



Document Number:

MAN – DAPS350

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05/04/2017

Page 1 of 14

## Installation and Operation Manual

### DAPS350

### VGA (RGB) Video Amplifier



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**TECHNICAL SUPPORT**  
470-239-7421 or [FDSAvionics.com](http://FDSAvionics.com)



## Specifications

DAPS350		
Unit		
	Input Source	PC VGA (TTL Compatible, RGB Analog)
	Input Connector	HD-15M
	Video Output	8 Channels, HD-15F
	Maximum Resolution	1600 x 1280 (XGA)
	Transmission Distance	DAPS350 to Monitor 120 FT Video Source to Splitter 25 FT
	Horizontal Frequency	30-100 KHz
	Vertical Frequency	43-120 KHz
	Bandwidth	500 MHz
	Mount Angle	6 Points on Flange
Power		
	Power	28VDC
	Inrush Current	17 Amp peak 2.6A @ 1.5 mS 140 mA steady State @ 3.0mS
Environmental Conditions		
	Operating Temperatures	0-50° C (32-122° F)
Dimensions		
	External	7.5”(W) x 2.1”(H) x 4.15”(D)
	Weight (2 Displays & Dual Base)	1 lb. 4 oz.
	Materials	Aluminum
Qualified Testing		
	RTCA DO-160	Section 21, Category B

**Note:** The input current specification does not include the current passed to peripheral devices that are connected to the DAPS350's 12 Volt outputs. An additional 1.7 Amps of input current will be required when supplying the full 3 Amps of current via the 12 Volt outputs.





## Table of Contents

General Information.....	4
Front View.....	4
Additional Information .....	4
NOTICE to Customer .....	4
Installation Instructions .....	5
Wiring Suggestions .....	5
VGA Wiring.....	6
Power & Ground Wiring .....	7
Power/Video.....	8
VGA Input .....	9
VGA Output .....	10
Technical Drawing.....	11
NOTICE to Customer .....	11
Technical Support.....	12
Instructions for Continued Airworthiness .....	12
Warranty .....	13
Log of Revisions.....	14



## General Information

The DAPS350 is a VGA (RGB) Video Amplifier which takes a VGA source, and splits and amplifies each to 8 outputs. In addition, the DAPS350 supplies a total of 3 Amps of 12VDC power for other cabin entertainment products (i.e. Wireless Audio, DVD player, Glareshield Camera, or LCD monitors). The 3 amps is a total current shared among all of the 12 Volt output pins. The installer can consume all three amps on one output, or share a portion of the 3 amp total across multiple 12 Volt outputs.

## Front View



## Additional Information

The DAPS350 is designed to interface with products that use VGA (Analog RGB) video output such as our FDS Avionics Corp. Moving Map

The DAPS350 is made of all metal components. DO-160 testing has been completed and is available upon request.

## Notice to Customer

**This product is not interchangeable with legacy non-PMA units. If purchasing replacement hardware, please contact FDS Avionics Corp. Sales for more information.**



## Installation Instructions

All cabin entertainment equipment, such as the DAPS350, should be installed on a non-essential bus and have a dedicated circuit breaker. It is a requirement that a switch be installed so that the pilot can de-energize the system should it become necessary.

There are four mounting slots located on the sides of the DAPS350 and two slots on the end for vertical mounting. It is sufficient to mount the unit by only two attach points. This unit can be mounted in any orientation. Care should be given to make sure the DB Connectors are firmly seated in the VGA inputs and outputs and that the aircraft wire bundle will not shift and pull the plugs away from the DAPS350.

The unit will come on automatically upon applying power. During check out you can look to see that the power LED is illuminated once power has been applied. Install VGA cables in the numerical order as indicated on the DAPS350 labeling.

Note: Maximum length from the source to the DAPS350 is 25', and maximum length from the DAPS350 to the displays is 120'.

