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Report No.: GZEM110700234201

Page: 1 of 56

TEST REPORT

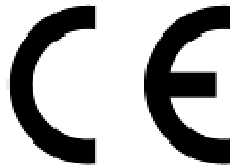
Application No.:	GZEM1107002342HS
Applicant:	HoMedics Group Ltd
Product Name:	Shiatsu Pillow with Heat
Product Description:	massage
Model No.:	SP-39HW-EU / SP-39HW-GB ♣
♣	Please refer to section 3 of this report for details
P.O. No.:	PC0000769
Standards:	EN 55014-1:2006+A1:2009, EN 55014-2:1997+A1:2001+A2:2008, EN 61000-3-2:2006+A1:2009+A2:2009, EN 61000-3-3:2008, BS EN 55014-1:2006+A1:2009, BS EN 55014-2:1997+A1:2001+A2:2008, BS EN 61000-3-2:2006+A1:2009+A2:2009, BS EN 61000-3-3:2008.
Date of Receipt:	2011-07-01
Date of Test:	2011-07-06 to 2011-07-11
Date of Issue:	2011-07-18
Test Result :	Pass*

* In the configuration tested, the EUT complied with the standards specified above.

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EC Declaration of Conformity and compliance with all relevant EC Directives.

Richard Li
2011 July

Richard Li
Manager



The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

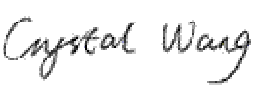
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2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
00		2011-07-18		Original

Authorized for issue by:			
Tested By	 (Crystal Wang) / Project Engineer	2011-07-06 to 2011-07-11 Date	
Prepared By	 (Lily Lai) / Clerk	2011-07-18 Date	
Checked By	 (Michael Huang) / Reviewer	2011-07-18 Date	



3 Test Summary

Electromagnetic Interference (EMI)				
Test	Test Requirement	Test Method	Class / Severity	Result
Conducted Emission on AC (150kHz to 30MHz)	EN 55014-1:2006 +A1:2009	EN 55014-1:2006 +A1:2009	Table 1 Columns 2&3	PASS
	BS EN 55014-1: 2006+A1:2009	BS EN 55014-1: 2006+A1:2009		
Disturbance Power (30MHz to 300MHz)	EN 55014-1:2006 +A1:2009	EN 55014-1:2006 +A1:2009	Table 2a, Table 2b Columns 2&3 ♀	PASS
	BS EN 55014-1: 2006 +A1:2009	BS EN 55014-1: 2006+A1:2009		
Harmonic Emission on AC (100Hz to 2kHz)	EN 61000-3-2:2006 +A1:2009+A2:2009	N/A	Class A	N/A
	BS EN 61000-3-2:2006 +A1:2009+A2:2009			
Flicker Emission on AC	EN 61000-3-3:2008	EN 61000-3-3:2008	Clause 5 of EN 61000-3-3	PASS
	BS EN 61000-3-3:2008	BS EN 61000-3-3:2008	Clause 5 of BS EN 61000-3-3	
Electromagnetic Susceptibility(EMS)				
Test	Test Requirement	Test Method	Class / Severity	Result
ESD	EN 55014-2:1997 +A1:2001+A2:2008	EN 61000-4-2:2009	Contact ±4 kV Air ±8 kV	PASS
	BS EN 55014-2:1997 +A1:2001+A2:2008	BS EN 61000-4-2: 2009		
Electrical Fast Transients (EFT) on AC	EN 55014-2:1997 +A1:2001+A2:2008	EN 61000-4-4: 2004+A1:2010	AC ± 0.5kV & ± 1.0kV	PASS
	BS EN 55014-2:1997 +A1:2001+A2:2008	BS EN 61000-4-4: 2004+A1:2010		
Surge Immunity on AC	EN 55014-2:1997 +A1:2001+A2:2008	EN 61000-4-5:2006	±1kV D.M.†	PASS
	BS EN 55014-2:1997 +A1:2001+A2:2008	BS EN 61000-4-5: 2006		



