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PROVISIONAL APPLICATION FOR PATENT COVER SHEET – Page 1 of 2

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No. _____

INVENTOR(S)		
Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
Additional inventors are being named on the _____ separately numbered sheets attached hereto.		
TITLE OF THE INVENTION (500 characters max):		
Direct all correspondence to: CORRESPONDENCE ADDRESS		
<input type="checkbox"/> The address corresponding to Customer Number: <input style="width: 200px; height: 20px;" type="text"/>		
OR		
<input type="checkbox"/> Firm or Individual Name		
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ENCLOSED APPLICATION PARTS (check all that apply)		
<input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76.		
<input type="checkbox"/> CD(s), Number of CDs _____		
<input type="checkbox"/> Drawing(s) <i>Number of Sheets</i> _____		
<input type="checkbox"/> Other (specify) _____		
<input type="checkbox"/> Specification (e.g., description of the invention) <i>Number of Pages</i> _____		
Fees Due: Filing Fee of \$260 (\$130 for small entity) (\$65 for micro entity). If the specification and drawings exceed 100 sheets of paper, an application size fee is also due, which is \$400 (\$200 for small entity) (\$100 for micro entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).		
METHOD OF PAYMENT OF THE FILING FEE AND APPLICATION SIZE FEE FOR THIS PROVISIONAL APPLICATION FOR PATENT		
<input type="checkbox"/> Applicant asserts small entity status. See 37 CFR 1.27.		
<input type="checkbox"/> Applicant certifies micro entity status. See 37 CFR 1.29. Applicant must attach form PTO/SB/15A or B or equivalent.		
<input type="checkbox"/> A check or money order made payable to the <i>Director of the United States Patent and Trademark Office</i> is enclosed to cover the filing fee and application size fee (if applicable).		<input style="width: 100px; height: 20px;" type="text"/> TOTAL FEE AMOUNT (\$)
<input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.		
<input type="checkbox"/> The Director is hereby authorized to charge the filing fee and application size fee (if applicable) or credit any overpayment to Deposit Account Number: _____		

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 10 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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PROVISIONAL APPLICATION FOR PATENT COVER SHEET – Page 2 of 2

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

No.

Yes, the invention was made by an agency of the U.S. Government. The U.S. Government agency name is: _____

Yes, the invention was made under a contract with an agency of the U.S. Government. The name of the U.S. Government agency and Government contract number are: _____

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

SIGNATURE _____ DATE _____

TYPED OR PRINTED NAME _____ REGISTRATION NO. _____
(if appropriate)

TELEPHONE _____ DOCKET NUMBER _____

Patent Description

I. Computer server motherboard design elements for increasing overall power efficiency

(a) Use of 5 volt fans instead of 12 volt fans

5-Volt fan headers, allowing the use of 5V fans which typically can use much less power than traditional 12 volts fans, in efficient servers that don't need high speed, and/or high pressure, cooling fans.

(b) Onboard components and component connector placement

Memory, cable connectors and other components that are wider in one aspect than another, are mounted with the thinner aspect in line with the direction of cooling air flowing though the computer, thus increasing cooling efficiency. This is shown in low detail in Fig. 1A.

