

EUT:LCD MONITOR

FCC/MELLON

DEC 28 1998

FCC ID:HFSKX5

QUANTA COMPUTER INC.

USER'S MANUAL

EXHIBIT

FEDERAL COMMUNICATIONS COMMISSION

NOTE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation if this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded interface cables (except Headphone, Line in data Cable, Power Input Cord) must be used in order to comply with emission limits.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

KX5

15.0" Color LCD Monitor

User's Manual

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1. Getting Started

Package Contents

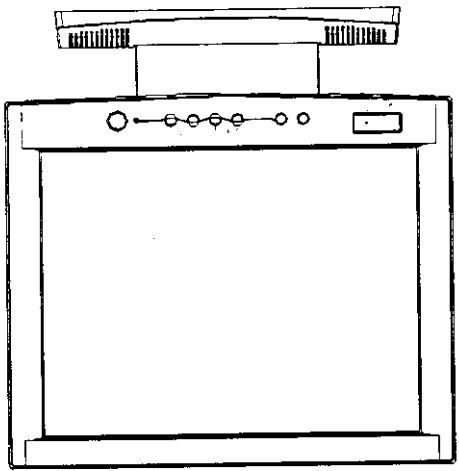
Congratulations on your purchase of the high quality KX5 LCD Monitor.

Your KX5 Monitor package includes the following:

- KX5 LCD Monitor
- VGA cable with 15 pin D-Sub connector
- AC adapter (19 VDC)
- Power cord
- Audio cable with 3.5 mm ear phone plug
- User's Guide

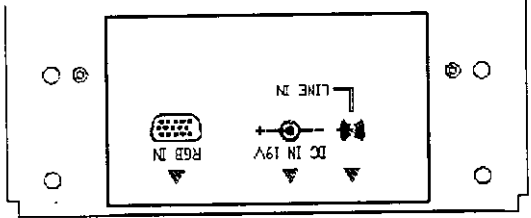
Note:

Save the original box and all packing material for future shipping needs.



Connecting the KX5 LCD Monitor

The rear panel of KX5 is shown as the figure (to be updated). There are four connectors: **RGB-IN** D-Sub connector, **DC-IN** power jack, audio **LINE-IN** connector. Take the following steps to connect your



1. Grasp the bottom of the neck cover with your hand.
2. Carefully pull away the cover from the neck.
3. Lift off the cover.
4. Turn off the computer.
5. Connect the VGA cable between KX5 and your computer's monitor port; use the end with cord at the computer side.
6. (If you like to use the integrated speakers.) Connect the audio cable between the **LINE-IN** of KX5 and the LineOut jack of your computer.
7. Connector the power plug into the power jack of KX5.
8. Connect the power cord into AC adapter and connect it into wall outlet.
9. Install the neck cover back into position.
10. Power on the KX5 LCD Monitor.
11. Power on the computer and ready to use.

The function of menu items are described as following:

- **H Position:** adjust the horizontal position of display.
- **V Position:** adjust the vertical position of display.
- **Phase:** adjust the phase position of data sampling. See details in next section.
- **Clock:** adjust the number of clocks for each horizontal line.
- **Video Utility:** enter a sub-menu for video adjustment. They are:
 - **R,G,B:** separated control of each Red, Green, and Blue colors. Usually set to same value for all three colors.
 - **Black Level:** set the base of the display blackness. Left this in the default value of 127 will provide best result.
 - **Colors:** select between 16M (24 bits) and 256K (18 bits) colors.
- **Frequency Information:** show the H-Sync and V-Sync frequencies of input video signal.
- **Language:** select between English and German.
- **Recall:** recall the default setting and ignore all changes of current video mode.

Auto Adjustment

In LCD monitor application, the adjustment of clock and phase is always been difficult for ordinary users. But without proper adjustment of these parameters, the display image can not be good. In most of the cases, the auto adjustment can be done only through special pattern or special software application. This will limit the adjustment to certain platform or OS requirement.

To improve this, the KX5 implement the auto adjustment without requiring of any special pattern. All it required is a full screen of image, like the Window desktop. The auto adjustment feature can automatically adjust the clock, phase, and image position and produce good image quality in the display.