Injected Currents on AC (150kHz to 230MHz)	EN 55014-2:1997 +A1:2001+A2:2008	EN 61000-4-6:2009	3V r.m.s (emf), 80%, 1kHz Amp. Mod.	PASS
	BS EN 55014-2: 1997 +A1:2001+A2:2008	BS EN 61000-4-6: 2009		
Voltage Dips and Interruptions on AC	EN 55014-2:1997 +A1:2001+A2:2008	EN 61000-4-11:2004	0 % U_T^* for 0.5per 40 % U_T^* for 10per 70 % U_T^* for 25per	PASS
	BS EN 55014-2:1997 +A1:2001+A2:2008	BS EN 61000-4-11: 2004		
Remark :				
* U_T is the nominal supply voltage.				
† D.M. – Differential Mode.				
♀ Disturbance Power test is applied to the EUT only since: 1) all the measurement result are lower than the applicable limits (Table 2a) minus the corresponding margin (Table 2b); or the limit for the measurement with the average detector is met when using a receiver with a quasi-peak detector; 2) No clock frequency or oscillator frequency of the EUT is more than or equal to 30 MHz. Please refer to section 7.2 of this test report for more details. N/A: Not applicable, please refer to Section 7.3 of this report for details.				
♣ Model No.: SP-39HW-EU / SP-39HW-GB				
According to the confirmation from the applicant, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, only difference being the plugs. “GB” is with CE/BS plug while “EU” is with CE/GS plug. Therefore only one model SP-39HW-EU was tested in this report.				



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5 General Information

5.1 Client Information

Applicant: HoMedics Group Ltd
Address of Applicant: HoMedics House, Somerhill Business Park, Five Oak Green Road, Tonbridge, Kent TN11 0GP England.

5.2 General Description of E.U.T.

Product Name: Shiatsu Pillow with Heat
Product Description: massage
Model No.: SP-39HW-EU / SP-39HW-GB
P.O. No.: PC0000769

5.3 Details of E.U.T.

Power Supply: AC 220-240V 50/60Hz
AC/DC Adapter detail: Model: EP-U-1220-EU
Input: AC 220-240V 50/60Hz 0.3A
2 pins, AC input
Output: DC 12V 1.6A
2 wires x 2.0m unscreened DC output cable.
Control cord:: 0.6m unscreened cable.

5.4 Description of Support Units

The EUT has been tested as an independent unit.

5.5 Deviation from Standards

None.

5.6 Abnormalities from Standard Conditions

None.

5.7 Monitoring of EUT for All Immunity Test

Audio: N/A
Visual: Movement, LED light and light of the EUT.

5.8 Test Location

All tests were performed at:
SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory,
198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,
Guangzhou, China 510663
Tel: +86 20 82155555 Fax: +86 20 82075059
No tests were sub-contracted.

5.9 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is recognized under the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

- **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.

- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

- **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

- **FCC (Registration No.: 282399)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 282399, May 31, 2002.

- **Industry Canada (Registration No.: 4620B-1)**

The 3m/10m Alternate Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering of Industry Canada for radio equipment testing with Registration No. 4620B-1.

- **VCCI (Registration No.: R-2460 and C-2584)**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2460 and C-2584 respectively.

- **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2005, the Basic Rules, IEC 60385:2006-10 and Rules of procedure IEC 60385:2006-10, and the relevant IEC 60385 CB-Scheme Operational documents.



6 Equipment Used during Test

Conducted Emission					
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Due date
					(YYYY-MM-DD)
EMC0306	Shielding Room	Zhong Yu	8 x 3 x 3.8 m ³	N/A	N/A
EMC0118	Two-line v-netwok	R&S	ENV216	100359	2011-09-25
EMC0102	LISN	SCHAFFNER CHASE	MN2050D/1	1421	2011-11-23
EMC2046	Artificial Mains Network (LISN)	AFJ Instruments	LT32C	S.N.320311201 50	2012-05-18
EMC0506	EMI Test Receiver	Rohde & Schwarz	ESCS30	100085	2011-11-24
EMC0107	Coaxial Cable	SGS	2m	N/A	2012-07-18
EMC0106	Voltage Probe	SGS	N/A	N/A	N/A
EMC0120	8 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T8-02	20550	2012-01-17
EMC0121	4 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T4-02	20549	2012-01-17
EMC0122	2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T2-02	20548	2012-01-17

