

***Approach***  
***Fast Stack***

# **FAST STACK PRO HUB**

**INSTALLATION MANUAL for Rev F**

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### **Manual Rev Information**

July 2005 Change - Wiring tables corrected.

January 2006 Update - Page numbers added to wiring tables.

August 2006 Update – PRO rev H Connector Drawing added.

July 2010 Update – PRO chassis and mounting plate drawings and instructions added.

# TABLE OF CONTENTS

## SECTION 1

## GENERAL DESCRIPTION

1.1	INTRODUCTION
1.1.1	EQUIPMENT DESCRIPTION
1.1.2	FEATURES
1.2	TECHNICAL SPECIFICATIONS
1.2.1	PHYSICAL CHARACTERISTICS
1.2.2	ENVIRONMENTAL CHARACTERISTICS
1.2.3	FAST STACK CABLES

## SECTION 2

## INSTALLATION PROCEDURES

2.1	GENERAL INFORMATION
2.2	UNPACKING AND INSPECTING
2.3	MOUNTING FAST STACK PRO HUB
2.4	CONNECTING FAST STACK CABLES

## SECTION 3

## CONNECTOR DEFINITIONS

3.1	GENERAL INFORMATION
3.2	HUB CONNECTOR NAMES AND PIN LOCATIONS
3.2.1	COMPLETE LIST OF HUB CONNECTIONS
3.2.2	C1 TRANSPONDER
3.2.3	C2 ENCODER
3.2.4	C3 AUTOPILOT
3.2.5	C4 AUX AUDIO
3.2.6	C5 GPS 1
3.2.7	C6 NAV 1
3.2.8	C7 COMM 1
3.2.9	C8 NAV INDICATOR 1
3.2.10	C9 ANNUNCIATOR / SWITCHES
3.2.11	C10 GPS I/O 1-1, 1-2, 1-3 and 1-4
3.2.12	C12 GPS I/O 1-2
3.2.13	C13 GPS 2
3.2.14	C14 NAV 2
3.2.15	C15 COMM 2
3.2.16	C16 NAV INDICATOR 2
3.2.17	C17 MULTI FUNCTION DISPLAY
3.2.18	C18 GPS I/O 2-1
3.2.19	C19 ENCODER OUT

## FIGURE

## LIST OF ILLUSTRATIONS

1	PRO HUB – FRONT VIEW
2	PRO HUB DIMENSIONS
3	PRO HUB MOUNTING BRACKET DIMENSIONS
4	BASIC CABLE
5	SPLIT CABLE
6	COMBINE CABLE
7	COMBINATION CABLE
8	SIDE VIEW OF HUB ATTACHING TO MOUNTING BRACKET
9	PRO HUB – EQUIPMENT BENCH TEST
10	PRO HUB - CONNECTOR IDENTIFICATION

# SECTION 1 GENERAL DESCRIPTION

## 1.1 INTRODUCTION

The Fast Stack PRO Hub and Cable System is a revolutionary product that provides a complete solution for the installation of avionic equipment into an existing aircraft or one you are building. It delivers everything you need to make avionic installs and upgrades fast, cost-effective and safe while eliminating the “rat’s nest” behind the instrument panel. This system also minimizes electronic noise and other problems associated with hand wiring by using centralizing grounding, uniform cable shielding and proper termination.

The Fast Stack PRO Hub was designed for a full Garmin, Apollo, or Bendix/King stack. It can also accept and connect most NAV, GPS, COM, EFIS, Audio Panels, Intercoms, Moving Map Displays, VOR Indicators, HSIs, RMIs, ADFs, and almost any RS-232 and ARINC formatted send/receive electronic device. This manual describes the physical, mechanical, and electrical characteristics of the installation requirements for the Fast Stack PRO Hub interconnect box and associated Fast Stack cables.

### 1.1.1 EQUIPMENT DESCRIPTION

The Fast Stack PRO Hub and its associated cables are designed to make the various interconnections in an IFR installation.

The Fast Stack PRO Hub can be used to connect:

- |                    |                              |
|--------------------|------------------------------|
| One TRANSPONDER    | One ENCODER                  |
| One ENCODER OUT    | One AUTOPILOT                |
| One AUX AUDIO      | One ANNUNCIATOR              |
| One AUDIO PANEL    | One MULTI FUNCTIONAL DISPLAY |
| Two GPS units      | Two NAV devices              |
| Two COM units      | Two INDICATORS               |
| Five GPS I/O units |                              |

**NOTE: Combination cables can be used to increase the number of connections.**

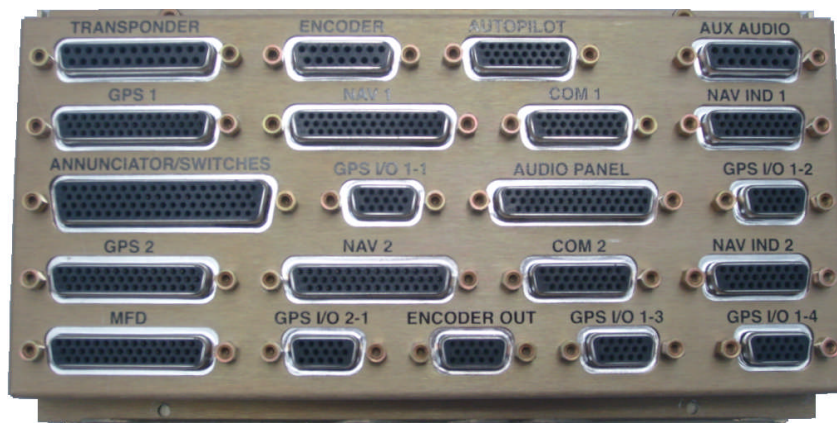


Figure 1: PRO rev F – Front View

## 1.1.2 FEATURES

The Fast Stack PRO Hub features the following:

- |                         |  |
|-------------------------|--|
| Modular Custom Cabling  | Milspec Tefzel Wiring                    |
| Cable enclosed in braid | Simple to Install                        |
| Simplifies Upgrades     | Limited hand wiring which reduces errors |
| Lower Upgrade Costs     | Single Point Grounding                   |

## 1.2 TECHNICAL SPECIFICATIONS

Mounting	Behind Instrument Panel
Box Width	4.350"
Box Length	8.125"
Box Height	0.895"
Box Weight	1 lb 2 oz

### 1.2.1 PHYSICAL CHARACTERISTICS

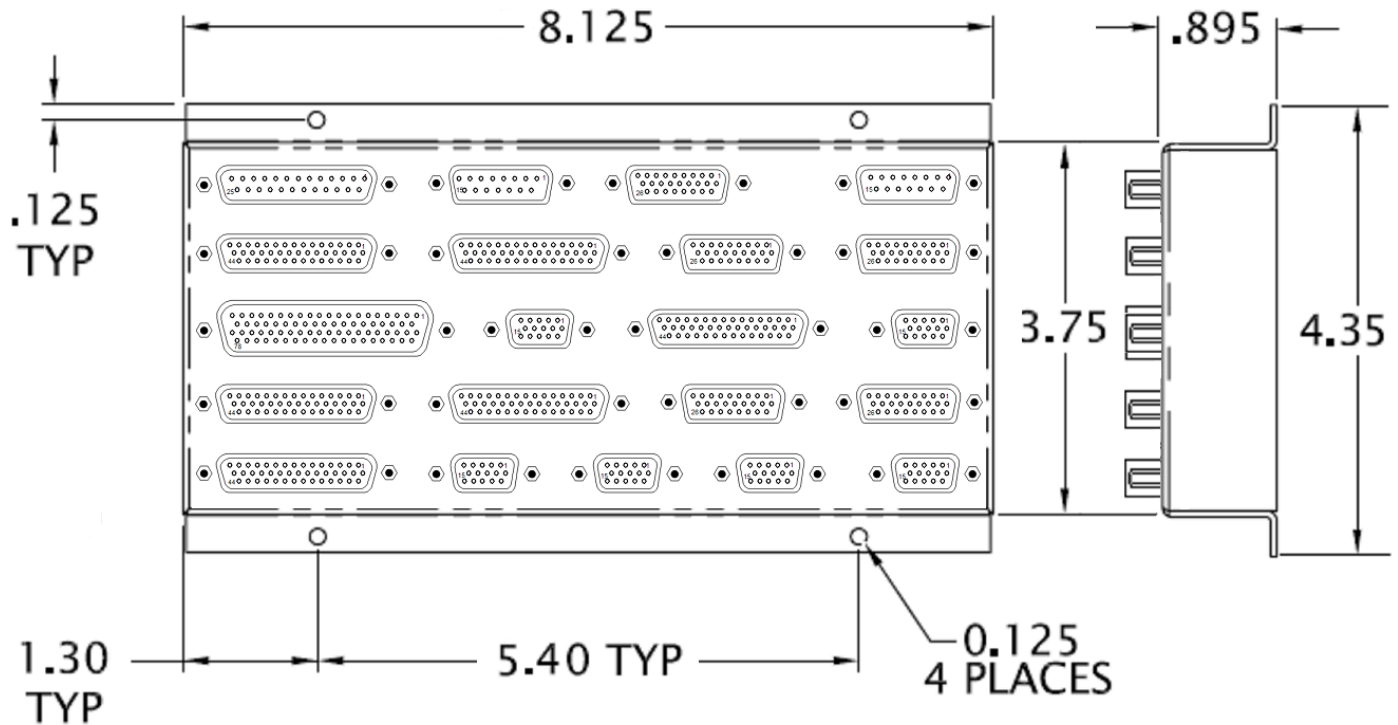
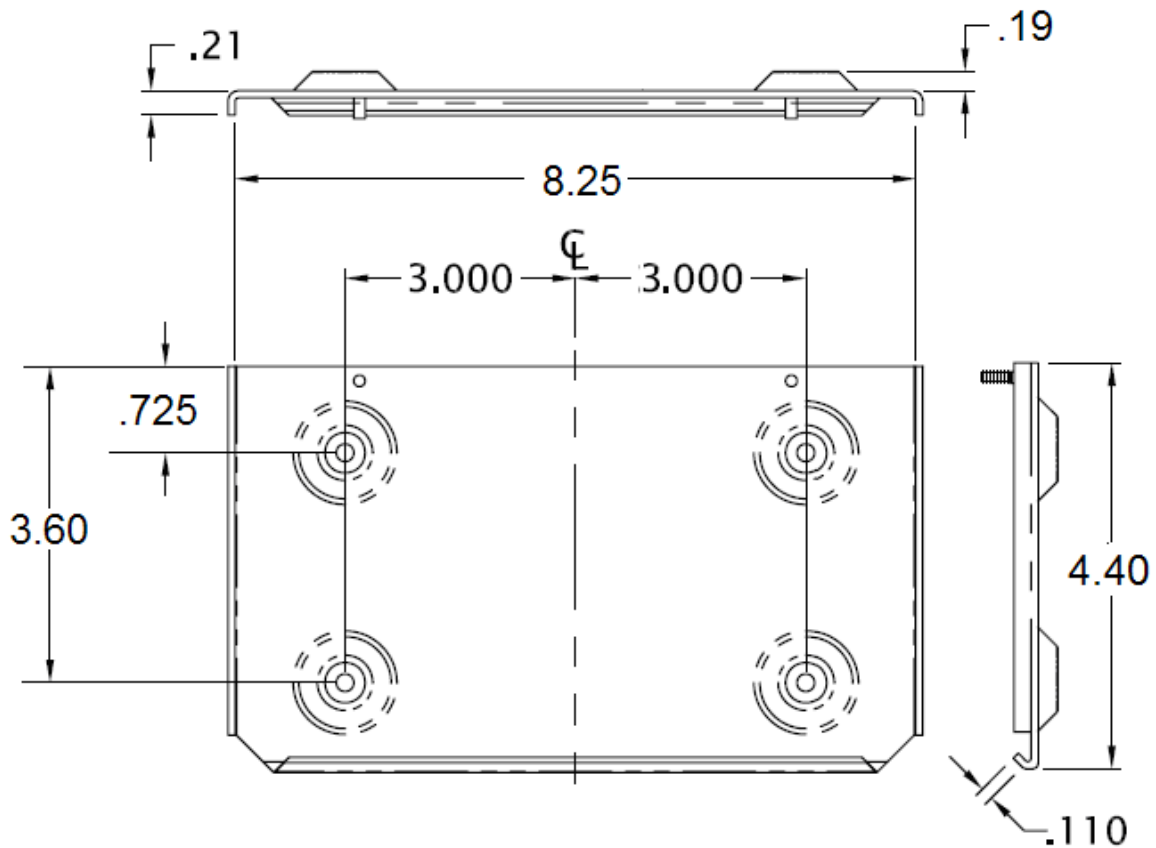


