



7F, No.192-1, Lien-Chen Rd., Chung-Ho City, Taipei Hsien, Taiwan, R.O.C.
Tel. +886-2-2246-7272; Fax: +886-2-2246-7312
E-mail: info@opti-ups.com.tw

Test protocol for OPTI uninterruptible power supply ES-C.

1. UPS characteristics' analysis w/o load on AC-line power:
 - Output voltage is 230Vac.
 - Output waveform – sinewave.
2. UPS characteristics' analysis with load on AC-line power:
 - Output voltage is 230Vac.
 - Output waveform – sinewave.
3. UPS characteristics' analysis w/o load on battery power:
 - Output voltage is 230Vac (rms).
 - Output waveform – stepwave.
4. UPS characteristics' analysis with load on battery power:
 - Output voltage is 230Vac (rms).
 - Output waveform – stepwave.
5. There are two steps for AC line voltage correction (AVR) – one for buck and one for boost.
 - Boost: when input voltage drops to 200V the boost is enabled, output voltage is 235V. UPS goes to battery mode at input voltage =172V. The switch from battery mode to AC line mode is executed when input voltage reaches 182V, when output voltage is 214V. When input voltage reaches 205V the boost is switched off.
 - Buck: When input voltage reaches 255V the buck mode is enabled, the output voltage at this time is 226V.
6. Battery backup time:
 - For ES800C with load = 660 VA the backup time is 70sec. before “Low battery” alarm goes on, 140sec. before UPS shutdown.
 - For ES1500C with load = 1166 VA the backup time is 75sec. before “Low battery” alarm goes on, 150sec. before UPS shutdown.

General Manager (OPTI International Corp.)

Jones Wu

Product Manager

John Shih

Service engineer

Ken Wang

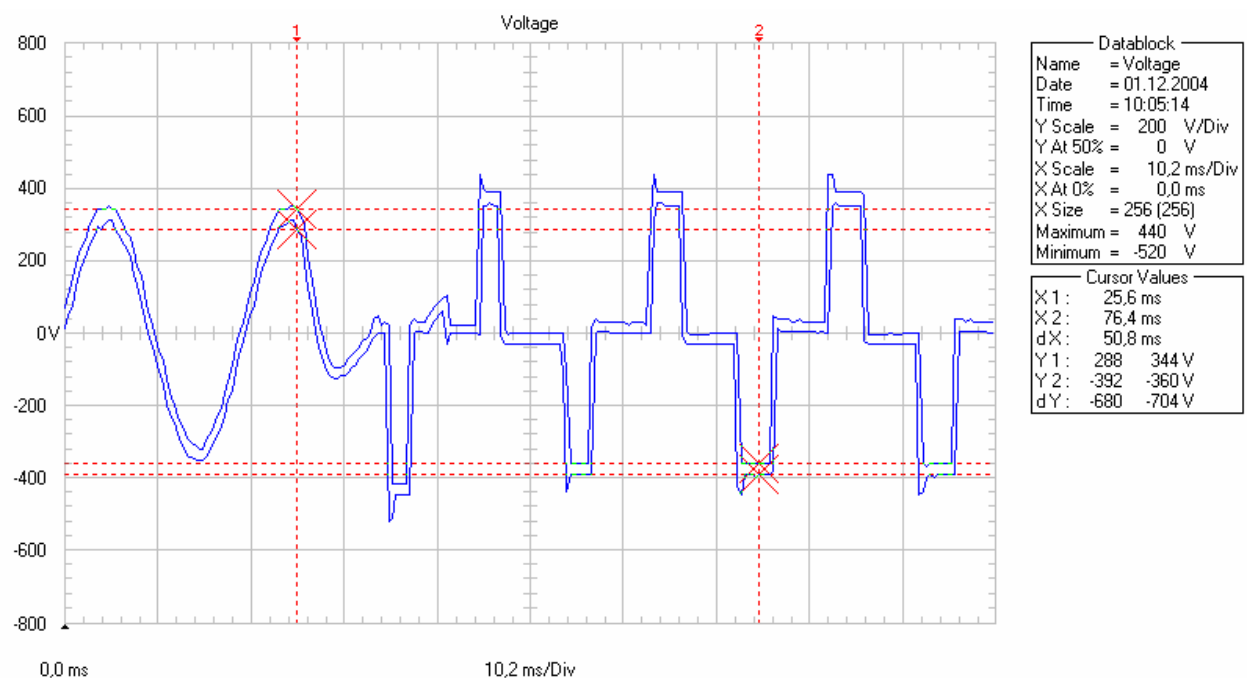
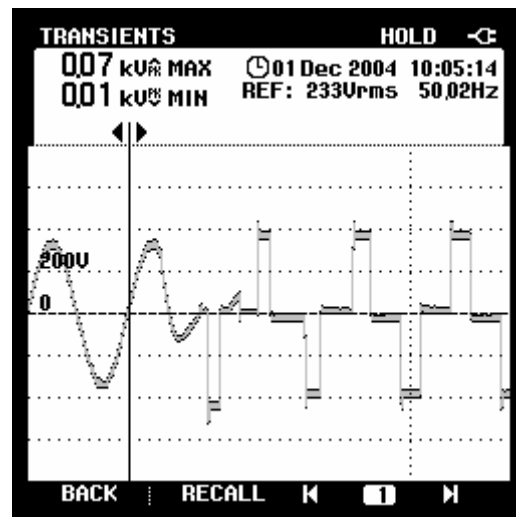
Taipei
2004

