User's Manual

MMX™Enhanced

MediaGX System Board

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Chapter 1 - Introduction

1.1 Introduction :

GXM-3 is a high performance system board integrated with Cyrix MMX™Enhanced MediaGX processor and Cx5530 chipset. Both the processor and chipset are the latest members of Cyrix MediaGX family. They offer high performance, fully accelerated 2D graphics, synchronous memory interface and PCI bus controller, all on a single chip.

The latest Cx5530 chipset offers additional features, such as, MPEG-2 decoding, UDMA devices supported, dual display supported in Win98 and larger video memory allocation.

The MMX™Enhanced MediaGX processor is an integrated 64 bit x86 class processor. The processor core is a proven design that offers leading edge CPU performance. It has integer and floating point execution units based on sixth-generation technology. The advanced architectures include :

XpressRAM :
Placing the memory controller onto the chip, data lookups move directly to SDRAM and back to the CPU, eliminating the need for external cache.

XpressGRAPHICS :
An innovative graphics compression scheme with high-speed buffering allows flexibility in memory configuration without adding costly video memory.

XpressAUDIO :
Ensure clear, crisp, full sounding acoustics with the performance and compatibility conflicts that often occur between audio and other components.

The system board itself, is at baby AT format (220 mm x 190 mm) and support both Baby AT and ATX form factor power supplies. It gives higher flexibility for the system integrators.

1.2 Features :

- Cyrix Cx5530 chipset.
- Support Cyrix MMX™Enhanced MediaGX processor at 180/200/233/266/300 MHz.
- 2 x 168 DIMM sockets support 64 bit 8 / 16 / 32 / 64 / 128 MB SDRAM DIMM module upto 256 MB.
- XpressAUDIO sound system integrated with AC97 CODEC. Line-in, Speaker, Microphone Jack and CD Audio connector available.
- XpressGRAPHICS video system supports 1280x1024 at 256 color depth or 1024x768 at 64K color depth.
- Support dual monitor display in Win98 Environment.
- MPEG acceleration (Y-U-V to R-G-B conversion hardware).
- 2 x 16 bit ISA slots and 2 x 64 bit PCI slots comply with PCI ver 2.1 standard.
- PCI Bus Mastering IDE interface supports 4 IDE devices (UDMA 33 supported) in 2 channels. Programmed I/O (PIO) mode 0 to mode 4 supported.
- On board floppy disk drive interface.
- On board 2 serial ports with 16550 fast UART compatible.
- On board parallel port with ECP and EPP capabilities.
- On board game port.
- On board PS/2 port.
- On board 2 USB ports. (Optional)
- On board IrDA port. (Optional)
- TV out features (Composite and S-VIDEO) supported by Chrontel CH7002. (Optional)
- On board Baby AT and ATX power connector.
- Board size : 220 mm x 190 mm.
- Award Plug-and-Play System BIOS supports NCR SCSI BIOS firmware

1.3 Attachment :

User's manual and Driver Diskette Set	x 1
HDD and FDD cables	x 1
Serial cable and bracket (9+25)	x 1
Parallel and PS/2 cable and bracket	x 1
Game cable and bracket	x 1
Video and Audio cable and bracket	x 1
(Composite connector optional)	

1.4 Static Electricity Precautions :

Static electricity can easily damage your system board. Observing a few basic precautions can help you safeguard against damage that could result expensive repairs. Follow the measures below to protect your equipment from static discharge :

● Keep the system board and other system components in their anti-static packaging until you are ready to install them.

● Touch a grounded surface before you remove any system component from its protective anti-static packaging. A grounded surface within easy reach is the expansion slot covers at the rear of the system chassis, or any other unpainted portion of the system chassis.

● During configuration and installation, touch a grounded surface frequently to discharge any static electric charge that may build up in your body. Another option is to wear a grounding wrist strap.

