

17"
Digital Control
Multiscan Color Green
Monitor
User's Guide
DH-1764U

FCC ID : HSUTRLDH - 1764 U

Display Mode

Standard	Resolution	HOR/Ver Frequency	Interlaced(I) Non-Interlaced(NI)
IBM/VGA	720x400	31.5KHz / 70Hz	NI
IBM/VGA	640x480	31.5KHz / 60Hz	NI
VESA/75	640x480	37.5KHz / 75Hz	NI
VESA/85	640x480	43.3KHz / 85Hz	NI
VESA/75	800x600	46.9KHz / 75Hz	NI
VESA/85	800x600	53.7KHz / 85Hz	NI
VESA/75	1024x768	60.0KHz / 75Hz	NI
VESA/85	1024x768	68.7KHz / 85Hz	NI
VESA/75	1280x1024	79.9KHz / 75Hz	NI
VESA/65	1600x1200	82.0KHz / 65Hz	NI

Video Pin Assignments

D-Type 15-Pin Connector Pinout

Pin no.	Description
1	Red
2	Green
3	Blue
4	Ground
5	Ground
6	R-Ground
7	G-Ground
8	B-Ground
9	No connect
10	Ground
11	I/D bit-0
12	DDC
13	H-sync
14	V-sync
15	DDC2

IMPORTANT SAFETY INFORMATION

- Read all of these instructions carefully, and save them for reference. Follow all warnings and instructions marked on the product.
- Clip the swivel base on to the monitor before installation.
- Unplug the monitor from the system unit before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
- Use only attachments recommended by the manufacturer; unapproved attachments may be hazardous.
- Do not use the monitor near water, for example near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool.
- Do not place the monitor on an unstable cart, stand or table. If the monitor falls, it could injure a person or cause serious damage to the appliance. Use only a cart or stand recommended by the manufacturer and follow the kit instructions.
- Slots and openings in the back and bottom of the cabinet are provided for ventilation. To ensure reliable operation of the monitor and to protect it from overheating, be sure these openings are not blocked or covered. Do not place the monitor on a bed, sofa, rug, or similar surface. Do not place the monitor near or over a radiator or heat register. Do not place the monitor in a bookcase or cabinet unless proper ventilation is provided.

- The monitor should be operated only from the type of power source indicated on the label. If you are not sure of the type of power supplied to your home, consult your dealer or local power company.
- The monitor is equipped with a three-wire grounded plug, a plug with a third (grounding) pin. This is a safety feature. If your outlet does not accommodate the three-wire plug, have an electrician install the correct outlet, or use an adapter to ground the appliance safely. Do not defeat the safety purpose of the grounded plug.
- Do not allow anything to rest on the power cord. Do not locate the monitor where people may walk on the cord.
- To protect the monitor during a lightening storm or when it is left unattended and unused for long periods of time, unplug it from the system unit. This will prevent damage to the monitor from lightening and power surges.
- Do not overload power outlet and extension cords. Overload can result in fire or electric shock.
- Never push any object into the slot in the monitor cabinet. It could touch dangerous voltage points or short out parts resulting in a fire or electric shock. Never spill liquid on the monitor.
- If your monitor don't operate normally, in particular if any unusual sounds or smells come from it, immediately unplug it and contact an authorized technician.
- Do not attempt to service the monitor yourself; openings or removing covers can expose you to dangerous voltage or other

hazards. Refer all servicing to qualified service personnel.

- Unplug the monitor from the system unit and refer servicing to qualified service personnel under the following conditions:
 - When the power cord or plug is damaged or frayed.
 - If liquid has been spilled into the monitor.
 - If the monitor has been exposed to rain or water.
 - If the monitor does not operate normally and you are following the operating instructions. Adjust only those controls covered by the operating instructions; improper adjustment other controls may result in damage and may require extensive work by a qualified technician to restore the monitor to normal operation.
 - If the monitor has been dropped or the cabinet has been damaged.
 - When the video monitor exhibits a distinct change in performance.
- To ensure satisfactory operation, use the monitor only with UL listed computers which have appropriate configured receptacles marked between 100 – 240 VAC, Min. 2.5A

FCC Class B Radio Frequency Interference Statement

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 against harmful interference in a residential installation. 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.

NOTICE

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

Doc compliance notice .

