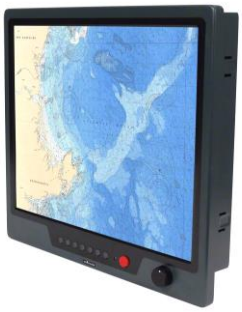
Stealth Marine / All Weather LCD Monitors

USER MANUAL



Models:

SVM-1200 - 12.1” Marine LCD Monitor
SVM-1500 - 15” Marine LCD Monitor
SVM-1700 - 17” Marine LCD Monitor
SVM-1900 - 19” Marine LCD Monitor
SVM-2150W - 21.5” Marine LCD Monitor
SVM-2400W - 24” Marine LCD Monitor

All information is subject to change without notice.

REVISION HISTORY

Version	Date	Description	Remark
WI-3204-REV00	July 24, 2014	Initial Release	
WI-3024-REV-01	December 12, 2016	Updated form and company information	

TABLE OF CONTENTS

REVISION HISTORY 2

TABLE OF CONTENTS 3

1.0 INTRODUCTION 7

2.0 CONTROLS AND FEATURES 8

3.0 INSTALLATION 9

4.0 OSD OPERATION 15

5.0 MAINTENAINCE AND TROUBLESHOOTING 32

IMPORTANT INFORMATION

EMC conformance

Stealth.com (Stealth) equipment and accessories are designed to the best industry standards for use in applications such as Marine, Aviation, Security, Industrial, Interactive Kiosks, Outdoor Computing and more. The design and manufacture of Stealth equipment and accessories conform to the appropriate ElectroMagnetic Compatibility (EMC) standards, however correct installation is required to ensure that performance is not compromised.

Waste Electrical and Electronic Equipment Directive

The Waste Electrical and Electronic Equipment (WEEE) Directive requires the recycling of waste electrical and electronic equipment. Whilst the WEEE Directive does not apply to some of Stealth's products, we support its policy and ask you to be aware of how to dispose of this product.

Restriction of the use of certain Hazardous Substances

This product uses components that comply with the requirements of the Restriction of the use of certain Hazardous Substances (RoHS) Directive 2002/95/ EC.

Warranty

Standard warranty: 1 Year parts and labor
http://www.stealth.com/warranty.htm

Packing List

Before installation, please ensure you have received the following items:

- ✓ 1 x Stealth Marine / All Weather LCD Monitor
- ✓ 4 x Mounting bracket lugs and 4 stainless steel threaded studs
- ✓ 1 x Power Cable
- ✓ 1 x VGA Cable
- ✓ 1 x USB cable for Touch interface

If any of these items should be missing or damaged, please contact Stealth or your sales representative immediately.

Ordering Information

Stealth Model Number & Description

SVM-1200-RT-USB
12.1” Sunlight readable LCD, Optical bonded touchscreen, 9~36V DC wide range input power

SVM-1500-RT-USB
15” Sunlight readable LCD, Optical bonded touchscreen, 9~36V DC wide range input power

SVM-1700-RT-USB
17” Sunlight readable LCD, Optical bonded touchscreen, 9~36V DC wide range input power

SVM-1900-RT-USB
19” Sunlight readable LCD, Optical bonded touchscreen, 9~36V DC wide range input power

SVM-2150W-RT-USB
21.5” Widescreen Sunlight readable LCD, Optical bonded touchscreen, 9~36V DC wide range input power

SVM-2400W-RT-USB
24” Widescreen Sunlight readable LCD, Optical bonded touchscreen, 9~36V DC wide range input power

1.0 INTRODUCTION

Weather Proof Computer Products - Built to Perform!

Stealth.com (Stealth) is an ISO 9001 registered manufacturer that is recognized world-wide as a leader in delivering highly reliable specialized computer solutions.

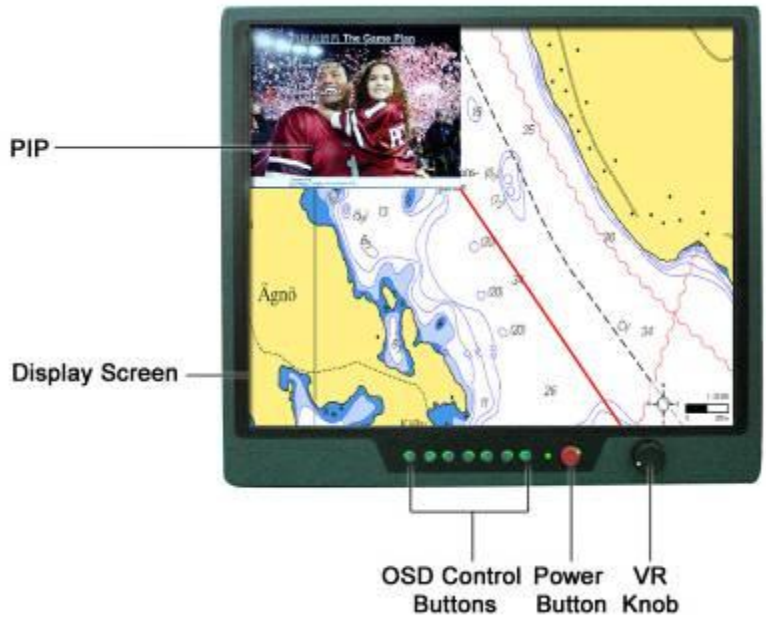
The Stealth marine / all-weather sunlight readable monitors handle a wide-range of extreme environments making it the industry choice for a number of applications that include marine, transportation, factory floor, control systems and other HMI applications. Housed in a milled aluminum chassis, the slim-profile Stealth all-weather display is light weight, watertight and easy to install. The front-mounted controls along with the user friendly touch screen provide simple user adjustment. Stealth has incorporated the latest optical engineering to achieve optimal viewing ability in a diverse range of lighting conditions. The Stealth marine/all-weather LCD Monitors are power efficient by incorporating a low heat design resulting in increased reliability required for mission critical deployment.

This detailed manual contains important information on the installation, operation and maintenance of the Stealth marine/all-weather LCD Monitors. Our displays are available in sizes 12.1", 15", 17" 19", 21.5" & 24" and the front panels are environmentally sealed to NEMA 4/IP65 specifications when properly installed.

2.0 CONTROLS AND FEATURES

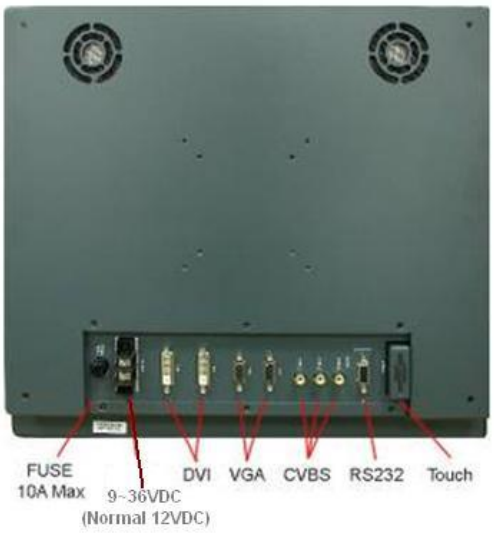
Your Stealth Marine / All Weather Display has the following controls and features:

Front View



Disclaimer: The PIP function is only available on the SVM-1700, SVM-1900, SVM-2150W & SVM-2400W model

Back View



Disclaimer: Only 1x DVI and 1x VGA available on the SVM-1200 & SVM-1500 models

3.0 INSTALLATION

It is important that your new Stealth Marine / All Weather LCD Monitor is installed and operated in accordance with the instructions provided in this manual. Failure to do so could result in poor product performance and may invalidate your warranty.

