

WIN TECHNOLOGIES CO., LTD.
W6BXA Intel BX AGP ATX MAINBOARD
User's Manual

Foreword

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This manual is designed to provide the basic necessary information for the end user to understand and properly use the W6BXA-0 mainboard. The mainboard ensures superlative performance and complete compatibility with industry standards, which incorporating many technical enhancements.

Trademarks

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Checklist

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Your W6BXA-0 package contains the following:

- * W6BXA-0 mainboard
- * User's manual
- * Driver Disk
- * HDD/FDD Cable
- * Retention

Precautions

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1. Make sure you ground yourself before handling the mainboard or other system components. Electrostatic discharge will damage the mainboard. Note that you must take special precaution when handling the mainboard in dry or air-conditioned environments.
2. Make sure your ATX power switch is turned off before you plug the power connector between your mainboard and power supply.

The precaution below is to protect the mainboard from electrostatic discharge.

- * Do not remove the anti-static packing until you are ready to install the mainboard and other system components.
- * Ground yourself before removing any system component from its protective anti-static packing. To ground yourself, and grasp the expansion slot covers or other unpainted portion computer chassis.
- * Frequently ground yourself while working, or use a grounding strap.
- * Handle the mainboard by the edges and avoid touching its components.

Mainboard Features

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- * Intel 440BX chipset: 82443BX/82371EB (PIIX4E)
- * Supports Intel Pentium II 233MHz-450MHz Processors (with MMX)
- * One AGP port with up to 133MHz data transfer capability
- * Four PCI slots and three ISA slots onboard
- * Supports three DIMM sockets and two USB ports
- * Award PnP BIOS supports ACPI function
- * Supports SDRAM from 8MB to 384MB
- * Supports ULTRA DMA/33 IDE protocol
- * Supports wake on LAN and modem ring on
- * Enhanced fast I/O (Serial, IR, Parallel port (ECP/EPP/SPP), FDC) onboard
- * Keyboard password, Hot key, PS/2 Mouse power on
- * Jumperless design for easy CPU speed setting
- * Onboard switching voltage regulator (supports 1.8V to 3.5V)
- * ATX form factor 305mm x 180mm

NOTE: The specifications in this manual are subject to change without notice.

Installation Directions

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To make the installation process as simple as possible, these step by step directions provide basic instructions detailing how to set up each component of the mainboard. For details or diagrams, please check the corresponding sections.

1. Disconnect the computer's power supply. Any area of the mainboard you plan to modify could be damaged by power input during the installation process. Unplug all cables going into the PC before actually open the case.
2. Open the computer case according to your original user manual. It is better to use a magnetic screwdriver as screws inevitably will drop into the case and may damage internal components.

Note: If your case is sealed and has a notice advising that breaking the seal will invalidate the warranty, check with your dealer before opening the case.

3. Connect connector J1 from the mainboard to the computer's outer case to install the Reset Button, Hard Disk LED, Speaker System, Power LED, Power on/off push button. Each switch, or set of pins on the mainboard, is detailed on the previous page's layout diagram. Pay attention to the correct orientation of the cables and pins. If the LED wire is mounted incorrectly, it will not light up. Please refer to page 2-1 jumpers and connectors reference.

Note: The brightness of the power LED becomes dim when system is in suspending mode.

