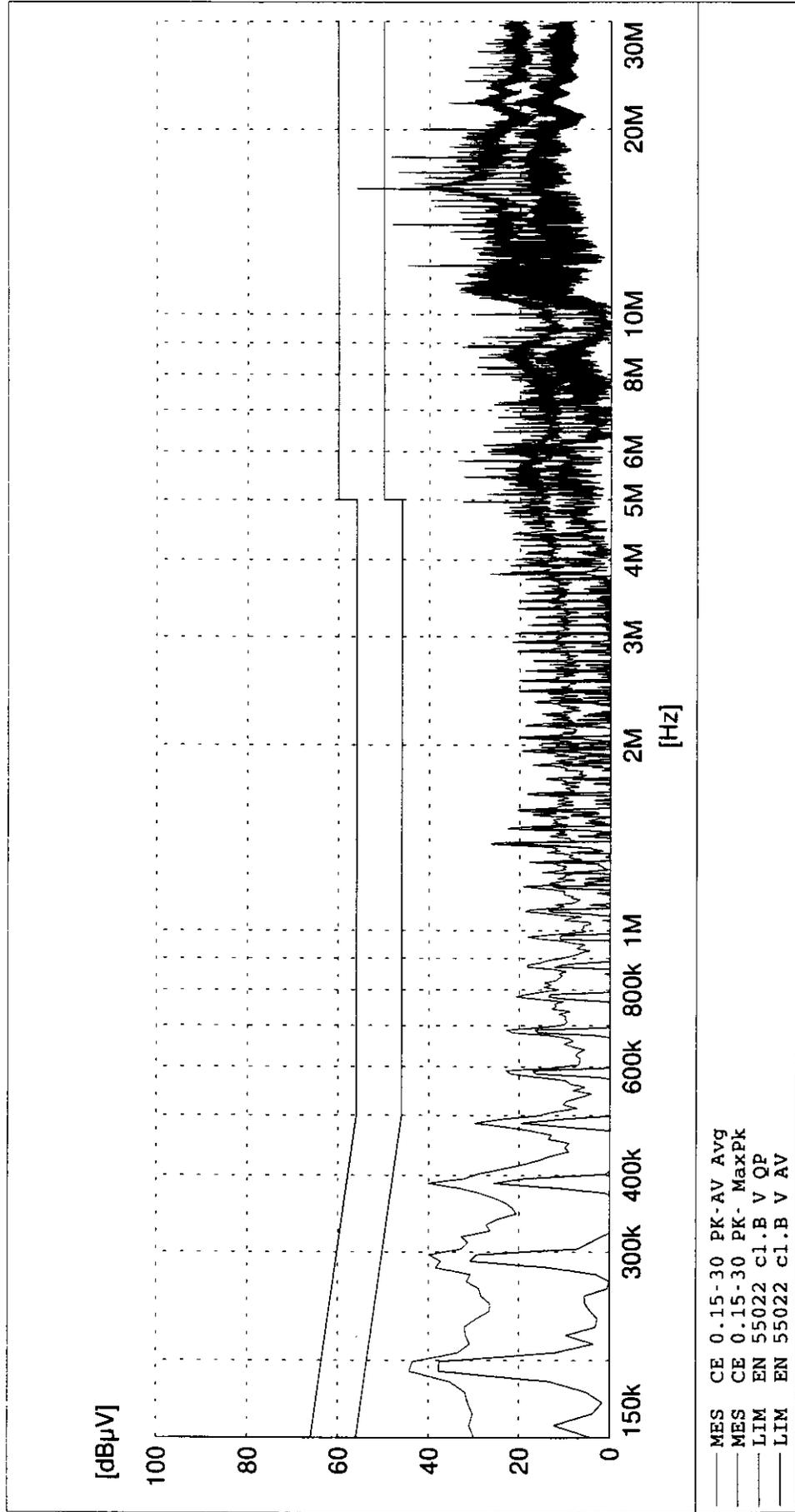
ANNEX 2

Test record sheets and photos regarding
conducted emission, AC mains (EN 55022, class B)

(10 pages)

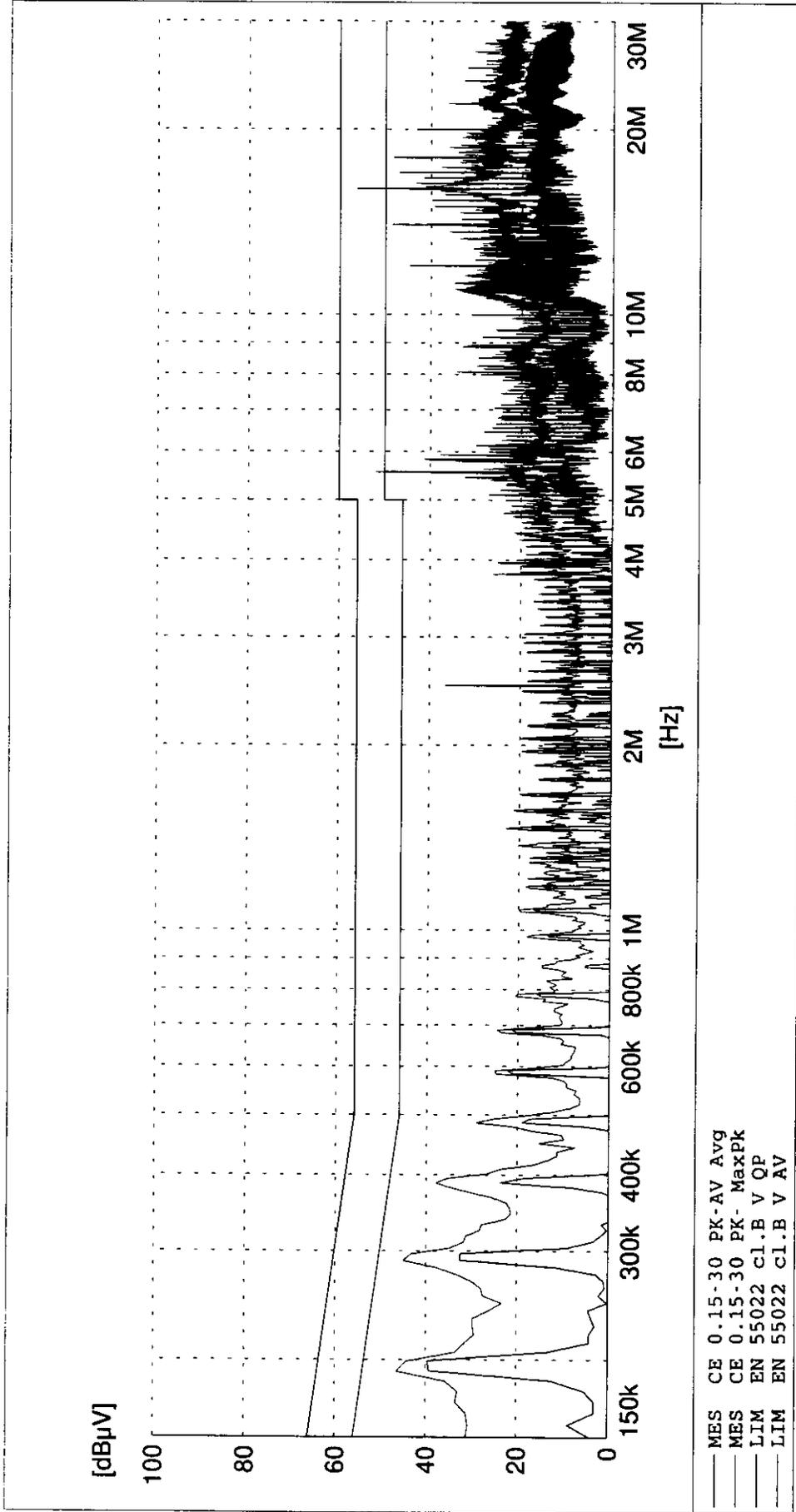
DELTA electronics testing

EUT: OC3540 rev.2. 16 Mbps. STP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 230 Vac. Line no. Neutral.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 25
 Start of Test: 1998-11-05



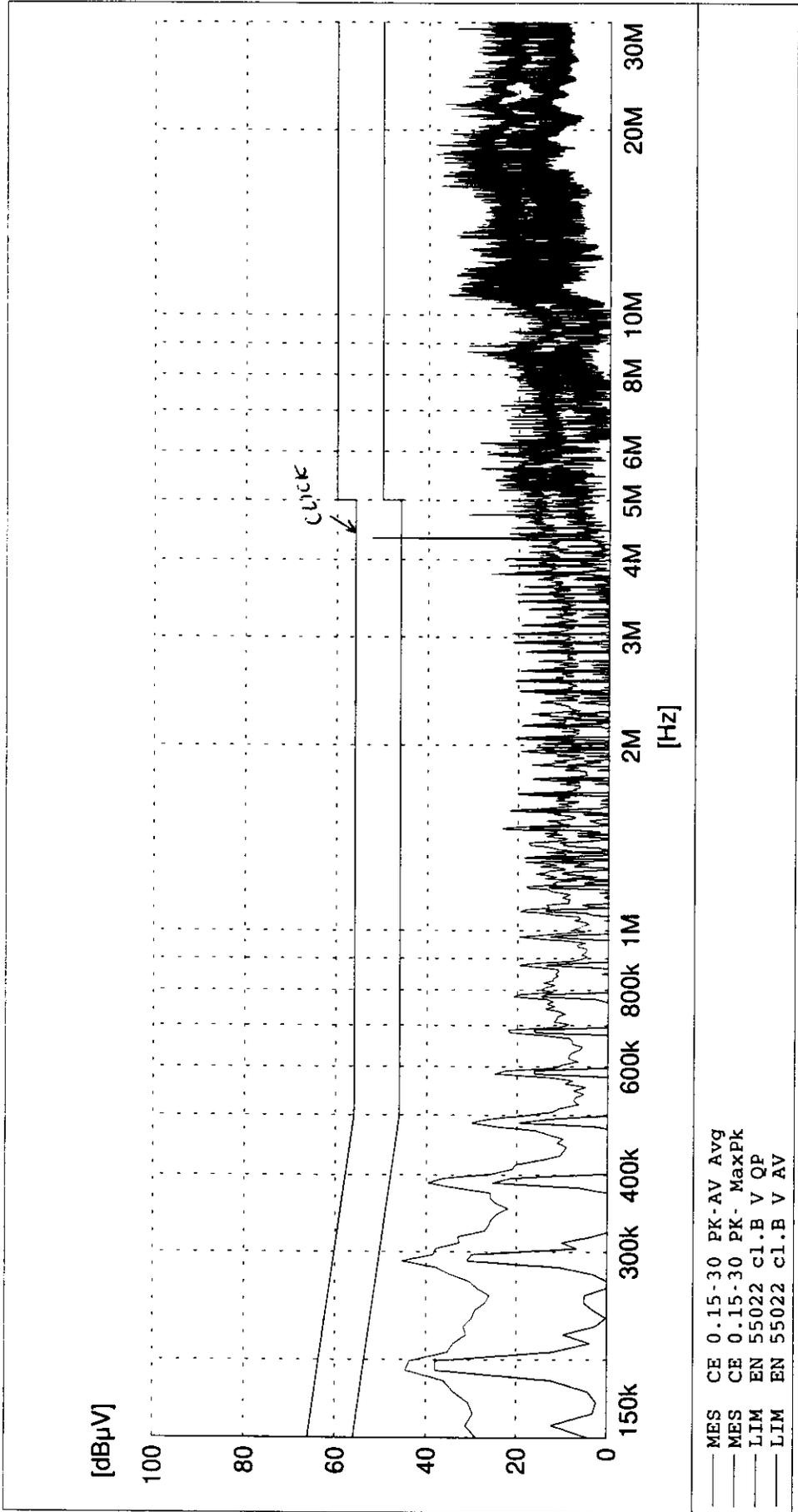
DELTA electronics testing

EUT: OC3540 rev.2. 16 Mbps. STP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 230 Vac. Line no. Line 1.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 26
 Start of Test: 1998-11-05



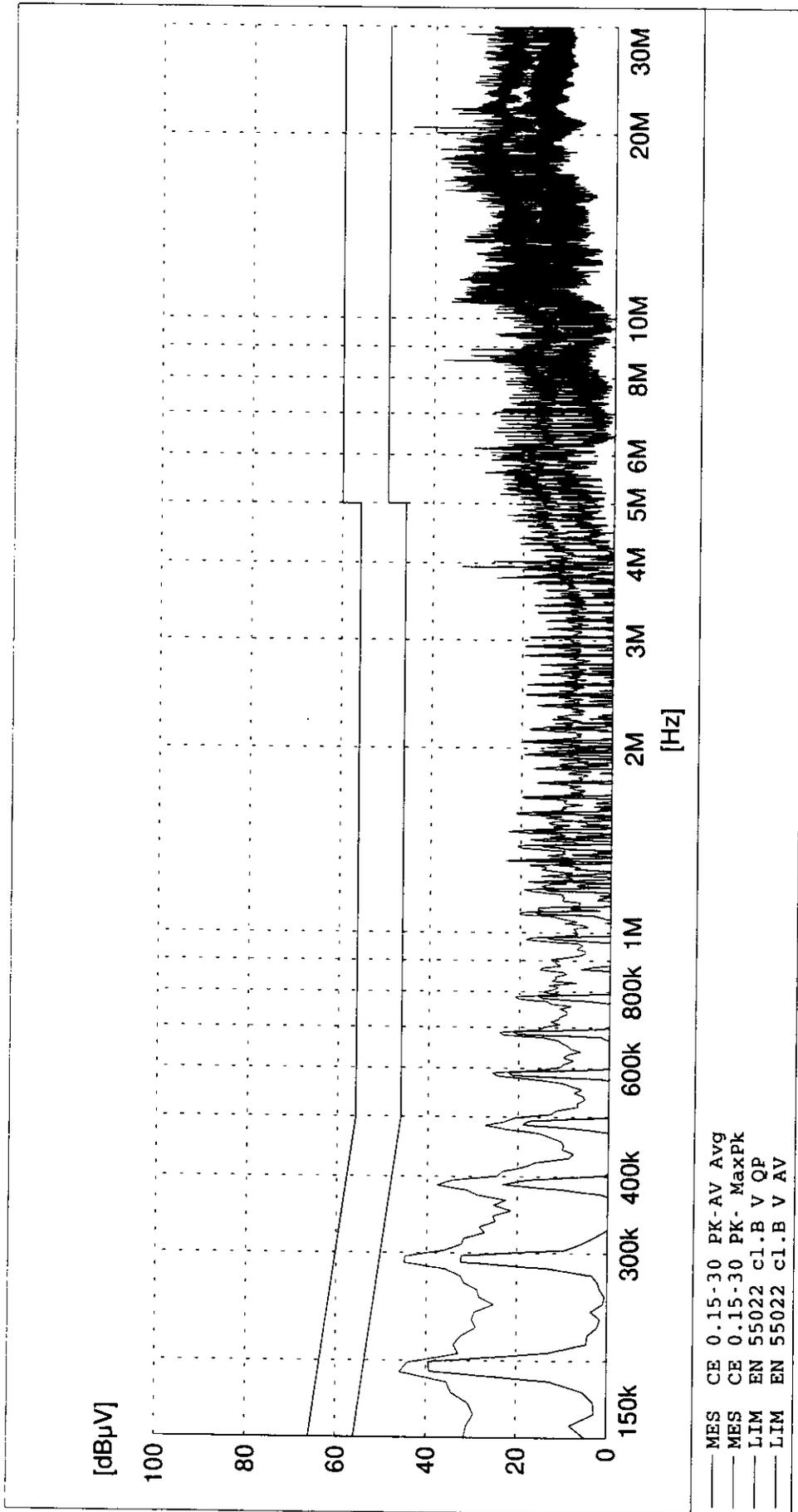
DELTA electronics testing

EUT: OC3540 rev.2. 100 Mbps. STP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 230 Vac. Line no. Neutral.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 27
 Start of Test: 1998-11-05



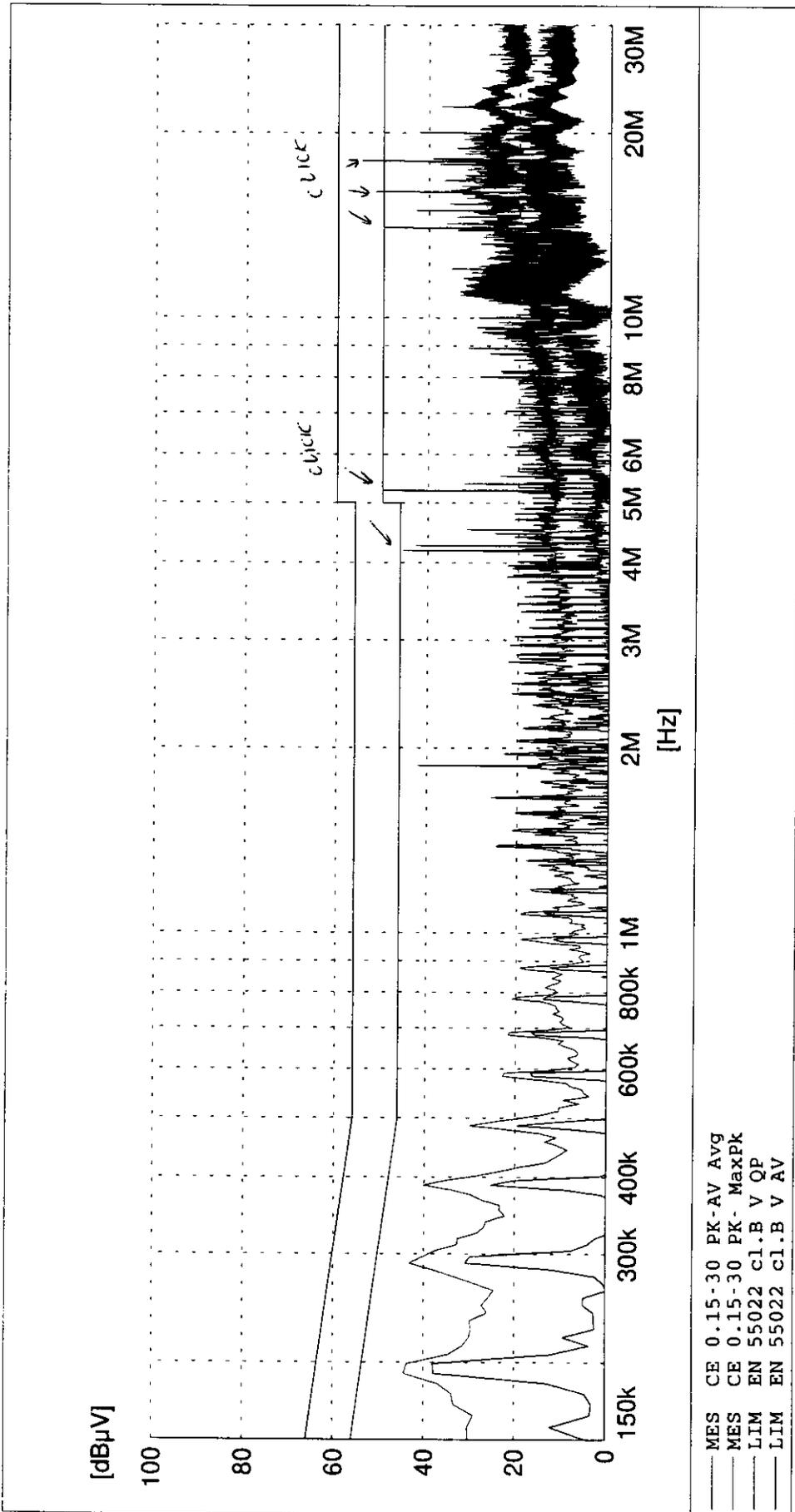
DELTA electronics testing

EUT: OC3540 rev.2. 100 Mbps. STP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 230 Vac. Line no. Line 1.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 28
 Start of Test: 1998-11-05



