

TEST REPORT



Testing Certification # 1367-01

Laboratory ID
PRODUCT SAFETY ENGINEERING, INC.
12955 Bellamy Brothers Boulevard
Dade City, Florida 33525 USA
PH (352) 588-2209 FX (352) 588-2544

Submitter ID
D.B.I. America Corp
254 Crystal Grove Blvd
Lutz, FL 33548

Report Issue Date: July 23, 2008
Sample S/N: 081201 / 081202 / 871101

Test Report Number: 08F276C
Model Designation: SP200 & Swift Portable
Piezo Ultrasonic Scaler

Sample Receipt Date: July 03, 2008
Sample Test Date: see data sheets

Product Description: See Page 10

Description of non-standard test method or test practice: *None*

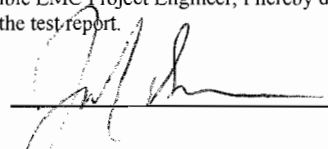
Estimated Measurement Uncertainty: *Not Applicable*

Special limitations of use: *None*

Traceability: *reference standards of measurement have been calibrated by a competent body using standards traceable to the NIST.*

According to testing performed at Product Safety Engineering, Inc., the above-mentioned unit is in compliance with the electromagnetic compatibility requirements defined in regulations indicated on page (3) of the test report. The test results contained herein relate only to the model(s) identified above. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical characteristics.

As the responsible EMC Project Engineer, I hereby declare that the equipment tested as specified above conforms to the requirements indicated on page (3) of the test report.

Signature 

Name Jack Garner

Title Test Engineer

Date July 22 2008

Reviewed by:

Approved Signatory  Steve Hoke Date July 23 2008

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Test Report Number 08F276C

Product Safety Engineering, Inc 12955 Bellamy Brothers Blvd. Dade City, FL 33525
Tel (352) 588-2209 Fax (352) 588-2544

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EMISSIONS TEST REGULATIONS :

The emissions tests were performed according to following regulations:

- EN 61000-6-3:2001

- EN 61000-6-4:2001

- EN 55011 : 1998 / A1:1999

- Group 1

- Group 2

- Class A

- Class B

- EN 55013 : 1990 / A12:1994 / A13:1996 / A14:1999

- EN 55014 -1: 2001

- Household appliances and similar

- Portable tools

- Semiconductor devices

- EN 55022:2006

- Class A

- Class B

-AS/NZS CISPR 22:2006

- Class A

- Class B

- ICES-003

- Class A

- Class B

- CNS 13438

- Class A

- Class B

- VCCI V-3/2007.4

- Class A

- Class B

- FCC Part 15

- Class A

- Class B

- Certification

- Verification

- Declaration of Conformity

- FCC Part 18

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Environmental conditions during testing:

	LAB	OATS
Temperature: *	_____	: _____
Relative Humidity: **	_____	: _____

* The ambient temperature during the testing was within the range of (50° - 104° F) unless indicted above.
** The humidity levels during the testing was within the range of (10% - 90%) relative humidity unless indicated above.

Power supply system : 230 Volts 50 Hz SINGLE phase

Sign Explanations:

- not applicable
- applicable

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Emissions Test Conditions: CONDUCTED EMISSIONS (Interference Voltage)

The *CONDUCTED EMISSIONS (INTERFERENCE VOLTAGE)* measurements were performed at the following test location:

- Test not applicable

- Darby Test Site (Open Area Test Site)
- Darby Laboratory

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
<input type="checkbox"/>	8028-50	Solar	50 Ω LISN	829012, 829022
<input type="checkbox"/>	3825/2	Solar	50 Ω LISN	924840
<input checked="" type="checkbox"/>	EMC-30	Electro-Metrics	EMI Receiver	191
<input type="checkbox"/>	8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
<input type="checkbox"/>	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
<input type="checkbox"/>	85662A	Hewlett Packard	Analyzer Display	2403A07352
<input checked="" type="checkbox"/>	8028-50	Solar	50 Ω LISN	903725, 903726
<input type="checkbox"/>	FCC-TLISN-T4-02	Fisher Custom Com.	Telecom ISN	20454
<input type="checkbox"/>	FCC-TLISN-T8-02	Fisher Custom Com.	Telecom ISN	20452

Emissions Test Conditions: RADIATED EMISSIONS (Magnetic Field)

The *RADIATED EMISSIONS (MAGNETIC FIELD)* measurements were performed at the following test location:

- Darby Test Site (Open Area Test Site)
-
-

at a test distance of :

- 3 meters
- 30 meters

- Test not applicable

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
<input type="checkbox"/>	3148	EMCO	Log Periodic Antenna	00044783
<input type="checkbox"/>	BIA-25	Electro-Metrics	Biconical Antenna	4283
<input type="checkbox"/>	8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
<input type="checkbox"/>	85662A	Hewlett-Packard	Analyzer Display	2403A07352
<input type="checkbox"/>	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
<input type="checkbox"/>	ALR-30M	Electro-Metrics	Loop Antenna	824
<input type="checkbox"/>	8447D	Hewlett Packard	Preamplifier	2944A06832
<input type="checkbox"/>	EMC-30	Electro-Metrics	EMI Receiver	191
<input type="checkbox"/>	ALA-130/A	Antenna Research	Loop Antenna	106

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Emissions Test Conditions: RADIATED EMISSIONS (Electric Field)

The *RADIATED EMISSIONS (ELECTRIC FIELD)* measurements, in the frequency range of 30 MHz-1000 MHz, were tested in a horizontal and vertical polarization at the following test location :

- Test not applicable

- Darby Site (Open Area Test Site)
- Darby Lab
-

at a test distance of :

- 3 meters
- 10 meters
- 30 meters

Test equipment used :

Model Number	Manufacturer	Description	Serial Number
<input type="checkbox"/> - HLP 3003C	EMC Automation	Hybrid Periodic Antenna	017501
<input checked="" type="checkbox"/> - 8447D	Hewlett-Packard	Preamplifier (26dB)	2944A06832
<input checked="" type="checkbox"/> - 8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
<input checked="" type="checkbox"/> - 85662A	Hewlett-Packard	Analyzer Display	2403A07352
<input checked="" type="checkbox"/> - 85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
<input type="checkbox"/> - BIA 25	Electro-Metrics	Biconical Antenna	4283
<input type="checkbox"/> - EMC-30	Electro-Metrics	EMI Receiver	191
<input type="checkbox"/> - 8568B	Hewlett Packard	Spectrum Analyzer	2407A03213
<input type="checkbox"/> - 85650A	Hewlett Packard	Quasi-Peak Adapter	2043A00358
<input type="checkbox"/> - 85662A	Hewlett Packard	Analyzer Display	2340A05806
<input checked="" type="checkbox"/> - LPA30	Electro-Metrics	Log Periodic	2280
<input type="checkbox"/> - BIA-30	Electro-Metrics	Biconical Antenna	3852
<input checked="" type="checkbox"/> - 3104C	EMCO	Biconical Antenna	00075927

Emissions Test Conditions): INTERFERENCE POWER

The *INTERFERENCE POWER* measurements were performed by using the absorbing clamp on the mains and interface cables in the frequency range 30 MHz - 300 MHz at the following test location :

- Test not applicable

- Darby Lab
-

Test equipment used :

Model Number	Manufacturer	Description	Serial Number
<input type="checkbox"/> - MDS-21	Rhode&Schwarz	Absorbing Clamp	8608447020
<input type="checkbox"/> - 8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
<input type="checkbox"/> - 85662A	Hewlett-Packard	Analyzer Display	2403A07352
<input type="checkbox"/> - 85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
<input type="checkbox"/> - 8447D	Hewlett-Packard	Amplifier (26 dB)	2944A06832
<input type="checkbox"/> - EMC-30	Electro-Metrics	EMI Receiver	191

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The *EQUIVALENT RADIATED EMISSIONS* measurements in the frequency range GHz - GHz were performed in a horizontal and vertical polarization at the following test location :

- Darby Test Site (Open Area Test Site)
-
-
-

at a test distance of:

- 1 meters
- 3 meters
- 10 meters

■- Test not applicable

Test equipment used :

Model Number	Manufacturer	Description	Serial Number
<input type="checkbox"/> - 8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
<input type="checkbox"/> - 85662A	Hewlett-Packard	Analyzer Display	2403A07352
<input type="checkbox"/> - 85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
<input type="checkbox"/> - 8449B	Hewlett-Packard	Preamplifier	3008A00320
<input type="checkbox"/> - 3115	Electro-Mechanics	Double Ridge Guide Horn	3810

The *ANTENNA TERMINAL DISTURBANCE VOLTAGE* in the frequency range 30 MHz - 1,000 MHz were performed.

- Darby Test Site (Open Area Test Site)
- Laboratory
-
-

■- Test not applicable

Model Number	Manufacturer	Description	Serial Number
<input type="checkbox"/> - 2F9-3C4-3C5	Wavecom	UHF PAL TV Modulator	185879
<input type="checkbox"/> - 2F1-3C4-3C5	Wavecom	VHF PAL TV Modulator	157728
<input type="checkbox"/> - A-8000	IFR	Spectrum Analyzer	1306
<input type="checkbox"/> - 8648B	Hewlett-Packard	Signal Generator	3623A01433
<input type="checkbox"/> - 8648B	Hewlett-Packard	Signal Generator	3623A01477
<input type="checkbox"/> - LMV-182A	Leader	RMS Milli-Voltmeter	8010091
<input type="checkbox"/> - 3202	Krhon-Hite	Active filter	5899
<input type="checkbox"/> - FMT115	Leaming	FM Modulator	NONE
<input type="checkbox"/> - 371	UDT	Optical power meter	06657
<input type="checkbox"/> - TSG95	Tektronix	PAL video / Audio generator	B028883
<input type="checkbox"/> -			

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Equipment Under Test (EUT) Test Operation Mode - Emission tests :

The device under test was operated under the following conditions during emissions testing:

- Standby
- Test program (H - Pattern)
- Test program (color bar)
- Test program (customer specific)
- Practice operation
- Normal Operating Mode
-

Configuration of the device under test:

- See System Under Test Information in Appendix B

Rationale for EUT setup / configuration:

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Emission Test Results:

Conducted emissions 150 kHz - 30 MHz

The requirements are - MET - NOT MET
Minimum limit margin 0.0 dB at 3.52 MHz
Remarks:

Radiated emissions (magnetic field) 10 kHz - 30 MHz

The requirements are - MET - NOT MET
Minimum limit margin dB at MHz
Remarks:

Radiated emissions (electric field) 30 MHz - 1000 MHz

The requirements are - MET - NOT MET
Minimum limit margin 1.9 dB at 36.7 MHz
Remarks:

Interference Power at the mains and interface cables 30 MHz - 300 MHz

The requirements are - MET - NOT MET
Minimum limit margin dB at MHz
Remarks:

Radiated emissions GHz - GHz

The requirements are - MET - NOT MET
Minimum limit margin dB at GHz
Remarks:

Antenna Terminal Disturbance Voltage 30 MHz - 1,000 MHz

The requirements are - MET - NOT MET
Minimum limit margin dB at MHz
Remarks:

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GENERAL REMARKS: The following are the (4) basic models that all include the piezo ultra sonic scaler tool:

Model - SP100 - (Combination Piezo Ultra Sonic Scaler with Electric Motor - Non-Portable)

Model - SP200 - (Combination Piezo Ultra Sonic Scaler with Electric Motor - Portable)

Model - Swift - (Piezo Ultra Sonic Scaler - Non Portable)

Model - Swift Portable - (Piezo Ultra Sonic Scaler - Portable)

The difference between portable and non-portable is whether the water is derived from a bottle or a permanent fixture. There are also (2) similar types of scalers available. One type was installed in Swift Portable and the second was installed in the SP200.

