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Report No.: SZEM130400200002
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TEST REPORT

Application No.: SZEM1304002000IT
Applicant/
Manufacturer/Factory: SHENZHEN SINCHI TECHNOLOGY LTD.
Address of Applicant/
Manufacturer/Factory:: 3rd Floor, Block 6, Jiangxiang Industrial Park, Zhenmei Nan Road, Guangming,
Shenzhen 518107, Guangdong, China
Equipment Under Test (EUT):
EUT Name: LAMINATOR
Model No.: A224, A235
Standards: EN 61000-6-3:2007+A1:2011 & EN 61000-6-1:2007
Date of Receipt: 2013-04-25
Date of Test: 2013-05-02 to 2013-05-03
Date of Issue: 2013-05-16

Test Result :	PASS*
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* In the configuration tested, the EUT complied with the standards specified above. This report supersedes our previous report SZEM130400200001, issued on 2013-05-14, which is hereby deemed null and void.

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. The protection requirements with respect to electromagnetic compatibility contained in Directive 2004/108/EC are considered.



Jack Zhang
EMC Laboratory 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. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

2 Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Radiated Emission, 30MHz to 1GHz	EN 61000-6-3: 2007+A1:2011	CISPR 16-2-3	Table 1 EN 61000-6-3	PASS
Conducted Emission on AC, 150kHz to 30MHz	EN 61000-6-3: 2007+A1:2011	CISPR 16-1-2	Table 2 EN 61000-6-3	PASS
Harmonic Emission on AC, 100Hz to 2kHz	EN 61000-6-3: 2007+A1:2011	EN 61000-3-2:2006+ A1:2009+A2:2009	Class 7 of EN 61000-3-2	PASS
Flicker Emission on AC	EN 61000-6-3: 2007+A1:2011	EN 61000-3-3:2008	Clause 5 of EN 61000-3-3	PASS
Immunity	EN 61000-6-1 :2007	N/A	Clause 7 of EN 61000-6-1	PASS



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4 General Information

4.1 Details of E.U.T.

Power Supply: Model A235: Input: AC 220-240V 50/60Hz 365W max
Model A224: Input: AC 220-240V 50/60Hz 265W max
Test voltage : AC 230V 50Hz
AC cable: 140cm (Unshielded)

4.2 Description of Support Units

The EUT has been tested as an independent unit.

4.3 Standards Applicable for Testing

The customer requested EMC tests for a laminator.
The standards used were EN 61000-6-3 & EN 61000-6-1.

Table 1 : Tests Carried Out Under EN 61000-6-3:2007+A1:2011

	Standard	Status
EN 61000-6-3:2007+A1:2011	Radiated Emissions	√
EN 61000-6-3:2007+A1:2011	Conducted Emissions on AC	√
EN 61000-3-2:2006+A1:2009+A2:2009	Harmonic Emissions on AC	√
EN 61000-3-3:2008	Flicker Emissions on AC	√

Table 3: Tests Carried Out Under EN 61000-6-1:2007

	Standard	Status
EN61000-4-2:2009	Electrostatic discharge immunity test	×
EN 61000-4-3:2006+A1:2008+A2:2010	Radiated, radio-frequency electromagnetic field electromagnetic field immunity test	×
EN 61000-4-4:2004+A1:2010	Electrical fast transients/burst immunity test	×
EN 61000-4-5:2006	Surge immunity test	×
EN 61000-4-6:2009	Immunity to conducted disturbances, induced by radio-frequency fields	×
EN 61000-4-8:2010	Power-frequency magnetic field immunity test	×
EN 61000-4-11:2004	Voltage dips, short interruptions and voltage variations immunity tests	×

× Indicates that the test is not applicable.

√ Indicates that the test is applicable.

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch E&E Lab,
No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China.
518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 Test Facility

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

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **VCCI**

The 3m Semi-anechoic chamber, Full-anechoic Chamber and Shielded Room (7.5m x 4.0m x 3.0m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2197, G-416, T-1153 and C-2383 respectively.

- **FCC – Registration No.: 556682**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen 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 No.: 556682.

- **Industry Canada (IC)**

Two 3m Semi-anechoic chambers of SGS-CSTC Standards Technical Services Co., Ltd. have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1 & 4620C-2.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None.



5 Equipment List

RE in Chamber					
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Due date (yyyy-mm-dd)
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEL0017	2013-06-10
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	SEL0023	2013-05-17
3	EMI Test software	AUDIX	E3	SEL0050	N/A
4	Coaxial cable	SGS	N/A	SEL0028	2013-05-29
5	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0015	2013-10-24
6	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	2013-05-17
7	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0006	2013-10-24
8	Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEL0168	2013-10-24
9	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEL0076	2013-10-24
10	Band filter	Amindeon	Asi 3314	SEL0094	2013-05-17
11	Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	2013-10-24

Harmonics / Flicker test					
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Due date (yyyy-mm-dd)
1	AC Power Source	California Instruments	5001ix	SEL0052	2013-05-17
2	Power Analyzer	California Instruments	PACS-1	SEL0051	2013-05-17
3	CTS 3.0 Software	California Instruments	N/A	SEL0087	N/A

Conducted Emission					
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Due date (yyyy-mm-dd)
1	Shielding Room	ZhongYu Electron	GB-88	SEL0042	2013-06-10
2	LISN	Rohde & Schwarz	ENV216	SEL0152	2013-10-24
3	LISN	ETS-LINDGREN	3816/2	SEL0021	2013-05-17
4	8 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T8-02	EMC0120	2013-11-10
5	4 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T4-02	EMC0121	2013-11-10
6	2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T2-02	EMC0122	2013-11-10
7	EMI Test Receiver	Rohde & Schwarz	ESCI	SEL0022	2013-05-17
8	Coaxial Cable	SGS	N/A	SEL0025	2013-05-29

General used equipment					
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Due date (yyyy-mm-dd)
1	Humidity/ Temperature Indicator	Shanghai	ZJ1-2B	SEL0102 to SEL0103	2013-10-24
2	Humidity/ Temperature Indicator	Shanghai	ZJ1-2B	SEL0101	2013-10-24
3	Barometer	ChangChun	DYM3	SEL0088	2013-05-17

6 Emission Test Results

6.1 Conducted Emissions Mains Terminals, 150kHz to 30MHz

Test Requirement:	EN 61000-6-3
Test Method:	EN 61000-6-3
Frequency Range:	150KHz to 30MHz
Limit:	
0.15M-0.5MHz	66dB(uV)-56dB(uV) quasi-peak, 56dB(uV)-46dB(uV) average
0.5MHz-5MHz	56dB(uV) quasi-peak, 46dB(uV) average
5MHz-30MHz	60dB(uV) quasi-peak, 50dB(uV) average
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth) Quasi-Peak if maximised peak within 6dB of Quasi-Peak limit

6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22.0 °C Humidity: 50% RH Atmospheric Pressure: 1010 mbar

EUT Operation: Pre-test the EUT in Cold laminating mode (Keep the EUT working normally) and Hot laminating mode (Keep the EUT working normally) to find the worst case, the complete test was performed at Hot laminating since it was the worst case.

An initial pre-scan was performed on the live and neutral lines with peak detector.

