Pacific C-SHS

SDI to HDMI Converter with Scaler

Revision 1.0.2, (March, 2014)

AVITECH

ABOUT THIS MANUAL
This manual contains information on using the Avitech Pacific C-SHS converter. There are 2 chapters in this manual.

- ✓ **Getting Started** introduces the features and specifications as well as the external components of Pacific C-SHS.
- ✓ **System Configuration** discusses the steps on using the LCD panel to set up the Avitech Pacific C-SHS.

The following conventions are used to distinguish elements of text throughout the manual.

 *provides additional hints or information that require special attention.*

 *identifies warnings which must be strictly followed.*

Any name of a menu, command, icon or button on the screen is shown in a bold typeset. For example: On the **Start** menu select **Settings**.

To assist us in making improvements to this user manual, we welcome any comments and constructive criticism. Email us at: sales@avitechvideo.com.

WARNING
Do not attempt to disassemble the Pacific converter module(s). Doing so may void the warranty. There are no user serviceable parts inside. Please refer all servicing to qualified personnel.

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TECHNICAL SUPPORT
For any questions regarding the information provided in this guide, call our technical support help line at 425-885-3863, or our toll free help line at 1-877-AVI-TECH, or email us also at support@avitechvideo.com

Contents

USER MANUAL APPLICATION

This manual contains information that is compatible to the Pacific C-SHS:

Hardware	
Main Board	R4
Upper Board	R4
Button Board	R2
Signal Board	R5
Firmware	
Control Board	V1.00.h2 06.06.2012
Upper Board FPGA	V1.00.ge 05.23.2012
ST	V1.00.h0 06.06.2012

USER MANUAL HISTORY

Revision No.	Date	Changes Applied
1.0.0	12/01/2011	First version. Updated chapter 1 (features/specs portions) and chapter 2 (LCM menu portion).
	12/21/2011	Updated chapter 2 (LCM menu portion).
	1/2/2012	Corrected error on location of audio port and updated "Weight" & "Dimension" entries in specs portion.
	1/5/2012	Edited preface and specs portions.
	1/20/2012	Added the 3 side panels' description and supported input signal format tables to chapter 1. Followed datasheet wording style on features/specs portions.
	3/2/2012	Updated the features portion and replaced tables.
	3/20/2012	Updated the LCM menu portion.
	3/23/2012	Improved the Image Adjustment portion (HStart/VStart/HActive/VActive/HTotal).
	4/6/2012	Updated LCM menu and edited map structure portions.
	4/11/2012	Removed mention of "720x480 59.94/ 60Hz" & "720x576 50Hz" support.
	4/13/2012	Updated LCM menu portion.
	4/20/2012	Added info on which LCM menu item settings will be saved upon power-off.
	5/8/2012	Added "Package Contents" portion to chapter 1.
	5/18/2012	Updated the LCD menu (Setup), audio meter, color correct, and added "NOTE" to "output mode" portions.
	5/23/2012	Added illustration from NAB PPT product presentation. Added "NOTES" to "aspect ratio" and "AFD detect" portions. Removed "NOTE" on "selecting primary channel without embedded audio will cause secondary channel to lose its audio output."
	5/28/2012	Added a "NOTE" to "audio meter" portion.
	5/29/2012	Removed all mention of 10-bit and 12-bit input format support.
	6/4/2012	Edited the "Aspect Ratio" portion.
1.0.1	6/15/2012	Replaced cover page photo and application diagram in chapter 1. Did edit to "product features" portion.
1.0.2	6/22/2012	Re-wrote the "supported formats" and "mapping structure" tables.

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1. Getting Started

The Pacific C-SHS allows conversion of SDI (3G/HD/SD) & CVBS (NTSC/PAL) source signals to HDMI or DVI with scaling. A compact, stand-alone converter with scaling and cropping, the Pacific C-SHS is ideal for production, OB vans, post-production, and television broadcasting. It provides automatic video input format detection, audio monitoring, safe area graticules, while supporting a wide variety of video resolutions.

This chapter introduces the features and specifications, as well as the external components of the Avitech Pacific C-SHS.

1.1 Package Contents

	
Avitech Pacific C-SHS	**Utility Disc (software and user manual)**
	
12 V DC 2.5A Power Adapter	**Magnetic Foot Stand with Screws (4 pcs)**

Table 1-1 Package Contents

1.2 Product Features

The Pacific C-SHS is capable of converting and scaling SDI signals to high quality (HDMI and DVI) signals for digital devices. It can automatically sense the SDI (3G/HD/SD) or CVBS (NTSC/PAL) input signals, then convert and scale it to a user-defined HDMI or DVI signal. The Pacific C-SHS also features a SDI Loop Out Port for SDI signals to pass through, allowing easy (non-interference) integration of the Pacific to existing installations.

For television broadcasting, the Pacific C-SHS has the ability to set safe-area graticules and accept SDI signals with embedded audio. The Pacific has both visual and auditory monitoring (through an on screen display of audio meters and through an 1/8 inch stereo headphone jack respectively. The headphone jack supports up to 170ms of delay.

The LCD panel on the Pacific C-SHS displays its operational status and input signal information. The LCD interface also allows users to fully configure all of the Pacific's settings.

