



Installation and Operation Manual

FD151CV-QUAD

15.1” Low-Profile LCD with Quad-Screen Capability





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General Information

The FD151CV-QUAD is a 15.1" Low-Profile LCD which has features that allow installation in the smallest of mounting areas with the minimum of interface equipment. Built with retrofit aircraft integration in mind, this display can switch between three video input sources using an infrared remote.

Front View



Additional Information

The FD151CV-QUAD utilizes a state of the art digital video decoding chipset for the analog video input. The video sources in order of picture quality are VGA (computer graphics like moving maps), and Composite Video (DVD, camera or VCR). Both NTSC and PAL formats are auto-detected.

The FD151CV-QUAD can also be connected to existing video switchers and just take a composite video input from a selector interface box. In this case multiple input sources can be selected and displayed on the monitor. You would only use the IR remote to set up the screen during installation.

The FD151CV-QUAD is made of all metal components. DO-160 testing has been completed and is available upon request.

The LCD is protected with a .060" Lexan lens to prevent scratching of the LCD.

Specifications

Display Type	15.1" TFT Color LCD
Display Color	16.7 Million Colors
Screen Resolution	VGA 1024 x 768
Brightness	400 cd/m ²
Dimensions	14.14" (W)x11.95" (H)x2.5" (D)
Display Size	11.89" (W)x8.91" (H)
Weight	7lbs 5 oz
Power	28V DC @ 1.5AMPS
PC & Video Input	VGA (High Density DB-15 Connector), Composite (4)
Video Type Supported	NTSC/PAL
Screen Control	On-Screen Display Menu
Materials	Aluminum
DO-160 Testing	Section 21, Category B
Remote Control	IR, included
Pixel Pitch	0.3mm x 0.3mm

Installation Instructions

All cabin entertainment equipment, such as the FD151CV-QUAD, should be installed on a non-essential bus and have a dedicated circuit breaker. It is a requirement that a switch be installed in the cockpit so that the pilot can de-energize the entertainment system should it become necessary.

For mounting specifications refer to drawing at the back of the manual.
(NOTE: Removing the front cover does not void the warranty.)

When installed, at least ¼" gap should be maintained along the top and along the bottom of the unit to allow for convection cooling.

Power

This is a **28VDC** monitor that requires 1.5 AMPS (42 Watts) of power to operate. The unit turns on automatically upon power application.

Wiring Suggestions

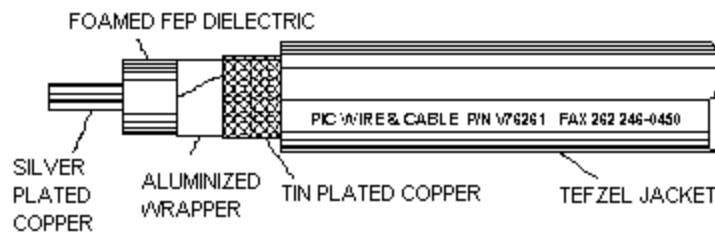
All shields should be grounded to the connector at the source, and floating at the display.

Avoid routing video wiring parallel to:

- AC wiring
- Strobe wiring
- DC motor supply cables
- Inverter cabling
- Or any other potential noise source.

S-Video/Composite and Audio Wiring

Recommended cable for s-video/composite and audio purposes is PIC 75 Ohm Coax, P/N V76261. This is a lightweight, flexible, and low signal loss cable which meets FAA flammability requirements of FAR 23.1359(d), FAR 25.853(a) and FAR 25.869(a)(4).