We tested the portable types of devices simultaneously where possible. We also used (2) of the SP200 models simultaneously during the conducted emissions testing so both the electric motor and scaler could be active.

SUMMARY:

This test report qualifies all (4) models described above.

The requirements according to the technical regulations are

- met

- **not** met.

The device under test does

- fulfill the general approval requirements mentioned on page 3.

- **not** fulfill the general approval requirements mentioned on page 3.

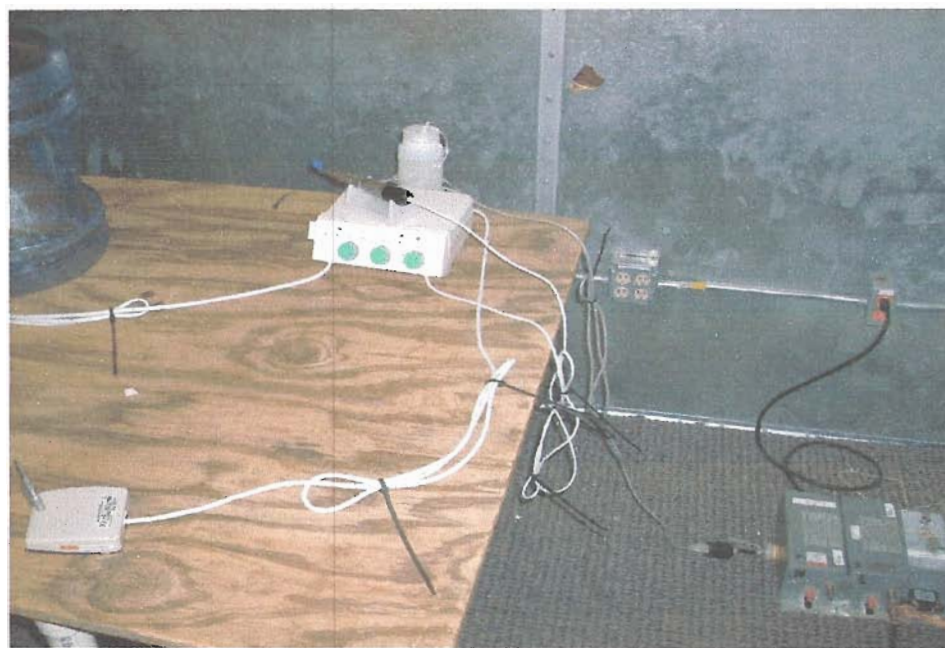
Testing Start Date **July 03, 2008**

Testing End Date: **July 03, 2008**

- PRODUCT SAFETY ENGINEERING INC -

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Test-setup photo(s):
Conducted emission 150 kHz - 30 MHz



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Test-setup photo(s):
Radiated emission 30 MHz - 1000 MHz



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APPENDIX

A

Test Equipment Calibration Information & Test Data Sheets

TEST EQUIPMENT CALIBRATION INFORMATION

Manufacturer	Model	Description	Serial Number	Cal Due
Hewlett Packard	8566B	Spectrum Analyzer	2421A00526	<u>07/13/08</u>
Hewlett Packard	85662A	Display	2403A07352	<u>07/13/08</u>
Hewlett Packard	85650A	Quasi-Peak Adapter	2043A00209	<u>07/13/08</u>
Hewlett Packard	8447D	Preamp 0.1 - 1,000 MHz	2944A06832	<u>12/18/08</u>
Hewlett Packard	8568B	Spectrum Analyzer	2407A03213	_____
Hewlett Packard	85662A	Display	2340A05806	_____
Hewlett Packard	85650A	Quasi-Peak Adapter	2043A00358	_____
Hewlett Packard	8447D	Preamp 0.1 - 1,000 MHz	2944A06901	_____
Hewlett Packard	8447D	Preamp 0.1 - 1,000 MHz	1937A03247	_____
Hewlett Packard	8449B	Preamp 1 - 26.5 GHz	3008A00320	_____
EMCO	3104C	Biconical Antenna	00075927	<u>12/20/08</u>
Electro-Metrics	LPA 30	Log Periodic Antenna	2280	<u>01/10/09</u>
Electro-Metrics	BIA 30	Biconical Antenna	3852	_____
Electro-Metrics	BIA 25	Biconical Antenna	4283	_____
Electro-Mechanics	3115	Double Ridge Guide Ant.	3810	_____
Electro-Metrics	ALR30M	Magnetic Loop Antenna	824	_____
Solar	8012	LISN	924840	_____
Solar	8028	LISN	829012/809022	_____
Solar	8028	LISN	903725/903726	<u>03/05/09</u>
Schwartzbeck	MDS-21	Absorbing Clamp	02581	_____
Electro-Metrics	EMC-30	EMI Receiver	191	<u>07/08/09</u>
Antenna Research	ALA-130/A	Loop Antenna	106	_____
Cole-Palmer	9970-00	Digital Barometer	61493735	_____
EMC Automation	HLP3003C	Hybrid Log Periodic	017501	_____
Fischer Custom	FCC-T4-02	Telecom ISN	20454	_____
Fischer Custom	FCC-T8-02	Telecom ISN	20452	_____

* Cal Due Date Format = MM/DD/YY

PRODUCT EMISSIONS

PRODUCT SAFETY ENGINEERING

Data File: SP 200 & SWIFT PORTABLE PIEZO

No	EMISSION	SPEC LIMIT	MEASUREMENTS			SITE			CORR FACTOR	COMMENTS
	FREQUENCY MHz		ABS	dLIM	MODE	POL	HGT cm	AZM deg		
1	34.683	30.0	24.4	-5.6	PK	V	100	315	-12.2	
2	36.324	30.0	27.8	-2.3	QP	H	400	270	-12.3	
3	36.670	30.0	28.1	-1.9	QP	H	400	270	-12.4	
4	40.470	30.0	28.0	-2.0	QP	H	400	180	-12.7	
5	48.002	30.0	23.1	-6.9	PK	V	100	90	-15.	
6	64.008	30.0	21.0	-9.0	PK	V	100	90	-16.7	
7	159.995	30.0	21.9	-8.2	PK	V	150	180	-12.7	
8	278.648	37.0	28.1	-8.9	PK	H	400	180	-11.2	
9	281.399	37.0	28.9	-8.1	PK	V	200	270	-11.1	

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DBI AMERICA

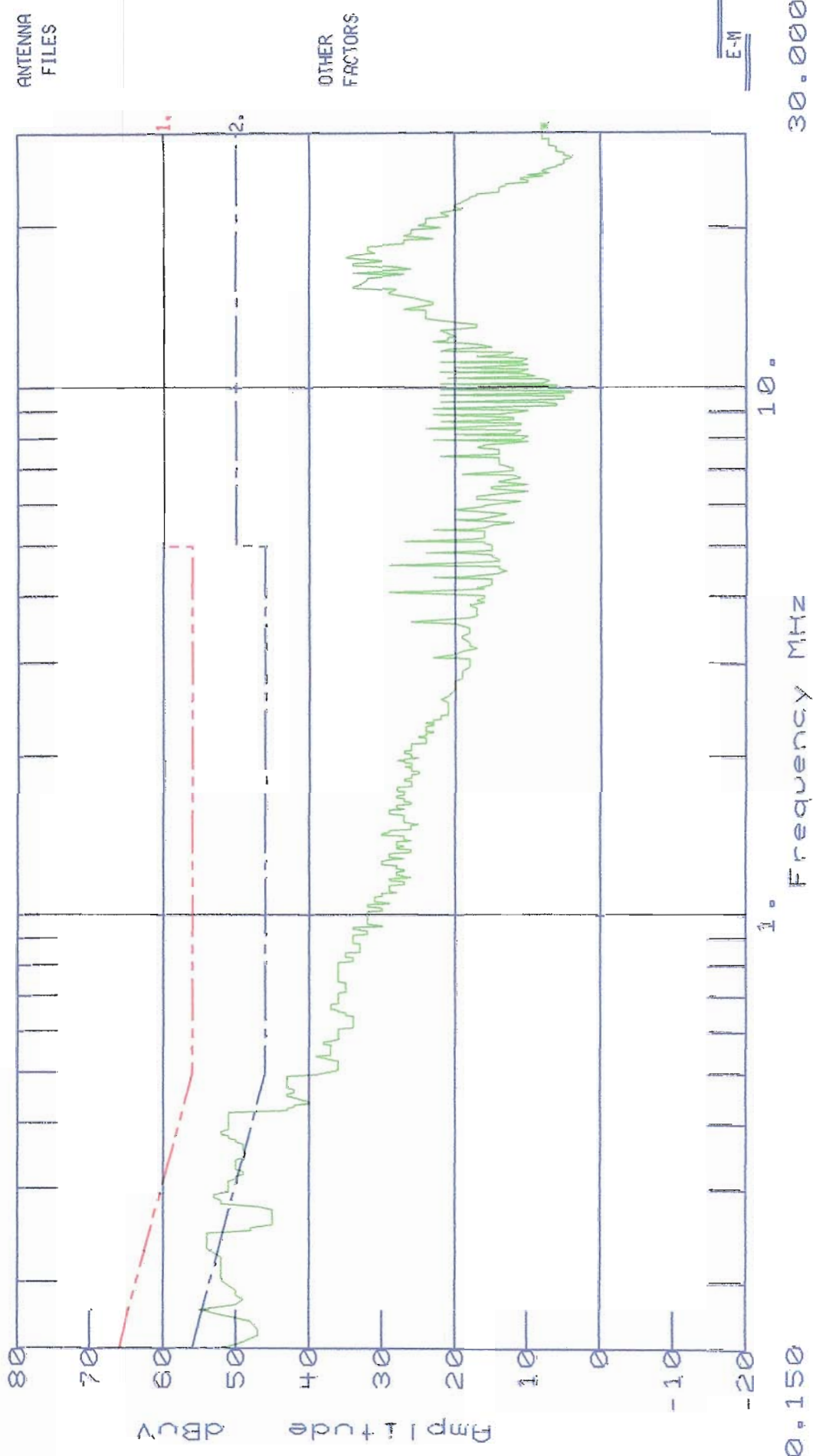
Date : 07/03/08
 Technician : CHIP FOERSTNER
 Test Method : EN55022 CLASS B
 Equipment : SP200
 Mode of Op. : SCALAR
 Serial No. : 081201

