ATTACHMENT E

15 ″ Multi-Scan COLOR MONITOR

SERVICE MANUAL

G-15LD28

GUANGLI COMPUTER DEVICE CO., LTD
MONITOR R&D

FCC COMPLIANCE STATEMENT:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

INFORMATION TO USER:

This equipment has been tested and found to comply with the limits of 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:

1. *Reorient / Relocate the receiving antenna.*
2. *Increase the separation between the equipment and receiver.*
3. *Connect the equipment into an outlet on a circuit difference from that to which the receiver is connected.*
4. *Consult the dealer or an experienced radio/TV technician for help.*

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

SAFETY PRECAUTIONS

CAUTION:*No modification of any circuit should be attempted. Service work should only be performed after you are thoroughly familiar with all the following safety check and servicing guidelines.*

SAFETY CHECK

Care should be taken while servicing this analog color display because of the high voltage used in the deflection circuits. These voltages are exposed in such areas as the associated flyback and yoke circuits.

FIRE & CHOCK HAZARD

1. Insert an isolation transformer between the analog color display and AC power line servicing chassis.
2. In servicing, pay attention to original lead dress especially in the high voltage circuit. If a short is found, replace all parts which have been overheated as a result of the short circuit.
3. All the protective devices must be reinstalled per original design.
4. Soldering must be inspected for possible cold solder points, frayed leads, damaged insulation, solder splashes or sharp solder points. Be certain to remove all foreign material.

IMPLOSION PROTECTION

Picture tube in this monitor employs integral implosion protection system, but care should be taken to avoid damage and scratching during installation.
Use only same type replacement picture tubes.

IMPORTANT SAFETY NOTICE:*There are special components used in Analog color displays which are tmportant for safety. These parts are shaded on the schematic diagram and on the replacement parts list.It is essential that these cirtical parts should be replaced with manufacture's specified parts to prevent X-RADIATION, shock, fire or other hazzards. Do not modify the original design without getting a written permission of GUANGLI COMPUTER DEVICE CO., LTD. or this will void the original parts and labor warranty.*

X-RADIATION

WARNING: The only potential source of X-Radiation is the picture tube. However when the high voltage circuity is operating properly, there is no possibility of an X-Radiation problem.The

basic precaution which must be exercised is to keep the high voltage at ehe following factory recommended level.

NOTE: It is important to use an accurate, periodically calibrated hith voltage meter.

1. To measure the high voltage, use a high-impedance high-voltage meter. Connect (-) to chassis and (+) to the CRT anode button
2. Turn the Contrast & Brightness control to maximum.
3. Measure the high voltage. The high voltage meter should indicate the following factory recommended level.
4. If the upper meter indication exceeds the maximum level, immediate service is required to prevent the possibility of premature component failure.
5. To prevent X-Radiation possibility, it is essential to use the specified picture tube.
6. The nominal high voltage is 27±1KV and must not exceed 28KV at zero beam current at rated voltage.

TECHNICAL INFORMATION

1. PICTURE TUBE

Size	: 15 inch (Flat Square Tube)
Gun	: In-line
Deflection Angle	: 90 °
Neck Diameter	: 29.1 mm
Phosphor	: P22
Transmission	: 57.0 %
Dot Pitch	: 0.28 mm

2. SIGNAL

2-1. HORIZONTAL & VERTICAL SYNC

1)	Input Voltage Level	: Low=0 ~ 0.4V, High=3.0 ~ 5.5V
2)	Rise/Fall Time	: 10 ns Max
3)	Sync Polarity	: Positive or Negative

2-2. VIDEO INPUT SIGNAL

1)	Voltage Level	: 0 ~ 0.7 Vp-p
2)	Rise/Fall Time	: 3.5ns Max
3)	Signal Polarity	: Positive
4)	Input Impedance	: 75 ohm
5)	Video Color	: R,G,B Analog
6)	Signal Format	: Refer to Timing Chart

2-3. SIGNAL CONNECTOR

15 Pin D-Sub Connector

2-4. SCANNING FREQUENCY

Horizontal	: 30 ~ 65kHz
Vertical	: 40 ~ 90Hz

3. POWER SUPPLY (Factory Preset)

3-1. POWER RATING

AC 100 ~ 240 V Free Voltage 1.5A Max. 60/50 Hz

3-2. POWER CONSUMPTION

● Normal	: 85W Max. (LED Green)
● Stand-by	: 15W Max. (LED Orange)
● Suspend	: 15W Max. (LED Orange)

4. DISPLAY AREA

4-1. Active Video Area	: 260 mm × 190 mm
4-2. Display Color	: Full Colors

4-3. Display Resolution : 1280 Dots × 1024 Lines
4-4. Video Bandwidth : 100 MHz

5. MISCONVERGENCE

Center : ≤ 0.20 mm
Corner : ≤ 0.40 mm

6. LINEAR DISTORTION

Horizontal : ≤ 10 %
Vertical : ≤ 7 %

7. GEOMETRIC DISTORTION

Horizontal : ≤ 2 mm
Vertical : ≤ 2 mm

8. ENVIRONIMENT

8-1. Operating Temperature : 10 ℃~ 33 ℃ (Ambient)
8-2. Relative Humidity: : 8 %~ 80 % (Noncondensing)
8-3. Altitude : 10,000 ft

