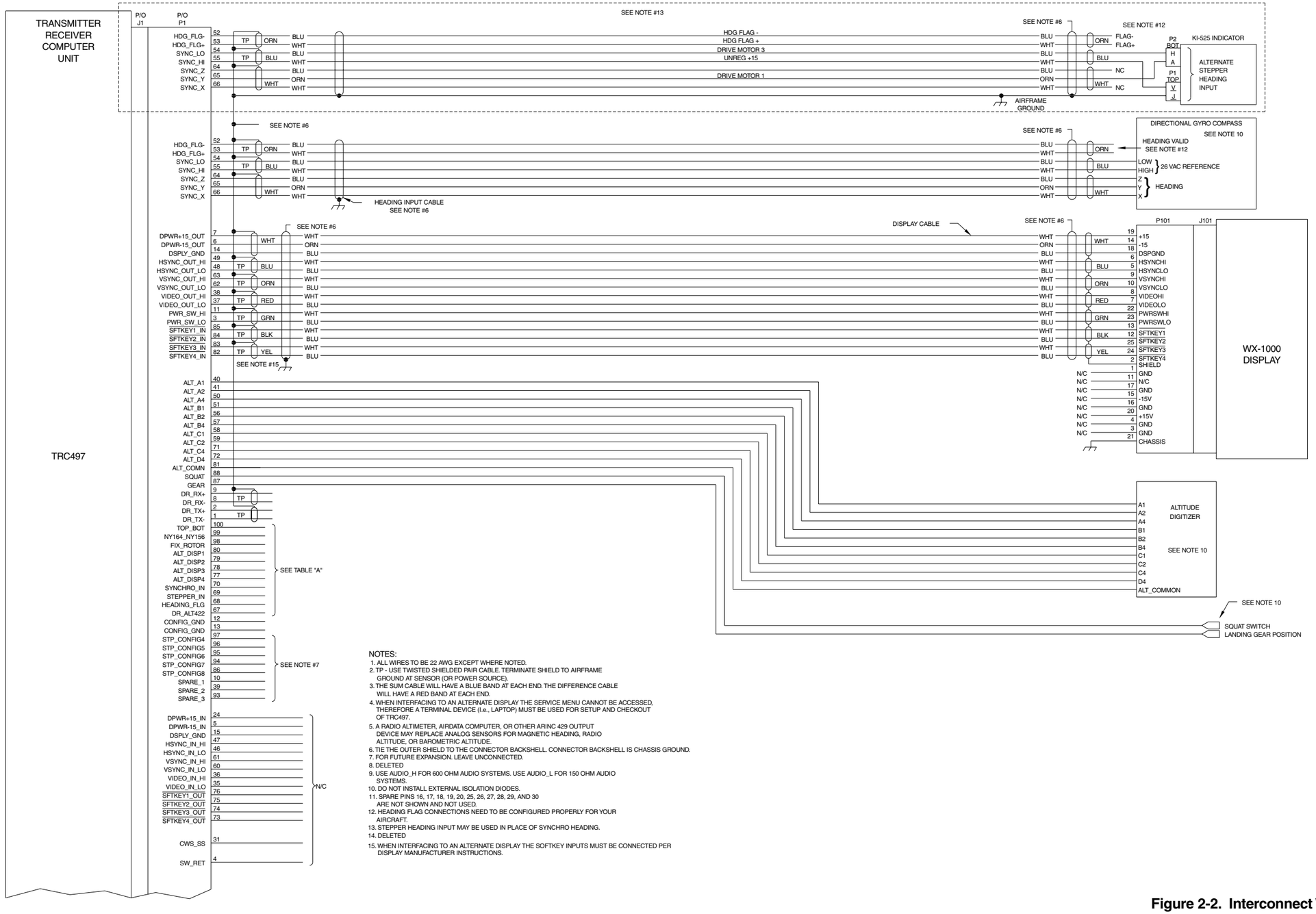


NOTES:

1. ALL WIRES TO BE 22 AWG EXCEPT WHERE NOTED.
2. TP - USE TWISTED SHIELDED PAIR CABLE. TERMINATE SHIELD TO AIRFRAME GROUND AT SENSOR (OR POWER SOURCE).
3. THE SUM CABLE WILL HAVE A BLUE BAND AT EACH END. THE DIFFERENCE CABLE WILL HAVE A RED BAND AT EACH END.
4. WHEN INTERFACING TO AN ALTERNATE DISPLAY THE SERVICE MENU CANNOT BE ACCESSED, THEREFORE A TERMINAL DEVICE (I.e., LAPTOP) MUST BE USED FOR SETUP AND CHECKOUT OF TRC497.
5. A RADIO ALTIMETER, AIRDATA COMPUTER, OR OTHER ARINC 429 OUTPUT DEVICE MAY REPLACE ANALOG SENSORS FOR MAGNETIC HEADING, RADIO ALTITUDE, OR BAROMETRIC ALTITUDE.
6. TIE THE OUTER SHIELD TO THE CONNECTOR BACKSHELL. CONNECTOR BACKSHELL IS CHASSIS GROUND.
7. FOR FUTURE EXPANSION. LEAVE UNCONNECTED.
8. DELETED
9. USE AUDIO_H FOR 600 OHM AUDIO SYSTEMS. USE AUDIO_L FOR 150 OHM AUDIO SYSTEMS.
10. DO NOT INSTALL EXTERNAL ISOLATION DIODES.
11. SPARE PINS 16, 17, 18, 19, 20, 25, 26, 27, 28, 29, AND 30 ARE NOT SHOWN AND NOT USED.
12. HEADING FLAG CONNECTIONS NEED TO BE CONFIGURED PROPERLY FOR YOUR AIRCRAFT.
13. STEPPER HEADING INPUT MAY BE USED IN PLACE OF SYNCHRO HEADING.
14. DELETED
15. WHEN INTERFACING TO AN ALTERNATE DISPLAY THE SOFTKEY INPUTS MUST BE CONNECTED PER DISPLAY MANUFACTURER INSTRUCTIONS.

Figure 2-2. Interconnect Wiring Without WX-1000 (Sheet 1 of 2)

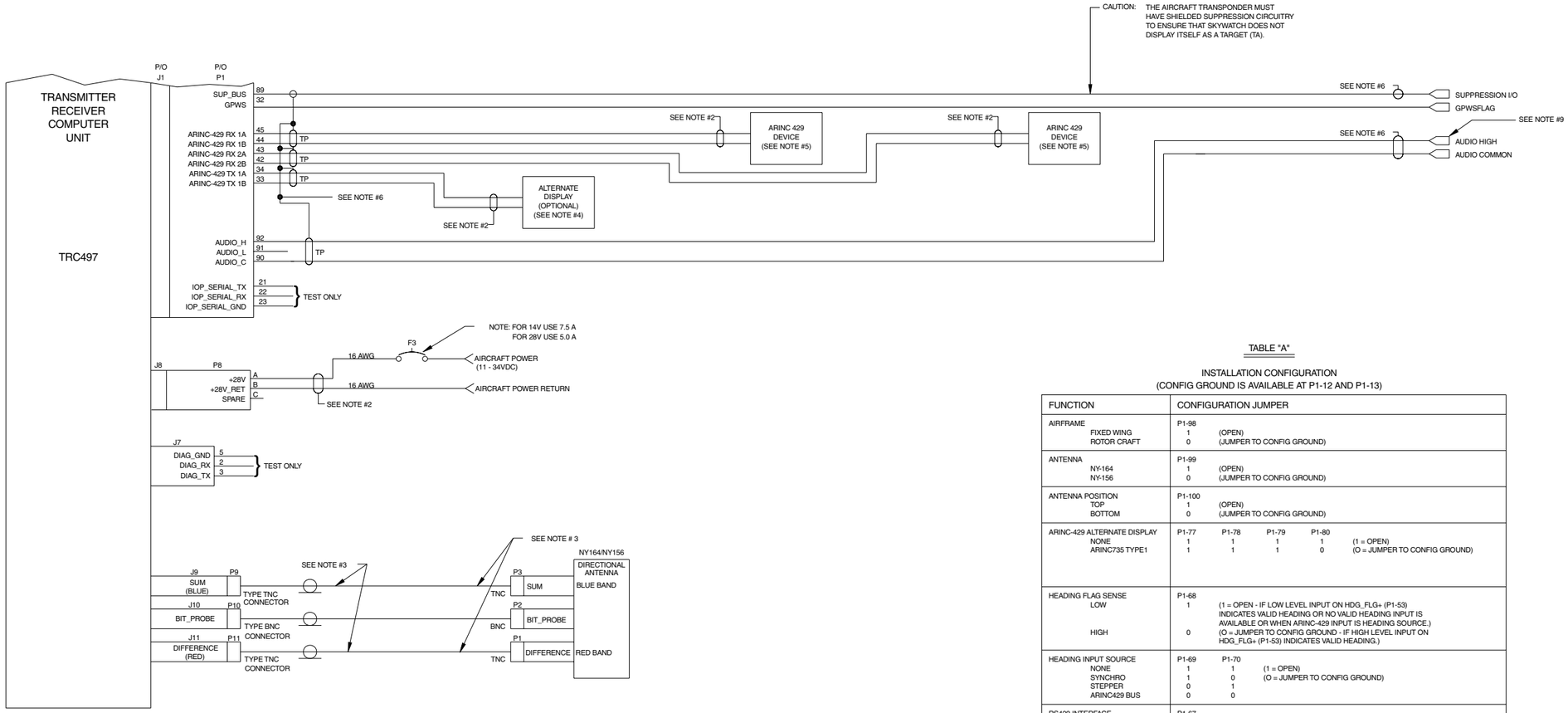


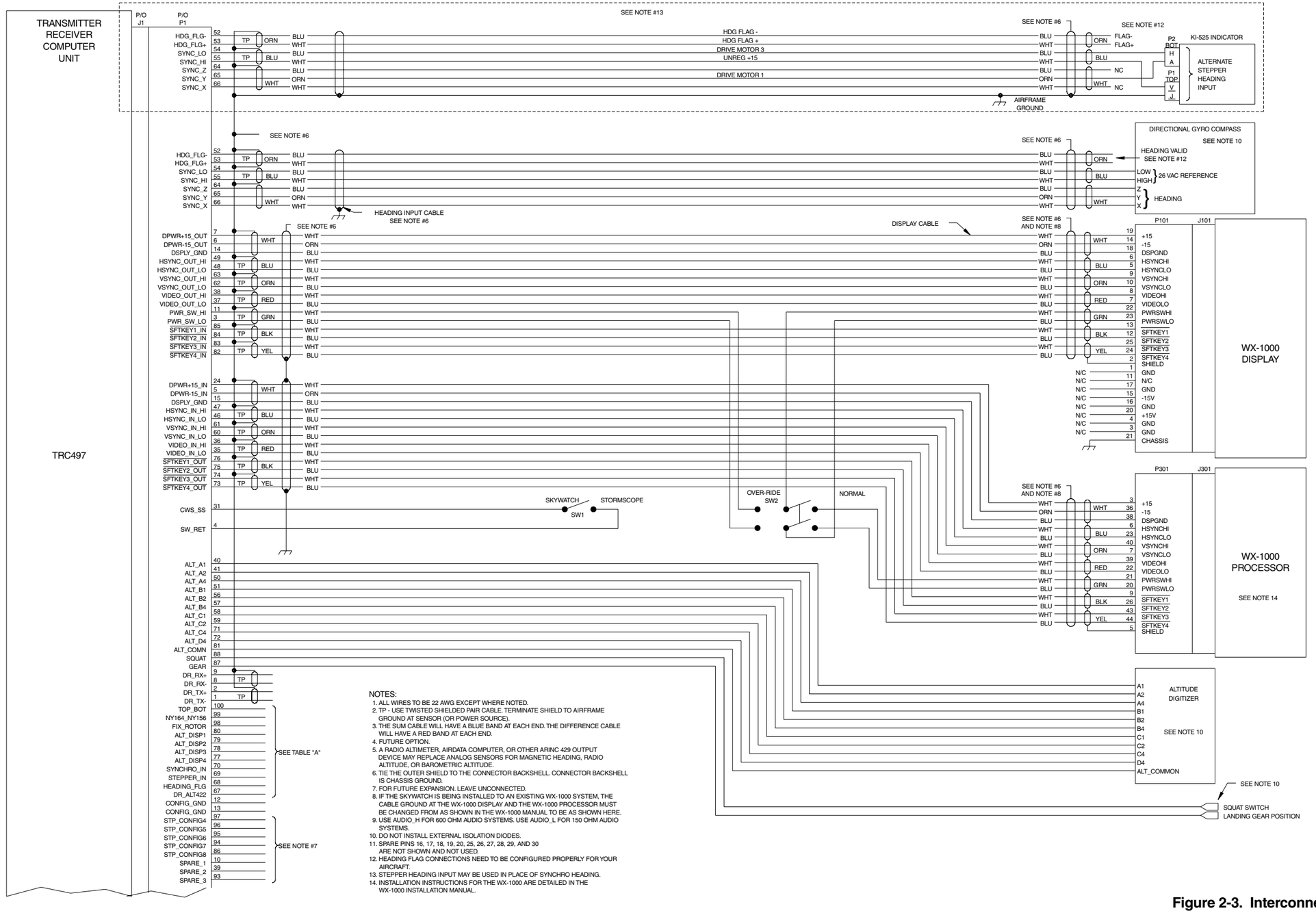
TABLE "A"