Time : 05:49:44.55
 Test Equip. : EMC-30
 Test Number : 1
 Sensor Loc. : SIDE 1
 Sensor Pol. :
 Ext. Atten. : 0 dB

Comment : 230 VAC / 50 HZ

EMC-30 SETTINGS
 Detector QuasiPeak
 Bandwidth CISPR
 Dump/Dwell IN/A
 RF Atten. 10 dB
 IF Atten. 10 dB

SPECS
 1) CISPR 22 Quasi Peak
 2) CISPR 22 AVG
 3)
 4)



Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
0.1769	55.0		0.370 *
0.2019	52.0		-1.532 *
0.2061	52.0		-1.361 *
0.2102	52.0		-1.197 *
0.2143	52.0		-1.037 *
0.2185	52.0		-0.876 *
0.2227	52.0		-0.718 *
0.2272	53.0		0.449 *
0.2314	54.0		1.601 *
0.2355	54.0		1.747 *
0.2394	54.0		1.883 *
0.2435	54.0		2.024 *
0.2477	54.0		2.166 *
0.2812	52.0		1.220 *
0.2856	52.0		1.349 *
0.2890	53.0		2.447 *
0.2925	53.0		2.547 *
0.2960	51.0		0.646 *
0.2994	51.0		0.741 *
0.3029	51.0		0.837 *
0.3064	51.0		0.932 *
0.3099	51.0		1.027 *
0.3131	50.0		0.112 *
0.3166	50.0		0.204 *
0.3201	49.0		-0.704 *
0.3235	49.0		-0.616 *
0.3270	50.0		0.473 *
0.3305	50.0		0.561 *
0.3340	50.0		0.649 *
0.3374	50.0		0.733 *
0.3409	50.0		0.819 *
0.3446	49.0		-0.092 *
0.3480	49.0		-0.010 *
0.3515	49.0		0.073 *
0.3550	49.0		0.155 *
0.3584	49.0		0.235 *
0.3619	49.0		0.315 *
0.3654	49.0		0.395 *
0.3689	50.0		1.474 *
0.3723	50.0		1.551 *
0.3756	51.0		2.624 *
0.3790	51.0		2.699 *
0.3825	52.0		3.775 *
0.3860	52.0		3.851 *
0.3895	51.0		2.926 *
0.3929	51.0		2.998 *
0.3964	51.0		3.072 *
0.3999	51.0		3.145 *
0.4033	51.0		3.215 *
0.4069	51.0		3.289 *
0.4103	51.0		3.358 *
0.4138	51.0		3.428 *
0.4173	51.0		3.498 *
0.4208	51.0		3.568 *

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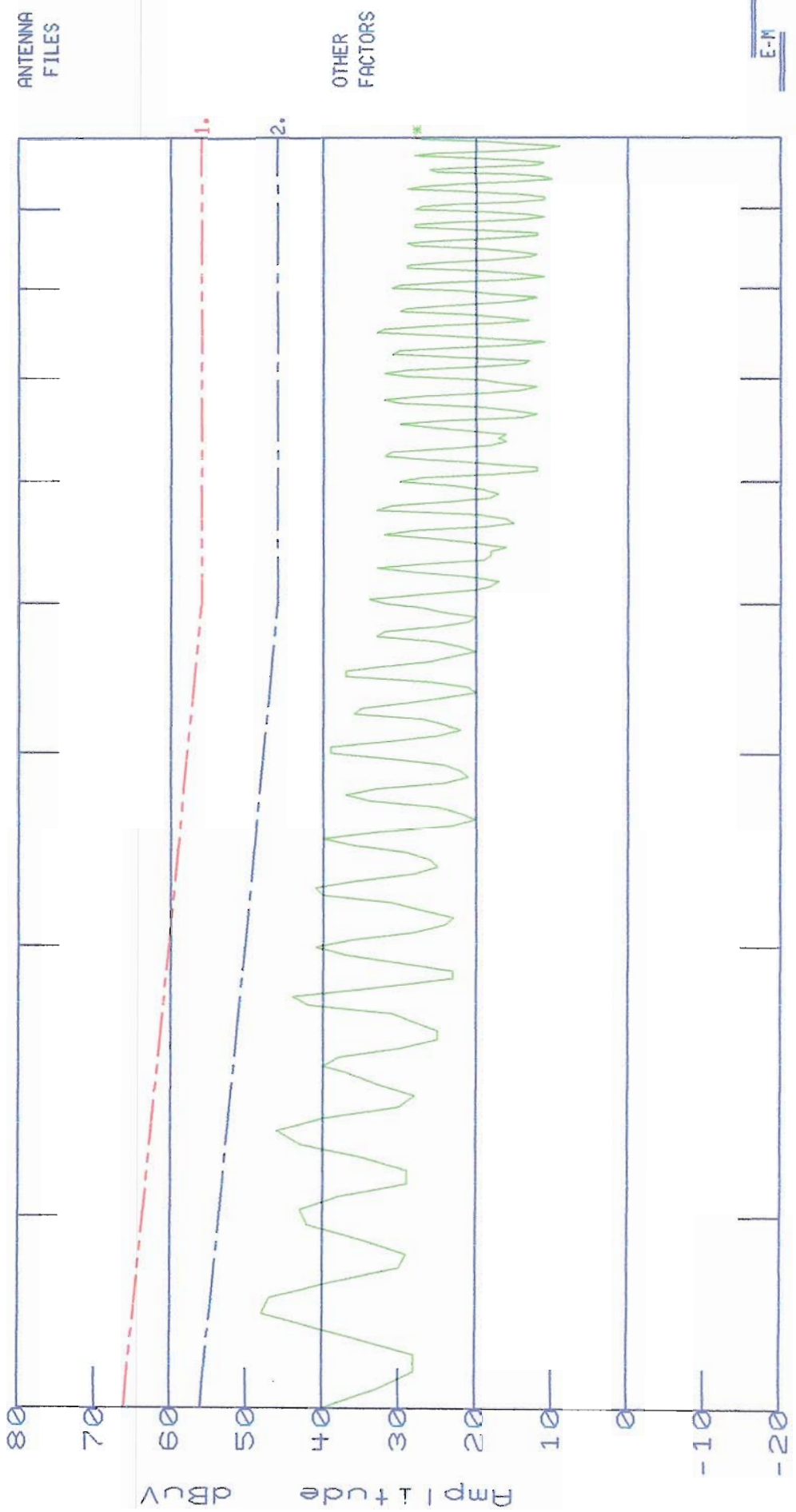
Date : 07/03/08
 Technician : CHIP FOERSTNER
 Test Method : EN55022 CLASS B
 Equipment : SP200
 Mode of Op. : SCALAR
 Serial No. : 081201

EMC-30 SETTINGS
 Detector Average
 Bandwidth CISPR
 Dump/Dwell N/A
 RF Atten. 10 dB
 IF Atten. 10 dB

SPECS

- 1) CISPR 22 Quasi Peak
- 2) CISPR 22 AVG
- 3)
- 4)

Comment : 230 VAC / 50 HZ 150 KHZ TO 1 MHZ AVERAGE DET



TEST TITLE:DBI AMERICA	PAGE 1
DATA FILE :276_1A.D30	Freq.(MHz)
Amplitude Units : dBuV	Threshold -7 dB
	0.1500

Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
0.1728	48.0		-6.825 *
0.2272	46.0		-6.551 *
0.2778	44.0		-6.881 *

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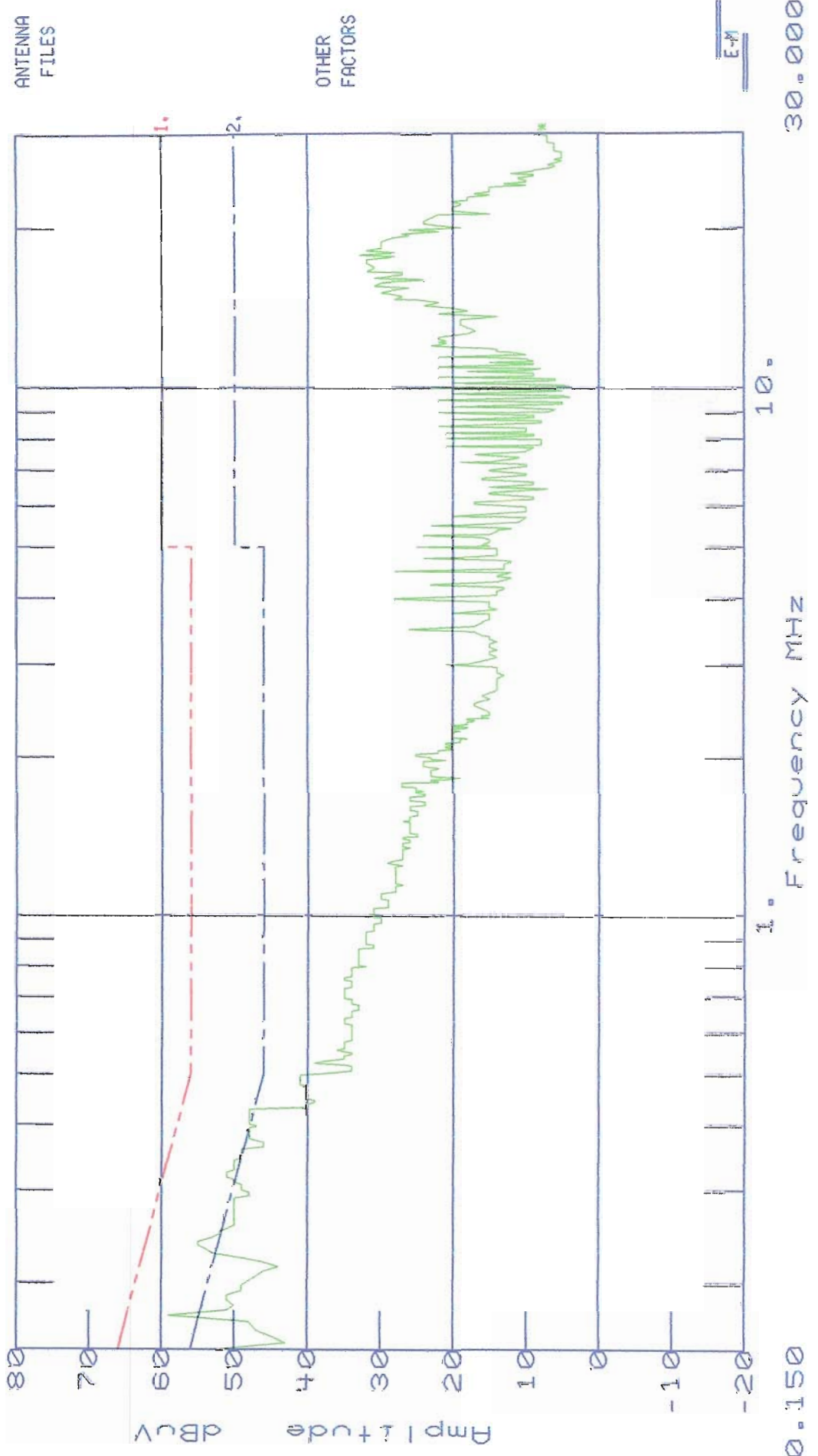
Date : 07/03/08
 Technician : CHIP FOERSTNER
 Test Method : EN55022 CLASS B
 Equipment : SP200
 Mode of Op. : SCALAR
 Serial No. : 081201