The Pacific C-SHS also supports color space conversion compensation when used with the Pacific C-HSS.*

** Only functional when used together with the Pacific C-HSS.*

1.3 Specifications

Input	
SDI (BNC connector)	Automatic detection of SDI (3G/HD/SD) & CVBS (NTSC/PAL): ❖ *NTSC/PAL* ❖ *SD-SDI (SMPTE 259M): 525i60, 625i50* ❖ *HD-SDI (SMPTE 292M): 720p50, 720p59.94, 720p60, 1080i50, 1080i59.94, 1080i60* ❖ *3G-SDI (SMPTE 424M): 1080p23.97, 1080PsF24, 1080p25, 1080p29.97, 1080p30, 1080p50, 1080p59.94, 1080p60*
Ethernet (RJ45 connector)	For Avitech ScreenCrop utility or advanced operations (IP port)

Output	
HDMI (HDMI type A)	Automatic detection or user selectable: ❖ *640x480, 60 (Hz)* ❖ *800x600, 50/60/75 (Hz)* ❖ *1024x768, 50/60/75 (Hz)* ❖ *1280x720, 50/60/75 (Hz)* ❖ *1280x768, 50/60/75 (Hz)* ❖ *1280x1024, 50/60/75 (Hz)* ❖ *1360x768, 50/60/75 (Hz)* ❖ *1400x1050, 50/60/75 (Hz)* ❖ *1440x900, 50/60/75 (Hz)* ❖ *1600x1200, 50/60/75 (Hz)* ❖ *1680x1050,50/60/75 (Hz)* ❖ *1920x1080, 50/60 (Hz)* ❖ *1920x1200, 50/60 (Hz)*
DVI (DVI connector)	Automatic detection or user selectable: ❖ *640x480, 60 (Hz)* ❖ *800x600, 50/60/75 (Hz)* ❖ *1024x768, 50/60/75 (Hz)* ❖ *1280x720, 50/60/75 (Hz)* ❖ *1280x768, 50/60/75 (Hz)* ❖ *1280x1024, 50/60/75 (Hz)* ❖ *1360x768, 50/60/75 (Hz)* ❖ *1400x1050, 50/60/75 (Hz)* ❖ *1440x900, 50/60/75 (Hz)* ❖ *1600x1200, 50/60/75 (Hz)* ❖ *1680x1050,50/60/75 (Hz)* ❖ *1920x1080, 50/60 (Hz)* ❖ *1920x1200, 50/60 (Hz)*
SDI Loop Out (BNC connector)	Follows SDI input (non-configurable): ❖ *SD-SDI (SMPTE 259M): 525i60, 625i50* ❖ *HD-SDI (SMPTE 292M): 720p50, 720p59.94, 720p60, 1080i50, 1080i59.94, 1080i60* ❖ *3G-SDI (SMPTE 424M): 1080p23.97, 1080PsF24, 1080p25, 1080p29.97, 1080p30, 1080p50, 1080p59.94, 1080p60*
Audio (Headphone jack)	Analog Audio (audio out port) Stereo

Others	
Power	Power consumption is less than 15W Power Supply: ❖ *Input (AC): 100 to 250V* ❖ *Output (DC): 12V adapter*
Dimensions/ Weight	Dimensions: 121×174×28 mm (4.77×6.87×1.1 inch) Weight: 0.43 kg (0.95 lb)
Environment/ Safety	Temperature: ❖ *Operating: 0 ℃ (32 ℉) to 40 ℃ (104 ℉)* ❖ *Storage: –10 ℃ (14 ℉) to 50 ℃ (122 ℉)* Humidity: 0 % to 80 % relative, non-condensing Safety: FCC/CE/C-Tick/Class B

Table 1-2 Specifications

1.4 Connections to the Pacific C-SHS

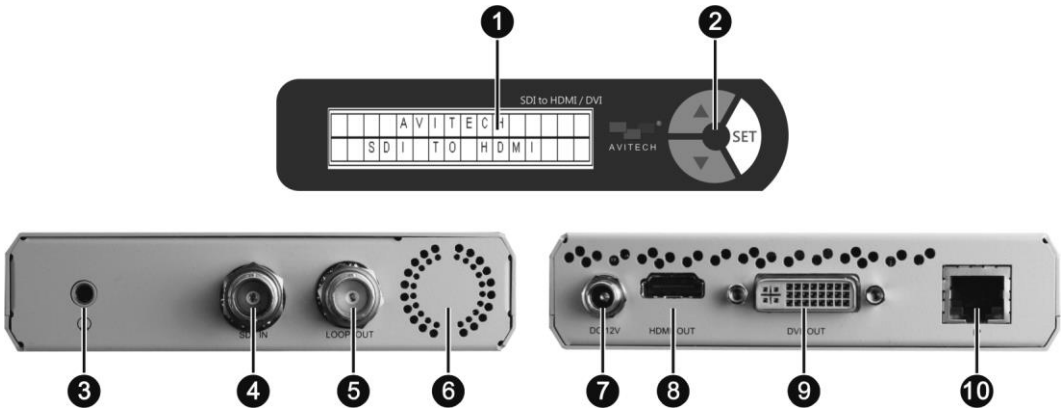

Figure 1-1 Pacific C-SHS Components

LCD Panel	
❶ **LCD Panel**	For displaying the configuration and control parameters
❷ **Control buttons**	▲ Go to previous selection ▼ Go to next selection SET Enter the next menu level or select item

Left Side Panel	
❸ **Headset**	1/8 inch audio port for connecting headphones (stereo)
❹ **SDI IN**	BNC connector for SDI (3G/HD/SD) & CVBS (NTSC/PAL) video sources
❺ **LOOP OUT**	BNC connector for SDI (3G/HD/SD) video out loop *Note: CVBS (NTSC/PAL) is **not** supported via loop out*
❻ **System Fan**	Contains the system fan*

Right Side Panel	
❼ **Power (DC 12V)**	Connects to the 12VDC/2.5A power adapter
❽ **HDMI OUT**	Connects to the monitor display's HDMI signal cable**
❾ **DVI OUT**	Connects to the monitor display's DVI signal cable
❿ **Ethernet (IP)**	For monitoring/controlling the Pacific through a network connection

Table 1-3 Pacific C-SHS Component Description

** Do not cover or block the ventilation openings.*
*** Embedded audio is **not** available with the following input formats.*
1. *YCbCr 4:4:4 – 1080p(24/23.98)PsF and 720p(30/29.97)Hz*
2. *RGB 4:4:4 – 1080p(24/23.98)PsF and 720p(30/29.97)Hz*

The following figure shows an example connection of the Pacific C-SHS and its application.