INSTALLATION CONFIGURATION
(CONFIG GROUND IS AVAILABLE AT P1-12 AND P1-13)

FUNCTION	CONFIGURATION JUMPER				
AIRFRAME	P1-98				
FIXED WING	1	(OPEN)			
ROTOR CRAFT	0	(JUMPER TO CONFIG GROUND)			
ANTENNA	P1-99				
NY-164	1	(OPEN)			
NY-156	0	(JUMPER TO CONFIG GROUND)			
ANTENNA POSITION	P1-100				
TOP	1	(OPEN)			
BOTTOM	0	(JUMPER TO CONFIG GROUND)			
ARINC-429 ALTERNATE DISPLAY	P1-77	P1-78	P1-79	P1-80	
NONE	1	1	1	1	(1 = OPEN)
ARINC735 TYPE1	1	1	1	0	(O = JUMPER TO CONFIG GROUND)
HEADING FLAG SENSE	P1-68				
LOW	1	(1 = OPEN - IF LOW LEVEL INPUT ON HDG_FLG+ (P1-53) INDICATES VALID HEADING OR NO VALID HEADING INPUT IS AVAILABLE OR WHEN ARINC-429 INPUT IS HEADING SOURCE.)			
HIGH	0	(O = JUMPER TO CONFIG GROUND - IF HIGH LEVEL INPUT ON HDG_FLG+ (P1-53) INDICATES VALID HEADING.)			
HEADING INPUT SOURCE	P1-69	P1-70			
NONE	1	1	(1 = OPEN)		
SYNCHRO	1	0	(O = JUMPER TO CONFIG GROUND)		
STEPPER	0	1			
ARINC429 BUS	0	0			
RS422 INTERFACE	P1-67				
DATA RECORDER ALTERNATE*	1	(OPEN)			
	0	(JUMPER TO CONFIG GROUND)			

* FUTURE OPTION

Figure 2-2. Interconnect Wiring Without WX-1000 (Sheet 2 of 2)



NOTES:
1. ALL WIRES TO BE 22 AWG EXCEPT WHERE NOTED.
2. TP - USE TWISTED SHIELDED PAIR CABLE. TERMINATE SHIELD TO AIRFRAME GROUND AT SENSOR (OR POWER SOURCE).
3. THE SUM CABLE WILL HAVE A BLUE BAND AT EACH END. THE DIFFERENCE CABLE WILL HAVE A RED BAND AT EACH END.
4. FUTURE OPTION.
5. A RADIO ALTIMETER, AIRDATA COMPUTER, OR OTHER ARINC 429 OUTPUT DEVICE MAY REPLACE ANALOG SENSORS FOR MAGNETIC HEADING, RADIO ALTITUDE, OR BAROMETRIC ALTITUDE.
6. TIE THE OUTER SHIELD TO THE CONNECTOR BACKSHELL. CONNECTOR BACKSHELL IS CHASSIS GROUND.
7. FOR FUTURE EXPANSION. LEAVE UNCONNECTED.
8. IF THE SKYWATCH IS BEING INSTALLED TO AN EXISTING WX-1000 SYSTEM, THE CABLE GROUND AT THE WX-1000 DISPLAY AND THE WX-1000 PROCESSOR MUST BE CHANGED FROM AS SHOWN IN THE WX-1000 MANUAL TO BE AS SHOWN HERE.
9. USE AUDIO_H FOR 600 OHM AUDIO SYSTEMS. USE AUDIO_L FOR 150 OHM AUDIO SYSTEMS.
10. DO NOT INSTALL EXTERNAL ISOLATION DIODES.
11. SPARE PINS 16, 17, 18, 19, 20, 25, 26, 27, 28, 29, AND 30 ARE NOT SHOWN AND NOT USED.
12. HEADING FLAG CONNECTIONS NEED TO BE CONFIGURED PROPERLY FOR YOUR AIRCRAFT.
13. STEPPER HEADING INPUT MAY BE USED IN PLACE OF SYNCHRO HEADING.
14. INSTALLATION INSTRUCTIONS FOR THE WX-1000 ARE DETAILED IN THE WX-1000 INSTALLATION MANUAL.

Figure 2-3. Interconnect Wiring With WX-1000 (Sheet 1 of 2)

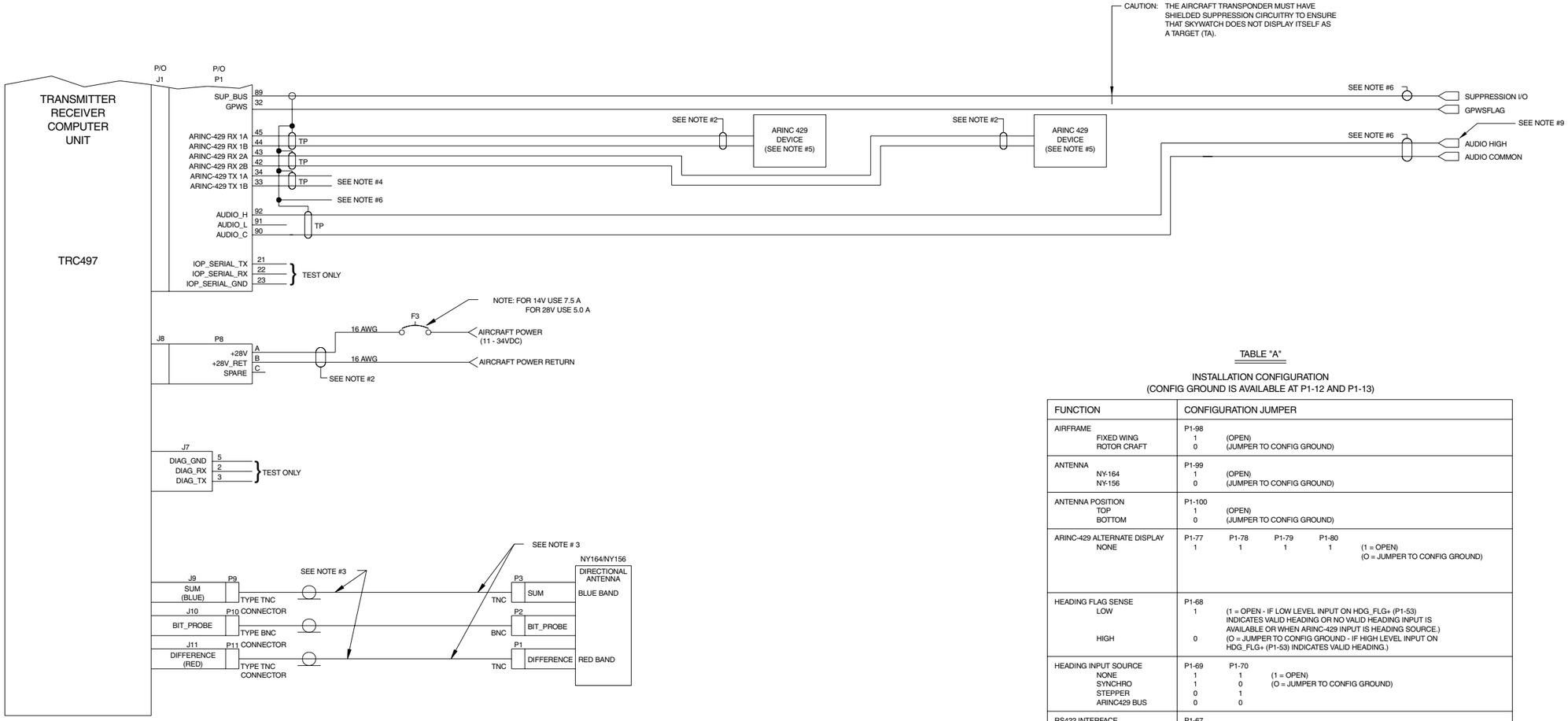


TABLE "A"

INSTALLATION CONFIGURATION
(CONFIG GROUND IS AVAILABLE AT P1-12 AND P1-13)

FUNCTION	CONFIGURATION JUMPER				
AIRFRAME	P1-98				
FIXED WING	1	(OPEN)			
ROTOR CRAFT	0	(JUMPER TO CONFIG GROUND)			
ANTENNA	P1-99				
NY-164	1	(OPEN)			
NY-156	0	(JUMPER TO CONFIG GROUND)			
ANTENNA POSITION	P1-100				
TOP	1	(OPEN)			
BOTTOM	0	(JUMPER TO CONFIG GROUND)			
ARINC-429 ALTERNATE DISPLAY	P1-77	P1-78	P1-79	P1-80	
NONE	1	1	1	1	(1 = OPEN) (O = JUMPER TO CONFIG GROUND)
HEADING FLAG SENSE	P1-68				
LOW	1	(1 = OPEN - IF LOW LEVEL INPUT ON HDG_FLG+ (P1-53) INDICATES VALID HEADING OR NO VALID HEADING INPUT IS AVAILABLE OR WHEN ARINC-429 INPUT IS HEADING SOURCE.)			
HIGH	0	(O = JUMPER TO CONFIG GROUND - IF HIGH LEVEL INPUT ON HDG_FLG+ (P1-53) INDICATES VALID HEADING.)			
HEADING INPUT SOURCE	P1-69	P1-70			
NONE	1	1	(1 = OPEN)		
SYNCHRO	1	0	(O = JUMPER TO CONFIG GROUND)		
STEPPER	0	1			
ARINC429 BUS	0	0			
RS422 INTERFACE	P1-67				
DATA RECORDER ALTERNATE *	1	(OPEN)			
	0	(JUMPER TO CONFIG GROUND)			

* FUTURE OPTION

Figure 2-3. Interconnect Wiring With WX-1000 (Sheet 2 of 2)

2.5 DISPLAY LOCATION

The display should be mounted in a location easily accessible and clearly visible to the pilot. In selecting a location, consider the following:

Magnetic Effect	Where possible to avoid it, the display should not be mounted within 3 inches (8 cm) of an electric turn and bank indicator, as the magnetic effect of the turn and bank motor may affect the display presentation. (a common symptom of magnetic interference is a wobbling or vibrating display raster.)
	NOTE
	If it is necessary to mount the display unit next to a device that may affect the CRT display, magnetic shielding material can be placed around the display unit. Shielding material is available from BFG Avionics Systems. Specify P/N 78-8060-5882-8 when ordering.
Panel Depth	Adequate depth must be available behind the instrument panel to allow for the display, the display connector, and excess display cable. Remember, a service loop is necessary to allow access to the display connector when removing the display or inserting it into the instrument panel.
Cooling	While the display has no special cooling requirements, it should be mounted to permit adequate ventilation.
Viewing Angle	The viewing angle for the CRT display is not a critical factor. The most favorable mounting position would be near eye level and no more than arms length from the principle user of the instrument.

