Electronic Test & Calibration Ltd.

ETC00327

Electromagnetic Compatibility Test

Customer
Somar Environmental Systems, Somar House, Heron Way, Newham Industrial Estate, Truro, Cornwall. TR1 2XN

Location
EMC Network (SW) Ltd., Caddsdown Industrial Park, Clovelly Road, Bideford, Devon. EX39 3DX.

Dates of test.
21st December 2004, 5th, 6th, 24th January 2005.

Equipment under test
Three phase motor control units type PBI Size 1 and PBI Size 2.

Test Standards
The equipment was tested to appropriate sections of BS EN 60947-4-2, which calls up EN 55011, EN 55022, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6 and EN 61000-4-11.

Disclaimer
The measurements made are valid at the time of measurement and do not represent the EUT characteristics under different operating conditions. Any conclusions drawn from these measurements are based purely on the represented information and are made in good faith. Any recommendations are made without prejudice and any changes in performance must be verified by testing to the appropriate standards.

Test Engineer
John Wilson

Head of Laboratory
Bernard Wragge-Morley

Signature Not Verified

Digitally signed by Bernard Wragge-Morley
DN: cn=Bernard Wragge-Morley, o=Electronic Test and Calibration Ltd, c=GB
Date: 2005.03.31 10:48:38 +01'00'

Caddsdown Industrial Park, Clovelly Road, Bideford, Devon, EX39 3DX.
Telephone: 01237 423388 Fax: 01237 423434 email: info@etcal.co.uk
Registered in England No. 2655986 Directors: B.D. and S.J. Wragge-Morley

Equipment configuration

The two EUTs are contained in single panel mounting units which takes a three phase ac supply and process it prior to feeding a three phase ac motor in order to provide soft start and motor optimisation control. During all tests each EUT was exercised by running a 4kW motor load in full optimisation mode. Connection from the three phase supply to the EUT, and cabling from the EUT to the load was made by unscreened flexible cable. The individual units are designated Size 1 for the lower power, and Size 2 for the higher power.

Conducted RF Emissions: BS EN 55011 Group 2 Class A called by BS EN 60947-4-2 2000

Date of test:	6th January 2005	24th January 2005
Temperature	19°C	21°C
Humidity	47%	28%
Pressure	1012mB	1018mB

Equipment used

Rohde & Schwarz 3 phase LISN ESH2-Z5	Ser. No. 843285/012
Rohde & Schwarz Test Receiver ESHS-10	Ser. No. 843276/008
Rohde & Schwarz Software ESxS-K1 Ver. 2.02.06g	Ser. No. 840.913/100
Instrumentation Limiter FCC FS-450B.6N	Ser. No. None
Screened room	

The standard calls for equipment to pass both quasi-peak and average limits in the frequency range 150kHz to 30MHz, shown on the accompanying graphs by an orange line for quasi-peak and a red line for average. The emissions are shown in blue for peak and green for average levels. The peak results are re-measured automatically to produce the quasi-peak points shown as diagonal crosses, with a tabular analysis on the second page of each graph. To allow for measurement uncertainties it is advisable to allow at least a 4dB margin below each limit line when considering a pass/fail decision.

Tests were carried out with the equipment inside a screened room. The line impedance stabilisation network (LISN) was bonded to the wall of the chamber as defined in the test standard. The measurement receiver and associated equipment were mounted in an adjacent screened control room. Prior to testing, calibration checks were carried out on test receivers and the FS-450B impulse limiter. Measurements were preceded by a prior system check using a wide band noise source type CNE.

The EUTs were connected to the LISN as shown in photographs PBI_013 and PBI_023 and emission plots carried out on the L1, L2 and L3 phases. The results are shown in graphs pbi_05.dat, pbi_06.dat and pbi_07.dat for the Size 1 unit, and in graphs pbi_10.dat, pbi_11.dat and pbi_12,dat for the Size 2 unit. In all cases the recorded emissions were substantially lower than the prescribed limits.

Conclusions:

The equipment as tested meets the requirements of the BS EN 55011 Group 2 Class A test standard called by BS EN 60947-4-2 2000

Uncertainty of Conducted Emissions 150kHz to 30MHz.

Uncertainty of measured level is 3.53dB. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. Calculated in accordance with CISPR 16-4 : 2002

Radiated Emissions: BS EN 55011 Class A called by BS EN 60947-4-2 2000

Date of test: 6th January 2005
Temperature 19°C
Humidity 47%
Pressure 1012mB

Equipment used

Anechoic chamber Lindgren-Rayproof	
Rohde & Schwarz Test Receiver ESVS-10	Ser. No. 843207/009
Rohde & Schwarz Software ESxS-K1 Ver. 2.02.06g	Ser. No. 840.913/100
ARA LPB-2520 antenna	Ser. No. 1068
Antenna mast Deisel Gmbh	Ser. No. AS620
Anritsu MS-2601B spectrum analyser	Ser. No. MT53659
Anritsu EMI probe kit MA8611A and preamplifier.	Ser No. M41053
ARA E Field & H Field probes.	Ser. No. 1016

The standard calls for equipment to meet quasi-peak limits for Class A (Industrial) or Class B (Domestic) emissions in the frequency range 30 to 1000MHz.. On all radiated RF emission graphs the limits are shown in orange for Class A and red for Class B, with the measured levels in blue. The peak results are re-measured automatically to produce the quasi-peak points shown as diagonal crosses, with a tabular analysis on the second page of each graph. To allow for measurement uncertainties it is advisable to allow at least a 6dB margin below each limit line when considering a pass/fail decision.

The equipments were set up in the anechoic chamber as shown in photographs PBI_009 and PBI_015. Graphs pbi_03.dat and pbi_04.dat show the worst case recorded emissions in vertical and horizontal polarisation for the Size 1 unit, whilst graphs pbi_08.dat and pbi_09.dat show worst case emissions for the Size 2 unit. In all cases the emission levels were comfortably below the required limits

Conclusions:

The equipment as tested meets the requirements of the BS EN 55011 Class A test standard called by BS EN 60947-4-2 2000

Uncertainty of Radiated Emission Measurements 30MHz to 1GHz

Uncertainty of measured level is 4.42dB. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. Calculated in accordance with CISPR 16-4 : 2002

Radiated RF Immunity: BS EN 61000-4-3 called by BS EN 60947-4-2 2000

Date of test:	6th January 2005	5th January 2005
Temperature	19°C	18°C
Humidity	47%	47%
Pressure	1012mB	1006mB

Rohde & Schwarz RF generator SMY-01.	Ser No. 843845/079
IFI SMX100 RF power amplifier, 10kHz to 1Ghz.	Ser. No. 2101-1096
IFI CMX3001 RF power amplifier, 10kHz to 250MHz	Ser. No. A544-0897
SPS EFP-2010 Isotropic field probe.	Ser. No. 006
SPS Lynx 2000 multi channel probe preamplifier.	Ser. No. M7D8A00-1012
EMCO Immunity software	Ver. 4.1.0
Anechoic chamber	
ARA LPB-2520 antenna	Ser. No. 1068

The standard calls for the equipment to show immunity to radiated RF signals at a level of 3V/metre or 10V/metre, amplitude modulated at 1kHz to a depth of 80%, over the frequency range 80 to 1000MHz at 1% frequency increments. During the tests the equipment is exercised and observed either by remote monitoring if this is available from the equipment under test, and/or by closed circuit TV camera. The tests are carried out in a screened anechoic chamber.

The equipment under test was placed in the anechoic chamber and configured as shown in photographs PBI_009 to PBI_012 inclusive for the Size 1 unit, and PBI_015 to PBI_018 inclusive for the Size 2 unit. The units under test were exposed to a test field of 12V/metre (10V/m plus measurement uncertainties) on all four faces, whilst correct operation was observed by CCTV camera. Test files pbi1_01.tst to pbi1_16.tst confirm the tests carried out on the Size 1 unit, whilst files pbi_01.tst to pbi2_16.tst confirm the tests on the Size 2 unit During all tests the units were driving a 4kW motor load as shown in photograph PBI_008.

The equipments under test showed no effects or failures either during or subsequent to the test procedures.

Conclusions:

The equipment as tested meets the requirements of the BS EN 61000-4-3 test standard called by BS EN 60947-4-2 2000

Uncertainty of Radiated Immunity Field 80MHz to 1GHz

Uncertainty of generated field level is 1.7dB. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. Calculated in accordance with UKAS LAB34

Conducted RF Immunity: BS EN 61000-4-6 called by BS EN 60947-4-2 2000

Date of test:	6th January 2005	24th January 2005
Temperature	19°C	21°C
Humidity	47%	28%
Pressure	1012mB	1018mB

Equipment used

Rohde & Schwarz RF generator SMY-01.	Ser No. 843845/079
Marconi Instruments TF 2167 RF power amplifier.	Ser. No. 391023-093
Hewlett Packard 436A RF power meter.	Ser. No. 2236A15055
Hewlett Packard 8482B power sensor.	Ser. No. 2703A03505
Hewlett Packard 30dB attenuator.	Ser. No. 2703A03505
Bird 8343-060 6dB power attenuator.	Ser. No. 804
Rohde & Schwarz RF generator SMY-01.	Ser No. 843845/079
IFI System 55 control software	Ver. 4.2
Current injection clamp F-120-9.	Ser. No. 100
Calibration fixture FCC BCICF-1.	Ser. No. 178
Mains 3 phase CDN FCC 801-M4-50.	Ser. No. 34
EM injection clamp CIC-8100	Ser. No. 182

The standard calls for the equipment to show immunity to conducted RF signals at a level of 3V rms or 10V rms, amplitude modulated at 1kHz to a depth of 80%, over the frequency range 150kHz to 80MHz at 1% frequency increments. The RF is applied to mains power feeds by use of a coupling/decoupling network, and to interface and control leads by means of an electromagnetic induction clamp. During the tests the equipment is exercised and observed for evidence of failure.

The equipment was configured as shown in photographs PBI_019 and PBI_020 for the Size 1 unit, and PBI_021 and PBI_022 for the Size 2 unit. The test signal was applied to the mains input cable via a coupling/decoupling network mounted directly on to the ground plane alongside the equipment. Modulated RF as called by the standard was applied to the mains input via the CDN at a level of 12V rms whilst the equipment was observed for evidence of susceptibility.

Before, during, and subsequent to the application of the test RF signals, the equipments under test showed no sign of any effects and there were no failures of operation.

Conclusions:

The equipment as tested meets the requirements of the BS EN 61000-4-6 test standard called by BS EN 60947-4-2 2000

Uncertainty of Conducted Immunity Field 150kHz to 80MHz

Uncertainty of generated field level is 1.95dB. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. Calculated in accordance with UKAS LAB34

Fast Transient and Burst Testing: BS EN 61000-4-4 called by BS EN 60947-4-2 2000

Date of test:	21st December 2004	5th January 2005
Temperature	19°C	18°C
Humidity	40%	47%
Pressure	1010mB	1006mB

Equipment used

Schaffner NSG-2025 Transient Burst generator.		Ser. No. 1154
Schaffner CDN-126 Capacitive injection clamp.		Ser. No. 278
Schaffner WIN-2025 software.	Ver. 3.03	Ser. No. IN1497-003

The test is designed to simulate the bursts of high voltage fast transients which appear on mains power supply lines as a result of high voltage contactor operations in the supply network. Bursts of pulses are superimposed on each mains supply conductor, including the protective earth (PE) line, whilst the equipment under test is in normal working mode. The same transients are applied to equipment interconnecting cables and interface leads by means of a capacitive clamp. The amplitude and polarity of the voltage transients is specified in the appropriate standard.

The equipment was installed on a ground plane as per the standard requirements and configured as shown in photographs PBI_003 for the Size 1 unit and PBI_005 for the Size 2 unit.

Transient bursts at the level prescribed in the test standards (2kV) were applied to each phase conductor and the protective earth line via a mains coupler, with the equipment driving a 4kW load during the test. The equipment showed no effects or failures either during or subsequent to the test schedule. Test reports are appended.

Conclusions.

The equipment as tested meets the requirements of the BS EN 61000-4-6 test standard called by BS EN 60947-4-2 2000

Uncertainty of Electrical Fast Transients

It has been demonstrated that the Electrical Fast Transient generator meets the requirement of EN61000-4-4 with at least a 95% confidence factor.

Surge Testing: BS EN 61000-4-5 called by BS EN 60947-4-2 2000

Date of test: 5th January 2005
Temperature 18°C
Humidity 47%
Pressure 1006mB

Equipment used

Schaffner NSG-2050 surge generator.	Ser. No. 189
Schaffner PNW 2050 impulse network.	Ser. No. 196
Schaffner CDN 133 coupler. .	Ser. No. 522
Schaffner WIN-2050 software.	Ver. 4.00

The test is designed to simulate the voltage surges superimposed on ac power lines caused by a nearby lightning strike. The surge consists of a single high energy pulse applied between each supply line to earth from an impedance of 12 ohms, and differentially between supply lines from an impedance of 2 ohms. Five surges of positive and negative polarities are normally applied, at intervals of 1 minute between surges, and the tests are repeated at phase angles representing zero(180°) crossing and peaks (90° and 270°) of the input mains supply waveform.

The equipment was configured as shown in photograph PBI_006 for the Size 1 and 2 units. Surges were applied between each of the the three phase conductors and earth at a level of 500V, 1kV and 2kV from a source impedance of 12 ohms at phase angles of 90°, 180° and 270°. Surges were then applied in differential mode between each pair of phase conductors at a level of 500V and 1kV and phase angles of 90°, 180° and 270. The equipment was monitored throughout the tests and no effects or failures were noted. Test results are appended.

Conclusions:

The equipment as tested meets the requirements of the BS EN 61000-4-5 test standard called by BS EN 60947-4-2 2000

Uncertainty of Surge

It has been demonstrated that the Surge generator meets the requirement of EN61000-4-5 with at least a 95% confidence factor.

Electrostatic Discharge: BS EN 61000-4-2 called by BS EN 60947-4-2 2000

Date of test: 24th January 2005
Temperature 21°C
Humidity 28%
Pressure 1018mB

Equipment used

Schaffner NSG-435 ESD Simulator. Ser. No. 001844

The test is designed to simulate the effects of electrostatic discharges normally caused by personnel touching equipment or touching other points adjacent to the equipment under test. Discharges are applied to any surface normally accessible to operators of the equipment and also to vertical and horizontal coupling plates adjacent to and/or below the units. Voltage levels applied are specified in the appropriate test standard.

The equipment was configured as shown in photograph PBI_024 for both Size 1 and Size 2 units. Contact discharges of +/- 2kV and +/- 4kV were applied to five faces of the Size 1 unit at corners and panel centres of all faces, a total of 1000 discharges. No air discharges were attempted because the Size 1 unit has no insulating surfaces. The same discharges were applied to the Size 2 unit, a total of 1000 contact discharges. Air discharges were attempted on the membrane control panel of the Size 2 unit but no discharges were achieved. Discharges were applied to vertical and horizontal coupling planes.

There were no effects noted at any discharge, and no failures occurred during or subsequent to the test sequence.

Conclusions:

The equipments as tested met the requirements of the BS EN 61000-4-2 test standard called by BS EN 60947-4-2 2000

Uncertainty of Electrostatic Discharge

It has been demonstrated that the Electrostatic Discharge generator meets the requirement of EN61000-4-2 with at least a 95% confidence factor.

Mains Harmonics BS EN 61000-3-2 1995

BS EN 60947-4-2 does not call for harmonic measurements to be carried out as they are still under consideration.

EMC Network (SW)

21 Dec 2004 12:44

Conducted emissions

EUT: PBI
Manuf: Somar
Op Cond: Running motor load
Operator: John Wilson
Test Spec: EN 55011 Group 2 Class A
Comment: L1 phase

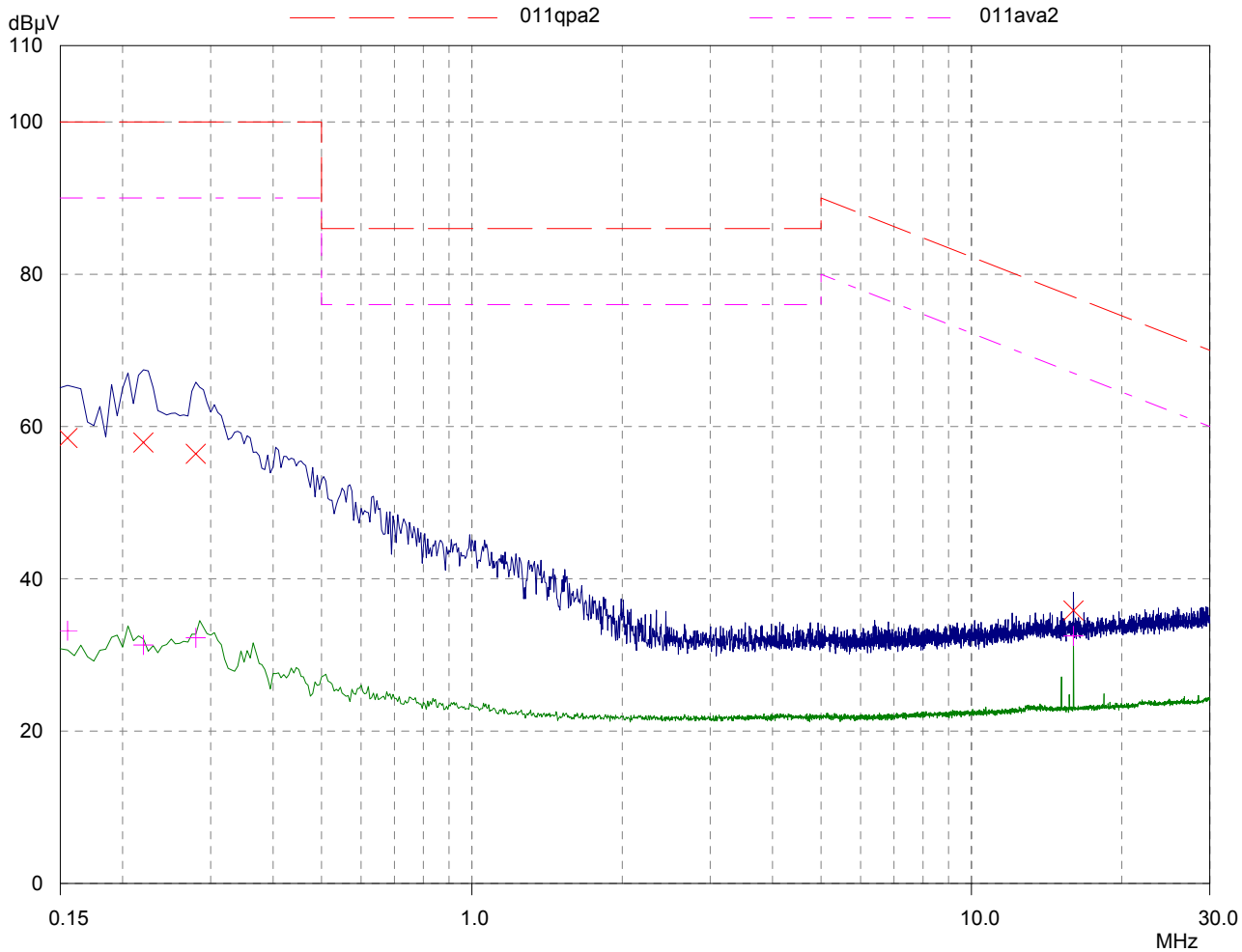
Result File: pbi_01.dat : Conducted L1 phase

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
5	9	9kHz	30MHz	concable
	11	9kHz	30MHz	esh_2z5
	12	10kHz	30MHz	fs450b

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 25
Acc Margin: 10 dB



EMC Network (SW)

21 Dec 2004 12:44

Conducted emissions

EUT: PBI
Manuf: Somar
Op Cond: Running motor load
Operator: John Wilson
Test Spec: EN 55011 Group 2 Class A
Comment: L1 phase

Result File: pbi_01.dat : Conducted L1 phase

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
5	9	9kHz	30MHz	concable
	11	9kHz	30MHz	esh_2z5
	12	10kHz	30MHz	fs450b

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 25
Acc Margin: 10 dB

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB
0.155	58.48	100.00	41.52
0.22	57.90	100.00	42.10
0.28	56.42	100.00	43.58
16.00499	35.84	77.01	41.17

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB
0.155	33.18	90.00	56.82
0.22	31.31	90.00	58.69
0.28	32.26	90.00	57.74
16.00499	32.49	67.01	34.52

* limit extended

EMC Network (SW)

21 Dec 2004 13:54

Conducted emissions

EUT: PBI Size 1
Manuf: Somar
Op Cond: Running motor load
Operator: John Wilson
Test Spec: EN 55011 Group 2 Class A
Comment: L1 phase

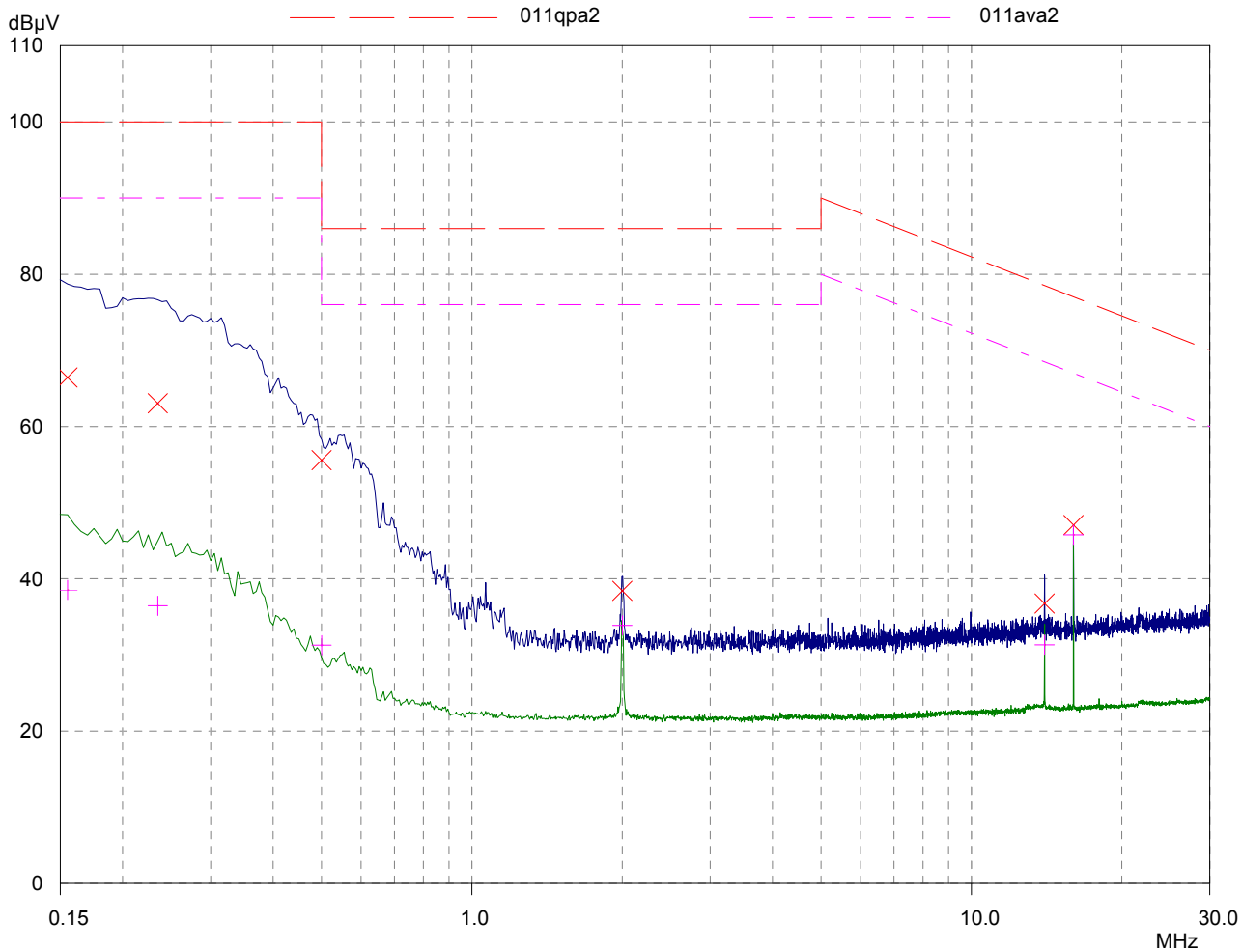
Result File: pbi_02.dat : Conducted L1 phase

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
5	9	9kHz	30MHz	concable
	11	9kHz	30MHz	esh_2z5
	12	10kHz	30MHz	fs450b

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 25
Acc Margin: 10 dB



EMC Network (SW)

21 Dec 2004 13:54

Conducted emissions

EUT: PBI Size 1
Manuf: Somar
Op Cond: Running motor load
Operator: John Wilson
Test Spec: EN 55011 Group 2 Class A
Comment: L1 phase

Result File: pbi_02.dat : Conducted L1 phase

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
5	9	9kHz	30MHz	concable
	11	9kHz	30MHz	esh_2z5
	12	10kHz	30MHz	fs450b

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 25
Acc Margin: 10 dB

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB
0.155	66.43	100.00	33.57
0.235	63.05	100.00	36.95
0.5	55.58	86.00	30.42
2.0	38.42	86.00	47.58
14.0	36.75	78.51	41.76
16.00499	47.06	77.01	29.95

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB
0.155	38.54	90.00	51.46
0.235	36.45	90.00	53.55
0.5	31.28	76.00	44.72
2.0	33.88	76.00	42.12
14.0	31.33	68.51	37.18
16.00499	45.77	67.01	21.24

* Limit extended

EMC Network (SW) 06 Jan 2005 08:21

Radiated Emissions in chamber

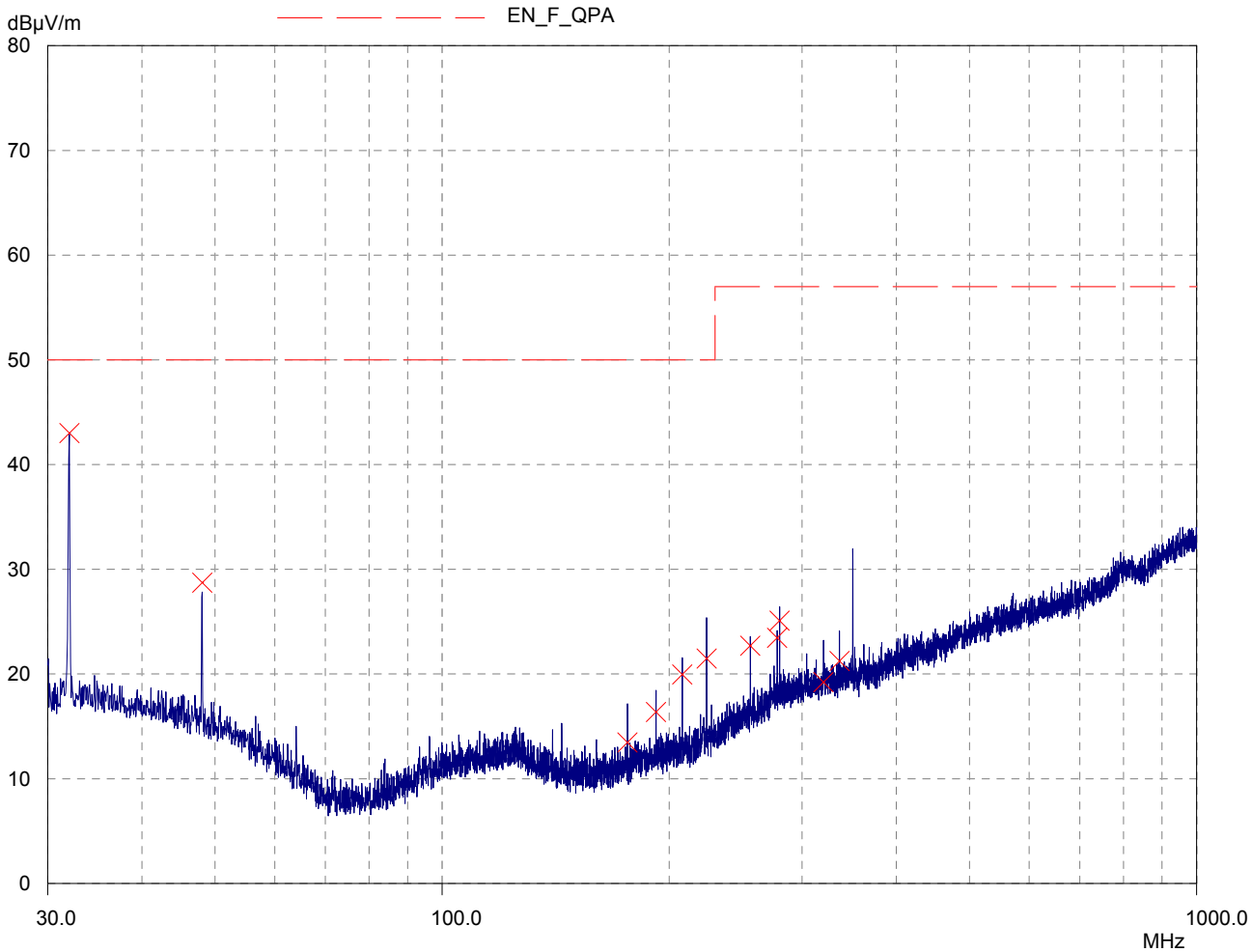
EUT:	PBI Size 1
Manuf:	Somar
Op Cond:	Running motor load. Unscreened cables.
Operator:	John Wilson
Test Spec:	EN55022 Class A
Comment:	Vertical
	Emission at 350MHz is local ambient, not from EUT.
Result File:	pbi_03.dat : Radiated vertical

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
30MHz	1000MHz	60kHz	120kHz	PK	2msec	0 dB	ON	60dB

Transducer	No.	Start	Stop	Name
2	12	30MHz	1000MHz	Cab10m
	13	30MHz	1000MHz	Cab4m
	22	29MHz	1000MHz	ara2520

Final Measurement:		
	Detector:	X QP
	Meas Time:	1sec
	Subranges:	16
	Acc Margin:	-60 dB



EMC Network (SW) 06 Jan 2005 08:21

Radiated Emissions in chamber

EUT: PBI Size 1
Manuf: Somar
Op Cond: Running motor load. Unscreened cables.
Operator: John Wilson
Test Spec: EN55022 Class A
Comment: Vertical
Emission at 350MHz is local ambient, not from EUT.
Result File: pbi_03.dat : Radiated vertical

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
30MHz	1000MHz	60kHz	120kHz	PK	2msec	0 dB	ON	60dB

Transducer	No.	Start	Stop	Name
2	12	30MHz	1000MHz	Cab10m
	13	30MHz	1000MHz	Cab4m
	22	29MHz	1000MHz	ara2520

Final Measurement: Detector: X QP
Meas Time: 1sec
Subranges: 16
Acc Margin: -60 dB

Final Measurement Results

Frequency MHz	QP Level dBµV/m	QP Limit dBµV/m	QP Delta dB
32.04	43.02	50.00	6.98
48.06	28.72	50.00	21.28
176.04	13.46	50.00	36.54
192.06	16.36	50.00	33.64
208.08	19.96	50.00	30.04
224.04	21.48	50.00	28.52
256.0799	22.70	57.00	34.30
277.98	23.46	57.00	33.54
280.02	25.09	57.00	31.91
320.1	19.22	57.00	37.78
336.12	21.23	57.00	35.77

* Limit extended

EMC Network (SW)

06 Jan 2005 08:47

Radiated Emissions in chamber

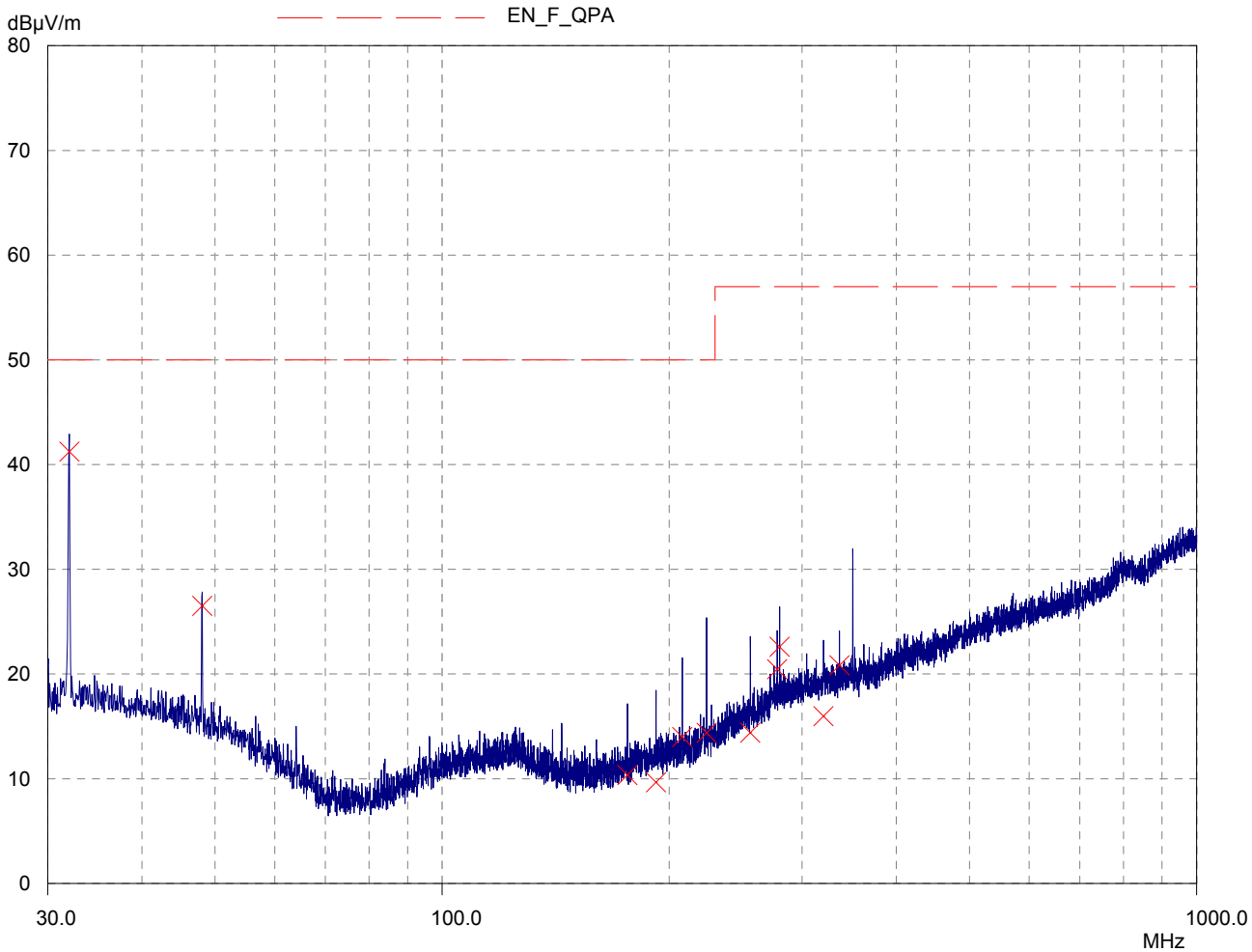
EUT:	PBI Size 1
Manuf:	Somar
Op Cond:	Running motor load. Unscreened cables.
Operator:	John Wilson
Test Spec:	EN55022 Class A
Comment:	Vertical. Re-measurement after fitting ferrite chokes to cabling at EUT Emission at 350MHz is local ambient, not from EUT.
Result File:	pbi_03a.dat : Radiated vertical

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
30MHz	1000MHz	60kHz	120kHz	PK	2msec	0 dB	ON	60dB

Transducer	No.	Start	Stop	Name
2	12	30MHz	1000MHz	Cab10m
	13	30MHz	1000MHz	Cab4m
	22	29MHz	1000MHz	ara2520

Final Measurement:		
	Detector:	X QP
	Meas Time:	1sec
	Subranges:	16
	Acc Margin:	-60 dB



EMC Network (SW)

06 Jan 2005 08:47

Radiated Emissions in chamber

EUT: PBI Size 1
Manuf: Somar
Op Cond: Running motor load. Unscreened cables.
Operator: John Wilson
Test Spec: EN55022 Class A
Comment: Vertical. Re-measurement after fitting ferrite chokes to cabling at EUT
Emission at 350MHz is local ambient, not from EUT.
Result File: pbi_03a.dat : Radiated vertical

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
30MHz	1000MHz	60kHz	120kHz	PK	2msec	0 dB	ON	60dB

Transducer	No.	Start	Stop	Name
2	12	30MHz	1000MHz	Cab10m
	13	30MHz	1000MHz	Cab4m
	22	29MHz	1000MHz	ara2520

Final Measurement: Detector: X QP
Meas Time: 1sec
Subranges: 16
Acc Margin: -60 dB

Final Measurement Results

Frequency MHz	QP Level dBµV/m	QP Limit dBµV/m	QP Delta dB
32.04	41.24	50.00	8.76
48.06	26.51	50.00	23.49
176.04	10.35	50.00	39.65
192.06	9.65	50.00	40.35
208.08	13.98	50.00	36.02
224.04	14.38	50.00	35.62
256.0799	14.40	57.00	42.60
277.98	20.46	57.00	36.54
280.02	22.60	57.00	34.40
320.1	15.97	57.00	41.03
336.12	20.83	57.00	36.17

* limit extended

EMC Network (SW)

06 Jan 2005 08:41

Radiated Emissions in chamber

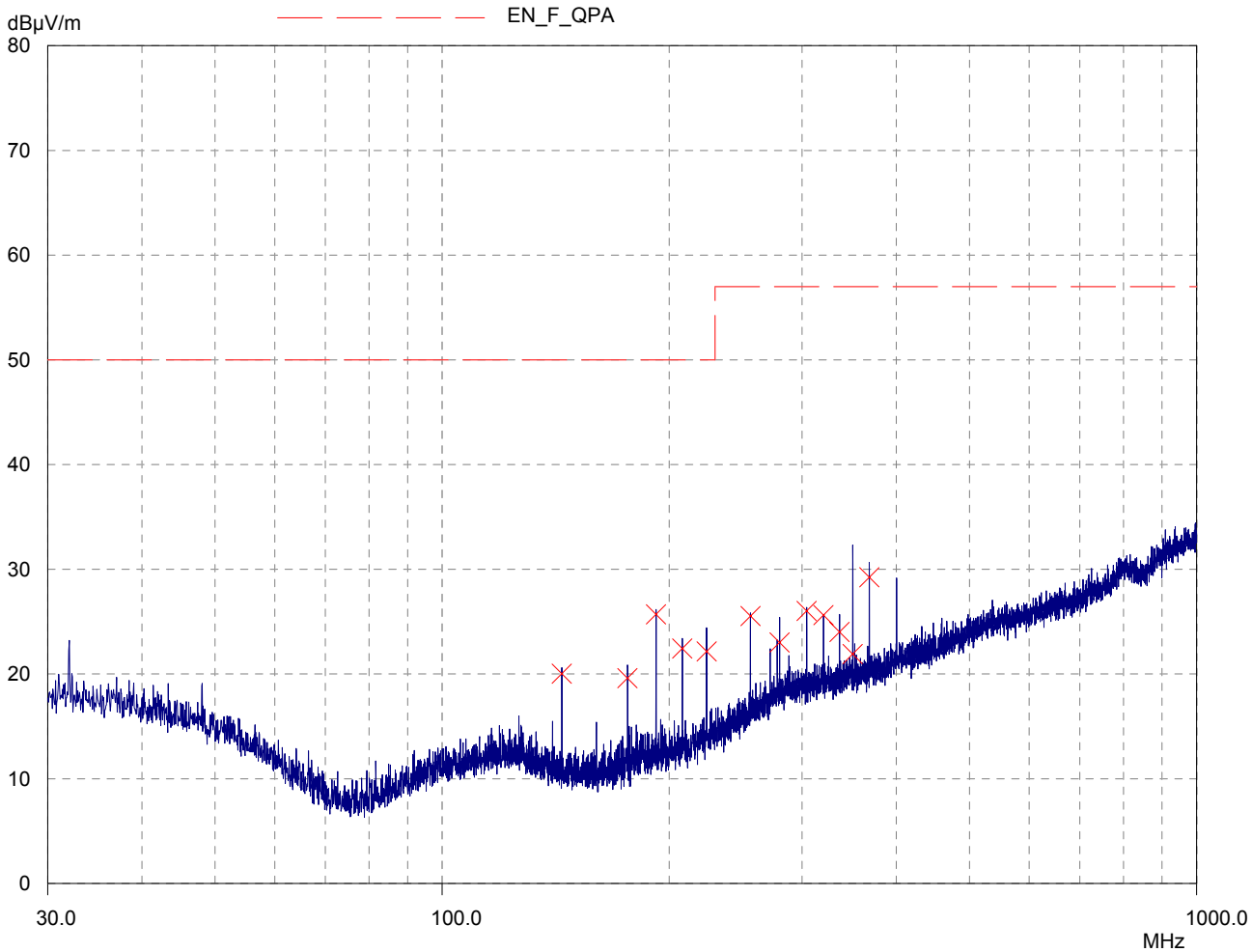
EUT:	PBI Size 1
Manuf:	Somar
Op Cond:	Running motor load. Unscreened cables.
Operator:	John Wilson
Test Spec:	EN55022 Class A
Comment:	Horizontal
	Emission at 350MHz is local ambient, not from EUT.
Result File:	pbi_04.dat : Radiated horizontal

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
30MHz	1000MHz	60kHz	120kHz	PK	2msec	0 dB	ON	60dB

Transducer	No.	Start	Stop	Name
2	12	30MHz	1000MHz	Cab10m
	13	30MHz	1000MHz	Cab4m
	22	29MHz	1000MHz	ara2520

