

smallHD



# DP1 User Manual

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## Overview

SmallHD, LLC represents the start of some much needed new thinking as it pertains the high definition video industry. For years, field monitoring has been far behind the capabilities of the video camera, creating uncertainty for the operator.

**Introducing the DP1.** Finally, a bridge between your eye and the camera's lens.

It's small, it's rugged, its Hi-Def, and it's affordable so everyone can take advantage of the new generation of HD equipment.

## Key Features

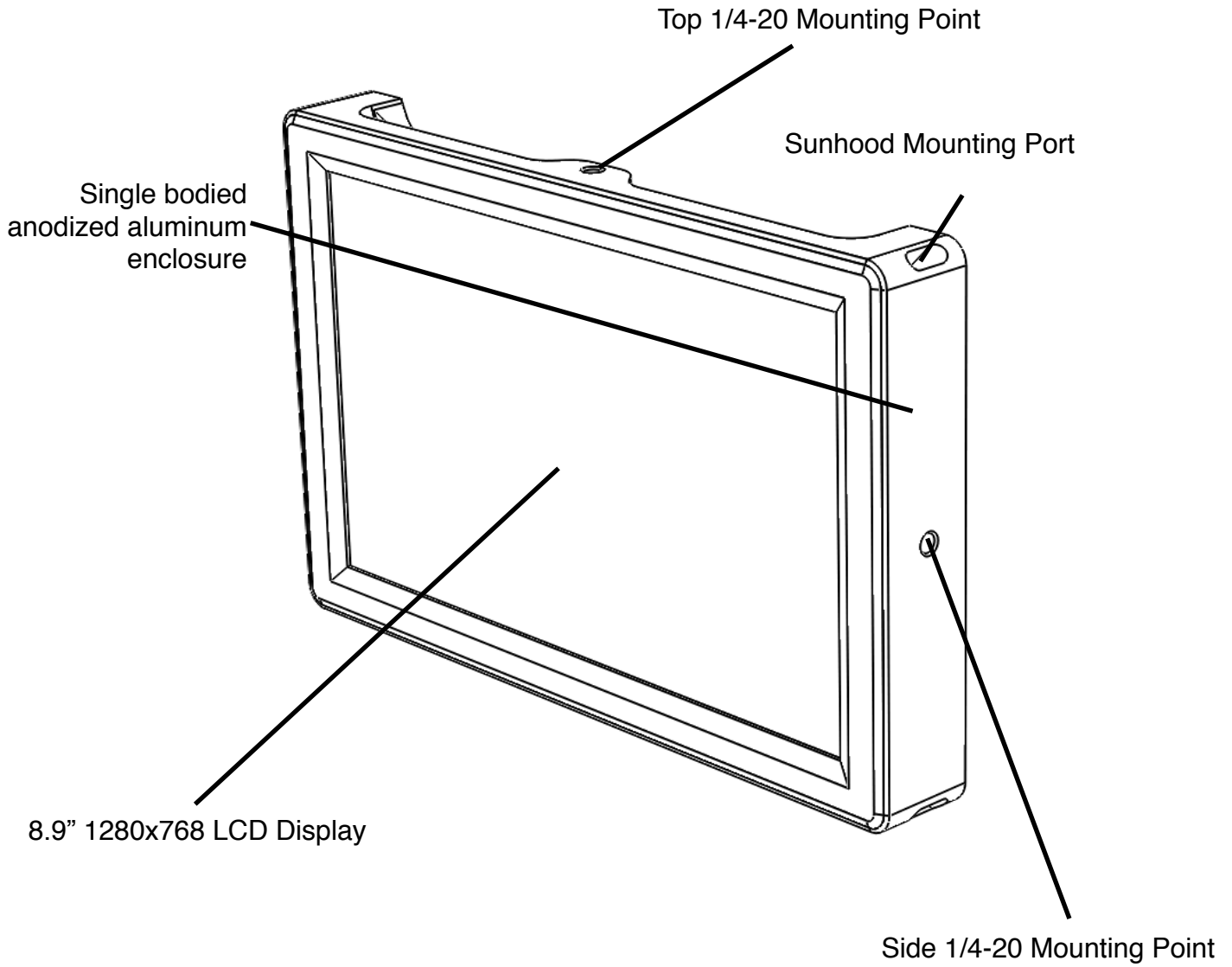
- Glossy, crisp high definition LCD screen with LED backlighting
- Extremely durable, lightweight, full-aluminum enclosure
- Versatile design utilizing 6 1/4-20 mounting points milled right into the chassis
- Full control of image scalability
- 3 HD inputs

## Key Specifications

- 1280x768 resolution in only 8.9" of screen real estate
- 178 degree viewing angle
- 300 nits screen luminosity
- 18bit RGB color reproduction
- HDMI, Component, VGA, S-video, Composite inputs
- 1.6lbs (without battery)
- 9" x 5.8" x 1.2" external dimensions
- 12vDC power at 1 amp
- Power input standard 5.5mm OD x 2.1mm ID barrel plug
- Full range of NTSC / PAL / SECAM signal reproduction capability

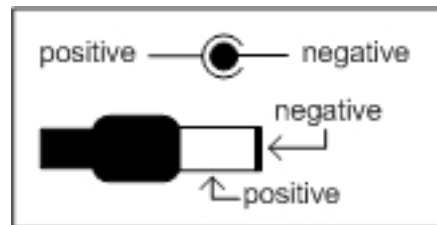
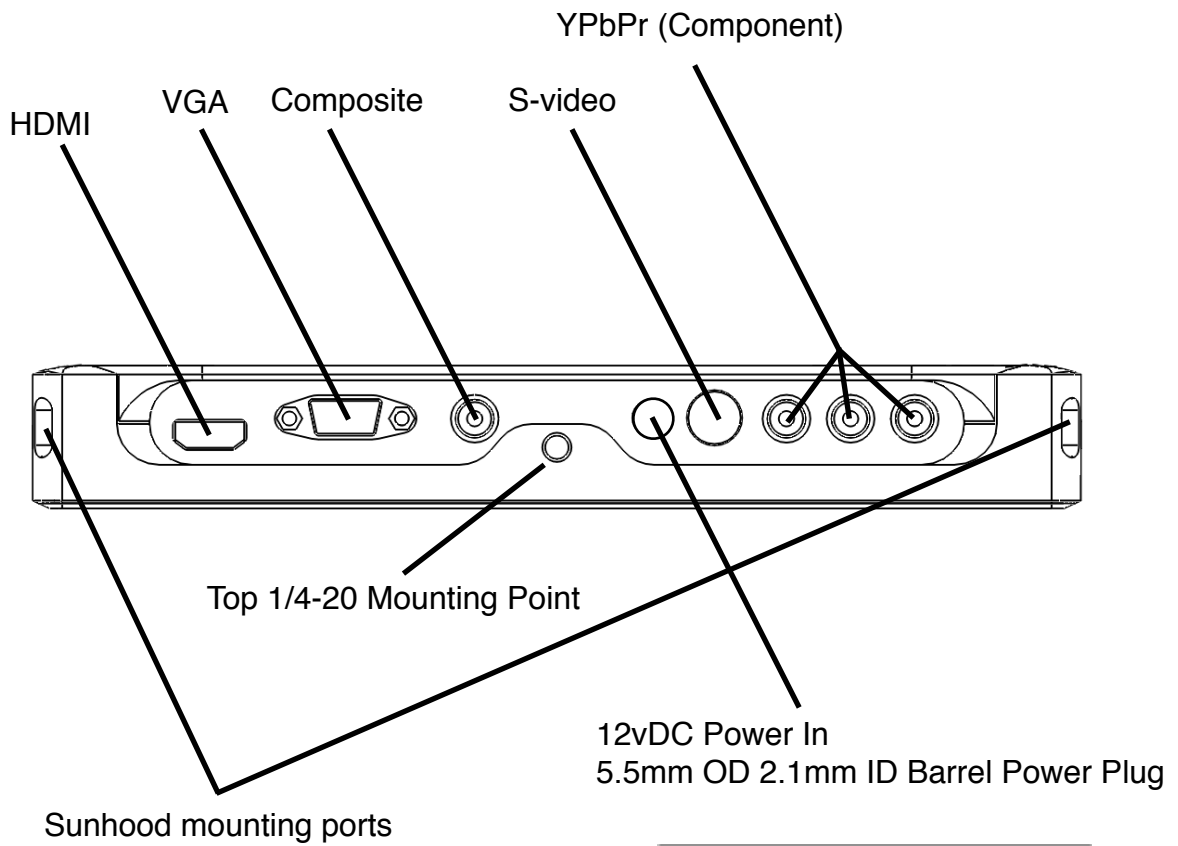
# Monitor Diagram