Figure 2: PRO rev F Hub Dimensions



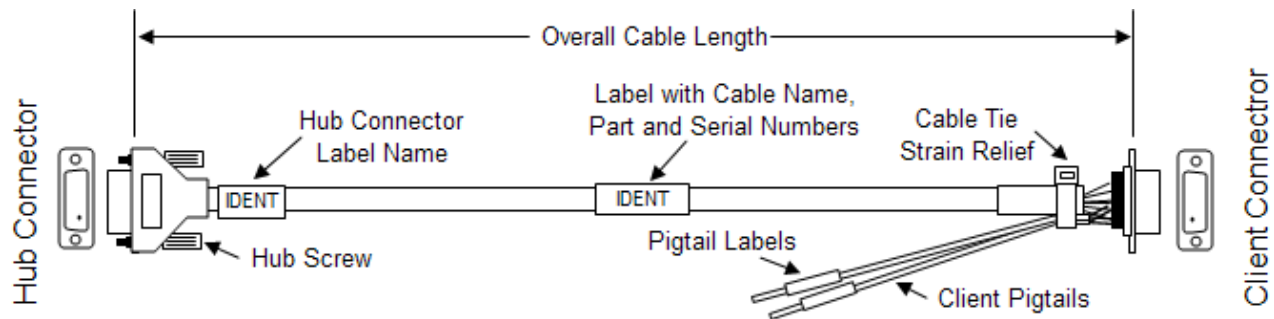
**Figure 3: PRO Hub Mounting Bracket Dimensions**

## 1.2.2 ENVIRONMENTAL CHARACTERISTICS

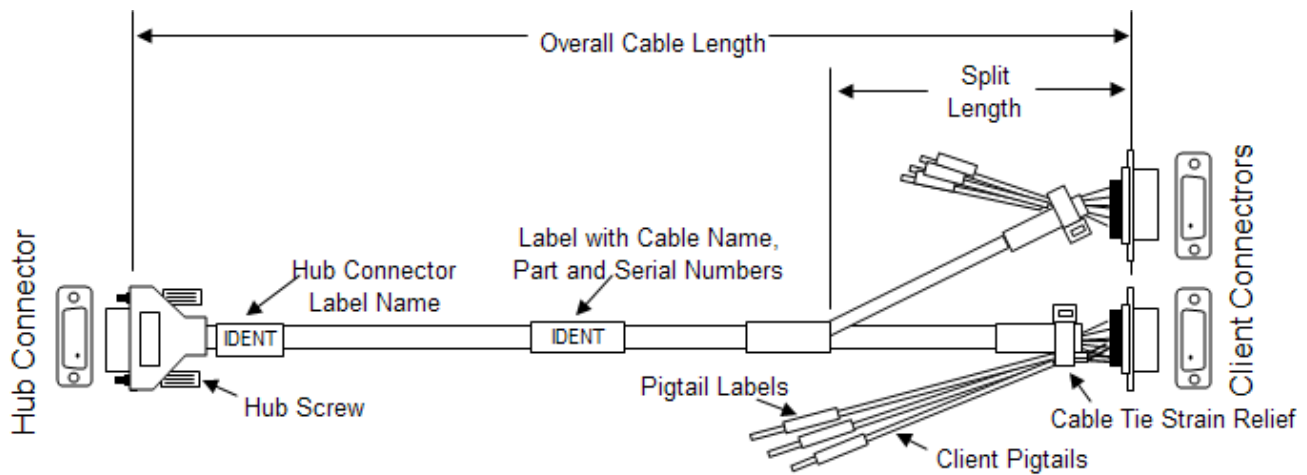
Regulatory Compliance	Wiring – AC-43.13-1B
DO160	
Operating Temperature Range	-55°C to 70°C
Humidity	95% Non-Condensing
Altitude Range	0 to 50,000
Operating Current	2.5 Amp Max Per Wire
Lighting Current	Not applicable

## 1.2.3 FAST STACK CABLES

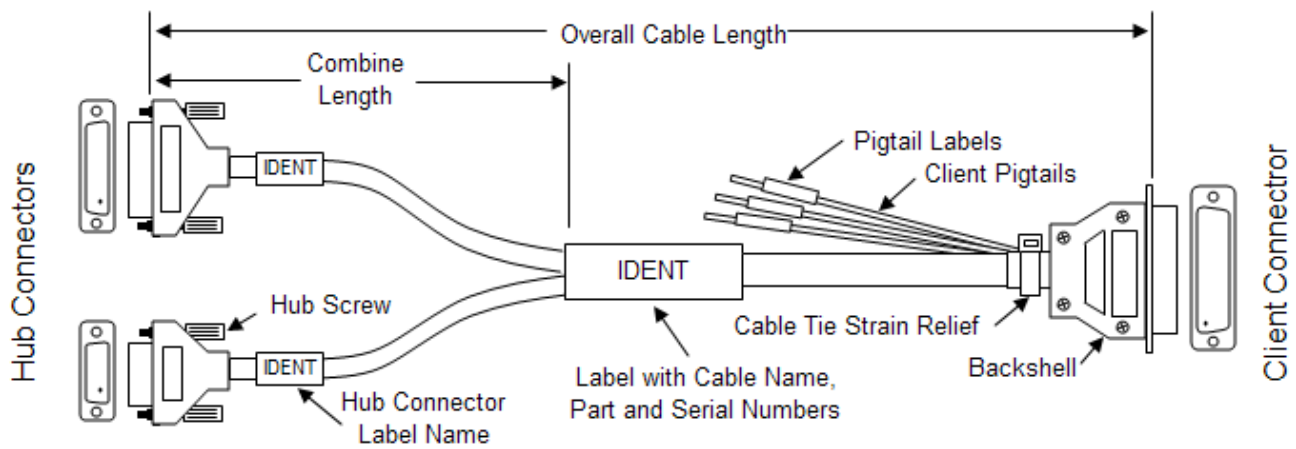
All Fast Stack cables are built with shielded and non-shielded Milspec Tefzel wire which is enclosed in braid and an insulating covering. Fast Stack cables come in four general forms: BASIC, SPLIT, COMBINED and COMBINATION. The length of each cable can be specified by the customer. However, two standard lengths will work for most installations: 36 inches for indicators and 24 inches for other panel mounted avionic equipment. The benefits of shorter cable lengths include less noise, less potential for “ground loops” and lower voltage losses. The standard length for power, ground and other non-intercom pigtail leads is 48 inches.



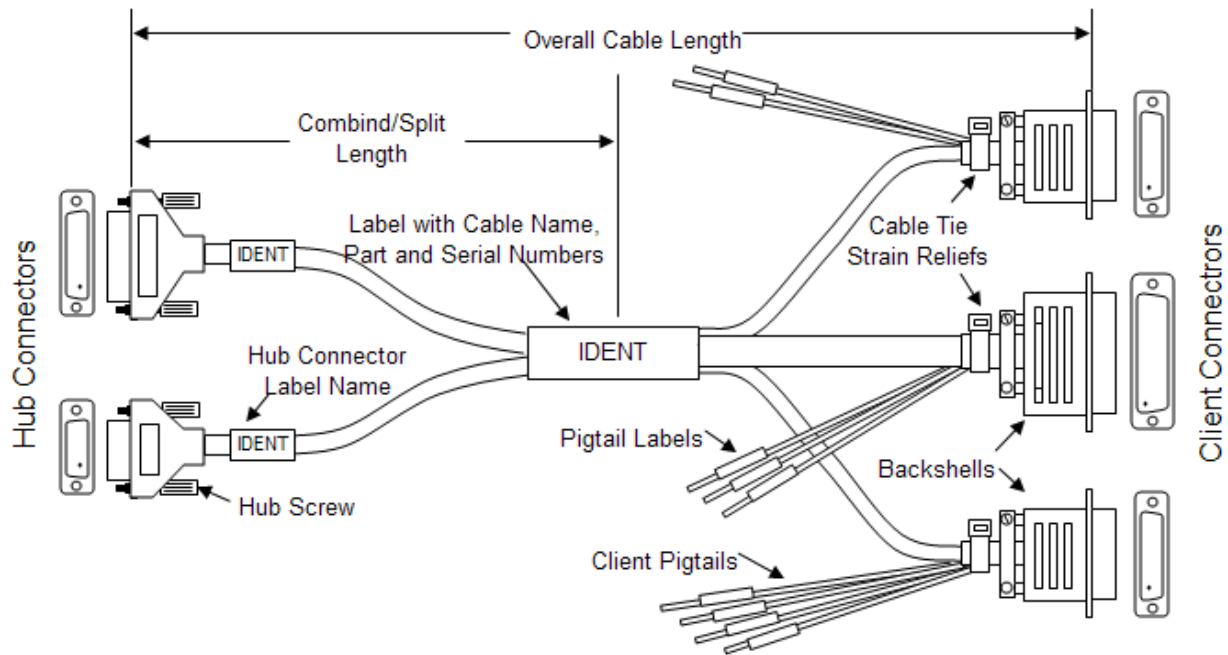
**Figure 4: Basic Cable**



**Figure 5: Split Cable**



**Figure 6: Combined Cable**



**Figure 7: Combination Cable**

## **SECTION 2 INSTALLATION PROCEDURES**

### **2.1 GENERAL INFORMATION**

The Fast Stack PRO Hub is compact and lightweight and designed to installation behind the instrument panel. Simply select the appropriate Approach cables for your avionics, plug them in, attach pigtails and you're done. The Approach Hub is not considered an "active" component and Fast Stack cables comply with FAA AC43.13-1B/2A. This means that the connections made using the Hub and Fast Stack cables already exist behind the instrument panel and should be FAA approved.

