

Interface Control Document

AVDU-2104-xx-ICD



General Description

This document applies to the 210mm (8.4") Colour TFT-LCD display AVDU-2104-xx and its variants.

The monitor supports the SVGA (800(H) x 600(V)) screen format and 16.7M colours (RGB 8/6-bits data) at high response speeds optimised for high-speed motion video typical in airborne surveillance applications.


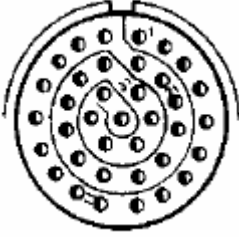

This Display contains:

- Power input filter and power supply module
- Video display driver Panel Electronic Circuit (PEC)
- Inverter PEC for the backlight
- Backlight light box assembly

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Electrical Connections

Monitor connectors (AVDU-2104-01)

| Power connector | |
|--|---|
|  <p>Size 20 contacts Wire Size 24,22,20 Gauge 3, 5, 7.5A max</p> | Unit connector D38999/20WB 98PN FLANGE MT RECEP 6 WAY PIN |
| | Mating half (cable connector) D38999/26WB 98SN PLUG 6 WAY SKT |
| | G8801-11M SIZE 11 Backshell |
| | |
| Signal connector | |
|  <p>Size 22D contacts Wire size 28,26,24,22 Gauge 1.5, 2, 3, 5A max</p> | Unit Connector D38999/20WD 35PN FLANGE MT RECEP 37 WAY PIN |
| | Mating Half (cable connector) D38999/26WD 35SN PLUG 37 WAY SKT |
| | G8801-15M SIZE 15 Backshell |
| | |
| Remote OUT | |
|  <p>Size 22D Contacts Wire size 28,26,24,22 Gauge 1.5, 2, 3, 5A max</p> | Unit connector D38999/20WB 35SN FLANGE MT RECEP 13 WAY Socket |
| | Mating Half (cable connector) D38999/26WB 35PN PLUG 13 WAY Plug |
| | G8801-11M SIZE 11 Backshell |
| | |
| Video IN/OUT connectors | |
| | Unit connector Isolated BNC |

For pin outs see table on next page



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| Power Connector | |
|-----------------|--------------------------------------|
| A | +28V DC Power |
| B | 28V DC Power Return |
| C | Chassis |
| D | + Heater (not fitted) |
| E | - Heater (not fitted) |
| F | Enable (Ground to pin B for Disable) |

| Signal Connector | | | |
|------------------|--|----------------------------|--|
| 1 | Video 2 | S-Video : Chroma in | |
| 2 | | Ground | |
| 3 | | S-Video : Luma in | |
| 4 | | Ground | |
| 5 | Video 1* | Composite video in | |
| 6 | | Ground | |
| 7 | Video 3 | Luma in / Green in | |
| 8 | | Ground | |
| 9 | | Cb in / Blue in | |
| 10 | | Ground | |
| 11 | | Cr in / Red in | |
| 12 | | Ground | |
| 13 | Video 5 | S-Video_2 : Chroma in | |
| 14 | | Ground | |
| 15 | | S-Video_2 : Luma in | |
| 16 | | Ground | |
| 17 | Video 4* | Composite video in_2 | |
| 18 | | Ground | |
| 19 | Video 6 YCrCb/RGB selected internally | Cr in_2 / Red in_2 | |
| 20 | | Ground | |
| 21 | | Luma in_2/Green in_2 (SOG) | |
| 22 | | Ground | |
| 23 | | Cb in_2 / Blue_2 | |
| 24 | | Ground | |
| 25 | | /Composite sync in | |
| 26 | | Ground | |
| 27 | Graphics | PCR | Red, analogue |
| 28 | | AGND | Analogue ground red |
| 29 | | PCG | Green, analogue |
| 30 | | AGND | Analogue ground green |
| 31 | | PCB | Blue analogue |
| 32 | | AGND | Analogue ground blue |
| 33 | | HS_IN | Horizontal sync or composite sync, input |
| 34 | | DGND | Digital ground |
| 35 | | VS_IN | Vertical sync, input |
| 36 | | DGND | Digital ground |
| 37 | NC | No connection | |

| Remote Connector | |
|------------------|----------------|
| 1 | +28V DC Output |
| 2 | 28V Return |
| 3 | Chassis |
| 4 | Data (+) |
| 5 | Data (-) |
| 6 | RS422 + IN |
| 7 | +12V DC Output |
| 8 | 12V DC return |
| 9 | RS422 + Out |
| 10 | RS422 - Out |
| 11 | RS422 - IN |
| 12 | Lighting Bus |
| 13 | Inhibit |

*Video 1 and Video 4 are looped to BNC connectors on the rear panel.

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Control Key Functions and legend



The unit will auto power off (after <15 sec) when there is no input on the selected video port.

Typical key legends and functions

- FLIR - Selects the Composite Video 1 (From the BNC (A) on the back)
- FRZ - Freezes and unfreezes the video image
- CONT-/+ Adjusts the display contrast.

