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Federal Communications Commission(FCC) Statement

You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void the use's authority to operate the equipment
FCC-Class B

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 communications.

However, there is no guarantee that interference will not occur in 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.

1. Application

This high-resolution color display is specifically designed to meet the rigorous performance standards needed for diagnostic, interventional radiology, and other medical applications. To guarantee image integrity, features include accurate signal conversion and a wide range of interfacing options.

Compact design -Low weight and small size with improved performance make the monochrome\color flat panel display C14S\G11S preferable to conventional CRT monitors.

Embedded LUT-This monitor is factory calibrated to achieve DICOM part 3.14 compliance and Linear gray level reproduction at the factory set point. 5 different settings are stored within the display.

Screen resolution- C14S\G11S is equipped with a panel with Super In Plane switching technology. The optimal picture resolution is 1280 x 1024 pixels. Video signals with other resolutions typical to medical engineering are optimally zoomed in or out to the screen size.

2. Declarations

Safety precautions

**With respect to electric shock,
Fire and mechanical hazards
only in accordance with
IEC、UL60950-1 and CAN/CSA
C22.2 No. 609501-1**

Regular maintenance and calibration are recommended

Please note that liquid crystal displays such as the C14S\G11S do not have a failure rate of zero and image parameters may change over time (e.g. luminance or discoloration). Please ensure that all measures are taken to prevent injuries or incorrect diagnoses. Regular maintenance and calibration are recommended.

Correct and safe operation of the flat panel displays is dependent on proper transport, storage, installation and assembly, as well as careful operation and maintenance. The units must only be used for applications for which monitors are normally used. The information in the Section "Technical data" must be observed exactly.

For the sake of safety, the following precautions must be observed:

Explanation of the symbols



Attention: Consult the accompanying documents



Alternation current (AC)



Protective earth



CAUTION: Risk of electric shock. Do not open.
ATTENTION: Risque de choc électrique, Ne pas ouvrir



Dispose of in accordance to your countries requirements



European conformity



China Quality Certification



UL approval mark



Conformance with FCC Rules and Regulations



China Rohs symbol



Danger: There is a danger to life if the warning information is not observed. Severe personal injury or damage to property may occur. Do not open the unit yourself.

Certain components inside the units are at high-voltage, i.e. touching these

components presents a **danger to life!**

Only use a perfect power supply cable

A damaged power supply cable may result in a fire or electric shock. When disconnecting the power supply cable, always do so by holding the plug.

Only use the same type of fuse

2A/250V

Do not insert any objects into the housing

Objects inserted into the housing may result in damage to the unit or personal injury.

Do not place any objects on top of the units

Penetrating liquids may result in a fire or electric shock.

Connection

No contact to a patient must occur when handling the cables.

Caution

Incorrect installation may result in extensive damage to property.

Installation should be carried out by trained personnel

When installing your medical electrical system with our products in an environment with patients, please observe the safety requirements of EN 60601-1 (IEC60601-1) for "Specifications for the safety of medical electrical systems" in order to prevent injury to patients and users of your systems.

Take appropriate measures to particularly ensure that discharge currents remain below the required limits: Appropriate measures:

- Disconnecting devices for signal input or output unit
- Use of a safety transformer
- Use of additional PE conductor

Only use the signal cables and interface cables specified by the manufacturer for the installation.

Use power cables with a PE contact. Only insert into sockets with a PE contact.

For certain applications, the video earth can be separately connected to the PE via the additional PE connection in the plug panel (observe IEC 601-1-1).

Close the plug panel using the provided cover (meaning the display stand), and secure using the screws.

Turn switch off and then remove power cord.

Mounting information: The stability of the display must be guaranteed following mounting of the foot/holder. The immersion depth of the mounting screws has to be 10 to 12 mm including a 3 mm VESA mounting plate. (See also table "Mounting screws" on the following). All these requirements are satisfied when using the original foot. All requirements must be observed when using customer-specific mounting solutions.

Notice for users: The plug panel closed by the cover (display stand), must not be opened by users.

Servicing information: If housing components have to be removed for servicing, this must not be carried out in the presence of patients, the user, or other persons not involved with servicing.

The following applies to installations in the USA and Canada: Molded power supply plugs must comply with the requirements for "Hospital Grade Attachments" UL 498.

Caution

Failure to observe the warnings may result in substantial damage to property.

Provide sufficient heat dissipation

Slots are provided at the rear of the housing. The display must be placed or secured on a hard, level surface at least 10 cm from the wall and 15 cm away from other devices. Several displays can be butt-mounted horizontally and vertically.

The following must be observed when mounting (VESA connection):

| Mounting screws | |
|------------------------|------------------------|
| Number | 4 |
| Thread | M4 |
| Strength | 12 |
| Immersion depth | Min. 10 mm; Max. 12 mm |
| Torque | Max. 3 Nm |

The permissible ambient temperature range (5 °C ... 40 °C) must not be violated. Do not subject device to unnecessary shocks. Take care when transporting! **Use the original packaging!** The panel in particular should be protected against shocks.