4. Connect the peripheral cables from the floppy disk, mouse, printer, and any other I/O devices to their appropriate port on the mainboard. Refer to the diagram and pay attention to the orientation of each cable and plug. On each cable, the pin 1 plug is denoted by a red wire. Additionally, most peripheral plugs are flat on one side and notched on the other to denote proper orientation. If a cable is plugged in upside down, the hardware will not function and may be damaged.
Note that this mainboard has a specific PS/2 mouse port (labeled "Mouse"). Make sure you buy a PS/2 compatible mouse. If you have a different type of mouse, you can still use the com1 or com2 port to connect the mouse to the computer, but in so doing will occupy a needed peripheral port.
5. The USB function is standard on all current Intel chipsets and is supported on the W6BXA-0 mainboard. To connect the keyboard or mouse to the mainboard, the hub plugs into the port on the case, and then connects the keyboard or mouse. Like other peripheral cables, the red cable or arrow corresponds to pin 1.
6. Here IR function only supports Sharp Ask-IR (pin 1- pin 5), and Consumer IR (pin 6-Pin 10) is reserved for I/O chips (support consumer IR) to use.
7. You are advised not to set jumper JP2 for the Flash ROM Voltage unless you want to change the flash ROM chip. It has already been preinstalled and preset for you by the manufacturer.
8. The CMOS Reset jumper JP4 is also already set for you. Reset the jumper only if you want to delete your previous CMOS setup. Whenever you modify the values of the CMOS items, don't forget to reboot the system.
- 9). Please refer to chapter 4 "Mounting CPU Diagram" to install CPU. If the default value of CPU is not available, press the "Ins" key and then power on. The system will display "Low Speed Type" and allow you to reset CMOS.

10. Plug in the monitor's VGA card and any other peripheral cards you wish to use. Any ISA card can plug into any ISA bus slot, and any PCI card into any PCI slot.
11. Install the DRAM memory modules.
12. Plug in the cables with connectors to the power source. Make sure they are oriented properly.
13. Recheck all your connections to make sure the correction. Connect the power cable from computer to AC outlet make sure the Voltage is correct (110 VAC or 220 VAC)
14. Turn on the computer by pushing the J1 PW-SW button and enter the BIOS setup by pressing when the prompt appears.

Jumpers and Connectors Reference

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Before installing the mainboard, make sure that the jumper settings are properly set for your configuration. The functions of the different jumpers are listed as follows:

| | |
|----------------------------|------------|
| Flash ROM Voltage Selector | JP2 |
| CMOS Charge / Discharge | JP4 |
| FAN Connector | FAN1, FAN2 |

Mainboard Connectors:

| | |
|----------------------------------|-----------------------|
| Hard Disk Connector | IDE1 & IDE2 |
| Printer Connector | LPT |
| Floppy Connector | FDC |
| Serial Connector | COM1 & COM2 |
| Universal Serial Bus Connector | USB |
| Power on push button Connector | J1 (PW-SW) |
| Power LED Connector & Keylock | J1 (PW-LED & KEYLOCK) |
| Hard disk LED Connector | J1 (HDD-LED) |
| Speaker Connector | J1 (SPEAKER) |
| Reset Connector | J1 (RESET) |
| Keyboard Connector | Keyboard |
| PS/2 Mouse | Mouse |
| Power Supply Connector | PW |
| IR Connector | IR |
| Wake Up on LAN Connector | JP3 |
| Keyboard/Mouse Power on Selector | JP6 |

Jumper Caps reference:

Red cap for voltage selector
 Black cap for the other

CPU Setting

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CPU Setting will be setup by BIOS, and please refer to chipset feature setup in Chapter 3 for details.

Note: If the default value of CPU speed is not available and does not work, please press the "Ins" key and then power on. The system will display the default value and allow you to adjust the CPU speed.

Memory Configuration

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1. Intel 440BX supports 3.3V DRAM only.
2. Intel 440BX supports 4 MB to 768 MB by using 3.3V EDO and supports 4 MB to 384MB by using SDRAM. The bank 0 and bank 1 are assigned to DIMM1;

bank 2 and bank 3 are assigned to DIMM2; bank 4 and bank 5 are assigned to DIMM3. You can install DIMM modules into any DIMM socket.

