

Interface Control Document

AVDU-2640-xx-ICD

10.4" XGA Multi-function LCD Display (for remote control)



General Description

This specification applies to the 264mm (10.4") Colour TFT-LCD Display AVDU-2640-xx and its variants.

The display supports the XVGA (1027(H) x 768(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.

The display is fitted with four M4 mountings on its rear face to allow the fitting of an external RADAR adaptor.

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
- Low temperature Heater



AVDU-2640-xx
SHEET 2 of 9
Issue No.. G
ICD

Interface Control Document


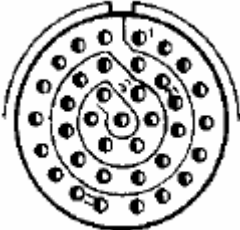

Change Record

Issue No. Change	Replaced		Added	Removed	Reason for Change	Completed: Date, Name
	Old	New				
F					Remote drawing corrected and RS232 option added	1 st Nov 2005
G					2 nd RS232 option added	5 December 2005

Interface Control Document

Electrical

Pin assignment

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 connector		
 <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 Pin
	G8801-11M	SIZE 11 Backshell
Video IN/OUT connectors		
	Unit connector	
	Isolated BNC	

For pin outs see table on next page



AVDU-2640-xx
SHEET 4 of 9
Issue No.. G
ICD

Interface Control Document

Power Connector	
A	+28V DC Power
B	28V DC Power Return
C	Chassis
D	+ Heater (Option)
E	- Heater (Option)
F	Enable (Ground to pin B for Disable)

Remote Connector		
1	+28V DC Output	
2	28V Return	
3	Chassis	
4	Data (+)	
5	Data (-)	
6	RS232 in 2 (option)	RS422 + (input option)
7	+12V DC Output	
8	12V DC return	Data Return
9	RS232 out 2(option)	RS422 + (output option)
10	RS232 out 1 (option)	RS422 – (output Option)
11	RS232 in 1 (option)	RS422 – (input option)
12	Illumination bus	
13	Enable/Inhibit	

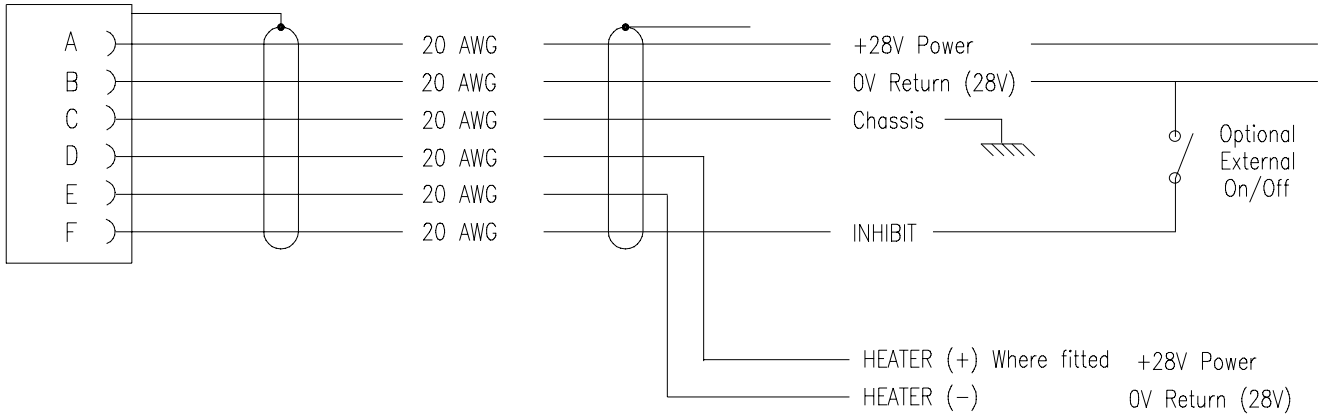
Signal Connector

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 (Separate sync see below)	
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	