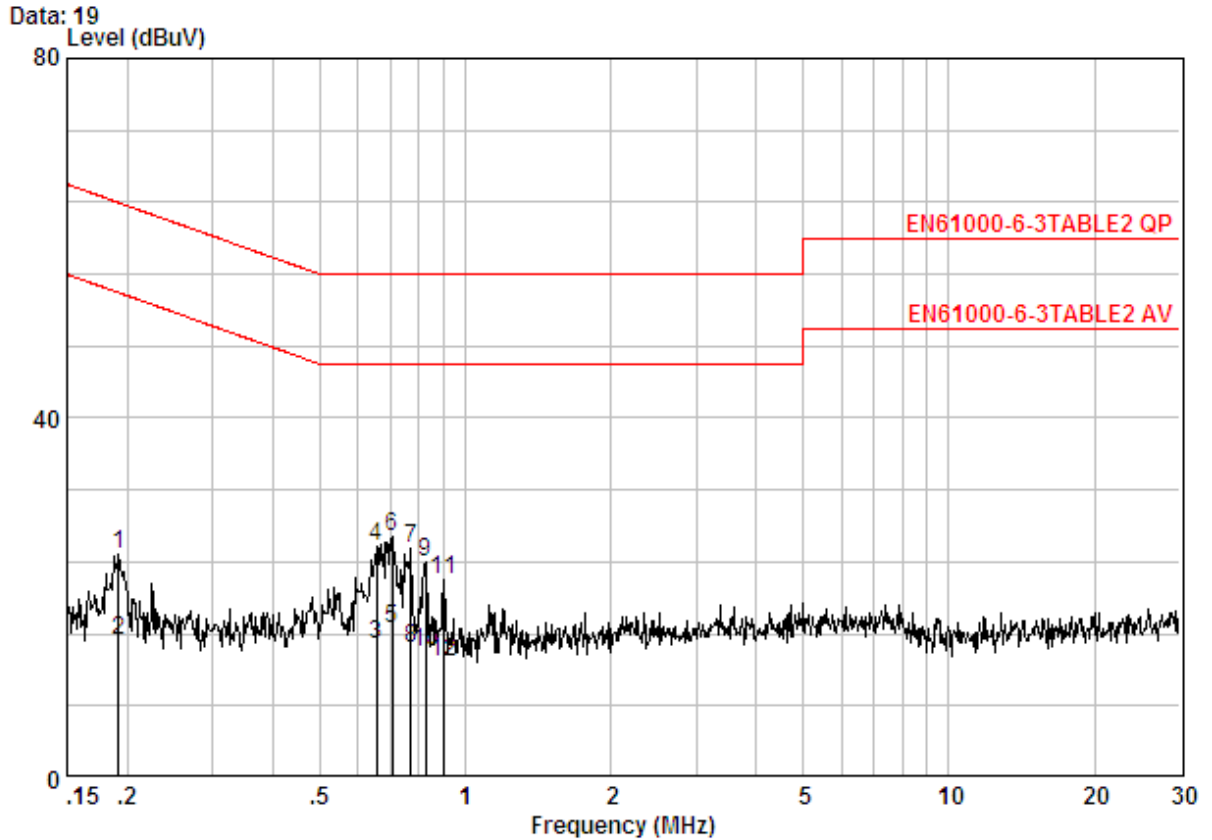
Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

6.1.2 Measurement Data

Please see the following Peak measurement graph for reference.

A224

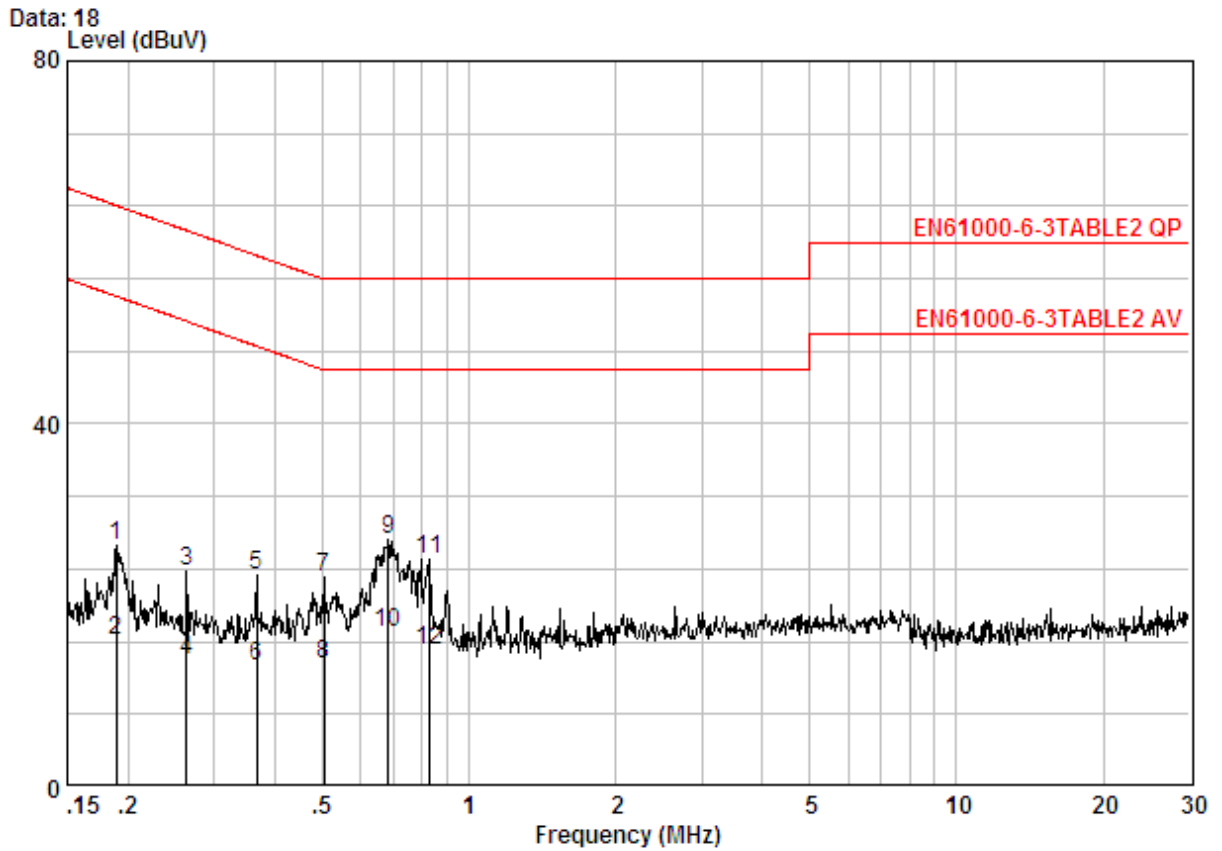
Live Line



Site : Shielding Room
Condition : EN61000-6-3TABLE2 QP CE LINE
Job No : 2000IT
Test mode : Hot laminating
Model : A224

	Freq	Cable Loss	LISN Factor	Read Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dB	
1	0.19140	0.02	9.70	15.21	24.93	63.98 -39.05	QP
2	0.19140	0.02	9.70	5.61	15.33	53.98 -38.65	Average
3	0.65430	0.02	9.80	5.10	14.92	46.00 -31.08	Average
4	0.65430	0.02	9.80	15.83	25.65	56.00 -30.35	QP
5	0.70468	0.02	9.80	6.64	16.46	46.00 -29.54	Average
6	0.70468	0.02	9.80	17.02	26.84	56.00 -29.16	QP
7	0.77110	0.02	9.80	15.69	25.51	56.00 -30.49	QP
8	0.77110	0.02	9.80	4.63	14.45	46.00 -31.55	Average
9	0.82608	0.02	9.80	14.07	23.89	56.00 -32.11	QP
10	0.82608	0.02	9.80	4.15	13.97	46.00 -32.03	Average
11	0.90394	0.02	9.80	12.27	22.09	56.00 -33.91	QP
12	0.90394	0.02	9.80	3.13	12.95	46.00 -33.05	Average

