Test Report for Power Supply:

Vendor: Young Year
Model #: PSIV-350-1

In making any use of this test report you are expressly agreeing to the disclaimers and notices below:

THIS TEST REPORT IS PROVIDED "AS IS" WITH NO WARRANTY WHATSOEVER, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO THOSE FOR NON-INFRINGEMENT OF INTELLECTUAL PROPERTY, MERCHANTABILITY OR SATISFACTIRY QUALITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY WARRANTY OTHERWISE ARISING OUT OF ANY PROPOSAL, SPECIFICATION OR SAMPLE.
INTEL ASSUMES NO RESPONSIBILITY FOR ANY ERRORS WHICH MAY APPEAR IN THIS DOCUMENT

Information in this document is provided solely in connection with and to enable the use of Intel products. Intel assumes no liability whatsoever, including infringement of any patent or copyright, for sale and use of Intel products except as provided in Intel's Terms and Conditions of Sale for such products. Intel retains the right to make changes to its test specifications and Intel Products at any time, without notice. Intel makes no commitment to update the information contained herein. The hardware vendor remains solely responsible for the design, sale and functionality of its product, including any liability arising from product infringement or product warranty. Intel accepts no liability for the quality of third party suppliers, and cannot guarantee that third party products are compatible with Intel products or that third party suppliers will not change parts so that they are no longer compliant.

IN NO EVENT WILL INTEL BE LIABLE FOR ANY LOSS OF PROFITS, LOSS OF USE, BUSINESS INTERRUPTIONS, INCIDENTAL, INDIRECT, SPECULATIVE CONSEQUENTIAL OR SPECIAL DAMAGES, IRRESPECTIVE OF WHETHER INTEL HAS ADVANCE NOTICE OF THE POSSIBILITY OF SUCH DAMAGES.
IN NO EVENT WILL INTEL'S TOTAL LIABILITY TO BUYER UNDER THIS AGREEMENT EXCEED THE VALUE OF THE INTEL PRODUCT THAT CAUSES SUCH LOSS OR DAMAGE.
IN NO EVENT WILL INTEL BE LIABLE IN INDEMNITY.

THIS TEST REPORT IS CONFIDENTIAL AND SHALL NOT BE USED FOR MARKETING PURPOSES.

THE LIMITATIONS AND DISCLAIMERS SET OUT IN THIS AGREEMENT WERE AN ESSENTIAL ELEMENT IN INTEL AGREEING TO SUPPLY THIS TEST REPORT FREE OF CHARGE.

Table Of Contents

1. Introduction

The data compiled in this report is for your reference to facilitate in designing your power supply so that it meets the mechanical and electrical requirements of the relevant design guides and specifications.

The importance of compliant power supplies lies in the fact that it makes system integration easier and better for everyone. Design guides promote interchangeability, which makes integration and assembly of computer systems easier. Overall, this results in lower integration and system costs and also reduced support cost for you. As you can see, compliant power supplies benefit everyone!

2. References

?? ATX12V v1.1 Power Supply Design Guide
?? ATX v2.03 Specification
?? SFX Power Supply Design Guide

All design guides available at www.teleport.com/~ffsupprt/

3. Test Equipment

Eltest Power Supply Test System, Cal Date: 4/5/00
?? Pacific Smartsource 115-ASX power source.
?? EL 467 Power Supply Measurement Board: DC voltage accuracy .1% FSR, PARD/Ripple accuracy 5% FSR.
?? EL 465 Electronic Load Controller board: Waveform DAC 12 bits resolution, .1% FSR Accuracy.
?? Power Supply Interface Board.
?? EL Series 25A/50V Electronic Loads: Loading current resolution .025% FSR, Accuracy 0.1% FSR, Loading Voltage settling time 25us, output impedance 100 Ohms.
?? TM series Test Manifold:
?? Power Win AC/DC, DC/DC Power Supply Test System Software
?? Tektronix Digital TDS684B Oscilloscope with 1Ghz bandwidth at 5Gs/s.