Mainboard Connectors

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| | |
|-----------|--|
| IDE 1 & 2 | HARD DISK CONNECTOR |
| FDC | FLOPPY CONNECTOR |
| LPT | PRINTER PORT CONNECTOR |
| COM 1 & 2 | SERIAL PORT CONNECTOR |
| USB | UNIVERSAL SERIAL BUS CONNECTOR |
| Mouse | PS/2 MOUSE CONNECTOR |
| Keyboard | PS/2 KEYBOARD CONNECTOR |
| IR | INFRARED MODULE CONNECTOR |
| PW | ATX POWER CONNECTOR |
| FAN 1 | CPU COOLING FAN CONNECTOR |
| FAN 2 | SYSTEM COOLING FAN CONNECTOR |
| J1 | ATX POWER BUTTON (PW-SW) |
| J1 | HARD DISK WORKING INDICATE LED CONNECTOR (HDD-LED) |
| J1 | HARD RESET BUTTON CONNECTOR (RESET) |
| J1 | SPEAKER CONNECTOR (SPEAKER) |
| J1 | POWER LED CONNECTOR (SUPPORT 2 and 3 pin LED CONNECTOR) AND KEYLOCK (PW-LED & KEYLOCK) |
| JP3 | WAKE ON LAN CONNECTOR |

Other Jumper Setting

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JP2: FLASH ROM BIOS VOLTAGE SELECTOR

1-2 FOR 5V BIOS
2-3 FOR 12V BIOS

5V BIOS BRANDS: WINBOND, SST, ATMEL
12V BIOS BRANDS: INTEL, MXIC

JP4: CMOS CHARGE / DISCHARGE SELECTOR default setting is 1-2 (charge) In normal state the setting is 1-2. When you want to clear the CMOS data including date, time, Hard disk configuration, FDD type, password, you can set JP4 to 2-3. Before setting 2-3, you have to draw the power core not less than 15 sec. to ensure the CMOS is deleted. After clearing the CMOS, you should set the CMOS to charge (JP4). Otherwise, the system will not work properly.

JP6: KEYBOARD PASSWORD / PS/2 MOUSE POWER ON SELECTOR.

If you want to enable this function, the 5VSB Current must be over 720MB to ensure this function can work properly.

1-2 Keyboard Password / PS/2 Mouse Power on enabled (default)
2-3 Keyboard Password / PS/2 Mouse Power on disabled

APPENDIX

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Definitions

The following definitions are provided to help you understand the lingo, acronyms, and technical language used in this manual. To describe your mainboard, understanding the computer's basic parts and their functions should make the process of installing your mainboard easier. Once a term has been defined, its abbreviation will be used in the instructions and diagrams.

1. ACPI: (Advanced Configuration and Power Interface) The key component in the OS Directed Power Management (OSPM). ACPI synthesizes the jumble of preexisting power management systems into one unified

mechanism. It allows the PC to conserve energy by using cost/benefit analysis calculations. Power management policies too complicated to be implemented in the ROM BIOS can be processed in the OS, allowing less complex hardware to support elaborate power management policies.

2. BGP: (Accelerated Graphics Port) It is a high performance 3D Graphic interface which is different from PCI VGA and ISA VGA . And there is higher performance and different slot to install for AGP Card.
3. Board: (Printed Circuit Board) Any flat board that is fitted with electronically conductive pathways between chips and other components. The main board in a system is the mainboard, while smaller boards which plug into mainboard slots are cards. The mainboard houses central computer components such as the CPU, main memory, and bus slots. Cards control communication between the computer and peripherals.
4. Bus: The pathway of signal lines between hardware devices which transport control codes, data, and address signals. These control lines insure that all inserted adapter cards are informed about operations taking place in the PC. The CPU, memory banks, and peripherals are all interconnected through the bus. When you plug into an expansion slot on the mainboard, you are plugging into the bus.
5. Cache: A reserved intermediary section of memory between the CPU and a slower memory subsystem designed to increase a computer's information processing speed. Blocks of data are copied into the cache temporarily so that commands can be performed in the high-speed cache memory. If subsequent data requests can be performed in the cache, slower disk or main memory access is not required. When you take a program or file off the shelf and open it to the desktop, you have put it into the cache memory. If the cache gets full and the computer cannot handle any more open files by returning some files to the shelf you can free up more space in the cache memory. There is one cache memory within the CPU itself and one contained in the chipset on the mainboard.
6. Chipset: A group of integrated circuits designed for a certain job, such as building an AT bus. A chipset integrates the individual functions of many hardware devices on a small number of chips and allows them to communicate and work together to create a unified computer out of many disparate parts.
7. Clock Speed: The internal heartbeat of a computer, determined by the fixed vibrations of a quartz crystal delivered in a stream of pulses to the CPU. A faster clock will speed up internal processing, if the computer's circuits can handle the speed.
8. CMOS: (Complimentary Metal Oxide Semiconductor) Memory made out of CMOS chips requires a low power input. On a mainboard, a battery-packed CMOS chip is used to store the BIOS boot-up parameters.
9. Controller: Different pieces of computer hardware operate according to different programs and standards and must be integrated in order to work as a cohesive whole. Controllers are groups of chips that facilitate communication between different parts of a computer, usually in the form of a card, such as a VGA card to control the monitor. Hard and floppy disk technology operates completely independently of the rest of the PC. To read and write data with the CPU on the mainboard, it is necessary to control the drives. Controllers transfer data between the drives and the main memory. With intelligent drives like AT bus and SCSI, the controller is fixed to the drive so that the drive and controller together form an integrated operating unit. Instead of a controller being inserted into a bus slot, a host adapter establishes a connection between the system bus and the controller.