Test protocol for UPS ES-C (OPTI-UPS).

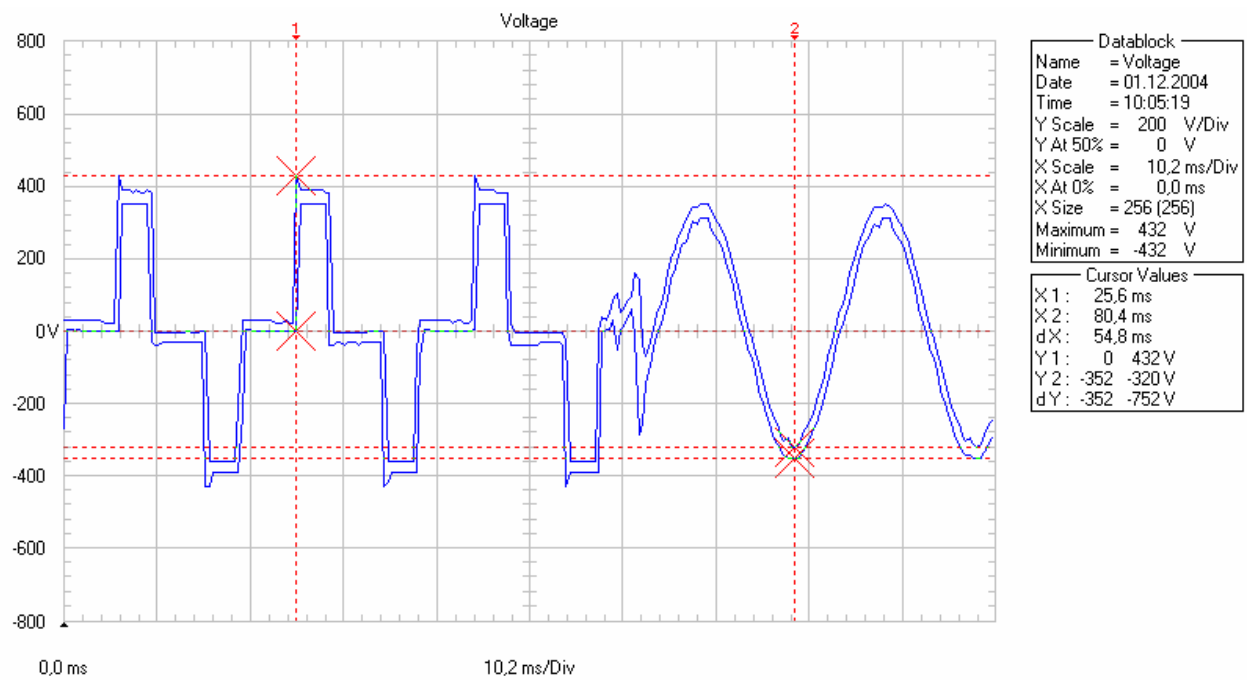
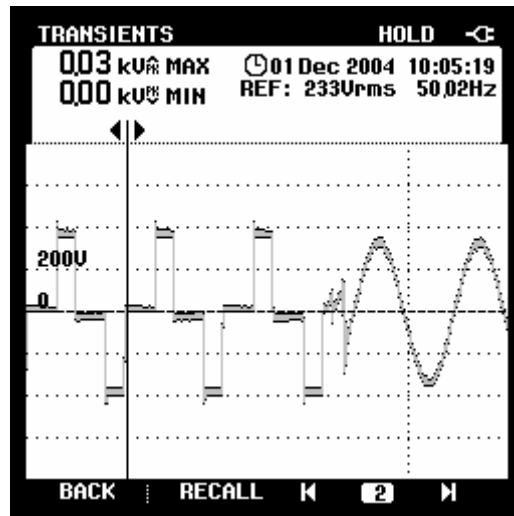
Test program:

1. Examine the transfer processes when AC line power failure occurs.
2. Examine the transfer processes when AC line power is restored.

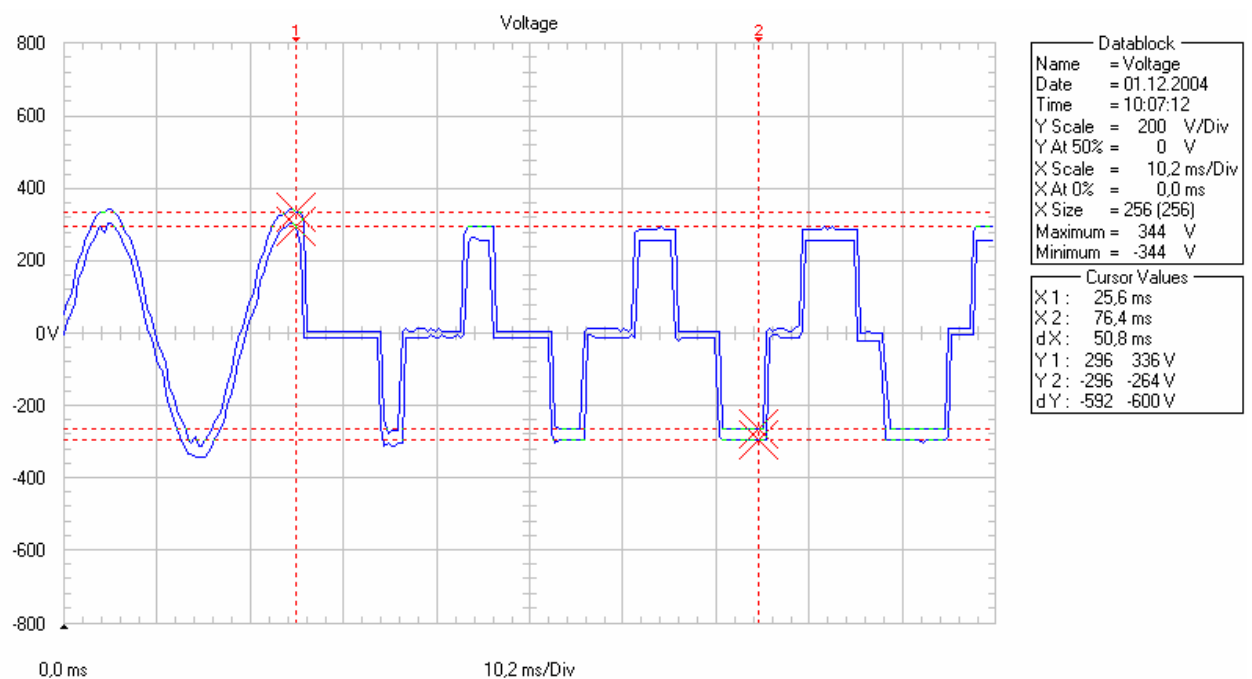
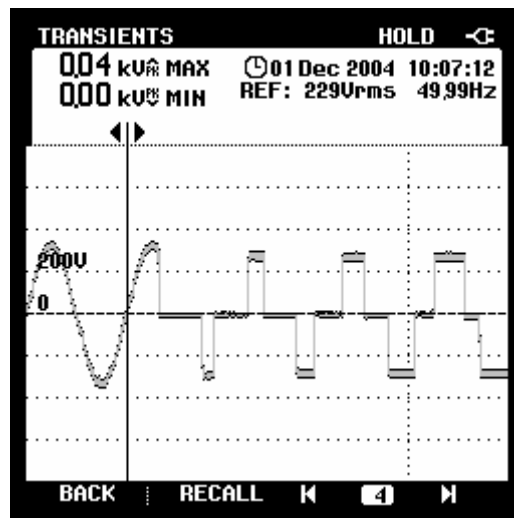
The examination is conducted using the measuring equipment Fluke 43B. The results show that the transfer process lasts less than 10ms, which is quite acceptable for powering PC systems and other load, more critical to power supply, the transfer process is clear without incorrect spikes or noise.