4. Test Configuration

The power supply was placed on a lab bench top at an ambient room temperature of ~22?C. The UUT (Unit Under Test) was connected to the Eltest power supply test system that provides automated control of the AC input mains and dynamic DC loading. This testing is not considered exhaustive or complete in terms of the “ATX12V Power Supply Design Guide”. The tests conducted are considered to be the MINIMUM performance required of an ATX12V power supply.

5. Tests Performed & Descriptions:

Each of the following tests was performed using the test equipment specified in section 3 of this report.

1. Multi-Channel Voltage Accuracy: All outputs are tested to verify that each meets specified test limits at defined loading current and AC input line voltage.

2. Multi-Channel Line Regulation: All outputs are tested to measure the variation in output voltage when input line voltage changes for a particular load state.

3. Multi-Channel Load Regulation: All outputs are tested to determine if a defined change in output meets defined test limits. Defined values are: high and low-level loading current, input line voltage, and upper and lower test limits in % accuracy. After making the load change, the deviation is measured after a defined settling time.

4. PARD Amplitude: Periodic and Random Deviation measures the peak-to-peak output amplitude of the power supply using AC coupling to remove the DC portion. Input bandwidth is 20MHz (-3dB). The wide bandwidth allows high frequency noise to be part of the measurement.

5. Dynamic Load with Ramp: Electronic loads are continuously exercised for a particular output. Rise and fall times as well as period and duty cycle are defined in the ATX12V design guide.

6. Cross Regulation: This test shows the change in one of the power supply's outputs as the load changes on other outputs.

7. Short Circuit: Tests a power supply's ability to incur a demand for infinite current for a specified time period.

6. Table of Tests NOT Performed:

Each of the tests in the table below was not performed.

Safety	EMC
Input Undervoltage	Remote Sensing
Catastrophic Failure Protection	Efficiency
Power Limit	Closed Loop Stability
Output Transient Response	Capacitive Loading
+5VDC/+3.3VDC Power Sequencing	PWR_OK
Voltage Hold-up Time	Risetime
Power-on Time	Reset after Shutdown
Overshoot at Turn-on / Turn-off	Overvoltage Protection
+5VSB at AC Power-down	No-Load Operation
Short-circuit Protection	Over-temperature Protection
Overcurrent Protection	Proper Labeling/Marking
Output Bypass	Humidity
Thermal Shock	Mechanical Shock
Altitude	Acoustics
Random Vibration	Magnetic Leakage Fields
Input Overcurrent Protection	Inrush Current Limiting

7. Test Log Output:

The Eltest Power Supply Test System generated the following lists of information. The power supply was tested at 115VAC and 230VAC input. The two lists reflect these tests.

Test log column definitions:

Column 1: The test name and the output it measures.
Column 2: The load number and the output it corresponds to
Column 3: Minimum value set for that output/test
Column 4: Cautionary low fail flag: NOT USED
Column 5: Measured value
Column 6: Cautionary high fail flag: NOT USED
Column 7: Maximum value set for that output/test
Column 8: Measurement units
Column 9: Test results: P = Pass, F = Fail

115VAC Input:

TEST NAME LABEL	OUTPUT T(C)	MIN	LOW	RESULT	HIGH	MAX	UNIT	R
MULTI CH VOLTAGE ACCURACY()								
5.0V	0,+5.0V	4.750	0.000	4.926	0.000	5.250	V	P
-5.0V	1,-5.0V	-6.000	0.000	-4.922	0.000	6.000	V	P
-12.0V	2,-12.0	-13.2	0.000	-12.35	0.000	-10.8	V	P
12.0V	3,+12.0	11.4	0.000	11.6	0.000	12.6	V	P
5.0V	4,+5.0V	4.750	0.000	5.070	0.000	5.250	V	P
3.3V	5,+3.3V	3.140	0.000	3.238	0.000	3.470	V	P
MULTI CH LINE REG()								
5.0V Dev	0,+5.0V	0.000	0.000	0.0047	0.000	5.000	%	P
-5.0V Dev	1,-5.0V	0.000	0.000	0.0115	0.000	10.0	%	P
-12.0V Dev	2,-12.0	0.000	0.000	0.315	0.000	10.0	%	P
12.0V Dev	3,+12.0	0.000	0.000	0.141	0.000	5.000	%	P
5.0V Dev	4,+5.0V	0.000	0.000	0.0565	0.000	5.000	%	P
3.3V Dev	5,+3.3V	0.000	0.000	0.180	0.000	5.000	%	P
MULTI CH LOAD REGULATION()								
5.0V Dev	0,+5.0V	0.000	0.000	2.823	0.000	5.000	%	P
-5.0V Dev	1,-5.0V	0.000	0.000	2.115	0.000	10.0	%	P
-12.0V Dev	2,-12.0	0.000	0.000	1.159	0.000	10.0	%	P
12.0V Dev	3,+12.0	0.000	0.000	2.713	0.000	5.000	%	P
5.0V Dev	4,+5.0V	0.000	0.000	0.361	0.000	5.000	%	P
3.3V Dev	5,+3.3V	0.000	0.000	3.832	0.000	5.000	%	P
PARD AMPLITUDE()								
PARD Amp	0,+5.0V	0.000	0.000	0.0161	0.000	0.100	V	P
PARD AMPLITUDE()								
PARD Amp	1,-5.0V	0.000	0.000	0.0136	0.000	0.100	V	P
PARD AMPLITUDE()								
PARD Amp	2,-12.0	0.000	0.000	0.0306	0.000	0.200	V	P
PARD AMPLITUDE()								
PARD Amp	3,+12.0	0.000	0.000	0.032	0.000	0.200	V	P
PARD AMPLITUDE()								
PARD Amp	4,+5.0V	0.000	0.000	0.020	0.000	0.100	V	P
PARD AMPLITUDE()								
PARD Amp	5,+3.3V	0.000	0.000	0.0173	0.000	0.100	V	P
DYNAMIC LOAD WITH RAMP()								
Amplitude	3,+12.0	0.000	0.000	0.406	0.000	0.600	V	P
Settle H-L	3,+12.0	0.000	0.000	0.000	0.000	0.500	ms	P
Settle L-H	3,+12.0	0.000	0.000	0.000	0.000	0.500	ms	P
DYNAMIC LOAD WITH RAMP()								
Amplitude	3,+12.0	0.000	0.000	0.0546	0.000	0.600	V	P
Settle H-L	3,+12.0	0.000	0.000	0.000	0.000	0.500	ms	P
Settle L-H	3,+12.0	0.000	0.000	0.000	0.000	0.500	ms	P
DYNAMIC LOAD WITH RAMP()								
Amplitude	4,+5.0V	0.000	0.000	0.109	0.000	0.250	V	P
Settle H-L	4,+5.0V	0.000	0.000	0.000	0.000	0.500	ms	P
Settle L-H	4,+5.0V	0.000	0.000	0.000	0.000	0.500	ms	P
DYNAMIC LOAD WITH RAMP()								
Amplitude	4,+5.0V	0.000	0.000	0.0233	0.000	0.250	V	P
Settle H-L	4,+5.0V	0.000	0.000	0.000	0.000	0.500	ms	P
Settle L-H	4,+5.0V	0.000	0.000	0.000	0.000	0.500	ms	P
DYNAMIC LOAD WITH RAMP()								
Amplitude	5,+3.3V	0.000	0.000	0.143	0.000	0.165	V	P