Time : 06:25:13.96
 Test Equip. : EMC-30
 Test Number : 1
 Sensor Loc. : SIDE 2
 Sensor Pol. :
 Ext. Atten. : 0 dB

Comment : 230 VAC / 50 HZ

EMC-30 SETTINGS
 Detector QuasiPeak
 Bandwidth CISPR
 Dump/Dwell IN/A
 RF Atten. 10 dB
 IF Atten. 10 dB

SPECS
 1) CISPR 22 Quasi Peak
 2) CISPR 22 AVG
 3)
 4)



Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
0.1728	59.0		4.175 *
0.2272	53.0		0.449 *
0.2314	54.0		1.601 *
0.2355	55.0		2.747 *
0.2394	55.0		2.883 *
0.2435	53.0		1.024 *
0.2477	52.0		0.166 *
0.2500	52.0		0.243 *
0.2535	51.0		-0.642 *
0.2743	50.0		-0.987 *
0.2778	50.0		-0.881 *
0.2812	50.0		-0.780 *
0.2856	50.0		-0.651 *
0.2890	50.0		-0.553 *
0.3099	50.0		0.027 *
0.3131	50.0		0.112 *
0.3166	51.0		1.204 *
0.3201	51.0		1.296 *
0.3235	51.0		1.384 *
0.3270	50.0		0.473 *
0.3305	50.0		0.561 *
0.3340	50.0		0.649 *
0.3374	50.0		0.733 *
0.3409	50.0		0.819 *
0.3446	49.0		-0.092 *
0.3480	49.0		-0.010 *
0.3515	49.0		0.073 *
0.3550	49.0		0.155 *
0.3584	49.0		0.235 *
0.3756	48.0		-0.376 *
0.3790	48.0		-0.301 *
0.3825	48.0		-0.225 *
0.3860	48.0		-0.149 *
0.3895	48.0		-0.074 *
0.3929	48.0		-0.002 *
0.3964	47.0		-0.928 *
0.3999	48.0		0.145 *
0.4033	48.0		0.215 *
0.4069	48.0		0.289 *
0.4103	48.0		0.358 *
0.4138	48.0		0.428 *
0.4173	48.0		0.498 *
0.4208	48.0		0.568 *
0.4242	48.0		0.634 *
0.4277	48.0		0.703 *

Product Safety Engineering

DBI AMERICA

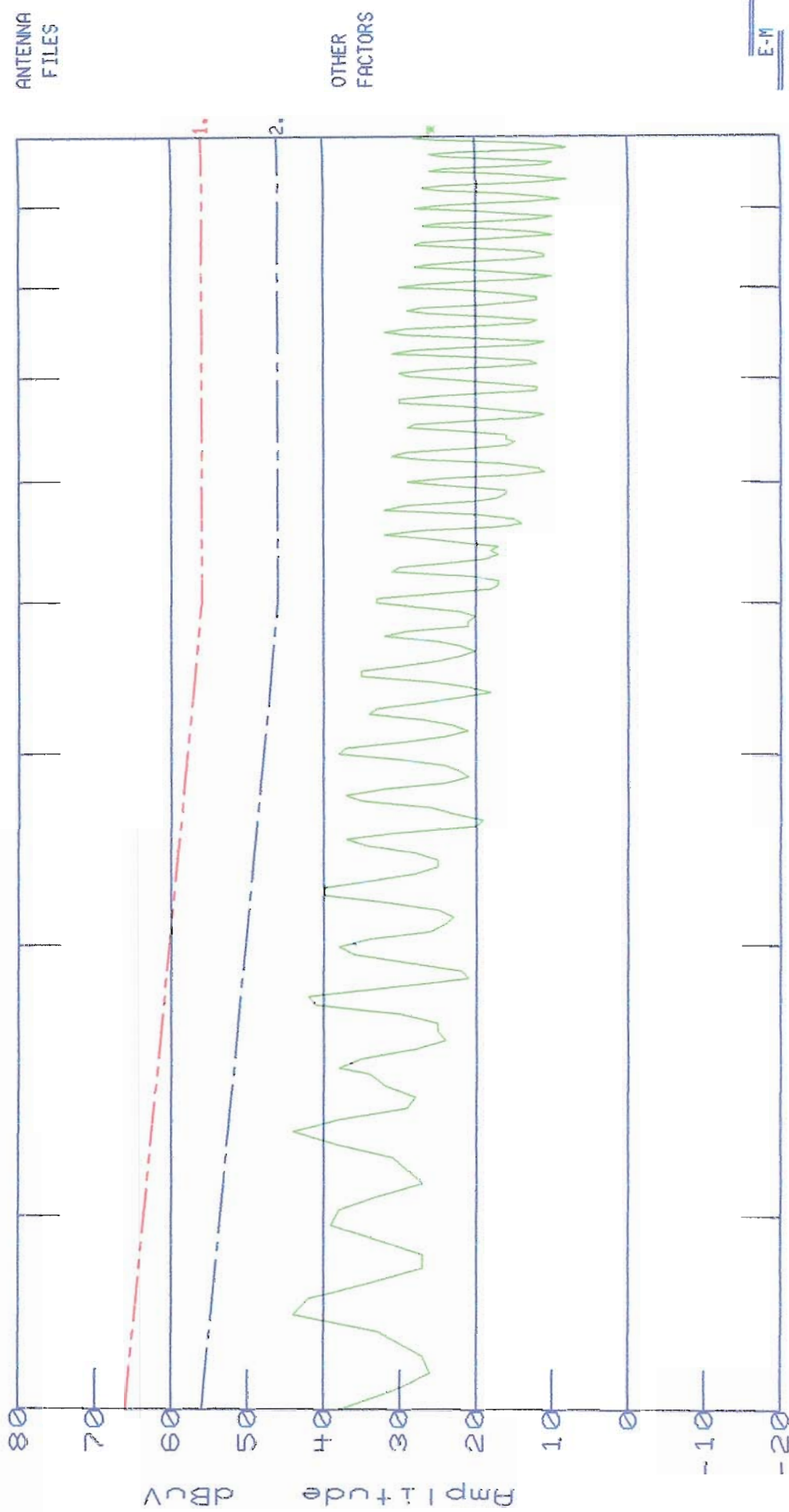
Date : 07/03/08
 Technician : CHIP FOERSTNER
 Test Method : EN55022 CLASS B
 Equipment : SP200
 Mode of Op. : SCALAR
 Serial No. : 081201

Time : 06:17:14.35
 Test Equip. : EMC-30
 Test Number : 1
 Sensor Loc. : SIDE 2
 Sensor Pol. :
 Ext. Atten. : 0 dB

Comment : 230 VAC / 50 HZ 150 KHZ TO 1 MHZ AVERAGE DET

EMC-30 SETTINGS
 Detector Average
 Bandwidth CISPR
 Dump/Dwell N/A
 RF Atten. 10 dB
 IF Atten. 10 dB

SPECS
 1) CISPR 22 Quasi Peak
 2) CISPR 22 AVG
 3)
 4)



0.150

Frequency MHz

1.000

E-M

Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
0.1728	44.0		-10.825 *
0.2272	44.0		-8.551 *
0.2743	41.0		-9.987 *
0.2778	42.0		-8.881 *
0.3235	40.0		-9.616 *
0.3270	40.0		-9.527 *
0.3515	37.0		-11.927 *
0.3756	37.0		-11.376 *
0.3999	38.0		-9.855 *
0.4033	37.0		-10.785 *
0.4485	35.0		-11.903 *
0.4520	35.0		-11.838 *