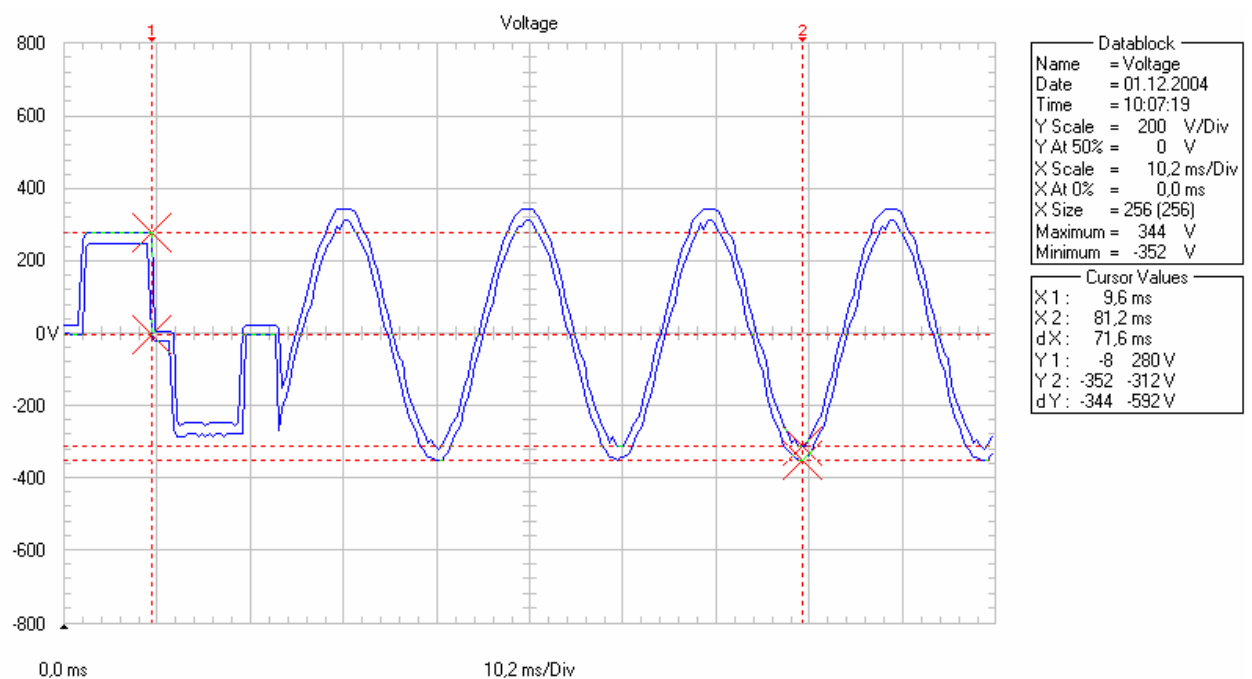
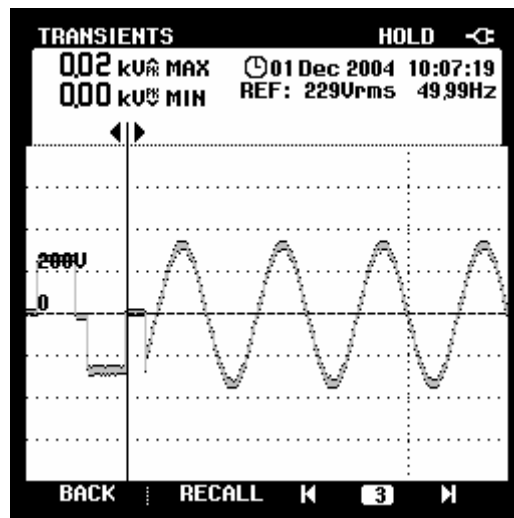
1.1 Transfer to battery power supply, ES800C, w/o load.