Neutral Line

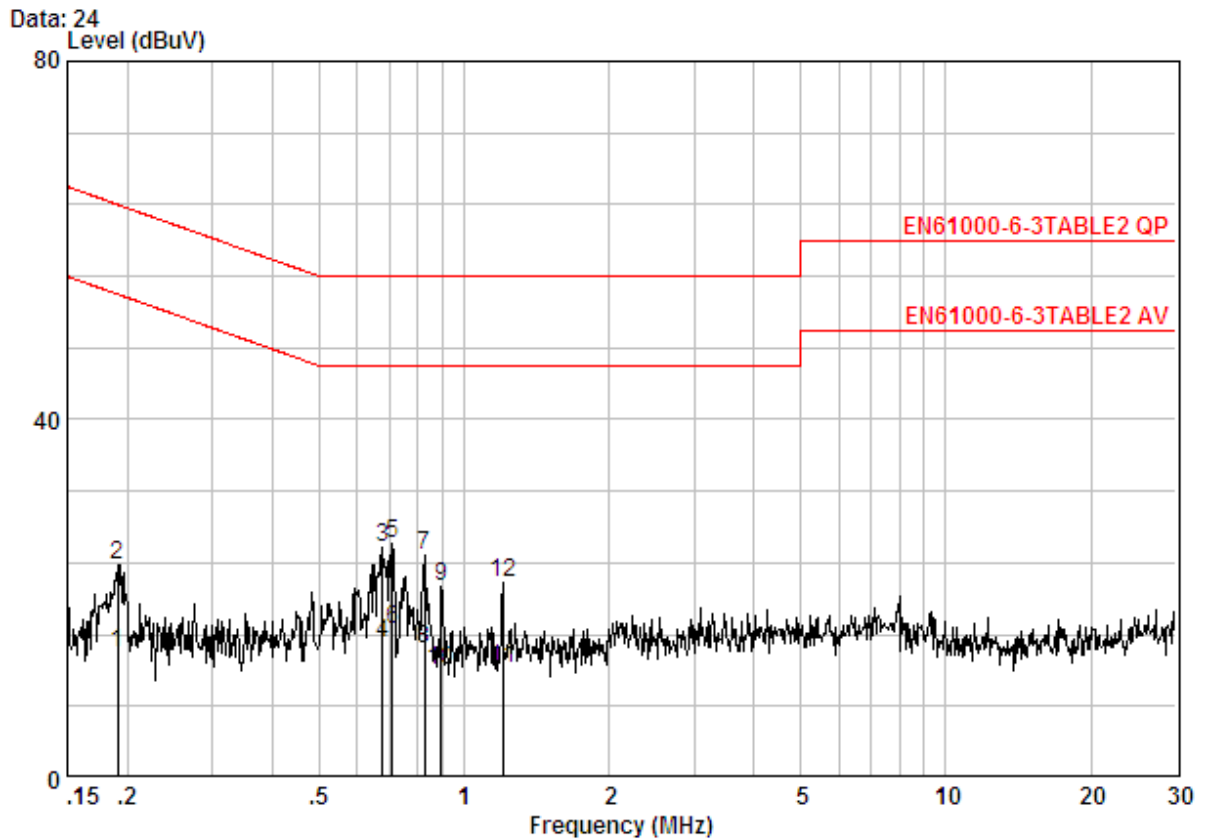


Site : Shielding Room
 Condition : EN61000-6-3TABLE2 QP CE NEUTRAL
 Job No : 2000IT
 Test mode : Hot laminating
 Model : A224

	Freq	Cable Loss	LISN Factor	Read Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dB	
1	0.18938	0.02	9.70	16.91	26.63	64.06	-37.43 QP
2	0.18938	0.02	9.70	6.36	16.08	54.06	-37.98 Average
3	0.26303	0.02	9.70	14.05	23.76	61.34	-37.57 QP
4	0.26303	0.02	9.70	4.25	13.97	51.34	-37.37 Average
5	0.36725	0.01	9.77	13.54	23.32	58.56	-35.24 QP
6	0.36725	0.01	9.77	3.62	13.40	48.56	-35.16 Average
7	0.50469	0.01	9.80	13.37	23.19	56.00	-32.81 QP
8	0.50469	0.01	9.80	3.65	13.46	46.00	-32.54 Average
9 @	0.68263	0.02	9.80	17.51	27.32	56.00	-28.68 QP
10 @	0.68263	0.02	9.80	7.15	16.97	46.00	-29.03 Average
11	0.82608	0.02	9.80	15.15	24.97	56.00	-31.03 QP
12	0.82608	0.02	9.80	5.16	14.98	46.00	-31.02 Average

A235

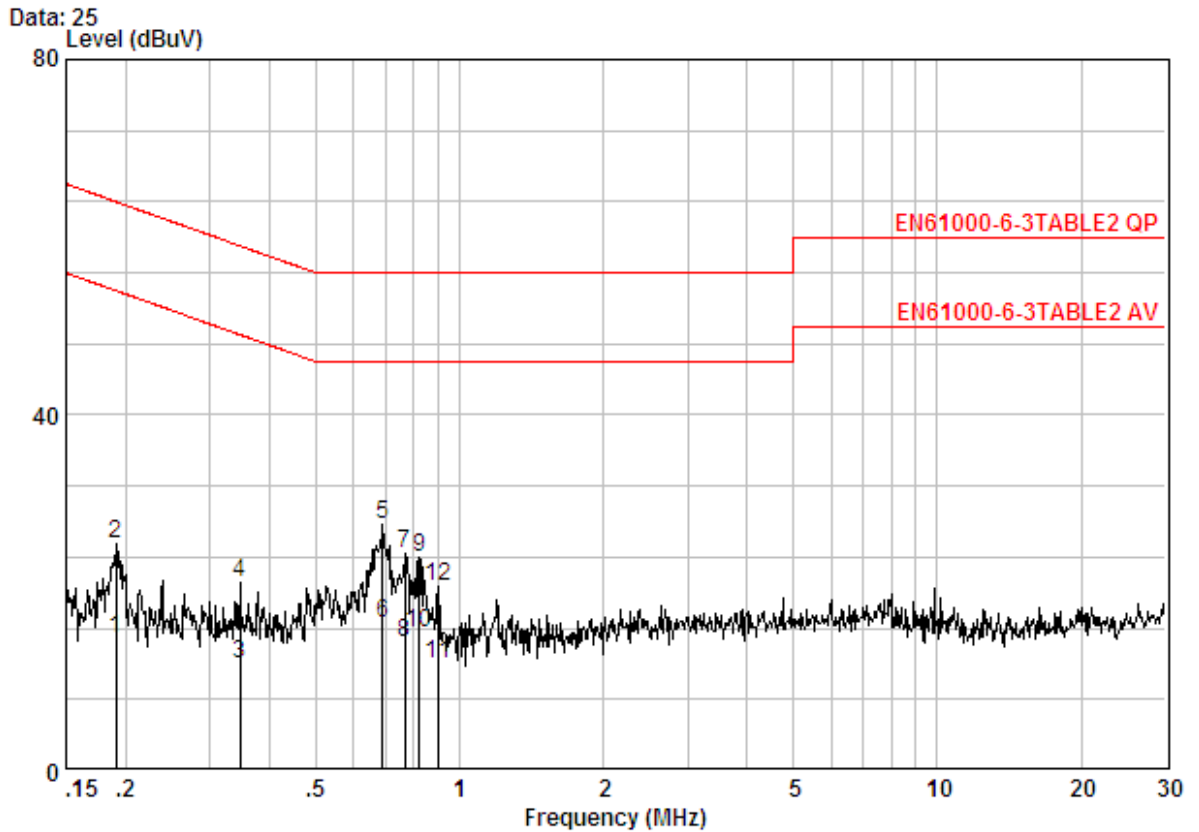
Live Line



Site : Shielding Room
Condition : EN61000-6-3TABLE2 QP CE LINE
Job No : 2000IT
Test mode : Hot laminating
Model : A235

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.19039	0.02	9.70	4.15	13.87	54.02	-40.15	Average
2	0.19039	0.02	9.70	14.05	23.77	64.02	-40.25	QP
3	0.67544	0.02	9.80	15.94	25.76	56.00	-30.24	QP
4	0.67544	0.02	9.80	5.14	14.96	46.00	-31.04	Average
5	0.70842	0.02	9.80	16.34	26.16	56.00	-29.84	QP
6	0.70842	0.02	9.80	6.85	16.67	46.00	-29.33	Average
7	0.82608	0.02	9.80	14.93	24.75	56.00	-31.25	QP
8	0.82608	0.02	9.80	4.55	14.37	46.00	-31.63	Average
9	0.89441	0.02	9.80	11.52	21.34	56.00	-34.66	QP
10	0.89441	0.02	9.80	2.22	12.04	46.00	-33.96	Average
11	1.203	0.02	9.80	2.46	12.28	46.00	-33.72	Average
12	1.203	0.02	9.80	11.91	21.73	56.00	-34.27	QP

Neutral Line



Site : Shielding Room
Condition : EN61000-6-3TABLE2 QP CE NEUTRAL
Job No : 2000IT
Test mode : Hot laminating
Model : A235