Product Safety Engineering

DBI AMERICA

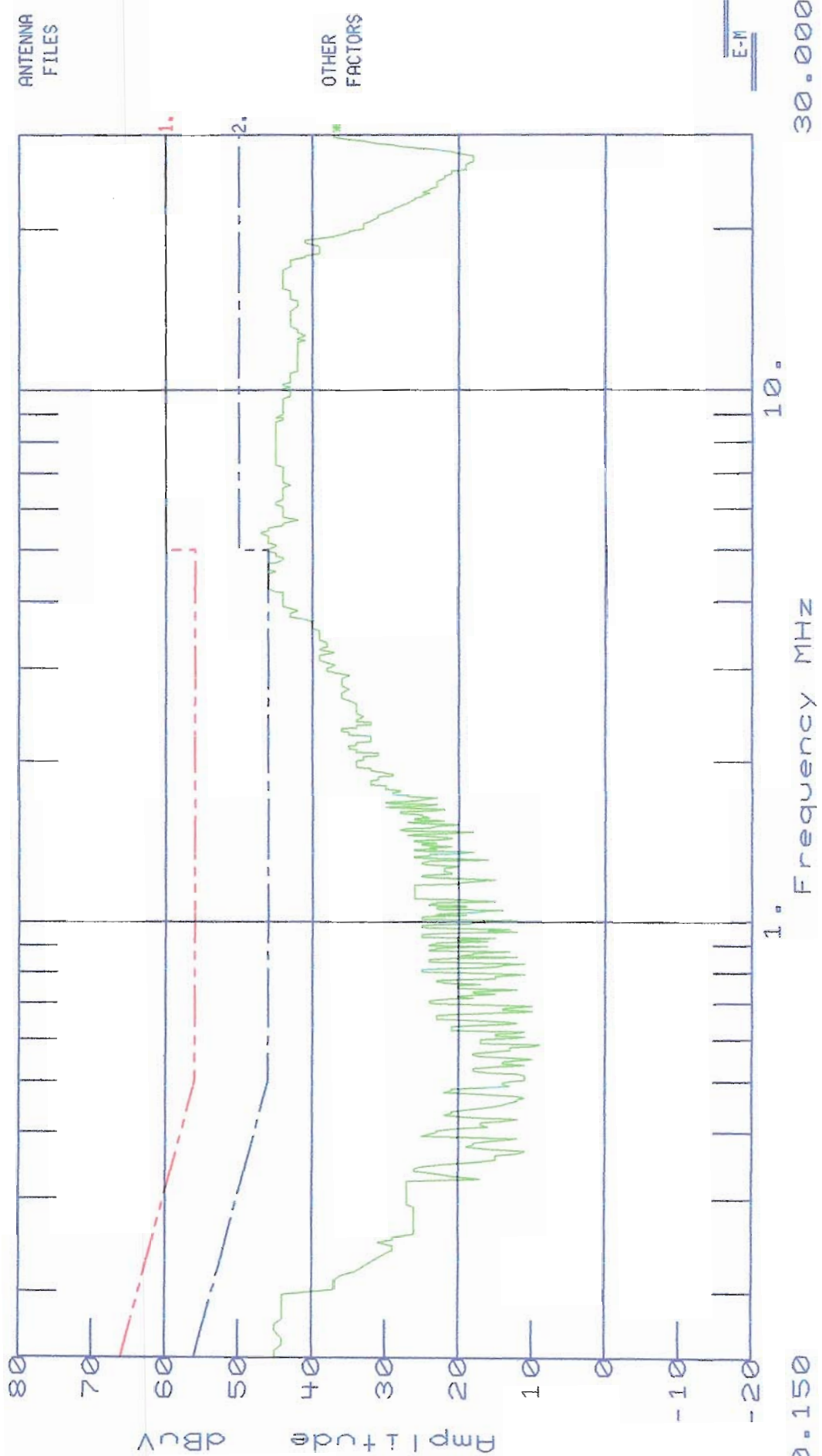
Date : 07/03/08
 Technician : CHIP FOERSTNER
 Test Method : EN55022 CLASS B
 Equipment : SP200
 Mode of Op. : MOTOR
 Serial No. : 081201

Time : 10:34:43.90
 Test Equip. : EMC-30
 Test Number : 1
 Sensor Loc. : SIDE 1
 Sensor Pol. :
 Ext. Atten. : 0 dB

EMC-30 SETTINGS
 Detector : QuasiPeak
 Bandwidth : CISPR
 Dump/Dwell : IN/A
 RF Atten. : 10 dB
 IF Atten. : 10 dB

SPECS
 1) CISPR 22 Quasi Peak
 2) CISPR 22 AVG
 3)
 4)

Comment : 230 VAC / 50 HZ



TEST TITLE:DBI AMERICA
DATA FILE :276_1M.D30
Amplitude Units : dBuV

Threshold -4 dB

PAGE 1
Freq.(MHz)
0.1500

Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
3.7360	43.0		-3.000 *
3.7712	43.0		-3.000 *
3.7993	43.0		-3.000 *
3.8416	42.0		-4.000 *
3.8768	43.0		-3.000 *
3.9120	44.0		-2.000 *
3.9472	44.0		-2.000 *
3.9822	44.0		-2.000 *
4.0174	44.0		-2.000 *
4.0526	44.0		-2.000 *
4.0879	44.0		-2.000 *
4.0949	44.0		-2.000 *
4.1548	44.0		-2.000 *
4.1583	45.0		-1.000 *
4.2253	46.0		0.000 *
4.2605	46.0		0.000 *
4.2957	46.0		0.000 *
4.3309	46.0		0.000 *
4.3662	46.0		0.000 *
4.3733	46.0		0.000 *
4.4367	46.0		0.000 *
4.4719	46.0		0.000 *
4.5000	46.0		0.000 *
4.5423	45.0		-1.000 *
4.5775	46.0		0.000 *
4.6127	46.0		0.000 *
4.6480	46.0		0.000 *
4.6832	46.0		0.000 *
4.7114	46.0		0.000 *
4.7219	45.0		-1.000 *
4.7888	44.0		-2.000 *
4.8241	44.0		-2.000 *
4.8593	45.0		-1.000 *
4.8945	45.0		-1.000 *
4.9297	45.0		-1.000 *
4.9649	46.0		0.000 *
5.0001	46.0		-4.000 *
5.0072	46.0		-4.000 *
5.1410	46.0		-4.000 *
5.1762	46.0		-4.000 *
5.2114	46.0		-4.000 *
5.2466	46.0		-4.000 *
5.2818	46.0		-4.000 *
5.3029	46.0		-4.000 *
5.3522	47.0		-3.000 *
5.3874	47.0		-3.000 *
5.4226	46.0		-4.000 *
5.4578	46.0		-4.000 *
5.4930	46.0		-4.000 *
5.4966	46.0		-4.000 *

Product Safety Engineering

DBI AMERICA

Date : 07/03/08
 Technician : CHIP FOERSTNER
 Test Method : EN55022 CLASS B
 Equipment : SP200
 Mode of Op. : MOTOR
 Serial No. : 081201

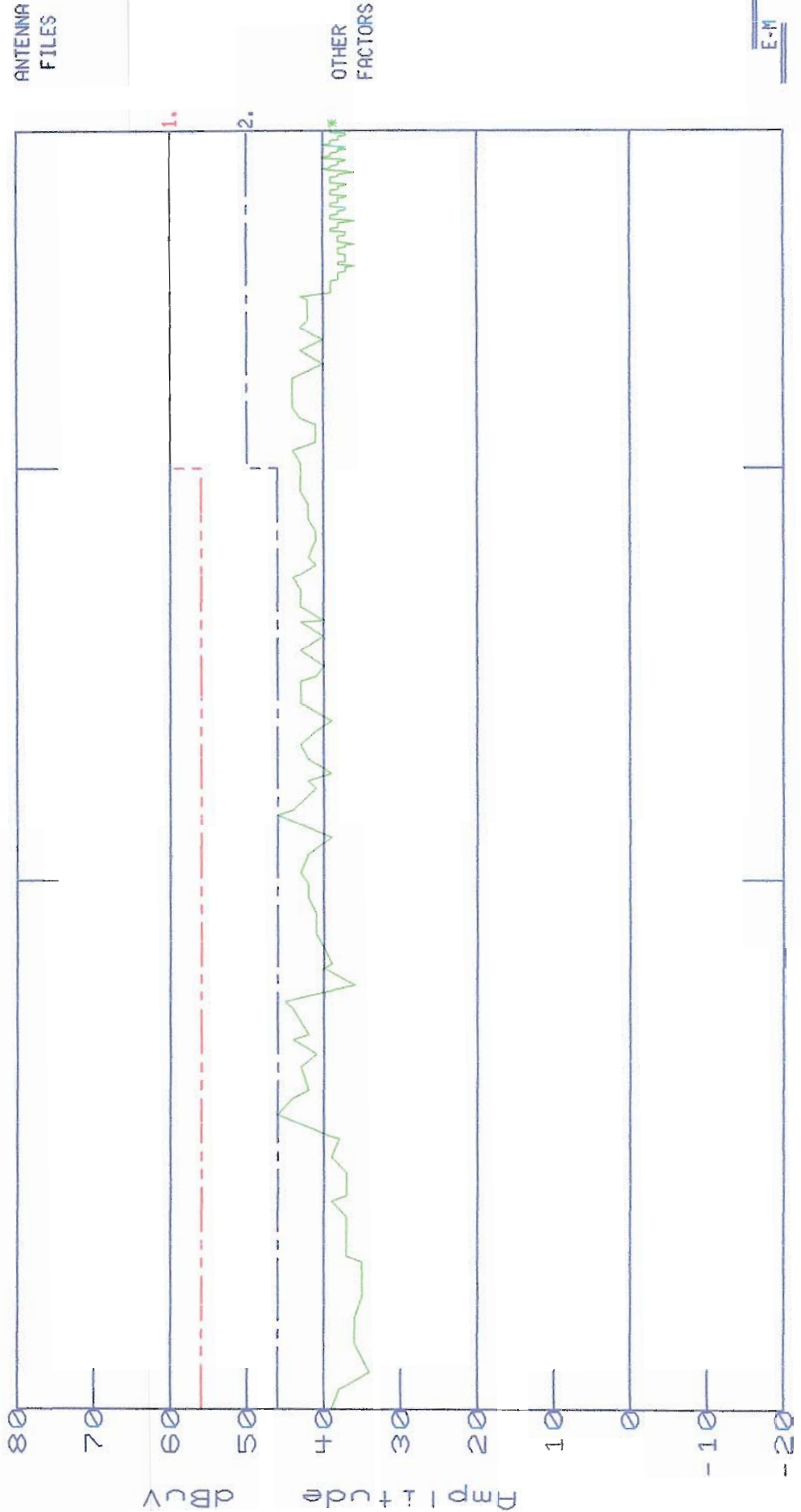
Time : 08:08:52.41
 Test Equip. : EMC-30
 Test Number : 1
 Sensor Loc. : SIDE 1
 Sensor Pol. :
 Ext. Atten. : 0 dB

EMC-30 SETTINGS
 Detector Average
 Bandwidth CISPR
 Dump/Dwell IN/A
 RF Atten. 10 dB
 IF Atten. 10 dB

SPECS

- 1) CISPR 22 Quasi Peak
- 2) CISPR 22 AVG
- 3)
- 4)

Comment : 230 VAC / 50 HZ AVERAGE 3 TO 6 MHZ



TEST TITLE:DBI AMERICA
DATA FILE :276_1MA.D30
Amplitude Units : dBuV

Threshold -6 dB

PAGE 1
Freq.(MHz)
3.0000

Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
3.5205	46.0		0.000 *
3.5522	44.0		-2.000 *
3.5664	42.0		-4.000 *
3.6121	43.0		-3.000 *
3.6368	41.0		-5.000 *
3.6649	44.0		-2.000 *
3.6755	42.0		-4.000 *
3.7283	44.0		-2.000 *
3.7423	45.0		-1.000 *
3.8127	40.0		-6.000 *
3.8585	40.0		-6.000 *
3.8866	41.0		-5.000 *
3.9254	41.0		-5.000 *
3.9289	41.0		-5.000 *
3.9631	42.0		-4.000 *
3.9913	42.0		-4.000 *
4.0160	43.0		-3.000 *
4.0547	42.0		-4.000 *
4.1216	43.0		-3.000 *
4.1428	46.0		0.000 *
4.1533	44.0		-2.000 *
4.2027	41.0		-5.000 *
4.2203	42.0		-4.000 *
4.2696	42.0		-4.000 *
4.3048	43.0		-3.000 *
4.3365	41.0		-5.000 *
4.4037	43.0		-3.000 *
4.4107	43.0		-3.000 *
4.4565	43.0		-3.000 *
4.4671	41.0		-5.000 *
4.4918	40.0		-6.000 *
4.5305	43.0		-3.000 *
4.5657	40.0		-6.000 *
4.6009	43.0		-3.000 *
4.6044	40.0		-6.000 *
4.6397	43.0		-3.000 *
4.6819	43.0		-3.000 *
4.7136	44.0		-2.000 *
4.7207	43.0		-3.000 *
4.7453	41.0		-5.000 *
4.7629	42.0		-4.000 *
4.8087	41.0		-5.000 *
4.8334	41.0		-5.000 *
4.8651	42.0		-4.000 *
4.8686	42.0		-4.000 *
4.9038	42.0		-4.000 *
4.9390	43.0		-3.000 *
4.9742	43.0		-3.000 *
5.0482	44.0		-6.000 *
5.1675	44.0		-6.000 *
5.2027	44.0		-6.000 *
5.2062	44.0		-6.000 *
5.2484	44.0		-6.000 *

