

UPS Harmonic Test Report

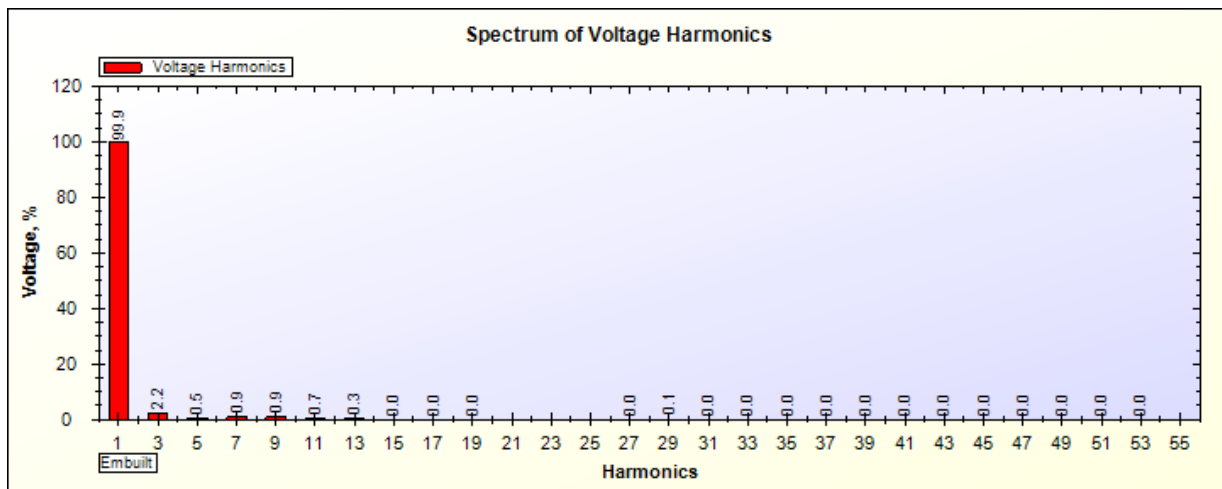
Date : 11-11-2014

Standard	<i>UL1778 article 49 Harmonic Distortion Test</i>
Instrument Under Test	<i>UPS 600VA</i>
Company Name	<i>Sukm</i>
Rated Voltage and Load	<i>12V,50A</i>
Battery Type	<i>Tubular Battery</i>
Test Condition	<i>On battery source (Assuming full charge battery)</i>

Load Pattern-

On 10% Load

Load Condition	Voltage	Voltage Harmonics
55.38 VA	227 V	2.843%

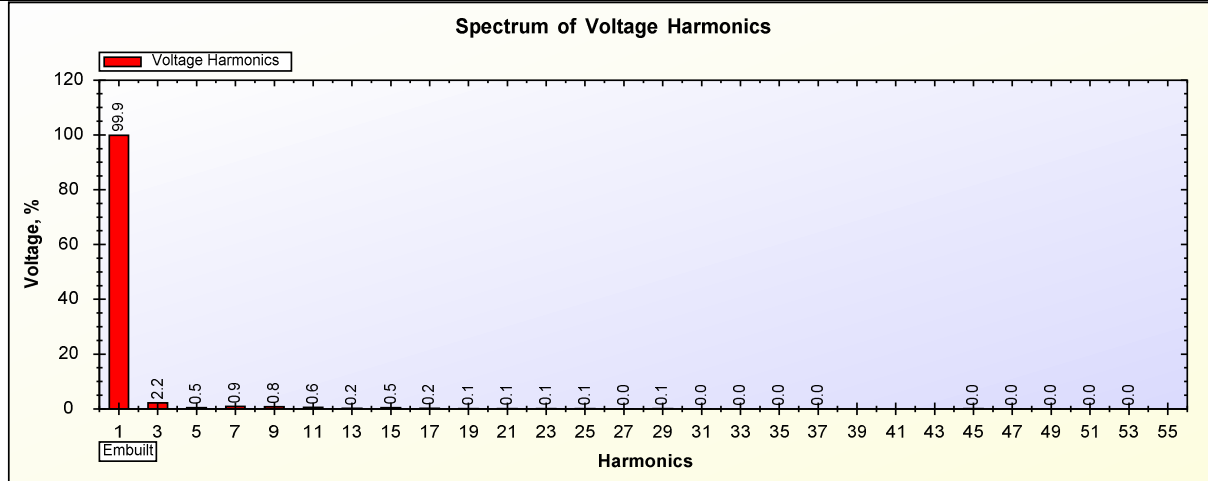


Comments –

1. Vthd is 2.843%.
2. Fundamental harmonics is 99.9 % of Vrms which is good.
3. Third harmonics is 2.2%
4. From 5th to 13th harmonics are less than 1% of Vrms.
5. Other harmonics are zero.