	Freq	Cable Loss	LISN Factor	Read Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dB	
1	0.19039	0.02	9.70	5.16	14.88	54.02	-39.14 Average
2	0.19039	0.02	9.70	15.78	25.50	64.02	-38.52 QP
3	0.34646	0.01	9.75	2.15	11.91	49.05	-37.14 Average
4	0.34646	0.01	9.75	11.33	21.09	59.05	-37.95 QP
5 @	0.68990	0.02	9.80	17.92	27.74	56.00	-28.26 QP
6	0.68990	0.02	9.80	6.64	16.46	46.00	-29.54 Average
7	0.76702	0.02	9.80	14.53	24.35	56.00	-31.65 QP
8	0.76702	0.02	9.80	4.58	14.40	46.00	-31.60 Average
9	0.82172	0.02	9.80	14.07	23.89	56.00	-32.11 QP
10	0.82172	0.02	9.80	5.63	15.45	46.00	-30.55 Average
11	0.89917	0.02	9.80	2.15	11.97	46.00	-34.03 Average
12	0.89917	0.02	9.80	10.90	20.72	56.00	-35.28 QP

6.2 Radiated Emissions, 30MHz to 1GHz

Test Requirement:	EN 61000-6-3
Test Method:	EN 61000-6-3
Frequency Range:	30MHz to 1GHz
Measurement Distance:	3m (Semi-Anechoic Chamber)
Limit:	40.0 dB μ V/m between 30MHz & 230MHz 47.0 dB μ V/m between 230MHz & 1GHz
Detector:	Peak for pre-scan (120kHz resolution bandwidth) Quasi-Peak if maximised peak within 6dB of limit Quasi-Peak if maximised peak within 6dB of limit

6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 24.0 °C Humidity: 50% RH Atmospheric Pressure: 1010 mbar

EUT Operation: Pre-test the EUT in Cold laminating mode (Keep the EUT working normally) and Hot laminating mode (Keep the EUT working normally) to find the worst case, the complete test was performed at Hot laminating since it was the worst case.

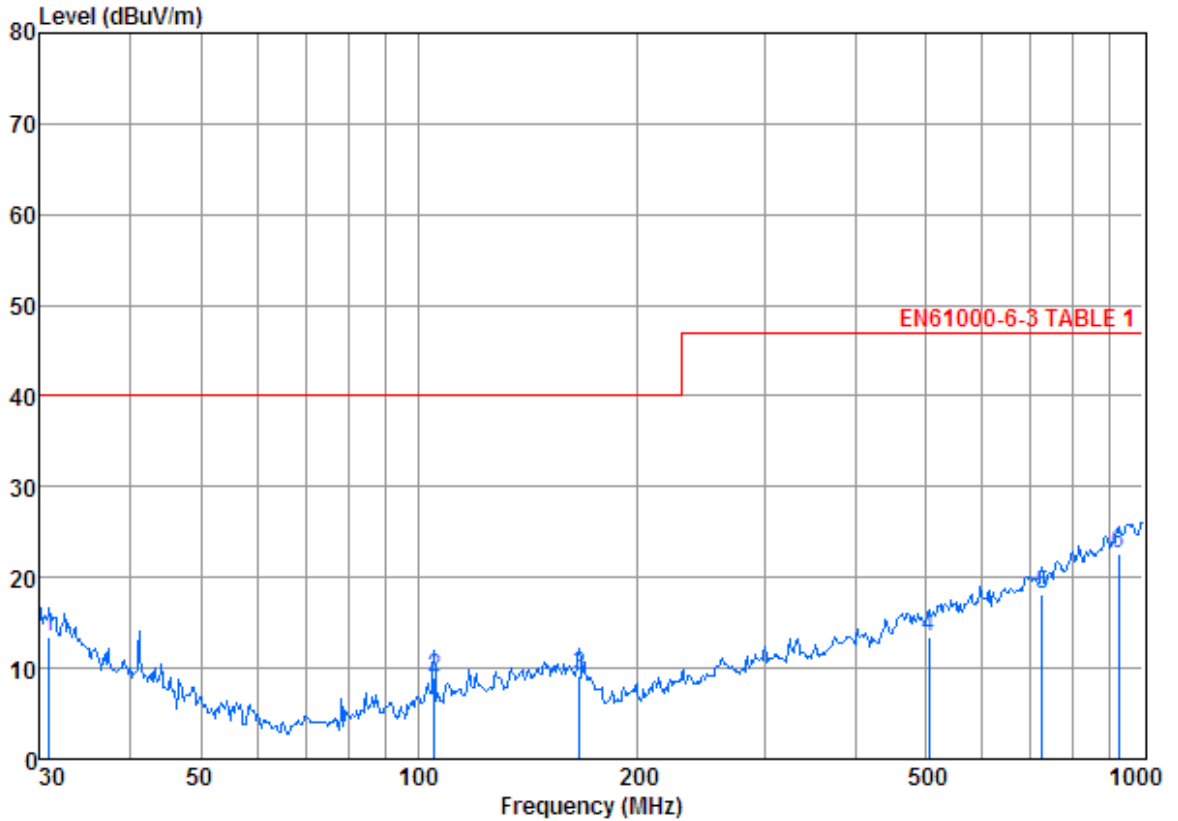
6.2.2 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConLog antenna with 2 orthogonal polarities.

A224

Vertical

Data: 21



Condition: EN61000-6-3 TABLE 1 3m 3142C NEW VERTICAL

Job No. : 2000IT

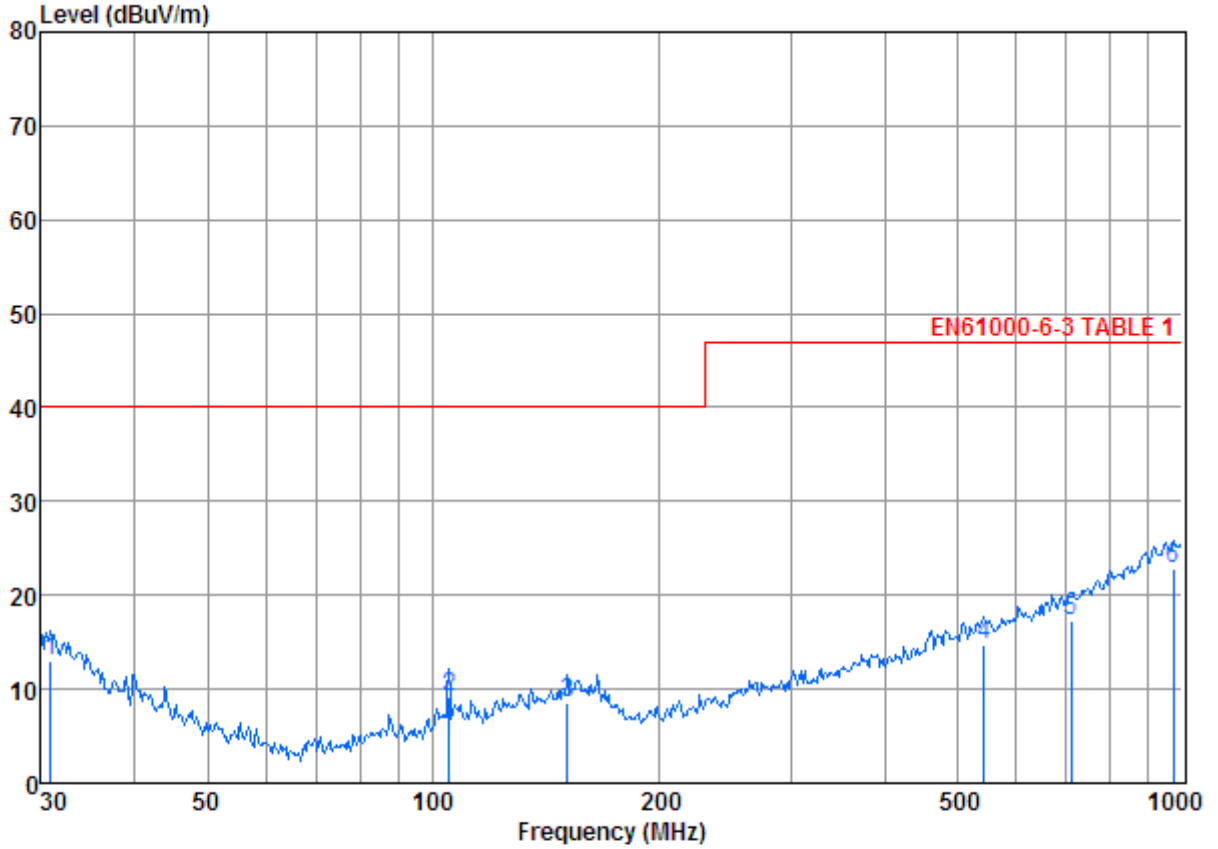
Test mode: Hot laminating

: A224

	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	30.853	0.60	17.23	27.35	23.06	13.54	40.00	-26.46
2	104.903	1.21	6.90	27.17	27.94	8.88	40.00	-31.12
3	166.651	1.35	9.38	26.83	25.33	9.23	40.00	-30.77
4	506.479	2.61	13.64	27.69	24.79	13.35	47.00	-33.65
5	724.261	2.98	17.05	27.38	25.45	18.10	47.00	-28.90
6	925.756	3.63	20.73	26.64	24.89	22.61	47.00	-24.39