Product Safety Engineering

DBI AMERICA

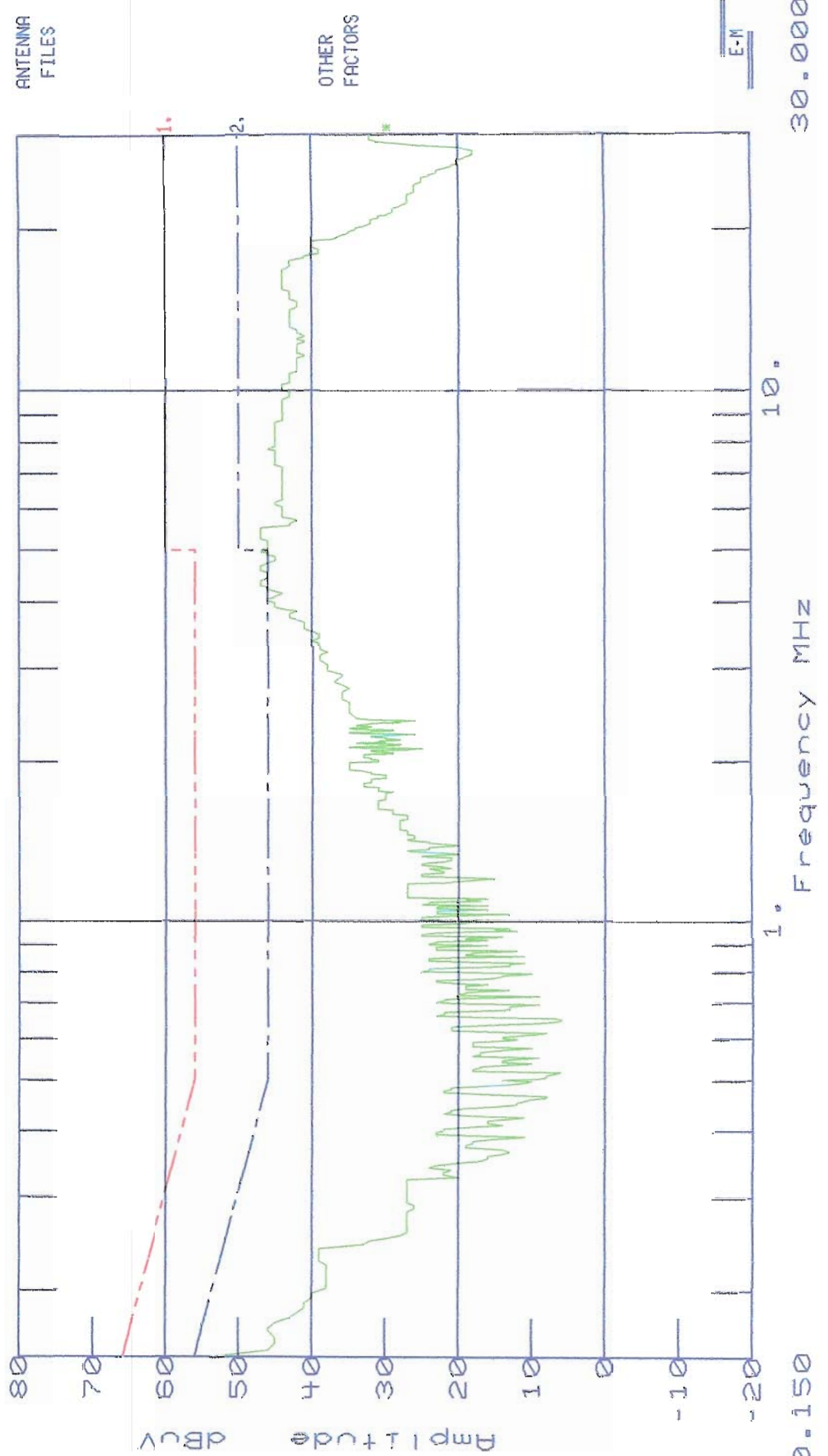
Date : 07/03/08
 Technician : CHIP FOERSTNER
 Test Method : EN55022 CLASS B
 Equipment : SP200
 Mode of Op. : MOTOR
 Serial No. : 081201

Time : 11:00:26.71
 Test Equip. : EMC-30
 Test Number : 1
 Sensor Loc. : SIDE 2
 Sensor Pol. :
 Ext. Atten. : 0 dB

EMC-30 SETTINGS
 Detector QuasiPeak
 Bandwidth CISPR
 Dump/Dwell IN/A
 RF Atten. 10 dB
 IF Atten. 10 dB

SPECS
 1) CISPR 22 Quasi Peak
 2) CISPR 22 AVG
 3)
 4)

Comment : 230 VAC / 50 HZ



TEST TITLE:DBI AMERICA
DATA FILE :276_2M.D30
Amplitude Units : dBuV

Threshold -4 dB

PAGE 1
Freq.(MHz)
0.1500

Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
0.1500	53.0		-3.000 *
3.7008	42.0		-4.000 *
3.7360	43.0		-3.000 *
3.7712	43.0		-3.000 *
3.7993	43.0		-3.000 *
3.8416	42.0		-4.000 *
3.8768	44.0		-2.000 *
3.9120	45.0		-1.000 *
3.9472	45.0		-1.000 *
3.9822	45.0		-1.000 *
4.0174	46.0		0.000 *
4.0526	46.0		0.000 *
4.0879	45.0		-1.000 *
4.0949	45.0		-1.000 *
4.1548	44.0		-2.000 *
4.1900	45.0		-1.000 *
4.2253	46.0		0.000 *
4.2605	46.0		0.000 *
4.2957	47.0		1.000 *
4.3309	47.0		1.000 *
4.3662	47.0		1.000 *
4.3733	47.0		1.000 *
4.4367	46.0		0.000 *
4.4719	46.0		0.000 *
4.5071	46.0		0.000 *
4.5423	46.0		0.000 *
4.5775	47.0		1.000 *
4.6127	47.0		1.000 *
4.6480	47.0		1.000 *
4.6691	47.0		1.000 *
4.7184	46.0		0.000 *
4.7219	46.0		0.000 *
4.7888	45.0		-1.000 *
4.8241	45.0		-1.000 *
4.8593	45.0		-1.000 *
4.8945	46.0		0.000 *
4.9297	46.0		0.000 *
4.9649	47.0		1.000 *
5.0001	46.0		-4.000 *
5.0354	46.0		-4.000 *
5.0706	46.0		-4.000 *
5.1058	46.0		-4.000 *
5.1410	46.0		-4.000 *
5.1762	46.0		-4.000 *
5.2114	46.0		-4.000 *
5.2466	47.0		-3.000 *
5.2818	47.0		-3.000 *
5.3029	47.0		-3.000 *
5.3522	47.0		-3.000 *
5.3874	47.0		-3.000 *
5.4226	47.0		-3.000 *
5.4297	47.0		-3.000 *
5.4930	47.0		-3.000 *
5.4966	47.0		-3.000 *
7.7457	46.0		-4.000 *

Product Safety Engineering

DBI AMERICA

Date : 07/03/08
 Technician : CHIP FOERSTNER
 Test Method : EN55022 CLASS B
 Equipment : SP200
 Mode of Op. : MOTOR
 Serial No. : 081201

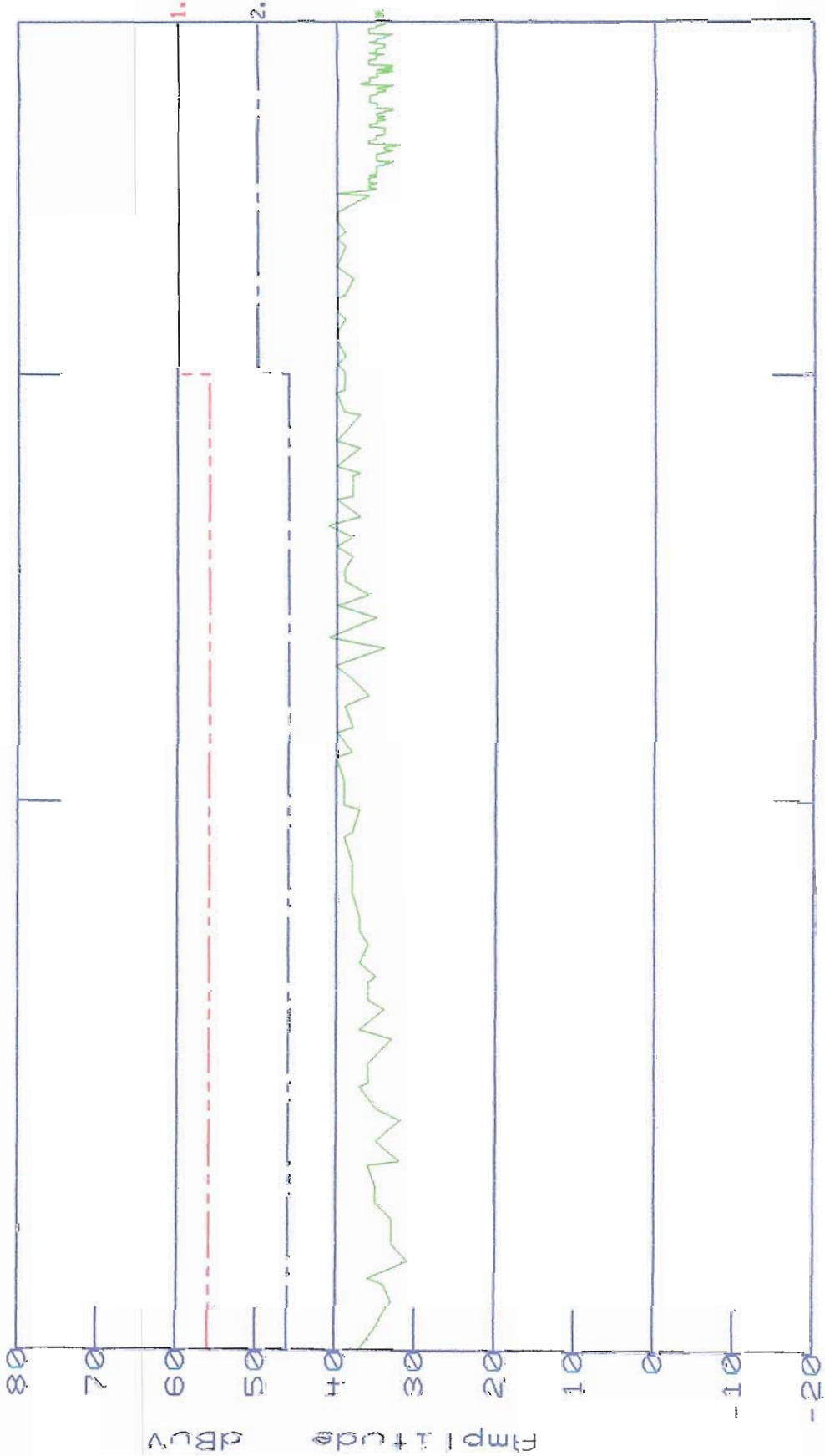
Time : 07:54:42.98
 Test Equip. : EMC-30
 Test Number : 1
 Sensor Loc. : SIDE 2 AVERAGE DET
 Sensor Pol. :
 Ext. Atten. : 0 dB