On 20% Load

Load Condition(VA)	Voltage	Voltage Harmonics
124.78	227.3	2.611

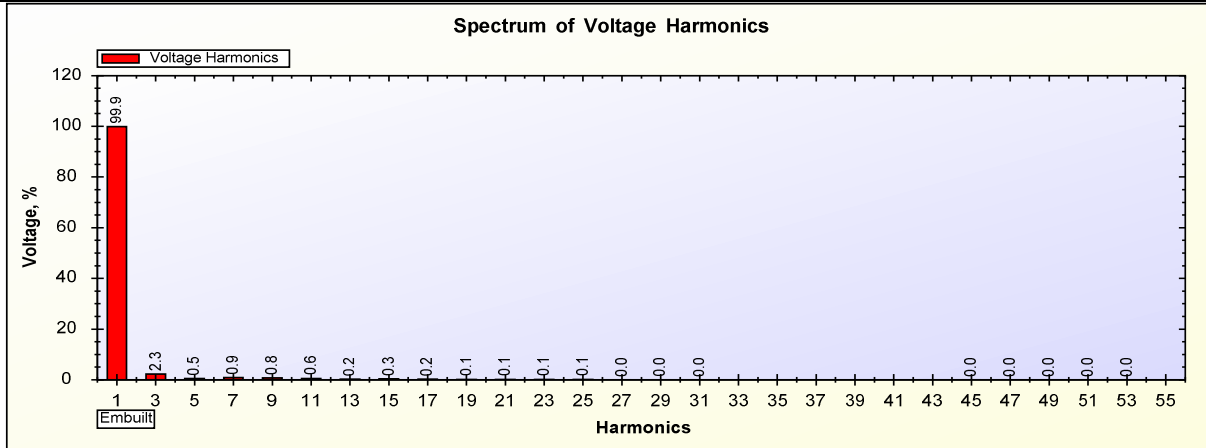


Comment –

1. Vthd is 2.611%
2. First harmonics remain same on 99.9%.
3. Third harmonic is also same on 2.2%.
4. 15 to 25 harmonics are slightly increases.
5. Others are zero.