When planning your installation the following points must be considered:

• Your Stealth LCD Monitor is sunlight viewable and visible in direct sunlight.

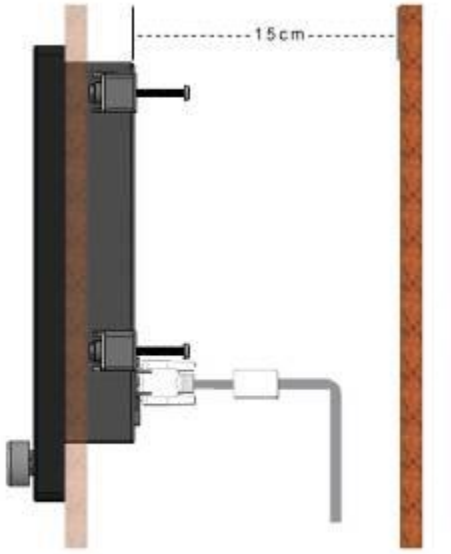
• If temperatures exceed the normal operating temperature range the display could overheat and begin to blackout due to the limitations of TFT LCD technology.

• In order to minimize the chances of a malfunction, the following precautions should be taken during installation:

  • The display should be installed in an area where there is proper and adequate ventilation (min. 15cm clearance) . If it is possible to cool the area behind the display, it will significantly reduce the risk of a malfunction.

  • The display should be mounted at an angle to the sun. We do not recommend mounting the unit in a flat plane, which increases the surface area exposed to the sun and leads to increased heat absorption.

IMPORTANT: Your Stealth LCD Monitor is only waterproof from the front. To maintain a watertight seal the display must be flush mounted ensuring that the rear casing is enclosed in a watertight enclosure.



Stealth Marine / All Weather LCD Monitors are designed to be mounted in two configurations:

VESA75 / VESA100 MOUNT

The Stealth Marine / All Weather LCD Monitors are designed to be compatible with VESA75 and VESA100 mounts. By installing the monitor with this kit, the user can adjust the viewing angle to improve visibility in changing environments. This mounting system has proven to be successful in supporting an extreme amount of weight in high vibration and difficult-mount applications.

The back of the monitor includes mounting points that you can use to mount the monitor as your installation requires.

PANEL (Flush) MOUNT

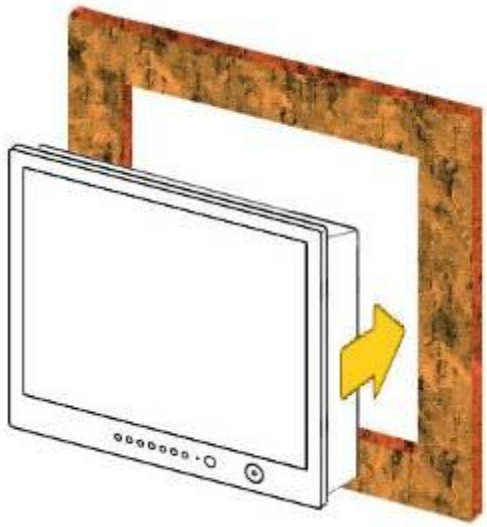
For installation, there are four tapped mounting holes on the two sides of the unit's panel. The mounting hardware is included with the product (see page 5). This includes four (4) stainless steel threaded studs, 3.2 cm and four (4) mounting lock brackets.

Your monitor can be installed using the mounting lock hardware (supplied) in the vertical keyways. Make sure that both brackets are in the same orientation.

Installing the display

1. Carefully insert the monitor into the aperture, ensuring that the gasket on the rear of the fascia lays flat against the aperture edge.

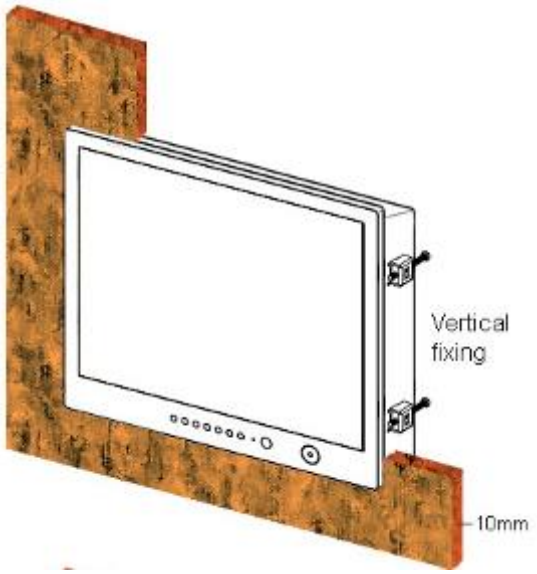
IMPORTANT**:** The gasket must lay flat against the aperture edge to ensure a watertight seal.



2. Place the mounting bracket lugs into the keyways and move them to the rear, securing the bracket to the monitor.

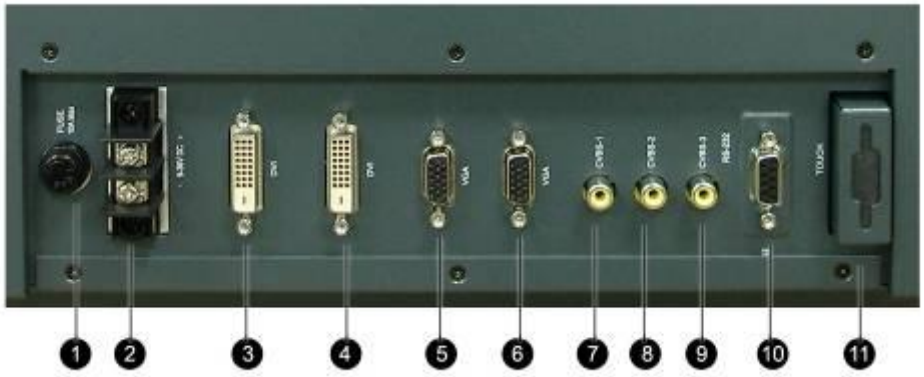
Note: *The mounting brackets can be used in either the horizontal or vertical keyways as required.*

3. Using a suitable screwdriver tighten the mounting bracket screws to secure the monitor into position.



4. Connect all cables as required - see “Rear connections” on the next page.

Rear connections



Disclaimer: The photo above may differ depending on the model.

The rear connectors are:

1. FUSE
2. DC Power Input
3. DVI-1 Input

4. DVI-2 Input (N/A for SVM-1200 & SVM-1500)
5. VGA-1 Input
6. VGA-2 Input (N/A for SVM-1200 & SVM-1500)
7. CVBS-1 Input (Composite Video) for AV input
8. CVBS-2 Input (Composite Video) for AV input
9. CVBS-3 Input (Composite Video) for AV input
10. RS232 Input (factory only, do not use)
11. USB for Touch control

Preparation and Planning for the installation

Before you install your display, the following points should be considered:
• Power requirements.
• Display location and mounting options.
• Additional accessories, e.g. keyboard or speakers.

Power requirements
Your Sunlight Viewable display is designed to run with 9~36V DC wide range power input.
For the power connections please ensure the power cable is tightly connected by two screws of the terminal block. Confirm that the polarity is correct.