### **2.2 UNPACKING AND INSPECTING**

The Fast Stack system comes in two or more boxes. One box contains the Fast Stack PRO Hub, install manual, and a packing slip of what was ordered (keep these for future reference). The other box(s) contain the cables you ordered for your installation.



## 2.3 MOUNTING FAST STACK PRO HUB

1. Select a mounting location that will provide a good electrical grounding point and which will avoid excessive bends in the cables that will be attached to the hub - Refer to figures 9 through 12. In the case of a non-aluminum (wood, composite, etc.) aircraft, a large gauge wire must be used to provide the ground.
2. Attach the PRO Hub mounting bracket to an electrical grounding point or airframe ground using four screws – AN526C632R or equivalent. Proper grounding shall have a Maximum of 2.5 mille-ohm resistance between unit and airframe structure.
3. Slide the Fast Stack PRO Hub into place and secure it using the two lock nuts

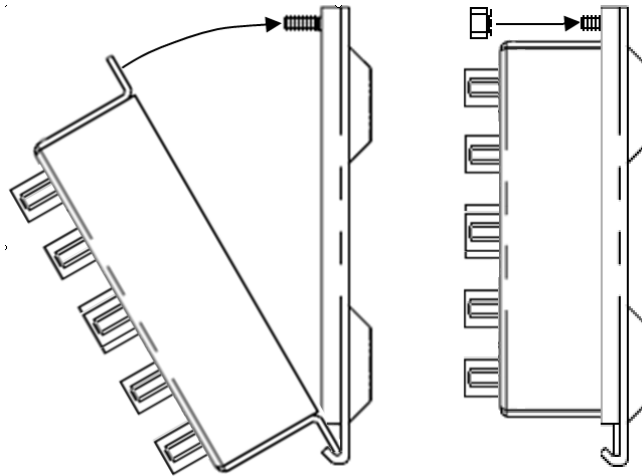
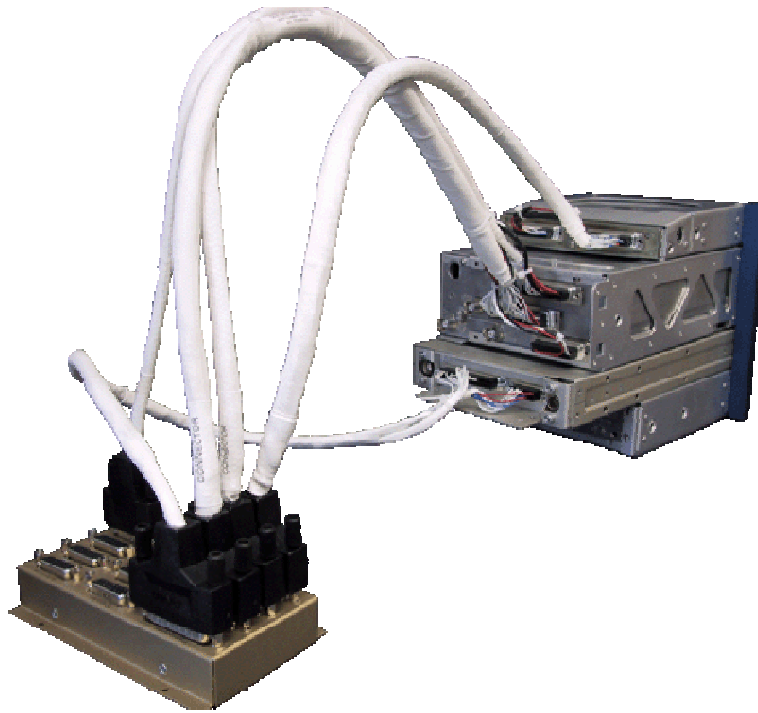


Figure 8: Side View of Hub attaching to the Mounting Bracket

## 2.4 CONNECTING FAST STACK CABLES

1. The Fast Stack cables must be plugged into the proper connectors on the PRO Hub (e.g., GPS/NAV1, COM #1, AUTOPILOT, etc.). Refer to the cable build sheet that came with your Fast Stack PRO Hub and check the labels on PRO cables to ensure they are connected correctly. **DO NOT USE EXCESSIVE FORCE** to plug cable connectors into the PRO Hub. If a cable does not easily plug into the hub, check the cable connector pins to ensure they are not damaged. **Improper cable connections will prevent the connected equipment from functioning properly and may also cause damage.**
2. Cables should be routed using proper bend radii, drip loops and slack to allow for easy access, maintenance repairs and inspection. **Route wires in such a manner that it does not violate any regulatory safety requirements.** (Ref: AC43.13-1B, Chapter 11, Sections 8, Paragraphs 11-96 (b), (q-y) and (aa-gg) and Chapter 9).
3. Move cables away from high energy sources such as coaxial cables, 400HZ AC, etc
4. Attach the client connector of the Fast Stack cable to the associated avionic equipment or tray in the Avionic Stack. (Refer to owner's manual of the equipment for more details). Connect pigtail leads from the Approach cables to the circuit breaker switch, power source or other point specified by the associated equipment's owner or installation manual.



**Figure 8: Equipment Bench Test**

5. Connect the appropriate cable leads to lighting (see individual avionics installation manual). Pay close attention to lighting connections. In the case of some King devices, 14V or 28V wiring is selected by wire connection combinations. (See the device's specific installation manual).
6. When stripping wires for termination, be sure not to nick or cut strands of wire.
7. Secure wiring in the aircraft to prevent chaffing. (Ref: AC43.13-1B, Chapter 11, Section 8, Paragraphs 11-96 (a-p) and Sections 9 and 11).
8. When crimping terminals and/or splices, use the correct size for the wire gauge. Also ensure that the proper crimping tools are used and that these tools are set to the proper setting for a correct crimp.
9. If soldering is necessary, be sure a cold solder joint does not exist and that shrink tube of the proper size and type is installed over the wire and connection point. (Ref: AC43.13-1B)
10. Whenever a cable is terminated, care should be taken to ensure proper grounding of the over-braid, preventing EMI (Electromagnetic Interference) and noise introduction into the system as is required for HIRF and Lightning protection. Proper grounding shall be a Maximum of 2.5 milli-ohm resistance between the grounded device and the adjacent airframe structure.
11. Any wire added to or removed from the aircraft should satisfy separation requirements and wiring standards, in accordance with FAA Advisory Circular AC43.13-1B, Chapter 11, Section 8, Paragraphs 11-96 (w), (z) and (dd)
12. Upon completion of installation, each avionics component will need to be tested according to its corresponding equipment's installation requirements.

**Note:** *You do not need to have cables attached to every connector in the Fast Stack PRO-C Hub.*

# SECTION 3 CONNECTOR DEFINITIONS

## 3.1 GENERAL INFORMATION

The Fast Stack PRO Hub has 18 HD (high-density) and 3 DB gold-plated female connectors: 6-HD15, 5-HD26, 6-HD44, 1-HD78, 2-DB15 and 1-DB25 connectors.

**Make sure all cables are attached to the PRO hub connectors as specified.**

## 3.2 HUB CONNECTOR NAMES AND PIN LOCATIONS

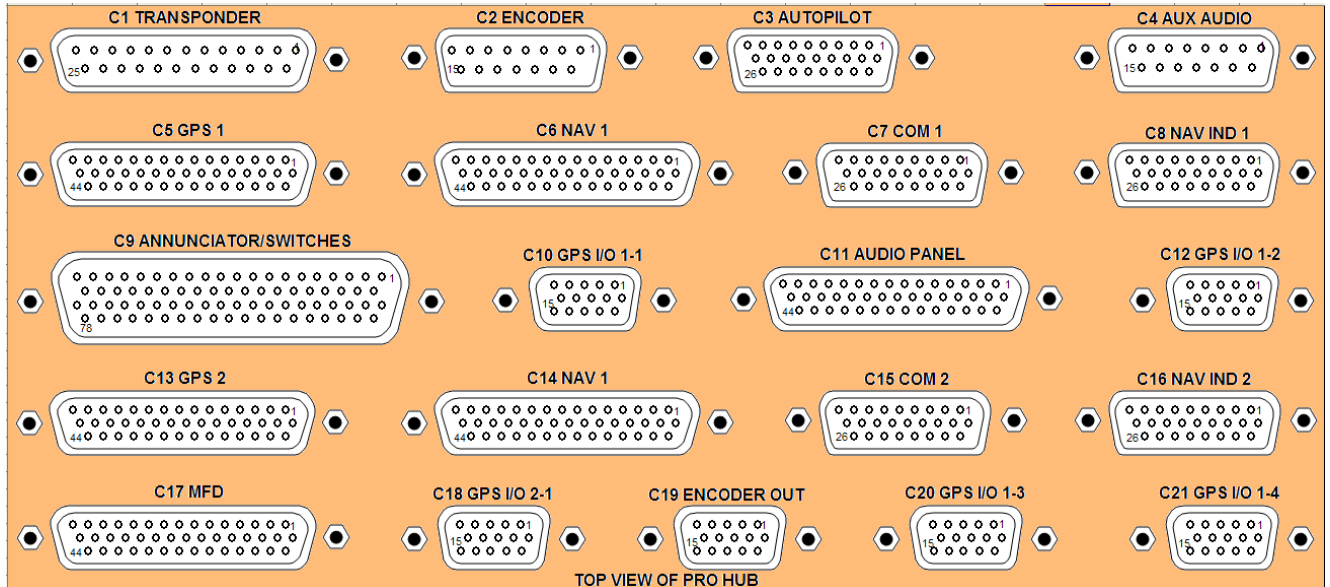


Figure 10: PRO Hub Connector Identification

### 3.2.1 PRO HUB rev F SORTED BY SIGNAL

NOTE: GROUND and SHIELD pins are connected together. However, the **bold** shield pin numbers are connected on a different layer.