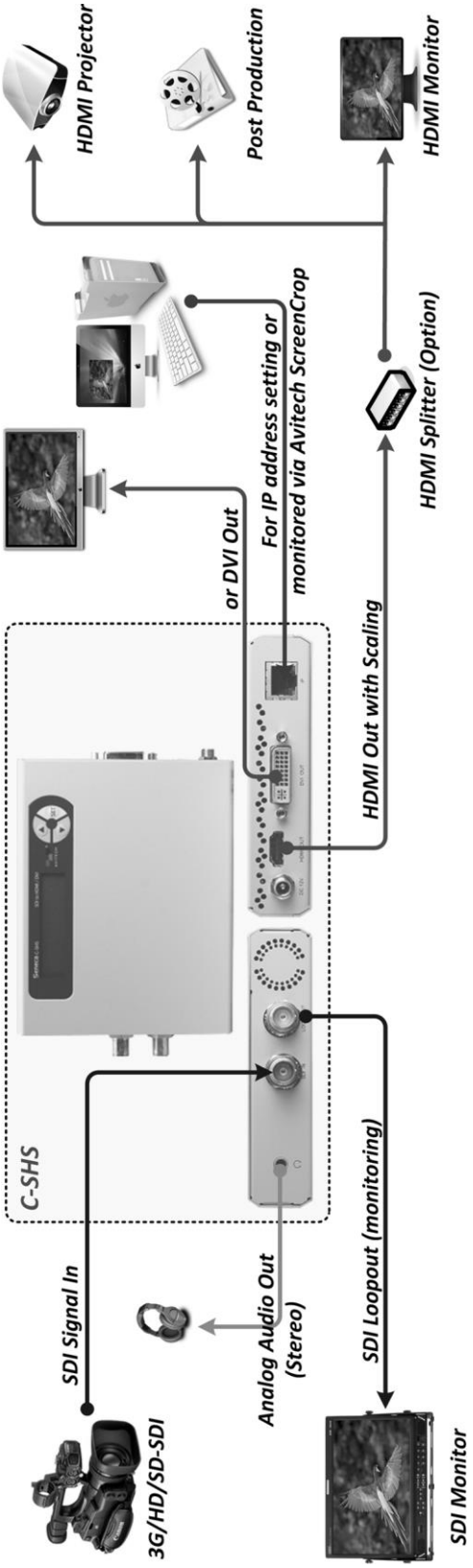

Figure 1-2 Typical Connection and Application

2. System Configuration

This chapter discusses the process of using LCD panel to set up the Avitech Pacific C-SHS.

2.1 Using the LCD Panel

The LCD panel allows for complete control over the Pacific C-SHS, including output signal adjustment, safe area graticules, audio meters, audio alarm, video alarm, customizable labels, image cropping, aspect ratio adjustment, and an operational status report. The LCD module consists of 3 buttons:

▲ Go to the previous selection (up arrow button)
▼ Go to the next selection (down arrow button)
SET Enter the next level of a menu, or select the currently highlighted item when no further level exists.

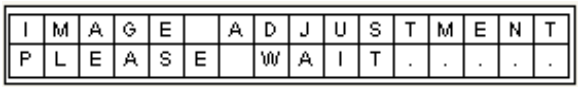

Figure 2-1 LCD Panel: Busy State

1. *When the "PLEASE WAIT . . . ." message is displayed on the LCD panel (see sample screen above), **DO NOT** disconnect or connect any signal cables as an error may occur.*
2. *Also, **DO NOT** change any of the incoming signal's display resolutions while the Pacific C-HSS is in this busy state.*

2.1.1 Welcome Screen

Upon starting up the LCD panel, the welcome screen pictured below is shown for about 15 seconds.

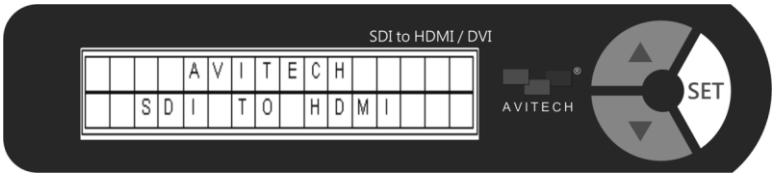

Figure 2-2 LCD Panel: Welcome Screen

The following default initial screen is subsequently displayed.

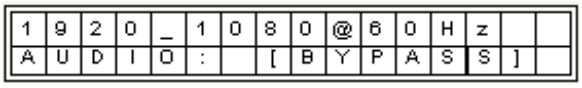

Figure 2-3 LCD Panel: Default Initial Screen

This screen displays the unit's default settings.
1. *First line (video): Displays the current video output settings.*
2. *Second line (audio): Displays the audio status, whether the delay feature is:*
   - ✓ ***BYPASS**ed (OFF – no audio delay).*
   - ✓ ***DELAY** (ON – audio delay).*

Settings made in the LCD panel will be saved automatically upon turning off the Pacific.

2.1.2 Navigating the Main Level

1. Press the SET button to enter the main menu from the default initial screen.
2. Use the buttons on the front of the LCD panel to navigate: (▲ / ▼ / SET)
3. There are a number of tables below, each detailing an item on the main menu (Output Mode, Map Structure… etc.) Each table lists the choices that can be made within each item.

