



Appendix A for Emission and Immunity test results

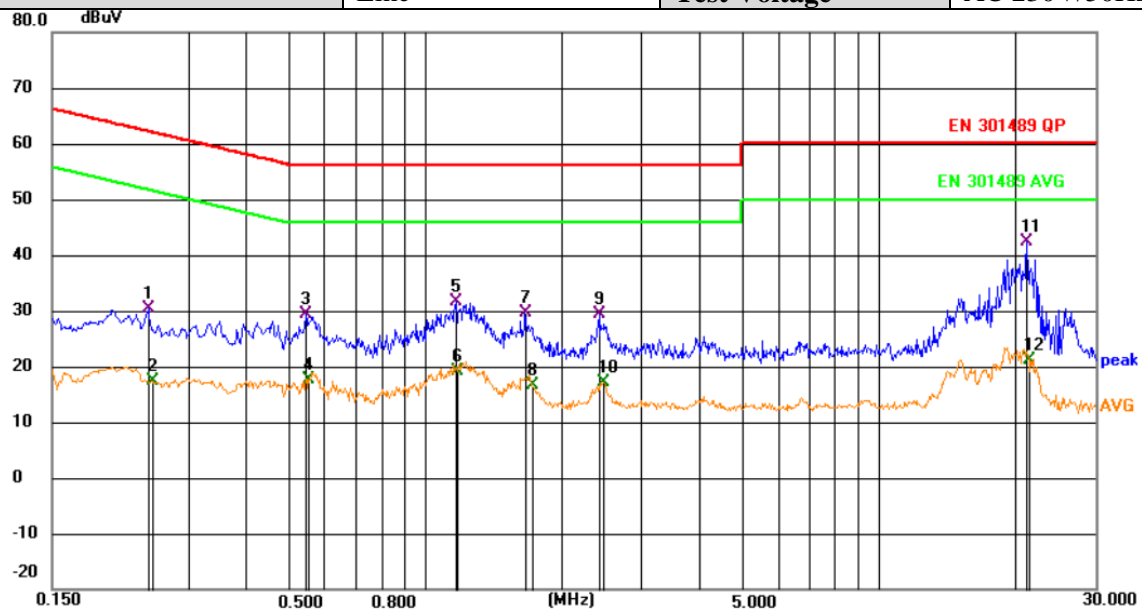
Product Name: SONOFF Smart Stackable Power Meter (Main Unit+4-Relays)

Test Model: SPM-Main

A.1 Line Conducted Emission

***Note: For pre-scan, the worst case is TM1, and the test data was shown as follow:

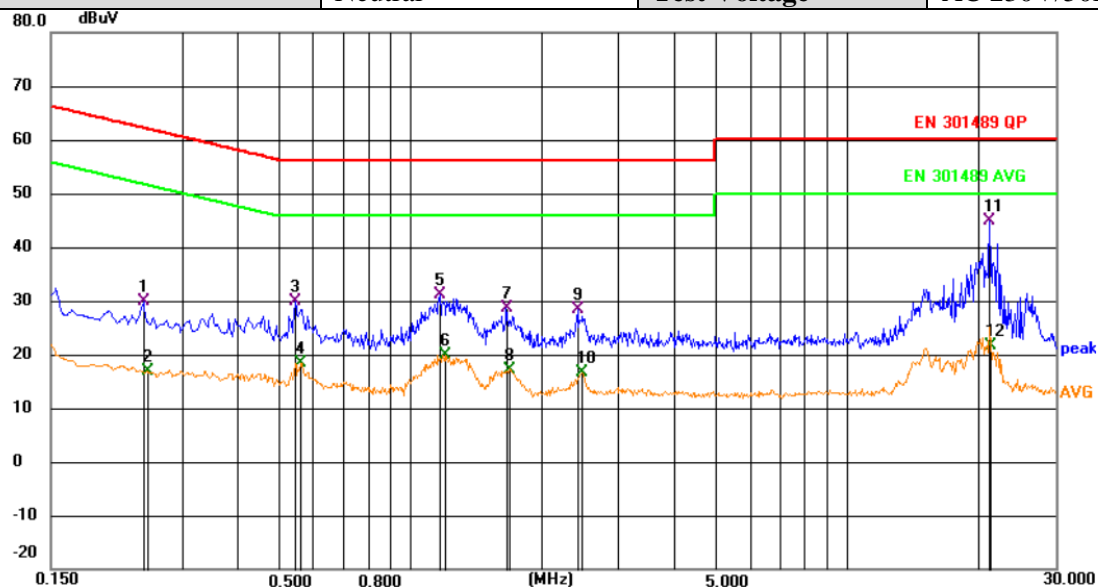
Test Model	SPM-Main	Test Mode	TM1
Environmental Conditions	22.7°C, 53.7% RH	Test Engineer	Kay Hu
Pol.	Line	Test Voltage	AC 230V/50Hz



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2446	10.62	19.75	30.37	61.94	-31.57	QP	
2		0.2494	-2.49	19.75	17.26	51.78	-34.52	AVG	
3		0.5460	9.47	19.80	29.27	56.00	-26.73	QP	
4		0.5550	-2.13	19.80	17.67	46.00	-28.33	AVG	
5		1.1670	11.80	19.79	31.59	56.00	-24.41	QP	
6		1.1805	-0.74	19.80	19.06	46.00	-26.94	AVG	
7		1.6620	9.71	19.83	29.54	56.00	-26.46	QP	
8		1.7160	-3.15	19.83	16.68	46.00	-29.32	AVG	
9		2.4135	9.45	19.86	29.31	56.00	-26.69	QP	
10		2.4676	-2.82	19.86	17.04	46.00	-28.96	AVG	
11	*	21.2371	21.41	20.96	42.37	60.00	-17.63	QP	
12		21.4080	0.12	20.93	21.05	50.00	-28.95	AVG	