The menu, Up, Down, Left and Right keys (right above) operate the on-screen display menu system (see manual)

The brightness rotary control (left above) adjusts the display illumination and the associated backlights with precise, adjustable dimming for night operations. The control is fitted with a power on off switch at the minimum brightness setting.

Note: Key legends can be customised during manufacturing to match customer specific configurations or to address specific installation requirements.



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Screen Filter options

A number of screen filter options may be specified – these are designated within the options field of the part number or the form AVDU-2104-xx-yy.

The xx designates the screen type

AVDU-2104-01-yy Polarised – contrast enhancing (Default)

AVDU-2104-02-yy NVG filtered screen – etched front surface

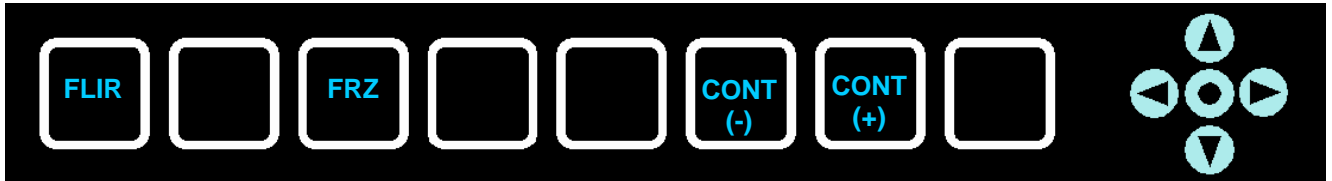
AVDU-2104-03-yy Clear screen – Etched front surface

Where yy designates the key functions against the tables on the following pages:

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AVDU 2104-xx-01 functionality

Arrangement for the Button Legends



Button Functionality

The functionality for the buttons on the Display's front panel. The ON/OFF switch is implemented by the rotary brightness control when turned fully anti clockwise and isolates the power to the unit.

| Button No. | Legend | | Function |
|------------|------------|-----------------|--|
| 1 | FLIR | Video Composite | Selects the 'Video 1' video input from the signal Connector or BNC at the rear of the Display (Composite). |
| 2 | | | |
| 3 | Freeze | | Freezes and unfreezes the video image |
| 4 | | | |
| 5 | | | |
| 6 | 'CONT (-)' | | Adjusts the display contrast down. (Graphic or Video Depending o the mode) |
| 7 | 'CONT (+)' | | Adjusts the display contrast up. |
| 8 | | | |

At power up this module will auto select the video input from the available graphic or video sources (Graphic, Video 1, Video 2 or Video 3) - (Video 4, 5 or 6 will not be auto selected). If the auto selected video is removed the display will auto search again from the four sources until a source is found. (In the event that no source is found a message "No Signal" will appear for a few seconds and the display will go into standby.) The display will "wake up" from stand by only if the previously displayed source reappears. (i.e. it only watches the last good input). The Video 1 inputs may be selected by pressing the FLIR button on the front panel after power on – if no video is present on this port the unit will auto search for a source as above. (It is not possible to select the graphic input or Video 2, 3, 4, 5 or 6 directly – these may be selected from the OSD menu).

The Menu select key invokes the On Screen Menu Display (OSD) and selects the menu when held down for more than 5 seconds. To exit the menu press and hold the key for >5 seconds

Video1 (composite) is routed to the "VIDEO IN" BNC and the signal connector
The four direction keys have four modes depending on the current display mode.

| MODE | Graphic/ VIDEO | MENU/OSD |
|-------|-------------------------------------|----------|
| Down | Zoom out (If frozen) | DOWN |
| UP | Zoom in (If frozen) | UP |
| LEFT | Dim the brightness of the keys | LEFT |
| RIGHT | Increase the Brightness of the keys | RIGHT |



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Handling Precautions

Handling of the display should be in compliance with Real-Time Vision's handling principles.

- 1) Since front window is an optical assembly and is easily damaged, observe precautions in order not to scratch it.
- 2) Be sure to turn off power supply when inserting or disconnecting the input connectors.
- 3) Wipe off water or fluid droplets immediately. Long contact with water or other fluids may cause discoloration or spots.
- 4) When the front window surface is soiled, wipe it with absorbent cotton or other soft cloth.
- 5) Since the panel is made of glass, it may break or crack if dropped or bumped on hard surface.
- 6) Since CMOS LSI is used in this module, take adequate static electricity precautions and ensure correct human earth bonding when handling.
- 7) Do not open nor modify the assembly.
- 8) Do not press the front window sheet in any direction.
- 9) At the insertion or removal of the power and signal interface connectors, ensure that the sockets are free from debris and be sure not to damage the interface pins
- 10) After installation of the display into a mounted position, do not twist nor bend the display even momentarily. When designing a suitable mounting, it should be taken into consideration that no bending/twisting forces are applied to the display from outside. Otherwise the TFT -LCD module or backlight may be damaged.

LIMITATION OF LIABILITY

The manufacturer's liability for damages to customer or others resulting from the use of any product supplied hereunder shall in no event exceed the purchase price of said product.