When touching the panel surface, the mechanical contact or an electrical discharge may cause a brief disturbance in the picture quality.

Care of unit / cleaning agents

– The front panel is extremely sensitive to mechanical damage. Avoid all scratches, knocks etc.!

– Remove water drops immediately; extended contact with water dismonochromes the surface.

Clean the front panel when dirty using a micro fiber cloth and, if necessary, a glass cleaning agent*. Only clean housing parts using a cleaning agent for plastics*.

● **Note:**

Do not use cleaning agents containing solvent, e.g. petroleum spirit!

Environmental Requirements

Mercury

The Cold Cathode Fluorescent Lamp (CCFL) utilized as the light source for LCD displays, The CCFL is a low-pressure discharge lamp. Construction of the lamp uses a glass tube coated on the inside with an inorganic phosphor. The sealed lamp's envelope contains a mixture of mercury; Mercury damages the nervous system and is toxic in high doses.

Lamp Disposal



Lamp(s) inside this product contains mercury and must be recycled or disposed of according to state, local or federal law. For more information, Contact the electronic industries alliance at www.Elae.org. For lamp specific disposal information check www.lamprecycle.org.

3. Installation

Provide adequate ventilation

Ventilation slots are located on the rear of the housing.

Ambient temperature

The permissible ambient temperature range must not be violated.

Minimize reflections

The display should be positioned so that reflections of lights, windows, furniture with shiny surfaces or light-monochrome walls do not appear on the screen.

Minimize mirroring

In order to reduce mirroring on the unit, ceiling lighting or reflected light (no dazzling) should be used. Mirroring can only be eliminated if the screen is clean and free of grease. Clean the display using a suitable micro fiber cloth.

Change of environment

If the unit is brought into a warm environment from a cold one, water may condense upon it. The unit should not be switched on until all the condensed water has evaporated, including that inside the unit. This may take several hours, depending on the conditions.

4. Start-up



Caution

In order to ensure safe operation of the equipment, close attention must be paid to the information contained in this Instruction Manual as well as the warnings in Section 2 "Safety precautions".

Caution Information for end customer

None of the settings must be changed on site by the user, otherwise the guarantee is canceled. This also applies to settings made using the HL1916 keys. These are therefore locked for certain applications. If settings have to be changed, please contact the responsible servicing department.

The display is designed for individual connection to a graphics card with a power supply of 100 or 240 Volt (TN-S system with PE conductor). If the display is to be used in a sequence of several displays, or if it is not exactly known whether the graphics card standard can be output by the display, refer to Section 5.1 "Connection of the flat panel display".

In order to start the unit properly, the following steps should be carried out in the given sequence.

4.1 Connecting the power and signal cables



Caution

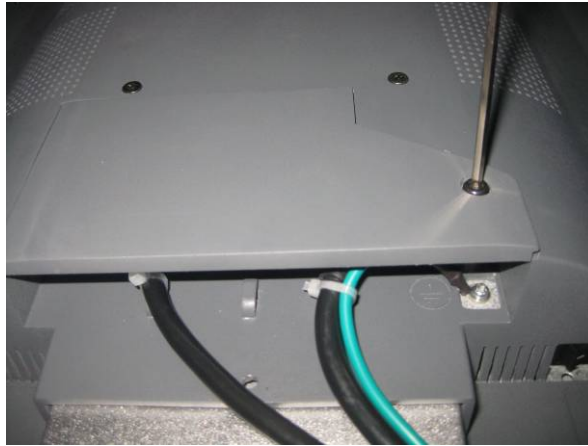
Use a power cable with PE conductor corresponding to the safety requirements of the respective country of use. Note for North America: Molded power supply plugs must comply with the requirements for hospitals with respect to CSA Std. C22.2 No. 21 and UL 498. The power supply and signal connections are located on the rear of the monochrome flat panel display.

Note

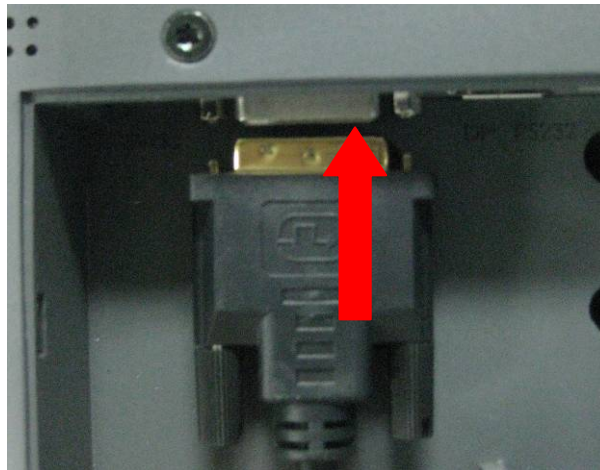
Note that the cables are not positioned when you receive the display (power cable and DVI-D cable). The following steps are only necessary if you need to connect/disconnect the cables of the scope of supply.