9. DIMENSIONS

Width : 450 mm
Depth : 485 mm
Heigh : 428 mm

10. WEIGHT (W/TILT SWIVEL)

Net. Weight : 15 kg
Gross Weight : 17 kg

11. OPTIONAL FUNCTION

DDC 2B
OSD (On Screen Display)
Rotation
Manual Degaussing

OPERATING INSTRUCTIONS

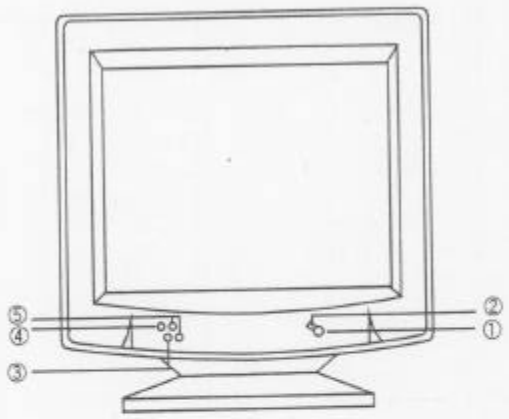
GENERAL DESCRIPTION

The G-15LD28 digital color monitor contains MCU controlled circuit designed with OSD (On Screen Display) function. In addition to 10 factory preset modes, the monitor can also provides 10 user-defined modes.

All control functions can using by OSD menu but the manual degaussing. After adjusting the display images on your desire, the parameters are then automaticly stored to the memory located in the main board.

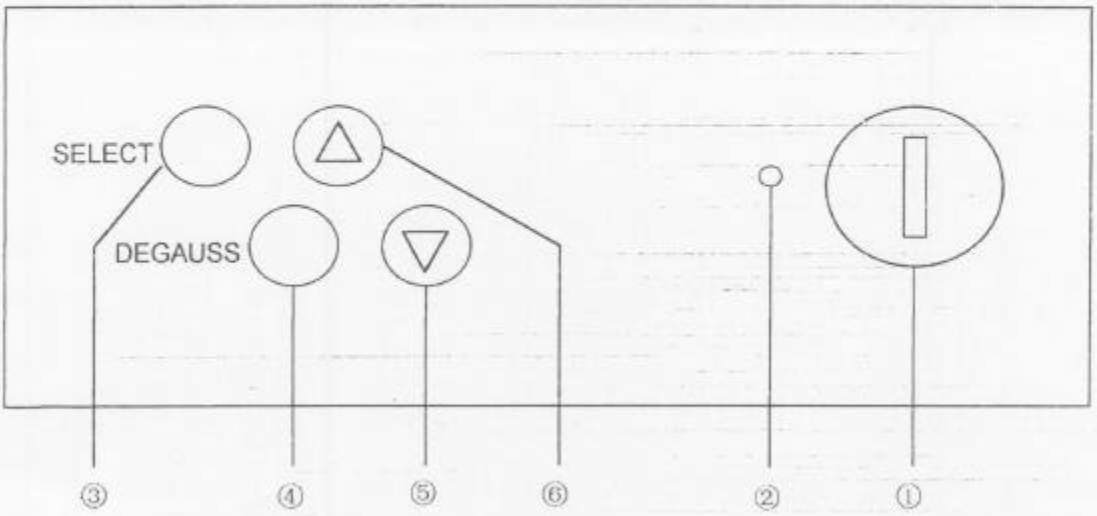
All control functions can using by only four keys which located on the front panel. No needs to remember the function of the keys.

FRONT VIEW



FRONT CONTROL PANEL

All functions are adjusted from the microprocessor based digital controls.



① POWER ON/OFF BUTTON

This button is used to turn the monitor ON and OFF.

② POWER INDICATOR

This indicator lights up green when the monitor operates normally. If the monitor is in MPM(Energy Saving) mode (stand-by / suspend), this indicator color changes to orange.

③ SELECT BUTTON

Use this button to start and enter from the On Screen Display (OSD). If there is on OSD on the screen, One click (press) of this button will show the Main Menu. If there is Main Menu on the screen, One click (press) of this button will show the Sub Menu. If you are in a Sub Menu, a single click will back you out to the Main Menu. To remove the OSD from the screen, you must wait 8 seconds.

④ DEGAUSS BUTTON

When the picture color is not clean, press this button to demagnetize the picture to give a more accurate image and color display. Next click this button must delay 10 minutes.

⑤ DOWN BUTTON

If you are in the Main Menu, One click (press) of this button, will move the highlighting bar downward.

If your are in the Sub Menu, One click (press) of this button, will decrease the value of the selected item to be adjusted.

⑥ UP BUTTON

If you are in the Main Menu, One click (press) of this button, will move the highlighting bar upward.

If your are in the Sub Menu, One click (press) of this button, will increase the value of the selected item to be adjusted.

CAUTION: *The four buttons of SELECT, DEGAUSS, UP and DOWN won't be activated when there is no sync signal input.*

OSD ADJUSTMENT STEPS

CAUTION: *There is no OSD on the screen.*

FLLOWS THE BELOW STEPS:

- Press the SELECT button will show the Main Menu.
- Press the UP/DOWN button for selecting (highlighting) an OSD items to be adjusted.
- Press the SELECT button again will show the Sub Menu.
- Press the UP/DOWN button for increasing/decreasing the value of the selected item to be adjusted.
- Press the SELECT button when you are in the Sub Menu, you would back to the Main Menu and allows you to continue your adjusting on other functions.
- The OSD will remove from the screen automatically after 8 seconds, when there is no any action.