Settle H-L	5,+3.3V	0.000	0.000	0.000	0.000	0.500	ms	P
Settle L-H	5,+3.3V	0.000	0.000	0.000	0.000	0.500	ms	P
DYNAMIC LOAD WITH RAMP()								
Amplitude	5,+3.3V	0.000	0.000	0.0542	0.000	0.165	V	P
Settle H-L	5,+3.3V	0.000	0.000	0.000	0.000	0.500	ms	P
Settle L-H	5,+3.3V	0.000	0.000	0.000	0.000	0.500	ms	P
CROSS REGULATION()								
Dev	2,-12.0	0.000	0.000	6.000	0.000	10.0	%	P
CROSS REGULATION()								
Dev	3,+12.0	0.000	0.000	2.192	0.000	5.000	%	P
CROSS REGULATION()								
Dev	4,+5.0V	0.000	0.000	0.268	0.000	5.000	%	P
CROSS REGULATION()								
Dev	5,+3.3V	0.000	0.000	1.509	0.000	5.000	%	P
SHORT CIRCUIT()								
V Out	0,+5.0V	4.750	0.000	4.914	0.000	5.250	V	P

230VAC Input:

TEST NAME LABEL	OUTPUT T(C)	MIN	LOW	RESULT	HIGH	MAX	UNIT	R
MULTI CH VOLTAGE ACCURACY()								
5.0V	0,+5.0V	4.750	0.000	4.923	0.000	5.250	V	P
-5.0V	1,-5.0V	-6.000	0.000	-4.952	0.000	6.000	V	P
-12.0V	2,-12.0	-13.2	0.000	-12.33	0.000	-10.8	V	P
12.0V	3,+12.0	11.4	0.000	11.59	0.000	12.6	V	P
5.0V	4,+5.0V	4.750	0.000	5.077	0.000	5.250	V	P
3.3V	5,+3.3V	3.140	0.000	3.238	0.000	3.470	V	P
MULTI CH LINE REG()								
5.0V Dev	0,+5.0V	0.000	0.000	0.0265	0.000	5.000	%	P
-5.0V Dev	1,-5.0V	0.000	0.000	0.0478	0.000	10.0	%	P
-12.0V Dev	2,-12.0	0.000	0.000	0.280	0.000	5.000	%	P
12.0V Dev	3,+12.0	0.000	0.000	0.118	0.000	5.000	%	P
5.0V Dev	4,+5.0V	0.000	0.000	0.0189	0.000	5.000	%	P
3.3V Dev	5,+3.3V	0.000	0.000	0.0886	0.000	5.000	%	P
MULTI CH LOAD REGULATION()								
5.0V Dev	0,+5.0V	0.000	0.000	3.012	0.000	5.000	%	P
-5.0V Dev	1,-5.0V	0.000	0.000	2.563	0.000	10.0	%	P
-12.0V Dev	2,-12.0	0.000	0.000	1.139	0.000	5.000	%	P
12.0V Dev	3,+12.0	0.000	0.000	2.745	0.000	5.000	%	P
5.0V Dev	4,+5.0V	0.000	0.000	0.296	0.000	5.000	%	P
3.3V Dev	5,+3.3V	0.000	0.000	3.991	0.000	5.000	%	P
PARD AMPLITUDE()								
PARD Amp	4,+5.0V	0.000	0.000	0.0185	0.000	0.100	V	P
PARD AMPLITUDE()								
PARD Amp	1,-5.0V	0.000	0.000	0.0134	0.000	0.100	V	P
PARD AMPLITUDE()								
PARD Amp	2,-12.0	0.000	0.000	0.022	0.000	0.200	V	P
PARD AMPLITUDE()								
PARD Amp	3,+12.0	0.000	0.000	0.0221	0.000	0.200	V	P
PARD AMPLITUDE()								
PARD Amp	4,+5.0V	0.000	0.000	0.0184	0.000	0.100	V	P