This digital apparatus does not exceed the Class B limits for radio

noise emissions from digital apparatus as set out in the Radio interference Regulations of the Canadian Department of Communications.

"Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux areils numeriques de class B prescrites dans le reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada."

TABLE OF CONTENTS

GENERAL DESCRIPTION	1
PRODUCT PACKAGE	2
Installing and Removing the Swivel Base	2
INSTALLATION THE MONITOR	4
Safety Checks	4
Connecting the Video Cable	4
Connecting the Power Cord	4
OPERATION THE MONITOR	6
Control Keys Meaning	6
On Screen Display (OSD) Message	6
Auto Save Function	7
Display Adjustment	7
POWER MANAGEMENT	12
TROUBLESHOOTING	13
No Picture	13
Poor picture	13
Picture Locks or Center Shift	13
Picture is Too Large or Small	13
TECHNICAL INFORMATION	14
Precautions	14
Specifications	14
Display Mode	16
Video Pin Assignment	16

GENERAL DESCRIPTION

This monitor is a high-performance intelligent multi-scan color monitor. It is designed to be compatible with all modes between 30 KHz and 86 KHz.

The microprocessor-based design was implemented with the user in mind, providing digital user controls for precision, auto-synchronization and auto-sizing for convenience, user-programmability for flexibility, as well as built-in tilt and swivel base for comfort in prolonged usage.

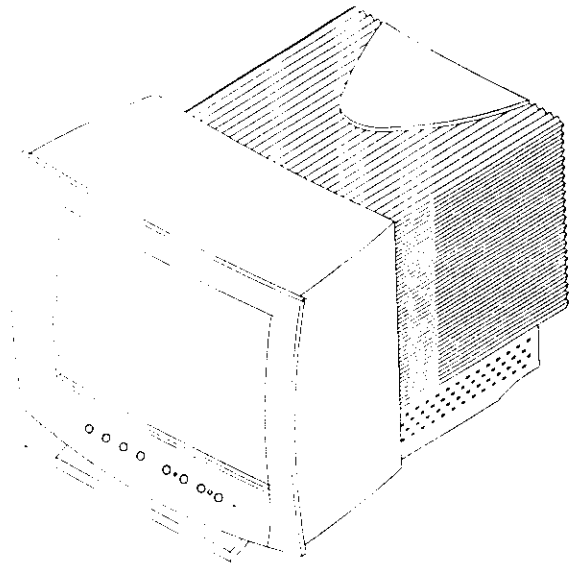


Figure 1 Multiscan Color Monitor

NOTE : To get the most from your monitor, read through this user's guide before installing and using the monitor.

PRODUCT PACKAGE

Plan the most convenient location for your monitor and avoid using sharp object in opening the carton. Open the shipping cartons and check the contents of the package. The package should include the following items:

- Swivel base
- Monitor
- Power cord

If any items are missing, contact your supplier immediately. Remove the monitor from its shipping carton. Save the carton and packaging materials, in case you ever need to pack and relocate the monitor.

Installing and Removing the Swivel Base

To attach the swivel base to the monitor, do the following:

1. Carefully turn the monitor on its side or upside-down.
2. Locate the cavities at the bottom front of the monitor.
3. Insert the pegs on the swivel base into these cavities. Push the swivel base forward until the swivel base locks in place.
4. Turn the monitor right side up and begin to install the monitor.

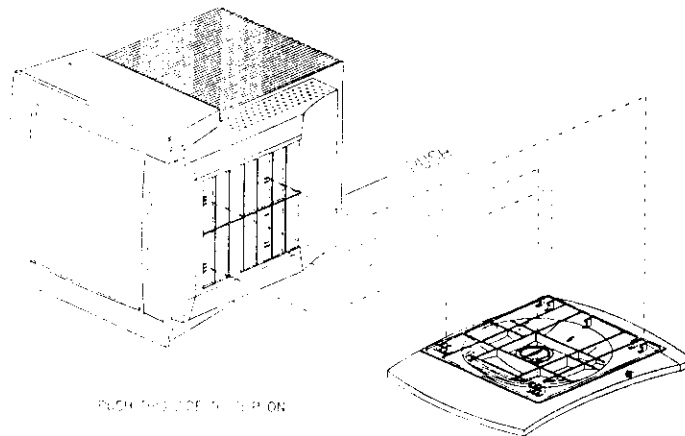


Figure 2 installing the Swivel Base

To remove the swivel base, hold the bottom of the swivel base, then push it out. User can easily lift off the swivel base from the monitor body.