Disturbance Power					
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Due date
					(YYYY-MM-DD)
EMC0306	Shielding Room	Zhong Yu	8 x 3 x 3.8 m ³	N/A	N/A
EMC0302	Absorbing Clamp	Schwarzbeck	MDS20	901997	2011-09-07
EMC0303	7m Coaxial Cable	SGS	7m	N/A	2011-11-01
EMC0506	EMI Test Receiver	Rohde & Schwarz	ESCS30	100085	2011-11-24
EMC0305	Slide Bar Controller	HD-GmbH	HD50	050/490	N/A
EMC0103	Slide Bar RP	HD-GmbH	KMS560	560/392	N/A

Harmonics / Flicker test					
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Due date
					(YYYY-MM-DD)
EMC0608	AC Power Source	California	50001iX	56627	2012-01-17
EMC0607	Power Analyzer	California	PAXS-1	72400	2012-01-17



Electrostatic Discharge					
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Due date
					(YYYY-MM-DD)
EMC0809	ESD Simulator	EM Test AG	Dito	V0735102864	2011-10-28
EMC0804	ESD Ground Plane	SGS	3m x 3m	N/A	N/A
EMC0077	Temperature, & Humidity	Shanghai Meteorological Instrument factory Co., Ltd.	ZJ1-2B	709151	2011-11-26

EFT, Surge, Voltage dips and Interruption					
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Due date
					(YYYY-MM-DD)
EMC1010	EMC Immunity Test System	Thermo KeyTek	Pro-Plus	501276	2011-09-30
EMC2012	Power-Electronics Measurement System	Tektronix	TDS 744A	N/A	2012-06-22

Conducted Immunity					
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Due date
					(YYYY-MM-DD)
EMC1101	Signal Generator	Rohde & Schwarz	SMY01	825675/016	2011-11-25
EMC1102	Amplifier 0.15-230MHz	Ophirrf	GRF5048	1003	2012-01-17
EMC1103	Power Meter	Rohde & Schwarz	NRVS	825770/079	2012-06-22
EMC0071	URV5-Z2 Insert. Unit	R&S	URV5-Z2	100309	2011-11-23
EMC1105	Dual Directional coupler	Werlatone Inc.	C1795	6635	2011-11-24
EMC0908	Oscilloscope Type 485	Tektronix	485	B144408	2011-11-01
EMC1108	CDN M3	Schaffner Chase	CDN-M3-16	9866	2011-11-23
EMC1107	CDN M2	Schaffner Chase	CDN-M2-16	9863	2011-11-23
EMC1116	Current Probe	Schaffner Chase	CIP9136	1155	2011-11-23
EMC1117	Current Probe	Schaffner Chase	CSP8445	18	2011-11-23

General used equipment					
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Due date
					(YYYY-MM-DD)
EMC0006	DMM	Fluke	73	70681569	2011-12-16
EMC0007	DMM	Fluke	73	70671122	2011-12-16



7 Electromagnetic Interference Test Results

7.1 Conducted Emissions on Mains Terminals, 150 kHz to 30MHz

Test Requirement: EN 55014-1 & BS EN 55014-1
Test Method: EN 55014-1 & BS EN 55014-1
Test Date: 2011-07-08
Test voltage: AC 230V 50Hz
Frequency Range: 150KHz to 30MHz
Detector: Quasi-Peak and Average at frequency with maximum peak
(9kHz resolution bandwidth)

Limit:

Frequency range MHz	At mains terminals dB (μV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	59 to 46
0.50 to 5	56	46
5 to 30	60	50
Note1: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 30 MHz.		
Note2: The lower limit is applicable at the transition frequency.		