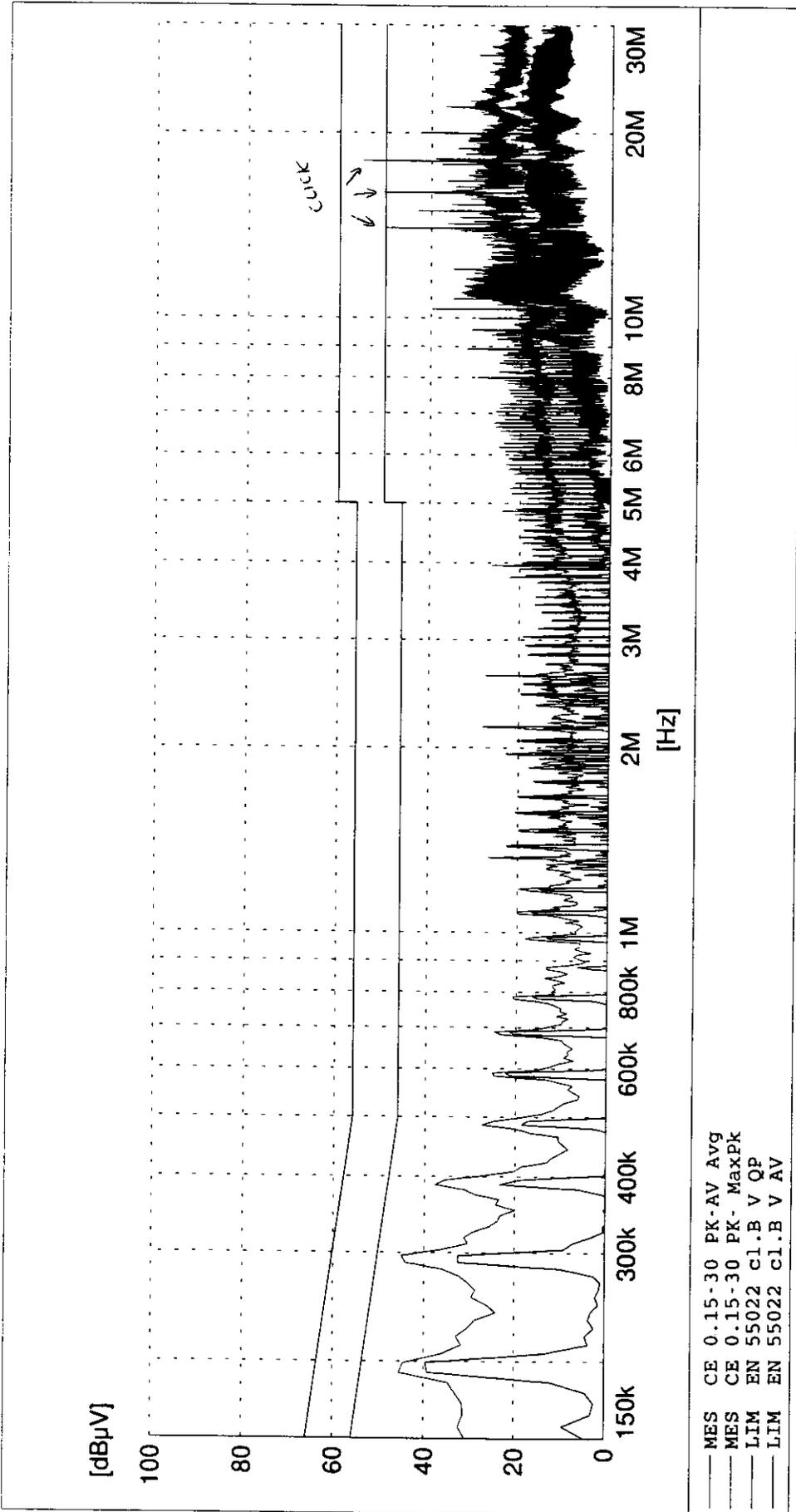
DELTA electronics testing

EUT: OC3540 rev.2. 16 Mbps. S-UTP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 230 Vac. Line no. Neutral.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 33
 Start of Test: 1998-11-05



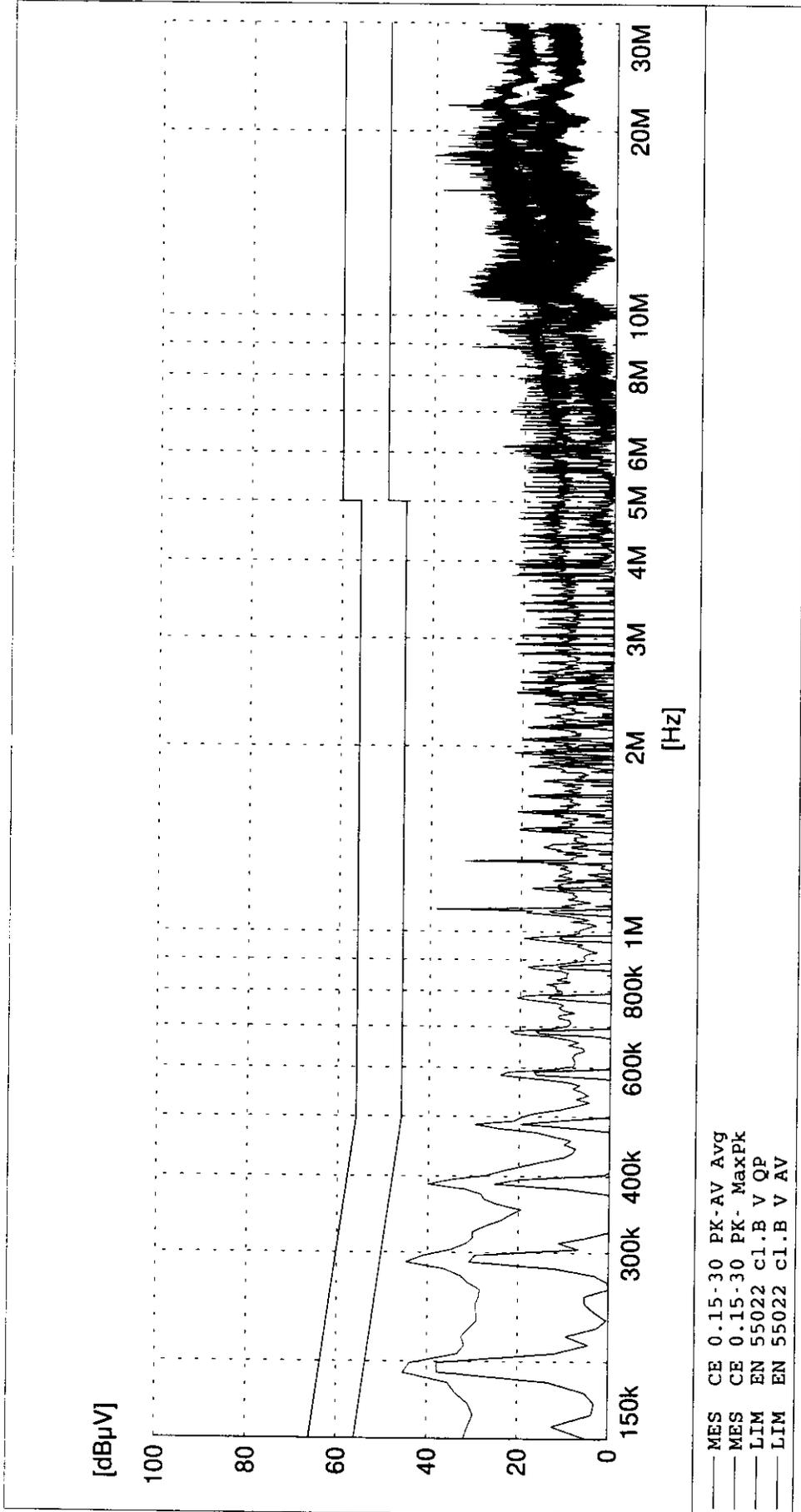
DELTA electronics testing

EUT: OC3540 rev.2. 16 Mbps. S-UTP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 230 Vac. Line no. Line 1.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 34
 Start of Test: 1998-11-05



DELTA electronics testing

EUT: OC3540 rev.2. 100 Mbps. S-Utp cable.
Manufacturer: Olicom A/S.
Operating Condition: 230 Vac. Line no. Neutral.
Test Site: EMC-5
Operator: JN - K220672
Test Specification: EN 55022 B.
Comment: Sheet 35
Start of Test: 1998-11-05



DELTA electronics testing

EUT: OC3540 rev.2. 100 Mbps. S-UTP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 230 Vac. Line no. Line 1.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 36
 Start of Test: 1998-11-05

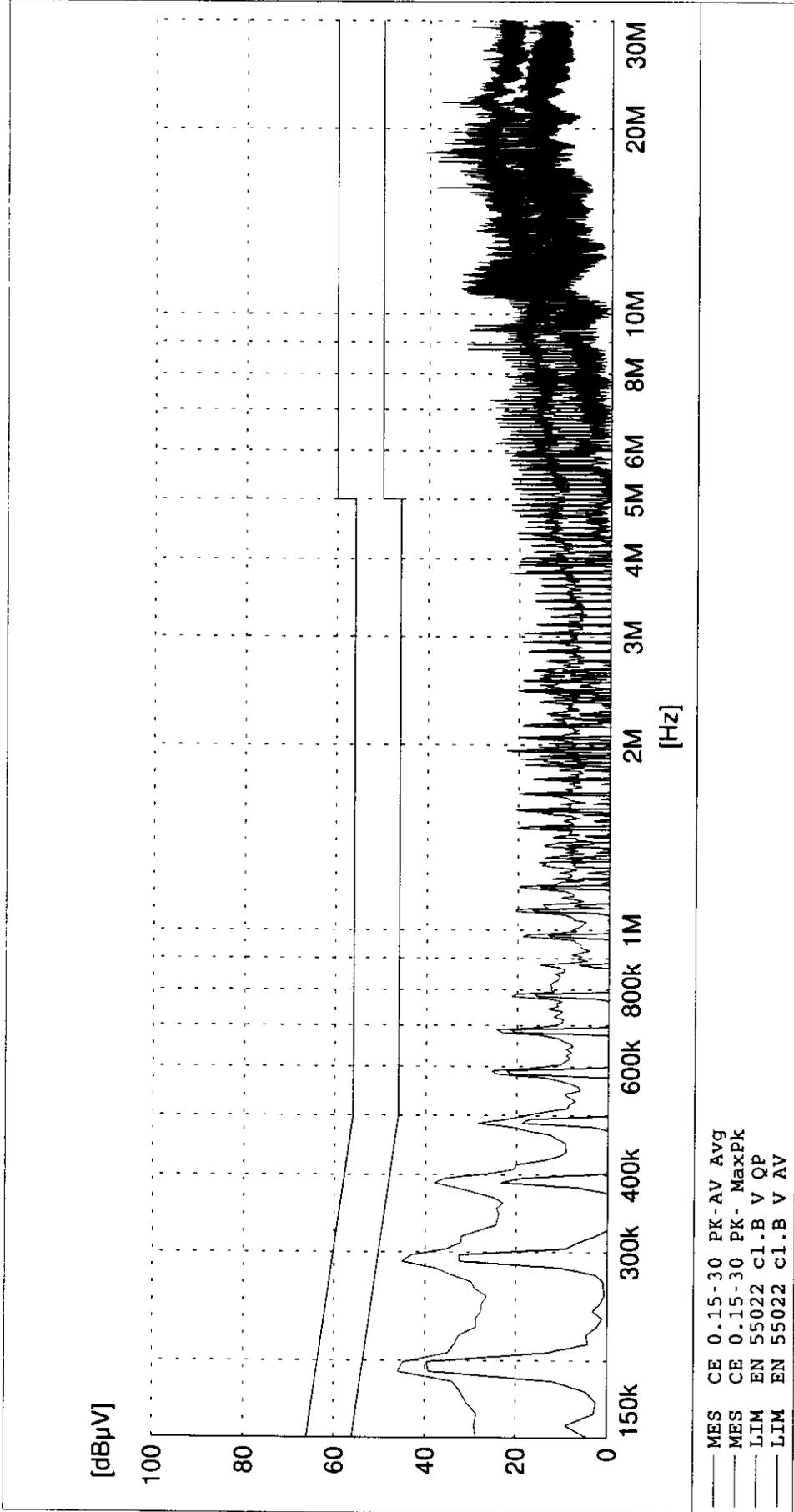


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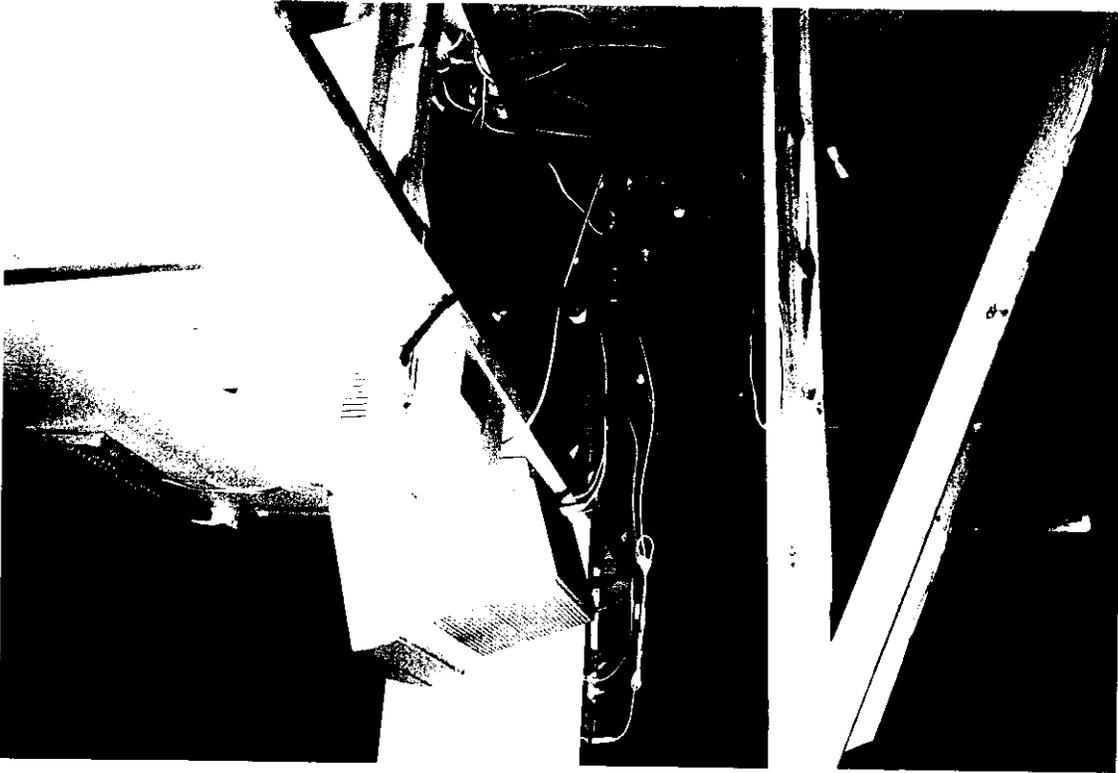
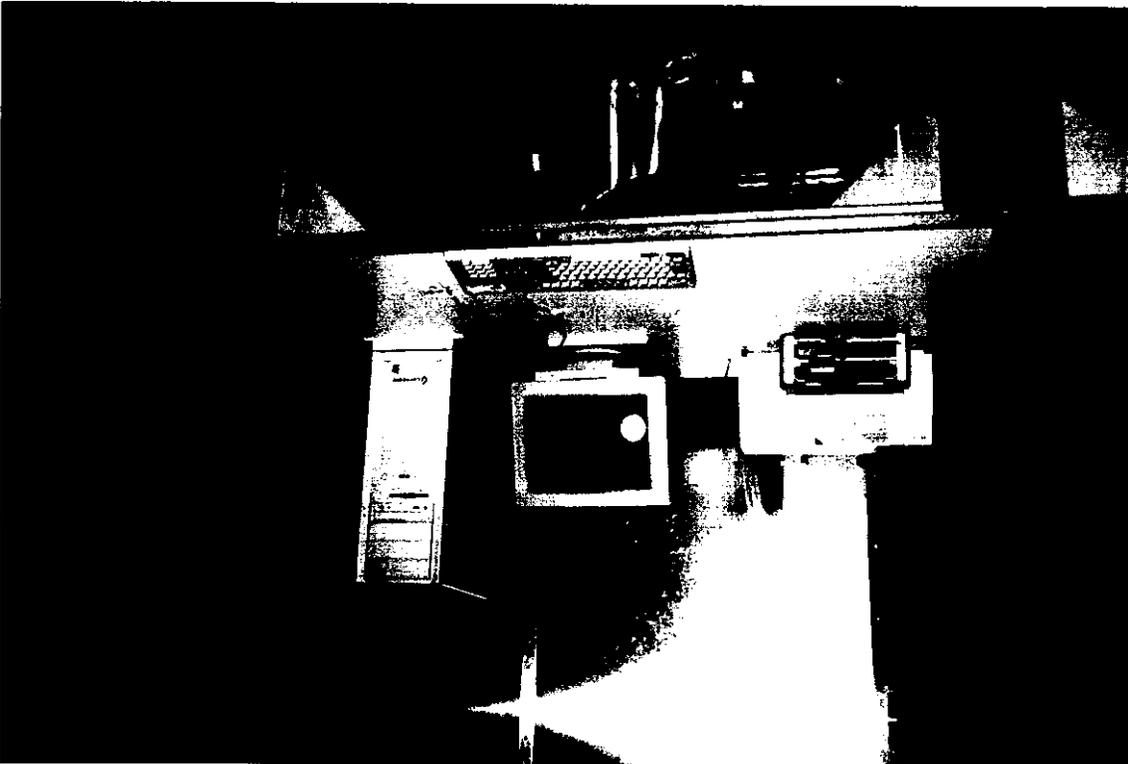