## Wiring Suggestions

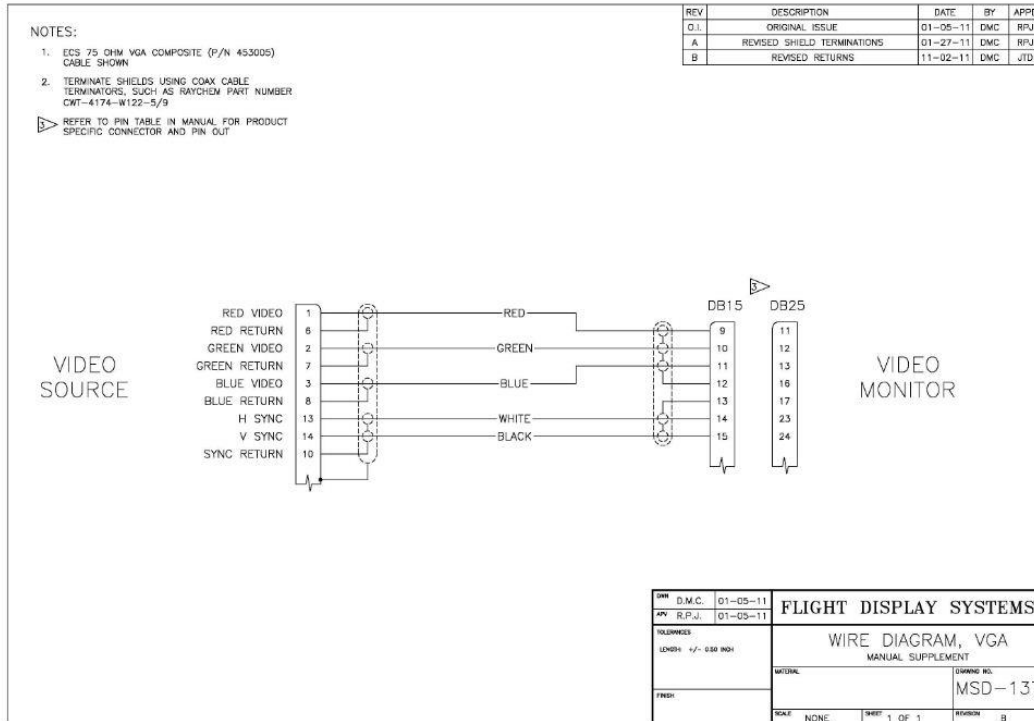
The braided or foil shields around each individual color, sync, or DDC data signal should be grounded to their connectors at both the source and destination. If a cable has an additional overall shield around the VGA video wire set, then that overall shield should be grounded to the connector at the source, and left 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.

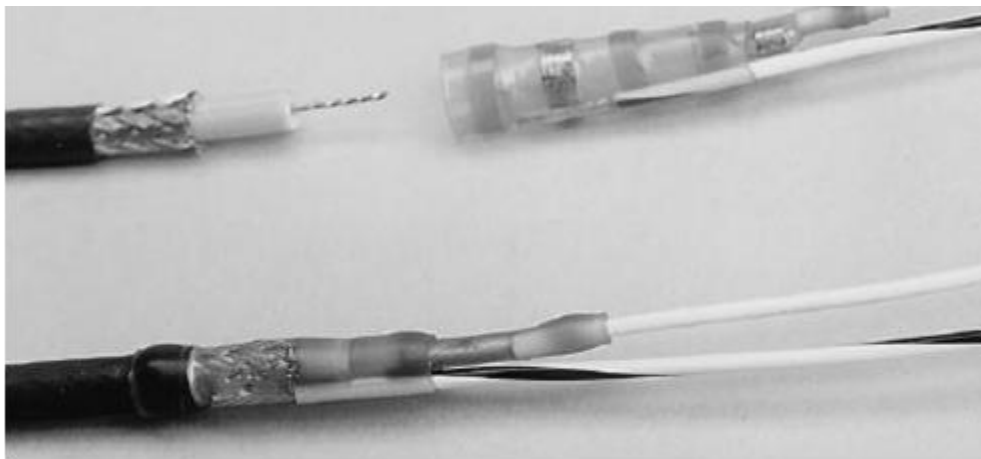


## VGA Wiring

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.