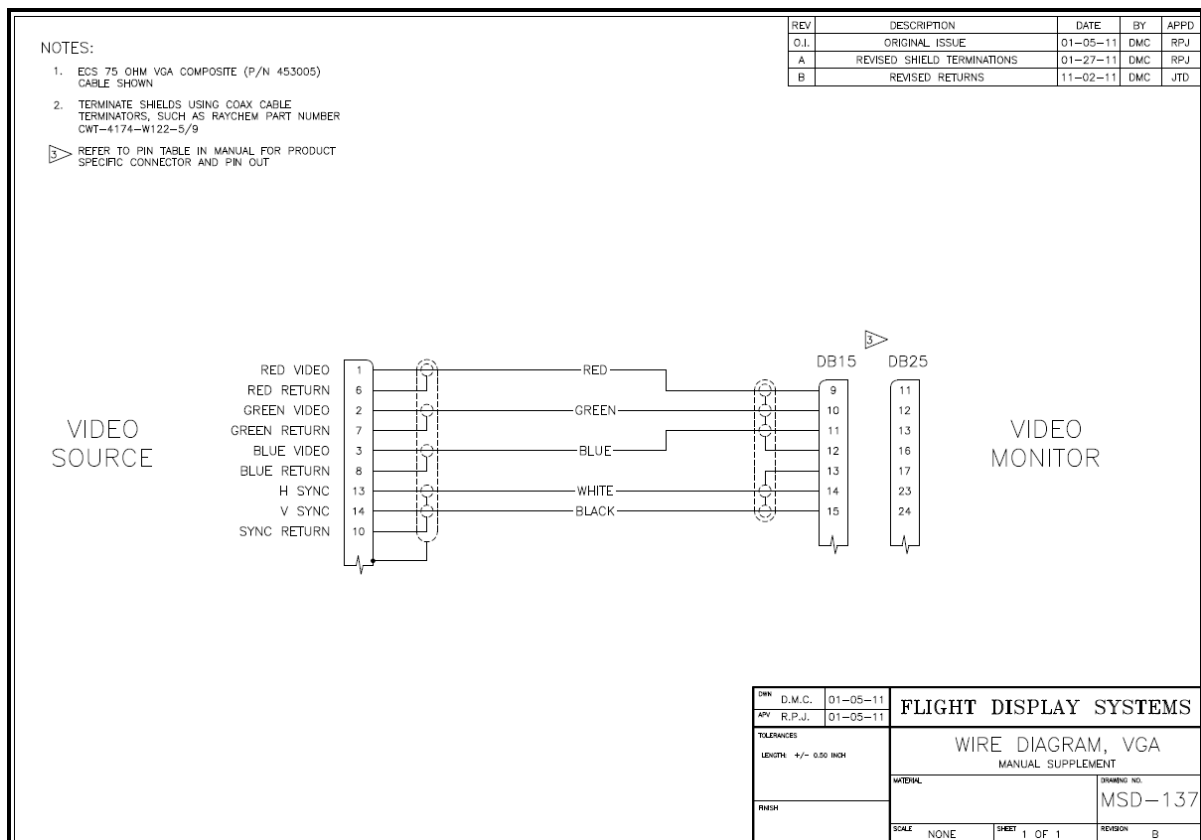


Similar aviation coaxial cable can be used from other vendors, as well.

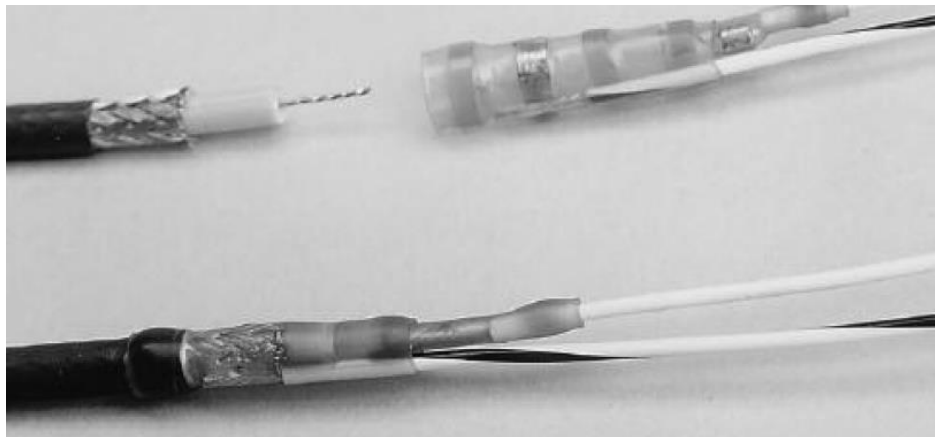
Some aircraft are prone to AC noise - we recommend adding to the composite source a 75 Ohm video isolation transformer such as Deerfield Laboratory, Inc. Part No. 162-1 (www.deerfieldlab.com, (650) 632-4090). In most cases this should be added to the video output of the source.