Following are some tips about using auto adjustment:

- Turn on the computer and set to the desired resolution and frame rate. The recommended mode is 1024 x 768, 60 Hz, and 24-bits colours. Noted that in the case of CRT monitor, higher frame rate will bring more stable image. But in the case of LCD monitor, usually 60 Hz is the best frame rate.
- Adjust the contrast first. Different contrast setting might bring different image effect, so adjust contrast first before doing auto adjustment. Use the 16 or 64 gray scale pattern to adjust the contrast to proper setting.
- Have a full screen of image before press AUTO button. Without full screen of image, the adjustment of clock and phase can not be done. Under such cases, only the position will be adjusted to upper right position, the clock and phase will not be changed.
- Repeated use of auto adjustment is possible and will not bring any bad effect. You may press the AUTO button any time you like, again and again.
- For clock adjustment, current implementation limits the clock difference to +/- 16 clocks from its nominal value. If the difference is more that the value, the clock will not be changed.

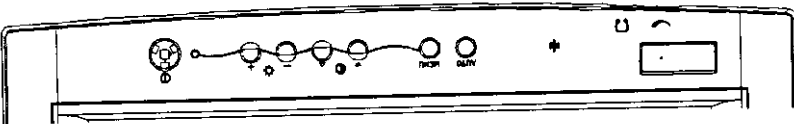
2. Operation

Note:

For best performance set your computer to 1024 x 768 resolution with 24 bit colors. See the user guide that came with your computer for instruction. Lower resolutions degrade display quality.

Front Panel

All operation controls and volume adjustment are located at the front panel. The figure shows the function of them.



- **I/O:** The power switch. To turn on the KX5, press the power switch and the power LED will light.
- **Power light LED:** The light turns green when it detects the input video signal or it will remain in orange and into power saving mode when there is no video signal.
- **[+]:** Press this button will increase the value of selected item with the OSD menu. With OSD menu off, this will increase the brightness.
- **[-]:** Press this button will decrease the value of selected item with the OSD menu. With OSD menu off, this will decrease the brightness.
- **[▲]:** Pressing this button move the selected item upward with the OSD menu. With OSD menu off, this increases the contrast.
- **[▼]:** Pressing this button move the selected item downward with the OSD menu. With OSD menu off, this decreases the contrast.
- **MENU:** Displays and exits the OSD menu.
- **AUTO:** Pressing this for auto adjusting the image quality.

Note: For the detection to be meaningful the display shall be full of image, like in the MS-Window desktop. If you press the **AUTO** without full screen of image, like under DOS mode, only the image position will be adjusted. For details, the paragraph of Auto Adjustment following.

- **HP-OUT:** Connect the headphone or external speaker from this connector.
- **Volume:** Adjust the volume of audio. This adjustment applies to the integrated speakers as well as the **HP-OUT** connector.

OSD Control

When press the MENU button, the OSD menu will display. Press it again, the menu will disappear. If there is no button pressed for about 6 seconds, the menu will turn off automatically.

When OSD menu appears, use [▲] and [▼] to select between items. Then use [+] and [-] to change the setting of the selected item. After your adjustment KX5 will store the change into non-volatile memory when the OSD menu is off. So next time when you turn on the computer the setting will automatically restore.