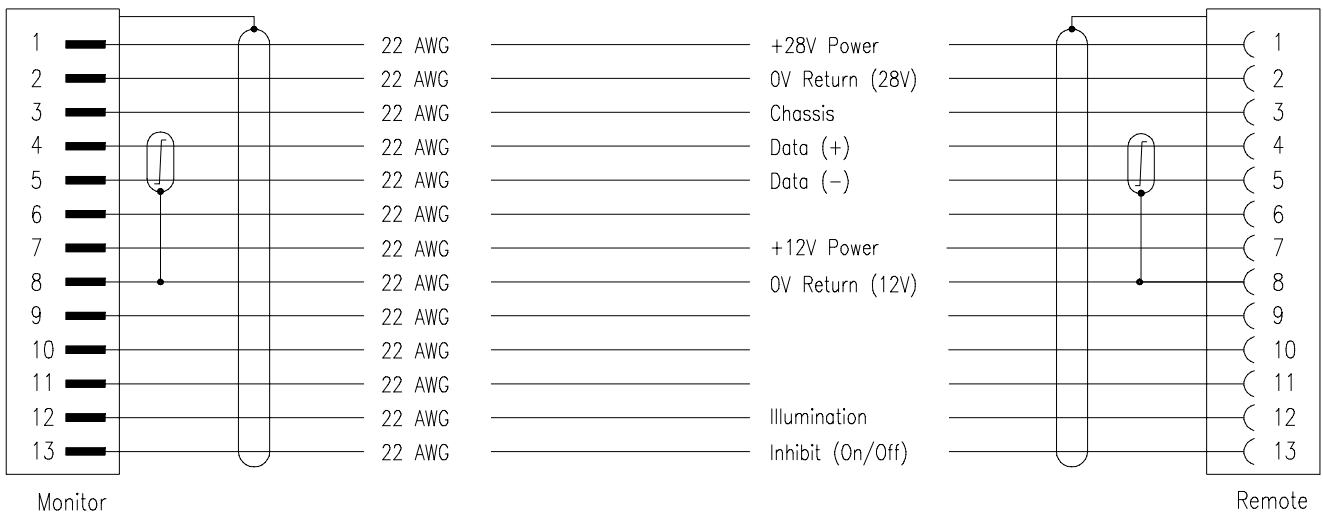
Interface Control Document

Typical Power connector wiring

Monitor Power



Typical Remote system wiring

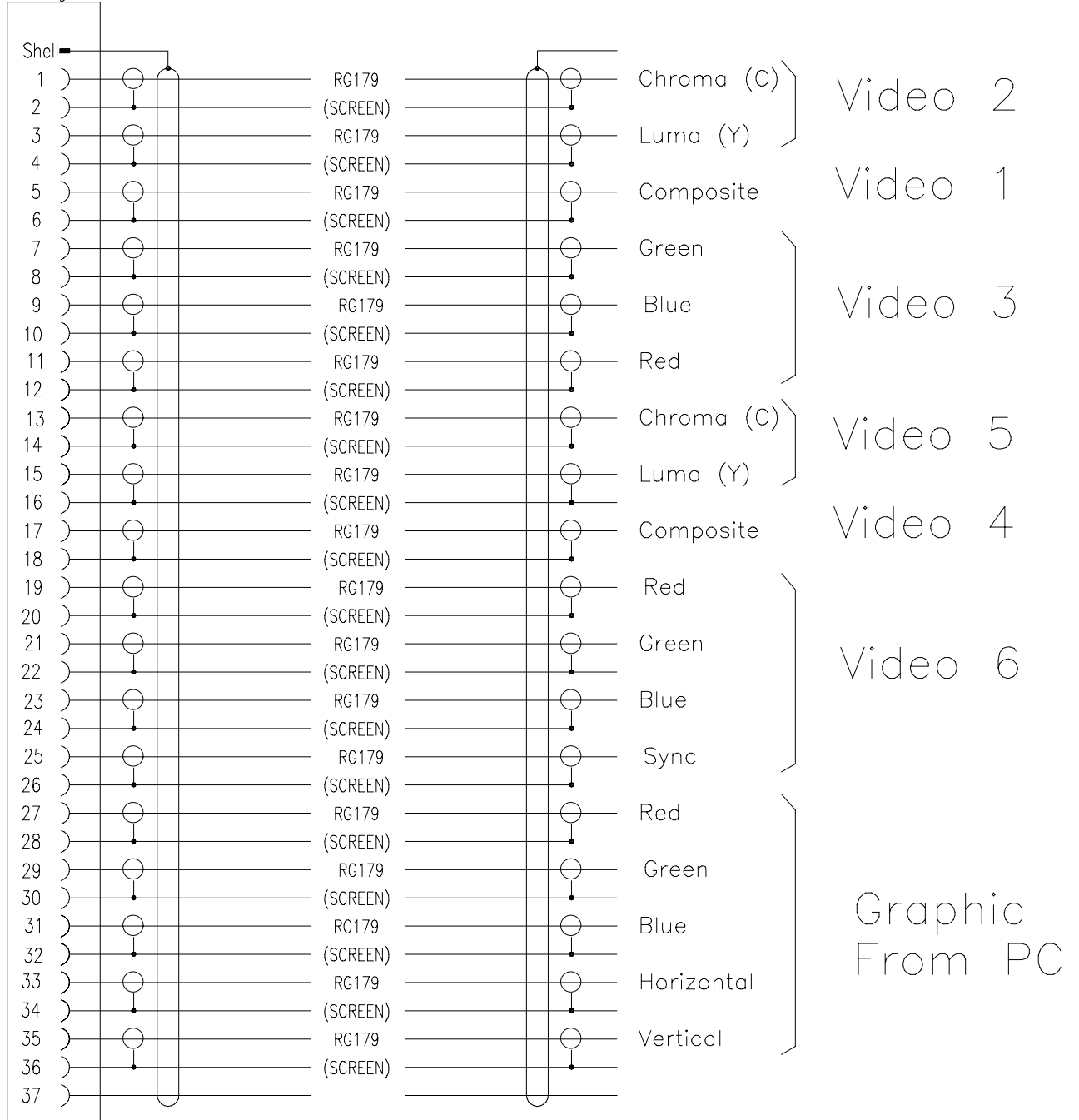




AVDU-2640-xx
SHEET 6 of 9
Issue No.. G
ICD

Interface Control Document

MONITOR Signal





AVDU-2640-xx
SHEET 7 of 9
Issue No.. G
ICD

Interface Control Document

EMI/EMC

The tests carried against D0-160D have shown that a shield on the external power cable will reduce (by a few dB) the conducted and radiated emissions in and installed system

Tests also carried out have shown that the fitting a small ferrite ring close to the power and signal connector also reduces the emissions. (by a few more dB.) The ferrite ring around the signal cable has been particularly effective against transmissions from rogue computer VGA signals during installation tests.

We recommend that a shielded power cable will help the installation's overall EMC performance.

We also recommend the fitting of one overall screen to the signal cables to improve overall installed performance.

We recommend the fitting of a ferrite ring close to the display's Power and signal cables to further reduce the system emissions.

The screen/shields must be RF bonded to the connector shell or as a minimum to pin C of the power connector.

Heater operation

The pre heater can be configured in two modes.

A. Heater is independent of the display (Use pins D and E)

B. Heater will not let the display power up until the temperature is above a preset limit. (Pins A and B)

Pre heat starts as soon as power is available on Pins A and B Power will be applied to the display when the low set temperature is reached at which point the heater is switched off and the display on.

(Mutually Exclusive)

The heater power is supplied in two ways on separate pins (D and E) of the power connector and through the normal power connections on pin A and B. The heater is a mat type with an integral temperature control that will pre heat the relevant parts of the monitor when power is applied and the temperature is below the low set limit (adjustable at manufacture - normally set to -25C to -30C).

e.g the monitor can be supplied from a separate heater bus that could be switched on before flight or left on overnight to keep the monitor warm by using pins D and E or will start to pre heat when power is applied to Pins A and B if the temperature is below the low set limit.

Applying power to pins D and E and not A and B will only power the heater and not power the monitor.

The power required, is determined by the pre heat time required and has been set at <15min for typical conditions. The faster the time the more power is required. We have limited this to 7A @28V (200W) maximum at the connector (Pins D and E). The Display system cct breaker should be set at 7.5A to allow future faster heating upgrades or to a minimum of 5A.