Grounding the display
It is important that an effective radio frequency (RF) ground is connected to the display. You must ground the display by connecting the drain wire (shield) of the power input cable to the nearest ground point.

Display location and mounting options
Your display can be mounted using the flush mounting kit supplied. Stealth recommends that you power the unit and select a suitable mounting location prior to installing the display. When planning the display location, the following points should be considered to ensure safe, comfortable and reliable operation:

Convenience - The mounting location should be easily accessible to allow operation of the controls and should enable easy viewing of the display.

Power connections
The power connection to the display should be made at either the output of the battery isolator switch, or at a DC power distribution panel. Stealth recommends that power is fed directly to the display via its own dedicated cable system and MUST be protected by a thermal circuit breaker or fuse, fitted close to the power connection. If you do not have a thermal circuit breaker or fuse in your power circuit, you MUST fit an in-line breaker or fuse to the positive (red) lead of the power cable.

Installation angle - Tthe display should be mounted at an angle. Mounting it in a flat plane is not recommended due to increased heat absorption.

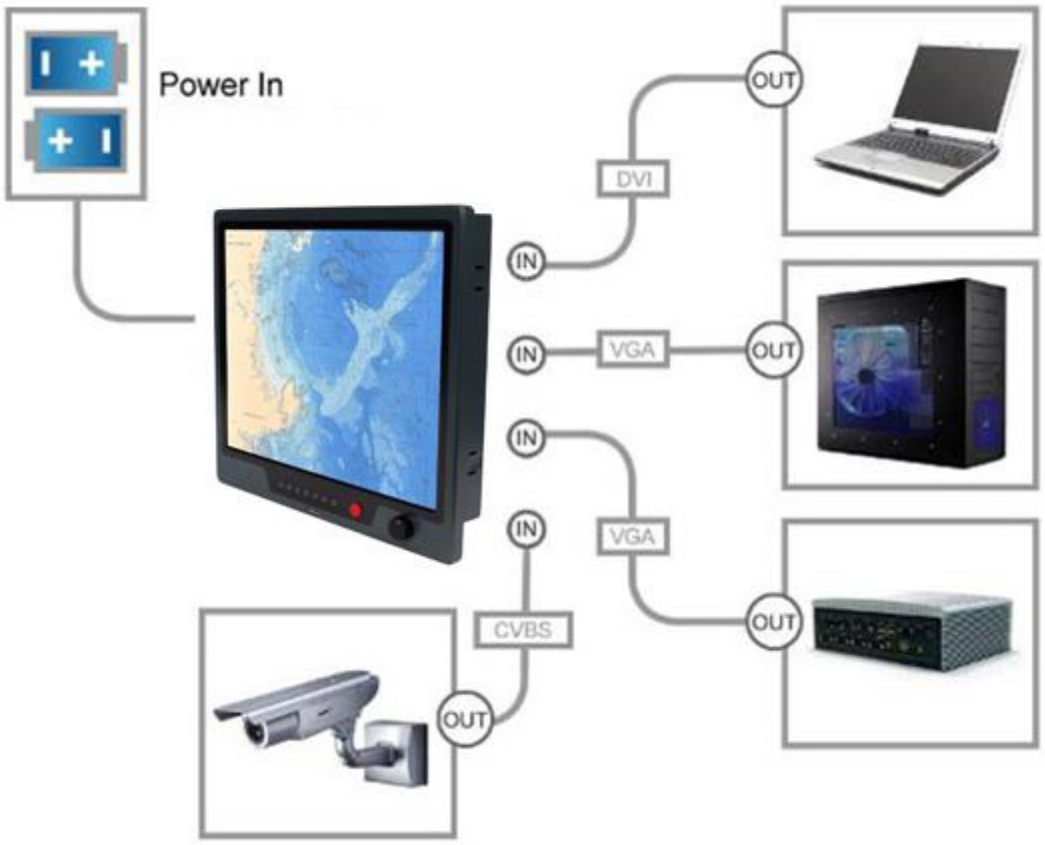
Viewing angle - This LCD has been chosen to give the very best performance, including viewing angle. However, the contrast and colors seen on all LCD displays may vary slightly with the viewing angle.

Environment - To prevent overheating, do not restrict airflow at the rear of the display unit. If the space behind the display is air conditioned or cooled by a fan it will help in keeping the unit's temperature down when mounted in direct sunlight.

FAILURE TO ADEQUATELY VENTILATE THE UNIT COULD VOID YOUR WARRANTY.

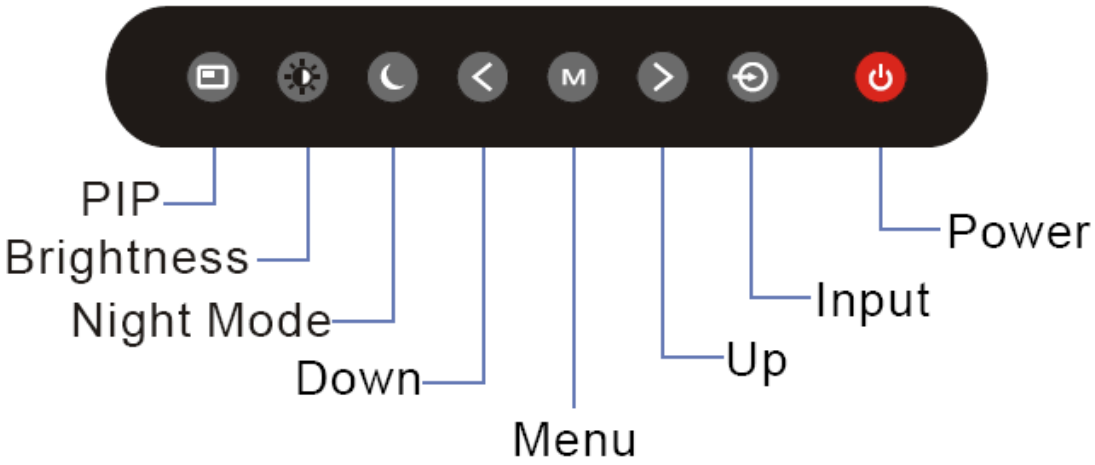
The display should be protected from physical damage and excessive vibration. Although the display unit is waterproof from the front when installed correctly, it is good practice to mount it in a protected area away from prolonged and direct exposure to rain and salt spray. DO NOT place the display near to a heat source.

Typical Installation Diagram



Disclaimer: The installation diagram above is only for reference and may differ from customer's applications.

4.0 OSD OPERATION



(Disclaimer: PIP function is only available for SVM-1700, SVM-1900, SVM-2150W & SV-2400W models)

Introduction
Your Stealth Marine / All Weather LCD Monitor can be controlled using the On Screen Display (OSD) menu and / or the 8 buttons on the front bezel of the unit.

The OSD menu enables you to change the way in which your display is set up and is accessed using the Menu button.

Using the buttons
Each of the 8 buttons on the front bezel of your display has an input and a control function.
Input functions enable you to select the type of signal input to the display.
Control functions enable you to change the appearance of the display.