4.1.1 Little cover (removing)

Remove the one screws with an M4 Slot screwdriver (one turn suffices). Open the little cover and remove it

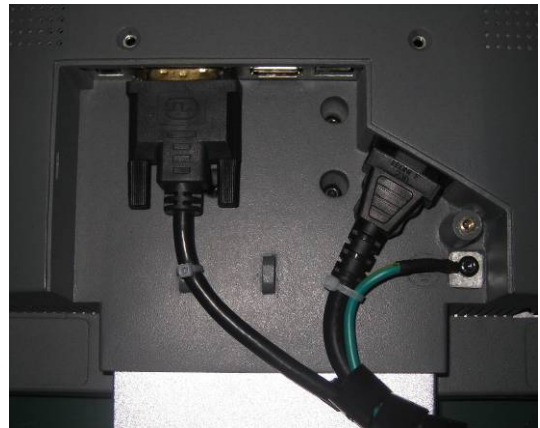


4.1.2 Cable (attaching)



Connect the cables to the display.

Connect the power cable



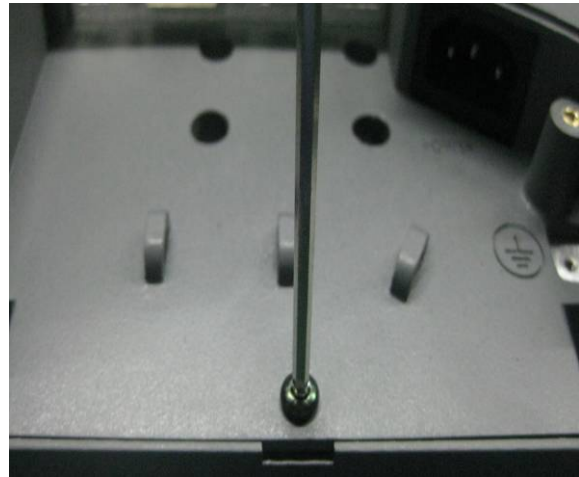
15-pin Sub-D connector: the flat panel display can be connected to the computer system using the Sub-D connector. The display is adapted using an

OSD menu.

DVI connection: The connection to the computer can also be made via the digital single link or via the analog channel of the DVI connection. The picture quality, noise immunity and radiated interference of the complete system depend on the cable quality and length.

Serial connection: you can connect the display via the 9pin D-SUB connector to the computer for firmware updating.

4.1.3 Little cover (attaching)



Lead the monitor end of the cables through the little cover's cable duct.
Connect the little cover to the rear cover.

4.2 Switching on the display

Switch on the flat panel display using the power switch. The operation LED lights up.

4.3 Adjusting the image geometry

The display automatically recognizes the used standard, and set-up values for each standard are preprogrammed. However, depending on the graphics card used, it may still be necessary to align and size the picture for the selected standard (see Section 6.1 "Picture adjustment"). Normally auto adjust will work.

4.4 Adjusting the brightness and contrast

The brightness and contrast must be adjusted for the respective graphics card (different output levels) in the system on site.

Note on adjustment

- Use the SMPTE test pattern.

- Adjust the brightness so that image sections with 5% and 0% blackness still visibly contrast from one another.
- Adjust the contrast so that image sections with 95% and 100% whiteness still visibly contrast from one another. To adapt the luminosity to the ambient lighting, adjust the backlight brightness (note: 300 cd/m² factory setting is then modified).

4.5 Screen saver



A screen saver function should be used in order to reduce "image sticking" which can occur in TFT displays. It is high risk to display a static graphic over half an hour. Image sticking is the effect where a faint image of the previous screen contents can still be seen after the display contents have changed. By using a screen saver with permanently changing screen contents, unnecessary effects of the same image are avoided.

If the keyboard is locked, contact the servicing department in order to unlock it. The guarantee is cancelled if you unlock it yourself!

5. Connections

5.1 Connecting the flat panel display

Note

All screening precautions contained in the corresponding EMC guidelines must be observed. If these guidelines are not observed, interference signals could penetrate the monitor.

Information on cable installation

Only screened cables are permitted for the signal connections.