Coax cables should be terminated using solder sleeve coaxial cable terminators, Raychem P/N: CWT-4174-W122-5/9. Use the absolute minimal length wire to make the connection between the coax and the connector. Each tenth of an inch of non-coax wire increases signal degradation and will ultimately show up as a blurry image or cause ghosting in the image.





## Power and Ground Wiring

This is a 28VDC Video Converter that requires up to 1.9 amps of power to operate. To operate properly this unit requires an input voltage of 16-30VDC.

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, unit and ground.

**Example:** 22awg wire has 16.2 Ohms per 1000 feet, this equates to .81 Ohms for 50 feet. 1.9 Amps of current on .81 Ohms will drop 1.54 Volts.

Resistance of Wire Type M22759/16- <b>**</b> (** = 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.

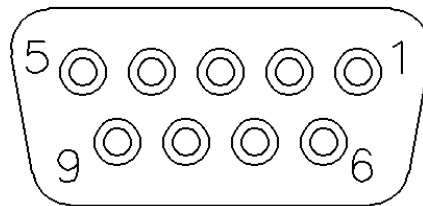


**Power/Video**

DB-9F (Supplied)

Connector  
Crimp Contacts

P/N: M24308/2-281 or Equivalent  
P/N: M39029/63-368 or Equivalent



MATING FACE

Pin Number	Description
1	28VDC In - Power
2	28VDC In - Ground
3	N/C
4	12VDC Out - Power
5	12VDC Out - Ground
6	12VDC Out - Power
7	12VDC Out - Ground
8	12VDC Out - Power
9	12VDC Out - Ground

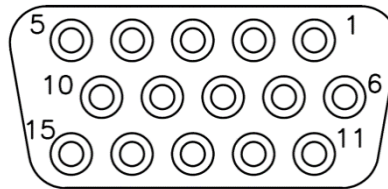


## VGA INPUT (Industry Standard)

DB-15F (Supplied)

Connector  
Crimp Contacts

P/N: M24308/2-286 or Equivalent  
P/N: M39029/57-354 or Equivalent



MATING FACE

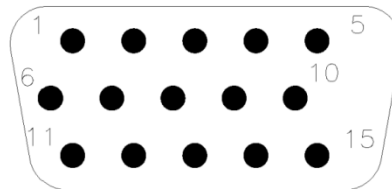
Pin Number	Description
1	Red Video
2	Green Video
3	Blue Video
4	GND
5	DDC Return (Optional)
6	Red Ground
7	Green Ground
8	Blue Ground
9	N/C
10	Sync Ground
11	GND
12	DDC Data (Optional)
13	Horizontal Sync
14	Vertical Sync
15	DDC Clock (Optional)

## VGA OUT – Monitors 1 through 8 (Industry Standard)

DB-15M (Supplied)