Front



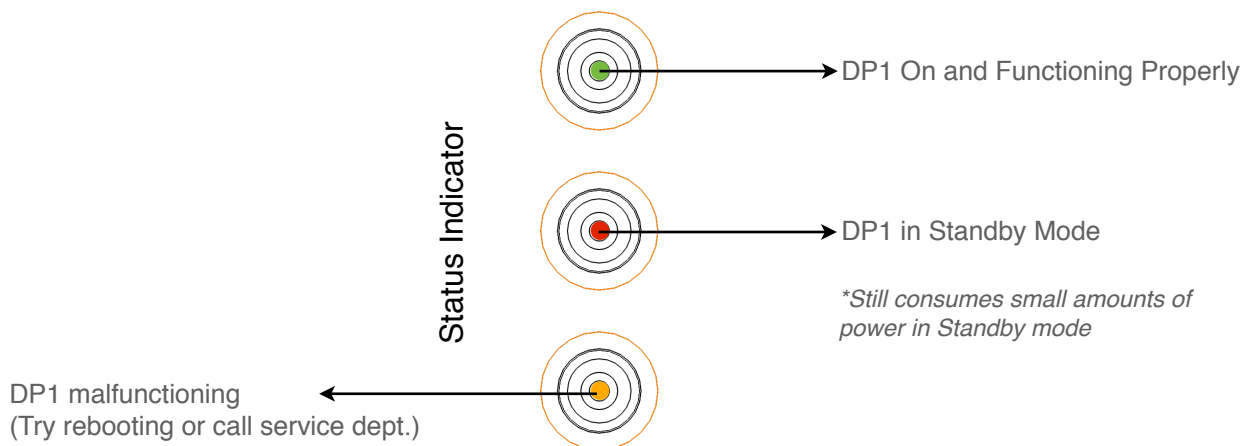
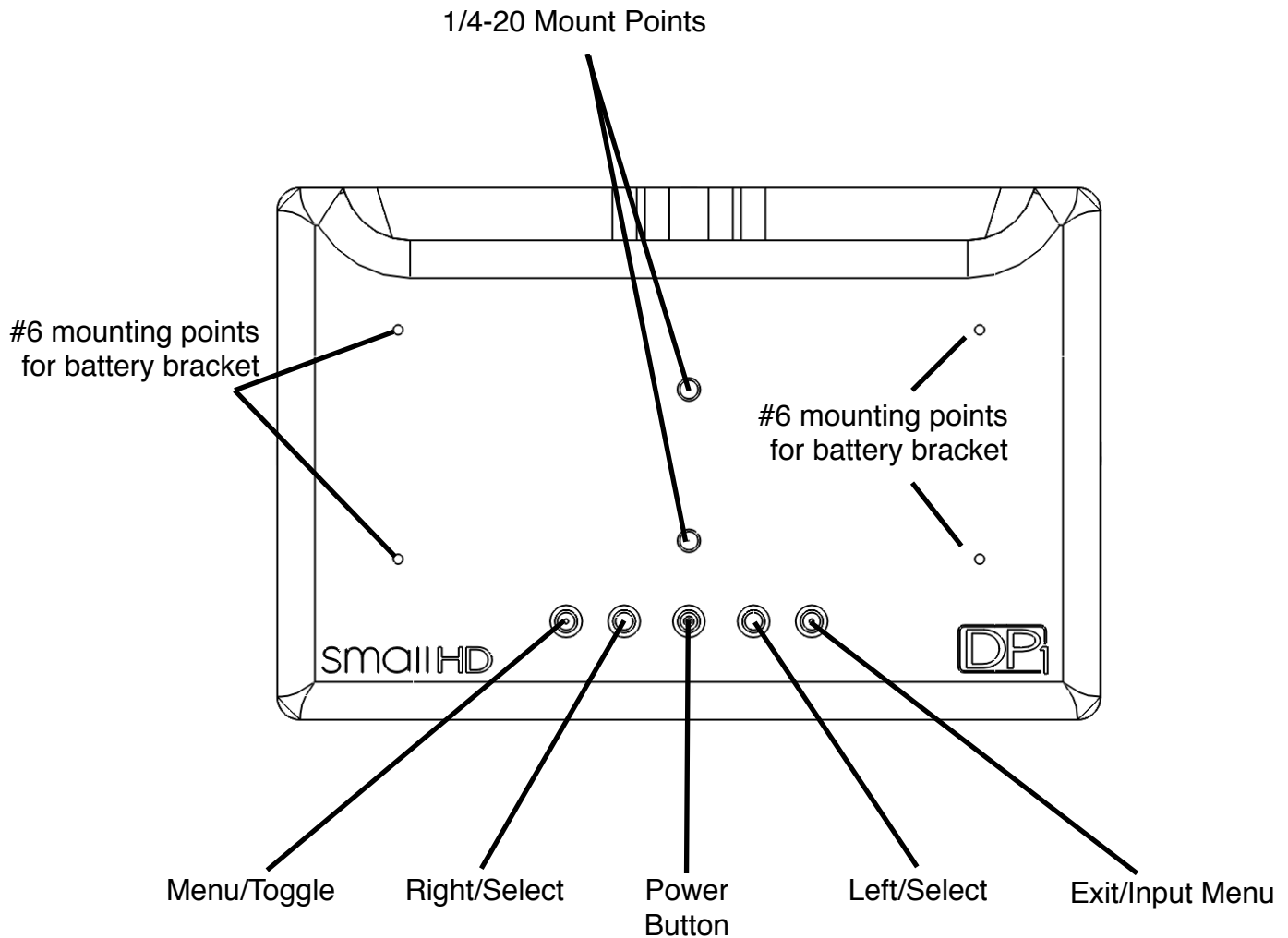
# Monitor Diagram

## Top



# Monitor Diagram

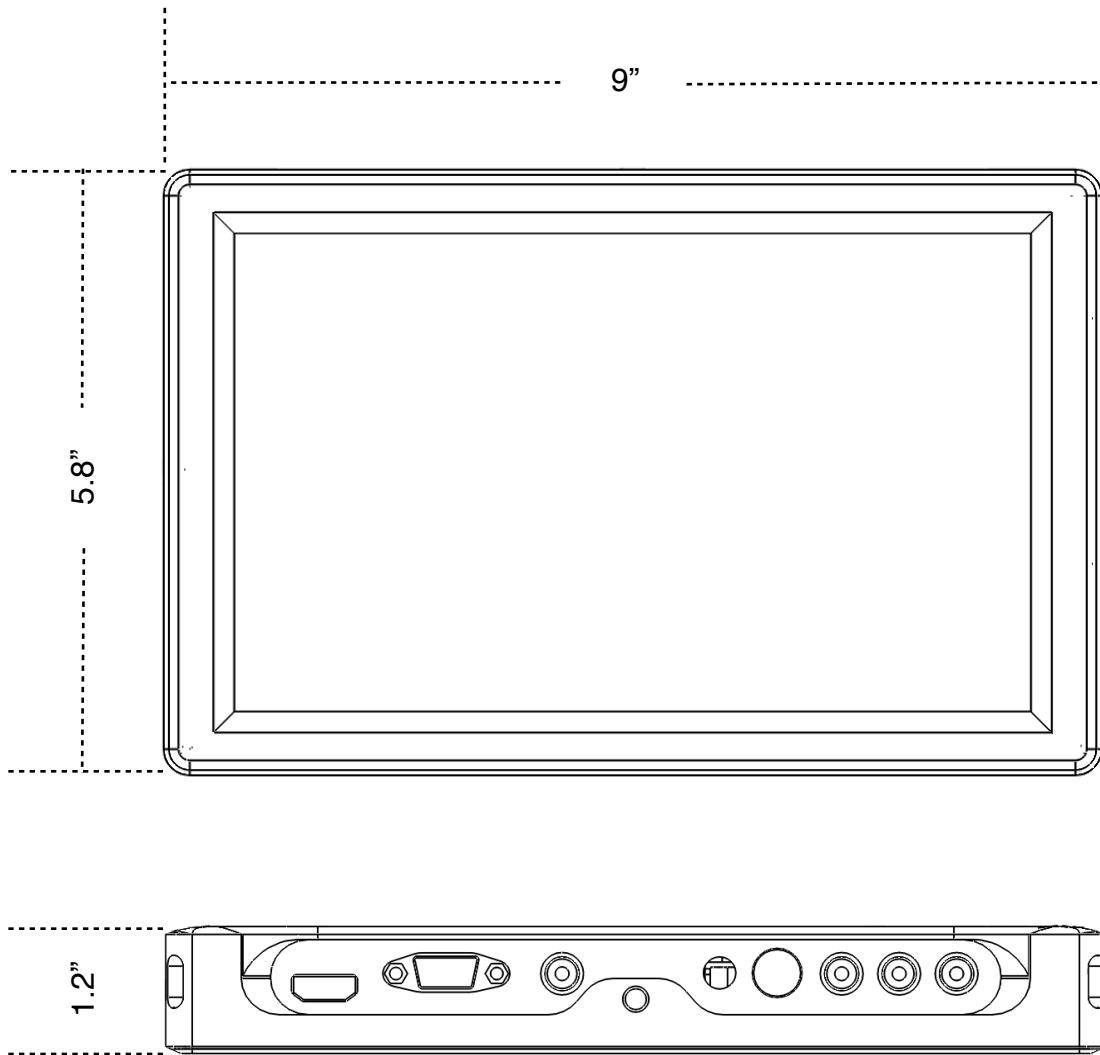
## Back



*For a full guide on button usage, refer to the "Menu and Button Basics" chapter.*

# Monitor Diagram

## Dimensions





# Getting Started

## Powering the DP1

### AC Power

- The DP1 comes packaged with an AC wall plug capable of converting 100-240v AC to the regulated 12v DC required by the DP1. Currently the DP1 is only shipped with the US-style wall plug. An adapter may be needed for this power supply to work in your country.
- To use the AC power adapter, plug the adapter into a standard wall plug. Plug the opposite end (the barrel plug) into the DP1.
- The DP1 will automatically power on, no need to press the power button. This happens by default, but can be changed in the advanced settings menu if you so desire.
- The LED in the center of the power button is the indicator of the DP1's power status. *Refer to page 6 for details.*

### Battery Specifics (v1.0)

- The SmallHD battery is a custom battery built specifically for the DP1, designed to be a lightweight, slim-profile, mobile powering solution. The DP1 can be powered with any 12v DC regulated power source, but the SmallHD battery is an excellent compact option.

#### What's in the Box?

- The battery is supplied with two (2) power cables that connect the battery to the DP1, and one AC wall charger.
  - The short cable is for use with the battery bracket.
  - The longer cable is for mounting the battery without the battery bracket – basically for whatever we haven't thought of.

#### What's on the Battery?

- The SmallHD battery only has 2 ports and 1 status LED.
  - (1) Mini-USB charge port (requires 17.5vDC in for charging)
  - (1) Small barrel plug for regulated 12vDC out.
  - The LED has three states: **GREEN**, **RED** and **ORANGE**.
    - GREEN has two contextual meanings:
      - When charging, green means the battery is fully charged.
      - When powering, green mean the battery has between 100% and 10% battery life left.
    - RED has two contextual meanings as well:

- When charging, red means the battery is in the process of charging, and is not yet fully charged. (**NOTE:** If red LED flashes during charge, this may indicate a charge failure or battery failure. In this event, please contact SmallHD Customer Service.)
- When powering, red means the battery has less than 10% battery life left.
- ORANGE indicates a circuitry failure within the battery. In this event, please contact SmallHD Customer Service.
- **NOTE: Mini-USB is just the plug style of the battery – it will NOT charge via USB from your computer. Attempting to charge the battery via standard USB connection will damage the battery and VOID the Warranty. Always use the supplied charger to charge the SmallHD battery.**
- NOTE: Unplug the battery from the DP1 (and interconnect cable) when not in use to avoid unwanted battery drain.