Test Model	SPM-Main	Test Mode	TM1
Environmental Conditions	22.7°C, 53.7% RH	Test Engineer	Kay Hu
Pol.	Neutral	Test Voltage	AC 230V/50Hz



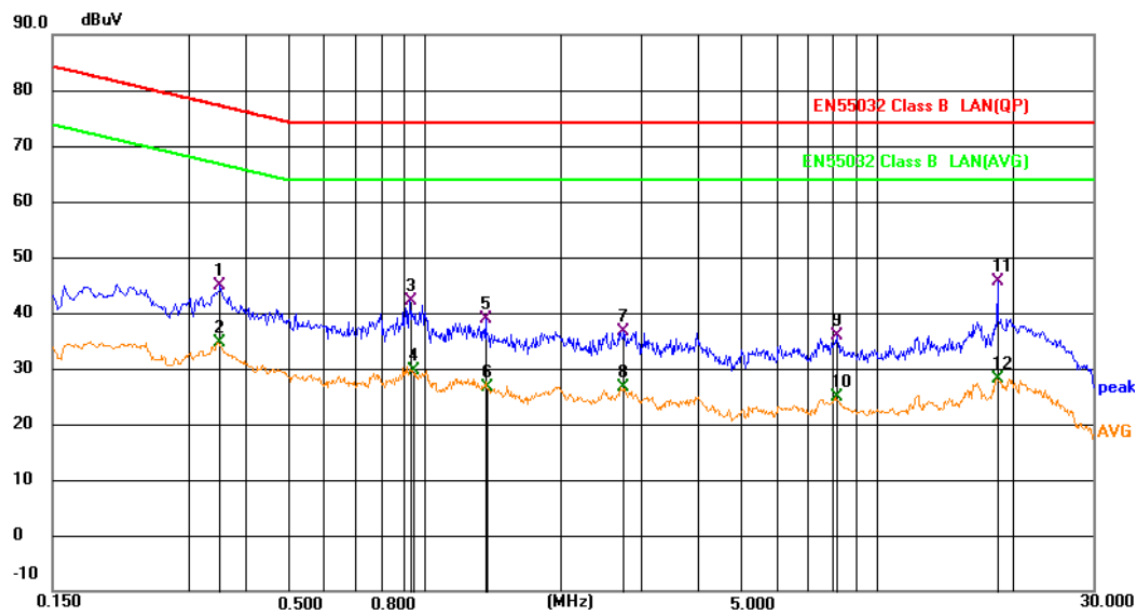
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.2446	10.12	19.75	29.87	61.94	-32.07	QP	
2		0.2491	-2.98	19.75	16.77	51.79	-35.02	AVG	
3		0.5460	9.97	19.80	29.77	56.00	-26.23	QP	
4		0.5595	-1.37	19.80	18.43	46.00	-27.57	AVG	
5		1.1670	11.30	19.79	31.09	56.00	-24.91	QP	
6		1.1985	0.05	19.80	19.85	46.00	-26.15	AVG	
7		1.6620	8.71	19.83	28.54	56.00	-27.46	QP	
8		1.6890	-2.79	19.83	17.04	46.00	-28.96	AVG	
9		2.4135	8.45	19.86	28.31	56.00	-27.69	QP	
10		2.4676	-3.32	19.86	16.54	46.00	-29.46	AVG	
11	*	21.2371	23.91	20.96	44.87	60.00	-15.13	QP	
12		21.3226	0.69	20.94	21.63	50.00	-28.37	AVG	

Note: For conducted emission and radiated emission test, a power supply of 230VAC and 120VAC was used for testing respectively, and only recorded the worst case of 230VAC.



A.2 Conducted Emission (Wired Network Port)

Test Model	SPM-Main	Test Mode	TM3
Environmental Conditions	23.3°C, 53.7% RH	Test Engineer	Kay Hu

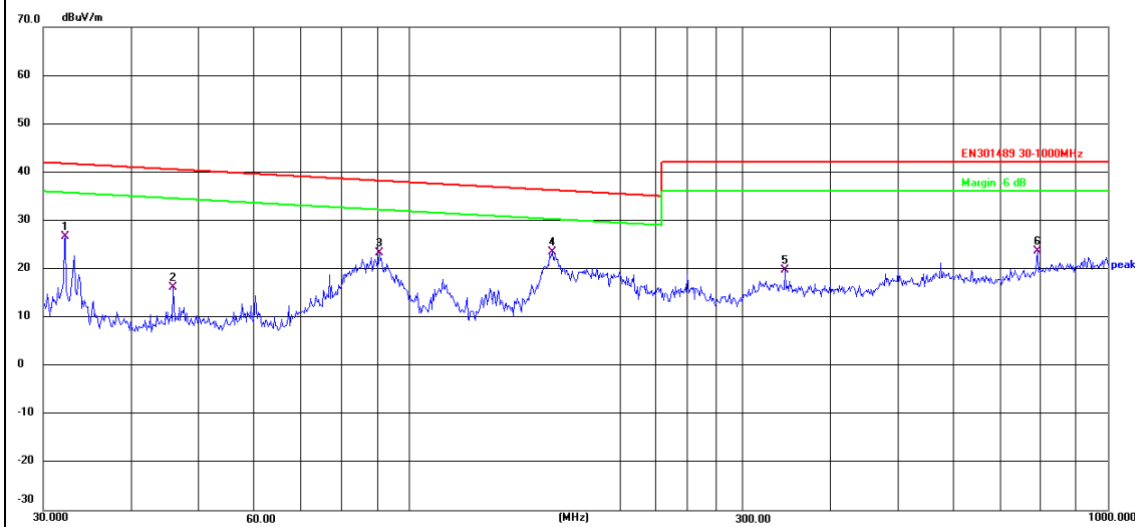


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.3526	18.87	26.01	44.88	76.90	-32.02	QP	
2		0.3526	8.67	26.01	34.68	66.90	-32.22	AVG	
3		0.9241	16.47	25.60	42.07	74.00	-31.93	QP	
4		0.9421	4.20	25.44	29.64	64.00	-34.36	AVG	
5		1.3651	13.86	25.00	38.86	74.00	-35.14	QP	
6		1.3696	1.71	25.00	26.71	64.00	-37.29	AVG	
7		2.7601	12.91	23.73	36.64	74.00	-37.36	QP	
8		2.7601	3.01	23.73	26.74	64.00	-37.26	AVG	
9		8.1511	9.68	26.13	35.81	74.00	-38.19	QP	
10		8.1511	-1.29	26.13	24.84	64.00	-39.16	AVG	
11	*	18.4561	25.41	20.33	45.74	74.00	-28.26	QP	
12		18.4561	7.77	20.33	28.10	64.00	-35.90	AVG	