Final Measurement:	Detector:	X QP
	Meas Time:	1sec
	Subranges:	16
	Acc Margin:	-60 dB



Radiated Emissions in chamber

EUT:	PBI Size 1
Manuf:	Somar
Op Cond:	Running motor load. Unscreened cables.
Operator:	John Wilson
Test Spec:	EN55022 Class A
Comment:	Horizontal
	Emission at 350MHz is local ambient, not from EUT.
Result File:	pbi_04.dat : Radiated horizontal

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
30MHz	1000MHz	60kHz	120kHz	PK	2msec	0 dB	ON	60dB

Transducer	No.	Start	Stop	Name
2	12	30MHz	1000MHz	Cab10m
	13	30MHz	1000MHz	Cab4m
	22	29MHz	1000MHz	ara2520

Final Measurement:	Detector:	X QP
	Meas Time:	1sec
	Subranges:	16
	Acc Margin:	-60 dB

Final Measurement Results

Frequency MHz	QP Level dBµV/m	QP Limit dBµV/m	QP Delta dB
144.06	20.03	50.00	29.97
176.04	19.60	50.00	30.40
192.06	25.70	50.00	24.30
208.08	22.44	50.00	27.56
224.1	22.16	50.00	27.84
256.14	25.54	57.00	31.46
280.02	23.02	57.00	33.98
304.14	26.02	57.00	30.98
320.16	25.62	57.00	31.38
336.18	24.01	57.00	32.99
350.04	21.91	57.00	35.09
368.16	29.24	57.00	27.76

* Limit extended

EMC Network (SW)

06 Jan 2005 09:18

Conducted emissions

EUT: PBI Size 1
Manuf: Somar
Op Cond: Running motor load
Operator: John Wilson
Test Spec: EN 55011 Group 2 Class A
Comment: L1 phase

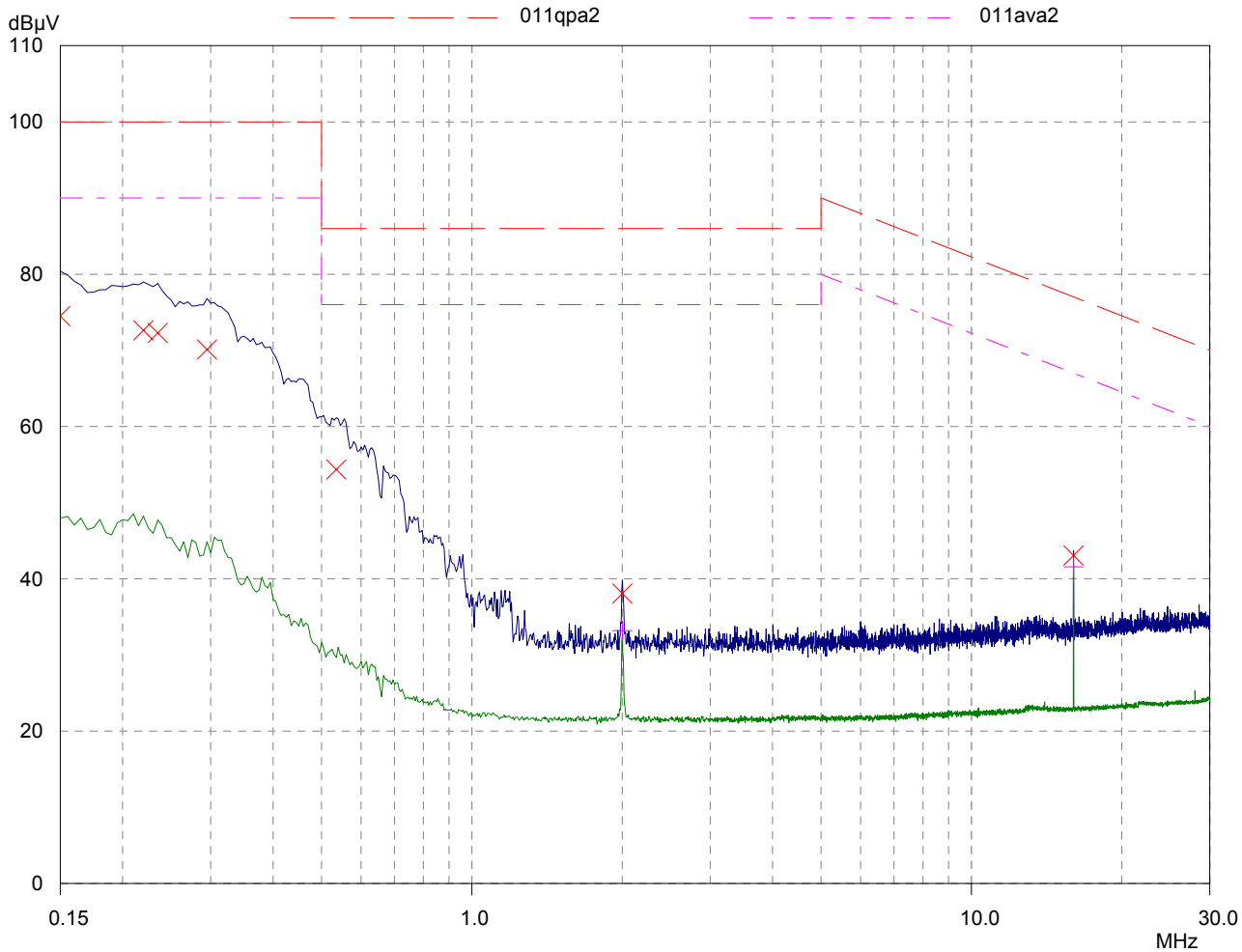
Result File: pbi_05.dat : Conducted L1 phase

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
5	9	9kHz	30MHz	concable
	11	9kHz	30MHz	esh_2z5
	12	10kHz	30MHz	fs450b

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 25
Acc Margin: 10 dB



EMC Network (SW) 06 Jan 2005 09:18

Conducted emissions

EUT: PBI Size 1
Manuf: Somar
Op Cond: Running motor load
Operator: John Wilson
Test Spec: EN 55011 Group 2 Class A
Comment: L1 phase

Result File: pbi_05.dat : Conducted L1 phase

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
5	9	9kHz	30MHz	concable
	11	9kHz	30MHz	esh_2z5
	12	10kHz	30MHz	fs450b

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 25
Acc Margin: 10 dB

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB
0.15	74.50	100.00	25.50
0.22	72.64	100.00	27.36
0.235	72.28	100.00	27.72
0.295	70.12	100.00	29.88
0.535	54.35	86.00	31.65
2.0	38.07	86.00	47.93
16.01	43.07	77.01	33.94

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB
2.0	33.18	76.00	42.82
16.01	41.58	67.01	25.43

* Limit extended

EMC Network (SW)

06 Jan 2005 09:33

Conducted emissions

EUT: PBI Size 1
Manuf: Somar
Op Cond: Running motor load
Operator: John Wilson
Test Spec: EN 55011 Group 2 Class A
Comment: L2 phase

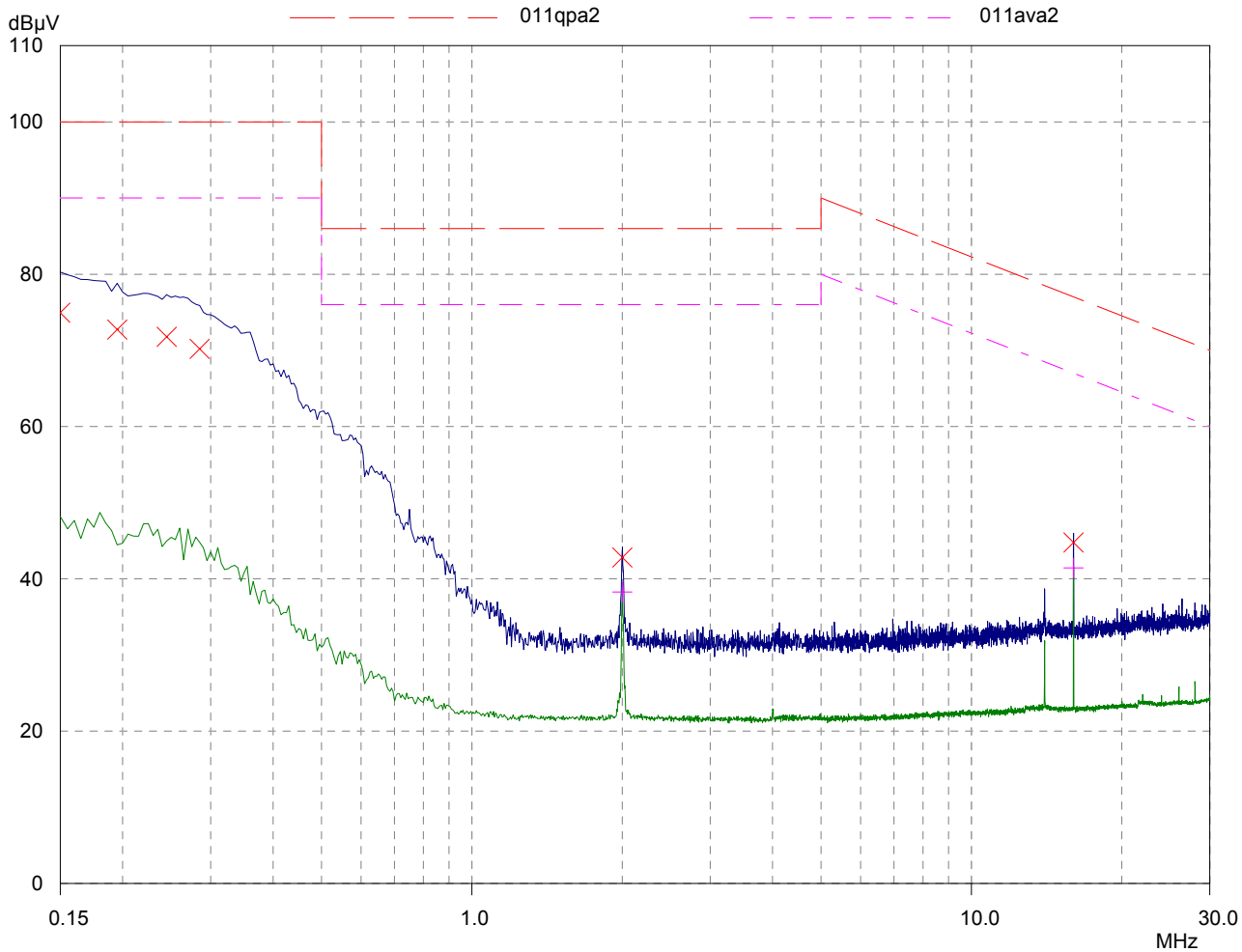
Result File: pbi_06.dat : Conducted L2 phase

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
5	9	9kHz	30MHz	concable
	11	9kHz	30MHz	esh_2z5
	12	10kHz	30MHz	fs450b

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 25
Acc Margin: 10 dB



EMC Network (SW)

06 Jan 2005 09:33

Conducted emissions

EUT: PBI Size 1
Manuf: Somar
Op Cond: Running motor load
Operator: John Wilson
Test Spec: EN 55011 Group 2 Class A
Comment: L2 phase

Result File: pbi_06.dat : Conducted L2 phase

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
5	9	9kHz	30MHz	concable
	11	9kHz	30MHz	esh_2z5
	12	10kHz	30MHz	fs450b

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 25
Acc Margin: 10 dB

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB
0.15	74.94	100.00	25.06
0.195	72.74	100.00	27.26
0.245	71.77	100.00	28.23
0.285	70.18	100.00	29.82
2.0	42.79	86.00	43.21
16.01	44.77	77.01	32.24

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB
2.0	38.26	76.00	37.74
16.01	41.42	67.01	25.59

* Limit extended

EMC Network (SW)

06 Jan 2005 09:47

Conducted emissions

EUT: PBI Size 1
Manuf: Somar
Op Cond: Running motor load
Operator: John Wilson
Test Spec: EN 55011 Group 2 Class A
Comment: L3 phase

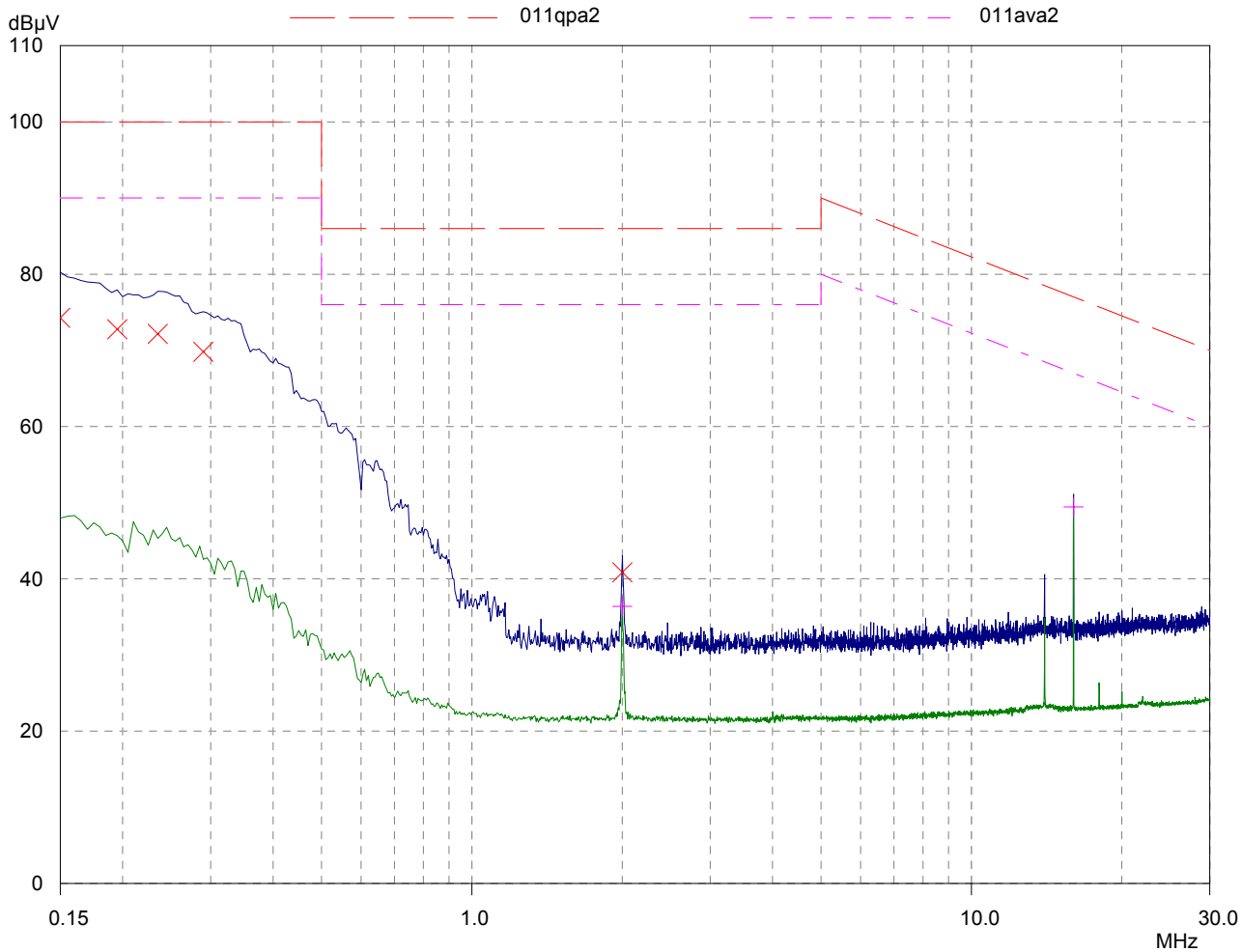
Result File: pbi_07.dat : Conducted L3 phase

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
5	9	9kHz	30MHz	concable
	11	9kHz	30MHz	esh_2z5
	12	10kHz	30MHz	fs450b

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 25
Acc Margin: 10 dB



EMC Network (SW)

06 Jan 2005 09:47

Conducted emissions

EUT: PBI Size 1
Manuf: Somar
Op Cond: Running motor load
Operator: John Wilson
Test Spec: EN 55011 Group 2 Class A
Comment: L3 phase

Result File: pbi_07.dat : Conducted L3 phase

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
5	9	9kHz	30MHz	concable
	11	9kHz	30MHz	esh_2z5
	12	10kHz	30MHz	fs450b

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 25
Acc Margin: 10 dB

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB
0.15	74.28	100.00	25.72
0.195	72.78	100.00	27.22
0.235	72.16	100.00	27.84
0.29	69.82	100.00	30.18
2.0	40.84	86.00	45.16

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB
2.0	36.38	76.00	39.62
16.01	49.44	67.01	17.57

* Limit extended

EMC Network (SW)

06 Jan 2005 10:34

Radiated Emissions in chamber

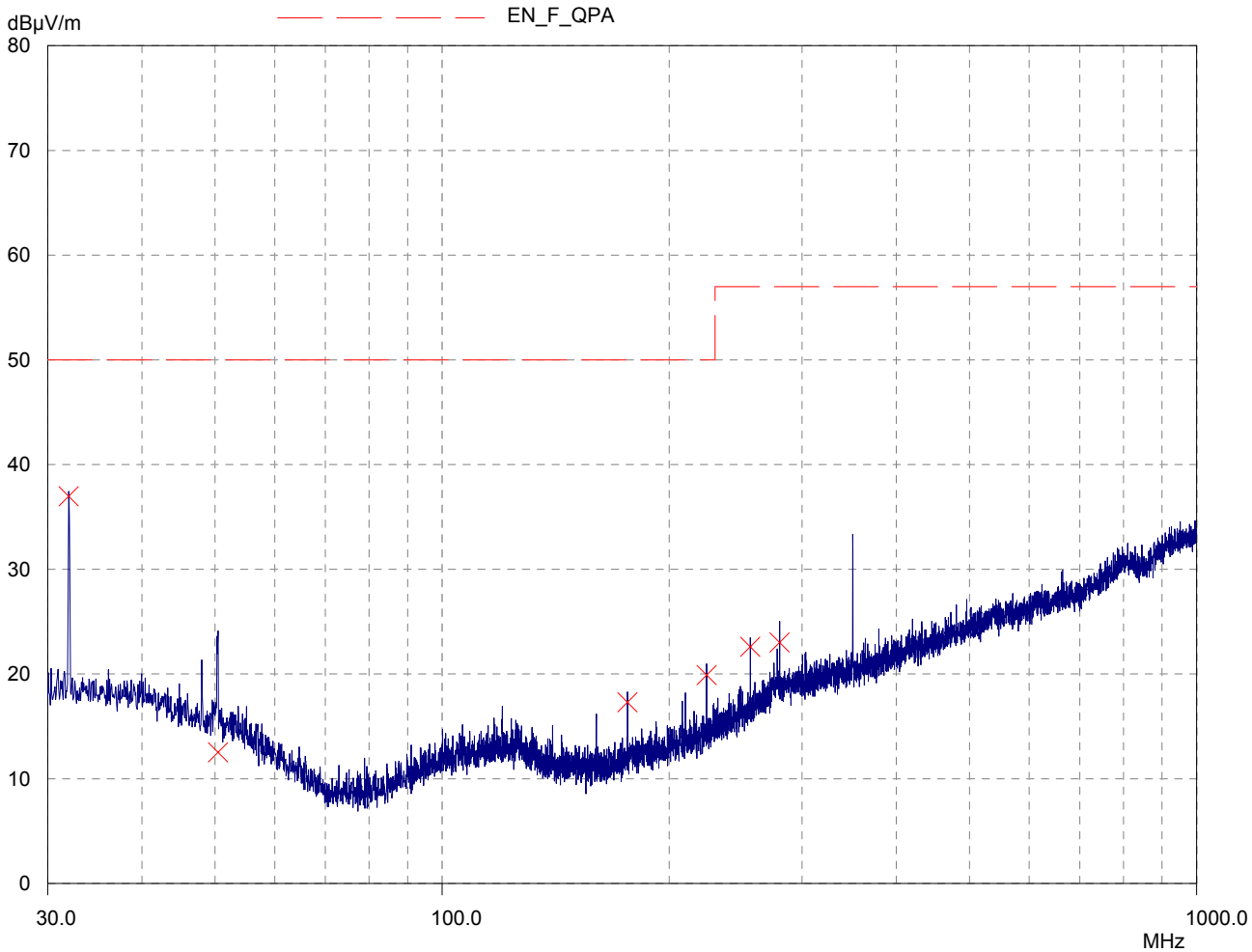
EUT:	PBI Size 2
Manuf:	Somar
Op Cond:	Running motor load. Unscreened cables.
Operator:	John Wilson
Test Spec:	EN55022 Class A
Comment:	Vertical
	Emission at 350MHz is local ambient, not from EUT.
Result File:	pbi_08.dat : Radiated vertical

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
30MHz	1000MHz	60kHz	120kHz	PK	2msec	0 dB	ON	60dB

Transducer	No.	Start	Stop	Name
2	12	30MHz	1000MHz	Cab10m
	13	30MHz	1000MHz	Cab4m
	22	29MHz	1000MHz	ara2520

Final Measurement:		
	Detector:	X QP
	Meas Time:	1sec
	Subranges:	16
	Acc Margin:	-60 dB



Radiated Emissions in chamber

EUT: PBI Size 2
Manuf: Somar
Op Cond: Running motor load. Unscreened cables.
Operator: John Wilson
Test Spec: EN55022 Class A
Comment: Vertical
Emission at 350MHz is local ambient, not from EUT.
Result File: pbi_08.dat : Radiated vertical

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
30MHz	1000MHz	60kHz	120kHz	PK	2msec	0 dB	ON	60dB

Transducer	No.	Start	Stop	Name
2	12	30MHz	1000MHz	Cab10m
	13	30MHz	1000MHz	Cab4m
	22	29MHz	1000MHz	ara2520

Final Measurement: Detector: X QP
Meas Time: 1sec
Subranges: 16
Acc Margin: -60 dB

Final Measurement Results

Frequency MHz	QP Level dBµV/m	QP Limit dBµV/m	QP Delta dB
31.98	36.98	50.00	13.02
50.46	12.52	50.00	37.48
176.04	17.30	50.00	32.70
224.1	19.89	50.00	30.11
256.0799	22.60	57.00	34.40
280.08	23.02	57.00	33.98

* limit extended

EMC Network (SW)

06 Jan 2005 10:55

Radiated Emissions in chamber

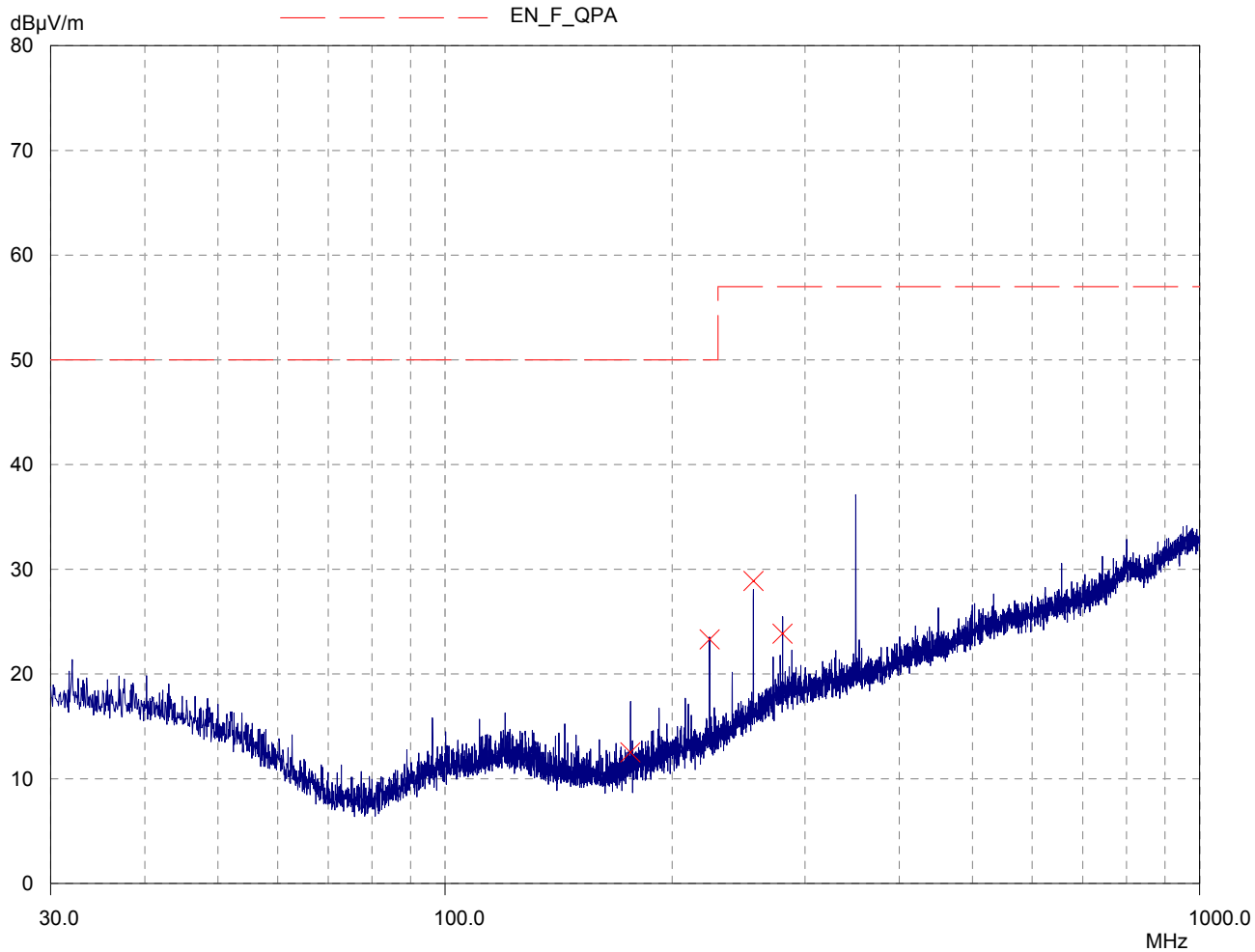
EUT:	PBI Size 2
Manuf:	Somar
Op Cond:	Running motor load. Unscreened cables.
Operator:	John Wilson
Test Spec:	EN55022 Class A
Comment:	Horizontal
	Emission at 350MHz is local ambient, not from EUT.
Result File:	pbi_09.dat : Radiated vertical

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
30MHz	1000MHz	60kHz	120kHz	PK	2msec	0 dB	ON	60dB

Transducer	No.	Start	Stop	Name
2	12	30MHz	1000MHz	Cab10m
	13	30MHz	1000MHz	Cab4m
	22	29MHz	1000MHz	ara2520

Final Measurement:		
	Detector:	X QP
	Meas Time:	1sec
	Subranges:	16
	Acc Margin:	-60 dB



Radiated Emissions in chamber

EUT:	PBI Size 2
Manuf:	Somar
Op Cond:	Running motor load. Unscreened cables.
Operator:	John Wilson
Test Spec:	EN55022 Class A
Comment:	Horizontal
	Emission at 350MHz is local ambient, not from EUT.
Result File:	pbi_09.dat : Radiated vertical

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
30MHz	1000MHz	60kHz	120kHz	PK	2msec	0 dB	ON	60dB

Transducer	No.	Start	Stop	Name
2	12	30MHz	1000MHz	Cab10m
	13	30MHz	1000MHz	Cab4m
	22	29MHz	1000MHz	ara2520

Final Measurement:	Detector:	X QP
	Meas Time:	1sec
	Subranges:	16
	Acc Margin:	-60 dB

Final Measurement Results

Frequency MHz	QP Level dBµV/m	QP Limit dBµV/m	QP Delta dB
176.04	12.51	50.00	37.49
224.1	23.31	50.00	26.69
256.14	28.88	57.00	28.12
280.02	23.86	57.00	33.14

* limit extended

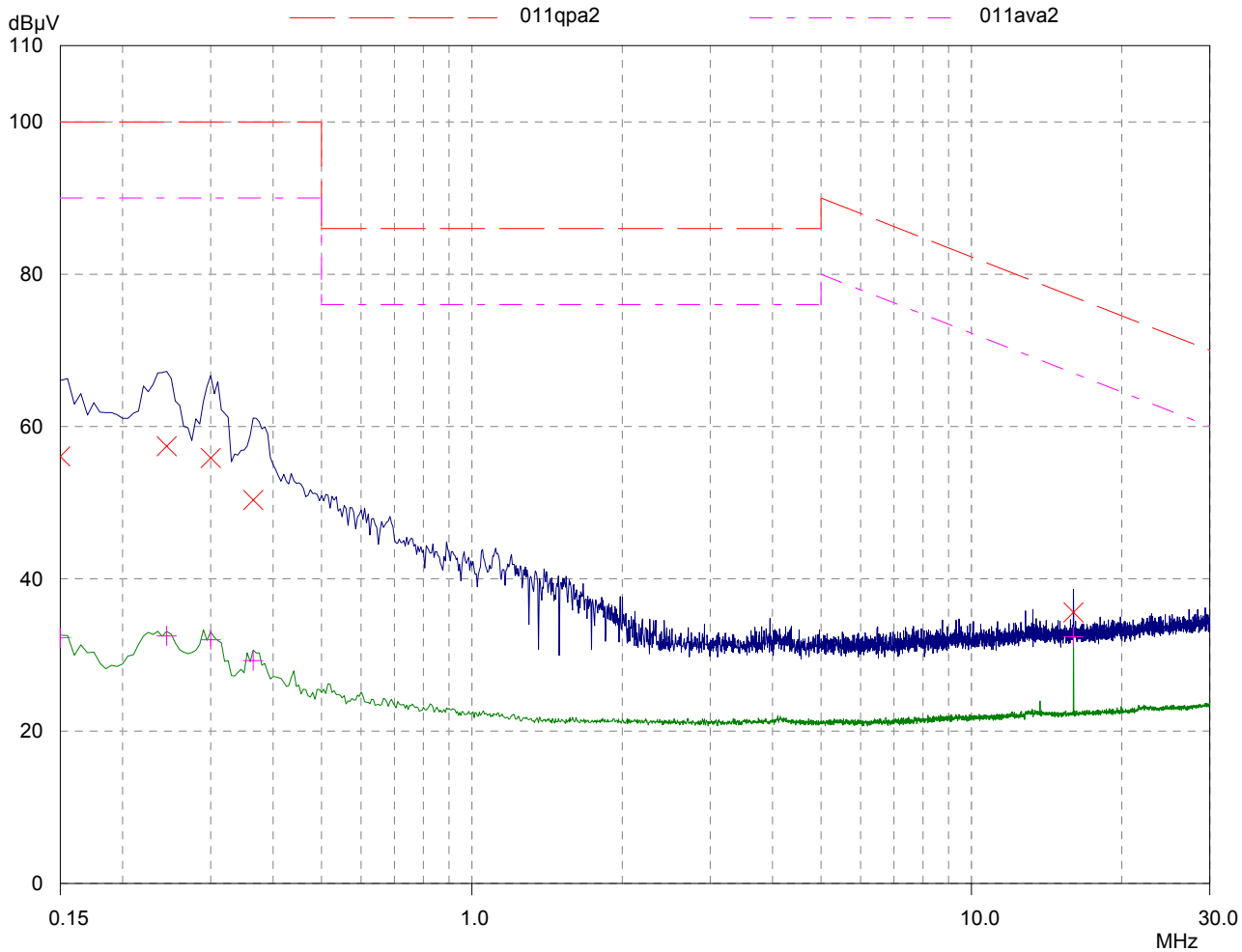
EMC Network (SW) 24 Jan 2005 10:41

Conducted emissions

EUT:	PBI Size 2
Manuf:	Somar
Op Cond:	Running motor load
Operator:	John Wilson
Test Spec:	EN 55011 Group 2 Class A
Comment:	L1 phase
Result File:	pbi_10.dat : Conducted L1 phase. Size 2
Scan Settings	(1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Final Measurement:	Detectors:	X QP / + AV
	Meas Time:	1sec
	Subranges:	25
	Acc Margin:	10 dB



EMC Network (SW)

24 Jan 2005 10:41

Conducted emissions

EUT: PBI Size 2
Manuf: Somar
Op Cond: Running motor load
Operator: John Wilson
Test Spec: EN 55011 Group 2 Class A
Comment: L1 phase

Result File: pbi_10.dat : Conducted L1 phase. Size 2

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 25
Acc Margin: 10 dB

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB
0.15	56.06	100.00	43.94
0.245	57.41	100.00	42.59
0.3	55.87	100.00	44.13
0.365	50.35	100.00	49.65
16.00499	35.60	77.01	41.41

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB
0.15	32.24	90.00	57.76
0.245	32.51	90.00	57.49
0.3	32.00	90.00	58.00
0.365	29.24	90.00	60.76
16.00499	32.40	67.01	34.61

* Limit exceeded

EMC Network (SW)

24 Jan 2005 11:04

Conducted emissions

EUT:	PBI Size 2
Manuf:	Somar
Op Cond:	Running motor load
Operator:	John Wilson
Test Spec:	EN 55011 Group 2 Class A
Comment:	L2 phase

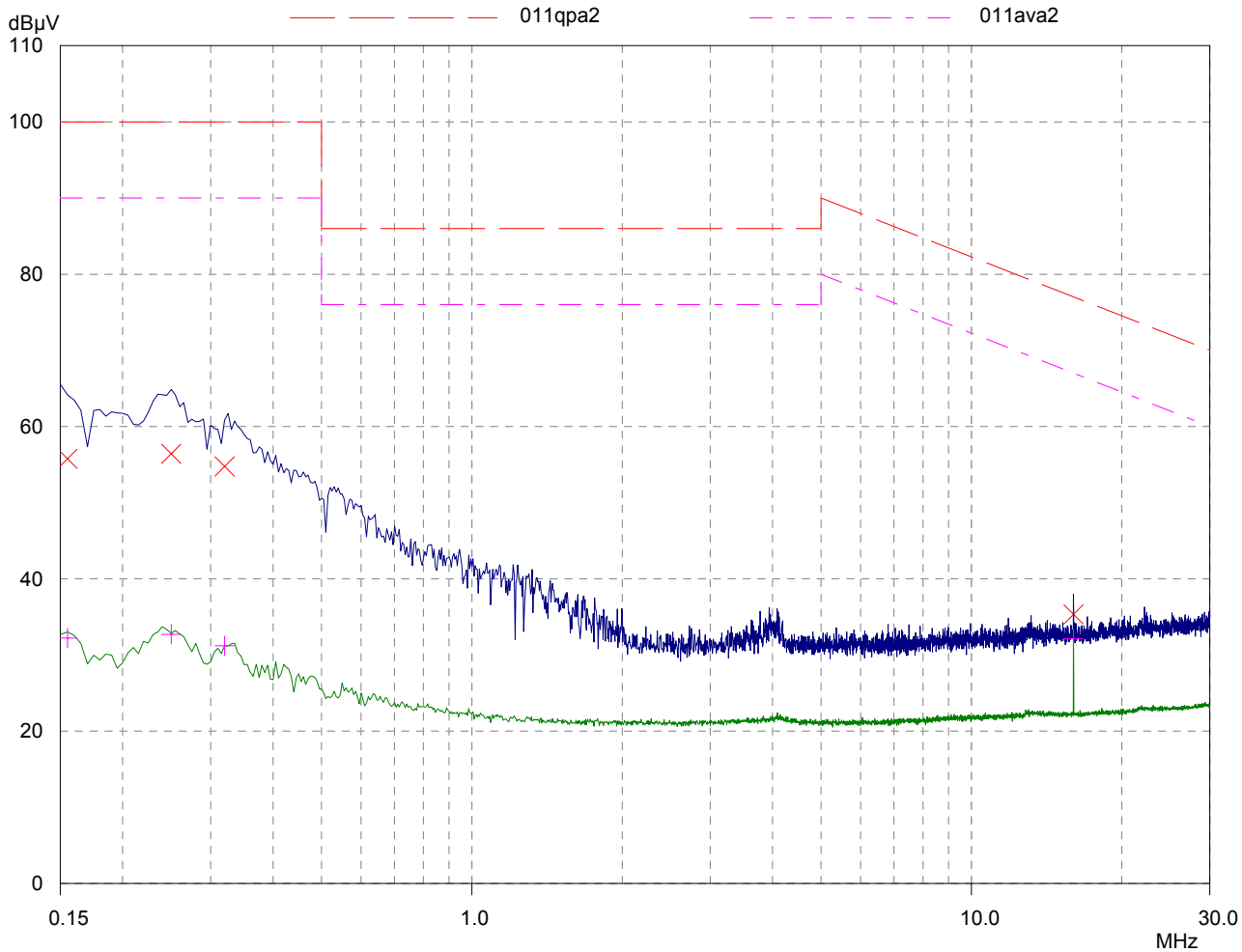
Result File: pbi_11.dat : Conducted L2 phase. Size 2

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Final Measurement:

Detectors:	X QP / + AV
Meas Time:	1sec
Subranges:	25
Acc Margin:	10 dB



EMC Network (SW)

24 Jan 2005 11:04

Conducted emissions

EUT: PBI Size 2
Manuf: Somar
Op Cond: Running motor load
Operator: John Wilson
Test Spec: EN 55011 Group 2 Class A
Comment: L2 phase

Result File: pbi_11.dat : Conducted L2 phase. Size 2

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 25
Acc Margin: 10 dB

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB
0.155	55.77	100.00	44.23
0.25	56.43	100.00	43.57
0.32	54.74	100.00	45.26
16.00499	35.34	77.01	41.67

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB
0.155	32.23	90.00	57.77
0.25	32.71	90.00	57.29
0.32	31.21	90.00	58.79
16.00499	32.12	67.01	34.89

* Limit exceeded

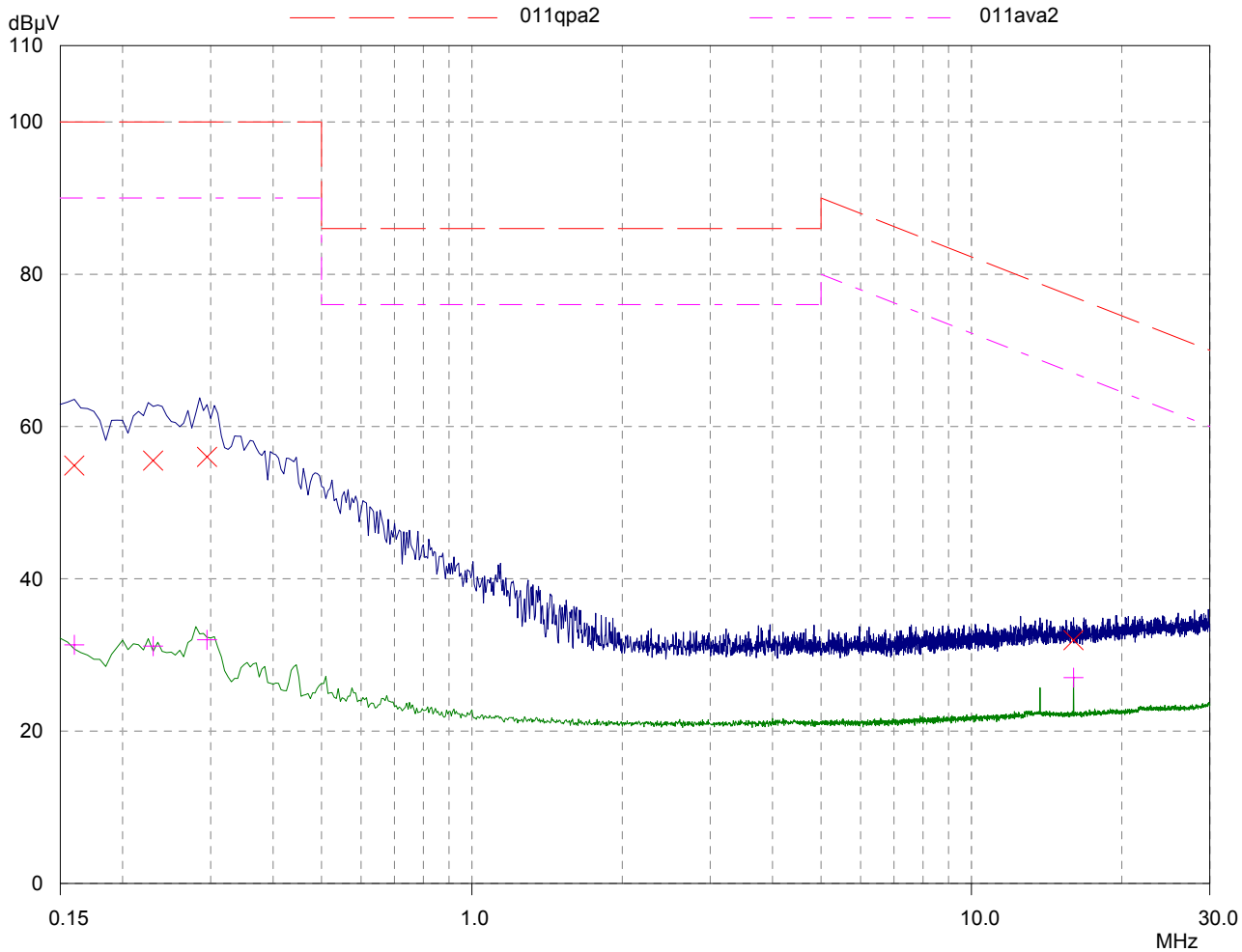
EMC Network (SW) 24 Jan 2005 11:18

Conducted emissions

EUT:	PBI Size 2
Manuf:	Somar
Op Cond:	Running motor load
Operator:	John Wilson
Test Spec:	EN 55011 Group 2 Class A
Comment:	L3 phase
Result File:	pbi_12.dat : Conducted L3 phase. Size 2
Scan Settings	(1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Final Measurement:	Detectors:	X QP / + AV
	Meas Time:	1sec
	Subranges:	25
	Acc Margin:	10 dB