Output Mode	
Resolution	Selects the desired display resolution and frequency. ❖ ***Auto Detect*** *(optimum resolution for HDMI signal only)* ❖ ***1920×1200*** *@* ***50, 60*** *(Hz)* ❖ ***1920×1080*** *@* ***50, 60*** *(Hz)* ❖ ***1680×1050*** *@* ***50, 60, 75*** *(Hz)* ❖ ***1600×1200*** *@* ***50, 60, 75*** *(Hz)* ❖ ***1440×900*** *@* ***50, 60, 75*** *(Hz)* ❖ ***1400×1050*** *@* ***50, 60, 75*** *(Hz)* ❖ ***1360×768*** *@* ***50, 60, 75*** *(Hz)* ❖ ***1280×1024*** *@* ***50, 60, 75*** *(Hz)* ❖ ***1280×768*** *@* ***50, 60, 75*** *(Hz)* ❖ ***1280×720*** *@* ***50, 60, 75*** *(Hz)* ❖ ***1024×768*** *@* ***50, 60, 75*** *(Hz)* ❖ ***800×600*** *@* ***50, 60, 75*** *(Hz)* ❖ ***640×480*** *@* ***60*** *(Hz)*
Standard	Selects the timing standard. ❖ ***Normal*** ❖ ***VESA***
Mode	Selects the output mode. ❖ ***Auto*** ❖ ***DVI***
Exit	Exits the output signal setup menu.

Table 2-1 Output

When outputting HDMI signal to both the "HDMI OUT" and "DVI OUT" ports, and when the display connected to the "DVI OUT" port only supports DVI mode, make sure to set the Pacific's "OUTPUT MODE" to "DVI." This will resolve any abnormalities in the images.

Map Structure	
Video Channel	When the "image format" has two video channels, select the desired video channel to view ("CHANNEL A" or "CHANNEL B"). ❖ ***A*** ❖ ***B*** *Note: Based on the image format, pixel depth and sampling structure a 3G signal can carry one or two channels.*
Exit	Exits the map structure setup menu.

Table 2-2 Map Structure

1. *If only one video channel is present, then channel A is selected automatically and Map Structure is not customizable.*
2. *Settings to* ***MAP STRUCTURE*** *will* ***not*** *be saved upon powering off the Pacific C-SHS.*

OSD (on screen display)	
Video Alarm	**On**: sets the alarm time from **0** seconds up to **23** seconds. **Off**: disables the video alarm.
Audio Alarm	**On**: enables the audio alarm. **Off**: disables the audio alarm.
Signal Type	**On**: enables the OSD of the signal type. ❖ ***BKGD (background)****: sets the background color* ***RED/GREEN/ BLUE/YELLOW/MAGENTA/CYAN/BLACK/WHITE/CUSTOM****.* ❖ ***FONT****: sets the font color* ***WHITE/BLACK/CYAN/MAGENTA/ YELLOW/BLUE/GREEN/RED/CUSTOM****.* **Off**: disables the display of signal type.
Custom Label	**On**: enables the customized label. ❖ ***DEFAULT****: selects the factory default label.* ❖ ***CUSTOM****: creates a custom label (refer to Figure 2.5).* ✓ ***TEXT****: input the text for* ***SOURCE1*** *by scrolling through the available symbols – (up to 30 ASCII characters)*.* ✓ ***FONT SIZE****: select between sizes:* ***16/24/36/48*** *(ARIAL FONT)* ✓ ***TRANSPARENCY****: select between* ***6.25%*** *to* ***100.0%*** ✓ ***BKGD*** *(background): select between* ***CUSTOM/RED/GREEN/ BLUE/YELLOW/MAGENTA/CYAN/BLACK/WHITE****.* ✓ ***FONT****: select between* ***CUSTOM/RED/GREEN/BLUE/ YELLOW/MAGENTA/CYAN/ BLACK/WHITE****.* ✓ ***OUTSIDE****:* ***ON/OFF*** ✓ ***FILL BKGD****:* ***ON/OFF*** **Off**: disables the custom label feature.
Safe Area	**On**: enables safe area graticule. ** (refer to Figure 2.6). ❖ ***UPPER****: sets the upper boundary.* ❖ ***LOWER****: sets the lower boundary.* ❖ ***LEFT****: sets the left boundary.* ❖ ***RIGHT****: sets the right boundary.* ❖ ***DEFAULT****: selects the factory default values.* **Off**: disable safe area.
Display 4:3	**On**: enables the OSD of 4:3 aspect ratio outline. **Off**: disables the display of 4:3 aspect ratio.
Audio Meter	**On**: enables the OSD of audio meters. (refer to Figure 2.4) ❖ ***SWITCH****: turn on/off any of the following meters* ■ METER1_L ■ R/METER3_L ■ PHASE1 ■ PHASE3 ■ METER1_R ■ METER3_R ■ METER2_L ■ METER4_L ■ PHASE2 ■ PHASE4 ■ METER2_R ■ METER4_R ❖ ***GROUP****:* ***METER****'s:* ***1*** *&* ***2*** *and* ***METER****'s:* ***3*** *&* ***4*** *can be assigned to any of the 4 groups. However,* ***(1*** *&* ***2)*** *and* ***(3*** *&* ***4)*** *cannot share the same* ***GROUP****.* (refer to Figure 2.4) ❖ ***ALARM****:* ***–5*** *to* ***3*** ❖ ***ALIGNMENT****:* ***–51*** *to* ***–3*** ❖ ***HEAD ROOM****:* ***–21*** *to* ***3*** ❖ ***BALLISTIC****: selects the type of audio meter* ***VU*** *(Volume Unit Meter)* ***DBFS*** *(Decibels Relative to Full Scale)* ***PPM*** *(Peak Program Meter)* ❖ ***OUTSIDE****: turns on/off* ❖ ***WIDTH****:* ***5*** *to* ***20*** ❖ ***TRANSPARENCY****:* ***6.25*** *to* ***100 %*** ❖ ***DEFAULT****: selects the factory default values.* **Off**: disables the OSD of audio meters.

OSD
(on screen display)

Audio Meters & Groups:

As with the video signal(s), each SDI signal may contain up to sixteen channels (8 pairs) of embedded audio. Typically, 48kHz, 20-bit audio; (extendable to 48kHz, 24-bit audio).

