
Application Note 104
Heatsink, Fan, Voltage Regulator,
Chipset and BIOS Reference



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Introduction

This application note provides reference information concerning the recommended fan, heatsink, regulators, chipset and BIOS for the 6x86MX processor. The reader may obtain current data sheets and other product information directly from vendors using the Internet addresses listed in this application note.

Heat Sink-Fan Reference Data

The following tables list the approved heat-sink fan solutions for the 6x86MX.

APPROVED 6X86MX HEATSINK-FAN SOLUTIONS FOR PR166 AND BELOW

VENDOR	PART NUMBER	AIR FLOW DIRECTION	OVERALL SIZE (L x W x H) (MM)	PHONE NUMBER		WEB SITE
				VOICE	FAX	
Chip Coolers	HTS108	Adjustable	50 x 50 x 29	(401) 739-7600	(401) 732-6119	www.chipcoolers.com
Cooler Master	T15-4515S7BC2	Bi-directional	49 x 49 x 25	(510) 770-0149	(510) 770-0242	www.cooler-master.com

APPROVED 6X86MX HEATSINK-FAN SOLUTIONS FOR PR200 AND BELOW

VENDOR	PART NUMBER	AIR FLOW DIRECTION	OVERALL SIZE (L x W x H) (MM)	PHONE NUMBER		WEB SITE
				VOICE	FAX	
Aavid Thermal Technologies	025790	Perpendicular to socket 7 level	51 x 45 x 30	(214) 563-2843	(214) 563-8383	www.aavid.com
	025791	Bidirectional	51 x 45 x 30	(02) 698-4448 [Taiwan]	(02) 698-4446 [Taiwan]	
	025795	Bidirectional	51 x 63 x 24			
	BEC6X86B1	Bidirectional	50 x 50 x 30			
Wakefield Engineering	919011		51 x 45 x 30	(617) 245-5900	(617) 246-0874	www.wakefield.com
Sanyo Denki	109P5412H2026		51 x 51 x 29	(919) 598-1680	(919) 598-1744	www.sanyodenki.co.jp

For information on heatsink-fan solutions for other devices, refer to Application Note 105, *6x86MX Thermal Design Considerations*. Heatsink-fan solutions for the PR233 are under evaluation.

Voltage Regulator Reference Data

A voltage regulator is a programmable DC to DC converter. There are two basic types of voltage regulator, linear and switching. Switching voltage regulators are usually required for core current.

Current Requirements

In the table below, the core current for the 6x86MX has been conservatively estimated and should remain valid for future Cyrix 6x86MX CPUs. Refer to the Cyrix 6x86MX data books and the Cyrix Web site (www.cyrix.com) for the most recent information.

ESTIMATED 6x86MX CORE CURRENT REQUIREMENTS

VOLTAGE REGULATOR CURRENT (A)	CPU BUS FREQUENCY	V_{CC} (V)	MAXIMUM ESTIMATED 6x86MX CURRENT (A)
10	150 MHz (PR166)	2.8	6.35
	166 MHz (PR200)		6.85
	188 MHz (PR233)		7.55
	200 MHz (PR233)		8.00
	225 MHz (PR266)		8.90
	233 MHz (PR266)		9.20

In the table below, the estimated 6x86MX and board current includes an assumed 600mA 3.3/3.52 V current for the external L2 cache (512 KBytes) and 300 mA for other motherboard components such as chipset and buffers

6x86MX I/O AND BOARD CURRENT REQUIREMENTS

VOLTAGE REGULATOR CURRENT (A)	CPU BUS FREQUENCY	V_{CC} (V)	MAXIMUM 6x86MX AND BOARD CURRENT (A)
2.5	150 MHz (PR166)	3.3	1.0
	166 MHz (PR200)		1.0
	188 MHz (PR233)		1.0
	200 MHz (PR233)		1.0
	225 MHz (PR266)		1.0
	233 MHz (PR266)		1.0

Recommended Regulators

Switching Voltage Regulators

PART NUMBER	VENDOR	OUTPUT CURRENT (A)	PRODUCTION	WEB SITE
EL7571	Elantec	10	Current	www.elantec.com
LTC1430	Linear Technology	10	Current	www.linear.com
MIC5157	Micrel	10	Current	www.micrel.com
US2050	Unisem	10	Current	www.unisem.com.my (ramirani@unisem.com)

Chipset Reference Data

RECOMMENDED CHIPSET VENDORS

VENDOR	WEB SITE
OPTi Inc.	http://www.opti.com
VIA Technologies Inc.	http://www.via.com
Silicon Integrated System Corp.	http://www.sis.com.tw
Acer Laboratories Inc.	http://www.acer.com
ACC Microelectronics Corp.	http://www.accmicro.com
Integrated Technology Express Inc.	http://www.iteusa.com
PicoPower Devices	http://www.national.com
National Semiconductor Corp.	http://www.national.com

BIOS Reference Data

RECOMMENDED BIOS VENDORS

PART NUMBER	WEB SITE
Phoenix Technologies Ltd.	http://www.phoenixtech.com
Award Software International Inc.	http://www.award.com
American Megatrends Inc.	http://www.megatrends.com
Unicore Software	http://www.unicore.com

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