On 25% Load

Load Condition(VA)	Voltage	Voltage Harmonics
153.9	226.3	2.755

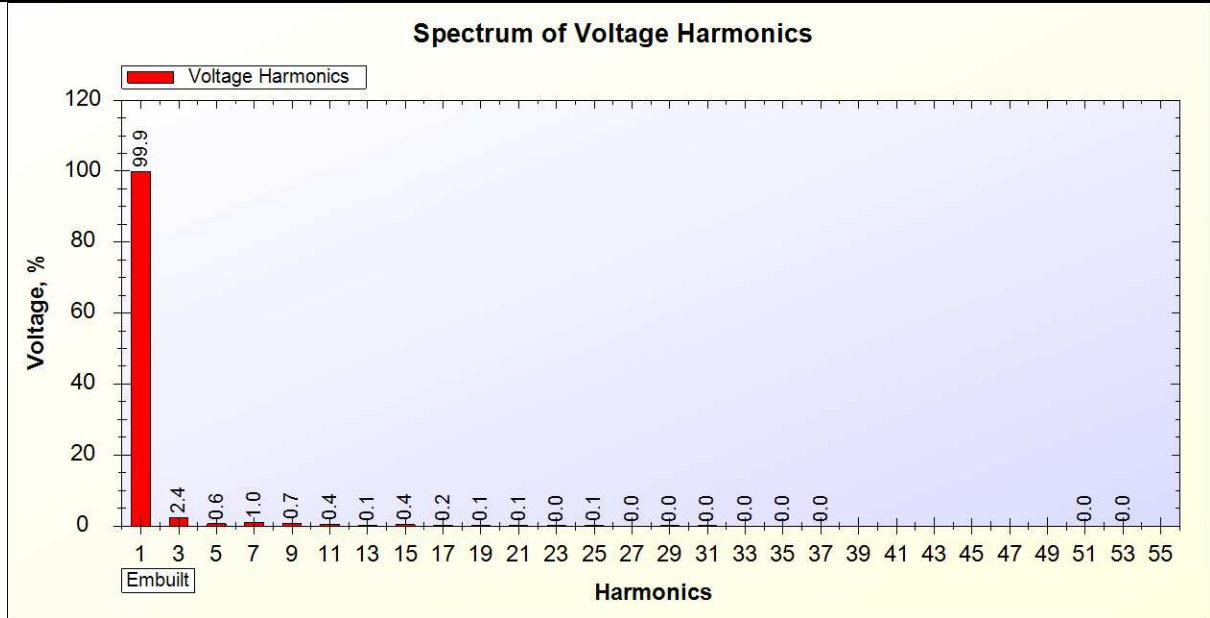


Comment –

1. Vthd is 2.755%.
2. Fundamental harmonic is remain same.
3. Third harmonic increased by 0.1%.
4. Others are same as previous.

On 40% Load

Load Condition(VA)	Voltage	Voltage Harmonics
194.53	223.6	2.835

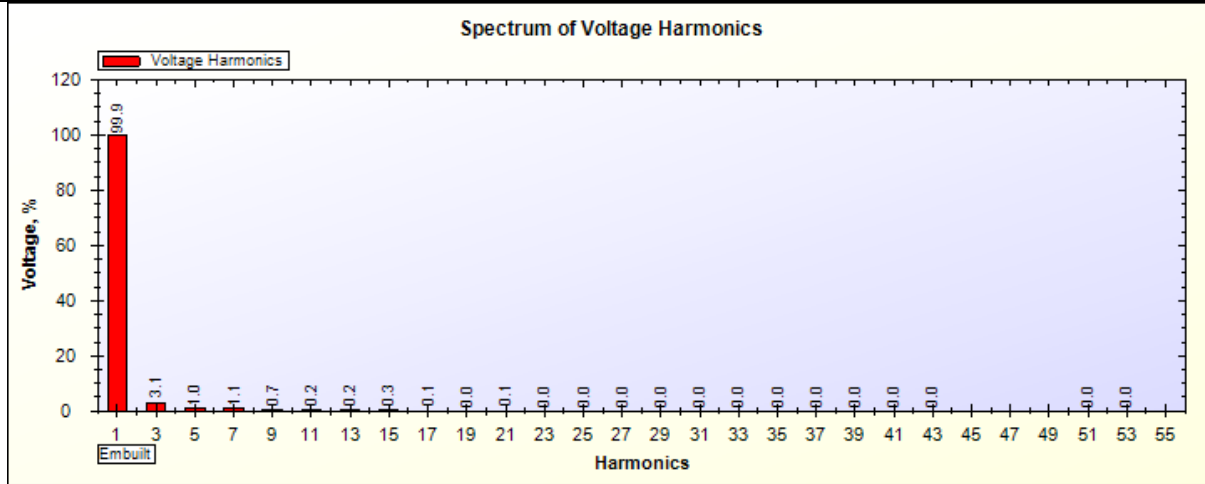


Comment –

1. Vthd is 2.835%.
2. Third harmonic is again increased by 0.1%.
3. 5th to 17th harmonics are slightly increased.

On 50% Load

Load Condition(VA)	Voltage	Voltage Harmonics
302.8	222.8	3.596



Comment –

1. Vthd is 3.596%
2. Third harmonic is also increased by 0.7 %.
3. Harmonics from 5th to 15 are also increased.
4. Others are zero.

Summary –

1. UPS showing overload on load over 300VA.
2. As load increases THD increases.
3. At load above 50% THD is greater than 3.
4. 3rd harmonic is affected most (0.9% change).

Testing Instrument – THDPM-1

Test Done By – Himanshu Sharma (Electronic Testing)