



AVDU-3820

XGA 15" Multi-Function Aircraft Display

Features

- ◆ XGA resolution high brightness display
- ◆ Picture-in-picture (PIP) sized and positioned on the screen by user menu
- ◆ Multiple video inputs, with instant switching between inputs to view
- ◆ Digital freeze frame
- ◆ SCALAR digital zoom
- ◆ NVG option
- ◆ Compact and light weight design
- ◆ Video enhancement option
- ◆ Soft key option with EIA-422, EIA-232, EIA-485 data-bus
- ◆ Touch screen option
- ◆ 256 grey scales for optimum quality FLIR and thermal imaging camera picture.
- ◆ User defined key legends

Introduction

The AVDU-3820 offers a large, high brightness screen capable of displaying a number of inputs including video and VGA. The display offers PIP capability as well as other features such as video freeze and video zoom.



Options include soft keys to enable other equipment to be controlled from the display and touch screen to enable control from on-screen driven menus.

Control & Functions

Control & Display Functionality

The display is fitted with a membrane row of backlit control buttons, along with a rotary brightness control and a set of small direction arrow keys used for maintenance and setup. All control buttons can be factory programmed to meet a variety of user or installer requirements. The standard layout is as follows:



In this standard factory setting, zoom is controlled by the direction arrow keys.

However, if the user intends to use the display for a specific installation, for example, he has a FLIR dual sensor camera

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(thermal and daylight), a radar image and a moving map to display, he could order the unit with the following setup:



In this example, the zoom and freeze frame functions are controlled from the direction arrow keys.

Button Backlighting Control

The buttons are backlit with specially designed NVG compatible lighting. The user can dim the backlighting to suit the prevailing environment by using the simple set up menu. Backlighting can be easily changed to meet differing requirements. For example, in early evening full backlighting brightness may be selected whereas for night time use, perhaps with NVG goggles, a very dim backlighting can be set.

Screen Brightness Control

The rotary brightness knob gives the user easy control over the brightness of the screen. The unit has been designed to offer the most precise and controllable adjustment at the 'dim' end where users need to make fine changes.

Menu & Setup

An on-screen menu can be called up by depressing the center direction membrane key for 3 seconds. Usually the menu is only needed for resizing and repositioning the PIP window; however, a number of other user defined options are available. The PIP window can be moved anywhere on the screen and enlarged or reduced to fit the users requirements. Once a setting is selected and stored, the display remembers this setting each time the unit is powered on and off.

Cockpit Master Dimming

The displays can be wired to enable the master cockpit lighting controller to dim and brighten the display in line with other avionics in the cockpit. This feature can be used or left unused as required by the installer or user.

NVG

Using the latest NVG technology, Skyquest displays offer high quality NVG compatibility. The filter, in combination with the smooth dimming control, allows the user to comfortably work in a night vision goggle environment.

Image Enhancement Module

As an option, all displays can be fitted with Skyquest ClearVision, a specially designed contrast module that enhances vision when mist, haze or smog is present. On selection of the function, a window appears centralized on the display and the image within the window is enhanced using powerful algorithms. ClearVision gives the visual effect of penetrating the atmospheric mist or haze.

Standard Display Features

Video Freeze Frame

By pressing the freeze frame button, the currently displayed picture is frozen in perfect quality on the screen. To return to live video, the freeze button is pressed again. Once frozen, an image can be electronically zoomed using the zoom function.

Video Zoom

The displayed video image can be zoomed using a built in mathematical SCALAR zoom. This offers users true video zoom capability rather than pixel replication. The zoom function can be used on any freeze frame image.

PIP

Picture-in-Picture mode selects the currently viewed video image and places it as a window (the user can set size and position of PIP window) on top of the VGA or RGB image (for example, a live FLIR or video image can be placed in a window on top of the moving map or radar image).

Contrast

Adjust the contrast of the display to give optimum viewing of video and FLIR images.

Video Compatibility

Each Skyquest display offers multiple video, RGB and VGA inputs so almost any installation configuration can be handled using a standard unit. Switching between inputs is as simple as pressing the button required. The display will switch to the selected input.