● When handling a system board or an adapter card, avoid touching its components. Handle the system board and adapter card either by the edges or by the mounting bracket that attached to the slot opening in the chassis.
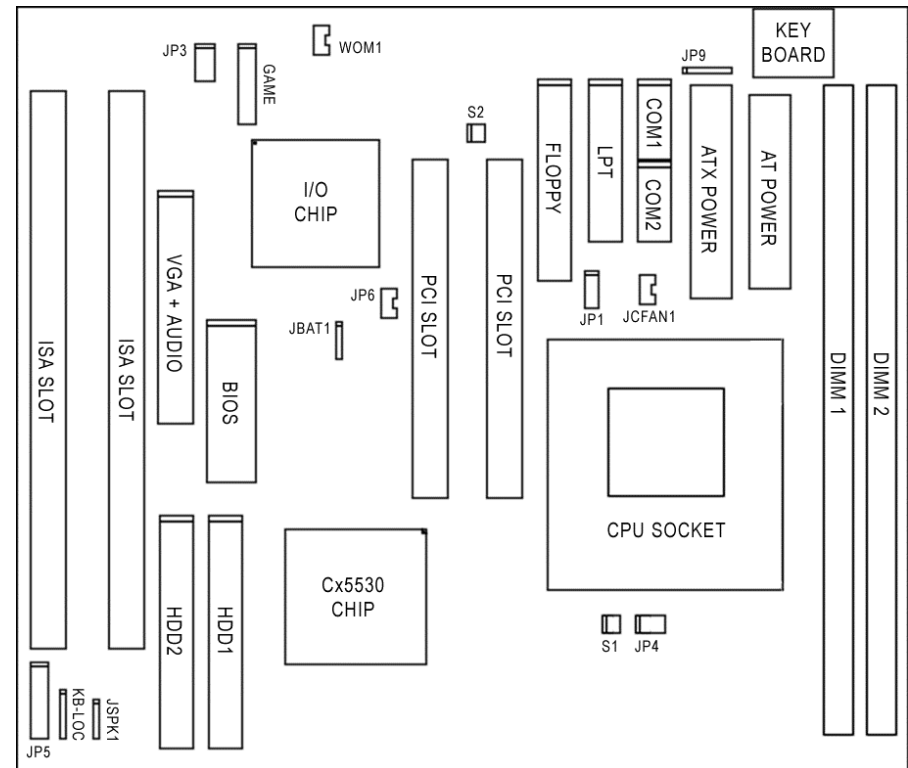
2.1 Components Layout :

Figure 2.1 GXM-3 System Board Components Layout

NOTE : All pin #1 location for each connector is marked with double line.
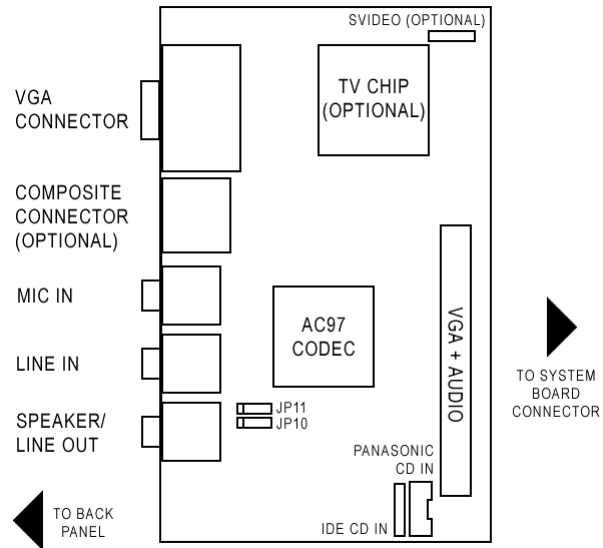
2.2 Audio / Video Cable Layout :

Figure 2.2 GXM-3 Video and Audio Doctor Board Components Layout

NOTE : JP10 Right channel / JP11 Left channel Audio Out Selector

1-2	Speaker
2-3	Line Out

2.3 Connectors :

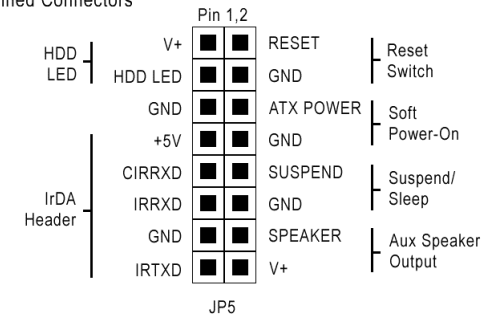Please refer to figure 2.1 for the connector's location.