EMC Network (SW) 24 Jan 2005 11:18

Conducted emissions

EUT: PBI Size 2
Manuf: Somar
Op Cond: Running motor load
Operator: John Wilson
Test Spec: EN 55011 Group 2 Class A
Comment: L3 phase

Result File: pbi_12.dat : Conducted L3 phase. Size 2

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 25
Acc Margin: 10 dB

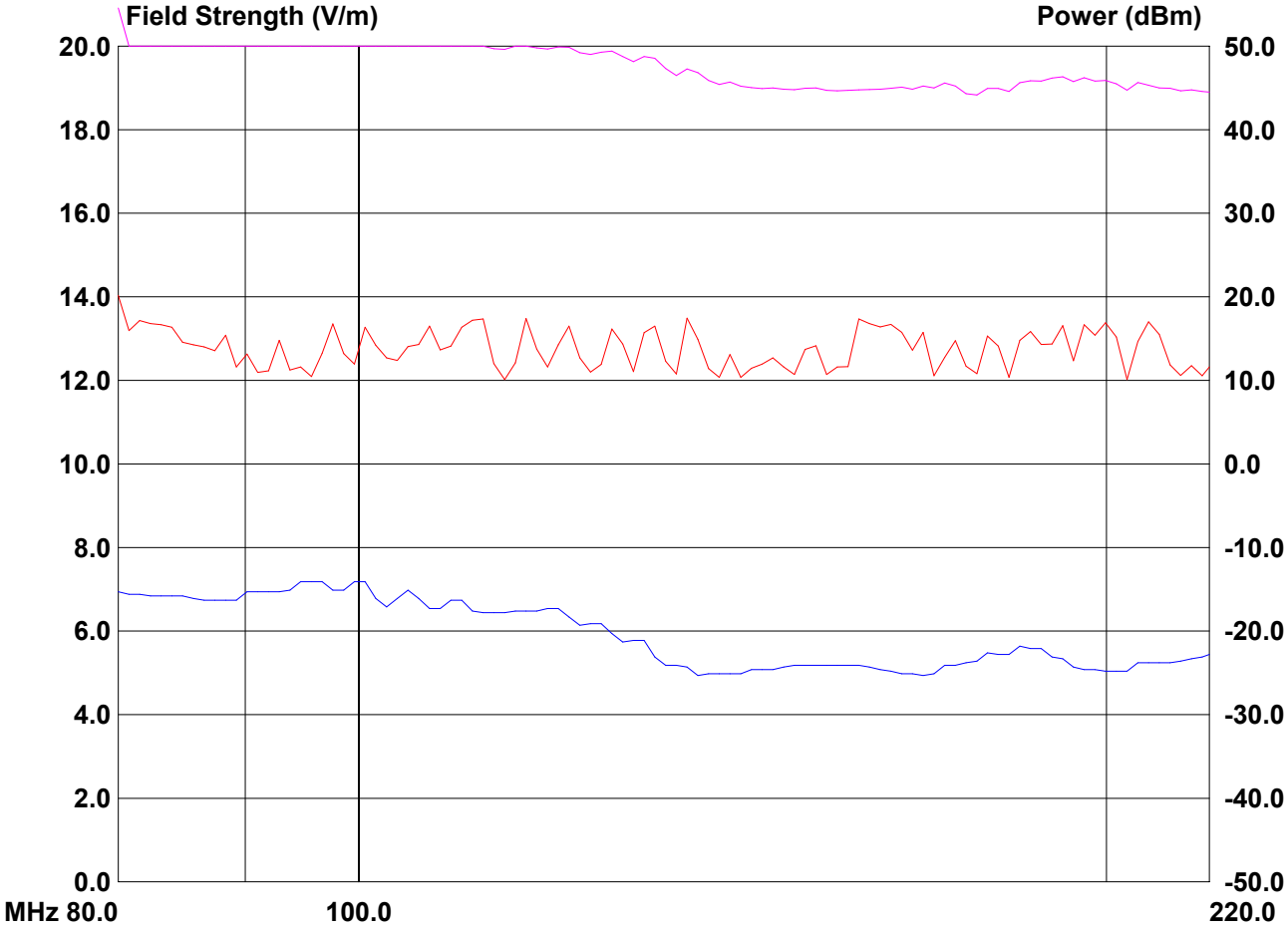
Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB
0.16	54.86	100.00	45.14
0.23	55.52	100.00	44.48
0.295	56.01	100.00	43.99
16.01	31.93	77.01	45.08

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB
0.16	31.32	90.00	58.68
0.23	31.16	90.00	58.84
0.295	31.99	90.00	58.01
16.01	27.02	67.01	39.99

* Limit extended

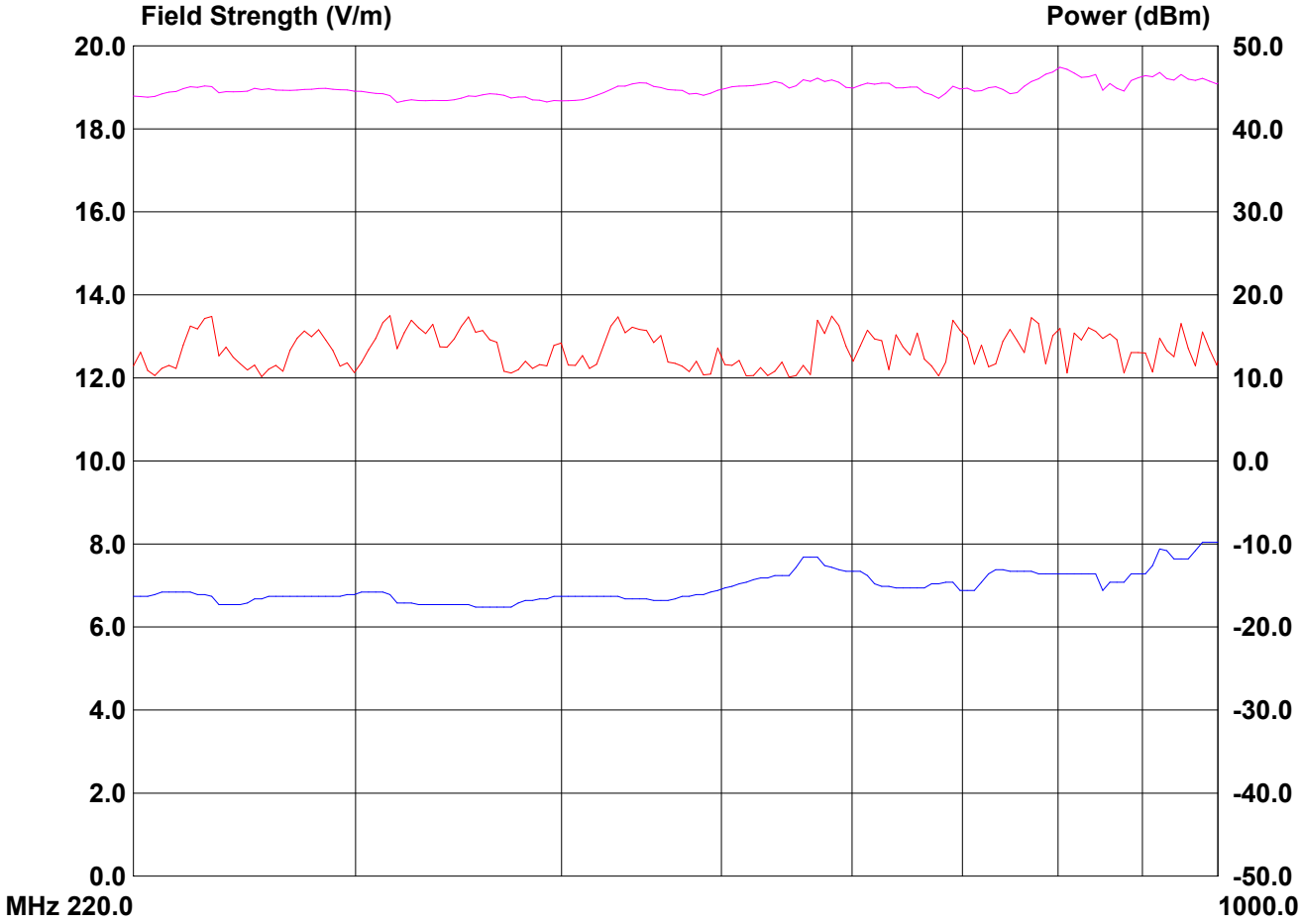
TEST FILE	pbi1_01.tst
Date/Time	05 Jan 2005 13:04
Title	Somar
Comments	Vertical 80 to 220MHz Front face
Operator	
EUT	
EUT Model	PBI Size 1
EUT Serial No.	Test sample
EUT Description	Motor soft starter
EUT Wait Time	1 secs
Modulation	AM 80 % EUT
Frequency Range	80 to 220 MHz 1 % log
Field Strength Level	12 V/m to 12.5 V/m



RF Generator	Rohde and Schwarz SMY02
Power Meter	HP 436A
Field Probe	SPS LYNX-2000 (UNKNOWN)
Amplifier Switch	MANUAL

Field Strength (V/m)	File Name	(dBm)	Signal Generator	Forward	Reverse	Nett	Feedback
	pbi1_01.tst						

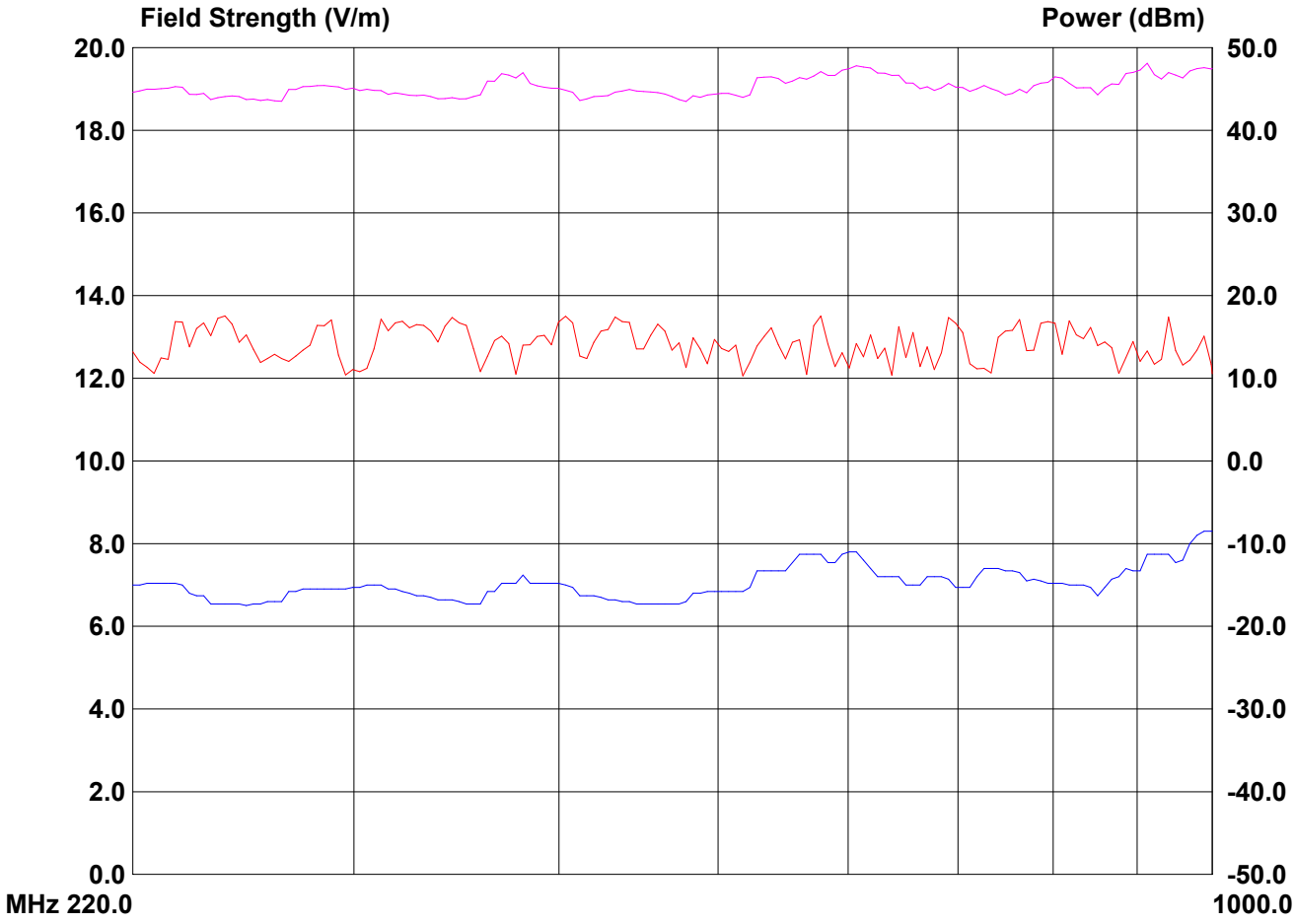
TEST FILE	pbi1_02.tst
Date/Time	05 Jan 2005 13:21
Title	Somar
Comments	Vertical 220 to 1000MHz Front face
Operator	
EUT	
EUT Model	PBI Size 1
EUT Serial No.	Test sample
EUT Description	Motor soft starter
EUT Wait Time	1 secs
Modulation	AM 80 % EUT
Frequency Range	220 to 1000 MHz 1 % log
Field Strength Level	12 V/m to 12.5 V/m



RF Generator	Rohde and Schwarz SMY02
Power Meter	HP 436A
Field Probe	SPS LYNX-2000 (UNKNOWN)
Amplifier Switch	MANUAL

Field Strength (V/m)	File Name	(dBm)	Signal Generator	Forward	Reverse	Nett	Feedback
	pbi1_02.tst						

TEST FILE	pbi1_03.tst
Date/Time	05 Jan 2005 13:35
Title	Somar
Comments	Horizontal 220 to 1000MHz Front face
Operator	
EUT	
EUT Model	PBI Size 1
EUT Serial No.	Test sample
EUT Description	Motor soft starter
EUT Wait Time	1 secs
Modulation	AM 80 % EUT
Frequency Range	220 to 1000 MHz 1 % log
Field Strength Level	12 V/m to 12.5 V/m



RF Generator	Rohde and Schwarz SMY02
Power Meter	HP 436A
Field Probe	SPS LYNX-2000 (UNKNOWN)
Amplifier Switch	MANUAL

Field Strength (V/m)	File Name	(dBm)	Signal Generator	Forward	Reverse	Nett	Feedback
	pbi1_03.tst						

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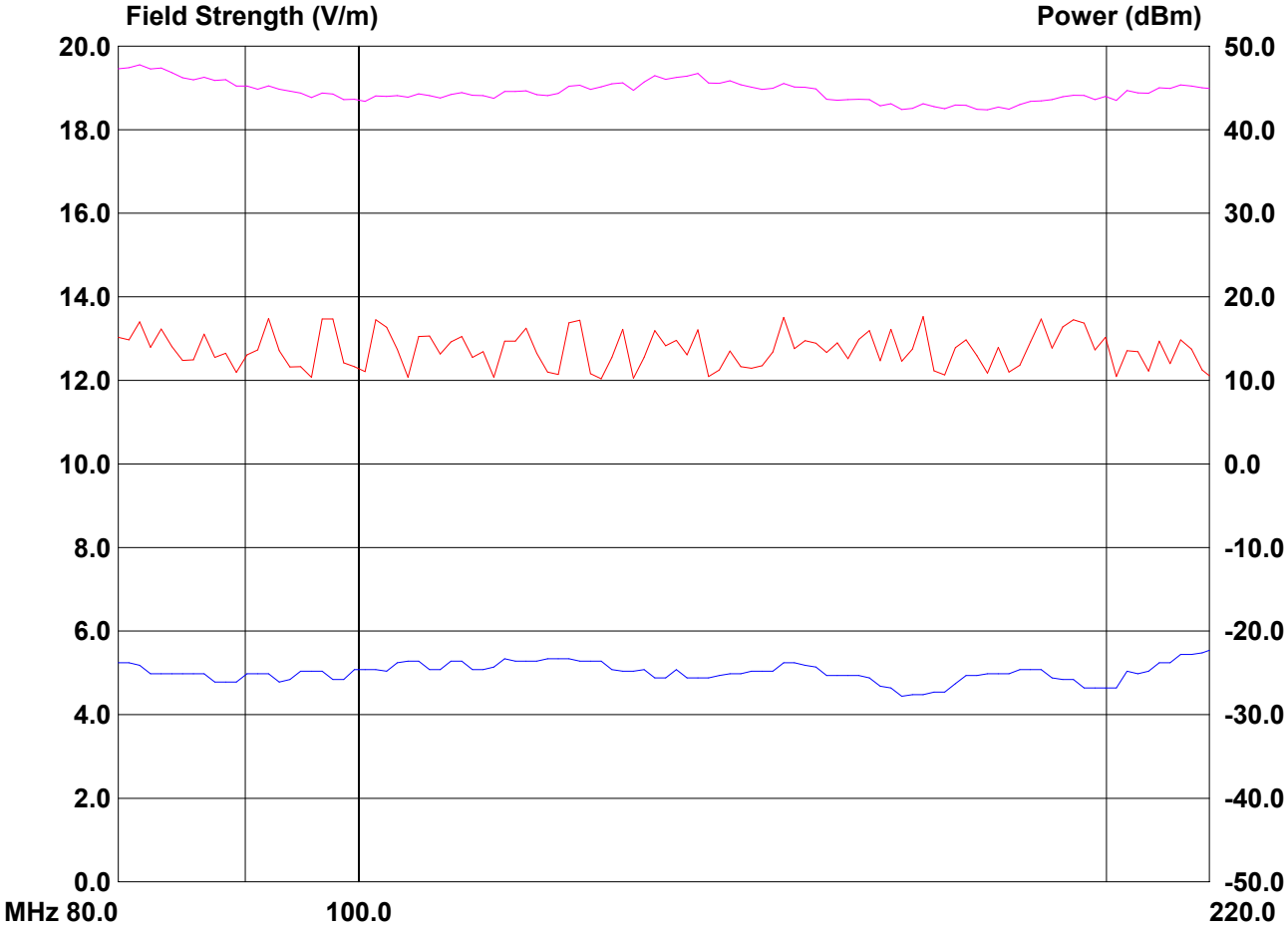
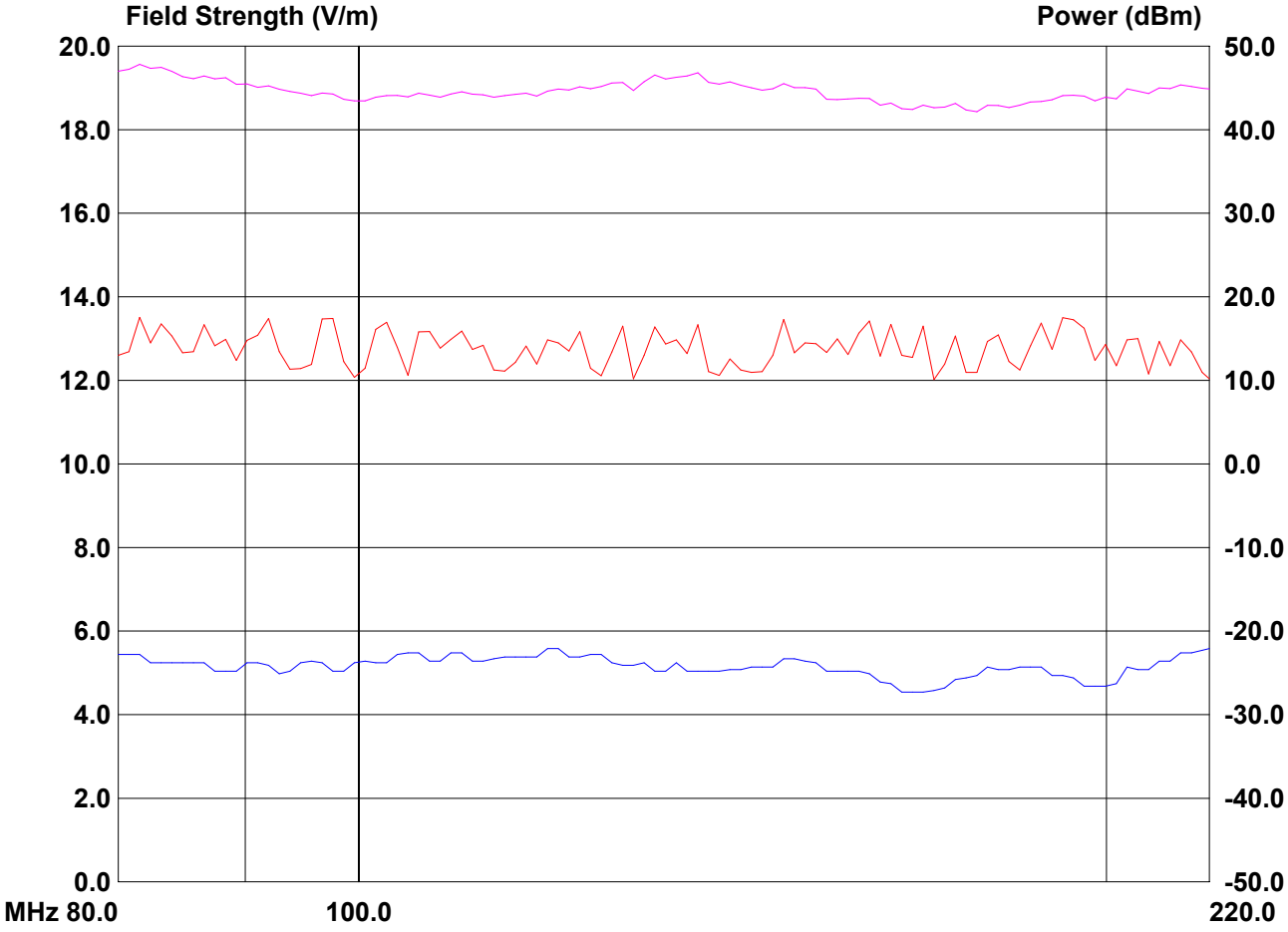
TEST FILE	pbi1_04.tst
Date/Time	05 Jan 2005 13:52
Title	Somar
Comments	Horizontal 80 to 220MHz Front face
Operator	
EUT	
EUT Model	PBI Size 1
EUT Serial No.	Test sample
EUT Description	Motor soft starter
EUT Wait Time	1 secs
Modulation	AM 80 % EUT
Frequency Range	80 to 220 MHz 1 % log
Field Strength Level	12 V/m to 12.5 V/m



RF Generator	Rohde and Schwarz SMY02
Power Meter	HP 436A
Field Probe	SPS LYNX-2000 (UNKNOWN)
Amplifier Switch	MANUAL

Field Strength (V/m)	File Name	(dBm)	Signal Generator	Forward	Reverse	Nett	Feedback
	pbi1_04.tst						

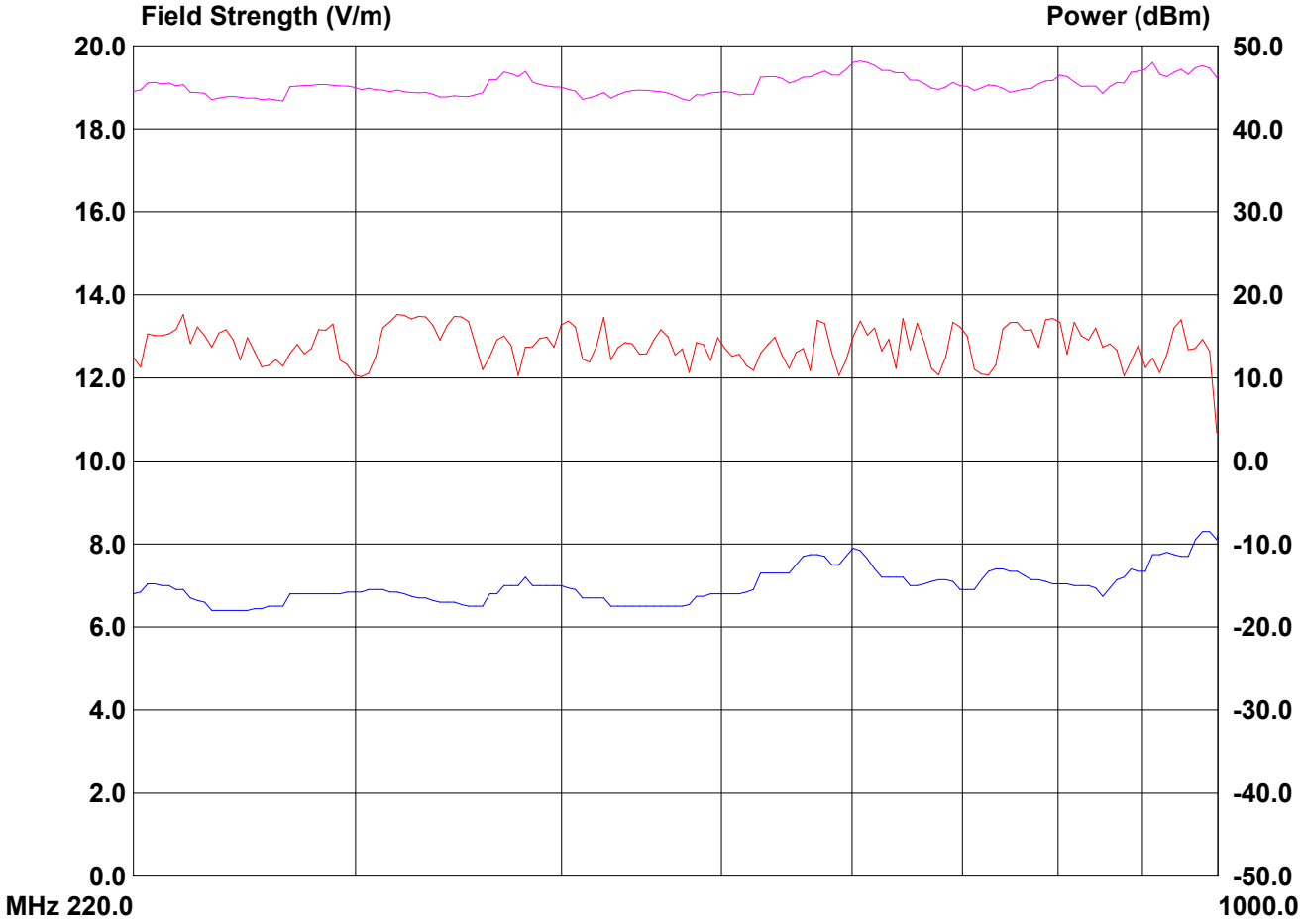
TEST FILE	pbi1_05.tst
Date/Time	05 Jan 2005 14:07
Title	Somar
Comments	Horizontal 80 to 220MHz RH side face
Operator	John Wilson
EUT	
EUT Model	PBI Size 1
EUT Serial No.	Test sample
EUT Description	Motor soft starter
EUT Wait Time	1 secs
Modulation	AM 80 % EUT
Frequency Range	80 to 220 MHz 1 % log
Field Strength Level	12 V/m to 12.5 V/m



RF Generator	Rohde and Schwarz SMY02
Power Meter	HP 436A
Field Probe	SPS LYNX-2000 (UNKNOWN)
Amplifier Switch	MANUAL

Field Strength (V/m)	File Name	(dBm)	Signal Generator	Forward	Reverse	Nett	Feedback
	pbi1_05.tst						

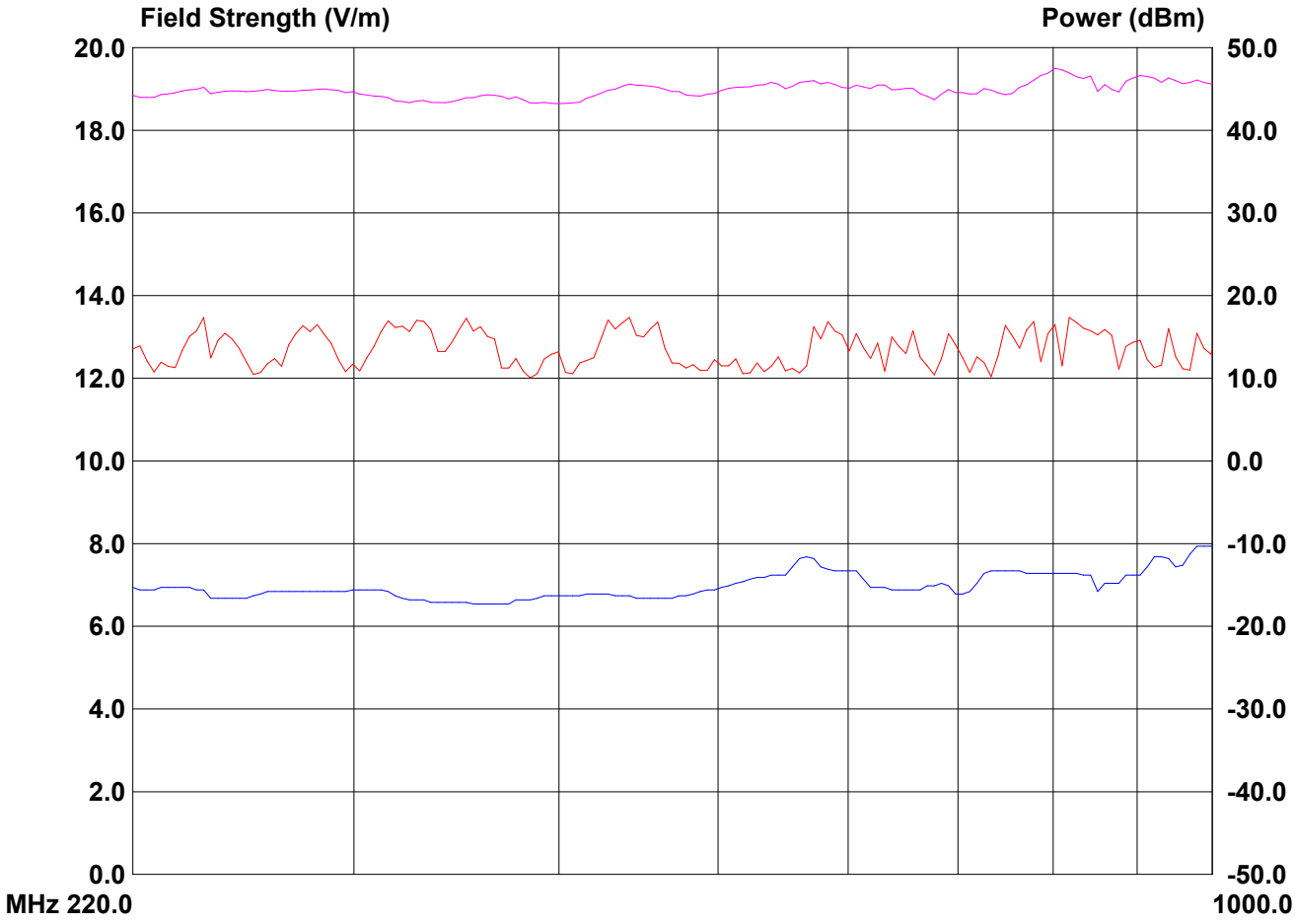
TEST FILE	pbi1_06.tst
Date/Time	05 Jan 2005 14:23
Title	Somar
Comments	Horizontal 220 to 1000MHz RH side face
Operator	John Wilson
EUT	
EUT Model	PBI Size 1
EUT Serial No.	Test sample
EUT Description	Motor soft starter
EUT Wait Time	1 secs
Modulation	AM 80 % EUT
Frequency Range	220 to 1000 MHz 1 % log
Field Strength Level	12 V/m to 12.5 V/m



RF Generator	Rohde and Schwarz SMY02
Power Meter	HP 436A
Field Probe	SPS LYNX-2000 (UNKNOWN)
Amplifier Switch	MANUAL

Field Strength (V/m)	File Name	(dBm)	Signal Generator	Forward	Reverse	Nett	Feedback
	pbi1_06.tst						

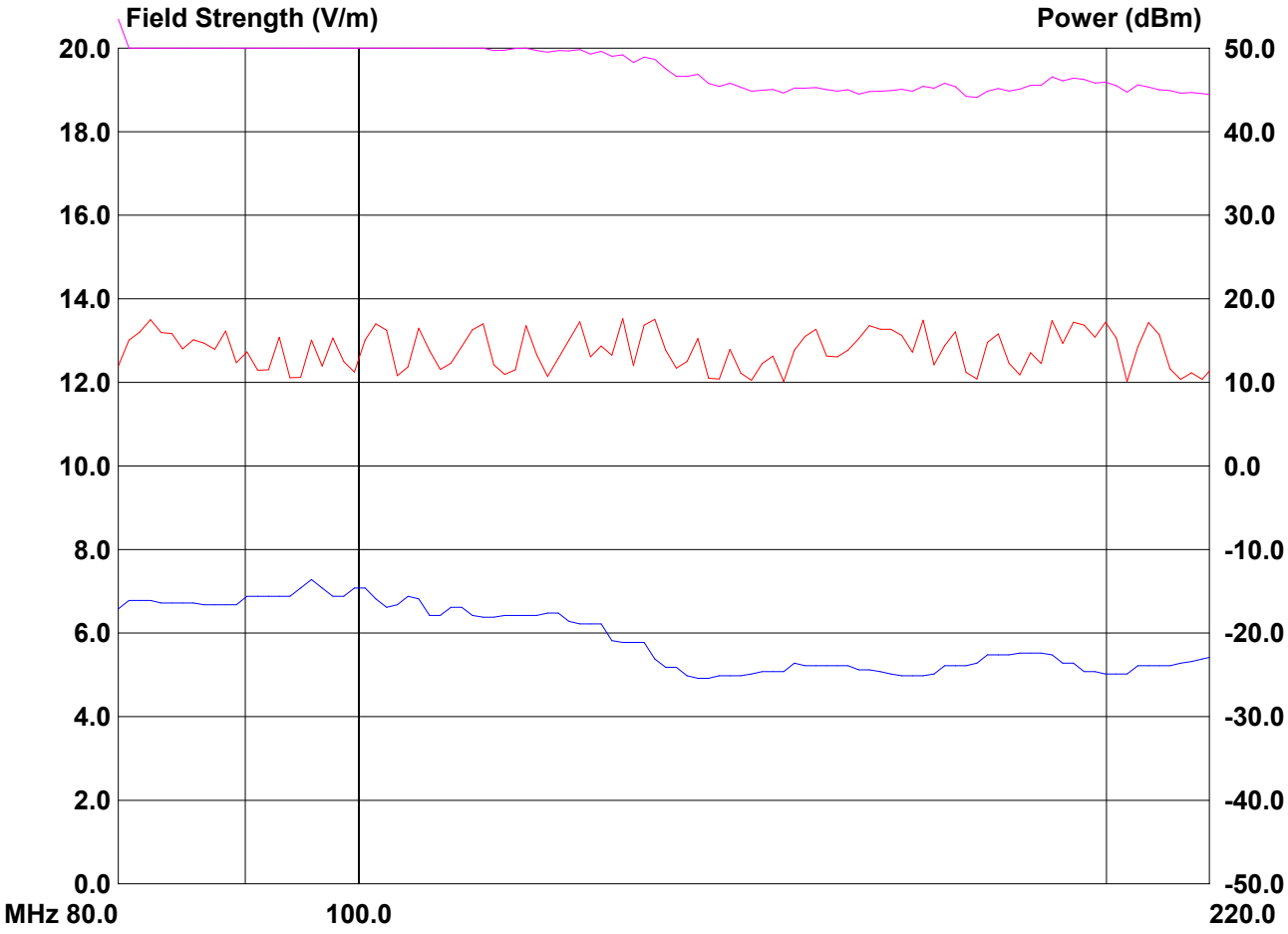
TEST FILE	pbi1_07.tst
Date/Time	05 Jan 2005 14:48
Title	Somar
Comments	Vertical 220 to 1000MHz RH side face
Operator	John Wilson
EUT	
EUT Model	PBI Size 1
EUT Serial No.	Test sample
EUT Description	Motor soft starter
EUT Wait Time	1 secs
Modulation	AM 80 % EUT
Frequency Range	220 to 1000 MHz 1 % log
Field Strength Level	12 V/m to 12.5 V/m



RF Generator	Rohde and Schwarz SMY02
Power Meter	HP 436A
Field Probe	SPS LYNX-2000 (UNKNOWN)
Amplifier Switch	MANUAL

Field Strength (V/m)	File Name	(dBm)	Signal Generator	Forward	Reverse	Nett	Feedback
	pbi1_07.tst						

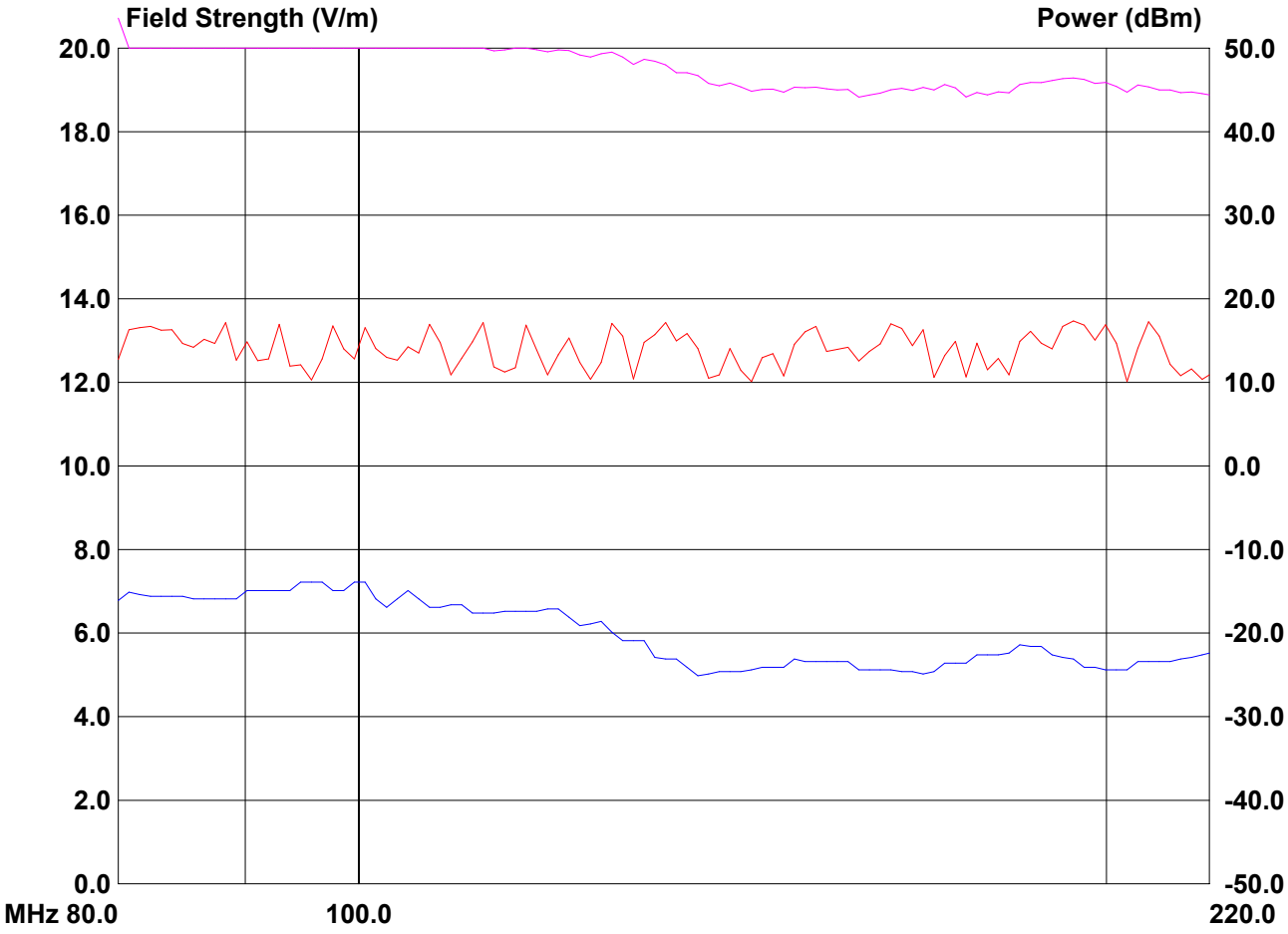
TEST FILE	pbi1_08.tst
Date/Time	05 Jan 2005 14:57
Title	Somar
Comments	Vertical 80 to 220MHz RH side face
Operator	John Wilson
EUT	
EUT Model	PBI Size 1
EUT Serial No.	Test sample
EUT Description	Motor soft starter
EUT Wait Time	1 secs
Modulation	AM 80 % EUT
Frequency Range	80 to 220 MHz 1 % log
Field Strength Level	12 V/m to 12.5 V/m



RF Generator	Rohde and Schwarz SMY02
Power Meter	HP 436A
Field Probe	SPS LYNX-2000 (UNKNOWN)
Amplifier Switch	MANUAL

Field Strength (V/m)	File Name	(dBm)	Signal Generator	Forward	Reverse	Nett	Feedback
	pbi1_08.tst						