1	Status LED Indicator
2	Regulated 12vDC OUTPUT
3	Mini-USB 17.5vDC charge INPUT

## Menu/Button Interface Basics

Though it is admittedly unconventional, the interface buttons have been deliberately placed on the back of the unit for a couple of reasons:

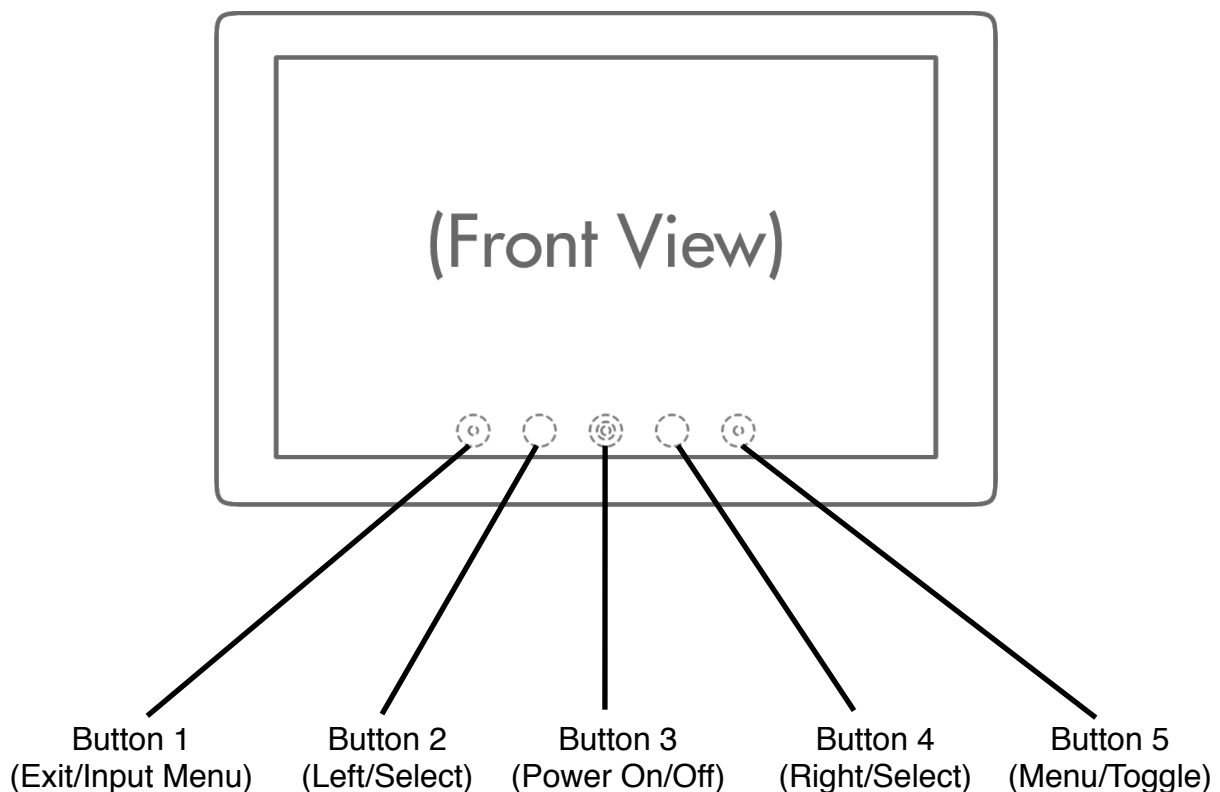
- To minimize the size and weight of the DP1
- To maximize the effect of the sunhood (4-sided instead of 3-sided) while maintaining easy access to the buttons.

This interface may seem odd at first, but a little guidance and 15 minutes of working with the device will be all that's needed to navigate the menu system with ease.

## Button Contexts

All of the buttons on the DP1 are context-sensitive, which means each button (with the exception of the power button), perform different functions based on where you are in the menu system.

In order for this user guide to communicate effectively, the buttons will be numbered and referred to from left to right, given a front-on view of the DP1. The “x-ray” diagram below reveals the location, function and reference number of each button on the back of the DP1 when viewing it from the front.



NOTE: The outside buttons both have raised nubs on them, and the center power button has a raised circular nub. These raised nubs enable you to find your starting place on the buttons without looking, making “blind operation” easily attainable with a little practice.

**Button 1**

This is the button to the far left (from the front), that does two things:

- On a blank screen, it opens up the input menu
- In any of the menus, pressing this button will deselect and eventually exit whatever menu you’re in. Think of it as a “go back” button.

**Button 2 / Button 4**

These are the two buttons to the left and right of the power button. These perform several functions:

- In the Main Menu at the top level, they switch between sub-menus.
- When a menu option is selected and highlighted in yellow (by the “Main Menu” button), it will adjust the corresponding value.
- They will select the highlighted input in the Input Menu.

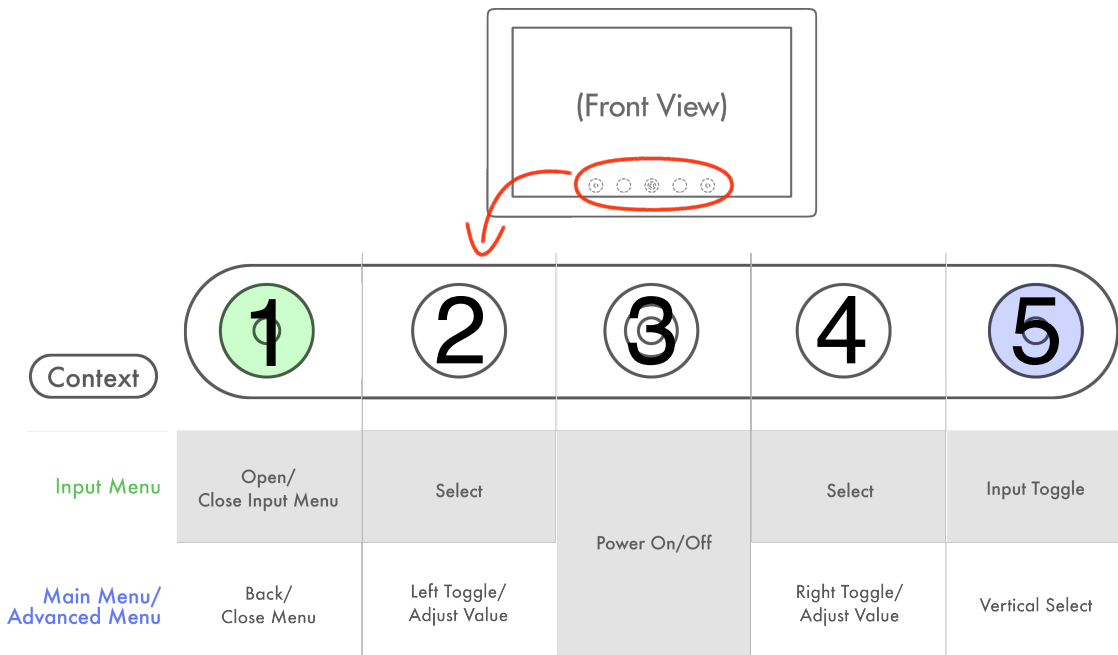
**Button 3 (Power On/Off)**

This button powers the DP1 on and off. The DP1’s power status is indicated in the center of this button (see the bottom of page 7 for more details).

**Button 5**

This is the button to the far right (from the front), that does three things based on context:

- On a blank screen, pressing it once will bring up the main menu
- In the main menu, it will toggle (or “cycle”) between the listed menu items
- In the INPUT menu, it toggles (or “cycles”) between the inputs in the input list

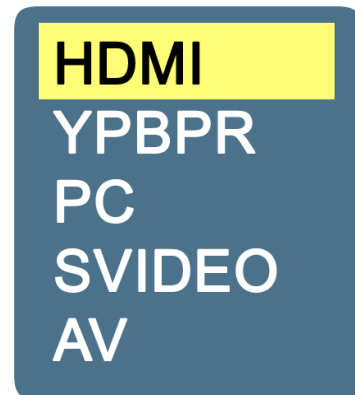


## The Input Menu

The input menu is accessed by pressing the far left button (from the front). This is how to select the appropriate input to display your device's signal.

- Press the Input Menu/Exit button (button 1) once to bring up the input select dialog.
- Toggle through the inputs using the Menu/Toggle button (button 5) until you highlight the desired input.
- Now press either the Right or Left Select buttons to select the input.

Example:



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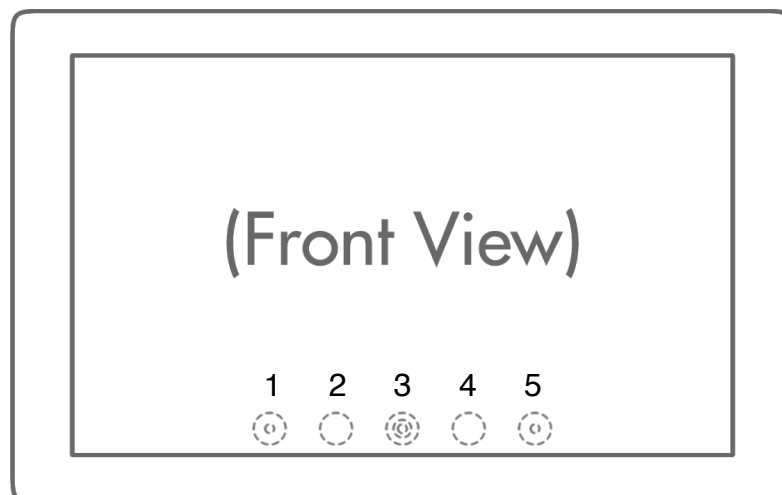
If you were **on the HDMI input**, and you wanted to select the **SVIDEO input**. Considering the buttons were **labeled 1-5** as pictured below, your button sequence would be: **1-5-5-5-4** or **1-5<sup>3</sup>-4**

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If you were at a blank screen, and wanted to just check which input you were on, the button sequence would be: **1-1**. The first press of button 1 (the Input/Exit button) opens the INPUT select menu. Once within a menu context, the same button (button 1) becomes the EXIT button, so another press exits the menu.