PHOTO A2.3



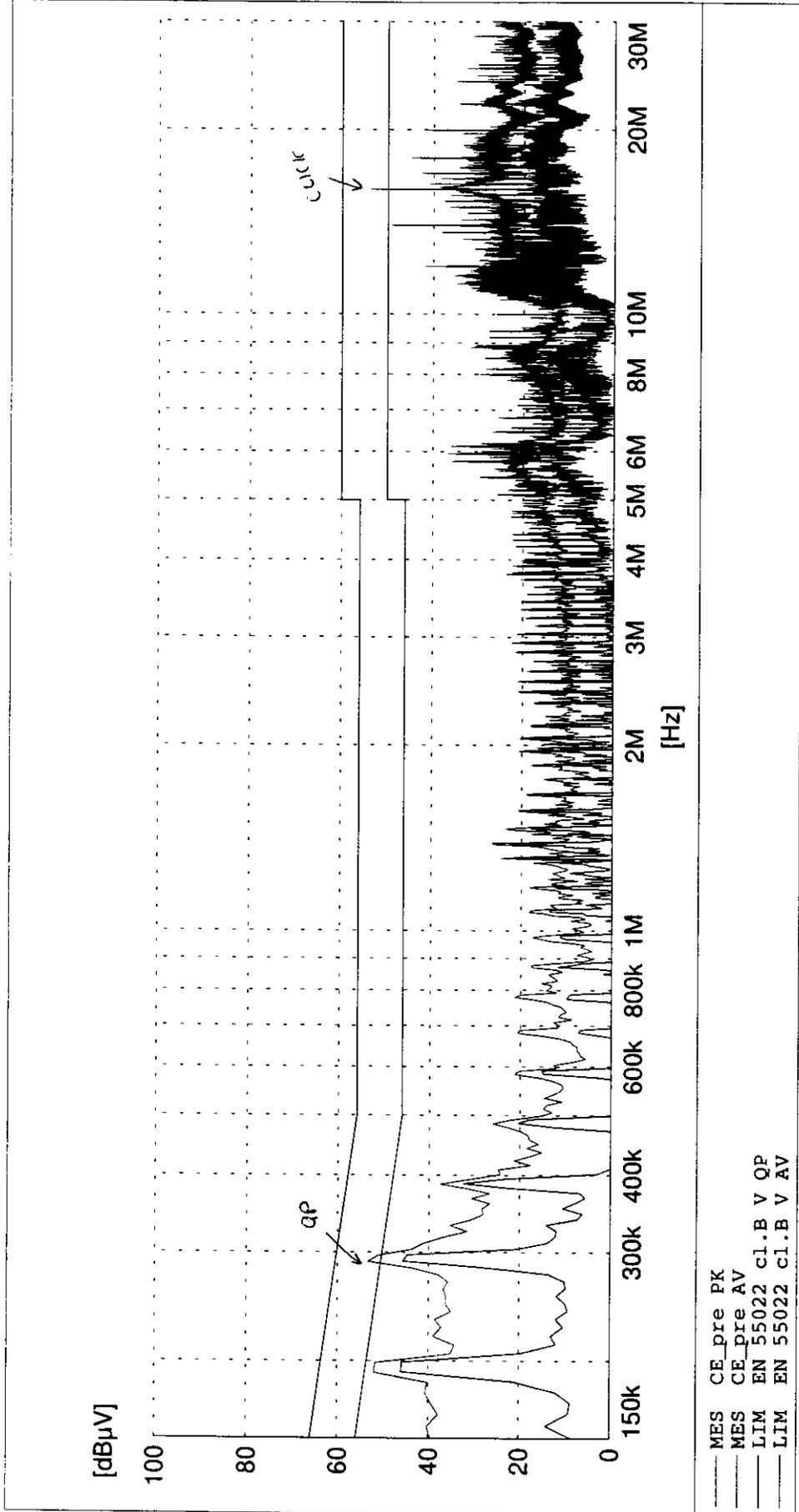
ANNEX 3

Test record sheets and photos regarding
conducted emission, AC mains (FCC class B, EN 55022 class B)

(10 pages)

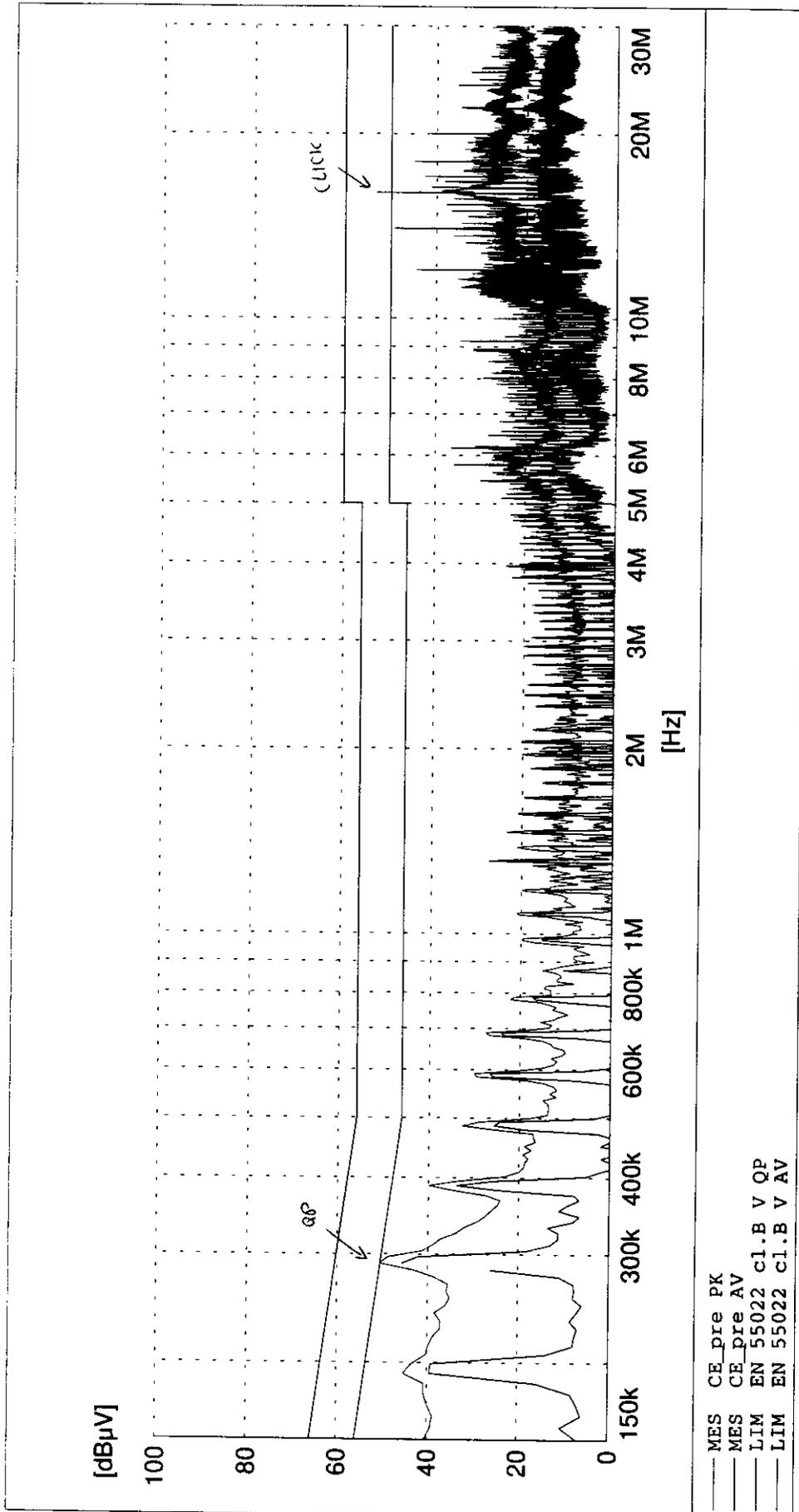
DELTA electronics testing

EUT: OC3540 rev.2. 16 Mbps. STP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 115 Vac. Line no. Neutral.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B
 Comment: Sheet 21
 Start of Test: 1998-11-05



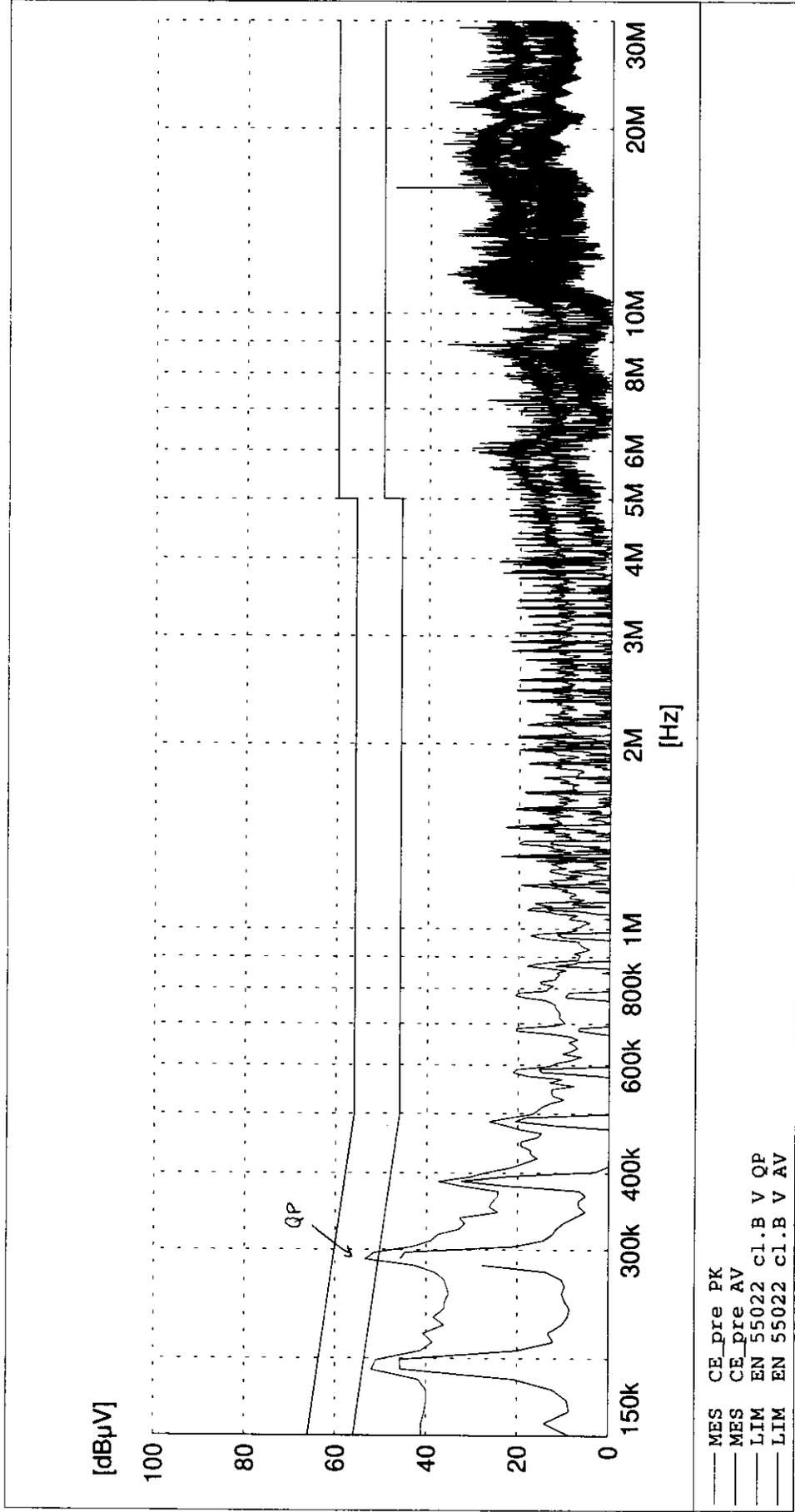
DELTA electronics testing

EUT: OC3540 rev.2. 16 Mbps. STP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 115 Vac. Line no. Line 1.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022
 Comment: Sheet 2
 Start of Test: 1998-11-05



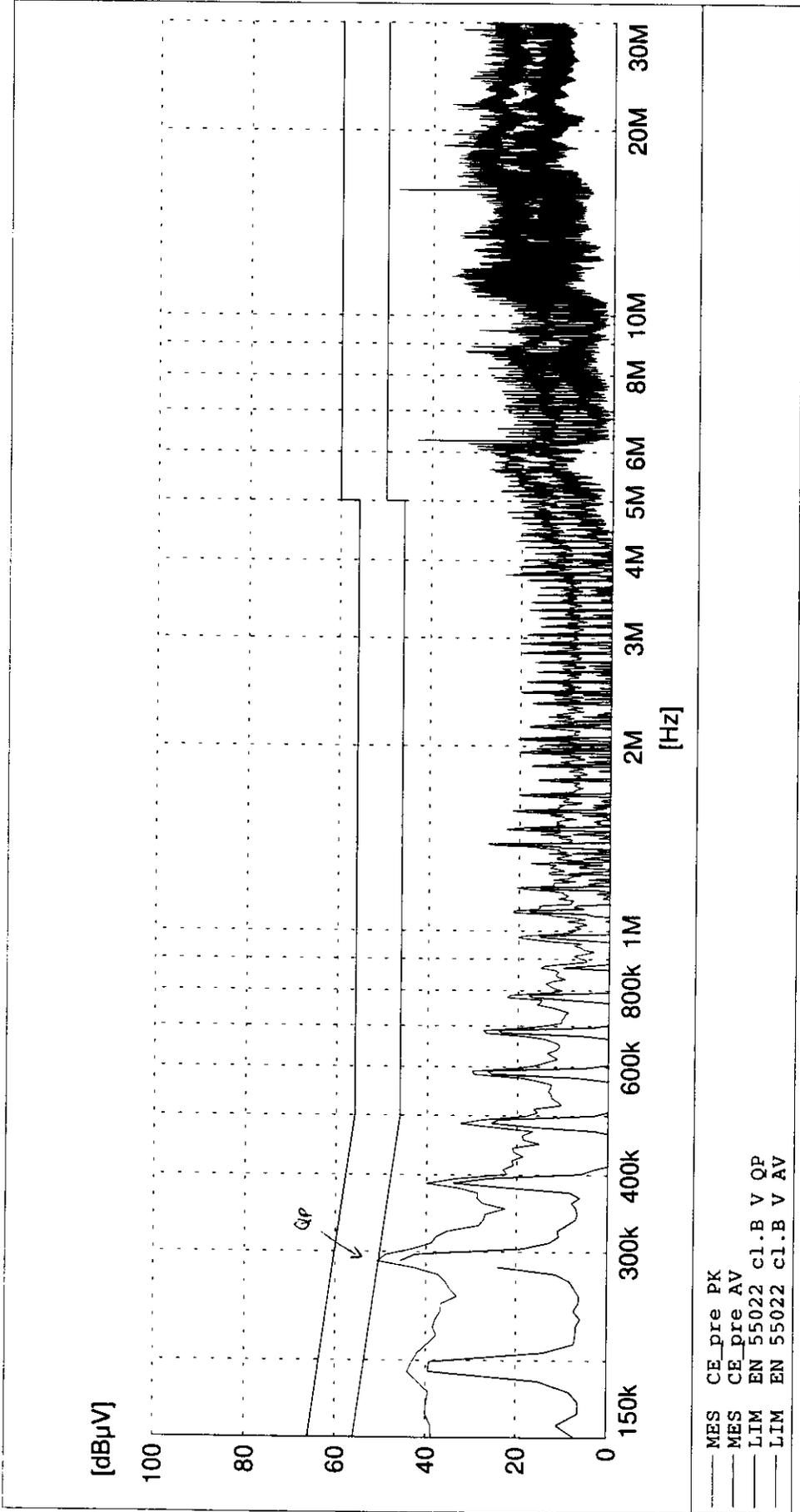
DELTA electronics testing

EUT: OC3540 rev.2. 100 Mbps. STP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 115 Vac. Line no. Neutral.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 23
 Start of Test: 1998-11-05



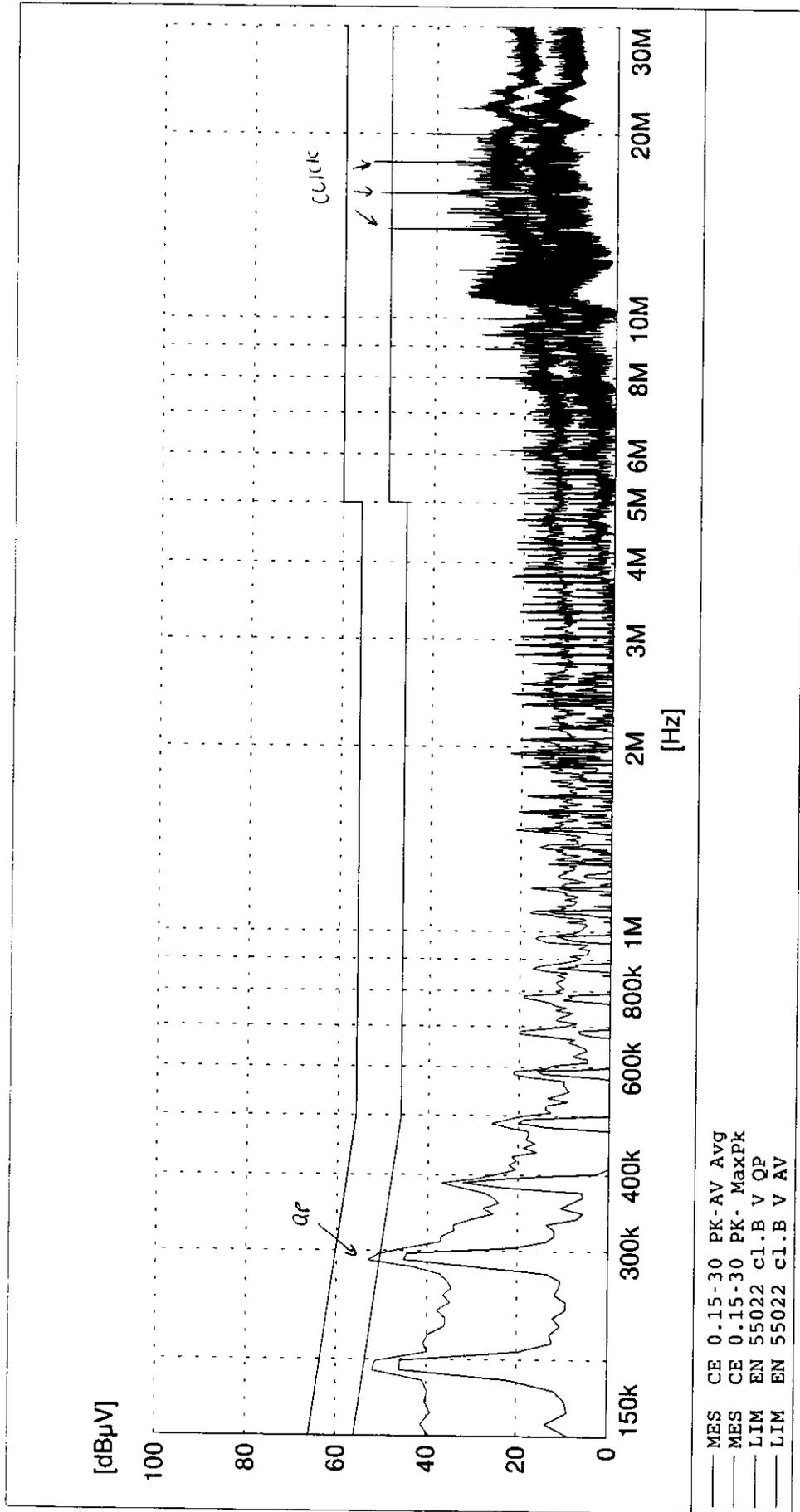
DELTA electronics testing

EUT: OC3540 rev.2. 100 Mbps. STP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 115 Vac. Line no. Line 1.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 24
 Start of Test: 1998-11-05