INSTALLATION THE MONITOR

Safety Checks

Make sure the monitor and system unit power switches are off, when you start connecting cables. This monitor is set for 100-240 Vac 60/50 Hz (full range). Confirm the line voltage for your monitor by checking the voltage label on the rear panel of the monitor.

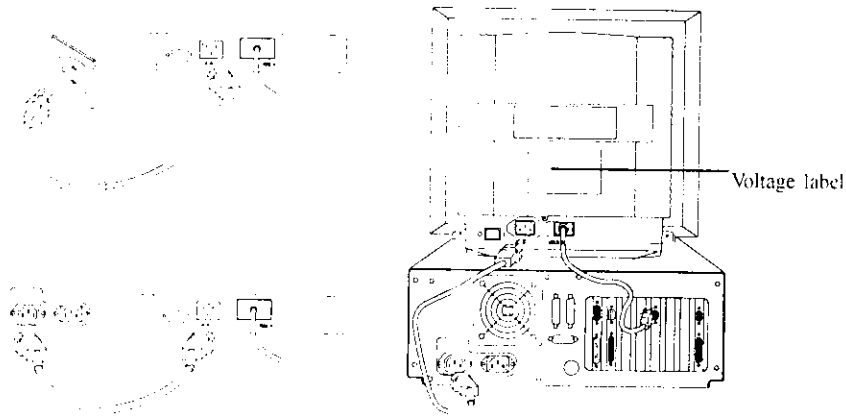


Figure 3 Connecting the Video Cable and Power Cord

Connecting the Video Cable

The monitor comes with a built-in video cable. To connect the video cable, follow the steps below:

1. Plug the signal cable's 15-pin connector into the computer's video port.
2. Tighten the two screws on the cable connector. As Figure 3.

Connecting the Power Cord

CAUTION: If the AC inlet in your location does not provide for this type of grounded plug, make sure to install the proper adapter for a safety grounding.

This monitor comes with a power cord. See Figure 3. Plug power cord into a computer's inlet. The three-wire power cord must be provided a safety precaution to ensure proper electrical grounding.

OPERATION THE MONITOR

The power switch is located at rear side base of the monitor. The other control knobs are located at the base of the monitor. (See Figure4) User could make a good appearance of the monitor to suit your personal preference by press these controls.

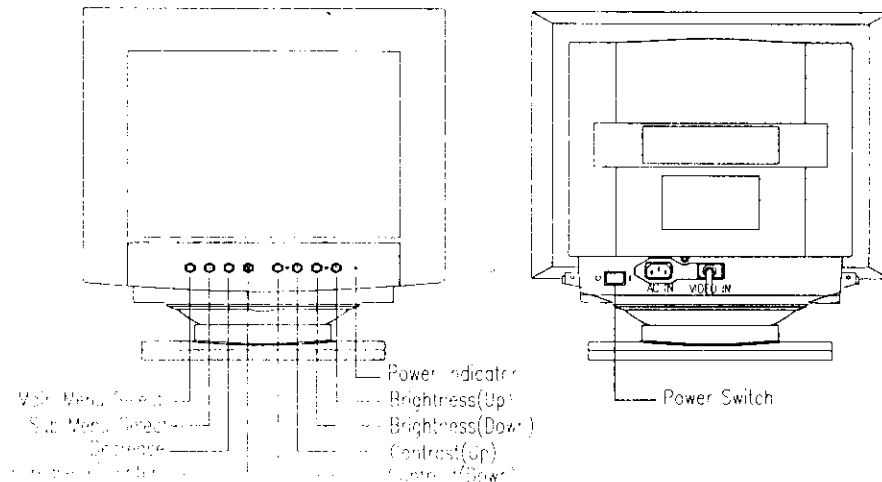


Figure 4 Power Switch and Control Knob

Control Keys Meaning

Power Switch: Turn the monitor on or off.

Power Indicator: Lights up when the power is ON.

Brightness (^ / v): Press ^ to increase or v to decrease the display brightness level.

Contrast (^ / v): Press ^ to increase or v to decrease the contrast level.

Main menu select: To switch to next main function in sequence.

Sub menu select: To switch to next sub function in sequence.

Decrease (-): To adjust function scale to smaller.