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## Introduction to the Main Menu

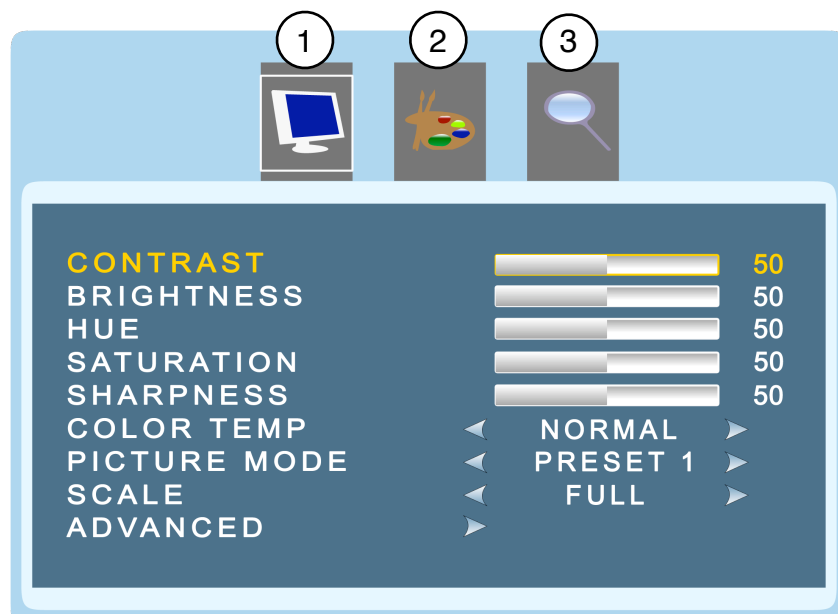
The Main Menu is where all the image and menu controls reside. This is where you will come to change aspect ratios, calibrate colors, adjust image controls like sharpness, saturation, scale and more. To start off, here is just a basic introduction of the main menu, and how to manipulate it.

### Accessing the Menu

The menu is accessed by pressing Button 5 (the far right button when viewing the LCD screen). Pressing this button brings up the dialog below:

The Main Menu is divided into three sub-sections:

1. The Image Control Menu (selected and displayed below)
2. The OSD (On-Screen-Display) Menu
3. The PIP (Picture-in-Picture) Control Menu



Once in the Main Menu, the same button you used to access the menu now becomes the button that toggles through this different menu options. For instance, from a blank screen, pressing this button 5 times would land you on the “SATURATION” option.

The first button press puts you on the icon with the monitor. This is where you would use the left and right buttons to toggle between sub-menus (labeled “1”, “2”, and “3” above). Pressing the button a second time brings you to “CONTRAST” (seen above). Each subsequent press brings you further down the list. Pressing the Button 1 would back out to the top level (back to the icon with the monitor on it), and then one more time exits out of the menu completely.

## Example:

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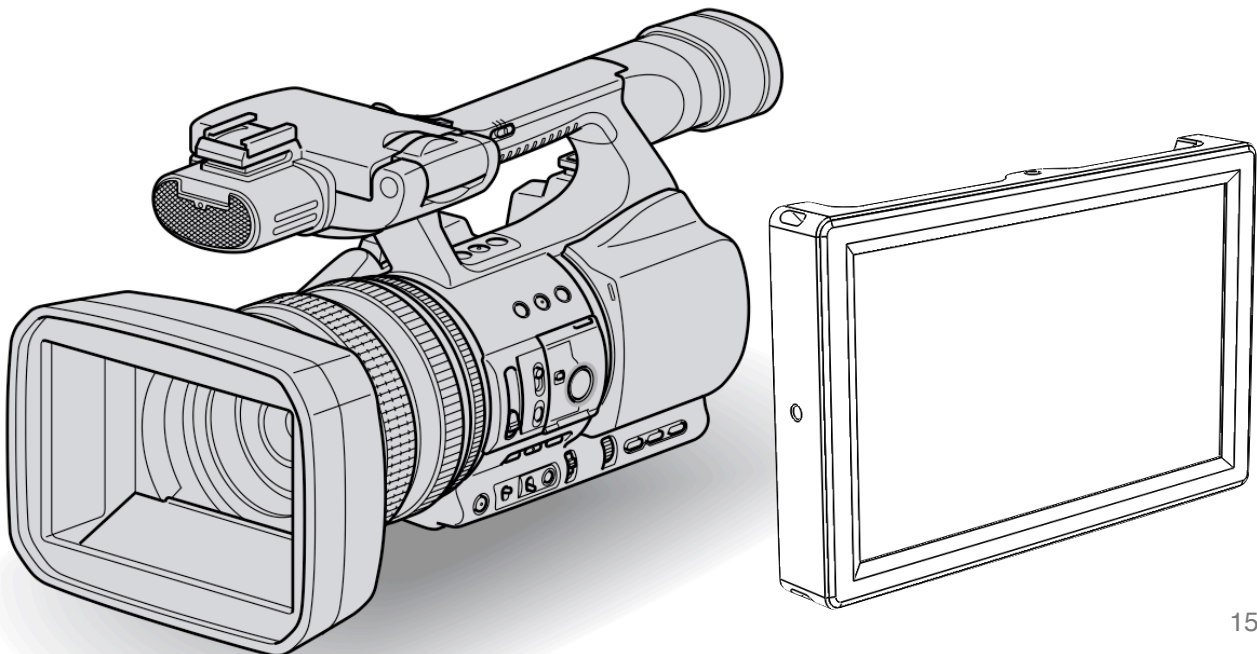
By default, the Scale option is set to FULL. We're going to set it to 16:9. From a blank screen, press the Menu/Toggle button (button 5) to bring up the main menu. Pressing the menu button 8 additional times selects "SCALE". Now pressing the Right/Select button (button 4) changes "FULL" to "16:9". Now press the Input/Exit button (button 1) 2 times to exit the menu. The button sequence would be:

**5<sup>9</sup> - 4 - 1<sup>2</sup>** (superscripts indicate number of multiple button presses)

If this seems complicated, spend a little time playing with the buttons. It won't be long before you will be able to navigate the menu system fluently.

## Connecting a Source

1. Connect your video camera or other device to the appropriate input on the DP1 using the proper cable.
2. Power on your device.
3. Power on the DP1.
4. If you see a blue or black screen, then either your camera is not connected properly, your camera is not powered on, or the DP1 is set to the wrong input.
5. To change to the proper input:
  - a. Press the Input/Exit button (button 1)
  - b. Press the Menu/Toggle button (button 5) until the correct input is highlighted.
  - c. Press the Left or Right Select buttons to select the highlighted input.
  - d. The screen will flash and sync up with the signal.



## The Menu

### Picture Control Menu

Access the Picture Control Menu by pressing Button 5 one time. This is where you will change and adjust basic picture/color settings and access saved color and picture presets. This is also how you access the Advanced Menu, which is where you setup color and picture presets, as well as control the custom overscan presets.



#### Contrast

Contrast is the difference between the darkest value and the lightest value. Setting a high contrast value creates a very harsh looking image by reducing the steps you see between black and white. When contrast is set too low, the image will appear washed out and gray. The point of this setting is to try to match as closely as possible what your camera sees so you have an accurate point of reference. We have found that 50 is very close in most cases.

#### Brightness

Adjusting brightness essentially adjusts the “black point” of the display. The further this value is increased, the lighter the darkest black of the LCD becomes, eventually creating an inaccurate representation of the blacks your camera is recording. This



value can also be set too low, creating areas on the monitor far darker than the camera is capable of producing.

## **Hue**

There are a lot of scientific explanations for Hue, but to be brief, Hue shifts the entire spectrum of color one way or another. When displaying color bars from your camera, adjust Hue while in the DP1's "Blue Only" mode for accurate calibration.

## **Saturation**

Saturation either "saturates" or "desaturates" the color in the displayed image depending on which way you slide the value. Setting Saturation to 0 will give you a monochrome (black and white) images. Sliding it to 100 will give you a dreadful looking "over-saturated" image. Setting proper saturation is essential for calibration. Additionally, it can be useful to save a monochrome setting as a picture mode preset for a quick B&W reference. (See page 22 for setting up picture mode presets).

## **Sharpness**

The sharpness setting controls the edge sharpening algorithms of the DP1s processor. The lower this number the "softer" the image appears, the higher the number the "sharper" it appears. Changing this number to 100 isn't going to give you the most accurate representation of what your camera is seeing but it will act as a further focusing aid. We have found that a setting of 25 is very accurate. You can also set up a picture mode preset for sharpness at a value of 100 for a quick focus assist toggle (see instructions on page 22).

## **Color Temp**

Toggling between the color temp options cycles between the color presets of the DP1. Each of the presets are user-configurable, and will be covered in in the "advanced" section beginning on page 21.

## **Picture Mode**

Similar to the Color Temp presets, these are stored presets for the basic image control options listed above (Contrast, Brightness, Saturation and Sharpness) that can also be configured. This option cycles through each customized preset. See page 23 for details.

## **Scale**

This toggles between the different scale options available. The scale options are:

- Full (tries to fill the entire screen of the DP1 no matter what signal)
- 16x9
- 4x3
- 2.35:1
- 1.85:1

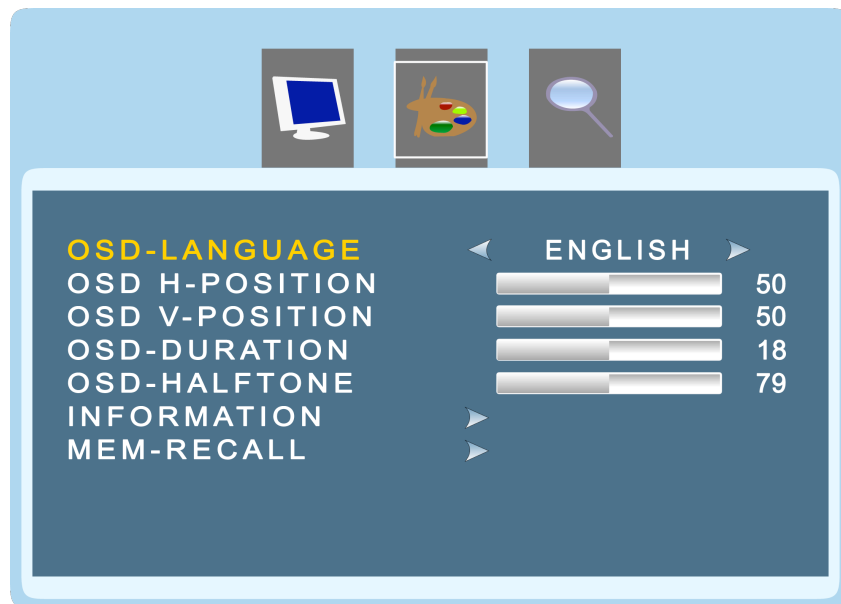
- RED (specifically for RED camera users, used on conjunction with the RED overscan preset)

### Advanced

Opens the advanced menu. (Details begin on page 21).