VGA Wiring

Recommended cable for VGA purpose is Carlisle P/N 453005. This is a single shielded cable containing 5 separate coaxial cables, color-coded to match the functions of the wires.



We recommend coax cables be terminated using solder sleeve coaxial cable terminators such as Raychem Part Number CWT-4174-W122-5/9.



Power and Ground Wiring

This is a 28VDC monitor that requires 1.5 amps of power to operate. To operate properly this monitor requires an input voltage of 18-29VDC.

The rated current of the equipment and associated voltage drop should be taken into consideration when selecting wire gauge. The following example is based on an install with a 28VDC power system and a total of 50 feet of wire between the circuit breaker, monitor and ground.

Example: 22awg wire has 16.2 Ohms per 1000 feet, this equates to .81 Ohms for 50 feet. 1.5 Amps of current on .81 Ohms will drop 1.22 Volts.

Resistance of Wire Type M22759/16-** (** = Gauge)	
Gauge (AWG)	OHMS/1000'
24	26.20
22	16.20
20	9.88
16	4.81
12	2.02
10	1.26
8	.701

Also, use short heavy gauge wire and a clean tight connection for ground.

It is the installer's responsibility to understand the product's requirements to install the product in compliance with industry standards and safety.

Power/Video

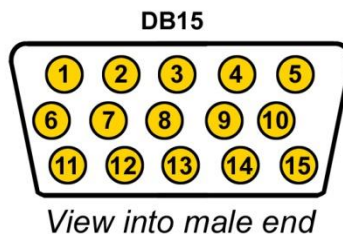
Pin out for P1 (High Density DB-15 Receptacle)

There is one High Density DB-15 on the rear of the display, which connects Power, Composite Video #1, Composite Video #2 and VGA connections.

Part Numbers for DB-15 connectors, manufactured by Tyco or Amp.

High density, D-sub, 15 contact receptacle (female) P/N 748565-1

HD15F pins P/N M39029/57-354



Pin Number	Description
1	28VDC Power
2	28VDC Ground
3	Composite Video 1 - Signal
4	Composite Video 1 - Shield
5	Composite Video 2 - Signal
6	Composite Video 2 - Shield
7	N/C
8	N/C
9	Red Video (Pin 1 on Standard VGA)
10	Green Video (Pin 2 on Standard VGA)
11	Blue Video (Pin 3 on Standard VGA)
12	Red Ground (Pin 6 on Standard VGA)
13	Green Ground (Pin 7 on Standard VGA)
14	Horizontal Sync (Pin 13 on Standard VGA)
15	Vertical Sync (Pin 14 on Standard VGA)



Operation Instructions

The FD151CV-QUAD is continuously on but can be de-energized by removing power from the entertainment system. No pilot or aircrew action is necessary during flight or ground operation.

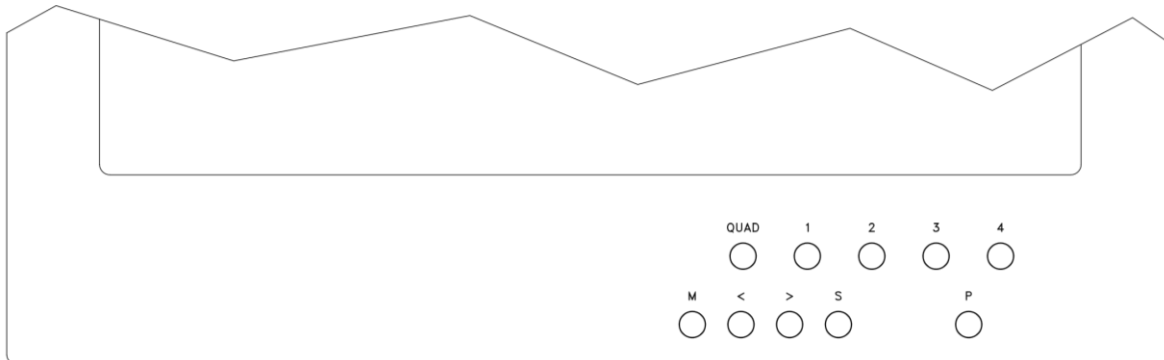
The passengers will be able to change the video output from the FD151CV-QUAD using the video source select button on the display, or remotely throughout the cabin with the included IR remote. Point the IR remote at the top of the LCD to make changes.