	TRANSPONDER	ENCODER	AUTOPILOT	AUX AUDIO	GPS 1	NAV 1	COMM 1	NAV INDICATOR 1	ANNUNCIATOR / SWITCHES	GPS I/O 1-1	AUDIO PANEL	GPS I/O 1-2	GPS 2	NAV 2	COMM 2	NAV INDICATOR 2	MFD	GPS I/O 2-1	ENCODER OUT	GPS I/O 1-3	GPS I/O 1-4	
PRO Hub Rev. F rev 040526	C1 DB25	C2 DB15	C3 HD26	C4 DB15	C5 HD44	C6 HD44	C7 HD26	C8 HD26	C9 HD78	C10 HD15	C11 HD44	C12 HD15	C13 HD44	C14 HD44	C15 HD26	C16 HD26	C17 HD44	C18 HD15	C19 HD15	C20 HD15	C21 HD-15	
Ground / <b>Shield</b>	1,11,18, <b>25</b>	15	23,26	2,4,6,8, 12,15	3,20,32, <b>44</b>	3,20, <b>44</b>	7,13,26	<b>26</b>	1,7,60,63, 65,78		<b>2,44</b>		3,20,25, 32, <b>44</b>	3,20, <b>44</b>	7,13,26	<b>26</b>	23,25, <b>44</b>		<b>15</b>			
A1	6	2	11		35		17						35		17				2			
A2	13	3	12		37		18						37		18				3			
A4	5	4	13		38		19						38		19				4			
ADF Hi				3							30											
Appr Active Annun (GPS1)					15				8													
Approach Annun (GPS1)			10		33				12								31					
Arinc 429 In 1 A	21					40		21		11		11					40			11	11	
Arinc 429 In 1 B	22					41		22		13		13					41			13	13	
Arinc 429 In 2 A														40		21		11				
Arinc 429 In 2 B														41		22		13				
Arinc 429 Out 1 A	23					39		20		12		12					39			12	12	
Arinc 429 Out 1 B	24					38		19		10		10					38			10	10	
Arinc 429 Out 2 A														39		20		12				
Arinc 429 Out 2 B														38		19		10				
Aux Audio Hi				11							21											
B1	15	5	14		39		20						39		20				5			
B2	7	9	16		40		21						40		21				9			
B4	14	10	17		41		22						41		22				10			
C1	9	11	18		42		23						42		23				11			
C2	16	13	20		43		25						43		25				13			
C4	8	12	19		23		24						23		24				12			
CDI L + (NAV1)						14			28													
CDI L + (NAV2)														14		11						
CDI L + [GPS1]					14				30								24					
CDI L+ (CDI1)			2					11	26													
CDI R + (NAV1)						13			29													
CDI R + (NAV2)														13		12						
CDI R + [GPS1]					13				31								27					
CDI R+ (CDI1)			1					12	27													
Cell Ring				13							27											
Cell Tip				14							24											
Comm 1 Audio Hi							14				17											
Comm 1 Mic Hi							8				26											
Comm 1 PTT							4				28											
Comm 2 Audio Hi											19				14							
Comm 2 Mic Hi											14				8							
Comm 2 Mic PTT											36				4							
Comm 3 Audio Hi				5							16											
Comm 3 Mic Hi				7							18											
Comm 3 PTT				9							29											
D4	17	14	21		24		16						24		16				14			
DME Hi				1							11											
From + (CDI1)								10	14													
From + (NAV1)						11			16													
From + (NAV2)													11		10							
From + [GPS1]					11				18								18					

	TRANSPONDER	ENCODER	AUTOPILOT	AUX AUDIO	GPS 1	NAV 1	COMM 1	NAV INDICATOR 1	ANNUNCIATOR / SWITCHES	GPS I/O 1-1	AUDIO PANEL	GPS I/O 1-2	GPS 2	NAV 2	COMM 2	NAV INDICATOR 2	MFD	GPS I/O 2-1	ENCODER OUT	GPS I/O 1-3	GPS I/O 1-4	
PRO Hub Rev. F rev 040526	C1 DB25	C2 DB15	C3 HD26	C4 DB15	C5 HD44	C6 HD44	C7 HD26	C8 HD26	C9 HD78	C10 HD15	C11 HD44	C12 HD15	C13 HD44	C14 HD44	C15 HD26	C16 HD26	C17 HD44	C18 HD15	C19 HD15	C20 HD15	C21 HD-15	
GPS Annun (CDI1)								17	62													
GPS Annun (GPS1)					17				11													
GPS OBS D					2				67													
GPS OBS E					9				68													
GPS OBS G					8				66													
GPS OBS H					1				64													
Hold Annun Out (GPS1)					34				9													
Hold Select (GPS1)					26				13													
ILS Energize 1						33		24	58													
ILS Energize 2														33		24						
ILS Engage to Autopilot			9						57													
Msg Annun (GPS1)					16				10									32				
Nav Annun (CDI1)								18	61													
Nav Audio 1 Hi						23	1				23											
Nav Audio 2 Hi											25			23	1							
Nav Valid - (CDI1)			4					8	21													
Nav Valid - (GPS1)					29				25									9				
Nav Valid - (NAV1)						29			23													
Nav Valid - (GPS2)													29			8						
Nav Valid + (NAV1)						10			22													
Nav Valid + (NAV2)													10			7						
NAV Valid + [GPS1]					10				24								13					
Nav Valid+ (CDI1)			3					7	20													
OBI Clk 1						17				5		5								5	5	
OBI Clk 2														17				5				
OBI Data 1						21				8		8			21				8		8	
OBI Data 2																			8			
OBI Sync 1						18				9		9								9	9	
OBI Sync 2														18					9			
OBS C (CDI1)								2	45													
OBS C (NAV1)						25			51													
OBS C (NAV2)														25		2						
OBS D (CDI1)								3	49													
OBS D (NAV1)						7			55													
OBS D (NAV2)														7		3						
OBS E (CDI1)								5	50													
OBS E (NAV1)						26			56													
OBS E (NAV2)														26		5						
OBS F (CDI1)								4	47													
OBS F (NAV1)						16			53													
OBS F (NAV2)																						
OBS G (CDI1)								6	48					16		4						
OBS G (NAV1)						34			54													
OBS G (NAV2)														34		6						
OBS H (CDI1)								1	46													
OBS H (NAV1)						24			52													
OBS H (NAV2)														24		1						
Roll Steering TX			22		25																	
RS232-1 RX GPS1					5	4				2		2					5			2	2	
RS232-1 TX GPS 2													5	4				2				
RS232-1 TX GPS1					4	5				1		1					4			1	1	

	TRANSPONDER	ENCODER	AUTOPILOT	AUX AUDIO	GPS 1	NAV 1	COMM 1	NAV INDICATOR 1	ANNUNCIATOR / SWITCHES	GPS I/O 1-1	AUDIO PANEL	GPS I/O 1-2	GPS 2	NAV 2	COMM 2	NAV INDICATOR 2	MFD	GPS I/O 2-1	ENCODER OUT	GPS I/O 1-3	GPS I/O 1-4	
PRO Hub Rev. F rev 040526	C1 DB25	C2 DB15	C3 HD26	C4 DB15	C5 HD44	C6 HD44	C7 HD26	C8 HD26	C9 HD78	C10 HD15	C11 HD44	C12 HD15	C13 HD44	C14 HD44	C15 HD26	C16 HD26	C17 HD44	C18 HD15	C19 HD15	C20 HD15	C21 HD-15	
RS232-1 RX GPS 2													4	5			28	1				
RS232-2 RX GPS 1	2				22					4		4								4	4	
RS232-2 RX GPS 2													21					21	3			
RS232-2 TX GPS 1		1			21					3		3					6		1	3	3	
RS232-2 TX GPS 2													22				22	4				
RS2323 RX GPS CROSS					19								18									
RS2323 TX GPS CROSS					18								19									
RS232-4 RX GPS 1					6					6		6								6	6	
RS232-4 TX GPS 2													7					7				
RS232-4 TX GPS 1					7					7		7								7	7	
RS232-4 RX GPS 2													6					6				
Strobe		6	15																6			
To + (CDI1)								9	15													
To + (NAV1)						12			17													
To + (NAV2)														12		9						
To + [GPS1]					12				19								20					
VDI + Dn (CDI1)			6					14	33													
VDI + Down (GPS1)					31				37													
VDI + Down (NAV1)						31			35													
VDI + Down (NAV2)														31		14						
VDI + Up (CDI1)			5					13	32													
VDI + Up (GPS1)					30				36													
VDI + Up (NAV1)						30			34													
VDI + Up (NAV2)														30		13						
VDI Valid - (CDI1)			8					16	39													
VDI Valid - (GPS1)					36				43													
VDI Valid - (NAV1)						32			41													
VDI Valid - (NAV2)														32		16						
VDI Valid + (CDI1)			7					15	38													
VDI Valid + (GPS1)					28				42													
VDI Valid + (NAV1)						28			40													
VDI Valid + (NAV2)														28		15						
Vloc Annun (CDI1)																						
Vloc Annun (GPS1)					27				3								30					
Vor/Loc ARINC IN 1 A						42				14		14					42			14	14	
Vor/Loc ARINC IN 1 B						43				15		15					43			15	15	
Vor/Loc ARINC IN 2 A														42				14				
Vor/Loc ARINC IN 2 B														43				15				
Vor/Loc Comp Out 1						19		25														
Vor/Loc Comp Out 2														19		25						

### 3.2.2 PRO HUB rev F SORTED BY TRANSPONDER C1

PRO Hub Rev. F rev 040526	TRANSPONDER	ENCODER	AUTOPILOT	AUX AUDIO	GPS 1	NAV 1	COMM 1	NAV INDICATOR 1	ANNUNCIATOR / SWITCHES	GPS I/O 1-1	AUDIO PANEL	GPS I/O 1-2	GPS 2	NAV 2	COMM 2	NAV INDICATOR 2	MFD	GPS I/O 2-1	ENCODER OUT	GPS I/O 1-3	GPS I/O 1-4	
	C1 DB25	C2 DB15	C3 HD26	C4 DB15	C5 HD44	C6 HD44	C7 HD26	C8 HD26	C9 HD78	C10 HD15	C11 HD44	C12 HD15	C13 HD44	C14 HD44	C15 HD26	C16 HD26	C17 HD44	C18 HD15	C19 HD15	C20 HD15	C21 HD-15	
Ground / Shield	1,11,18, 25	15	23,26	2,4,6,8, 12,15	3,20,32, 44	3,20,44	7,13,26	26	1,7,60,63, 65,78		2,44		3,20,25, 32,44	3,20,44	7,13,26	26	23,25,44		15			
RS232-2 RX GPS 1	2				22					4		4								4	4	
A4	5	4	13		38		19						38		19				4			
A1	6	2	11		35		17						35		17				2			
B2	7	9	16		40		21						40		21				9			
C4	8	12	19		23		24						23		24				12			
C1	9	11	18		42		23						42		23				11			
A2	13	3	12		37		18						37		18				3			
B4	14	10	17		41		22						41		22				10			
B1	15	5	14		39		20						39		20				5			
C2	16	13	20		43		25						43		25				13			
D4	17	14	21		24		16						24		16				14			
Arinc 429 In 1 A	21					40		21		11		11					40			11	11	
Arinc 429 In 1 B	22					41		22		13		13					41			13	13	
Arinc 429 Out 1 A	23					39		20		12		12					39			12	12	
Arinc 429 Out 1 B	24					38		19		10		10					38			10	10	

NOTE: GROUND and SHIELD pins are connected together. However, the **bold** shield pin numbers are connected on a different layer.