EMC-30 SETTINGS
 Detector Average
 Bandwidth CISPR
 Dump/Dwell IN/A
 RF Atten. 10 dB
 IF Atten. 10 dB

SPECS
 1) CISPR 22 Quasi Peak
 2) CISPR 22 AVG
 3)
 4)

Comment : 230 VAC / 50 HZ AVERAGE 3 TO 6 MHZ

ANTENNA FILES



3.000

Frequency MHz

6.000

TEST TITLE:DBI AMERICA
DATA FILE :276_2MA.D30
Amplitude Units : dBuV

Threshold -7 dB

PAGE 1
Freq.(MHz)
3.0000

Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
3.9254	39.0		-7.000 *
3.9913	39.0		-7.000 *
4.0371	39.0		-7.000 *
4.0441	39.0		-7.000 *
4.0935	40.0		-6.000 *
4.1463	40.0		-6.000 *
4.2027	39.0		-7.000 *
4.2907	40.0		-6.000 *
4.2943	40.0		-6.000 *
4.3579	41.0		-5.000 *
4.4319	40.0		-6.000 *
4.4882	39.0		-7.000 *
4.5164	39.0		-7.000 *
4.5692	40.0		-6.000 *
4.6185	41.0		-5.000 *
4.6819	40.0		-6.000 *
4.7629	40.0		-6.000 *
4.8263	40.0		-6.000 *
4.8475	39.0		-7.000 *
4.9003	39.0		-7.000 *
4.9496	40.0		-6.000 *
4.9566	39.0		-7.000 *

Product Safety Engineering

DBI AMERICA

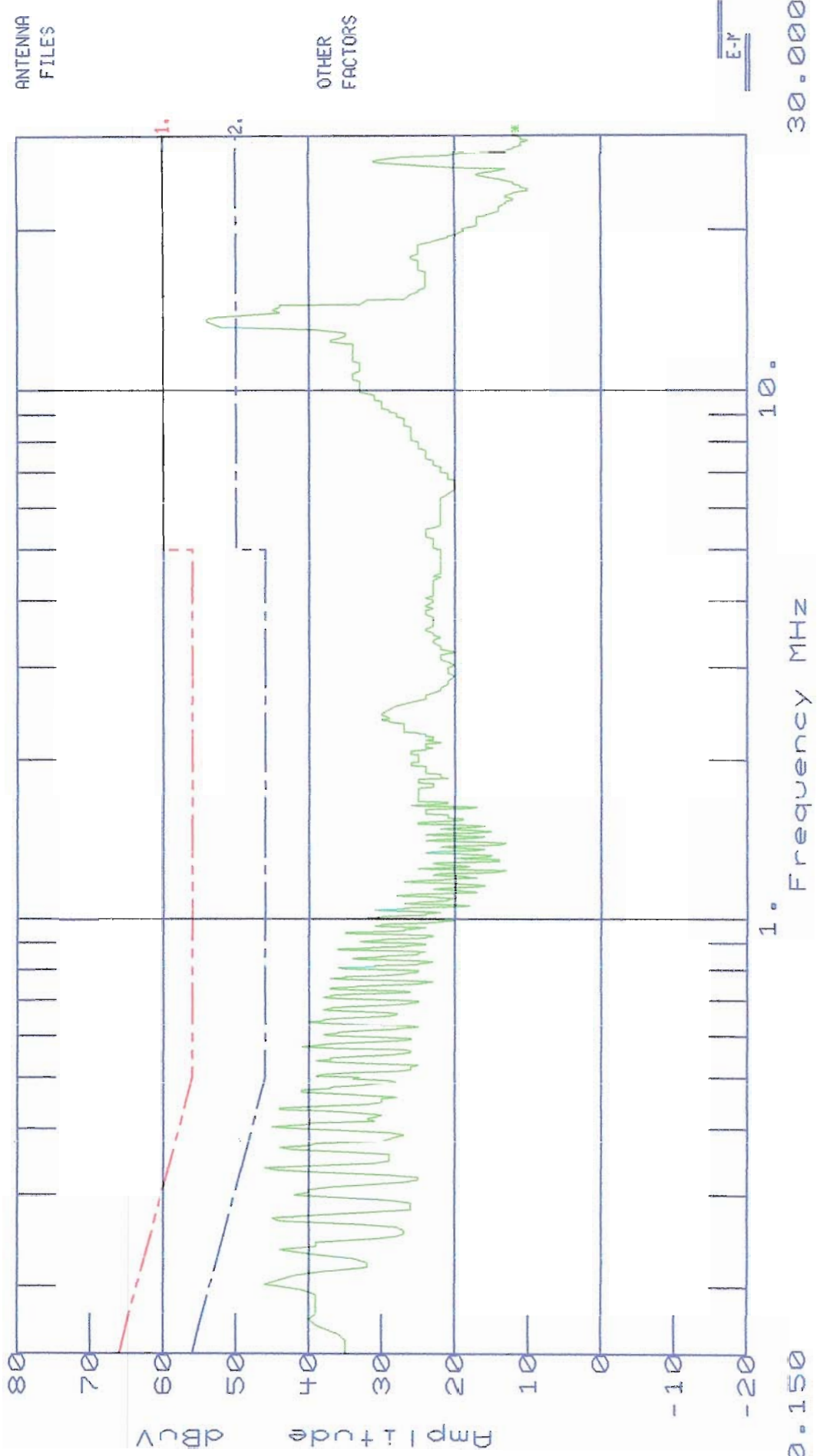
Date : 07/03/08
 Technician : CHIP FOERSTNER
 Test Method : EN55022 CLASS B
 Equipment : SWIFT
 Mode of Op. : SCALER
 Serial No. : 871101

Time : 07:53:02.69
 Test Equip. : EMC-30
 Test Number : 1
 Sensor Loc. : SIDE 1
 Sensor Pol. :
 Ext. Atten. : 0 dB

EMC-30 SETTINGS
 Detector : Quasi Peak
 Bandwidth : CISPR
 Dump/Dwell : IN/A
 RF Atten. : 10 dB
 IF Atten. : 10 dB

SPECS
 1) CISPR 22 Quasi Peak
 2) CISPR 22 AVG
 3)
 4)

Comment : 230 VAC / 50 HZ



TEST TITLE:DBI AMERICA
 DATA FILE :276_1S.D30
 Amplitude Units : dBuV

Threshold -6 dB

PAGE 1
 Freq.(MHz)
 0.1500

Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
0.3340	44.0		-5.351 *
0.3374	46.0		-3.267 *
0.3689	44.0		-4.526 *
0.3999	42.0		-5.855 *
0.4033	45.0		-2.785 *
0.4346	44.0		-3.164 *
0.4381	44.0		-3.098 *
0.4692	41.0		-5.528 *
0.4727	41.0		-5.466 *
0.5715	41.0		-5.000 *
0.6369	40.0		-6.000 *
13.1646	52.0		2.000 *
13.3316	53.0		3.000 *
13.4986	54.0	-6.000 *	4.000 *
13.6355	54.0	-6.000 *	4.000 *
13.7323	53.0		3.000 *
13.9995	44.0		-6.000 *
14.1632	45.0		-5.000 *
14.3301	44.0		-6.000 *
14.4771	44.0		-6.000 *