Horizontal

Data: 22



Condition: EN61000-6-3 TABLE 1 3m 3142C NEW HORIZONTAL

Job No. : 2000IT

Test mode: Hot laminating

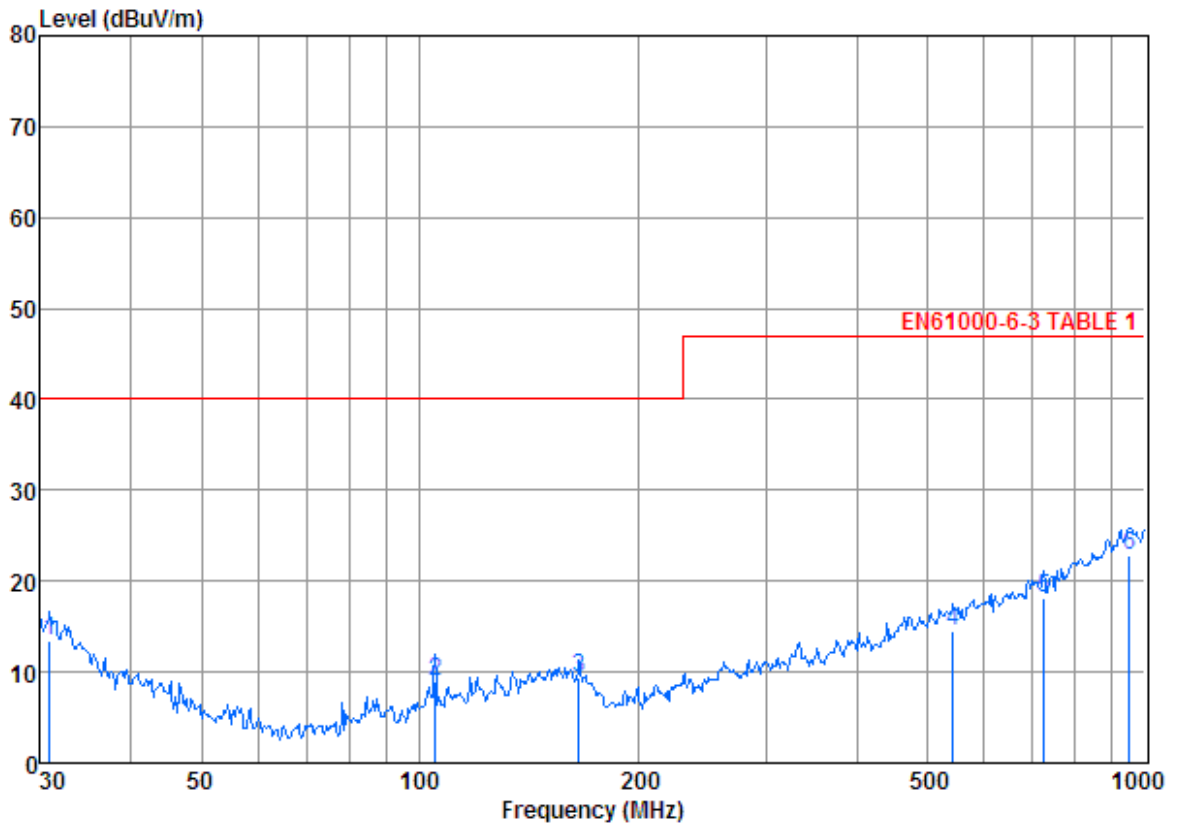
: A224

	Freq	CableAntenna	Preamp	Read	Limit	Over	
	MHz	Loss Factor	Factor	Level	Level	Line	Limit
		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m
1	30.853	0.60	17.23	27.35	22.63	13.11	40.00 -26.89
2	104.903	1.21	6.90	27.17	28.32	9.26	40.00 -30.74
3	151.067	1.32	9.37	26.90	24.79	8.58	40.00 -31.42
4	543.274	2.65	14.74	27.63	24.87	14.63	47.00 -32.37
5	709.182	2.93	17.10	27.40	24.74	17.37	47.00 -29.63
6	972.337	3.67	21.20	26.44	24.47	22.90	47.00 -24.10



A235
Vertical

Data: 20



Condition: EN61000-6-3 TABLE 1 3m 3142C NEW VERTICAL

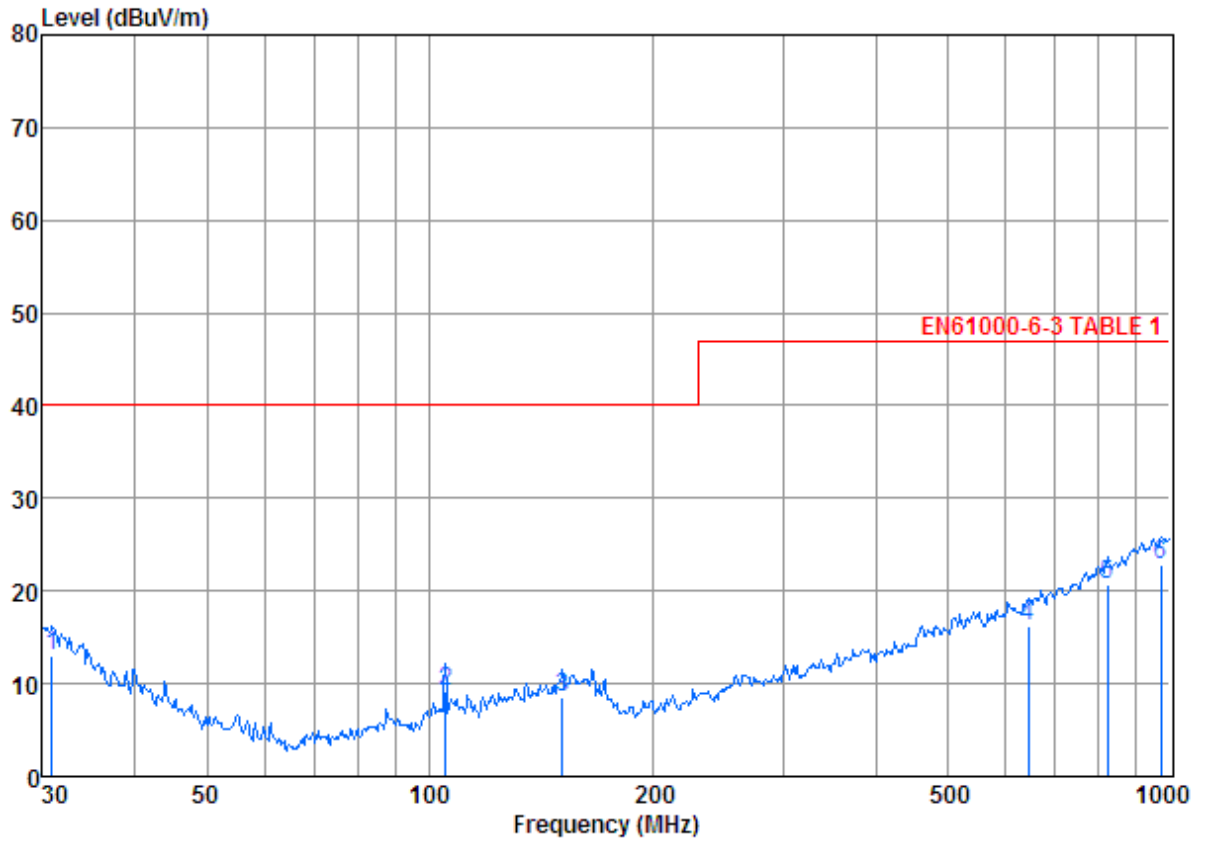
Job No. : 2000IT

Test mode: Hot laminating
: A235

		Cable	Antenna	Preamp	Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	30.853	0.60	17.23	27.35	23.06	13.54	40.00	-26.46
2	104.903	1.21	6.90	27.17	27.94	8.88	40.00	-31.12
3	165.487	1.35	9.50	26.83	25.34	9.36	40.00	-30.64
4	543.274	2.65	14.74	27.63	24.70	14.46	47.00	-32.54
5	724.261	2.98	17.05	27.38	25.45	18.10	47.00	-28.90
6	952.094	3.65	21.30	26.54	24.35	22.76	47.00	-24.24