*Use the "Group" setting to select which group of embedded audio to monitor. In accordance with SMPTE standards, incoming audio may be embedded in up to 4 groups with each group containing 4 channels. For example; a simple stereo signal would typically use: **Ch**annels **1** & **2**, which can also be thought of as **Meter 1**-**L**eft & **Meter 1**-**R**ight. An embedded 5.1 surround sound signal would typically use: **Ch1**-**L**eft, **Ch2**-**R**ight, **Ch3**-**C**enter, **Ch4**-**S**ubwoofer, **Ch5**-**R**ight Surround, **Ch6**-Left Surround. The Pacific C-SHS is capable of displaying 8 Channels (2 Groups) at a time. **Meter**s **1** & **2** are always displayed on the left side of the screen and **Meter**s **3** & **4** are always displayed on the right of the screen. However, you can associate any Group to any "set" of meters. For instance, **Group 2** could be displayed on the left side of the screen.*

Note: when interfacing with advanced/custom installations, there may also be audio embedded on channels 9-16.

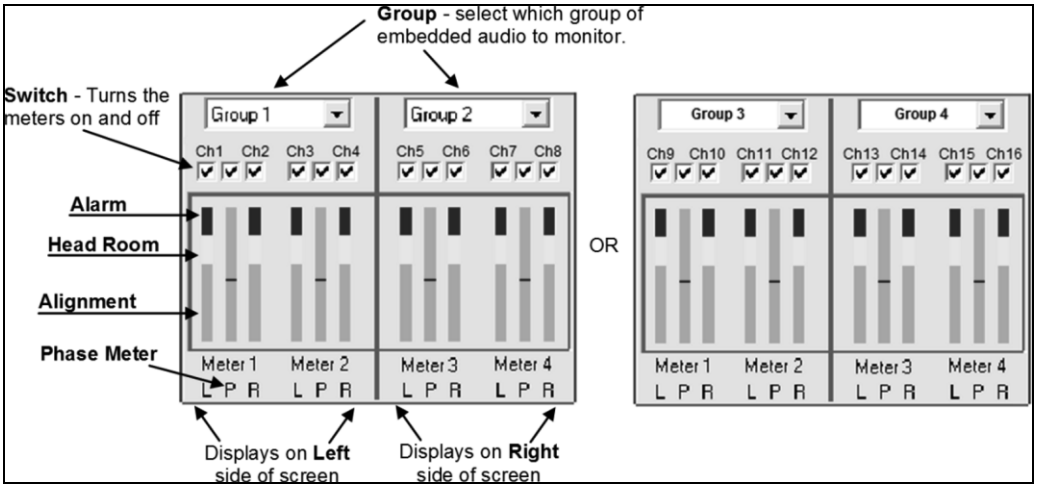

Figure 2.4

Recap:

*Any of the 4 **Group**s can be assigned to **Meter**s **1** & **2**, and any of the 4 **Group**s can be assigned to **Meter**s **3** & **4**. However, **Meter**s **1** & **2** and **Meters 3** & **4** can never share the same group. For example; Group 1 can never be set to Meters 1, 2, 3 & 4 simultaneously.*

Note:

When changing the audio meter settings through the Pacific's LCD interface, the names are abbreviated. For Example:

- ***METER12**: **GROUP1** – This means Group 1 is assigned to Meters 1 & 2.*
- ***METER34**: **GROUP2** – This means Group 2 is assigned to Meters 3 & 4.*

*Upon changing the audio source entering the "SDI IN" port, make sure to refresh the audio meters by either re-selecting the "ON" option within the audio meter menu or by physically disconnecting and reconnecting the signal cable to the "SDI IN" port. Refreshing the audio meters is necessary for **Meter**s **3** & **4** to display the correct dynamic meter bars.*

Color Bar	**On**: enables the display of the color bar. The color bar can only be turned on when there is no input signal (default setting is **OFF**). **Off**: disables the display of the color bar.
Metadata	**On**: displays the sampling structure, bit depth and AFD. (active format description)****. **Off**: disables the display of metadata.
Exit	Exits the OSD setup menu.

Table 2-3 OSD

```
  ! " # $ % & ' ( ) * + , - . /
0 1 2 3 4 5 6 7 8 9 : ; < = > ?
@ A B C D E F G H I J K L M N O
P Q R S T U V W X Y Z [ \ ] ^ _
` a b c d e f g h i j k l m n o
p q r s t u v w x y z { | }
```

Figure 2-5 Custom Text Selection

*

1. *Upon finding the desired ASCII character, **wait** for 1 second; the system will automatically accept the entry and move to the next character location (no need to press the SET button).*
2. *To go back one character (or to delete a previous entry), press both the down arrow and SET buttons simultaneously.*
3. *To save the text string, press the SET button.*

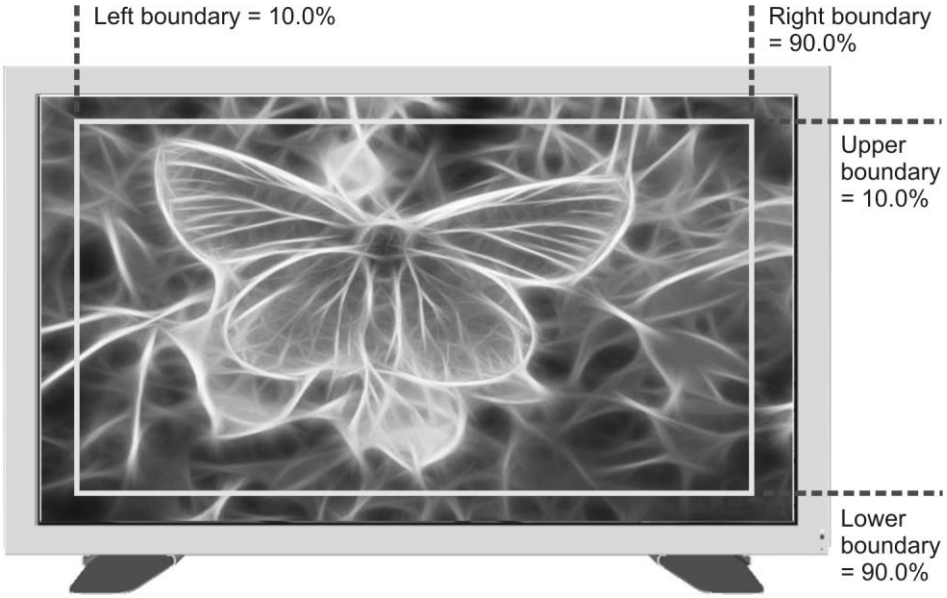

Figure 2-6 Safe Area

*** The "SAFE AREA GRATICULE" and the "AUDIO METER" functions will have no effect on NTSC/PAL input signals. The safe area is fully customizable.*