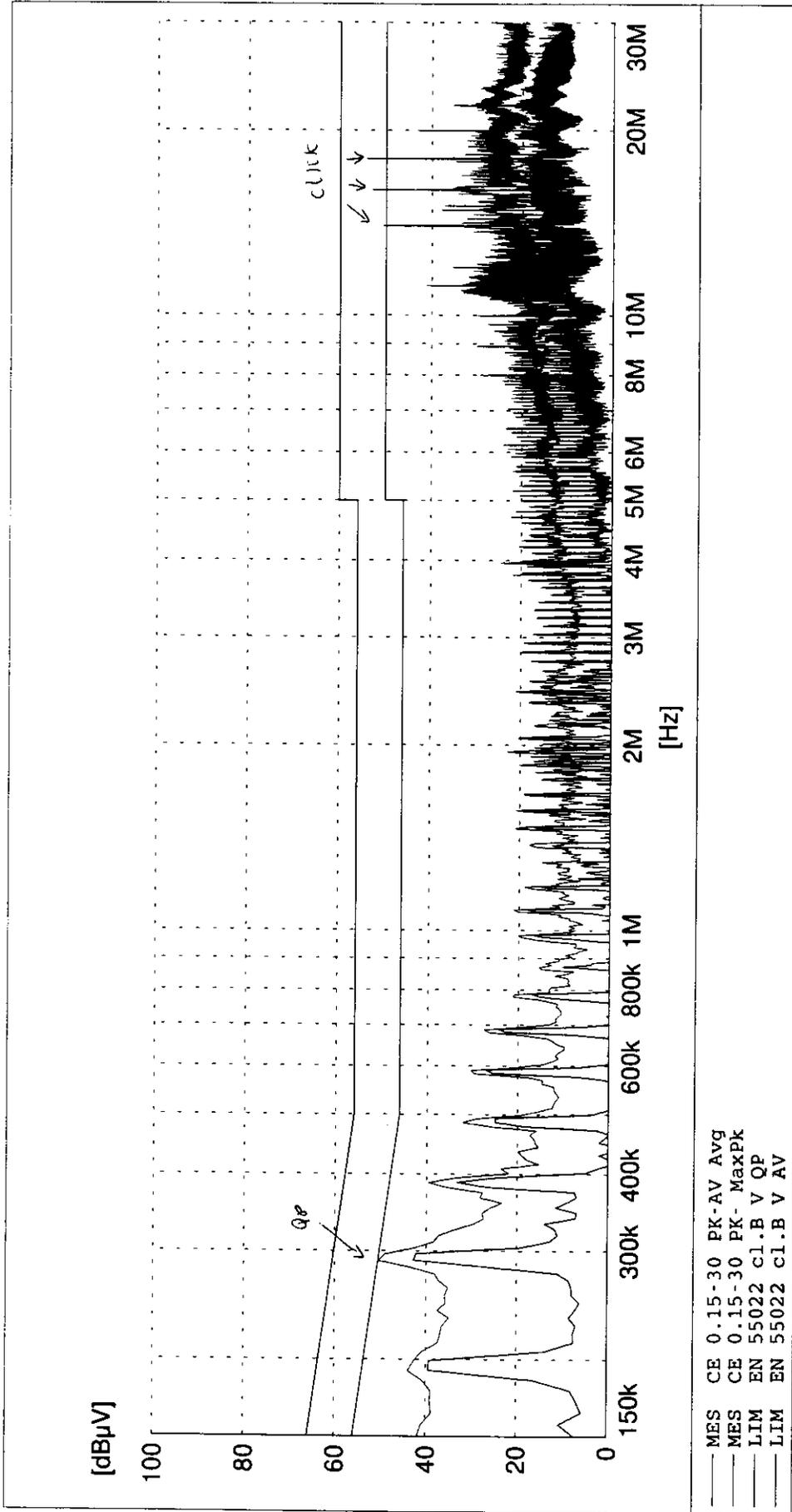
DELTA electronics testing

EUT: OC3540 rev.2. 16 Mbps. S-UTP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 115 Vac. Line no. Neutral.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 29
 Start of Test: 1998-11-05



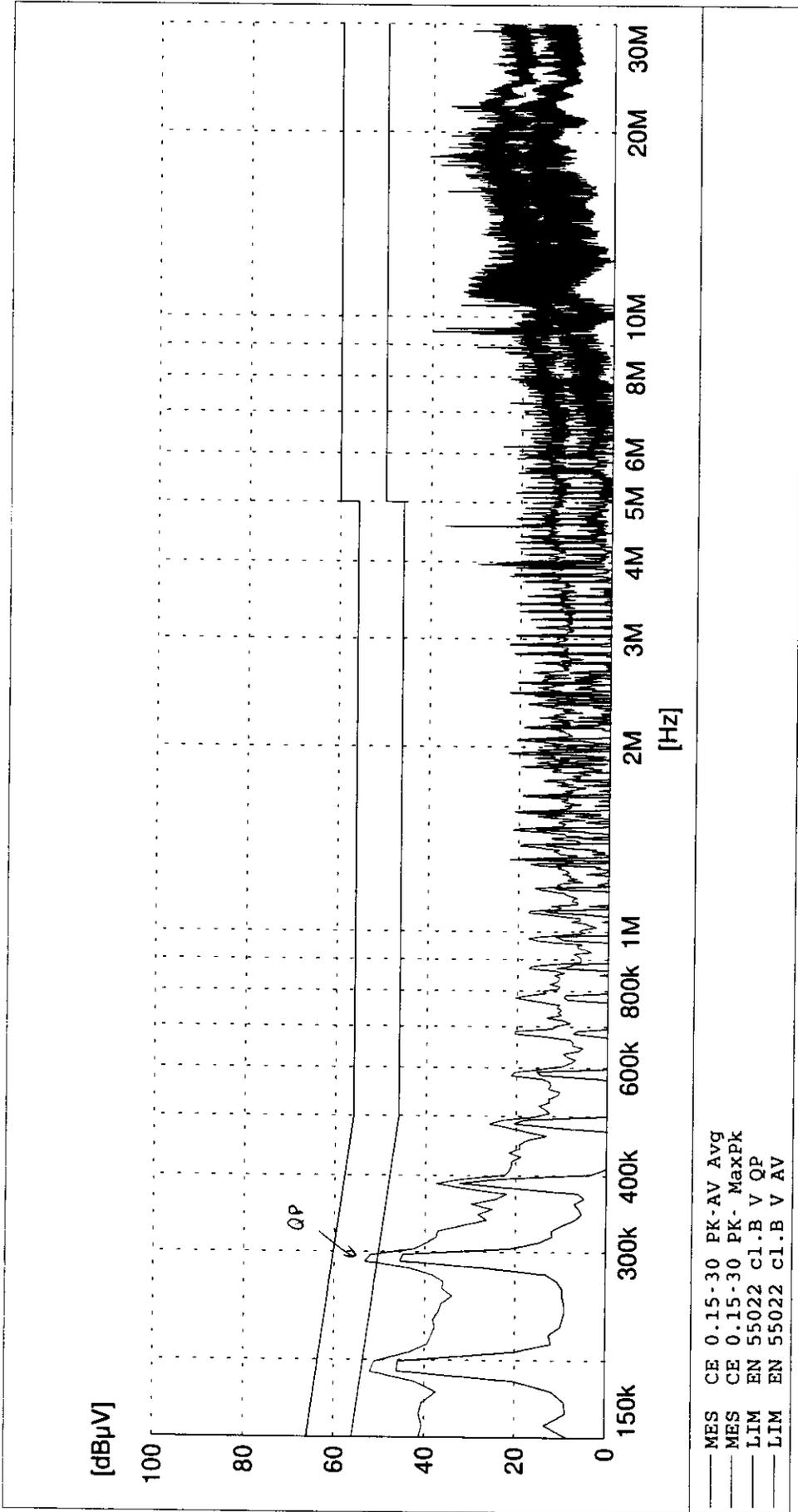
DELTA electronics testing

EUT: OC3540 rev.2. 16 Mbps. S-UTP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 115 Vac. Line no. Line 1.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 30
 Start of Test: 1998-11-05



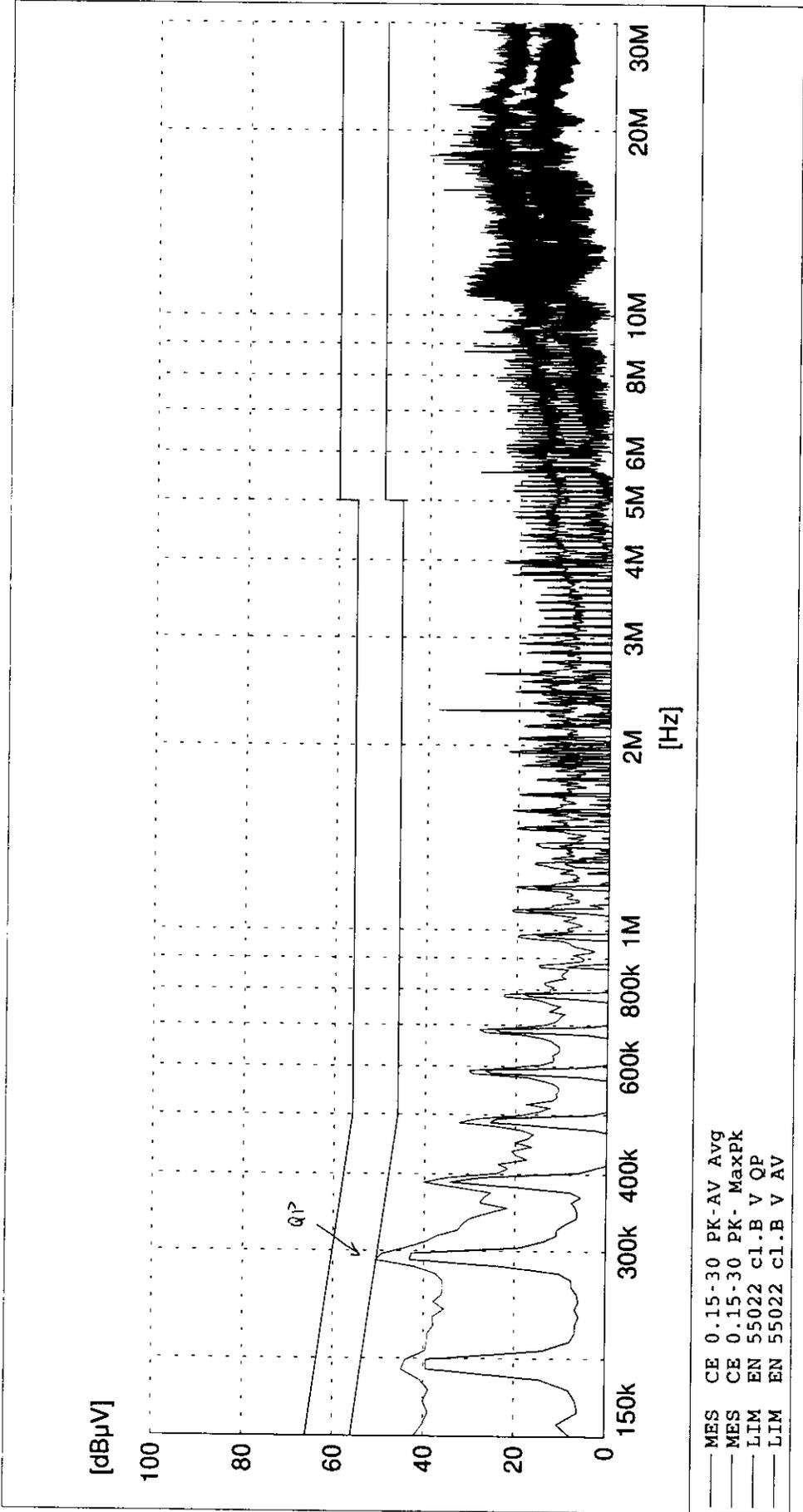
DELTA electronics testing

EUT: OC3540 rev.2. 100 Mbps. S-UTP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 115 Vac. Line no. Neutral.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 31
 Start of Test: 1998-11-05



DELTA electronics testing

EUT: OC3540 rev.2. 100 Mbps. S-UTP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 115 Vac. Line no. Line 1.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 32
 Start of Test: 1998-11-05



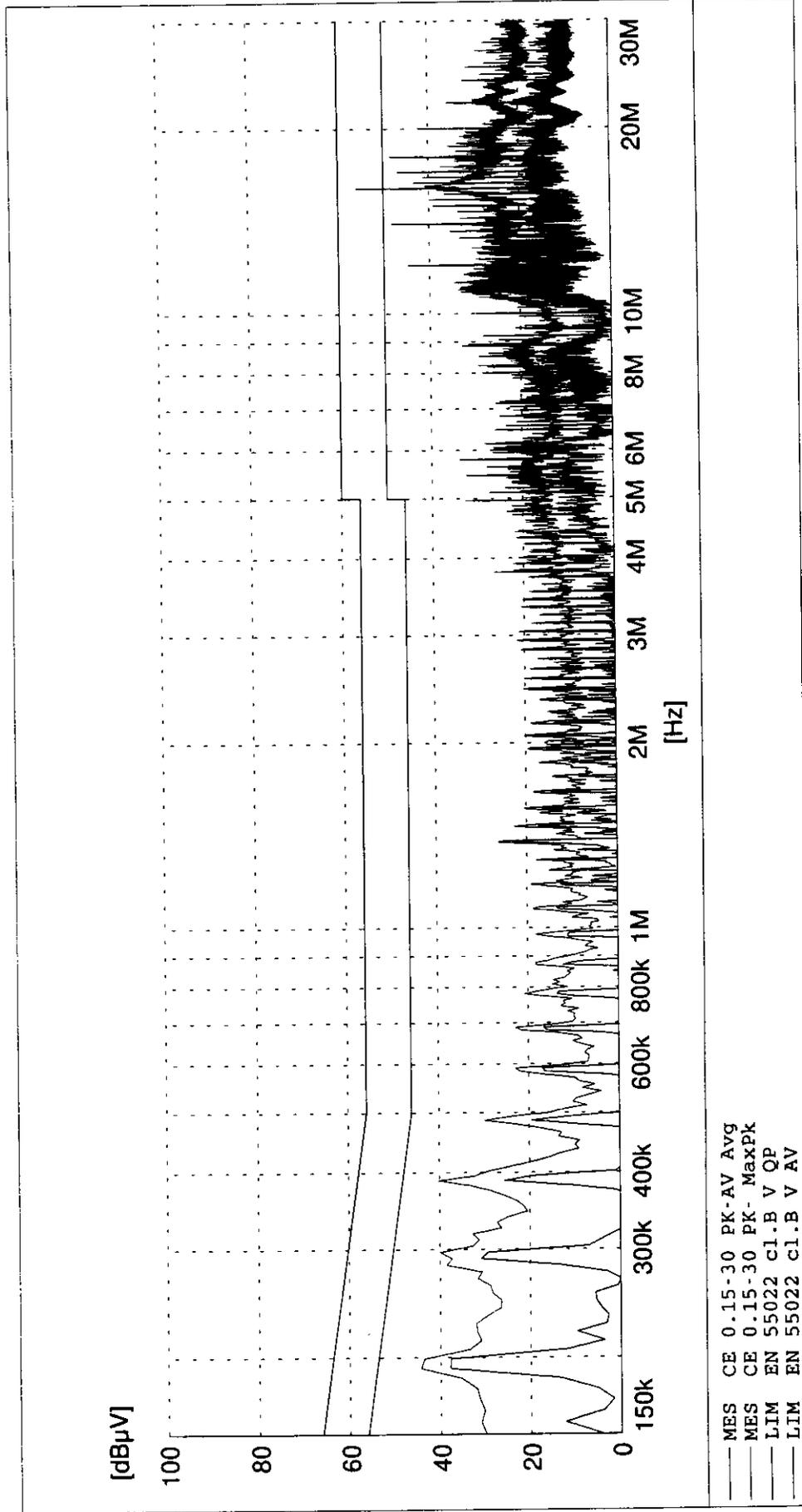
ANNEX 4

**Test record sheets and photos regarding
conducted emission, AC mains (VCCI, class B)**

(10 pages)

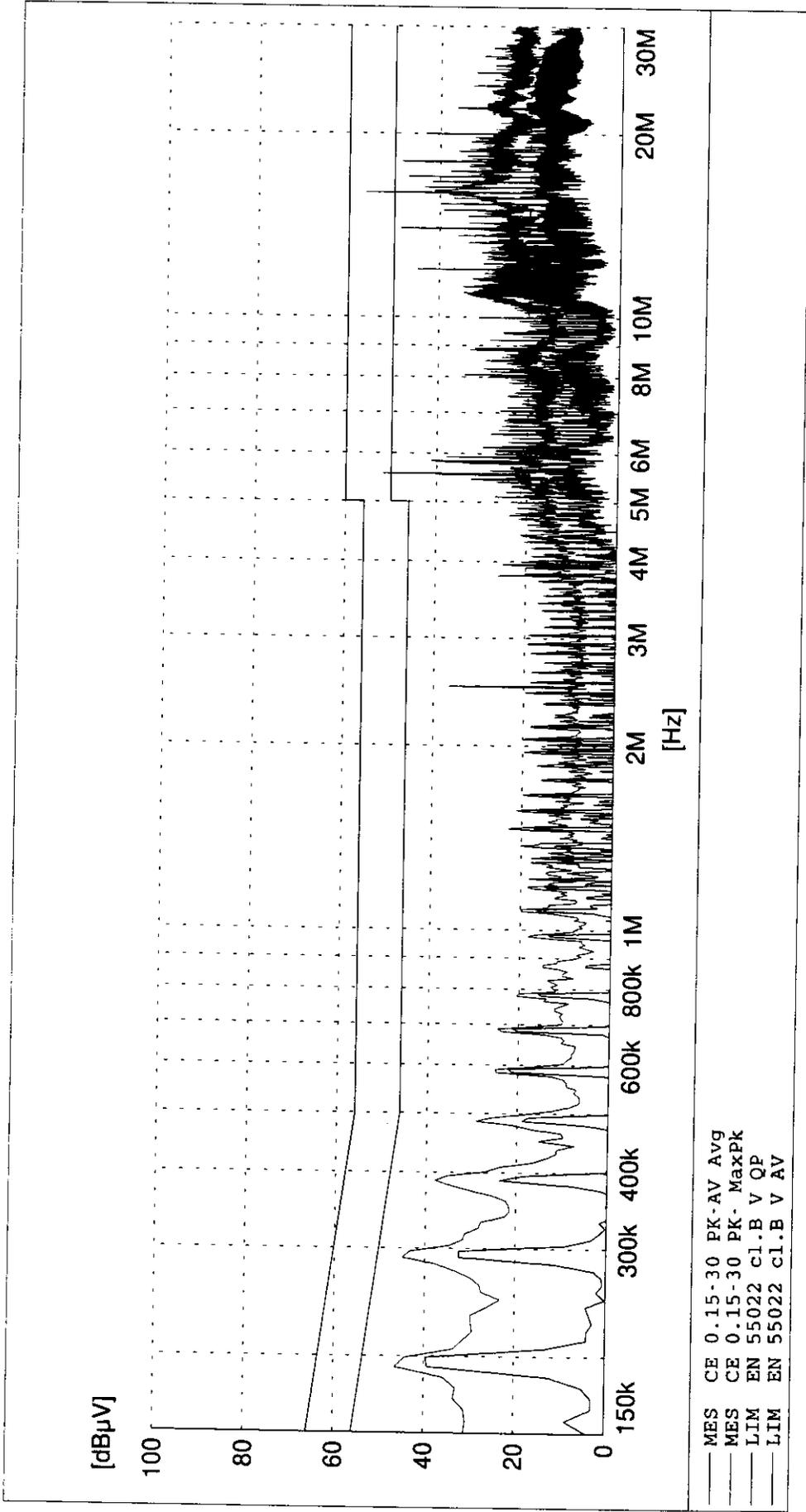
DELTA electronics testing

EUT: OC3540 rev.2. 16 Mbps. STP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 230 Vac. Line no. Neutral.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 25
 Start of Test: 1998-11-05