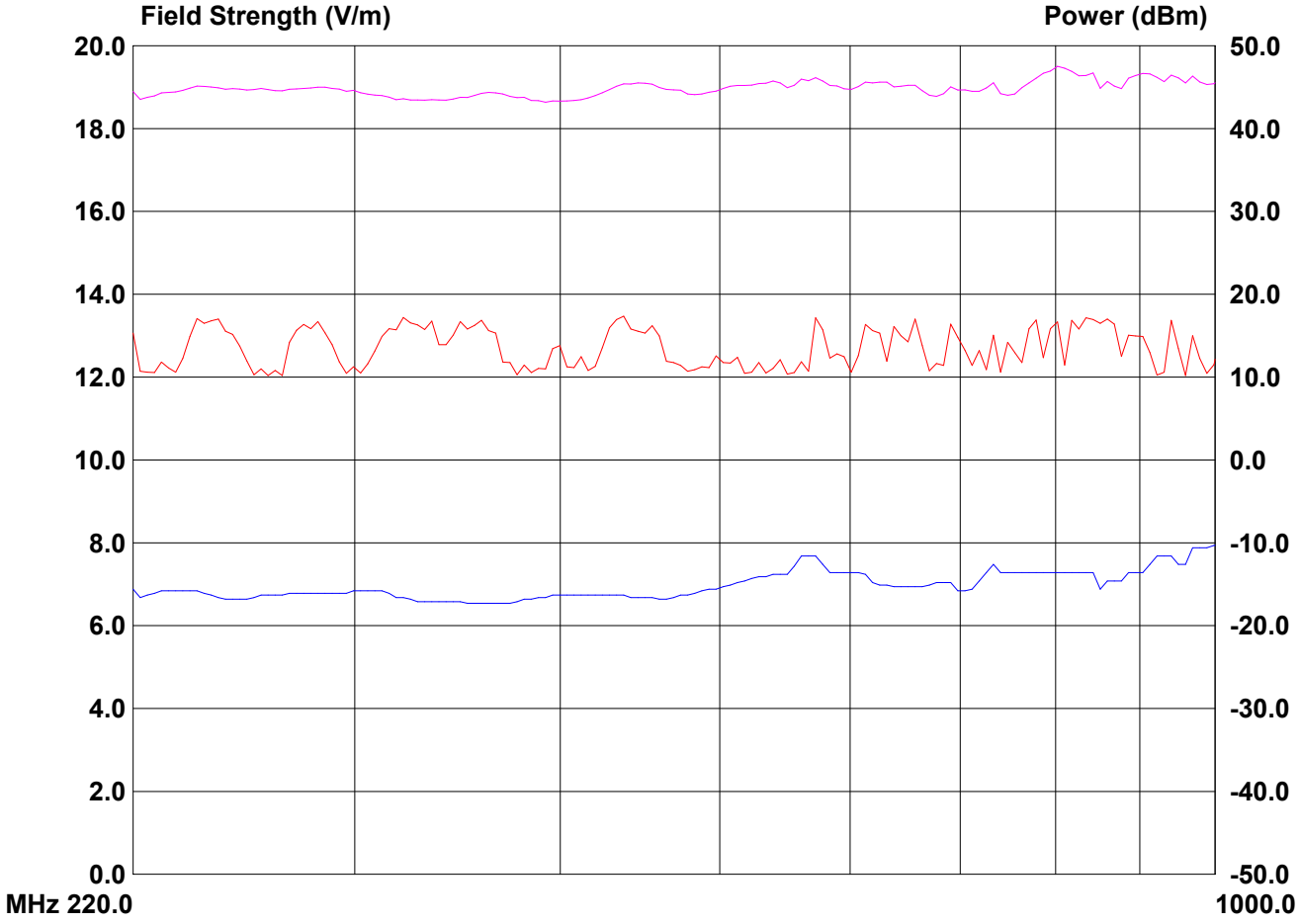
TEST FILE	pbi1_09.tst
Date/Time	05 Jan 2005 15:07
Title	Somar
Comments	Vertical 80 to 220MHz
	Rear face
Operator	John Wilson
EUT	
EUT Model	PBI Size 1
EUT Serial No.	Test sample
EUT Description	Motor soft starter
EUT Wait Time	1 secs
Modulation	AM 80 % EUT
Frequency Range	80 to 220 MHz 1 % log
Field Strength Level	12 V/m to 12.5 V/m



RF Generator	Rohde and Schwarz SMY02
Power Meter	HP 436A
Field Probe	SPS LYNX-2000 (UNKNOWN)
Amplifier Switch	MANUAL

Field Strength (V/m)	File Name	(dBm)	Signal Generator	Forward	Reverse	Nett	Feedback
	pbi1_09.tst						

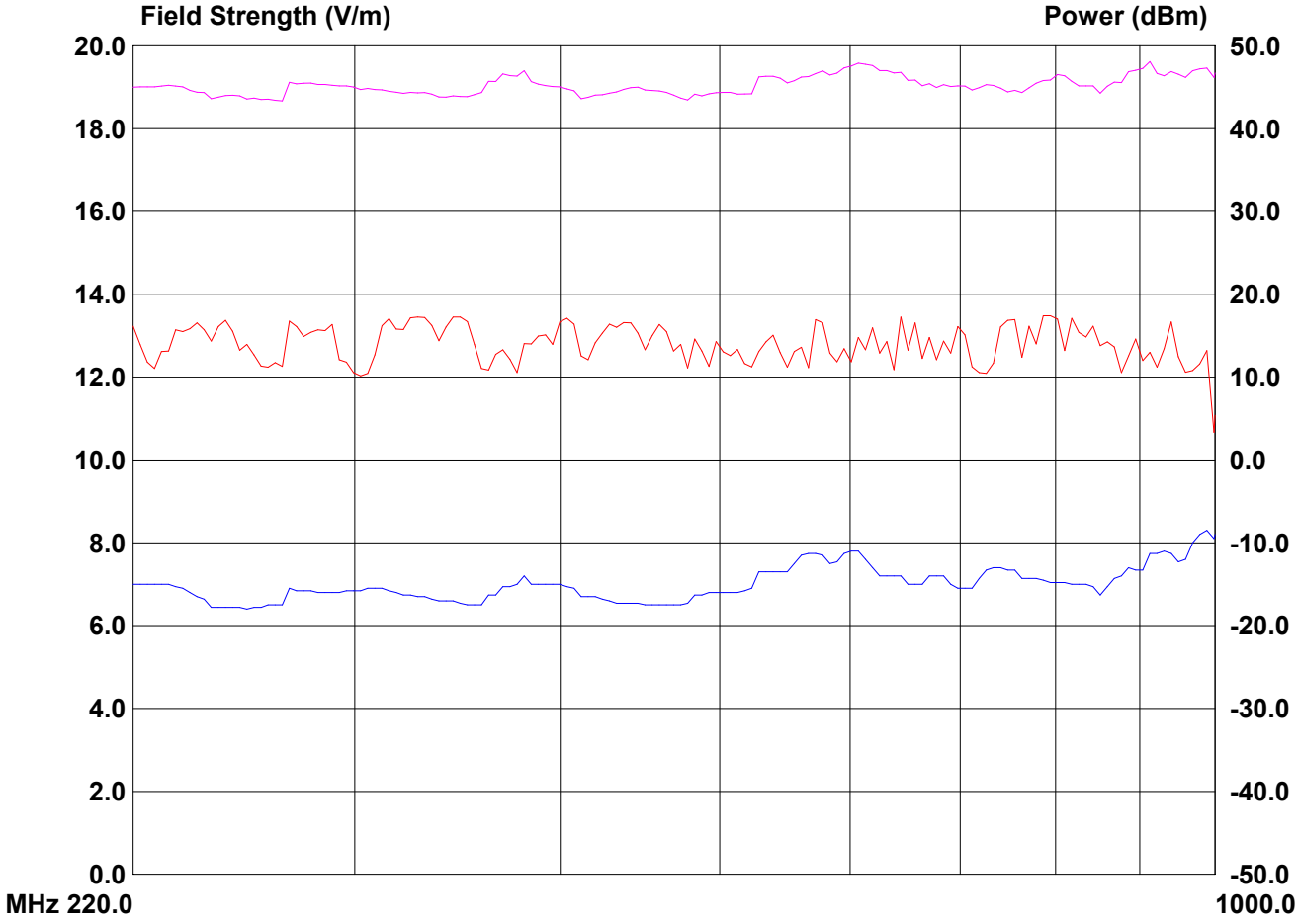
TEST FILE	pbi1_10.tst
Date/Time	05 Jan 2005 15:24
Title	Somar
Comments	Vertical 220 to 1000MHz
	Rear face
Operator	John Wilson
EUT	
EUT Model	PBI Size 1
EUT Serial No.	Test sample
EUT Description	Motor soft starter
EUT Wait Time	1 secs
Modulation	AM 80 % EUT
Frequency Range	220 to 1000 MHz 1 % log
Field Strength Level	12 V/m to 12.5 V/m



RF Generator	Rohde and Schwarz SMY02
Power Meter	HP 436A
Field Probe	SPS LYNX-2000 (UNKNOWN)
Amplifier Switch	MANUAL

Field Strength (V/m)	File Name	(dBm)	Signal Generator	Forward	Reverse	Nett	Feedback
	pbi1_10.tst						

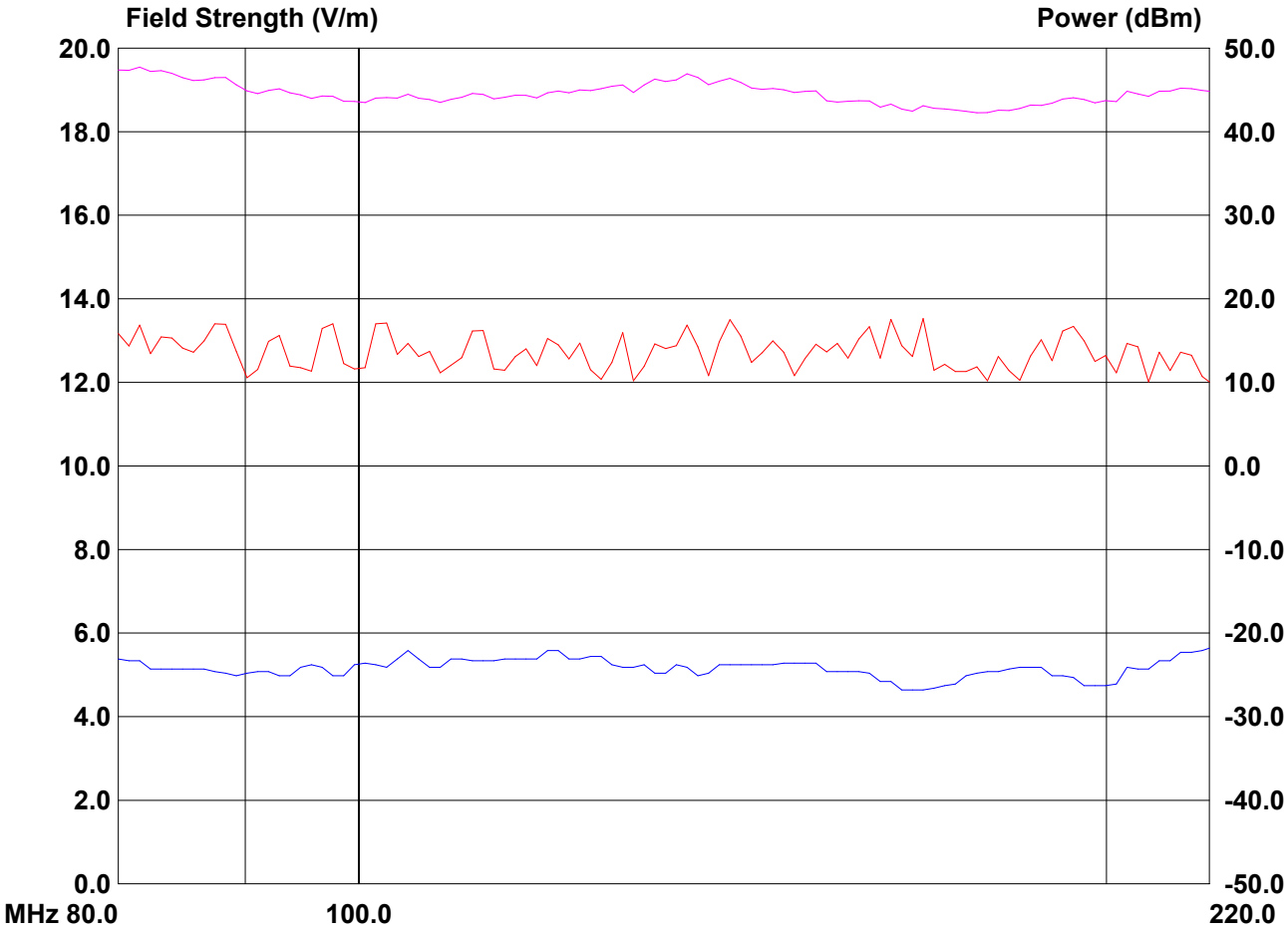
TEST FILE	pbi1_11.tst
Date/Time	05 Jan 2005 15:43
Title	Somar
Comments	Horizontal 220 to 1000MHz
	Rear face
Operator	John Wilson
EUT	
EUT Model	PBI Size 1
EUT Serial No.	Test sample
EUT Description	Motor soft starter
EUT Wait Time	1 secs
Modulation	AM 80 % EUT
Frequency Range	220 to 1000 MHz 1 % log
Field Strength Level	12 V/m to 12.5 V/m



RF Generator	Rohde and Schwarz SMY02
Power Meter	HP 436A
Field Probe	SPS LYNX-2000 (UNKNOWN)
Amplifier Switch	MANUAL

Field Strength (V/m)	File Name	(dBm)	Signal Generator	Forward	Reverse	Nett	Feedback
	pbi1_11.tst						

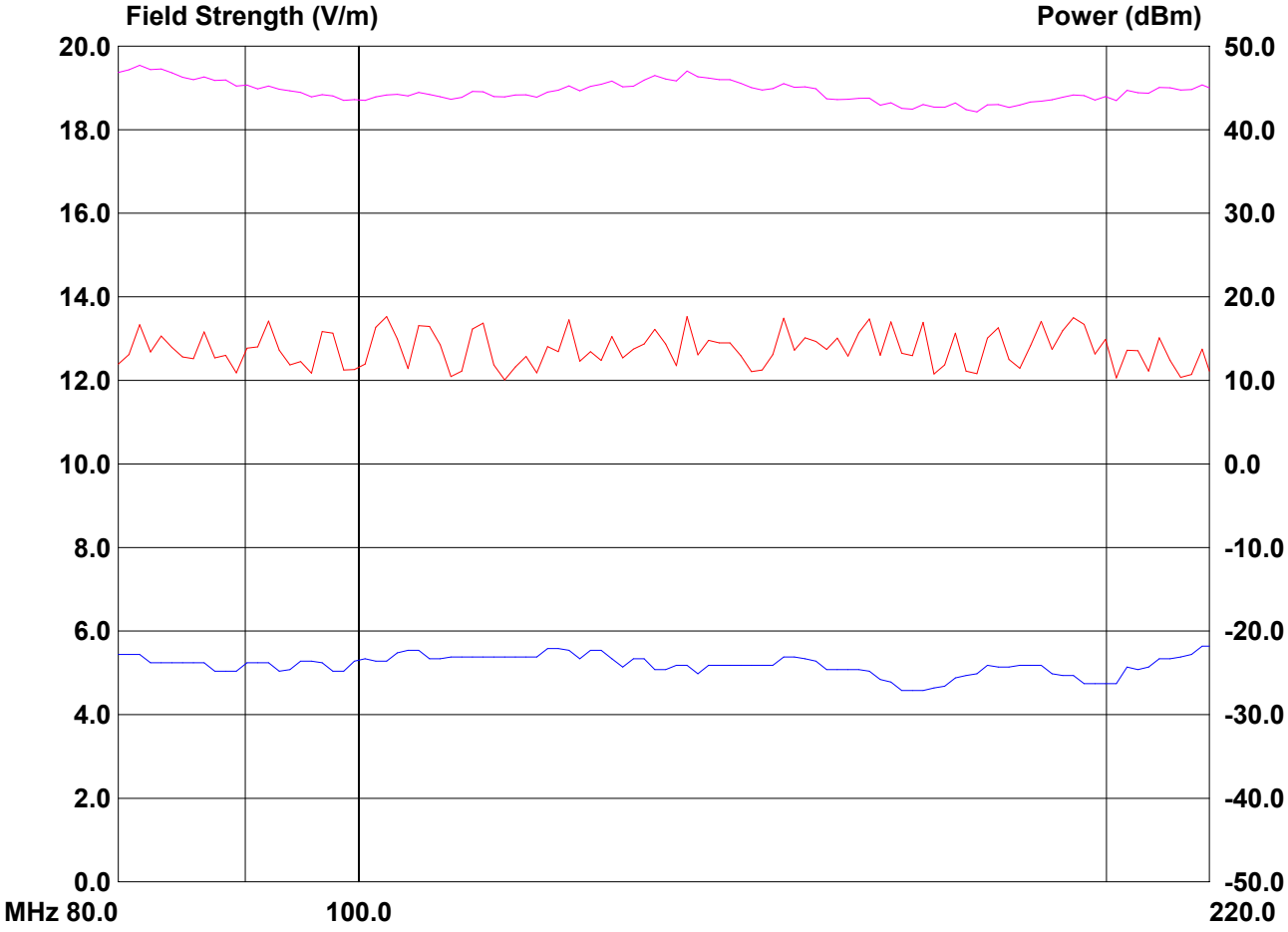
TEST FILE	pbi1_12.tst
Date/Time	05 Jan 2005 15:53
Title	Somar
Comments	Horizontal 80 to 220MHz Rear face
Operator	John Wilson
EUT	
EUT Model	PBI Size 1
EUT Serial No.	Test sample
EUT Description	Motor soft starter
EUT Wait Time	1 secs
Modulation	AM 80 % EUT
Frequency Range	80 to 220 MHz 1 % log
Field Strength Level	12 V/m to 12.5 V/m



RF Generator	Rohde and Schwarz SMY02
Power Meter	HP 436A
Field Probe	SPS LYNX-2000 (UNKNOWN)
Amplifier Switch	MANUAL

Field Strength (V/m)	File Name	(dBm)	Signal Generator	Forward	Reverse	Nett	Feedback
	pbi1_12.tst						

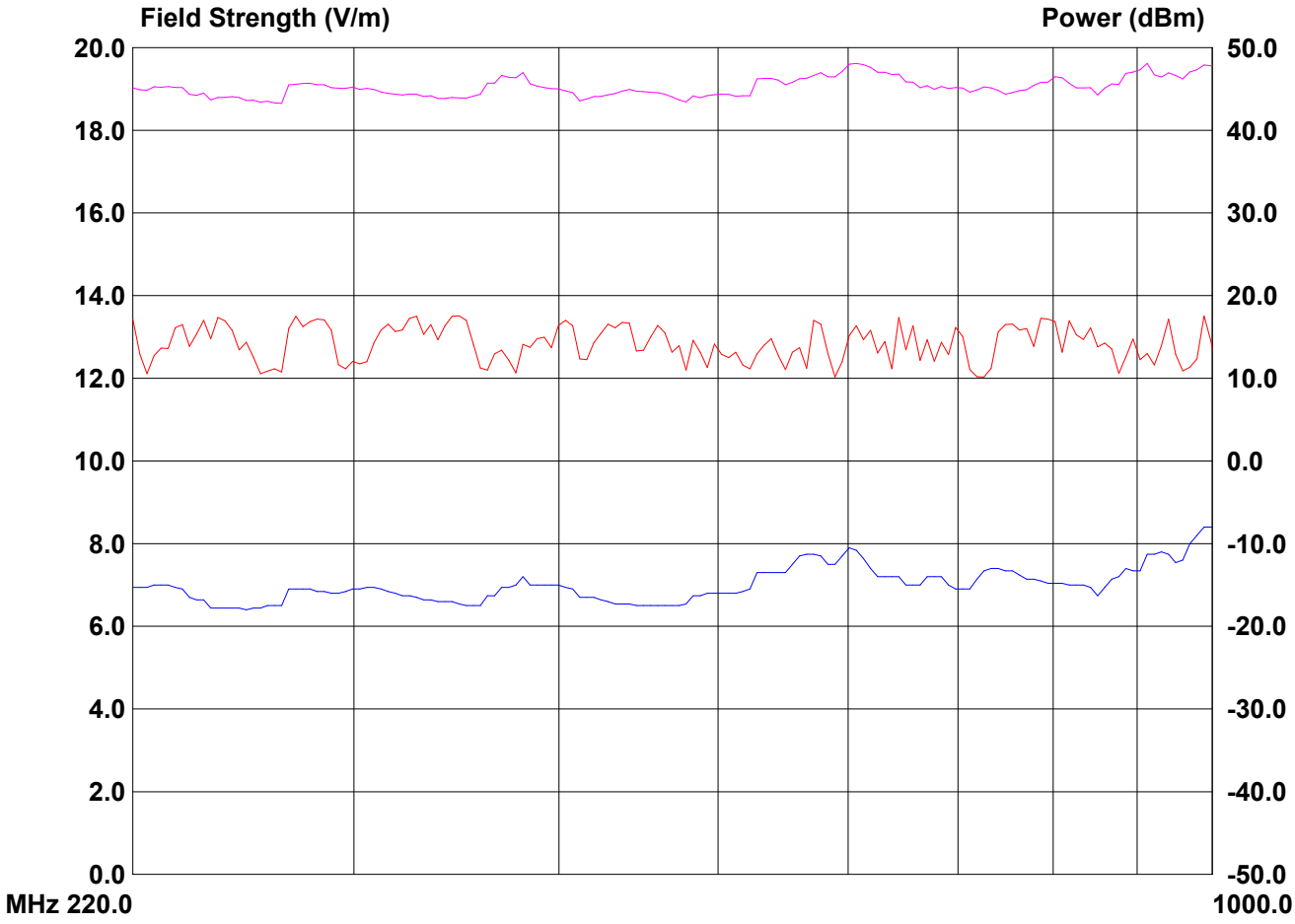
TEST FILE	pbi1_13.tst
Date/Time	05 Jan 2005 16:04
Title	Somar
Comments	Horizontal 80 to 220MHz
	LH side face
Operator	John Wilson
EUT	
EUT Model	PBI Size 1
EUT Serial No.	Test sample
EUT Description	Motor soft starter
EUT Wait Time	1 secs
Modulation	AM 80 % EUT
Frequency Range	80 to 220 MHz 1 % log
Field Strength Level	12 V/m to 12.5 V/m



RF Generator	Rohde and Schwarz SMY02
Power Meter	HP 436A
Field Probe	SPS LYNX-2000 (UNKNOWN)
Amplifier Switch	MANUAL

Field Strength (V/m)	File Name	(dBm)	Signal Generator	Forward	Reverse	Nett	Feedback
	pbi1_13.tst						

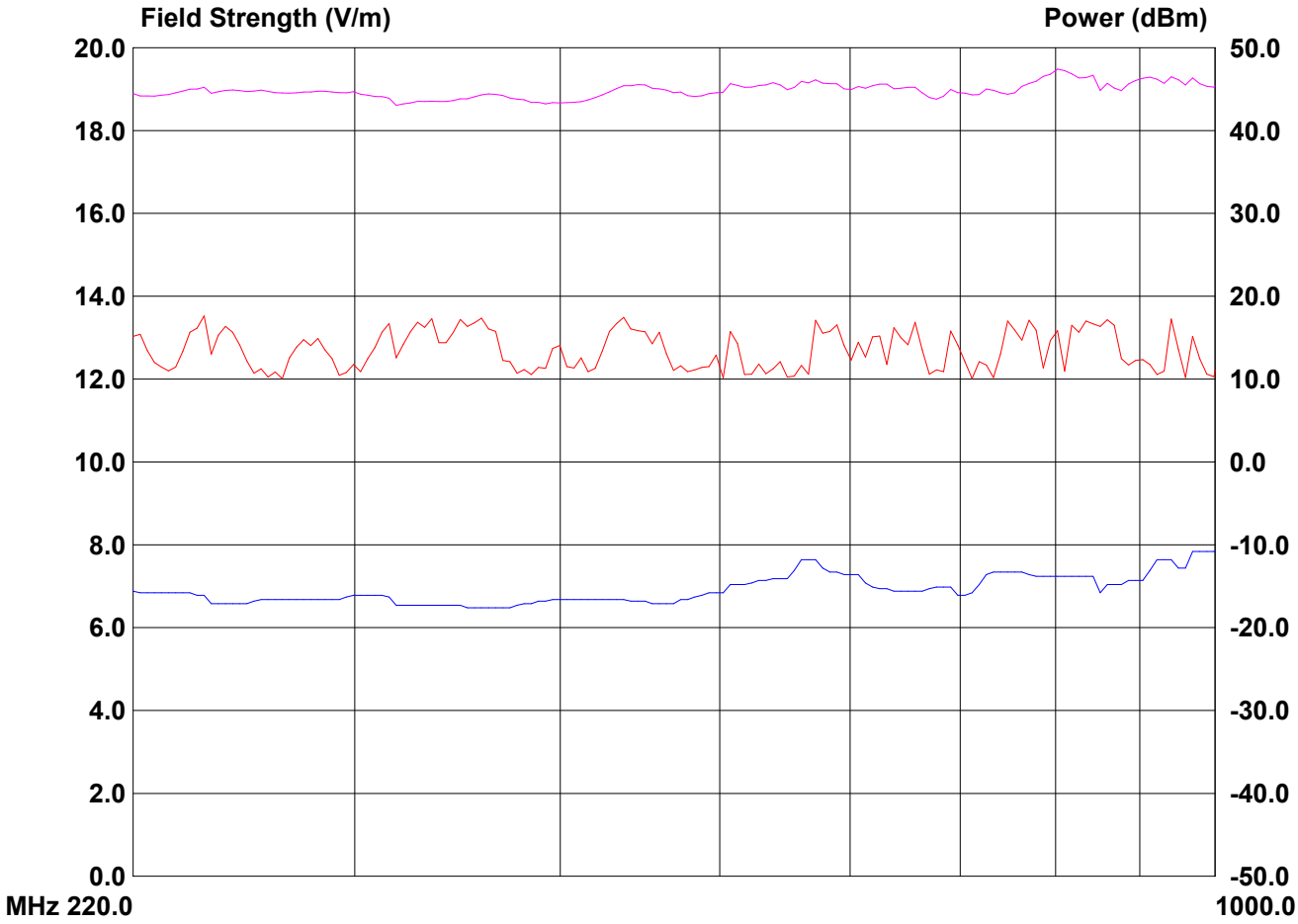
TEST FILE	pbi1_14.tst
Date/Time	05 Jan 2005 16:17
Title	Somar
Comments	Horizontal 220 to 1000MHz LH side face
Operator	John Wilson
EUT	
EUT Model	PBI Size 1
EUT Serial No.	Test sample
EUT Description	Motor soft starter
EUT Wait Time	1 secs
Modulation	AM 80 % EUT
Frequency Range	220 to 1000 MHz 1 % log
Field Strength Level	12 V/m to 12.5 V/m



RF Generator	Rohde and Schwarz SMY02
Power Meter	HP 436A
Field Probe	SPS LYNX-2000 (UNKNOWN)
Amplifier Switch	MANUAL

Field Strength (V/m)	File Name	(dBm)	Signal Generator	Forward	Reverse	Nett	Feedback
	pbi1_14.tst						

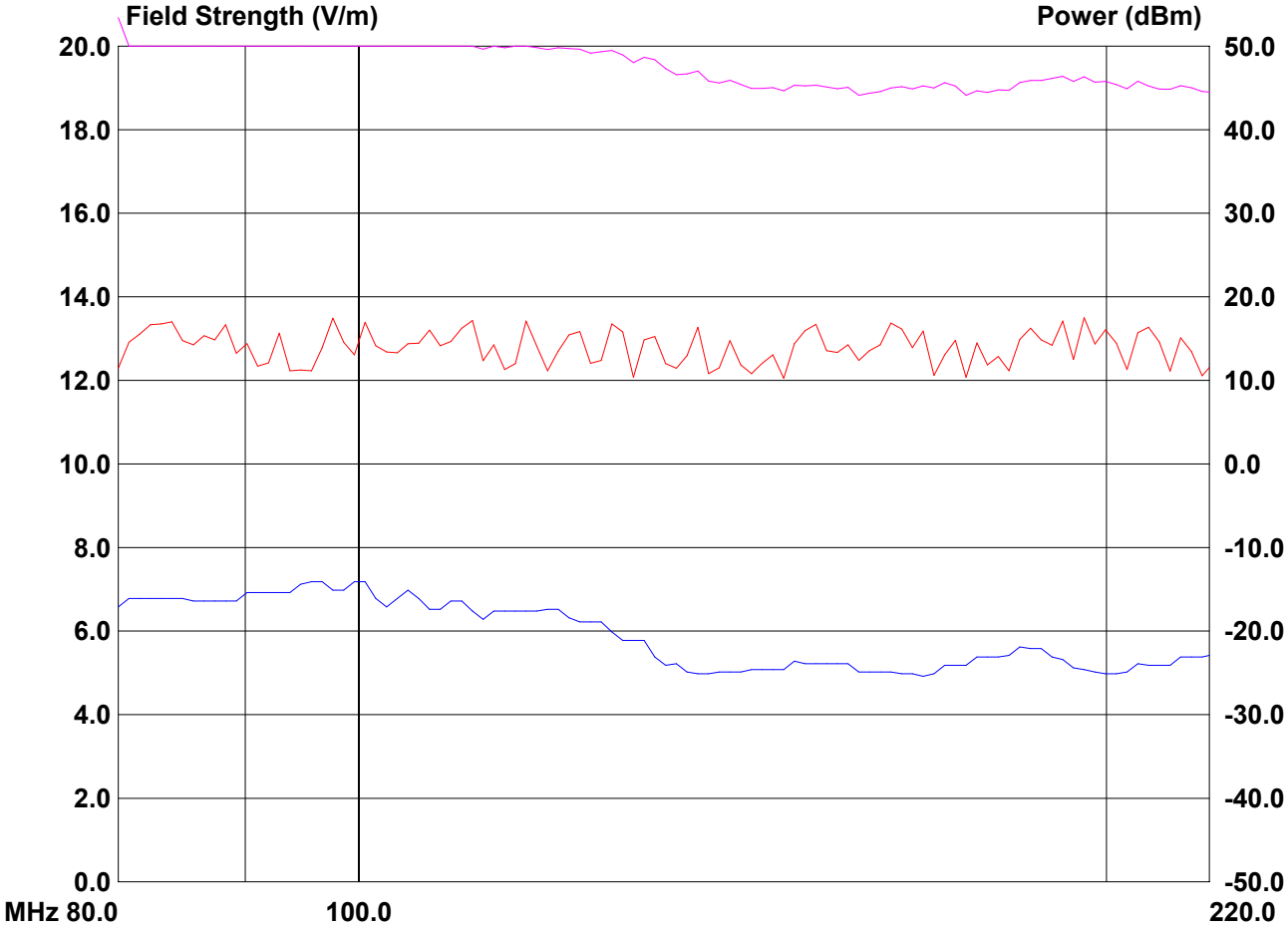
TEST FILE	pbi1_15.tst
Date/Time	05 Jan 2005 16:30
Title	Somar
Comments	Vertical 220 to 1000MHz
	LH side face
Operator	John Wilson
EUT	
EUT Model	PBI Size 1
EUT Serial No.	Test sample
EUT Description	Motor soft starter
EUT Wait Time	1 secs
Modulation	AM 80 % EUT
Frequency Range	220 to 1000 MHz 1 % log
Field Strength Level	12 V/m to 12.5 V/m



RF Generator	Rohde and Schwarz SMY02
Power Meter	HP 436A
Field Probe	SPS LYNX-2000 (UNKNOWN)
Amplifier Switch	MANUAL

Field Strength (V/m)	File Name	(dBm)	Signal Generator	Forward	Reverse	Nett	Feedback
	pbi1_15.tst						

TEST FILE	pbi1_16.tst
Date/Time	05 Jan 2005 16:49
Title	Somar
Comments	Vertical 80 to 220MHz
	LH side face
Operator	John Wilson
EUT	
EUT Model	PBI Size 1
EUT Serial No.	Test sample
EUT Description	Motor soft starter
EUT Wait Time	1 secs
Modulation	AM 80 % EUT
Frequency Range	80 to 220 MHz 1 % log
Field Strength Level	12 V/m to 12.5 V/m



RF Generator	Rohde and Schwarz SMY02
Power Meter	HP 436A
Field Probe	SPS LYNX-2000 (UNKNOWN)
Amplifier Switch	MANUAL

Field Strength (V/m)	File Name	(dBm)	Signal Generator	Forward	Reverse	Nett	Feedback
	pbi1_16.tst						

Date: 21/12/2004 **Time:** 11:58:50 **Company:** EMC Network (SW)

Equipment Tested	PBI
Serial Number	Test sample
Test Equipment used	Schaffner NSG 2025
Test Procedure Used	EN 61000-4-4 called by EN 60947-2

Test #1

Version	Win2025 Ver 3.10
Test Name	C:\PSUITE\WIN2025\3PH1KV.P25
Pulse Type	Burst
Status	PASS
Description	EUT running motor load and monitored during tests. No effects noted. No failures. EUT fitted with varistors from phase conductors to ground

Comments
Time Elapsed 0000:08:17

PARAMETER		OPERATION	FROM	TO	STEP
SIZE	FAIL VALUE	UNITS			
Polarity	Positive,Negative			N/A	
COUPLER	PE,L1,L2,L3			N/A	
Voltage	Static	2000	- - -	- - -	N/A	Volts
Angle	Static	1	- - -	- - -	N/A	degrees
Spikes	Static	75	- - -	- - -	N/A	
tREP	Static	300	- - -	- - -	N/A	mSecs
fBURST	Static	5	- - -	- - -	N/A	kHz

Sync	ASYNCHRONOUS
Ambient Temperature	17°C
Humidity	40%
Pressure	1001mB
Tested by	EMC Network SW
Title	pbi_01

Date: 21/12/2004 **Time:** 12:15:50 **Company:** EMC Network (SW)

Equipment Tested	PBI
Serial Number	Test sample
Test Equipment used	Schaffner NSG 2025
Test Procedure Used	EN 61000-4-4 called by EN 60947-2

Test #1

Version	Win2025 Ver 3.10
Test Name	C:\PSUITE\WIN2025\3PH1KV.P25
Pulse Type	Burst
Status	PASS
Description	EUT running motor load and monitored during test. No effects noted. No failures. EUT fitted 0.1µF earth line capacitor. Varistors between phases and ground

Comments
Time Elapsed 0000:08:18

PARAMETER		OPERATION		FROM	TO	STEP
SIZE	FAIL VALUE	UNITS				
Polarity	Positive,Negative				N/A	
COUPLER	PE,L1,L2,L3				N/A	
Voltage	Static	2000	- - -	- - -	N/A	Volts
Angle	Static	1	- - -	- - -	N/A	degrees
Spikes	Static	75	- - -	- - -	N/A	
tREP	Static	300	- - -	- - -	N/A	mSecs
fBURST	Static	5	- - -	- - -	N/A	kHz

Sync	ASYNCHRONOUS
Ambient Temperature	17°C
Humidity	40%
Pressure	1001mB
Tested by	EMC Network SW
Title	pbi_02

Date: 21/12/2004 **Time:** 13:16:37 **Company:** EMC Network (SW)

Equipment Tested	PBI size 1
Serial Number	Test sample
Test Equipment used	Schaffner NSG 2025
Test Procedure Used	EN 61000-4-4 called by EN 60947-2

Test #1

Version	Win2025 Ver 3.10
Test Name	C:\PSUITE\WIN2025\3PH1KV.P25
Pulse Type	Burst
Status	PASS
Description	EUT running motor load and monitored during text. Slight changes in motor speed during bursts but no failures.

Comments

Time Elapsed 0000:08:18

PARAMETER		OPERATION		FROM	TO	STEP
SIZE	FAIL VALUE	UNITS				
Polarity	Positive,Negative				N/A	
COUPLER	PE,L1,L2,L3				N/A	
Voltage	Static	2000	- - -	- - -	N/A	Volts
Angle	Static	1	- - -	- - -	N/A	degrees
Spikes	Static	75	- - -	- - -	N/A	
tREP	Static	300	- - -	- - -	N/A	mSecs
fBURST	Static	5	- - -	- - -	N/A	kHz

Sync	ASYNCHRONOUS
Ambient Temperature	17°C
Humidity	40%
Pressure	1001mB
Tested by	EMC Network SW
Title	pbi_03

Date: 05/01/2005 **Time:** 08:25:19 **Company:** EMC Network (SW)

Equipment Tested	PBI size 2
Serial Number	Test sample
Test Equipment used	Schaffner NSG 2025
Test Procedure Used	EN 61000-4-4 called by EN 60947-2

Test #1

Version	Win2025 Ver 3.10
Test Name	C:\PSUITE\WIN2025\3PH1KV.P25
Pulse Type	Burst
Status	PASS
Description	EUT running motor load during tests. No observable effects on motor operation. No failures.

Comments

Time Elapsed 0000:08:18

PARAMETER		OPERATION		FROM	TO	STEP
SIZE	FAIL VALUE	UNITS				
Polarity	Positive,Negative				N/A	
COUPLER	PE,L1,L2,L3				N/A	
Voltage	Static	2000	- - -	- - -	N/A	Volts
Angle	Static	1	- - -	- - -	N/A	degrees
Spikes	Static	75	- - -	- - -	N/A	
tREP	Static	300	- - -	- - -	N/A	mSecs
fBURST	Static	5	- - -	- - -	N/A	kHz

Sync	ASYNCHRONOUS
Ambient Temperature	18°C
Humidity	47%
Pressure	1006mB
Tested by	EMC Network SW
Title	pbi_04

SOMAR

Date: 21/12/2004 **Time:** 14:34:16 **Company:** Schaffner

Equipment Tested	PBI Size 1
Serial Number	Test sample
Test Equipment used	Schaffner NSG 2050/PNW 2050
Test Procedure Used	EN 61000-4-5 called by EN 60947-2

Test #1

Version	Win2050 Ver 4.00
Test Name	C:\PSUITE\WIN2050\3P2KVL-E.PLS
Pulse Type	PNW2050 12 OHMS
Status	PASS
Description	EUT running motor load and monitored during tests. No effects. No failures.

Comments
Time Elapsed 0000:35:58

PARAMETER		OPERATION		FROM	TO	STEP
SIZE	FAIL VALUE	UNITS				
Coupler	L1 PE,L2 PE,L3 PE				N/A	
Polarity	POSITIVE,NEGATIVE					N/A
Angle	Static	90	270	90	N/A	Degrees
Voltage	Static	1000	2000	1000	N/A	Volts

Sync	SYNCHRONOUS
Repetition Rate	30 seconds
Ambient Temperature	18°C
Humidity	40%
Pressure	1001mB
Tested by	EMC Network SW
Title	pbi_01

Full Test Report

[No]	Coupler	Polarity	Angle	Voltage	[Measured IP] [Status]
[1]	L1 PE	POSITIVE	90 1000	27	PASS
[2]	L2 PE	POSITIVE	90 1000	26	PASS
[3]	L3 PE	POSITIVE	90 1000	28	PASS
[4]	L1 PE	NEGATIVE	90 1000	27	PASS
[5]	L2 PE	NEGATIVE	90 1000	27	PASS
[6]	L3 PE	NEGATIVE	90 1000	26	PASS
[7]	L1 PE	POSITIVE	180 1000	28	PASS
[8]	L2 PE	POSITIVE	180 1000	26	PASS
[9]	L3 PE	POSITIVE	180 1000	26	PASS
[10]	L1 PE	NEGATIVE	180 1000	26	PASS
[11]	L2 PE	NEGATIVE	180 1000	27	PASS
[12]	L3 PE	NEGATIVE	180 1000	27	PASS
[13]	L1 PE	POSITIVE	270 1000	27	PASS
[14]	L2 PE	POSITIVE	270 1000	28	PASS
[15]	L3 PE	POSITIVE	270 1000	26	PASS
[16]	L1 PE	NEGATIVE	270 1000	27	PASS
[17]	L2 PE	NEGATIVE	270 1000	26	PASS
[18]	L3 PE	NEGATIVE	270 1000	27	PASS
[19]	L1 PE	POSITIVE	90 2000	56	PASS
[20]	L2 PE	POSITIVE	90 2000	55	PASS
[21]	L3 PE	POSITIVE	90 2000	56	PASS
[22]	L1 PE	NEGATIVE	90 2000	55	PASS
[23]	L2 PE	NEGATIVE	90 2000	55	PASS
[24]	L3 PE	NEGATIVE	90 2000	53	PASS
[25]	L1 PE	POSITIVE	180 2000	56	PASS
[26]	L2 PE	POSITIVE	180 2000	55	PASS
[27]	L3 PE	POSITIVE	180 2000	54	PASS
[28]	L1 PE	NEGATIVE	180 2000	54	PASS
[29]	L2 PE	NEGATIVE	180 2000	55	PASS
[30]	L3 PE	NEGATIVE	180 2000	55	PASS
[31]	L1 PE	POSITIVE	270 2000	55	PASS
[32]	L2 PE	POSITIVE	270 2000	56	PASS
[33]	L3 PE	POSITIVE	270 2000	54	PASS
[34]	L1 PE	NEGATIVE	270 2000	55	PASS
[35]	L2 PE	NEGATIVE	270 2000	54	PASS
[36]	L3 PE	NEGATIVE	270 2000	55	PASS
[37]	L1 PE	POSITIVE	90 1000	27	PASS
[38]	L2 PE	POSITIVE	90 1000	26	PASS
[39]	L3 PE	POSITIVE	90 1000	28	PASS
[40]	L1 PE	NEGATIVE	90 1000	26	PASS
[41]	L2 PE	NEGATIVE	90 1000	28	PASS
[42]	L3 PE	NEGATIVE	90 1000	26	PASS
[43]	L1 PE	POSITIVE	180 1000	28	PASS
[44]	L2 PE	POSITIVE	180 1000	26	PASS
[45]	L3 PE	POSITIVE	180 1000	26	PASS
[46]	L1 PE	NEGATIVE	180 1000	25	PASS
[47]	L2 PE	NEGATIVE	180 1000	27	PASS
[48]	L3 PE	NEGATIVE	180 1000	27	PASS
[49]	L1 PE	POSITIVE	270 1000	27	PASS
[50]	L2 PE	POSITIVE	270 1000	28	PASS
[51]	L3 PE	POSITIVE	270 1000	26	PASS
[52]	L1 PE	NEGATIVE	270 1000	26	PASS
[53]	L2 PE	NEGATIVE	270 1000	26	PASS
[54]	L3 PE	NEGATIVE	270 1000	27	PASS
[55]	L1 PE	POSITIVE	90 2000	55	PASS
[56]	L2 PE	POSITIVE	90 2000	55	PASS
[57]	L3 PE	POSITIVE	90 2000	56	PASS
[58]	L1 PE	NEGATIVE	90 2000	55	PASS
[59]	L2 PE	NEGATIVE	90 2000	56	PASS
[60]	L3 PE	NEGATIVE	90 2000	53	PASS
[61]	L1 PE	POSITIVE	180 2000	56	PASS
[62]	L2 PE	POSITIVE	180 2000	55	PASS
[63]	L3 PE	POSITIVE	180 2000	55	PASS
[64]	L1 PE	NEGATIVE	180 2000	54	PASS
[65]	L2 PE	NEGATIVE	180 2000	55	PASS
[66]	L3 PE	NEGATIVE	180 2000	54	PASS
[67]	L1 PE	POSITIVE	270 2000	55	PASS
[68]	L2 PE	POSITIVE	270 2000	56	PASS
[69]	L3 PE	POSITIVE	270 2000	54	PASS
[70]	L1 PE	NEGATIVE	270 2000	54	PASS
[71]	L2 PE	NEGATIVE	270 2000	53	PASS
[72]	L3 PE	NEGATIVE	270 2000	55	PASS

SOMAR

Date: 21/12/2004 **Time:** 15:15:56 **Company:** Schaffner

Equipment Tested	PBI Size 1
Serial Number	Test sample
Test Equipment used	Schaffner NSG 2050/PNW 2050
Test Procedure Used	EN 61000-4-5 called by EN 60947-2

Test #1

Version	Win2050 Ver 4.00
Test Name	C:\PSUITE\WIN2050\3P1KVL-L.PLS
Pulse Type	PNW2050 2 OHMS
Status	PASS
Description	EUT running motor load and monitored during tests. No effects. No failures.