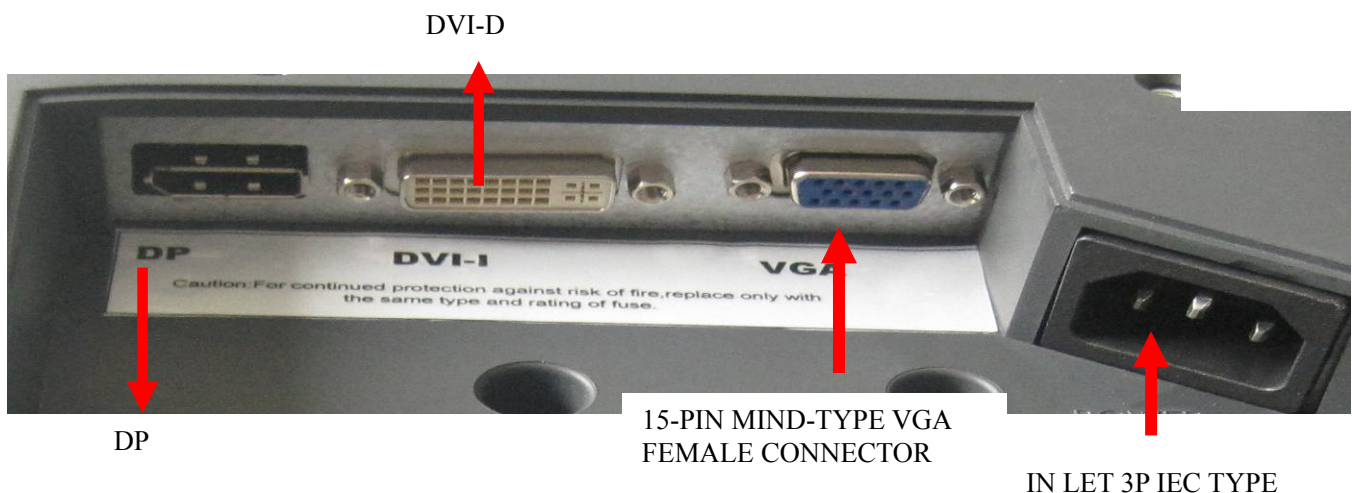
All connectors should be of screw or locking types (as far as possible).

Signal and power cables must not be routed in the same duct.

The display must not share a power supply with motors or valves (glitches!).

5.2 Connection panel

A connection panel for the signals and power supply is located at the rear of the flat panel display underneath the stand and its cover.



5.3 Information on additional serial interface (Service Only)

Serial connection: you can connect the display via the 9pin D-SUB connector to the computer for firmware updating and monitor test.

5.4 Analog and digital inputs (DVI-D, VGA)

15-pin Sub-D connector

Connect VGA cable with 15-pin Sub-D connector (male) for the analog input

to the 15-pin Sub-D connector (female).

DVI socket

With DVI digital signal.

5.5 Power supply connection

Note

Device fuses can not be exchanged outside of the repair centers.

The display power supply is connected using an appliance plug. Only use the power cable supplied in the delivery, or a cable with PE conductor and appliance socket to DIN 49 547, IEC 320.

Caution

A power cable with PE conductor must be used which corresponds to the safety requirements of the respective country of use.

5.6 Serial interface

Caution

No other units may be connected to the service socket. Connection or disconnection of a unit may only be carried out by servicing personnel or those trained by them. A Serial Spot Meter or Universal Serial Luminance Meter must not be connected in the presence of patients.

The display has a serial RS 232 interface sockets to update the SW.

6. Adjustments

6.1 Picture adjustment

This section describes the settings for operation of the flat panel display with a video source. The most important settings are:

Adjusting the graphics memory of the video source

As with all monitors, the flat panel display also has certain limits, e.g. maximum resolution and vertical frequency. The graphics adapter must be set when using the flat panel display such that the limits are observed.

Fine adjustment of the flat panel display

Note

Fine adjustment of the flat panel display can only be carried out via the analog port 15-pin SUB-D. The digital input (DVI-D) does not require a fine adjustment since the display signal is always optimum.

RGB picture sources via 15-pin Sub-D connector supply analog signals which are basically intended for conventional CRT monitors and which are processed directly by them.

In contrast, the analog signals must be converted for a flat panel display into digital signals by a video digitizer. Depending on the picture source, cable length and video mode (e.g. VGA, SVGA, XGA) this conversion may cause certain deviations which cannot be corrected fully automatically by the flat panel display. A manual fine adjustment is therefore necessary during which the flat panel display (or, more precisely, the video digitizer) is matched to the respective video source. The fine adjustment comprises e.g. setting the horizontal/vertical picture position and the picture sharpness. This can be carried out for the color flat panel display HL1916T using an OSD menu.

To optimize the display settings for the installed graphic board, and to ensure all gray levels are distinguishable, we recommend to adjust the brightness and contrast levels for and only for analog inputs. Note that the calibration (in the Look Up Table) is not changed by these adjustments (All the monitors are and remain factory calibrated):

Using a 100% black picture and an appropriate measurement device (a spot meter recommended), decrease the brightness level using the OSD controls until the measurement device displays a constant level (i.e. the measured value no longer changes). Once this is achieved, increase the brightness level slightly until the display is just above the absolute lowest black level (one step is generally sufficient).