2.6 CABLE REQUIREMENTS AND FABRICATION

NOTE

All wiring must be in accordance with industry accepted methods, techniques and practices.

The installer will supply and fabricate all system cables. Appendix A defines the electrical characteristics of all input and output signals and identifies the cable requirements for each signal. Refer to figure 2-2 (without WX-1000) or 2-3 (with WX-1000) for interconnect wiring information. Required connectors and contact pins are supplied in the installation kits.

The length and routing of the external cables must be carefully studied and planned before attempting installation of the equipment. Observe the following precautions:

- Note the signal characteristics of flag lines and discrete signal inputs; an external relay may be required to provide proper polarity or "sense" of the signals.
- All cable routing should be kept as short and direct as possible.
- Avoid sharp bends (do not exceed the minimum bend radius detailed in table 2-1).
- Avoid routing the cables too close to aircraft control cables.
- Avoid routing cable near the ADF, comm radio, or transponder antenna cables (allow at least a 12 inch separation).
- Avoid routing cable near power sources (e.g., 400 Hertz generators, trim motors, etc.) and near power for fluorescent lighting.
- To limit the possibility of wire chafing, it is recommended that heat shrink sleeving be installed over the wire bundle between the shield termination's (inside the connector backshell) and the connector cable clamp.
- Observe all wiring notes on interconnect wiring diagram.

After fabricating the cables and before installing the equipment, use the interconnect diagram to verify continuity between each pin and its opposite end termination. Check resistance to ground between each connector pin. When a path to ground is detected, verify its validity.

2.6.1 Antenna Cables

NOTES

1. Use of any cable not meeting BFG Avionics Systems specifications voids all system warranties.
2. If you fabricate your own cables, you must verify that the attenuation and VSWR does not exceed the specified values.
3. To add strain relief and alleviate stress caused by aircraft vibration, place 4-6 inches of heat shrink tubing over each antenna connector and cable.

The directional antenna requires three cable assemblies; sum (Sigma Port), bit probe (Probe Port) and difference (Delta Port). Cable attenuation for the sum and difference ports must not exceed 2.5 dB. Table 2-1 identifies U. S. vendors who sell approved cables by the foot. Table 2-2 provides a cable to connector cross reference. RG142B or equivalent may be used for the bit probe cable. Attenuation for the bit probe cable must not exceed 6 dB. VSWR, on cables attached to the sum, bit probe, and difference ports, must not exceed 1.5:1.

Table 2-1. Directional Antenna SIGMA and DELTA Port Cable Vendors

Electrical & Mechanical Technologies (EMTEQ) 1-888-879-6170 262-679-6170 FAX 262-679-6175				
Part Number	**Attenuation (dB/100 ft 1.0 gHz)**	**Weight (lb) (per 100 ft)**	**Maximum Length (ft)**	**Minimum Bend Radius (in)**
PFLX195-100	10.81	2.7	21.8	0.50
PFLX240-100	9.76	4.5	25.0	0.75
PFLX340-100	6.3	7.2	38.2	0.88
Electronic Cable Specialists 1-800-327-9473 414-421-5300 FAX 414-421-5301				
Part Number	**Attenuation (dB/100 ft 1.0 gHz)**	**Weight (lb) (per 100 ft)**	**Maximum Length (ft)**	**Minimum Bend Radius (in)**
352001	12.2	2.7	15	0.81
311601	8.7	5.5	26	1.15
311201	5.56	8.5	41	1.59
310801	3.63	16.1	63	2.26
PIC Wire and Cable 1-800-742-3191 262-246-0500 FAX 262-246-0450				
Part Number	**Attenuation (dB/100 ft 1.0 gHz)**	**Weight (lb) (per 100 ft)**	**Maximum Length (ft)**	**Minimum Bend Radius (in)**
S33141	7.2	6.5	32	1.5
S55122	5.7	8.2	40	1.6
S22089	3.8	18	61	2.5

If cable weight is not a consideration, select lowest loss cable. Contact cable vendors before installation. New low-loss light-weight cables may be available.

At the antenna, each connector has an identifying color band. To ensure the cables are connected to the correct port, affix the following marking at the termination points of each cable:

Sum (Sigma) Port — The Sum (Sigma) port is the forward antenna connector. It is marked with a blue band. Fabricate the sum antenna cable with a TNC connector at each end. Affix a blue marking band on each connector. At the TRC, the sum port (J9) is identified with blue marking.

Probe (Bit) Port — The Probe (Bit) port is the center antenna connector. Fabricate the probe cable with a BNC connector at each end.

Difference (Delta) Port — The Difference (Delta) port is the rear antenna connector. It is marked with a red band. Fabricate the difference antenna cable with a TNC connector at each end. Affix red marking band on each connector. At the TRC, the difference port (J11) is identified with red marking.

When routing antenna cables, observe the following precautions:

- All cable routing should be kept as short (do not exceed maximum cable length detailed in table 2-1) and direct as possible.
- Avoid sharp bends (do not exceed maximum bend radius detailed in table 2-1).
- Avoid routing cable near power sources (e.g., 400 Hertz generators, trim motors, etc.) and near power for fluorescent lighting.
- Avoid routing cable near ADF antenna cable (allow at least a 12-inch separation).
- Observe all wiring notes on interconnect wiring diagram (figure 2-2 or 2-3).
- Use pressurized bulkhead connectors certified to 30 psi or greater where needed.

Table 2-2. Cable to Connector Reference

Electrical & Mechanical Technologies (EMTEQ) 1-888-879-6170 262-679-6170 FAX 262-679-6175				
Cable Part Number	**TNC Straight**	**TNC Right Angle**	**BNC Straight**	**BNC Right Angle**
PFLX195-100	TMS195-1	TMR195-1	BMS195-1	BMR195-1
PFLX240-100	TMS240-1	TMR240-1	BMS240-1	BMR240-1
PFLX340-100	TMS340-1	TMR340-1	BMS340-1	BMR340-1
Electronic Cable Specialists 1-800-327-9473 414-421-5300 FAX 414-421-5301				
Cable Part Number	**TNC Straight**	**TNC Right Angle**	**BNC Straight**	**BNC Right Angle**
311601	CTS922	CTR922	CBS922	CBR922
311201	CTS122	CTR122	CBS122	CBR122
310801	CTS022	CTR022	CBS022	CBR022
352001	CTS3522	CTR3522	CBS3522	CBR3522
PIC Wire and Cable 1-800-742-3191 262-246-0500 FAX 262-246-0450				
Cable Part Number	**TNC Straight**	**TNC Right Angle**	**BNC Straight**	**BNC Right Angle**
S33141	190308	190309	190312	190313
S55122	190608	190609	190612	190613
S22089	190408	190409	190412	190413

2.6.2 Configuration Jumpers

All installation dependent selections are defined via configuration jumpers. The configuration jumpers, as detailed in table 2-3, are installed on the TRC mating connector (P1). Figure 2-4 shows the contact arrangement for connector P1. Configuration ground is available at P1-12 and P1-13.

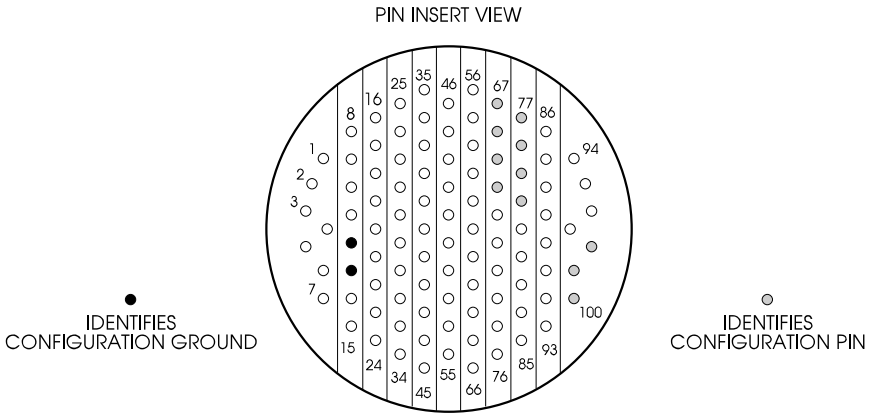


Figure 2-4. Connector P1 Contact Arrangement

Table 2-3. Configuration Jumpers

FUNCTION	CONFIGURATION JUMPER
Airframe Fixed Wing Rotor Craft	P1-98 1 (Open) 0 (Jumper to Configuration Ground)
Antenna NY-164 NY-156	P1-99 1 (Open) 0 (Jumper to Configuration Ground)
Antenna Position Top Bottom*	P1-100 1 (Open) 0 (Jumper to Configuration Ground)
ARINC-429 Alternate Display None ARINC 735 Type 1 Device**	P1-77 P1-78 P1-79 P1-80 1 1 1 1 (1 = Open) 1 1 1 0 (0 = Jumper to Configuration Ground)
Heading Flag Sense LOW HIGH	P1-68 1 (1 = Open - If LOW level input on HDG_FLG+ (P1-53) indicates valid heading or no valid heading input is available or when ARINC 429 input is heading source.) 0 (0 = Jumper to Configuration Ground - If HIGH level input on HDG_FLG+ (P1-53) indicates valid heading.)
Heading Input Source None Synchro Stepper ARINC 429 Bus	P1-69 P1-70 1 1 (1 = Open) 1 0 (0 = Jumper to Configuration Ground) 0 1 0 0
RS422 Interface Data Recorder Alternate***	P1-67 1 (Open) 0 (Jumper to Configuration Ground)

* See paragraph 2.3 Antenna Position
** ARINC-735 Type 1 device is a BFGAS designation that identifies the current display driver
*** Future Option

Heading flag logic, as detailed in table 2-4, is programmed with a jumper between P1-68 (Heading Flag Sense) and configuration ground.

NOTE

If the heading system has a low level flag between 1.5 VDC and 2.7 VDC (when valid), P1-68 (HEADING FLAG SENSE) should not be jumpered to ground and P1-53 (HDG_FLG+) must remain unconnected.

Table 2-4. Heading Flag Action

Heading Flag Logic	FLAG SENSE LOW (P1-68 Open)		FLAG SENSE HIGH (P1-68 Jumpered to ground.)	
Heading Status	VALID	FLAGGED	VALID	FLAGGED
P1-53 Relative to P1-52 (HDG_FLG+ - HDG_FLG-)	<1 V	>5 V	>5V	<1V

2.6.3 Display Cable

The display cable connects the TRC to the WX-1000/SKY497 Display. If a WX-1000 *Stormscope*® Weather Mapping System is installed, the same type cable is used to connect the TRC to a WX-1000 processor. Refer to figure 2-2 (without WX-1000) or 2-3 (with WX-1000) for interconnect wiring information. Pinout information relating to the WX-1000 processor and display is also provided in tables 2-5 and 2-6.

Table 2-5. WX-1000/SKY497 Display Connection

FUNCTION	Display P101	WIRE COLOR SUB-CABLE	WIRE	TRC P1
(Inner Jackets)	2			
DPWR+15_OUT	19	WHITE	WHITE	P1-7
DPWR-15_OUT	14	WHITE	ORANGE	P1-6
DSPLY_GND	18	WHITE	BLUE	P1-14
HSYNC_OUT_HI	6	BLUE	BLUE	P1-49
HSYNC_OUT_LO	5	BLUE	WHITE	P1-48
VSYNC_OUT_HI	9	ORANGE	WHITE	P1-63
VSYNC_OUT_LO	10	ORANGE	BLUE	P1-62
VIDEO_OUT_HI	8	RED	WHITE	P1-38
VIDEOOUT_LO	7	RED	BLUE	P1-37
PWR_SW_HI	22 (SW2*)	GREEN	WHITE	P1-11
PWR_SW-LO	23 (SW2*)	GREEN	BLUE	P1-3
SFTKEY1_IN	13	BLACK	WHITE	P1-85
SFTKEY2_IN	12	BLACK	BLUE	P1-84
SFTKEY3_IN	25	YELLOW	WHITE	P1-83
SFTKEY4_IN	24	YELLOW	BLUE	P1-82

*SW2 required if WX-1000 Processor installed (see figure 2-2).