7.1.1 E.U.T. Operation

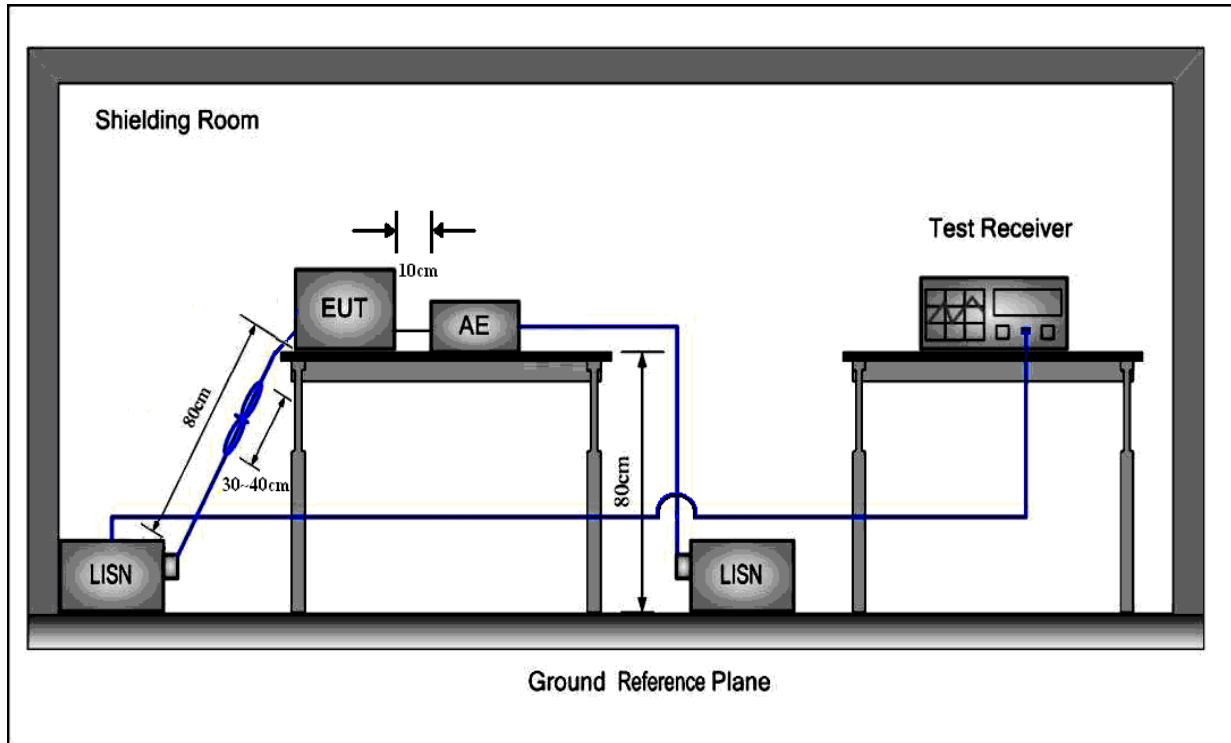
Operating Environment:

Temperature: 23.0 °C Humidity: 52 % RH Atmospheric Pressure: 1003 mbar

EUT Operation: Test the EUT in motor running and heating mode.

A pre-test at 160KHz shall be made over a range of 0.9 to 1.1 times the rated voltage in order to check the level of disturbance varies considerably with the supply voltage, compliance test at AC 230V as no worse case was found.

7.1.2 Test Setup and Procedure



1. The mains terminal disturbance voltage was measured with the EUT in a shielded room.
2. The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a $50\Omega/50\mu\text{H} + 5\Omega$ linear impedance. The power cables of all other units of the EUT were connected to a second LISN, which was bonded to the ground reference plane in the same way as the LISN for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
3. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
4. The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN was placed 0.8m from the boundary of the unit under test and bonded to a ground reference plane for LISN mounted on top of the ground reference plane. This distance was between the closest points of the LISN and the EUT. The mains lead of EUT excess 0.8m was folded back and forth parallel to the lead so as to form a horizontal bundle with a length between 0.3m and 0.4m. All other units of the EUT and associated equipment was at least 0.8m from the LISN.