Increase (+)/Enter: The key has two uses.

1. To adjust function scale to larger.
2. To select function (Recall, Degauss, Exit).

On Screen Display (OSD) Message

The OSD is a message that displays on the monitor screen. The OSD message can show the function scale and the mode's frequency. When user does not press key at 10 seconds later, the OSD message is been off.

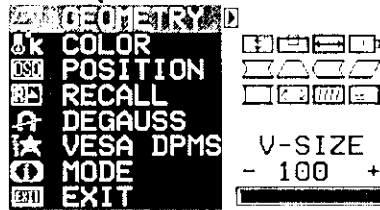


Figure 5 The OSD Message

Auto Save Function

This monitor provides auto save function for saving any controls change. The auto save function acts when

1. Function Mode and Function Adjustment change immediately.
2. Function Mode persists and Function Adjustment changes at 10 seconds later.

Display Adjustment

Brightness

Press $\odot \wedge$ or $\vee$ to show the brightness adjustment window of OSD message as figure 6. Press $\wedge$ to increase or $\vee$ to decrease the display brightness level.



Figure 6 brightness and contrast Adjustment

Contrast

Press  ^ or v to show the contrast adjustment window of OSD message as figure6. Press ^ to increase or v to decrease the contrast level.

GEOMETRY :

- V-size

Repeatedly press > until the  symbol changes color. Press + to increase or - to decrease the vertical size of the display.

- V-position

Repeatedly press > until the  symbol changes color. Press + to move up or - to lower the vertical position of the display.

- H-width

Repeatedly press > until the  symbol changes color. Press + to increase or - to decrease the horizontal width of the display.

- H-position

Repeatedly press > until the  symbol changes color. Press + to move screen rightward or - to move screen leftward.

- Pincushion

Repeatedly press > until the  symbol changes color. Press + or - until the display edges neither bulge out (barrel) nor pull in (pincushion).

- Trapezoid

Repeatedly press > until the  symbol changes color. Press + or - until the display does not slant (trapezoid distortion).

- **Balance**

Repeatedly press > until the  symbol changes color. Making the desired adjustment by pressing the keys + or - to adjust the balance of the display.

- **Parallelogram**

Repeatedly press > until the  symbol changes color. Making the desired adjustment by pressing the keys + or - to adjust the parallelogram of the display.

- **Corner**

Repeatedly press > until the  symbol changes color. Making the desired adjustment by pressing the keys + or - to adjust the Corner of the display.

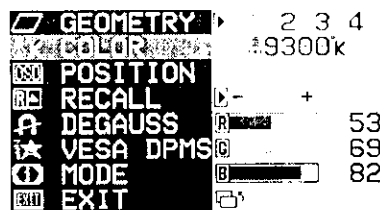
- **Rotation**

Repeatedly press > until the  symbol changes color. Making the desired adjustment by pressing the keys + or - to adjust the Rotation of the display.

- Moire H  : To adjust the moire of the display.

- Moire V  : To adjust the moire of the display.

OK COLOR :



Press > to select

1.9300 K (Factory preset)

2.6500 K (Factory preset)

3.USER-1(9300° K back ground color)

4.USER-2 (6500° K Back ground color)

If choice 3 (USER-1) or 4 (USER-2) then press + key

You can adjust R-gain, G-gain or B-gain.

- **R-gain**

Repeatedly press > until the red  symbol changes color.
Making the desired adjustment by pressing the keys + or - to adjust Red-Gain.

- **G-gain**

Repeatedly press > until the green  symbol changes color.
Making the desired adjustment by pressing the keys + or - to adjust Green-Gain.

- **B-gain**

Repeatedly press > until the blue  symbol changes color.
Making the desired adjustment by pressing the keys + or - to adjust Blue-Gain.

- **Exit**

Press > until the symbol change color and press + to exit the color sub menu.

 POSITION

Press > to select  up, down or  left, right and press the key + or - to adjust the OSD position.

 RECALL

Press + to recall  GEOMETRY factory set, If  mode show is preset mode.

 VESA DPMS

Press key + : On is enable DPMS function.

Press key - : Off is disable DPMS function.

 MODE : information

Show the current mode information: includes the following.
Factory preset mode number or user mode number.
H: Horizontal Sync frequency.
V: Vertical Sync frequency.
H.SYNC +/-: Horizontal Sync Positive / Negative.
V.SYNC +/-: Vertical Sync Positive / Negative.