**** Settings to the following items in the "OSD" menu are saved automatically upon turning off the Pacific C-SHS.*

- ***VIDEO ALARM***
- ***AUDIO ALARM***
- ***SIGNAL TYPE***
- ***CUSTOM LABEL***
- ***SAFE AREA***
- ***DISPLAY 4:3***
- ***AUDIO METER***
- ***METADATA***

*The **COLOR BAR** settings are **not** saved.*

Image Adjustment	
Status	**On**: after plugging in the video cable to the "SDI IN" port, the image may be off-center (e.g., does not completely fill the edges). ❖ ***SOURCE****: upon selecting* ***CVBS****, there are the following selections:* ✓ ***H START****: horizontal starting position.* *(refer to Figure 2.7) ✓ ***V START****: vertical starting position.* ✓ ***H ACTIVE****: horizontal active area (width).* ✓ ***V ACTIVE****: vertical active area (height).* ✓ ***V TOTAL****: value is based on values of* ***VSTART*** *plus* ***VACTIVE*** *Note: Must not exceed signal's pre-determined value for V Total* ✓ ***AUTO GAIN****: (automatic gain)* *System will perform automatic gain adjustment by correcting the color values.* ✓ ***DEFAULT*** ❖ ***IMAGE PARAMETER*** ✓ ***BRIGHTNESS*** ✓ ***CONTRAST*** ✓ ***SATURATION*** ***HUE****: Adjusts the color balance of the image; adds or subtracts red, green, blue and yellow.* ✓ ***SHARPNESS*** ✓ ***DEFAULT*** **Off**: disables the image adjustment feature.
Exit	Exits the image adjustment setup menu.

Table 2-4 Image Adjustment

Depending on the type of video signal, ***SATURATION*** *and* ***HUE*** *may not be available.*

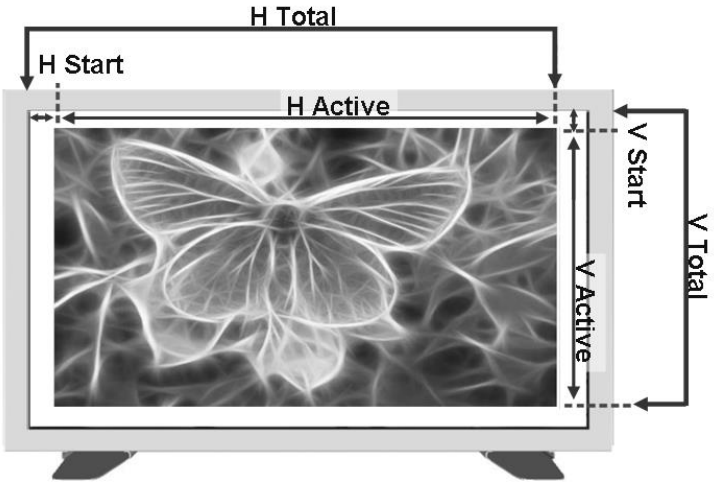

Figure 2-7 H-Start, H-Active, H-Total, V-Start, V-Active, V-Total

Crop Image	
Status	**On**: adjusts the crop area and location. ❖ ***LEFT****: sets the horizontal starting point.* ❖ ***TOP****: sets the vertical starting point.* ❖ ***RIGHT****: sets the horizontal end point.* ❖ ***BOTTOM****: sets the vertical end point.* ❖ ***DEFAULT*** **Off**: disables the crop image feature.
Exit	Exits the crop image setup menu.

Table 2-5 Crop Image

1. *When the **CROP IMAGE** feature is **ON**, the **AFD DETECT** (see table 2.7) function will be automatically disabled.*
2. *Make sure the difference in value between **LEFT** and **RIGHT** is at least 20% (e.g., **LEFT** = **80.0% RIGHT** = **100.0%**). Likewise, the difference in value between **TOP** and **BOTTOM** must also be at least 20% (e.g., **TOP** = **80.0% BOTTOM** = **100.0%**). Simply put, the smallest crop size that is valid is 20% of the total height by 20% of the total width.*

Aspect Ratio	
Status	**On**: sets the display's aspect ratio. ❖ ***4:3*** ❖ ***16:9*** ❖ ***AUTO*** ❖ ***CUSTOM*** **Off**: disables the aspect ratio detect feature.
Exit	Exits the aspect ratio setup menu.

Table 2-6 Aspect Ratio

1. *When the "AFD DETECT" feature (detailed in the next item) is set "ON" and AFD is present in the input signal, the "ASPECT RATIO" function will be automatically disabled.*
2. *When the "AFD DETECT" feature (detailed in the next item) is set "ON" but AFD is not present in the input signal, the "ASPECT RATIO" function will not be affected.*
3. *When the width ratio is greater than the height ratio, the width ratio must be less than 6 times the value of height ratio.*
4. *When the height ratio is greater than the width ratio, the height ratio must be less than 6 times the value of width ratio.*

AFD Detect	
Status	**On**: AFD (Active Format Description) solves a problem in the transition to widescreen 16:9 displays from conventional 4:3 display devices. ❖ *Active area signaling allows the display device to process the incoming signal, making the most accurate picture with the highest resolution possible. Aspect ratio signaling allows the display device to produce the best image possible.* **Off**: Disables the AFD detect feature.
Exit	Exits the AFD detect setup menu.

