

FD151SMT

Installation and Operation Manual

15" LCD and Slide Mount



TECHNICAL SUPPORT
678-867-6717, or
www.FlightDisplay.com

Flight Display Systems
Enhancing the Flight Experience

FD151SMT

15.1" LCD and Slide Mount

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General Information

The FD151SMT is a 15.1" LCD and Slide Mount 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.

Installed View



FD151SMT-R Shown

Additional Information

The FD151CV-LP, an integral part of the FD151SMT, utilizes a state of the art digital video decoding chipset for the analog video input. The three video sources in order of picture quality are VGA (computer graphics like moving maps), S-Video and Composite Video (DVD, camera or VCR).

The FD151CV-LP 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.

The FD151SMT is visible to passengers both while stored and deployed, and can be pulled out and into the aisle for more accessible viewing. The FD151SMT is offered in a Left or Right configuration. The FD151SMT-L is mounted on the Left side of the bulkhead, to extend rightwards into the aisle, while the FD151SMT-R is installed on the Right side of the bulkhead, extending leftwards into the aisle.

Specifications

Display Size	11.89" (W) x 8.91" (H)
Display Type	15.1" TFT Color LCD
Display Color	16.7 Million Colors
Dimensions Stowed	14.14" (W) x 12.5" (H) x 1.81" (D)
Dimensions Deployed	27.7" (W) x 12.5" (H) x 1.81" (D)
Screen Resolution	XGA 1024 x 768
Brightness	400 cd/m ²
Weight	10 lbs 12 oz
Power	28VDC @ 1.5 AMPS
PC Input	VGA (High Density DB-15 Connector)
Video Input	2 Composite
Video Type Supported	NTSC/PAL
Screen control	On Screen Display Menu
Remote Control	IR, included
Materials	Aluminum
DO-160E testing	Section 21 Category B
Slide Mount Type	Retractable - Dual Slide Rail Mechanism

Installation Instructions

All cabin entertainment equipment, such as the FD151SMT, 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.

The FD151SMT is integrated with a rugged slide mount bracket. Usually the FD151SMT is mounted against a bulkhead behind a seat, exposed to the interior. The FD151SMT is secured by six #10 machine screws. The monitor locks into place when stowed and deployed.

There is one DB-15 male connector on a 10" cable coming off of the back of the unit. The FD151SMT comes with a female DB-15 connector and crimp pins. The FD151CV-LP has already been connected to the slide mount and tested prior to shipping.

Power

This is a **28VDC** monitor that requires 1.5 Amps of power to operate. The unit turns on automatically upon power application.

Video Wiring Suggestions

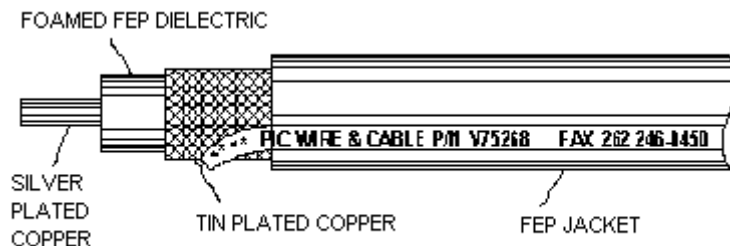
All shields should be grounded to the connector at the source, and floating at the display.

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 V75268. 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).

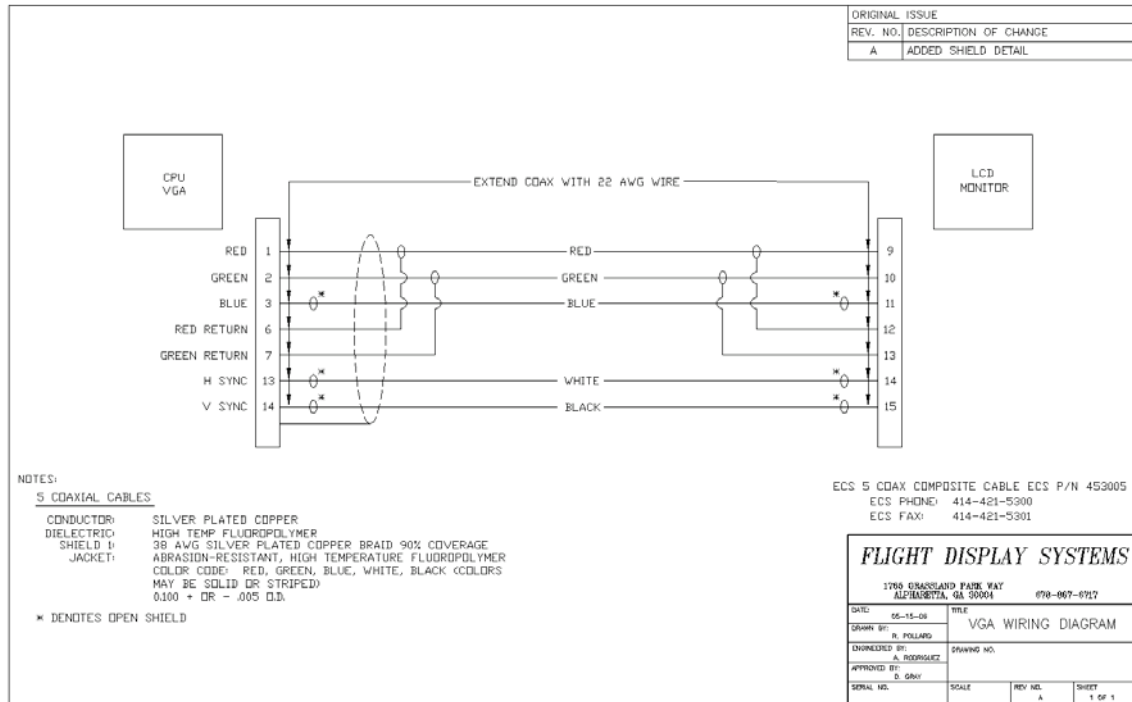


Similar aviation coaxial cable can be used from other vendors, as well.