EXIT EXIT

Press key +/- to exit OSD.

POWER MANAGEMENT

This monitor meets the power management standards as set by

the Video Electronics Standards Association (VESA) and / or the United States Environmental Protection Agency (EPA). This feature is designed to conserve electrical energy by reducing power consumption.

This function is active by an operating system or Windows utility program which turns off the monitor display and also turns off, or changes the color of the monitors power indicator.

Mode		Signal			Power	
	Cable	H-Sync	V-Sync	Video	Indicator	Consumption
ON*	Attach	Yes	Yes	Active	Green	≤120W
Stand-by	Attach	No	Yes	Blanked	Amber	≤15W
Suspend	Attach	Yes	No	Blanked	Amber	≤15W
OFF	Attach	No	No	Blanked	Amber	≤5W
Override	Attach	No	No	Signal ERROR	Green	≤120W

In the power on condition, this monitor also provides override mode to lets the end user with a troubleshooting capability. The override mode is not state of power management.

The override mode means the monitor displays Signal ERROR if you turn on the monitor before you turn on the computer. And the power indicator shows green.

Note: If you turn off the computer before you turn off the monitor, the monitor goes power management OFF mode. And the power indicator shows amber.

TROUBLESHOOTING

This section provides solutions to minor problems you may encounter when installing or using this monitor. If the problem persists after trying the suggestions in Table 1, contact your place of purchase.

No Picture

- Check that both power and signal cables are securely connected.
- Adjust the brightness and contrast controls.

Poor Picture

- Adjust the brightness and contrast controls.
- Check your display adapter configuration. (Refer to your display adapter manual.)

Picture Locks or Center Shifts

- Adjust vertical center and horizontal phase controls.

Picture is too Large or Small

- Adjust vertical size control or horizontal width control.

TECHNICAL INFORMATION

Precautions

- Only a qualified service technician should open the monitor case. Components inside the monitor can cause serious electric shock. Do not attempt to remove the back cover of the monitor by yourself. Contact your monitor dealer or authorized service personnel if your monitor needs to be repaired.
- To prevent fire or shock hazard, do not expose this monitor to rain or moisture.

Specifications

CRT:

- | | |
|------------------|--------------------------------------|
| 1. Viewable Size | : 40 cm (15.8") max. Screen Diagonal |
| 2. Deflection | : 90-degree deflection |
| 3. Dot pitch | : 0.26mm |
| 4. Phosphor | : P22 |
| 5. Surface | : Nonglare |
| 6. Transmission | : 46% |

Video and Synchronization Signals:

- | | |
|-----------------------|--------------------------------|
| 1. Signal cable | : 15-pin D-type connector |
| 2. Video | : Analog levels |
| 3. Horizontal Sync | : TTL Positive/Negative |
| 4. Vertical Sync | : TTL Positive/Negative |
| 5. Bandwidth | : 135 MHz(-3dB) |
| 6. Display Area | : 300x225mm±5mm(STANDARD MODE) |
| 7. Display colors | : Limited by VGA card |
| 8. Video signal input | : 0.7 Vpp |

Display Data Channel:

- | | |
|------------------|-----------------|
| 1. Compatibility | : VESA DDC 1/2B |
|------------------|-----------------|

Scanning Frequency:

1. Horizontal : 30 KHz to 86 KHz
2. Vertical : 47 Hz to 150 Hz

Power Supply:

1. Input voltage : 100-240 Vac 60/50 Hz
2. Consumption : 120 Watts maximum

Environment:

1. Operating
 - Temperature : 0°C to 40°C
 - Humidity : 20% to 80%
2. Nonoperating
 - Temperature : -20°C to 60°C
 - Humidity : 10% to 90%

Dimension:

445mm(W)x 447mm(H)x 434mm(D) (with base)

Weight:

Approx. 17kgs(NET)

X-Radiation:

1. DIIHS
2. PTB (Self Certificate)

Regulatory:

1. Optional FCC-B/UL/CSA
2. Optional TÜV-GS
3. Optional MPR II(MPR 1990:10)
4. Optional BZT-B(FTZ-B)
5. Optional NORDIC
6. Optional CE

NOTE: If discrepancy occurs between the above specification regulation and that listed on back label, use the later as standard.