Table 2-6. WX -1000 Processor Connection

FUNCTION	WX-1000 Processor	WIRE COLOR		TRC497
		SUB-CABLE	WIRE	
SHIELD	P301-5			
PWRSWHI	P301-21	GREEN	WHITE	SW2*
PWRSWLO	P301-20	GREEN	BLUE	SW2*
+15	P301-3	WHITE	WHITE	P1-24
-15	P301-36	WHITE	ORANGE	P1-5
DSPGND	P301-38	WHITE	BLUE	P1-15
HSYNCHI	P301-6	WHITE	BLUE	P1-47
HSYNCLO	P301-23	BLUE	WHITE	P1-46
VSYNCHI	P301-40	ORANGE	WHITE	P1-61
VSYNCLO	P301-7	ORANGE	BLUE	P1-60
VIDEOHI	P301-22	RED	BLUE	P1-36
VIDEOLO	P301-39	RED	WHITE	P1-35
SFTKEY1	P301-9	BLACK	WHITE	P1-76
SFTKEY2	P301-26	BLACK	BLUE	P1-75
SFTKEY3	P301-43	YELLOW	WHITE	P1-74
SFTKEY4	P301-44	YELLOW	BLUE	P1-73

*SW2 required if WX-1000 Processor installed (see figure 2-2).

Table 2-7 identifies U.S. vendors who sell approved display cables by the foot.

NOTE

Use of any cable not meeting BFG Avionics Systems specifications voids all system warranties.

Table 2-7. Display Cable Vendors

U.S. COMPANY	DISPLAY CABLE P/N	WEIGHT (LB PER 100 FT)
Dallas Avionics 1-800-527-2581 214-320-9776 FAX 214-320-1057	WX-3	10.5
Electronic Cable Specialists 414-421-5300 FAX 414-421-5301	3N6715	16
A.E. Petsche 817-461-9473 FAX 817 277 2887	TZDIS	13.1
PIC Wire and Cable 1-800-742-3191 414-246-0500 FAX 414-246-0450	WM25815	14.5
EDMO Distributors 1-800-235-3300 509-535-8280 FAX 1-800-828-0623 FAX 509-535-8266	WX-1000 Display	---

Required connectors and contact pins are supplied in the installation kit.

The display cable consists of the following (refer to figure 2-5).

1. Twisted, shielded, jacketed triad #22 AWG
   Colors: White, Blue, Orange
   Shield: Tin plated copper braid, 90% min.
   Jacket: FEP .007 in. min., White jacket

2. Twisted, shielded, jacketed pair #24 AWG
   Colors: White, Blue
   Shield: Tin plated copper braid, 90% min.
   Jacket: FEP .007 in. min., Blue jacket

3. Same as 2 except Orange jacket.

4. Same as 2 except Green jacket.

5. Same as 2 except Red jacket.

6. Same as 2 except Black jacket.

7. Same as 2 except Yellow jacket.

8. Aluminized Mylar® wrap.

9. #34 AWG braided shield.

10. FEP Teflon® jacket .013 in. - .023 in., Red tint.

11. Marker tape with Vendor P/N.

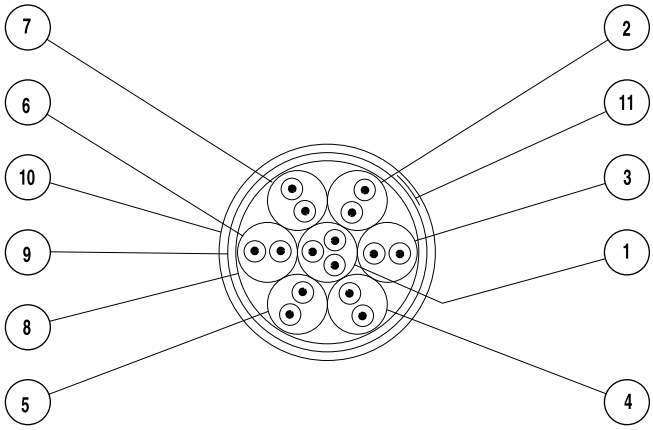


Figure 2-5. Display Cable

The sub-cable color-coded jackets and shields should be left on the sub-cables as close to the connectors as practical to provide the required shielding and to identify the sub-cables.

2.6.4 Heading Input Cable

The heading input cable connects the TRC497 to the aircraft heading system (refer to the Interconnect Wiring Diagram, figure 2-2 or 2-3). This cable provides XYZ and HC aircraft heading information (or King KCS55 stepper signals) to the TRC497. FLAG lines are also included in the heading input cable to provide the TRC497 processor with flag status (or heading valid) information.

Figure 2-6 shows the TRC497 heading validation circuit of the King KCS55 that provides a heading valid signal to the TRC497.

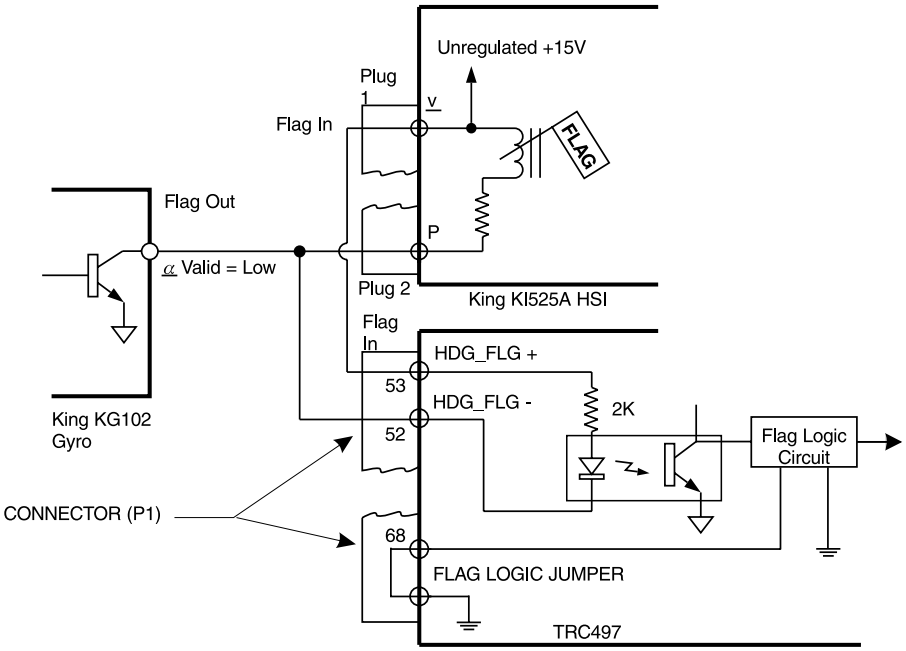


Figure 2-6. KCS55 Heading Flag Connection

If the heading source does not have a FLAG LO (-), the heading source FLAG HI(+) input is connected to P1-53 (HDG_FLG+) and P1-52 (HDG_FLG-) is connected to ground.

If the heading system has a low level flag between 1.5 VDC and 2.7 VDC (when valid), P1-68 (HEADING FLAG SENSE) should not be jumpered to ground and P1-53 (HDG_FLG+) must remain unconnected.

Table 2-8 lists some U.S. vendors who sell the required cable by the foot.

NOTE

Use of any cable not meeting BFG Avionics Systems specifications voids all system warranties.

The synchro cable consists of the following (refer to figure 2-7):

1. Twisted, Shielded, Jacketed Triad #24 AWG
   Colors: White, Blue, Orange
   Shield: Tin Plated Copper Braid, 90% min.
   Jacket: FEP .007 in. min., White
2. Twisted, Shielded, Jacketed Pair #24 AWG
   Colors: White, Blue
   Shield: Tin Plated Copper Braid, 90% min.
   Jacket: FEP .007 in. min., Blue
3. Same as Item 2, except Orange jacket.
4. Aluminized Mylar® Wrap.
5. #34 AWG braided shield.

6. FEP Teflon® jacket .013 in. - .023 in., clear (translucent).
7. Marker tape with vendor P/N.

The sub-cable color-coded jackets and shields should be left on the sub-cables as close to the connector as practical to provide the required shielding and to identify the sub-cables.

Table 2-8. Heading Input Cable Vendors

US COMPANY	CABLE P/N
Dallas Avionics 1-800-527-2581 214-320-9776 FAX 214-320-1057	WX-5 (6.84 lb/ 100 ft)
Electronic Cable Specialists 414-421-5300 FAX 414-521-5301	3N6607 (7.5 lb/ 100 ft)
A.E. Petsche 817-461-9473 FAX 817-277-2887	TZGYR (6.84 lb/ 100 ft)
EDMO Distributors 1-800-235-3300 805-295-6689 FAX 1-800-828-0623 FAX 805-295-6703	WX-1000 SYNCHRO
PIC Wire and Cable 1-800-742-3191 414-246-0500 FAX 414-246-0450	WM25807 (7.2 lb/ 100 ft)

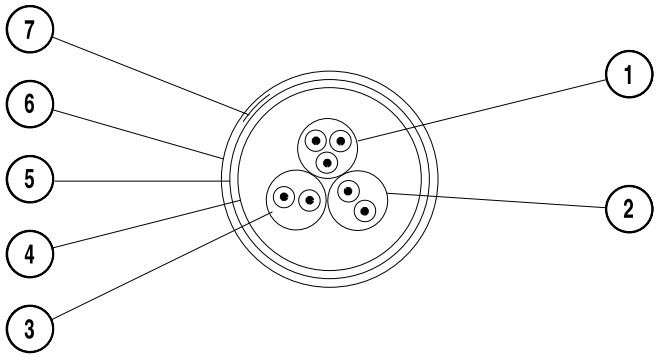


Figure 2-7. Heading Input Cable

2.6.5 ARINC 429 Data Cables

ARINC 429 Data Input Cable. The two ARINC 429 receivers can be used to input data from other avionics systems. The following labels are supported:

LABEL	FUNCTION
164	Radio Altimeter (see note)
203	Barometric Altitude (Uncorrected)
320	Magnetic Heading

NOTE

The radio altimeter must provide full range output between 0 and 2500 feet. Not all altimeters provide this full range output. The full range output can sometimes be obtained as a mod to the radio altimeter. Check with the specific altimeter manufacturer for compatibility and availability of modification, if necessary.

Data can be input at either low speed (12.5 kHz) or high speed (100 kHz). Both transmitters (data sources) must be set to the same speed. The TRC will automatically adjust both receivers to the speed of the first detected incoming data.

The TRC can only accept Radio Altimeter input from ARINC 429 source. The Barometric Altitude can be ARINC 429 or Gilham Code. The Magnetic Heading can be ARINC 429, Synchro (XYZ) or Stepper depending on the configuration pins and interconnect wiring. (See figure 2-2 or 2-3.)

NOTE

If 429 barometric altitude is used, it should be from the same source that is interfaced with the transponder or it must be at least as accurate as that source, i.e., ± 125 ft.

Once the TRC detects valid ARINC 429 barometric altitude (Label 203) input, it will only use 429 data as a source. ARINC 429 data cables are #22 AWG (minimum) twisted, shielded cables. Cable runs should be as short as practicable.

Receiver "1" connection:

ARINC-429 RX 1A -to- P1-45
ARINC-429 RX 1B -to- P1-44

Receiver "2" connection:

ARINC-429 RX 2A -to- P1-43
ARINC-429 RX 2B -to- P1-42

Refer to figure 2-2 or 2-3 for detailed interconnect wiring information. Ground overall shields to the airframe at the processor end only.