Power

Power ON Key 

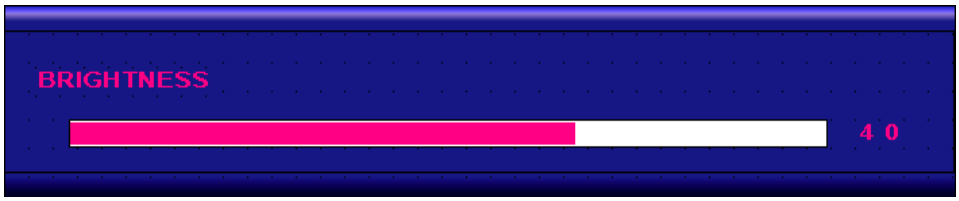
To power your monitor ON, press this button and it will delay the power on sequence around 3 seconds.

Power OFF Key 

To power your monitor OFF, press this button.

BRIGHTNESS Key

When you press the BRIGHTNESS Key, the screen will show the following image



You can press the UP / DOWN Key to do the screen brightness adjustment. When the brightness achieves 50 this is the Max, 1 is the lowest.

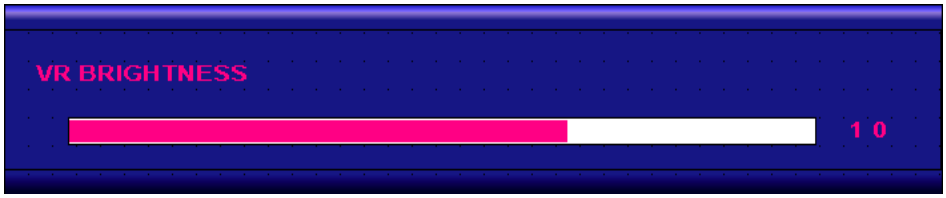
If you keep pressing “BRIGHTNESS” Key and hold it, the brightness will appear as following status:

. . . .2 → 1 → 2→ 3 → . . . → 48 → 49 → 50 → 49 → 48 → . . . .

And if you release the “BRIGHTNESS” Key around 5 seconds with any action, the brightness bar will disappear.

When you press the “BRIGHTNESS” Key and any other Key (not including Up/Down Key), the BRIGHTNESS status bar image will disappear.

When you press NIGHT MODE KEY or choose VR adjustment, the BRIGHTNESS KEY will not function if you press it.



VR BRIGHTNESS Key

If you want to enable the VR Brightness function, you need to press “MENU” KEY and then choose VR function. When you rotate the VR knob, the VR BRIGHTNESS status bar will appear as above image (dimming range from 1~50):

When you enter the VR BRIGHTNESS mode, it will disable the BRIGHTNESS KEY. When you release the VR knob after 5 seconds, the VR BRIGHTNESS Status bar image will be closed.

When you enter the “NIGHT MODE” or choose “BRIGHTNESS” Key for brightness adjustment, the VR knob will not function.

When you press “MENU”, “DISP” or “PIP” Key, you will enter the menu item selection and the VR BRIGHTNESS status bar image will be closed.

Any modified or changed parameter setting will be automatically saved if you power off or Exit the BRIGHTNESS status bar.

NIGHT MODE KEY

When you press the “NIGHT MODE” KEY, the dimming will be down to under 0.5 nit directly and if you press “BRIGHTNESS” KEY or “VR” knob at this moment, it will not function until you press the “NIGHT MODE” KEY again to release this restriction.

When you press “MENU”, “DISP”, “PIP” Key, you will enter the menu item selection.

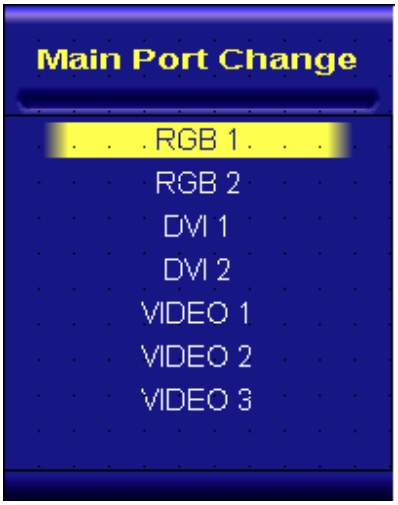
Any modified or changed parameter setting will be automatically saved if you power off or Exit the NIGHT MODE.

UP / DOWN KEY

It works as menu item selection use, the “UP”KEY can be used as “RIGHT” KEY and the “DOWN” KEY can be used as “LEFT”KEY.

INPUT KEY

When you press “INPUT” KEY, the screen will pop up the following image:



You can press the “UP”/ ”DOWN” KEY for the menu item selection above. It will remain at “VIDEO 3” position if you keep pressing “DOWN” KEY to the end and it will also remain at “RGB1” position if you keep pressing “UP” KEY to the end.

When you press and hold the “INPUT” KEY, the menu screen will show as

RGB1→RGB2→ · · →VIDEO3→VIDEO2→ · ·

If you release the “INPUT” KEY for 5 seconds without any action, the menu selection screen will be closed and it will remain at the item which you have selected.

When you press “MENU”, “BRIGHTNESS” or “PIP” Key, you will enter the menu item selection.

Any modified or changed parameter setting will be automatically saved if you power off or Exit the menu setting screen.

PIP KEY  **(Disclaimer: PIP KEY is not available on the SVM-1200 & SVM-1500 models)**

1. Default main screen shows at RGB1 & RGB2→ Press “PIP” KEY→ Figure 1
2. Default main screen stays at DVI1 & DVI2→ Press “PIP” KEY→ Figure 2
3. Default main screen stays at VIDEO 1→ Press “PIP” KEY→ Figure 3_1
4. Default main screen stays at VIDEO 2→ Press “PIP” KEY→ Figure 3_2
5. Default main screen stays at VIDEO 3→ Press “PIP” KEY→ Figure 3_3

PIP Function Supporting Table								
Sub / Main	RGB 1	RGB 2	DVI 1	DVI 2	VIDEO 1	VIDEO 2	VIDEO 3	
RGB 1			OK	OK	OK	OK	OK	Figure 1
RGB 2			OK	OK	OK	OK	OK	Figure 1
DVI 1	OK	OK			OK	OK	OK	Figure 2
DVI 2	OK	OK			OK	OK	OK	Figure 2
VIDEO 1	OK	OK	OK	OK		OK	OK	Figure 3_1
VIDEO 2	OK	OK	OK	OK	OK		OK	Figure 3_2
VIDEO 3	OK	OK	OK	OK	OK	OK		Figure 3_3