### 3.2.3 PRO HUB rev F SORTED BY ENCODER C2

PRO Hub Rev. F rev 040526	ENCODER	TRANSPONDER	AUTOPILOT	AUX AUDIO	GPS 1	NAV 1	COMM 1	NAV INDICATOR 1	ANNUNCIATOR / SWITCHES	GPS I/O 1-1	AUDIO PANEL	GPS I/O 1-2	GPS 2	NAV 2	COMM 2	NAV INDICATOR 2	MFD	GPS I/O 2-1	ENCODER OUT	GPS I/O 1-3	GPS I/O 1-4	
	C2 DB15	C1 DB25	C3 HD26	C4 DB15	C5 HD44	C6 HD44	C7 HD26	C8 HD26	C9 HD78	C10 HD15	C11 HD44	C12 HD15	C13 HD44	C14 HD44	C15 HD26	C16 HD26	C17 HD44	C18 HD15	C19 HD15	C20 HD15	C21 HD-15	
RS232-2 TX GPS 1	1				21					3		3					6		1	3	3	
A1	2	6	11		35		17						35		17				2			
A2	3	13	12		37		18						37		18				3			
A4	4	5	13		38		19						38		19				4			
B1	5	15	14		39		20						39		20				5			
Strobe	6		15																6			
B2	9	7	16		40		21						40		21				9			
B4	10	14	17		41		22						41		22				10			
C1	11	9	18		42		23						42		23				11			
C4	12	8	19		23		24						23		24				12			
C2	13	16	20		43		25						43		25				13			
D4	14	17	21		24		16						24		16				14			
Ground / Shield	15	1,11,18, 25	23,26	2,4,6,8, 12,15	3,20,32, 44	3,20,44	7,13,26	26	1,7,60,63, 65,78		2,44		3,20,25, 32,44	3,20,44	7,13,26	26	23,25,44		15			

NOTE: GROUND and SHIELD pins are connected together. However, the **bold** shield pin numbers are connected on a different layer.

### 3.2.4 PRO HUB rev F SORTED BY AUTOPILOT C3

	AUTOPILOT	TRANSPONDER	ENCODER	AUX AUDIO	GPS 1	NAV 1	COMM 1	NAV INDICATOR 1	ANNUNCIATOR / SWITCHES	GPS I/O 1-1	AUDIO PANEL	GPS I/O 1-2	GPS 2	NAV 2	COMM 2	NAV INDICATOR 2	MFD	GPS I/O 2-1	ENCODER OUT	GPS I/O 1-3	GPS I/O 1-4	
PRO Hub Rev. F rev 040526	C3 HD26	C1 DB25	C2 DB15	C4 DB15	C5 HD44	C6 HD44	C7 HD26	C8 HD26	C9 HD78	C10 HD15	C11 HD44	C12 HD15	C13 HD44	C14 HD44	C15 HD26	C16 HD26	C17 HD44	C18 HD15	C19 HD15	C20 HD15	C21 HD-15	
CDI R+ (CDI1)	1							12	27													
CDI L+ (CDI1)	2							11	26													
Nav Valid+ (CDI1)	3							7	20													
Nav Valid - (CDI1)	4							8	21													
VDI + Up (CDI1)	5							13	32													
VDI + Dn (CDI1)	6							14	33													
VDI Valid + (CDI1)	7							15	38													
VDI Valid - (CDI1)	8							16	39													
ILS Engage to Autopilot	9								57													
Approach Annun (GPS1)	10				33				12								31					
A1	11	6	2		35		17						35		17					2		
A2	12	13	3		37		18						37		18					3		
A4	13	5	4		38		19						38		19					4		
B1	14	15	5		39		20						39		20					5		
Strobe	15		6																	6		
B2	16	7	9		40		21						40		21					9		
B4	17	14	10		41		22						41		22					10		
C1	18	9	11		42		23						42		23					11		
C4	19	8	12		23		24						23		24					12		
C2	20	16	13		43		25						43		25					13		
D4	21	17	14		24		16						24		16					14		
Roll Steering TX	22				25																	
Ground / Shield	<b>23,26</b>	1,11,18, <b>25</b>	15	2,4,6,8,12, <b>15</b>	3,20,32, <b>44</b>	3,20,44	7,13,26	<b>26</b>	1,7,60,63, <b>65,78</b>		2,44		3,20,25, <b>32,44</b>	3,20,44	7,13,26	<b>26</b>	23,25,44		<b>15</b>			

NOTE: GROUND and SHIELD pins are connected together. However, the **bold** shield pin numbers are connected on a different layer.

### 3.2.5 PRO HUB rev F SORTED BY AUX AUDIO C4

	AUX AUDIO	TRANSPONDER	ENCODER	AUTOPILOT	GPS 1	NAV 1	COMM 1	NAV INDICATOR 1	ANNUNCIATOR / SWITCHES	GPS I/O 1-1	AUDIO PANEL	GPS I/O 1-2	GPS 2	NAV 2	COMM 2	NAV INDICATOR 2	MFD	GPS I/O 2-1	ENCODER OUT	GPS I/O 1-3	GPS I/O 1-4	
PRO Hub Rev. F rev 040526	C4 DB15	C1 DB25	C2 DB15	C3 HD26	C5 HD44	C6 HD44	C7 HD26	C8 HD26	C9 HD78	C10 HD15	C11 HD44	C12 HD15	C13 HD44	C14 HD44	C15 HD26	C16 HD26	C17 HD44	C18 HD15	C19 HD15	C20 HD15	C21 HD-15	
DME Hi	1																					
Ground / Shield	2,4,6,8, <b>12,15</b>	1,11,18, <b>25</b>	15	23,26	3,20,32, <b>44</b>	3,20,44	7,13,26	<b>26</b>	1,7,60,63, <b>65,78</b>		2,44		3,20,25, <b>32,44</b>	3,20,44	7,13,26	<b>26</b>	23,25,44		<b>15</b>			
ADF Hi	3																					
Comm 3 Audio Hi	5																					
Comm 3 Mic Hi	7																					
Comm 3 PTT	9																					
Aux Audio Hi	11																					
Cell Ring	13																					
Cell Tip	14																					

NOTE: GROUND and SHIELD pins are connected together. However, the **bold** shield pin numbers are connected on a different layer.



### 3.2.6 PRO HUB rev F SORTED BY GPS 1 C5

	GPS 1	TRANSPONDER	ENCODER	AUTOPILOT	AUX AUDIO	NAV 1	COMM 1	NAV INDICATOR 1	ANNUNCIATOR / SWITCHES	GPS I/O 1-1	AUDIO PANEL	GPS I/O 1-2	GPS 2	NAV 2	COMM 2	NAV INDICATOR 2	MFD	GPS I/O 2-1	ENCODER OUT	GPS I/O 1-3	GPS I/O 1-4	
PRO Hub Rev. F rev 040526	C5 HD44	C1 DB25	C2 DB15	C3 HD26	C4 DB15	C6 HD44	C7 HD26	C8 HD26	C9 HD78	C10 HD15	C11 HD44	C12 HD15	C13 HD44	C14 HD44	C15 HD26	C16 HD26	C17 HD44	C18 HD15	C19 HD15	C20 HD15	C21 HD-15	
GPS OBS H	1								64													
GPS OBS D	2								67													
Ground / Shield	<b>3,20,32,44</b>	1,11,18,25	15	23,26	2,4,6,8,12,15	3,20,44	7,13,26	26	1,7,60,63,65,78		2,44		3,20,25,32,44	3,20,44	7,13,26	26	23,25,44		15			
RS232-1 TX GPS1	4					5				1		1					4			1	1	
RS232-1 RX GPS1	5					4				2		2					5			2	2	
RS232-4 RX GPS 1	6									6		6								6	6	
RS232-4 TX GPS 1	7									7		7								7	7	
GPS OBS G	8								66													
GPS OBS E	9								68													
NAV Valid + [GPS1]	10								24								13					
From + [GPS1]	11								18								18					
To + [GPS1]	12								19								20					
CDI R + [GPS1]	13								31								27					
CDI L + [GPS1]	14								30								24					
Appr Active Annun (GPS1)	15								8													
Msg Annun (GPS1)	16								10								32					
GPS Annun (GPS1)	17								11													
RS2323 TX GPS CROSS	18												19									
RS2323 RX GPS CROSS	19												18									
RS232-2 TX GPS 1	21		1							3		3					6		1	3	3	
RS232-2 RX GPS 1	22	2								4		4								4	4	
C4	23	8	12	19			24						23		24				12			
D4	24	17	14	21			16						24		16				14			
Roll Steering TX	25			22																		
Hold Select (GPS1)	26								13													
Vloc Annun (GPS1)	27								3								30					
VDI Valid + (GPS1)	28								42													
Nav Valid - (GPS1)	29								25								9					
VDI + Up (GPS1)	30								36													
VDI + Down (GPS1)	31								37													
Approach Annun (GPS1)	33			10					12								31					
Hold Annun Out (GPS1)	34								9													
A1	35	6	2	11			17						35		17				2			
VDI Valid - (GPS1)	36								43													
A2	37	13	3	12			18						37		18				3			
A4	38	5	4	13			19						38		19				4			
B1	39	15	5	14			20						39		20				5			
B2	40	7	9	16			21						40		21				9			
B4	41	14	10	17			22						41		22				10			
C1	42	9	11	18			23						42		23				11			
C2	43	16	13	20			25						43		25				13			

**NOTE:** GROUND and SHIELD pins are connected together. However, the **bold** shield pin numbers are connected on a different layer.