Comments
Time Elapsed 0000:35:58

PARAMETER		OPERATION		FROM	TO	STEP
SIZE	FAIL VALUE	UNITS				
Polarity	POSITIVE,NEGATIVE					N/A
Coupler	L2 L3,L1 L3,L1 L2				N/A	
Voltage	Static	500	1000	500	N/A	Volts
Angle	Static	90	270	90	N/A	Degrees

Sync	SYNCHRONOUS
Repetition Rate	30 seconds
Ambient Temperature	18°C
Humidity	40%
Pressure	1001mB
Tested by	EMC Network SW
Title	pbi_02

Full Test Report

[No]	Polarity	Coupler	Voltage	Angle	[Measured IP]	[Status]
[1]	POSITIVE	L2 L3	500 90	31	PASS	
[2]	NEGATIVE	L2 L3	500 90	23	PASS	
[3]	POSITIVE	L1 L3	500 90	28	PASS	
[4]	NEGATIVE	L1 L3	500 90	25	PASS	
[5]	POSITIVE	L1 L2	500 90	30	PASS	
[6]	NEGATIVE	L1 L2	500 90	25	PASS	
[7]	POSITIVE	L2 L3	1000	90	56	PASS
[8]	NEGATIVE	L2 L3	1000	90	47	PASS
[9]	POSITIVE	L1 L3	1000	90	53	PASS
[10]	NEGATIVE	L1 L3	1000	90	50	PASS
[11]	POSITIVE	L1 L2	1000	90	55	PASS
[12]	NEGATIVE	L1 L2	1000	90	50	PASS
[13]	POSITIVE	L2 L3	500 180	28	PASS	
[14]	NEGATIVE	L2 L3	500 180	27	PASS	
[15]	POSITIVE	L1 L3	500 180	23	PASS	
[16]	NEGATIVE	L1 L3	500 180	30	PASS	
[17]	POSITIVE	L1 L2	500 180	31	PASS	
[18]	NEGATIVE	L1 L2	500 180	24	PASS	
[19]	POSITIVE	L2 L3	1000	180	52	PASS
[20]	NEGATIVE	L2 L3	1000	180	52	PASS
[21]	POSITIVE	L1 L3	1000	180	48	PASS
[22]	NEGATIVE	L1 L3	1000	180	54	PASS
[23]	POSITIVE	L1 L2	1000	180	56	PASS
[24]	NEGATIVE	L1 L2	1000	180	49	PASS
[25]	POSITIVE	L2 L3	500 270	23	PASS	
[26]	NEGATIVE	L2 L3	500 270	31	PASS	
[27]	POSITIVE	L1 L3	500 270	25	PASS	
[28]	NEGATIVE	L1 L3	500 270	29	PASS	
[29]	POSITIVE	L1 L2	500 270	25	PASS	
[30]	NEGATIVE	L1 L2	500 270	30	PASS	
[31]	POSITIVE	L2 L3	1000	270	48	PASS
[32]	NEGATIVE	L2 L3	1000	270	56	PASS
[33]	POSITIVE	L1 L3	1000	270	50	PASS
[34]	NEGATIVE	L1 L3	1000	270	53	PASS
[35]	POSITIVE	L1 L2	1000	270	50	PASS
[36]	NEGATIVE	L1 L2	1000	270	55	PASS
[37]	POSITIVE	L2 L3	500 90	31	PASS	
[38]	NEGATIVE	L2 L3	500 90	23	PASS	
[39]	POSITIVE	L1 L3	500 90	29	PASS	
[40]	NEGATIVE	L1 L3	500 90	25	PASS	
[41]	POSITIVE	L1 L2	500 90	30	PASS	
[42]	NEGATIVE	L1 L2	500 90	26	PASS	
[43]	POSITIVE	L2 L3	1000	90	56	PASS
[44]	NEGATIVE	L2 L3	1000	90	48	PASS
[45]	POSITIVE	L1 L3	1000	90	53	PASS
[46]	NEGATIVE	L1 L3	1000	90	47	PASS
[47]	POSITIVE	L1 L2	1000	90	55	PASS
[48]	NEGATIVE	L1 L2	1000	90	50	PASS
[49]	POSITIVE	L2 L3	500 180	27	PASS	
[50]	NEGATIVE	L2 L3	500 180	27	PASS	
[51]	POSITIVE	L1 L3	500 180	23	PASS	
[52]	NEGATIVE	L1 L3	500 180	30	PASS	
[53]	POSITIVE	L1 L2	500 180	31	PASS	
[54]	NEGATIVE	L1 L2	500 180	24	PASS	
[55]	POSITIVE	L2 L3	1000	180	52	PASS
[56]	NEGATIVE	L2 L3	1000	180	52	PASS
[57]	POSITIVE	L1 L3	1000	180	48	PASS
[58]	NEGATIVE	L1 L3	1000	180	54	PASS
[59]	POSITIVE	L1 L2	1000	180	56	PASS
[60]	NEGATIVE	L1 L2	1000	180	49	PASS
[61]	POSITIVE	L2 L3	500 270	23	PASS	
[62]	NEGATIVE	L2 L3	500 270	31	PASS	
[63]	POSITIVE	L1 L3	500 270	25	PASS	
[64]	NEGATIVE	L1 L3	500 270	28	PASS	
[65]	POSITIVE	L1 L2	500 270	25	PASS	
[66]	NEGATIVE	L1 L2	500 270	30	PASS	
[67]	POSITIVE	L2 L3	1000	270	48	PASS
[68]	NEGATIVE	L2 L3	1000	270	56	PASS
[69]	POSITIVE	L1 L3	1000	270	49	PASS
[70]	NEGATIVE	L1 L3	1000	270	53	PASS
[71]	POSITIVE	L1 L2	1000	270	50	PASS
[72]	NEGATIVE	L1 L2	1000	270	55	PASS

SOMAR

Date: 21/12/2004 **Time:** 15:53:14 **Company:** Schaffner

Equipment Tested	PBI Size 1
Serial Number	Test sample
Test Equipment used	Schaffner NSG 2050/PNW 2050
Test Procedure Used	EN 61000-4-5 called by EN 60947-2

Test #1

Version	Win2050 Ver 4.00
Test Name	C:\PSUITE\WIN2050\3P1KVL-L.PLS
Pulse Type	PNW2050 2 OHMS
Status	PASS
Description	EUT running motor load and monitored during test. No effects. No failures.

Comments
Time Elapsed 0000:35:57

PARAMETER		OPERATION		FROM	TO	STEP
SIZE	FAIL VALUE	UNITS				
Polarity	POSITIVE,NEGATIVE					N/A
Coupler	L2 L3,L1 L3,L1 L2				N/A	
Voltage	Static	500	1000	500	N/A	Volts
Angle	Static	90	270	90	N/A	Degrees

Sync	SYNCHRONOUS
Repetition Rate	20 seconds
Ambient Temperature	18°C
Humidity	40%
Pressure	1001mB
Tested by	EMC Network SW
Title	pbi_03

Full Test Report

[No]	Polarity	Coupler	Voltage	Angle	[Measured IP]	[Status]
[1]	POSITIVE	L2 L3	500 90	31	PASS	
[2]	NEGATIVE	L2 L3	500 90	23	PASS	
[3]	POSITIVE	L1 L3	500 90	29	PASS	
[4]	NEGATIVE	L1 L3	500 90	25	PASS	
[5]	POSITIVE	L1 L2	500 90	30	PASS	
[6]	NEGATIVE	L1 L2	500 90	25	PASS	
[7]	POSITIVE	L2 L3	1000	90	56	PASS
[8]	NEGATIVE	L2 L3	1000	90	48	PASS
[9]	POSITIVE	L1 L3	1000	90	53	PASS
[10]	NEGATIVE	L1 L3	1000	90	49	PASS
[11]	POSITIVE	L1 L2	1000	90	55	PASS
[12]	NEGATIVE	L1 L2	1000	90	50	PASS
[13]	POSITIVE	L2 L3	500 180	28	PASS	
[14]	NEGATIVE	L2 L3	500 180	27	PASS	
[15]	POSITIVE	L1 L3	500 180	23	PASS	
[16]	NEGATIVE	L1 L3	500 180	30	PASS	
[17]	POSITIVE	L1 L2	500 180	31	PASS	
[18]	NEGATIVE	L1 L2	500 180	24	PASS	
[19]	POSITIVE	L2 L3	1000	180	52	PASS
[20]	NEGATIVE	L2 L3	1000	180	52	PASS
[21]	POSITIVE	L1 L3	1000	180	48	PASS
[22]	NEGATIVE	L1 L3	1000	180	54	PASS
[23]	POSITIVE	L1 L2	1000	180	56	PASS
[24]	NEGATIVE	L1 L2	1000	180	49	PASS
[25]	POSITIVE	L2 L3	500 270	23	PASS	
[26]	NEGATIVE	L2 L3	500 270	31	PASS	
[27]	POSITIVE	L1 L3	500 270	25	PASS	
[28]	NEGATIVE	L1 L3	500 270	29	PASS	
[29]	POSITIVE	L1 L2	500 270	25	PASS	
[30]	NEGATIVE	L1 L2	500 270	30	PASS	
[31]	POSITIVE	L2 L3	1000	270	48	PASS
[32]	NEGATIVE	L2 L3	1000	270	56	PASS
[33]	POSITIVE	L1 L3	1000	270	50	PASS
[34]	NEGATIVE	L1 L3	1000	270	53	PASS
[35]	POSITIVE	L1 L2	1000	270	50	PASS
[36]	NEGATIVE	L1 L2	1000	270	54	PASS
[37]	POSITIVE	L2 L3	500 90	31	PASS	
[38]	NEGATIVE	L2 L3	500 90	23	PASS	
[39]	POSITIVE	L1 L3	500 90	29	PASS	
[40]	NEGATIVE	L1 L3	500 90	25	PASS	
[41]	POSITIVE	L1 L2	500 90	30	PASS	
[42]	NEGATIVE	L1 L2	500 90	25	PASS	
[43]	POSITIVE	L2 L3	1000	90	56	PASS
[44]	NEGATIVE	L2 L3	1000	90	48	PASS
[45]	POSITIVE	L1 L3	1000	90	53	PASS
[46]	NEGATIVE	L1 L3	1000	90	49	PASS
[47]	POSITIVE	L1 L2	1000	90	55	PASS
[48]	NEGATIVE	L1 L2	1000	90	50	PASS
[49]	POSITIVE	L2 L3	500 180	27	PASS	
[50]	NEGATIVE	L2 L3	500 180	27	PASS	
[51]	POSITIVE	L1 L3	500 180	23	PASS	
[52]	NEGATIVE	L1 L3	500 180	30	PASS	
[53]	POSITIVE	L1 L2	500 180	31	PASS	
[54]	NEGATIVE	L1 L2	500 180	23	PASS	
[55]	POSITIVE	L2 L3	1000	180	52	PASS
[56]	NEGATIVE	L2 L3	1000	180	51	PASS
[57]	POSITIVE	L1 L3	1000	180	48	PASS
[58]	NEGATIVE	L1 L3	1000	180	54	PASS
[59]	POSITIVE	L1 L2	1000	180	56	PASS
[60]	NEGATIVE	L1 L2	1000	180	49	PASS
[61]	POSITIVE	L2 L3	500 270	23	PASS	
[62]	NEGATIVE	L2 L3	500 270	31	PASS	
[63]	POSITIVE	L1 L3	500 270	25	PASS	
[64]	NEGATIVE	L1 L3	500 270	29	PASS	
[65]	POSITIVE	L1 L2	500 270	25	PASS	
[66]	NEGATIVE	L1 L2	500 270	30	PASS	
[67]	POSITIVE	L2 L3	1000	270	48	PASS
[68]	NEGATIVE	L2 L3	1000	270	56	PASS
[69]	POSITIVE	L1 L3	1000	270	50	PASS
[70]	NEGATIVE	L1 L3	1000	270	53	PASS
[71]	POSITIVE	L1 L2	1000	270	50	PASS
[72]	NEGATIVE	L1 L2	1000	270	55	PASS
[73]	POSITIVE	L2 L3	500 90	31	PASS	
[74]	NEGATIVE	L2 L3	500 90	23	PASS	
[75]	POSITIVE	L1 L3	500 90	29	PASS	
[76]	NEGATIVE	L1 L3	500 90	25	PASS	
[77]	POSITIVE	L1 L2	500 90	30	PASS	
[78]	NEGATIVE	L1 L2	500 90	25	PASS	
[79]	POSITIVE	L2 L3	1000	90	56	PASS
[80]	NEGATIVE	L2 L3	1000	90	48	PASS
[81]	POSITIVE	L1 L3	1000	90	53	PASS
[82]	NEGATIVE	L1 L3	1000	90	49	PASS
[83]	POSITIVE	L1 L2	1000	90	55	PASS
[84]	NEGATIVE	L1 L2	1000	90	50	PASS
[85]	POSITIVE	L2 L3	500 180	27	PASS	
[86]	NEGATIVE	L2 L3	500 180	27	PASS	
[87]	POSITIVE	L1 L3	500 180	23	PASS	
[88]	NEGATIVE	L1 L3	500 180	30	PASS	
[89]	POSITIVE	L1 L2	500 180	31	PASS	
[90]	NEGATIVE	L1 L2	500 180	24	PASS	
[91]	POSITIVE	L2 L3	1000	180	52	PASS
[92]	NEGATIVE	L2 L3	1000	180	52	PASS
[93]	POSITIVE	L1 L3	1000	180	48	PASS
[94]	NEGATIVE	L1 L3	1000	180	54	PASS
[95]	POSITIVE	L1 L2	1000	180	56	PASS
[96]	NEGATIVE	L1 L2	1000	180	49	PASS

[97]	POSITIVE	L2 L3	500 270	23	PASS	
[98]	NEGATIVE	L2 L3	500 270	31	PASS	
[99]	POSITIVE	L1 L3	500 270	25	PASS	
[100]	NEGATIVE	L1 L3	500 270	28	PASS	
[101]	POSITIVE	L1 L2	500 270	25	PASS	
[102]	NEGATIVE	L1 L2	500 270	30	PASS	
[103]	POSITIVE	L2 L3	1000	270	48	PASS
[104]	NEGATIVE	L2 L3	1000	270	56	PASS
[105]	POSITIVE	L1 L3	1000	270	50	PASS
[106]	NEGATIVE	L1 L3	1000	270	53	PASS
[107]	POSITIVE	L1 L2	1000	270	50	PASS
[108]	NEGATIVE	L1 L2	1000	270	55	PASS

SOMAR

Date: 22/12/2004 **Time:** 08:59:09 **Company:** Schaffner

Equipment Tested	PBI Size 1
Serial Number	Test sample
Test Equipment used	Schaffner NSG 2050/PNW 2050
Test Procedure Used	EN 61000-4-5 called by EN 60947-2

Test #1

Version	Win2050 Ver 4.00
Test Name	C:\PSUITE\WIN2050\3P1KVL-E.PLS
Pulse Type	PNW2050 12 OHMS
Status	PASS
Description	EUT running motor load and monitored during test. No effects. No failures.

Comments
Time Elapsed 0000:59:56

PARAMETER		OPERATION		FROM	TO	STEP
SIZE	FAIL VALUE	UNITS				
Coupler	L3 PE,L2 PE,L1 PE				N/A	
Angle	Static	90	270	90	N/A	Degrees
Polarity	POSITIVE,NEGATIVE					N/A
Voltage	Static	500	1000	500	N/A	Volts

Sync	SYNCHRONOUS
Repetition Rate	20 seconds
Ambient Temperature	19°C
Humidity	46%
Pressure	1001mB
Tested by	EMC Network SW
Title	pbi_04

Full Test Report

[No]	Coupler	Angle	Polarity	Voltage	[Measured IP]	[Status]
[1]	L3 PE	90	POSITIVE	500	14	PASS
[2]	L2 PE	90	POSITIVE	500	11	PASS
[3]	L1 PE	90	POSITIVE	500	13	PASS
[4]	L3 PE	180	POSITIVE	500	12	PASS
[5]	L2 PE	180	POSITIVE	500	12	PASS
[6]	L1 PE	180	POSITIVE	500	14	PASS
[7]	L3 PE	270	POSITIVE	500	12	PASS
[8]	L2 PE	270	POSITIVE	500	14	PASS
[9]	L1 PE	270	POSITIVE	500	13	PASS
[10]	L3 PE	90	NEGATIVE	500	11	PASS
[11]	L2 PE	90	NEGATIVE	500	14	PASS
[12]	L1 PE	90	NEGATIVE	500	12	PASS
[13]	L3 PE	180	NEGATIVE	500	13	PASS
[14]	L2 PE	180	NEGATIVE	500	13	PASS
[15]	L1 PE	180	NEGATIVE	500	11	PASS
[16]	L3 PE	270	NEGATIVE	500	13	PASS
[17]	L2 PE	270	NEGATIVE	500	11	PASS
[18]	L1 PE	270	NEGATIVE	500	12	PASS
[19]	L3 PE	90	POSITIVE	1000	28	PASS
[20]	L2 PE	90	POSITIVE	1000	26	PASS
[21]	L1 PE	90	POSITIVE	1000	27	PASS
[22]	L3 PE	180	POSITIVE	1000	27	PASS
[23]	L2 PE	180	POSITIVE	1000	27	PASS
[24]	L1 PE	180	POSITIVE	1000	28	PASS
[25]	L3 PE	270	POSITIVE	1000	26	PASS
[26]	L2 PE	270	POSITIVE	1000	28	PASS
[27]	L1 PE	270	POSITIVE	1000	27	PASS
[28]	L3 PE	90	NEGATIVE	1000	26	PASS
[29]	L2 PE	90	NEGATIVE	1000	27	PASS
[30]	L1 PE	90	NEGATIVE	1000	27	PASS
[31]	L3 PE	180	NEGATIVE	1000	27	PASS
[32]	L2 PE	180	NEGATIVE	1000	28	PASS
[33]	L1 PE	180	NEGATIVE	1000	26	PASS
[34]	L3 PE	270	NEGATIVE	1000	28	PASS
[35]	L2 PE	270	NEGATIVE	1000	26	PASS
[36]	L1 PE	270	NEGATIVE	1000	27	PASS
[37]	L3 PE	90	POSITIVE	500	13	PASS
[38]	L2 PE	90	POSITIVE	500	11	PASS
[39]	L1 PE	90	POSITIVE	500	13	PASS
[40]	L3 PE	180	POSITIVE	500	12	PASS
[41]	L2 PE	180	POSITIVE	500	12	PASS
[42]	L1 PE	180	POSITIVE	500	14	PASS
[43]	L3 PE	270	POSITIVE	500	12	PASS
[44]	L2 PE	270	POSITIVE	500	14	PASS
[45]	L1 PE	270	POSITIVE	500	13	PASS
[46]	L3 PE	90	NEGATIVE	500	11	PASS
[47]	L2 PE	90	NEGATIVE	500	14	PASS
[48]	L1 PE	90	NEGATIVE	500	12	PASS
[49]	L3 PE	180	NEGATIVE	500	13	PASS
[50]	L2 PE	180	NEGATIVE	500	13	PASS
[51]	L1 PE	180	NEGATIVE	500	11	PASS
[52]	L3 PE	270	NEGATIVE	500	13	PASS
[53]	L2 PE	270	NEGATIVE	500	11	PASS
[54]	L1 PE	270	NEGATIVE	500	12	PASS
[55]	L3 PE	90	POSITIVE	1000	28	PASS
[56]	L2 PE	90	POSITIVE	1000	26	PASS
[57]	L1 PE	90	POSITIVE	1000	27	PASS
[58]	L3 PE	180	POSITIVE	1000	27	PASS
[59]	L2 PE	180	POSITIVE	1000	26	PASS
[60]	L1 PE	180	POSITIVE	1000	28	PASS
[61]	L3 PE	270	POSITIVE	1000	26	PASS
[62]	L2 PE	270	POSITIVE	1000	28	PASS
[63]	L1 PE	270	POSITIVE	1000	27	PASS
[64]	L3 PE	90	NEGATIVE	1000	26	PASS
[65]	L2 PE	90	NEGATIVE	1000	28	PASS
[66]	L1 PE	90	NEGATIVE	1000	27	PASS
[67]	L3 PE	180	NEGATIVE	1000	27	PASS
[68]	L2 PE	180	NEGATIVE	1000	27	PASS
[69]	L1 PE	180	NEGATIVE	1000	26	PASS
[70]	L3 PE	270	NEGATIVE	1000	28	PASS
[71]	L2 PE	270	NEGATIVE	1000	26	PASS
[72]	L1 PE	270	NEGATIVE	1000	27	PASS
[73]	L3 PE	90	POSITIVE	500	14	PASS
[74]	L2 PE	90	POSITIVE	500	11	PASS
[75]	L1 PE	90	POSITIVE	500	13	PASS
[76]	L3 PE	180	POSITIVE	500	12	PASS
[77]	L2 PE	180	POSITIVE	500	12	PASS
[78]	L1 PE	180	POSITIVE	500	14	PASS
[79]	L3 PE	270	POSITIVE	500	11	PASS
[80]	L2 PE	270	POSITIVE	500	14	PASS
[81]	L1 PE	270	POSITIVE	500	13	PASS
[82]	L3 PE	90	NEGATIVE	500	11	PASS
[83]	L2 PE	90	NEGATIVE	500	14	PASS
[84]	L1 PE	90	NEGATIVE	500	12	PASS
[85]	L3 PE	180	NEGATIVE	500	13	PASS
[86]	L2 PE	180	NEGATIVE	500	13	PASS
[87]	L1 PE	180	NEGATIVE	500	11	PASS
[88]	L3 PE	270	NEGATIVE	500	13	PASS
[89]	L2 PE	270	NEGATIVE	500	11	PASS
[90]	L1 PE	270	NEGATIVE	500	13	PASS
[91]	L3 PE	90	POSITIVE	1000	28	PASS
[92]	L2 PE	90	POSITIVE	1000	26	PASS
[93]	L1 PE	90	POSITIVE	1000	27	PASS
[94]	L3 PE	180	POSITIVE	1000	27	PASS
[95]	L2 PE	180	POSITIVE	1000	27	PASS
[96]	L1 PE	180	POSITIVE	1000	28	PASS

[97]	L3 PE	270	POSITIVE	1000	26	PASS
[98]	L2 PE	270	POSITIVE	1000	28	PASS
[99]	L1 PE	270	POSITIVE	1000	27	PASS
[100]	L3 PE	90	NEGATIVE	1000	26	PASS
[101]	L2 PE	90	NEGATIVE	1000	27	PASS
[102]	L1 PE	90	NEGATIVE	1000	27	PASS
[103]	L3 PE	180	NEGATIVE	1000	27	PASS
[104]	L2 PE	180	NEGATIVE	1000	27	PASS
[105]	L1 PE	180	NEGATIVE	1000	26	PASS
[106]	L3 PE	270	NEGATIVE	1000	28	PASS
[107]	L2 PE	270	NEGATIVE	1000	26	PASS
[108]	L1 PE	270	NEGATIVE	1000	27	PASS
[109]	L3 PE	90	POSITIVE	500	14	PASS
[110]	L2 PE	90	POSITIVE	500	11	PASS
[111]	L1 PE	90	POSITIVE	500	13	PASS
[112]	L3 PE	180	POSITIVE	500	12	PASS
[113]	L2 PE	180	POSITIVE	500	12	PASS
[114]	L1 PE	180	POSITIVE	500	14	PASS
[115]	L3 PE	270	POSITIVE	500	12	PASS
[116]	L2 PE	270	POSITIVE	500	14	PASS
[117]	L1 PE	270	POSITIVE	500	13	PASS
[118]	L3 PE	90	NEGATIVE	500	11	PASS
[119]	L2 PE	90	NEGATIVE	500	14	PASS
[120]	L1 PE	90	NEGATIVE	500	12	PASS
[121]	L3 PE	180	NEGATIVE	500	13	PASS
[122]	L2 PE	180	NEGATIVE	500	13	PASS
[123]	L1 PE	180	NEGATIVE	500	11	PASS
[124]	L3 PE	270	NEGATIVE	500	13	PASS
[125]	L2 PE	270	NEGATIVE	500	11	PASS
[126]	L1 PE	270	NEGATIVE	500	13	PASS
[127]	L3 PE	90	POSITIVE	1000	28	PASS
[128]	L2 PE	90	POSITIVE	1000	26	PASS
[129]	L1 PE	90	POSITIVE	1000	27	PASS
[130]	L3 PE	180	POSITIVE	1000	27	PASS
[131]	L2 PE	180	POSITIVE	1000	26	PASS
[132]	L1 PE	180	POSITIVE	1000	28	PASS
[133]	L3 PE	270	POSITIVE	1000	26	PASS
[134]	L2 PE	270	POSITIVE	1000	28	PASS
[135]	L1 PE	270	POSITIVE	1000	27	PASS
[136]	L3 PE	90	NEGATIVE	1000	26	PASS
[137]	L2 PE	90	NEGATIVE	1000	27	PASS
[138]	L1 PE	90	NEGATIVE	1000	27	PASS
[139]	L3 PE	180	NEGATIVE	1000	27	PASS
[140]	L2 PE	180	NEGATIVE	1000	27	PASS
[141]	L1 PE	180	NEGATIVE	1000	26	PASS
[142]	L3 PE	270	NEGATIVE	1000	28	PASS
[143]	L2 PE	270	NEGATIVE	1000	26	PASS
[144]	L1 PE	270	NEGATIVE	1000	27	PASS
[145]	L3 PE	90	POSITIVE	500	13	PASS
[146]	L2 PE	90	POSITIVE	500	12	PASS
[147]	L1 PE	90	POSITIVE	500	13	PASS
[148]	L3 PE	180	POSITIVE	500	12	PASS
[149]	L2 PE	180	POSITIVE	500	12	PASS
[150]	L1 PE	180	POSITIVE	500	14	PASS
[151]	L3 PE	270	POSITIVE	500	11	PASS
[152]	L2 PE	270	POSITIVE	500	14	PASS
[153]	L1 PE	270	POSITIVE	500	13	PASS
[154]	L3 PE	90	NEGATIVE	500	11	PASS
[155]	L2 PE	90	NEGATIVE	500	14	PASS
[156]	L1 PE	90	NEGATIVE	500	12	PASS
[157]	L3 PE	180	NEGATIVE	500	13	PASS
[158]	L2 PE	180	NEGATIVE	500	13	PASS
[159]	L1 PE	180	NEGATIVE	500	11	PASS
[160]	L3 PE	270	NEGATIVE	500	13	PASS
[161]	L2 PE	270	NEGATIVE	500	11	PASS
[162]	L1 PE	270	NEGATIVE	500	13	PASS
[163]	L3 PE	90	POSITIVE	1000	28	PASS
[164]	L2 PE	90	POSITIVE	1000	26	PASS
[165]	L1 PE	90	POSITIVE	1000	27	PASS
[166]	L3 PE	180	POSITIVE	1000	27	PASS
[167]	L2 PE	180	POSITIVE	1000	27	PASS
[168]	L1 PE	180	POSITIVE	1000	28	PASS
[169]	L3 PE	270	POSITIVE	1000	26	PASS
[170]	L2 PE	270	POSITIVE	1000	28	PASS
[171]	L1 PE	270	POSITIVE	1000	27	PASS
[172]	L3 PE	90	NEGATIVE	1000	26	PASS
[173]	L2 PE	90	NEGATIVE	1000	28	PASS
[174]	L1 PE	90	NEGATIVE	1000	27	PASS
[175]	L3 PE	180	NEGATIVE	1000	27	PASS
[176]	L2 PE	180	NEGATIVE	1000	27	PASS
[177]	L1 PE	180	NEGATIVE	1000	26	PASS
[178]	L3 PE	270	NEGATIVE	1000	27	PASS
[179]	L2 PE	270	NEGATIVE	1000	26	PASS
[180]	L1 PE	270	NEGATIVE	1000	27	PASS

SOMAR

Date: 22/12/2004 **Time:** 09:42:11 **Company:** Schaffner

Equipment Tested	PBI Size 1
Serial Number	Test sample
Test Equipment used	Schaffner NSG 2050/PNW 2050
Test Procedure Used	EN 61000-4-5 called by EN 60947-2

Test #1

Version	Win2050 Ver 4.00
Test Name	C:\PSUITE\WIN2050\3P1KVL-E.PLS
Pulse Type	PNW2050 12 OHMS
Status	PASS
Description	EUT running motor load and monitored during test. No effects. No failures.

Comments
Time Elapsed 0000:29:58

PARAMETER		OPERATION		FROM	TO	STEP
SIZE	FAIL VALUE	UNITS				
Coupler	L3 PE,L2 PE,L1 PE				N/A	
Angle	Static	90	270	90	N/A	Degrees
Polarity	POSITIVE,NEGATIVE					N/A
Voltage	Static	2000	- - -	- - -	N/A	Volts

Sync	SYNCHRONOUS
Repetition Rate	20 seconds
Ambient Temperature	19°C
Humidity	46%
Pressure	1001mB
Tested by	EMC Network SW
Title	pbi_05

Full Test Report

[No]	Coupler	Angle	Polarity	Voltage	[Measured IP]	[Status]
[1]	L3 PE	90	POSITIVE	2000	56	PASS
[2]	L2 PE	90	POSITIVE	2000	55	PASS
[3]	L1 PE	90	POSITIVE	2000	55	PASS
[4]	L3 PE	180	POSITIVE	2000	55	PASS
[5]	L2 PE	180	POSITIVE	2000	55	PASS
[6]	L1 PE	180	POSITIVE	2000	56	PASS
[7]	L3 PE	270	POSITIVE	2000	55	PASS
[8]	L2 PE	270	POSITIVE	2000	57	PASS
[9]	L1 PE	270	POSITIVE	2000	55	PASS
[10]	L3 PE	90	NEGATIVE	2000	54	PASS
[11]	L2 PE	90	NEGATIVE	2000	56	PASS
[12]	L1 PE	90	NEGATIVE	2000	55	PASS
[13]	L3 PE	180	NEGATIVE	2000	55	PASS
[14]	L2 PE	180	NEGATIVE	2000	55	PASS
[15]	L1 PE	180	NEGATIVE	2000	54	PASS
[16]	L3 PE	270	NEGATIVE	2000	55	PASS
[17]	L2 PE	270	NEGATIVE	2000	54	PASS
[18]	L1 PE	270	NEGATIVE	2000	54	PASS
[19]	L3 PE	90	POSITIVE	2000	56	PASS
[20]	L2 PE	90	POSITIVE	2000	55	PASS
[21]	L1 PE	90	POSITIVE	2000	55	PASS
[22]	L3 PE	180	POSITIVE	2000	55	PASS
[23]	L2 PE	180	POSITIVE	2000	55	PASS
[24]	L1 PE	180	POSITIVE	2000	57	PASS
[25]	L3 PE	270	POSITIVE	2000	54	PASS
[26]	L2 PE	270	POSITIVE	2000	57	PASS
[27]	L1 PE	270	POSITIVE	2000	56	PASS
[28]	L3 PE	90	NEGATIVE	2000	53	PASS
[29]	L2 PE	90	NEGATIVE	2000	56	PASS
[30]	L1 PE	90	NEGATIVE	2000	55	PASS
[31]	L3 PE	180	NEGATIVE	2000	55	PASS
[32]	L2 PE	180	NEGATIVE	2000	55	PASS
[33]	L1 PE	180	NEGATIVE	2000	54	PASS
[34]	L3 PE	270	NEGATIVE	2000	55	PASS
[35]	L2 PE	270	NEGATIVE	2000	54	PASS
[36]	L1 PE	270	NEGATIVE	2000	55	PASS
[37]	L3 PE	90	POSITIVE	2000	56	PASS
[38]	L2 PE	90	POSITIVE	2000	54	PASS
[39]	L1 PE	90	POSITIVE	2000	55	PASS
[40]	L3 PE	180	POSITIVE	2000	55	PASS
[41]	L2 PE	180	POSITIVE	2000	55	PASS
[42]	L1 PE	180	POSITIVE	2000	57	PASS
[43]	L3 PE	270	POSITIVE	2000	54	PASS
[44]	L2 PE	270	POSITIVE	2000	57	PASS
[45]	L1 PE	270	POSITIVE	2000	55	PASS
[46]	L3 PE	90	NEGATIVE	2000	53	PASS
[47]	L2 PE	90	NEGATIVE	2000	55	PASS
[48]	L1 PE	90	NEGATIVE	2000	55	PASS
[49]	L3 PE	180	NEGATIVE	2000	54	PASS
[50]	L2 PE	180	NEGATIVE	2000	55	PASS
[51]	L1 PE	180	NEGATIVE	2000	54	PASS
[52]	L3 PE	270	NEGATIVE	2000	55	PASS
[53]	L2 PE	270	NEGATIVE	2000	54	PASS
[54]	L1 PE	270	NEGATIVE	2000	54	PASS
[55]	L3 PE	90	POSITIVE	2000	56	PASS
[56]	L2 PE	90	POSITIVE	2000	55	PASS
[57]	L1 PE	90	POSITIVE	2000	55	PASS
[58]	L3 PE	180	POSITIVE	2000	55	PASS
[59]	L2 PE	180	POSITIVE	2000	55	PASS
[60]	L1 PE	180	POSITIVE	2000	56	PASS
[61]	L3 PE	270	POSITIVE	2000	54	PASS
[62]	L2 PE	270	POSITIVE	2000	56	PASS
[63]	L1 PE	270	POSITIVE	2000	55	PASS
[64]	L3 PE	90	NEGATIVE	2000	54	PASS
[65]	L2 PE	90	NEGATIVE	2000	56	PASS
[66]	L1 PE	90	NEGATIVE	2000	54	PASS
[67]	L3 PE	180	NEGATIVE	2000	54	PASS
[68]	L2 PE	180	NEGATIVE	2000	55	PASS
[69]	L1 PE	180	NEGATIVE	2000	54	PASS
[70]	L3 PE	270	NEGATIVE	2000	55	PASS
[71]	L2 PE	270	NEGATIVE	2000	54	PASS
[72]	L1 PE	270	NEGATIVE	2000	55	PASS
[73]	L3 PE	90	POSITIVE	2000	56	PASS
[74]	L2 PE	90	POSITIVE	2000	55	PASS
[75]	L1 PE	90	POSITIVE	2000	55	PASS
[76]	L3 PE	180	POSITIVE	2000	55	PASS
[77]	L2 PE	180	POSITIVE	2000	55	PASS
[78]	L1 PE	180	POSITIVE	2000	56	PASS
[79]	L3 PE	270	POSITIVE	2000	54	PASS
[80]	L2 PE	270	POSITIVE	2000	56	PASS
[81]	L1 PE	270	POSITIVE	2000	55	PASS
[82]	L3 PE	90	NEGATIVE	2000	53	PASS
[83]	L2 PE	90	NEGATIVE	2000	55	PASS
[84]	L1 PE	90	NEGATIVE	2000	55	PASS
[85]	L3 PE	180	NEGATIVE	2000	54	PASS
[86]	L2 PE	180	NEGATIVE	2000	55	PASS
[87]	L1 PE	180	NEGATIVE	2000	54	PASS
[88]	L3 PE	270	NEGATIVE	2000	55	PASS
[89]	L2 PE	270	NEGATIVE	2000	54	PASS
[90]	L1 PE	270	NEGATIVE	2000	55	PASS

Date: 04/01/2005 **Time:** 10:06:45 **Company:** Schaffner

Equipment Tested	PBI Size 2
Serial Number	Test sample
Test Equipment used	Schaffner NSG 2050/PNW 2050
Test Procedure Used	EN 61000-4-5 called by EN 60947-2

Test #1

Version	Win2050 Ver 4.00
Test Name	C:\PSUITE\WIN2050\3P1KVL-E.PLS
Pulse Type	PNW2050 12 OHMS
Status	PASS
Description	EUT running motor load during tests. No effects. No failures

Comments

Time Elapsed 0000:59:54

PARAMETER		OPERATION		FROM	TO	STEP
SIZE	FAIL VALUE	UNITS				
Polarity	POSITIVE,NEGATIVE					N/A
Coupler	L3 PE,L2 PE,L1 PE				N/A	
Voltage	Static	500	1000	500	N/A	Volts
Angle	Static	90	270	90	N/A	Degrees

Sync	SYNCHRONOUS
Repetition Rate	20 seconds
Ambient Temperature	18°C
Humidity	52%
Pressure	1005mB
Tested by	EMC Network SW
Title	pbi_06