Product Safety Engineering

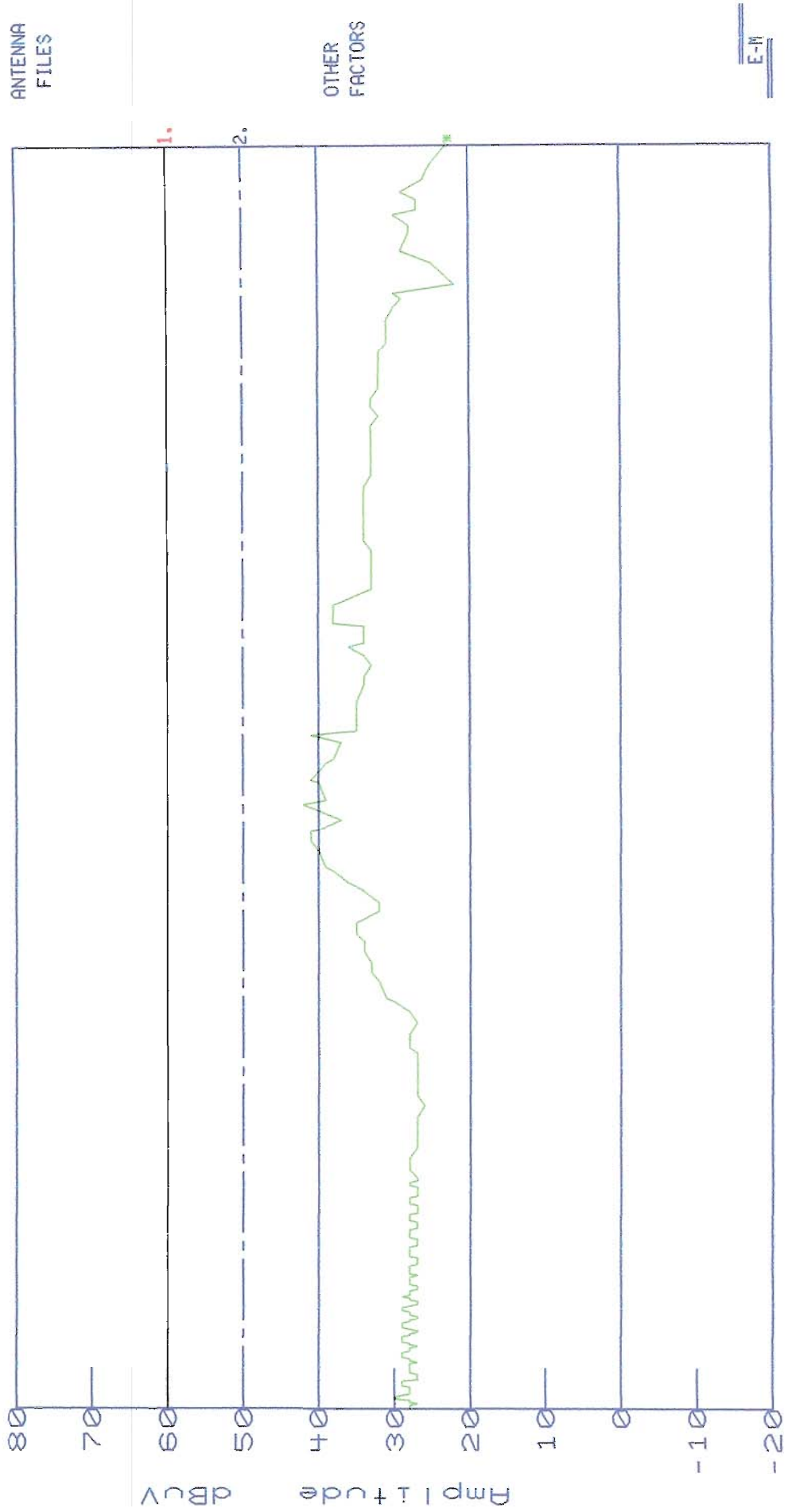
DBI AMERICA

Date : 07/03/08 Time : 08:10:15.51
 Technician : CHIP FOERSTNER Test Equip. : EMC-30
 Test Method : EN55022 CLASS B Test Number : 1
 Equipment : SWIFT Sensor Loc. : SIDE 1
 Mode of Op. : SCALER Sensor Pol. :
 Serial No. : 871101 Ext. Atten. : 0 dB

EMC-30 SETTINGS
 Detector Average
 Bandwidth CISPR
 Dump/Due IN/A
 RF Atten. 10 dB
 IF Atten. 10 dB

SPECS
 1) CISPR 22 Quasi Peak
 2) CISPR 22 AVG
 3)
 4)

Comment : 230 VAC / 50 HZ 12 - 15 MHZ AVERAGE



TEST TITLE:DBI AMERICA
DATA FILE :276_1SA.D30
Amplitude Units : dBuV

Threshold -10 dB

PAGE 1
Freq.(MHz)
12.0000

Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
13.2448	40.0		-10.000 *
13.2681	41.0		-9.000 *
13.2915	41.0		-9.000 *
13.2948	40.0		-10.000 *
13.3550	42.0		-8.000 *
13.4084	40.0		-10.000 *
13.4117	41.0		-9.000 *
13.5186	41.0		-9.000 *

Product Safety Engineering

DBI AMERICA

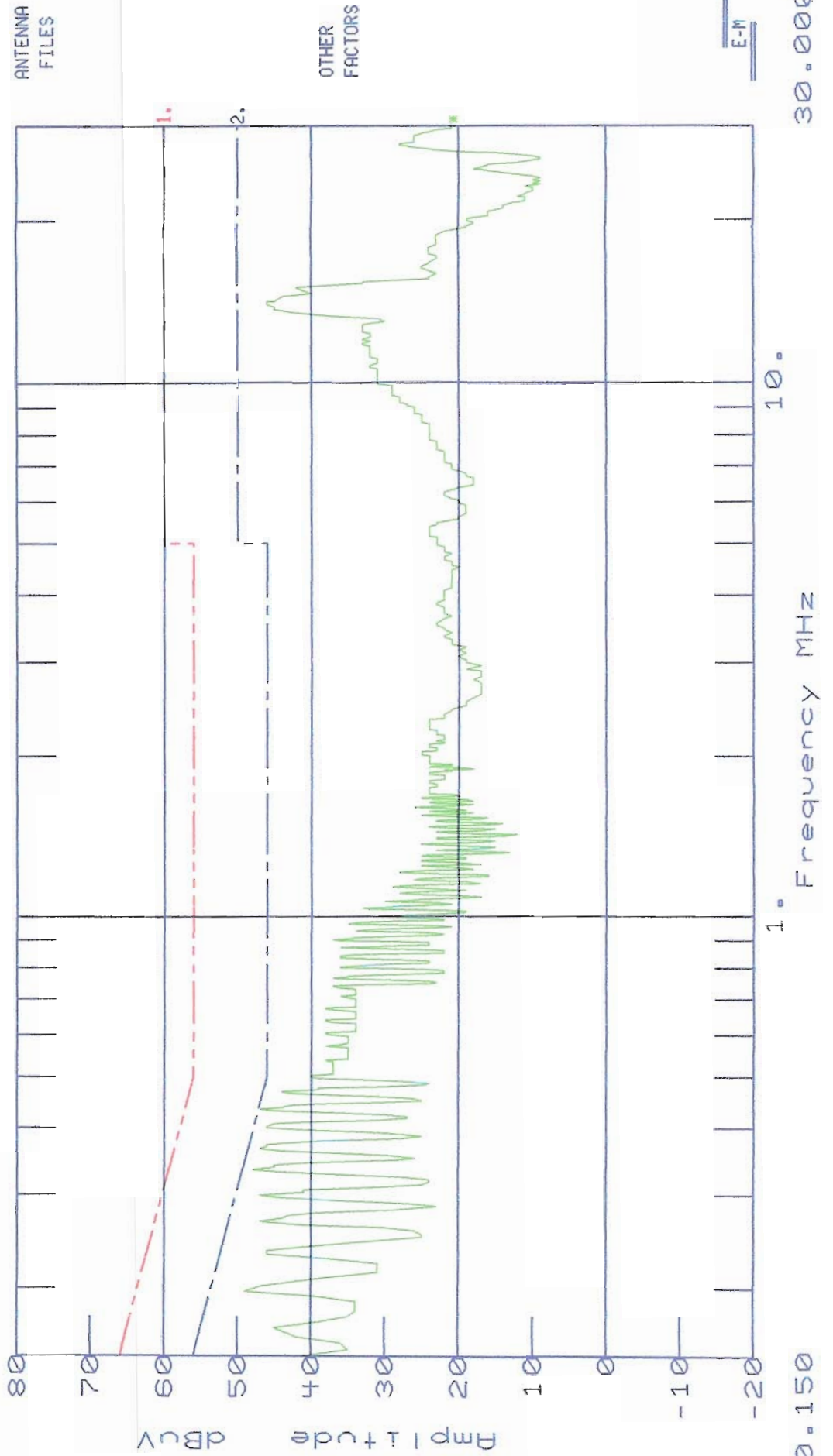
Date : 07/03/08
 Technician : CHIP FOERSTNER
 Test Method : EN55022 CLASS B
 Equipment : SWIFT
 Mode of Op. : SCALER
 Serial No. : 871101

Time : 08:22:43.65
 Test Equip. : EMC-30
 Test Number : 1
 Sensor Loc. : SIDE 2
 Sensor Pol. :
 Ext. Atten. : 0 dB

EMC-30 SETTINGS
 Detector QuasiPeak
 Bandwidth CISPR
 Dump/DwellIN/A
 RF Atten. 10 dB
 IF Atten. 10 dB

SPECS
 1) CISPR 22 Quasi Peak
 2) CISPR 22 AVG
 3)
 4)

Comment : 230 VAC / 50 HZ



TEST TITLE:DBI AMERICA

DATA FILE :276_2S.D30

Amplitude Units : dBuV

Threshold -6 dB

PAGE 1
Freq.(MHz)
0.1500

Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
0.1973	49.0		-4.723 *
0.2674	47.0		-4.198 *
0.2994	47.0		-3.259 *
0.3305	44.0		-5.439 *
0.3340	48.0		-1.351 *
0.3374	45.0		-4.267 *
0.3409	45.0		-4.181 *
0.3619	44.0		-4.685 *
0.3654	47.0		-1.605 *
0.3689	46.0		-2.526 *
0.3723	46.0		-2.449 *
0.3964	42.0		-5.928 *
0.3999	46.0		-1.855 *
0.4033	46.0		-1.785 *
0.4069	45.0		-2.711 *
0.4312	45.0		-2.230 *
0.4346	47.0		-0.164 *
0.4381	44.0		-3.098 *
0.4416	43.0		-4.032 *
0.4658	43.0		-3.588 *
0.4692	44.0		-2.528 *
0.5000	40.0		-6.000 *
0.5034	40.0		-6.000 *
13.6656	45.0		-5.000 *
13.8325	45.0		-5.000 *
13.9995	46.0		-4.000 *
14.1632	46.0		-4.000 *
14.1665	45.0		-5.000 *
14.4771	44.0		-6.000 *

APPENDIX

B

System Under Test Description

SYSTEM COMPONENTS

DEVICE TYPE: EUT, SP200 COMBINATION PIEZO ULTRASONIC SCALER WITH
ELECTRIC MOTOR (SP200, SP100 AND SIMILAR) PORTABLE AND NON-PORTABLE
S/N: 081201 (RADIATED AND CONDUCTED), 081201 (RADIATED ONLY)

DEVICE TYPE: EUT, SWIFT PORTABLE PIEZO ULTRASONIC SCALER (PORTABLE
AND NON-PORTABLE)

S/N: 871101

INTERFACE CABLES

DEVICE TYPE: EUT (ALL 3)
SHIELD: NO
LENGTH: 1 METER
CONNECTOR TYPE: DEDICATED TO DEDICATED
PORT: FOOT SWITCH

DEVICE TYPE: EUT (ALL 3)
SHIELD: NO
LENGTH: 1 METER
CONNECTOR TYPE: DEDICATED TO DEDICATED
PORT: SCALER

DEVICE TYPE: EUT (ALL 3)
SHIELD: NO
LENGTH: 1 METER
CONNECTOR TYPE: DEDICATED TO DEDICATED
PORT: MOTOR

AC LINE CORDS

DEVICE TYPE: EUT (ALL 3)

SHIELD: NO

LENGTH: 1 METER

CONNECTOR TYPE: IEC TO DEDICATED