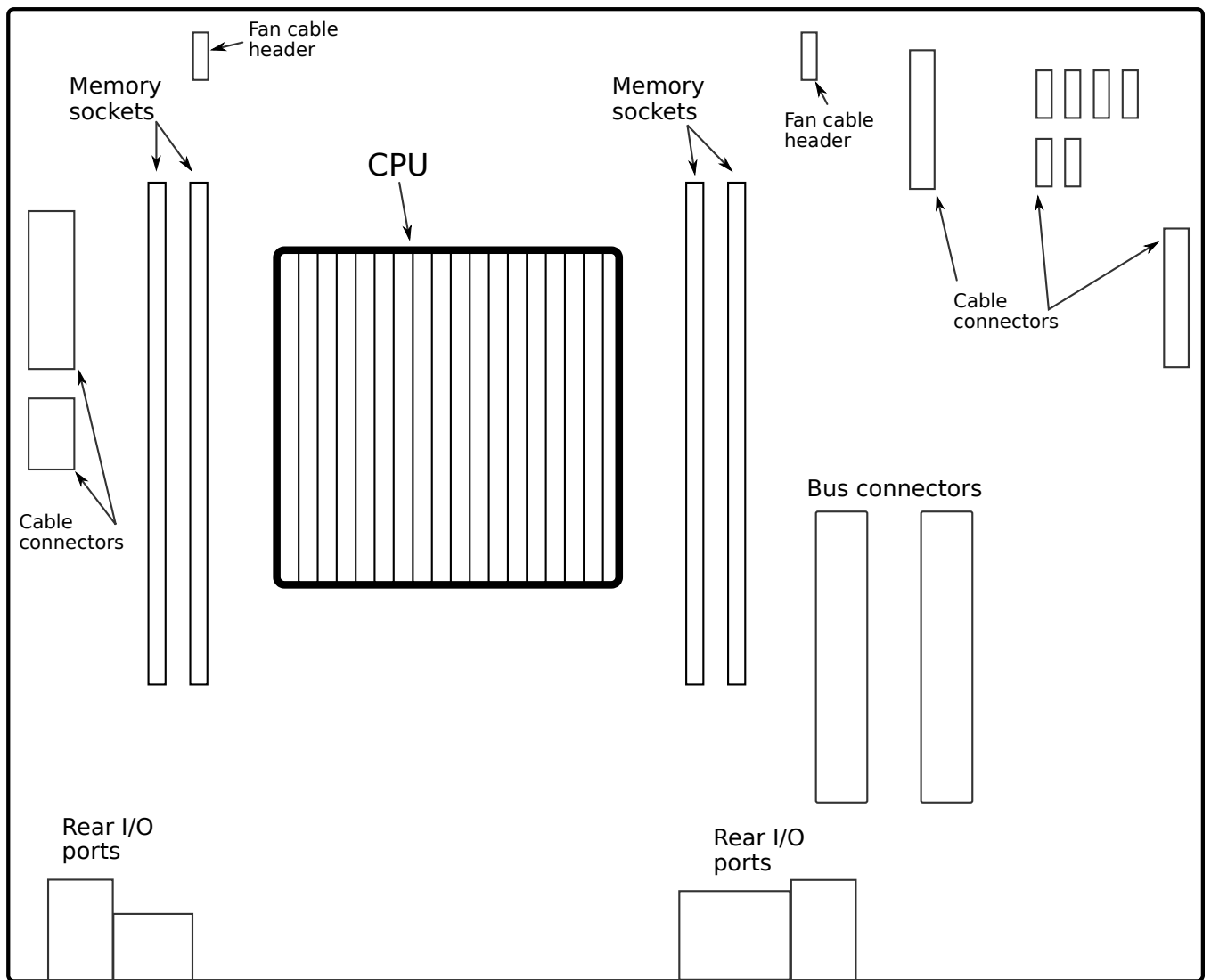
(c) I/O device connector port placement

Conventional designs located these headers on the left side of the board, which is usually in the direct path of the air flow cooling the CPU. This new design locates the rear I/O ports, and any other vertical components, on the opposite side of the motherboard from the CPU or CPUs to prevent them from obstructing the cooling air flow. This substantially improves air flow over the motherboard (and therefore through the computer case) of cooling air propelled by cooling fans. With the rear I/O headers, ports and other large components moved out of the way, the cooling air can flow across the CPU and other hotter parts, and exit the case substantially easier, allowing the use of less powerful fans to cool the components of the computer server, which in turn reduces the amount of energy consumed overall by the computer server. This applies to the I/O ports, but also to other tall components that could hinder air flow. Also shown in Fig. 1A.

(d) Use of components, especially I/O controllers, that are designed for the high efficiency requirements of mobile computing. Including, but not limited to: network controllers and the associated PHY; CPUs; fan controllers; disk controllers and associated integrated circuit devices; video controllers (if any); USB controllers; and keyboard/mouse controllers.