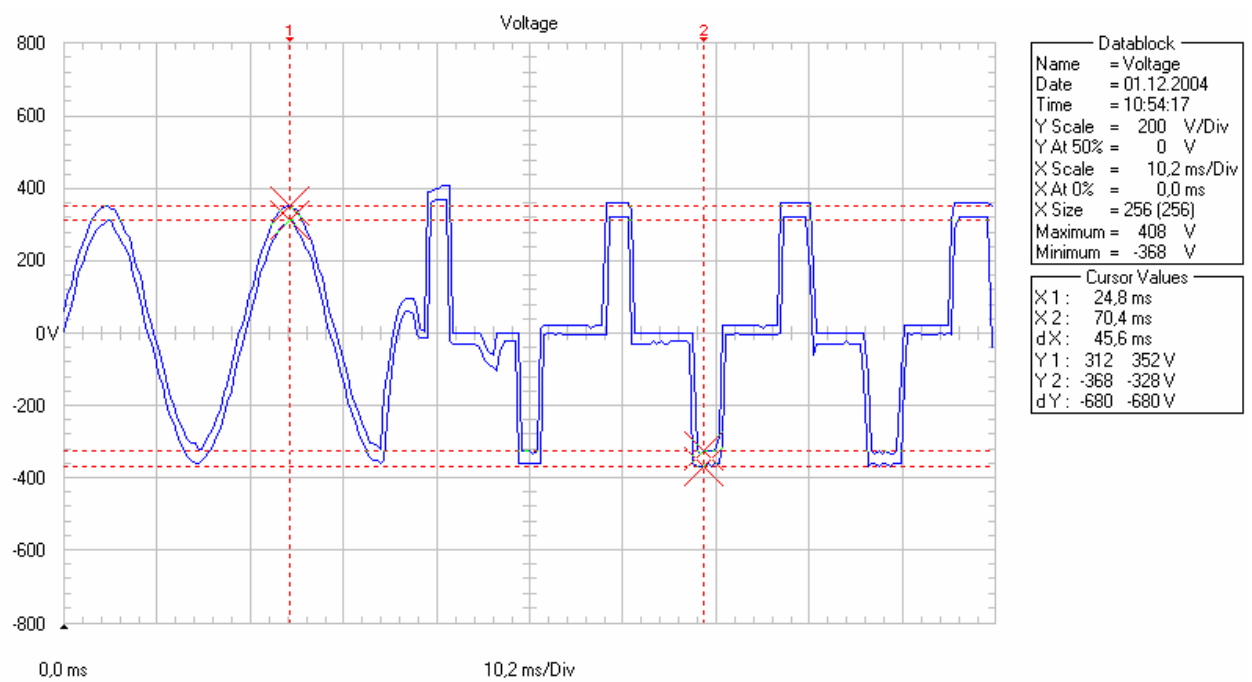
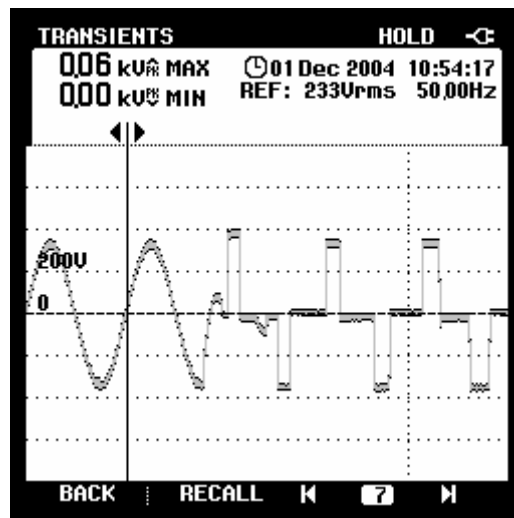
1.2 Transfer from batteries to AC line when AC power restored, ES800C, w/o load.