KEYBOARD : Keyboard Connector (DIN-5).
DIMM 1/2 : DIMM Socket 1 and 2.
AT POWER : Power Connector for AT power supply.
ATX POWER : Power Connector for ATX power supply.
COM 1/2 : Serial (COM) Port1 and 2.
LPT : Parallel (LPT) Port.
Floppy : Floppy Disk Drive Port.
HDD 1/2 : Hard Disk Drive Port1 and 2.
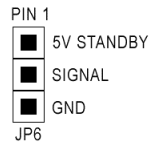VGA + AUDIO : Video and Audio Port.
GAME : Game Port.
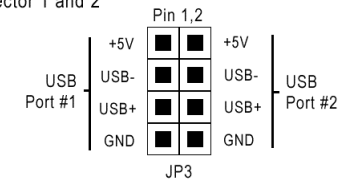
JP6 : Wake On Lan Connector (optional)

PIN 1
■ 5V STANDBY
■ SIGNAL
■ GND
JP6

JP9 : PS/2 Mouse Connector

Pin 1 ■ ■ ■ ■ ■ JP9
+5V NC MDAT GND MCLK

JCFAN1 : CPU Fan Connector

PIN 1
■ CONTROL TO GND
■ +12V
■ CONTROL TO GND
JCFAN1

JSPK : Speaker
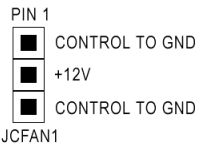
PIN 1
■ V+
■ NC
■ NC
■ SPEAKER OUT
JSPK1
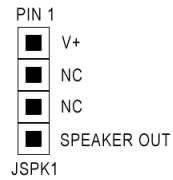
KB-LOC : KeyLock and Power Connector

PIN 1
■ LED+
■ NC
■ GND
■ KEYLOCK
■ GND
KB-LOC
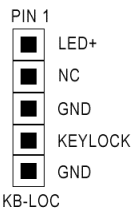
WOM1 : Wake On Modem (optional)

PIN 1
■ GND
■ SIGNAL
WOM1
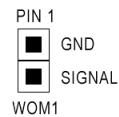
NOTE : Ribbon cables should always be connected with the red stripe on the Pin #1 side of the connector. The Pin #1' s direction was marked as double line in Figure 2.1 and 2.2. IDE ribbon cable must be lesser than 46cm, with the second drive connector no more than 15 cm from the first connector.

2.3 Jumper Settings : (* Default Setting)

JBAT1 : CMOS Battery

Normal *	2-3
Clear CMOS	3-4
External Battery	1-4

S2 : ATX / AT Power Supply Selector

	1 – 3	2 – 4
ATX Power Supply *	OPEN	OPEN
AT Power Supply	CLOSE	CLOSE

NOTE : Following jumper settings should be not changed unless you are going to upgrade the on board MediaGX Processor.

JP1 / S1 : CPU Speed Selector

CPU Speed	JP1				S1	
	1-2	3-4	5-6	7-8	1-2	3-4
180 MHz	OPEN	OPEN	CLOSE	OPEN	CLOSE	OPEN
200 MHz	OPEN	OPEN	CLOSE	OPEN	OPEN	CLOSE
233 MHz	OPEN	OPEN	OPEN	CLOSE	OPEN	CLOSE
266 MHz	OPEN	OPEN	OPEN	OPEN	OPEN	CLOSE
300 MHz	RESERVED					

JP4 : Core Voltage and I/O Voltage Selector

Core Volt.	Jumper 1,3,5	I/O Voltage	Jumper 2,4,6
2.9V *	OPEN	3.3V *	OPEN
3.0V	1-3	3.45V	2-4
3.6V	3-5	3.6V	4-6

2.5 System Memory :

The GXM-3 system board only supports Dual-Inline-Memory-Modules (DIMM). There are 2 DIMM sockets available for 3.3Volt Synchronous Dynamic Random Access Memory (SDRAM). Each DIMM socket can support both single-sided or double-sided memory modules at max. 128MB.