Figure 1A Efficient Server Motherboard

Motherboard



CERTIFICATION OF MICRO ENTITY STATUS (GROSS INCOME BASIS)

Application Number or Control Number (if applicable):	Patent Number (if applicable):
First Named Inventor:	Title of Invention:

The applicant hereby certifies the following—

- (1) **SMALL ENTITY REQUIREMENT** – The applicant qualifies as a small entity as defined in 37 CFR 1.27.
- (2) **APPLICATION FILING LIMIT** – Neither the applicant nor the inventor nor a joint inventor has been named as the inventor or a joint inventor on more than four previously filed U.S. patent applications, excluding provisional applications and international applications under the Patent Cooperation Treaty (PCT) for which the basic national fee under 37 CFR 1.492(a) was not paid, and also excluding patent applications for which the applicant has assigned all ownership rights, or is obligated to assign all ownership rights, as a result of the applicant’s previous employment.
- (3) **GROSS INCOME LIMIT ON APPLICANTS AND INVENTORS** – Neither the applicant nor the inventor nor a joint inventor, in the calendar year preceding the calendar year in which the applicable fee is being paid, had a gross income, as defined in section 61(a) of the Internal Revenue Code of 1986 (26 U.S.C. 61(a)), exceeding the “Maximum Qualifying Gross Income” reported on the USPTO Web site at http://www.uspto.gov/patents/law/micro_entity.jsp which is equal to three times the median household income for that preceding calendar year, as most recently reported by the Bureau of the Census.
- (4) **GROSS INCOME LIMIT ON PARTIES WITH AN “OWNERSHIP INTEREST”** – Neither the applicant nor the inventor nor a joint inventor has assigned, granted, or conveyed, nor is under an obligation by contract or law to assign, grant, or convey, a license or other ownership interest in the application concerned to an entity that, in the calendar year preceding the calendar year in which the applicable fee is being paid, had a gross income, as defined in section 61(a) of the Internal Revenue Code of 1986, exceeding the “Maximum Qualifying Gross Income” reported on the USPTO Web site at http://www.uspto.gov/patents/law/micro_entity.jsp which is equal to three times the median household income for that preceding calendar year, as most recently reported by the Bureau of the Census.

SIGNATURE by an [authorized party](#) set forth in 37 CFR 1.33(b)

Signature					
Name					
Date		Telephone		Registration No.	

There is more than one inventor and I am one of the inventors who are jointly identified as the applicant. The required additional certification form(s) signed by the other joint inventor(s) are included with this form.

Electronic Acknowledgement Receipt

EFS ID:	21945967
Application Number:	62141665
International Application Number:	
Confirmation Number:	5403
Title of Invention:	Efficient Server Motherboard Design
First Named Inventor/Applicant Name:	Andrew Sharp
Customer Number:	128708
Filer:	Andrew Sharp
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	01-APR-2015
Filing Date:	
Time Stamp:	17:51:49
Application Type:	Provisional

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$65
RAM confirmation Number	4268
Deposit Account	
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The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Abstract	description-efficient-server-motherboard.pdf	47558	no	1
			046d45a371d62199aa06fd5fd537d2c3b05961da		
Warnings:					
Information:					
2	Drawings-only black and white line drawings	drawing-efficient-server-motherboard.pdf	14491	no	1
			54fad6cd70879608af932caa50b9871b1ac55b2a		
Warnings:					
Information:					
3	Certification of Micro Entity (Gross Income Basis)	sb0015a-efficient-mobo.pdf	119689	no	2
			e83797db1d7443a530edf3d9383871c2c29e8701		
Warnings:					
Information:					
4	Provisional Cover Sheet (SB16)	efficient-mobo-cover-1.pdf	119261	no	2
			48f9bcc42a9f5561ab455a61023ccc4e2f4da7a4		
Warnings:					
This is not a USPTO supplied Provisional Cover Sheet SB16 form.					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	28873	no	2
			17377096eb80de6cde3d8fa653a0ac7bd99795b8		
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Total Files Size (in bytes):			329872		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.