Similarly, set the white level using a 100%-white test pattern and the measurement device. Only the contrast level should be adjusted to ensure that the black level remains unchanged.

- Control again the black value did not change. In case it did you need to duplicate the two previous steps until it does not change anymore (cause: pedestal).

Increase the contrast level until the measurement device no longer detects an increase in luminance. Once this is achieved, decrease the contrast level slightly (1 or 2 steps is generally sufficient).

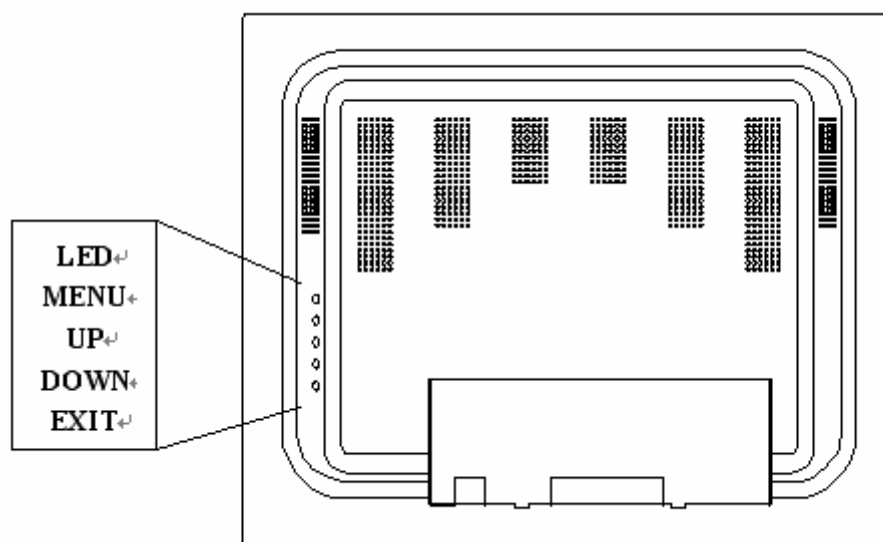
At this point, the display is configured for optimal performance with the installed graphic board. If one is not yet satisfied with the luminance level, the black and white levels can be further increased by adjusting the backlight level in the OSD menu. Please note that higher backlight level settings tend to reduce the stability of luminance over time.

6.2 Optimum picture quality

In order to achieve an optimum picture quality, the monochrome flat panel display HL1916T should be operated with a graphics resolution of 1280 x 1024 pixels (settings for graphics card in the PC). When adjusting the picture position and size, ensure that the picture appears exactly on the active surface of the display and that it is not offset by even one pixel. For example, if the horizontal position is offset by one step to the right, the right-hand edge of the picture will disappear, and a black pixel column will appear at the left-hand edge. And similarly for an offset to the left, top or bottom. If the vertical lines are still slightly fuzzy, adjust the setting "Frequency/phase" (see Section 6.4 "Description of the menus").

6.3 OSD menu

6.3.1 Keys assignment and operation LED



A “dynamic help for keypad function” is available for each menu: it explains the role of each key depending on the OSD menu window, which is currently active.

6.3.2 Key functions without active OSD menu

| Key | Action |
|------|---------------------------|
| Menu | Activate OSD |
| Up | Adjust Backlight |
| Down | Analog Input auto balance |

* Scenario in case all signal sources is available. If not, the signal from the next available source will be displayed.

6.3.3 Key functions in the OSD menu

| Key(s) | Situation | Action |
|-------------|------------------|-------------------------|
| Menu | Always | Jump to next line |
| Up | Slide controller | Increase value |
| | Selection point | To previous selection |
| | Command | "Enter key" |
| Down | Slide controller | Decrease value |
| | Selection point | To subsequent selection |

| | | |
|-------------|------------------------|------------------------------------------------|
| Exit | Except "Exit OSD" menu | One menu level upwards (settings are retained) |
| | In "Exit OSD" menu | Return to main menu (settings are retained) |

6.3.4 Submenu calls

Press the “Menu” key while the OSD is active, the function icon will jump to next line. Pressing the “Up” key, the coordinate submenu will be selected.

6.3.5 Locking of OSD menu

| Key(s) | Action |
|-------------------------------|-------------------------------------------------------------------------------------------------------------|
| In a sequence Set, Up, Up ,Up | Lock or unlock OSD If the OSD is locked, it is only possible to switch over the source (see Section 6.3.2). |

6.3.6 Keys function hints

A “dynamic help for keypad function” is available for each menu: it explains the role of each key depending on the OSD menu window, which is currently active.