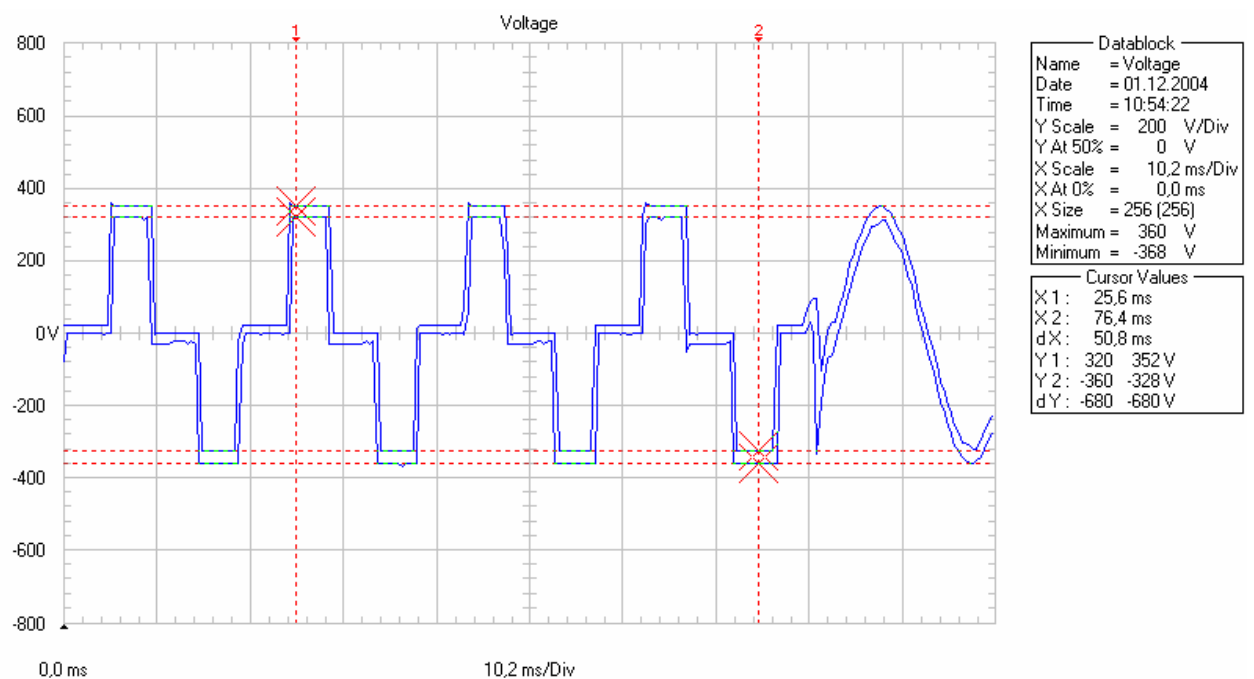
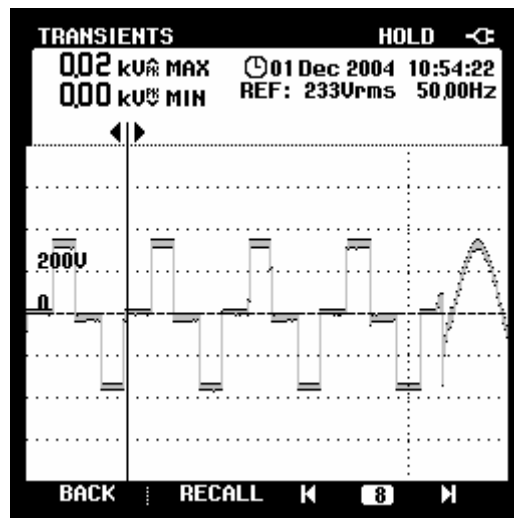
1.3 Transfer to battery mode, ES800C, load = 660VA.