A.3 Radiated Disturbance

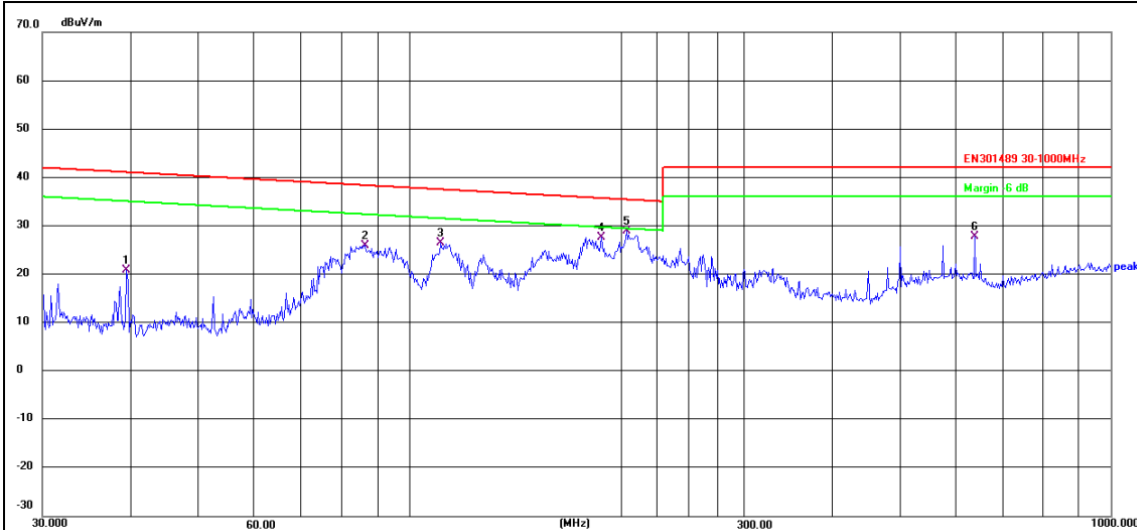
Test Model	SPM-Main	Test Mode	TM1
Environmental Conditions	23.5°C, 52.2% RH	Test Engineer	Kay Hu
Pol.	Vertical	Detector Function	Quasi-peak
Distance	3m	Test Voltage	AC 230V/50Hz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	32.2924	44.75	-18.15	26.60	41.75	-15.15	QP
2	46.0162	33.16	-16.92	16.24	40.53	-24.29	QP
3	90.8554	42.05	-18.82	23.23	38.19	-14.96	QP
4 *	160.3454	43.09	-19.68	23.41	36.24	-12.83	QP
5	345.5951	34.53	-14.75	19.78	42.00	-22.22	QP
6	793.3958	33.72	-9.99	23.73	42.00	-18.27	QP



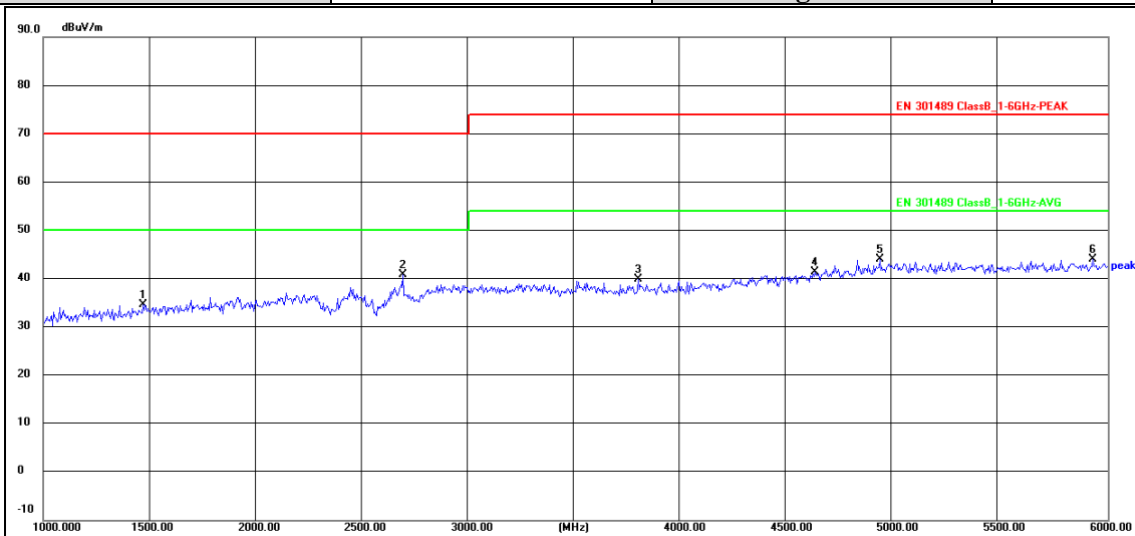
Test Model	SPM-Main	Test Mode	TM1 (Above 1GHz)
Environmental Conditions	23.5°C, 52.2% RH	Test Engineer	Kay Hu
Pol.	Horizontal	Detector Function	Quasi-peak
Distance	3m	Test Voltage	AC 230V/50Hz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	39.5756	38.49	-17.57	20.92	41.05	-20.13	QP
2	86.5027	45.16	-19.23	25.93	38.36	-12.43	QP
3	110.9569	45.60	-19.15	26.45	37.51	-11.06	QP
4	187.7529	45.33	-17.64	27.69	35.70	-8.01	QP
5 *	204.2375	46.22	-17.29	28.93	35.41	-6.48	QP
6	640.6109	38.82	-11.05	27.77	42.00	-14.23	QP