Memory modules can be installed at the following combinations :

DIMM Location	Memory Type	Total Memory
DIMM 1	SDRAM (8,16, 32, 64, 128 MB) x 1	
DIMM 2	SDRAM (8,16, 32, 64, 128 MB) x 1	
	Total memory installed :	

Chapter 3 – BIOS Setup

3.1 Enter BIOS Setup & Main Menu :

All computer system boards provide a Setup Utility program for specifying the system configuration and settings. If you are installing the system board, reconfiguring your system or you receive a Run Setup message, you will need to enter new setup information.

To enter the Award BIOS Setup Main Menu :

1. Power on your computer system. The following message will appear at the bottom of the screen :
   "Press DEL to enter setup, ESC to skip memory test"

2. Press the <DEL> key to enter Award BIOS Setup main menu.

3. Use the arrow keys to choose an option and press <ENTER>. Modify the system parameters to reflect the options installed in the system.

4. Press <ESC> at anytime to return to main menu.

5. In the Main Menu, choose "SAVE & EXIT SETUP" or Press <F10> to save your changes and reboot the system. Choosing "EXIT WITHOUT SAVING" or <ESC> to ignores your changes and exits the main menu.

3.2 Standard CMOS Setup :

The "STANDARD CMOS SETUP" is used to define the general information (Time and Date) and configuration (HDD, FDD and Video installed) of the system.

Date (mm/dd/yy):
> To set the current date, highlight the field and use <PgUp><PgDn> or <+><-> to select.

Time (hh:mm:ss) :
> To set the current time, highlight the field and use <PgUp><PgDn> or <+><-> to select.

Primary and Secondary Master/Slave Hard Disk :
> The field records the specifications for all non-SCSI hard disk drives. If you choose "User" defined, run the IDE HDD Auto Detection function from the main menu, or enter the parameters directly and press <ENTER>. If you use "AUTO" mode, the BIOS automatically detects HDD type while boot up.

Drive A and B :
> The field record the types of installed floppy disk drives. Available options are : 360K, 5.25in"; 1.2M, 5.25 in."; 720K, 3.5 in."; 1.44M, 3.5 in." and 2.88M, 3.5 in."

Video :
> The field record the type of display card installed in the system. Available options are : EGA/VGA; CGA 40; CGA80; and MONO.

Halt On :
> The field determines which types of errors will cause the system to halt. Available options are : All Errors; No Errors; All, But Keyboard; All, But Diskette and All, But Disk/Key.

3.3 BIOS Features Setup :

The "BIOS FEATURES SETUP" is used to configures the general information and setting for the BIOS.

Virus Warning :
> This field allows you to set virus detection. Enable this option and a SYSTEM WARNING MESSAGE will appear when the system detects a virus.

CPU Internal Cache :
> This field lets you enable or disable the CPU's internal cache memory.

Quick Power On Self Test :
> Enable this option will provide a fast POST (Power-On-Self-Test) by skipping multiple tests.

Boot Sequence :
> This field determines where the system looks first for an operating system. Available options are Drive A, C, D, E, F, SCSI, CD-ROM and LS-120.

Swap Floppy Drive :
> Enable this option will swap the drive letter of Floppy Drive A and B.

Boot Up Num Lock Status :
> This field allows users to activate the Num Lock function upon system boot.

Boot Up System Speed :
> This field allows users to choose system boot-up speed.

Gate A20 Option :
> This field allows users to use the GA20 from chipset of the keyboard controller.

Typematic Rate Setting :
> This field allows users to control 2 typematic controls listed below.

Typematic Rate (Chars/Sec) :
> This field controls the speed at which system registers repeated keystrokes.

Typematic Delay (Msec) :
> This field controls the time interval for displaying repeated characters.

Security Option :
> This field determines when the system prompts for the password. "System" prompts for the user password each time the system boots. "Setup" prompts for the supervisor password only when entering the BIOS Setup.

PCI/VGA Palette Snoop :

Some display card that are non-standard VGA such as graphic accelerators or MPEG Video Cards may not show colors properly. Enable this option should correct the problem.

OS Select For DRAM >64 MB :

When using OS/2 operating system with installed DRAM of greater than 64MB, you need to enable this option.

Report No FDD For WIN95 :

Enable this option will let Win95 Operating System to work with no FDD environment.