6.4 Description of the menus

| Main Menu | Function | Adjustment range | Description |
|----------------|----------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Brightness | Contrast | 0...255 | Adjustment of contrast This allows the brighter area to be seen more distinctly. The center point is in 128 position. Note: for DVI-D signals the Contrast setting is optimized. Manual changes are not recommended. |
| | Brightness | 0...255 | It is used to adjust the Brightness of the monitor. The center point is in 255 position. This allows the darker area to be seen more distinctly. Note: for DVI-D signals the brightness setting is optimized. Manual changes are not recommended. |
| | Backlight | 0...255 | Adjustment brightness of LCD backlight to adapt total brightness for room illumination |
| | SETTINGS | Setting1 Setting2 Setting3 User | Set desired Brightness level: Three fixed Brightness level are available The default value is: Setting1: 300cd/m ² ; Setting2: 250cd/m ² ; Setting3: 350 cd/m ² While choose setting 1,2,3 state it will recall factory default Black level, Contrast, Backlight. Have a control to change the color temperature. |
| Position | H Position | 0...100% | Shift picture in horizontal direction |
| | V Position | 0...100% | Shift picture in vertical direction |
| | Frequency (VGA only) | | Adjust the frequency and phase of the input signal. |
| | Phase (VGA only) | | Adjust phase of the input signal. |
| Picture Source | | DVI-IN VGA-IN(Analog) | Select source for main display When you enter this OSD menu the current source is highlighted. Following switch off and on of the display, the picture sources are searched one after another. |

| | | | |
|--------------------------------------|-------------------------------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Auto function (Analog input only) | | | The auto functions are used to assist the automatic setting of parameters. The quality of settings depends on the picture contents and the type of synchronization. Corresponding items in the OSD can adjust all settings finely. |
| | Execute | | The selected auto functions are executed. Note: The quality of the function depends on the applied picture contents. To get better effect it is recommended to apply full screen and including whiteness contents picture. |
| | Auto-Balance | On/Off | Automatically get input signal match with the monitor |
| | Auto-Config | On/Off | Automatically adjusts the image position, H-Size (or V-Size) |
| | Auto adjust on mode change | On/Off | Enable or disable auto-adjust on mode change |
| Language | English Chinese | | Select the language of OSD menu. Note: English menu is default state. |
| Others | You can make further settings for the picture source | | |
| | OSD—Hposition | | Adjustment of OSD horizontal position (Default state is on the bottom right corner of the screen) |
| | OSD—Vposition | | Adjustment of OSD vertical position (Default state is on the bottom right corner of the screen) |
| | Hot Key | On/Off | Enable or disable the Hotkey. The up key is used for brightness, down key is used for Auto Adjust. |
| | Sharpness | Interpolation filter 1 to 7 | One of the 7 filters can be selected for the focus setting to reduce scaling artifacts. Interpolation filters depend on the input resolution. A filter is not usually used with 1280X1024 since each pixel is controlled by its own pulse. The user should individually adjust the filter depending on the application. The default interpolation filter position is 1. |
| | OSD Lock Timer | 120sec | If there is no action in 2 minutes, the OSD will be locked automatically. The OSD's content will be saved. |
| | Status | | Current display settings can be called here in the respective picture mode: Operate hours of display, firmware version, OSD version, configuration version, current source, current temperature, current timing of input signal, current LUT inside the monitor. |
| Service level 2 | Settings in this menu must only be carried out by service person* | | |

REV A

| | | |
|---------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Quit OSD menu | Accept changes Reject changes | Quick OSD menu and either save or reject the changes. If you have reached this menu unintentionally, you can return to the main menu using the EXIT key. |
| OSD is locked | | If this message is displayed, you do not have the authority to carry out the changes in the OSD menu. Please contact your servicing partner in this case. |

* Service level 2 enter: while the highlight line is on the service level 2 position, press 1 x Up, and 2 x Down keys, it will enter the following submenu.

| | | | |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------|
| Service level2 | LUT select and factory settings recall: Contrast; Brightness; Backlight; Setting1; OSD position; corresponding LUT factory recall. (The default state is Gamma2.2LUT) | | |
| | | CIE | Select CIE LUT |
| | | DICOM | Select DICOM LUT |
| | | Gamma 1.8 | Select Gamma 1.8 LUT |
| | | Gamma 2.0 | Select Gamma 2.0LUT |
| | | Gamma 2.2 | Select Gamma 2.2 LUT(default) |
| | | Native | Select panel native characteristics |
| | | FACTORY RESET | Load the factory setting |

7. Fault diagnostics

| Fault | Cause | Remedy |
|-----------------------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| No picture appears on the display, operation LED off | Broken fuse | Inform servicing department |
| | Power cable not inserted or incorrectly inserted | Insert power cable |
| No picture appears on the display, operation LED green blinking | No video signal | Check video cable |
| | Video source not supplying a signal | Check video source |
| Fuzzy picture, interference in vertical lines | Scanning frequency or phase incorrectly set | Adjust frequency and phase |
| Other faults –LED orange blinking | Loose plugs | Plug cables in properly and secure them |
| | Faulty cable | Replace cable |
| Other faults: “Temp. High” on screen | Temperature shutdown value has been reached | Display will be automatically shut down after a certain time (and turn on again when the temperature decreases enough again) |

Other information available from the 2-monochromes LED

| LED | Display status |
|------------|--------------------------------------------|
| LED orange | No error, stand-by has been activated |
| LED green | Video signal has been recognized, no error |

8. Technical data

All technical data are valid after a warming-up period of 2 hours.