Horizontal

Data: 19



Condition: EN61000-6-3 TABLE 1 3m 3142C NEW HORIZONTAL

Job No. : 2000IT

Test mode: Hot laminating

: A235

	Freq	CableAntenna Loss	Antenna Factor	Preamp Factor	Read Level	Limit Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	30.853	0.60	17.23	27.35	22.63	13.11	40.00	-26.89
2	104.903	1.21	6.90	27.17	28.32	9.26	40.00	-30.74
3	151.067	1.32	9.37	26.90	24.79	8.58	40.00	-31.42
4	642.861	2.79	15.77	27.49	25.08	16.15	47.00	-30.85
5	821.710	3.29	19.13	27.16	25.46	20.72	47.00	-26.28
6	972.337	3.67	21.20	26.44	24.47	22.90	47.00	-24.10

6.3 Harmonics Test Results

Test Requirement: EN 61000-3-2
Test Method: EN 61000-3-2
Frequency Range 100Hz to 2kHz
Measurement Time: 3 mins
Class / Severity: Class A

6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 22.0 °C Humidity: 50% RH Atmospheric Pressure: 1010 mbar

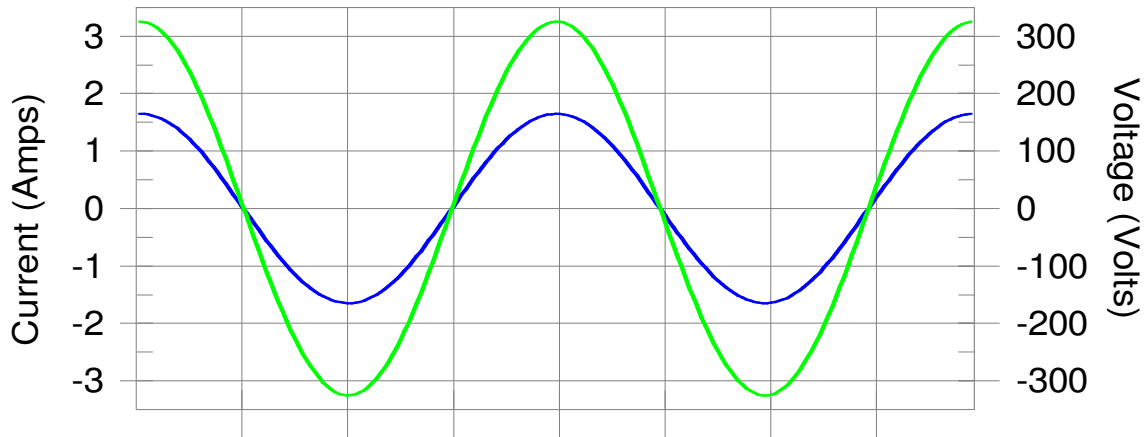
EUT Operation: Pre-test the EUT in Cold laminating mode (Keep the EUT working normally) and Hot laminating mode (Keep the EUT working normally) to find the worst case, the complete test was performed at Hot laminating since it was the worst case.

6.3.2 Measurement Data

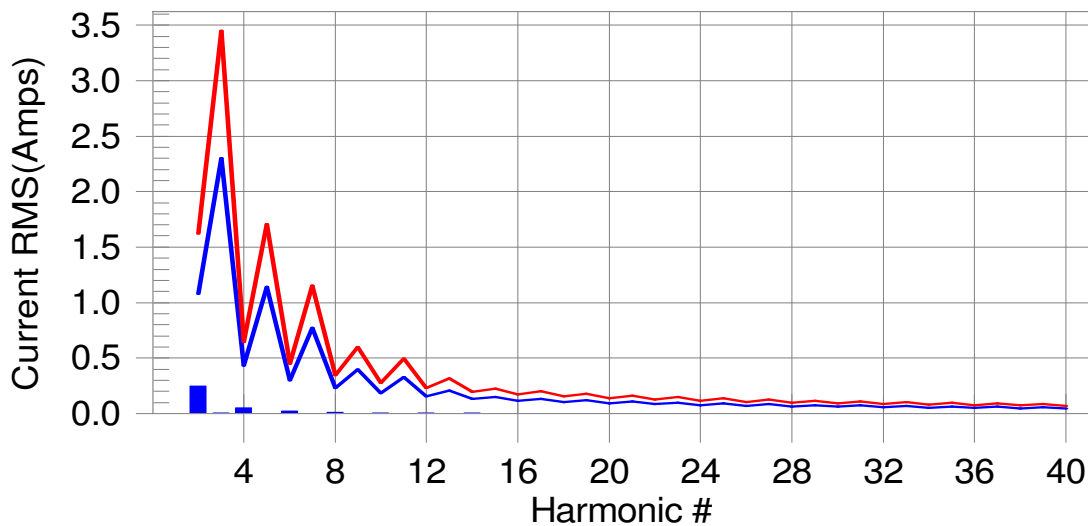
A224

Test Result: Pass Source qualification: Normal

Current & voltage waveforms



Harmonics and Class A limit line European Limits



Test result: Pass Worst harmonic was #2 with 15.23% of the limit.

Test Result: Pass Source qualification: Normal
 THC(A): 0.18 I-THD(%): 23.60 POHC(A): 0.000 POHC Limit(A): 0.251
 Highest parameter values during test:

V_RMS (Volts): 230.24	Frequency(Hz): 50.00
I_Peak (Amps): 1.652	I_RMS (Amps): 1.165
I_Fund (Amps): 1.165	Crest Factor: 2.114
Power (Watts): 268.0	Power Factor: 0.999

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.173	1.080	16.0	0.247	1.620	15.23	Pass
3	0.004	2.300	0.2	0.006	3.450	0.16	Pass
4	0.035	0.430	8.1	0.050	0.645	7.75	Pass
5	0.001	1.140	0.1	0.002	1.710	0.09	Pass
6	0.015	0.300	5.0	0.021	0.450	4.74	Pass
7	0.000	0.770	0.1	0.001	1.155	0.07	Pass
8	0.008	0.230	3.6	0.012	0.345	3.41	Pass
9	0.000	0.400	0.1	0.001	0.600	0.11	Pass
10	0.005	0.184	2.9	0.008	0.276	2.79	Pass
11	0.000	0.330	0.1	0.000	0.495	0.09	Pass
12	0.004	0.153	2.4	0.005	0.230	2.32	Pass
13	0.000	0.210	0.1	0.001	0.315	0.17	Pass
14	0.003	0.131	2.0	0.004	0.197	1.93	Pass
15	0.000	0.150	0.1	0.000	0.225	0.18	Pass
16	0.002	0.115	1.8	0.003	0.173	1.70	Pass
17	0.000	0.132	0.1	0.000	0.199	0.19	Pass
18	0.002	0.102	1.6	0.002	0.153	1.51	Pass
19	0.000	0.118	0.1	0.000	0.178	0.17	Pass
20	0.001	0.092	1.4	0.002	0.138	1.34	Pass
21	0.000	0.107	0.1	0.000	0.161	0.19	Pass
22	0.001	0.084	1.3	0.002	0.125	1.24	Pass
23	0.000	0.098	0.1	0.000	0.147	0.19	Pass
24	0.001	0.077	1.2	0.001	0.115	1.13	Pass
25	0.000	0.090	0.1	0.000	0.135	0.20	Pass
26	0.001	0.071	1.1	0.001	0.106	1.04	Pass
27	0.000	0.083	0.1	0.000	0.125	0.17	Pass
28	0.001	0.066	1.0	0.001	0.099	0.95	Pass
29	0.000	0.078	0.1	0.000	0.116	0.17	Pass
30	0.001	0.061	0.9	0.001	0.092	0.88	Pass
31	0.000	0.073	0.1	0.000	0.109	0.17	Pass
32	0.001	0.058	0.9	0.001	0.086	0.83	Pass
33	0.000	0.068	0.1	0.000	0.102	0.19	Pass
34	0.000	0.054	0.8	0.001	0.081	0.78	Pass
35	0.000	0.064	0.1	0.000	0.096	0.19	Pass
36	0.000	0.051	0.8	0.001	0.077	0.73	Pass
37	0.000	0.061	0.1	0.000	0.091	0.17	Pass
38	0.000	0.048	0.7	0.001	0.073	0.69	Pass
39	0.000	0.058	0.1	0.000	0.087	0.15	Pass
40	0.000	0.046	0.7	0.000	0.069	0.67	Pass