ARINC 429 Output Cable. The ARINC 429 transmitter can be used to output data to an external alternate display (e.g., weather radar via BFGoodrich Avionics Systems RGC250). The output speed is 100 kHz. ARINC 429 data cables are #22 AWG (minimum) twisted, shielded cables. Cable runs should be as short as practicable.

Transmitter connection:

ARINC-429 TX 1A -to- P1-34
ARINC-429 TX 1B -to- P1-33

Refer to figure 2-2 for detailed interconnect wiring information.

2.6.6 Altimeter Input Cable

NOTE

Only one altimeter input source (Gray Code or ARINC 429, not both) should be connected. The altimeter input should be from the same source that is interfaced with the transponder or it must be at least as accurate as that source, i.e., ± 125 ft.

These signals are Gilham Code inputs coming from an airdata computer or altitude digitizer. These 10 lines may be connected in parallel with the aircraft transponder. If the aircraft is equipped with selectable altitude encoders, connect the altitude inputs so that SKY497 is always connected to the selected encoder. (Reference ARINC 572-1.)

Altitude encoder connection:

A1 -to- P1-40	B1 -to- P1-51	C1 -to- P1-58	D4 -to- P1-72
A2 -to- P1-41	B2 -to- P1-56	C2 -to- P1-59	
A4 -to- P1-50	B4 -to- P1-57	C4 -to- P1-71	

ALTITUDE COMMON - to P1-81

NOTE

If the aircraft has switched encoders that uses 28V RETURN or AIRCRAFT GROUND as reference for encoder selection, then ALTITUDE COMMON should be left unconnected.

For each connection use #22 AWG (minimum). Cable runs should be as short as practicable. Refer to figure 2-2 or 2-3 for detailed interconnect wiring information.

2.6.7 Audio Alert Output Cable

Audio output from the TRC is directly compatible with industry standard aircraft audio panels. There is no internal audio adjustment. Audio levels are adjusted at the aircraft audio panel. This output is disabled when a GPWS alarm is detected and remains disabled until the warning clears.

Use #22 AWG (minimum) twisted shielded pair cable for lengths up to 30 ft. . Cable runs should be as short as practicable.

- Connect 600-ohm audio systems to P1-92 (AUDIO_H).
- Connect 150-ohm audio systems to P1-91 (AUIDO_L).
- Audio common is connected to P1-90 (AUDIO_C)

Refer to figure 2-2 or 2-3 for detailed interconnect wiring information.

2.6.8 Suppression Bus I/O

The TRC497 outputs (P1-89) a 100 µs (± 5 µs) suppression pulse on the aircraft suppression bus. In addition, the TRC497 receives suppression signals from all other devices on the suppression bus (e.g., transponder, DME). (Reference ARINC 735-2 and DO-197.)

CAUTION

The aircraft transponder must have suppression circuitry to ensure that SKYWATCH does not paint itself as a target (e.g., TA).

Any size low capacitance shielded cable may be used. Cable runs should be as short as practicable and the shields should be grounded at both ends of the cable. Refer to figure 2-2 or 2-3 for detailed interconnect wiring information.

2.6.9 Ground Proximity Warning System (GPWS) Input

This input senses a GPWS alarm and temporarily disables the audio alert output until the warning clears. The input can be either a constant flag signal or an alternating flag output. The flag must be cleared for five (5) seconds before the TRC accepts a "NO ALARM" condition and restores audible alerts.

NOTES

1. If the aircraft is equipped with GPWS, it must be connected to the TRC.
2. If the aircraft is not equipped with GPWS, leave this input unconnected..

For the GPWS input (P1-32) line, use #22 AWG (minimum) unshielded cable. Routing and length are not critical to system operation.

2.6.10 SKYWATCH/*Stormscope* Mode Switch

The SKYWATCH/*Stormscope* mode switch (SW1) is required only if a WX-1000 *Stormscope* Weather Mapping System is installed. This switch permits the flight crew to switch the display between the SKY497 and WX-1000. If a TA (Traffic Advisory) is detected in the *Stormscope* mode, the display will switch to the SKYWATCH mode. Refer to figure 2-3 for interconnect wiring information. Any general purpose SPST toggle switch (3 Amp @ 28 VDC) may be used. Display mode switch cable routing and length are not critical to system operation. Mount the switch at a location easily accessible to the pilot.

2.6.11 WX-1000 Maintenance Switch

ON/OFF control and display brightness is controlled through the OFF/BRT switch located on the WX-1000 display. An external NORMAL/OVERRIDE control over-ride switch (SW2) is required only if a WX-1000 *Stormscope* Weather Mapping System is installed. The override switch enables the S*KYWATCH* to be powered-up if the WX-1000 processor has been removed for maintenance. During normal operation the switch should remain in the NORMAL position and moved to OVERRIDE only if the WX-1000 processor has been removed for service or if it is necessary to access the WX-1000 service menu. Refer to figure 2-3 for interconnect wiring information. Any general purpose DPDT toggle switch (3 Amp @ 28 VDC) may be used. The maintenance switch cable routing and length are not critical to system operation. The switch can be located in the avionics bay near the WX-1000 processor.

2.6.12 Squat Switch Input

This signal line is to be connected to the squat switch to sense when the aircraft is on the ground. If the aircraft is not equipped with a squat switch, it is recommended that a squat switch be installed.

For the SQUAT input (P1-88) line, use #22 AWG (minimum) unshielded cable. Routing and length are not critical to system operation.

If a squat switch is not available, this input could be tied to an airspeed switch inline with the pitot system as an alternate input for the squat switch. In this configuration care should be taken to ensure the switch is set to trigger at a speed consistent with take-off and landing.

On helicopter installations with skids, and a squat switch is not available, this input can be tied to the collective switch. In this configuration care should be taken to ensure the switch is connected to provide a ground when the aircraft is on the ground and open when the aircraft is airborne.

If it is not possible to install a squat switch, airspeed switch, or collective switch ground this input. With this configuration the pilot must press soft-key (**4**), labeled **→OPR** or **→STB**, to toggle the system in and out of standby. To display traffic, the pilot will have to switch out of standby by pressing the **→OPR** button.

With a squat switch installed, SKYWATCH will automatically switch out of standby (i.e, ABV/6nm) 8 to 10 seconds after takeoff and switch back to standby 24 seconds after landing. A squat switch would also prevent the pilot from placing SKYWATCH in standby (i.e., pressing the **→STB** button) while the aircraft is in-flight.

2.6.13 Landing Gear Switch Input

This signal line is to be connected to the landing gear switch to sense the position of the landing gear.

For the GEAR input (P1-87) line, use #22 AWG (minimum) unshielded cable. Routing and length are not critical to system operation.

If the aircraft does not have a landing gear switch input (e.g., fixed-gear aircraft), leave this input unconnected. With this configuration, if no ARINC 429 compatible radio altimeter is installed, the system will default to the highest TA sensitivity level (level B) and audio TA announcements (i.e., "traffic, traffic") will not be inhibited during takeoff and landing.

2.6.14 Power Cable

The power cable (not supplied) runs from the aircraft circuit breaker panel to the TRC. The power cable is connected to the TRC using the MS3126F12-3S connector included in the TRC installation kit. For the power cable, use #16 AWG (minimum) twisted shielded pair cable (Beldon 83322, Alpha 2826/2, or equivalent).

NOTE

For 14 V aircraft systems a 7.5 A circuit breaker is required and for 28 V systems a 5 A circuit breaker is required. The circuit breaker may be selected to match components of the individual aircraft.

The positive wire (P8-A) connects to the circuit breaker. The negative wire (P8-B) connects to the aircraft power return. Terminate the shield to airframe ground at the power source. Power cable routing and length are not critical to system operation.

2.7 ANTENNA INSTALLATION

The following paragraphs provide installation details for directional antenna. The installer must ensure the immediate antenna installation area is clean and prepared so that the antenna is electrically bonded (metal-to-metal contact) to the aircraft. To provide optimum bonding through the mounting holes, prepare the surfaces with Alodine No. 1001.

To facilitate mounting to the airframe, the dimensions shown in figure 2-8 can be used to locate and drill mounting and connector access holes. Connection to the antenna should be made in accordance with the system interconnect diagram (figure 2-2 or 2-3).

NOTE

A doubler plate (not supplied) is required to reinforce the aircraft skin.

1. Connect each of the three antenna cables. Check to ensure that each cable is connected to the correct antenna connector. Each connector/cable has a matching color band (see note para 2.6.1).
2. Attach the antenna to the aircraft, with the special adapter plate and o-ring, using 10-32 hardware provided. See figure 2-9.

NOTES

1. When mounting the antenna remove the O-ring from the bag and install it in the O-ring groove on the bottom of the antenna.
2. The antenna must be sealed to the airframe. For pressurized aircraft, use a sealant that meets the requirements of SAE AMS-S-8802 such as Flamemaster® CS3204 class B. For non-pressurized aircraft, use a non-corrosive sealant that meets the physical requirements of MIL-A-46146 such as General Electric RTV162.