10. CPU: (Central Processing Unit) The computing part of a computer.
11. DMA: (Direct Memory Access) A peripheral has to go through the CPU to access the main memory. To speed up memory access, the DMA forms a second data channel between the peripherals and main memory through which a peripheral can directly access the main memory without the help of the CPU and read or write data. DMA data transfer is very fast, occurring at 33MHz instead of the usual 13MHz.
12. Expansion Slot: Circuit. boards of the graphics adapter and other peripheral interfaces plug into dual contact strips called ports, or slots, on the mainboard which connect them to the computer's bus. An expansion, or bus, slot contains the electric contacts for all necessary control, data, and address signals.
13. External Clock: The input clock of the CPU that regulates the electrical frequency supplied to the CPU. Also known as the external CPU clock or bus clock.
14. Fast Page Mode, EDO Mode: Two types of DRAM information transfer standards with different access speed capabilities.
15. FDD (Floppy Disk Drive): A computer's main memory is erased when the power is turned off, making it unsuitable for long term information storage. Magnetic memories maintain their content without electrical input. Both hard and floppy disks consist of tiny magnetic rings through which run read and write wires, making up a magnetic core memory. Floppy disk drives read circular floppy disks that are coated with a magnetic material and housed in a square protective case.
16. Graphics Adapter: The electronic circuitry for displaying graphics, constructed as a plug-in card for a bus slot, which drives the monitor and displays text and graphics. An adapter's hub is a graphics control chip.
17. HDD (Hard Disk Drive): A drive for data recording which uses a stiff data carrier in the form of a fast rotating disk. Hard disks, unlike floppies, do not have variable data volume it is fixed in the drive. A hard disk holds many times more information than a single floppy.
- 18, HDD Boot Sector: The boot sector always occupies the first sector of a floppy disk or partition on a hard disk. Without knowing the specific content of the rest of the disk, BIOS can locate and access the boot sector and read information necessary to boot the computer.
19. HDD Partition Table: The hard drive controller hardware and the BIOS can only manage a limited number of drives. Furthermore, DOS OS/2 and Unix/Xenix, the most common operating systems for microcomputers, have completely incompatible data structures. When formatting a hard disk drive, if you want to support multiple operating systems, you must allocate each operating system its own section of the hard disk. Each section is called a partition. When you power up, the BIOS checks the hard disk for an operating system. Information about the location of individual partitions in the hard disk drive is stored on a partition table, located at a designated spot on the hard disk.
20. IDE: (Integrated/Intelligent Drive Electronics) There are two types of intelligent hard disk controllers - IDE and SCSI. IDE is a standard for connecting intelligent hard disks with an internal controller to the AT bus, and is sometimes referred to as an AT bus or ATA interface. IDE ready mainboards do not need an additional hard disk controller - they have a 40-pin Header that connects from the IDE controller mounted standard on the mainboard directly to an

IDE-compatible hard disk drive. SCSI drives operate in the same way, but use a 68-pin Header. In non-IDE mainboards, the drive connects to a hard drive host adapter rather than directly to an expansion slot on the mainboard.