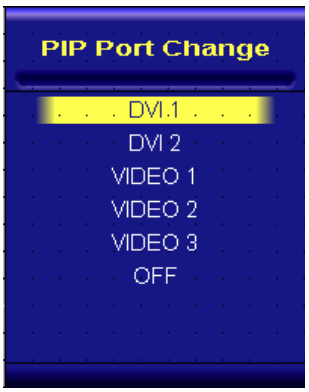


Figure 1

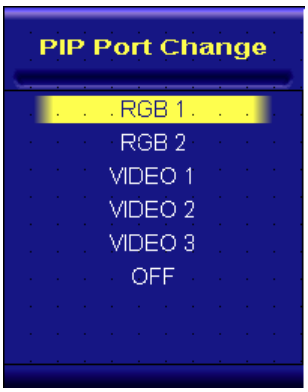


Figure 2

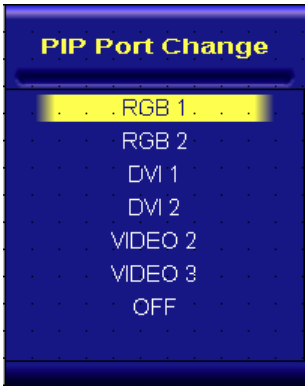


Figure 3_1

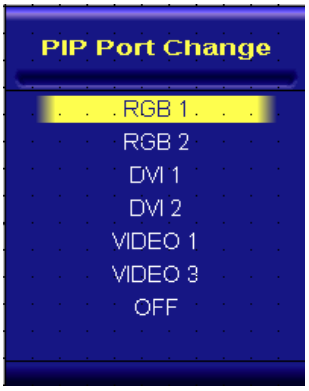


Figure 3_2

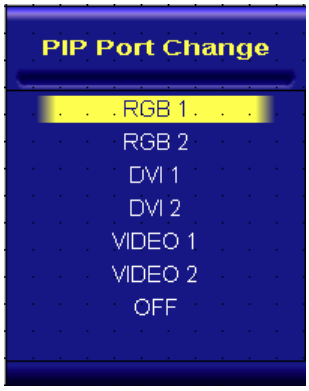


Figure 3_3

When you enter the “PIP Port Change” screen, the status bar will remain at “OFF” position if you keep pressing the “DOWN” KEY to the end. At the other hand, the status bar will remain at top item of each menu if you keep pressing the “UP” KEY to the end.

When you press and hold the “PIP” KEY, the menu screen will show as:

DVI→VIDEO1→VIDEO2→VIDEO3→OFF→VIDEO3→VIDEO2→VIDEO1→DVI→VIDEO1→…

If you release the “INPUT” KEY for 5 seconds without any action, the menu selection screen will be closed and it will remain at the item which you have selected.

When you press “MENU”, “BRIGHTNESS” or “PIP” Key, you will enter the menu item selection.

Any modified or changed parameter setting will be automatically saved if you power off or Exit the menu setting screen.

PIP KEY Function

You can choose PIP size scaling from 1~10 times and PAP1 (4:3 aspect ratio) or PAP2 (side by side for half full screen)

PIP (1~10) Picture

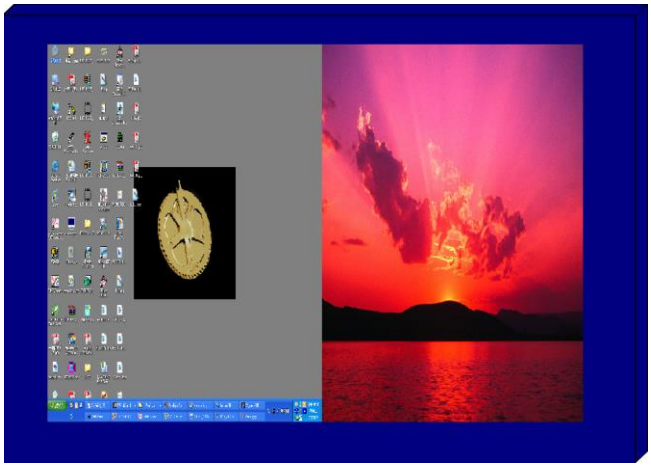
You can press “RIGHT/LEFT” key to move PIP window position

RIGHT KEY: The PIP window will move horizontally. You may put the PIP window to any desired horizontal position you want.

LEFT KEY: The PIP window will move vertically. You may put the PIP window to any desired vertical position you want.

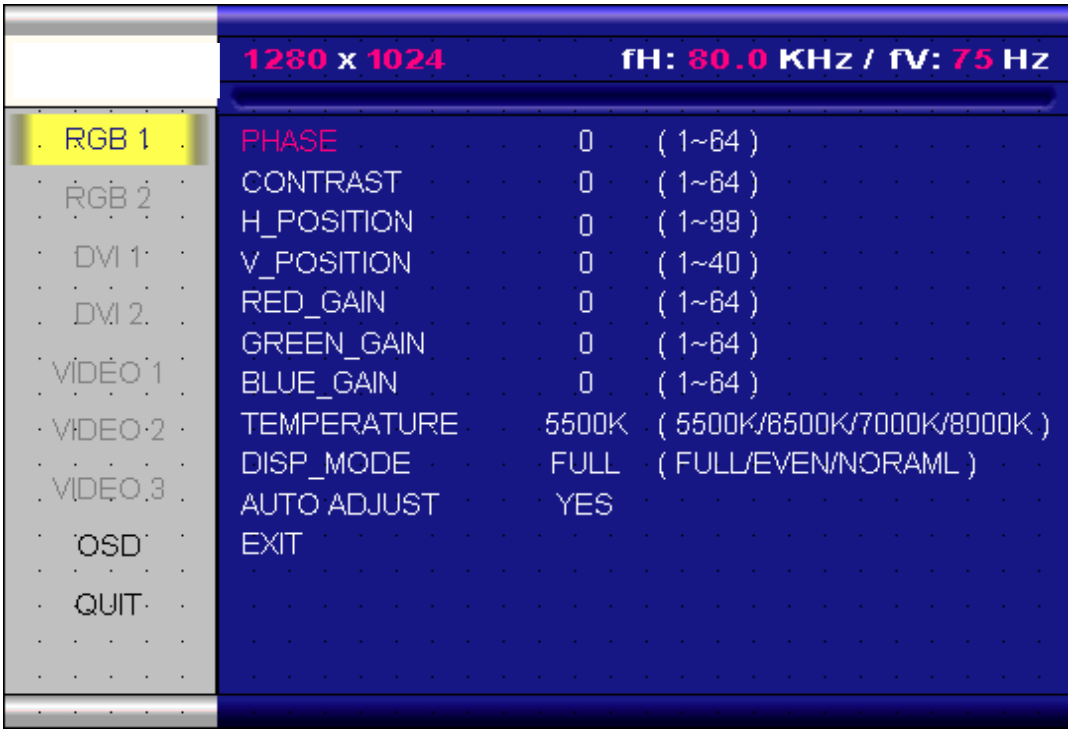
PAP1 (4:3 aspect ratio window) Picture

PAP2 (Side by side full screen window) Picture



MENU KEY 

When you press “MENU” KEY, the OSD main menu screen will appear as below:



If you release the “MENU” KEY for 30 seconds without any action, the menu OSD screen will disappear automatically. You can also choose “QUIT” and then press “MENU” KEY to exit this OSD menu screen.

RGB1 & 2’s setting screen:

(Disclaimer: Only RGBx1 are on the SVM-1200 & SVM-1500 models)

RGB Setting Item Description:

- PHASE——— Horizontal Sampling Phase Adjustment ◦
- CONTRAST——— Contrast Adjustment ◦
- H_POSITION—— Horizontal Screen Adjustment ◦
- V_POSITION—— Vertical Screen Adjustment ◦
- R_LEVEL——— Red Color level Adjustment ◦
- G_LEVEL——— Green Color level Adjustment ◦
- B_LEVEL——— Blue Color level Adjustment ◦
- TEMPERATURE——— Color Temperature Adjustment ◦
- DISP MODE———