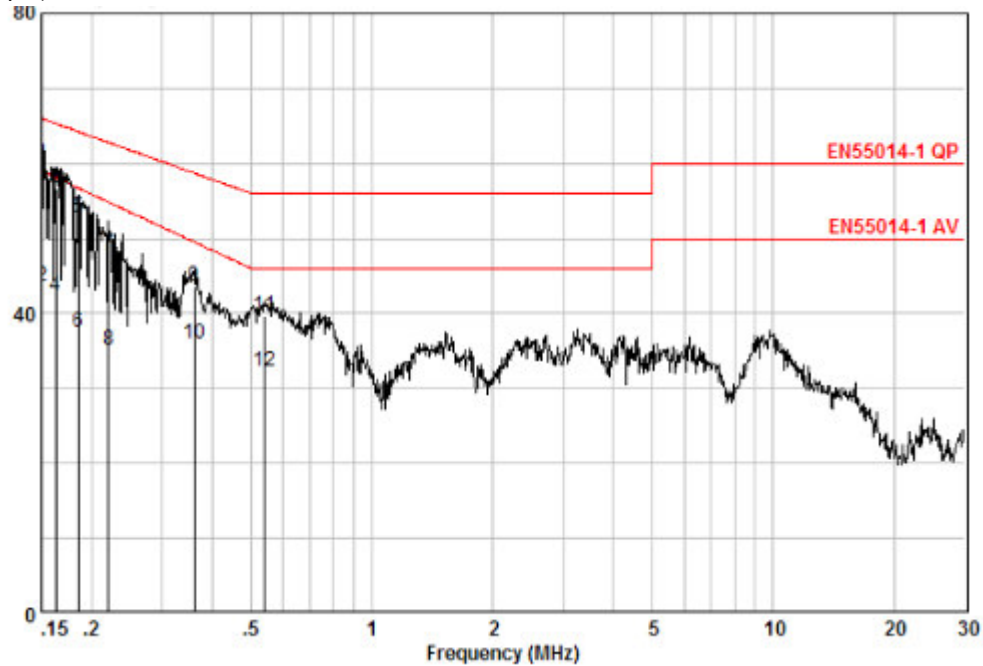
7.1.3 Measurement Data

For EN 55014-1

Live Line:

Peak Scan:

Level (dBμV)



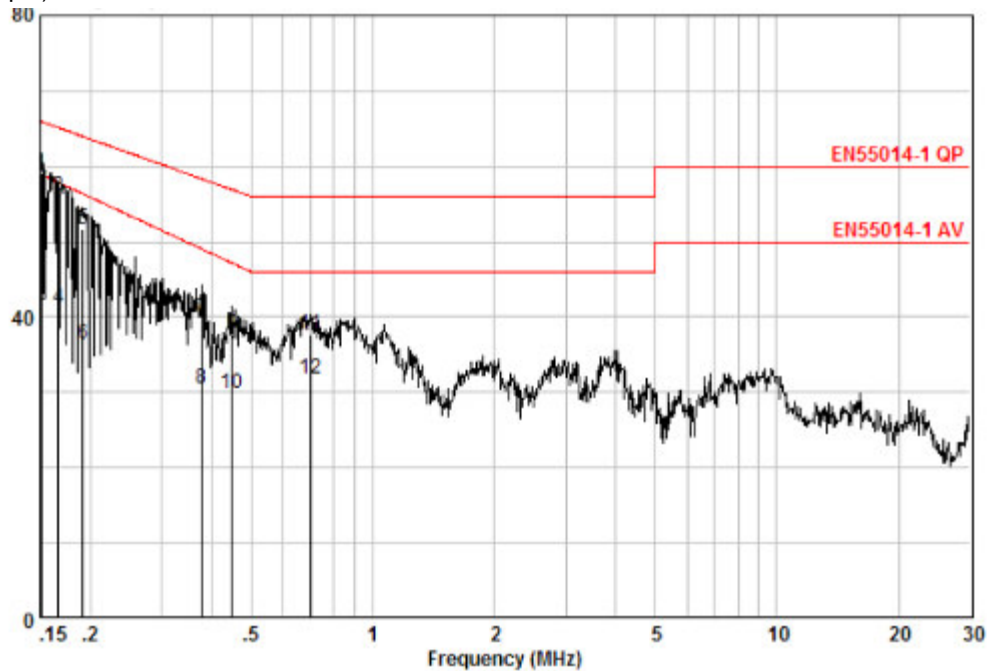
Quasi-peak and Average measurement:

Freq MHz	Read Level dBμV	Cable Loss dB	LISN Factor dB	Level dBμV	Limit Line dBμV	Over Limit dB	Remark
0.150	50.16	0.06	9.62	59.84	66.00	-6.16	QP
0.150	33.93	0.06	9.62	43.61	59.00	-15.39	AVERAGE
0.162	47.02	0.08	9.62	56.72	65.34	-8.62	QP
0.162	32.50	0.08	9.62	42.20	58.14	-15.94	AVERAGE
0.185	42.98	0.11	9.62	52.71	64.24	-11.53	QP
0.185	27.82	0.11	9.62	37.55	56.71	-19.16	AVERAGE
0.221	38.30	0.12	9.62	48.04	62.79	-14.75	QP
0.221	25.41	0.12	9.62	35.15	54.82	-19.68	AVERAGE
0.360	33.98	0.05	9.61	43.65	58.74	-15.09	QP
0.360	26.32	0.05	9.61	35.99	49.56	-13.57	AVERAGE
0.538	30.04	0.05	9.61	39.70	56.00	-16.30	QP
0.538	22.58	0.05	9.61	32.24	46.00	-13.76	AVERAGE