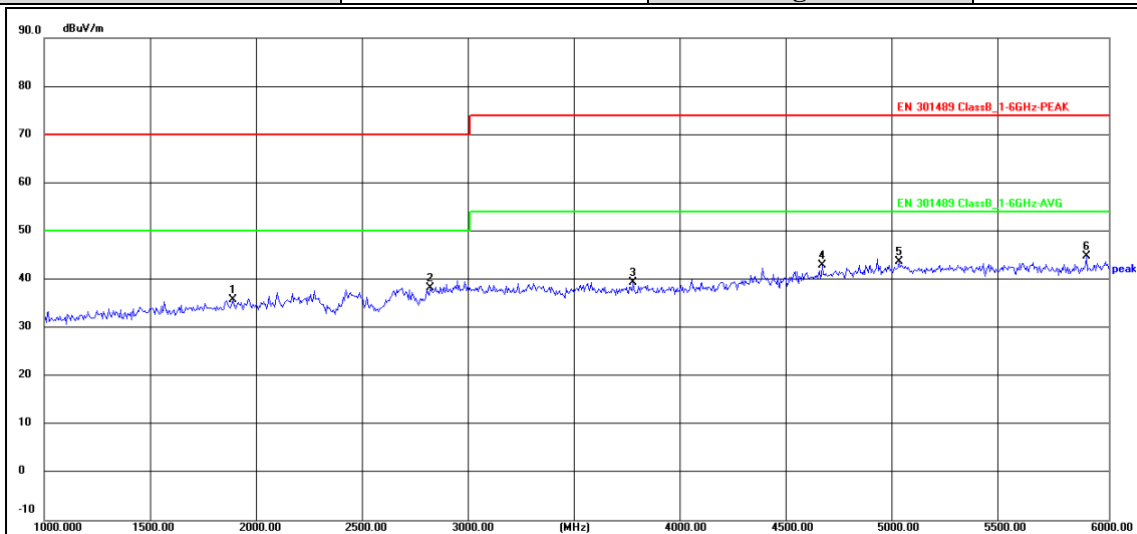
Test Model	SPM-Main	Test Mode	TM1
Environmental Conditions	23.5°C, 52.1% RH	Test Engineer	Kay Hu
Pol.	Vertical	Detector Function	Peak + AV
Distance	3m	Test Voltage	AC 230V/50Hz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1470.000	49.69	-15.03	34.66	70.00	-35.34	peak
2 *	2690.000	51.53	-10.68	40.85	70.00	-29.15	peak
3	3795.000	48.78	-8.90	39.88	74.00	-34.12	peak
4	4625.000	47.44	-5.97	41.47	74.00	-32.53	peak
5	4930.000	48.54	-4.47	44.07	74.00	-29.93	peak
6	5930.000	47.74	-3.62	44.12	74.00	-29.88	peak



Test Model	SPM-Main	Test Mode	TM1 (Above 1GHz)
Environmental Conditions	23.5°C, 52.1% RH	Test Engineer	Kay Hu
Pol.	Horizontal	Detector Function	Peak + AV
Distance	3m	Test Voltage	AC 230V/50Hz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1885.000	49.53	-13.71	35.82	70.00	-34.18	peak
2	2815.000	48.54	-10.24	38.30	70.00	-31.70	peak
3	3765.000	48.37	-8.96	39.41	74.00	-34.59	peak
4	4655.000	48.67	-5.82	42.85	74.00	-31.15	peak
5	5015.000	47.72	-4.09	43.63	74.00	-30.37	peak
6 *	5895.000	48.35	-3.59	44.76	74.00	-29.24	peak

Note:

1. Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.
2. Measurements above show only up to 6 maximum emissions noted.
3. Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. Factor = Antenna Factor + Cable Loss + Amplifier Factor
Emission Level = Reading level + Factor
Margin = Emission Level - Limit



A.4 Harmonic Current Emissions

Test Model	SPM-Main	Test Engineer	Kay Hu
Environmental Conditions	22.1°C, 53.3% RH	Test Voltage	AC 230V/50Hz
Type of Test: EN61000:2006 Harmonics inc. interharmonics to EN61000-4-7:2002 Limits: Class B Power Analyzer: Voltech PM6000 SN: 200006700523 Firmware version: v1.21.07RC2 Channel(s): 1. SN: 090015502053, 28 Adjusted Date: 22 JUN 2011. 2. SN:None Adjusted Date:None 3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None 5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None Shunt(s): 1. SN: 091024301916, 4 Adjusted Date: 23 JUN 2011. 2. SN:None Adjusted Date:None 3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None 5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None AC Source: Test AC Source			
Harmonic Results Against Chosen Limits: PASS		Notes:	
Test Parameter Details		User Entered	Measured
Operating Frequency:		50	49.9840
Operating Voltage:		230	229.3316
Specified Power:		0.0000	518.1146
Fundamental Current:		0.0000	2.2594
Power Factor:		0.0000	0.9998
Average Input Current:			2.2587
Maximum POHC:			0.0104
POHC Limit:			0.3771
Maximum THC:			0.0278
Minimum Power:		75	
Class Multiplier:		1.0000	
Test Duration:		00:02:30	