  FULL——— Full Screen ◦

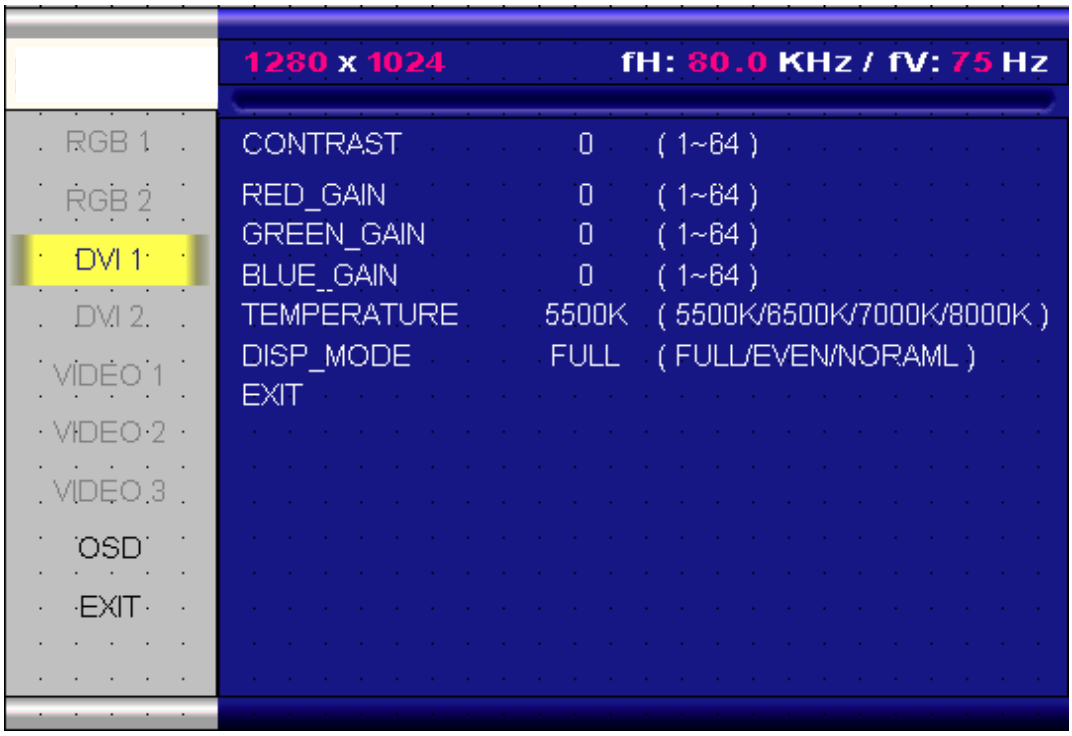
  EVEN——— Half Screen ◦

NORMAL—— Keep normal aspect ratio。

- AUTO ADJUST——— Auto adjustment。
- EXIT——— Quit from current setting

(Disclaimer: DISP MODE is not available on the SVM-1200 & SVM-1500 models)

DVI 1 & 2's setting screen: **(Disclaimer: Only DVIx1 on the SVM-1200 & SVM-1500 models)**



DVI Setting Item Description:

- CONTRAST———Contrast Adjustment。
- R_LEVEL——— Red Color level Adjustment。
- G_LEVEL——— Green Color level Adjustment。
- B_LEVEL——— Blue Color level Adjustment。
- TEMPERATURE——— Color Temperature Adjustment。
- DISP MODE———

FULL——— Full Screen。

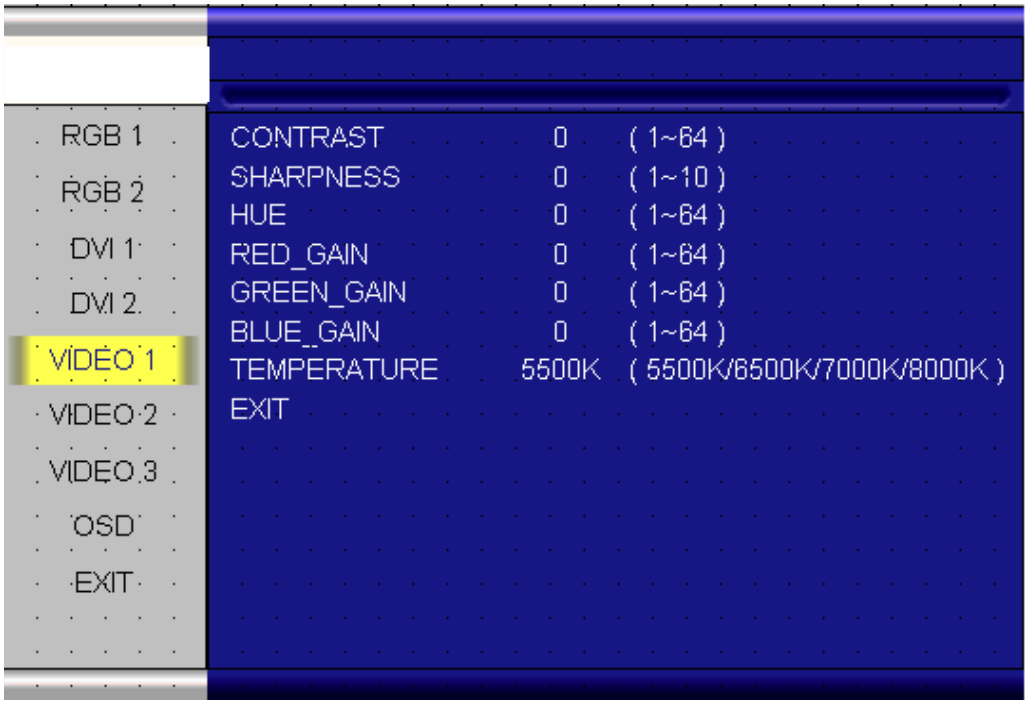
EVEN——— Half Screen。

NORMAL—— Keep normal aspect ratio。

- EXIT——— Quit from current setting。

(Disclaimer: DISP MODE is not available on the SVM-1200 & SVM-1500 models)

VIDEO 1 & 2 & 3' setting screen:



VIDEO Setting Item Description:

- CONTRAST——— Contrast Adjustment。
- SHARPNESS——— Horizontal edge sharpness
- HUE——— Color Adjustment
- R_LEVEL——— Red Color level Adjustment。
- G_LEVEL——— Green Color level Adjustment。
- B_LEVEL——— Blue Color level Adjustment。
- TEMPERATURE——— Color Temperature Adjustment。
- EXIT——— Quit from current setting。

(Disclaimer: HUE function is not available on the SVM-1200 & SVM-1500 models)

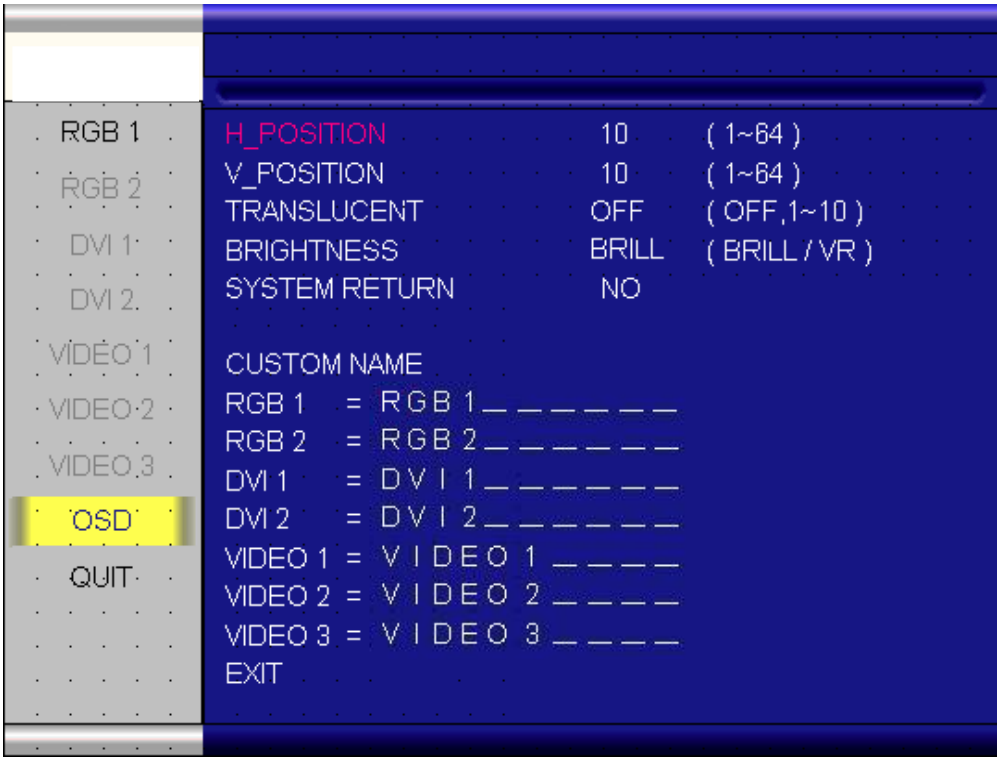
PIP Sub-menu setting screen: **(Disclaimer: PIP function is not available on the SVM-1200 & SVM-1500 models)**