Neutral Line

Peak Scan:

Level (dBμV)



Quasi-peak and Average measurement:

Freq	Read	Cable	LISN	Level	Limit	Over	Remark
MHz	dBuV	Loss	Factor	dBuV	dBuV	Limit	
0.151	49.44	0.06	9.64	59.14	65.96	-6.81	QP
0.151	31.84	0.06	9.64	41.54	58.94	-17.40	AVERAGE
0.167	46.32	0.09	9.63	56.04	65.12	-9.08	QP
0.167	31.55	0.09	9.63	41.27	57.86	-16.59	AVERAGE
0.191	41.86	0.12	9.62	51.60	63.98	-12.37	QP
0.191	26.64	0.12	9.62	36.38	56.37	-19.99	AVERAGE
0.377	30.30	0.05	9.63	39.98	58.34	-18.37	QP
0.377	20.78	0.05	9.63	30.46	49.05	-18.59	AVERAGE
0.449	28.08	0.05	9.63	37.75	56.89	-19.14	QP
0.449	20.14	0.05	9.63	29.81	47.16	-17.34	AVERAGE
0.701	28.10	0.04	9.61	37.75	56.00	-18.25	QP
0.701	22.15	0.04	9.61	31.80	46.00	-14.20	AVERAGE

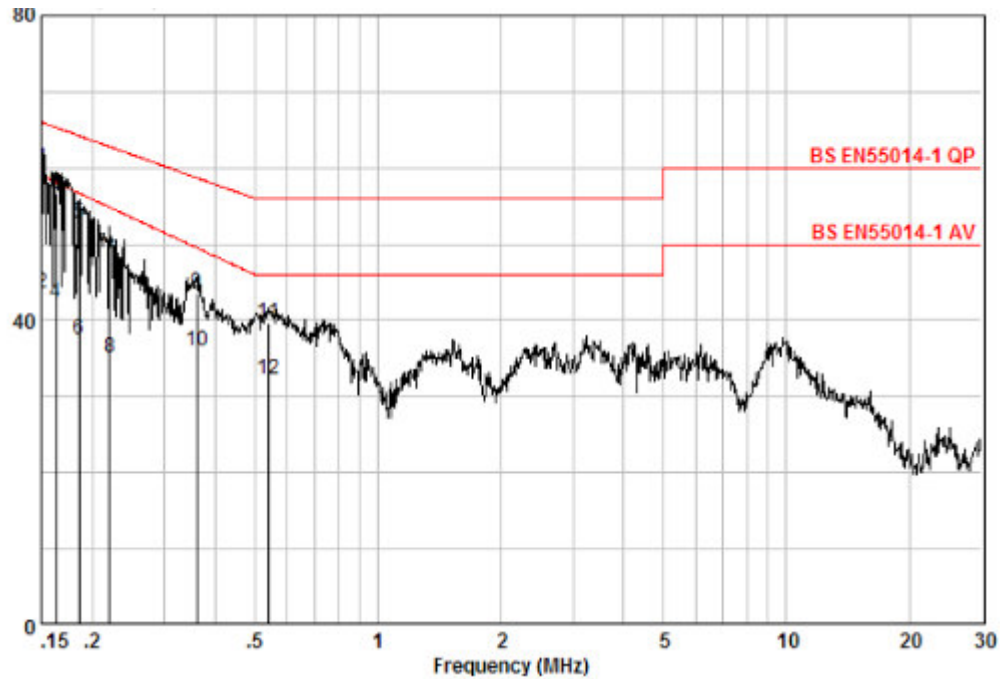
Level = Read Level + LISN Factor + Cable Loss.