When applying 28VDC power, the display will turn on and look for a valid input on the last known source. If no input is found, the display will go to standby mode. Pressing the Select button will select new video input.



Button Controls

Located at the bottom of the FD151CV-QUAD are 10 buttons.



The functions are as follows:

BUTTON	DESCRIPTION
QUAD	Puts monitor into quad-screen mode.
1	Displays Input 1 as full-screen.
2	Displays Input 2 as full-screen.
3	Displays Input 3 as full-screen.
4	Displays Input 4 as full-screen.
M	Opens the menu, changes between selections.
←	Press while in menu- Adjust selection UP. Press out of menu – Brightness (Use up or down to change.)
→	Press while in menu- Adjust selection DOWN. Press out of menu – Contrast (Use up or down to change.)
S	Select video source with the following order: Composite 1, Composite 2 and RGB (PC).
P	Pressing will turn the monitor ON or OFF from Standby mode.

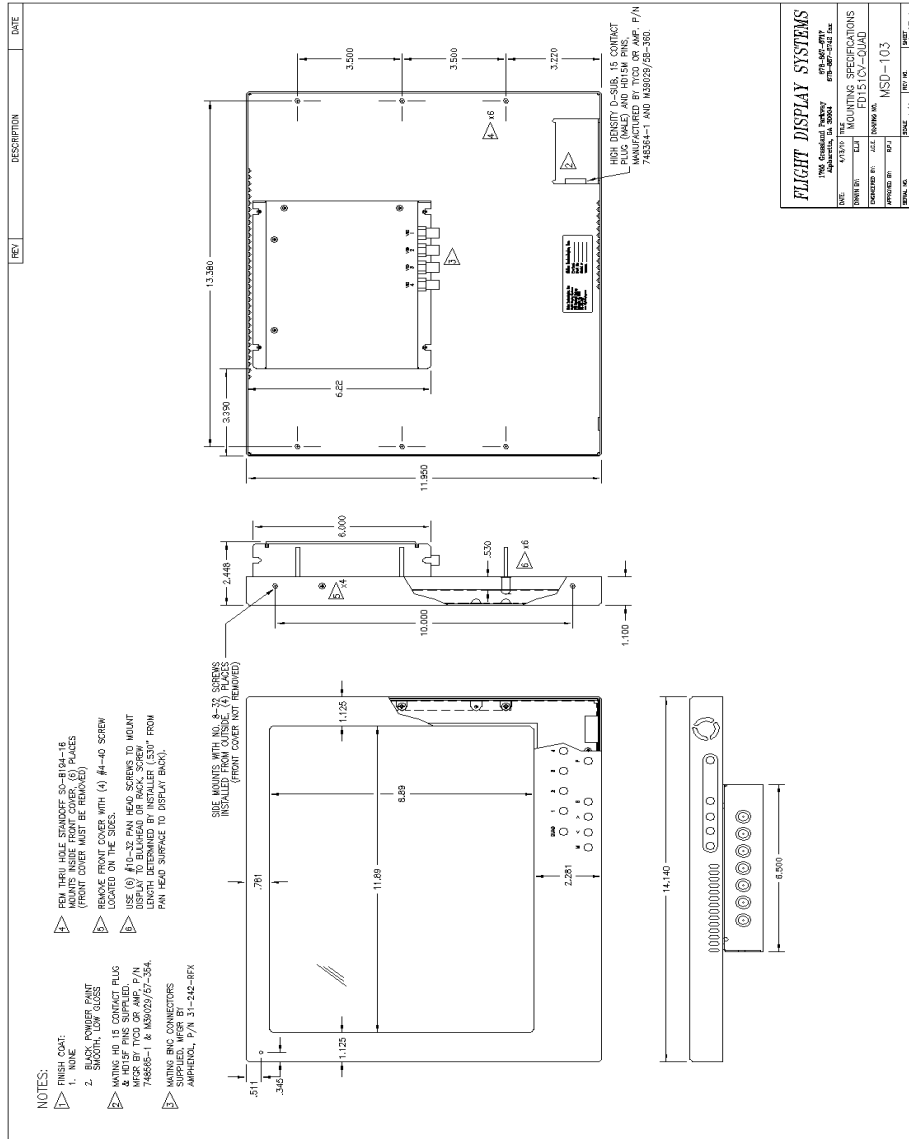
Remote Control Buttons

The remote control included with the FD151CV-QUAD contains the same functionality available on the display buttons, to include power, source, menu, and directional arrows.





Technical Drawing





Technical Support

Should you have any questions concerning this product or other FDS Avionics Corp. products, please contact our Product Support representatives at 470-239-7421.

FDS Avionics Corp.

6435 Shiloh Road
Alpharetta, GA 30005
Phone: 470-239-7400
Fax: 470-239-7439
Email: sales@FDSAvionics.com

For further product information, technical data and sample wiring diagrams, please click on the **Dealers** section of our web site at www.FDSAvionics.com

Instructions for Continued Airworthiness

The FD151CV-QUAD is designed not to require regular general maintenance.





Limited Warranty

All FDS Avionics Corp. (FDS) products are warranted to be free from material or manufacturing defects for a period of 24 months from the date of shipment for General Aviation customers or 12 months from the date of shipment for Government/Special Mission customers. Any material or repair workmanship for in warranty repair service will be specifically warranted for 90 days or the remainder of the original warranty period, whichever is longer. If the original warranty period has expired, the 90 day repair warranty is limited to the material and workmanship specific to the repair activity completed.

The following conditions are exclusions to warranty coverage:

1. Labor costs associated with installation, removal or reinstallation of any product.
2. Damage to or malfunction caused by any unauthorized alteration made to the product.