PARD AMPLITUDE()								
PARD Amp	**5,+3.3V**	**0.000**	**0.000**	**0.0146**	**0.000**	**0.100**	**V**	**P**
DYNAMIC LOAD WITH RAMP()								
Amplitude	**3,+12.0**	**0.000**	**0.000**	**0.586**	**0.000**	**0.600**	**V**	**P**
Settle H-L	**3,+12.0**	**0.000**	**0.000**	**0.000**	**0.000**	**0.500**	**ms**	**P**
Settle L-H	**3,+12.0**	**0.000**	**0.000**	**0.000**	**0.000**	**0.500**	**ms**	**P**
DYNAMIC LOAD WITH RAMP()								
Amplitude	**3,+12.0**	**0.000**	**0.000**	**0.128**	**0.000**	**0.600**	**V**	**P**
Settle H-L	**3,+12.0**	**0.000**	**0.000**	**0.000**	**0.000**	**0.500**	**ms**	**P**
Settle L-H	**3,+12.0**	**0.000**	**0.000**	**0.000**	**0.000**	**0.500**	**ms**	**P**
DYNAMIC LOAD WITH RAMP()								
Amplitude	**4,+5.0V**	**0.000**	**0.000**	**0.0952**	**0.000**	**0.250**	**V**	**P**
Settle H-L	**4,+5.0V**	**0.000**	**0.000**	**0.000**	**0.000**	**0.500**	**ms**	**P**
Settle L-H	**4,+5.0V**	**0.000**	**0.000**	**0.000**	**0.000**	**0.500**	**ms**	**P**
DYNAMIC LOAD WITH RAMP()								
Amplitude	**4,+5.0V**	**0.000**	**0.000**	**0.0832**	**0.000**	**0.250**	**V**	**P**
Settle H-L	**4,+5.0V**	**0.000**	**0.000**	**0.000**	**0.000**	**0.500**	**ms**	**P**
Settle L-H	**4,+5.0V**	**0.000**	**0.000**	**0.000**	**0.000**	**0.500**	**ms**	**P**
DYNAMIC LOAD WITH RAMP()								
Amplitude	**5,+3.3V**	**0.000**	**0.000**	**0.162**	**0.000**	**0.165**	**V**	**P**
Settle H-L	**5,+3.3V**	**0.000**	**0.000**	**0.000**	**0.000**	**0.500**	**ms**	**P**
Settle L-H	**5,+3.3V**	**0.000**	**0.000**	**0.000**	**0.000**	**0.500**	**ms**	**P**
DYNAMIC LOAD WITH RAMP()								
Amplitude	**5,+3.3V**	**0.000**	**0.000**	**0.107**	**0.000**	**0.165**	**V**	**P**
Settle H-L	**5,+3.3V**	**0.000**	**0.000**	**0.000**	**0.000**	**0.500**	**ms**	**P**
Settle L-H	**5,+3.3V**	**0.000**	**0.000**	**0.000**	**0.000**	**0.500**	**ms**	**P**
CROSS REGULATION()								
Dev	**1,-5.0V**	**0.000**	**0.000**	**6.635**	**0.000**	**10.0**	**%**	**P**
CROSS REGULATION()								
Dev	**2,-12.0**	**0.000**	**0.000**	**6.000**	**0.000**	**10.0**	**%**	**P**
CROSS REGULATION()								
Dev	**3,+12.0**	**0.000**	**0.000**	**2.111**	**0.000**	**5.000**	**%**	**P**
CROSS REGULATION()								
Dev	**4,+5.0V**	**0.000**	**0.000**	**0.295**	**0.000**	**5.000**	**%**	**P**
CROSS REGULATION()								
Dev	**5,+3.3V**	**0.000**	**0.000**	**1.300**	**0.000**	**5.000**	**%**	**P**
SHORT CIRCUIT()								
V Out	**0,+5.0V**	**4.750**	**0.000**	**4.913**	**0.000**	**5.250**	**V**	**P**

8. Test Results:

Congratulations, the above power supply passed all electrical testing.

Please reference the relevant power supply design guideline for any other design guidance.

Thank you once again for your participation in this program.

9. Product Safety Notice:

The thermal, mechanical, and electrical testing conducted on this power supply did not evaluate product safety requirements. It is the manufacturer's responsibility to assure the power supply complies with all national and local safety requirements within the country sold. Contact your National Certification Body (NCB) or a third party certifier, like Underwriters Laboratories (UL) http://www.ul.com, for further guidance.