For BS EN 55014-1

Live Line:

Peak Scan:

Level (dB μ V)



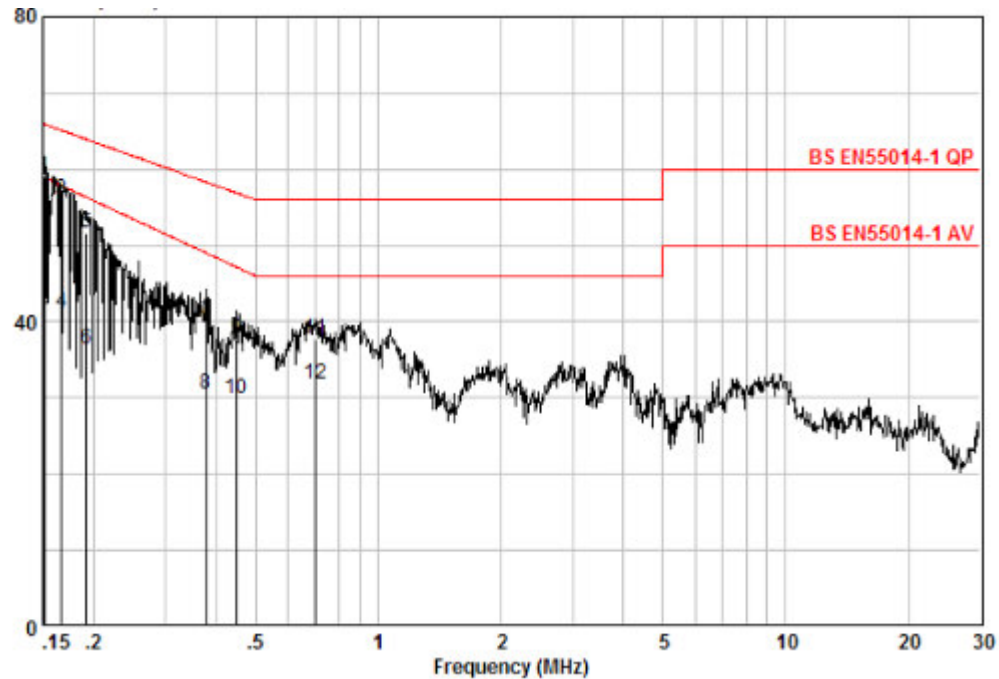
Quasi-peak and Average measurement:

Freq MHz	Read Level dB μ V	Cable Loss dB	LISN Factor dB	Level dB μ V	Limit Line dB μ V	Over Limit dB	Remark
0.150	50.16	0.06	9.62	59.84	66.00	-6.16	QP
0.150	33.93	0.06	9.62	43.61	59.00	-15.39	AVERAGE
0.162	47.02	0.08	9.62	56.72	65.34	-8.62	QP
0.162	32.50	0.08	9.62	42.20	58.14	-15.94	AVERAGE
0.185	42.98	0.11	9.62	52.71	64.24	-11.53	QP
0.185	27.82	0.11	9.62	37.55	56.71	-19.16	AVERAGE
0.221	38.30	0.12	9.62	48.04	62.79	-14.75	QP
0.221	25.41	0.12	9.62	35.15	54.82	-19.68	AVERAGE
0.360	33.98	0.05	9.61	43.65	58.74	-15.09	QP
0.360	26.32	0.05	9.61	35.99	49.56	-13.57	AVERAGE
0.538	30.04	0.05	9.61	39.70	56.00	-16.30	QP
0.538	22.58	0.05	9.61	32.24	46.00	-13.76	AVERAGE

Neutral Line

Peak Scan:

Level (dBμV)



Quasi-peak and Average measurement:

Freq	Read Level	Cable Loss	LISN Factor	Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.151	49.44	0.06	9.64	59.14	65.96	-6.81	QP
0.151	31.84	0.06	9.64	41.54	58.94	-17.40	AVERAGE
0.167	46.32	0.09	9.63	56.04	65.12	-9.08	QP
0.167	31.55	0.09	9.63	41.27	57.86	-16.59	AVERAGE
0.191	41.86	0.12	9.62	51.60	63.98	-12.37	QP
0.191	26.64	0.12	9.62	36.38	56.37	-19.99	AVERAGE
0.377	30.30	0.05	9.63	39.98	58.34	-18.37	QP
0.377	20.78	0.05	9.63	30.46	49.05	-18.59	AVERAGE
0.449	28.08	0.05	9.63	37.75	56.89	-19.14	QP
0.449	20.14	0.05	9.63	29.81	47.16	-17.34	AVERAGE
0.701	28.10	0.04	9.61	37.75	56.00	-18.25	QP
0.701	22.15	0.04	9.61	31.80	46.00	-14.20	AVERAGE

Level = Read Level + LISN Factor + Cable Loss.