### 3.2.7 PRO HUB rev F SORTED BY NAV 1 C6

	NAV 1	TRANSPONDER	ENCODER	AUTOPILOT	AUX AUDIO	GPS 1	COMM 1	NAV INDICATOR 1	ANNUNCIATOR / SWITCHES	GPS I/O 1-1	AUDIO PANEL	GPS I/O 1-2	GPS 2	NAV 2	COMM 2	NAV INDICATOR 2	MFD	GPS I/O 2-1	ENCODER OUT	GPS I/O 1-3	GPS I/O 1-4	
PRO Hub Rev. F rev 040526	C6 HD44	C1 DB25	C2 DB15	C3 HD26	C4 DB15	C5 HD44	C7 HD26	C8 HD26	C9 HD78	C10 HD15	C11 HD44	C12 HD15	C13 HD44	C14 HD44	C15 HD26	C16 HD26	C17 HD44	C18 HD15	C19 HD15	C20 HD15	C21 HD-15	
Ground / Shield	3,20,44	1,11,18,25	15	23,26	2,4,6,8,12,15	3,20,32,44	7,13,26	26	1,7,60,63,65,78		2,44		3,20,25,32,44	3,20,44	7,13,26	26	23,25,44		15			
RS232-1 RX GPS1	4					5				2		2					5				2	2
RS232-1 TX GPS1	5					4				1		1					4				1	1
OBS D (NAV1)	7								55													
Nav Valid + (NAV1)	10								22													
From + (NAV1)	11								16													
To + (NAV1)	12								17													
CDI R + (NAV1)	13								29													
CDI L + (NAV1)	14								28													
OBS F (NAV1)	16								53													
OBI Clk 1	17									5		5									5	5
OBI Sync 1	18									9		9									9	9
Vor/Loc Comp Out 1	19							25														
OBI Data 1	21									8		8									8	8
Nav Audio 1 Hi	23						1				23											
OBS H (NAV1)	24								52													
OBS C (NAV1)	25								51													
OBS E (NAV1)	26								56													
VDI Valid + (NAV1)	28								40													
Nav Valid - (NAV1)	29								23													
VDI + Up (NAV1)	30								34													
VDI + Down (NAV1)	31								35													
VDI Valid - (NAV1)	32								41													
ILS Energize 1	33							24	58													
OBS G (NAV1)	34								54													
Arinc 429 Out 1 B	38	24						19		10		10					38				10	10
Arinc 429 Out 1 A	39	23						20		12		12					39				12	12
Arinc 429 In 1 A	40	21						21		11		11					40				11	11
Arinc 429 In 1 B	41	22						22		13		13					41				13	13
Vor/Loc ARINC IN 1 A	42									14		14					42				14	14
Vor/Loc ARINC IN 1 B	43									15		15					43				15	15

NOTE: GROUND and SHIELD pins are connected together. However, the bold shield pin numbers are connected on a different layer.

### 3.2.8 PRO HUB rev F SORTED BY COMM 1 C7

	COMM 1	TRANSPONDER	ENCODER	AUTOPILOT	AUX AUDIO	GPS 1	NAV 1	NAV INDICATOR 1	ANNUNCIATOR / SWITCHES	GPS I/O 1-1	AUDIO PANEL	GPS I/O 1-2	GPS 2	NAV 2	COMM 2	NAV INDICATOR 2	MFD	GPS I/O 2-1	ENCODER OUT	GPS I/O 1-3	GPS I/O 1-4	
PRO Hub Rev. F rev 040526	C7 HD26	C1 DB25	C2 DB15	C3 HD26	C4 DB15	C5 HD44	C6 HD44	C8 HD26	C9 HD78	C10 HD15	C11 HD44	C12 HD15	C13 HD44	C14 HD44	C15 HD26	C16 HD26	C17 HD44	C18 HD15	C19 HD15	C20 HD15	C21 HD-15	
Nav Audio 1 Hi	1							23			23											
Comm 1 PTT	4										28											
Ground / Shield	<b>7,13,26</b>	<b>1,11,18,25</b>	15	<b>23,26</b>	<b>2,4,6,8,12,15</b>	<b>3,20,32,44</b>	<b>3,20,44</b>	<b>26</b>	<b>1,7,60,63,65,78</b>		<b>2,44</b>		<b>3,20,25,32,44</b>	<b>3,20,44</b>	<b>7,13,26</b>	<b>26</b>	<b>23,25,44</b>		<b>15</b>			
Comm 1 Mic Hi	8										26											
Comm 1 Audio Hi	14										17											
D4	16	17	14	21		24						24			16						14	
A1	17	6	2	11		35						35			17						2	
A2	18	13	3	12		37						37			18						3	
A4	19	5	4	13		38						38			19						4	
B1	20	15	5	14		39						39			20						5	
B2	21	7	9	16		40						40			21						9	
B4	22	14	10	17		41						41			22						10	
C1	23	9	11	18		42						42			23						11	
C4	24	8	12	19		23						23			24						12	
C2	25	16	13	20		43						43			25						13	

NOTE: GROUND and SHIELD pins are connected together. However, the **bold** shield pin numbers are connected on a different layer.

### 3.2.9 PRO HUB rev F SORTED BY NAV INDICATOR 1 C8

	NAV INDICATOR 1	TRANSPONDER	ENCODER	AUTOPILOT	AUX AUDIO	GPS 1	NAV 1	COMM 1	ANNUNCIATOR / SWITCHES	GPS I/O 1-1	AUDIO PANEL	GPS I/O 1-2	GPS 2	NAV 2	COMM 2	NAV INDICATOR 2	MFD	GPS I/O 2-1	ENCODER OUT	GPS I/O 1-3	GPS I/O 1-4	
PRO Hub Rev. F rev 040526	C8 HD26	C1 DB25	C2 DB15	C3 HD26	C4 DB15	C5 HD44	C6 HD44	C7 HD26	C9 HD78	C10 HD15	C11 HD44	C12 HD15	C13 HD44	C14 HD44	C15 HD26	C16 HD26	C17 HD44	C18 HD15	C19 HD15	C20 HD15	C21 HD-15	
OBS H (CDI1)	1								46													
OBS C (CDI1)	2								45													
OBS D (CDI1)	3								49													
OBS F (CDI1)	4								47													
OBS E (CDI1)	5								50													
OBS G (CDI1)	6								48													
Nav Valid+ (CDI1)	7			3					20													
Nav Valid - (CDI1)	8			4					21													
To + (CDI1)	9								15													
From + (CDI1)	10								14													
CDI L+ (CDI1)	11			2					26													
CDI R+ (CDI1)	12			1					27													
VDI + Up (CDI1)	13			5					32													
VDI + Dn (CDI1)	14			6					33													
VDI Valid + (CDI1)	15			7					38													
VDI Valid - (CDI1)	16			8					39													
GPS Annun (CDI1)	17								62													
Nav Annun (CDI1)	18								61													
Arinc 429 Out 1 B	19	24					38			10		10					38				10	10
Arinc 429 Out 1 A	20	23					39			12		12					39				12	12
Arinc 429 In 1 A	21	21					40			11		11					40				11	11
Arinc 429 In 1 B	22	22					41			13		13					41				13	13
ILS Energize 1	24						33		58													
Vor/Loc Comp Out 1	25						19															
Ground / Shield	<b>26</b>	<b>1,11,18,25</b>	15	<b>23,26</b>	<b>2,4,6,8,12,15</b>	<b>3,20,32,44</b>	<b>3,20,44</b>	<b>7,13,26</b>	<b>1,7,60,63,65,78</b>		<b>2,44</b>		<b>3,20,25,32,44</b>	<b>3,20,44</b>	<b>7,13,26</b>	<b>26</b>	<b>23,25,44</b>		<b>15</b>			

NOTE: GROUND and SHIELD pins are connected together. However, the **bold** shield pin numbers are connected on a different layer.

### 3.2.10 PRO HUB rev F SORTED BY ANNUNCIATOR / SWITCHES C9

	ANNUNCIATOR / SWITCHES	TRANSPONDER	ENCODER	AUTOPILOT	AUX AUDIO	GPS 1	NAV 1	COMM 1	NAV INDICATOR 1	GPS I/O 1-1	AUDIO PANEL	GPS I/O 1-2	GPS 2	NAV 2	COMM 2	NAV INDICATOR 2	MFD	GPS I/O 2-1	ENCODER OUT	GPS I/O 1-3	GPS I/O 1-4	
PRO Hub Rev. F rev 040526	C9 HD78	C1 DB25	C2 DB15	C3 HD26	C4 DB15	C5 HD44	C6 HD44	C7 HD26	C8 HD26	C10 HD15	C11 HD44	C12 HD15	C13 HD44	C14 HD44	C15 HD26	C16 HD26	C17 HD44	C18 HD15	C19 HD15	C20 HD15	C21 HD-15	
Ground / Shield	1,7,60,63, <b>65,78</b>	1,11,18, <b>25</b>	15	23,26	2,4,6,8, 12,15	3,20,32, <b>44</b>	3,20,44	7,13,26	26		2,44		3,20,25, 32,44	3,20,44	7,13,26	26	23,25, 44		15			
Vloc Annun (GPS1)	3					27											30					
Appr Active Annun (GPS1)	8					15																
Hold Annun Out (GPS1)	9					34																
Msg Annun (GPS1)	10					16											32					
GPS Annun (GPS1)	11					17																
Approach Annun (GPS1)	12			10		33											31					
Hold Select (GPS1)	13					26																
From + (CDI1)	14								10													
To + (CDI1)	15								9													
From + (NAV1)	16							11														
To + (NAV1)	17							12														
From + (GPS1)	18					11											18					
To + (GPS1)	19					12											20					
Nav Valid+ (CDI1)	20			3					7													
Nav Valid - (CDI1)	21			4					8													
Nav Valid + (NAV1)	22							10														
Nav Valid - (NAV1)	23							29														
NAV Valid + (GPS1)	24					10											13					
Nav Valid - (GPS1)	25					29											9					
CDI L+ (CDI1)	26			2					11													
CDI R+ (CDI1)	27			1					12													
CDI L + (NAV1)	28							14														
CDI R + (NAV1)	29							13														
CDI L + (GPS1)	30					14											24					
CDI R + (GPS1)	31					13											27					
VDI + Up (CDI1)	32			5					13													
VDI + Dn (CDI1)	33			6					14													
VDI + Up (NAV1)	34							30														
VDI + Down (NAV1)	35							31														
VDI + Up (GPS1)	36					30																
VDI + Down (GPS1)	37					31																
VDI Valid + (CDI1)	38			7					15													
VDI Valid - (CDI1)	39			8					16													
VDI Valid + (NAV1)	40							28														
VDI Valid - (NAV1)	41							32														
VDI Valid + (GPS1)	42					28																
VDI Valid - (GPS1)	43					36																
OBS C (CDI1)	45								2													
OBS H (CDI1)	46								1													
OBS F (CDI1)	47								4													
OBS G (CDI1)	48								6													
OBS D (CDI1)	49								3													
OBS E (CDI1)	50								5													
OBS C (NAV1)	51							25														
OBS H (NAV1)	52							24														
OBS F (NAV1)	53							16														
OBS G (NAV1)	54							34														
OBS D (NAV1)	55							7														
OBS E (NAV1)	56							26														
ILS Engage to Autopilot	57			9																		
ILS Energize 1	58							33									24					
Nav Annun (CDI1)	61								18													
GPS Annun (CDI1)	62								17													
GPS OBS H	64					1																
GPS OBS G	66					8																
GPS OBS D	67					2																
GPS OBS E	68					9																

NOTE: GROUND and SHIELD pins are connected together. However, the bold shield pin numbers are connected on a different layer.

