

TEST REPORT

Applicant: Ablerex Electronics Co., Ltd.
1F, No. 3, Lane 7, Paokao Rd., Hsintien 23144, Taipei Hsien,
Taiwan R.O.C.

Product: PV Inverter

Brand name: Ablerex

Model: ES8000

Rating: Input: Nominal 740 Vdc, MPPT 370-850 Vdc, Max. 2 x 11.4 A
Output: 220 Vac, 60 Hz, 8000 W, 3 x 11.59 A

Sample Description: Power inverter for PV

Testing Specification: IEEE 519, Rev. June. 5. 2004

Date of Test: September 02, 2011 –September 08, 2011

Sample of Receipt the Test Item: September 01, 2011

Conclusion: From the results of our testing on the submitted sample(s), we are of the opinion that the submitted sample(s) **COMPLY WITH** the above testing specification.

Tested by:



Lawrence Lin
Project Engineer

Reviewed by:



Tin Lin
Supervisor

Harmonics test for Inverters

Results:

| Load | | 8K | Voltage Phase | | | U | | DC input | | 740 Vdc | |
|---------------|-------|-------|---------------|-------|-------|-------|-------|-----------|-------|------------|--|
| | | | | | | | | AC output | | 220 Vac | |
| Harm. order h | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| Current (%) | | 0.201 | 0.201 | 0.053 | 1.243 | 0.110 | 2.192 | 0.064 | 0.033 | 0.040 | |
| Limit (%) | | 1.000 | 4.000 | 1.000 | 4.000 | 1.000 | 4.000 | 1.000 | 4.000 | 1.000 | |
| | | | | | | | | | | | |
| Harm. order h | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| Current (%) | 1.067 | 0.037 | 0.765 | 0.034 | 0.006 | 0.040 | 0.463 | 0.019 | 0.360 | 0.023 | |
| Limit (%) | 2.000 | 0.500 | 2.000 | 0.500 | 2.000 | 0.500 | 1.500 | 0.375 | 1.500 | 0.375 | |
| | | | | | | | | | | | |
| Harm. order h | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | |
| Current (%) | 0.002 | 0.016 | 0.259 | 0.017 | 0.213 | 0.016 | 0.007 | 0.008 | 0.164 | 0.007 | |
| Limit (%) | 1.500 | 0.375 | 0.600 | 0.150 | 0.600 | 0.150 | 0.600 | 0.150 | 0.600 | 0.150 | |
| | | | | | | | | | | | |
| Harm. order h | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | |
| Current (%) | 0.150 | 0.013 | 0.009 | 0.004 | 0.139 | 0.007 | 0.168 | 0.006 | 0.020 | 0.003 | |
| Limit (%) | 0.600 | 0.150 | 0.600 | 0.150 | 0.300 | 0.075 | 0.300 | 0.075 | 0.300 | 0.075 | |
| TRD (%) | 2.956 | | | | | | | | | | |
| Limit (%) | 5 | | | | | | | | | | |

Results

| Load | | 8K | Voltage Phase | | | V | | DC input | | 740 Vdc | |
|---------------|-------|-------|---------------|-------|-------|-------|-------|-----------|-------|------------|--|
| | | | | | | | | AC output | | 220 Vac | |
| Harm. order h | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| Current (%) | | 0.547 | 0.167 | 0.077 | 1.171 | 0.112 | 2.145 | 0.104 | 0.020 | 0.068 | |
| Limit (%) | | 1.000 | 4.000 | 1.000 | 4.000 | 1.000 | 4.000 | 1.000 | 4.000 | 1.000 | |
| | | | | | | | | | | | |
| Harm. order h | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| Current (%) | 1.066 | 0.062 | 0.757 | 0.052 | 0.013 | 0.046 | 0.460 | 0.033 | 0.363 | 0.026 | |
| Limit (%) | 2.000 | 0.500 | 2.000 | 0.500 | 2.000 | 0.500 | 1.500 | 0.375 | 1.500 | 0.375 | |
| | | | | | | | | | | | |
| Harm. order h | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | |
| Current (%) | 0.018 | 0.022 | 0.247 | 0.023 | 0.215 | 0.016 | 0.007 | 0.013 | 0.163 | 0.009 | |
| Limit (%) | 1.500 | 0.375 | 0.600 | 0.150 | 0.600 | 0.150 | 0.600 | 0.150 | 0.600 | 0.150 | |
| | | | | | | | | | | | |
| Harm. order h | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | |
| Current (%) | 0.152 | 0.013 | 0.013 | 0.008 | 0.143 | 0.010 | 0.165 | 0.008 | 0.012 | 0.070 | |
| Limit (%) | 0.600 | 0.150 | 0.600 | 0.150 | 0.300 | 0.075 | 0.300 | 0.075 | 0.300 | 0.075 | |
| TRD (%) | 2.933 | | | | | | | | | | |
| Limit (%) | 5 | | | | | | | | | | |

Results

| Load | | 8K | | Voltage Phase | | W | | DC input | | 740 Vdc | |
|---------------|-------|-------|-------|---------------|-------|-------|-------|-----------|-------|---------|--|
| | | | | | | | | AC output | | 220 Vac | |
| Harm. order h | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| Current (%) | | 0.528 | 0.233 | 0.025 | 1.191 | 0.059 | 2.167 | 0.089 | 0.040 | 0.043 | |
| Limit (%) | | 1.000 | 4.000 | 1.000 | 4.000 | 1.000 | 4.000 | 1.000 | 4.000 | 1.000 | |
| | | | | | | | | | | | |
| Harm. order h | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| Current (%) | 1.069 | 0.032 | 0.751 | 0.035 | 0.019 | 0.025 | 0.455 | 0.024 | 0.357 | 0.015 | |
| Limit (%) | 2.000 | 0.500 | 2.000 | 0.500 | 2.000 | 0.500 | 1.500 | 0.375 | 1.500 | 0.375 | |
| | | | | | | | | | | | |
| Harm. order h | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | |
| Current (%) | 0.021 | 0.016 | 0.245 | 0.008 | 0.215 | 0.005 | 0.014 | 0.009 | 0.162 | 0.003 | |
| Limit (%) | 1.500 | 0.375 | 0.600 | 0.150 | 0.600 | 0.150 | 0.600 | 0.150 | 0.600 | 0.150 | |
| | | | | | | | | | | | |
| Harm. order h | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | |
| Current (%) | 0.156 | 0.006 | 0.010 | 0.013 | 0.134 | 0.004 | 0.175 | 0.004 | 0.014 | 0.011 | |
| Limit (%) | 0.600 | 0.150 | 0.600 | 0.150 | 0.300 | 0.075 | 0.300 | 0.075 | 0.300 | 0.075 | |
| TRD (%) | 2.952 | | | | | | | | | | |
| Limit (%) | 5 | | | | | | | | | | |