Full Test Report

[No]	Polarity	Coupler	Voltage	Angle	[Measured IP]	[Status]
[1]	POSITIVE	L3 PE	500 90	11	PASS	
[2]	NEGATIVE	L3 PE	500 90	9	PASS	
[3]	POSITIVE	L2 PE	500 90	9	PASS	
[4]	NEGATIVE	L2 PE	500 90	12	PASS	
[5]	POSITIVE	L1 PE	500 90	17	PASS	
[6]	NEGATIVE	L1 PE	500 90	10	PASS	
[7]	POSITIVE	L3 PE	1000	90	29	PASS
[8]	NEGATIVE	L3 PE	1000	90	40	PASS
[9]	POSITIVE	L2 PE	1000	90	28	PASS
[10]	NEGATIVE	L2 PE	1000	90	42	PASS
[11]	POSITIVE	L1 PE	1000	90	53	PASS
[12]	NEGATIVE	L1 PE	1000	90	22	PASS
[13]	POSITIVE	L3 PE	500 180	10	PASS	
[14]	NEGATIVE	L3 PE	500 180	15	PASS	
[15]	POSITIVE	L2 PE	500 180	14	PASS	
[16]	NEGATIVE	L2 PE	500 180	11	PASS	
[17]	POSITIVE	L1 PE	500 180	11	PASS	
[18]	NEGATIVE	L1 PE	500 180	9	PASS	
[19]	POSITIVE	L3 PE	1000	180	26	PASS
[20]	NEGATIVE	L3 PE	1000	180	51	PASS
[21]	POSITIVE	L2 PE	1000	180	49	PASS
[22]	NEGATIVE	L2 PE	1000	180	27	PASS
[23]	POSITIVE	L1 PE	1000	180	32	PASS
[24]	NEGATIVE	L1 PE	1000	180	29	PASS
[25]	POSITIVE	L3 PE	500 270	9	PASS	
[26]	NEGATIVE	L3 PE	500 270	11	PASS	
[27]	POSITIVE	L2 PE	500 270	12	PASS	
[28]	NEGATIVE	L2 PE	500 270	9	PASS	
[29]	POSITIVE	L1 PE	500 270	10	PASS	
[30]	NEGATIVE	L1 PE	500 270	17	PASS	
[31]	POSITIVE	L3 PE	1000	270	40	PASS
[32]	NEGATIVE	L3 PE	1000	270	29	PASS
[33]	POSITIVE	L2 PE	1000	270	40	PASS
[34]	NEGATIVE	L2 PE	1000	270	27	PASS
[35]	POSITIVE	L1 PE	1000	270	22	PASS
[36]	NEGATIVE	L1 PE	1000	270	54	PASS
[37]	POSITIVE	L3 PE	500 90	11	PASS	
[38]	NEGATIVE	L3 PE	500 90	9	PASS	
[39]	POSITIVE	L2 PE	500 90	9	PASS	
[40]	NEGATIVE	L2 PE	500 90	12	PASS	
[41]	POSITIVE	L1 PE	500 90	17	PASS	
[42]	NEGATIVE	L1 PE	500 90	10	PASS	
[43]	POSITIVE	L3 PE	1000	90	29	PASS
[44]	NEGATIVE	L3 PE	1000	90	40	PASS
[45]	POSITIVE	L2 PE	1000	90	28	PASS
[46]	NEGATIVE	L2 PE	1000	90	43	PASS
[47]	POSITIVE	L1 PE	1000	90	53	PASS
[48]	NEGATIVE	L1 PE	1000	90	22	PASS
[49]	POSITIVE	L3 PE	500 180	10	PASS	
[50]	NEGATIVE	L3 PE	500 180	16	PASS	
[51]	POSITIVE	L2 PE	500 180	14	PASS	
[52]	NEGATIVE	L2 PE	500 180	11	PASS	
[53]	POSITIVE	L1 PE	500 180	12	PASS	
[54]	NEGATIVE	L1 PE	500 180	9	PASS	
[55]	POSITIVE	L3 PE	1000	180	26	PASS
[56]	NEGATIVE	L3 PE	1000	180	51	PASS
[57]	POSITIVE	L2 PE	1000	180	50	PASS
[58]	NEGATIVE	L2 PE	1000	180	27	PASS
[59]	POSITIVE	L1 PE	1000	180	31	PASS
[60]	NEGATIVE	L1 PE	1000	180	30	PASS
[61]	POSITIVE	L3 PE	500 270	9	PASS	
[62]	NEGATIVE	L3 PE	500 270	11	PASS	
[63]	POSITIVE	L2 PE	500 270	12	PASS	
[64]	NEGATIVE	L2 PE	500 270	9	PASS	
[65]	POSITIVE	L1 PE	500 270	10	PASS	
[66]	NEGATIVE	L1 PE	500 270	17	PASS	
[67]	POSITIVE	L3 PE	1000	270	41	PASS
[68]	NEGATIVE	L3 PE	1000	270	29	PASS
[69]	POSITIVE	L2 PE	1000	270	42	PASS
[70]	NEGATIVE	L2 PE	1000	270	27	PASS
[71]	POSITIVE	L1 PE	1000	270	22	PASS
[72]	NEGATIVE	L1 PE	1000	270	53	PASS
[73]	POSITIVE	L3 PE	500 90	11	PASS	
[74]	NEGATIVE	L3 PE	500 90	9	PASS	
[75]	POSITIVE	L2 PE	500 90	9	PASS	
[76]	NEGATIVE	L2 PE	500 90	12	PASS	
[77]	POSITIVE	L1 PE	500 90	17	PASS	
[78]	NEGATIVE	L1 PE	500 90	10	PASS	
[79]	POSITIVE	L3 PE	1000	90	29	PASS
[80]	NEGATIVE	L3 PE	1000	90	40	PASS
[81]	POSITIVE	L2 PE	1000	90	27	PASS
[82]	NEGATIVE	L2 PE	1000	90	41	PASS
[83]	POSITIVE	L1 PE	1000	90	53	PASS
[84]	NEGATIVE	L1 PE	1000	90	22	PASS
[85]	POSITIVE	L3 PE	500 180	10	PASS	
[86]	NEGATIVE	L3 PE	500 180	15	PASS	
[87]	POSITIVE	L2 PE	500 180	15	PASS	
[88]	NEGATIVE	L2 PE	500 180	11	PASS	
[89]	POSITIVE	L1 PE	500 180	12	PASS	
[90]	NEGATIVE	L1 PE	500 180	9	PASS	
[91]	POSITIVE	L3 PE	1000	180	26	PASS
[92]	NEGATIVE	L3 PE	1000	180	50	PASS
[93]	POSITIVE	L2 PE	1000	180	50	PASS
[94]	NEGATIVE	L2 PE	1000	180	26	PASS
[95]	POSITIVE	L1 PE	1000	180	31	PASS
[96]	NEGATIVE	L1 PE	1000	180	31	PASS

[97]	POSITIVE	L3 PE	500 270	9	PASS	
[98]	NEGATIVE	L3 PE	500 270	11	PASS	
[99]	POSITIVE	L2 PE	500 270	12	PASS	
[100]	NEGATIVE	L2 PE	500 270	9	PASS	
[101]	POSITIVE	L1 PE	500 270	10	PASS	
[102]	NEGATIVE	L1 PE	500 270	17	PASS	
[103]	POSITIVE	L3 PE	1000	270	41	PASS
[104]	NEGATIVE	L3 PE	1000	270	29	PASS
[105]	POSITIVE	L2 PE	1000	270	41	PASS
[106]	NEGATIVE	L2 PE	1000	270	27	PASS
[107]	POSITIVE	L1 PE	1000	270	22	PASS
[108]	NEGATIVE	L1 PE	1000	270	53	PASS
[109]	POSITIVE	L3 PE	500 90	11	PASS	
[110]	NEGATIVE	L3 PE	500 90	9	PASS	
[111]	POSITIVE	L2 PE	500 90	9	PASS	
[112]	NEGATIVE	L2 PE	500 90	12	PASS	
[113]	POSITIVE	L1 PE	500 90	17	PASS	
[114]	NEGATIVE	L1 PE	500 90	10	PASS	
[115]	POSITIVE	L3 PE	1000	90	29	PASS
[116]	NEGATIVE	L3 PE	1000	90	41	PASS
[117]	POSITIVE	L2 PE	1000	90	27	PASS
[118]	NEGATIVE	L2 PE	1000	90	41	PASS
[119]	POSITIVE	L1 PE	1000	90	53	PASS
[120]	NEGATIVE	L1 PE	1000	90	22	PASS
[121]	POSITIVE	L3 PE	500 180	10	PASS	
[122]	NEGATIVE	L3 PE	500 180	15	PASS	
[123]	POSITIVE	L2 PE	500 180	14	PASS	
[124]	NEGATIVE	L2 PE	500 180	11	PASS	
[125]	POSITIVE	L1 PE	500 180	12	PASS	
[126]	NEGATIVE	L1 PE	500 180	9	PASS	
[127]	POSITIVE	L3 PE	1000	180	27	PASS
[128]	NEGATIVE	L3 PE	1000	180	50	PASS
[129]	POSITIVE	L2 PE	1000	180	50	PASS
[130]	NEGATIVE	L2 PE	1000	180	27	PASS
[131]	POSITIVE	L1 PE	1000	180	31	PASS
[132]	NEGATIVE	L1 PE	1000	180	30	PASS
[133]	POSITIVE	L3 PE	500 270	9	PASS	
[134]	NEGATIVE	L3 PE	500 270	11	PASS	
[135]	POSITIVE	L2 PE	500 270	12	PASS	
[136]	NEGATIVE	L2 PE	500 270	9	PASS	
[137]	POSITIVE	L1 PE	500 270	10	PASS	
[138]	NEGATIVE	L1 PE	500 270	17	PASS	
[139]	POSITIVE	L3 PE	1000	270	41	PASS
[140]	NEGATIVE	L3 PE	1000	270	29	PASS
[141]	POSITIVE	L2 PE	1000	270	40	PASS
[142]	NEGATIVE	L2 PE	1000	270	27	PASS
[143]	POSITIVE	L1 PE	1000	270	21	PASS
[144]	NEGATIVE	L1 PE	1000	270	53	PASS
[145]	POSITIVE	L3 PE	500 90	11	PASS	
[146]	NEGATIVE	L3 PE	500 90	9	PASS	
[147]	POSITIVE	L2 PE	500 90	9	PASS	
[148]	NEGATIVE	L2 PE	500 90	11	PASS	
[149]	POSITIVE	L1 PE	500 90	17	PASS	
[150]	NEGATIVE	L1 PE	500 90	10	PASS	
[151]	POSITIVE	L3 PE	1000	90	29	PASS
[152]	NEGATIVE	L3 PE	1000	90	41	PASS
[153]	POSITIVE	L2 PE	1000	90	28	PASS
[154]	NEGATIVE	L2 PE	1000	90	41	PASS
[155]	POSITIVE	L1 PE	1000	90	53	PASS
[156]	NEGATIVE	L1 PE	1000	90	22	PASS
[157]	POSITIVE	L3 PE	500 180	10	PASS	
[158]	NEGATIVE	L3 PE	500 180	15	PASS	
[159]	POSITIVE	L2 PE	500 180	14	PASS	
[160]	NEGATIVE	L2 PE	500 180	11	PASS	
[161]	POSITIVE	L1 PE	500 180	12	PASS	
[162]	NEGATIVE	L1 PE	500 180	9	PASS	
[163]	POSITIVE	L3 PE	1000	180	27	PASS
[164]	NEGATIVE	L3 PE	1000	180	49	PASS
[165]	POSITIVE	L2 PE	1000	180	51	PASS
[166]	NEGATIVE	L2 PE	1000	180	27	PASS
[167]	POSITIVE	L1 PE	1000	180	28	PASS
[168]	NEGATIVE	L1 PE	1000	180	30	PASS
[169]	POSITIVE	L3 PE	500 270	9	PASS	
[170]	NEGATIVE	L3 PE	500 270	11	PASS	
[171]	POSITIVE	L2 PE	500 270	12	PASS	
[172]	NEGATIVE	L2 PE	500 270	9	PASS	
[173]	POSITIVE	L1 PE	500 270	10	PASS	
[174]	NEGATIVE	L1 PE	500 270	17	PASS	
[175]	POSITIVE	L3 PE	1000	270	41	PASS
[176]	NEGATIVE	L3 PE	1000	270	29	PASS
[177]	POSITIVE	L2 PE	1000	270	42	PASS
[178]	NEGATIVE	L2 PE	1000	270	27	PASS
[179]	POSITIVE	L1 PE	1000	270	22	PASS
[180]	NEGATIVE	L1 PE	1000	270	53	PASS

Date: 04/01/2005 **Time:** 10:57:31 **Company:** Schaffner

Equipment Tested	PBI Size 2
Serial Number	Test sample
Test Equipment used	Schaffner NSG 2050/PNW 2050
Test Procedure Used	EN 61000-4-5 called by EN 60947-2

Test #1

Version	Win2050 Ver 4.00
Test Name	C:\PSUITE\WIN2050\3P1KVL-E.PLS
Pulse Type	PNW2050 12 OHMS
Status	PASS
Description	EUT running motor load during tests. No effects. No failures.

Comments
Time Elapsed 0000:29:58

PARAMETER		OPERATION		FROM	TO	STEP
SIZE	FAIL VALUE	UNITS				
Coupler	L3 PE,L2 PE,L1 PE				N/A	
Polarity	POSITIVE,NEGATIVE					N/A
Angle	Static	90	270	90	N/A	Degrees
Voltage	Static	2000	- - -	- - -	N/A	Volts

Sync	SYNCHRONOUS
Repetition Rate	20 seconds
Ambient Temperature	18°C
Humidity	52%
Pressure	1005mB
Tested by	EMC Network SW
Title	pbi_07

Full Test Report

[No]	Coupler	Polarity	Angle	Voltage	[Measured IP] [Status]
[1]	L3 PE	POSITIVE	90 2000	91	PASS
[2]	L2 PE	POSITIVE	90 2000	84	PASS
[3]	L1 PE	POSITIVE	90 2000	127	PASS
[4]	L3 PE	NEGATIVE	90 2000	110	PASS
[5]	L2 PE	NEGATIVE	90 2000	115	PASS
[6]	L1 PE	NEGATIVE	90 2000	79	PASS
[7]	L3 PE	POSITIVE	180 2000	79	PASS
[8]	L2 PE	POSITIVE	180 2000	117	PASS
[9]	L1 PE	POSITIVE	180 2000	104	PASS
[10]	L3 PE	NEGATIVE	180 2000	124	PASS
[11]	L2 PE	NEGATIVE	180 2000	91	PASS
[12]	L1 PE	NEGATIVE	180 2000	98	PASS
[13]	L3 PE	POSITIVE	270 2000	112	PASS
[14]	L2 PE	POSITIVE	270 2000	115	PASS
[15]	L1 PE	POSITIVE	270 2000	82	PASS
[16]	L3 PE	NEGATIVE	270 2000	90	PASS
[17]	L2 PE	NEGATIVE	270 2000	86	PASS
[18]	L1 PE	NEGATIVE	270 2000	126	PASS
[19]	L3 PE	POSITIVE	90 2000	91	PASS
[20]	L2 PE	POSITIVE	90 2000	87	PASS
[21]	L1 PE	POSITIVE	90 2000	125	PASS
[22]	L3 PE	NEGATIVE	90 2000	106	PASS
[23]	L2 PE	NEGATIVE	90 2000	124	PASS
[24]	L1 PE	NEGATIVE	90 2000	80	PASS
[25]	L3 PE	POSITIVE	180 2000	79	PASS
[26]	L2 PE	POSITIVE	180 2000	116	PASS
[27]	L1 PE	POSITIVE	180 2000	103	PASS
[28]	L3 PE	NEGATIVE	180 2000	125	PASS
[29]	L2 PE	NEGATIVE	180 2000	82	PASS
[30]	L1 PE	NEGATIVE	180 2000	92	PASS
[31]	L3 PE	POSITIVE	270 2000	116	PASS
[32]	L2 PE	POSITIVE	270 2000	120	PASS
[33]	L1 PE	POSITIVE	270 2000	79	PASS
[34]	L3 PE	NEGATIVE	270 2000	90	PASS
[35]	L2 PE	NEGATIVE	270 2000	92	PASS
[36]	L1 PE	NEGATIVE	270 2000	127	PASS
[37]	L3 PE	POSITIVE	90 2000	90	PASS
[38]	L2 PE	POSITIVE	90 2000	89	PASS
[39]	L1 PE	POSITIVE	90 2000	125	PASS
[40]	L3 PE	NEGATIVE	90 2000	116	PASS
[41]	L2 PE	NEGATIVE	90 2000	120	PASS
[42]	L1 PE	NEGATIVE	90 2000	80	PASS
[43]	L3 PE	POSITIVE	180 2000	83	PASS
[44]	L2 PE	POSITIVE	180 2000	121	PASS
[45]	L1 PE	POSITIVE	180 2000	109	PASS
[46]	L3 PE	NEGATIVE	180 2000	123	PASS
[47]	L2 PE	NEGATIVE	180 2000	83	PASS
[48]	L1 PE	NEGATIVE	180 2000	103	PASS
[49]	L3 PE	POSITIVE	270 2000	106	PASS
[50]	L2 PE	POSITIVE	270 2000	116	PASS
[51]	L1 PE	POSITIVE	270 2000	81	PASS
[52]	L3 PE	NEGATIVE	270 2000	95	PASS
[53]	L2 PE	NEGATIVE	270 2000	82	PASS
[54]	L1 PE	NEGATIVE	270 2000	126	PASS
[55]	L3 PE	POSITIVE	90 2000	101	PASS
[56]	L2 PE	POSITIVE	90 2000	84	PASS
[57]	L1 PE	POSITIVE	90 2000	126	PASS
[58]	L3 PE	NEGATIVE	90 2000	102	PASS
[59]	L2 PE	NEGATIVE	90 2000	120	PASS
[60]	L1 PE	NEGATIVE	90 2000	81	PASS
[61]	L3 PE	POSITIVE	180 2000	79	PASS
[62]	L2 PE	POSITIVE	180 2000	117	PASS
[63]	L1 PE	POSITIVE	180 2000	114	PASS
[64]	L3 PE	NEGATIVE	180 2000	124	PASS
[65]	L2 PE	NEGATIVE	180 2000	91	PASS
[66]	L1 PE	NEGATIVE	180 2000	93	PASS
[67]	L3 PE	POSITIVE	270 2000	107	PASS
[68]	L2 PE	POSITIVE	270 2000	120	PASS
[69]	L1 PE	POSITIVE	270 2000	79	PASS
[70]	L3 PE	NEGATIVE	270 2000	96	PASS
[71]	L2 PE	NEGATIVE	270 2000	85	PASS
[72]	L1 PE	NEGATIVE	270 2000	125	PASS
[73]	L3 PE	POSITIVE	90 2000	94	PASS
[74]	L2 PE	POSITIVE	90 2000	81	PASS
[75]	L1 PE	POSITIVE	90 2000	126	PASS
[76]	L3 PE	NEGATIVE	90 2000	109	PASS
[77]	L2 PE	NEGATIVE	90 2000	123	PASS
[78]	L1 PE	NEGATIVE	90 2000	80	PASS
[79]	L3 PE	POSITIVE	180 2000	79	PASS
[80]	L2 PE	POSITIVE	180 2000	120	PASS
[81]	L1 PE	POSITIVE	180 2000	111	PASS
[82]	L3 PE	NEGATIVE	180 2000	125	PASS
[83]	L2 PE	NEGATIVE	180 2000	86	PASS
[84]	L1 PE	NEGATIVE	180 2000	98	PASS
[85]	L3 PE	POSITIVE	270 2000	105	PASS
[86]	L2 PE	POSITIVE	270 2000	119	PASS
[87]	L1 PE	POSITIVE	270 2000	81	PASS
[88]	L3 PE	NEGATIVE	270 2000	89	PASS
[89]	L2 PE	NEGATIVE	270 2000	86	PASS
[90]	L1 PE	NEGATIVE	270 2000	124	PASS

Date: 04/01/2005 **Time:** 12:19:47 **Company:** Schaffner

Equipment Tested	PBI Size 2
Serial Number	Test sample
Test Equipment used	Schaffner NSG 2050/PNW 2050
Test Procedure Used	EN 61000-4-5 called by EN 60947-2

Test #1

Version	Win2050 Ver 4.00
Test Name	C:\PSUITE\WIN2050\3P1KVL-L.PLS
Pulse Type	PNW2050 2 OHMS
Status	PASS
Description	EUT running motor load during test. No effects. No failures.

Comments
Time Elapsed 0000:59:55

PARAMETER		OPERATION		FROM	TO	STEP
SIZE	FAIL VALUE	UNITS				
Coupler	L2 L3,L1 L3,L1 L2				N/A	
Polarity	POSITIVE,NEGATIVE					N/A
Voltage	Static	500	1000	500	N/A	Volts
Angle	Static	90	270	90	N/A	Degrees

Sync	SYNCHRONOUS
Repetition Rate	20 seconds
Ambient Temperature	18°C
Humidity	52%
Pressure	1005mB
Tested by	EMC Network SW
Title	pbi_08

Full Test Report

[No]	Coupler	Polarity	Voltage	Angle	[Measured IP]	[Status]
[1]	L2 L3	POSITIVE	500 90	32	PASS	
[2]	L1 L3	POSITIVE	500 90	30	PASS	
[3]	L1 L2	POSITIVE	500 90	30	PASS	
[4]	L2 L3	NEGATIVE	500 90	24	PASS	
[5]	L1 L3	NEGATIVE	500 90	26	PASS	
[6]	L1 L2	NEGATIVE	500 90	26	PASS	
[7]	L2 L3	POSITIVE	1000	90	58	PASS
[8]	L1 L3	POSITIVE	1000	90	55	PASS
[9]	L1 L2	POSITIVE	1000	90	123	PASS
[10]	L2 L3	NEGATIVE	1000	90	49	PASS
[11]	L1 L3	NEGATIVE	1000	90	107	PASS
[12]	L1 L2	NEGATIVE	1000	90	51	PASS
[13]	L2 L3	POSITIVE	500 180	30	PASS	
[14]	L1 L3	POSITIVE	500 180	24	PASS	
[15]	L1 L2	POSITIVE	500 180	33	PASS	
[16]	L2 L3	NEGATIVE	500 180	30	PASS	
[17]	L1 L3	NEGATIVE	500 180	31	PASS	
[18]	L1 L2	NEGATIVE	500 180	25	PASS	
[19]	L2 L3	POSITIVE	1000	180	55	PASS
[20]	L1 L3	POSITIVE	1000	180	50	PASS
[21]	L1 L2	POSITIVE	1000	180	58	PASS
[22]	L2 L3	NEGATIVE	1000	180	145	PASS
[23]	L1 L3	NEGATIVE	1000	180	72	PASS
[24]	L1 L2	NEGATIVE	1000	180	50	PASS
[25]	L2 L3	POSITIVE	500 270	24	PASS	
[26]	L1 L3	POSITIVE	500 270	26	PASS	
[27]	L1 L2	POSITIVE	500 270	26	PASS	
[28]	L2 L3	NEGATIVE	500 270	33	PASS	
[29]	L1 L3	NEGATIVE	500 270	30	PASS	
[30]	L1 L2	NEGATIVE	500 270	31	PASS	
[31]	L2 L3	POSITIVE	1000	270	50	PASS
[32]	L1 L3	POSITIVE	1000	270	99	PASS
[33]	L1 L2	POSITIVE	1000	270	51	PASS
[34]	L2 L3	NEGATIVE	1000	270	57	PASS
[35]	L1 L3	NEGATIVE	1000	270	55	PASS
[36]	L1 L2	NEGATIVE	1000	270	123	PASS
[37]	L2 L3	POSITIVE	500 90	32	PASS	
[38]	L1 L3	POSITIVE	500 90	31	PASS	
[39]	L1 L2	POSITIVE	500 90	31	PASS	
[40]	L2 L3	NEGATIVE	500 90	24	PASS	
[41]	L1 L3	NEGATIVE	500 90	26	PASS	
[42]	L1 L2	NEGATIVE	500 90	26	PASS	
[43]	L2 L3	POSITIVE	1000	90	57	PASS
[44]	L1 L3	POSITIVE	1000	90	55	PASS
[45]	L1 L2	POSITIVE	1000	90	129	PASS
[46]	L2 L3	NEGATIVE	1000	90	49	PASS
[47]	L1 L3	NEGATIVE	1000	90	109	PASS
[48]	L1 L2	NEGATIVE	1000	90	52	PASS
[49]	L2 L3	POSITIVE	500 180	29	PASS	
[50]	L1 L3	POSITIVE	500 180	25	PASS	
[51]	L1 L2	POSITIVE	500 180	32	PASS	
[52]	L2 L3	NEGATIVE	500 180	27	PASS	
[53]	L1 L3	NEGATIVE	500 180	32	PASS	
[54]	L1 L2	NEGATIVE	500 180	25	PASS	
[55]	L2 L3	POSITIVE	1000	180	54	PASS
[56]	L1 L3	POSITIVE	1000	180	50	PASS
[57]	L1 L2	POSITIVE	1000	180	57	PASS
[58]	L2 L3	NEGATIVE	1000	180	145	PASS
[59]	L1 L3	NEGATIVE	1000	180	70	PASS
[60]	L1 L2	NEGATIVE	1000	180	56	PASS
[61]	L2 L3	POSITIVE	500 270	24	PASS	
[62]	L1 L3	POSITIVE	500 270	26	PASS	
[63]	L1 L2	POSITIVE	500 270	26	PASS	
[64]	L2 L3	NEGATIVE	500 270	32	PASS	
[65]	L1 L3	NEGATIVE	500 270	30	PASS	
[66]	L1 L2	NEGATIVE	500 270	31	PASS	
[67]	L2 L3	POSITIVE	1000	270	50	PASS
[68]	L1 L3	POSITIVE	1000	270	103	PASS
[69]	L1 L2	POSITIVE	1000	270	51	PASS
[70]	L2 L3	NEGATIVE	1000	270	58	PASS
[71]	L1 L3	NEGATIVE	1000	270	55	PASS
[72]	L1 L2	NEGATIVE	1000	270	117	PASS
[73]	L2 L3	POSITIVE	500 90	32	PASS	
[74]	L1 L3	POSITIVE	500 90	30	PASS	
[75]	L1 L2	POSITIVE	500 90	31	PASS	
[76]	L2 L3	NEGATIVE	500 90	24	PASS	
[77]	L1 L3	NEGATIVE	500 90	26	PASS	
[78]	L1 L2	NEGATIVE	500 90	26	PASS	
[79]	L2 L3	POSITIVE	1000	90	57	PASS
[80]	L1 L3	POSITIVE	1000	90	55	PASS
[81]	L1 L2	POSITIVE	1000	90	125	PASS
[82]	L2 L3	NEGATIVE	1000	90	50	PASS
[83]	L1 L3	NEGATIVE	1000	90	104	PASS
[84]	L1 L2	NEGATIVE	1000	90	51	PASS
[85]	L2 L3	POSITIVE	500 180	28	PASS	
[86]	L1 L3	POSITIVE	500 180	25	PASS	
[87]	L1 L2	POSITIVE	500 180	32	PASS	
[88]	L2 L3	NEGATIVE	500 180	29	PASS	
[89]	L1 L3	NEGATIVE	500 180	31	PASS	
[90]	L1 L2	NEGATIVE	500 180	25	PASS	
[91]	L2 L3	POSITIVE	1000	180	54	PASS
[92]	L1 L3	POSITIVE	1000	180	50	PASS
[93]	L1 L2	POSITIVE	1000	180	57	PASS
[94]	L2 L3	NEGATIVE	1000	180	144	PASS
[95]	L1 L3	NEGATIVE	1000	180	64	PASS
[96]	L1 L2	NEGATIVE	1000	180	50	PASS

[97]	L2 L3	POSITIVE	500 270	24	PASS	
[98]	L1 L3	POSITIVE	500 270	27	PASS	
[99]	L1 L2	POSITIVE	500 270	26	PASS	
[100]	L2 L3	NEGATIVE	500 270	32	PASS	
[101]	L1 L3	NEGATIVE	500 270	30	PASS	
[102]	L1 L2	NEGATIVE	500 270	31	PASS	
[103]	L2 L3	POSITIVE	1000	270	50	PASS
[104]	L1 L3	POSITIVE	1000	270	107	PASS
[105]	L1 L2	POSITIVE	1000	270	51	PASS
[106]	L2 L3	NEGATIVE	1000	270	57	PASS
[107]	L1 L3	NEGATIVE	1000	270	55	PASS
[108]	L1 L2	NEGATIVE	1000	270	107	PASS
[109]	L2 L3	POSITIVE	500 90	32	PASS	
[110]	L1 L3	POSITIVE	500 90	30	PASS	
[111]	L1 L2	POSITIVE	500 90	31	PASS	
[112]	L2 L3	NEGATIVE	500 90	24	PASS	
[113]	L1 L3	NEGATIVE	500 90	27	PASS	
[114]	L1 L2	NEGATIVE	500 90	26	PASS	
[115]	L2 L3	POSITIVE	1000	90	58	PASS
[116]	L1 L3	POSITIVE	1000	90	55	PASS
[117]	L1 L2	POSITIVE	1000	90	114	PASS
[118]	L2 L3	NEGATIVE	1000	90	50	PASS
[119]	L1 L3	NEGATIVE	1000	90	107	PASS
[120]	L1 L2	NEGATIVE	1000	90	51	PASS
[121]	L2 L3	POSITIVE	500 180	28	PASS	
[122]	L1 L3	POSITIVE	500 180	25	PASS	
[123]	L1 L2	POSITIVE	500 180	31	PASS	
[124]	L2 L3	NEGATIVE	500 180	28	PASS	
[125]	L1 L3	NEGATIVE	500 180	32	PASS	
[126]	L1 L2	NEGATIVE	500 180	25	PASS	
[127]	L2 L3	POSITIVE	1000	180	53	PASS
[128]	L1 L3	POSITIVE	1000	180	49	PASS
[129]	L1 L2	POSITIVE	1000	180	56	PASS
[130]	L2 L3	NEGATIVE	1000	180	145	PASS
[131]	L1 L3	NEGATIVE	1000	180	62	PASS
[132]	L1 L2	NEGATIVE	1000	180	52	PASS
[133]	L2 L3	POSITIVE	500 270	24	PASS	
[134]	L1 L3	POSITIVE	500 270	27	PASS	
[135]	L1 L2	POSITIVE	500 270	26	PASS	
[136]	L2 L3	NEGATIVE	500 270	32	PASS	
[137]	L1 L3	NEGATIVE	500 270	30	PASS	
[138]	L1 L2	NEGATIVE	500 270	31	PASS	
[139]	L2 L3	POSITIVE	1000	270	50	PASS
[140]	L1 L3	POSITIVE	1000	270	123	PASS
[141]	L1 L2	POSITIVE	1000	270	52	PASS
[142]	L2 L3	NEGATIVE	1000	270	58	PASS
[143]	L1 L3	NEGATIVE	1000	270	55	PASS
[144]	L1 L2	NEGATIVE	1000	270	102	PASS
[145]	L2 L3	POSITIVE	500 90	33	PASS	
[146]	L1 L3	POSITIVE	500 90	30	PASS	
[147]	L1 L2	POSITIVE	500 90	31	PASS	
[148]	L2 L3	NEGATIVE	500 90	25	PASS	
[149]	L1 L3	NEGATIVE	500 90	27	PASS	
[150]	L1 L2	NEGATIVE	500 90	26	PASS	
[151]	L2 L3	POSITIVE	1000	90	58	PASS
[152]	L1 L3	POSITIVE	1000	90	55	PASS
[153]	L1 L2	POSITIVE	1000	90	100	PASS
[154]	L2 L3	NEGATIVE	1000	90	50	PASS
[155]	L1 L3	NEGATIVE	1000	90	121	PASS
[156]	L1 L2	NEGATIVE	1000	90	52	PASS
[157]	L2 L3	POSITIVE	500 180	27	PASS	
[158]	L1 L3	POSITIVE	500 180	23	PASS	
[159]	L1 L2	POSITIVE	500 180	32	PASS	
[160]	L2 L3	NEGATIVE	500 180	30	PASS	
[161]	L1 L3	NEGATIVE	500 180	32	PASS	
[162]	L1 L2	NEGATIVE	500 180	26	PASS	
[163]	L2 L3	POSITIVE	1000	180	53	PASS
[164]	L1 L3	POSITIVE	1000	180	49	PASS
[165]	L1 L2	POSITIVE	1000	180	57	PASS
[166]	L2 L3	NEGATIVE	1000	180	144	PASS
[167]	L1 L3	NEGATIVE	1000	180	57	PASS
[168]	L1 L2	NEGATIVE	1000	180	78	PASS
[169]	L2 L3	POSITIVE	500 270	24	PASS	
[170]	L1 L3	POSITIVE	500 270	27	PASS	
[171]	L1 L2	POSITIVE	500 270	26	PASS	
[172]	L2 L3	NEGATIVE	500 270	32	PASS	
[173]	L1 L3	NEGATIVE	500 270	30	PASS	
[174]	L1 L2	NEGATIVE	500 270	31	PASS	
[175]	L2 L3	POSITIVE	1000	270	50	PASS
[176]	L1 L3	POSITIVE	1000	270	121	PASS
[177]	L1 L2	POSITIVE	1000	270	51	PASS
[178]	L2 L3	NEGATIVE	1000	270	58	PASS
[179]	L1 L3	NEGATIVE	1000	270	55	PASS
[180]	L1 L2	NEGATIVE	1000	270	104	PASS

Date: 05/01/2005 **Time:** 10:09:24 **Company:** Schaffner

Equipment Tested	PBI Size 1
Serial Number	Test sample
Test Equipment used	Schaffner NSG 2050/PNW 2050
Test Procedure Used	EN 61000-4-5 called by EN 60947-2

Test #1

Version	Win2050 Ver 4.00
Test Name	C:\PSUITE\WIN2050\3P1KVL-E.PLS
Pulse Type	PNW2050 12 OHMS
Status	PASS
Description	EUT running motor load during tests. No effects on motor operation. No failures.

Comments

Time Elapsed 0000:59:55

PARAMETER				FROM	TO	STEP
SIZE	FAIL VALUE	OPERATION	UNITS			
Coupler	L3 PE,L2 PE,L1 PE				N/A	
Angle	Static	90	270	90	N/A	Degrees
Polarity	POSITIVE,NEGATIVE					N/A
Voltage	Static	500	1000	500	N/A	Volts

Sync	SYNCHRONOUS
Repetition Rate	20 seconds
Ambient Temperature	18°C
Humidity	47%
Pressure	1007mB
Tested by	EMC Network SW
Title	pbi_09

Full Test Report

[No]	Coupler	Angle	Polarity	Voltage	[Measured IP]	[Status]
[1]	L3 PE	90	POSITIVE	500	13	PASS
[2]	L2 PE	90	POSITIVE	500	11	PASS
[3]	L1 PE	90	POSITIVE	500	13	PASS
[4]	L3 PE	180	POSITIVE	500	12	PASS
[5]	L2 PE	180	POSITIVE	500	12	PASS
[6]	L1 PE	180	POSITIVE	500	14	PASS
[7]	L3 PE	270	POSITIVE	500	11	PASS
[8]	L2 PE	270	POSITIVE	500	14	PASS
[9]	L1 PE	270	POSITIVE	500	12	PASS
[10]	L3 PE	90	NEGATIVE	500	11	PASS
[11]	L2 PE	90	NEGATIVE	500	14	PASS
[12]	L1 PE	90	NEGATIVE	500	12	PASS
[13]	L3 PE	180	NEGATIVE	500	13	PASS
[14]	L2 PE	180	NEGATIVE	500	13	PASS
[15]	L1 PE	180	NEGATIVE	500	11	PASS
[16]	L3 PE	270	NEGATIVE	500	13	PASS
[17]	L2 PE	270	NEGATIVE	500	11	PASS
[18]	L1 PE	270	NEGATIVE	500	12	PASS
[19]	L3 PE	90	POSITIVE	1000	28	PASS
[20]	L2 PE	90	POSITIVE	1000	26	PASS
[21]	L1 PE	90	POSITIVE	1000	27	PASS
[22]	L3 PE	180	POSITIVE	1000	27	PASS
[23]	L2 PE	180	POSITIVE	1000	27	PASS
[24]	L1 PE	180	POSITIVE	1000	28	PASS
[25]	L3 PE	270	POSITIVE	1000	26	PASS
[26]	L2 PE	270	POSITIVE	1000	28	PASS
[27]	L1 PE	270	POSITIVE	1000	27	PASS
[28]	L3 PE	90	NEGATIVE	1000	26	PASS
[29]	L2 PE	90	NEGATIVE	1000	28	PASS
[30]	L1 PE	90	NEGATIVE	1000	27	PASS
[31]	L3 PE	180	NEGATIVE	1000	27	PASS
[32]	L2 PE	180	NEGATIVE	1000	27	PASS
[33]	L1 PE	180	NEGATIVE	1000	26	PASS
[34]	L3 PE	270	NEGATIVE	1000	28	PASS
[35]	L2 PE	270	NEGATIVE	1000	26	PASS
[36]	L1 PE	270	NEGATIVE	1000	27	PASS
[37]	L3 PE	90	POSITIVE	500	13	PASS
[38]	L2 PE	90	POSITIVE	500	11	PASS
[39]	L1 PE	90	POSITIVE	500	12	PASS
[40]	L3 PE	180	POSITIVE	500	12	PASS
[41]	L2 PE	180	POSITIVE	500	12	PASS
[42]	L1 PE	180	POSITIVE	500	14	PASS
[43]	L3 PE	270	POSITIVE	500	11	PASS
[44]	L2 PE	270	POSITIVE	500	14	PASS
[45]	L1 PE	270	POSITIVE	500	12	PASS
[46]	L3 PE	90	NEGATIVE	500	11	PASS
[47]	L2 PE	90	NEGATIVE	500	14	PASS
[48]	L1 PE	90	NEGATIVE	500	12	PASS
[49]	L3 PE	180	NEGATIVE	500	13	PASS
[50]	L2 PE	180	NEGATIVE	500	13	PASS
[51]	L1 PE	180	NEGATIVE	500	11	PASS
[52]	L3 PE	270	NEGATIVE	500	13	PASS
[53]	L2 PE	270	NEGATIVE	500	11	PASS
[54]	L1 PE	270	NEGATIVE	500	13	PASS
[55]	L3 PE	90	POSITIVE	1000	28	PASS
[56]	L2 PE	90	POSITIVE	1000	26	PASS
[57]	L1 PE	90	POSITIVE	1000	27	PASS
[58]	L3 PE	180	POSITIVE	1000	27	PASS
[59]	L2 PE	180	POSITIVE	1000	26	PASS
[60]	L1 PE	180	POSITIVE	1000	28	PASS
[61]	L3 PE	270	POSITIVE	1000	26	PASS
[62]	L2 PE	270	POSITIVE	1000	28	PASS
[63]	L1 PE	270	POSITIVE	1000	27	PASS
[64]	L3 PE	90	NEGATIVE	1000	26	PASS
[65]	L2 PE	90	NEGATIVE	1000	28	PASS
[66]	L1 PE	90	NEGATIVE	1000	27	PASS
[67]	L3 PE	180	NEGATIVE	1000	27	PASS
[68]	L2 PE	180	NEGATIVE	1000	27	PASS
[69]	L1 PE	180	NEGATIVE	1000	26	PASS
[70]	L3 PE	270	NEGATIVE	1000	28	PASS
[71]	L2 PE	270	NEGATIVE	1000	26	PASS
[72]	L1 PE	270	NEGATIVE	1000	27	PASS
[73]	L3 PE	90	POSITIVE	500	13	PASS
[74]	L2 PE	90	POSITIVE	500	11	PASS
[75]	L1 PE	90	POSITIVE	500	13	PASS
[76]	L3 PE	180	POSITIVE	500	12	PASS
[77]	L2 PE	180	POSITIVE	500	11	PASS
[78]	L1 PE	180	POSITIVE	500	14	PASS
[79]	L3 PE	270	POSITIVE	500	11	PASS
[80]	L2 PE	270	POSITIVE	500	14	PASS
[81]	L1 PE	270	POSITIVE	500	12	PASS
[82]	L3 PE	90	NEGATIVE	500	11	PASS
[83]	L2 PE	90	NEGATIVE	500	14	PASS
[84]	L1 PE	90	NEGATIVE	500	12	PASS
[85]	L3 PE	180	NEGATIVE	500	13	PASS
[86]	L2 PE	180	NEGATIVE	500	13	PASS
[87]	L1 PE	180	NEGATIVE	500	11	PASS
[88]	L3 PE	270	NEGATIVE	500	13	PASS
[89]	L2 PE	270	NEGATIVE	500	11	PASS
[90]	L1 PE	270	NEGATIVE	500	13	PASS
[91]	L3 PE	90	POSITIVE	1000	28	PASS
[92]	L2 PE	90	POSITIVE	1000	26	PASS
[93]	L1 PE	90	POSITIVE	1000	27	PASS
[94]	L3 PE	180	POSITIVE	1000	27	PASS
[95]	L2 PE	180	POSITIVE	1000	26	PASS
[96]	L1 PE	180	POSITIVE	1000	28	PASS

[97]	L3 PE	270	POSITIVE	1000	26	PASS
[98]	L2 PE	270	POSITIVE	1000	28	PASS
[99]	L1 PE	270	POSITIVE	1000	27	PASS
[100]	L3 PE	90	NEGATIVE	1000	25	PASS
[101]	L2 PE	90	NEGATIVE	1000	28	PASS
[102]	L1 PE	90	NEGATIVE	1000	27	PASS
[103]	L3 PE	180	NEGATIVE	1000	27	PASS
[104]	L2 PE	180	NEGATIVE	1000	27	PASS
[105]	L1 PE	180	NEGATIVE	1000	26	PASS
[106]	L3 PE	270	NEGATIVE	1000	28	PASS
[107]	L2 PE	270	NEGATIVE	1000	26	PASS
[108]	L1 PE	270	NEGATIVE	1000	27	PASS
[109]	L3 PE	90	POSITIVE	500	14	PASS
[110]	L2 PE	90	POSITIVE	500	11	PASS
[111]	L1 PE	90	POSITIVE	500	13	PASS
[112]	L3 PE	180	POSITIVE	500	12	PASS
[113]	L2 PE	180	POSITIVE	500	12	PASS
[114]	L1 PE	180	POSITIVE	500	14	PASS
[115]	L3 PE	270	POSITIVE	500	11	PASS
[116]	L2 PE	270	POSITIVE	500	14	PASS
[117]	L1 PE	270	POSITIVE	500	12	PASS
[118]	L3 PE	90	NEGATIVE	500	11	PASS
[119]	L2 PE	90	NEGATIVE	500	14	PASS
[120]	L1 PE	90	NEGATIVE	500	12	PASS
[121]	L3 PE	180	NEGATIVE	500	13	PASS
[122]	L2 PE	180	NEGATIVE	500	13	PASS
[123]	L1 PE	180	NEGATIVE	500	11	PASS
[124]	L3 PE	270	NEGATIVE	500	13	PASS
[125]	L2 PE	270	NEGATIVE	500	11	PASS
[126]	L1 PE	270	NEGATIVE	500	13	PASS
[127]	L3 PE	90	POSITIVE	1000	28	PASS
[128]	L2 PE	90	POSITIVE	1000	26	PASS
[129]	L1 PE	90	POSITIVE	1000	27	PASS
[130]	L3 PE	180	POSITIVE	1000	27	PASS
[131]	L2 PE	180	POSITIVE	1000	27	PASS
[132]	L1 PE	180	POSITIVE	1000	28	PASS
[133]	L3 PE	270	POSITIVE	1000	26	PASS
[134]	L2 PE	270	POSITIVE	1000	28	PASS
[135]	L1 PE	270	POSITIVE	1000	27	PASS
[136]	L3 PE	90	NEGATIVE	1000	26	PASS
[137]	L2 PE	90	NEGATIVE	1000	28	PASS
[138]	L1 PE	90	NEGATIVE	1000	27	PASS
[139]	L3 PE	180	NEGATIVE	1000	27	PASS
[140]	L2 PE	180	NEGATIVE	1000	27	PASS
[141]	L1 PE	180	NEGATIVE	1000	26	PASS
[142]	L3 PE	270	NEGATIVE	1000	27	PASS
[143]	L2 PE	270	NEGATIVE	1000	26	PASS
[144]	L1 PE	270	NEGATIVE	1000	27	PASS
[145]	L3 PE	90	POSITIVE	500	13	PASS
[146]	L2 PE	90	POSITIVE	500	11	PASS
[147]	L1 PE	90	POSITIVE	500	13	PASS
[148]	L3 PE	180	POSITIVE	500	12	PASS
[149]	L2 PE	180	POSITIVE	500	12	PASS
[150]	L1 PE	180	POSITIVE	500	14	PASS
[151]	L3 PE	270	POSITIVE	500	12	PASS
[152]	L2 PE	270	POSITIVE	500	14	PASS
[153]	L1 PE	270	POSITIVE	500	12	PASS
[154]	L3 PE	90	NEGATIVE	500	11	PASS
[155]	L2 PE	90	NEGATIVE	500	14	PASS
[156]	L1 PE	90	NEGATIVE	500	12	PASS
[157]	L3 PE	180	NEGATIVE	500	13	PASS
[158]	L2 PE	180	NEGATIVE	500	13	PASS
[159]	L1 PE	180	NEGATIVE	500	11	PASS
[160]	L3 PE	270	NEGATIVE	500	13	PASS
[161]	L2 PE	270	NEGATIVE	500	11	PASS
[162]	L1 PE	270	NEGATIVE	500	12	PASS
[163]	L3 PE	90	POSITIVE	1000	28	PASS
[164]	L2 PE	90	POSITIVE	1000	26	PASS
[165]	L1 PE	90	POSITIVE	1000	27	PASS
[166]	L3 PE	180	POSITIVE	1000	27	PASS
[167]	L2 PE	180	POSITIVE	1000	26	PASS
[168]	L1 PE	180	POSITIVE	1000	28	PASS
[169]	L3 PE	270	POSITIVE	1000	26	PASS
[170]	L2 PE	270	POSITIVE	1000	28	PASS
[171]	L1 PE	270	POSITIVE	1000	27	PASS
[172]	L3 PE	90	NEGATIVE	1000	26	PASS
[173]	L2 PE	90	NEGATIVE	1000	28	PASS
[174]	L1 PE	90	NEGATIVE	1000	27	PASS
[175]	L3 PE	180	NEGATIVE	1000	27	PASS
[176]	L2 PE	180	NEGATIVE	1000	27	PASS
[177]	L1 PE	180	NEGATIVE	1000	26	PASS
[178]	L3 PE	270	NEGATIVE	1000	28	PASS
[179]	L2 PE	270	NEGATIVE	1000	26	PASS
[180]	L1 PE	270	NEGATIVE	1000	27	PASS

Somar

Date: 05/01/2005 **Time:** 10:48:10 **Company:** Schaffner

Equipment Tested	PBI Size 1
Serial Number	Test sample
Test Equipment used	Schaffner NSG 2050/PNW 2050
Test Procedure Used	EN 61000-4-5 called by EN 60947-2

Test #1

Version	Win2050 Ver 4.00
Test Name	C:\PSUITE\WIN2050\3P1KVL-E.PLS
Pulse Type	PNW2050 12 OHMS
Status	PASS
Description	EUT running motor load during test. No effects on motor operation. No failures.