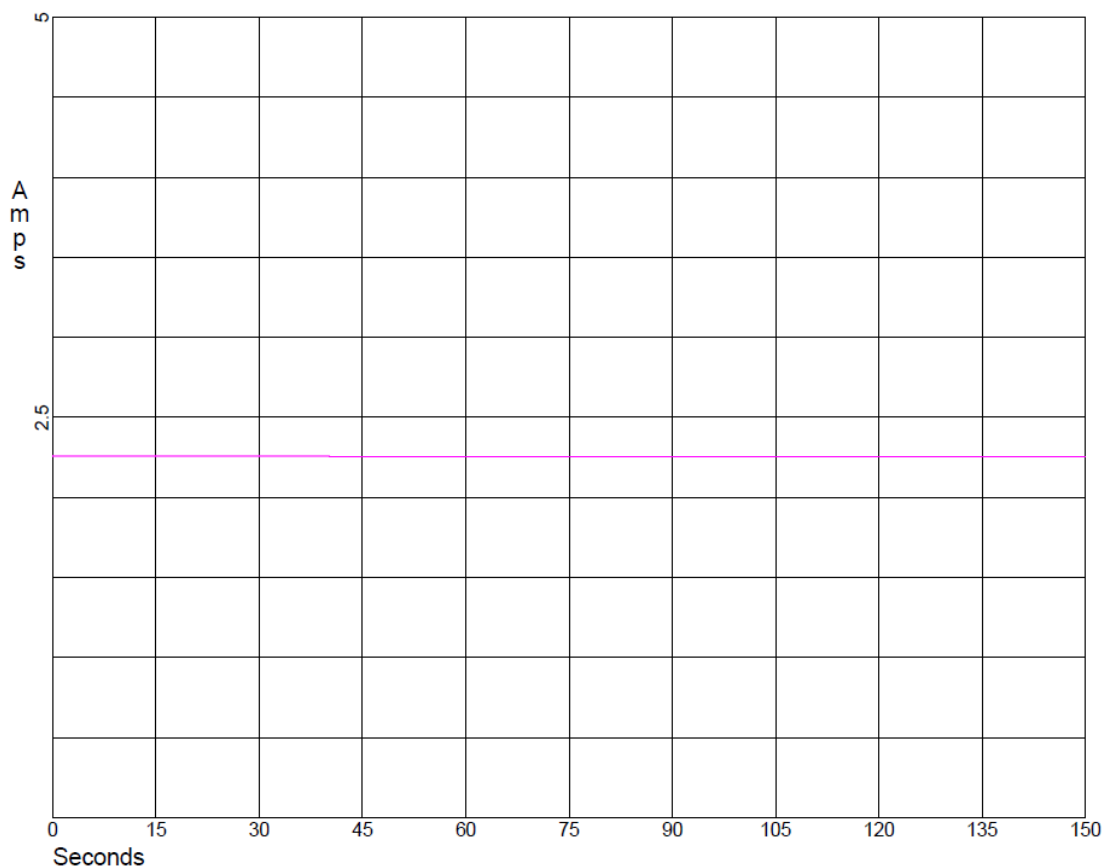
Type of Test: Fluctuating Harmonics Test - Single Harmonic Plot (2006)
Power Analyzer: Voltech PM6000 SN: 200006700523 Firmware version: v1.21.07RC2
Channel(s):
1. SN: 090015502053, 28 Adjusted Date: 22 JUN 2011. 2. SN:None Adjusted Date:None
3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None
5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None
Shunt(s):
1. SN: 091024301916, 4 Adjusted Date: 23 JUN 2011. 2. SN:None Adjusted Date:None
3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None
5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None

AC Source: Test AC Source

Overall Result:

PASS

Fundamental





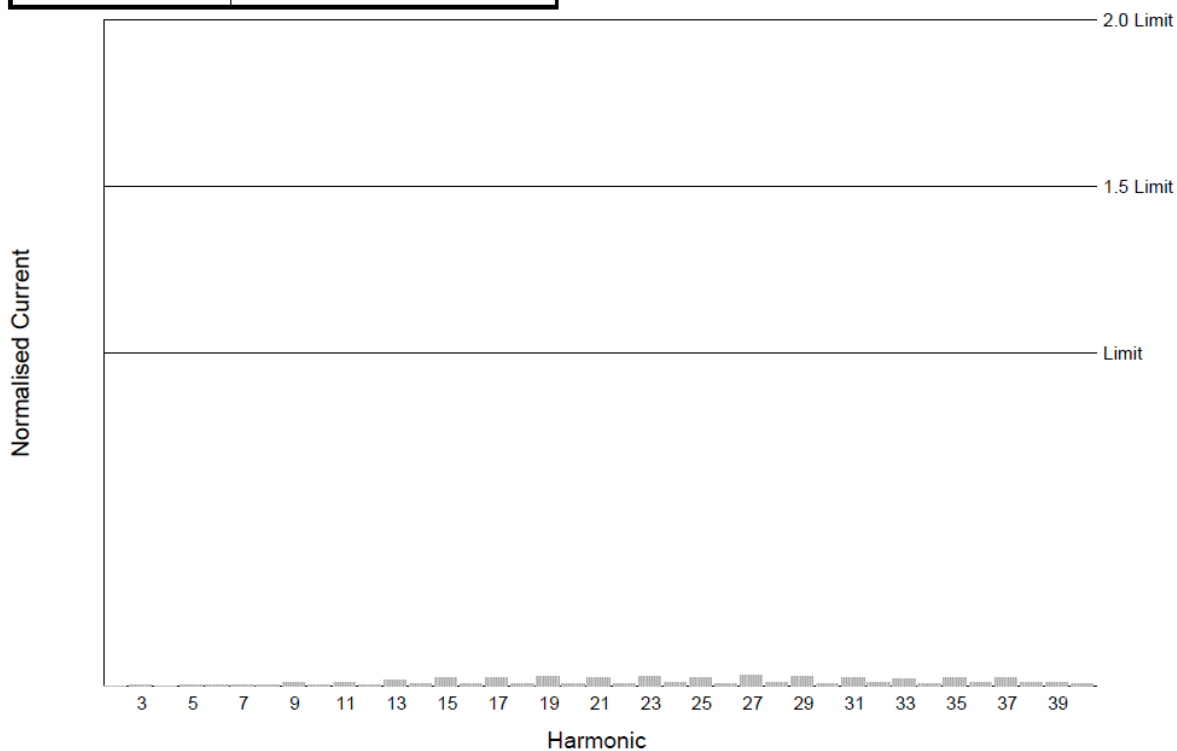
Type of Test: Fluctuating Harmonics Test - Normalised Worst Case Bar Chart (2006)
Power Analyzer: Voltech PM6000 SN: 200006700523 Firmware version: v1.21.07RC2
Channel(s):
1. SN: 090015502053, 28 Adjusted Date: 22 JUN 2011. 2. SN:None Adjusted Date:None
3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None
5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None
Shunt(s):
1. SN: 091024301916, 4 Adjusted Date: 23 JUN 2011. 2. SN:None Adjusted Date:None
3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None
5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None