Table 2-7 AFD Detect

1. *When the "AFD DETECT" feature is set "ON," the "CROP IMAGE" function will be automatically disabled.*
2. *When the "AFD DETECT" feature is set "ON" and AFD is present in the input signal, the "ASPECT RATIO" function (described in the previous item) will be automatically disabled.*
3. *When the "AFD DETECT" feature is set "ON" but AFD is not present in the input signal, this function is invalid and the "ASPECT RATIO" function (described in the previous item) will not be affected.*

Note: AFD (Active Format Description) has been added to many digital interfaces for the purpose of identifying the video payload. AFD solves a problem in the transition to widescreen 16:9 displays from conventional 4:3 display devices. Active area signaling allows the display device to process the incoming signal, making the most accurate picture with the highest resolution possible.*

** Video payload is defined as the picture carried by a digital interface and comprised of a matrix of horizontal and vertical pixels. The matrix usually comprises of a multiplex of luminance and color components.*

Color Correct(ion)	
Status	**On**: enables the color correction feature. **Off**: disables the color correction feature.
Exit	Exits the color correction setup menu.

Table 2-8 Color Correction

1. *This function is applicable for 1080p input signal only.*
2. *When the Pacific C-HSS is connected to the Pacific C-SHS, make sure that the **COLOR CORRECT** function is enabled (set **ON**) on the Pacific C-HSS and the Pacific C-SHS's is disabled (set **OFF**) to allow the correct embedded color signal to pass through.*

Headphones	
Status	**Enable**: listen to the audio output via headphones. ❖ ***SOURCE**: select from the available 4 source channels.* ✓ ***CH1**, **CH2**, **CH3**, **CH4*** ❖ ***MIX MODE**: select the left/right/both channels.* ✓ ***LCH**, **RCH**, **R/L*** ❖ ***DELAY**: sets the audio delay time.* ✓ ***0** to **170**ms, sample rate at 48kHz.* ❖ ***BYPASS**: this means there is no audio delay.* ❖ ***VOLUME**: adjusts the volume.* ✓ ***MUTE** up to **127** (level).* **Mute**: disables the audio output via headphone feature.
Exit	Exits the headphone setup menu.

Table 2-9 Headphones

Audio	
Status	**Enable**: allows the audio output. ❖ ***DELAY****: sets the audio delay time.* ✓ ***0*** *to* ***170****ms, sample rate at 48kHz.* ❖ ***BYPASS****: this means there is no audio delay.* **Mute**: disables the audio output feature.
Exit	Exits the audio setup menu.

Table 2-10 Audio

Setup	
Backlight	**On**: enables the LCD panel's backlight. **Off**: disables the LCD panel's backlight.
Contrast	Sets the LCD panel's contrast level from **1** to **16**.
Idle Time	**On**: scrolling text (conversion format and related frame rate) will appear when the LCD panel of the Pacific C-SHS is idle. ❖ ***15 mins*** ❖ ***30 mins*** ❖ ***45 mins*** ❖ ***60 mins*** **Off**: disables the scrolling text feature.
Reset	**On**: resets to default setting; system reboot is required. **Off**: maintains present setting.
BIOS Version	Shows the current firmware version for reference.
IP Address	Allows user to modify the **IP ADDRESS**, **SUBNET MASK**, and **GATEWAY** based on Ethernet environment.
Exit	Exits the setup menu.

Table 2-11 Setup

2.2 Using the ScreenCrop Utility

With Avitech's ScreenCrop utility, you can monitor all networked/connected Pacific C-SHS and Pacific C-HSS converters while overseeing their operational status with ease. For the SHS series ScreenCrop supports: changes of IP address, output resolution, output timing and viewing of operational status.

Before using the ScreenCrop utility to control Pacific C-SHS, it needs to be set in the same network mask as the connected computer. Please refer to the "Appendix" for further details on setting up the network mask.

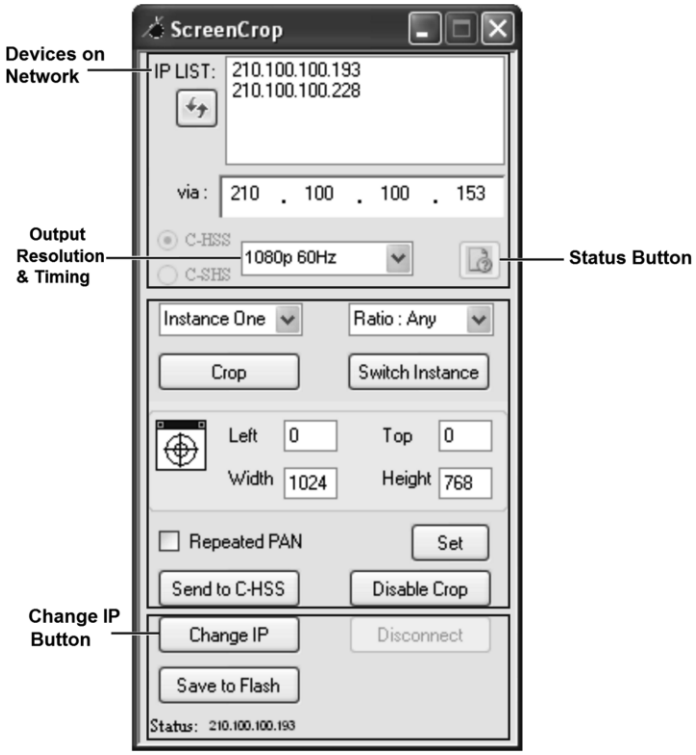

Figure 2-8 Avitech's ScreenCrop Utility

To use the ScreenCrop utility, perform the following steps:

Step 1. Copy ScreenCrop utility system files to the computer.