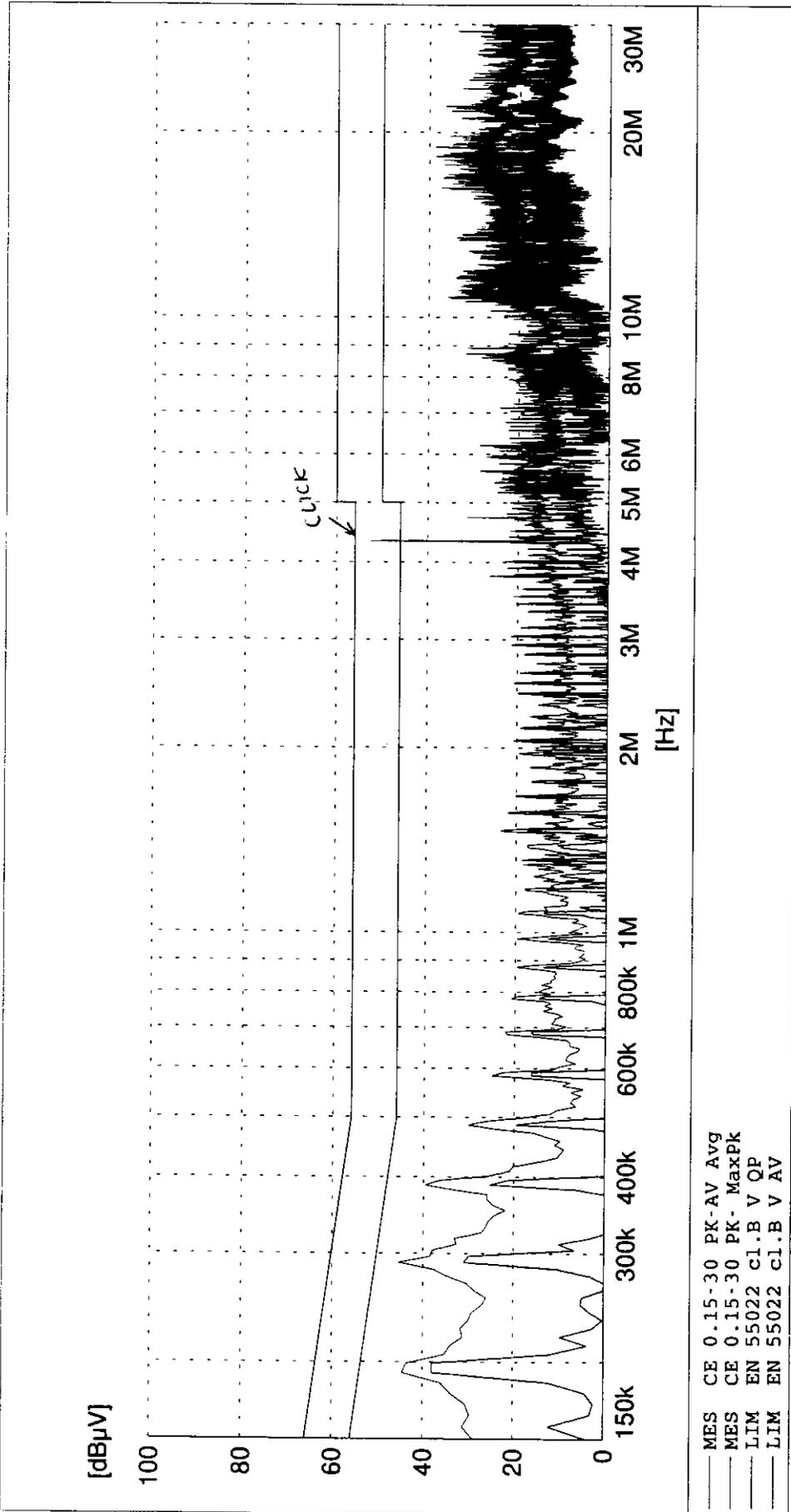
DELTA electronics testing

EUT: OC3540 rev.2. 16 Mbps. STP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 230 Vac. Line no. Line 1.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 26
 Start of Test: 1998-11-05



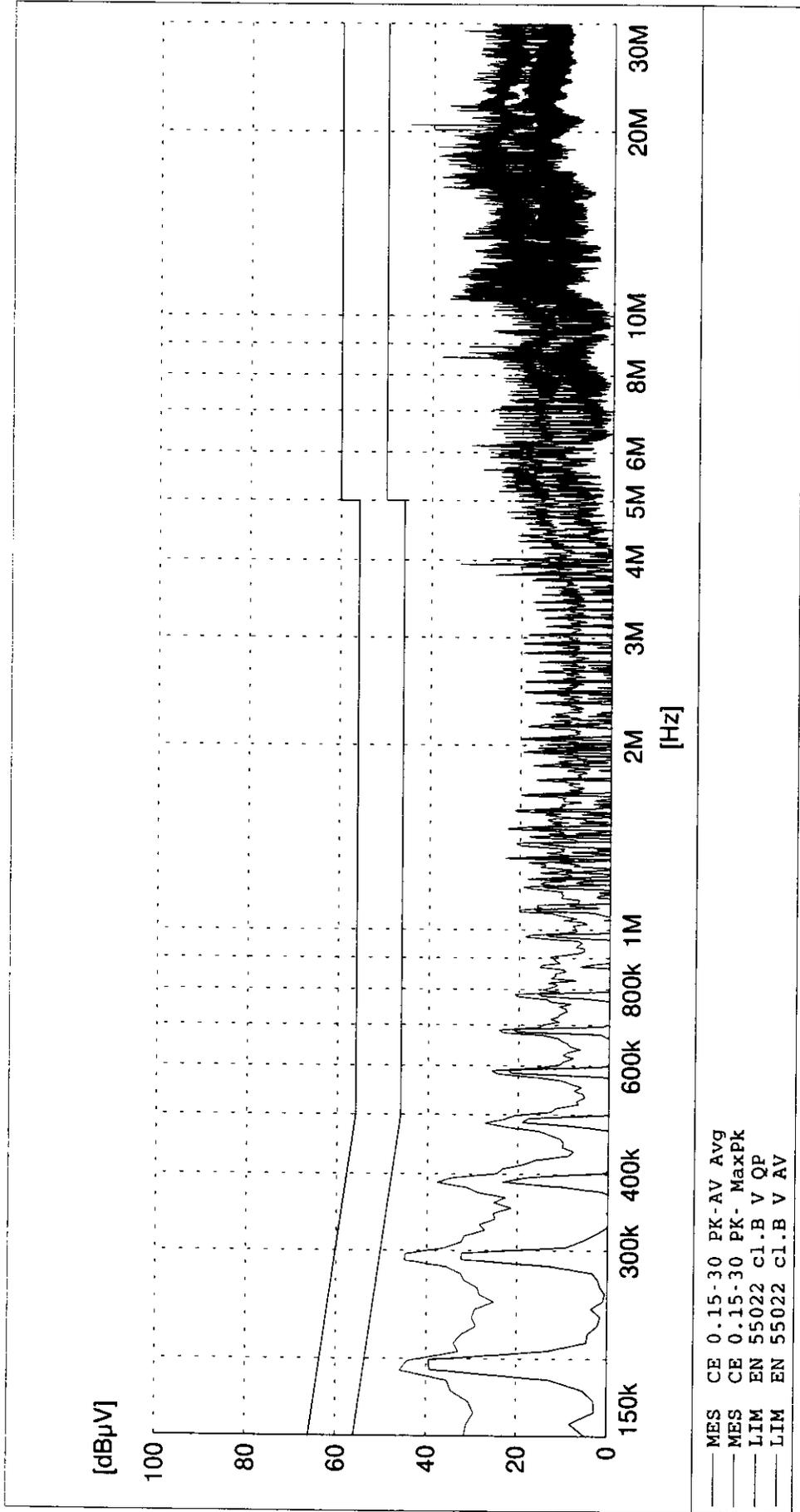
DELTA electronics testing

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 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 27
 Start of Test: 1998-11-05



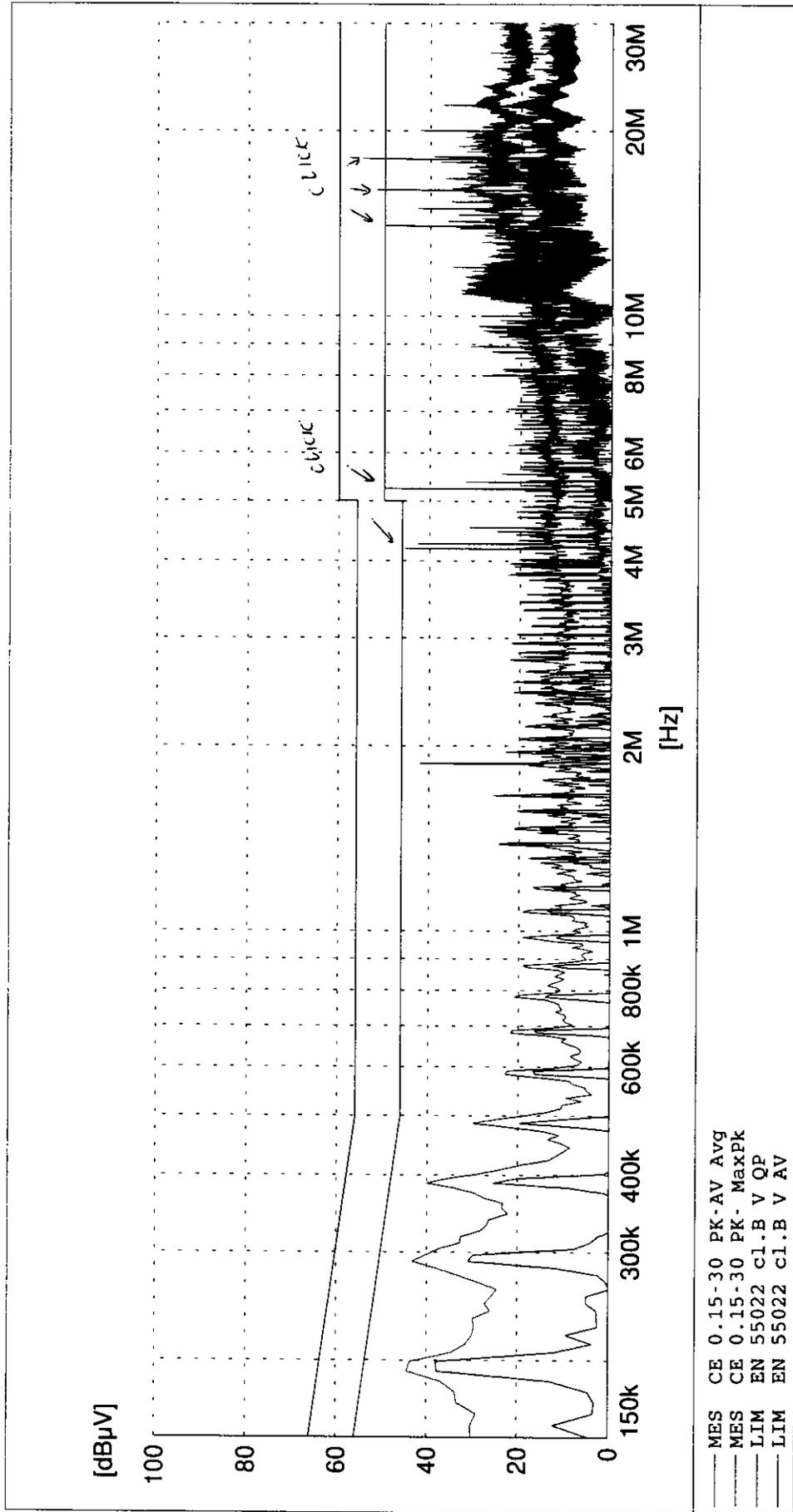
DELTA electronics testing

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 Manufacturer: Olicom A/S.
 Operating Condition: 230 Vac. Line no. Line 1.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 28
 Start of Test: 1998-11-05



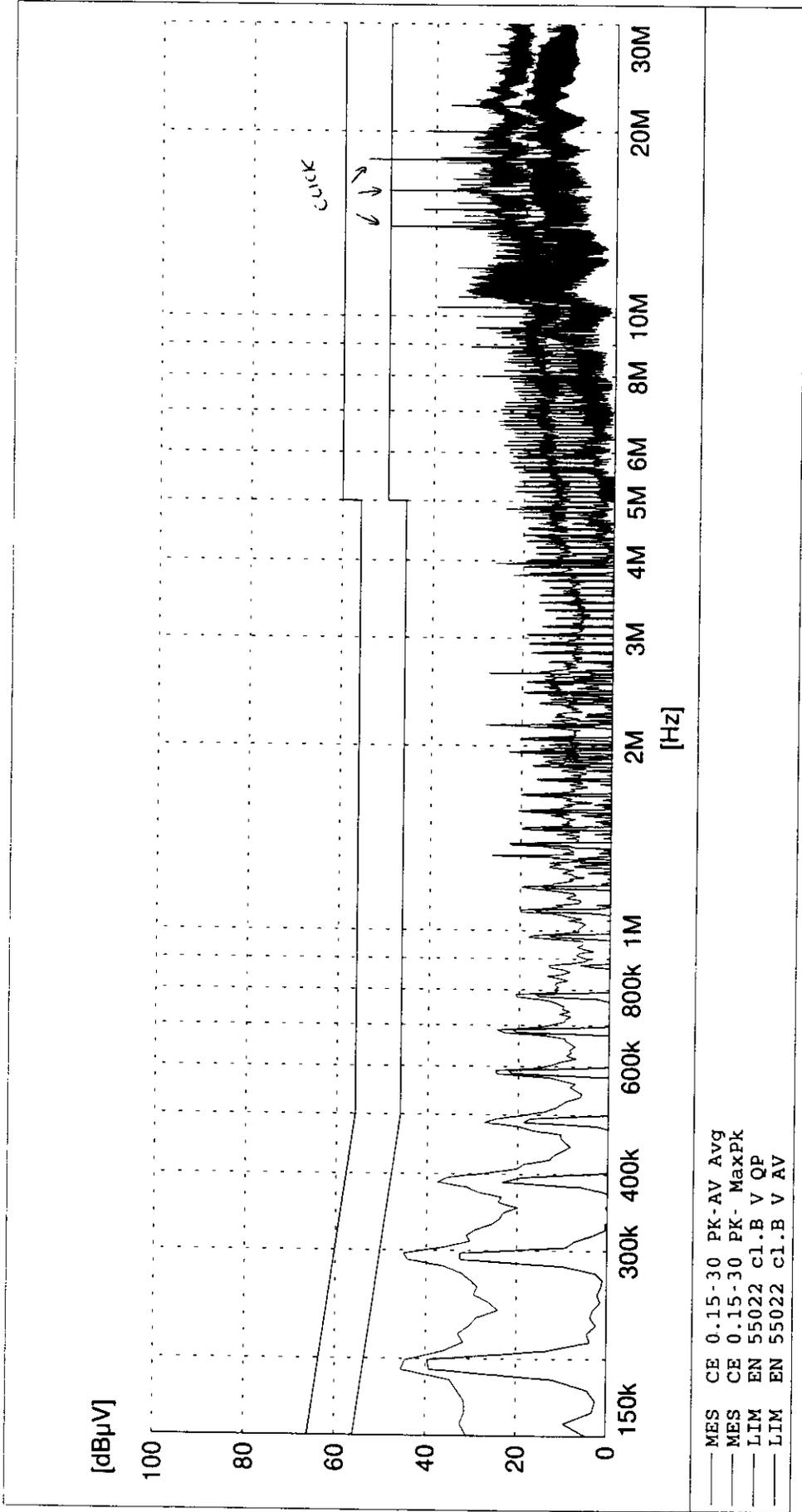
DELTA electronics testing

EUT: OC3540 rev.2. 16 Mbps. S-UTP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 230 Vac. Line no. Neutral.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 33
 Start of Test: 1998-11-05



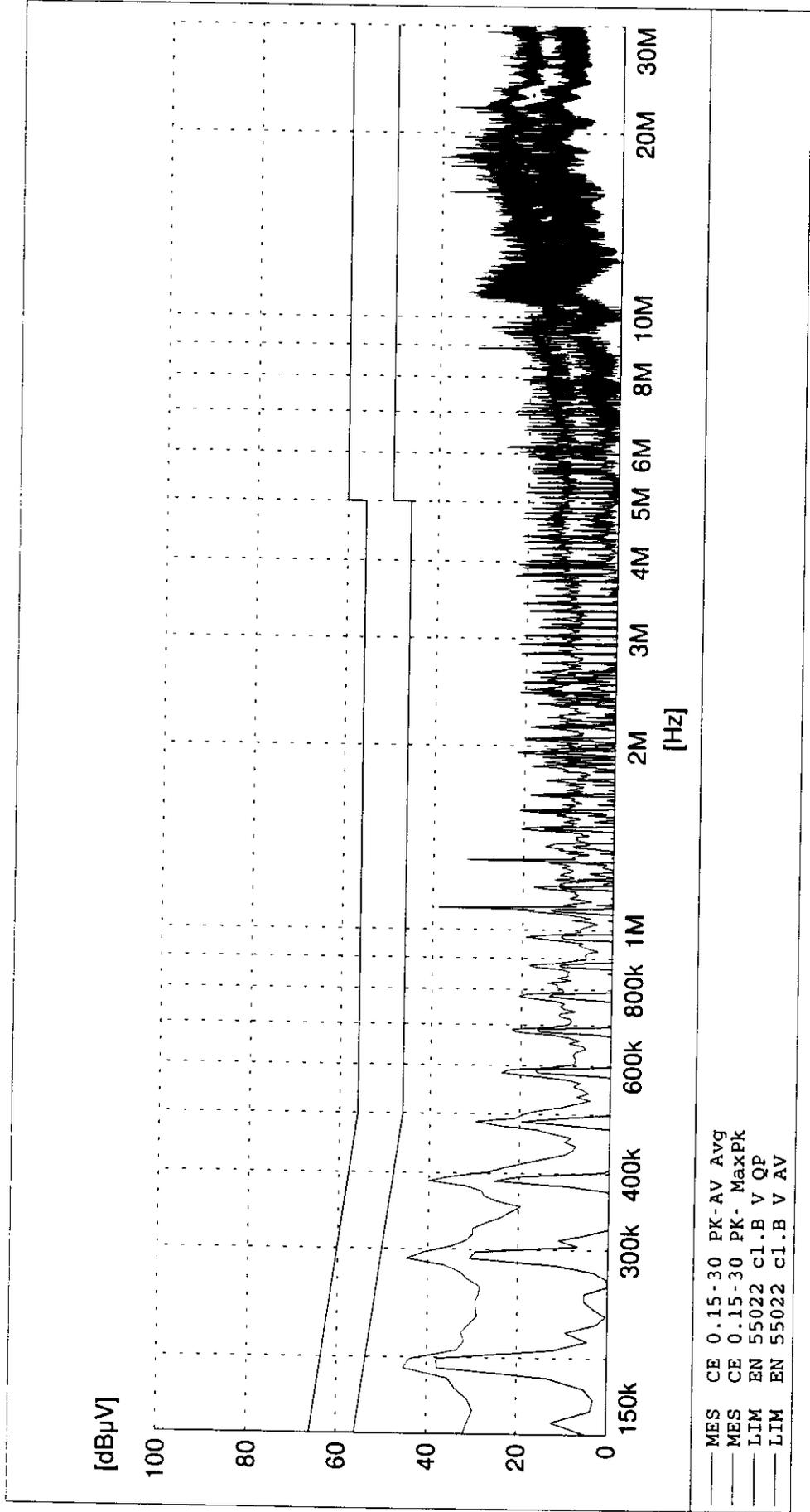
DELTA electronics testing

EUT: OC3540 rev.2. 16 Mbps. S-UTP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 230 Vac. Line no. Line 1.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 34
 Start of Test: 1998-11-05