AC Source: Test AC Source

Overall Result:

PASS

Class	Class B
Class Multiplier	1





Type of Test: Fluctuating Harmonics Test - Source Qualification (2006)
Power Analyzer: Voltech PM6000 SN: 200006700523 Firmware version: v1.21.07RC2
Channel(s):
1. SN: 090015502053, 28 Adjusted Date: 22 JUN 2011. 2. SN:None Adjusted Date:None
3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None
5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None
Shunt(s):
1. SN: 091024301916, 4 Adjusted Date: 23 JUN 2011. 2. SN:None Adjusted Date:None
3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None
5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None

AC Source: Test AC Source

Overall Result:

PASS

	Nominal	Measured	Deviation	Allowed Deviation	Result
Supply Voltage	230.00V	229.33V	0.67V	4.60V	Pass
Supply Frequency	50.00Hz	49.98Hz	0.02Hz	0.25Hz	Pass
Crest Factor	1.4100	1.4195	0.0095	+/- 0.01	Pass

Harmonic	Reading	Limit	Result	Harmonic	Reading	Limit	Result
2	0.15%	0.20%	Pass	3	0.08%	0.90%	Pass
4	0.05%	0.20%	Pass	5	0.06%	0.40%	Pass
6	0.03%	0.20%	Pass	7	0.06%	0.30%	Pass
8	0.04%	0.20%	Pass	9	0.04%	0.20%	Pass
10	0.02%	0.20%	Pass	11	0.04%	0.10%	Pass
12	0.02%	0.10%	Pass	13	0.02%	0.10%	Pass
14	0.01%	0.10%	Pass	15	0.04%	0.10%	Pass
16	0.01%	0.10%	Pass	17	0.02%	0.10%	Pass
18	0.01%	0.10%	Pass	19	0.02%	0.10%	Pass
20	0.01%	0.10%	Pass	21	0.03%	0.10%	Pass
22	0.01%	0.10%	Pass	23	0.01%	0.10%	Pass
24	0.01%	0.10%	Pass	25	0.02%	0.10%	Pass
26	0.01%	0.10%	Pass	27	0.03%	0.10%	Pass
28	0.01%	0.10%	Pass	29	0.01%	0.10%	Pass
30	0.01%	0.10%	Pass	31	0.01%	0.10%	Pass
32	0.01%	0.10%	Pass	33	0.01%	0.10%	Pass
34	0.01%	0.10%	Pass	35	0.01%	0.10%	Pass
36	0.01%	0.10%	Pass	37	0.03%	0.10%	Pass
38	0.01%	0.10%	Pass	39	0.03%	0.10%	Pass
40	0.01%	0.10%	Pass				



Type of Test: Fluctuating Harmonics Test - Worst Case Table (2006)
Power Analyzer: Voltech PM6000 SN: 200006700523 Firmware version: v1.21.07RC2
Channel(s):
1. SN: 090015502053, 28 Adjusted Date: 22 JUN 2011. 2. SN:None Adjusted Date:None
3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None
5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None
Shunt(s):
1. SN: 091024301916, 4 Adjusted Date: 23 JUN 2011. 2. SN:None Adjusted Date:None
3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None
5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None

AC Source: Test AC Source

Overall Result:

PASS

Class Class B

Class Multiplier 1

Harm	Limit 1	Limit 2	Average Reading	<L1 <L2	Max Reading	<L2	Pass FAIL	Harm	Limit 1	Limit 2	Average Reading	<L1 <L2	Max Reading	<L2	Pass FAIL
2	1.6200A	2.4300A	3.711mA	N/A	4.362mA	N/A	N/A	3	3.4500A	5.1750A	18.08mA	✓ ✓	18.39mA	✓	Pass
4	645.0mA	967.5mA	1.145mA	N/A	1.484mA	N/A	N/A	5	1.7100A	2.5650A	5.631mA	N/A	5.908mA	N/A	N/A
6	450.0mA	675.0mA	1.419mA	N/A	1.804mA	N/A	N/A	7	1.1550A	1.7325A	7.338mA	N/A	7.669mA	N/A	N/A
8	345.0mA	517.5mA	1.019mA	N/A	1.451mA	N/A	N/A	9	600.0mA	900.0mA	6.485mA	N/A	6.791mA	N/A	N/A
10	276.0mA	414.0mA	1.211mA	N/A	1.514mA	N/A	N/A	11	495.0mA	742.5mA	5.857mA	N/A	6.024mA	N/A	N/A
12	230.0mA	345.0mA	1.154mA	N/A	1.481mA	N/A	N/A	13	315.0mA	472.5mA	5.928mA	N/A	6.062mA	N/A	N/A
14	197.1mA	295.7mA	1.105mA	N/A	1.441mA	N/A	N/A	15	225.0mA	337.5mA	5.677mA	N/A	5.832mA	N/A	N/A
16	172.5mA	258.7mA	1.129mA	N/A	1.403mA	N/A	N/A	17	198.5mA	297.7mA	5.343mA	N/A	5.471mA	N/A	N/A
18	153.3mA	230.0mA	0.945mA	N/A	1.237mA	N/A	N/A	19	177.6mA	266.4mA	5.008mA	N/A	5.105mA	N/A	N/A
20	138.0mA	207.0mA	1.004mA	N/A	1.307mA	N/A	N/A	21	160.7mA	241.0mA	4.400mA	N/A	4.495mA	N/A	N/A
22	125.4mA	188.1mA	0.892mA	N/A	1.137mA	N/A	N/A	23	146.7mA	220.1mA	4.221mA	N/A	4.311mA	N/A	N/A
24	115.0mA	172.5mA	0.978mA	N/A	1.242mA	N/A	N/A	25	135.0mA	202.5mA	3.693mA	N/A	3.771mA	N/A	N/A
26	106.1mA	159.2mA	0.798mA	N/A	1.054mA	N/A	N/A	27	125.0mA	187.5mA	4.139mA	N/A	4.231mA	N/A	N/A
28	98.57mA	147.8mA	0.873mA	N/A	1.108mA	N/A	N/A	29	116.3mA	174.5mA	3.224mA	N/A	3.312mA	N/A	N/A
30	92.00mA	138.0mA	0.736mA	N/A	0.960mA	N/A	N/A	31	108.8mA	163.3mA	2.793mA	N/A	2.857mA	N/A	N/A
32	86.25mA	129.3mA	0.764mA	N/A	0.977mA	N/A	N/A	33	102.2mA	153.4mA	2.230mA	N/A	2.292mA	N/A	N/A
34	81.17mA	121.7mA	0.635mA	N/A	0.816mA	N/A	N/A	35	96.42mA	144.6mA	2.397mA	N/A	2.461mA	N/A	N/A
36	76.66mA	115.0mA	0.736mA	N/A	0.891mA	N/A	N/A	37	91.21mA	136.8mA	2.452mA	N/A	2.499mA	N/A	N/A
38	72.63mA	108.9mA	0.618mA	N/A	0.783mA	N/A	N/A	39	86.53mA	129.8mA	0.958mA	N/A	1.007mA	N/A	N/A
40	69.00mA	103.5mA	0.502mA	N/A	0.634mA	N/A	N/A								

<L1 : Reading is below limit 1.

<L2 : Reading is below limit 2.

N/A : Harmonic current below 0.6% of rated current or 5mA, whichever is greater, are disregarded.



A.5 Voltage Fluctuation and Flicker

Test Model		SPM-Main	Test Engineer		Kay Hu	
Environmental Conditions		22.1℃, 53.3% RH		Test Voltage		AC 230V/50Hz
		Type of Test: Flickermeter Test - Table				
		Power Analyzer: Voltech PM6000 SN: 200006700523 Firmware Version: v1.21.07RC2				
		Channel(s):				
		1. SN: 090015502053, 28 Adjusted Date: 22 JUN 2011. 2. SN:None Adjusted Date:None				
		3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None				
		5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None				
		Shunt(s):				
		1. SN: 091024301916, 4 Adjusted Date: 23 JUN 2011. 2. SN:None Adjusted Date:None				
		3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None				
		5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None				
AC Source:		Mains / Manual Source				
Overall Result:		Notes:				
PASS		Measurement method - Voltage				

	Pst	dc (%)	dmax (%)	d(t) > 3.3%(ms)
Limit	1.000	3.300	4.000	500
Reading 1	0.088	0.008	0.078	0

**A.6 RF Electromagnetic Field (80 MHz - 6000 MHz)**

Test Model	SPM-Main	Test Engineer	Kay Hu
Environmental Conditions	23.2°C, 52.6% RH	Test Voltage	AC 230V/50Hz

TM1-TM2 Test Result:

EUT Working Mode	Antenna Polarity	Frequency (MHz)	Fielded Strength (V/m)	Observation	Position	Conclusion
Operating Mode	Vertical	80-6000	3	CT, CR	Front, Right, Left, Back	Pass
	Horizontal	80-6000	3	CT, CR	Front, Right, Left, Back	Pass
Idle	Vertical	80-6000	3	See Note	Front, Right, Left, Back	Pass
	Horizontal	80-6000	3	See Note	Front, Right, Left, Back	Pass

TM3-TM4 Test Result:

EUT Working Mode	Antenna Polarity	Frequency (MHz)	Fielded Strength (V/m)	Observation	Position	Conclusion
Operating Mode	Vertical	80-6000	3	See Note	Front, Right, Left, Back	Pass
	Horizontal	80-6000	3	See Note	Front, Right, Left, Back	Pass
Idle	Vertical	80-6000	3	See Note	Front, Right, Left, Back	Pass
	Horizontal	80-6000	3	See Note	Front, Right, Left, Back	Pass

Note: The EUT performance complied with performance criteria for CT&CR to Function and there is no any degradation of performance and function.



A.7 Electrostatic Discharge

Electrostatic Discharge Test Results			
Standard	<input type="checkbox"/> IEC 61000-4-2 <input checked="" type="checkbox"/> EN 61000-4-2		
Applicant	Shenzhen Sonoff Technologies Co., Ltd.		
EUT	SONOFF Smart Stackable Power Meter (Main Unit+4-Relays)	Temperature	22.5℃
M/N	SPM-Main	Humidity	52.4%
Criterion	B	Pressure	1021mbar
Test Mode	TM1-TM4	Test Engineer	Kay Hu
TEST RESULT OF TM1-TM2			
Test Voltage	Coupling	Observation	Result (Pass/Fail)
±2KV, ±4kV	Contact Discharge	TT, TR	Pass
±2KV, ±4kV, ±8kV	Air Discharge	TT, TR	Pass
±2KV, ±4kV	Indirect Discharge HCP	TT, TR	Pass
±2KV, ±4kV	Indirect Discharge VCP	TT, TR	Pass
TEST RESULT OF TM3-TM4			
Test Voltage	Coupling		Result (Pass/Fail)
±2KV, ±4kV	Contact Discharge		Pass
±2KV, ±4kV, ±8kV	Air Discharge		Pass
±2KV, ±4kV	Indirect Discharge HCP		Pass
±2KV, ±4kV	Indirect Discharge VCP		Pass
Note: The EUT performance complied with performance criteria for TT&TR Function and there is no any degradation of performance and function.			