## OSD Menu

The OSD Menu is a simple menu that controls the functionality of the menu itself. It also contains the **factory reset** option.



### OSD Language

Sets the language of the OSD Menu.

### OSD H-Position

Moves the Menu left and right.

### OSD V-Position

Moves the Menu up and down.

### OSD Duration

Adjusts the amount of time the Menu will remain visible while no buttons are being pressed (before it disappears automatically).

### OSD Halftone

Sets the transparency of the Menu.

### Information

Gives general information about the PIP settings.

## MEM-Recall

This is the FACTORY DEFAULT setting for the DP1. This will reset the DP1 to the state it was in when you first received it.

## PIP Menu

The DP1 is PIP capable. Which means it can display any 1 HD signal and 1 SD signal simultaneously. The menu below is how the PIP function is configured.



### Multi Window

Turns PIP on or off.

### Sub Source

Selects which source besides the main source you want to display.

### Size

Changes the size of the sub-source window

### Border Color

Changes the color of the border of the sub-source window

### Swap

Makes the sub-source the main image and puts the main image in the sub-source window.

### PIP Position

Moves the sub-source window into different corners of the display.

## Setting Color Temp Presets

The Color Temp preset menu is accessed by going to the advanced menu through the main menu. (Button Sequence: 5<sup>10</sup> - 4 - 5<sup>2</sup> - 4)

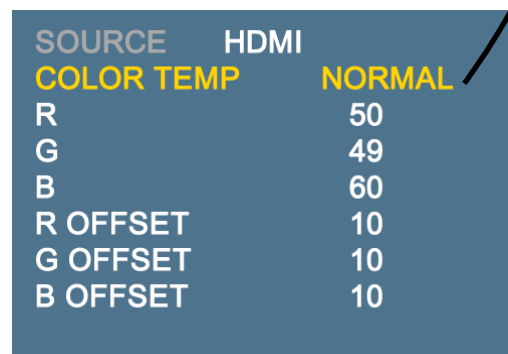
**1** Open the main menu and select the **ADVANCED** menu.



**2** Click down to the **COLOR TEMP** option and select it.



**3** This is the interface where you will cycle through the different color temp presets and save your desired values to the chosen preset.



SOURCE	HDMI
<b>COLOR TEMP</b>	<b>NORMAL</b>
R	50
G	49
B	60
R OFFSET	10
G OFFSET	10
B OFFSET	10

In this menu, you will see individual settings for Red, Green and Blue and their offsets. The RGB values range from 0-100, and the Offset values range from 1-20.

### RGB Values

All colors can be derived from a combination of Red Green and Blue (light). By adjusting these values, you effectively add and subtract the corresponding color from the mix. This allows for extremely accurate color correction, and for specific presets used to perform color calibration.

### RGB Offset

RGB offset is used “offset” a specific color channel in a direction. It is recommended to leave these settings where they are unless you really know what you’re doing.

The Color Temp dialogue has the following presets:

**Normal**  
**Red**  
**Green**  
**Blue**  
**Warm**  
**Cool**

Specifically, if you wanted to have a preset for “Blue Gun” (or “blue only”), you would open up this menu, press the “right” button until the “BLUE” preset is highlighted, (you can use any preset name you want, but obviously blue makes the most sense here) and then drop the R and G values to zero. Exit out of the menu, and now anytime you select BLUE in the “Color Temp” setting of the **Main Menu**, it will recall these settings.

Repeat for any other presets you desire.

## Setting Picture Mode Presets

The “Picture Mode” differs from Color Temp because Picture Modes are presets for only the basic image control values. The button sequence that navigates to the Picture Mode settings sub-menu is 5<sup>10</sup> - 4 - 5 - 4. The values that can be set to a Picture Mode Preset are:

- Brightness**
- Contrast**
- Saturation**
- Sharpness**

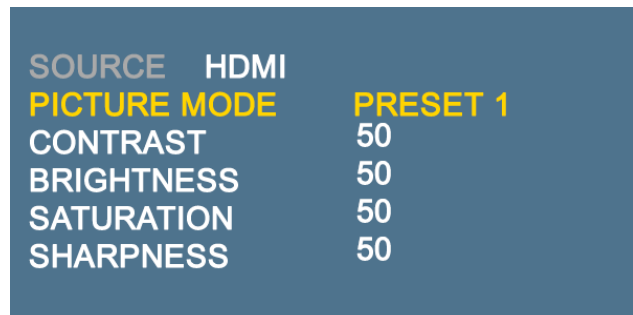
**1** Open the main menu and select the **ADVANCED** menu.



**2** Click down to the **PIC MODE** option and select it.



**3** This is the interface where you will cycle through the different Picture Mode presets (Preset 1 – 4) and save your desired values to the chosen preset.



SOURCE	HDMI
PICTURE MODE	PRESET 1
CONTRAST	50
BRIGHTNESS	50
SATURATION	50
SHARPNESS	50

This works the same way as setting a Color Temp preset. You select the preset you wish to manipulate, adjust the settings accordingly, and then recall that preset from the Main Menu when you wish to initiate those settings.

The most useful application for this is for setting a “focus assist” preset, or a “monochrome” preset. Example below:

### Setting a “Focus Assist” preset

If the SHARPNESS value is raised to 100, the DP1 gives the image an effect identical to the “sharpen” filter in Photoshop. It attempts to “sharpen” the edges of objects on-screen by enhancing the contrast around those edges.

NOTE: This effect clearly defines the difference between subjects that are IN focus and OUT of focus, but removes much of the subtleties within the depth-of-field (i.e. focal plane). This effect is recommended for shooting on-the-fly, rather than in a controlled environment because EXACT focus can be achieved more easily without this effect.

If we wanted a quick way to enable this function without having to manually dial it in every time, a preset could be made for it.

We will assign this function to “Preset 2”:

1. In the PIC MODE menu, Click once to the right to select “Preset 2”
2. Click the down to the Sharpness setting.
3. Click and hold the right button until the Sharpness value reaches 100.
4. Press the “exit” button twice.

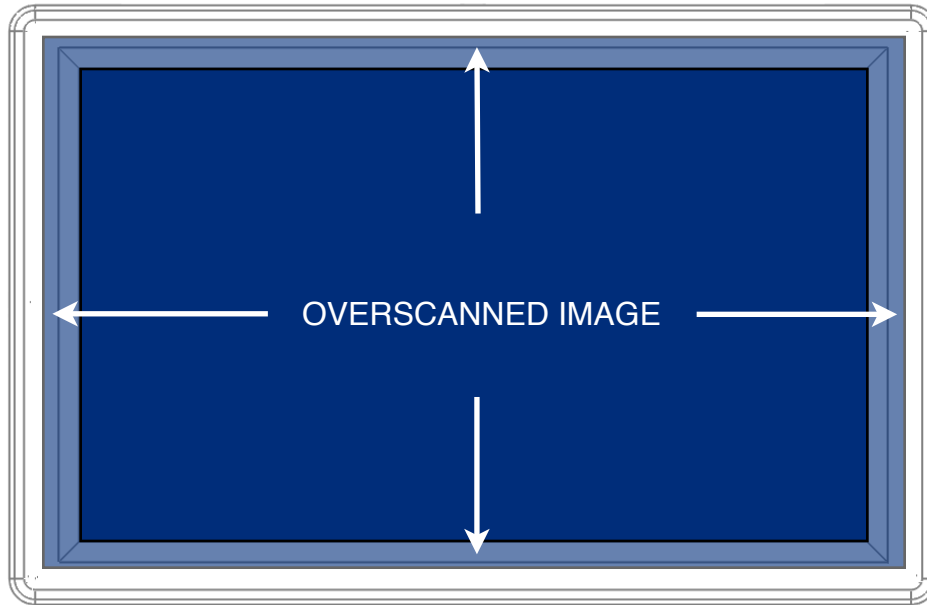
Now the setting of Sharpness=100 is saved into Preset 2.

To recall this setting, open up the Main Menu, click down to PIC MODE and click the right button until Preset 2 is selected.

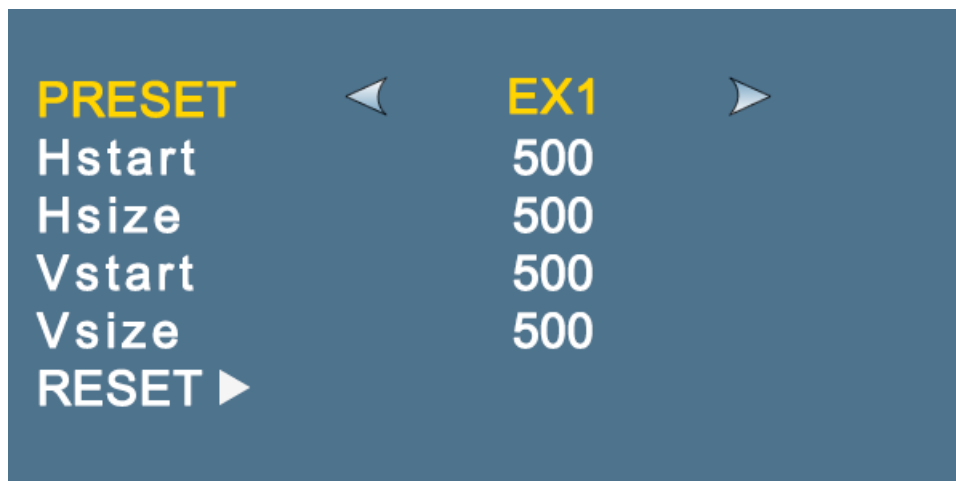
*Assigning any other value to any other preset works the exact same way. If you wanted Preset 2 to be your Monochrome setting (black and white), just return the SHARPNESS value to normal (~25) and set the SATURATION value to 0.*

## Using Overscan and Setting Presets

The Overscan function of the DP1 is one of the most important features of the DP1. This allows the DP1 to provide maximum versatility by allowing **custom** image scaling of any input. Many cameras actually don't show you the entire image that the sensor is capturing. In other words, the image being sent to the DP1 is actually "overshooting" the screen itself and is being lost to the person operating the camera or viewing the monitor.