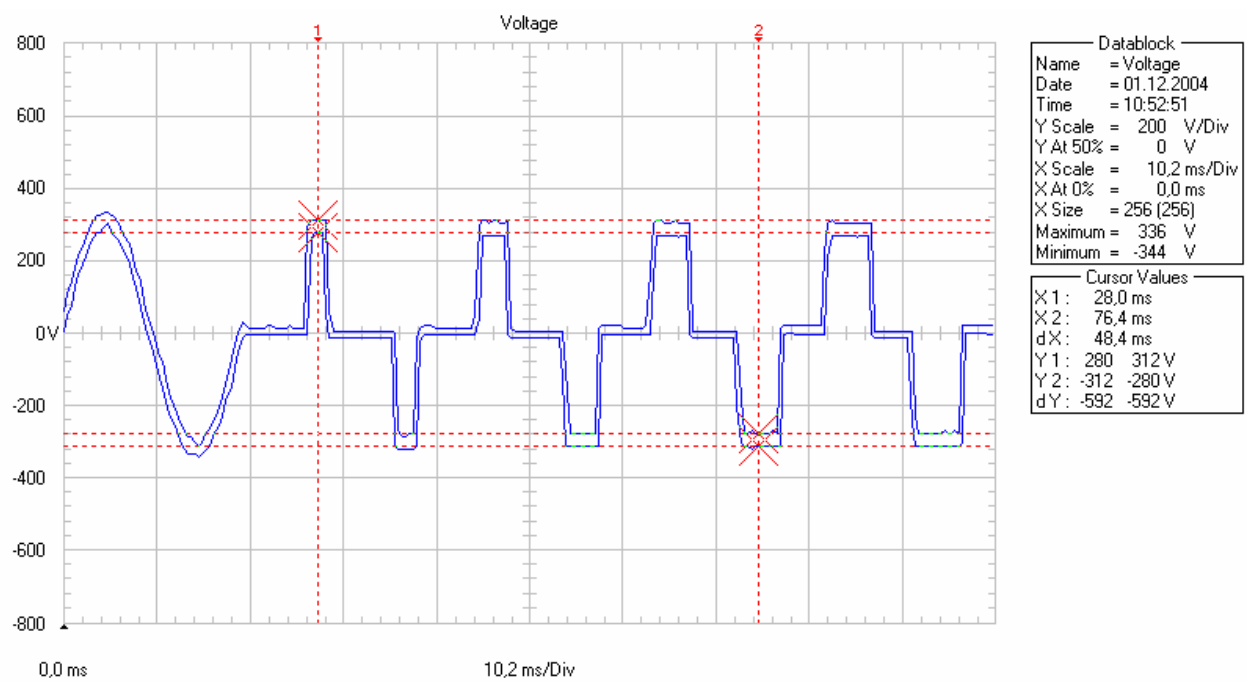
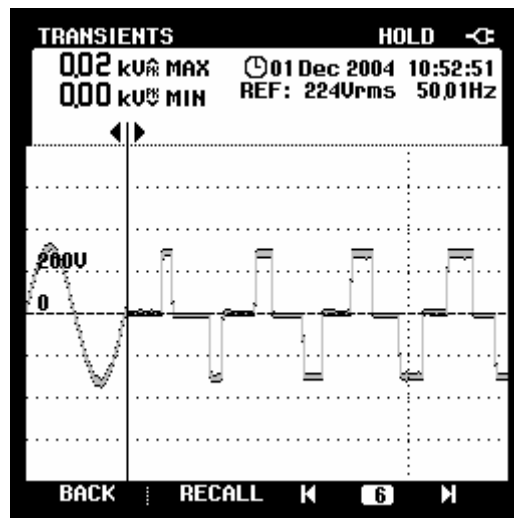
1.4 Transfer from batteries to AC line when AC power restored, ES800C, load = 660VA.