Test Result: Pass Source qualification: Normal

Highest parameter values during test:

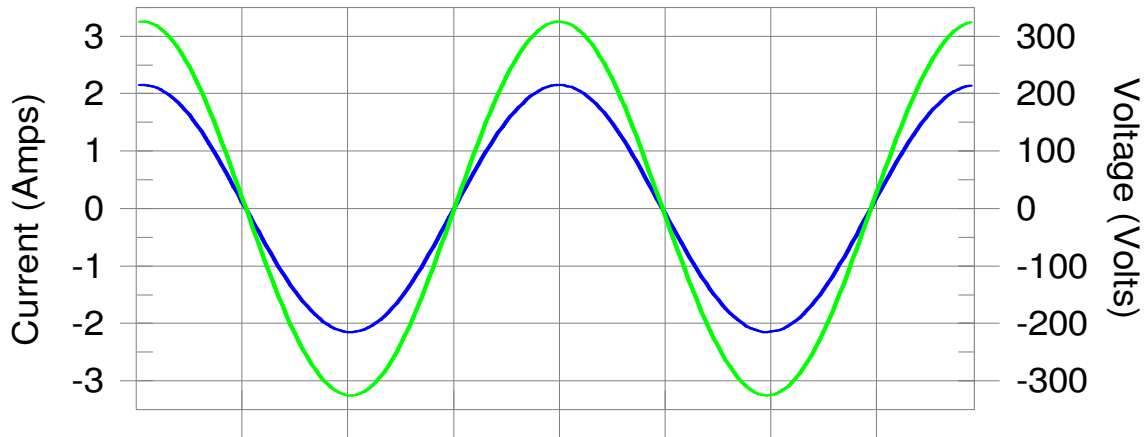
Voltage (Vrms):	230.24	Frequency(Hz):	50.00
I_Peak (Amps):	1.652	I_RMS (Amps):	1.165
I_Fund (Amps):	1.165	Crest Factor:	2.114
Power (Watts):	268.0	Power Factor:	0.999

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.211	0.460	45.80	OK
3	0.521	2.071	25.13	OK
4	0.081	0.460	17.66	OK
5	0.059	0.921	6.39	OK
6	0.059	0.460	12.87	OK
7	0.054	0.691	7.76	OK
8	0.025	0.460	5.50	OK
9	0.084	0.460	18.32	OK
10	0.029	0.460	6.27	OK
11	0.030	0.230	13.01	OK
12	0.017	0.230	7.45	OK
13	0.021	0.230	9.14	OK
14	0.011	0.230	4.87	OK
15	0.011	0.230	4.85	OK
16	0.018	0.230	7.74	OK
17	0.010	0.230	4.33	OK
18	0.017	0.230	7.26	OK
19	0.008	0.230	3.47	OK
20	0.014	0.230	6.12	OK
21	0.010	0.230	4.45	OK
22	0.009	0.230	3.91	OK
23	0.009	0.230	3.87	OK
24	0.005	0.230	2.35	OK
25	0.008	0.230	3.36	OK
26	0.009	0.230	3.83	OK
27	0.008	0.230	3.37	OK
28	0.008	0.230	3.57	OK
29	0.008	0.230	3.56	OK
30	0.007	0.230	2.91	OK
31	0.005	0.230	2.31	OK
32	0.006	0.230	2.76	OK
33	0.006	0.230	2.80	OK
34	0.004	0.230	1.67	OK
35	0.004	0.230	1.84	OK
36	0.004	0.230	1.67	OK
37	0.005	0.230	2.09	OK
38	0.003	0.230	1.18	OK
39	0.004	0.230	1.59	OK
40	0.005	0.230	2.24	OK

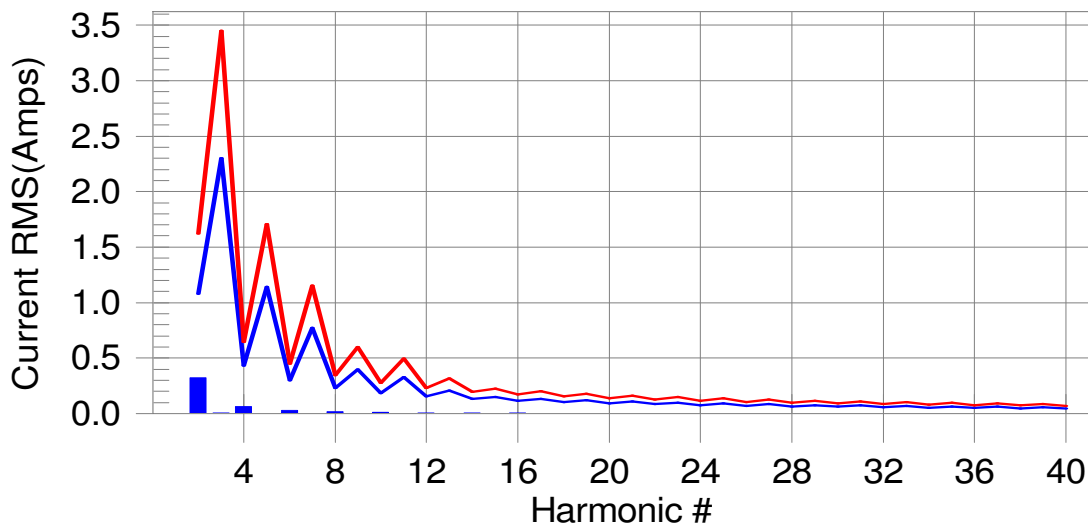
A235

Test Result: Pass Source qualification: Normal

Current & voltage waveforms



Harmonics and Class A limit line European Limits



Test result: Pass Worst harmonic was #2 with 20.01% of the limit.

Test Result: Pass Source qualification: Normal
 THC(A): 0.25 I-THD(%): 25.90 POHC(A): 0.000 POHC Limit(A): 0.251
 Highest parameter values during test:

V_RMS (Volts): 230.24	Frequency(Hz): 50.00
I_Peak (Amps): 2.154	I_RMS (Amps): 1.520
I_Fund (Amps): 1.519	Crest Factor: 2.122
Power (Watts): 349.6	Power Factor: 0.999

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.241	1.080	22.3	0.324	1.620	20.01	Pass
3	0.003	2.300	0.1	0.005	3.450	0.16	Pass
4	0.048	0.430	11.3	0.066	0.645	10.16	Pass
5	0.001	1.140	0.1	0.001	1.710	0.08	Pass
6	0.021	0.300	6.9	0.028	0.450	6.22	Pass
7	0.001	0.770	0.1	0.001	1.155	0.12	Pass
8	0.011	0.230	5.0	0.015	0.345	4.48	Pass
9	0.000	0.400	0.1	0.001	0.600	0.14	Pass
10	0.007	0.184	4.0	0.010	0.276	3.62	Pass
11	0.000	0.330	0.1	0.001	0.495	0.11	Pass
12	0.005	0.153	3.4	0.007	0.230	3.04	Pass
13	0.000	0.210	0.1	0.000	0.315	0.16	Pass
14	0.004	0.131	2.8	0.005	0.197	2.54	Pass
15	0.000	0.150	0.2	0.000	0.225	0.22	Pass
16	0.003	0.115	2.5	0.004	0.173	2.22	Pass
17	0.000	0.132	0.1	0.000	0.199	0.17	Pass
18	0.002	0.102	2.2	0.003	0.153	1.98	Pass
19	0.000	0.118	0.1	0.000	0.178	0.19	Pass
20	0.002	0.092	2.0	0.002	0.138	1.78	Pass
21	0.000	0.107	0.1	0.000	0.161	0.24	Pass
22	0.002	0.084	1.8	0.002	0.125	1.61	Pass
23	0.000	0.098	0.1	0.000	0.147	0.20	Pass
24	0.001	0.077	1.7	0.002	0.115	1.48	Pass
25	0.000	0.090	0.1	0.000	0.135	0.17	Pass
26	0.001	0.071	1.5	0.001	0.106	1.36	Pass
27	0.000	0.083	0.1	0.000	0.125	0.21	Pass
28	0.001	0.066	1.4	0.001	0.099	1.25	Pass
29	0.000	0.078	0.1	0.000	0.116	0.20	Pass
30	0.001	0.061	1.3	0.001	0.092	1.16	Pass
31	0.000	0.073	0.1	0.000	0.109	0.15	Pass
32	0.001	0.058	1.2	0.001	0.086	1.09	Pass
33	0.000	0.068	0.1	0.000	0.102	0.16	Pass
34	0.001	0.054	1.2	0.001	0.081	1.02	Pass
35	0.000	0.064	0.1	0.000	0.096	0.15	Pass
36	0.001	0.051	1.1	0.001	0.077	0.97	Pass
37	0.000	0.061	0.1	0.000	0.091	0.17	Pass
38	0.000	0.048	1.0	0.001	0.073	0.91	Pass
39	0.000	0.058	0.1	0.000	0.087	0.24	Pass
40	0.000	0.046	1.0	0.001	0.069	0.87	Pass