Not only does the DP1 allow custom scaling of any image, but it allows you to set multiple presets for this image scaling. Because different cameras behave differently in terms of how they output their images, it may be convenient to have multiple presets if you often work with more than one type of camera.





The overscan menu shown above is accessed by selecting OVERSCAN within the advanced menu. This is the interface by which you will set and select your overscan presets. (Refer to the Color Temp or Picture Mode preset chapters if you are unable to comfortably navigate to this menu).

Feel free to adjust these settings however you wish. We suggest playing around with them to get a feel for what they do and how it affects the image. It will only work if an image is being supplied to the DP1. *It will not affect a blank screen with no signal.*

There are 3 customizable presets for the DP1. They are:

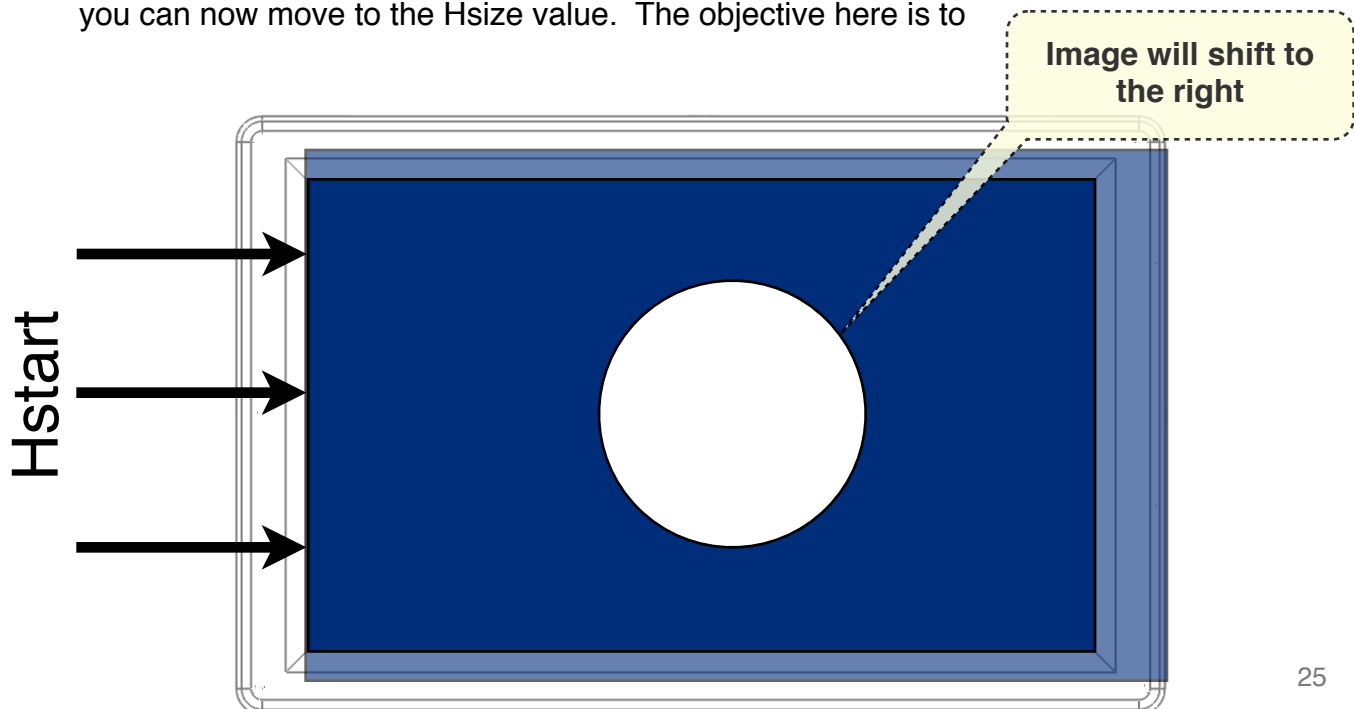
**Custom**  
**RED**  
**EX1**

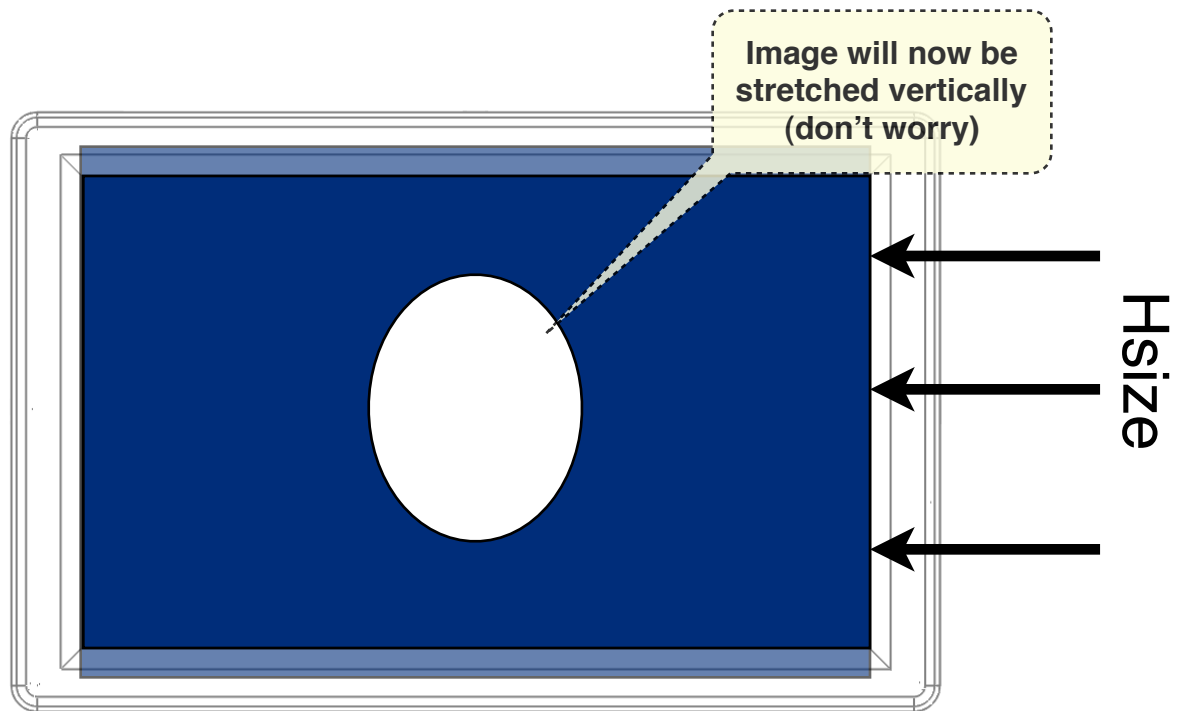
The titles are nothing more than a reference, and can be set to any value for any camera you desire. “EX1” and “RED” were selected solely because these cameras have special needs in regard to overscan settings (to properly display menu data), and because they are popular cameras. We will go into specifics, primarily for RED (because its a little different than the other ones) later. But pretty much all cameras can be adjusted here using one technique.

### Setting the DP1 to display the entire source image

The best technique is to start with “Hstart” and “Vstart” values. To begin, select “Hstart”, then click and hold the left button (button 2). This will move the entire image to the right, decreasing the “Hstart” value. The key is to just keep clicking until the image starts pulling away from the edge of the screen. In some cases you will start to see a green background color, indicating the end of the image. In other cases it will just be black so you’ll have to pay a little more attention.

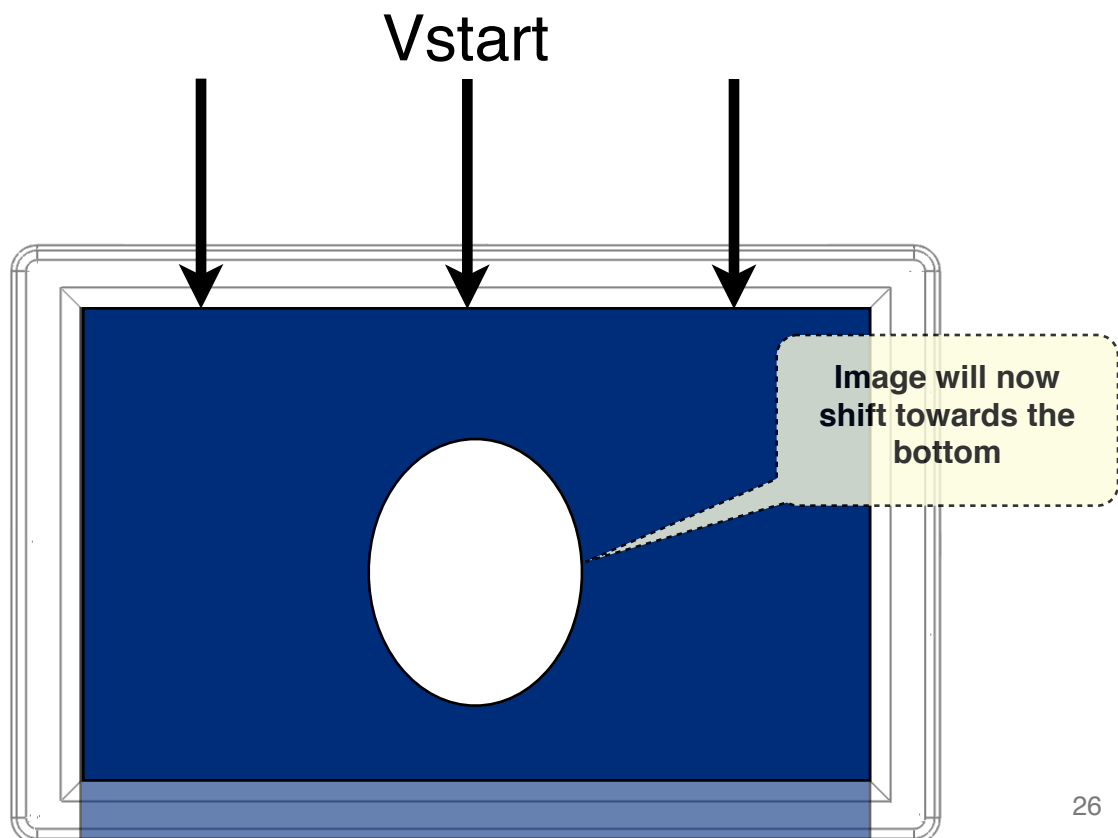
Once the image is lined up with the left side of the screen, you can now move to the Hsize value. The objective here is to