8.1 Display

| | |
|--------------------------|---------------------------------------------------------------------------------------------------|
| Type | TFT,color active matrix |
| Display area | 376.32 mm x 301.056 mm |
| Picture diagonal | 19" or 48 cm |
| Native resolution | 1280 x 1024 (full-screen format) |
| Pixel organization | 3 vertical sub pixels |
| Pixel pitch | 0.294 mm x 0.294 mm |
| Contrast ratio | Typically 1000:1 |
| Horizontal viewing angle | Typically $\pm 85^\circ$ |
| Vertical viewing angle | Typically $\pm 80^\circ$ |
| Backlight | 4pcs* CCFT (cold cathode fluorescent tube) |
| Brightness | Typically 450 cd/m ² Factory setting: 300 cd/m ² |
| Lifetime of backlight | 50,000 hours typically for CCFT (applies to an ambient temperature for the backlight of 25° C) |

8.2 Power supply

| | | | |
|--------------|-------------------|------------------|---------------------------------|
| Power Supply | Input Voltage | | 100-240V~, 50 / 60Hz; 0.9A-0.4A |
| | Power Consumption | Normal operation | <60W |
| | Input Connector | | 3P IEC Type |

8.3 Electronics

| | |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Multi-standard technology | Video modes with resolutions less than 1280 x 1024 can be expanded to the TFT resolution, and thus utilize the full display area (like |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------|

| | |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | multi-sync CRTs). In the same way, resolutions higher than 1280 x 1024 can be reduced and then displayed. (Caution: depending if the timing is frame buffered or frame sync, image information might get lost; the gray levels - the color depth for color images - will also be reduced and might be visible) |
| Timing recognition | H frequency, V frequency |

8.4 Inputs/outputs

8.4.1 Analog signal input

| | |
|--------------------------------------------|-------------------------------------------------------------|
| RGB input, H/C Sync input and V Sync input | Via 15-pin Sub-D connector (female) Any polarity |
| DVI-D input | Via DVI-D socket (analog pins are used) |
| CVS signal | Video level: 0.5 ... 1.0 Vpp Sync level: 0.2 ... 0.3 Vpp |

8.4.2 Digital signal input

| | |
|-------------|------------------------------|
| DVI-D input | Via DVI socket , single link |
| DDC | Via DVI |

8.4.3 Serial interface

| | |
|-------|----------------|
| RS232 | Via D-sub 9pin |
|-------|----------------|

8.4.4 Timing Input

| Input Signals | | Analog | Digital |
|---------------|----------------------|--------------|--------------|
| | Horizontal frequency | 31kHz -82kHz | 31kHz -82kHz |

| | | | |
|--|--------------------|----------------------------------------------------------|--------------------------------------|
| | Vertical frequency | 50.0Hz - 85.0 Hz (Non-Interlaced) | 50.0Hz - 85.0 Hz (Non-Interlaced) |
| | Video Signal | Analog RGB | Digital RGB |
| | Sync. Signal | Separate Sync. (TTL) Composite Sync. Sync on green | TMDS |
| | Pixel Clock | 25.0MHz -140.0MHz | 25.0MHz -140.0MHz |
| | Input connector | Mini D-sub 15Pin | DVI-D |

8.5 Controls and connection elements

| | |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Left Side | Four keys for OSD menu, operation-LED |
| Rear | <ul style="list-style-type: none"> • Power switch • Power supply connection • DVI socket • 15-contact 3-row Sub-D socket • RS 232 sockets Sub-D 9 pin |

8.6 Mechanical design

| | |
|-------------------------------------------------------------------------------------|------------------------------------------------------------|
| Housing components | Aluminum |
| Protective screen | No |
| Visible screen surface | Approx. 376 mm x 301 mm |
| Ventilation slots | In rear panel |
| Degree of protection (front) | IP20 to DIN 40 050 |
| Connection panel | At rear, covered |
| Weight: Without stand With stand | 5.0 kg (approximate) 7.6 kg (approximate) |
| Dimensions (W x H x D) in mm Without stand With stand(down) With stand(up) | 423 × 348 × 72mm 423 × 429 × 210mm 423 × 509 × 210mm |

8.7 Climatic conditions

Operation

| | |
|---------------------------|-------------------------|
| Ambient temperature range | +10.. +40 °C |
| Temperature gradient | Max. 5 °C/h |
| Relative Humidity | 10-80%, no condensation |
| Atmospheric pressure | 700hPa to 1060hP a |