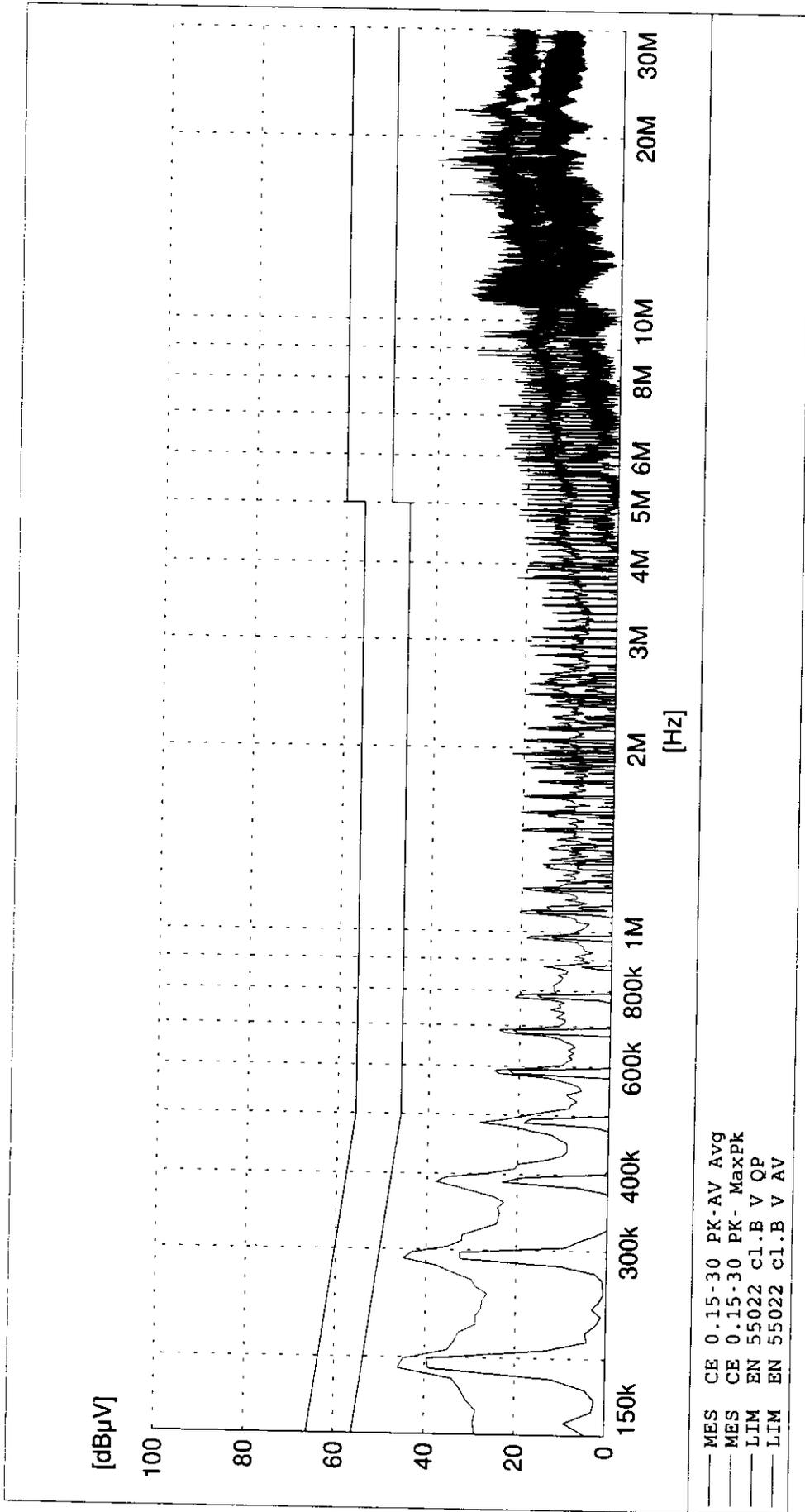
DELTA electronics testing

EUT: OC3540 rev.2. 100 Mbps. S-UTP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 230 Vac. Line no. Neutral.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 35
 Start of Test: 1998-11-05



DELTA electronics testing

EUT: OC3540 rev.2. 100 Mbps. S-UTP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: 230 Vac. Line no. Line 1.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 B.
 Comment: Sheet 36
 Start of Test: 1998-11-05



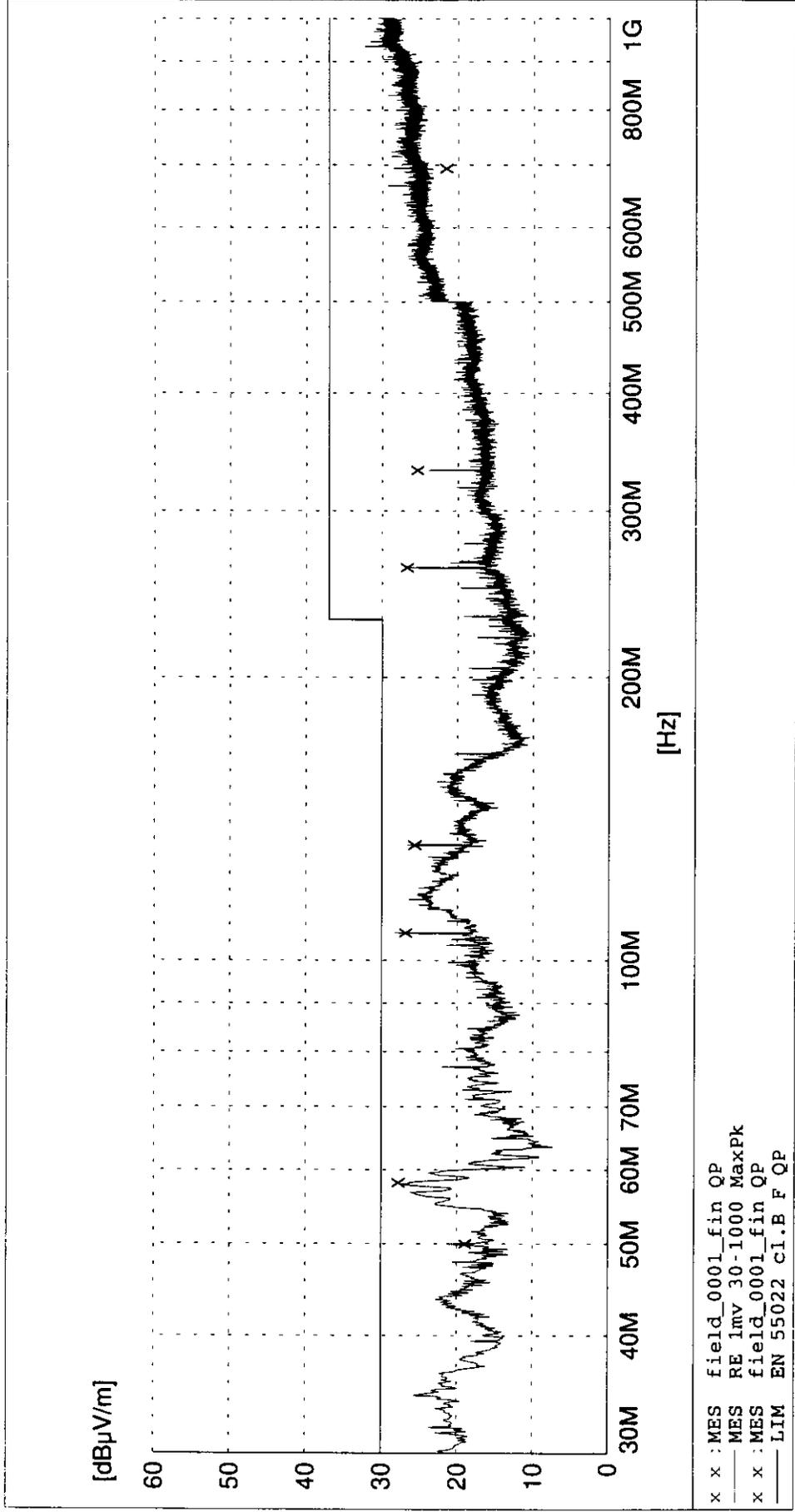
ANNEX 5

Test record sheets and photos regarding
radiated electromagnetic field (EN 55022, class B)

(10 pages)

DELTA electronics testing

EUT: OC3540 rev.2. 16 Mbps. STP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: Ant. 1mv. 115 Vac.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 A
 Comment: Sheet 1/1
 Start of Test: 1998-11-05



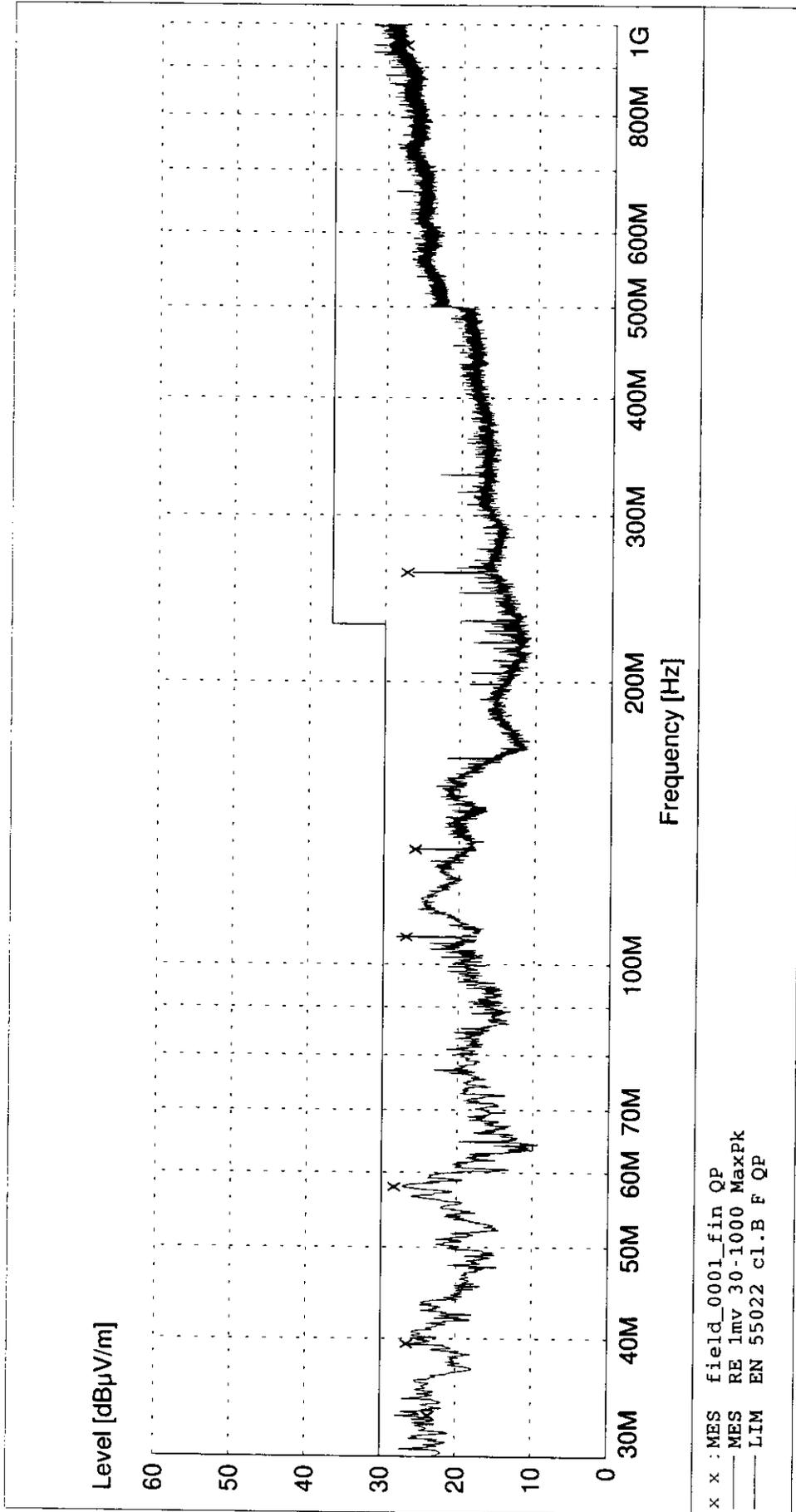
MEASUREMENT RESULT: "field_0001_fin_QP"

05-11-98 18:26

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Height cm	Azimuth deg	Polarisation
50.000000	19.30	8.1	30.0	10.6	113.0	285.00	VERTICAL
58.100000	28.10	5.6	30.0	1.8	291.0	258.00	VERTICAL
107.000000	27.20	10.7	30.0	2.7	119.0	336.00	VERTICAL
132.630000	26.00	11.6	30.0	3.9	115.0	26.00	VERTICAL
261.250000	27.10	13.5	37.0	9.8	113.0	24.00	VERTICAL
331.580000	25.70	14.8	37.0	11.2	241.0	34.00	HORIZONTAL
663.160000	26.20	22.0	37.0	10.7	155.0	36.00	VERTICAL
693.400000	21.90	22.3	37.0	15.0	115.0	348.00	VERTICAL

DELTA electronics testing

EUT: OC3540 rev.2. 100 Mbps. STP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: Ant. 1mv. 115 Vac.
 Test Site: EMC-5
 Operator: HEN - K220672
 Test Specification: EN 55022 B FCC B.
 Comment: Sheet 17
 Start of Test: 1998-11-05



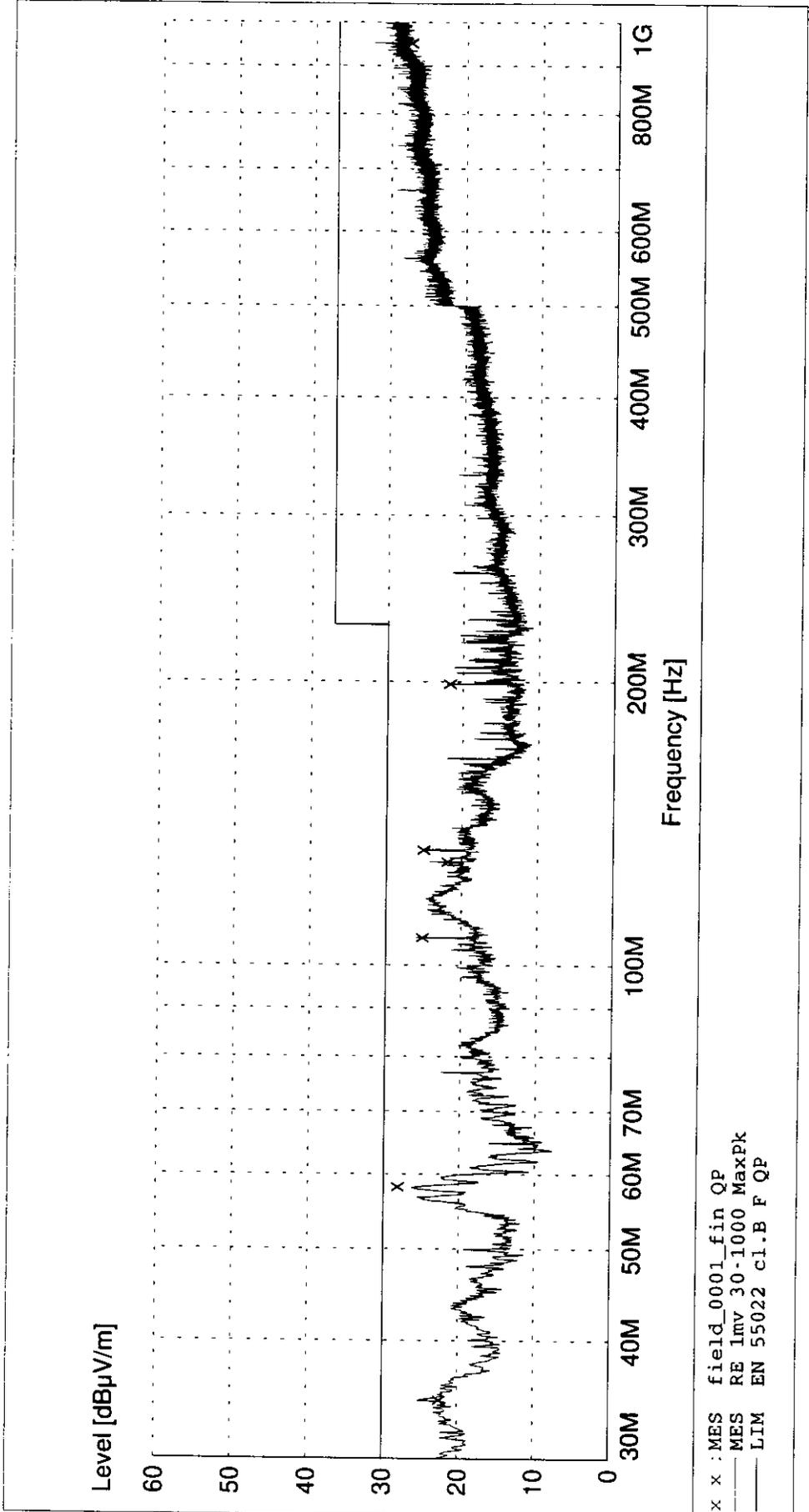
MEASUREMENT RESULT: "field_0001_fin_QP"

05-11-98 16:17

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
33.200000	24.00	16.5	30.0	5.9	111.0	15.00	VERTICAL
39.550000	26.90	13.4	30.0	3.0	112.0	132.00	VERTICAL
58.000000	28.70	5.7	30.0	1.2	310.0	258.00	VERTICAL
107.000000	27.30	10.7	30.0	2.6	128.0	346.00	VERTICAL
132.630000	26.20	11.6	30.0	3.7	112.0	34.00	VERTICAL
261.250000	27.50	13.5	37.0	9.4	112.0	15.00	VERTICAL
950.060000	28.00	26.6	37.0	8.9	114.0	15.00	VERTICAL

DELTA electronics testing

EUT: OC3540 rev.2. 16 Mbps. S-UTP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: Ant. 1mv. 115 Vac.
 Test Site: EMC-5
 Operator: HEN - K220672
 Test Specification: EN 55022 **B** FCC **B**.
 Comment: Sheet 13
 Start of Test: 1998-11-05