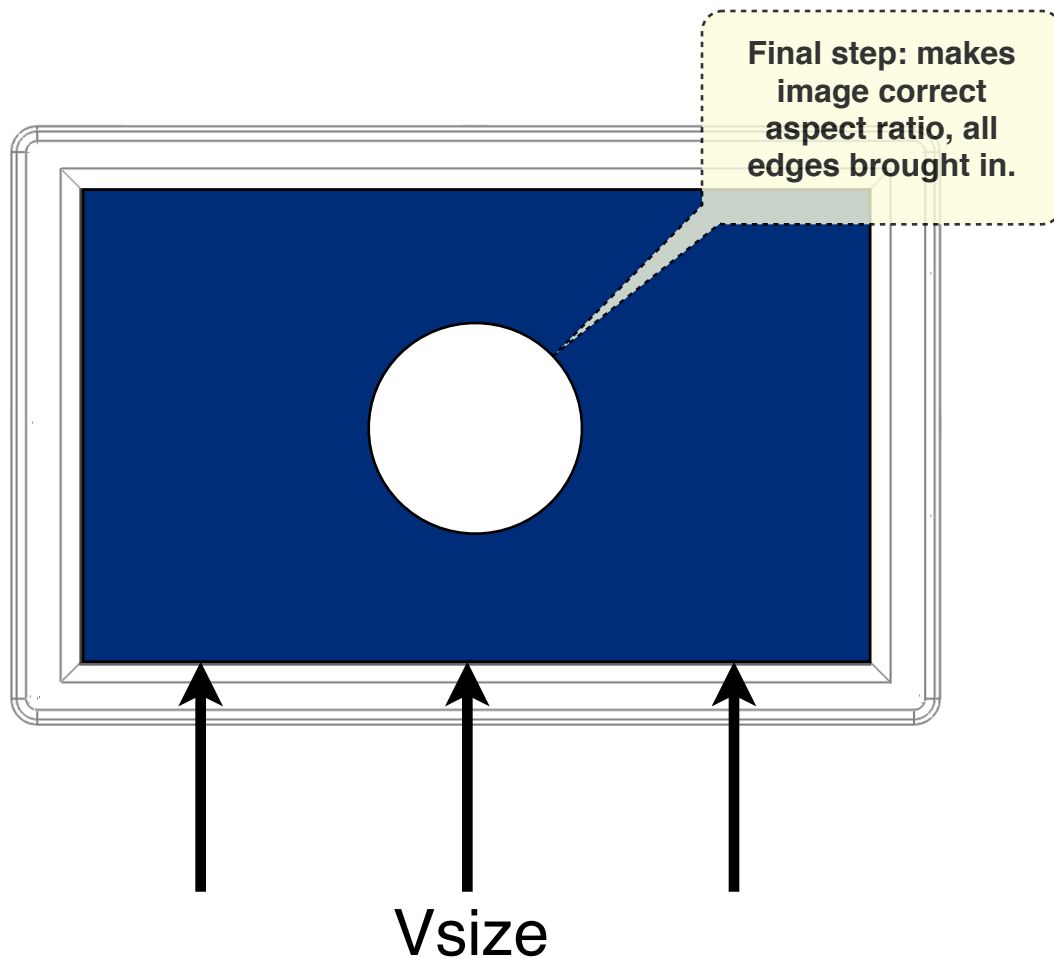




scale the image back in to the left and get the right side of the image to match up to the right side of the DP1.

The exact same process is used for Vstart and Vsize.





NOTE: Make sure the appropriate aspect ratio for your camera is selected from the SCALE option within the Main Menu when performing the above operation (16:9 for most HD cameras). This will insure that the final image will not be stretched or distorted when the overscan setup is complete.

Now that the image is matched up properly (as pictured above), you can exit this menu and it will be saved into the preset that was selected during the calibration process.

NOTE: The overscan function operates completely independently of the SCALE function located in the Main Menu. Overscan works within the bounds of whatever scale setting you are using. For an example, refer to the “Crop” chapter of this manual.

***If anything ever goes wrong, just click the “Reset” button at the bottom. If problems persist, click the “MEM-RECALL” button in the Main Menu to reset the DP1 to it’s factory default. (Page 18)***

## Additional Advanced Menu Options

### Power Modes

This is a basic setting that controls how the DP1 behaves when power is plugged in.

**Note:** The DP1's "Standby" Mode still consumes small amounts of power. Standby mode is designated by the RED LED light on the back of the DP1.

The DP1 has three power modes:

#### ON

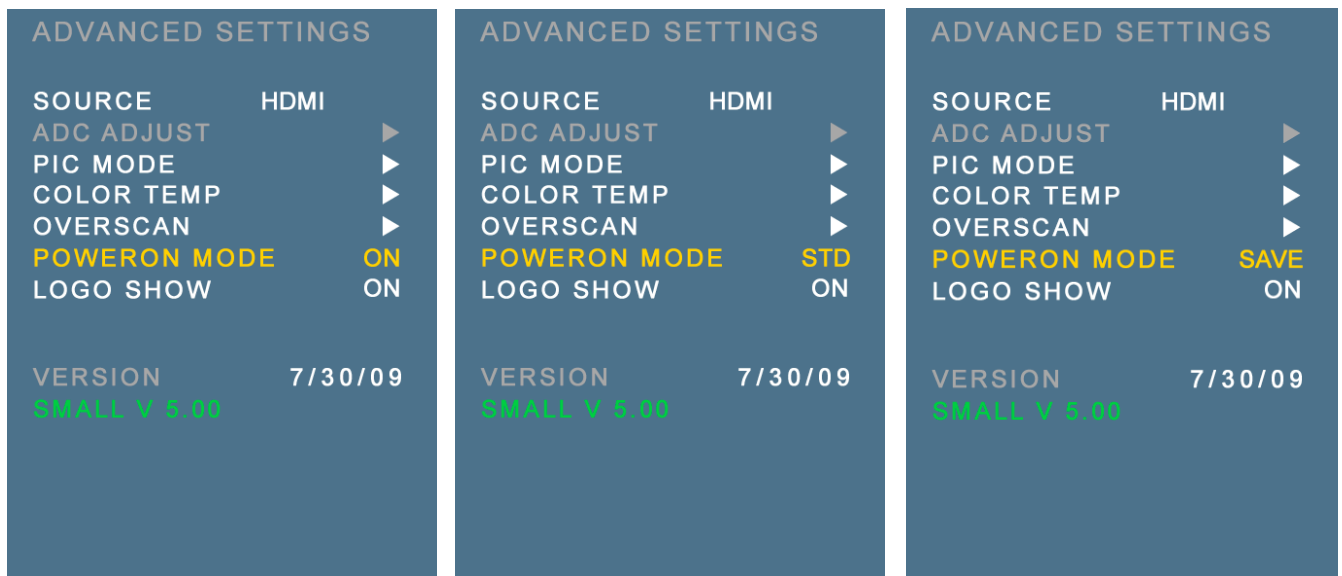
This means the DP1 will automatically power on when a power source is plugged in.

#### STD

This means that when power is first plugged in, the DP1 will require the user to press the power button to boot up.

#### SAVE

This is a power save mode. When no signal is present and no menu buttons are being pressed, the DP1 will eventually shut itself down.



### Logo Show

This is a simple setting in the Advanced Menu that determines whether or not the SmallHD logo displays on boot up. Disable this for a faster boot time.

## ADC Adjust

ADC Adjust is a function that only applies to the YPbPr (component) input. It will attempt to automatically color calibrate the incoming signal for you. You can always readjust the resulting RGB values at your discretion.

## Various Calibration / Setups

### Configuration Settings for RED

Because of the DP1's unique ability to incrementally scale any image, as well as its ability to accept a very large array of signals, it makes a very good companion to the RED One Cinema Camera. In addition to its superior resolution, the DP1 is one of the few aftermarket field monitors that can display the RED camera data.

The RED sends a very awkward 1280x848 pixel signal via HDMI, which is approximately a 1.509 aspect ratio. To take some of the guess work out of configuring the DP1 for the RED, a custom scale option for RED has been added.

This option automatically scales the image's bounding box (the area in which image is only allowed to display) to this exact aspect ratio. This essentially changes the aspect ratio of the DP1 to exactly match that of RED.

However, for the RED signal to display properly, an adjustment within the overscan menu must be made. Here are the steps:

1. Set the SCALE option to "RED" in the Main Menu
2. Go into the Overscan dialogue (in the advanced menu)
3. Toggle over to the "RED" preset
4. Follow the overscan setup procedure outlined starting on page 25

Once these steps are followed, (the SCALE option is set to RED and the Overscan is set up so the all the image edges have been properly aligned) the Menu data will be entirely within view, and DP1 will be displaying the correct aspect ratio.