Some aircraft are prone to AC noise - we recommend adding to the composite source a 75Ohm 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 ECS P/N 453005. This is a single shielded cable containing 5 separate coaxial cables, color-coded to match the functions of the wires.



The individual wires should be extended with 6" 22awg wires using an environmental splice for the red & green wires, and Raychem caps for the blue, white, and black wires.

Power and Ground Wiring

22 AWG wire is recommended for Power and Ground applications.

Pinout for High Density DB-15

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

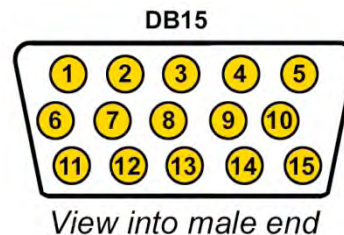
High density, D-sub, 15 contact receptacle (female)

P/N 748565-1

HD15F pins

P/N M39029/57-354

Wiring Diagram



Pin Number	Description
1	28VDC Power
2	28VDC Ground
3	Composite Video - Signal
4	Composite Video - Shield
5	S-Video Y - Signal
6	S-Video Y - Shield
7	S-Video C - Signal
8	S-Video C - Shield
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 FD151SMT 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. It is necessary to stow the display during take-off and landing.

The passengers will be able to change the video output on the FD151SMT 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 on the bottom of the FD151SMT are 5 buttons.



From right to left (fan inwards), the functions are as follows:

BUTTON	DESCRIPTION
POWER	Pressing will turn the monitor ON or OFF from Standby mode.
SOURCE	Select video source with the following order: Composite, S-Video and RGB (PC).
UP	Press while in menu- Adjust selection UP. Press out of menu - Brightness (Use up or down to change.)
DOWN	Press while in menu- Adjust selection DOWN. Press out of menu – Contrast (Use up or down to change.)
MENU	Opens the menu, changes between selections.

Troubleshooting

Video Noise

Check for an incorrect ground in the installation wiring. See specific examples of video noise below, or visit <http://flightdisplay.com/Grounding.pdf>

VGA Shadowing

Most of shadowing problems are due to shielding on the wire. Locate the point where all of the shields are connected. Cut away the shields, one at a time, while viewing the display on the screen to observe which shield is causing the noise. Cutting away one shield at a time will allow you to focus and isolate the video noise issue.

- Twisted pair wiring is prone to video noise. ECS VGA Wire (Detailed under “Video Wiring Suggestions”) is recommended.

Snow or Sweeping Lines

Lines that slowly sweep up and down are a result of AC noise. This AC noise can be generated by a power cart on the aircraft. Take the power cart off of the aircraft. Be careful of inverter wiring, which can also cause noise. Stand off the wires, if necessary.

If snow or sweeping lines persist, it is possible that the ground is at an incorrect point in the aircraft. Try moving the ground to another location.

No power to Monitor, or No video Input

- Verify correct wiring. Check the base receptacle connectors for possibly damaged pins.
- Check that the video source is:
 1. Powered on,
 2. In Play mode, and
 3. Displaying video.

Colour Distortion

- Adjust brightness and contrast settings using the buttons on the monitor.

Remote Control Inoperable

- Confirm that the infrared eye on the LCD screen is visible.
- Replace battery in remote control.

Technical Support

Should you have any questions concerning this product or other Flight Display Systems products, please contact our Product Support representatives at (678) 867-6717.

Flight Display Systems

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

Instructions for Continued Airworthiness

The FD151SMT is designed not to require regular general maintenance.

Warranty Information

Flight Display Systems warrants the FD151SMT against material or manufacturing defects for a two-year period (effective 1/1/2009 on all equipment shipped with 2009 pricing). Warranty begins on date of installation.

If product support is required, please call our Technical Support team at 678-867-6717 to obtain assistance. If the return of the unit to the factory is required, an RMA number will be issued at that time. Flight Display Systems will, upon receipt of the failed hardware, remanufacture or replace the unit at our discretion.

Flight Display Systems will pay Ground Shipping charges for warranted items. Charges for express shipment will be the responsibility of the sender.

This warranty is not transferable. Any implied warranties expire at the expiration date of this warranty. We shall not be liable for incidental or consequential damages.

This warranty does not cover a defect or failure that has resulted from improper or unreasonable installation, use or maintenance, as determined by Flight Display Systems. This warranty is void if there is any attempt to disassemble or open this product without factory authorization.

Any labour charges associated with the removal of product or related troubleshooting by a firm other than Flight Display Systems or its designee will not be covered.

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Log of Revisions

Rev	Date	Page	Description
A	01/25/2007	---	---
B	03/05/2008	6	Changed button order.
C	04/10/2009	2,9	Updated specifications, warranty info