

PC Power & Cooling  
Certified Test Report

Test Program name : Turbo-Cool 1KW-SR  
Serial No : 3762780752 System Time : 2006/10/24 12:40:01 PM  
Model name : Turbo-Cool 1KW-SR Elapsed Time : 00:02:01  
Inspector : James Test Result : PASS

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STEP.1 : TTL & Relay Setup ----- PASS

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STEP.2 : Turn On & Sequence Test ----- PASS

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STEP.3 : ATX Voltage Setpoint ----- PASS

Output	50% Load(A)	Min	Meas(V)	Max
+5V	12.000	4.900	5.094	5.150
+12V	33.000	11.760	12.116	12.360
-12V	0.400	-11.400	-11.645	-12.600
+3.3V	10.000	3.234	3.371	3.399
+5VSB	1.500	4.850	5.089	5.150

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STEP.4 : ATX Efficiency ----- PASS

Output Power(W)	Input Power(W)	Min	Meas(%)	Max
1015.1	1226.8	78.00	82.74	100.00

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STEP.5 : ATX Peak Power ----- PASS

Peak Output Power(W) 1109.2

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STEP.6 : ATX Ripple Noise ----- PASS

Line(VAC)	90	Freq(Hz)	60	
Output	100% Load(A)	Min	Meas(V)	Max
+5V	24.000	0.000	0.032	0.050
+12V	66.000	0.000	0.036	0.120
-12V	0.750	0.000	0.035	0.120
+3.3V	20.000	0.000	0.028	0.050
+5VSB	3.000	0.000	0.027	0.075

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STEP.7 : TTL & Relay Setup ----- PASS

STEP.8 : ATX Power Good ----- PASS

Min	Meas(ms)	Max
100	318	1000

STEP.9 : ATX Power Factor ----- PASS

Min	Meas(PF)	Max
0.980	0.993	1.000

STEP.10 : ATX Remote Enable ----- PASS

STEP.11 : ATX Line Regulation ----- PASS

Low Line(VAC) 90      High Line(VAC) 264      Freq(Hz) 60

Output	100% Load(A)	Min	Meas(V)	Max
+5V	24.000	0.000	0.002	0.050
+12V	66.000	0.000	0.003	0.120
-12V	0.750	0.000	0.002	0.120
+3.3V	20.000	0.000	0.001	0.033
+5VSB	3.000	0.000	0.002	0.050

STEP.12 : ATX Load Regulation ----- PASS

Output	10% Load(A)	100% Load(A)	Min	Meas(V)	Max
+5V	2.400	24.000	0.001	0.045	0.150
+12V	6.600	66.000	0.001	0.277	0.360
-12V	0.075	0.750	0.001	0.104	0.360
+3.3V	2.000	20.000	0.001	0.021	0.099
+5VSB	0.300	3.000	0.001	0.144	0.250

STEP.13 : ATX Current Limit(5V) ----- PASS

Min	Meas(A)	Max
33.000	41.000	50.000

STEP.14 : TTL & Relay Setup ----- PASS

STEP.15 : ATX Current Limit(12V) ----- PASS

Min	Meas(A)	Max
85.000	92.000	100.000

STEP.16 : TTL & Relay Setup ----- PASS

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STEP.17 : ATX Current Limit(3.3V) ----- PASS

Min	Meas(A)	Max
33.000	40.500	50.000

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STEP.18 : TTL & Relay Setup ----- PASS

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STEP.19 : Internal Setup ----- PASS

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STEP.20 : ATX Hold up ----- PASS

Min	Meas(ms)	Max
21.00	60.38	80.00

# TEST DESCRIPTIONS

This Test Report is unique to your power supply and references its serial number.

STEP.2 : Turn On & Sequence Test ----- PASS

The **Turn On** test measures the time it takes for each output voltage to reach its nominal value (+5.00V, +12.00V, etc). If the rise time is too slow or if the outputs come up in the wrong sequence, the computer will not boot.