21. Internal Clock: The actual internal operating clock that determines the electrical frequency of the CPU's power input. The internal clock is a multiple of the external clock.
22. I/O: I/O device (Input/Output device).
23. IR: (Infrared) The device which allows two computers to transfer data to from CPU is called and transfer information by means of infrared light.
24. ISA: (Industry Standard Architecture) The original PC bus architecture, which replaced the vague AT bus specification. VO device.
25. Jumper: A short wire or plastic-covered metal block that connects with two Pins on the mainboard to close a circuit, thereby regulating electrical flow within a computer.
26. Keylock. Literally a lock on the computer case that connects directly to the mainboard and disables the keyboard to prevent tampering.
27. LED: (Light Emitting Diode) A semiconductor diode that emits light when charged. LEDs are used in numerous electronic appliances as readout displays or on/off lights.
28. MPEG: (Motion Picture Expert Group) The industry standard for information compression of motion picture.
29. OS: (Operating System) Software that controls and supervises the operation of a computer and establishes interface between application programs and the hardware and file system, such as Unix/Xenix and DOS.
30. Parallel Port: An I/O attachment used to hook up the printer or any other parallel interface device in which information is transferred both to and from the computer.
31. PCI: (Peripheral Component Interconnect) A bus standard initiated by Intel with a bus width of 32 bits. ISA, with only 16 bits, is slower than PCI.
32. Peripheral: Any hardware device that connects to the computer, such as a monitor, keyboard, or printer.
33. EnP (Plug and Play): An I/O function allowing the user to change add-on cards without manually updating the BIOS. When a new peripheral is plugged in, PnP directs BIOS to automatically detect it and self-format accordingly.
34. DRAM: (Dynamic Random Access Memory) The most common type of computer memory. DRAM forms the computer's primary workspace and requires uninterrupted electrical power and periodic charge . Turning off the computer causes RAM to lose its memory.
35. ROM: (Read Only Memory) A memory chip which, unlike RAM, holds its content without power input. ROM contains fundamental operating programs that cannot be changed frequently and are needed by the computer at power up, such as BIOS. Though basically unalterable. The content of the Flash ROM can be updated. BIOS manufacturers which utilize PnP technology allow the computer to update the Flash ROM BIOS configuration at each boot up depending on how various hardware is detected.
36. POST: (Power On Self-Test) After the computer is turned on, the ROM BIOS

begins POST by testing the processor and initializing the hardware. As POST proceeds, BIOS test all the hardware, detects the memory, and initializes the chipset and other controllers according to information defined by the user and saved in the CMOS chip. When POST is completed, the computer is initialized and BIOS turns control of the computer over to an operating system such as DOS.

37. Serial Port: An I/O port used to connect a mouse, scanner, or any other serial interface device to the computer.
38. SIMM/DIMM. (Single/Dual In-line Memory Module) A narrow printed circuit board about three inches long which holds a few memory chips. Single-sided modules only have chips on one side, while doubles have chips on both.
39. SMI: (System Management Interface) A BIOS override function allowing the computer to go directly into power conservation or "green" mode without waiting for a certain amount a time specified in the BIOS to elapse.
30. UART: (Universal Asynchronous Receiver and Transmitter) An intelligent microchip for a serial interface which carries out the serialization of parallel data and the insertion of start, parity, and stop bits, or the parallelization of serial data and the separation of start, parity, and stop bits.
41. USB: (Universal Serial Bus) A bus designed to allow the peripherals to plug into a hub on the mainboard and or other peripherals communicate directly with the chipset, thereby eliminating expansion cards. Some chipsets do not support USB.

~~~ THE END ~~~