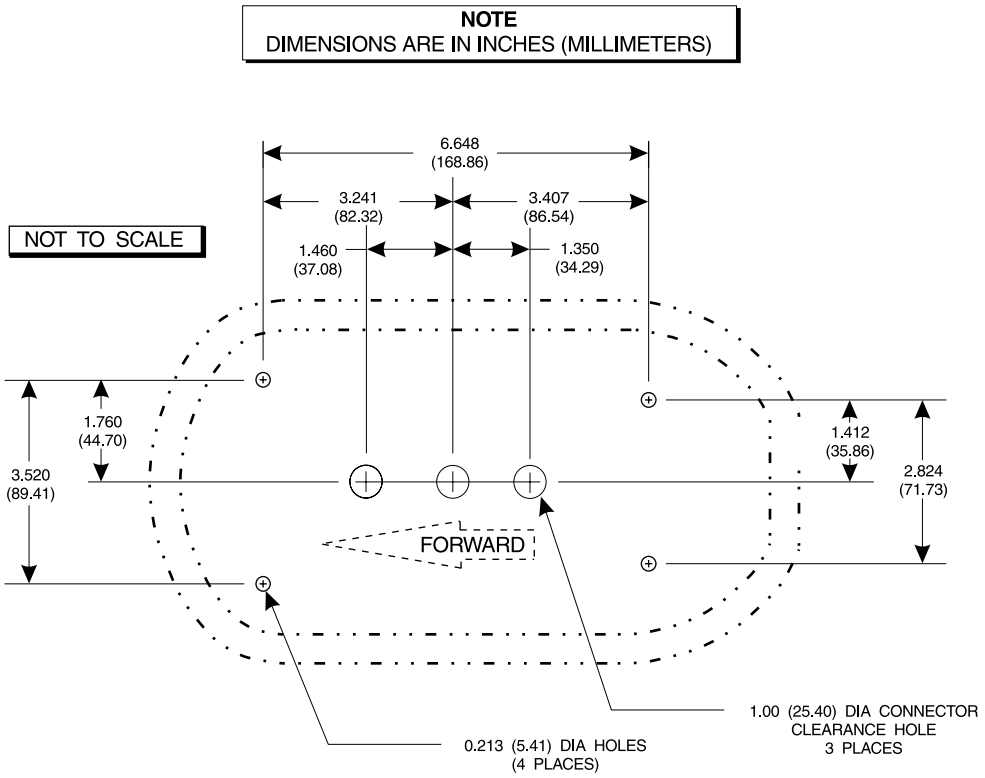


Figure 2-8. Antenna Mounting Holes

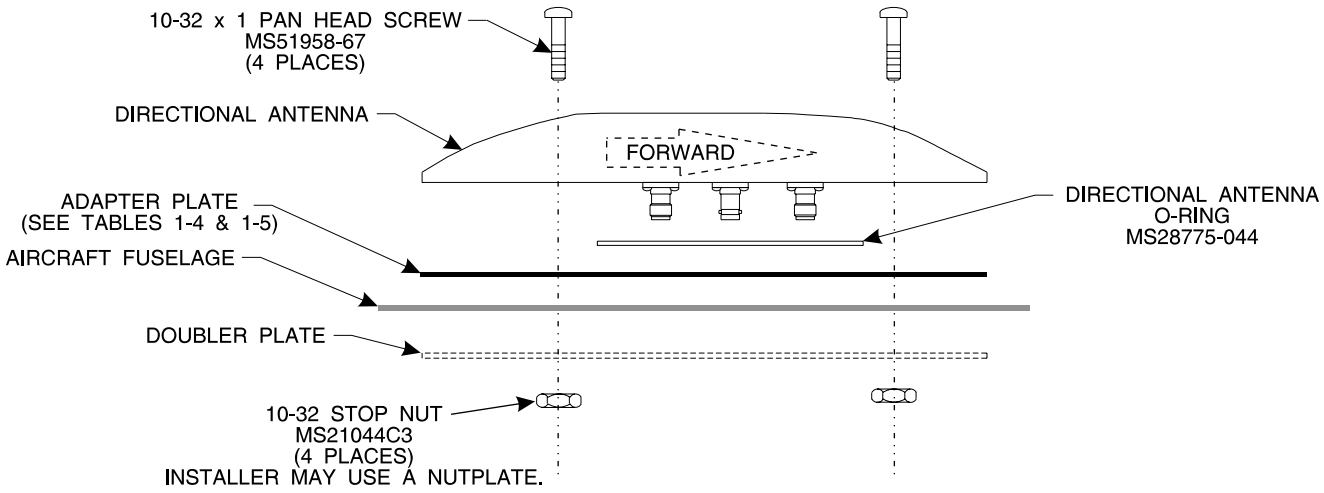


Figure 2-9. Directional Antenna Installation

2.8 TRC MOUNTING TRAY INSTALLATION

To accommodate different space limitations, the standard TRC mounting tray (P/N 805-10870-001) can be channel or flat mounted. To flat mount the tray, simply remove the eight 6-32 (Phillps) screws that secure the channel to the tray. The ruggedized TRC mounting tray (P/N 805-10870-003), required for rotorcraft installations, must be channel mounted.

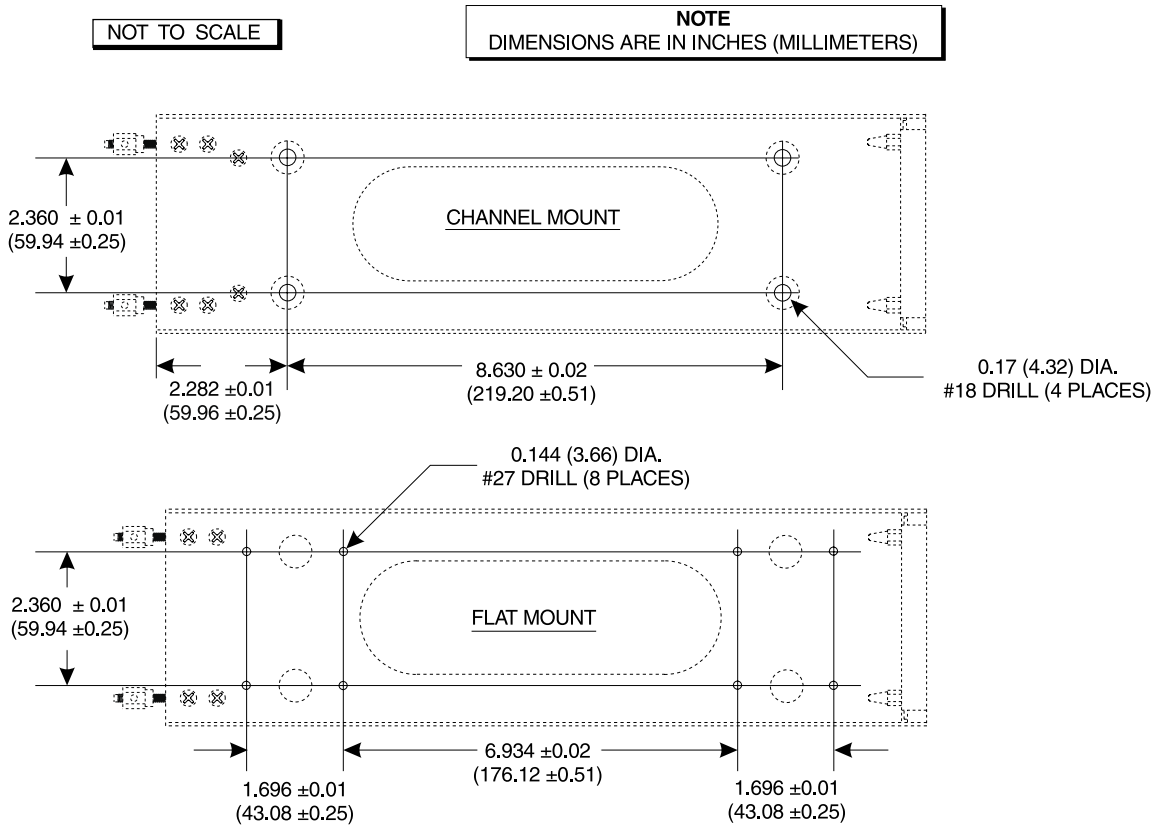


Figure 2-10. Mounting Holes for Standard Mounting Tray, P/N 805-10870-001

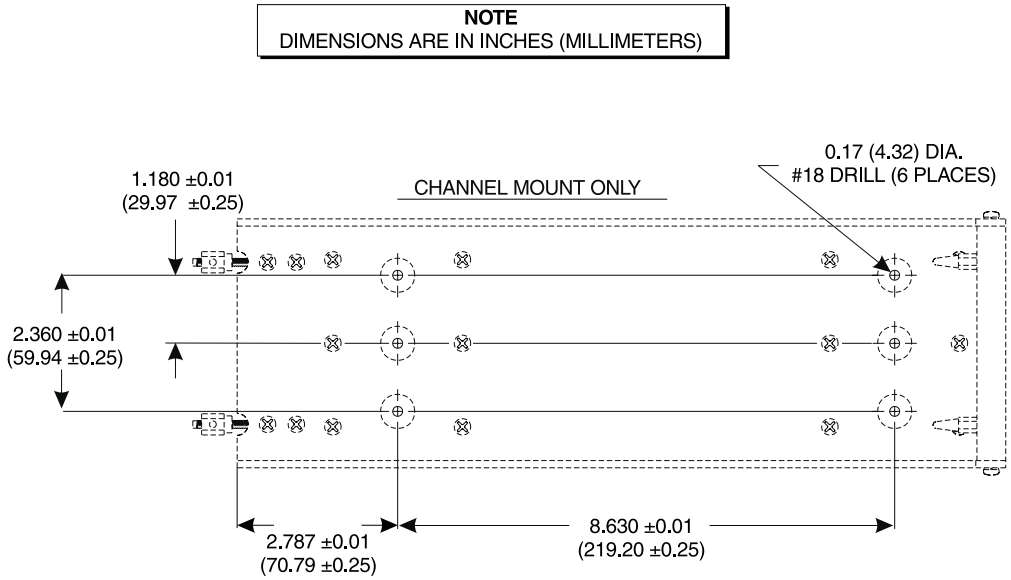


Figure 2-11. Mounting Holes for Ruggedized Mounting Tray, P/N 805-10870-003

1. Position tray at the installation location.
2. Determine centers for mounting holes, and drill for required fasteners. See figure 2-10 (standard tray) or 2-11 (ruggedized tray).
3. Secure tray in place using suitable 8-32 (channel mount) or 6-32 (flat mount) hardware.

2.9 TRC INSTALLATION

CAUTION

Before placing the TRC into its mounting tray, de-energize or disconnect all power and signal sources and loads used with the SKY497 system.

1. Slide the TRC into the mounting tray (see figure 2-12). Ensure that the rear hold-down pins on the mounting tray are properly inserted into receptacles on the TRC.
2. Place the retainer cups over the TRC J-hooks. Secure the TRC to the mounting tray by tightening the self-locking hold-down knobs.
3. Connect the three antenna inputs to the connectors on the front panel.
   a. Connect the Sum port antenna connector (P9 - a TNC connector identified with a blue band) to connector J9 (identified with blue marking).
   b. Connect the Probe (Bit) port antenna connector (P10 - a BNC connector identified with a black band) to connector J10.
   c. Connect the Difference (Delta) port antenna connector (P11 - a TNC connector identified with a red band) to connector J11 (identified with red marking).
4. Connect I/O Signal Cable (P1 - a 100-pin connector) to connector J1.
5. Connect the power cable (P8 - a three pin connector) to connector J8.

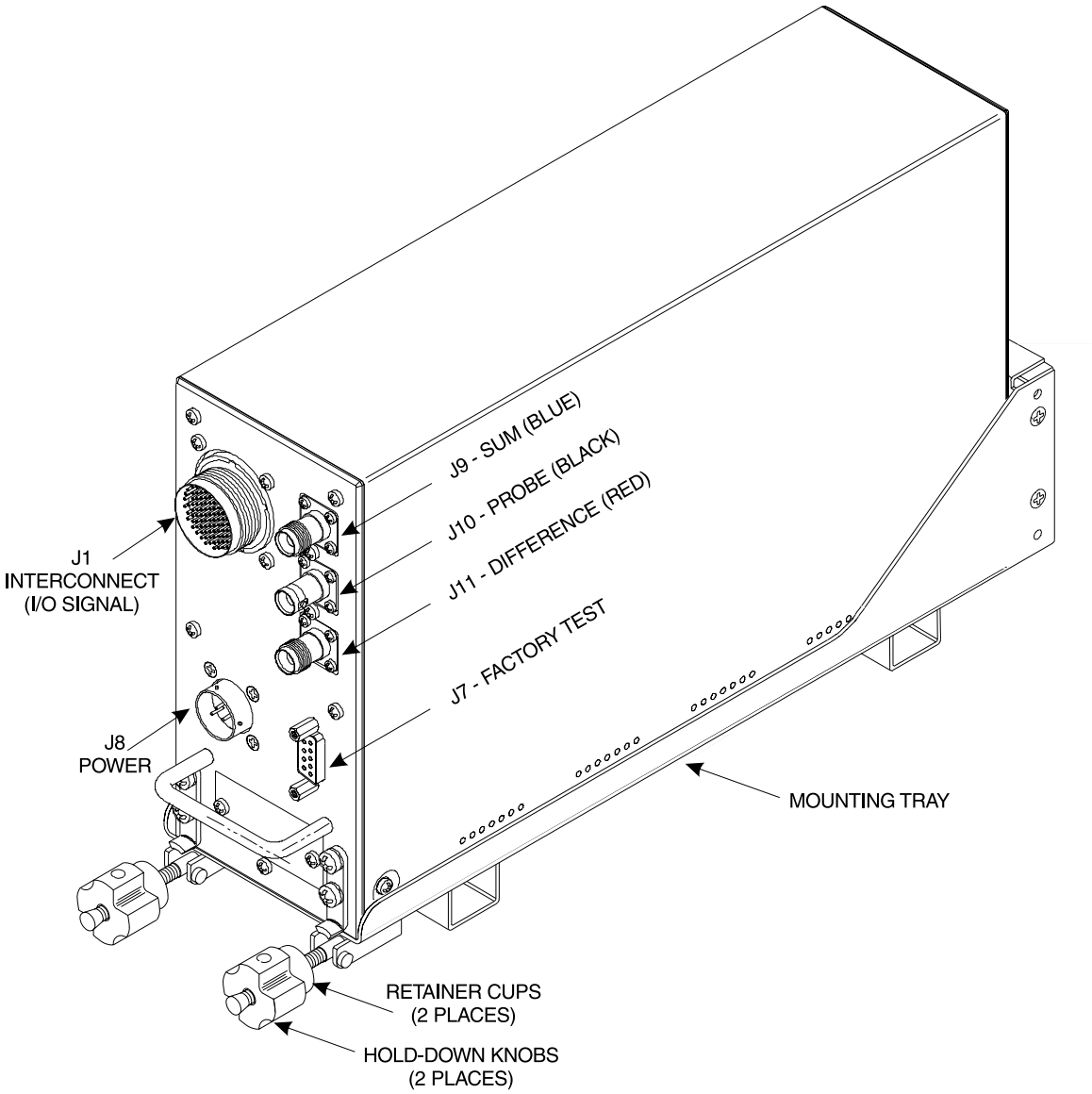


Figure 2-12. TRC497 Installation

2.10 MOUNTING THE WX-1000/SKY497 DISPLAY

The display mounts in a standard 3ATI panel cutout (figure 2-13). The unit may be mounted from the front or rear. The following paragraphs describe the installation procedure.