3. Resolving signal quality issues caused by externally generated noise introduced by aircraft electrical systems or other components connected to any FDS product.
4. Any malfunction caused by improper installation or connection to aircraft wiring, industry standard cabin management/ inflight entertainment systems, or third party commercial equipment not specifically identified as compatible with FDS products.
5. Any malfunction caused by installation that does not conform to precautions associated with operating environments listed in the operating manual or consistent with industry best practices such as; high temperature, adequate ventilation, high humidity, high dust, or power surges.
6. Cosmetic damage or damage to internal components caused by installation or removal, failure to follow installation or operating instructions, or any neglect or misuse of the product.
7. Any product that is returned for service with a broken tamper evident seal, indicating tampering or improper handling of the product by an unauthorized person. Violation of product tamper evident seals or modification of factory installed serial and PMA labels voids any warranty, either expressed or implied.

The FDS technical support team is available to provide distance troubleshooting support during business hours (8:00am to 5:00pm EST) Monday through Friday at (470) 239-7421.

Many repair requests can be resolved through distance support and may not require return of merchandise to the factory. If a product must be returned to the factory for repair, an RMA number will be issued as directed by the technical support team and communicated by the repair coordinator.

Upon request by the customer, FDS may send a service technician onsite to repair any non-PMA products. The travel expenses incurred to include transportation, lodging and meals along with the technician's hourly rate shall be payable by the customer in accordance with FDS' applicable rates and procedures.

FDS Avionics Corp. will, upon receipt of returned merchandise, remanufacture or replace the unit at our discretion and return the product by Ground Return Shipping. Express return shipment will be the responsibility of the sender.

This warranty is not transferable.

Any implied warranties expire at the express limited warranty expiration date. FDS shall not be held liable for any indirect, special, punitive, incidental or consequential damages.

Some states do not allow limitation on the length of an implied warranty. In such states, the exclusions or limitations of this limited warranty may not apply.



Log of Revisions

Rev	Date	Page	Description
A	04/13/2010		Initial Release
B	5/4/2017	All	Company name change, warranty, and formatting.