*Step 2. Double-click the **ScreenCrop.exe** file. If in case an alert screen appears, click **Unblock** to continue.*

A Windows Security Alert screen may appear upon using ScreenCrop utility for the first time on the computer. Click "Unblock," and the Windows Alert will not appear on any subsequent uses of ScreenCrop.

2.2.1 Status Information

ScreenCrop utility allows for easy monitoring of all networked Pacific devices. With 2 clicks of the mouse, you can have operational status on any of the Pacific converters that are in your network.

Step 1. Click to select the desired IP address from the IP LIST window. This will connect you to that particular Pacific device.

- ✓ *The "Status" button will be enabled and the radio button for the Pacific C-HSS or the Pacific C-SHS will be faintly highlighted.*

Step 2. Click the "Status" button and a popup window will display detailed information about that device's operational status and broadcast output.

- ✓ *Display the Pacific converter's status information such as: output resolution and related frame rate, color correction on/off, sampling, pixel depth, input signal type and input timing (horizontal/vertical frequency), vertical total lines, horizontal total/start pixel, and vertical start line.*

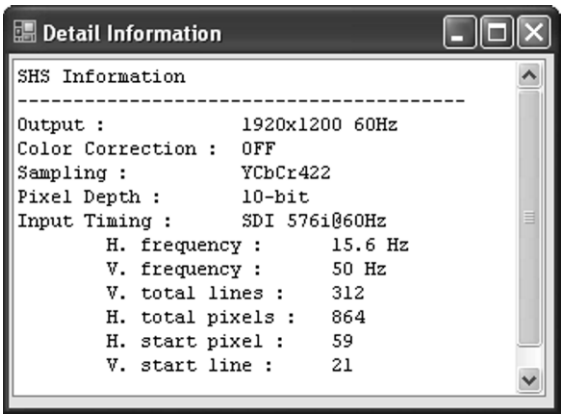

Figure 2-9 Detailed Information on the Connected Pacific C-SHS

Appendix

The following 2 methods allow the Pacific C-HSS/C-SHS to be in the same network mask with the connected computer.

Method 1: Change the IP Address of the Pacific C-SHS

Step 1. Run ScreenCrop utility by double-clicking the "ScreenCrop.exe" file. Select the Pacific C-SHS IP address appearing in the "IP LIST" window, then click "Change IP."

The following screen will appear showing the current IP address in the "New IP" field. The corresponding "Network Mask" and "Gateway" belonging to the present IP address are automatically displayed.

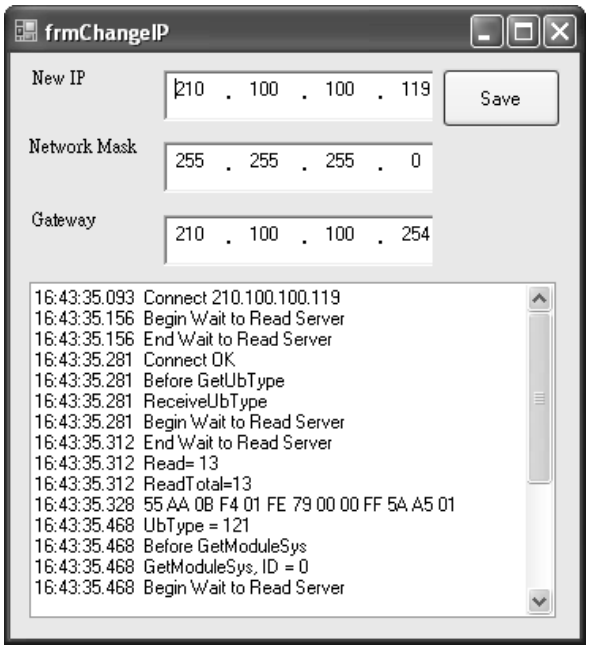

Figure A-1 ScreenCrop Utility: Change IP Screen

Step 2. Enter "New IP" address. Edit the "Network Mask" and "Gateway" as necessary then click "Save." The IP address will be changed for the target device (saved to flash memory of Pacific C-SHS).

Step 3. When the next window appears, click "OK" to exit.

Figure A-2 Save IP Screen

Other devices on Network:
Sometimes you may have a large number of devices from various manufactures all on the same network. ScreenCrop will detect all devices that are set to the Network Mask it is on. If this occurs and you select a device that is not supported by ScreenCrop then, the status button will be grayed-out and non-selectable. If you click "Change IP" then the following error message would appear.

Figure A-3 Device does not support ScreenCrop Utility (Error Message)

Method 2: Change the IP Address of the Controlling Computer

For Windows XP

*Step 1. Click **Start**, right-click on **My Network Places**, then click **Properties**.*

*Step 2. When the next screen appears, right-click **Local Area Connection** icon, then click **Properties**.*

*Step 3. When next screen appears, click to check **Internet Protocol (TCP/IP)**, then click **Properties**.*

*Step 4. When the next screen appears, click the radio button to select **Use the following IP address:**, then enter the **IP address: 210 . 100 . 100 . x** (where **x** is any value from **1 – 253**) and the **Subnet mask: 255 . 255 . 255 . 0**.*

*Step 5. Click **OK** to exit.*

For Windows 7

*Step 1. Click **Start** and type in **Network and Sharing Center**.*

*Step 2. Click **Change Adaptor Settings** on the left.*

*Step 3. Right-click the **Local Area Connection** the Pacific is connected to and select **Properties**.*

*Step 4. When the next screen appears, click to check **Internet Protocol Version 4 (TCP/IPv4)**, then click **Properties**.*

*Step 5. When the next screen appears, click the radio button to select **Use the following IP address:**, then enter the **IP address: 210 . 100 . 100 . x** (where **x** is any value from **1 – 253**), and the **Subnet mask: 255 . 255 . 255 . 0**.*

*Step 6. Click **OK** to exit.*