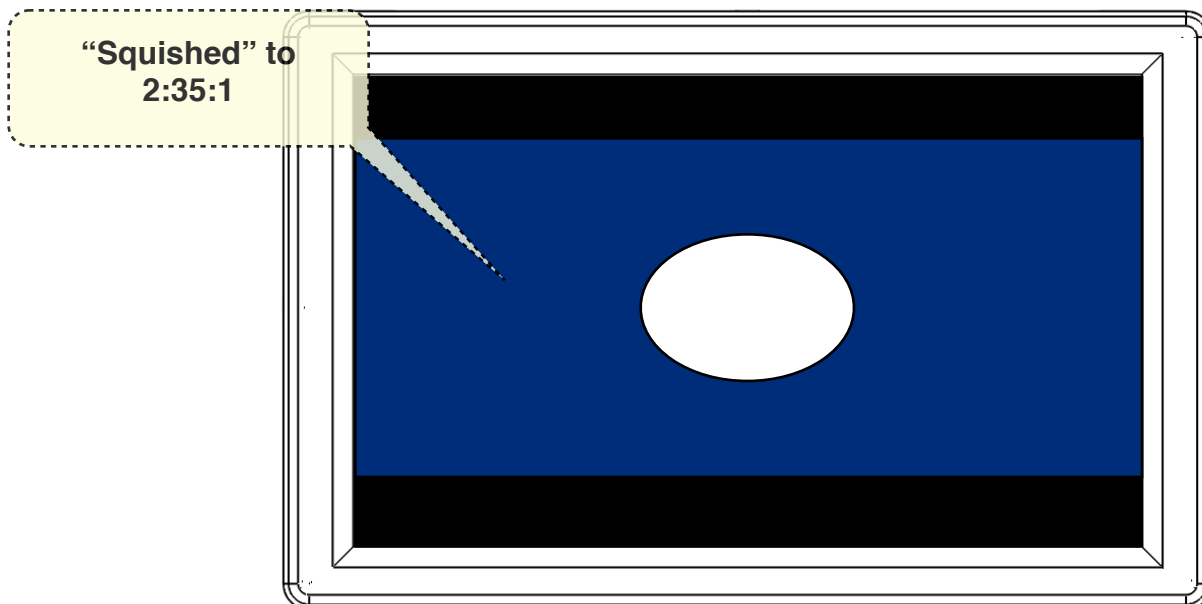
**\*Note:** In order for the RED to display menu data out the HDMI port, The "Menus (DVI) setting must be enabled in the Monitor sub-menu of the RED. Also, the RED can only output menu data to two devices at once, and the HDMI port takes bottom priority. So if you have a RED EVF, a RED LCD and a DP1 all plugged in simultaneously, the RED menu data will not display on the DP1.

## Crop

The DP1 does not have on-screen markers at the time of this writing. Some people however wish to shoot in 16x9 or 4x3 intending to eventually crop to a cinema aspect ratio (2.35:1 or 1.85:1) in post. Using a combination of the overscan function and the scale function, you can essentially “crop” the viewable image realtime (for framing purposes). Use the following steps:

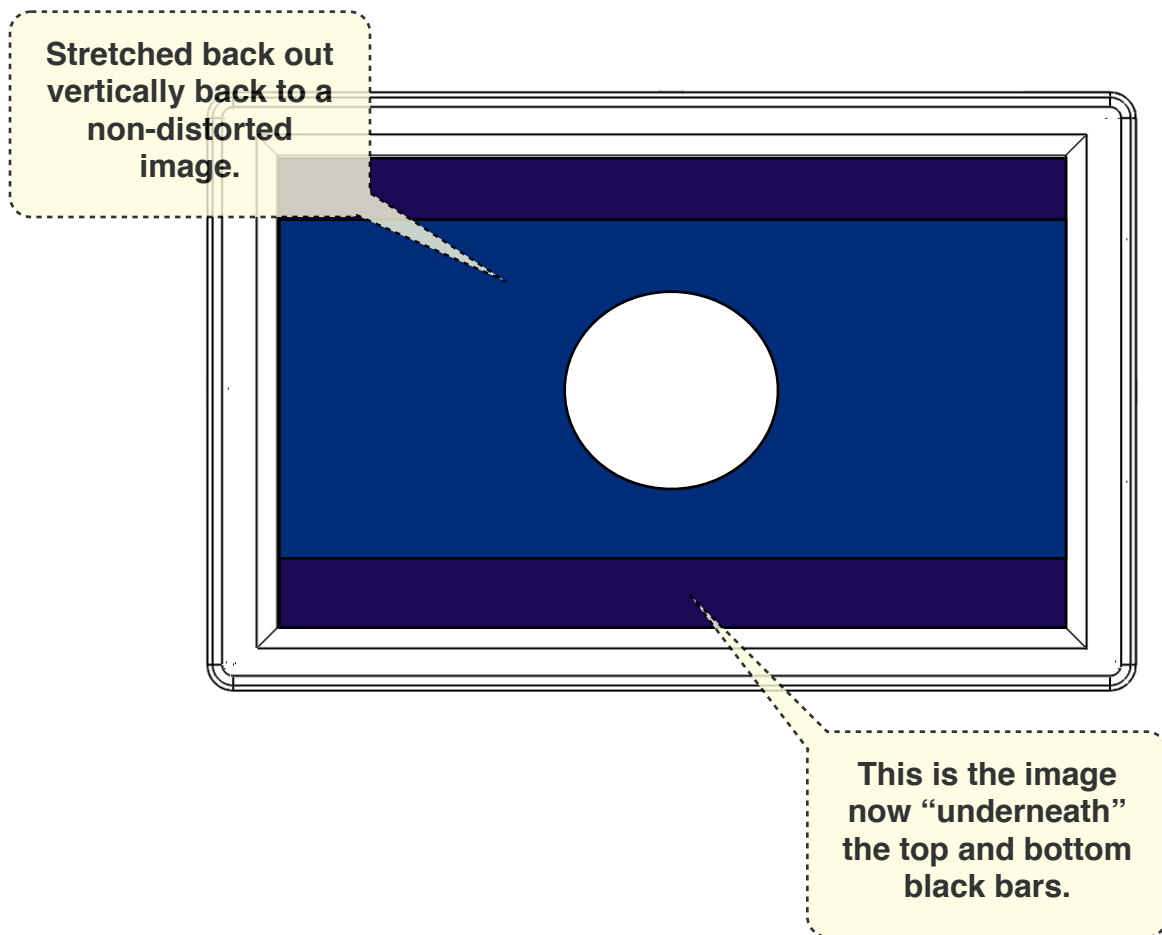


1. Connect perfectly  
circular object in the center of the screen.
2. Set the SCALE option in the Main Menu to 2.35:1 (or 1.85:1). This will squish the circular object into an oval.
3. Adjust “Vsize” in the OVERSCAN settings to stretch the image back to its original shape. The “oval” will eventually return to its proper “circular” state (but the circle will no longer be centered within the frame at this point).
4. Adjust “Vstart” to re-center the circle within the frame (see image below).



The image on the DP1 should now be a “cropped” version of the original (i.e. a “cropped” version of what you’ll see in the viewfinder of the camera).

NOTE: The DP1 is now “hiding” part of the image behind the black bars on the top and bottom of the screen. **This has no effect on what the camera will actually record.** This “crop” effect should only be used as a reference/simulation for what will be achieved in post production.





## Specifications

### General

Operating Voltage	12v (regulated)
Power Consumption	<12W
Operating Temperature	0° – 60° C / 32° – 160° F

### Display

Display Type	TFT-LCD
Size (Diagonal)	8.9 in. / 226mm
Resolution	1280 x 768 pixels (WXGA) (1 pixel = R + G + B dots)
Contrast Ratio	500:1
Native Aspect Ratio	15:9 (when Aspect is set to “Full” in main menu)
Brightness	300 nits / 300 cd/m <sup>2</sup>
Viewing Angle	178° Horizontal / 178° Vertical
Color Reproduction	18 Bit RGB / 262,144 colors
LCD Finish	Glare and Polariation Filters (Low Gloss)
Active Viewing Area	7.635 in. x 4.581 in. 193.92 mm x 116.35 mm
Pixel Pitch (pixel size)	0.005965 in. x 0.005965 in. 0.1515 mm x 0.1515 mm
Pixels Per Inch (ppi)	168
Backlight	LED
Response Time	28 ms

## Connectivity

Connection Types	1 x HDMI (Type A) Female 1 x Component (3 x RCA Female) 1 x VGA 15-pin D-Sub Female 1 x S-Video 4-pin mini-DIN Female 1 x Composite/CVBS (1 x RCA Female) 1 x Power (Barrel: 5.5mm OD / 2.1mm ID)
HDMI 1.3	1080p, 1080i, 720p, 576p, 480p
Component (YPbPr)	480i, 480p, 576i, 576p, 720p, 1080i, 1080p
VGA (max resolution)	1920 x 1080 / 60Hz
S-Video	NTSC, PAL, SECAM
Composite (CVBS)	NTSC, PAL, SECAM
Supported SD Formats	NTSC — M, J, 4.43 PAL — B, D, G, H, M, N, Nc, I SECAM

## Physical

Dimensions	8.99 in. x 5.80 in. x 1.22 in.
Weight	1.66 lbs.
Construction	Single-Piece CNC Milled Aluminum Chassis
Mounting Thread Type	1/4-20
Mounting Points	6 total (1 on each metal face + 2 on back)

### SmallHD Battery Specifications

Dimensions	5.0 in. x 3.0 in. x 0.5 in.
Weight	0.5 lbs.
Capacity	26 Wh
Charge Voltage	17.5 v *
Charge Current	800 mA
Charge Plug Style	Mini-A USB *
Output Voltage	9 v – 12 v
Output Current	1.8 A **
Output Plug Style	Barrel Connector 3.5 mm OD / 1.35 mm ID
Charge Time	< 2 hours
Drain Time with DP1	2 – 2.5 hours ***
Each Battery Ships With...	110v – 240v AC Charger (U.S. style) 5 in. DP1/Battery Power Cable 24 in. DP1/Battery Power Cable

\*Mini-A USB is the **PLUG STYLE ONLY**. Do not attempt to charge using a standard USB Power source of only 5 volts. This will damage the battery and VOID the warranty.

\*\*Max 2 Amps.

\*\*\*Battery Drain Time varies slightly depending on use with the DP1 and is typically on the lower end of the spectrum when using HD sources due to an increase in processing.

# Warranty

## 2-Year Manufacturer Guarantee

SmallHD electronic devices come with a limited hardware warranty. The limited hardware warranty covers defects in materials and workmanship of our products.

- DP1 Warranty – 2 Years
- SmallHD Battery – 6 Months

### Warranty specifics:

- Warranty period begins on date of shipment
- Warranty is non-transferable; products not purchased directly from SmallHD or SmallHD approved affiliates and distributors do not qualify for warranty coverage.
- The customer shall be responsible for paying shipping charges required to return products to SmallHD for warranty repair. SmallHD shall pay for shipping of repaired products to the customer.

### What is NOT covered by our warranty:

- Problems resulting from accidents, abuse, or misuse
- Problems resulting from electrical power source issues
- 3rd-party servicing not authorized by SmallHD
- Failure to follow product instructions
- Water damage
- Scratches to the body or panel that occur as part of normal use

## Customer Service

### Contact info

Phone: 919-502-7125  
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[service@smallhd.com](mailto:service@smallhd.com)  
Live Chat [www.smallhd.com](http://www.smallhd.com) (click “Live Chat” link)  
Hours 8:30AM — 5:30PM (Eastern Standard Time)