STEP.3 : ATX Voltage Setpoint ----- PASS

Output	50% Load(A)	Min	Meas(V)	Max
+5V	12.000	4.900	5.094	5.150
+12V	33.000	11.760	12.116	12.360
-12V	0.400	-11.400	-11.645	-12.600
+3.3V	10.000	3.234	3.371	3.399
+5VSB	1.500	4.850	5.089	5.150

To determine the **Voltage Setpoint**, each output voltage is checked at 50% load. The maximum allowed variation from nominal is -2%/+3% for the +5V, +12V and +3.3V outputs.

STEP.4 : ATX Efficiency ----- PASS

Output Power(W)	Input Power(W)	Min	Meas(%)	Max
1015.1	1226.8	78.00	82.74	100.00

**Efficiency** is the output power divided by the input power. High efficiency means cooler operation and a lower utility bill. The test is conducted at 100% load. (Highest efficiency occurs at 70%-80% load.)

STEP.5 : ATX Peak Power ----- PASS

Peak Output Power(W) 1109.2

To verify **Peak Output**, the power supply is loaded to 110% of its continuous rating.

STEP.6 : ATX Ripple Noise ----- PASS

Line(VAC)	90	Freq(Hz)	60	
Output	100% Load(A)	Min	Meas(V)	Max
+5V	24.000	0.000	0.032	0.050
+12V	66.000	0.000	0.036	0.120
-12V	0.750	0.000	0.035	0.120
+3.3V	20.000	0.000	0.028	0.050
+5VSB	3.000	0.000	0.027	0.075

The **Ripple** test insures that the DC power from each output is pure and clean for reliable computer operation. The test is conducted at 100% load (full load).

STEP.8 : ATX Power Good ----- PASS

Min	Meas(ms)	Max
100	318	1000

The **Power Good** test insures that the motherboard signal turns on with the proper delay.

STEP.9 : ATX Power Factor ----- PASS

Min	Meas(PF)	Max
0.980	0.993	1.000

The **Power Factor** test measures how well the input current is converted to power. The ratio is true power (watts) divided by apparent power (VA). A power supply with power factor correction (PFC) should have a PF of .95-.99.

STEP.10 : ATX Remote Enable ----- PASS

The **Remote Enable** test checks the function of the +5V Stand By circuit.

STEP.11 : ATX Line Regulation ----- PASS

Low Line(VAC) 90 High Line(VAC) 264 Freq(Hz) 60

Output	100% Load(A)	Min	Meas(V)	Max
+5V	24.000	0.000	0.002	0.050
+12V	66.000	0.000	0.003	0.120
-12V	0.750	0.000	0.002	0.120
+3.3V	20.000	0.000	0.001	0.033
+5VSB	3.000	0.000	0.002	0.050

The **Line Regulation** test demonstrates the power supply's ability to maintain stable output voltages when the input voltage is varied from low (90VAC) to high (264VAC). Tight line regulation insures that the system won't crash during sags and surges. The test is conducted at 100% load. The maximum allowed variation is 1%.

STEP.12 : ATX Load Regulation ----- PASS

Output	10% Load(A)	100% Load(A)	Min	Meas(V)	Max
+5V	2.400	24.000	0.001	0.045	0.150
+12V	6.600	66.000	0.001	0.277	0.360
-12V	0.075	0.750	0.001	0.104	0.360
+3.3V	2.000	20.000	0.001	0.021	0.099
+5VSB	0.300	3.000	0.001	0.144	0.250

The **Load Regulation** test demonstrates the power supply's ability to maintain stable output voltages when the load on each output is varied from 10% to 100%. Tight load regulation insures that the power supply is compatible with any system configuration and insures that the computer won't crash during the significant load changes that occur in a file server or gaming PC. The maximum allowed variation is 3%.

STEP.13 : ATX Current Limit(5V) ----- PASS

Min	Meas(A)	Max
33.000	41.000	50.000

The **Current Limit** tests show whether the power supply is capable of producing 110%-120% of the current rating for each output. They also show if the unit safely shuts down to protect itself, when the load is 120%-140%.

STEP.20 : ATX Hold up ----- PASS

Min	Meas(ms)	Max
21.00	60.38	80.00

The **Hold Up** test measures how long output voltages are present at 100% load after input power is lost. Without adequate hold up, the power supply would shut down during the transfer time of a stand by UPS.