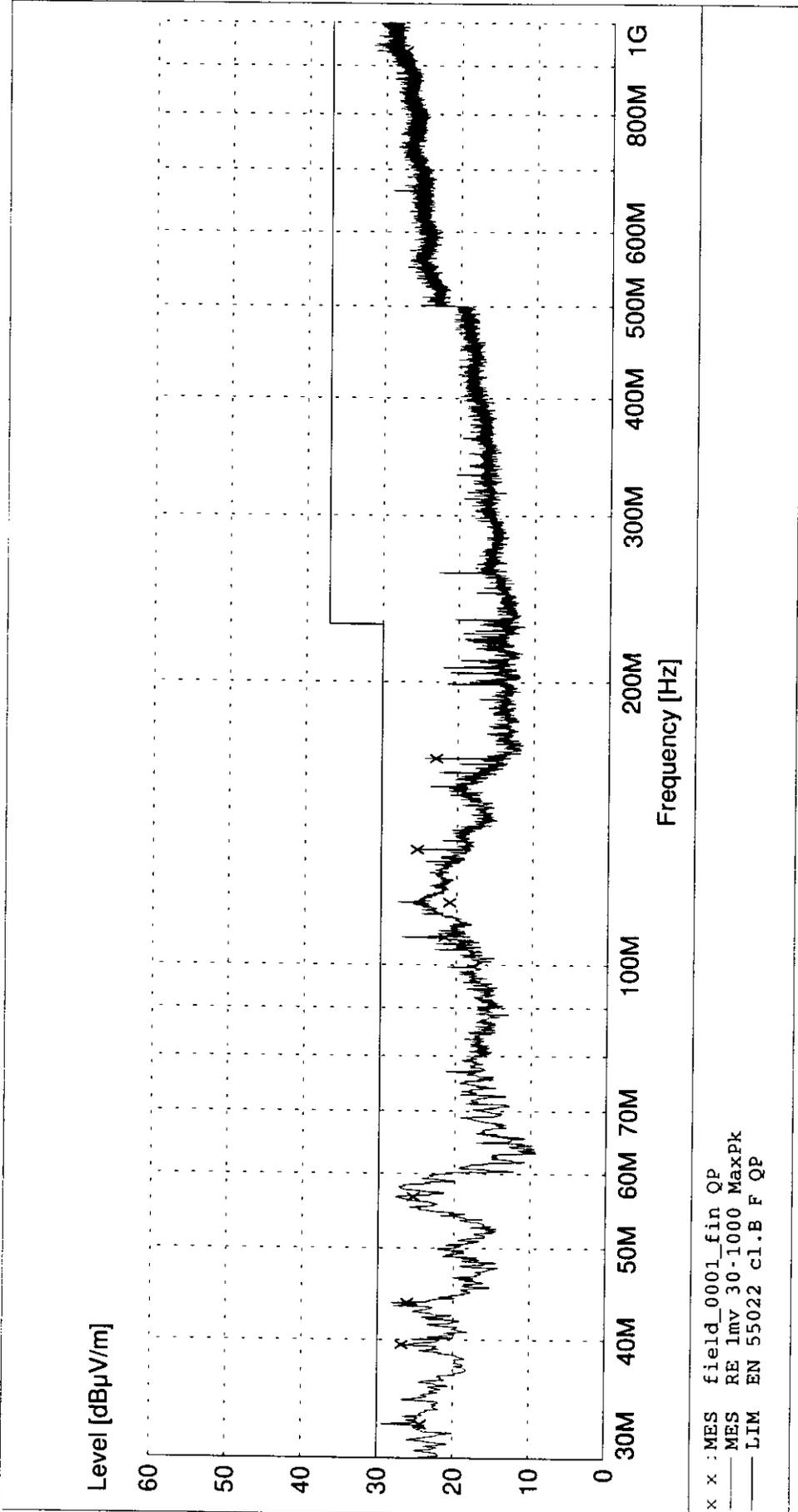
MEASUREMENT RESULT: "field_0001_fin_QP"

05-11-98 12:55

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Height cm	Azimuth deg	Polarisation
34.620000	22.80	15.7	30.0	7.1	113.0	156.00	VERTICAL
58.200000	28.50	5.6	30.0	1.4	312.0	237.00	VERTICAL
107.000000	25.50	10.7	30.0	4.4	114.0	4.00	VERTICAL
128.860000	22.20	11.6	30.0	7.7	113.0	104.00	VERTICAL
132.630000	25.40	11.6	30.0	4.5	113.0	24.00	VERTICAL
198.950000	22.10	8.9	30.0	7.8	112.0	24.00	VERTICAL
950.060000	27.80	26.6	37.0	9.1	114.0	15.00	VERTICAL

DELTA electronics testing

EUT: OC3540 rev.2. 100 Mbps. S-UTP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: Ant. 1mv. 115 Vac.
 Test Site: EMC-5
 Operator: HEN - K220672
 Test Specification: EN 55022 **D**. FCC **B**.
 Comment: Sheet 15
 Start of Test: 1998-11-05



x x : MES field_0001_fin QP
 — MES RE 1mv 30-1000 MaxPk
 — LIM EN 55022 cl.B F QP

MEASUREMENT RESULT: "field_0001_fin_QP"

05-11-98 14:31

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Height cm	Azimuth deg	Polarisation
32.590000	24.70	16.8	30.0	5.2	113.0	4.00	VERTICAL
39.550000	27.20	13.4	30.0	2.7	112.0	122.00	VERTICAL
43.830000	26.50	11.2	30.0	3.4	107.0	197.00	VERTICAL
56.700000	25.80	6.0	30.0	4.1	356.0	114.00	VERTICAL
107.010000	21.90	10.8	30.0	8.0	113.0	305.00	VERTICAL
116.600000	21.30	11.2	30.0	8.6	112.0	300.00	VERTICAL
132.630000	25.60	11.6	30.0	4.3	112.0	33.00	VERTICAL
165.790000	23.20	9.7	30.0	6.7	112.0	44.00	VERTICAL
663.100000	26.20	22.0	37.0	10.7	153.0	4.00	VERTICAL
933.100000	27.80	26.4	37.0	9.1	114.0	0.00	VERTICAL

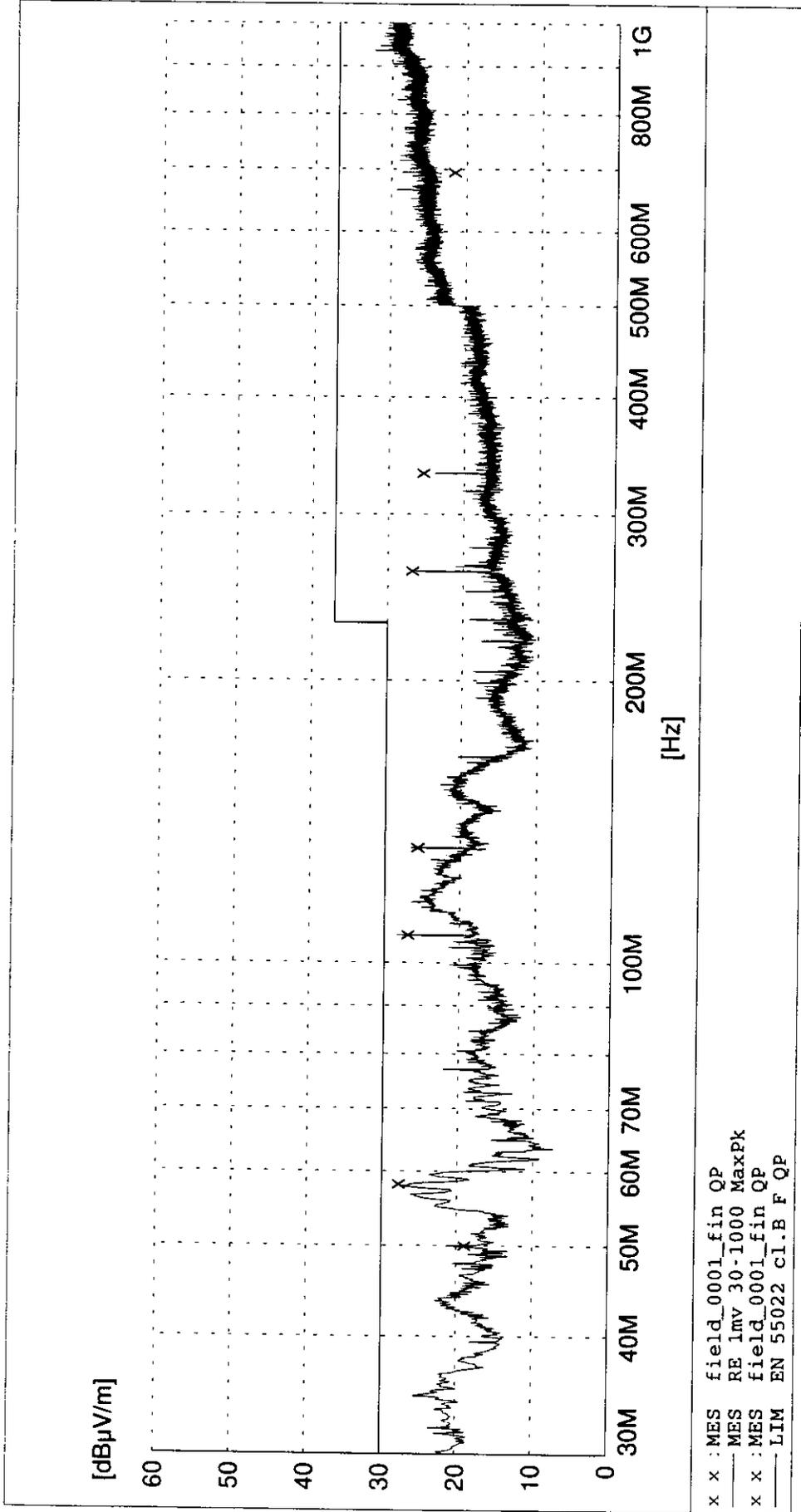
ANNEX 6

Test record sheets and photos regarding
radiated electromagnetic field (FCC, class B / EN 55022, class B)

(10 pages)

DELTA electronics testing

EUT: OC3540 rev.2. 16 Mbps. STP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: Ant. 1mv. 115 Vac.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 A
 Comment: Sheet 1/1
 Start of Test: 1998-11-05



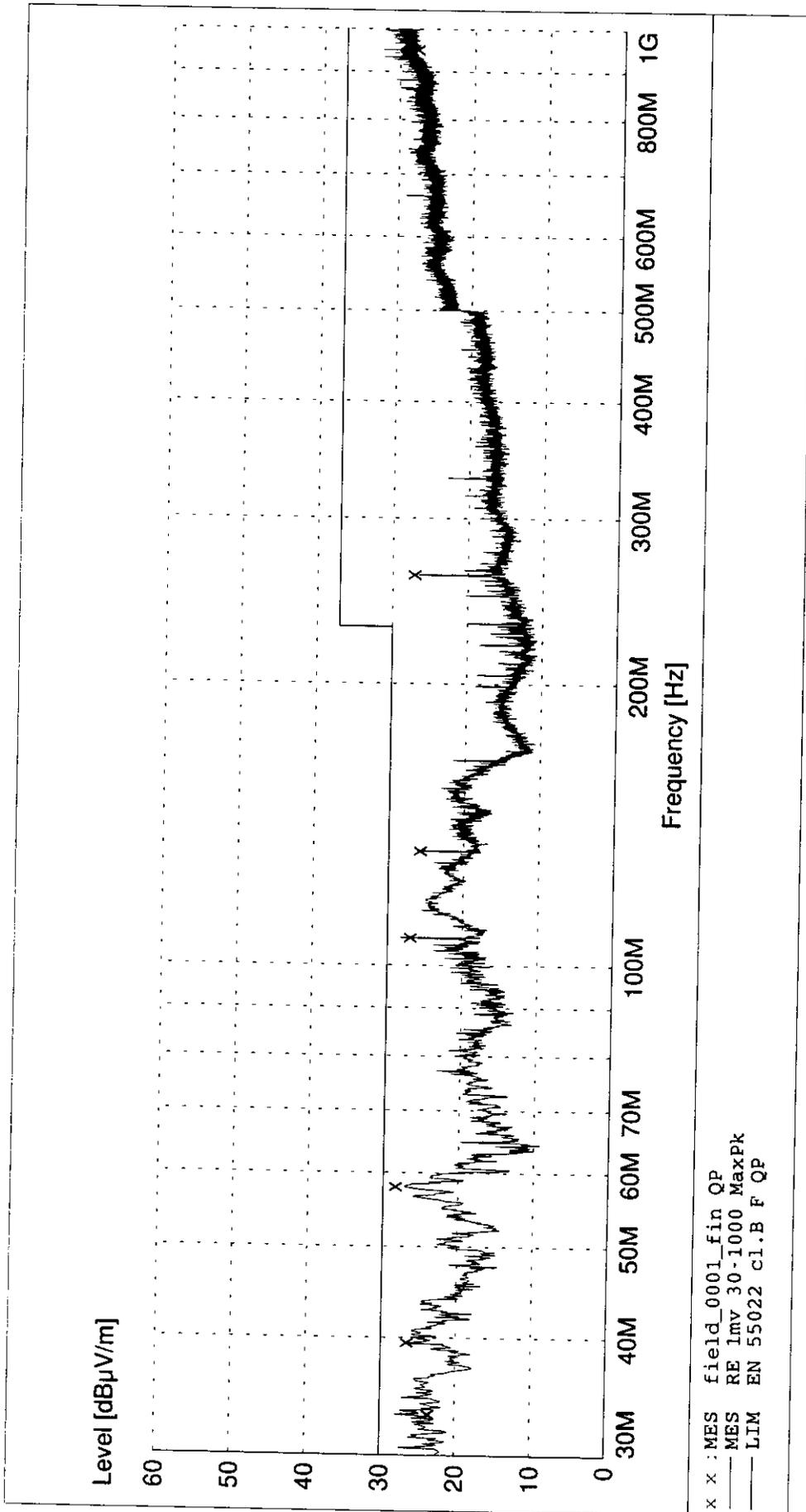
MEASUREMENT RESULT: "field_0001_fin_QP"

05-11-98 18:26

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
50.000000	19.30	8.1	30.0	10.6	113.0	285.00	VERTICAL
58.100000	28.10	5.6	30.0	1.8	291.0	258.00	VERTICAL
107.000000	27.20	10.7	30.0	2.7	119.0	336.00	VERTICAL
132.630000	26.00	11.6	30.0	3.9	115.0	26.00	VERTICAL
261.250000	27.10	13.5	37.0	9.8	113.0	24.00	VERTICAL
331.580000	25.70	14.8	37.0	11.2	241.0	34.00	HORIZONTAL
663.150000	26.20	22.0	37.0	10.7	155.0	36.00	VERTICAL
693.400000	21.90	22.3	37.0	15.0	115.0	348.00	VERTICAL

DELTA electronics testing

EUT: OC3540 rev.2. 100 Mbps. STP cable.
Manufacturer: Olicom A/S.
Operating Condition: Ant. 1mv. 115 Vac.
Test Site: EMC-5
Operator: HEN - K220672
Test Specification: EN 55022 B FCC B.
Comment: Sheet 17
Start of Test: 1998-11-05



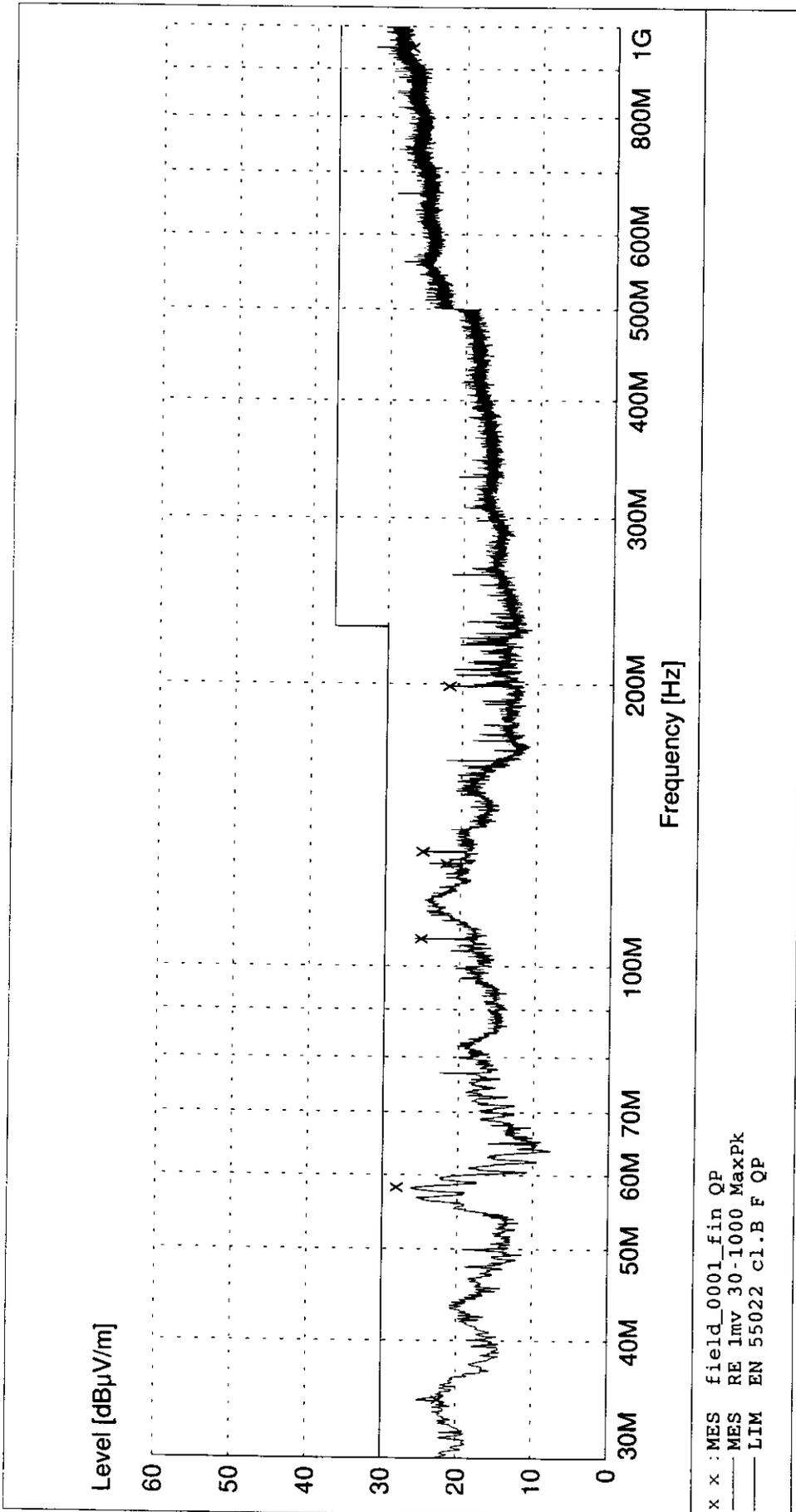
MEASUREMENT RESULT: "field_0001_fin_QP"

05-11-98 16:17

Frequency MHz	Level dB μ V/m	Transd dB	Limit dB μ V/m	Margin dB	Height cm	Azimuth deg	Polarisation
33.200000	24.00	16.5	30.0	5.9	111.0	15.00	VERTICAL
39.550000	26.90	13.4	30.0	3.0	112.0	132.00	VERTICAL
58.000000	28.70	5.7	30.0	1.2	310.0	258.00	VERTICAL
107.000000	27.30	10.7	30.0	2.6	128.0	346.00	VERTICAL
132.630000	26.20	11.6	30.0	3.7	112.0	34.00	VERTICAL
261.250000	27.50	13.5	37.0	9.4	112.0	15.00	VERTICAL
950.060000	28.00	26.6	37.0	8.9	114.0	15.00	VERTICAL

DELTA electronics testing

EUT: OC3540 rev.2. 16 Mbps. S-UTP cable.
Manufacturer: Olicom A/S.
Operating Condition: Ant. 1mv. 115 Vac.
Test Site: EMC-5
Operator: HEN - K220672
Test Specification: EN 55022 B FCC B.
Comment: Sheet 13
Start of Test: 1998-11-05



MEASUREMENT RESULT: "field_0001_fin_QP"

05-11-98 12:55

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Height cm	Azimuth deg	Polarisation
34.620000	22.80	15.7	30.0	7.1	113.0	156.00	VERTICAL
58.200000	28.50	5.6	30.0	1.4	312.0	237.00	VERTICAL
107.000000	25.50	10.7	30.0	4.4	114.0	4.00	VERTICAL
128.860000	22.20	11.6	30.0	7.7	113.0	104.00	VERTICAL
132.630000	25.40	11.6	30.0	4.5	113.0	24.00	VERTICAL
198.950000	22.10	8.9	30.0	7.8	112.0	24.00	VERTICAL
950.060000	27.80	26.6	37.0	9.1	114.0	15.00	VERTICAL