Connector  
Crimp Contacts

P/N: M24308/4-264 or Equivalent  
P/N: M39029/58-360 or Equivalent

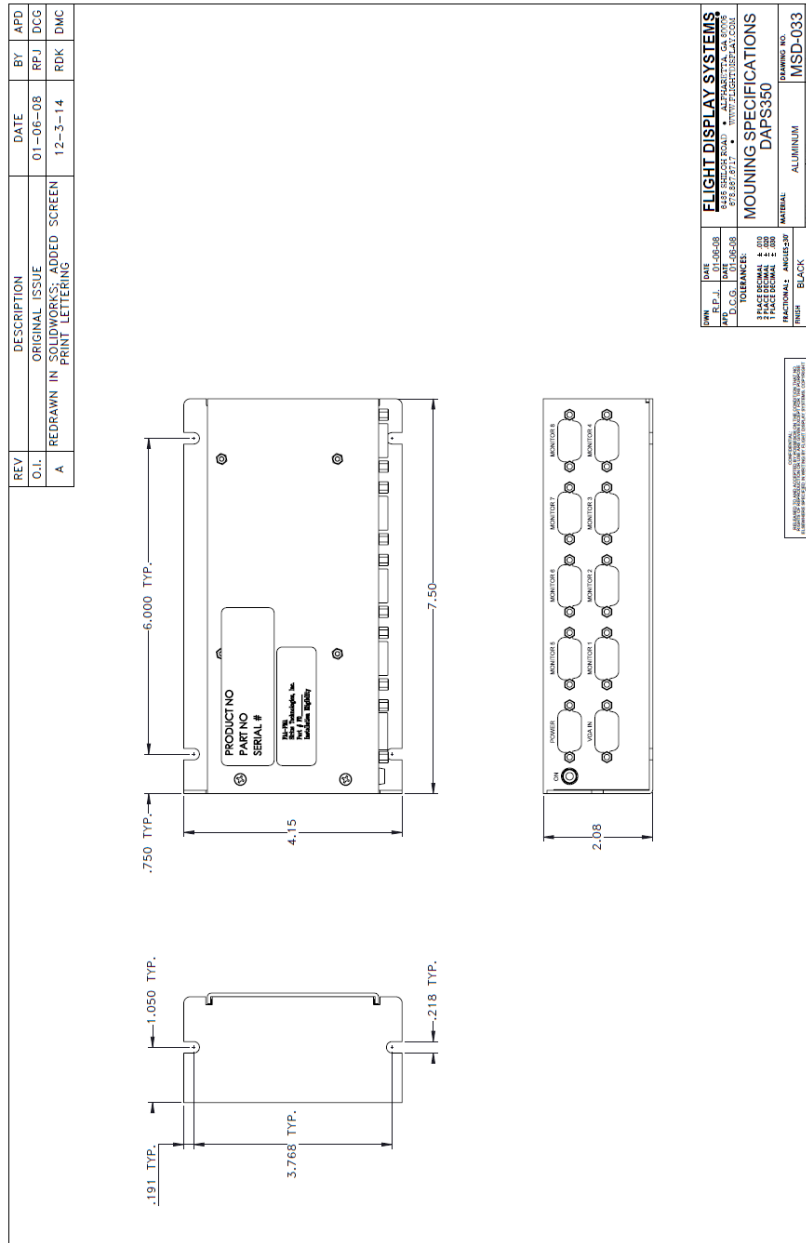


MATING FACE

Pin Number	Description
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8	Blue Ground
9	N/C
10	Sync Ground
11	GND
12	DDC Data (Optional)
13	Horizontal Sync
14	Vertical Sync
15	DDC Clock (Optional)



# Technical Drawing



## NOTICE TO CUSTOMER

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L

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Page 12 of 14

## Technical Support

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

### **FDS Avionics Corp.**

6435 Shiloh Road

Alpharetta, GA 30005

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Email: [sales@FDSAvionics.com](mailto: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](http://www.FDSAvionics.com)

## Instructions for Continued Airworthiness

The DAPS350 is designed not to require regular general maintenance.





## Warranty Information

All FDS Avionics Corp. 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	02/02/2007	---	---
B	06/20/2008	1 5	Updated image Corrected image of DB-15 connector
C	04/14/2009	1,8	Updated specifications, warranty info
D	07/20/2009	1	Updated FAA/PMA Testing Approval
E	11/19/2009	cover	Updated front cover photo
F	11/23/2009	1	Updated specs
G	11/30/2009	9	Revised Assembly Drawing
H	10/21/2011		New Format, added operating temp to specs, new VGA wiring diagram, updated DO-160 info
I	08/27/2014	1, 11,12	Update address, phone number, and warranty info
J	1/30/2015	1, 3,5,6- 15	Updated Logo's on Cover and Table of Contents (Added pages 14 & 15); updated Spec table; Updated Wiring Suggestions (grounding shields); Updated VGA wiring (Coax Cables); Updated Pinout information (VGA & Connector/Contact part numbers); Updated MSD-033 drawing, updated power and ground.
K	10/1/2016	All	Updated cover, specifications, Wiring Tables, Warranty, Emails
L	05/04/2017	All	Updated Corporate Name, Format, Contact Numbers, Warranty