3. Technical Data

Specifications

LCD	Type	15.0 inch TFT color LCD module, 18-bit color, 0.297 mm pixel pitch		
	Display Area Surface	304.1 x 228.1 mm (15.0 inch) Anti-glare, hard coat		
Input Signal	Video Sync	RGB analog (0.7 Vp-p, 75 ohms) H/V separate (TTL)		
Compatibility	PC	IBM® XT, AT, 386, 486, Pentium® or PS/2 and compatible (from VGA upto 1024 x 768 non-interlaced)		
Connectors	Front	Headphone-Out	3.5 mm stereo phone jack	
	Rear	Video-In	Mini D-Sub 15 pin female	
		Line-In	3.5 mm stereo phone jack	
		Stand	Power	DC 19 V (AC adapter)
		Stereo speaker	1.1 W @ 8 ohm	
User Control	Buttons Rotary switch	Auto, Menu, Up, Down, Left, Right, Power Volume control		
Power Saving & LED Indicator		On	Green	35 WAC (video only)
		Standby	Orange	5 WAC
		Off	Orange	5 WAC
Power Adapter	Input Output	100 – 240 VAC, 50/60 Hz 19 VDC, 50 W		
Operation Conditions	Temperature	0°C to 35°C (32°F to 95°F)		
	Humidity	5% to 90% (non-condensation)		
Storage Conditions	Temperature	-20°C to 60°C (-4°F to 140°F)		
	Humidity	5% to 90% (non-condensation)		
Dimension	Physical Packing	391(W) x 374(H) x 175(D) mm 480(W) x 500(H) x 270(D) mm		
Weight	Net	5.7 Kg.		
	Gross	7.5 Kg.		
Other Features		Compatible with DDC1™ and DDC2B™		
Regulations Agencies	Safety EMC Others	UL, C-UL, CB Report FCC-B, CE, VCCI-B, CNS-B Energy Star, DPMS		

All products and trademarks are brand names of their respective companies. Specifications are subject to change without notice.

Power Management System

This KX5 meets VESA DPMs (Display Power Management Signaling) standards. For the power saving feature to work, the video board or computer must also meet VESA DPMs standards.

State	LED	Power	Recovery Time
On	Green	30 W	N/A
Standby	Orange	3 W	< 4 sec
Off	None	---	< 20 sec

The KX5 goes into the power saving stages with the following video synchronization signals:

State	H-Sync	V-Sync
On	On	On
Standby	Off	Off
Off	---	---

To conserve energy, we recommend tuning off the KX5 at the power switch when it will not be used for long period of time.

4. Trouble Shooting

If your LCD Monitor is not operating properly, use this trouble-shooting chart for quick solutions to common problems. If the problem still exists, call your monitor dealer.

Problem...	Possible Cause...	What to do...
No picture, LED off	Power cord disconnected	Connect the power cord.
	Power switch off	Turn on the power switch.
	Faulty AC outlet	Try another AC outlet.
No picture, LED on	Video cable connection	Connect VGA cable properly.
	Computer or graphics card	Check PC or VGA card connection.
	Video sync signal	Check if the video mode is supported.
Image is not centered	Screen position adjustment	Adjust H-position and V-position in OSD menu or press AUTO for auto adjustment.
Screen is dark or too bright	Brightness and contrast adjustment	Adjust BRIGHTNESS and CONTRAST with front panel buttons.
Color is not pure	Color adjustment	Check the relative setting of R,G,B in the Video Utility sub-menu of the OSD.
Character is not solid	Low resolution mode	Set the display mode to 1024x768 resolution.
Wavy lines, banding, fuzzy image	Phase adjustment	Adjust the PHASE for best image.
Vertical stripes	Clock adjustment	Adjust the CLOCK till vertical stripes no longer existed.
No sound	Audio cable connection	Connect the audio cable between the LINEOUT jack of PC and the LINE-IN jack of KX5 (located under the neck cover on the rear side).
	Volume control adjustment, PC side	Check if the PC audio is mute or adjust the output volume.
	Volume control adjustment, monitor side	Turn the rotary switch of VOLUME to its right for increasing the volume.

Factory Preset Timings

#	Mode	Resolution	Rate (Hz)	Frame	HSync
4	PC98	640 x 400	56		24.82
5	Panacom M	640 x 400	60		26.37
6	DOS	640 x 400	70		31.48
7	VESA	640 x 480	60		31.47
8	VESA	640 x 480	72		37.86
9	VESA	640 x 480	75		37.50
10	HIC	720 x 348	60		31.47
11	HGC	720 x 350	50		31.47
12	VGA	720 x 400	70		31.47
13	VESA	800 x 600	56		35.16
14	VESA	800 x 600	60		37.88
15	VESA	800 x 600	72		48.08
16	VESA	800 x 600	75		46.88
17	VESA	1024 x 768	60		48.36