### 3.2.11 PRO HUB rev F SORTED BY GPS I/O 1-1 C10 (Same as GPS I/O 1-2 C12, 1-3 C20 and 1-4 C21)

	GPS I/O 1-1	TRANSPONDER	ENCODER	AUTOPILOT	AUX AUDIO	GPS 1	NAV 1	COMM 1	NAV INDICATOR 1	ANNUNCIATOR / SWITCHES	AUDIO PANEL	GPS I/O 1-2	GPS 2	NAV 2	COMM 2	NAV INDICATOR 2	MFD	GPS I/O 2-1	ENCODER OUT	GPS I/O 1-3	GPS I/O 1-4
PRO Hub Rev. F rev 040526	C10 HD15	C1 DB25	C2 DB15	C3 HD26	C4 DB15	C5 HD44	C6 HD44	C7 HD26	C8 HD26	C9 HD78	C11 HD44	C12 HD15	C13 HD44	C14 HD44	C15 HD26	C16 HD26	C17 HD44	C18 HD15	C19 HD15	C20 HD15	C21 HD-15
RS232-1 TX GPS1	1					4	5					1					4			1	1
RS232-1 RX GPS1	2					5	4					2					5			2	2
RS232-2 TX GPS 1	3		1			21						3					6		1	3	3
RS232-2 RX GPS 1	4	2				22						4								4	4
OBI Clk 1	5						17					5								5	5
RS232-4 RX GPS 1	6					6						6								6	6
RS232-4 TX GPS 1	7					7						7								7	7
OBI Data 1	8						21					8								8	8
OBI Sync 1	9						18					9								9	9
Arinc 429 Out 1 B	10	24					38		19			10					38			10	10
Arinc 429 In 1 A	11	21					40		21			11					40			11	11
Arinc 429 Out 1 A	12	23					39		20			12					39			12	12
Arinc 429 In 1 B	13	22					41		22			13					41			13	13
Vor/Loc ARINC IN 1 A	14						42					14					42			14	14
Vor/Loc ARINC IN 1 B	15						43					15					43			15	15

### 3.2.12 PRO HUB rev F SORTED BY AUDIO PANEL C11

	AUDIO PANEL	TRANSPONDER	ENCODER	AUTOPILOT	AUX AUDIO	GPS 1	NAV 1	COMM 1	NAV INDICATOR 1	ANNUNCIATOR / SWITCHES	GPS I/O 1-1	GPS I/O 1-2	GPS 2	NAV 2	COMM 2	NAV INDICATOR 2	MFD	GPS I/O 2-1	ENCODER OUT	GPS I/O 1-3	GPS I/O 1-4	
PRO Hub Rev. F rev 040526	C11 HD44	C1 DB25	C2 DB15	C3 HD26	C4 DB15	C5 HD44	C6 HD44	C7 HD26	C8 HD26	C9 HD78	C10 HD15	C12 HD15	C13 HD44	C14 HD44	C15 HD26	C16 HD26	C17 HD44	C18 HD15	C19 HD15	C20 HD15	C21 HD-15	
Ground / Shield	2,44	1,11,18,25	15	23,26	2,4,6,8,12,15	3,20,32,44	3,20,44	7,13,26	26	1,7,60,63,65,78			3,20,25,32,44	3,20,44	7,13,26	26	23,25,44		15			
DME Hi	11				1																	
Comm 2 Mic Hi	14														8							
Comm 3 Audio Hi	16				5																	
Comm 1 Audio Hi	17							14														
Comm 3 Mic Hi	18				7																	
Comm 2 Audio Hi	19														14							
Aux Audio Hi	21				11																	
Nav Audio 1 Hi	23						23	1														
Cell Tip	24				14																	
Nav Audio 2 Hi	25													23	1							
Comm 1 Mic Hi	26							8														
Cell Ring	27				13																	
Comm 1 PTT	28							4														
Comm 3 PTT	29				9																	
ADF Hi	30				3																	
Comm 2 Mic PTT	36														4							

NOTE: GROUND and SHIELD pins are connected together. However, the bold shield pin numbers are connected on a different layer.

### 3.2.13 PRO HUB rev F SORTED BY GPS 2 C13

	GPS 2	TRANSPONDER	ENCODER	AUTOPILOT	AUX AUDIO	GPS 1	NAV 1	COMM 1	NAV INDICATOR 1	ANNUNCIATOR / SWITCHES	GPS I/O 1-1	AUDIO PANEL	GPS I/O 1-2	NAV 2	COMM 2	NAV INDICATOR 2	MFD	GPS I/O 2-1	ENCODER OUT	GPS I/O 1-3	GPS I/O 1-4
PRO Hub Rev. F rev 040526	C13 HD44	C1 DB25	C2 DB15	C3 HD26	C4 DB15	C5 HD44	C6 HD44	C7 HD26	C8 HD26	C9 HD78	C10 HD15	C11 HD44	C12 HD15	C14 HD44	C15 HD26	C16 HD26	C17 HD44	C18 HD15	C19 HD15	C20 HD15	C21 HD-15
Ground / Shield	3,20,25, 32,44	1,11,18, 25	15	23,26	2,4,6,8, 12,15	3,20,32, 44	3,20,44	7,13,26	26	1,7,60,63, 65,78		2,44		3,20,44	7,13,26	26	23,25, 44		15		
RS232-1 RX GPS 2	4													5			28	1			
RS232-1 TX GPS 2	5													4				2			
RS232-4 RX GPS 2	6																	6			
RS232-4 TX GPS 2	7																	7			
RS2323 RX GPS CROSS	18					19															
RS2323 TX GPS CROSS	19					18															
RS232-2 RX GPS 2	21																21	3			
RS232-2 TX GPS 2	22																22	4			
C4	23	8	12	19		23		24							24				12		
D4	24	17	14	21		24		16							16				14		
A1	35	6	2	11		35		17							17				2		
A2	37	13	3	12		37		18							18				3		
A4	38	5	4	13		38		19							19				4		
B1	39	15	5	14		39		20							20				5		
B2	40	7	9	16		40		21							21				9		
B4	41	14	10	17		41		22							22				10		
C1	42	9	11	18		42		23							23				11		
C2	43	16	13	20		43		25							25				13		

NOTE: GROUND and SHIELD pins are connected together. However, the **bold** shield pin numbers are connected on a different layer.

### 3.2.14 PRO HUB rev F SORTED BY NAV 2 C14

	NAV 2	TRANSPONDER	ENCODER	AUTOPILOT	AUX AUDIO	GPS 1	NAV 1	COMM 1	NAV INDICATOR 1	ANNUNCIATOR / SWITCHES	GPS I/O 1-1	AUDIO PANEL	GPS I/O 1-2	GPS 2	COMM 2	NAV INDICATOR 2	MFD	GPS I/O 2-1	ENCODER OUT	GPS I/O 1-3	GPS I/O 1-4
PRO Hub Rev. F rev 040526	C14 HD44	C1 DB25	C2 DB15	C3 HD26	C4 DB15	C5 HD44	C6 HD44	C7 HD26	C8 HD26	C9 HD78	C10 HD15	C11 HD44	C12 HD15	C13 HD44	C15 HD26	C16 HD26	C17 HD44	C18 HD15	C19 HD15	C20 HD15	C21 HD-15
Ground / Shield	3,20,44	1,11,18,25	15	23,26	2,4,6,8,12,15	3,20,32,44	3,20,44	7,13,26	26	1,7,60,63,65,78		2,44		3,20,25,32,44	7,13,26	26	23,25,44	15			
RS232-1 TX GPS 2	4													5				2			
RS232-1 RX GPS 2	5													4			28	1			
OBS D (NAV2)	7															3					
Nav Valid + (NAV2)	10															7					
From + (NAV2)	11															10					
To + (NAV2)	12															9					
CDI R + (NAV2)	13															12					
CDI L + (NAV2)	14															11					
OBS F (NAV2)	16															4					
OBI Cik 2	17																	5			
OBI Sync 2	18																	9			
Vor/Loc Comp Out 2	19																				
OBI Data 2	21															25					
Nav Audio 2 Hi	23											25									
OBS H (NAV2)	24															1					
OBS C (NAV2)	25																				
OBS E (NAV2)	26															2					
VDI Valid + (NAV2)	28															5					
Nav Valid - (GPS2)	29															15					
VDI + Up (NAV2)	30															8					
VDI + Down (NAV2)	31															13					
VDI Valid - (NAV2)	32															14					
ILS Energize 2	33															16					
OBS G (NAV2)	34															24					
Arinc 429 Out 2 B	38															6					
Arinc 429 Out 2 A	39															19			10		
Arinc 429 In 2 A	40															20			12		
Arinc 429 In 2 B	41															21			11		
Vor/Loc ARINC IN 2 A	42															22			13		
Vor/Loc ARINC IN 2 B	43																		14		
																			15		

NOTE: GROUND and SHIELD pins are connected together. However, the **bold** shield pin numbers are connected on a different layer.