Comments
Time Elapsed 0000:29:58

PARAMETER		OPERATION		FROM	TO	STEP
SIZE	FAIL VALUE	UNITS				
Coupler	L3 PE,L2 PE,L1 PE				N/A	
Angle	Static	90	270	90	N/A	Degrees
Polarity	POSITIVE,NEGATIVE					N/A
Voltage	Static	2000	- - -	- - -	N/A	Volts

Sync	SYNCHRONOUS
Repetition Rate	20 seconds
Ambient Temperature	18°C
Humidity	47%
Pressure	1007mB
Tested by	EMC Network SW
Title	pbi_10

Full Test Report

[No]	Coupler	Angle	Polarity	Voltage	[Measured IP]	[Status]
[1]	L3 PE	90	POSITIVE	2000	56	PASS
[2]	L2 PE	90	POSITIVE	2000	54	PASS
[3]	L1 PE	90	POSITIVE	2000	55	PASS
[4]	L3 PE	180	POSITIVE	2000	55	PASS
[5]	L2 PE	180	POSITIVE	2000	55	PASS
[6]	L1 PE	180	POSITIVE	2000	56	PASS
[7]	L3 PE	270	POSITIVE	2000	54	PASS
[8]	L2 PE	270	POSITIVE	2000	56	PASS
[9]	L1 PE	270	POSITIVE	2000	55	PASS
[10]	L3 PE	90	NEGATIVE	2000	53	PASS
[11]	L2 PE	90	NEGATIVE	2000	55	PASS
[12]	L1 PE	90	NEGATIVE	2000	54	PASS
[13]	L3 PE	180	NEGATIVE	2000	55	PASS
[14]	L2 PE	180	NEGATIVE	2000	55	PASS
[15]	L1 PE	180	NEGATIVE	2000	54	PASS
[16]	L3 PE	270	NEGATIVE	2000	55	PASS
[17]	L2 PE	270	NEGATIVE	2000	53	PASS
[18]	L1 PE	270	NEGATIVE	2000	54	PASS
[19]	L3 PE	90	POSITIVE	2000	56	PASS
[20]	L2 PE	90	POSITIVE	2000	54	PASS
[21]	L1 PE	90	POSITIVE	2000	55	PASS
[22]	L3 PE	180	POSITIVE	2000	55	PASS
[23]	L2 PE	180	POSITIVE	2000	55	PASS
[24]	L1 PE	180	POSITIVE	2000	55	PASS
[25]	L3 PE	270	POSITIVE	2000	54	PASS
[26]	L2 PE	270	POSITIVE	2000	56	PASS
[27]	L1 PE	270	POSITIVE	2000	55	PASS
[28]	L3 PE	90	NEGATIVE	2000	54	PASS
[29]	L2 PE	90	NEGATIVE	2000	55	PASS
[30]	L1 PE	90	NEGATIVE	2000	54	PASS
[31]	L3 PE	180	NEGATIVE	2000	55	PASS
[32]	L2 PE	180	NEGATIVE	2000	55	PASS
[33]	L1 PE	180	NEGATIVE	2000	54	PASS
[34]	L3 PE	270	NEGATIVE	2000	55	PASS
[35]	L2 PE	270	NEGATIVE	2000	53	PASS
[36]	L1 PE	270	NEGATIVE	2000	55	PASS
[37]	L3 PE	90	POSITIVE	2000	56	PASS
[38]	L2 PE	90	POSITIVE	2000	54	PASS
[39]	L1 PE	90	POSITIVE	2000	55	PASS
[40]	L3 PE	180	POSITIVE	2000	55	PASS
[41]	L2 PE	180	POSITIVE	2000	54	PASS
[42]	L1 PE	180	POSITIVE	2000	56	PASS
[43]	L3 PE	270	POSITIVE	2000	54	PASS
[44]	L2 PE	270	POSITIVE	2000	55	PASS
[45]	L1 PE	270	POSITIVE	2000	55	PASS
[46]	L3 PE	90	NEGATIVE	2000	53	PASS
[47]	L2 PE	90	NEGATIVE	2000	55	PASS
[48]	L1 PE	90	NEGATIVE	2000	54	PASS
[49]	L3 PE	180	NEGATIVE	2000	54	PASS
[50]	L2 PE	180	NEGATIVE	2000	55	PASS
[51]	L1 PE	180	NEGATIVE	2000	53	PASS
[52]	L3 PE	270	NEGATIVE	2000	55	PASS
[53]	L2 PE	270	NEGATIVE	2000	53	PASS
[54]	L1 PE	270	NEGATIVE	2000	54	PASS
[55]	L3 PE	90	POSITIVE	2000	56	PASS
[56]	L2 PE	90	POSITIVE	2000	54	PASS
[57]	L1 PE	90	POSITIVE	2000	55	PASS
[58]	L3 PE	180	POSITIVE	2000	55	PASS
[59]	L2 PE	180	POSITIVE	2000	55	PASS
[60]	L1 PE	180	POSITIVE	2000	56	PASS
[61]	L3 PE	270	POSITIVE	2000	54	PASS
[62]	L2 PE	270	POSITIVE	2000	56	PASS
[63]	L1 PE	270	POSITIVE	2000	55	PASS
[64]	L3 PE	90	NEGATIVE	2000	53	PASS
[65]	L2 PE	90	NEGATIVE	2000	55	PASS
[66]	L1 PE	90	NEGATIVE	2000	54	PASS
[67]	L3 PE	180	NEGATIVE	2000	54	PASS
[68]	L2 PE	180	NEGATIVE	2000	55	PASS
[69]	L1 PE	180	NEGATIVE	2000	53	PASS
[70]	L3 PE	270	NEGATIVE	2000	55	PASS
[71]	L2 PE	270	NEGATIVE	2000	53	PASS
[72]	L1 PE	270	NEGATIVE	2000	54	PASS
[73]	L3 PE	90	POSITIVE	2000	56	PASS
[74]	L2 PE	90	POSITIVE	2000	54	PASS
[75]	L1 PE	90	POSITIVE	2000	55	PASS
[76]	L3 PE	180	POSITIVE	2000	55	PASS
[77]	L2 PE	180	POSITIVE	2000	54	PASS
[78]	L1 PE	180	POSITIVE	2000	56	PASS
[79]	L3 PE	270	POSITIVE	2000	54	PASS
[80]	L2 PE	270	POSITIVE	2000	56	PASS
[81]	L1 PE	270	POSITIVE	2000	55	PASS
[82]	L3 PE	90	NEGATIVE	2000	53	PASS
[83]	L2 PE	90	NEGATIVE	2000	55	PASS
[84]	L1 PE	90	NEGATIVE	2000	54	PASS
[85]	L3 PE	180	NEGATIVE	2000	55	PASS
[86]	L2 PE	180	NEGATIVE	2000	55	PASS
[87]	L1 PE	180	NEGATIVE	2000	53	PASS
[88]	L3 PE	270	NEGATIVE	2000	55	PASS
[89]	L2 PE	270	NEGATIVE	2000	54	PASS
[90]	L1 PE	270	NEGATIVE	2000	54	PASS

Date: 05/01/2005 **Time:** 11:53:12 **Company:** Schaffner

Equipment Tested	PBI Size 1
Serial Number	Test sample
Test Equipment used	Schaffner NSG 2050/PNW 2050
Test Procedure Used	EN 61000-4-5 called by EN 60947-2

Test #1

Version	Win2050 Ver 4.00
Test Name	C:\PSUITE\WIN2050\3P1KVL-L.PLS
Pulse Type	PNW2050 2 OHMS
Status	PASS
Description	EUT running motor load during test. No effects on motor operation. No failures.

Comments

Time Elapsed 0000:59:54

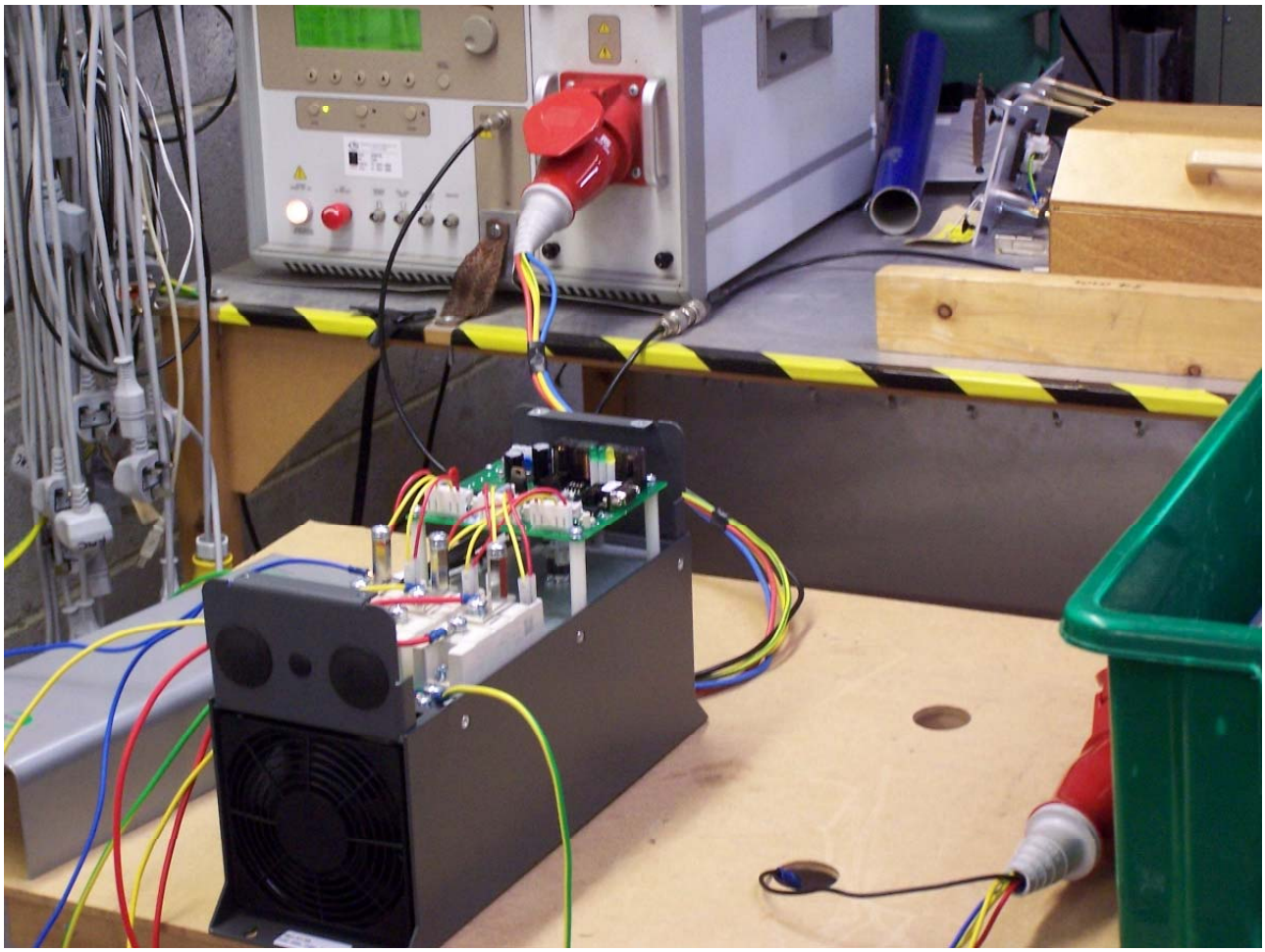
PARAMETER				FROM	TO	STEP
SIZE	FAIL VALUE	OPERATION	UNITS			
Coupler	L2 L3,L1 L3,L1 L2				N/A	
Polarity	POSITIVE,NEGATIVE					N/A
Voltage	Static	500	1000	500	N/A	Volts
Angle	Static	90	270	90	N/A	Degrees

Sync	SYNCHRONOUS
Repetition Rate	20 seconds
Ambient Temperature	18°C
Humidity	47%
Pressure	1007mB
Tested by	EMC Network SW
Title	pbi_11

Full Test Report

[No]	Coupler	Polarity	Voltage	Angle	[Measured IP]	[Status]
[1]	L2 L3	POSITIVE	500 90	31	PASS	
[2]	L1 L3	POSITIVE	500 90	29	PASS	
[3]	L1 L2	POSITIVE	500 90	30	PASS	
[4]	L2 L3	NEGATIVE	500 90	23	PASS	
[5]	L1 L3	NEGATIVE	500 90	25	PASS	
[6]	L1 L2	NEGATIVE	500 90	25	PASS	
[7]	L2 L3	POSITIVE	1000	90	56	PASS
[8]	L1 L3	POSITIVE	1000	90	53	PASS
[9]	L1 L2	POSITIVE	1000	90	54	PASS
[10]	L2 L3	NEGATIVE	1000	90	48	PASS
[11]	L1 L3	NEGATIVE	1000	90	50	PASS
[12]	L1 L2	NEGATIVE	1000	90	50	PASS
[13]	L2 L3	POSITIVE	500 180	27	PASS	
[14]	L1 L3	POSITIVE	500 180	23	PASS	
[15]	L1 L2	POSITIVE	500 180	31	PASS	
[16]	L2 L3	NEGATIVE	500 180	27	PASS	
[17]	L1 L3	NEGATIVE	500 180	30	PASS	
[18]	L1 L2	NEGATIVE	500 180	23	PASS	
[19]	L2 L3	POSITIVE	1000	180	52	PASS
[20]	L1 L3	POSITIVE	1000	180	48	PASS
[21]	L1 L2	POSITIVE	1000	180	55	PASS
[22]	L2 L3	NEGATIVE	1000	180	52	PASS
[23]	L1 L3	NEGATIVE	1000	180	54	PASS
[24]	L1 L2	NEGATIVE	1000	180	48	PASS
[25]	L2 L3	POSITIVE	500 270	23	PASS	
[26]	L1 L3	POSITIVE	500 270	25	PASS	
[27]	L1 L2	POSITIVE	500 270	25	PASS	
[28]	L2 L3	NEGATIVE	500 270	31	PASS	
[29]	L1 L3	NEGATIVE	500 270	29	PASS	
[30]	L1 L2	NEGATIVE	500 270	30	PASS	
[31]	L2 L3	POSITIVE	1000	270	48	PASS
[32]	L1 L3	POSITIVE	1000	270	50	PASS
[33]	L1 L2	POSITIVE	1000	270	49	PASS
[34]	L2 L3	NEGATIVE	1000	270	56	PASS
[35]	L1 L3	NEGATIVE	1000	270	53	PASS
[36]	L1 L2	NEGATIVE	1000	270	54	PASS
[37]	L2 L3	POSITIVE	500 90	32	PASS	
[38]	L1 L3	POSITIVE	500 90	29	PASS	
[39]	L1 L2	POSITIVE	500 90	30	PASS	
[40]	L2 L3	NEGATIVE	500 90	23	PASS	
[41]	L1 L3	NEGATIVE	500 90	25	PASS	
[42]	L1 L2	NEGATIVE	500 90	25	PASS	
[43]	L2 L3	POSITIVE	1000	90	56	PASS
[44]	L1 L3	POSITIVE	1000	90	53	PASS
[45]	L1 L2	POSITIVE	1000	90	54	PASS
[46]	L2 L3	NEGATIVE	1000	90	48	PASS
[47]	L1 L3	NEGATIVE	1000	90	50	PASS
[48]	L1 L2	NEGATIVE	1000	90	50	PASS
[49]	L2 L3	POSITIVE	500 180	26	PASS	
[50]	L1 L3	POSITIVE	500 180	23	PASS	
[51]	L1 L2	POSITIVE	500 180	31	PASS	
[52]	L2 L3	NEGATIVE	500 180	27	PASS	
[53]	L1 L3	NEGATIVE	500 180	30	PASS	
[54]	L1 L2	NEGATIVE	500 180	23	PASS	
[55]	L2 L3	POSITIVE	1000	180	52	PASS
[56]	L1 L3	POSITIVE	1000	180	48	PASS
[57]	L1 L2	POSITIVE	1000	180	55	PASS
[58]	L2 L3	NEGATIVE	1000	180	52	PASS
[59]	L1 L3	NEGATIVE	1000	180	55	PASS
[60]	L1 L2	NEGATIVE	1000	180	49	PASS
[61]	L2 L3	POSITIVE	500 270	23	PASS	
[62]	L1 L3	POSITIVE	500 270	25	PASS	
[63]	L1 L2	POSITIVE	500 270	25	PASS	
[64]	L2 L3	NEGATIVE	500 270	31	PASS	
[65]	L1 L3	NEGATIVE	500 270	29	PASS	
[66]	L1 L2	NEGATIVE	500 270	30	PASS	
[67]	L2 L3	POSITIVE	1000	270	48	PASS
[68]	L1 L3	POSITIVE	1000	270	50	PASS
[69]	L1 L2	POSITIVE	1000	270	50	PASS
[70]	L2 L3	NEGATIVE	1000	270	56	PASS
[71]	L1 L3	NEGATIVE	1000	270	53	PASS
[72]	L1 L2	NEGATIVE	1000	270	54	PASS
[73]	L2 L3	POSITIVE	500 90	32	PASS	
[74]	L1 L3	POSITIVE	500 90	29	PASS	
[75]	L1 L2	POSITIVE	500 90	30	PASS	
[76]	L2 L3	NEGATIVE	500 90	23	PASS	
[77]	L1 L3	NEGATIVE	500 90	25	PASS	
[78]	L1 L2	NEGATIVE	500 90	25	PASS	
[79]	L2 L3	POSITIVE	1000	90	56	PASS
[80]	L1 L3	POSITIVE	1000	90	53	PASS
[81]	L1 L2	POSITIVE	1000	90	54	PASS
[82]	L2 L3	NEGATIVE	1000	90	48	PASS
[83]	L1 L3	NEGATIVE	1000	90	49	PASS
[84]	L1 L2	NEGATIVE	1000	90	50	PASS
[85]	L2 L3	POSITIVE	500 180	27	PASS	
[86]	L1 L3	POSITIVE	500 180	23	PASS	
[87]	L1 L2	POSITIVE	500 180	31	PASS	
[88]	L2 L3	NEGATIVE	500 180	27	PASS	
[89]	L1 L3	NEGATIVE	500 180	30	PASS	
[90]	L1 L2	NEGATIVE	500 180	24	PASS	
[91]	L2 L3	POSITIVE	1000	180	52	PASS
[92]	L1 L3	POSITIVE	1000	180	48	PASS
[93]	L1 L2	POSITIVE	1000	180	55	PASS
[94]	L2 L3	NEGATIVE	1000	180	52	PASS
[95]	L1 L3	NEGATIVE	1000	180	55	PASS
[96]	L1 L2	NEGATIVE	1000	180	49	PASS

[97]	L2 L3	POSITIVE	500 270	23	PASS	
[98]	L1 L3	POSITIVE	500 270	25	PASS	
[99]	L1 L2	POSITIVE	500 270	25	PASS	
[100]	L2 L3	NEGATIVE	500 270	31	PASS	
[101]	L1 L3	NEGATIVE	500 270	29	PASS	
[102]	L1 L2	NEGATIVE	500 270	30	PASS	
[103]	L2 L3	POSITIVE	1000	270	48	PASS
[104]	L1 L3	POSITIVE	1000	270	50	PASS
[105]	L1 L2	POSITIVE	1000	270	50	PASS
[106]	L2 L3	NEGATIVE	1000	270	56	PASS
[107]	L1 L3	NEGATIVE	1000	270	53	PASS
[108]	L1 L2	NEGATIVE	1000	270	54	PASS
[109]	L2 L3	POSITIVE	500 90	31	PASS	
[110]	L1 L3	POSITIVE	500 90	29	PASS	
[111]	L1 L2	POSITIVE	500 90	30	PASS	
[112]	L2 L3	NEGATIVE	500 90	23	PASS	
[113]	L1 L3	NEGATIVE	500 90	25	PASS	
[114]	L1 L2	NEGATIVE	500 90	25	PASS	
[115]	L2 L3	POSITIVE	1000	90	56	PASS
[116]	L1 L3	POSITIVE	1000	90	53	PASS
[117]	L1 L2	POSITIVE	1000	90	54	PASS
[118]	L2 L3	NEGATIVE	1000	90	48	PASS
[119]	L1 L3	NEGATIVE	1000	90	50	PASS
[120]	L1 L2	NEGATIVE	1000	90	49	PASS
[121]	L2 L3	POSITIVE	500 180	27	PASS	
[122]	L1 L3	POSITIVE	500 180	23	PASS	
[123]	L1 L2	POSITIVE	500 180	31	PASS	
[124]	L2 L3	NEGATIVE	500 180	27	PASS	
[125]	L1 L3	NEGATIVE	500 180	30	PASS	
[126]	L1 L2	NEGATIVE	500 180	24	PASS	
[127]	L2 L3	POSITIVE	1000	180	52	PASS
[128]	L1 L3	POSITIVE	1000	180	48	PASS
[129]	L1 L2	POSITIVE	1000	180	55	PASS
[130]	L2 L3	NEGATIVE	1000	180	52	PASS
[131]	L1 L3	NEGATIVE	1000	180	55	PASS
[132]	L1 L2	NEGATIVE	1000	180	49	PASS
[133]	L2 L3	POSITIVE	500 270	23	PASS	
[134]	L1 L3	POSITIVE	500 270	25	PASS	
[135]	L1 L2	POSITIVE	500 270	25	PASS	
[136]	L2 L3	NEGATIVE	500 270	31	PASS	
[137]	L1 L3	NEGATIVE	500 270	29	PASS	
[138]	L1 L2	NEGATIVE	500 270	30	PASS	
[139]	L2 L3	POSITIVE	1000	270	48	PASS
[140]	L1 L3	POSITIVE	1000	270	50	PASS
[141]	L1 L2	POSITIVE	1000	270	50	PASS
[142]	L2 L3	NEGATIVE	1000	270	56	PASS
[143]	L1 L3	NEGATIVE	1000	270	53	PASS
[144]	L1 L2	NEGATIVE	1000	270	54	PASS
[145]	L2 L3	POSITIVE	500 90	31	PASS	
[146]	L1 L3	POSITIVE	500 90	29	PASS	
[147]	L1 L2	POSITIVE	500 90	30	PASS	
[148]	L2 L3	NEGATIVE	500 90	23	PASS	
[149]	L1 L3	NEGATIVE	500 90	25	PASS	
[150]	L1 L2	NEGATIVE	500 90	25	PASS	
[151]	L2 L3	POSITIVE	1000	90	56	PASS
[152]	L1 L3	POSITIVE	1000	90	53	PASS
[153]	L1 L2	POSITIVE	1000	90	54	PASS
[154]	L2 L3	NEGATIVE	1000	90	48	PASS
[155]	L1 L3	NEGATIVE	1000	90	50	PASS
[156]	L1 L2	NEGATIVE	1000	90	50	PASS
[157]	L2 L3	POSITIVE	500 180	27	PASS	
[158]	L1 L3	POSITIVE	500 180	23	PASS	
[159]	L1 L2	POSITIVE	500 180	31	PASS	
[160]	L2 L3	NEGATIVE	500 180	28	PASS	
[161]	L1 L3	NEGATIVE	500 180	30	PASS	
[162]	L1 L2	NEGATIVE	500 180	24	PASS	
[163]	L2 L3	POSITIVE	1000	180	52	PASS
[164]	L1 L3	POSITIVE	1000	180	48	PASS
[165]	L1 L2	POSITIVE	1000	180	55	PASS
[166]	L2 L3	NEGATIVE	1000	180	53	PASS
[167]	L1 L3	NEGATIVE	1000	180	55	PASS
[168]	L1 L2	NEGATIVE	1000	180	49	PASS
[169]	L2 L3	POSITIVE	500 270	23	PASS	
[170]	L1 L3	POSITIVE	500 270	25	PASS	
[171]	L1 L2	POSITIVE	500 270	25	PASS	
[172]	L2 L3	NEGATIVE	500 270	31	PASS	
[173]	L1 L3	NEGATIVE	500 270	29	PASS	
[174]	L1 L2	NEGATIVE	500 270	29	PASS	
[175]	L2 L3	POSITIVE	1000	270	48	PASS
[176]	L1 L3	POSITIVE	1000	270	49	PASS
[177]	L1 L2	POSITIVE	1000	270	50	PASS
[178]	L2 L3	NEGATIVE	1000	270	56	PASS
[179]	L1 L3	NEGATIVE	1000	270	53	PASS
[180]	L1 L2	NEGATIVE	1000	270	54	PASS



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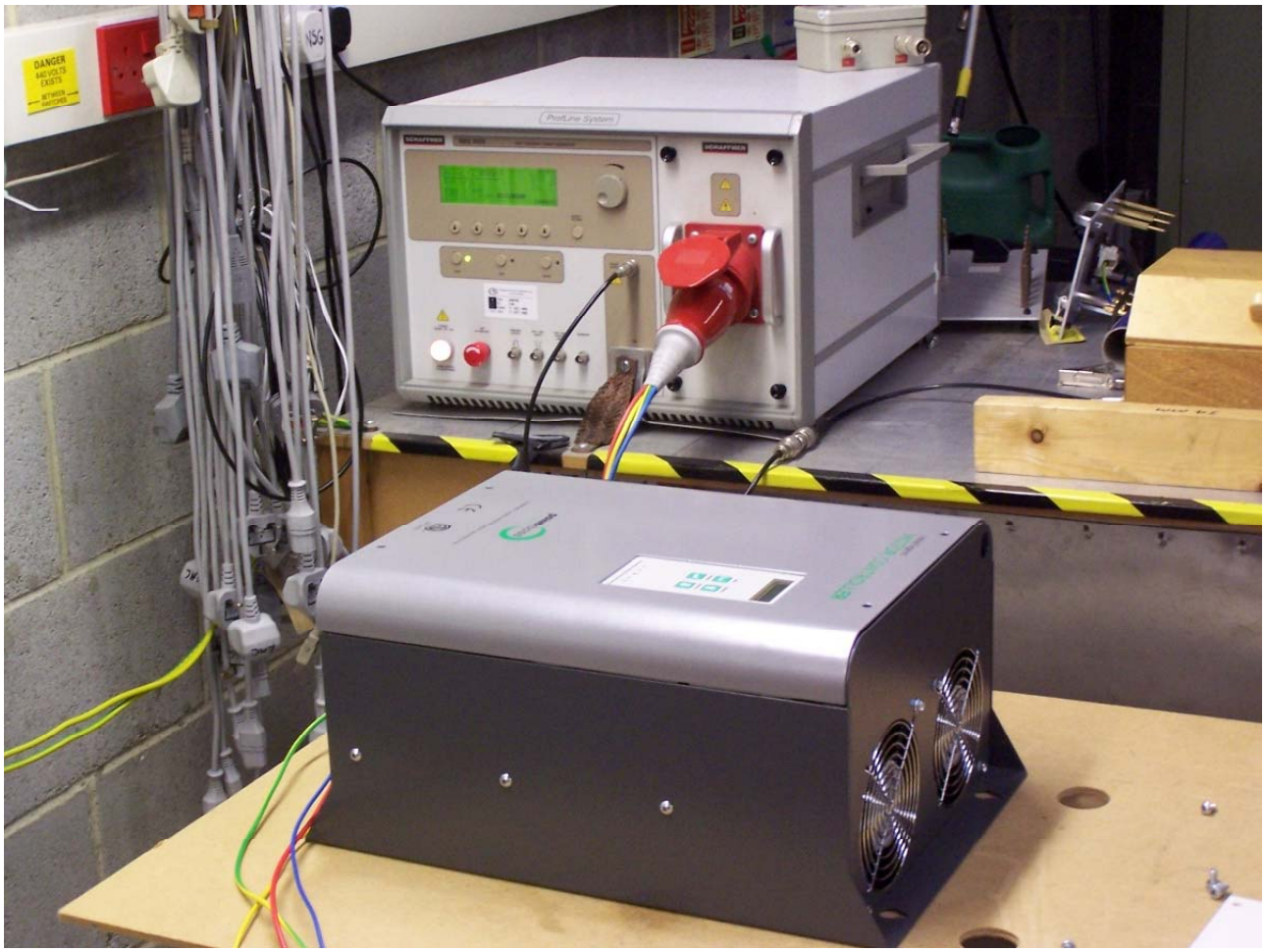

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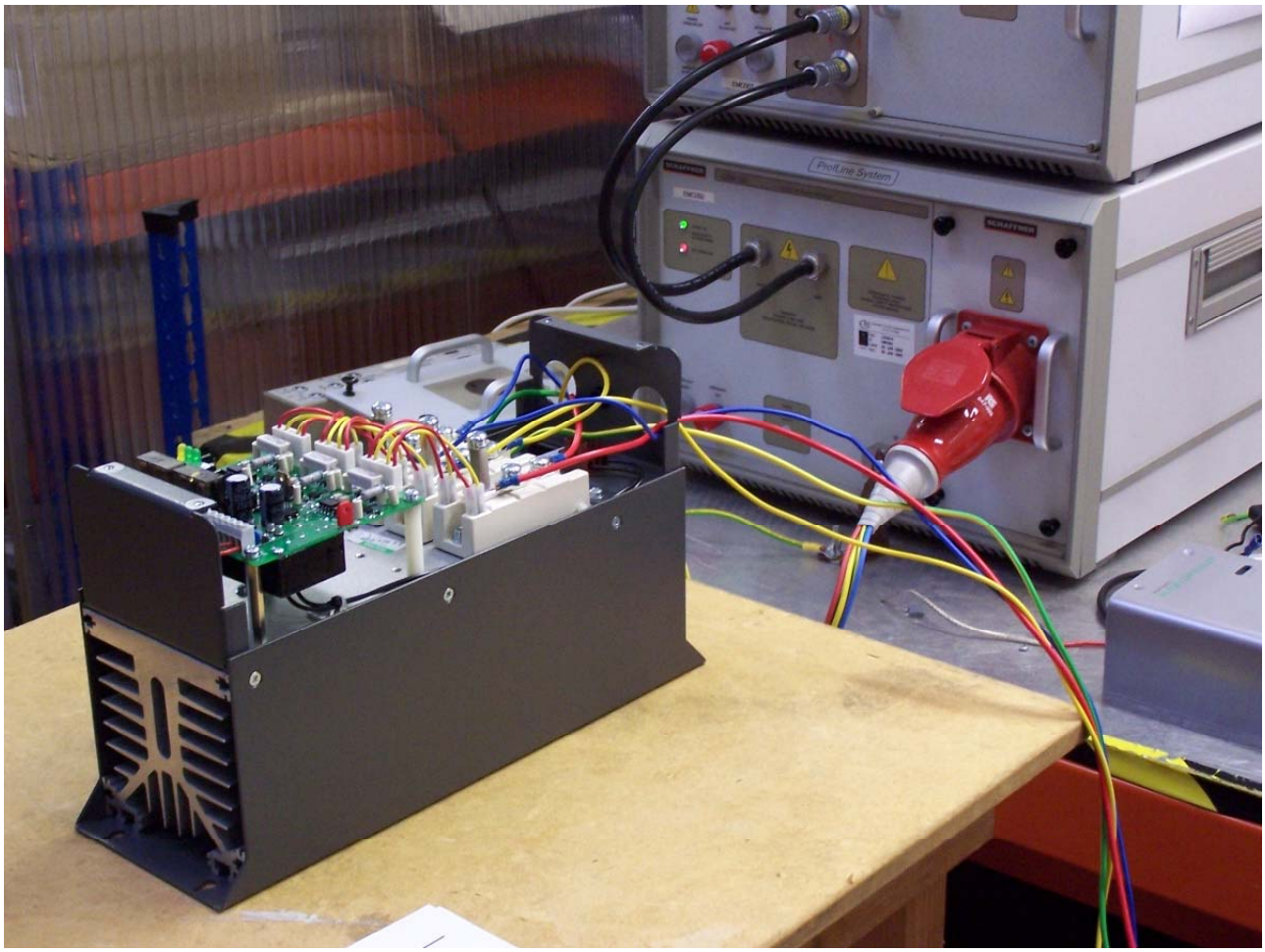

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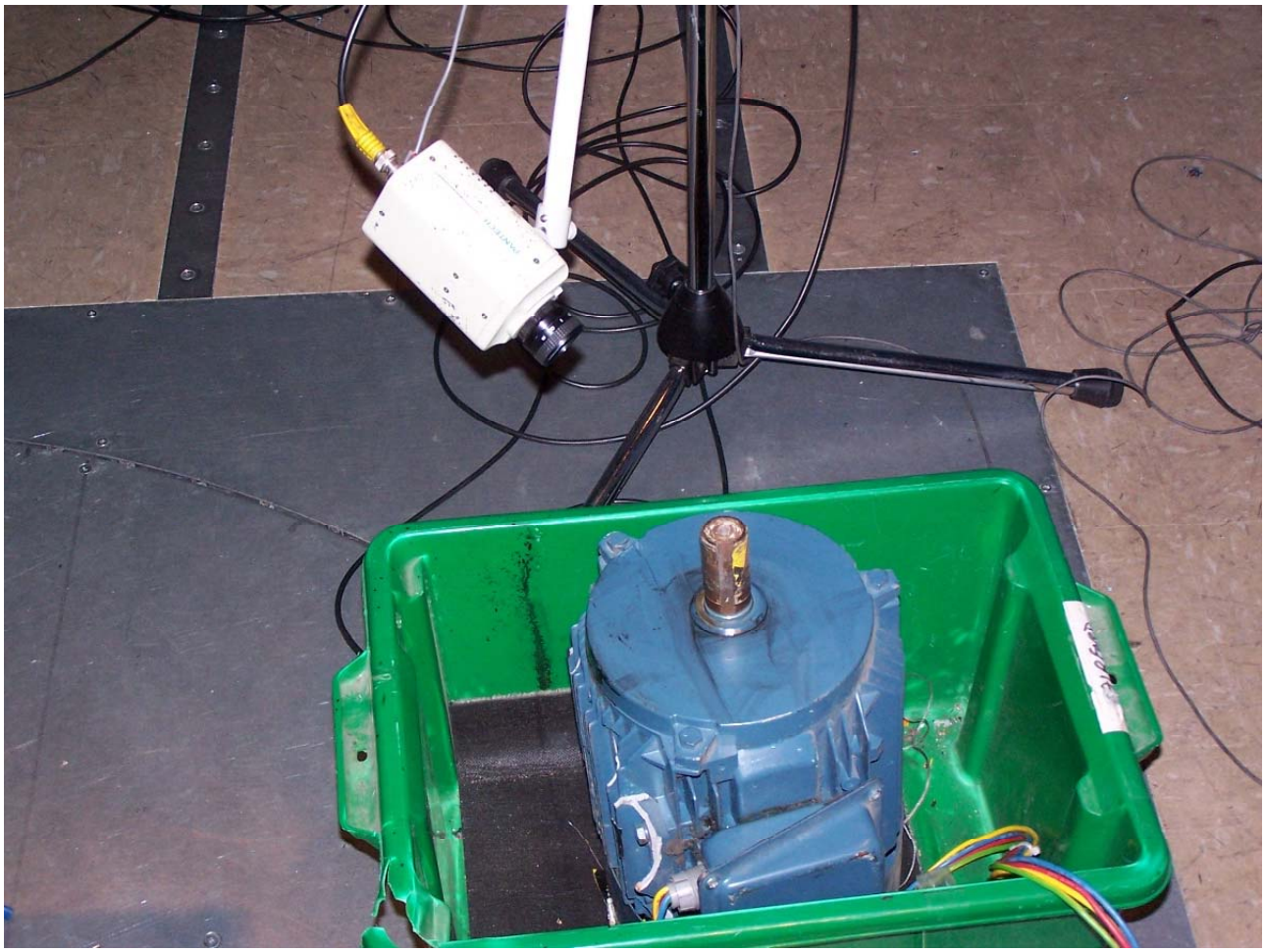

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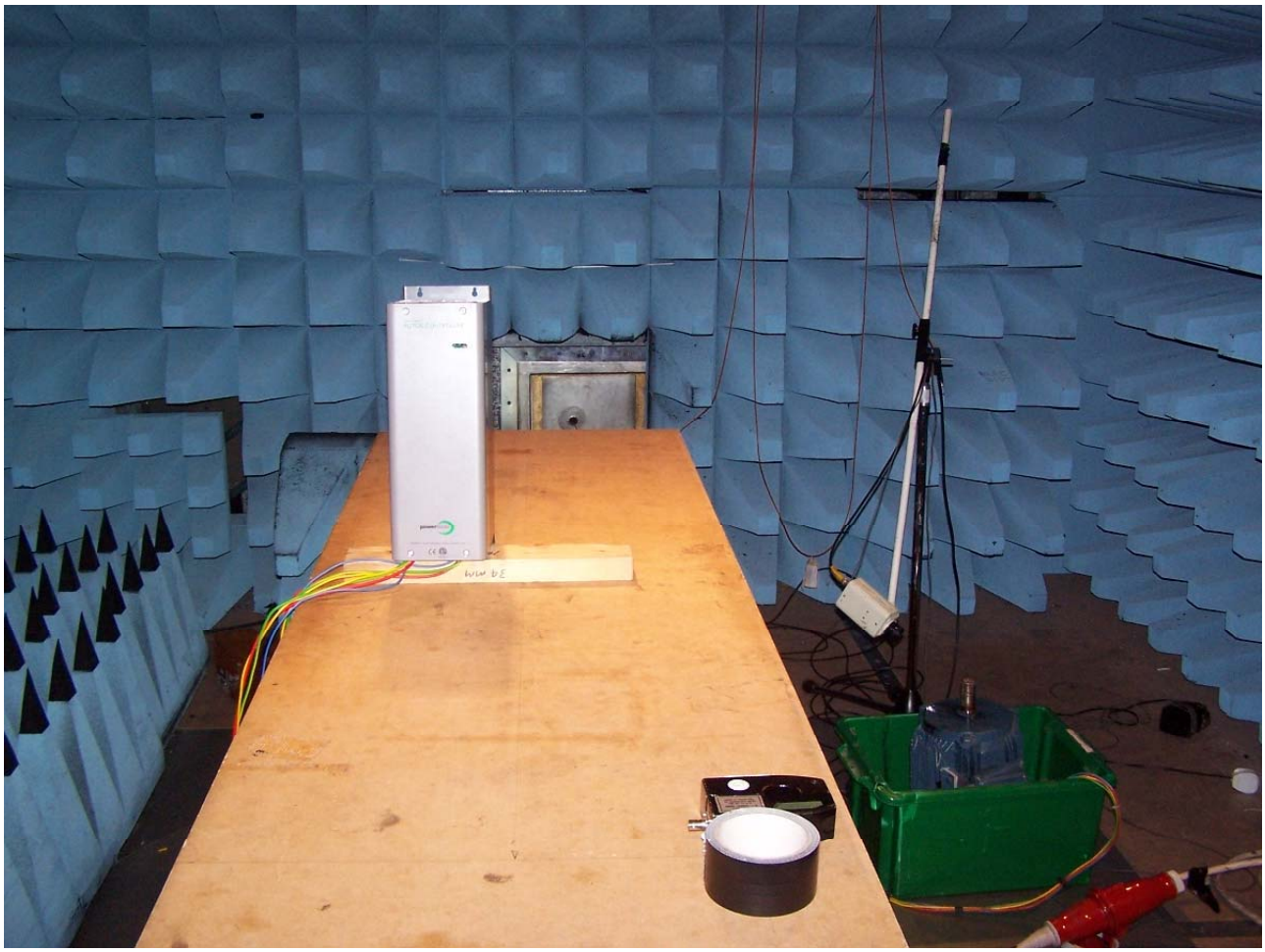