2.10.1 Panel Cutout.

Refer to figure 2-13 for the panel cutout and mounting hole dimensions. Drill and punch the required holes. The instrument panel cutout is a standard 3ATI.

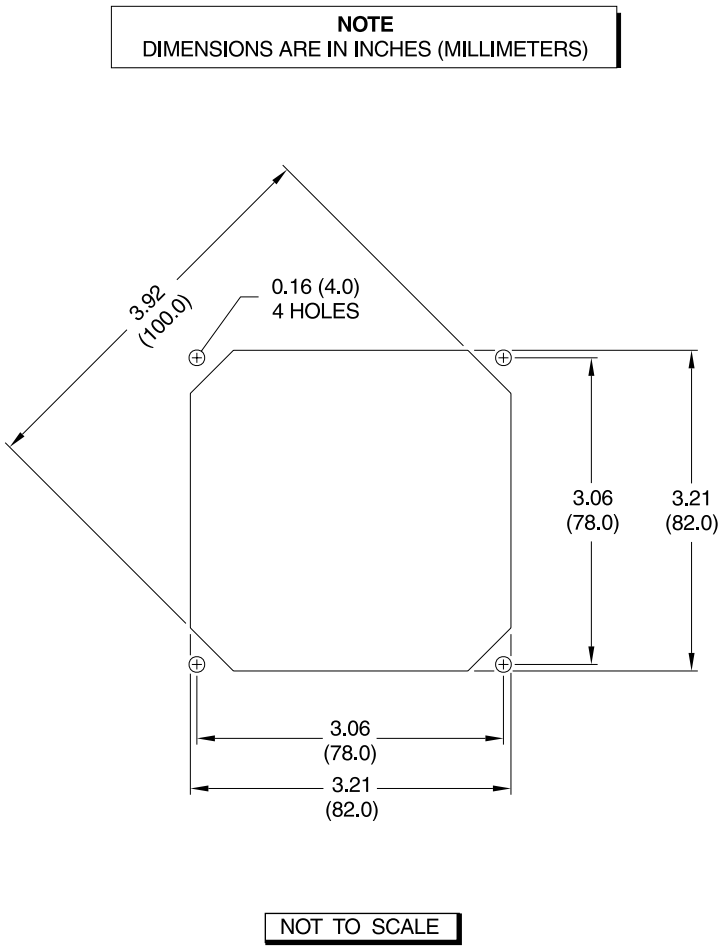


Figure 2-13. Instrument Panel Cutout and Mounting Holes

2.10.2 Display Installation

Figure 2-14 shows a typical display installation. The display can be mounted to the instrument panel from the front or from the rear. An optional mooring clamp is available for increased stability in high-vibration environments.

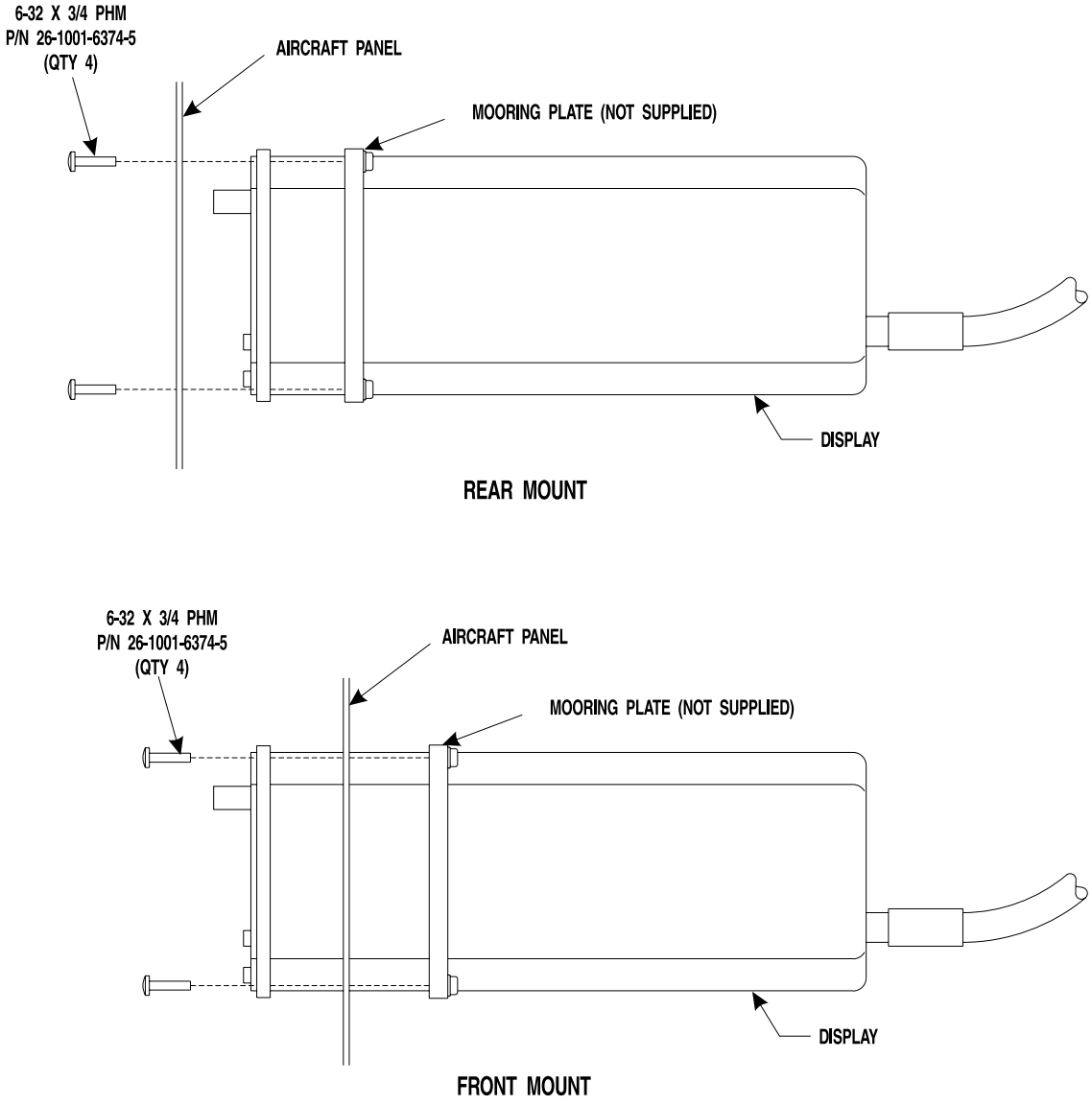


Figure 2-14. Display Installation

Use rivnuts® or a mooring clamp to secure the display to the instrument panel.

NOTE

1. The mooring clamp is not furnished with the display.
2. A mooring clamp (P/N 78-8060-5856-2) can be ordered when the order for the display is placed.
3. A 3ATI mooring clamp is also available from:

   MSP, Incorporated
   R.R. 4, Box 383A
   Nashville, Indiana 47448
   Tel. (812) 988-6623 or FAX (812) 988-6181

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CHAPTER 3
INSTALLATION CHECKOUT

3.1 INTRODUCTION

This section contains instructions for using the BFGoodrich Avionics Systems TT391 Flightline Tester to do post-installation checkout of the BFG Avionics Systems SKY497. Detailed setup, operation and maintenance information for the TT391 Flightline Tester is provided in the TT391 Instruction Manual.

NOTES

1. This procedure assumes familiarity with the set up and operation of the TT391 Flightline Tester.
2. All test equipment used in completing these tests shall be calibrated in accordance with the manufacturer's recommendations.
3. This section provides checkout information for the BFGoodrich Avionics Systems SKY497 using the WX-1000 Display. If using an alternate display use Appendix E for installation checkout.
4. Checkout of the WX-1000 processor should be done in accordance with the procedures detailed in the WX-1000 Installation Manual.

This procedure will validate the installation and return to service of the BFGoodrich Avionics Systems SKY497.

3.2 CONTROLS

All operating controls are located on the front of the indictor. Figure 3-1 shows the locations of the controls. Complete operating instructions for the SKY497 are provided in the SKY497 Pilot's Guide supplied with each system.

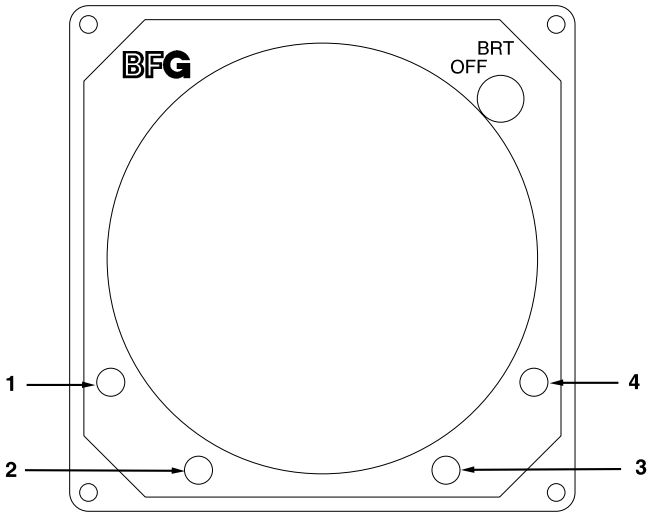

Figure 3-1. Controls

OFF/BRT Switch	Power is applied by rotating the knob clockwise past the detent. Continued clockwise rotation increases display brightness.
1, **2**, **3**, & **4** Pushbuttons	Also referred to as soft-keys **(1)**, **(2)**, **(3)**, and **(4)**. In every operating mode a label identifying the button function will be displayed next to the button.

3.3. CHECKOUT PROCEDURE

The TT391 Flightline Tester simulates both a ground based secondary surveillance radar (SSR) and an airborne transponder. With the SKY497 set to GROUND TEST (i.e., the barometric altimeter is simulated to 50,000 ft, heading simulated to 0 degrees, and the radar altimeter simulated to 2,500 ft) the TT391 will simulate two targets; a Traffic Advisory (i.e., a solid circle) at ¼ nm and Other Traffic (i.e., open diamond) at 4.5 nm. Both targets will be displayed in level flight at own aircraft altitude (i.e., "00" displayed above the traffic symbol).

If the indications given in the following procedure, except for the Flightline Tester, are not obtained, refer to the troubleshooting procedures in Chapter 4. If indications given for the Flightline Tester are not obtained, refer to the maintenance section of the TT391 Instruction Manual.

1. Make sure the aircraft's transponder is in the STBY mode and the DME is turned OFF. At the aircraft's instruments, verify all compass/HSI flags are valid.

NOTE

After power up, it may take a couple of minutes for the altitude encoder to return a valid altitude to the transponder and SKY497.

2. Turn SKY497 ON. The display will show a start-up screen similar to one shown in figure 3-2. After start-up screen appears, rotate the OFF/BRT switch. Verify that clockwise rotation increases display brightness.

Figure 3-2. Start-up Screen

After approximately thirty seconds the display will show the STANDBY screen (see figure 3-3).

NOTE

If the TRC has not been calibrated to the directional antenna (see step 3) the display may show a "SKY497 FAILED" message.