A.8 Electrical Fast Transient Immunity

Electrical Fast Transient/Burst Test Results			
Standard	<input type="checkbox"/> IEC 61000-4-4 <input checked="" type="checkbox"/> EN 61000-4-4		
Applicant	Shenzhen Sonoff Technologies Co., Ltd.		
EUT	SONOFF Smart Stackable Power Meter (Main Unit+4-Relays)	Temperature	22.4℃
M/N	SPM-Main	Humidity	52.4%
Test Mode	TM1-TM4	Criterion	B
Test Engineer	Kay Hu		

TEST RESULT OF TM1-TM2

Line	Test Voltage	Polarity	Observation	Result (Pass/Fail)
L	1KV	+/-	TT, TR	Pass
N	1KV	+/-	TT, TR	Pass
L-N	1KV	+/-	TT, TR	Pass

TEST RESULT OF TM3

Line	Test Voltage	Polarity	Observation
RJ45 Line	0.5KV	+/-	TT, TR

TEST RESULT OF TM4

Line	Test Voltage	Polarity	Result (Pass/Fail)
L	1KV	+/-	Pass
N	1KV	+/-	Pass
L-N	1KV	+/-	Pass



A.9 RF Common Mode

Injected Currents Susceptibility Test Results			
Standard	<input type="checkbox"/> IEC 61000-4-6 <input checked="" type="checkbox"/> EN 61000-4-6		
Applicant	Shenzhen Sonoff Technologies Co., Ltd.		
EUT	SONOFF Smart Stackable Power Meter (Main Unit+4-Relays)	Temperature	21.2℃
M/N	SPM-Main	Humidity	53.2%
Test Mode	TM1-TM4	Criterion	A
Test Engineer	Kay Hu		

TEST RESULT OF TM1-TM2				
Frequency Range (MHz)	Strength (Unmodulated)	Injected Position	Observation	Result (Pass/Fail)
0.15 ~ 10	3V	AC Mains	CT, CR	Pass
10 ~ 30	3V to 1V			
30 ~ 80	1V			

TEST RESULT OF TM3			
Frequency Range (MHz)	Strength (Unmodulated)	Injected Position	Result (Pass/Fail)
0.15 ~ 80	3V	RJ45 Port	Pass

TEST RESULT OF TM4			
Frequency Range (MHz)	Strength (Unmodulated)	Injected Position	Result (Pass/Fail)
0.15 ~ 10	3V	AC Mains	Pass
10 ~ 30	3V to 1V		
30 ~ 80	1V		

Remark:

1. Modulation Signal: 1kHz 80% AM
2. Measurement Equipment :
Simulator: CIT-10 (FRANKONIA)
 CDN : ☒CDN-M2 (FRANKONIA)
 ☐CDN-M3 (FRANKONIA)

Note: The EUT performance complied with performance criteria for CT&CR Function and there is no any degradation of performance and function.

**A.10 Surges, Line to Line and Line to Ground**

Surge Immunity Test Result			
Standard	<input type="checkbox"/> IEC 61000-4-5 <input checked="" type="checkbox"/> EN 61000-4-5		
Applicant	Shenzhen Sonoff Technologies Co., Ltd.		
EUT	SONOFF Smart Stackable Power Meter (Main Unit+4-Relays)	Temperature	23.2℃
M/N	SPM-Main	Humidity	52.4%
Test Mode	TM1-TM4	Criterion	B
Test Engineer	Kay Hu		

TEST RESULT OF TM1-TM2						
Location	Polarity	Phase Angle	Number of Pulse	Pulse Voltage (KV)	Observation	Result (Pass/Fail)
L-N	+	0°, 90°, 180°, 270°	5	1.0	TT, TR	Pass
	-	0°, 90°, 180°, 270°	5	1.0	TT, TR	Pass

TEST RESULT OF TM3					
Location	Polarity	Phase Angle	Number of Pulse	Pulse Voltage (KV)	Result (Pass/Fail)
RJ45 Port	+	0°, 90°, 180°, 270°	5	1.0	Pass
	-	0°, 90°, 180°, 270°	5	1.0	Pass

TEST RESULT OF TM4					
Location	Polarity	Phase Angle	Number of Pulse	Pulse Voltage (KV)	Result (Pass/Fail)
L-N	+	0°, 90°, 180°, 270°	5	1.0	Pass
	-	0°, 90°, 180°, 270°	5	1.0	Pass

**A.11 Voltage Dips/Interruptions Immunity Test**

Voltage Dips And Interruptions Test Results			
Standard	<input type="checkbox"/> IEC 61000-4-11 <input checked="" type="checkbox"/> EN 61000-4-11		
Applicant	Shenzhen Sonoff Technologies Co., Ltd.		
EUT	SONOFF Smart Stackable Power Meter (Main Unit+4-Relays)	Temperature	23.2℃
M/N	SPM-Main	Humidity	54.3%
Test Mode	TM1-TM4	Criterion	B&C
Test Engineer	Kay Hu		

TEST RESULT OF TM1-TM2				
Test Level % U _T	Voltage Dips & Short Interruptions % U _T	Duration (in periods)	Observation	Result (Pass/Fail)
0	100	0.5P	TT, TR	Pass
0	100	1P	TT, TR	Pass
70	30	25P	TT, TR	Pass
0	100	250P	TT, TR	Pass
TEST RESULT OF TM3-TM4				
Test Level % U _T	Voltage Dips & Short Interruptions % U _T	Duration (in periods)	Result (Pass/Fail)	
0	100	0.5P	Pass	
0	100	1P	Pass	
70	30	25P	Pass	
0	100	250P	Pass	