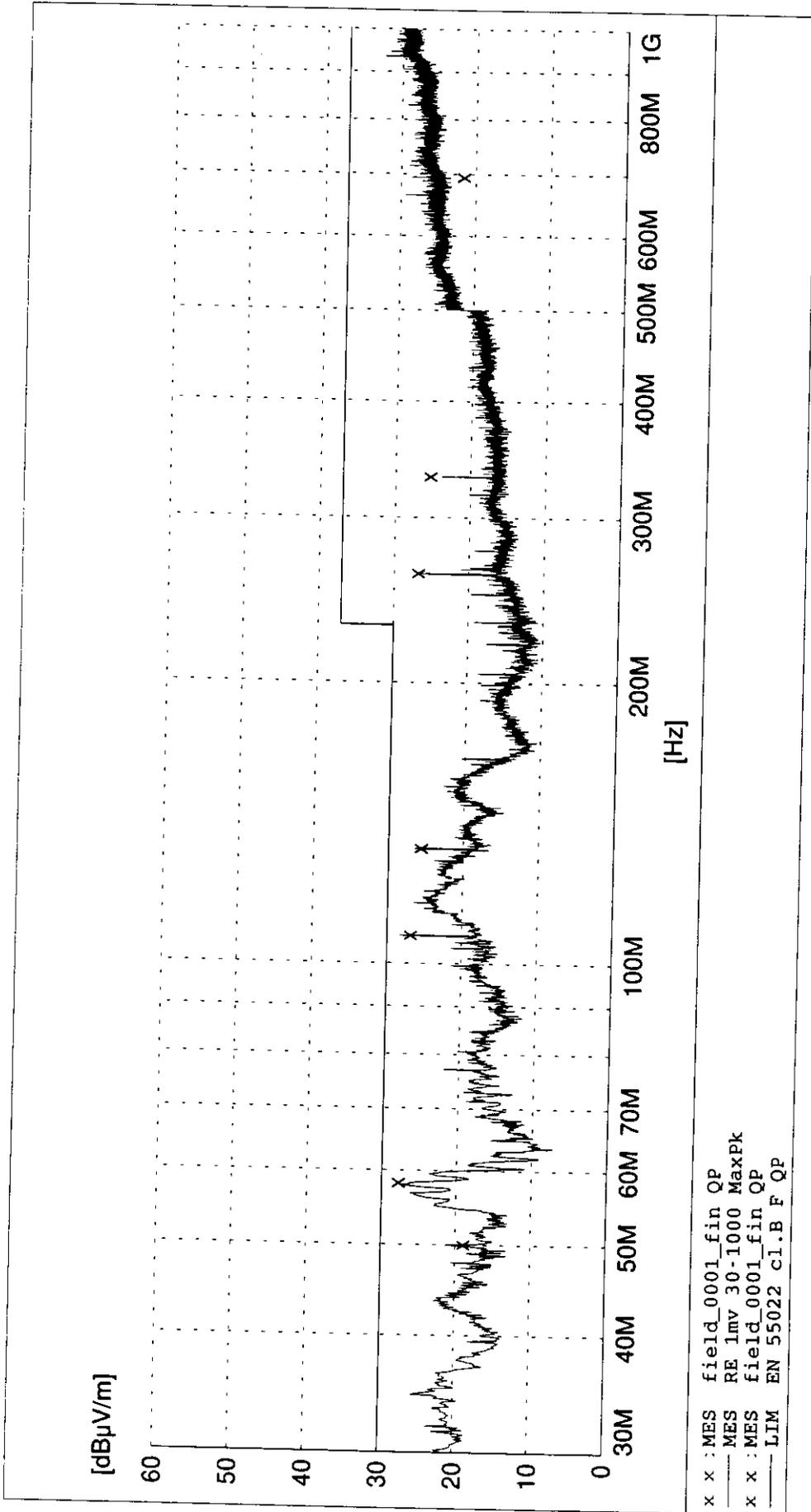
ANNEX 7

**Test record sheets and photos regarding
radiated electromagnetic field (VCCI, class B)**

(10 pages)

DELTA electronics testing

EUT: OC3540 rev.2. 16 Mbps. STP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: Ant. 1mv. 115 Vac.
 Test Site: EMC-5
 Operator: JN - K220672
 Test Specification: EN 55022 A
 Comment: Sheet 1/1
 Start of Test: 1998-11-05



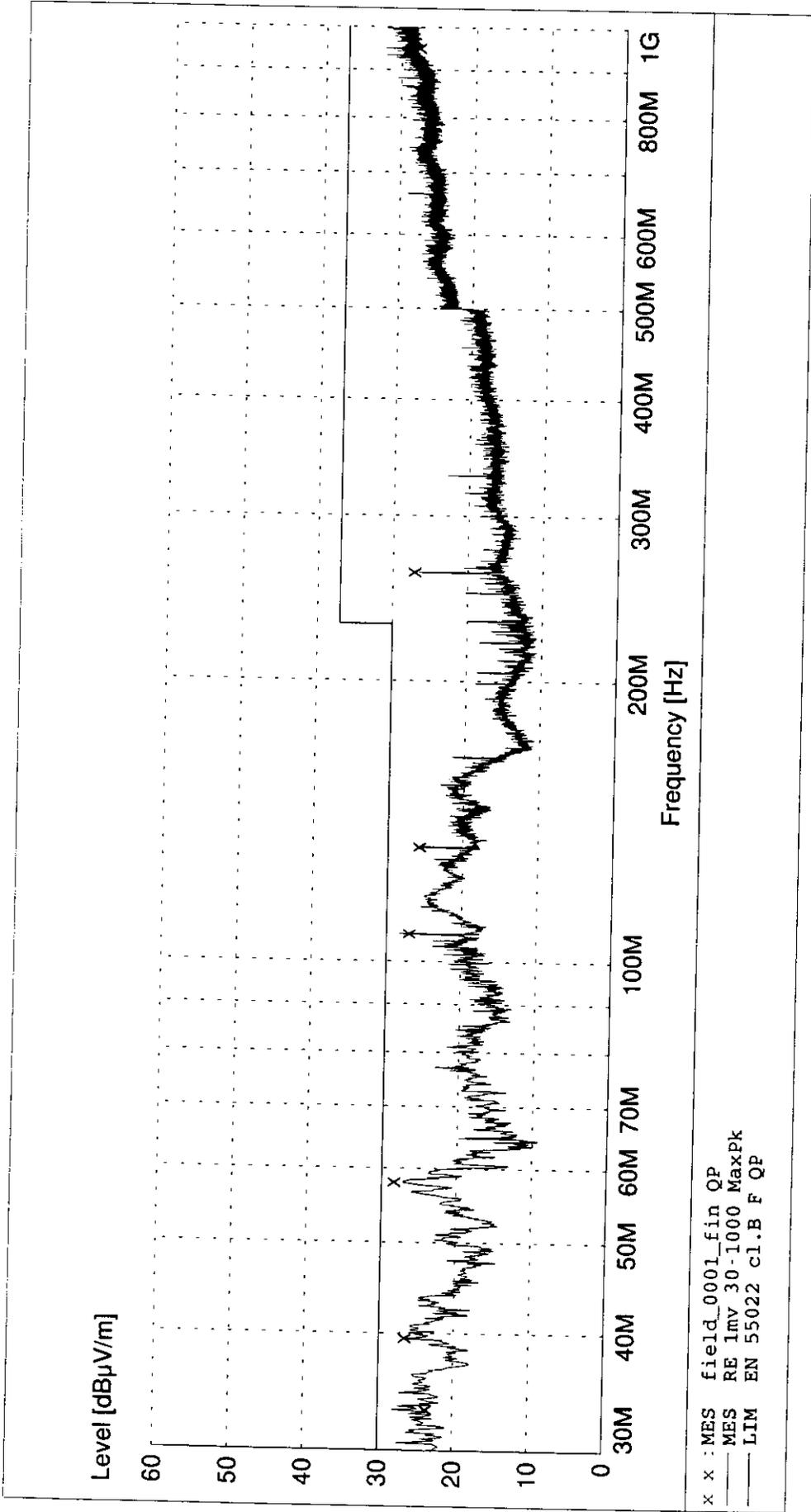
MEASUREMENT RESULT: "field_0001_fin_QP"

05-11-98 18:26

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
50.000000	19.30	8.1	30.0	10.6	113.0	285.00	VERTICAL
58.100000	28.10	5.6	30.0	1.8	291.0	258.00	VERTICAL
107.000000	27.20	10.7	30.0	2.7	119.0	336.00	VERTICAL
132.630000	26.00	11.6	30.0	3.9	115.0	26.00	VERTICAL
261.250000	27.10	13.5	37.0	9.8	113.0	24.00	VERTICAL
331.580000	25.70	14.8	37.0	11.2	241.0	34.00	HORIZONTAL
663.160000	26.20	22.0	37.0	10.7	155.0	36.00	VERTICAL
693.400000	21.90	22.3	37.0	15.0	115.0	348.00	VERTICAL

DELTA electronics testing

EUT: OC3540 rev.2. 100 Mbps. STP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: Ant. 1mv. 115 Vac.
 Test Site: EMC-5
 Operator: HEN - K220672
 Test Specification: EN 55022 B FCC B.
 Comment: Sheet 17
 Start of Test: 1998-11-05



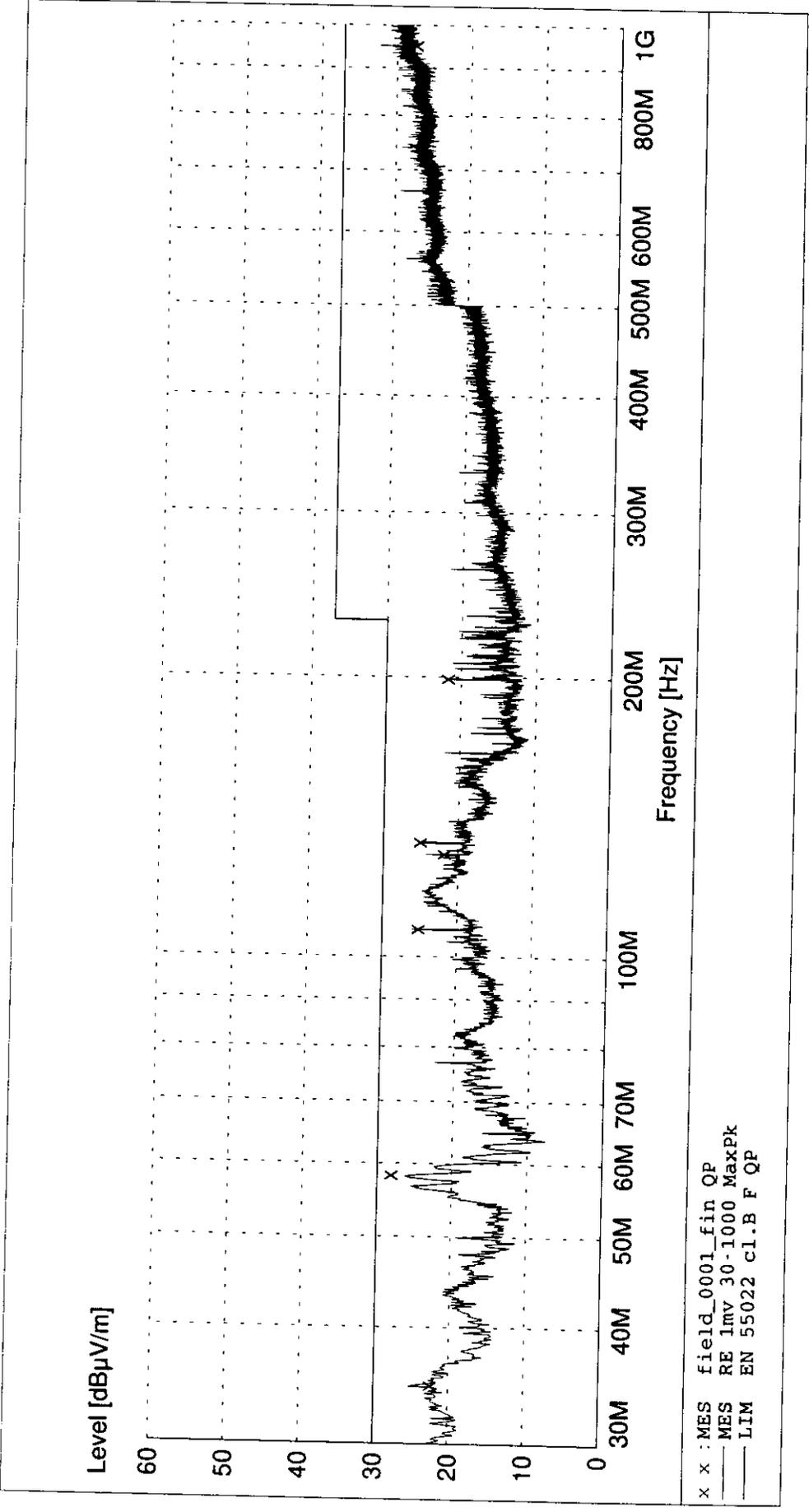
MEASUREMENT RESULT: "field_0001_fin_QP"

05-11-98 16:17

Frequency MHz	Level dB μ V/m	Transd dB	Limit dB μ V/m	Margin dB	Height cm	Azimuth deg	Polarisation
33.200000	24.00	16.5	30.0	5.9	111.0	15.00	VERTICAL
39.550000	26.90	13.4	30.0	3.0	112.0	132.00	VERTICAL
58.000000	28.70	5.7	30.0	1.2	310.0	258.00	VERTICAL
107.000000	27.30	10.7	30.0	2.6	128.0	346.00	VERTICAL
132.630000	26.20	11.6	30.0	3.7	112.0	34.00	VERTICAL
261.250000	27.50	13.5	37.0	9.4	112.0	15.00	VERTICAL
950.060000	28.00	26.6	37.0	8.9	114.0	15.00	VERTICAL

DELTA electronics testing

EUT: OC3540 rev.2. 16 Mbps. S-UTP cable.
 Manufacturer: Olicom A/S.
 Operating Condition: Ant. 1mv. 115 Vac.
 Test Site: EMC-5
 Operator: HEN - K220672
 Test Specification: EN 55022 B FCC B.
 Comment: Sheet 13
 Start of Test: 1998-11-05



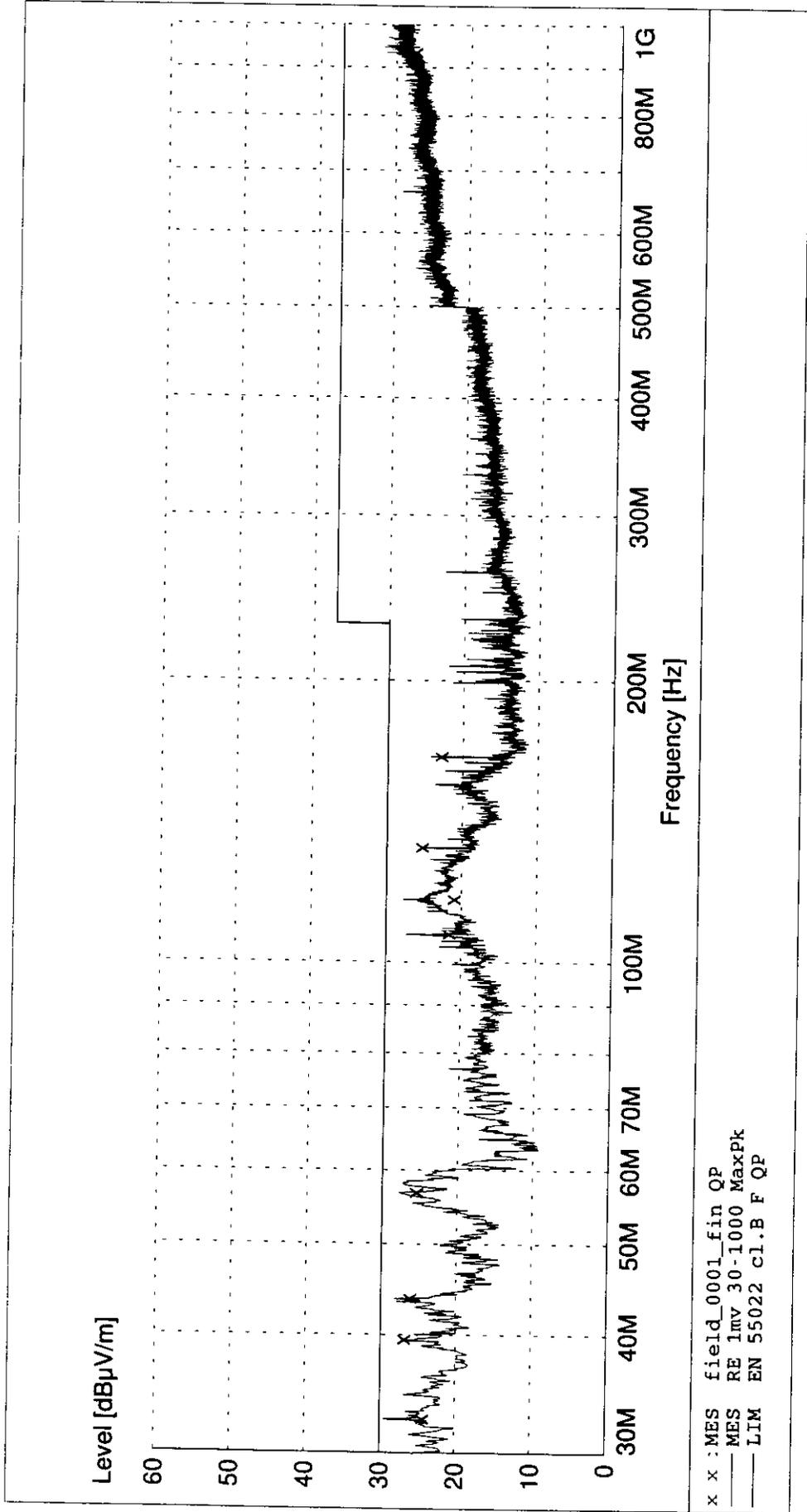
MEASUREMENT RESULT: "field_0001_fin_QP"

05-11-98 12:55

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
34.620000	22.80	15.7	30.0	7.1	113.0	156.00	VERTICAL
58.200000	28.50	5.6	30.0	1.4	312.0	237.00	VERTICAL
107.000000	25.50	10.7	30.0	4.4	114.0	4.00	VERTICAL
128.860000	22.20	11.6	30.0	7.7	113.0	104.00	VERTICAL
132.630000	25.40	11.6	30.0	4.5	113.0	24.00	VERTICAL
198.950000	22.10	8.9	30.0	7.8	112.0	24.00	VERTICAL
950.060000	27.80	26.6	37.0	9.1	114.0	15.00	VERTICAL

DELTA electronics testing

EUT: OC3540 rev.2. 100 Mbps. S-UTP cable.
Manufacturer: Olicom A/S.
Operating Condition: Ant. 1mv. 115 Vac.
Test Site: EMC-5
Operator: HEN - K220672
Test Specification: EN 55022 B. FCC B.
Comment: Sheet 15
Start of Test: 1998-11-05



MEASUREMENT RESULT: "field_0001_fin_QP"

05-11-98 14:31

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
32.590000	24.70	16.8	30.0	5.2	113.0	4.00	VERTICAL
39.550000	27.20	13.4	30.0	2.7	112.0	122.00	VERTICAL
43.830000	26.50	11.2	30.0	3.4	107.0	197.00	VERTICAL
56.700000	25.80	6.0	30.0	4.1	356.0	114.00	VERTICAL
107.010000	21.90	10.8	30.0	8.0	113.0	305.00	VERTICAL
116.600000	21.30	11.2	30.0	8.6	112.0	300.00	VERTICAL
132.630000	25.60	11.6	30.0	4.3	112.0	33.00	VERTICAL
165.790000	23.20	9.7	30.0	6.7	112.0	44.00	VERTICAL
663.100000	26.20	22.0	37.0	10.7	153.0	4.00	VERTICAL
933.100000	27.80	26.4	37.0	9.1	114.0	0.00	VERTICAL

ANNEX 8

Photo of EUT

(1 pages)