IMPORTANT USAGE NOTE

This equipment is for use by developers and integrators, the manufacturer accepts no liability for damage or injury caused by the use of this product. It is the responsibility of the developer, integrators or other user of this product to:

- Ensure that all necessary and appropriate safety measures are taken.
- Obtain suitable regulatory approvals as may be required.
- Check power settings to all component parts before connection.

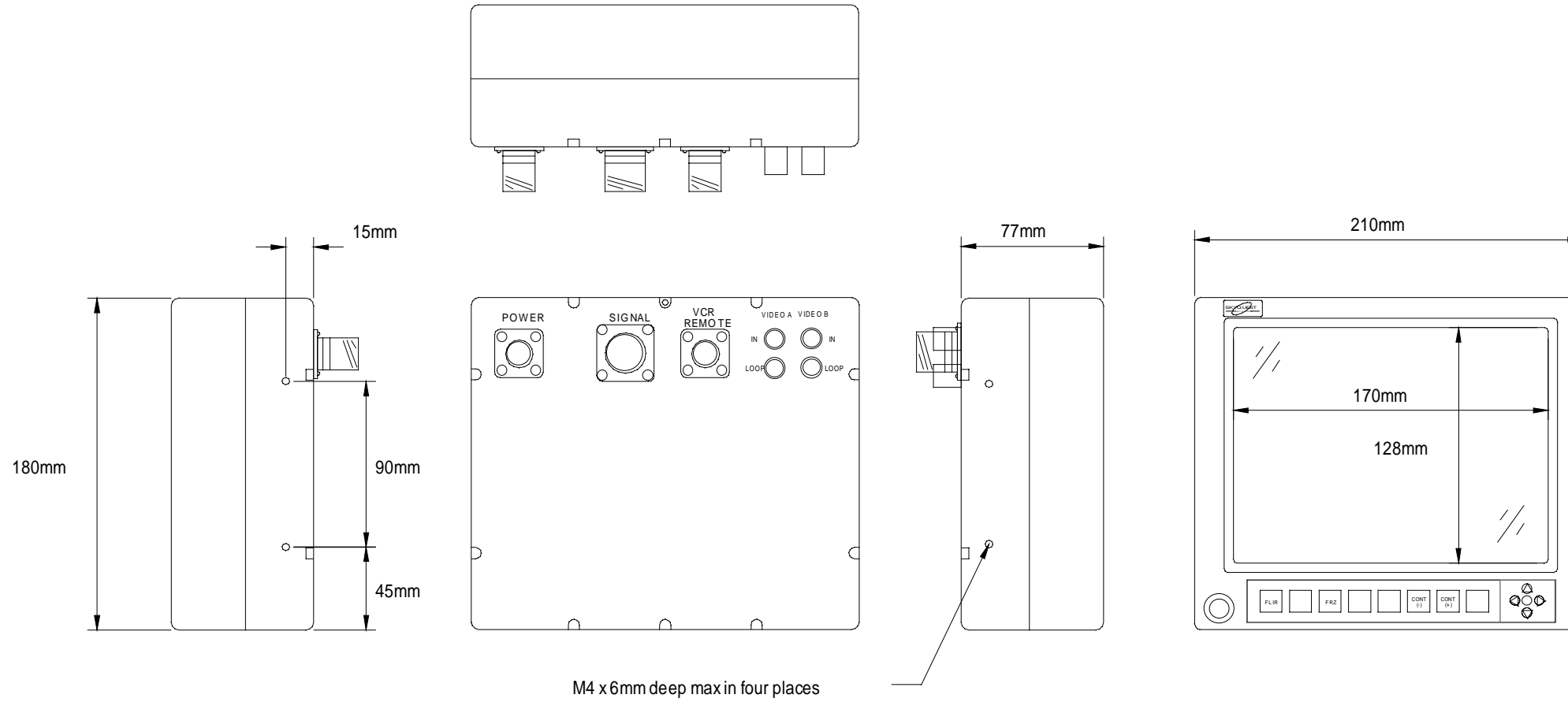
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DRG No. AVDU / 2104 / xx

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D
C
B
A

THIRD ANGLE PROJECTION
DO NOT SCALE

| | | | | | |
|------------|---------|------|----------------|----------|---------|
| MATERIAL:- | | | | | |
| FINISH:- | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| CJS | | C | 4 October 2005 | AJM | |
| DRAWN | ECO No. | ISS. | ACTIONED | APPROVED | CHECKED |

| | |
|------------------------------|---------|
| DIMENSIONS:- | |
| SCALE | NTS |
| GENERAL TOLERANCES | |
| TWO DECIMAL PLACES | ± 0.025 |
| ONE DECIMAL PLACE | ± 0.125 |
| NO DECIMAL PLACE | ± 0.4 |
| ANGLES | ± 1° |
| PROJECT:- | |
| ENGLAND UNITED KINGDOM | |
| TITLE:- Display 213mm (8.4") | |
| DRG No. AVDU / 2104 / xx | |
| SHT 1 of 1 | A3 |

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