Table 1: Specifications

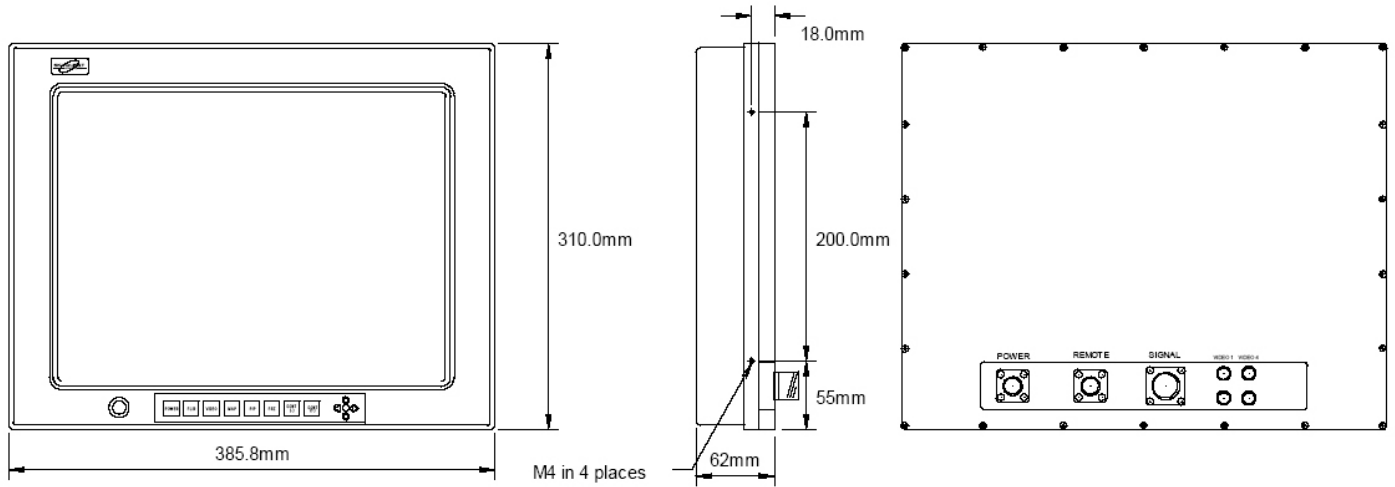
Physical	
Dimensions	385.5 mm (w) x 310 mm (h) x 62 mm (d) 15.177" (w) x 12.205" (h) x 2.441" (d)
Weight	< 6 kg / 13.23 lbs
Finish	Matte black anodized
Electrical	
Input Voltage	28V DC
Power Dissipation	<7.5A (internal limit) Nominal ~4A
Temperature	
Operating	-25° C (-13° F) to + 55° C (131° F)
Storage	-30° C (-22° F) to +80° C (176° F)
Video & Graphic Signals	
Video Input Standards	PAL 50 Hz, NTSC 60 Hz, Composite video, S-video (Y/C) and Component video (R,G,B/ Y,Cr,Cb) or STANAG 3350/B/C
Graphic Input Standards	Standard VGA, SVGA, XGA, SXGA and UXGA
Display Performance	
Resolution	1024 x 768 pixels XGA
Viewing Area	304.1 mm (w) x 228.1 mm (h) 11.972" (w) x 8.980" (h)
Pixel Pitch	0.297 mm (w) x 0.297 mm (h) 0.012" (w) x 0.012" (h)
Pixel Configuration	RGB vertical stripe
Color Capacity	8 bits per color; 16.2 million colors
Grey scale capacity	256 grey scale
Viewing angle	+/-60° horizontal; +60° to -60°vertical
Luminance at Optimum Viewing Angle	Max > 800 cd/m ² Min < 7 cd/m ² (XGA)
Contrast Ratio at Optimum Viewing Angle	> 200:1, typically 300:1
Ordering Information	
Description	15" XGA multi-function LCD display
Part Number	AVDU-3820-01 AVDU-3820-02 (with NVG filter)

Table 2: Environmental Performance (to EUROCAE/ED-14D and RTCA/DO-160D)

4 - Temperature & Altitude	Category A1. This unit is considered satisfactory for operation up to an altitude of 25,000 feet unpressurized.
5 - Temperature Variation	Category C
6 - Humidity	Category A
7 - Operational Shocks & Crash Safety	Category B. Operation 6 g/11 ms, Non-operation 15 g/11 ms
8 - Vibration	Category R+U (equiv: DO-160C Helicopter -Test curve 'N', 1.5 g p-p)
9 - Explosion Proofing	N/A Category A, Equipment located within the passenger cabin
10 - Waterproofing	Category W
11 - Fluid Susceptibility	Category X
12 - Sand & Dust	Category D
13 - Fungus Resistance	N/A Category F
14 - Salt Spray	N/A Category X
15 - Magnetic Effect	Category A. The unit has no perceivable effect when mounted within 460 mm (18") of an aircraft magnetic compass
16 - Power Input	Category B
17 - Voltage Spike	Category A
18 - Audio Frequency	Category A + Z
19 - Induced Susceptibility	Category Z
20 - RF Susceptibility (Radiated & Conducted)	Category U
21 - RF Emission	Category B
22 - Lightning Induced Transients	Not considered
23 - Lightning Direct Effects	Not considered
24 - Icing	Category X
25 - Electrostatic Discharge	Not considered



Figure 1: ADVU-3820 dimensions



Warranty

This product has a one year warranty.

Contact Information

To find your appropriate sales representative, please visit:

Website: www.cwembedded.com/sales

Email: sales@cwembedded.com

For technical support, please visit:

Website: www.cwembedded.com/support1

Email: support1@cwembedded.com

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