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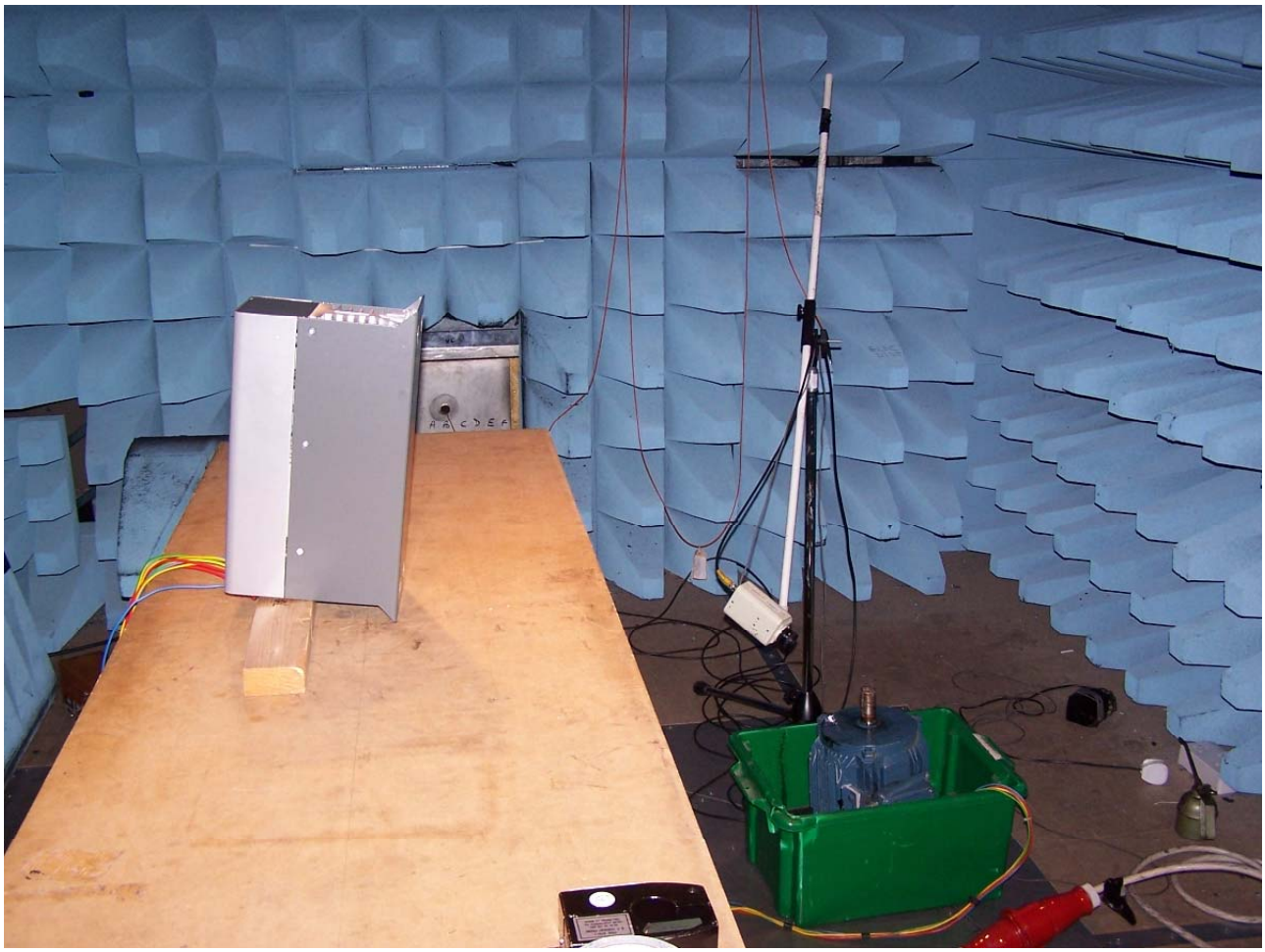

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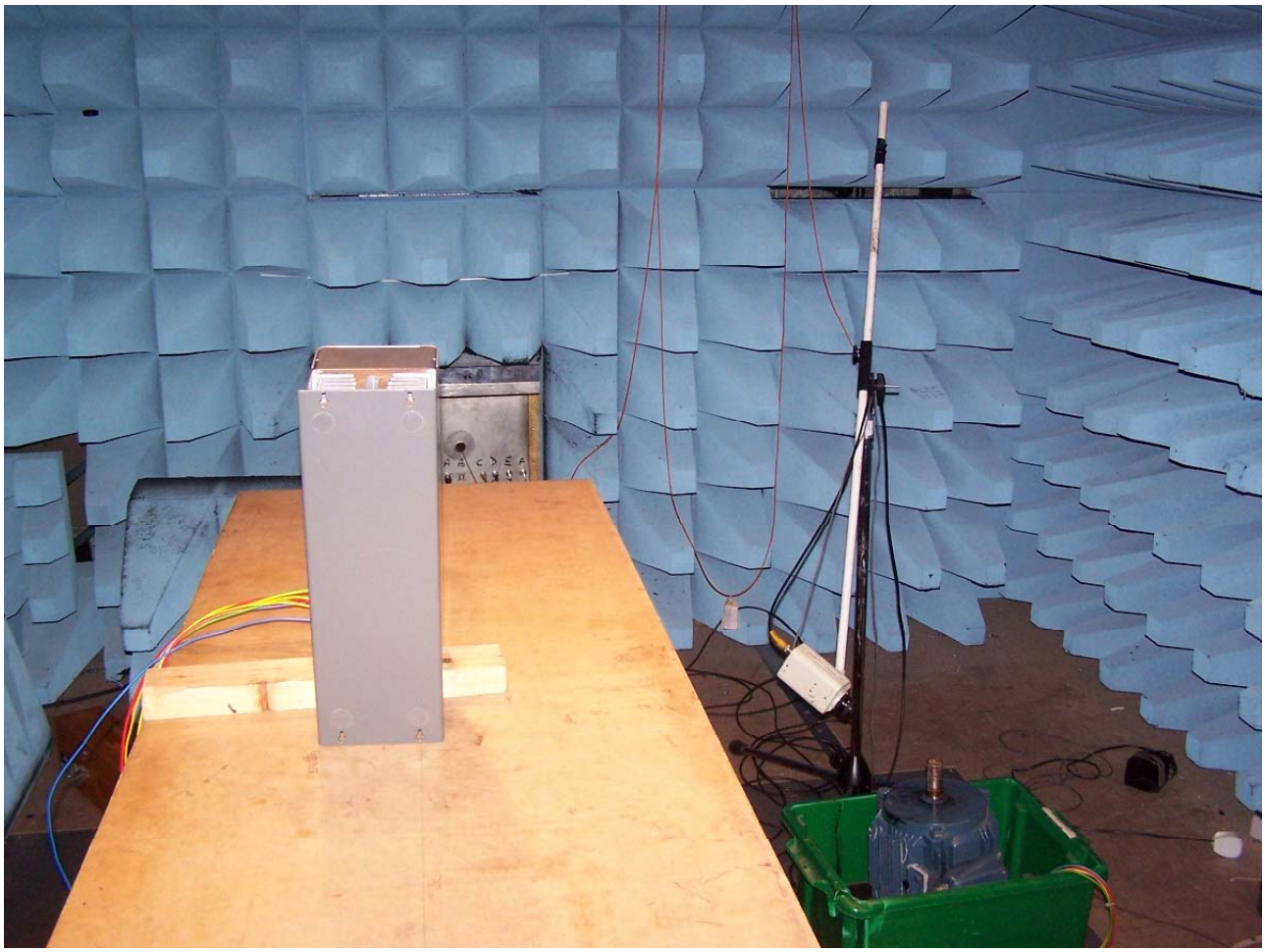

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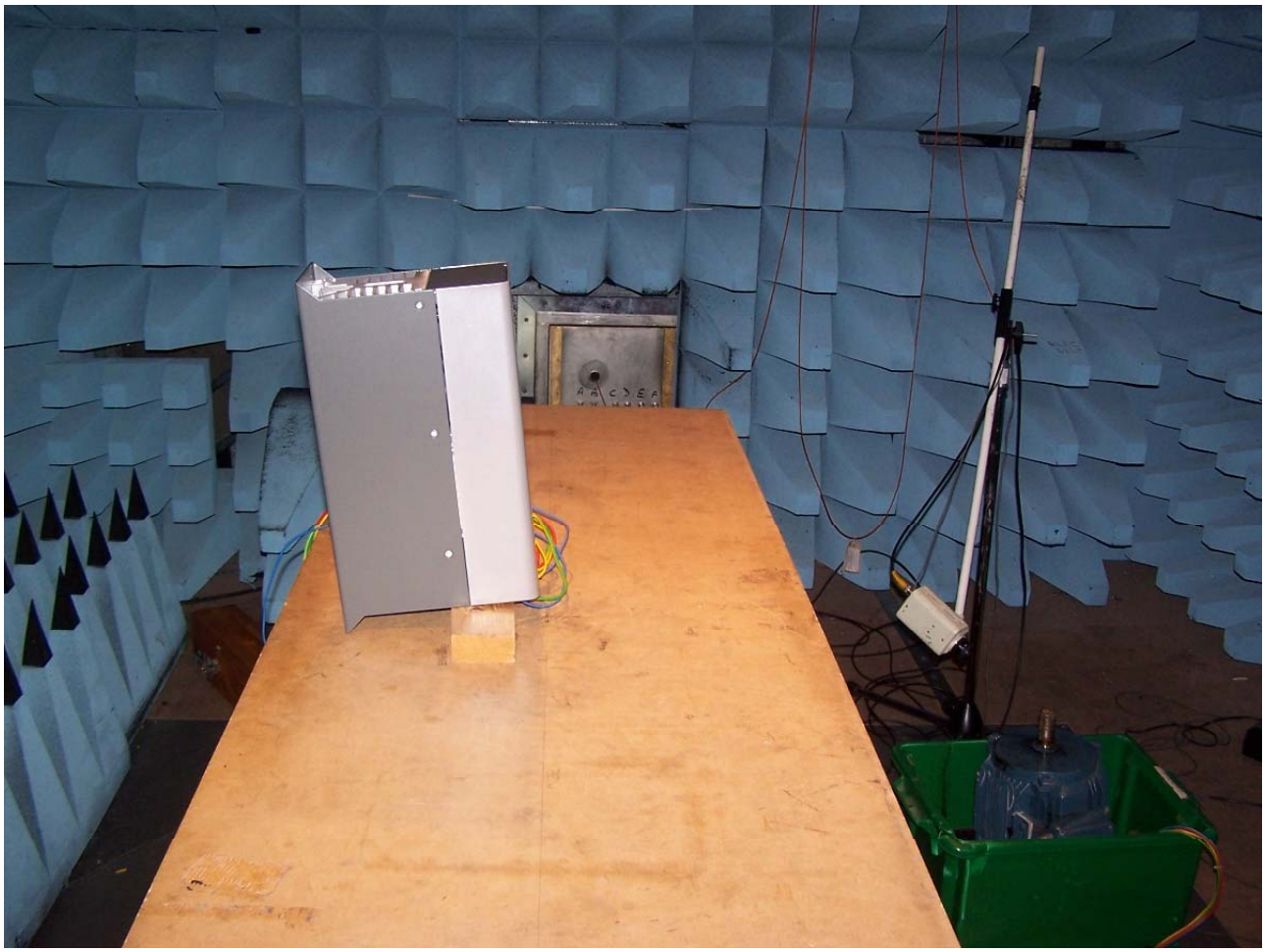

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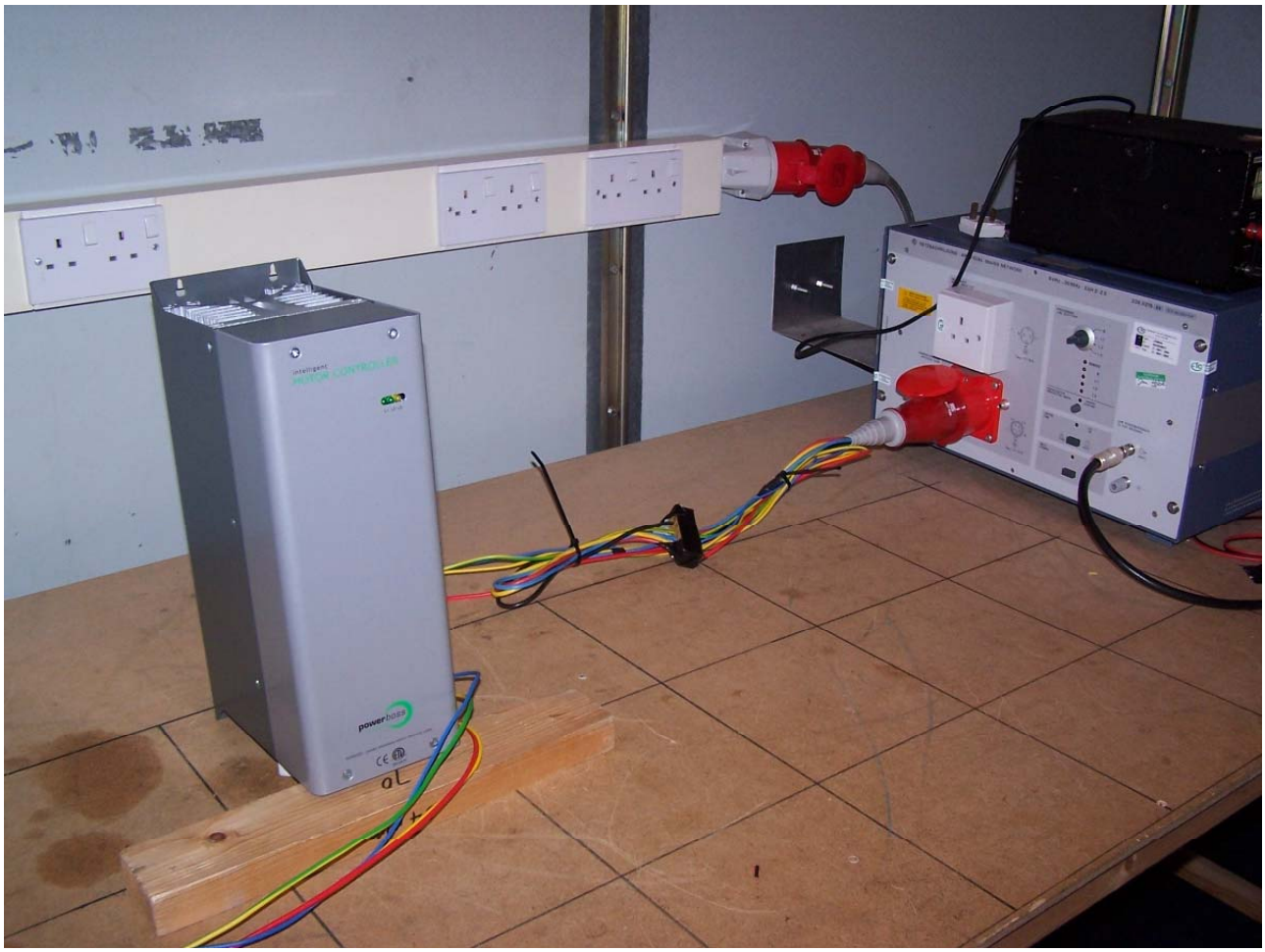

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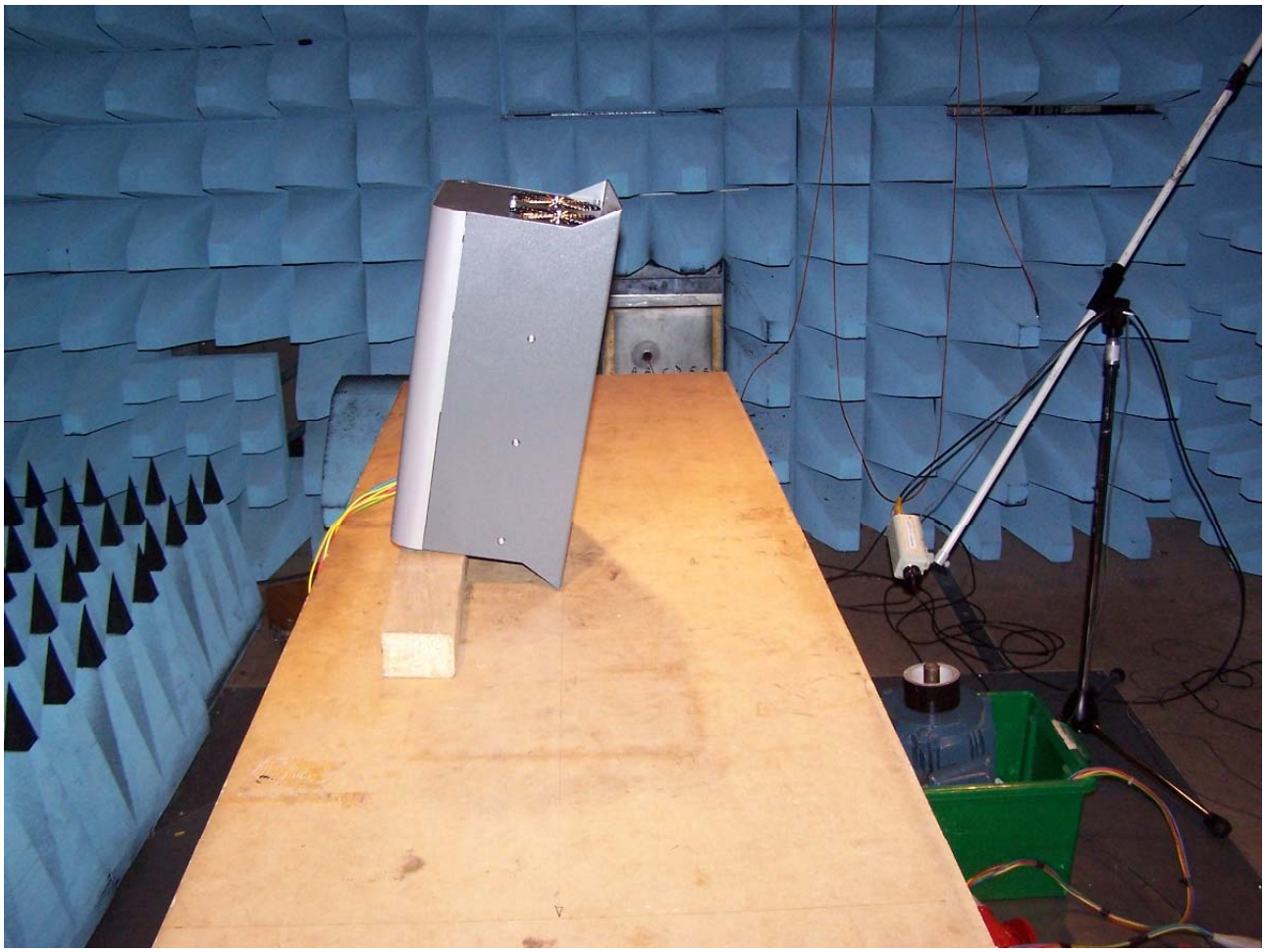

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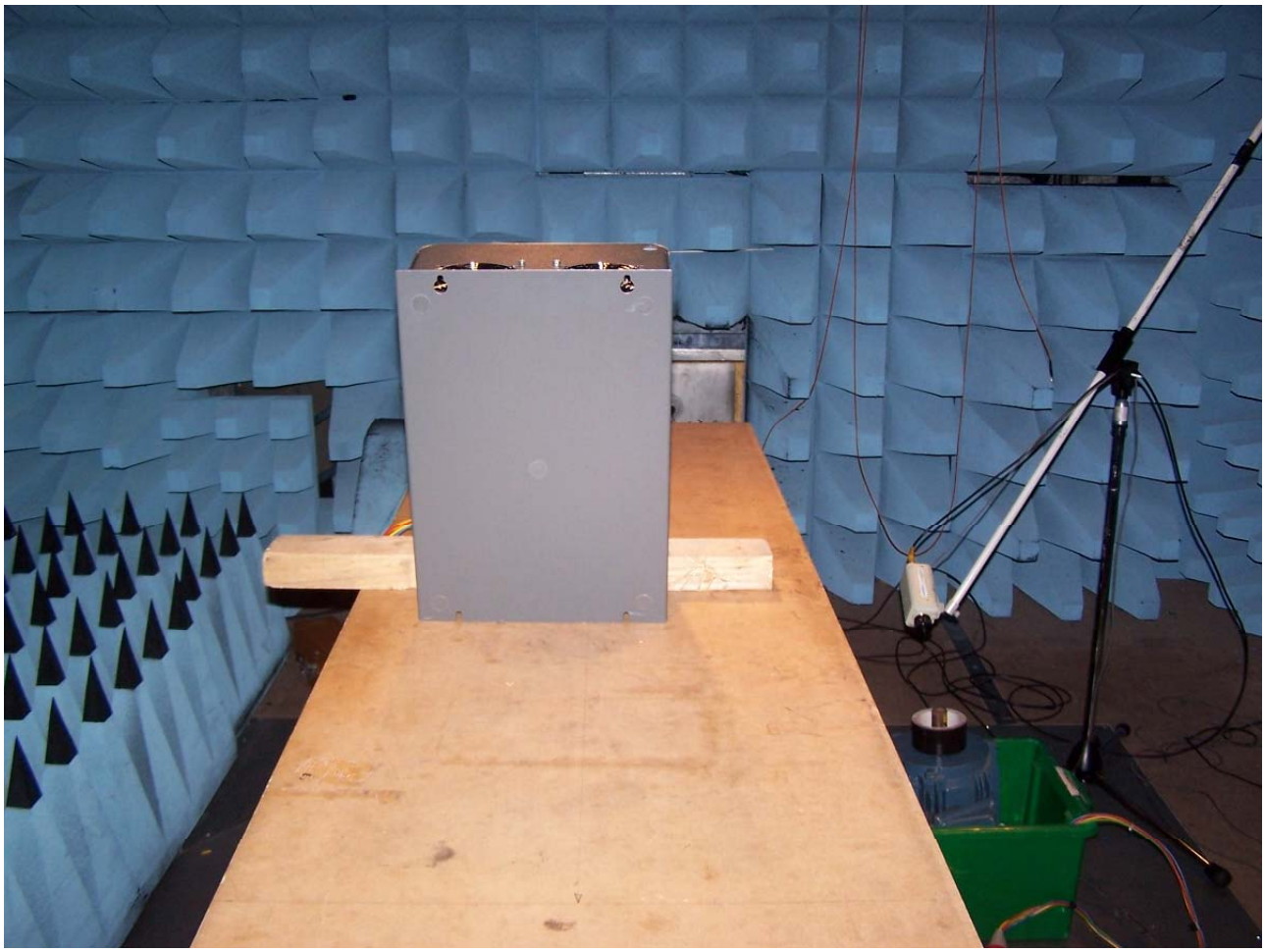

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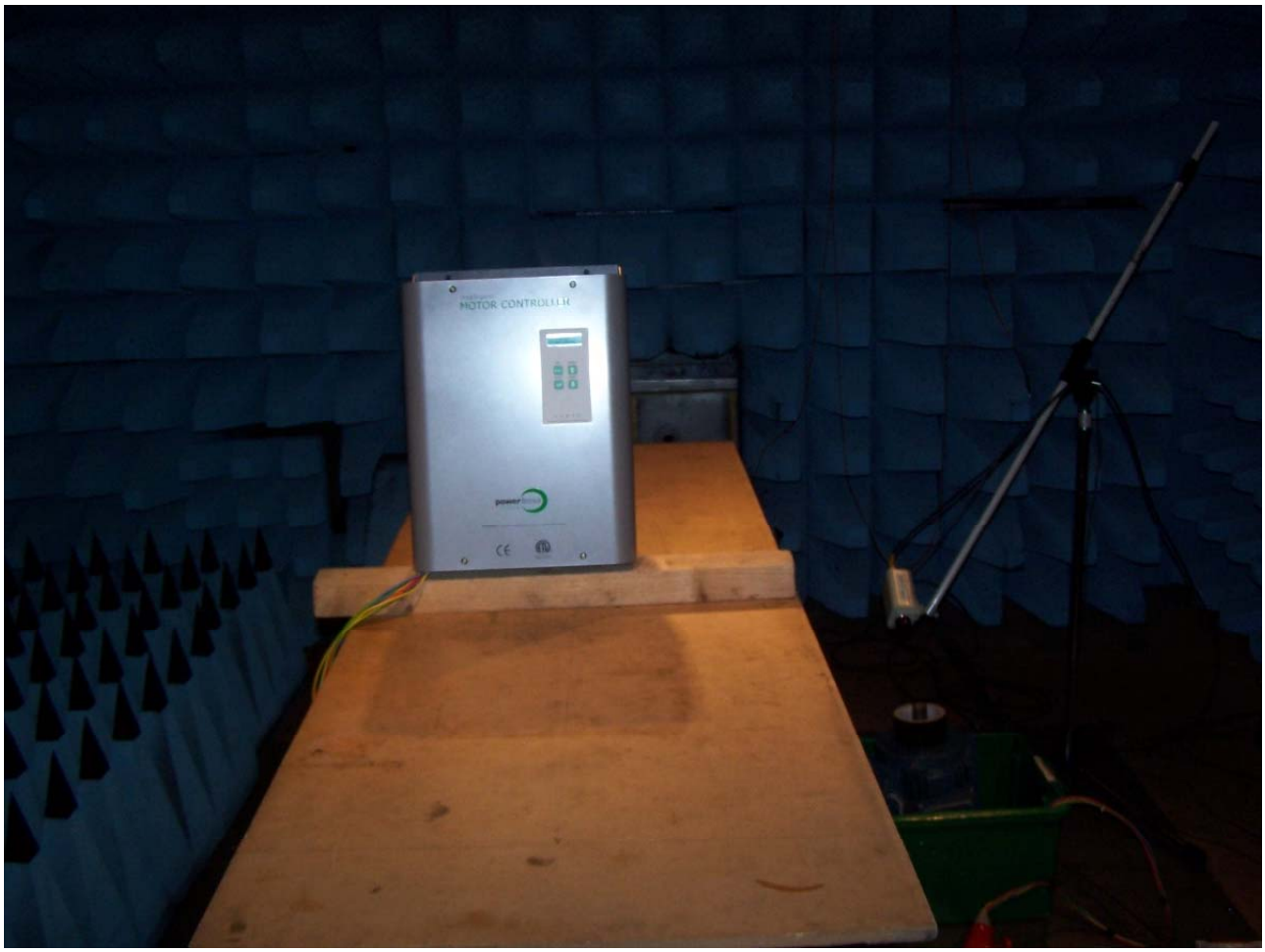

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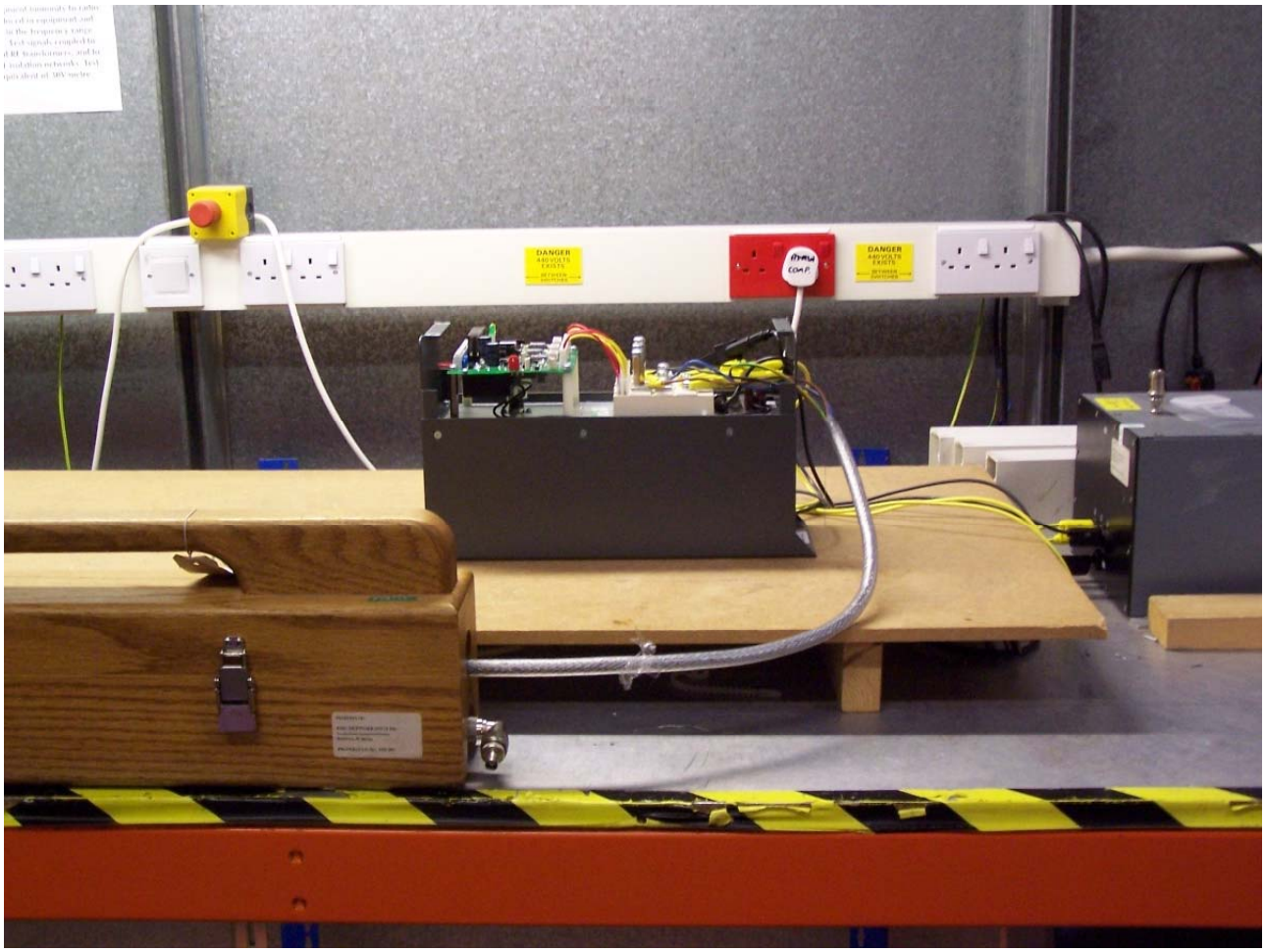

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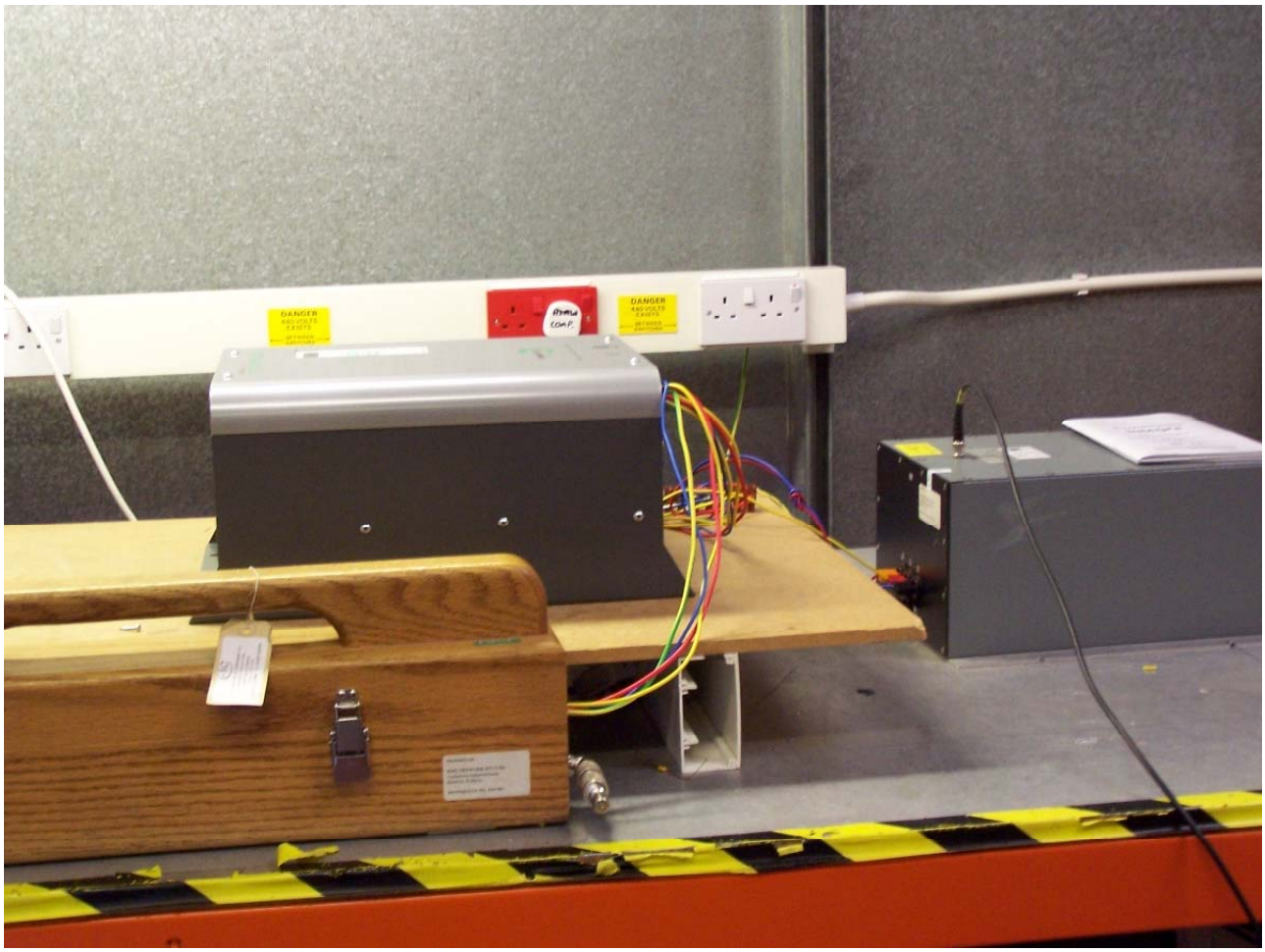

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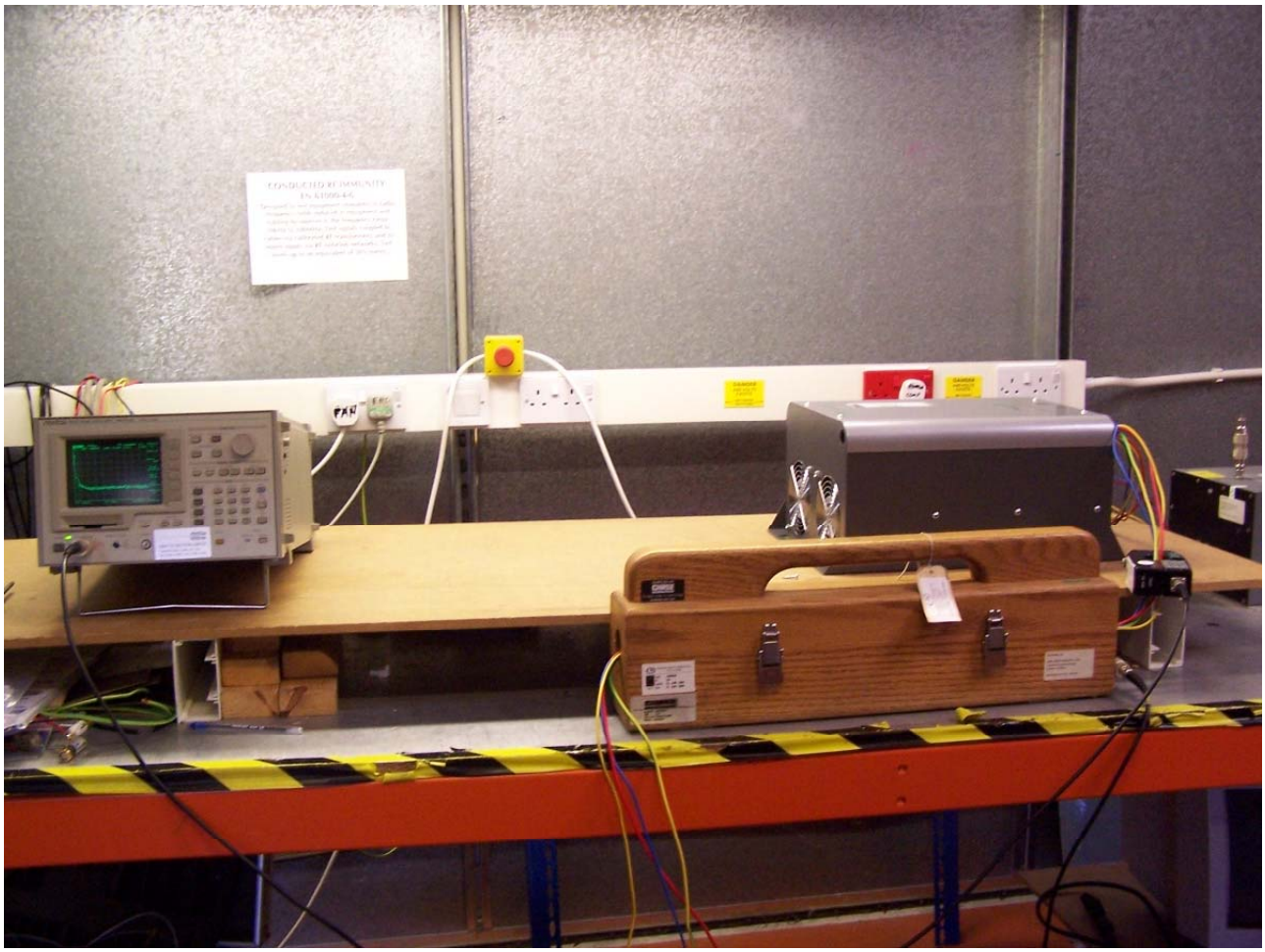

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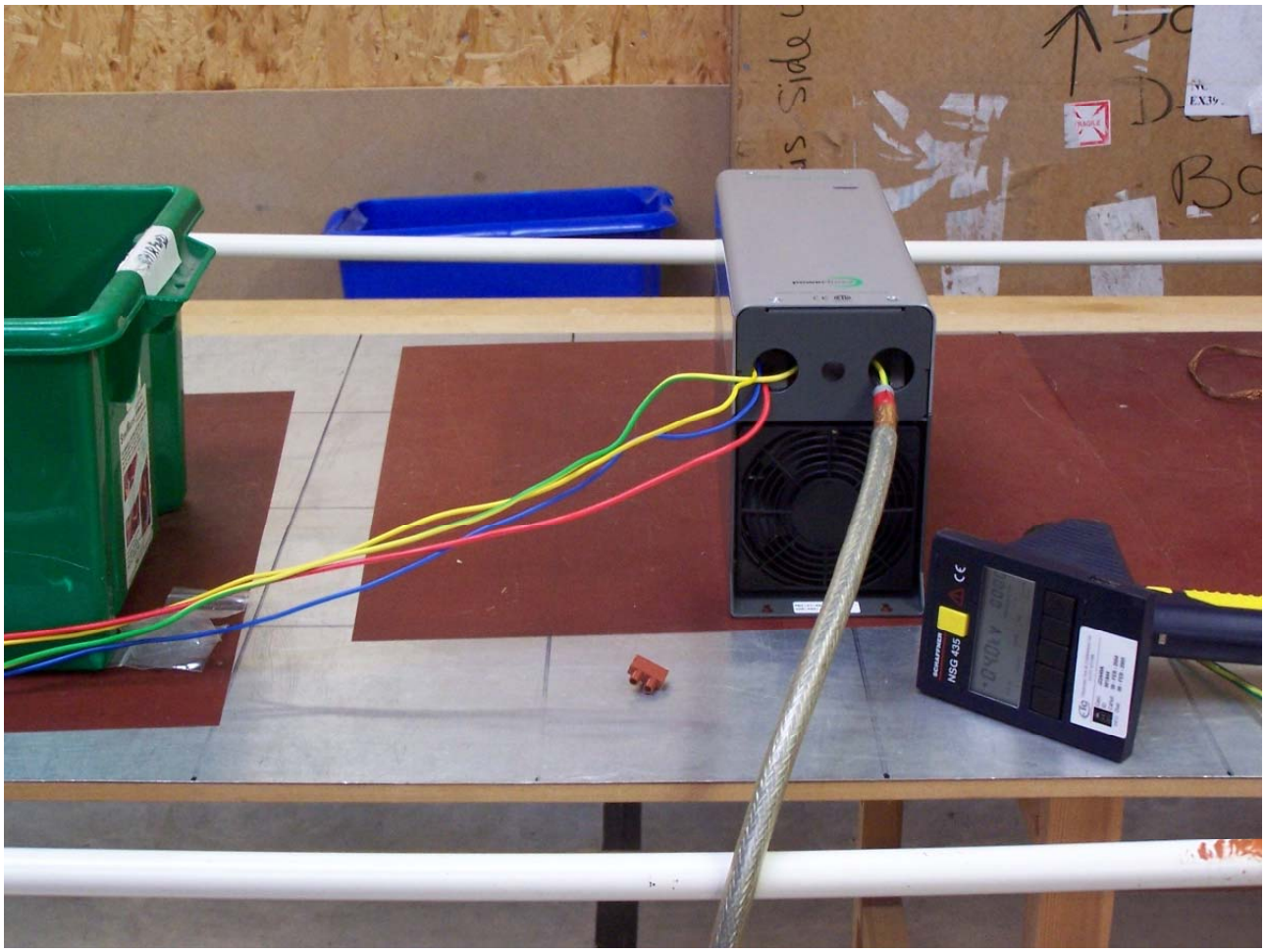

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