Test Result: Pass Source qualification: Normal

Highest parameter values during test:

Voltage (Vrms):	230.24	Frequency(Hz):	50.00
I_Peak (Amps):	2.154	I_RMS (Amps):	1.520
I_Fund (Amps):	1.519	Crest Factor:	2.122
Power (Watts):	349.6	Power Factor:	0.999

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.231	0.460	50.09	OK
3	0.531	2.071	25.63	OK
4	0.087	0.460	18.90	OK
5	0.062	0.921	6.73	OK
6	0.052	0.460	11.29	OK
7	0.052	0.691	7.52	OK
8	0.026	0.460	5.75	OK
9	0.086	0.460	18.67	OK
10	0.030	0.460	6.49	OK
11	0.030	0.230	12.99	OK
12	0.021	0.230	9.08	OK
13	0.021	0.230	9.09	OK
14	0.012	0.230	5.14	OK
15	0.012	0.230	5.07	OK
16	0.019	0.230	8.28	OK
17	0.010	0.230	4.21	OK
18	0.017	0.230	7.57	OK
19	0.008	0.230	3.42	OK
20	0.015	0.230	6.43	OK
21	0.011	0.230	4.72	OK
22	0.010	0.230	4.33	OK
23	0.008	0.230	3.50	OK
24	0.006	0.230	2.60	OK
25	0.008	0.230	3.42	OK
26	0.009	0.230	4.12	OK
27	0.007	0.230	3.20	OK
28	0.008	0.230	3.48	OK
29	0.008	0.230	3.55	OK
30	0.007	0.230	3.17	OK
31	0.005	0.230	2.35	OK
32	0.006	0.230	2.74	OK
33	0.007	0.230	2.94	OK
34	0.004	0.230	1.53	OK
35	0.004	0.230	1.71	OK
36	0.004	0.230	1.57	OK
37	0.005	0.230	2.08	OK
38	0.003	0.230	1.22	OK
39	0.004	0.230	1.54	OK
40	0.005	0.230	2.29	OK

6.4 Flicker Test Result

Test Requirement: EN 61000-3-3
Test Method: EN 61000-3-3
Measurement Time: 10 mins
Class / Severity: Clause 5 of EN 61000-3-3

6.4.1 E.U.T. Operation

Operating Environment:
Temperature: 22.0 °C Humidity: 50% RH Atmospheric Pressure: 1010 mbar
EUT Operation: Pre-test the EUT in Cold laminating mode (Keep the EUT working normally) and Hot laminating mode (Keep the EUT working normally) to find the worst case, the complete test was performed at Hot laminating since it was the worst case.

6.4.2 Measurement Data



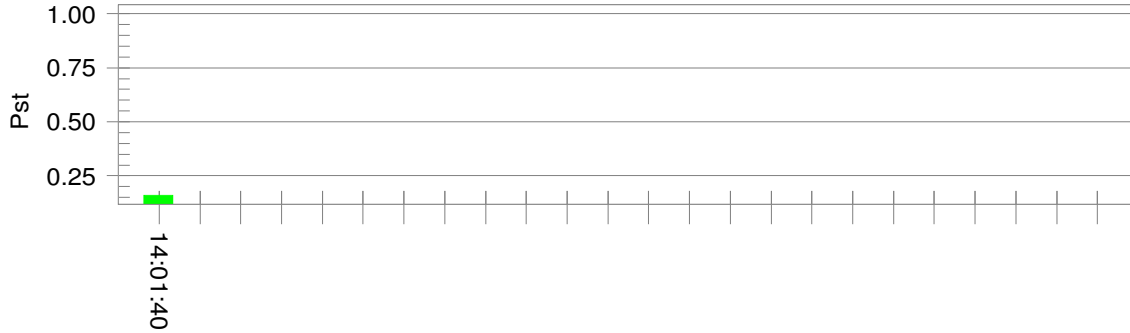
A224

Test Result: Pass

Status: Test Completed

Pst_i and limit line

European Limits



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.87		
Highest dt (%):	-0.25	Test limit (%):	3.30 Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0 Pass
Highest dc (%):	-0.14	Test limit (%):	3.30 Pass
Highest dmax (%):	-0.23	Test limit (%):	4.00 Pass
Highest Pst (10 min. period):	0.160	Test limit:	1.000 Pass



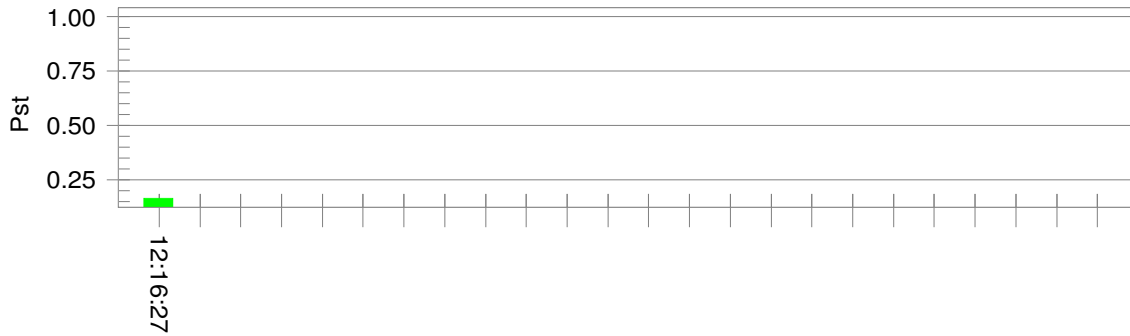
A235

Test Result: Pass

Status: Test Completed

Pst_i and limit line

European Limits



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt):	230.10		
Highest dt (%):	-0.26	Test limit (%):	3.30 Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0 Pass
Highest dc (%):	0.16	Test limit (%):	3.30 Pass
Highest dmax (%):	-0.26	Test limit (%):	4.00 Pass
Highest Pst (10 min. period):	0.164	Test limit:	1.000 Pass

7 Immunity Test Results

Test Requirement: EN61000-6-1

Test Method: N/A: See the Remark Below

Remark: There is no need for immunity tests to be performed on this product in accordance with EN61000-6-1 since the EUT does not contain electromagnetic susceptible electronic circuit or component inside.

For further details, please refer to clause 7 of EN61000-6-1 which states:

It may be determined from consideration of the electrical characteristics and usage of a particular apparatus that some of the tests are inappropriate and therefore unnecessary. In such case it is required that the decision and justification not to test shall be recorded in the test report.

8 Photographs

8.1 Conducted Emission Test Setup

A224



A235



8.2 Radiated Emission Test Setup

A224



A235



8.3 Harmonics & Flicker Test Setup

A224



A235



8.4 EUT Constructional Details

A224





A235





A235 Laminator
Power Supply: AC220-240V 50/60HZ
Power Consumption: 365W Max.
Rated Current: 1.7A
Width: 330mm (A3) Max.
Pre-heating Time: 3-5min
Laminating Speed: 250mm/min
Pouch: 2x75 - 2x125mic, Max. 0.5mm

☐ ⏏
CE ⏏