### 3.2.15 PRO HUB rev F SORTED BY COMM 2 C15

	COMM 2	TRANSPONDER	ENCODER	AUTOPILOT	AUX AUDIO	GPS 1	NAV 1	COMM 1	NAV INDICATOR 1	ANNUNCIATOR / SWITCHES	GPS I/O 1-1	AUDIO PANEL	GPS I/O 1-2	GPS 2	NAV 2	NAV INDICATOR 2	MFD	GPS I/O 2-1	ENCODER OUT	GPS I/O 1-3	GPS I/O 1-4
PRO Hub Rev. F rev 040526	C15 HD26	C1 DB25	C2 DB15	C3 HD26	C4 DB15	C5 HD44	C6 HD44	C7 HD26	C8 HD26	C9 HD78	C10 HD15	C11 HD44	C12 HD15	C13 HD44	C14 HD44	C16 HD26	C17 HD44	C18 HD15	C19 HD15	C20 HD15	C21 HD-15
Nav Audio 2 Hi	1											25				23					
Comm 2 Mic PTT	4											36									
Ground / Shield	<b>7,13,26</b>	<b>1,11,18,25</b>	15	<b>23,26</b>	<b>2,4,6,8,12,15</b>	<b>3,20,32,44</b>	<b>3,20,44</b>	<b>7,13,26</b>	<b>26</b>	<b>1,7,60,63,65,78</b>		<b>2,44</b>		<b>3,20,25,32,44</b>	<b>3,20,44</b>	<b>26</b>	<b>23,25,44</b>		<b>15</b>		
Comm 2 Mic Hi	8											14									
Comm 2 Audio Hi	14											19									
D4	16	17	14	21		24		16						24					14		
A1	17	6	2	11		35		17						35					2		
A2	18	13	3	12		37		18						37					3		
A4	19	5	4	13		38		19						38					4		
B1	20	15	5	14		39		20						39					5		
B2	21	7	9	16		40		21						40					9		
B4	22	14	10	17		41		22						41					10		
C1	23	9	11	18		42		23						42					11		
C4	24	8	12	19		23		24						23					12		
C2	25	16	13	20		43		25						43					13		

NOTE: GROUND and SHIELD pins are connected together. However, the **bold** shield pin numbers are connected on a different layer.

### 3.2.16 PRO HUB rev F NAV INDICATOR 2 C16

	NAV INDICATOR 2	TRANSPONDER	ENCODER	AUTOPILOT	AUX AUDIO	GPS 1	NAV 1	COMM 1	NAV INDICATOR 1	ANNUNCIATOR / SWITCHES	GPS I/O 1-1	AUDIO PANEL	GPS I/O 1-2	GPS 2	NAV 2	COMM 2	MFD	GPS I/O 2-1	ENCODER OUT	GPS I/O 1-3	GPS I/O 1-4
PRO Hub Rev. F rev 040526	C16 HD26	C1 DB25	C2 DB15	C3 HD26	C4 DB15	C5 HD44	C6 HD44	C7 HD26	C8 HD26	C9 HD78	C10 HD15	C11 HD44	C12 HD15	C13 HD44	C14 HD44	C15 HD26	C17 HD44	C18 HD15	C19 HD15	C20 HD15	C21 HD-15
OBS H (NAV2)	1														24						
OBS C (NAV2)	2														25						
OBS D (NAV2)	3														7						
OBS F (NAV2)	4														16						
OBS E (NAV2)	5														26						
OBS G (NAV2)	6														34						
Nav Valid + (NAV2)	7														10						
Nav Valid - (GPS2)	8														29						
To + (NAV2)	9														12						
From + (NAV2)	10														11						
CDI L + (NAV2)	11														14						
CDI R + (NAV2)	12														13						
VDI + Up (NAV2)	13														30						
VDI + Down (NAV2)	14														31						
VDI Valid + (NAV2)	15														28						
VDI Valid - (NAV2)	16														32						
Arinc 429 Out 2 B	19														38						
Arinc 429 Out 2 A	20														39			10			
Arinc 429 In 2 A	21														40			12			
Arinc 429 In 2 B	22														41			11			
ILS Energize 2	24														41			13			
Vor/Loc Comp Out 2	25														33						
Ground / Shield	<b>26</b>	<b>1,11,18,25</b>	15	<b>23,26</b>	<b>2,4,6,8,12,15</b>	<b>3,20,32,44</b>	<b>3,20,44</b>	<b>7,13,26</b>	<b>26</b>	<b>1,7,60,63,65,78</b>		<b>2,44</b>		<b>3,20,25,32,44</b>	<b>3,20,44</b>	<b>7,13,26</b>	<b>23,25,44</b>		<b>15</b>		

NOTE: GROUND and SHIELD pins are connected together. However, the **bold** shield pin numbers are connected on a different layer.



### 3.2.17 PRO HUB rev F SORTED BY MULTI FUNCTION DISPLAY C17

PRO Hub Rev. F rev 040526	MFD	TRANSPONDER	ENCODER	AUTOPILOT	AUX AUDIO	GPS 1	NAV 1	COMM 1	NAV INDICATOR 1	ANNUNCIATOR / SWITCHES	GPS I/O 1-1	AUDIO PANEL	GPS I/O 1-2	GPS 2	NAV 2	COMM 2	NAV INDICATOR 2	GPS I/O 2-1	ENCODER OUT	GPS I/O 1-3	GPS I/O 1-4	
	C17 HD44	C1 DB25	C2 DB15	C3 HD26	C4 DB15	C5 HD44	C6 HD44	C7 HD26	C8 HD26	C9 HD78	C10 HD15	C11 HD44	C12 HD15	C13 HD44	C14 HD44	C15 HD26	C16 HD26	C18 HD15	C19 HD15	C20 HD15	C21 HD-15	
RS232-1 TX GPS1	4					4	5				1		1								1	1
RS232-1 RX GPS1	5					5	4				2		2								2	2
RS232-2 TX GPS 1	6		1			21					3		3						1		3	3
Nav Valid - (GPS1)	9					29				25												
NAV Valid + [GPS1]	13					10				24												
From + [GPS1]	18					11				18												
To + [GPS1]	20					12				19												
RS232-2 RX GPS 2	21												21					3				
RS232-2 TX GPS 2	22												22					4				
Ground / Shield	23,25,44	1,11,18, 25	15	23,26	2,4,6,8, 12,15	3,20,32, 44	3,20,44	7,13,26	26	1,7,60,63 ,65,78		2,44		3,20,25, 32,44	3,20,44	7,13,26	26		15			
CDI L + [GPS1]	24					14				30												
CDI R + [GPS1]	27					13				31												
RS232-1 RX GPS 2	28												4	5				1				
Vloc Annun (GPS1)	30					27				3												
Approach Annun (GPS1)	31			10		33				12												
Msg Annun (GPS1)	32					16				10												
Arinc 429 Out 1 B	38	24					38		19		10		10							10	10	
Arinc 429 Out 1 A	39	23					39		20		12		12							12	12	
Arinc 429 In 1 A	40	21					40		21		11		11							11	11	
Arinc 429 In 1 B	41	22					41		22		13		13							13	13	
Vor/Loc ARINC IN 1 A	42						42				14		14							14	14	
Vor/Loc ARINC IN 1 B	43						43				15		15							15	15	

NOTE: GROUND and SHIELD pins are connected together. However, the **bold** shield pin numbers are connected on a different layer.

### 3.2.18 PRO HUB rev F SORTED BY GPS I/O 2-1 C18

PRO Hub Rev. F rev 040526	GPS I/O 2-1	TRANSPONDER	ENCODER	AUTOPILOT	AUX AUDIO	GPS 1	NAV 1	COMM 1	NAV INDICATOR 1	ANNUNCIATOR / SWITCHES	GPS I/O 1-1	AUDIO PANEL	GPS I/O 1-2	GPS 2	NAV 2	COMM 2	NAV INDICATOR 2	MFD	ENCODER OUT	GPS I/O 1-3	GPS I/O 1-4	
	C18 HD15	C1 DB25	C2 DB15	C3 HD26	C4 DB15	C5 HD44	C6 HD44	C7 HD26	C8 HD26	C9 HD78	C10 HD15	C11 HD44	C12 HD15	C13 HD44	C14 HD44	C15 HD26	C16 HD26	C17 HD44	C19 HD15	C20 HD15	C21 HD-15	
RS232-1 RX GPS 2	1													4	5			28				
RS232-1 TX GPS 2	2													5	4							
RS232-2 RX GPS 2	3													21				21				
RS232-2 TX GPS 2	4													22				22				
OBI Clk 2	5														17							
RS232-4 RX GPS 2	6													6								
RS232-4 TX GPS 2	7													7								
OBI Data 2	8															21						
OBI Sync 2	9															18						
Arinc 429 Out 2 B	10															38	19					
Arinc 429 In 2 A	11															40	21					
Arinc 429 Out 2 A	12															39	20					
Arinc 429 In 2 B	13															41	22					
Vor/Loc ARINC IN 2 A	14															42						
Vor/Loc ARINC IN 2 B	15															43						

### 3.2.19 PRO HUB rev F SORTED BY ENCODER OUT C19

	ENCODER OUT	TRANSPONDER	ENCODER	AUTOPILOT	AUX AUDIO	GPS 1	NAV 1	COMM 1	NAV INDICATOR 1	ANNUNCIATOR / SWITCHES	GPS I/O 1-1	AUDIO PANEL	GPS I/O 1-2	GPS 2	NAV 2	COMM 2	NAV INDICATOR 2	MFD	GPS I/O 2-1	GPS I/O 1-3	GPS I/O 1-4
PRO Hub Rev. F rev 040526	C19 HD15	C1 DB25	C2 DB15	C3 HD26	C4 DB15	C5 HD44	C6 HD44	C7 HD26	C8 HD26	C9 HD78	C10 HD15	C11 HD44	C12 HD15	C13 HD44	C14 HD44	C15 HD26	C16 HD26	C17 HD44	C18 HD15	C20 HD15	C21 HD-15
RS232-2 TX GPS 1	1		1			21					3		3					6		3	3
A1	2	6	2	11		35		17						35		17					
A2	3	13	3	12		37		18						37		18					
A4	4	5	4	13		38		19						38		19					
B1	5	15	5	14		39		20						39		20					
Strobe	6		6	15																	
B2	9	7	9	16		40		21						40		21					
B4	10	14	10	17		41		22						41		22					
C1	11	9	11	18		42		23						42		23					
C4	12	8	12	19		23		24						23		24					
C2	13	16	13	20		43		25						43		25					
D4	14	17	14	21		24		16						24		16					
Ground / Shield	<b>15</b>	<b>1,11,18,25</b>	15	<b>23,26</b>	<b>2,4,6,8,12,15</b>	<b>3,20,32,44</b>	<b>3,20,44</b>	<b>7,13,26</b>	<b>26</b>	<b>1,7,60,63,65,78</b>		<b>2,44</b>		<b>3,20,25,32,44</b>	<b>3,20,44</b>	<b>7,13,26</b>	<b>26</b>	<b>23,25,44</b>			

NOTE: GROUND and SHIELD pins are connected together. However, the **bold** shield pin numbers are connected on a different layer.