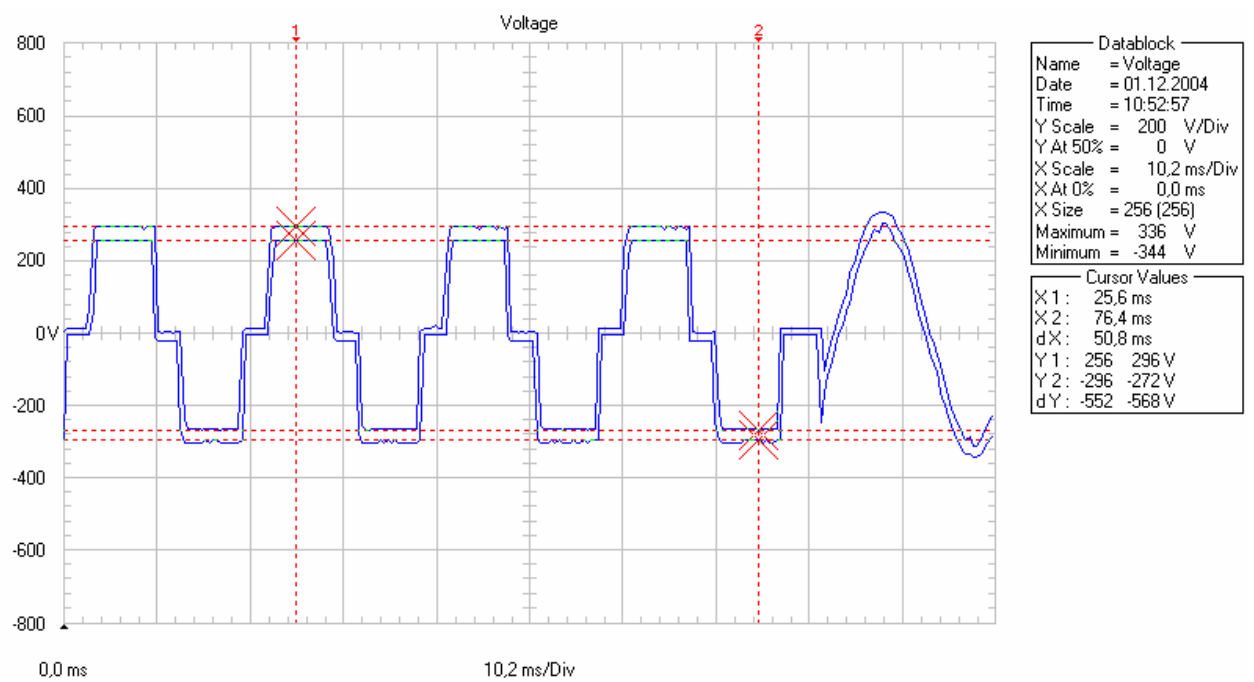
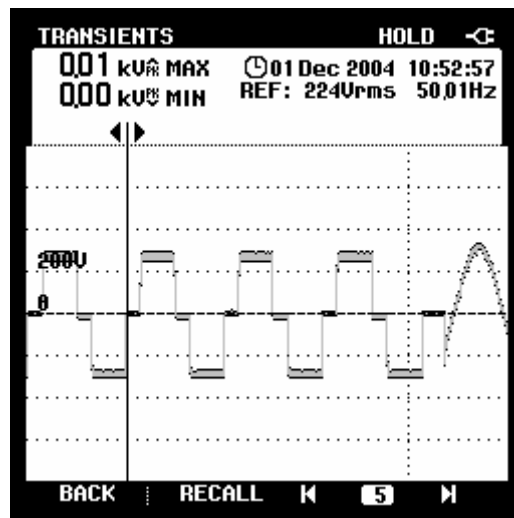
1.5 Transfer to battery power supply, ES1500C, w/o load.



1.6 Transfer from batteries to AC line when AC power restored, ES1500C, w/o load.



1.7 Transfer to battery mode, ES1500C, load = 1166VA.



1.8 Transfer from batteries to AC line when AC power restored, ES1500C, load = 1166VA.