Installation and Operation Manual

FDCVGA-2

Composite to VGA Up-converting Splitter

TECHNICAL SUPPORT
470-239-7421 or FlightDisplay.com

FDCVGA-2

Composite to VGA Up-converting Splitter

Flight Display Systems
6435 Shiloh Road
Alpharetta, GA 30005
470-239-7400 Phone
678-867-6742 Fax
sales@FlightDisplay.com
www.FlightDisplay.com

For the most current copy of all product manuals, please visit our website at www.FlightDisplay.com

Table of Contents

General Information

The FDCVGA-2 is used to convert two (2) Composite video signals into two (2) VGA signals and split them into Red, Green, Blue, Horizontal, and Vertical components.

Front View

Specifications

Output Resolution	1024x768
Dimensions	8.0″(W)x2.0″(H)x4.53″(D)
Weight	1 lb. 10 oz.
Power	28V DC @ 1.5 Amps
PC & Video Input	(2) Composite (via BNC connectors)
Video Type Supported	NTSC/PAL
Materials	Aluminum
Operating Temperature	0-50° C (32-122° F)
DO-160 Testing	Section 21, Category B

Installation Instructions

All supplementary equipment, such as the FDCVGA-2, 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 unit should it become necessary.

Eight (8) mounting slots are provided to mount the unit horizontally or vertically. It is recommended that, at least, four (4) mounting slots be used to secure the unit.

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 **28V DC** device that requires 1.5 Amps of power to operate. The unit turns on automatically upon power application.

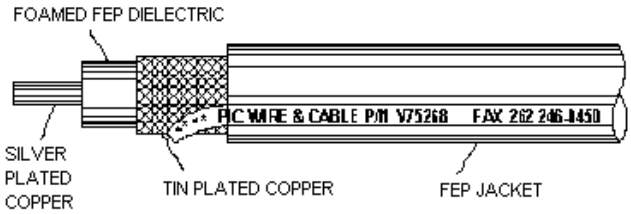
Wiring Suggestions

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.

Recommended cable for composite input and VGA outputs 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).

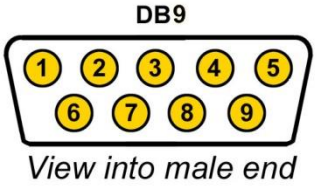


Power/Video

Pin out for DB-9

Part numbers for DB-9 connectors, manufactured by Amp:

D-sub, 9 contact receptacle (female)	P/N 747905-2
9F pins	P/N 205439-1



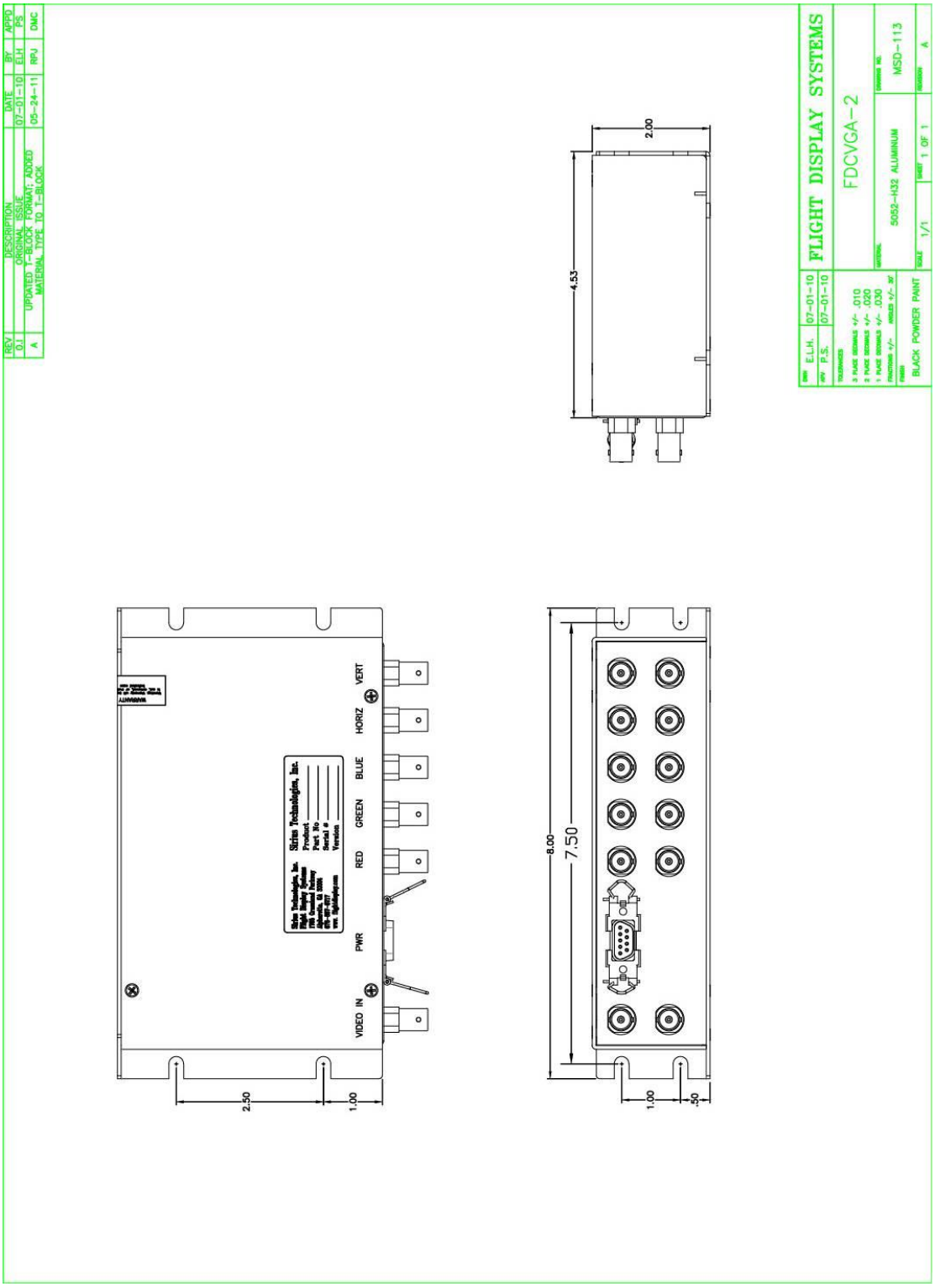
Pin Number	Description
1	28VDC Power
2	28VDC Ground
3	N/C
4	N/C
5	Serial Port Ground
6	TX Line to Controller CH 1 (Bottom)
7	RX Line from Controller CH 1 (Bottom)
8	TX Line to Controller CH 2 (Top)
9	RX Line from Controller CH 2 (Top)

Operation Instructions

The FDCVGA-2 is continuously on but can be de-energized by removing power from the unit. No pilot or aircrew action is necessary during flight or ground operation.

First, plug in one (1) or two (2) composite input sources into the BNC connectors labelled “Video In”. Next, make VGA component connections by connecting the proper BNC connector to its corresponding component connector as labelled on top of unit (i.e. Red to Red, Green to Green, etc.). Lastly, supply 28VDC via the DB-9 connector.

Technical Drawing



Troubleshooting

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.
- Reference “Video Wiring Suggestions” section on page 5 for recommended video cable.

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.

Verify that Horizontal and Vertical components are in their proper location.

No power to Unit, or No Video Output

- 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.

Color Distortion

- Verify that the Red, Green, and Blue components are in their proper location.

Technical Support

Should you have any questions concerning this product or other Flight Display Systems products, please contact our Product Support representatives at (470) 239-7421.

Flight Display Systems
6435 Shiloh Road
Alpharetta, GA 30005
Phone: 470-239-7400
Fax: 678-867-6742
Email: sales@FlightDisplay.com

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 FDCVGA-2 is designed not to require regular general maintenance.

Limited Warranty

All Flight Display Systems (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.

Flight Display Systems 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	7/1/10		Initial Release
B	10/27/2011		Added Operating Temp, Revised Pin out, revised photo, replaced technical drawing
C	09/04/2012		Updated format, warranty and non-PMA info