PIP Setting Item Description:

- PIP_SIZE——— Picture in Picture Screen Size Adjustment。
- CONTRAST——— Contrast Adjustment。
- R_LEVEL——— Red Color level Adjustment。

- G_LEVEL——— Green Color level Adjustment。
- B_LEVEL——— Blue Color level Adjustment。
- EXIT——— Quit from current setting。

OSD Setting Main Screen:



OSD Setting Item Description:

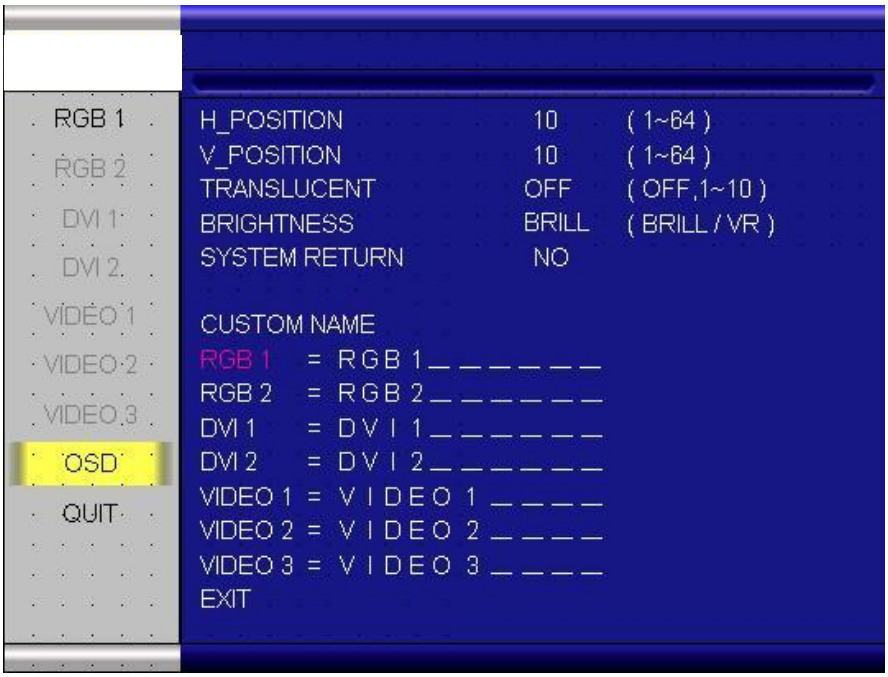
- H_POSITION—— Horizontal Screen Adjustment。
- V_POSITION—— Vertical Screen Adjustment。
- TRANSLUCENT——— Screen background color can be adjusted as transparent as you want (total 10 scales)。

- BRIGHTNESS——— Selection between “BRIGHTNESS” key or “VR” Button for brightness adjustment。
- SYSTEM RETURN——— Restore all parameter setting to factory default value。
- EXIT——— Quit from current setting。

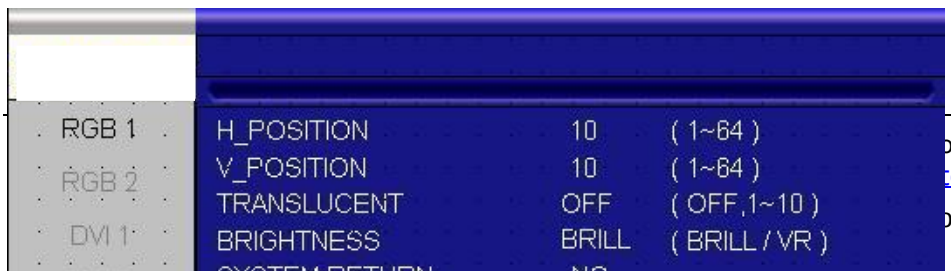
(Disclaimer: TRANSLUCENT function is not available on the SVM-1200 & SVM-1500 models)

Programmable OSD Source Tag setting screen:

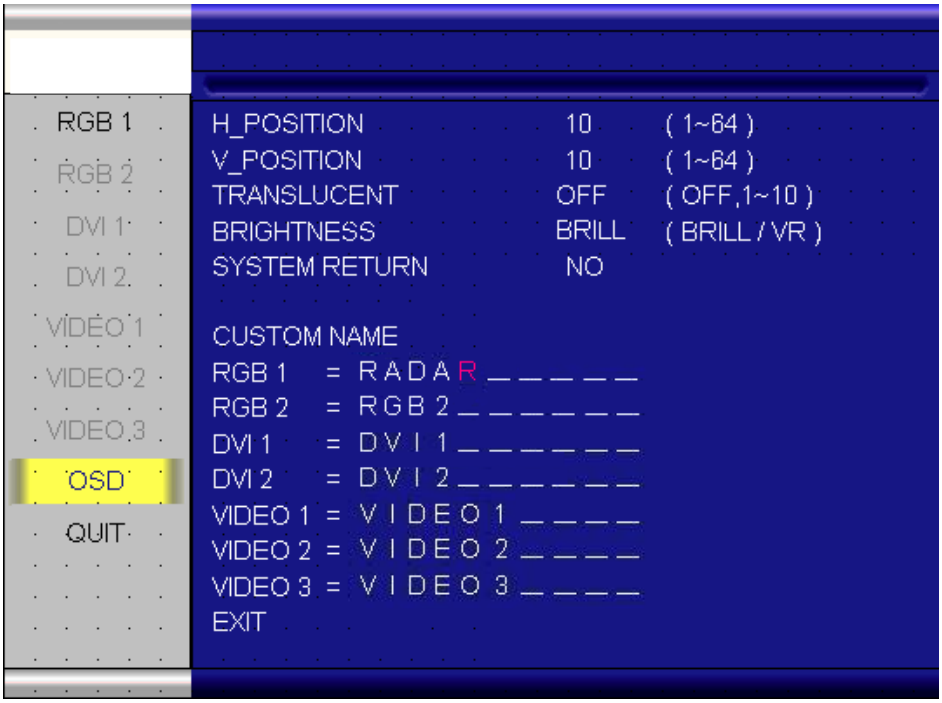
1. Press the “RIGHT/LEFT” key to selected channel