Video BIOS Shadow :

VIDEO shadow copies BIOS code from slower ROM to faster RAM. BIOS can then execute from RAM.

3.4 Chipset Features Setup :

The "CHIPSET FEATURES SETUP" is used to control the configuration of the board's chipset.

Note : Defaults are the optimal settings for the system board. You are not advised to change them unless you are familiar with the chipset and PC architecture.

3.5 Power Management Setup :

The "POWER MANAGEMENT SETUP" is used to reduce power consumption under the preset methods. This feature turns off the video display and shuts down the hard disk drives after a period of inactivity.

Power Management :

This field act as the master control for the power management modes. "Max Saving" puts the system into power saving mode after a brief period of system inactivity; "Min Saving" puts the system into power saving mode at a longer time; "Disable" will the turn off the power saving features; "User Define" allows users to set power saving option according to their preference.

USB Controller :

This field allow you to enable or disable the on board USB controller.

Individual IRQ wake-up Event :

The settings in this group determine if a system's Interrupt Request (IRQ) is monitored for activity, so as to wake up the system if an IRQ is generated by the device using. If an IRQ is not use, there is no effect.

3.6 PNP/PCI Configuration :

The "PNP/PCI CONFIGURATION" is used to configures the PCI bus slots of the system board.

PNP OS Installed :
    This field allows you to use a Plug-and-Play (PnP) operating system to configure the PCI bus slots instead of using the BIOS. Thus interrupts may be reassigned by the OS when "Yes" is selected. When a non-PnP OS is installed or prevent reassigning of interrupt settings, select the option of "No".

Resources Controller By :
    This field allows you to manually or automatically assign the IRQ.

IRQ <#> Assigned To :
    When you select to assign the IRQ manually, a list of IRQ options will be displayed. These fields allow you to set a Legacy ISA device or PnP device is assigned for each IRQ.

3.7 Integrated Peripherals

The "INTERGRATED PERIPHERALS" is used to control the values of the I/O chipset registers.

IDE HDD Block Mode :
    This field allows users to enable the Block mode of HDD R/W.
Primary/Secondary IDE Channel :
    This field allows users to enable or disable the first and second IDE channel.
Master/Slave Drive PIO mode :
    This field allows users to set the PIO mode for each IDE device.
KBC Input Clock :
    This field allows users to set the clock frequency from the Keyboard Controller.
Onboard FDC Controller :
    This field allows users to enable or disable the Floppy Disk Controller.
Onboard Serial Port 1/2 and Parallel Port:
    This field allows users to enable or disable the serial/parallel port, and assign the IRQ and I/O address used for each port.
UR2 Mode :
    This field allows users to set the type of IrDA device connected.
Parallel Port Mode :
    This field allows users to set operating mode of the parallel port.
Build In CPU Audio :
    This field allows users to enable or disable the onboard XpressAUDIO features.
Audio/MPU-401 I/O Base Address :
    This field allows users to define the I/O address for Audio and MPU-401 device.
Audio IRQ :
    This field allows users to define the IRQ used for Audio.
Audio Low/Hi DMA Select :
    This field allows users to define the DMA number used for Hi and Low channel.
Joystick Status :
    This field allows users to enable or disable the game port.
Video Memory Size :
    This field allows users to select the allocated video memory size from the system's base memory.

3.8 IDE HDD Auto Detection :

The "IDE HDD AUTO DETECTION" used to detect the parameter of installed IDE hard disk drives, and automatically write the entries into the Standard CMOS Setup.

Up to four IDE Drives in two IDE channels will be detected, with the parameters for each listed inside the box. To accept the optimal entries, press <Y> or else select from the numbers displayed under the "OPTIONS" field; to skip to next drive, press<N>.

When the auto-detection is completed, the program will automatically enter all entries you accepted on the field for that drive in the Standard CMOS Setup. Skipped entries are ignored and are not entered in the screen.

If the parameters listed differ from the ones used when the disk was formatted, the disk will not be readable. If the auto-detected parameters do not match the ones that should be used for your disk, do not accept them. Press <N> to reject the presented settings and enter the correct ones manually from the Standard CMOS Setup.

Chapter 4 – Software Installation

4.1 Software Driver Installation :

Please follow the instructions in the readme file provided with the driver.