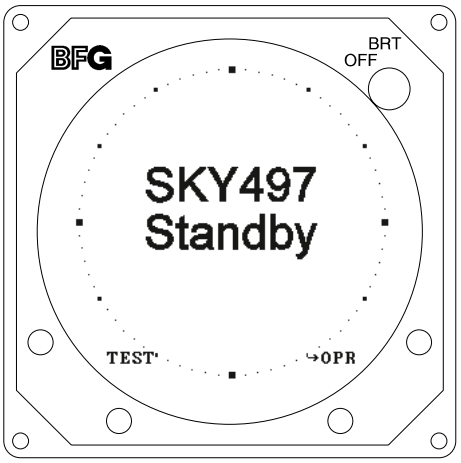

Figure 3-3. Standby Screen

3. Turn SKY497 OFF and then enter the Service Menu (see paragraph 4.4) by holding the left two buttons (soft-keys **1** and **2**) depressed as the system is turned ON.
4. From the Service Menu, calibrate the TRC to the directional antenna (see paragraph 4.4.1).
5. Return to the Service Menu and select System Data (see paragraph 4.4.3).
   a. Verify status and save the configuration jumpers (see paragraph 4.4.3.2, Configuration).

WARNING

Verify displayed antenna position matches antenna location on the aircraft (top or bottom). Failure to do so could give incorrect traffic bearing.

   b. Verify that the system has recognized and is responding to installed sensors (see paragraph 4.4.3.3, Data Monitor).
      1) Sequence through each Data Monitor display page.
      2) Verify that the sensor information displayed is correct.
      3) If the information is not correct, the sensor has failed to communicate with the TRC. Check operation of the sensor and cables between the TRC and sensor.
      4) Change the status of the landing gear, squat switch, altitude, and heading sensors. Verify that the display shows the correct input (i.e., sensing of these signals).
6. Exit the service menu and do the SKYWATCH self-test (see para 3.4).
7. Turn SKY497 OFF, return to the Service Menu and select Ground Test (see paragraph 4.4.4).
8. Verify operation of range function. Soft-key **(3)** is labeled to indicate the current range. Press soft-key **(3)** to toggle the display range between 2 and 6 nm.
9. Select the 6 nautical mile range.
10. Verify that the system toggles through the altitude display modes. Soft-key **(2)** is labeled to indicate the current mode. Press Soft-key **(2)** to select normal (NRM), below (BLW), and above (ABV).
11. Select the NRM (normal) mode.

12. Position the aircraft with the nose aligned on any 90 degree heading. Avoid areas within 250 ft of obstructions (e.g., hangers, large aircraft, control towers, etc.) where there is a potential for multipath problems. Locate and mark test points at 30 degree intervals (i.e., 000, 030, 060, 090, 120, 150, 180, 210, 240, 270, 300, and 330 degrees) with respect to the directional antenna. Mark these points at the same distance, between 100 and 150 ft, from the aircraft.

13. Position the TT391 Flightline Tester on one of the test points identified in previous step.

CAUTION

The Flightline Tester is not weatherproof when the lid is open. Do not setup or operate the Flightline Tester in conditions of rain, sleet, etc.

14. Setup and verify operation of the TT391 Flightline Tester:
    a. Open the chassis lid and remove the lid from the chassis by sliding the lid off of the hinge pins (sliding it to the right). The lid "stay" must be removed from the lid before mounting. The stay will pop off of the lid. (The stay is the hinged part that props the lid open on the chassis).

NOTE

The Patch Antenna may be used without a tripod. The Patch Antenna can be held, or secured, and pointed towards the SKYWATCH aircraft under test WITH THE MOUNTING STUD POINT TOWARD THE GROUND. This orientation is critical.

    b. Mount the chassis lid, with the Patch Antenna facing the aircraft, onto a tripod (not included). The tripod must be capable of holding the antenna (approximately 2.5 lb) and must provide a standard base mounting stud threaded 1/4"-20. A typical tripod mount is shown in figure 3-4.
    c. If the internal batteries are being utilized, proceed to sub-step f. If the Flightline Tester AC Converter Power Supply is to be utilized, proceed to sub-step d.
    d. Connect the AC Converter Power Supply cable connector to the chassis external connector.
    e. Connect the AC Converter Power Supply input power cable connector to one of the following AC sources:.
        - 115 Vac, 60 Hz
        - 115 Vac, 400 Hz
    f. Set the Flightline Tester POWER switches to the ON position.
    g. Verify that the LOW indicator is not steady on (it may flash). If the LOW indicator remains on (i.e., lit), perform one of the following three options.
        - Use the AC Converter Power Supply to power the unit.
        - Recharge the internal batteries.
        - Replace the internal batteries.
    h. Set the SELF-TEST switch to the 1030 position and verify that the 1030 indicator blinks on for 1/2 second every 5 seconds.
    i. Set the SELF-TEST switch to the 1090 position and verify that the 1090 indicator blinks on for 1/2 second every 5 seconds.
    j. Set SELF-TEST switch to center position (off). Set the POWER switch to the OFF position.

NOTE

Care should be taken to ensure that the Patch Antenna is connected to TT391 connector J1 and NOT J2. IF THE PATCH ANTENNA IS CONNECTED TO J2 THE TT391 WILL NOT FUNCTION CORRECTLY.

    k. Connect the Flightline Tester coax cable to J3 on the Patch Antenna and to connector J1 in the chassis. (J2 should remain capped by the dust cover).

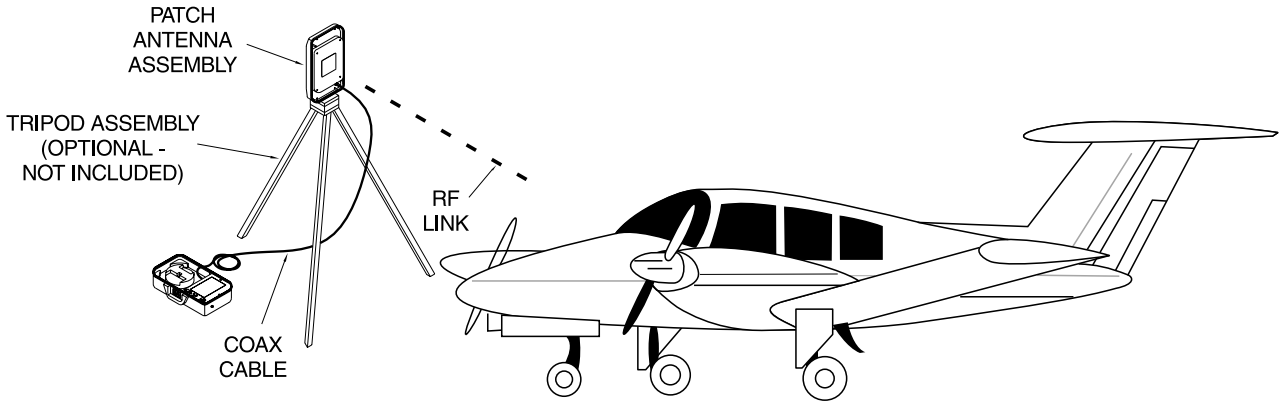

Figure 3-4. Typical Patch Antenna Tripod Mount

15. From each test point (see step 12):
    a. Position the TT391 Patch Antenna facing the SKYWATCH aircraft under test.
    b. Set the TT391 POWER switch to the ON position.
    c. Verify that the display shows, in the direction (± 30 degrees) of the TT391, two targets; a Traffic Advisory (i.e., a solid circle) at ¼ nm and Other Traffic (i.e., open diamond) at 4.5 nm. Both targets will be displayed in level flight at own aircraft altitude (i.e., "00" displayed above the traffic symbol).

NOTES

1. If the display reflects a gross error in target bearing, check the directional antenna cables at TRC connectors J9 (sum port) and J11 (difference port). They may be reversed. A further indication of this condition would be a target that moved in a counter-clockwise direction when the TT391 is moved in a clockwise direction.
2. Multiple targets or a faulty bearing may result from multipath distortion (see step 1).
3. During these tests, the SKY497 may detect and display other active targets.
4. To obtain a better line of sight, it may be necessary to elevate the patch antenna.

    d. Set the TT391 POWER switch to the OFF. Repeat procedure from each test point. Step 15 can be done from the last test point.

NOTE

To prevent SKYWATCH from tracking the movement of the test-set, it is necessary to set the TT391 POWER switch to OFF after completing each bearing measurement.

16. Return the TT391 assemblies to their position in the aluminum carrying case.
17. Restart SKYWATCH by cycling power OFF and then ON.
18. Connect an oscilloscope to the suppression bus and verify that the SKY497 suppression pulse (100 µs ±5 µs) exceeds +15 V dc. If less than +15 V dc the suppression bus is overloaded. Check all equipment connected to the bus. Repair/replace the offending device.
19. This completes the post installation checkout procedure.

3.4 SELF TEST

1. Turn SKYWATCH OFF and then:
   a. Make sure the aircraft's transponder is in the STANDBY, ON, or ALT mode.

NOTE

After power up, it may take a couple of minutes for the altitude encoder to return a valid altitude to the transponder and SKY497.

   b. If installed, power up the radio altimeter.
   c. Make sure all compass/HSI flags are cleared from the aircraft's instruments.
2. Turn SKYWATCH ON. The display should show a start-up screen similar to one shown in figure 3-2.
3. After approximately thirty seconds, observe the STANDBY screen and then press the TEST button (soft-key **(1)**).
4. The display should present a screen similar to that shown in figure 3-5.

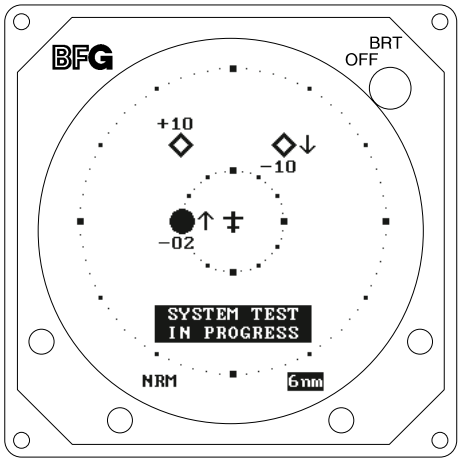

Figure 3-5. Self Test Screen

5. If SKYWATCH passes the self-test, the system will return to the STANDBY screen (see figure 3-3) and the voice message, "TRAFFIC ADVISORY SYSTEM TEST PASSED," will be enunciated over the cockpit audio system.
6. If you do not hear the voice message or if the voice message is of insufficient volume:
   a. Check headphones/speaker and aircraft audio panel switch settings.

NOTE

Audio levels are adjusted at the aircraft audio panel. There is no internal audio adjustment.

b. Check audio connection to the TRC:

1) 600-ohm audio systems should be connected to P1-92 (AUDIO_H).

2) 150-ohm audio systems should be connected to P1-91 (AUDIO_L).

3) Audio common is connected to P1-90 (AUDIO_C).

NOTE

Audio output from the TRC is transformer isolated.

7. If SKYWATCH fails the self-test:

a. The "**SKY497 Failed**" screen (see figure 3-6) with an error message indicating the type of failure will be displayed.

b. The voice message, "TRAFFIC ADVISORY SYSTEM TEST FAILED", will be enunciated over the cockpit audio system.

c. Soft-key **(1)** will be labeled **TEST**. To re-test, press soft-key **(1)**.

d. Soft-keys **(2)**, **(3)**, and **(4)** are not used.

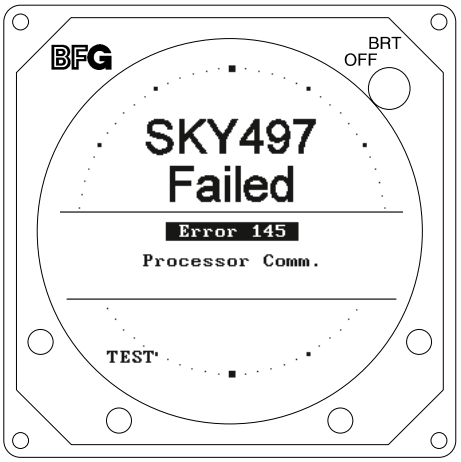

Figure 3-6. Self Test Failed Screen

e. Refer to the fault isolation procedures in Chapter 4.

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