AVDU-2640-xx
SHEET 8 of 9
Issue No.. G
ICD

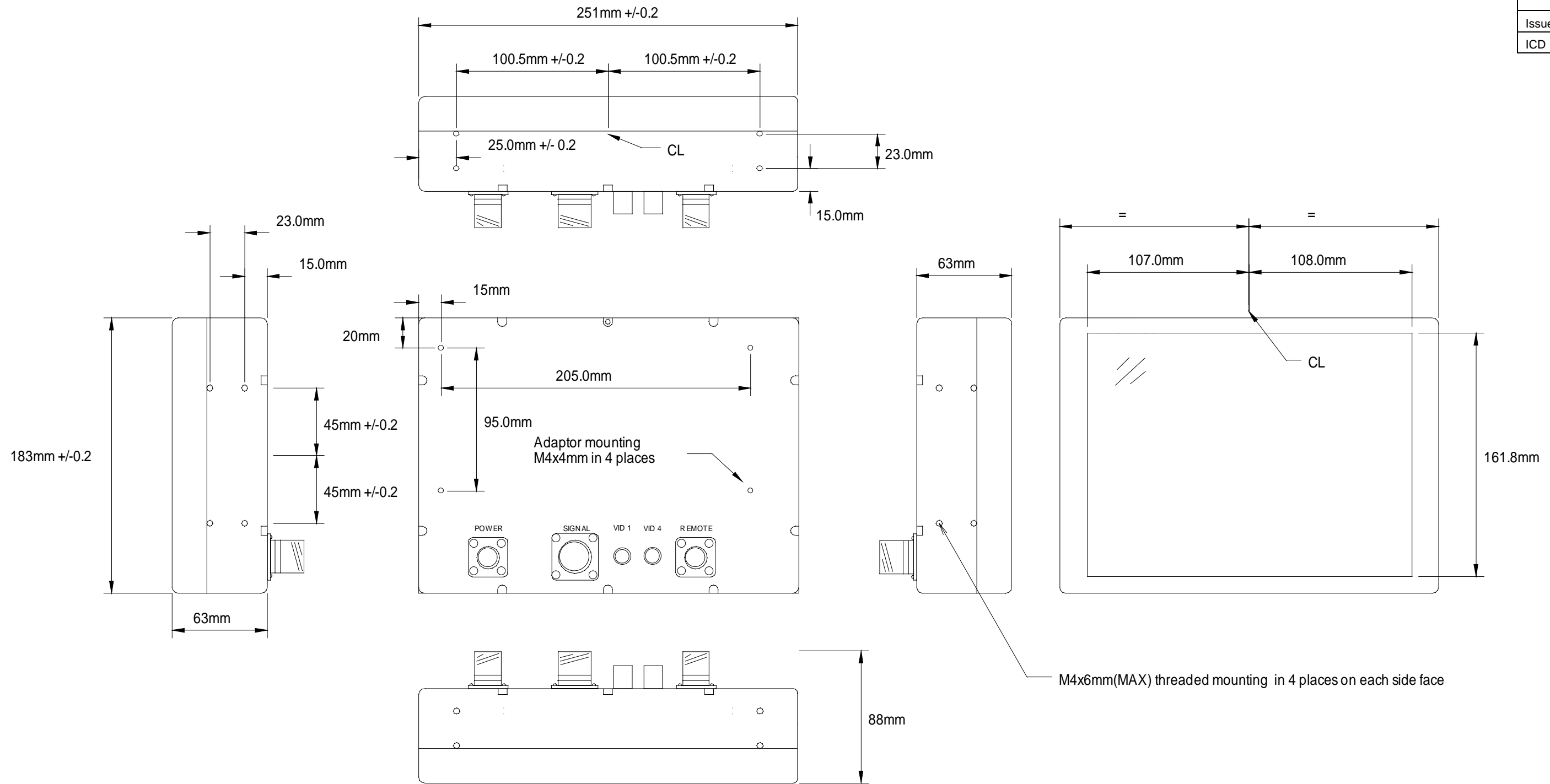
Interface Control Document

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 a in any direction.
- 9) At the insertion or removal of the Power and Signal Interface Connector, 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 momentary. 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.

AVDU-2640-xx
Issue No.. G
ICD



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THIRD ANGLE PROJECTION
DO NOT SCALE

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MATERIAL:-					
FINISH:-					
CJS	G	10th MAY 2005	AJM		
CJS	F	29th April 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°



Real-Time Vision
21, Horsby Square
Southfields Industrial Park
Laindon, Essex SS15 6SD

PROJECT:-

ENGLAND
UNITED KINGDOM

TITLE:- Display 264mm (10.4")

DRG No. AVDU / 2640 / xx

5

4

3

2

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SHT 1 of 1 A3

REV G

AVDU-2640-xx