Transport and storage (packed)

| | |
|---------------------------|--------------------------|
| Ambient temperature range | - 20 ... + 60°C |
| Temperature gradient | Max. 5 °C/h |
| Relative Humidity | 10%-85%, no condensation |
| Atmospheric pressure | 500hPa to 1060hP a |

8.8 Mechanical requirements

Operation

| | |
|-----------|-----------------------------------------------------------------------------------------------------------------------------|
| Vibration | According to EN 60068-2-6 10 ... 58 Hz with ± 0.075 mm deflection 58 ... 500 Hz at 10 m/s ² |
| Shock | According to EN 60068-2-27 (single shock) 150 m/s ² , 6 ms No permanent shock allowed in operating conditions |

Packed unit

| | |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Vibration | According to EN 60068-2-6 5 ... 9 Hz with ± 3.5 mm deflection 9 ... 500 Hz at 10 m/s ² |
| Shock | According to EN 60068-2-27 (single shock) 250 m/s ² , 6 ms (in storage packaging) According to EN 60068-2-29 (permanent shock) |

8.9 Safety specifications

| | |
|--------------------------------------|------------------------------------------------|
| Safety standards | EN 60950-1, IEC 60950-1 |
| Approvals | CAN/CSA - C 22.2 No. 950.1, cULus mark, CB,CCC |
| Protection class | Protection class I |
| Degree of protection to DIN 40050 | IP 20 |
| Type B/BF/CF applied part | No Applied Part |
| Category AP/APG equipment | No AP/APG |
| Conformity | CE |

REV A

8.10 Electromagnetic compatibility

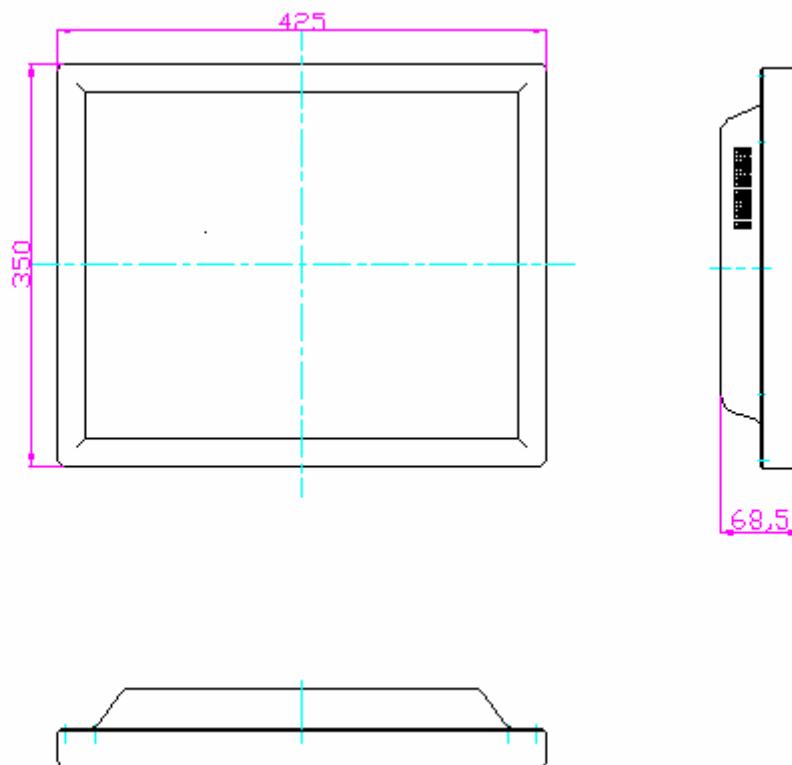
IEC6061-1-2

FCC Class B

9. Dimensional drawings

All dimensions in mm.

9.1 Front 、 Platform and Side view



10 Remarks and contact address

Invalidity of guarantee

All unauthorized electrical or mechanical alterations on or in the unit result in loss of the guarantee.

Information on the Instruction Manual

For clarity reasons, this Instruction Manual does not contain all detailed information on this product. Your attention is additionally drawn to the fact that the contents of this Instruction Manual are not part of a previous or existing agreement, commitment or statutory right and do not change the latter.

Guarantee

All commitments on the part of customer are contained in the respective sales contract which also contains the complete and solely applicable warranty conditions. These warranty conditions in the contract are neither extended nor limited by the contents of this Instruction Manual.

Repairs

Please contact your distributor from whom you originally purchased the product.

Environmental protection

When disposing of the device, the requirements and laws in the respective country must be observed.

Name of Manufacture: Shenzhen Beacon Display Technology Co., Ltd

Address: Room 201, Incubator Bld,CASTD,High-tech South 1st Street,Nanshan District,Shenzhen 518057, China.

Person to be contacted: Mr Duan

Tel: 0755-26995355 ext: 633