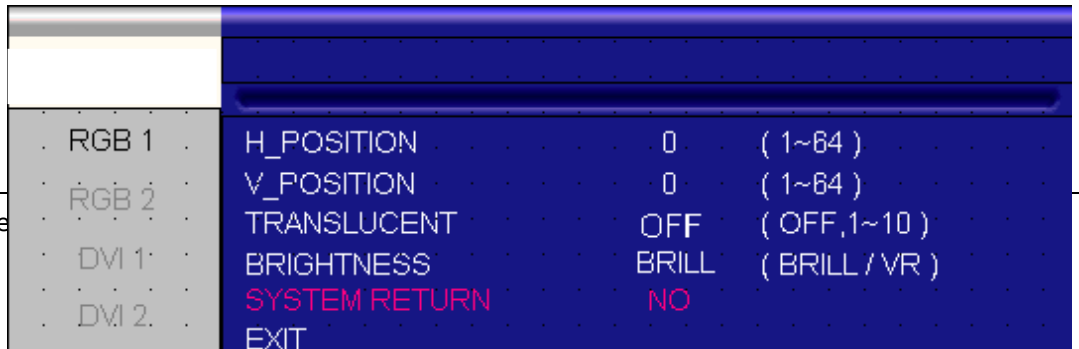
2. Press the “MENU” key to rename the “RGB1” to any desired source input (ex. Sonar, Radar…etc). You may press “RIGHT/LEFT” key to select from (A~Z, 0~9, “.”, “-“) character. If done, just press “MENU” key to jump to next character for renaming step by step.



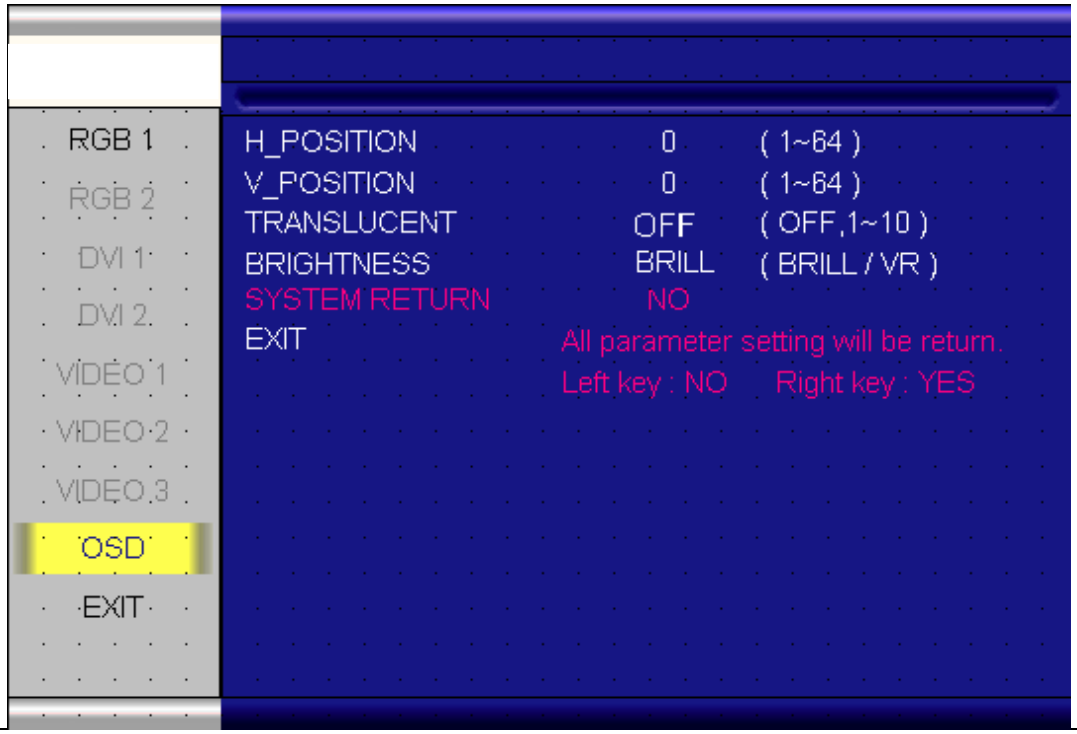
3. This is the picture of renaming RGB1 channel to “RADAR”



SYSTEM RETURN setting screen:



You may choose the “SYSTEM RETURN” option in the OSD Screen to restore all of the parameter setting to factory default value. When you press the “UP” or “RIGHT” KEY, the parameter will show “YES” and confirm it.



“KEY LOCK” Mode Function setting screen:

When you press “MENU” and “BRIGHTNESS” KEY simultaneously for 3 seconds, you will enter the “KEY LOCK” mode. At the same time, the screen will show “KEY LOCK” image as below for 5 seconds and then disappear.

In the “KEY LOCK” mode, keys do not function. When you press the key in the “KEY LOCK” mode, the screen will show “KEY LOCK” image as below for 5 seconds and then disappear.

To Release / Unlock “KEY LOCK” Mode Function setting screen:

In the “KEY LOCK” mode, when you press “MENU” and “BRIGHTNESS” KEY simultaneously for 3 seconds, you will release/unlock the “KEY LOCK” mode. At the same time, your screen will show “KEY UNLOCK” image as below.

5.0 MAINTENAINCE AND TROUBLESHOOTING

Precautions

To maximize the life and safe use of your unit, always be sure to follow the warnings, precautions and maintenance recommendations in this user manual.

In a Watercraft or Vehicle:

- The monitor should be visible to the driver only if it is used for navigation, or system control. Care should be taken to ensure distraction does not occur.
- Review all applicable federal, state and local laws and regulations to make sure the monitor is used properly and safely.
- Avoid using the monitor for extended times while the charging system is not running, or the monitor could drain your power source such as a battery.

Maintenance

High Voltage

The display unit contains high voltages.

01. To reduce the risk of electric shock, do not remove the cover or back. There are no user-serviceable parts inside.
02. Make sure you turn off and unplug the display before installing devices.

Cleaning the display

Cleaning

DO NOT use acid, ammonia based or abrasive products.

1. Use a soft cloth moistened with mild detergent, isopropyl alcohol, or window cleaners to clean the display housing.
2. Ensure the display is disconnected from the power supply. Wipe the display with a clean, damp cloth.
3. If necessary use iso-propyl alcohol (IPA) or a mild detergent to remove grease marks.
4. Never use abrasive cleaners, waxes or solvents to clean the unit.

Disconnecting the power supply

To disconnect the display from the power supply either;

• Isolate the power cable from the main supply, or,
• Remove the power connector from the rear of the monitor.

The power button on the front of the monitor changes the operating mode; it does not provide complete protection in an emergency

Troubleshooting

All Stealth products are, prior to packing and shipping, subjected to comprehensive test and quality assurance programs. However, if this unit should develop a fault, please refer to the following table to identify the most likely cause and the corrective action required to restore normal operation. If you still have a problem after referring to the table below, please contact the Stealth Technical Support Department for further advice.

Common problems and their solutions

Problem	Solution
The display is very dim or dark	Adjust the display as described in “Image adjustment on ” Section 5 OSD Menu.
The display shows the message ‘No Input’	Check that the video source i.e. display, camera, DVD etc. is powered and that the cables are correctly connected.
You have pressed the power button, but the display does not function.	1. Make sure that the power cable is well connected and that all connections are tight and free from corrosion. 2. Check the system fuse.